XONE_ DGAC paramotor wing

MANUAL

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Servus - Hello

There are those very special and rare scenes and encounters in time, when we indulge in the present, feeling the now and simply pure joy. The GRAVITY team has devoted its efforts, work and vision entirely to and around the pleasures and enjoyment to the art of flying. Not only do we all live the spirit and mind-set of safety and freedom every day, we also want to share it with as many people and like-minded airheads as possible! GRAVITY develops innovative products for paragliding and offers a full-service range with the great desire to make our products accessible to as many enthusiasts and sportsmen out there.

WE PROCLAIM – Secured and lasting enjoyment!

GRAVITY strives for the highest level of passive safety, with inspiring, performing and convincing products that make you truly happy. Our products deliver reliably, supporting and aiding the pilot even in more challenging conditions.
It's simple that the fun factor increases significantly by reducing risk. Designing and manufacturing products, applying high, latest technological standards, originality with long-lasting quality.

AMBITIOUS DESTINATION - XONE what is already great!

"Innovation is a trusted, strong driver and successful progress the best vessel!" With this we are aiming to improve, grow and develop personally and our devices every day. Evolving and advancing on certain thoughts and ideas about the current state of a product, how to improve safety and protection, including sustainability with fresh, out of the box angles and approaches. We are proud of our work, savour uncompromising quality and love our sport. The products are crafted and tested with utmost care, in order to create and maintain long lasting quality.

THE HEART OF TRADE

Managing the team responsibly and with care, treating our surroundings and nature with respect comes just as natural to us as how we communicate with each individual customer and pilot. The GRAVITY team and family keeps an authentic and plain management style. Evident, direct structures enable active, empowered interactions and makes us dynamic and flexible. We wish you many countless, lasting, impressive explorations and moments with your GRAVITY product.

Stefan Berger
Gravity Europe owner & sales

Xone

 PAY ATTENTION_ This operating manual is an important part of the aircraft. Please study and revise it well and in detail, due to the fact that there is a legal OBLIGATION to deal with the air sports device and its special features prior commissioning it. The manual is intended to make the use of **the GRAVITY Xone** as safe and easy as possible.

1 PRODUCT_

1.1 GRAVITY Xone_ innovation is the best driver

The XONE is amongst the first gliders newly conceptualized and designed to also operate with electric motors and units. The engine's efficiency itself often only plays a minor role, when flying a paramotor combustion engine – whereas it is key when flying an electrical engine.

Illustration 01_ GRAVITY Xone

The Xone is one of our new developments in the paramotor area and is suitable for pilots of all skill levels, due to its enormous range of options. It is a beginner's glider with a fully reflexed profile, simple paramotor risers and a short trimmer with 100mm travel.

The easy launch characteristics are based on a mix of materials and special geometry – hence, starting with the paramotor has never been easier. Due to the extremely wide size range from 23m2 to 32m2, we can cover a weight range from 60kg to 200 kg! No problem to launch with zero wind and no confusing risers. The X One is the perfect device for all pilots - whether by foot start or trike - who are looking for safety, fun and a feel-good experience when doing paramotor gliding. The energy efficiency of the wing only plays a secondary role in the combustion engine, it ensures an elementary performance increase in the electric actuator. The XONE is a truly diverse and versatile cruiser with which you can grow your skills,

developing them further. This is guaranteed by a variable reflex profile, which adapts linearly as the speed increases and thus offers the perfect entry into the reflex class for those wanting to shift. Even ambitious pilots can accelerate the fun factor when flying the XONE. The resourceful XONE offers immense enjoyment and pleasure aspects already from the beginning as the handling is truly simple. The XONE is equipped with Tip-Steering making up for a comfortable and stress-free take-off with no wind already at morning dew.

Illustration 02_ GRAVITY Xone

Chief designer Ernst Strobl strikes the balance ideally between high performance and maximum safety with the XONE. The wing has been equipped with the latest technological features. The shark nose specially calculated for the reflex profile reinforces the high stability of the profile in turbulent air and ensures a larger angle of attack.

The PPN and a 3D shape (3DS) give the wing increased profile accuracy along the leading edge. The High Pressure Crossport Design (HPCD) optimizes the cross ventilation of the crossports and creates a balanced internal pressure of the wing. Miniribs (MRB) and the Brake Gathering System (BGS) ensure efficient transmission of the brakes in the rear area. The line geometry is based on a comparatively large number of starting points in order to ensure that

the wing maintains the required shape despite the variable profile. In addition, the surface load on the individual suspension points is minimized, which means that the line diameters can be optimized. The shoulder strap is equipped with a trimmer and a smooth-running accelerator. The innovative ergonomic bar handle for the tip steering can be perfectly integrated into the shoulder strap using magnets.

The XONE was developed together with Paramotor professional and took over two years in its realisation, implementing extensive know-how from training, evaluation and competing. Low cap weight with a long service life and durability- this is promised by the smart material mix in combination with the high quality of the XONE. The wing is made of 100% Skytex premium fabric. The best abrasion resistance in combination with selective reinforcements lead to permanent form stability and a long service life. The XONE is the perfect choice for pilots who want to develop their skills further and wanting to grow with drive and who value maximum safety.

Illustration 03_ GRAVITY Xone

The versatile semi-reflex wing offers beginners a comfortable introduction and entry into the fascinating world of motorized paragliding. The cruiser delivers high energy efficiency, which is particularly evident when it comes to thermals and soaring. The economic performance profile ensures a wide range of speeds, with which even ambitious pilots can accelerate their fun factor.

1.2 Pilot Profile

The XONE is the perfect choice for pilots who want to develop their skills as well as themselves further with passion and ambition, while valuing value maximum safety. The versatile semi-reflex wing offers a comfortable entry into the fascinating world of motorized paragliding. The cruiser delivers high energy efficiency which is particularly evident in the thermals and comes into play with soaring. The economic performance profile ensures a wide range of speeds, with which even ambitious pilots can accelerate their fun factor. The XONE is based on the latest development knowledge and is therefore at the maximum of the safety standard in its class. We ask you to always pursue aviation with the proper cautiousness and respect.

Illustration 04_ GRAVITY Xone

This includes profound, extensive flight preparation as well as the examination of meteorological conditions and the proper evaluation of the weather situation. Act defensively and proactive at all times!

Remember that increasing fun by reducing risks!

The easy handling of the XONE comes into play right from the very beginning. Almost, as if pushing a button, the wing rises over the pilot with only a slight impulse and aligns itself independently.

Illustration 05_ GRAVITY Xone

Due to the excellent gliding capability even in the lower speed range, the XONE reaches flight ability very quickly, which means that only a minimal take-off is necessary to take off. Since the conditions of motorized paragliding are often impeded due to increased load, a lot of emphasis was placed on reliable take-off behaviour. Even with no wind in wet morning dew, the XONE starts impressively easy. In flight, the wing offers very precise handling and cuts through the air like a blade - the control pressures are kept very low. The XONE is equipped with tip steering. Known from the field of competition, the control of the outer wing ensures a very efficient transmission of the control impulses and thus a significantly lower energy and performance loss and air resistance

1.3 Use

The XONE is a versatile semi-reflective wing and offers changeovers a comfortable entry into the fascinating world of motorized paragliding. The cruiser delivers high energy efficiency, which is particularly evident when it comes to thermals and soaring. The XONE was built exclusively for single-seat use and is a light air sports device with a unladen weight of less than 120 kg in the paraglider division.

The XONE has DGAC approval. The approval of the product was carried out and conducted according to current legal requirements and specifications:

- Inspection guidelines: DGAC, ULM CLASS 1 IDENTIFICATION
- Accredited testing centre: Republique Francaise Ministry of Ecology, Sustained Development and Energy

1.4 Signboard

The essential and relevant product data is positioned on each product by default and in accordance to the admission office. In the case of the entire GRAVITY paraglider range these are visibly placed are the centre of the canopy.

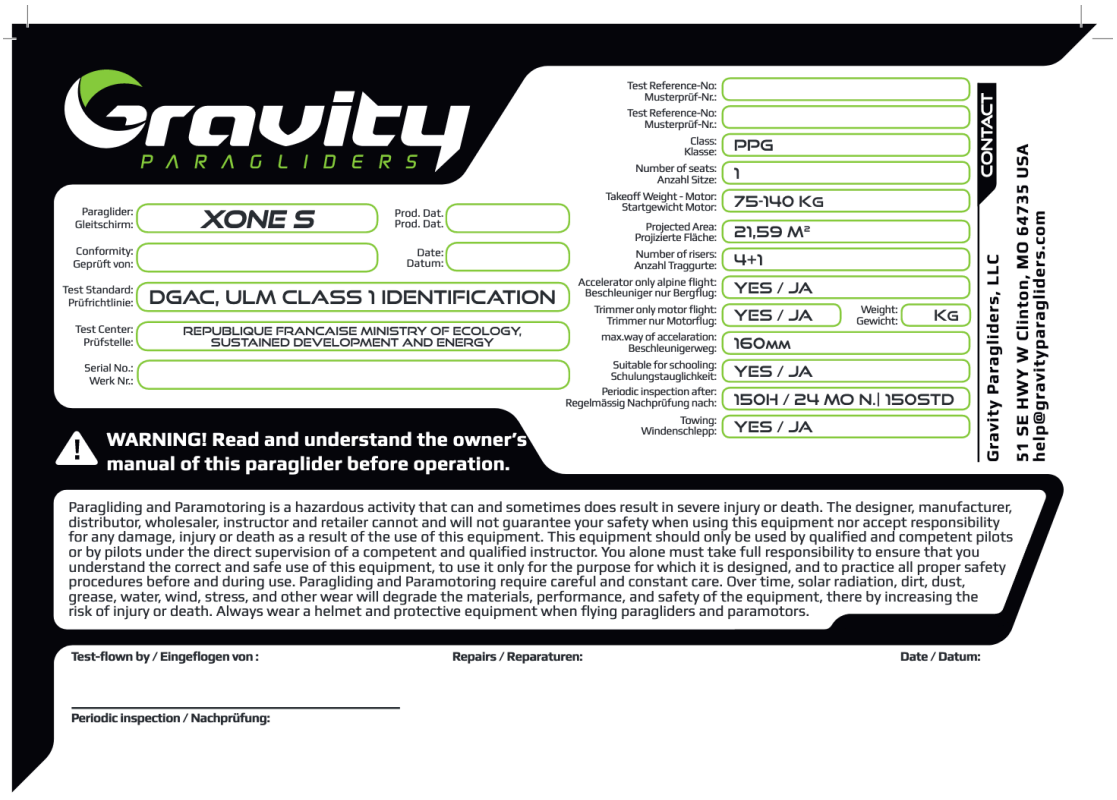


Illustration 06_ GRAVITY Xone

Illustration 05_ Signboard

2 POSSIBLE USE_

2.1 Motorised paragliding

The XONE was developed for motorized use on footlaunch and trikes lower 120kg empty weight. Please note that NO ACRO MANEUVERS are permitted in motorized operation. The extremely high wing load, due to the additional motor weight also pushes the GRAVITY XONE to its limits. The permissible weight limits must not be eXONEed at any time!

2.2 Towing winches

The GRAVITY XONE offers excellent starting characteristics with its high trim speed, best conditions for towing winches. The following must be observed and revised when towing winches/ aerotow:

- The GRAVITY XONE must not be towed over 100 kp
- Unless towing on your “house winch”, it is absolutely necessary to familiarize yourself with the local conditions in advance. Every “guest” in a foreign/ new flight area must be instructed by the local pilots.
- Never tow the GRAVITY XONE with a load eXONEing the approved weight limits
- All persons and facilities involved in winch operation must have the required qualifications or approvals for towing paragliders on the winch. This applies to the pilot, winch operator, towing device, towing pawl and all other devices for which a certificate of competence is required

3 THE DEFAULT SETTINGS_

The delivered brake line and default setting corresponds to the setting 0-leeway plus 5 cm.
It is recommended to adjust the brake handle to your personal needs after the first flight. Remember that the brakes should not be set too short, otherwise the glider would fly continuously braked. These situations would be extremely dangerous for take-off, flight and landing!

The default setting is in extreme flight situations and when landing sufficient braking distance available. At the same time, it enables a comfortable arm position for the trim flight. Under no circumstances should the basic setting of the A, B and C lines be changed.

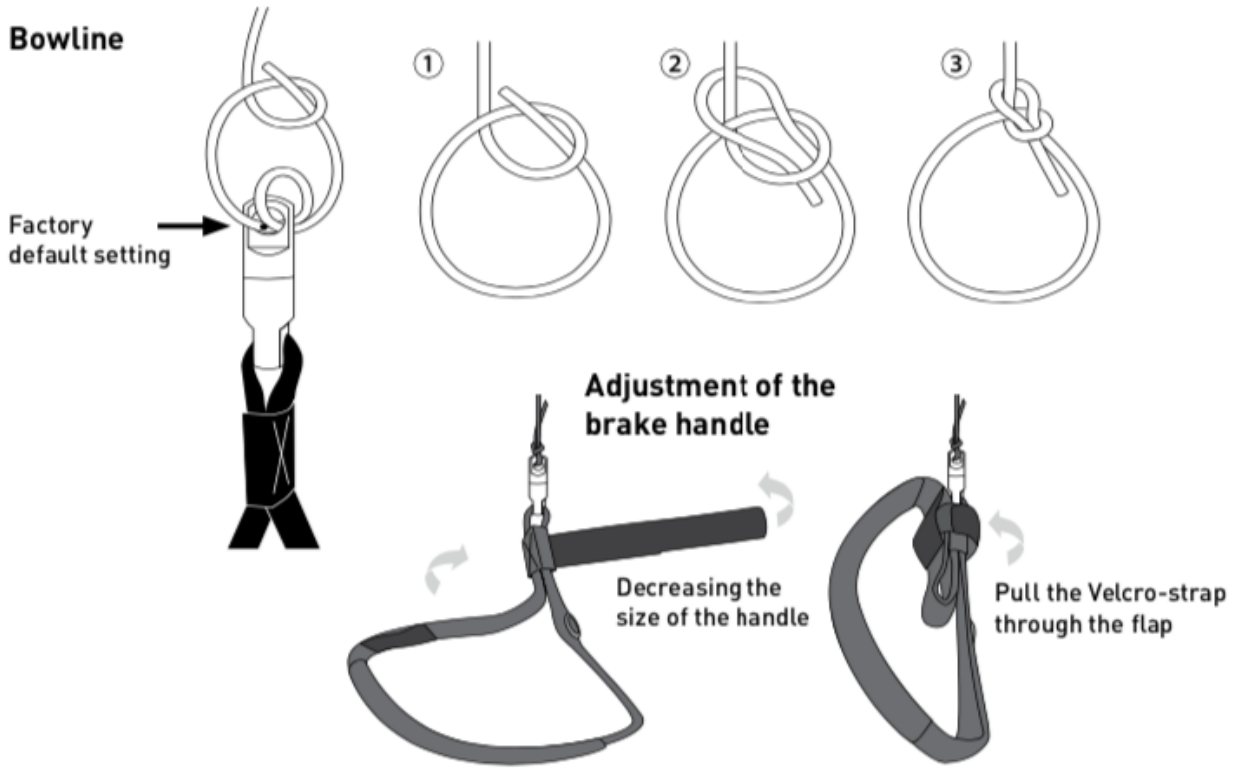


Illustration 07_ Bowline

PAY ATTENTION_ Please note that the relative braking distance changes with the height/ length of the harness. When fixing the setting, make sure that both sides are symmetrical and that a permanent knot is used. The double fisherman's knot/ spar or pile stitch has proven particularly effective in that since it weakens the lines the least with excellent slip resistance.

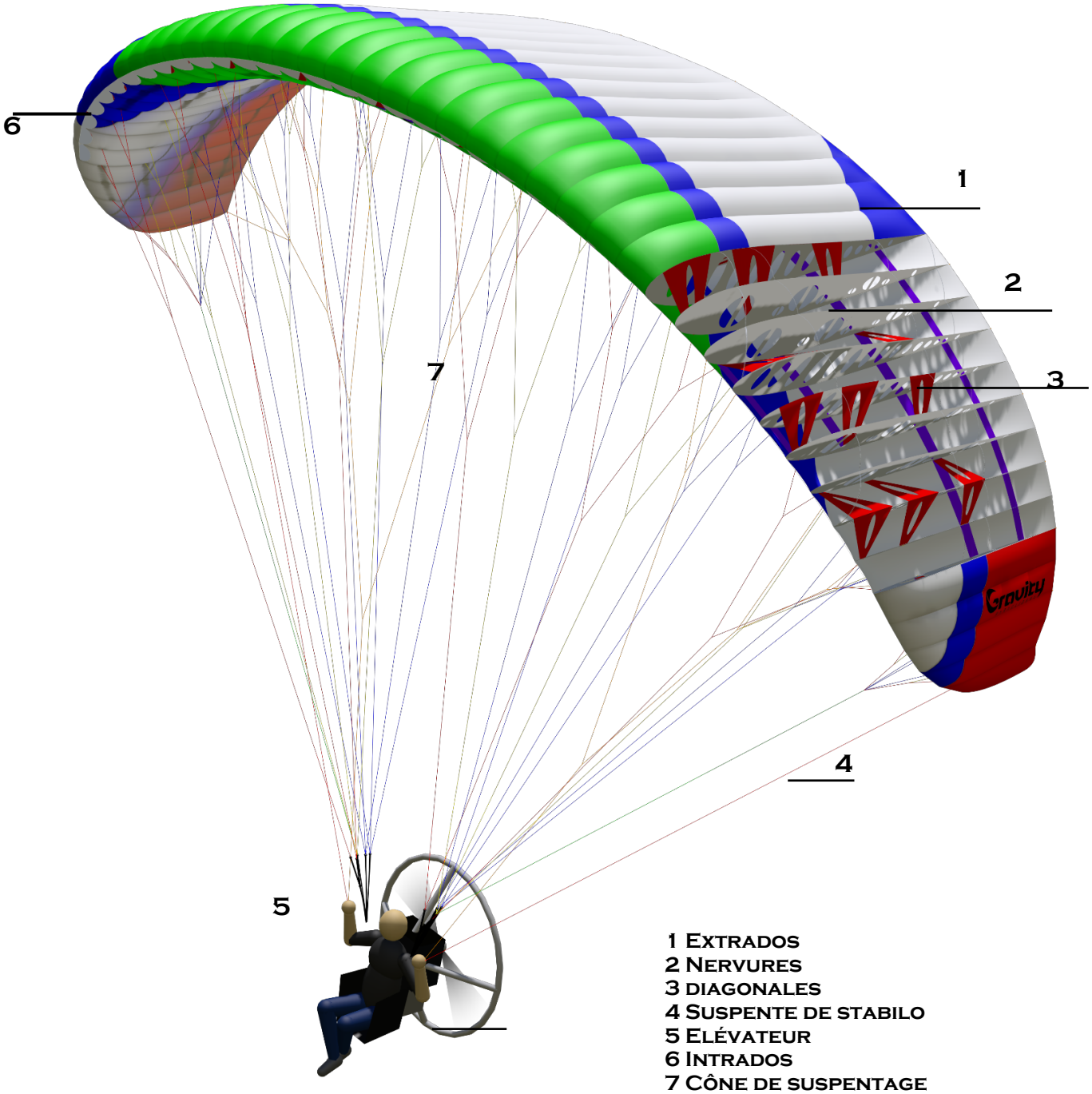
4 SECURITY PRECAUTIONS_

1. 1. Before the first flight, the cap, lines, all connections and sewing, the shackles, brake lines and brake line knots as well as any twisted lines must be checked by appropriately trained personnel and confirmed on the type plate
2. Make your first flight in a known flight area/ territory and in calm conditions
3. Test your GRAVITY XONE only over water
4. During a "dynamic flight" the gravitation does not only affect you, but also on the glider. Do not underestimate this state and the forces!
5. Always fly your GRAVITY XONE with at least one rescue device!
6. Compliance with the air traffic act and regulations are applicable in the respective country must be observed and revised carefully
7. Successful, certified completion of the appropriate training and license as well as the current existence of the appropriate level of knowledge / the current flight experience are prerequisites for using the GRAVITY XONE
8. The use of suitable, tested and approved accessories (helmet, harness, rescue device) is a prerequisite for using the GRAVITY XONE
9. Carry out a thorough material check of your equipment (top sail, bottom sail, ribs, especially the lines, carabiners, belt buckles, cloth, speed system, etc.) before every start
10. A flight with a crack or hole in the wing or line can be life-threatening
11. Always make sure that the aircraft is in a proper flying condition and that the required inspections have been carried out regularly
12. Be aware that as a pilot you must be physically and mentally able to carry out the flight unimpeded. You have to concentrate fully on flying in order to possibly avoid unpleasant flight conditions
13. Most accidents are due to pilot errors
14. Never fly near high-voltage lines, airports or highways, over people or during a thunderstorm! Otherwise you could endanger the life and physical integrity of third parties and / or your own and act grossly negligent at the same time!
15. The minimum distance must never be less than 50 m. At airports, this is a radius of 5 km
16. Find out about the prevailing weather conditions in the weather report and on site in advance
17. Only use the GRAVITY XONE at wind speeds where you are able to control the glider 100%
18. Never use the screen during approaching thunderstorms or storms or when there is a high probability of thunderstorms or storms
19. Land immediately when thunderstorms or bad weathers approach!
20. Aerobatic flying is generally prohibited and life-threatening. Unpredictable flight situations can occur that may get out of control. There is a risk of physical and thermal overload on the material and/ or the pilot

PAY ATTENTION_ Failure to disregard one or more safety precautions or violation can turn flight fun into a life-threatening event.

5 DEVICE DESCRIPTION_

5.1 Short description



1 EXTRADOS
2 NERVURES
3 DIAGONALES
4 SUSPENTE DE STABILO
5 ELÉVATEUR
6 INTRADOS
7 CÔNE DE SUSPENTAGE

Illustration 08_ device description

5.2 Technical Datas_

Size	XS 23	S 25	M 27	L 29
Recommended start weight		65 - 90 kg	85 - 115 kg	100 - 130 kg
DGAC (all up + paramotor unit)	60 - 90kg	70 - 110 kg	90 - 140 kg	110 - 165 kg
Flat Area (simple)	23,5m²	25,5m²	27,5m²	29,5m²
Projected Area	19,612m²	21,281m²	22,95m²	24,619m²
Nr Cells	46	46	46	46
Flat Wingspan	11,00m	11,46m	11,901m	12,326m
Projected Span	8,632m	8,992m	9,338m	9,671m
Max Chord	2,53m	2,636m	2,737m	2,835m
Flat AR	5,15	5,15	5,15	5,15
Projected AR	3,799	3,799	3,799	3,799
Bridle 3d length	264,739m	294,91m	327,436m	359,289m
Bridle height m	6,491m	6,761m	7,021m	7,272m
Glider weight	5,15kg	5,35kg	5,6kg	5,95%
Certification	DGAC	DGAC	DGAC	DGAC
Top // Bottom // Rip Surface Cloth	Dokdo30 // Dokdo 20 // Dodo 30HF	Dokdo30 // Dokdo 20 // Dodo 30HF	Dokdo30 // Dokdo 20 // Dodo 30HF	Dokdo30 // Dokdo 20 // Dodo 30HF

Illustration 09_ technical datas

5.3 Materials – Lines and Lineplans

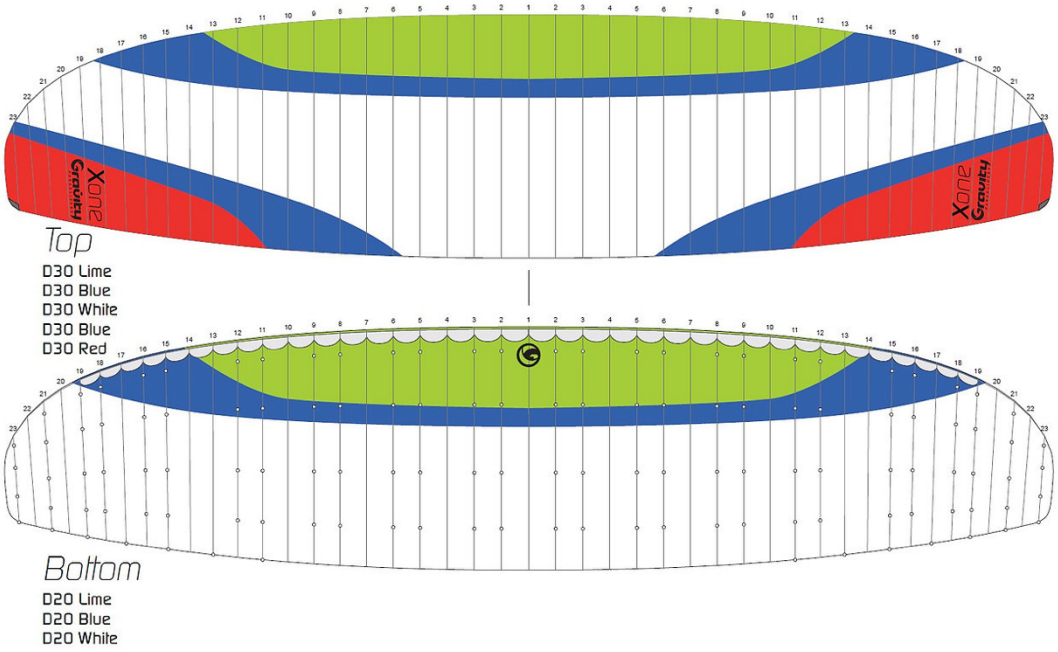


Illustration 10_ used materials

Illustration 11_ used lines

Illustration 12_ used lines

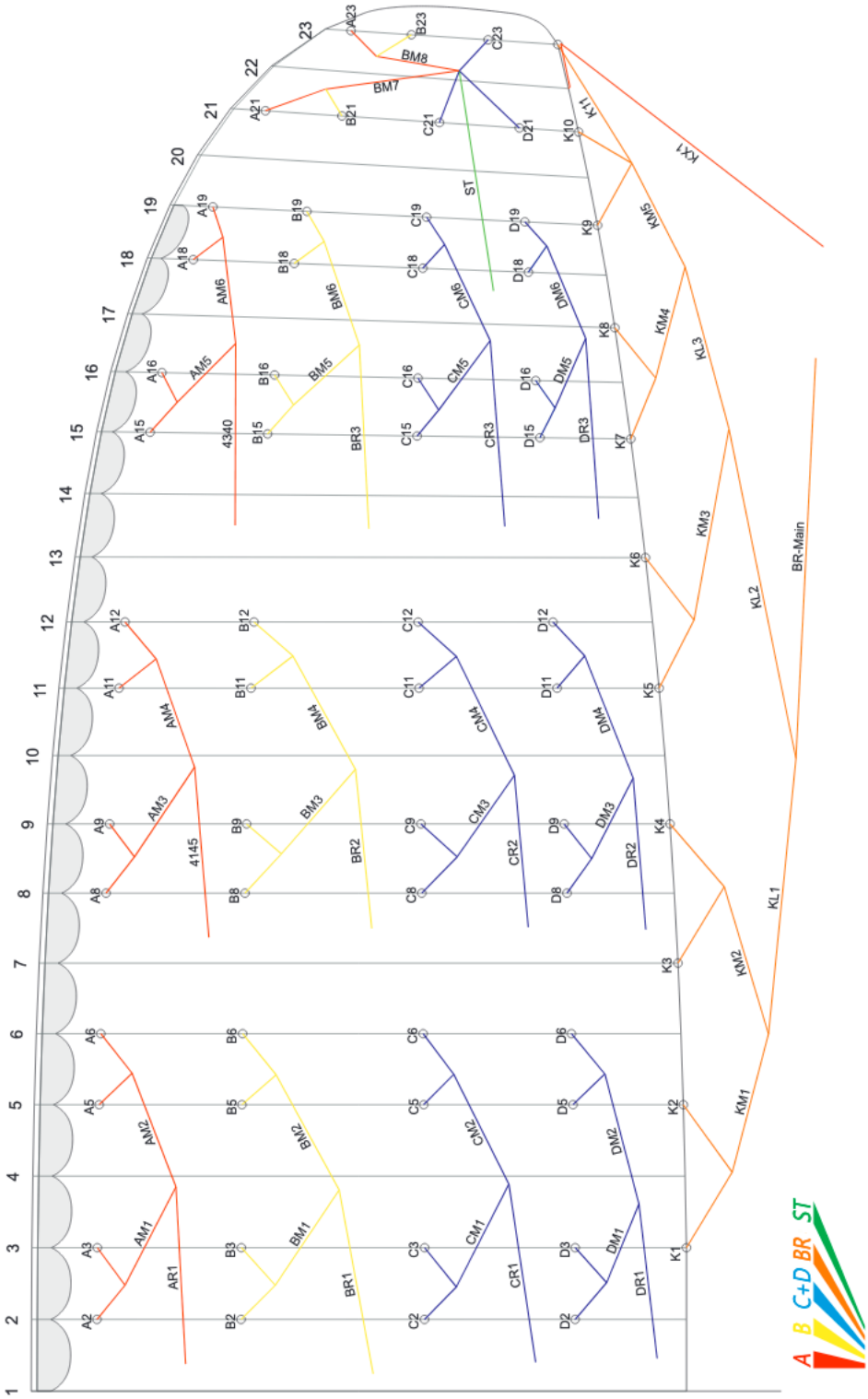


Illustration 13_ lineplan

5.4 Riserbelt

The A- and B-risers have different colour codes to ensure positive identification at take-off and during a B-stall decent. Other adjustable, removable or variable mechanisms are non-existent.

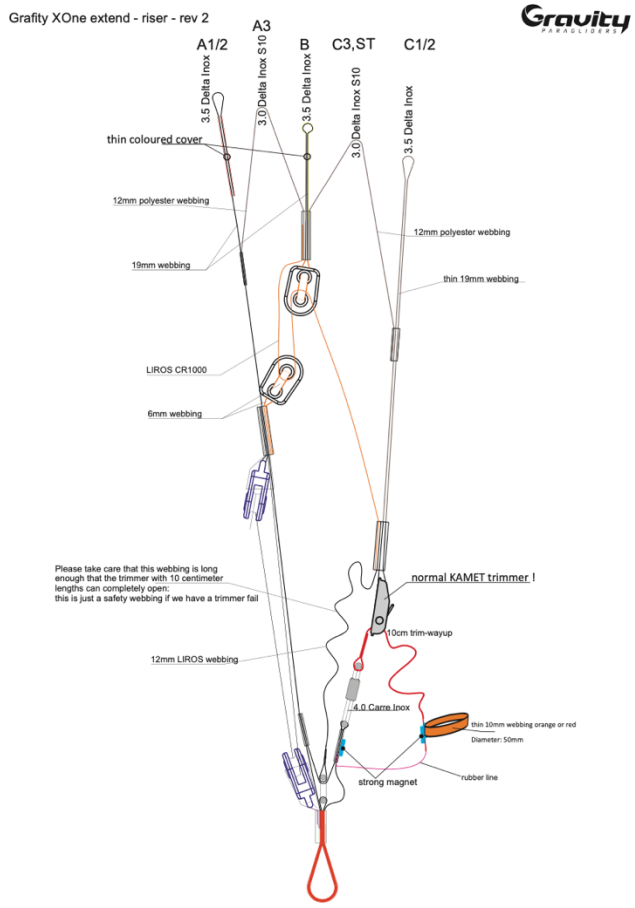


Illustration 14_ hybrid risers sketch
Illustration 15_ hybrid risers pic

Number of risers: 3 + 2. The risers of the Gravity XONE consist of 19mm webbing

5.5 Speed system

The GRAVITY XONE is equipped with a very effective foot actuated speed system. When applied, it increases the speed up to approx. 15 km / h depending on the wing size, pilot weight and surface loading respectively. Consequently, it shouldn't be activated in extreme flight conditions or deactivated as soon as such occurs. All extreme flight attitudes (e.g. collapses) happen more dynamically at higher speed. Since the maximum acceleration distance refers to the safety behaviour of the wing, it may occur that some harnesses won't be able to use the full acceleration distance!

The speed system needs to be adjusted accordingly before the first flight. Therefore, the connection lines of the foot extensor are being connected through the brummel hooks with the speed system on the riser.
To be able to undertake the right adjustment the harness should be hung up so you can sit in flying position. The attached risers are best held up by someone else. It should be adjusted in a way so that the pulleys are on top of each other and you have your legs stretched out. And you are also responsible to watch out that the speed system is adjusted symmetrically and not too short so the glider is not pre-accelerated in the flight.

Make sure to always operate the accelerator in a way that you feel comfortable under your glider at all times.

 PAY ATTENTION_ It is essential to ensure that the accelerator is not set too short so that the glider is not pre-accelerated.

5.6 Trimmer

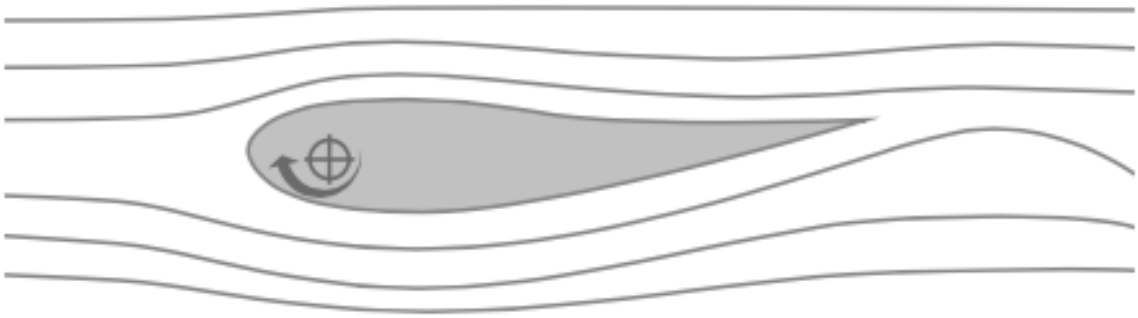
The trimmer is used for 2 applications. For the constant high-speed flight and the slight curve behaviour due to the induced propeller torque.
The torque brought about by the propeller, which affects the glider like the one-sided weight shift, can be compensated for by finely dosed opening of the trimmer on the inside of the curve.

The trimmer has a wide adjustment range. For take-off and normal flight, the trimmer should be set to neutral (markings). The XONE has a small negative-trim span which enables a slow-down for landing. Be careful, the negative trim can cause a delay during a stall manoeuvre. The trimmer is set positive in order to continuously fly faster. Make sure that you always open the trimmer at the same time! Especially with the smaller wing sizes, opening the trimmer on one side can lead to a sporty turn away. The same applies to the closing! Should you not operate the trimmer symmetrically, change it gradually and step by step. The fast side with the trimmer fully open - DO NOT slow down via the main brake to maintain the straight flight but only via the Tip-Steer.

 PAY ATTENTION_ In fast flight with activated accelerator or open trimmer, only use the TipSteer for steering.

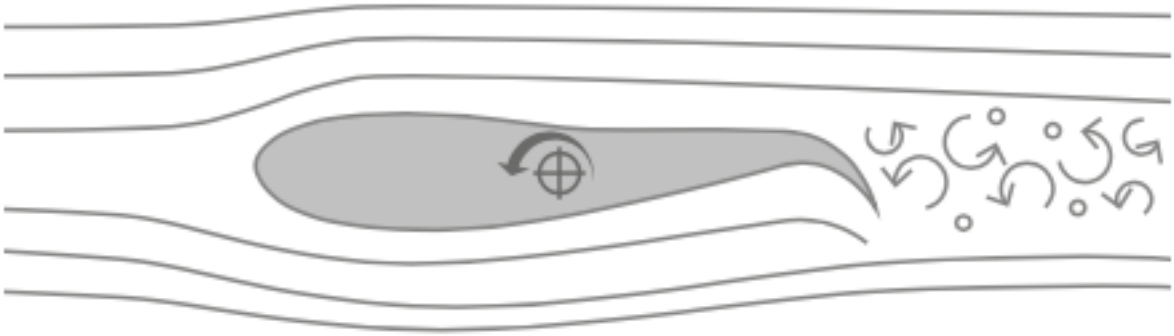
Influential steering factors on the reflex profile

In contrast to active flying with mountain gliders, the use of brakes with reflex wings in turbulent air is rather counterproductive and can lead to front collapses. By using the main brake, the pressure point is shifted further back, which reduces the reflex-typical high pressure in the wing nose, which can cause the front to fold in. Therefore, only operate the Tip-Steer when the trimmer is open or the accelerator is activated.



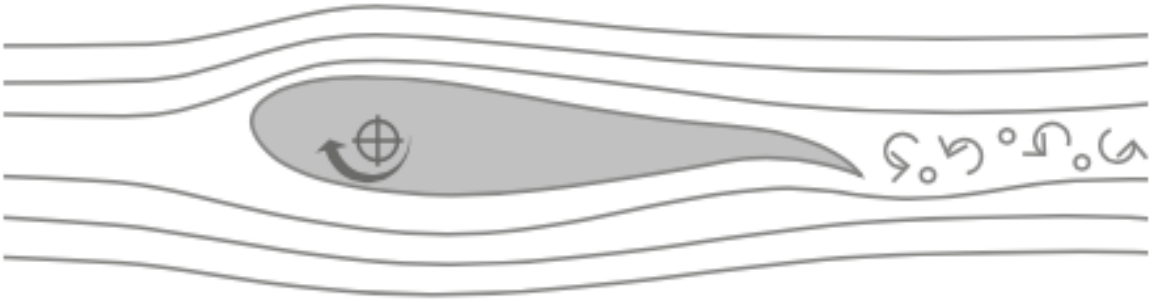
OPENED TRIMMER

Fast flight - pressure point moves forward and ensures high stability of the wing front, which almost eliminates the susceptibility to front collapses. The righting moment increases the angle of attack.



OPENED TRIMMER – APPLICATION OF MAIN BRAKES

The action of the main brake even with minimal effort ensures that the pressure point moves backwards. this can lead to front collapses. The righting moment reduces the angle of attack.



CLOSED TRIMMER

When the trimmers are closed, the profile behaves similar to a mountain umbrella. Useful for thermal flying and take-offs with zero wind. the brake acts like a mountain wing.

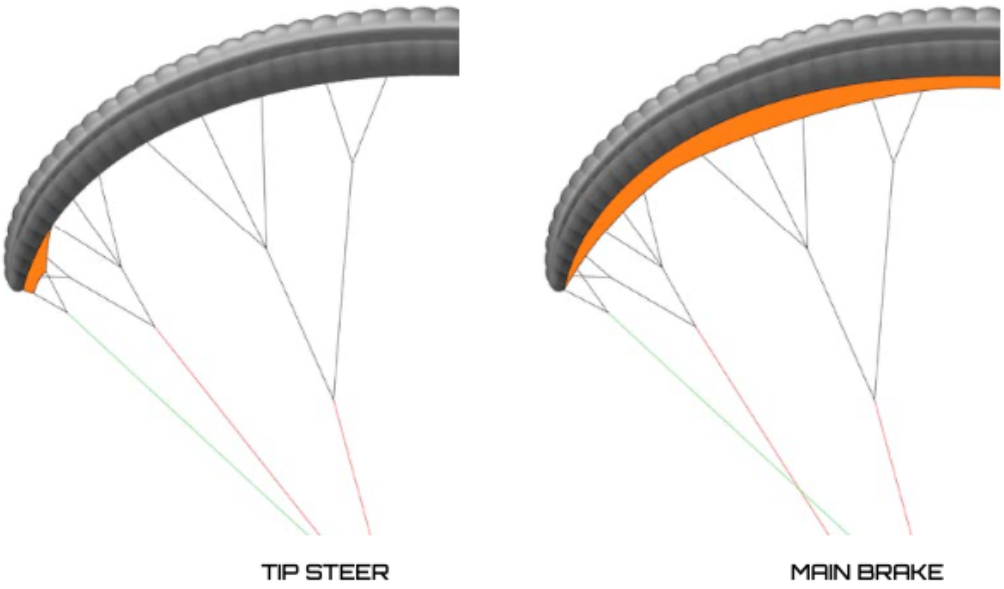


Illustration 16_ tip-steering profile XONE

When the trimmer is open or the accelerator is activated, the wing forms a reflex profile. This should not be affected by operating the main brake. The Tip Steer has no influence on the reflex profile. Especially for pilots with a lot of mountain paragliding experience it is unusual to release the brakes. However, pulling the main brake results in the loss of the reflex properties.

5.7 Colours and Design

“Never change a winning horse!”

One of the unique selling points of the GRAVITY product range is that each glider product is only available in a single lead design and comes without colour variations or special designs. That way we can maintain supply capability within the agreed lead times and can guarantee the price stability. We are aiming at keeping basic calculations stable for sales and as well as within the production processes with forecasted quantities. We have made a big effort at creating each product of the glider product range holistically and to give each product unique features and moreover high recognition values.

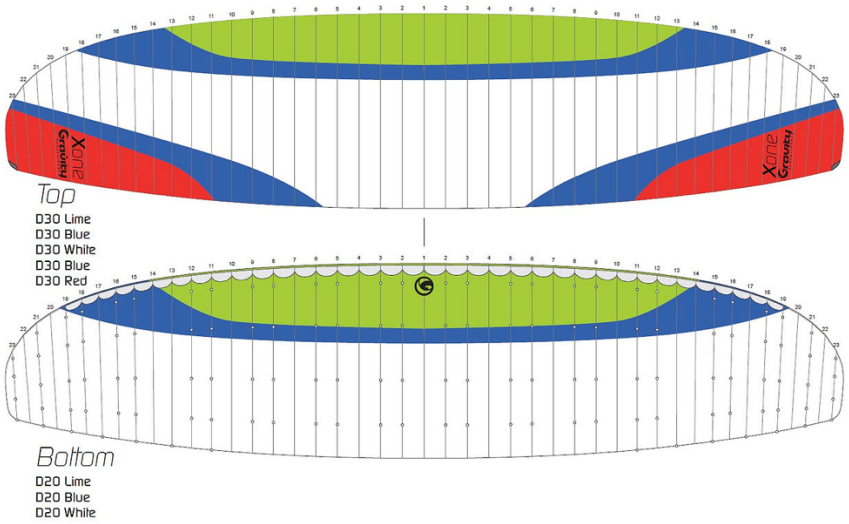


Illustration 17_ colour catalouige scheme

Illustration 18_ colour sheme

5.8 Environmental aspects

Having a responsible attitude towards fellow human beings, our general surroundings, habitat and nature is a matter of course for us, just like when dealing with every single pilot. Accordingly, we ask you to pursue our sport in respectful manners and way in regards to our environment. The sensitive biological equilibrium in the mountains demands consideration, which comprises not leaving garbage behind and using existing paths for entering launch sites. Especially at take-off sites, unnecessary noise is truly misplaced.

5.9 TRANSPORTATION and STORAGE_

When transporting the paraglider, make sure that it is not exposed to any kind of liquid. It must be packed dry. When storing the XONE, it should be ensured that it is not exposed to UV rays. In addition, it must not be stored together with acids or the like or anywhere near them. Dry storage is extremely important.

 PAY ATTENTION_ After a long storage period, the glider must be checked thoroughly.

6 THE FLIGHT_

6.1 Flying experience

These operating instructions only deal with the relevant points regarding flight technology that are important for the GRAVITY XONE It cannot and should not replace sound flight training in a recognized, authorised flight school! Without flight training and experience, flying with paragliders is extremely dangerous!

6.2 Take-off

After the paraglider has been unpacked and laid out in a semicircle, the following points must be followed and checked:

1.) the paraglider should be flattened out in a way that the lines in the middle of the paraglider are evenly under tension and slightly earlier than those at the wing ends when they are pulled up with the A-risers. This ensures an easy and directionally stable start
2.) When laying/ flattening out, please pay attention to the wind direction so that when pulling up against the wind both halves of the paraglider can rise symmetrically
3.) If the risers are not twisted, the brake lines run freely through the guides to the rear edge of the glider
4.) No lines are to run directly underneath the canopy cap. Make sure they are properly organized underneath the gilder canopy. Otherwise it can have disastrous consequences
5.) The 5-point check should never be forgotten of course
    The 5-point check should include the following:
    a) buckled up/ strapped (helmet, harness and carabiners closed)
    b) suspended (the risers are not twisted when hung in the carabiner, the accelerator is correctly hooked in, the carabiner is locked)
    c) lines (A-lines above, all lines sorted, brake line runs freely to the brake roll(er))
    d) canopy (cap is arched with an opened leading edge at the start)
    e) wind and airspace (wind suitable for take-off, free airspace)

The centre of the screen of the GRAVITY XONE is identified by the GRAVITY logo on the leading edge. It is sufficient to only take the A main risers (into your hands). Since the GRAVITY XONE only shows very little tendency to shoot forward/ eXONEing the pilot, it only needs to be slowed down a little in the starting phase. Any directional corrections with the brakes should only be undertaken when the canopy is already over the pilot, otherwise the glider can fall back due to excessive braking. The remaining risers should not be touched in the starting phase. The cap is filled with a steady, even pull and only a slight start impulse overall. Unlike conventional gliders, it is not necessary to fill the GRAVITY XONE with strong wind-up movements or even a few quick steps. This also applies to little wind and even zero wind. , Dosed winding is the easiest and safest way to start the GRAVITY XONE Once the pilot has made sure that the cap is fully open above him, the final decision to take off is made. After a few dynamic steps, the pilot takes off.

6.3 Turning flight

The GRAVITY XONE has great manoeuvrability and reacts to control impulses directly and without delay. By shifting your weight, you can fly perfectly flat curves with minimal loss of height. A combined control technology consisting of the proportioned pull of the brake line on the inside of the curve and weight shifting is ideally suited for every turn. The brake line pull determines the curve radius. From approx. 75% one-sided brake line pull, the GRAVITY XONE takes a significant side inclination and flies a fast and steep curve that can be extended to the spiral dive.

 PAY ATTENTION_ If you pull a brake line too abruptly, the cap can turn negatively!

6.4 Active flying

In turbulent air, the GRAVITY XONE should be flown lightly braked on both sides. Increasing the working angle increases the stability of the glider. When flying in strong thermals or in very rough conditions, make sure that the paraglider cap does not stay behind you. This can be prevented by loosening the brakes in order to take up some speed when flying into the upwind area. If the surface eXONEs you when leaving flying into downwind areas, the paraglider must be braked accordingly.

When flying through downwind zones, accelerated flight makes sense. The design of the GRAVITY XONE has a very high inherent stability. However, an active flight style in turbulent air (as described above) contributes significantly to increasing safety. Collapsing and deforming of the cap can be prevented by active flying.

6.5 Landing

Prepare yourself for landing already in sufficient height. Thanks to its excellent flare properties, the GRAVITY XONE is easy to land if you brake at the right moment. From a straight final approach to the wind, you let the paraglider slide with normal speed and straighten up in time in the harness. Depending on the wind conditions, the brakes are resolved at a height of approx. 1 m and swiftly pulled until you reach the stalling point. Landings out of steep curves and quick changes of curve before landing are to be avoided due to the associated risk of swinging!

 PAY ATTENTION_ During strong wind starts, ground handling and landing, the leading edge can hit the ground at very high speed. This is to be avoided, as otherwise profile tears, damage to the seams or the fabric can occur.

7 RAPID DESCENT_

Should a fast descent be necessary due to special weather conditions such as thunderstorms, a weather front, extreme winds or other dangers and hazardous situations occur, the following options are available:

PAY ATTENTION_ The manoeuvres described for quick/ fast descent put an extra amount of strain and pressure on your paraglider and should therefore only be used for training or used in emergency situations.

7.1.1 „Big Ears“

Both designated outer A2-risers (grab at or above the quick links) are being pulled down simultaneously for 15 - 20 cm to fold in the wing tips. The brake toggles are to be held in hand together with the pulled down a-lines. for additional stability and for an increased sink rate

the speed system should be actuated. The glider remains fully steerable by weight shifting and descents at an elevated sink rate (4 - 7 m/ sec, depending on how many cells are folded in) straight forward. Once the a-risers are released, the folded wingtips re-inflate automatically, if not you may pump the brakes gently. due to the high wing load “big earing” is a very stable flight condition even in turbulent conditions. Please be aware that you reduce the trim speed during “big ears”, but this can be compensated by applying the speed bar. “Big ears” in combination with weight shifting in order to get the spiral dive, will achieve the highest sink rate. This decent method is often taught in SIV training. Be mindful that this exposes the glider to extreme loads, should one need to use this manoeuvre we recommend an equipment inspection afterwards.

7.1.2 B-Stall

Another very efficient method is the B-stall. The B-line stall is generally considered the easiest descent aid. But be careful, if it is executed incorrectly, it is anything but harmless! The B-line stall allows you to sink from 6 to over 9 m/ s. Orientate yourself on your whereabouts and the airspace below and behind you before you start a B-Stall. Make sure you have enough height. To start, take the two B-lines over the line locks. With the brakes always in your hands, pull the B-risers down evenly and symmetrically from shoulder to chest level.
Remain in this position. Your sail will come to a halt, the glider will partially empty and stabilize over your head. The canopy tilts back a little, which should under no circumstances entice you to release the B-lines again. The result would be heavy advance and commute. Only when the sail has stabilized over your head can the diversion begin. To do this, bring the B-risers back quickly and symmetrically to their starting position. We recommend that you do not just let go of the straps, as this results in enormous mechanical forces on the cloth, seams and lines. Read about what to do if you unexpectedly fall into a stall, in the section "Extreme flight manoeuvres".

7.2 Extreme flight manoeuvres

Even though the GRAVITY XONE has a very high aerodynamic stability it is possible that the glider gets into an extreme flight situation due to pilot errors or turbulent air. The best method to stay calm and react correctly is to take part in a flight safety course. The pilot will learn to manage extreme flight situation under professional supervision. extreme flight manoeuvres may only be executed in calm air and in sufficient height under professional supervision (e.g. safety trainings). Once again, we mention that a rescue system is required by the law.

The following extreme flight figures and flight manoeuvres can either be caused intentionally, through turbulences or through pilot errors. every pilot can get into these flight situations! all mentioned extreme flight figures and manoeuvres are dangerous if performed without the appropriate knowledge, enough altitude or necessary introduction. a wrong execution of these described figures and manoeuvres may have fatal consequences!

7.3 Spiral dive

As with turning and flying curves, initiating the spiral dive with the GRAVITY XONE is very easy. The steep spiral leads to very good sink values (with up to approx. 15-20 m/ s). In order to be able to use the spiral dive safely in extreme situations, it should be practiced in calm and easy conditions. You move vertically downwards with/ with the air mass. Do not underestimate the G-forces acting on the pilot with an effective spiral. The canopy nose tilts sharply when the inclination increases while spiralling. The behaviour is very dynamic and should be piloted with the release of the brake line on the inner side of the bend/ curve or with the outer brake and only practiced with the appropriate professional support.

 PAY ATTENTION_ If initiated too quickly there is a risk that the canopy will turn/ spin negatively. In this case, release the brake again and start commence into the spiral manoeuvre again.

7.4 Wingover

The pilot has to perform right and left turns with increasing bank until the desired angle is reached. Collapsing wingtips are prevented by gently applying brake pressure in the up- and/ or down-swing of the wingover. Normally there is no danger of collapsing wing tips with the GRAVITY XONE except for when there is a very high bank. With shifting the body weight while applying the brake it is possible to fly the highest possible wingovers.

7.5 Full Frontal

A negative angle of attack/ working angle caused by turbulence or the pilot pulling down the A-risers on either side causes the leading edge to collapse. The GRAVITY XONE ends a front collapse quickly and independently. Evenly symmetrical pumping of the brakes can support reopening.

7.6 Collapses

Although the GRAVITY XONE has very high aerodynamic stability, strong turbulence however can cause the canopy to collapse on the side. This is normally not critical and an automatic reopening takes place immediately. The reopening can be supported by braking (pumping) the affected side vigorously while taking countermeasures on the open side. In the case of large collapses, countermeasures must be carried out in a dosed, well-proportioned manner so that the flow on the positive side of the glider is not completely cut off and gets into a negative spin.

7.7 How to avoid collapses

Tips and tricks by GRAVITY chief designer, test and competition pilot Ernst Strobl

Single side collapses, especially close to the ground, are the number one reason for accidents with paragliders. How to avoid them or how to handle the situation when it already happened, some tips and tricks from GRAVITY test- and competition pilot Ernst Strobl:
The best way to avoid collapses up front is the right choice of the paraglider. A lot of pilots fly a glider that is a little too hot to handle for them. So why don`t you get a glider with a lower rating but in the end fly better and higher in the updrafts and have a lot more fun and by the way be safer, too.

To optimize the feeling for your glider on the ground, try the following:
Practice on the ground with the right wind at a suitable location. Slowly pull up the canopy and try to hold it up as long as possible without looking at it. That is a good way to improve the feeling for your glider and is a prerequisite for „active flying“(the key to avoid collapses). Very important is also a close look at the terrain. Watch for obstacles that could cause turbulences (buildings, trees, ...). On certain days, for example a freshly mowed meadow as landing field, could cause a lot of thermal activity. Fly very alert on a thermal active day. Watch your canopy, collapses most of the time, announce themselves. Light braking in turbulences mostly avoids a collapse. You should have already practised that on the ground. Should a collapse occur close to the ground don`t always try to prevent a turn away. There is a danger when the braking on the open side is to strong, to lose the airflow on this side and stall the glider. Rather use the turn away motion to try to open the collapsed side. Apply smooth braking on the open side, depending on the size of the collapse, and maybe a little pumping action. Some canopies open a lot better when the brakes are fully applied once on the according side, but that depends on the brake lines adjustment and your arm length.

Wrapped lines are cleared by braking the opposite side at enough altitude and pumping the affected side a couple of times. Watch out for a possible stall. If that does no clear the situation, try to pull down the outer lines as much as possible. If you are too low for that, stabilize the canopy on the opposite side avoid turning away, and leave the lines like they are. Instead of any - risky manoeuvres rather concentrate on the landing. In the end one more advice in order to have all kinds of situations under control. Visit a safety-training above water. There is no better way to practice the right behaviour than simulating a dangerous situation. Don`t get caught off guard by your first collapse. In addition, during safety-training you can familiarize yourself with the particulars of your equipment and you gain confidence in your gliders as well as your own abilities. Thus far the expert advice concerning collapses by Ernst Strobl

7.8 Deep stall

The GRAVITY XONE is not sensitive to deep stalls. He ends a blind flight independently, initiated by pulling the brake lines or the rear risers too strongly, or by a B-Stall stalling too slowly, with the brakes or the rear risers released. If the glider is in a blind flight due to a special flight situation or flight configuration (e.g. too low take-off weight), the pilot ends it by symmetrically "pushing forward" the A-riser on both sides or kick the accelerator.

 PAY ATTENTION_ Flight exercises, in which one deliberately causes the stall, should only be carried out at a sufficient safety level and height. Under no circumstances should the brakes be used one-sided during a deep stall, as this could cause the canopy to spin (negative curve). You should only release the brake once the XONE is in a deep stall and the canopy nods forward.

7.9 Full stall

To initiate a full stall, both control lines are slowly brought to the stall point without winding. As soon as the stall point is reached, you keep your hands still and there. The glider tilts backwards. In this moment, the hands must never be put up. The canopy has to be stabilized and pre-filled before recovering the full stall. To do this, slightly release both brakes symmetrically. Both brakes are slowly and symmetrically released to fully reject. With correct symmetrical rejection, the cap surges forward quickly, as soon as the wing nods strongly forward, the glider must be braked briefly and firmly. An asymmetrical recovery must be avoided, there is a risk of falling/ diving into the glider.

7.10 Negative spin

A negative turn/ spin is initiated, when the pilot pulls the brake on one side fast and completely through to the point of stall while letting the other brake partly free. With a negative turn the glider turns relatively fast around its centre, while the inside flies backwards. In order to exit a negative spin, the applied brake is released, where stalled side of the wing can pick up speed or one exits though a full stall, by braking, the flying side into a stall as well.

PAY ATTENTION_ The negative spin and the full stall are both unpredictable and dangerous flight manoeuvres and should never be deliberately flown except in safety training and carried out under professional instruction. There is a risk of a riser twist. The brake lines can get blocked during a twist.

PAY ATTENTION_ Using full stalls and negative curves/ spins as means to a quick descent is hazardous and dangerous, as incorrect recovery, regardless of the type of glider, can have disastrous consequences.

7.11 Emergency piloting/ control

If for some reason it is not possible to control the GRAVITY XONE with the brake lines, it can also be controlled and landed very well with the back risers. Turns can be flown with a weight shift, but please pay attention that the glider does not lock in a spiral.

PAY ATTENTION_ During strong wind starts, ground handling and landing, the entry edge can hit the ground at very high speed. This is to be avoided, as otherwise profile tears, damage to the seams or the fabric can occur.

The XONE is based on the latest development knowledge and is therefore at the maximum of the safety standard in its class and category.

Nevertheless, we would like to ask you to always practice aviation with the necessary caution and respect. This also includes flight preparation by dealing with the meteorological conditions and the correct assessment of the weather situation.

8 REPAIRS_

In general, repairs to paragliders may only be carried out by authorized service centres. Small damages such as cracks or small holes up to a size of 2 x 2 cm, which can be carried out without special equipment, may be carried out by the pilot him-/ herself. The supplied repair adhesive sail from the repair kit is to be used. Cracks or small holes are made from either side of the damaged area. Please note that the repair adhesive sail protrudes at least 2 cm above the damaged area on all sides. The adhesive sail can be cut to the appropriate shape. Rounding the corners prevents detachment and fraying.

9 MAINTENANCE and CLEANING_

Since only high-quality materials are used at GRAVITY, the GRAVITY XONE will retain undiminished airworthiness for several years if it is properly cared for and maintained. How quickly your GRAVITY XONE ages, ultimately depends on how often it is flown, where it is flown, how many UV-hours it accumulates and how carefully and regularly it is cared for. Below are some useful tips on care and maintenance:

1) Long-lasting UV-radiation and extreme acro manoeuvres reduce the resistance of each paraglider cloth over time
2) Never expose your GRAVITY XONE to unnecessary sunlight, but put it back in the glider bag after the flight
3) When choosing the take-off site, pay close attention to the surface on which the paraglider is laid out
4) Stacking the opening reinforcements properly increases the life-span of the paraglider
5) Don't drag your paraglider over the ground and pack it on grass
6) Please pay attention to the following:
   a) the lines are checked regularly for damage
   b) the lines are not nodded unnecessarily and you do not step on the lines when laying them out
   c) check the strength and correct length of lines after overloading (tree landings, water landings, etc.) and have them replaced if necessary
   d) when noticing changes in flight behaviour, all lines lengths must be checked.
   e) the brake stem line on the brake handle must not be knotted unnecessarily, every knot weakens the line

The best way to clean the cap is to use warm, clean water and a soft sponge. Under no circumstances should chemicals be used for cleaning, as these damage the coating and the strength of the cloth. Always store your paraglider dry and protected from light, never near chemicals. After 24 months or 150 operating hours at the latest, the GRAVITY XONE must be brought to the manufacturer or GRAVITY Competence Centre for inspection. On request, we would be happy to carry out the required inspection before, if you believe that it is necessary.

9.1 Packing

Chose a clean and soft ground to spread out/ flatten out your glider. Free the cloth of soil, dirt or stains like from leaves, grass or sand and sort the lines evenly. Use the riser-fix system at the rear end of the wing for the risers. make sure that the glider is try and clean be- fore you pack it up. Now start to fold the glider from the middle out cell by cell. after that place both halves on top of each other and fold the glider to the end format. Shifted packing prevents constant abrasion of the middle of the paraglider.

9.2 Recycle

GRAVITY uses only safe materials and puts a lot of value into saving resources as well as using non-detrimental materials. Nevertheless, the materials used in a paraglider need proper disposal. Please return worn out gliders to GRAVITY airsports & more GmbH or disassemble the glider into its parts and recycle them accordingly.

10 FLYING ACCESSORIES_

10.1 XFusion Rescue system, performance and quality - in a petite pack

GRAVITY presents a ground-breaking, innovative series of reserve parachutes in the latest format. The very light cross canopy X was designed and built, combining premium materials and the ultramodern technical enhancements, providing all constructional advantages of the square reserve parachute with a sensational weight of only 0.98 / 1.2 kg. The Xfusion not only impresses with its little pack-weight but also with precise and quick responsiveness when it comes to opening and sinking rates. Using delicate scaling and research, the cross-canopy shape as well as the air outlets making its flight behaviour practically free of pendulum movements. This series was produced to ensure safety, using highest quality standards in materials and production – designed to last and to keep you safe from beginner, ambitious, long distance to pleasure and fun-loving pilots.

Specifications

	X100	X115	X130	X150	X220
Weight	0.98 kg	1,20 kg	1,44 kg	1,68 kg	2,27 kg
Surface	28,5 sqm	36,2 sqm	40,2 sqm	45,2 sqm	64,7 sqm
Maximum paylod (sink test)	100 kg	115 kg	130 kg	150 kg	220 kg
Maximum paylod (load test)	100 kg	115 kg	140 kg	160 kg	220 kg
Sink Rate on maxload	5,6 m/ s	5,35 m/ s	5,1 m/ s	5,1 m/ s	5,3 m/ s
Packing Volume	2380 cm3	3850 cm3	4180 cm3	4350 cm3	8700 cm3
Panel	12	20	28	28	28
Number of lines	24	24	28	28	28
Total length	5,80 m	6,20 m	6,50 m	6,90 m	7,10 m
Certification No.	LTF	EN / LTF	EN / LTF	EN / LTF	EN / EÜ_222.2018

USPs

- high safety aspect without horizontal drift
- extremely fast opening time
- unmatched pendulum stability with low sink rates
- very simple packing method with a small packing size
- high-quality material mix with water-repellent material
- cap construction with optimized air outlets
- minimal weight without reducing the geometry
- 220 kg lightest EN certified cross cap on the market

Illustration *19_ Xfusion product range*

11 PRESUMPTION OF RISK_

The use of the GRAVITY XONE poses certain dangers of physical injury or death to the user of this product or third parties. By using the XONE you agree to accept all known and unknown, probable and unlikely risks of any kind of injury. The dangers associated with practicing this sport can be reduced by internalising the warning and safety requirements and content stated in the manual and the care required in individual cases, as well as common sense. The risks inherent in this sport can be largely reduced if you follow both the maintenance guidelines listed in these instructions for use and common sense.

12 LIABILITY DISCLAIMER_

By concluding the purchase contract for a Gravity XONE, you declare your consent to the following points within the legal requirements: THE DISCLAIMER OF ALL AND EVERYTHING CLAIMS arising from the use of the GRAVITY XONE and either its components now or in the future against GRAVITY airsports & more GmbH and all other contractual partners could grow up.

The legal release of GRAVITY airsports & more GmbH and all other contractual partners from any claims regarding loss, damage, injury or expenditure that you, your closest relatives and relatives or any other user of your GRAVITY XONE can suffer from the use of the GRAVITY XONE result, including the liability resulting from law or contract on the part of GRAVITY airsports & more GmbH and all other contractual partners in the manufacture and processing of the GRAVITY XONE and all of its components.

With the occurrence of death or occupational disability, all of the provisions of law listed here come into force and also bind the heirs, closest relatives and next of kin, estate and asset managers, legal successors and legal representatives. GRAVITY airsports & more GmbH and all other contractual partners have given no other oral or written representations and expressly deny that this has been done, with the exception of what is stated here in and in the GRAVITY XONE manual.

13 SAFETY NOTE and LIABILITY_

At the time of delivery, this paraglider complies with the approval regulations of the EAPR (see Appendix). Any unauthorized change will invalidate the operating license! Each pilot bears responsibility for his own safety and must also ensure that the aircraft with which he / she flies is checked for airworthiness before each take-off.

Further we assume that the pilot is in possession of the required valid qualification and that the applicable legal provisions are complied with. Use the device at your own risk! Manufacturers and dealers assume no liability for accidents of any kind and their consequential damage. Follow the safety precautions to fly safely.

14 LIABILITY EXEMPTION and WAIVER_

You hereby declare that - before using the GRAVITY XONE - you have read and understood the entire manual of the GRAVITY XONE, including all instructions and warnings contained in this manual. In addition, you declare that you ensure that - before you allow someone else to use your GRAVITY XONE – that any other users (who will take over the product from you permanently or for a limited period of time) have read as well as understood the entire user manual of the GRAVITY XONE including all instructions and the warnings contained in this manual.

GRAVITY airsports & more GmbH accepts no responsibility, liability and / or guarantee for checks, inspections and repairs not carried out by it.

Stefan Berger
owner & sales

15 MAINTENANCE MANUAL_

English Release.1.1; Oktober 2020

All technical information in this manual has been carefully checked by GRAVITY airsports & more GmbH. However, we would like to point out that no liability is accepted for any incorrectly specified technical information. This applies to legal responsibility and liability for consequences that are based on incorrect information. We reserve the right to make ongoing changes to this manual insofar as they serve technical progress.

15.1 Subject to inspection and inspection intervals

Regular inspection according to the aircraft inspection regulations for certified paragliders. For end consumer devices after 24 months, for school devices after 12 months.

The inspection must be carried out according to the intervals specified above or at the latest after 150 flight hours. Ground handling should be included in the number of flight hours.

 PAY ATTENTION_ in the event of abnormal flight behaviour, the manufacturer should be informed immediately and the glider sent in for checking if necessary.

15.2 Who is authorized to check?

In addition to the manufacturer or the person/ test centre commissioned by him, only the owner of the paraglider may personally carry out the two-year test, given he meets the requirements.

15.3 Rescue inspection equipment

Before the rescue system is packed, it must be checked by the packer. If the parachute has been opened for rescue, it must be checked.

If a rescue parachute is to be repacked, a trigger check must be carried out. It must be determined whether the release force is between a minimum of 3 and a maximum of 6 kg. Checking from the top and bottom sail, seams, all lines to the rescue system.

15.4 Holes and cracks

The upper and lower sails for paragliders and rescue systems must be checked panel for panel/ length of material from the leading edge to the sail's trailing edge. Should abnormalities reveal themselves while testing, the glider needs to be presented to the manufacturer for professional testing.

1.) Check for holes, small or large cracks, strains and chafe marks

2.) Defects on the coating, other abnormalities on the cap such as old repairs

3.) For rescue equipment, a light table must be used to check holes, chafing points and expansions

15.5 Abrasion and expansions

In the case of large and critical chafing, straining and stretching, the affected sailing tracks must be replaced by the manufacturer.

The determined values/ changes are to be noted in the inspection report! Checking the ribs:

1) Visual inspection of the chambers (from the entry to the rear edge) to see whether the inner seams, cell partition walls and stiffeners are in good condition, i.e. without cracks, stretching, straining, chafing, damage to the coating

2) If the ribs are torn, the sewing/ stitching is defective, lose or missing, the glider must be sent to the manufacturer or an authorised dealership or competence centre

3) The specified values / changes are to be noted in the inspection report!

15.6 Tear resistance control

To be carried out with the bed meter at the following points (B.M.A.A. approved patent number GB2270768 Clive Betts Sails). The test sequence can be found in the operating instructions for the bettsometer.

1) Punch a needle-thick hole in the upper and lower sails of the A-line linkage and check the tear resistance

2) The limit value of the measurement is set to 500 g, and a crack length of less than 5 mm

The specified values / changes are to be noted in the inspection report!

15.7 Canopy porosity measurements

At all subsequent measuring points, the air permeability should be higher than at least 20 seconds (after Kretschmer). For smaller air permeability values, the paraglider must be sent to the manufacturer. Measuring points: The porosity measurements according to the

Kretschmer measuring method (please observe the operating instructions) should be carried out at the following points on the cap. Perform tests on the lower and upper sails:

1) middle cell about 20 - 30cm behind the leading edge
2) 3rd cell from the middle left/ right approx. 20 - 30 cm behind the leading edge
3) 10th cell from the middle left/ right about 20 - 30 cm behind the leading edge

The specified values/ changes are to be noted in the inspection report!

15.8 Connecting parts

Checking the risers and und quick link openings:

1) are there chafe marks, kinks, cracks, strong signs of wear?
2) is all stitching tight?
3) is the accelerator movement free and intact?
4) are the brake loops still tight and firmly sewed?
5) are the line locks corrosion-free, is the thread free to move?
6) are the quick link openings/ line locks corrosion-free, is the thread tube clear and intact? Measurement under a load of 5 kg. The determined values are to be compared to the specifications from the DHV certificate form as a declaration of conformity.

Permitted deviations can be found in the manufacturer's instructions. If the shoulder strap or parts of it are defective, spare parts must be ordered from the manufacturer and the defective parts exchanged for an original spare part.

The specified values/ changes are to be noted in the inspection report!

15.9 Lines

Checking the line tear strength: Line selection: A medium A, B and C main line and, if available, a medium A and B cascade line are selected and checked for their tear strength with a tensile strength tester.

Pull speed of the pull cylinder: v = 30 cm/ min

15.10 Tensile strength values and tear resistance

The specified values / changes are to be noted in the inspection report!

PAY ATTENTION_ A fixed value is assigned to each size (line diameter). If the lines cannot withstand the specified tensile load or tear resistance, all other lines must also be replaced. If the tested lines meet these test criteria, only the others will be replaced by new ones. All replaced lines must be marked near the shackle (seam) with a black pen and noted in the test report with the date of the exchange and amount of flight hours from the device. At the next check, an original line nearest to the replaced one is used for the line strength test. A minimal sewing length is assigned to the different line diameters!

15.11 Checking line lengths and fixings

Visually inspect the main, cascade and brake lines for cracks, kinks and chafe marks. First the A-line level, then B. etc.

1.) are all lines and their fixings sewn and attached correctly?

2.) is the coating of the lines intact?

3.) are all loops, knots and sewing in good condition?

4.) are there chafe marks?

15.12 Line length measurements:

Measuring the line lengths is part of the regular data check. The lines must be measured with a load corresponding to 5 kg in order to obtain comparable results. You can find the corresponding line lengths in the aerial sports equipment description sheet in your manual.

1) The measurement is carried out according to the DHV method from the (line) shackle to the cap (including the line loop on the cap).

2) The numbering is from the centre of the screen to the Stabilo. The measurement of the opposing wing side can also be carried out under the same conditions by a symmetry comparison

3) The result is noted again in the test protocol and compared with the nominal line lengths of the DHV-data sheet. The tolerance deviation should not be more than +/- 1.5 cm

4) If a line is defective, it must be replaced immediately. Please take the description of the lines from the line plan, order from the manufacturer and then install or have them installed accordingly by authorized professionals.

The specified values / changes are to be noted in the inspection report!

15.13 Stitch/ Sewing control of trimming and settings

Before a check flight, the canopy and lines must be checked visually when the device is laid out flat and pulled up lightly. Particular attention should be paid to the length of the control lines (brake lines) when the glider is open. A check flight may only be carried out when all concerns regarding incorrect adjustment of the control lines (brake lines) have been removed.

Please revise and study your paraglider manual

15.14 Miscellaneous

All measurement and repair work on the paraglider and rescue system must be fully documented in the inspection report. When repacking the rescue system, it is essential to pay close attention to the special packing method of the rescue system! See the rescue equipment manual for details. When replacing components or modules/ units, only original materials or original spare parts may be used! When sewing, the original sewing pattern must be observed, only use patch and thread material of the same strength and quality as the original! The verification and/ or measurement/ inspection protocol must be signed, (if an authorized dealer or service centre, stamped) including place and date!

16 IMPORTANT -> carried out inspections

1) Before you carry out your own tests and/ or repairs on your paraglider, we ask you to carefully read the following pages attentively. You inform yourself about the terms and conditions of a two-year examination/ check manually and carried out by yourself.

2) According to the new DHV regulation, the customer (glider owner) can carry out the 2-year inspection of the paraglider with his own responsibility with the help of the inspection instructions and all necessary equipment and documents. The paraglider does not have to be sent to the manufacturer for it

3) The 2-year inspection/ check may only be carried out personally by the paraglider owner if he/ she meets the requirements, or by the manufacturer and his authorized inspection bodies. Contact and advise with the manufacturer for any authorized test centres/ dealerships

4) The owner of the glider must be aware of the responsibility that he assumes with a personally and manually carried out 2-year inspection. The single-handed 2-year check is only legally effective if it is confirmed after the test with the date, printed name (in capital letters) and signature on or next to the seal of approval

5) Packing interval for rescue equipment: Repacking every 12 months. Permissible operating time: 10 years with an annual inspection

6) You should inform your insurer in good time/ advance about the legal effects of your own two-year review and check

7) An inspection is only valid if the inspection report is completely filled out. Also inform yourself about possible changes to the inspection instructions from the manufacturer before executing the check

8) Important: If the necessary expenses/ resources for the maintenance check are insufficient or cannot be made entirely (see necessary equipment and documents), the glider should be sent to the manufacturer

9) For paragliders, harnesses and rescue equipment that are not checked, controlled, repaired, exchanged, packed, new or repacked, flown in and/ or other maintenance work carried out other than by GRAVITY-authorized personnel, all warranty and guarantee is void!

10) All maintenance work must be carried out in accordance to the maintenance information in the operating instructions/ manual and the special maintenance instructions of the manufacturer and the publications of the IHB

11) In the event of unusual occurrences and events during the execution of the maintenance work, a technical manager from GRAVITY itself or any authorized dealer/ competence centre is to be informed, who has to decide on further procedures

12) When replacing components, spare-parts or units, only original materials or original spare parts are to be used!

GRAVITY airsports & more GmbH accepts no responsibility, liability and/ or guarantee for checks, inspections and repairs which are not carried out by the manufacturer or any authorized service dealer/ centre.

Stefan Berger
owner & sales