

 OZONE

 MANTRA  
12

YOUR WING IS HERE



TRUE

REFRESH



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PERFORMANCE

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 and performance. 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 Lachens, guarantees us more than 300 flyable days per year. This is a great asset in the development of the Ozone range.

If you need any further information about Ozone, the Mantra R12, or any of our products please check [www.flyozone.com](http://www.flyozone.com) or contact your local dealer or any of us here at Ozone.

It is essential that you read this manual completely, it contains important information that you need to be aware of before flying your Mantra R12 for the first time, especially where you see the 🚧 symbol.

Wishing you all the best success for your season ahead.

Safe Flying!  
Team Ozone





## WARNING

The Mantra R12 is an Open class competition paraglider, it has been successfully load tested, but holds no EN or LTF flight certification. It should ONLY be flown by very competent and very experienced pilots,

DO NOT fly this wing if you are inexperienced or unfamiliar with the characteristics of a high aspect ratio, high performance paraglider.

Paragliding is a potentially dangerous sport that can cause serious injury including bodily harm, paralysis and death. Flying an Ozone paraglider is undertaken with the full knowledge that paragliding involves such risks.

As the owner of an Ozone paraglider you take exclusive responsibility for all risks associated with its use. Inappropriate use and or abuse of your equipment will increase these risks. Any liability claims resulting from use of this product towards the manufacturer, distributor or dealers are excluded.

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 and always fly with a reserve parachute.

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.

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; Dav has a wealth of experience both in competition, adventure flying and paraglider design. Also on the design team are test pilots Russell Ogden, Luc Armant and Fred Pieri. 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 manoeuvres. 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. Fred is the latest addition to the team. He is a mechanical engineer and vol Biv specialist. Fred designed the Anti-G and was the brainchild of the shark nose.

Back in the office Mike 'Da Boss' Cavanagh generally keeps control of the mayhem. Mike is an old school XC specialist who flies to a very high standard so he knows the needs and requirements of serious pilots. Promotion and Team pilots are organised by Matt Gerdes. Matt is our speed riding/flying specialist and is a highly accomplished extreme skier.

Karine Marconi, Jill Devine and Chloe Vila 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 Khanh, Phong and over 700 production staff.

## YOUR MANTRA R12

The Mantra R12 is the latest wing of the legendary R series. The R&D team have spent the last 18 months refining and perfecting the R11 to suite their continued and demanding requirements for the best possible high performance XC wing. With refined handling and a more comfortable feel in flight, the R12 retains all of the glide performance of the R11 but with more intuitive and direct handling.

The R12 shares the same planform, arc and shark nose profile as the R11 but includes several modifications to further improve the feel and behavior. Tension across the entire wing, but most notably in the trailing edge, has been modified, as a result the wing has a 'tighter' feel and a more cohesive behavior in turbulent air. The brake fan has also been modified to improve the handling and overall feel of the glider.

These refinements contribute to a more linear brake response. The wing is now more direct and responsive to brake inputs, this helps improve the initial turn response and the precision during the turn. It is both very precise and maneuverable. The improved responsiveness of the brakes also helps whilst controlling the wing in turbulent air. There is a more direct feel compared to the R11, the information through the brakes is more predictable, making pitch control easier to manage and more effective. Because the R12 is an uncompromised XC wing, and because the test team preferred the feel of the XAlps R11s, the R12 uses 27gr cloth for the undersurface. The resultant reduction in weight increases the precision and feel in the air and makes the wing overall nicer to fly.

The R12 is fast. Faster than any certified paraglider and with more than enough top speed for efficient XC flights. However, compared to the R11, the top speed has been reduced, this is a result of the modified trailing edge tension and the fact that there is no longer a need for such a high top speeds. Although very stable, the R12 can still react aggressively to closures in severe turbulence, just like any other Open Class wing. Only consider this wing if you have the necessary experience and skills to fly such wings. For expert pilots only.

### ➤ Brake Lines

The main brake line lengths have been set carefully during testing, however, if you do choose to adjust them, please bear in mind the following:

- Do not reduce the set lengths, this may cause the wing to engage the brakes whilst at full speed.
- 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.

**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 (B-risers) for directional control.**

### ➤ Risers

The Mantra R12 has been designed with 2 rows of lines A & B.

Each riser has a set of trimmers, these are used to slow the wing in thermals and to optimise the trim speed.

### ➤ Total Weight in flight

Each R12 has a defined optimum weight range, it does not have to be flown at the top of this range for a good feel and handling, this can also be achieved near the bottom of the range. If you are between sizes the following information may help you:

If you want better speed, precise handling, and generally fly in mountains and/or in strong conditions, you should choose to fly in the top part of the weight range. If you want a better sink rate, or if you generally fly in flat lands and/or in weak conditions, you may choose to fly near the bottom part of the weight range. Remember, you can always add ballast when conditions are stronger.

## ➤ Harness

It is worthwhile checking the adjustment straps of your harness to double check for symmetry.

The chest strap should be set between 44cm and 50cm (between the centre of the risers) to your taste.

## ➤ Accelerator System

To set up the accelerator on the ground, ask a friend to pull your risers into their in-flight position while you sit in your harness. Now adjust the length of the line so that the main bar sits just beneath your seat.

The accelerator must be slack enough to ensure that the speed system is not engaged in normal flight, but not so long that it is impossible to use the full speed range of the glider.

Once set up, test the full range of the accelerator in calm flying conditions: ensure that both risers are pulled evenly during operation. Fine-tuning can be completed when you are back on the ground.

## BASIC FLIGHT TECHNIQUES

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

## ➤ Preparation

Lay out the wing 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 stabilo, 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 checklist:

1. Check reserve parachute - pin in and handle secure
2. Helmet on and fastened
3. All harness buckles closed - check leg-loops again
4. Karabiners and maillons tight
5. Holding the A's and your brake handles
6. Leading edge open
7. Aligned directly into wind
8. Airspace and visibility clear

## ➤ Launching

Your Mantra R12 will launch with either the forward or reverse techniques.

**IMPORTANT: It is only necessary to take hold of the main A riser with AR1 connected to it rather than all of the A risers.**

**NOTE: The glider rises overhead quickly so be prepared to modify your technique, especially if your last wing was slow in this respect.**

## 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 Mantra R12 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 as this may cause the leading edge to 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 Mantra R12 is inflated correctly, accelerate smoothly off the launch.

### Reverse Launch - Light to Strong Winds

Lay out your wing as you would for the forward launch. However, this time turn to face it. Lean backwards and smoothly inflate the glider using your body weight and the A-risers. Brake the glider if it tries to overshoot you.

In stronger winds, be prepared to take a few steps towards the glider as it inflates. This will take some of the energy out of the glider and it will be less likely to overfly you.

The reverse-launch technique can be used in surprisingly light winds too.

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

### ➤ Turning

The R12 has relatively light brake pressure and is very responsive to inputs. To familiarise yourself with the new wing your first turns should be gradual and progressive. Application of too much brake will cause excessive roll and dive in the turn or cause the wing to spin.

### ⚠ ➤ Trimmers

'Normal' trim speed (neutral) is marked with a row of stitching in the trim tab, it is also when the A and B risers are of equal length.

Neutral position should be set when launching and landing.

To achieve the optimal climb rate it is necessary to slow the wing by adjusting the trimmers. The recommended trim range for thermalling is with the trimmers set between neutral and the full trim-on position. Flying in the neutral position gives maximum precision and the best handling characteristics. Flying with the trimmers in the fully slow position gives the best minimum sink rate.

Find your optimum position depending on your personal tastes, wing loading and the conditions you are flying in but do not fly fully trim-on in turbulent condition.

**IMPORTANT: Do NOT fly in strong or turbulent conditions with the trimmers in the fully closed position.**

It is also possible to climb using the trimmers asymmetrically; this way gives a good compromise between handling and brake pressure. To do so, engage the trimmer on the inside of the turn and leave the outside trimmer at neutral.

To increase speed you can release both trimmers, this has exactly the same effect as using the speed bar, there is no difference in efficiency between releasing the trimmer or using the same amount of speed bar. However Ozone strongly recommends to accelerate the wing using the speed bar rather than the trimmers.

**IMPORTANT: Do not fly with the trimmers released in turbulent conditions.**

### ➤ Speed System

For better penetration in headwinds and improved glide performance in sinking air, crosswinds or headwinds, you should fly faster than trim speed by using the accelerator system. Using up to half bar does not degrade the glide angle or stability significantly and will improve your flying performance. At full speed the Mantra R12 is very fast but less stable; only use max speed in very calm air conditions and fly actively with your B risers.

**⚠ IMPORTANT: Ozone strongly recommends when flying at full speed (with the speed bar) that the trimmers are set to the neutral position. Do not fly full speed (speed bar) with the trimmers released.**

## ⚠️ **Active B Riser Control**

When gliding at trim or in accelerated flight it is recommended to pilot the wing with the B risers. This gives an improved feel and control over the wing enabling you to fly actively without using the brakes (which causes drag and pitch movements), the direct feel allows you to stop collapses before they happen and maintain higher speeds and higher levels of efficiency through turbulence.

To fly with the B risers, keep hold of your brake handles (remove any wraps) and take hold of the red toggles located at the top of the B risers near the maillon. Now you have direct control of the AofA; by gently pulling on your B risers you increase the AofA of the wing, releasing all pressure on the B's returns the wing to the speed you set. With the B riser you can fly actively through turbulence; If you feel the nose of the wing lose internal pressure you can apply a small amount of pressure to the B's to keep the nose open, the amount of pressure and size of the input is dependent on the amount of turbulence, but always be gentle to avoid large pitch movements.



During accelerated flight, the added control of active B riser flying increases the efficiency and stability of the wing and really shows the advantages of this control method compared to conventional 3 line gliders. Whilst accelerated the act of pulling the B risers is exactly the same as releasing the speed bar. This translates to direct control of speed, AofA, and feel of the internal pressure in your hands at the same time! Coupled with active speed bar control, small adjustments can be made with the B risers to optimise your speed and internal pressure through turbulence helping you to maintain a higher average speed and at the same time reducing the likelihood of unexpected collapses.

**NOTE: This control method is suitable for gliding in good 'normal' air without huge turbulence, it does not replace proper active flying with the brakes in strong turbulent conditions. If you are unsure about the air return the glider**

**to trim speed, release the B risers and fly the glider actively with the brakes.**

**IMPORTANT: Be careful to use only small inputs to the risers especially when flying at slower speeds (i.e with the trimmers set on slow) as you risk stalling part or all of the wing if you are over enthusiastic. Be prepared for plenty of practice as this new method may take some time for it to become totally intuitive, efficient and comfortable.**

## ➤ **Active Flying**

To minimize the likelihood of suffering collapses in turbulent conditions, it is essential to use active flying.

Flying with some brake applied (approx. 20cm) will give you the required feedback from the wing. Inputs can be symmetric or asymmetric; you may have to apply both brakes or just one to maintain equal pressure across the span/chord of the wing. These subtle adjustments will keep the glider flying smoothly and directly above you

Avoid flying with continuous amounts of deep brake in rough air as you could inadvertently stall the wing. Always consider your airspeed.

**IMPORTANT: No pilot and no glider are immune to collapses however active flying reduces 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 and not to fly in very turbulent conditions.**

## EMERGENCY FLIGHT TECHNIQUES

### ➤ Big Ears

Folding-in the wingtips increases the sink rate whilst maintaining forward speed, this is useful for staying out of cloud. To pull big ears, keep hold of your brake handles and take the outermost A-line and the stabilo line on each side, then pull out down (preferably one at a time) 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 A lines at the same time. To help reinflation, brake gently one side at a time until tips regain pressure. Avoid deep symmetric applications of the brake as this could induce parachutal or full stalls.

### ➤ Big ears and accelerator

Once the big ears are in you can further increase the sink rate by pushing on the accelerator bar.

**NEVER try to pull the Big Ears in with the speed bar already applied. This can lead to a major asymmetric 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!

**IMPORTANT: Ozone strongly recommends to NOT use this manoeuvre!**

### ⚠ ➤ B-Line Stall

A traditional B line stall is not possible with the Mantra R12

### ➤ Spiral Dive

The spiral dive is the most effective descent method to lose height rapidly. The Mantra R12 will turn almost 360 degrees before it drops

into a spiral dive, once in the spiral you should apply enough outside brake to keep the outer wing tip pressured and inflated.

Safe descent rates of 8m/s and beyond are possible, the associated high speeds and G-forces can be disorientating, 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 Mantra R12 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.

You should always be prepared to pilot the wing out of 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. Ozone recommends the use of an ANTI G parachute for a more effective and comfortable spiral dive**

## INCIDENTS IN FLIGHT

### ➤ Deflations

If you have a collapse, first priority is to maintain a safe direction and fly away from the ground, obstacles and other pilots. Asymmetric collapses can be controlled by weight shifting away from the collapse and applying enough brake to control your direction, this act alone will normally be enough for a full recovery of the wing. In your efforts to stop the glider turning towards the collapsed side 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 do 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 a quick input of 15 to 20cm of brake applied symmetrically will speed the process and reduce the likelihood of the wing tips coming together in a horseshoe and resulting cravats. Never let your tips come together in a front collapse, use enough input to stop this happening. If the wing does not spontaneously reinflate after a frontal collapse, pump the brakes hard to provoke the nose to open, this could take 2 or 3 pumps in extreme cases.

If your Mantra R12 collapses in accelerated flight, immediately release the accelerator, return trimmers to the neutral position (if untrimmed) and actively control the glider.

## ➤ Cravats

The first solution to get out of a cravat situation is to maintain control of your direction and pull the stabilo line (red sheathed line on A risers) until you gain tension in the line. This action will clear most small tip cravats however larger cravats may need deep brake inputs to clear. You must be careful with any brake inputs or you may unexpectedly stall the wing.

If after repeated attempts this does not work, a parachutal or full stall (symmetrical or asymmetrical) are the next best solutions. This should only be done with a large amount of altitude and training. Remember if the rotation is accelerating and you are unable to control it, you should use your reserve whilst you still have enough altitude.

## ➤ Deep Stall / Parachutal stall

The R12 shows no parachutal tendencies, 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, make sure the trimmers are not in the fully slow position and apply some speed bar to regain normal flight. A full stall is an alternative way to effectively recover from parachutal stall.

Ensure the glider has returned to normal flight (check your airspeed) before initiating a turn.

**IMPORTANT: Only a few cms of brake input can maintain the wing in a parachutal stall, release wraps if you have taken them!**

**⚠ IMPORTANT: Do not fly in rain, doing so significantly increases the likelihood of parachutal stalls occurring. To reduce the chance of stalling in rain avoid using deep brake movements, Big Ears or slow trim settings. Find a safe area to land and using the speed bar, maintain a good airspeed at all times.**

## ➤ Wingovers

The Mantra R12 is not designed for aerobatic flying. The limit is tightly banked S-turns, commonly known as wingovers. These must not exceed 90 degrees of bank

**WARNING: Uncoordinated wingovers can lead to large asymmetric collapses/cravats and therefore should never be executed near the ground.**

**NOTE: Acrobatic flying puts unnecessary strain on the wing, it will accelerate the ageing process and reduce the wing's performance and overall lifespan.**

## ➤ SIV

The R12 is a cutting edge performance paraglider that has been fully optimised for XC flying, it is only suitable for very experienced pilots.

Only undertake SIV training with this wing if you have the necessary skills to do so. You must be completely familiar with SIV manoeuvres

before attempting them with this wing.

- ⚠ Due to the nature of the 2 line design, the tab positioning makes it hard to induced collapses that simulate real life collapses. Ozone recommends you to NOT perform accelerated asymmetric/symmetric collapses. To do so properly requires the addition of collapse lines to the leading edge which have to be mounted accurately.

## CARING FOR YOUR MANTRA R

### ➤ Caring Tips

- DO NOT drag your wing along the ground to another take-off position - this can damage the sailcloth and the lines. Lift up your wing 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.
- Never fly with a damaged or broken line.

**IMPORTANT: 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.**

### ➤ 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 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 LE reinforcements with the A tabs 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 centre of the wing, keeping the B tabs together.



Step 5. Carefully zip up the saucisse pack without trapping any material



Step 6. Make the first fold just after the LE reinforcements. Do not fold the plastic reinforcements, use 3 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.**



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**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.**



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## 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. Heat and humidity are the worst factors in 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.

## ➤ Cleaning

Any kind of wiping/scratching can damage the coating of the cloth. We recommend for cleaning to use a soft cloth dampened only with water and to use gentle movements little by little across the surface.

**Never use any 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 however, you can fix it yourself. You'll find all the materials you need in the repair kit.

The fabric can be mended simply 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.

## ➤ Lines

The R12 has been optimised for absolute performance. When new the line set is very strong and passes the physical and theoretical load tests. However due to the nature of the material and the thin diameters, it is necessary to be extra vigilant with the care of your lines.

**!** It is vitally important that the condition and age of the lines be considered at all times. If you have a cascading event that involves heavy shock loads and/or riser twists, then you must have the lines properly checked. After any such incident you should strongly consider changing the complete line set, even if it occurs well before the scheduled line change interval (150hrs) since damage cannot always be seen. Flying with damaged lines significantly increases the risk of

line failure. You must never fly with a damaged or broken line, any line that is visually damaged in anyway **MUST** 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](http://www.flyozone.com)

You need to measure the line set regularly to ensure the correct trim is maintained. Adjustments can be made if necessary, such adjustments should only be made by a professional.

**!** **IMPORTANT: We recommend the complete line set to be changed after 150hrs.**

## MAINTENANCE CHECKS

The Mantra R12, like any aircraft needs to be checked regularly to ensure proper airworthiness.

Your wing should be checked by a qualified professional for the first time after 80 hrs or 12 months, whichever comes sooner and thereafter annually. The checker should inform you about the condition of your glider and whether or not any parts need to be re-checked or changed before the next normal service check period.

The sail and the lines do not age in the same way: it will be necessary to change the line set during your wings life. This is why it is also important to do a regularly check up to know the condition of all of the components of your glider. We recommend that the check up is carried out by a qualified professional. The lines should be changed after 150hrs to ensure that they retain their strength and correct lengths.

You are responsible for your flying kit and your safety depends on it. Take care of your equipment and have it regularly inspected. Changes

in a wings flying behaviour, are also indicators of the gliders aging, if you notice any changes you should have the wing checked before flying again.

The two line design puts more pressure on the trimmers than a 3 line design. Therefore the webbing can wear quickly. Trimmer webbing can also wear quickly according to use – if your trimmer webbing shows undue wear, then you must replace the risers even if this occurs before the recommended maintenance interval.

If the wing is abused in any way (such as tree landings) then the recommended maintenance interval is invalid and you should check the wing immediately.

**! IMPORTANT: The line set must be replaced at the recommended interval...150 hrs.**

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

Full details of the check can be found here <http://www.flyozone.com/paragliders/en/learn/glider-inspections/>

## TOWING

The Mantra R12 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 above your head before you start. In each case the maximum tow force needs to correspond to the body weight of the pilot.

## MODIFICATIONS

Your Ozone Mantra R12 was designed and trimmed to give the absolute optimum balance of performance, handling and safety. Any modification means that the glider will lose this balance and will be more demanding to fly. For these reasons, we strongly recommend that you do not modify your glider in any way.

## QUALITY

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](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 and ensure we are practised in emergency flight procedures. If you are lacking in any area you will be exposing yourself to more danger than is necessary.

Please think responsibly if you come to sell your Mantra R12, this wing is only suitable for very experienced and competent pilots. Pilots without the necessary experience or skills in flying high aspect ratio wings should not attempt or be encouraged to fly this glider. It is YOUR responsibility to change the line set before selling the wing.

Please take care to look after your wing and respect the recommended service intervals, this is especially important for the lines, any damaged lines must be replaced at the first sign of visual damage and the whole set must be changed after 150hrs of use.

Finally, always RESPECT the weather, it has more power than we can ever imagine.

Team Ozone

## MATERIALS

All Ozone gliders are made from the highest quality materials available. Porcher cloth has been used for all components of the glider due to its lighter weight and stretch resistance, which are two important factors in a high performance wing.

### ↗ Cloth

#### **Upper-surface**

Dominico 30D MF

#### **Lower-surface**

Porcher Skytex 7000 27gr

#### **Supported Ribs**

Porcher Skytex 9017 E29A

#### **Unsupported Ribs**

Porcher Skytex 7000 27gr

#### **Leading-edge reinforcement**

Plastic P18 / P25

### ↗ Line Set

Lower cascade - Edelrid 8000UV.070/090/130/190/230kg Aramid

Middle cascade - Edelrid 8000UV 050/070/090 Aramid

Upper cascade - Edelrid 8000UV 025/050/070 Aramid

### ↗ Risers and hardware

#### **Shackles**

High quality micro maillons from Maillon Rapide.

#### **Riser webbing**

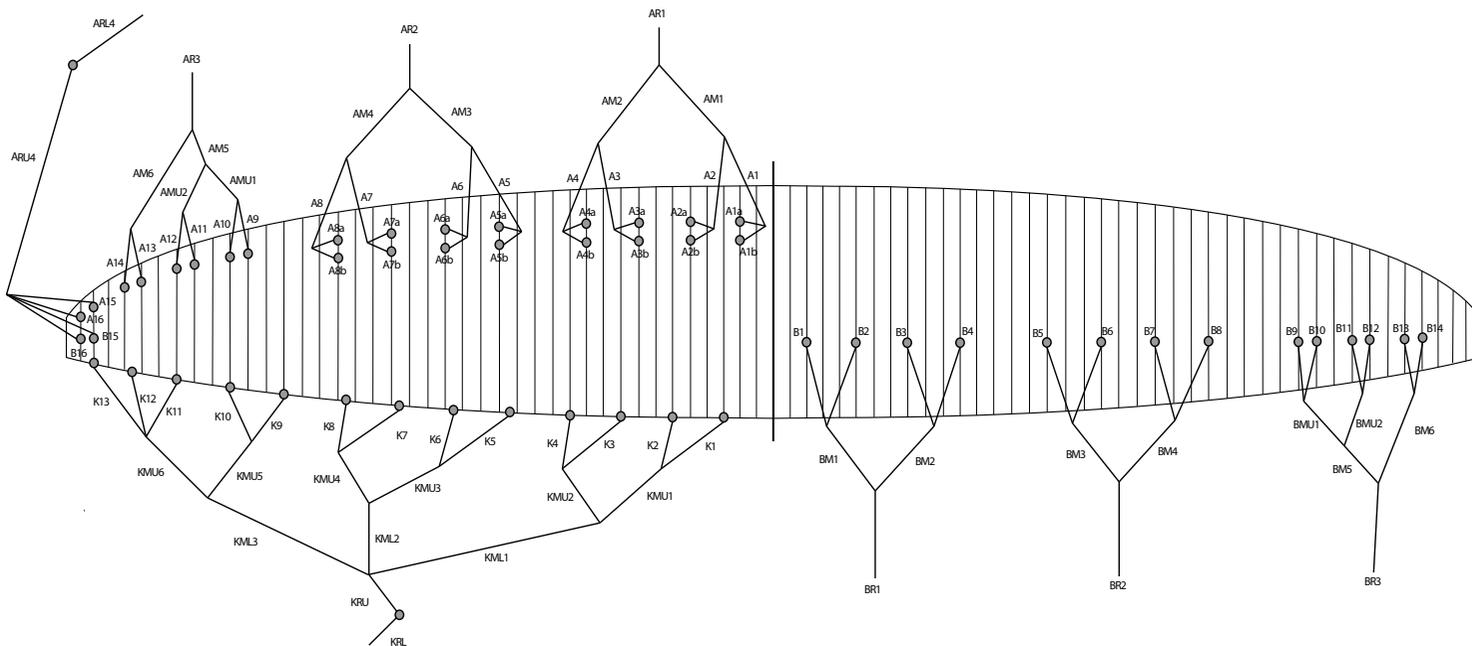
12mm Cousin zero stretch webbing

#### **Pulleys**

Ronstan ball bearings

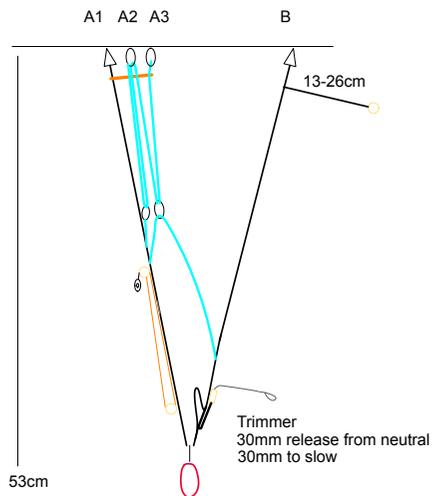
# LINE DIAGRAM

ENGLISH



## RISER DIAGRAM

Riser A1 - AR1  
 Riser A2 - AR2  
 Riser A3 - AR3, AR4  
 Riser B - BR1-BR2-BR3



## TECHNICAL SPECIFICATIONS

	XS	S	M	L
No. of Cells	82	82	82	82
Projected Area (m <sup>2</sup> )	17.5	18.6	20.1	21.7
Flat Area (m <sup>2</sup> )	20.7	22	23.7	25.7
Projected Span (m)	9.8	10.1	10.5	10.9
Flat Span (m)	12.5	12.9	13.4	13.9
Projected Aspect Ratio	5.5	5.5	5.5	5.5
Flat Aspect Ratio	7.55	7.55	7.55	7.55
Root Chord	2.07	2.14	2.22	2.31
Glider Weight	*	*	5.4	*
In-Flight Weight Range	80-95	90-105	100-115	120-125
Load Test DHV	Yes	Yes	Yes	Yes

\* To be confirmed

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