



OZONE
ARC MAX

MANUAL

 ***PAGEMAX***





CONTENTS



Pilots Manual (Eng)	2 > 17
Line Diagram	20
Spreader Bar Diagram	21
Riser Diagram/Lengths	55
Materials	22
Technical Specifications	22





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.

All of 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 includes the sites of Gourdon, Monaco and Col de Bleyne and 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 your new paraglider; so to keep costs low and quality high we build all our wings in our own production plant. During production our wings undergo numerous and rigorous quality control checks, this way we can guarantee that all our paragliders meet the same high standards that we expect ourselves.

This manual will help you get the most out of your Magnum2. It details information about its design, tips and advice on how best to use it and how to care for it to ensure it has a long life and retains a high resale value. If you need any further information about Ozone or any of our products please check www.flyozone.com or contact your local dealer, school or any of us here at Ozone.

It is essential that you read this manual before flying your new wing for the first time.

Please ensure that this manual is passed on to the new owner if you ever resell this paraglider.

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 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 is 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 pre-flight 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.

Avoid flying your glider in rain, snow, strong wind, and turbulent weather conditions or clouds.

If you use good, safe judgment you will enjoy many years of paragliding.

Remember, PLEASURE is the reason for our sport

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.

Paragliding design is led by the ever thoughtful David Dagault; David has a wealth of experience both in competition, adventure flying and paraglider design. Also on the design team are test pilots Russell Ogden and Luc Armant. Russ is a top competition pilot and ex paragliding instructor, he can usually be found putting Dav's latest creation through a series of test maneuvers. Luc, a dedicated XC addict has a background in naval architecture. He brings a wealth of knowledge and ideas to the design team and works closely with Dav in the design process.

World, European and French Paramotoring champion Mathieu Rouanet has been heavily involved with the test flying, offering valuable advice and feedback throughout the development process to produce the perfect blend of safety, speed and performance.

Back in the office Mike 'Da Boss' Cavanagh generally keeps control of the mayhem. Promotion and Team pilots are organised by Matt Gerdes. Karine Marconi and Jill Devine make sure we don't spend too much money and look after the ordering system.

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 Ngan and 400 production staff



YOUR MAGMAX

The Magnum series has been used by more professional tandem pilots around the world over the past 5 years than any other wing. We are proud of the Magnum's legacy and it has been a very difficult job to improve upon the original design. Our goals were to maintain the best characteristics of the original Magnum while making it even easier to fly.

The Magnum 2 was more than three years in development, and has been tested thoroughly in all flyable conditions; from high wind launches to tail wind launches, high mountain air to coastal soaring and everything in between. Like the original Magnum, it is strong and versatile enough for any professional tandem pilot, and excels in all conditions.

The MagMax is derived from the Magnum2 and has been specifically adapted for paramotor/trike use. What professional pilots will notice first when flying the MagMax is an easier launch due to a much lighter sail. Incredibly, without reducing the wing's strength or durability we have reduced the weight by 700g. This has improved not only the inflation and launch, but the in-flight behaviour as well. The next obvious improvement is the reduced brake pressure. Pro pilots will appreciate the easier feel in turns and also a more sensitive and easily accessed flare for soft landings.

With a slightly increased aspect ratio and 6 more cells, the MagMax outperforms the original not only in comfort and ease of use, but also in glide performance and climb efficiency. A new line plan has allowed an 18% reduction in line drag, allowing you and your passenger more time in the air, if you want it. And if you don't, the proven "Ear-Blocker" system will get you down quickly and easily.

What passengers will notice (or not notice, as the case may be) is the smoothest tandem ride that we've ever felt. An increase in overall efficiency has also improved the "smoothness" of the ride, with better behaviour in active conditions.

➤ Bag

The bag has been especially redesigned for the MagMax to be comfortable and useful (padded hip belt, ergonomic and adjustable shoulder straps). Its large volume will allow you to store all equipment, including both pilot and passenger harnesses whilst still being comfortable for hiking. In addition to the standard bag, there is the Easy Bag option. This is useful for quick packing and for UV protection. Just mushroom the glider, pop it inside and away you go, nothing could be easier and faster.

➤ Risers

The MagMax has been designed with a 4 riser system. Each riser is covered with coloured webbing, which makes them easy to identify. The A's are GREY - you will notice that the A's are split in two parts, the small riser on the back, holding only one line is the "Baby A" designed to make applying "Big Ears" simple.

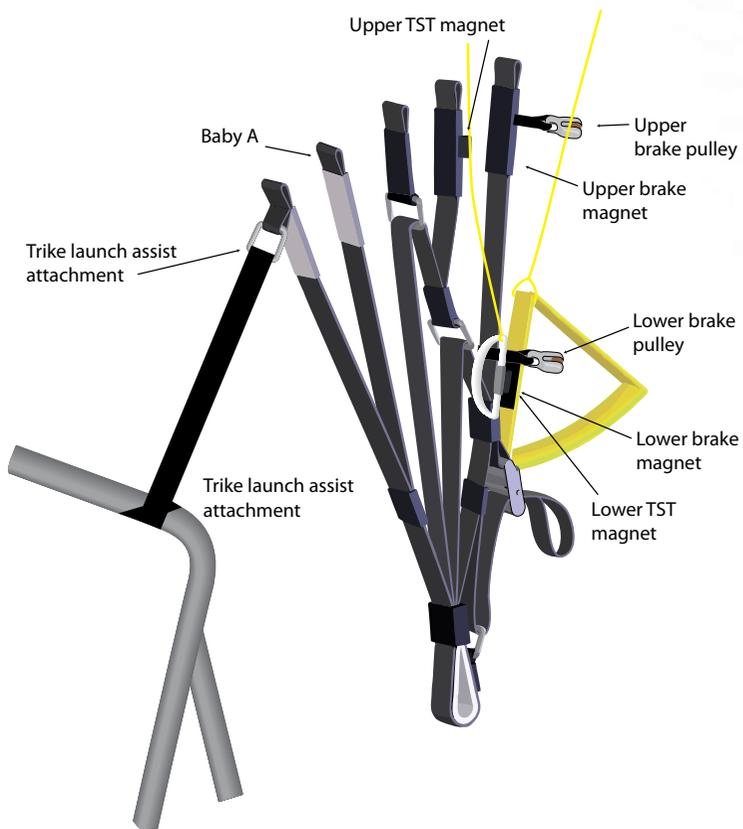
The risers feature a special system to aid Trike launches, dual pulleys to adjust the brake handle position and dual magnets for both the adjustable TST system and the lower brake handle setting.

➤ 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 them, please bear 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 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.

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) for directional control or using the TST handle.



Adjustable Brake Position

The height of the brake handles can be adjusted according to pilot preference to suite the power unit's hang points height. There are 2 settings: upper and lower. The upper setting (as set by the factory) is for low hang point motors whilst the lower setting is for units with higher hang points.

If you lower the brake handle, you must also lengthen the brake lines accordingly. Moving the brake handles to the lower pulley requires adding 16cm to the overall brake line length - use the appropriate mark on the brake lines.

1. First undo the brake handle's knot and remove the brake line from the upper pulley.
2. Re-route the brake line through the lower pulley
3. Re-attach the brake handle with an appropriate knot at the correct length using the second mark.

IMPORTANT: If you adjust the brake handle height, you MUST re-lengthen the brake lines accordingly.

Trimmers

The MagMax comes equipped with trimmer risers so that the trim speed can be adjusted to personal taste depending on the payload.

The trimmers have a stitched white line to represent 'standard trim'. This is the trim we recommend for 'normal' flight with 'normal' wing loadings. In this position the MagMax will achieve its best glide for calm air,

When launching it is best to partly release the trimmers (approx 2cm) from the white line to give a faster inflation.

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 not fly at the slowest trim.



For better penetration in headwinds and improved glide performance in sinking air, crosswinds or headwinds you should fly faster than trim speed by releasing the trimmers. Using up to half or three-quarter trim does not degrade the glide angle or stability significantly and will improve your flying performance, as you will reach the next thermal faster and higher. At full speed the MagMax is stable, however we recommend not to fly at full speed close to the ground or in turbulence.

Whilst making the landing approach it is recommended to return the wing to the white line setting.

Warning: When flying with a light load do not fly in the fully slow position.

Warning: Do not fly with the trimmers fully released when close to the ground or in turbulent air.

➤ Trike launching assistant system

The risers are equipped with a special attachment point for the trike launching system. This system shortens the A riser to help the first phase of the inflation (when the canopy is still behind the trike/pilot) During inflation its effect gradually decrease and disappears entirely when the canopy is directly above.

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 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.

➤ Spreader bars

Your MagMax comes with a pair of Ozone spreader bars which incorporate an innovative Ear Blocker Big Ears system. Make sure that you attach the spreader bars to the correct side; the spreaders are marked with an L or R.

Ensure that the ear stopper ball is located facing to the outside. The spreader bar has a single hang point (coloured Grey) at one end and twin hang points (coloured Blue) at the other. The single loop (Grey) is for the attachment of the pilot's harness. 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 spreader bars.

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 the trapezoidal links so that the single loops (Grey) are to the rear for the pilot to clip into. If you use karabiners instead of trapezoidal links you must make sure that they are tandem rated.

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 (red) on spreader bar with a separate karabiner (not supplied). The two bridles should be threaded up through the Velcro loop and under the protective black cloth flap, before clipping into the main suspension point.

➤ Harness and Motor

It will be in your harness that you will enjoy flying. Therefore, we recommend you spend the time on the ground to adjust the harnesses and spreader bar to find the best settings. Hang from a solid beam and double check that you are comfortable and that you can reach the brake handles and tip steering handles before flying.

The MagMax is suitable for all types of tandem motors. There are many different motor units available and it is vitally important that you choose one that is suitable for your needs, weight and skill level.

BASIC FLIGHT TECHNIQUES

Before flying tandem it is important that you are a competent and experienced pilot that has received appropriate training and attained the necessary qualifications. 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 flight, and how to react to them.

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

Lay out the MagMax on its top surface in a pronounced arc, with the centre of the wing higher than the tips. 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 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.

Take-off check list:

1. Check reserve parachute - pin in and handle secure
2. Helmets on and fastened
3. All harness buckles closed on the pilot and passenger - check leg straps again
4. Karabiners and maillons tight
5. Lines cleared
6. Leading edge open
7. Trimmers set correctly and equally
8. A risers (or Launch assist connected), Brake handles and throttle in hands
9. Engine warm and ready to deliver full power
10. Aligned directly into wind
11. Prop clear
12. Airspace and visibility clear

➤ Launching

Your MagMax will launch with either the forward or reverse launch techniques.

When taking off under power, make sure there is enough clear space upwind of you 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 power off to a suitable landing place.

Once clipped in, and you have gone through the take-off check list (above), stand central to the wing to ensure an even and progressive inflation. Whilst inflating your wing, you should hold both of the A risers on each side (it is not necessary to take hold of the Baby A's).

Run in an upright position so that the motor is generating forward thrust, do not lean too far forward otherwise the power of the motor will attempt to push you into the ground! When you have enough 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.

Forward Launch - Nil to Light winds

When forward launching it is best to release the trimmers (approx 2cm) from the white line to give a faster inflation.

When the wind is favourable, move forward positively: your lines should become tight within one or two steps. The MagMax 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 MagMax is inflated correctly, progressively apply full power and accelerate smoothly for the launch.

Reverse Launch -Light to Strong Winds

Lay out your MagMax 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 pull up the MagMax by its A-risers. Once the wing is overhead, brake it gently, 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 over-fly you. Once stable and above your head apply progressive power and accelerate smoothly for a controlled take off.

IMPORTANT: Never attempt to take off with a glider that is not fully inflated, directly overhead or if you are not fully in control of the pitch/roll of the wing.

➤ The Climb Out

Once in the air you should continue flying into wind whilst gaining height. By setting the trimmers to the first white line position you will achieve the best climb rate. Do not attempt to climb too steeply or too quickly by using the brakes or slow trim. 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 MagMax 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.

➤ Active Flying

To minimise the likelihood of suffering collapses in turbulent conditions, it is essential to fly actively.

All good pilots react to the feedback the gliders send them, and are constantly adjusting their speed and pitch to match the movements of the air. The key elements of active flying, are pitch control and pressure control: As the glider pitches in front of you, use the brakes to slow it down. Equally, as the glider drops behind you, release the brakes to allow it to speed up.

Flying with a small amount of brake applied (approx 20cms) will allow you to best feel the feed back of the wing. In turbulent conditions the internal pressure of the wing can change, this can be felt through the brakes. The aim is to maintain a constant pressure at all times. If you feel a loss in pressure, apply the brakes until normal pressure is resumed then raise hands back to original position (this must be done quickly). Avoid flying with continuous amounts of 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. These subtle adjustments will keep the glider flying smoothly and directly above you and dramatically reduce the chances of a collapse. These are skills are best learnt by playing with the glider on the ground!

IMPORTANT: No pilot and no glider are immune to collapses

however active flying will virtually eliminate any tendency to collapse. When the conditions are turbulent, be more active and anticipate the movements of your wing. Always be aware of your altitude and do not over-react. We advise you to keep hold of your brakes. Do not fly in turbulent conditions.

➤ Turning

To familiarize yourself with the MagMax your first turns should be gradual and progressive.

To make efficient and coordinated turns first look in the direction you want to go and check that the airspace is clear. Your first input for directional change should be a smooth application of the brake until the desired bank angle is achieved. To regulate the speed and radius of the turn, coordinate your inner and outer brakes.

IMPORTANT: Never initiate a turn at minimum speed (i.e. with full brakes on) or under full power in a steep climb as you may risk entering a spin.

➤ Landing

The MagMax shows no unusual landing characteristics. We recommend the trimmers be returned to the normal slow 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.
- Once below 30m 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.
- Lean forward out of your harness and move the passenger to one side before the actual landing, this allows you both to be able to run/step without tripping over each other. Do not slow down gradually, instead, allow the glider to fly at full speed for your final descent until you are around 1m above the ground. Apply the brakes slowly and progressively to slow the glider

down until the glider stalls and you are able to step on to the ground. Taking a wrap will allow for a fuller flare.

- Be careful not to flare too hard at full speed as the glider might climb again before stalling. If the glider does begin to climb, ease off the brakes until it stops climbing, then flare again, but slower this time. If this does happen, don't put your hands up! You should keep the brakes at mid speed, stand up, be ready to run and make sure you brake fully as you arrive on the ground.
- Choose the appropriate approach style in function of the landing area and the conditions.
- Always land heading into wind!
- 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 to soften the impact as you touch down.
- 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, then run towards it.
- If the wind is very strong, and you feel you might be dragged, stall the glider with the C risers. This stalls the MagMax in a very quick and controllable way and will drag you less than if you use the brakes.

TOWING

The MagMax 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 body weight of the pilot.



ADVANCED FLIGHT TECHNIQUES

➤ 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.

➤ Big Ears

Folding in the wingtips of the MagMax increases its sink rate. This is useful for staying out of cloud or descending quickly. To pull big ears on the MagMax, keep holding your brake handles and take the outermost A-line (Baby A) on each side, then pull it down 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 both baby As 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.

IMPORTANT: You can land with the ears (you should release the ears before final flare). But Ozone don't advise you to do this when it's turbulent or windy due to the risk of a possible stall and lack of precision in steering.

➤ Ear Blocker system

To use the ear blocker system, after pulling-in the big ears simply hook the outermost A line to the underside of the red ball on the spreader. Keep the A lines and your hands to the outside of the spreader bars at all times, do not try to use the system from the inside as this could result in tangles and potential danger. Make sure that the line is settled neatly under the ball and double check that it cannot accidentally slip off.

Once engaged your hands are free, you can keep hold of the brakes and make small directional adjustments but the major directional control should still be with weight shift. Be aware that with the ear blocker system engaged it is possible that the brake range will be reduced (higher stall speed) and the roll response of the wing changed. For this reason you should concentrate on flying the wing carefully with small, smooth inputs and not use big directional control movements.

IMPORTANT: Practice using the ear system for the first time in smooth conditions, get used to the action of engaging and disengaging the line in a smooth controlled manor.

WARNING: With big ears engaged the flying characteristics of any wing is changed, maintain good airspeed and avoid deep brake movements or sudden turns. This will reduce the possibility of entering a stall or spin.

The ears should be released with plenty of altitude; well before your final landing approach. If you need to perform big ears to lose more height on approach then do so 'manually' - without using the blocker system.

To release the big ears simply push the line away from the red ball. Push the A line towards the outside using the palm of your hand, alternatively you can use your thumb to push the line from the ball itself. The line will easily slide off the ball and the wing tip will start to inflate.

If the wing tip does not spontaneously inflate use a small brake input to encourage it to do so.

➤ Big ears and trimmers

Once the big ears are engaged you can further increase the sink rate by releasing the trimmers.

➤ 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!

WARNING; Ozone strongly recommends to NOT use this manoeuvre!

➤ 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.

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 will horseshoe and move around a lot.

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. Check you have forward flight again before using the brakes.

IMPORTANT: The pitching movement on exiting the B stall is small but necessary. We recommend you do not brake the glider until you are sure that the glider is flying again.

The load applied on the B lines during this manoeuvre is not very good for your glider, only use it in emergency situations.

➤ Spiral Dives

If you turn your MagMax 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 go, then smoothly pull down on the inside brake. The MagMax will first turn almost

360 degrees before it drops in to the spiral. Once in the spiral you must apply a little outside brake to keep the outer wing tip pressurised and inflated.

Safe descent rates of 8 metres per second (500 ft/min approx.) are possible in a spiral dive, but at these rates the associated high speeds and G-forces can be disorientating, especially for the passenger so pay particular attention to your altitude.

To exit the spiral dive, return your weight shift to a central position and then slowly release the inside brake. As the MagMax 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. The MagMax shows no indication of remaining neutral in the spiral dive, however some parameters could interfere with its behaviour such as; wrong settings of the chest strap (too wide), total weight in flight outside of the certified weight range, or being in a very deep spiral at a very high sink rate. You should always be prepared to pilot the wing out of such a spiral dive. To do so smoothly use opposite weight shift and apply a small amount of outside brake and the glider will start to 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: Spiral dives with sink rates over 8 m/s are possible, but should be avoided. They are dangerous and put unnecessary strain on the glider. Spiral dives cause disorientation and need time and height to recover. Do not perform this manoeuvre near the ground.





INCIDENTS

➤ Deflations

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

Most collapses can be prevented with good active flying skills, however if a collapse does occur the most important thing is to not panic!

The first course of action for an asymmetric collapse should always be to take control of the direction of flight. You should fly away from the ground, obstacles and other pilots. Asymmetric collapses can be controlled by weight shifting away from the collapsed side and applying the necessary amount of brake to control your direction. This act alone 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 collapse you must be very careful to not apply too much brake so that the remaining flying side stalls. If you are unable to stop the glider turning without exceeding the stall point, 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 whilst trying to retain directional control. The pumping action should be deep and hard. Pumping too short and fast will not reinflate the wing, whilst pumping too long and slow may take the wing close to, or beyond, the stall point. A stubborn collapse may require several firm pumps.

Symmetrical (front) collapses normally reinflate without pilot input, however 15 to 20cm of brake applied symmetrically will speed the process. As soon as the wing re-inflates keep your hands high to ensure the wing recovers airspeed and does not enter a parachutal stall.

➤ Cravats

When the tip of your wing gets stuck in the lines, this is called a 'cravat'. This can make your glider go into a rotation which is difficult to control. The first solution to get out of this situation is to control your direction and then pull down the stabilo line (red line on the B riser). You must be careful with any brake inputs not to stall the opposite wing.

If this does not work, try pumping the cravated side (using a similar method to an asymmetric collapse). Inducing a collapse on the side of the cravat sometimes works otherwise a full stall is the only other option.

IMPORTANT: A bad preparation on launch, aerobatic flying, flying a wing of too high a level or in conditions too strong for your ability, are the main causes of cravats.

➤ Deep Stall / Parachutal stall

It is possible for gliders to resume their normal shape on a very slow release of the B-lines, but carry on descending vertically and without full forward motion. This situation is called 'deep stall' or 'parachutal stall'.

It is highly unlikely to happen on any OZONE glider, but should it happen, your first reaction should be to fully raise both brakes and the glider should return to normal flight. If nothing happens after a few seconds, reach up and push the A-risers forwards or release the trimmers to regain normal flight.

Ensure the glider has returned to normal flight (check your airspeed) before you use the brakes again.

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!

IMPORTANT: 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 then 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 a small amount if necessary.

CARING FOR YOUR WING

➤ Storage

Always store all your flying equipment in a dry room, protected from the 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).
- Dry your wing preferably out of the sun, in the wind. Never use a hair dryer, etc.
- If you land in the salt water, you must clean it with fresh water first and then dry it.
- 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.

IMPORTANT: Never pack away or store your glider wet.

➤ 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 strongly 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 the Ozone Saucisse 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 or the Saucisse pack. It is best to start from the mushroomed position as this reduces the dragging of the leading edge across the ground.



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



Step 3 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 not to crush the LE



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



Step 8. If using the Saucisse Pack carefully do 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.
- 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 etc.
- Change your main brake lines if they become damaged.

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.

➤ Cleaning

Any kind of wiping/scratching can damage the coating of the cloth, therefore it is best to NOT attempt to clean your wing unless it is absolutely necessary. We recommend to use a soft cloth dampened only with water and to use gentle movements little by little across the surface.

IMPORTANT: Never use detergent or chemical cleaners.

➤ Wing Repairs

Amateur repairs can do more harm than good. Always let a registered dealer or the manufacturer carry out major glider repairs.

If you damage the sail:

If the rip is small, you can fix it yourself. You'll find all the materials you need in the supplied repair kit. The fabric can be simply mended with the sticky rip stop/spinnaker tape. When cutting out the patch remember to allow ample overlap around the tear and round the corners of the patch.

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 damaged should be replaced. It is important that the replacement line is from the same material, has the same strength and the same length. You can check its length against its counterpart on the other side of the wing, to make sure that it is symmetrical. Once the line has been replaced, inflate and check the glider before flying. If you do not have access to an Ozone dealer you can order individual lines at www.flyozone.com

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 80 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/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 (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.

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.

Full 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 flight test that confirms that the wing behaves normally should be carried out by the professional.

IMPORTANT: Take care of your glider and make sure you have it checked according to the above schedule: This will ensure you hours of safe flying.

MODIFICATIONS

Your Ozone MagMax 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 MagMax in any way.

OZONE QUALITY & SERVICE

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. We will always undertake to fix problems not caused by general wear and tear or inappropriate use. If you have a problem with your glider please contact your dealer/distributor who will be able to decide upon the most appropriate action. If you are unable to contact your dealer then you can contact us directly at info@flyozone.com

OZONE GUARANTEE

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, and damage to products due to wear and tear will be repaired at a reasonable charge.

SUMMARY

Safety is paramount in our sport. To be safe, we must be trained, practiced 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 those areas you will be exposing yourself to more danger than is necessary.

Flying is an immense subject which takes years to learn, so let your experience build slowly, don't put pressure on yourself, you have plenty of time to learn as many people fly well into old age. If conditions aren't good now then pack up and go home, there is always tomorrow.

Don't overestimate your abilities, be honest with yourself. As the wise saying goes, 'it is better to be on the ground wishing you were in the air, than to be in the air wishing you were on the ground'.

Every year many pilots get hurt launching; don't be one of them. Launching is the time that you are most exposed to danger so practice it lots. Some launch sites are small and difficult and conditions aren't always perfect. If you're good at ground handling you'll be able to confidently and safely launch whilst others struggle. You'll be less likely to get hurt and more likely to have a great day's flying.

Ground handling is also a form of flying. It teaches you to be sensitive to your glider and to understand the feedback it sends you, so practice as much as you can.

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.

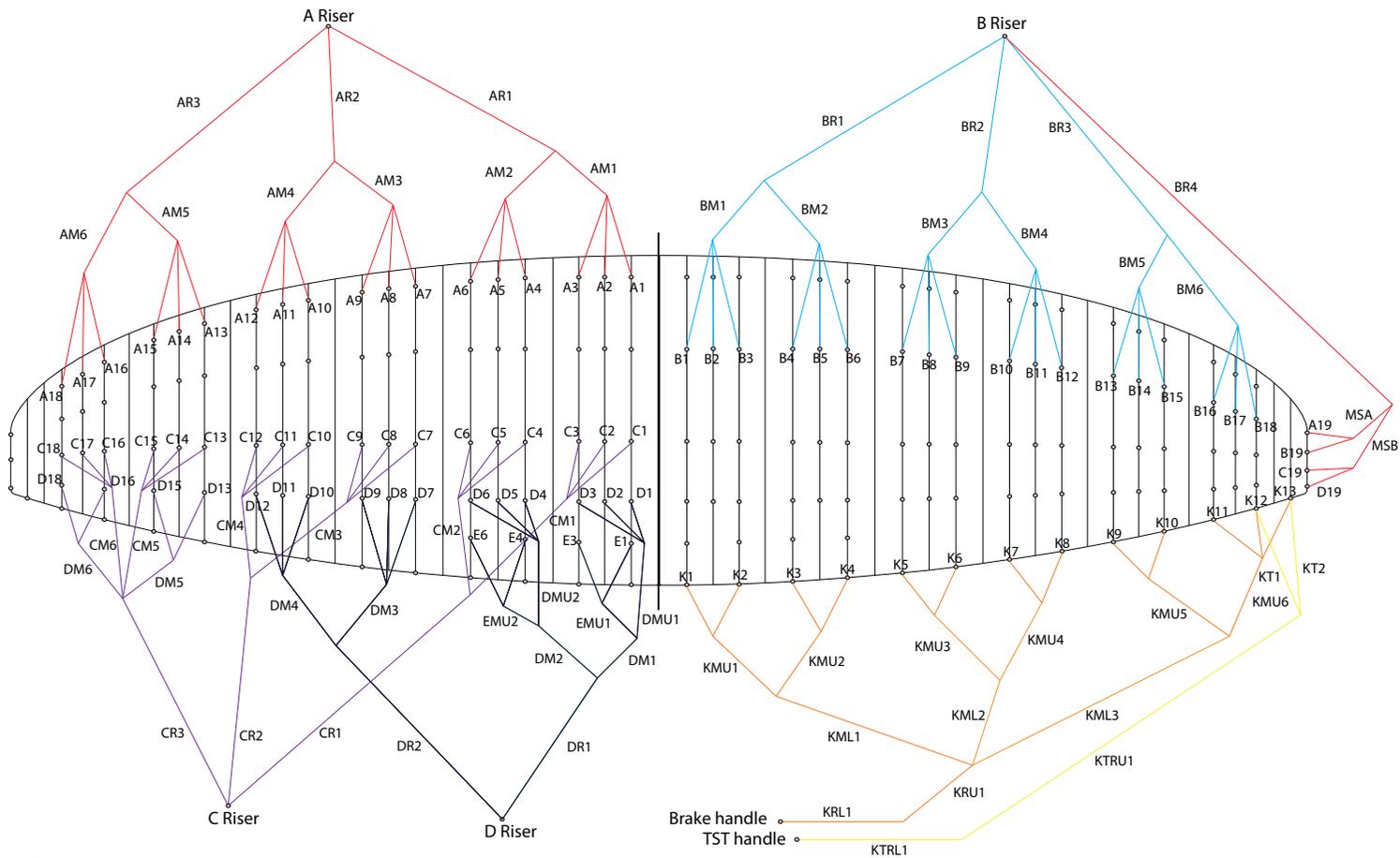
Happy flying & enjoy your MagMax.

Team Ozone





LINE DIAGRAM





SPREADER BARS

RISER LENGTHS (mm)

Risers
élevateurs
tragegurte



Slow Trim

A	400
B	396
C	392
D	385

Neutral

A	400
B	400
C	400
D	400

Fast Trim

A	400
B	520
C	440
D	480

MATERIALS

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

↗ Cloth

Upper-surface

Porcher 9017 E77

Lower-surface

Dominico 30D MF

Internal Ribs

Porcher 9017 E29

Dominico 30D Hard

Leading-edge reinforcement

P25/18 plastic pipe

↗ Line Set

Lower cascade

Edelrid 7343 420/280/230/190

Middle cascade

Edelrid 7343 230/190

& Liros DSL 140/70

Upper cascade

Liros DSL 140/70

↗ Risers and hardware

Shackles

Maillons from Maillon Rapide

Riser webbing

20mm Polyester webbing

TECHNICAL SPECIFICATIONS

	38	41
No. of Cells	52	52
Projected Area (m ²)	32.3	34.9
Flat Area (m ²)	38	41
Projected Span (m)	11.12	11.55
Flat Span(m)	14.12	14.67
Projected Aspect Ratio (m)	3.82	3.82
Flat Aspect Ratio (m)	5.25	5.25
Root Chord (m)	3.4	3.5
Glider Weight (kgs)	8.0	8.4
Recommended PPG Weight Range (Kgs)	110-255	130-290
EN Certified Weight Range (Kgs)	110-185	130-220
EN Load test 8G (max Kgs)	255	255
Load Test 6G (max Kgs)	340	340
EN/LTF Flight Certification	B	B



FLYMAX

WWW.FLYOZONE.COM