



# TriOX

*Pilots Manual*







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## THANK YOU

**T**hank 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, this 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. This can be found on the product's page on at [www.flyozone.com](http://www.flyozone.com)

If you need any further information about any of our products please check [flyozone.com](http://flyozone.com) or contact your local dealer, school or any of us here at Ozone.

Safe Flying!  
Team Ozone

## WARNING

- Paragliding/Paramotoring 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 of the involved 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.
- Be prepared to practice as much as you can - especially ground handling, as this is a critical aspect of paragliding. Poor control while on the ground is one of the most common causes of accidents.
- Be ready to continue your learning by attending advanced courses to follow the evolution of our sport, as techniques and materials keep improving.
- Use only certified paragliders, harnesses with protector and reserve parachutes that are free from modification, and use them only within their certified weight ranges. Please remember that flying a glider outside 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 you complete a thorough daily and preflight inspection of all of your equipment. Never attempt flying with unsuitable or damaged equipment.
- Always wear a helmet, gloves and boots.
- All pilots should have the appropriate level of license for their respective country and 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, clouds or turbulent weather conditions.**
- If you use good, safe judgment you will enjoy many years of paragliding/paramotoring.

## TEAM OZONE

Everyone at Ozone continues to be driven by our passion for flying, our love of adventure and our quest to see Ozone's paraglider development create better, safer and more versatile paragliders.

The design team consists of David Dagault, Luc Armant, Fred Pieri, Russell Ogden, Honorin Hamard, Emilia Plak and Alex Mateos.

Dav has a wealth of experience in competition flying, XC, XAlps and paraglider design. Luc, a dedicated XC and competition addict has a background in naval architecture. Fred, our resident geek is a mathematician, mechanical engineer and vol Biv specialist. Russ is a competition pilot and test pilot with 1000s of hours testing experience. Honorin has been flying since he was 13, naturally talented, he has already become world champion. Between them, they bring a wealth of knowledge, ideas and experience and work closely together in the design and testing process.

Former female World champion, Emilia Plak manages the paramotor department, she is helped by Alex Mateos. As two of the finest pilots in the world holding World, European and French Paramotoring champion titles between them, they offer valuable advice and feedback throughout the development process, helping to produce the perfect blend of safety, speed and performance.

Mike Cavanagh is the boss and multiple winner of the UK XC league, when not out flying he generally keeps control of the mayhem. He is helped by Jean Christophe Skiera (JC) who manages our distribution network and the product range. Promotion and marketing are coordinated by BASE jumping legend Matt Gerdes. Back in the office Karine Marconi, Chloe Vila and Isabelle Martinez run the show. These wonderful ladies look after the ordering system, the dealers, the design team and the general day to day running of the company - without them it would be chaos.

Our manufacturing facility in Vietnam is headed up by Dr Dave Pilkington who works relentlessly manufacturing gliders and producing prototypes as well as researching materials and manufacturing processes for our future products. He is backed up by a superb team managed by Khanh and Phong with over 1000 production staff.

## YOUR TRIOX

The Triox has been designed specifically for powered trike flying. Compatible with all types of trike power units from the lightest to the very heaviest, the Triox is a versatile and reliable wing offering a stable and fast platform with easy launch and landing characteristics.

The Triox inflates easily in all wind conditions without overshooting. The Trike launch assist system further aids the inflation process, leaving your hands free to control the brakes and throttle. The landing characteristics are also very good thanks to the excellent flair authority through the brakes. The easy, forgiving nature helps remove the stress from launches and landings allowing you to concentrate more on the flying.

In the air the Triox handles well with a progressive, direct feel through the brakes. Turns are smooth and coordinated without the tendency to dive but it retains the fun and agility that Ozone wings have become renowned for. Feedback from the wing has been tuned for comfort, filtering out unnecessary movements and information so the pilot and passenger can enjoy the ride. The high levels of glide and climb efficiency, thanks to the high performance profile, high aspect ratio and low total line drag gives greater autonomy from a full tank of fuel and makes the Triox suitable for XC flying adventures.

The Triox features a customised Shark Nose Ozone Reflex Profile (OZRP) tuned specifically for powered flight. The Shark nose profile maintains a constant level so of lift and internal pressure over a wide range of angles of attack. This gives the Triox increased levels of stability whilst accelerated, not only is it very collapse resistant in turbulent air, it is also very resistant to stalls, even with deep inputs at low speeds.

The risers have been especially designed for trike flying, the short risers feature TST handles for high speed manoeuvrability; adjustable magnetic brake positions and adjustable long range trimmers for fast cruise speeds.

Certified DGAC and EN load tested to 411kgs and available in 2 sizes, the Triox accommodates a wide range of power units and wing loadings. It is suitable for both solo and tandem trike flying and thanks to the easy launch and flight characteristics is suitable for a wide range of pilots from professionals to recreation pilots alike. Overall it is intuitive to fly and a very predictable – a dependable trike wing that is designed to last many seasons.

## RISERS

The updated risers feature long range trimmers; strong brake handle magnets; tip steering system (TST); fully adjustable brake pulley height settings; special brake handles; double launch assist system attachment points and coloured A risers for easy identification. See page 30.

### Trimmers

The Triox is supplied with long range trimmers that are fully adjustable in the air to suite the conditions, phase of flight and wing loading. The trimmers have four rows of stitching; a lower red line and an upper red line with two rows of white stitching in between.

The slowest trim setting - with the trimmers pulled all the way, gives the maximum climb rate and is recommended for when climbing under power but not near the ground, ridge soaring or thermalling, the brake pressure is at its lightest and the handling at its best. It is also the recommended position for when the air becomes turbulent and active flying is necessary. At this setting the reactions to collapses is at its most benign.

The first (lowest) red line is the recommended position for the take off phase as it offers the best compromise between inflation behaviour and take-off speed. Launching at this setting is especially effective in light winds and/or at high altitudes.

Upper red line is the limit at which it is suitable to use the brakes for directional control without significantly affecting the stability of the wing. When flying faster than the upper red line position, directional control MUST be made using the TST system. Using the brakes fully accelerated compromises the stability of the wing and increases the chances of a collapse occurring.

The white stitching lines act as a reference for symmetry and reduce the chances of the trimmers slipping in flight. They do not indicate any specific flight speed.

**IMPORTANT**  
**In thermic or turbulent air it is recommended pull the trimmers to the slowest position or at least to the lower red stitch line and fly the glider actively.**

**IMPORTANT**  
**When accelerated faster than the upper red line position, directional control should be maintained using the TST system. DO NOT use the brakes when fully accelerated.**

### 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 when necessary.

- Ensure both main brake lines are of equal length.
- If a brake handle has been removed, check that its line is still routed through the pulley when it is replaced.
- When the brake handles are 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.
- 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 releasing the trimmers or when controlling the wing with the TST.

### Adjustable Brake Pulley Position

The height of the brake line pulley can be adjusted according to pilot preference and to suite the power unit's hang points height. Higher settings are for low hang point motors/trikes whilst a middle or lower setting are for units with higher hang points.

The factory setting may not be suitable for your particular trike unit. We recommend to make a test inflation with your unit to ensure the pulleys are in a suitable position, the brake lines are not set too short and that you can reach the brake handles comfortably.

To adjust the pulley height, first remove them from the risers and re-attach at the desired position, then undo the Velcro magnet attachments and re-attach a few cms below the new pulley position. If you lower the pulley height, you must also lengthen the brake lines accordingly. Moving the pulleys to the middle position on the risers requires the addition of about 10cm to the overall brake line lengths (measured from the mark on the lines). Moving to the lowest position requires an additional 20cm from the marks.

**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 (D-risers), or the TST for directional control.**

**IMPORTANT**  
**If you adjust the brake pulley height, you MUST re lengthen the brake lines accordingly.**

### Tip Steering System

The Tip Steering System (TST) uses ergonomic handles for control of the wing during accelerated flight. Located near the main hangpoint loops, the handles are easily accessible and linked to the very tips of the wing, giving high levels of precision and comfort for high speed cruising or accurate low level carving. The TST allows for precise handling without the need to use the brakes, it is not necessary to use large control movements to effect a turn so be progressive and gentle at first until you are familiar with the handling characteristics.

For directional control whilst flying faster than the upper red line position only use the TST. DO NOT use the brakes alone. Application of brake when the wing is at a low angle of attack has a negative effect on the reflex profile causing loss of precision, adverse roll, and reduced collapse resistance. In accelerated flight the tip steering system can be used for both directional control - to keep a straight heading and for effecting nice smooth turns. It becomes more precise the faster you fly.

### Trike Launch Assist System

The risers are equipped with special attachment points for the trike launch assist system. This system shortens the A risers to help with the first phase of the inflation (when the canopy is still behind the trike/pilot). There are two attachment points - upper and lower. Either can be used depending on your personal preference or the particular requirements of your trike unit. Using the upper point pulls more the center of the wing during the inflation process, this is the recommended position if your technique causes the wing to horseshoe forwards. The lower point inflates the wing more evenly across the span. The way you lay out the wing therefore is crucial to which attachment point you use.

The A-Assist needs to be adjusted so that once the wing is inflated above the head it is no longer under tensioning and inadvertently pulling the A risers.

The length of the system can be adjusted to suite conditions or taste. If the canopy is inflating too fast, the system should be lengthened to reduce the speed, whereas if the canopy rises too slowly the system should be reduced in length. It is not necessary to hold the A risers

**IMPORTANT**  
**When accelerated directional control should be maintained with the TST system. Do NOT use the brakes.**

whilst launching with the trike assist system. The system is part of the trike construction so please refer to the trike manual for more information.

### **Trike and Power unit**

The Triox is delivered as standard without any special equipment for tandem flying. All suitable accessories such as tandem spreader bars, tandem roll bar etc are specific to a paramotor / trike unit and needs to be provided by the paramotor / trike manufacture. It is the pilot's responsibility to make a hang test and to ensure the set up is well adjusted and balanced.

The Triox is suitable for all types of paramotor / trike power units. There are many different units available and it is vitally important that you choose one that is suitable for your needs, weight and skill level. Always seek assistance and advice from your instructor or experienced pilots before choosing equipment for yourself.

## PREPARATION

### **Wing**

To familiarise yourself with the glider it is a good idea to perform practice inflations and ground handling both with and without the motor/trike unit. As with all new equipment, only fly in conditions that you would normally fly in and on a familiar site. Fly the wing in a progressive manner and be aware that wing loading has a direct effect on the wing's flying characteristics. The closer to the top of the recommended weight range the more dynamic and responsive the wing will be.

### **Preflight Checks**

Lay out the wing downwind of your motor on its top surface in a pronounced arc, with the centre of the wing higher than the tips. As you unfold the wing check the upper and lower panels for any rips or tears, pay particular attention to the seams and line attachment points as these are load bearing. Never fly with a damaged wing.

Lay out the lines one side at a time and check for any obvious signs of damage. Hold the risers clear of the ground at shoulder height and starting with the brake lines, pull all lines clear. Repeat the process with the D, C, B and then the A lines, laying the checked lines on top of the previous set. Make sure no lines are tangled, knotted or snagged then mirror the process on the other side.

### **Take-off checklist:**

1. Check reserve parachute - pin in and handle secure
2. Helmets on and fastened
3. All harness buckles closed - check leg-loops again, especially your passenger's
4. Carabiners and maillons tight
5. Holding the A's (or A assist attached) and holding your brake handles and throttle
6. Leading edge open
7. Aligned exactly central to the wing and directly into wind
8. Engine warm and able to deliver full power
9. Trimmers set correctly
10. Prop clear of lines
11. Airspace and visibility clear

**IMPORTANT**  
Always lay out your glider downwind of the motor, never leave the motor downwind of the wing or connected to the motor if unattended.

**IMPORTANT**  
Never fly with a damaged sail or lines.

### Trike Launching

Make sure there is enough clear space upwind to launch and climb out safely, avoiding trees, power lines and any other obstacles that may affect you should you have a power failure. Always fly with a safety margin so that power failures do not leave you compromised. You should always be able to glide to a suitable landing place.

- Following the pre flight inspection lay the wing out in a perfect arch with the leading edge open
- Attach risers to the carabiners or hang points of your trike
- Lay the lines neatly over the line support points on both sides of the frame
- Pull the trike forwards so that it is perfectly centred with the wing and aligned to the wind. Tension the lines symmetrically being careful to not close the leading edge
- Ensure the lines are clear of the front wheel
- To improve the inflation characteristics, it is advised to set the trimmers to the first (lower) red line position and to use the A-Assist system when using a trike unit.
- After completing the pre-flight checks and confirming the conditions are favourable, commence the launch by smoothly applying enough throttle to start rolling forwards and inflate the wing
- Once the wing has inflated to approximately 60 degrees give full throttle to increase forward speed
- During the take off run whilst the wing is inflated above the head, pitch and directional control should be maintained with the brakes.
- If the wing is inflating asymmetrically, decrease the throttle to a minimum but just enough to maintain forward speed. Correction should be made using the brakes and by driving the front wheel so that the trike unit remains directly under the wing

Extra care must be taken when launching in wind, it is possible for the trike to be pulled backwards during the inflation process or sideways in the case of an asymmetric inflation. Even in average wind strengths, without good pilot control it is possible to be pulled backwards or sideways, potentially inverting the trike and trapping the pilot and passenger inside.

**IMPORTANT**  
The trimmers should be set to the lower red line position for better inflation behaviour during take-off. This is especially important in light winds and/or at high altitudes.

**IMPORTANT**  
DO NOT attempt to trike launch in strong winds.

### Foot Launching

Although designed specifically for trike flying, it is also possible to foot launch the Triox. Extra care must be taken however due to the small surface area and high wing loading.

#### Forward Launch - Nil to Light winds

When the wind is favourable, move forward positively, your lines should become tight within one or two steps. The Triox 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.

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 the Triox has inflated correctly and is directly above your head progressively apply full power and accelerate smoothly. When you have sufficient airspeed a gentle application of brake will help you lift off, do not stop running until your feet have left the ground and you are sure of a safe climb out.

During a forward launch we advise to NOT use the power launch technique. During the inflation the power should be progressively applied once the wing is half way up. Applying the power too early may inhibit the inflation characteristics of the center part of the wing, causing the wing tips to come up faster.

#### Reverse Launch -Light to Strong Winds

Lay out your Triox as you would for the forward launch. However, this time face the wing, and attach the risers in the correct manor (half a turn in each riser, and crossed in the direction you want to turn). Now you can inflate the wing using the A-risers. In stronger winds, be prepared to take a few steps towards the glider as it inflates, this will take some of the energy from the wing and it will be less likely to over-fly you. Once stable and above your head apply progressive power and accelerate smoothly for a controlled take off.

**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.



### **The Climb Out**

Once in the air you should continue flying into wind whilst gaining height. By setting the trimmers to the first red line position you will achieve the safest climb rate. Do not attempt to climb too steeply or too quickly by using the brakes or slow trim directly after take-off. The wing already has a high angle of attitude, coupled with a higher AoA (if you use the brakes) plus the engine's full thrust acting on the pilot, this could contribute to make the glider more prone to stall. Furthermore, in the event of an engine failure the resulting backward pendulum motion of the pilot and the forward dive of the wing may bring you back to the ground very hard. Do not initiate turns until you have sufficient height and airspeed. Avoid low turns downwind with insufficient airspeed.

The Triox is well damped in roll but under certain circumstances it is possible for the pilot to induce oscillations. This is caused by a combination of the engine/propeller torque and pilot weight shift and/or brake inputs. To stop oscillations it is best to reduce the power slightly and ensure that you remain static with weight shift and brake inputs. Once settled you can once again apply full power. Under full power the torque effect will attempt to gently turn the wing, using weight shift or adjusting the trims asymmetrically is the best method to correct this.

### **Normal Flight**

Once at a safe height you can release the trimmers for a faster cruise speed. If your motor has enough power, the Triox will achieve very good straight line speeds whilst maintaining level flight with trims fully released. Be cautious when releasing the trimmers beyond the upper red line, only do so in calm conditions.

For better penetration in headwinds and improved glide performance in sinking air, crosswinds or headwinds, you should accelerate the wing by releasing the trimmers. In turbulent air the reflex profile is very stable. It will resist reasonable levels of turbulence with a high resistance to collapse without active pilot input. The faster the wing is flown the more inherent stability there is, as the reflex has a greater effect. In mild turbulence it may be best to not attempt to actively fly the wing, rather let the profile absorb the turbulence itself. However in very strong

**IMPORTANT**  
**For take off and landing use only the brakes. In turbulent air use the brakes for directional, pitch and pressure control, DO NOT use the Tip Steering**

**IMPORTANT**  
**The closer to the top of the recommended weight range the more dynamic and responsive the wing will be.**

turbulence Ozone recommends to return the trimmers to the lower red line position and fly the glider actively. This way, you will be in the best position to react correctly should a collapse occur and the behaviour of the wing will be more benign.

### **Turning**

To familiarize yourself with the Triox your first turns should be gradual and progressive. To make efficient and coordinated turns with the Triox first look in the direction you want to go and check that the airspace is clear. Then smoothly apply the brake until the desired turn radius and bank angle is achieved. To regulate the speed and radius of the turn, coordinate the inner and outer brakes. When accelerated beyond the upper red line position, use the TST system for directional control. Do not use the brakes.

### **Active Flying**

In turbulent air the Shark nose Ozone reflex profile (OZRP) is very stable. It will resist reasonable levels of turbulence without pilot input however in strong turbulence we recommend to fly the wing actively.

The key elements of effective active flying are pitch control and pressure control: In very turbulent air, if the glider pitches hard 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. Avoid flying with continuous amounts of brake in rough air as you could inadvertently stall the wing. Always consider your airspeed. In mild turbulence it may be best to not attempt to fly the wing actively and let the profile absorb the turbulence itself, indeed small applications of the brakes can reduce the inherent stability of the profile. However in strong turbulence Ozone recommends to always return the trimmers to the slow or at least the lower red line position and fly the glider actively. At this trim setting you will be better able to react correctly should an incident occur.

No pilot and no glider are immune to collapses however in strong turbulence, correct active flying will virtually eliminate any tendency to collapse. When the conditions are very turbulent, be more active and anticipate the movements of your wing. Always be aware of your altitude and do not over-react.

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

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

## ADVANCED FLIGHT TECHNIQUES

### Landing

The Triox shows no unusual landing characteristics. We recommend the trimmers be returned to the lower red line position for landings. You can land un-powered or powered, here are some tips:

- Always set up your landing early, give yourself plenty of options and a safe margin for error and make sure you are heading INTO wind.
- Once below 30 metres avoid turning tightly as the glider will have to dive to accelerate back to normal flight.
- Allow the glider to fly with speed for your final descent until you are around 1 metre above the ground. Apply the brakes slowly and progressively to slow the glider down so that you arrive on the ground smoothly.
- It is safest to perform un-powered landings as this reduces the likelihood of propeller damage caused by either falling over or allowing the lines to foul the prop. Turn off the engine at around 30m and glide in like a normal paraglider.
- Powered landings offer the chance to power up and continue with the flight if you misjudge your final approach, but can be more expensive if you get it wrong!
- Choose the appropriate approach style in function of the landing area and the conditions.
- In light winds you need a strong, long and progressive flare to bleed off all your excess ground speed. In strong 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.
- 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, stall the glider with the C risers. This stalls the Triox 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 these 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. The flying characteristics and behaviour of the wing are very much dependent on the wing loading and power unit. Smaller, heavily loaded wings are more dynamic than larger wings.

### Big Ears

Folding in the wing tips of the Triox increases its sink rate. This is useful for staying out of cloud or descending quickly. To pull big ears on the Triox take hold of the outermost A-line on each side whilst keeping the brake handles in your hand. Pull down the outer A lines until the tips of the wing fold under.

Do not use the brakes other than for re-inflation. For directional control while using the Big Ears, you should use weight shift steering. To reopen your big ears, release the A lines at the same time. To help re-inflation, brake gently one side at a time until tips regain pressure. Avoid deep symmetric applications of the brake as this could induce parachutal or full stalls.

### Big ears and accelerator

Once the big ears are in you can further increase the sink rate by releasing the trimmers. Never attempt to induce Big Ears with the trimmers already released, always make the Big ears before accelerating the wing otherwise you risk provoking a major asymmetric or symmetric deflation.

### Big ears and spiral dive

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!

**NEVER induce Big Ears in accelerated flight, this can lead to a major deflation. Always pull the Big Ears first and then apply the speed bar.**

**DO NOT perform spiral dives with Big Ears engaged.**

### **B-Line Stall**

B-stall is for fast descents in emergency situations only. B-stall is performed by symmetrically pulling down on the B-risers. The load applied on the B lines during this manoeuvre is not very good for your wing; only use it in emergency situations.

To initiate the B-stall place your fingers between the lines above the maillons on the B risers. Do not release the brake handles. As you pull the B-lines down the airflow over the wing is broken and the glider loses its forward speed but remains open and you will descend at around 6 m/s. If you pull too much B-line the glider may horseshoe and move around a lot.

To exit the B-stall the B-risers should be released symmetrically and in one smooth, fast progressive motion. The glider will resume normal forward flight without further input. Check you have forward flight again before using the brakes. Do not release the B lines slowly, this may lead to a parachutal stall.

### **Spiral Dives**

If you turn your Triox in a series of tightening 360's it will enter a spiral dive. This will result in rapid height loss. To initiate a spiral dive, look to the direction you want to turn and then smoothly apply the inside brake. The Triox will first turn almost 360 degrees before it drops into the spiral (depending on the input). Once in the spiral you should apply a little outside brake to keep the outer wing tip pressured and inflated. Safe descent rates are possible but high speeds and high G-forces can build quickly leading to disorientation. Excessive G forces can lead to loss of consciousness. High descent rates, especially when combined with high hangpoint power units or trikes, increases the likelihood of the wing remaining neutral or possibly unstable in spiral. Always be prepared to pilot the wing out of the spiral using counter brake.

To exit the spiral dive, weight shift away from the direction of rotation and smoothly release the inside brake. As the Triox decelerates allow it to continue to turn until enough energy is lost for it to return to level flight without an excessive climb and surge. Always be prepared to pilot the wing out of a spiral dive. In case of neutrality/instability use opposite weight shift and smoothly apply enough outside brake to provoke the glider to exit the spiral.

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

### **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, or at least not to fly into them. Asymmetric collapses can be controlled by weight shifting away from the collapse and applying a small amount of brake to control your direction. This act will most of the time be enough for a full recovery of the wing.

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 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 normally reinflate without pilot input, however 15 to 20cm of brake applied symmetrically will speed the process.

If your wing collapses in accelerated flight, immediately pull the trimmers to the slow position before attempting to reinflate the canopy.

### 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 then pull down the stabilo line (attached to the C riser) until the wing tip frees itself. You must be careful with any brake inputs or you may stall the opposite wing. You can also use strong deep pumps on the brake to 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.

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; or after a front/symmetric deflation. 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 it happen, your first reaction should be to fully raise both brakes, this action alone normally allows the glider to return to normal flight. If nothing happens after a few seconds, release the trimmers to regain normal flight. Ensure the glider has returned to normal flight (check your airspeed) before using the brakes again.

**Never fly in rain or with a wet wing**, this will significantly increase the likelihood of parachutal stall. If you are accidentally caught-out in a rain shower, land immediately. DO NOT use big ears as a descent technique; big ears with a wet wing will further increase the chances of a parachutal stall occurring. Instead, lose height with gentle 360's and make sure to consider your air speed during final approach, release the trimmers if necessary.

## 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.

Ozone recommends 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. Using an Ozone Saucisse or Saucisse light pack will help preserve the life of the wing and aid with the speed and ease of packing.

**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 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 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 plastic too tightly.



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



If using a Saucisse pack go to Step 8.



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

**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 the Saucisse Pack, carefully zip it up without trapping any material.



**Step 9.** Turn the Saucisse on its side and make the first fold just after the LE reinforcements. Do not fold the plastic reinforcements, use 3 or 4 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**

Careless ground handling damages many paragliders. Here are some things to avoid in order to prolong the life of your aircraft:

- 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.
- If you fly with a wrap, you should regularly undo the twisting that appears on the main brake lines. By twisting the line become shorter and you can end up with a constant tension on the trailing edge which can lead to problem on launch, stalling, glider not flying symmetrically.
- Change your main brake lines if they are damaged.
- Be Careful when groundhandling 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 groundhandling 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).

**IMPORTANT**  
**Never pack away or store your glider wet.**

### **Storage and Transport**

Always store all your flying equipment in a dry room, protected from direct heat. 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.

**IMPORTANT**  
**Never use detergent or chemical cleaners.**

### **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 or directly from our website <http://www.flyozone.com/paragliders/en/shop/lines.php>

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, like a car, should be technically checked to ensure proper airworthiness. Your wing should be checked by a qualified professional for the first time after 24 months, or after 100 hours. However, if you are a frequent flyer (more than 100 hrs per year), then we recommend, that you get your glider checked annually. The checker should inform you about the condition of your glider and if some parts will need to be checked or changed before the next normal service check period.

The sail and the lines do not age in the same way or at the same rate; it is possible that you may have to change part or all of the lines during the wing's life. For this reason it is important to do regular inspections so that you know the exact condition of all of the components of your glider. We recommend that inspections are carried out by a qualified professional.

You alone are responsible for your flying kit and your safety depends on it. Take care of your equipment and have it regularly inspected. Changes in inflation/groundhandling/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 (full details and permissible figures can be found on our website)

**Porosity** is measured with a porosity meter, the time taken by a certain volume of air to go through a certain surface of the cloth. The time in seconds is the result. A measurement is done in a several places on the top surface along the span of the glider behind the leading edge.

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

**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 and a lower C (and lower D if applicable) line should be tested for strength. Each line is tested to breaking point and the value recorded. The minimum value is 8 G for all lower A+B lines and 6 G for all lower remaining lines, calculated from the maximum certified flying weight of the glider. The added minimum strength for the middle lines and for the top lines should be the same. If the breaking strength is too close to the minimum value calculated, the professional should give a period after which you will have to test the strength of the lines again.

**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. The changes that could appear are a slight shrink on the C or Ds and/or a slight stretch on the A, B. The consequences of these changes can include a slower trim speed, difficult inflation etc.

**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, ...) should be checked for signs of deterioration.

Finally, a test flight to confirm that the wing behaves normally should be carried out by a professional.

### **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 accidentally 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 and/or releasing the trimmers, 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 release the trimmers and accelerate the wing to regain airspeed.

**IMPORTANT**  
**Do not fly your wing when it is wet.**

## LIMITATIONS

The Triox is designed for use with a powered trike or paramotor unit. It is suitable for either tandem or solo flying so long as the maximum recommended weight range and the maximum permitted load are respected. Extra care must be taken when foot launching due to the small surface area and high wing loading. It is not designed for aerobatic flying.

The Triox is intended for competent pilots only, it is not suitable for beginner pilots nor those under training.

Ozone wings are designed and tested to the highest standards by a dedicated team of professionals. The Triox has passed the EN 926.1 load test and holds DGAC certification.

### **Towing**

The Triox may be tow-launched. It is the pilot's responsibility to use suitable harness attachments and release mechanisms and to ensure they are correctly trained in 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.

### **Total Weight in flight**

The Triox has been designed with a defined weight range. Never fly outside of the recommended weight ranges. The flying characteristics and behaviour of the wing are very much dependent on the wing loading and power unit. Smaller, heavily loaded wings are more dynamic than larger wings.

### **Modifications**

Your Ozone Triox 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 be more difficult to fly. We strongly recommend that you do not modify your glider in any way.

**IMPORTANT**  
**Do not modify your wing in any way.**



## 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](mailto: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.

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.

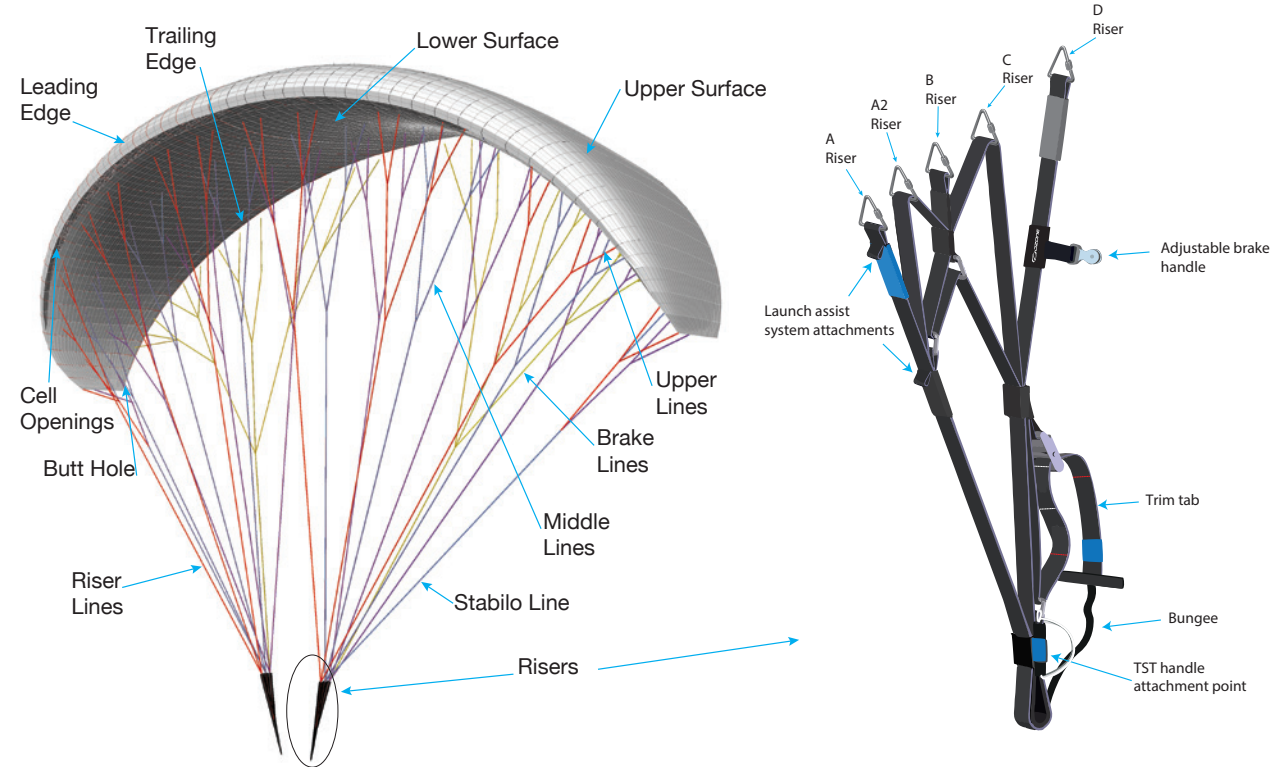
Finally, RESPECT the weather, it has more power than you can ever imagine. Understand what conditions are right for your level of flying and stay within that window.

Happy flying & enjoy your Triox.  
Team Ozone

## TECHNICAL SPECIFICATIONS

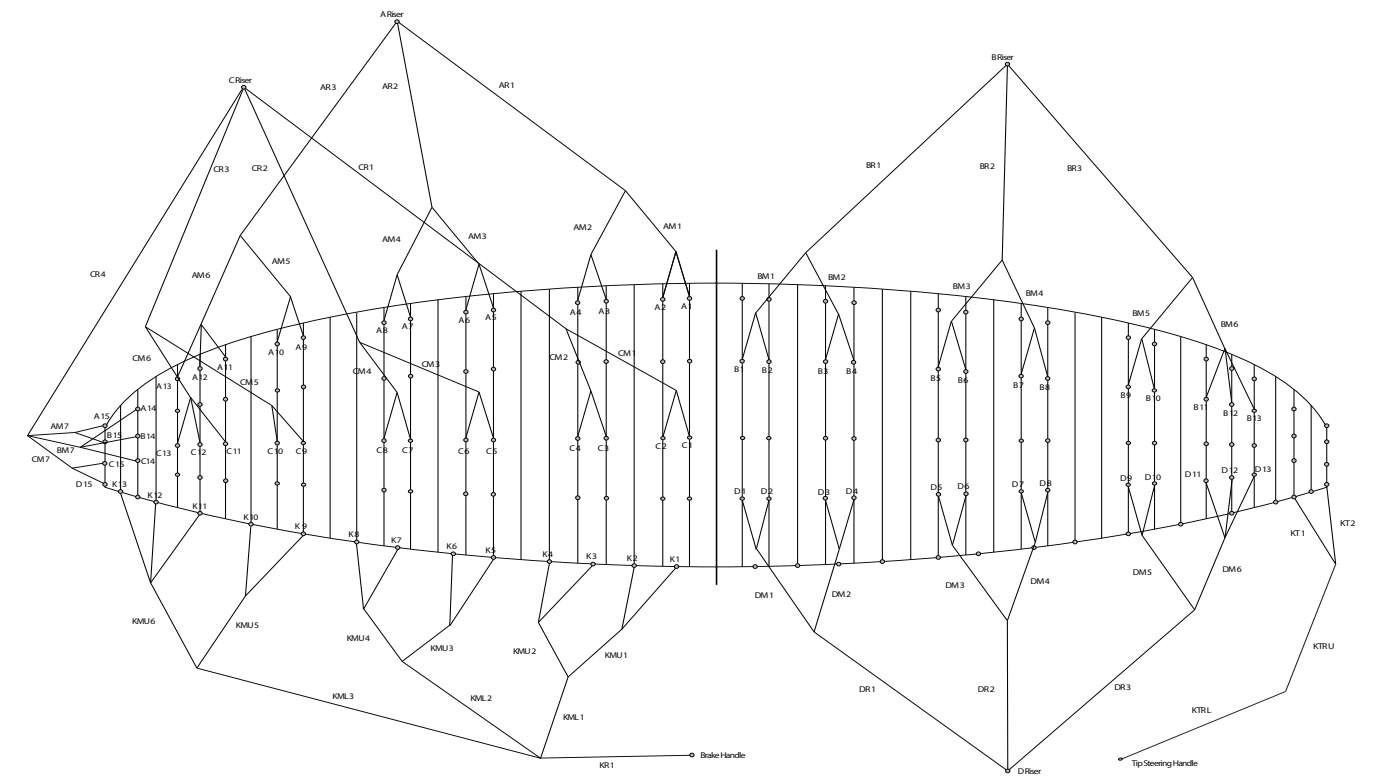
	34	38
No. of Cells	48	48
Projected Area (m2)	29.3	32.7
Flat Area (m2)	34	38
Projected Span (m)	10.37	10.97
Flat Span (m)	13.17	13.92
Projected Aspect Ratio	3.7	3.7
Flat Aspect Ratio	5.1	5.1
Root Chord (m)	3.3	3.5
Glider Weight (Kg)	7.77	8.49
PPG Weight Range (Kg)	130-320	160-380
Maximum Load 5.25G (kg)	411	411
Certification	DGAC	DGAC

TECHNICAL DRAWINGS



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 30D MF

#### **Lower Surface**

Dominico DOKDO 30D MF

#### **Internal Ribs**

Dominico DOKDO 30D FM

#### **Leading Edge Reinforcement**

2.5mm Plastic pipe

### **Main Line Set**

#### **Riser Lines**

Edelrid 8000U 280/360/470kg

#### **Middle Lines**

Edelrid 8000U 190/230/280kg

#### **Upper Lines**

Edelrid 8000U 130/190kg

### **Brake Lines**

#### **Main brake/TST Lines**

Liros - 10-300 / 10-200 /DSL 070

#### **Middle brake lines**

Edelrid 8000U 190

#### **Upper brake lines**

Edelrid 8000U 190

### **Risers and hardware**

#### **Riser webbing**

20mm zero stretch polyester webbing

#### **Shackles**

Maillon Rapide - Peguet



1258 Route de Grasse  
Le Bar sur Loup  
06620  
France

*Inspired by Nature, Driven by the Elements*

[WWW.FLYOZONE.COM](http://WWW.FLYOZONE.COM)