OZONE

swiftMAX 2

Pilot Manual - EN

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THANK YOU

Thank you for choosing to fly Ozone. As a team of free flying enthusiasts, competitors and adventurers, Ozone's mission is to build agile paragliders of the highest quality with cutting edge designs, performance and maximum security.

Confidence and belief in your paraglider is a far greater asset than any small gains in performance - ask any of the Ozone pilots on your local hills, or those who have taken our gliders on ground-breaking adventures or stood on podiums around the world. All our research and development is concentrated on creating the best handling/performance characteristics possible with optimum security. Our development team is based in the south of France. This area, which includes the sites of Gourdon, Monaco and Col de Bleyne guarantees us more than 300 flyable days per year which is a great asset in the development of the Ozone range.

As pilots we fully understand just how big an investment a new paraglider is. We know that quality and value for money are essential considerations when choosing a new wing, so to keep costs low and quality high we manufacture all of our products in our own production facility. During production our wings undergo numerous rigorous quality control checks that are fully traceable, this way we can guarantee that all of our paragliders meet the same high standards.

It is essential that you read this manual before flying your wing for the first time. The manual will help you get the most out of your new wing, it details information about the design, tips and advice on how best to use it and how to care for your wing to ensure it has a long life and retains a high resale value. For the latest updates, including all technical datas please refer to the online version found on the product's page on at www.flyozone.com.

If you need any further information about any of our products please check flyozone.com or contact your local dealer, school or any of us here at Ozone.

Safe Flying!
Team Ozone

WARNING

- Paragliding is a potentially dangerous sport that can cause serious injury including bodily harm, paralysis and death. Flying an Ozone paraglider is undertaken with the full knowledge that paragliding involves such risks.
- As the owner of an Ozone paraglider you take exclusive responsibility for all risks associated with its use. Inappropriate use and or abuse of your equipment will increase these risks.
- Any liability claims resulting from use of this product towards the manufacturer, distributor or dealers are excluded.
- Use only certified paragliders, harnesses with protectors and reserve parachutes that are free from modifications.
- Fly within the certified weight range. Please remember that flying outside of its certified configuration may jeopardise any insurance (e.g. liability, life etc) you have. It is your responsibility as the pilot to verify your insurance cover.
- Make sure to complete a thorough daily and pre-flight inspection of all the equipment. Pay attention to the pilot and passenger connections.
- Do not use old spreader bars, they should be changed every 5 years.
- Never attempt flying with unsuitable or damaged equipment.
- Always wear a helmet.
- All pilots must have the appropriate license and qualifications for their respective country along with adequate third party insurance.
- Make sure that you are physically and mentally healthy before flying.
- Choose the correct wing, harness and conditions for your level of experience.
- Pay special attention to the terrain you will be flying and the weather conditions before you launch. If you are unsure do not fly, and always add a large safety margin to all your decisions.
- NEVER fly your glider in rain, snow, strong wind, turbulent weather conditions or clouds.

YOUR SWIFTMAX 2

The Swiftmax 2 is our high performance tandem designed for XC pleasure flights and professional tandem flying. Based on the World record holding Swiftmax, the new generation pushes the performance envelope even further whilst improving safety, comfort, ease of use and longevity.

The SwiftMax concept shares many design elements of the solo light weight Swift series including the SharkNose profile, low drag 3 line architecture and sail optimisations. The Swiftmax 2 now incorporates winglets for improved roll stability and damping and better spiral stability. Roll stability has a big impact on pilot and passenger comfort, the winglets reduce parasitic roll movements, often the cause of passenger motion sickness. Coupled with the dependable and solid profile the winglets creates a smooth magic carpet feel for high levels of comfort especially during long flights in turbulent conditions.

The Swiftmax 2 maintains the semi lightweight construction for every day ease of use but has also been reinforced in critical areas to increase robustness. Specific fabrics have been chosen within the redesigned structure to optimise weight saving, whilst strengthening the critical areas in order to improve longevity. The lightweight design and trim optimisation offers energetic handling for efficient climbing. A high top speed and class leading glide performance makes this the XC tandem of choice.

The risers have been updated with Rollercam trimmers for silky smooth operation and a dedicated big ears system to make prolonged big ears easy to manage.

The Swiftmax 2 is a solid, confidence inspiring platform with high levels of efficiency designed to fly far with friends and share the pure joy of flight. It is also an ideal workhorse for commercial tandem pilots who fly sites where performance is the key to successful flights. Certified EN B it is only suitable for experienced/ intermediate pilots who hold the necessary qualifications.

Rucksack

Your wing is supplied with a specially designed bag that is light in weight and comfortable. It features a padded hip belt, adjustable ergonomic shoulder straps and extra pockets to store keys, accessories and all those extra bits. Its large volume allows you to store all of your equipment whilst distributing the weight for comfortable hiking.

Brake Lines

The brake line lengths have been set carefully during testing. We feel it is better to have slightly long brake lines and to fly with a wrap (one turn of line around the hand). However, if you do choose to adjust their length please keep in mind the following:

- Ensure both main brake lines are of equal length.
- If a brake handle has been removed, check that its line is routed through the pulley when it is replaced.
- When the brakes are fully released in flight, the brake lines should be slack. There must be a substantial bow in them to guarantee no deformation of the trailing edge when accelerated.
- There must be a minimum of 10cm of free play before the brakes begin to deform the trailing edge. This prevents the trailing edge from being deformed when using the speed system.

Risers

The Swiftmax 2 has been designed with 3 risers per side. The A riser is covered with coloured webbing, to allow for easy identification. The A risers are split into two, the smaller riser - holding only the outermost A line - is the 'AR3 riser' and has been designed this way to make applying big ears simple. The risers also feature a Big Ears system which holds the ears engaged.

The risers feature certified trimmers to adjust the trim speed of the wing, there is no foot operated accelerator system.

IMPORTANT
In the unlikely event of a brake line snapping in flight, or a handle becoming detached, the glider can be flown by gently pulling the rear risers (C-risers) for directional control.

Trimmers

The Swiftmax 2 is certified with trim risers that can be adjusted in flight to maximise thermalling or gliding efficiency or to compensate for wing loading/conditions depending on personal taste. The design team have found that when flying in the middle to top of the weight range the best position for take off and thermalling is with the trimmers set to the fully slow position. For a faster trim speed and improved handling when flying at lower wing loadings it is recommended to release both trimmers to at least the first white line, when flying close to the bottom of the weight range the trims can be released further.

The trimmers can be used asymmetrically during thermalling by releasing the outside trimmer 2-3 cm for even better turn radius and more efficient climbing. When landing we recommend to release both trimmers symmetrically a few cms, this helps produce a good flare with better pop.

Before the take off inflation, ensure that the trimmers are set equally on both sides. The white stitching does not represent a specific speed or recommendation, it is there purely as a reference for symmetry.

IMPORTANT
Before the take off inflation, ensure that the trimmers are set equally on both sides.

Spreader bars

Optional Ozone spreader bars are available: Standard, Soft or Light.

Standard spreaders have rigid bars and colour coded hang points. The single (grey) loop is the pilot harness attachment. The twin loops (blue) are for the passenger's harness, either the upper or lower loop can be used depending on the size and weight of the passenger, but always ensure the passenger is hooked into matching loops on both sides.

The loop in the centre of the spreader bar (coloured Red) is for attaching the spreaders to the glider's risers. The spreader bars should be attached to the risers of the glider with a tandem rated trapezoidal link or suitable carabiner. The single loops (grey) should be facing to the rear for the pilot to clip into.

Soft spreaders have trimmers to adjust the pilot's height relative to the passenger. The pilot hang points are coloured black, the passenger's blue and the main hang points red.

Light spreaders weigh just 60g. The pilot hang points are coloured black, the passenger's grey and the main hang points black.

LIMITATIONS

Limitations

The Swiftmax 2 has been designed as a tandem intermediate XC wing. As a tandem wing, it is intended for experienced pilots, it is not suitable for beginners and those under training nor for aerobatics.

Before flying tandem it is essential that you are a competent and experienced solo pilot with the appropriate training and qualifications necessary for your region. Taking passengers for a paragliding flight is a huge responsibility and not one to be taken lightly. It is important, especially if the passenger is new to the sport, that they receive a thorough pre flight briefing so that they are aware of all the possible incidents that may occur during the launch/flight/landing process and how to react to them correctly.

Total Weight in flight

The Swiftmax 2 offers a wide weight range to accommodate a broad range of passengers. The flying characteristics are therefore very different at the extremities. When flying at the upper limit of the weight range there is a faster speed, harder brake pressure with more precise handling and more dynamic reactions. Flying near the lower weight will give improved sink rate performance, lighter brake pressure and less dynamic handling. When flying close to the lower limit, Ozone recommends to fly with the trimmers released as much as is required for effective turns and to avoid inadvertent stalls and spins. When flying at the very bottom of the weight range avoid deep brake inputs with the trimmers in the slow position.

Each Ozone glider has been certified for a defined weight range, we strongly recommend that you respect these weight ranges.

Towing

The Swiftmax 2 may be tow-launched. It is the pilot's responsibility to use suitable harness attachments and release mechanisms and to ensure that they are correctly trained on the equipment and system employed. All tow pilots should be qualified to tow, use a qualified tow operator with proper, certified equipment, and make sure all towing regulations are observed. When towing you must be certain that the paraglider is completely over your head before you start. In each case, the maximum tow force needs to correspond to the all up weight of the pilot and passenger.

Flying in the Rain

Modern wings are susceptible to rain and moisture, flying with a wet wing can result in the loss of normal flight.

Due to the efficient, wrinkle-free design of the sail, water tends to bead on the leading edge causing flow separation. Flow separation will make the wing more prone to entering inadvertent parachutal stalls, so flying in the rain, or with a wet wing (e.g early morning dew) should be avoided at all costs.

If you are accidently caught-out in a rain shower, it is best to land immediately. If your wing becomes wet in the air it is advised to maintain accelerated flight using the speed bar, even during the final approach. DO NOT use big ears as a descent technique, big ears increases drag, and with a wet wing this will further increase the chances of a parachutal stall occurring. Instead, lose height with gentle 360's and maintain your air speed at all times. If your wing enters parachutal stall when wet, immediately accelerate the wing with the speed bar to regain airspeed.

IMPORTANT
Never fly in the rain or with a wet glider

Reserve Parachute

We recommend that you always fly your tandem with a reserve parachute suitable for your maximum all up flying weight. A twin bridle reserve should be used; each bridle should be attached to the main suspension point on the spreader with a separate carabiner (not supplied). The bridles should be threaded through the Velcro loop and under the protective black cloth flap, before clipping into the carabiner on the main suspension point.

Modifications

Your Ozone Swiftmax 2 was designed and trimmed to give the optimum balance of performance, handling and safety. Any modification means the glider loses its certification and will also probably be more difficult to fly. For these reasons, we strongly recommend that you do not modify your glider in any way.

PREPARATION

Harness

For the pilot, we recommend a dedicated tandem harness that allows freedom of movement with a wide seat plate or split leg design to comfortably accommodate the passenger once in the air. The reserve parachute handle should not be accessible to the passenger to reduce the likelihood of an accidental deployment. The chest strap should be set with 48cm - 55cm between the centre of the hang points.

It is important to set up your and your passenger's harness correctly before flying. Make sure to spend time adjusting the harness's settings until you are completely comfortable.

NOTE
The wing was certified with a chest strap setting of 55cm.

Wing

To prepare the wing, lay it out on the top surface and perform a thorough daily check. You should inspect the top and bottom surfaces for any rips and tears or any other obvious signs of damage. Lay out the lines one side at a time, hold up the risers and starting with the brake lines, pull all lines clear. Repeat with the stabilo, D, C, B and A lines, laying the checked lines on top of the previous set, and making sure no lines are tangled, knotted or snagged. Mirror the process on the other side and then inspect the lines for any visual damage. Then inspect the risers for any signs of obvious damage.

To familiarise yourself with the glider it is a good idea to perform practice inflations and small flights on a familiar hill. This will enable you to set up your equipment correctly.

Take-off checklist (for both pilot and passenger):

- Check reserve parachute - pin is in and handle secure
- Helmets on and fastened
- All harness buckles closed - check leg-loops again, triple check passenger
- Carabiners and maillons correctly placed on spreaders and done up tight
- Trimmers set equally on both sides
- Holding the A risers and your brake handles correctly without twists
- Leading edge open
- Aligned in the middle of the wing and directly into wind
- Airspace and visibility clear

BASIC FLIGHT TECHNIQUES

Launching

Your Swiftmax 2 will launch with either the forward or reverse technique. The wing should be laid out in a pronounced arc, with the centre of the wing higher than the tips. It is recommended to launch with the trimmers set in the fully slow position. In this position the inflation is smooth and consistent and the wing creates sufficient lift for flight with the least amount of speed and the take off distance is reduced to a minimum.

Forward Launch - Nil to Light winds

When the wind is favourable, whilst gently holding the A risers move forward positively, your lines should become tight within one or two steps and the Swiftmax 2 will immediately start to inflate. You should maintain a constant pressure on the risers until the wing is overhead. Do not pull down or push the risers forward excessively, or the leading edge will deform and possibly collapse making taking-off more difficult and potentially dangerous.

Move smoothly throughout the entire launch, there is no need to rush or snatch at it. You should have plenty of time to look up and check your canopy before committing yourself. Once you are happy that the Swiftmax 2 is inflated correctly, accelerate smoothly off the launch. Once up to speed the application of a small amount of brake will get you airborne

Reverse Launch - Light to Strong Winds

Lay out your wing as you would for the forward launch. However, this time turn to face it, passing one entire set of risers over your head as you turn. Now you can inflate the glider with your body weight and the A-risers. Once the wing is overhead, release the risers, brake gently if necessary, turn and launch.

In stronger winds, be prepared to take a few steps towards the glider as it inflates. This will take some of the energy out of the glider and it will be less likely to overfly you. This reverse-launch technique can be used in surprisingly light winds too.

IMPORTANT

Never take off with a glider that is not fully inflated or if you are not in control of the pitch/roll of your wing.

Speed to Fly

Flying with the trimmers released a few cm achieve Swiftmax 2's best glide speed for still air. You should fly at this speed when gliding or when the air is not excessively sinking.

For better penetration in headwinds and improved glide performance in sinking air, crosswinds or headwinds, you should fly faster by releasing the trimmers. Releasing up to half of the trim range does not degrade the glide angle or stability significantly and will improve your XC flying performance. You will reach the next thermal faster and higher. At full speed - when the trimmers are fully released - the Swiftmax 2 is stable, however we recommend that you do not fly at full speed close to the ground or in turbulent air.

The sink rate and brake pressure are reduced with the trimmers in the fully slow position, this speed should be used when ridge soaring or thermalling. However if you are flying near the bottom of the weight range it is recommended to keep speed in reserve and not fly with the trimmers set too slow. By applying the brakes approximately 30cm, the Swiftmax 2 will achieve its minimum-sink rate; this is the speed for best climb and is the speed to use for thermalling, gliding downwind in lifting air or ridge soaring.

IMPORTANT
Do not fly fully untrimmed in turbulent conditions.

Turning

To familiarize yourself with the Swiftmax 2 your first turns should be gradual and progressive. To make efficient and coordinated turns with the Swiftmax 2 first look in the direction you want to go, then lean into it. Your first input for directional change should be weight-shift, followed by the smooth application of the brake until the desired bank angle is achieved. To regulate the speed and radius of the turn, coordinate your weight shift and use the outer brake.

IMPORTANT
Never initiate a turn at minimum speed (i.e. with full brakes on) as you could risk entering a spin.

Active Flying

To minimize the likelihood of suffering collapses in turbulent conditions, it is essential to fly actively. In turbulent conditions the internal pressure of the wing is constantly changing and only by using a small amount of brake will you feel these changes. Flying with a small amount of brake applied (approx. 20cm) will allow you to feel the feedback from the wing. The aim of active flying is to maintain a constant pressure through the brakes, If you feel a reduction or loss of pressure apply the brakes until you feel normal pressure again. Once you have normal pressure, raise the hands quickly back to the original position.

Avoid flying with continuous amounts of deep brake in rough air as you could inadvertently stall the wing. Always consider your airspeed. These movements can be symmetric or asymmetric; you may have to apply

both brakes or just one. The subtle adjustments will keep the glider flying smoothly and directly above you and dramatically reduce the chances of a collapse. If the glider pitches in front of you, use the brakes to slow it down. Equally, if the glider drops behind you, release the brakes to allow it to speed up. The goal of active flying is to maintain the internal pressure whilst keeping the wing directly overhead.

No pilot and no glider are immune to collapses however active flying will virtually eliminate any tendency to collapse. When the conditions are turbulent, return the trimmers to the white line position and fly actively anticipating the movements of the wing. Always be aware of your altitude and never over-react. We strongly advise you to always keep hold of your brake handles and to not fly in turbulent conditions.

IMPORTANT
Always keep hold of your brakes. Do not fly in turbulent conditions

Active Rear Riser Control

When gliding it is possible to pilot the wing with the D risers, this gives an improved feel and control over the wing enabling you to fly actively without using the brakes. Using brakes whilst accelerated causes drag which is not only inefficient but it also reduces the inherent stability of the profile - using the brakes whilst accelerated can actually lead to a collapse. Using the D risers increases the angle of attack evenly across the chord and does not weaken the profile, the direct feel allows you to stop collapses before they happen whilst maintaining a higher speed and higher level of efficiency through turbulence.

To fly with the D risers, keep hold of your brake handles (remove any wraps) and take hold of the D risers. If you see or feel the leading edge lose pressure, you can input to the D risers to help keep the nose open. Be careful to use only small inputs with the D risers, you risk stalling part or all of the wing if you are over enthusiastic. The amount of pressure and size of the input is dependent on the amount of turbulence/loss of pressure, but always be gentle at first.

Be prepared for plenty of practice as this new method may take some time for it to become totally intuitive, efficient and comfortable. This control method is suitable for gliding in good ‘normal’ air, it does not replace proper active flying on the brakes in strong turbulent conditions. If you are unsure about the air release the D risers, return the glider to the slow trimmer position and fly actively with the brakes.

Landing

The flare of the Swiftmax 2 is very good, when performed correctly a solid flare creates lift and reduces the forward speed effectively for smooth, safe landings. The Swiftmax 2 shows no unusual landing characteristics but as a reminder, here are some tips:

- Always set up for your landing early, give yourself plenty of options and a safe margin for error.
- Once below 30 metres avoid turning tightly as the glider will have to dive to accelerate back to normal flight. If you are at low altitude, or if you hit sink, this could mean you hit the ground harder than necessary. Always land into wind!
- Prepare yourself and passenger for the landing, both should be leaning forward in a standing position, not seated in the harness well before the actual landing (especially if it's turbulent)
- Set the trimmers to a mid position and fly hands up during the final descent until you are around 1 metre above the ground (in windy or turbulent conditions you must fly the glider actively all the way). Apply the brakes slowly and progressively to slow the glider down until groundspeed has been reduced to a minimum and you are able to step onto the ground.
- In light winds/zero wind you need a strong, long and progressive flare to bleed off all your excess ground speed. In stronger winds your forward speed is already low so you are flaring only to soften the landing. A strong flare may result in the glider climbing upwards and backwards quickly, leaving you in a vulnerable position.
- If the glider begins to climb too much, ease off the brakes (10-20cm) - do not put your hands up all the way - then flare again.
- Choose the appropriate approach style in function of the landing area and the conditions.
- In strong winds you need to turn towards the glider the second your feet touch the ground. Once facing the wing pull smoothly and symmetrically down on the brakes to stall the wing. If the glider pulls you, run toward it.
- If the wind is very strong, and you feel you might be dragged, or lifted again, stall the glider with the C risers. This stalls the wing in a very quick and controllable way and will drag you less than if you use the brakes.

RAPID DESCENT TECHNIQUES

Ozone would like to remind you that the following manoeuvres should be learnt under the supervision of a qualified instructor and always used with caution. Never forget that properly analysing the conditions before launch will help avoid the need to use these techniques.

Big Ears

Folding in the wing tips increases the sink rate without radically changing the airspeed. This is useful for staying out of cloud or descending quickly through the lift band of the hill, for example when top landing.

To pull big ears, keep hold of your brake handles and take the outermost A-line on each side, then pull out and down (preferably one at a time) until the wing tips fold under. The Outer A line is attached to the Baby A riser, making identification and use of the big ear system easier. The size of the big ears can be adjusted by pulling more line, or reaching higher up the line. Once the big ears are engaged you can further increase the sink rate by releasing the trimmers. For directional control while using the Big Ears, you should use weight shift.

Big ears can be used for the final landing approach but they should be released before making the final flare. To reopen the ears, release both A lines at the same time. To help reinflation, brake gently one side at a time until tips regain pressure. Avoid deep symmetric applications of the brake as this could accidently induce a stall.

Whilst it is possible to enter a spiral dive whilst holding in Big Ears, the high forces applied to the lower lines could exceed the breaking strain of the lines leading to equipment failure! Do not perform spiral dives with Big Ears engaged.

DO NOT perform spiral dives with Big Ears engaged.

Big Ear System

The risers feature a Big Ear System which allows the ears to be fixed in place. This is useful in emergency situations where comfortable high descent rates are required, for example with a nauseous passenger.

To use the Ear System pull the small handle found on the A risers until the ball passes through the basket. Once the ball has passed the basket move your hand forwards so that the ball traps itself in one of the grooves. The handle can now be replaced on the original magnet or left as it is. The ears will now stay in place as long as required with a stable descent rate.

To release the ears, reach around to the AR1 riser and feel for the ball trapped in the basket with your index finger, push the ball back towards the interior of the basket to free it. The ears will automatically re-open.

The ear system is ideal when prolonged ears are necessary, they should be released with plenty of altitude. If you need to make minor sink rate adjustments, for example when top landing or setting up approach to a tight landing field then it is recommended to use traditional big ears with the AR3 risers as these can be engaged and released without letting go of the brake handles.

The Big Ear System lines can be removed if not required, leaving just the basket on the A risers.

IMPORTANT
When using the Big Ear System always release the ears with plenty of altitude.

B-Line Stall

B-stall is very physical and is for fast descents in emergency situations only. It is faster, safer and easier to lose altitude with a spiral dive.

To initiate the B-stall, keep the brakes in your hand and take hold of both the B risers on or near the maillons. Pull the B risers firmly, you may need the assistance of your passenger to break the pressure. As you pull the B risers the airflow over the wing is broken, the glider loses its forward speed but remains open with a reduced cord. You can descend at around 6 m/s.

If you pull too much B-line the glider may horseshoe and move around a lot above your head. If this occurs, slowly release the B risers until the wing stabilises or simply exit the B line stall by immediately releasing the B risers. Do not attempt to maintain a B line stall that is not stable.
To exit the B-stall the B risers should be released symmetrically and in one smooth, progressive motion. The glider will resume normal forward flight without further input. Do not release the B risers slowly as this increases the risks of a parachutal stall occurring. Check you have forward speed and normal flight has resumed before using the brakes.

Spiral Dives

If you turn your glider in a series of tightening 360's it will enter a spiral dive. This will result in rapid height loss. To initiate a spiral, look and lean in to the direction you want to turn, then smoothly pull down on the inside brake. The Swiftmax 2 will first turn almost 360 degrees before it drops into the spiral. Once in the spiral you should re-centre your weight shift and apply a little outside brake to keep the outer wing tip pressured and inflated.

Safe descent rates of more than 8m/s are possible in a spiral dive, but beyond these rates the associated high speeds and G-forces can be very disorientating. Always pay particular attention to your altitude. To exit the spiral dive, move your weight shift to the outside whilst smoothly releasing the inside brake. As the wing decelerates allow it to continue to turn until enough energy is lost to return to level flight without an excessive climb and associated surge.

The Swiftmax 2 will normally exit a spiral dive spontaneously, however certain parameters can influence its behaviour and it is not impossible for the wing remain stable in the spiral. These parameters include: very tight chest strap settings; total weight in flight outside of the certified weight range and/or being in a very deeply engaged spiral dive with a very high sink rate >14m/s. You should always be prepared to pilot the wing out of a spiral dive with opposite weight shift and a smooth application of the brake, the rotational speed will then start to reduce and the glider will resume normal flight. Never attempt to recover from a spiral with hard or quick opposite inputs as this will result in an aggressive climb and surge.

IMPORTANT

Always be prepared to pilot the wing out of a spiral dive. If necessary use opposite weight shift and apply enough outside brake to stop the wing from spiralling.

INCIDENTS IN FLIGHT

Deflations

Due to the flexible form of a paraglider, turbulence may cause a portion of the wing suddenly to collapse. This can be anything from a small 30% (asymmetric) collapse to a complete (symmetric) collapse.

If you have a collapse, the first thing to do is to control your direction. You should fly away from the ground or obstacles and other pilots. Asymmetric collapses should be controlled by weight shifting away from the collapse and applying enough brake to control your direction. This action alone will be enough for a full recovery of the wing most of the time.

Once a glider is deflated it is effectively a smaller wing, so the wing loading and stall speed are higher. This means the glider will spin or stall with less brake input than normal. In your efforts to stop the glider turning towards the collapsed side of the wing you must be very careful not to stall the side of the wing that is still flying. If you are unable to stop the glider turning without exceeding the stall point then allow the glider to turn whilst you reinflate the collapse.

If you have a deflation which does not spontaneously reinflate, make a long smooth progressive pump on the deflated side. This pumping action should take about 1-2 seconds per pump. Pumping too short and fast will not reinflate the wing and pumping too slow might take the glider close to, or beyond, the stall point.

Symmetrical collapses reinflate without pilot input, however 15 to 20cm of brake applied symmetrically will speed the process. After a symmetric collapse always consider your airspeed. Make sure the glider is not in parachutal stall before making any further inputs.

If the wing collapses in accelerated flight, manage the collapse using the same methods described above. Returning the trimmers to the slow position will aid the speed and ease of reinflating the wing.

Cravats

If the tip of your wing gets stuck in the lines, this is called a ‘cravat’. This can make your glider go into a spiral, which is difficult to control. The first solution to get out of this situation is to stabilise the glider into normal flight, i.e get control of your direction and use strong deep pumps of the brake on the cravated side, when doing so it is important to lean away from the cravat otherwise you risk spinning or deepening the

spiral. The aim is to empty the air out of the wing tip, but without spinning. Correctly done, this action will clear the cravat efficiently. Alternatively, and if the cravat is small, after maintaining a controlled direction you can pull the stabilo line (outermost line on the D risers) until you feel tension, this action will normally clear the cravat. You must be careful with any brake inputs or you may stall the opposite wing.

If it is a very large cravat and the above options have not worked then a full stall is another option. This should not be attempted unless you have been taught how to do it and can only be done with a large amount of altitude. Remember if the rotation is accelerating and you are unable to control it, you should throw your reserve parachute whilst you still have enough altitude.

Deep Stall / Parachutal Stall

It is possible for gliders to enter a state of parachutal stall. This can be caused by several situations including; a very slow release from a B-line stall; flying the glider when wet; after a front/symmetric deflation; or flying with a light load with the trimmers in the slow position. The glider often looks as though it has recovered properly but carries on descending vertically without full forward motion. This situation is called 'deep stall' or 'parachutal stall'.

Should a parachutal stall occur, the first reaction should be to fully raise both hands immediately. This normally allows the glider to return to normal flight but If nothing happens after a few seconds, release the trimmers fully or reach up and push the A-risers forwards to encourage the wing to regain normal flight. Ensure the glider has returned to normal flight (check your airspeed) before using the brakes again.

Do not fly in rain, doing so significantly increases the likelihood of parachutal stalls occurring. To reduce the chance of stalling in rain, release the trimmers fully and avoid using deep brake movements and do not engage big ears. Find a safe area to land and using the trimmers maintain a good airspeed at all times.

IMPORTANT
Only a few cms of input from your brakes can maintain your wing in the stall. Always release your wraps if you have taken them!

CARE AND MAINTENANCE

Packing

To prolong the life of your wing and to keep the plastic reinforcements in the best possible condition it is very important to pack the wing carefully. We recommend to use the concertina packing method exactly as shown so that all of the cells rest alongside each other and the plastic reinforcements are not unnecessarily bent.

Step 1. Lay mushroomed wing on the ground. It is best to start from the mushroomed position as this reduces the dragging of the leading edge across the ground.

Step 2. Group the Leading Edge (LE) reinforcements with the A tabs aligned. Make sure the plastic reinforcements lay side by side.

Step 3. Lay wing on its side and strap the LE. Note the glider is NOT folded in half, it is folded with a complete concertina from tip to tip. It is really important to not stress the middle cell or bend the plastics too tightly.

Step 4. Group together the middle/trailing edge of the wing by sorting the folds near the B, C and D tabs.

Step 5. Once the LE and rear of the wing have been sorted, turn the whole wing on its side.

If using a Concerto pack go to Step 8.

Step 6. Fold the wing with 3 or 4 folds whilst being careful to not crush the LE.

Step 7. Now place the folded wing into the stuff sack.

Step 8. If using a Concerto, with the wing laid on its side carefully close the zip (or clips) without trapping any material.

Step 9. Make the first fold just after the LE reinforcements. Do not fold the plastic reinforcements, use 1 or 2 folds around the LE.

IMPORTANT: Do NOT lay the wing flat on the ground before packing the glider, this will cause abrasion damage to the top surface as you pull the glider towards the middle. ALWAYS pack from a mushroom or lift the wing off the ground when gathering the wing and grouping the leading edge.

IMPORTANT: Do not fold the glider in the centre, you will bend the plastics, instead pack the wing with a full concertina method from tip to tip before packing into the stuff sac.

Caring Tips

- DO NOT drag your wing along the ground to another take-off position - this damages the sailcloth. Lift it up and carry it.
- DO NOT try to open your wing in strong winds without untangling the lines first - this puts unnecessary strain on the lines.
- DO NOT walk on the wing or lines.
- DO NOT repeatedly inflate the glider and then allow it to crash back down. Try to keep this movement as smooth as possible by moving towards the glider as it comes down.
- DO NOT slam your glider down on the ground leading edge first! This impact puts great strain on the wing and stitching and can even explode cells.
- FLYING in salty air, in areas with abrasive surfaces (sand, rocks etc.) and ground handling in strong winds will accelerate the aging process.
- DO NOT fly in the rain or expose the wing to moisture.
- DO NOT expose the wing to unnecessary UV. Pack away once you have finished flying. Do not leave it sitting in the sun.
- Change your main brake lines if they are damaged.
- Be careful when ground handling to not saw the brake lines against the risers or main lines. The abrasion caused by a sawing motion can damage the main lines and lead to premature ageing of the risers. If you notice any signs of abrasion, especially to the lines, make sure you get the wing professionally serviced and importantly modify your ground handling technique to stop any further damage.
- Your Ozone wing has an opening closed using Velcro on the trailing edge of the tip called the 'Butt hole'. This has been designed to easily empty all the things which have been accumulating in your wing (sand, leaves, rocks, mobile phones etc).
- It is recommended that you regularly CHECK your wing, especially after a heavy period of use, after an incident or after a long period of storage.

Storage and Transport

Always store all your flying equipment in a dry room, protected from direct heat and sunlight. Your wing should be dry before being packed away. Moisture, heat and humidity are the worst elements for damaging your glider. Storing a damp glider in your car under the sun would be terrible for example.

If you land in salt water, you must first rinse it thoroughly with clean fresh water. Dry the wing completely, preferably out of the sun, in the wind. Never use a hair dryer, etc.

Take care that no insects get packed away with the wing. They may eat the cloth and make holes in a bid to escape. They can also leave acidic deposits if they die and decompose.

Transport the wing in the supplied bags and keep away from oils, paints, chemicals, detergents etc.

Cleaning

Any kind of wiping/scratching can damage the coating of the cloth. We recommend to not clean the wing, but if you do have to, use a soft cloth dampened with a small amount of water and use gentle movements little by little across the surface.

Wing Repairs

Always let a registered dealer, professional repair centre or the manufacturer carry out any major or complex repairs, especially those near seam margins.

If you damage the sail:

If the rip is small and in the middle of a panel however you can fix it yourself. You'll find all the materials in the repair kit you need. The fabric can be simply mended with the sticky rip stop/spinnaker tape. When cutting out the patches allow ample overlap of the tear and make sure both sides are different sizes. Make sure to round off each corner of the patches. You can find more information about repairing your wing on the Ozone website, including step by step instructions with pictures.

If you damage a line:
Any line that is visually damaged MUST be replaced. Use a reputable paragliding service centre to make the replacement lines. Alternatively you can order them from your local Ozone dealer.

It is important that replacement lines are made from the correct materials and diameters. You should check lengths against their counterpart on the other side of the wing to make ensure symmetry. Once the line has been replaced, inflate and check the glider before flying.

Maintenance Checks

Your wing should be checked regularly to ensure proper airworthiness. It should be serviced by a qualified professional for the first time after 24 months, or after 100 hours. If you are a frequent flyer, more than 100 hrs per year, or a professional then we recommend to have the wing serviced annually.

The dimensions of the lines tend to move during the first part of their life, it is therefore recommended to have a performance trim check within the first 50hrs of use. To ensure the correct trim, the lines should be measured and adjusted to the published values as necessary.

It is important to perform regular inspections to know the exact condition of all of the components of your wing. We recommend these inspections are carried out by a qualified professional and to follow the guidelines set out within the PMA standard. The PMA standard for inspecting wings forms the minimum values expected.

The sail cloth and the lines do not age in the same way or at the same rate so you will have to change the line set during the normal use of the wing.

You alone are responsible for your flying equipment and your safety depends on it. Take care of your equipment and have it regularly inspected. Changes in inflation/ground handling/flying behaviour indicates the gliders aging, if you notice any changes you should have the wing checked before flying again. These are the basic elements of the check up:

IMPORTANT
Take care of your glider and make sure you have it checked and serviced according to the schedule.

Porosity - A porosity meter measures the time taken by a certain volume of air to go through a certain surface of cloth. Measurements are made in several places along the top surface of the leading edge.

The tearing resistance of the cloth - A non-destructive test following the TS-108 standard which specifies minimum tear strength for sky diving canopies should be made using a Bettsometer. (B.M.A.A. Approved Patent No. GB 2270768 Clive Betts Sails)

Strength of the lines - An upper, middle and lower A line, along with a lower B line should be tested for strength.

Lengths of the lines - The overall length (riser lines + mid lines + upper lines) has to be checked under 5Kgs of tension. The difference between the measured length and the original length should not exceed +/- 10mm.

Compliance of the test sample's suspension lines, brake lines and risers were checked by the testing laboratory after the test flights were completed.

Risers - Visual inspection for signs of wear or abrasion. Differences to manual lengths should not exceed +/-5mm.

Canopy check - A full visual check should be carried out: All the components of the wing (stitching, ribs, diagonals, lines, tabs etc) should be checked for signs of deterioration.

OZONE QUALITY GUARANTEE

At Ozone we take the quality of our products very seriously, all our gliders are made to the highest standards in our own manufacturing facility. Every glider manufactured goes through a stringent series of quality control procedures and all the components used to build your glider are traceable. We always welcome customer feedback and are committed to customer service. Ozone guarantees all of its products against manufacturer's defects or faults. Ozone will repair or replace any defective product free of charge. Ozone and its distributors provide the highest quality service and repair, any damage to products due to wear and tear will be repaired at a reasonable charge. If you are unable to contact your dealer then you can contact us directly at info@flyozone.com.

Summary

Safety is paramount in our sport. To be safe, we must be trained, practised and alert to the dangers around us. To achieve this we must fly as regularly as we can, ground handle as much as possible and take a continuous interest in the weather. If you are lacking in any of these areas you will be exposing yourself to more danger than is necessary.

Launching is the time when you are most exposed to danger, some launch sites are small and difficult and conditions aren't always perfect so practice as much as you can.

Respect the environment and look after your flying sites.

If you need to dispose the wing, do so in an environmentally responsible manner. Do not dispose of it with the normal household waste.

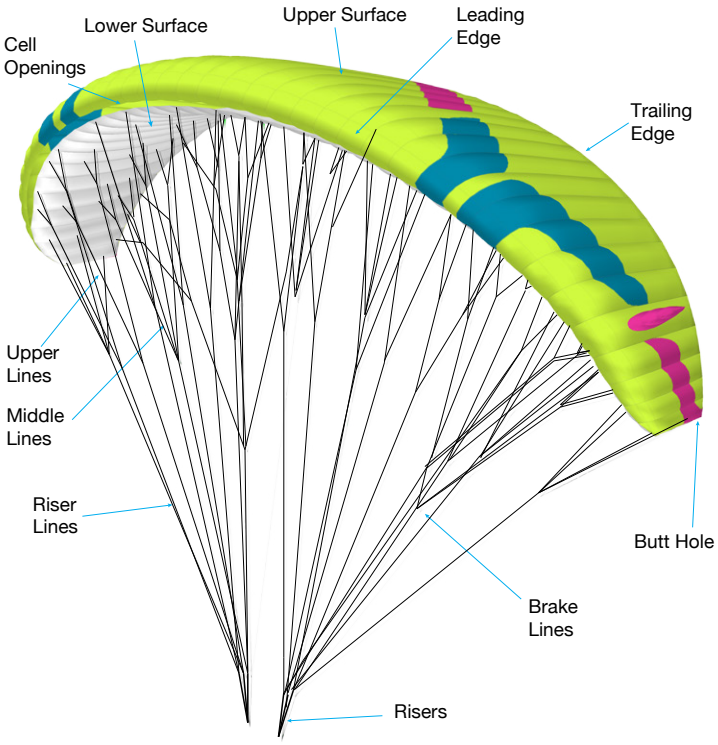
Finally, RESPECT the weather, it has more power than you can ever imagine. Understand what conditions are right for your level of flying and stay within that window.

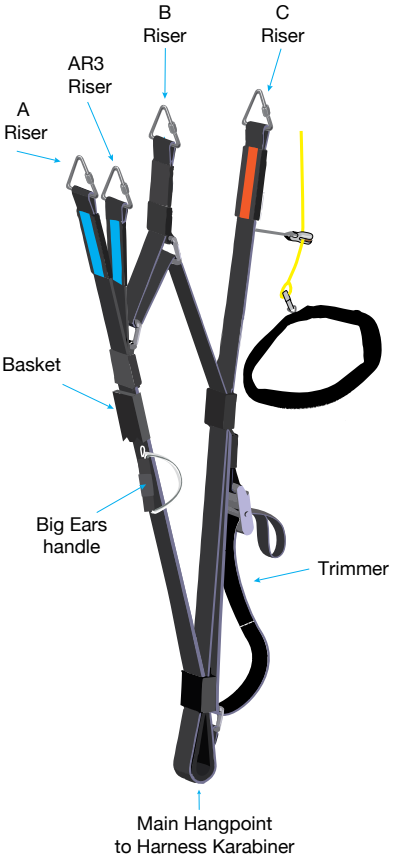
Happy flying & enjoy your Swiftmax 2.
Team Ozone

TECHNICAL SPECIFICATIONS

	41
No. of Cells	57
Projected Area (m^2)	34.6
Flat Area (m^2)	41
Projected Span (m)	11.83
Flat Span (m)	15.09
Projected Aspect Ratio	4.05
Flat Aspect Ratio	5.55
Root Chord (m)	3.42
Maximum control travel (cm)	82
Weight (kg)	7.20
Certified Weight Range (kg)	120 - 230
Certification EN/LTF	B

TECHNICAL DRAWINGS



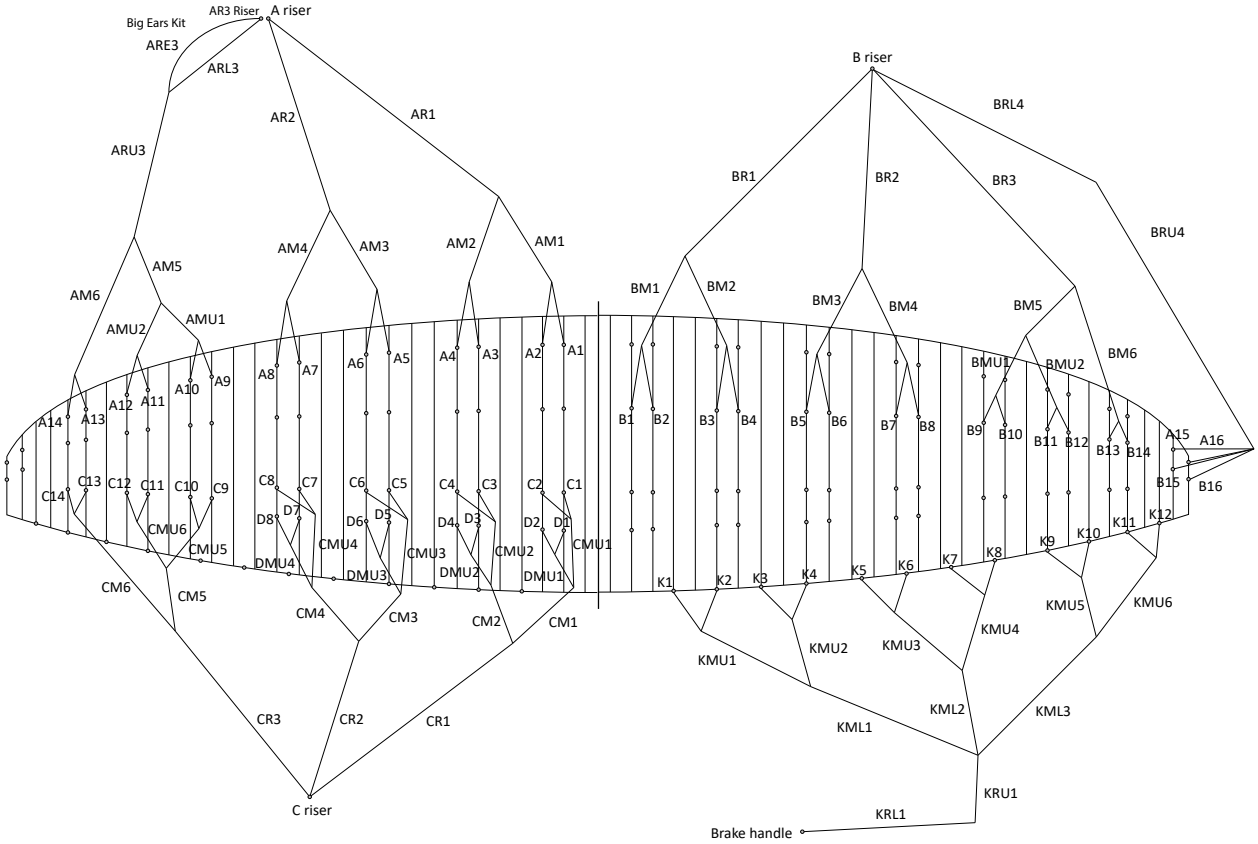


Non Accelerated trims pulled	
A+AR3	400
B	380
C	340

Accelerated trims released	
A+AR3	400
B	434
C	500

LINE DIAGRAM

Individual and linked line lengths can be found online.



MATERIALS

All Ozone gliders are made from the highest quality materials available.

Cloth

Upper Surface
Dominico DOKDO N30D MF / N20D_32 PS / N20D MF
Lower Surface
Porcher 7000 E71
Internal Ribs
Porcher 9017 E29 / Dominico N20D_32 FM
Leading Edge Reinforcement
Plastic

Main Line Set

Riser Lines
Edelrid 8001
Middle Lines
Edelrid 8001
Upper Lines
Edelrid 8001

Risers and hardware

Shackles
Maillon Rapide - Pegeut
Riser webbing
20mm zero stretch polyester webbing

INSPIRED BY NATURE, *DRIVEN* BY THE ELEMENTS

FLYOZONE.COM

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