



Papillon[®] **HORIZON**

LTF/EN **B**

MANUAL

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Please read this manual
before you fly your new Papillon HORIZON
for the first time.



PAPILLON HORIZON: AN HONEST B-WING

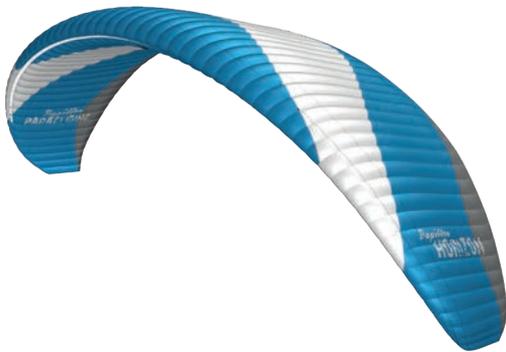
Congratulations, you have chosen the cross country wing HORIZON. The Horizon is a revelation for the experienced pilot. It takes you to a new level of paragliding. His character is reflected in his name. Let yourself be inspired by a feeling of freedom that is second to none. His turnability convinces, he was developed to bring you higher, faster and further.

We would like to thank you for your confidence in Papillon Paragliders and see this as confirmation to continue to pursue and further develop our uncompromising quality standards. We wish you many enjoyable flights and great moments in the air.

The dialogue is important to us because we are always trying to optimize the products in terms of "from pilots for pilots". The exchange of experience at Papillon is a high priority. Therefore, we are looking forward to active contributions in the form of suggestions and criticism. If questions remain open, we will gladly help you at any time.

See you UP in the sky!

Your PAPILLON PARAGLIDERS Team



This manual is an important part of the glider.

Please read it carefully, because there is an OBLIGATION to deal with the glider and its special features. The manual is supposed to make the handling with the PAPILLON HORIZON as easy and safe as possible.

PAPILLON PARAGLIDERS
Wasserkuppe 46
D-36129 GERSFELD

Fax: +49 (06654) 82 96
Tel. +49 (06654) 75 48

info@papillon-paragliders.com
papillon-paragliders.com

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WELCOME TO THE PAPILLON WORLD OF PARAGLIDING!



PAPILLON HORIZON: AN HONEST B-WING

An honest B-wing with revolutionary performance and sporty handling. With its glide ratio of 10.7 and its high speed, the HORIZON is an ideal cross-country wing. The HORIZON reacts precisely and without delay to the smallest control impulses and converts thermals very reliably into heights.

The Sharknose provides more stability at higher speeds. Its characteristics during slow flight are also outstanding. The HORIZON can be started easily and with low take-off speed.

The 3D shaping gives the leading edge a smooth, wrinkle-free surface and, in combination with the Precision Profile Nose (PPN), increases profile fidelity in the nose area. Complex calculations of the ballooning in conjunction with the optimized wing pre-stressing ensure the perfect airflow around the profile. The High Pressure Crossport Design (HPCD) optimizes cross-ventilation of the cross ports and creates a balanced inside pressure of the wing. The line setup is very clear with three main lines.

The intelligent material mix and the high-quality manufacturing of the HORIZON guarantee a long service life with a low canopy weight.



HORIZON

Usage

The HORIZON is a revolutionary high-end performance wing for ambitious cross country pilots. It offers a fascinating sporty handling with impressive performance and high comfort.

The HORIZON is only designed for solo usage and is a light aircraft with a mass of less than 120 kg in the class of paragliders. All sizes are certified according to LTF/EN-B.

Motorised Paragliding

The HORIZON is not certified for paramotor usage.



Winching

Because of its excellent start characteristics and its high trimmed speed, the Papillon HORIZON offers the best conditions for winching operations. Take the following points into account:

- Do not use a tow line tension over 100 kp with the Papillon HORIZON.
- If you are not operating at your usual winch, get acquainted with the local procedures. Every visitor on unfamiliar flying grounds needs to get a good briefing by a local pilot.
- Never winch the Papillon HORIZON with loads outside the permitted weight range.
- All involved persons, machines and accessories need to have the appropriate licenses, approvals or certification for winching. That applies to pilots, hoist operator, towing attachment, attachment points as well as all further machines and accessories for which a certificate of competence is required.

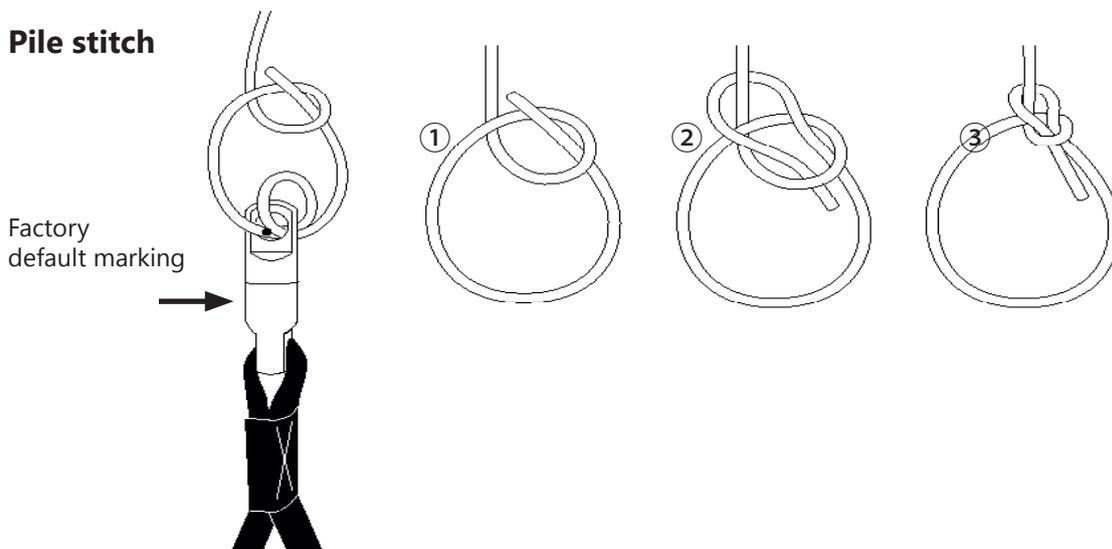
Base- and brakeline adjustment

The factory brake-line setting corresponds to 0-free travel plus 5 cm. It is recommended to adjust your brake line travel after the first flight to your personal preferences. Be aware not to adjust the brakes too short, otherwise the glider may fly with a little, but continuous applied brake pressure. This could be extremely dangerous during takeoff, flight and landing!

The afore mentioned factory brake setting allows for ample brake travel in extreme flight situations as well as for landing.

At the same time it enables during flight at trim-speed a position of comfort for the pilots arms. In no case the setup A, B and C main lines should be changed before the wing has been flown in the original setup. Please also note that adjusting the height of the suspension to the hangpoints on the harness, changes the relative braking travel. When setting the adjustment it is to be made certain that both sides are symmetrical and that a permanent knot is used. The bowline works particularly well because of the fact that it weakens the lines the least with excellent slip resistance.

Pile stitch



Safety precautions

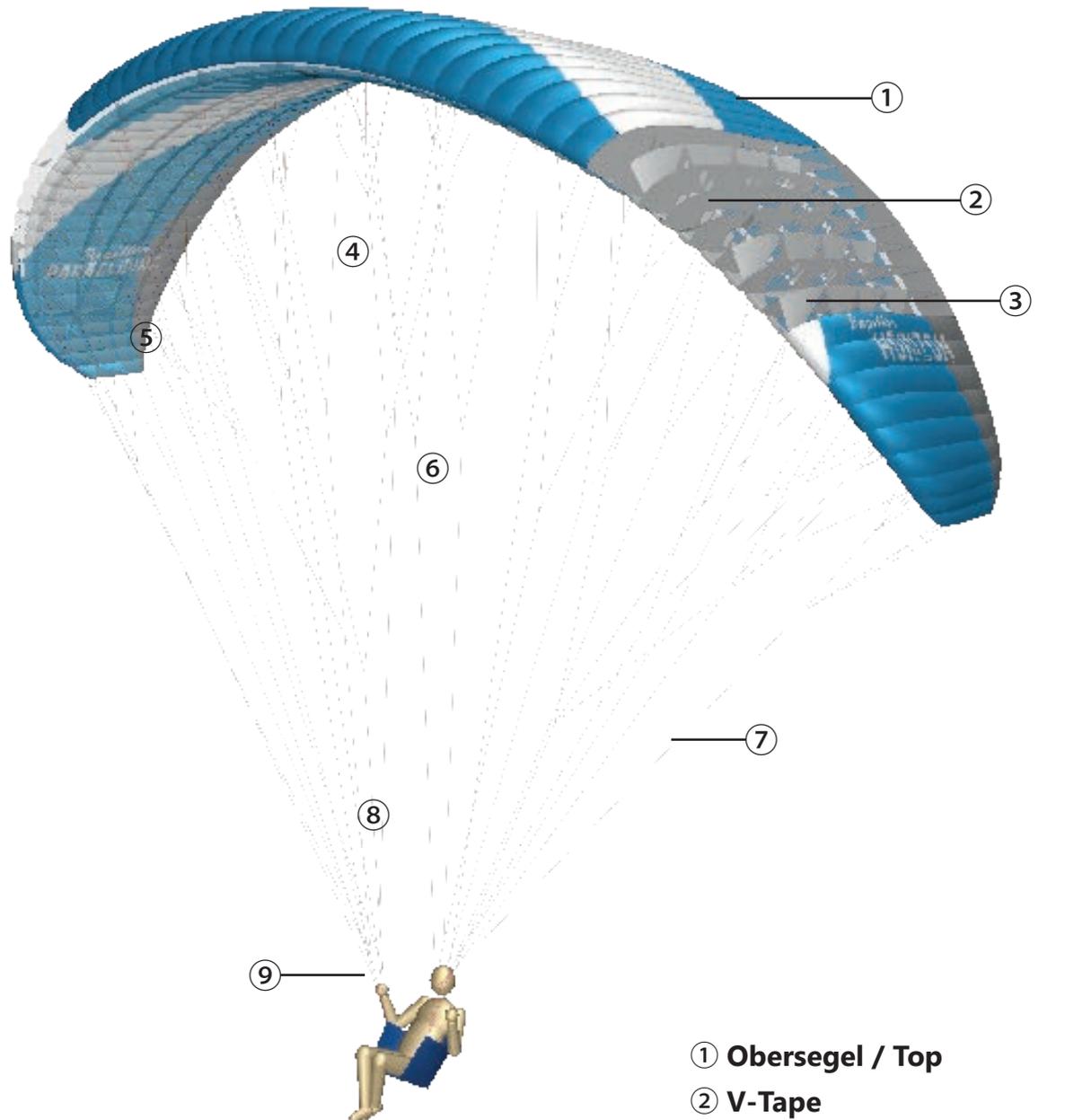
- Before the first flight, the canopy, lines, all connections and sutures, the shackles and brake lines, as well as any twisted lines must be checked by appropriately trained personnel and confirmed in the type plate.
- Make your maiden flight in a familiar flying site and calm conditions.
- Test your Papillon HORIZON only over water.
- In a „dynamic flight“ not only you are exposed to Hike loads but also the glider. Do not underestimate this!
- Only fly the HORIZON with at least one reserve parachute.
- Observe and abide to the local aviation laws which rule in the respective country in question.
- Successful completion of appropriate training/schooling, having the needed knowledge as well as the actual flight experience are a prerequisite to operate your Papillon HORIZON.
- The use of suitable, certified and in the respective country approved accessories (helmet, harness, reserve) is a requirement for the use of the Papillon HORIZON.
- Before every take off execute a thorough inspection of your equipment (top sail, bottom sail, ribs, especially the lines, carabiners, buckles, cloth speed system etc.) A flight with a tear in a glider or lines can be life threatening.
- Always make sure that your flying gear is in good condition and all checks are done.
- Be aware that you as a pilot have to be in a physical and mental state to control each flight unimpaired. You have to concentrate completely on flying, in order to avoid potential distressing flight conditions. Most accidents are caused by pilot error.
- Never fly in close proximity to high voltage power lines, airports or motorways, over people or with lightning! You could endanger your life and the physical well being of yourself as well as third parties and at the same time act reckless and negligent. At no circumstance should the minimum distance fall below 50m at any given time. At airports this minimum distance to maintain is 5km.
- Inform yourself on the weather forecast and/or the predominating local weather conditions. Use the Papillon HORIZON only in wind strengths, in which you are able to control the wing to 100%. Do not use the Papillon HORIZON in wind with a great gust factor. Never use the glider with approaching thunderstorms or if probability of those of the development of thunderstorms is high. If a thunderstorm is approaching land immediately!
- The flying of aerobatics is generally forbidden and is dangerous. Unforeseen flight orientations can occur, which can spill out of control, arising the danger of overload on pilot and equipment.



ATTENTION: Ignoring one or several safety precautions can lead to a leisurely fun flight turning into a fatal event!

EQUIPMENT DESCRIPTION

Short description



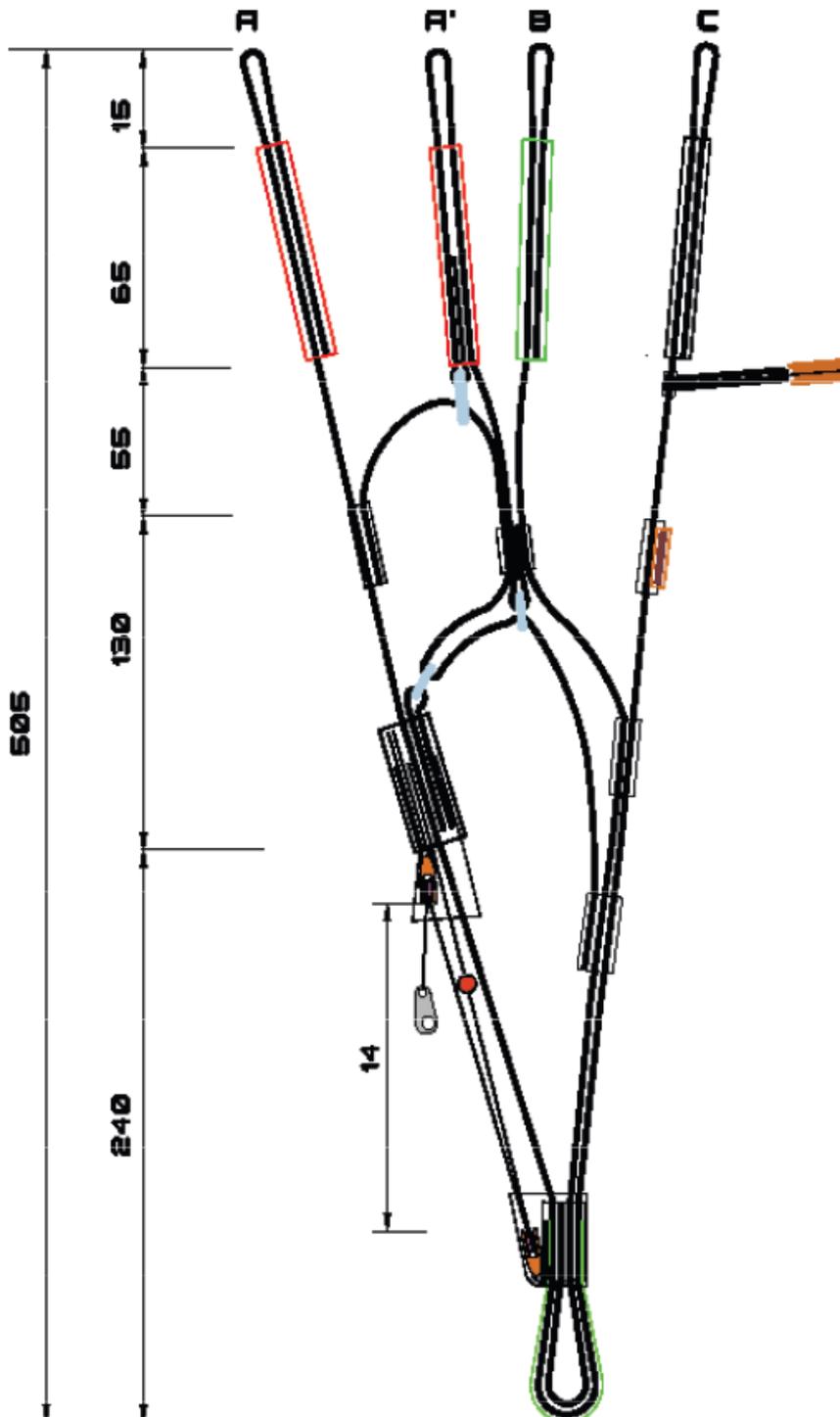
- ① Obersegel / Top
- ② V-Tape
- ③ Profilrippen / Profil ribs
- ④ Galerieleine / Galleryline
- ⑤ Untersegel / Bottom
- ⑥ Gabelleine / Gabeline
- ⑦ Stabiloleine / Stabiloline
- ⑧ Stammleine / Mainline
- ⑨ Tragegurte / Riser

Risers

The A- and B-risers have different colors to ensure positive identification at take off and during a B-stall decent.

Number of risers: 3+1

The risers of the Papillon HORIZON consist of 10 mm Dyneema tubewebbing.



Speed system

The Papillon HORIZON is equipped with a very effective foot actuated speed system. It increases the speed when applied up to approx. 15 km/h, depending on the wing size and pilot weight or surface loading.

Therefore it should not be activated in extreme flight situations or deactivated immediately when they are occurring. All extreme flight attitudes (e.g. collapses) happen at accelerated speed more dynamically. Since the maximum acceleration is part of the safety behavior of the glider, it can happen that with some harnesses the speed bar to full speed cannot be used.

The speed system needs to be adjusted 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.



THE FLIGHT

Flying experience

This manual is only focusing on the points of the technique of flying that are important for the Papillon HORIZON. It cannot and should not replace a profound flight training in an approved flying school! Without flight training and according experience paragliding is life-endangering!

The Launch

The 5-point pre-launch check must be performed before each flight. It is helpful to have the check conducted additionally by a second pilot (partner check).

1. PILOT: All buckles, straps and clips of the harness closed? Leg straps closed? Carabiner untwisted and closed properly? Helmet on? Radio on?
2. LINES: Lines free? A-lines on top? Risers untwisted? Speed system attached and untwisted? Control lines free and not twisted?
3. CANOPY: Laid out in an arch? All chambers open?
4. WIND: From the right direction? Is the wind speed right?
5. AIRSPACE: Free on all sides?

The paraglider is laid out symmetrically in an arch, so that the canopy behind you can fill evenly from the centre. The center of the Papillon HORIZON is marked on the leading edge.

You launch the wing by a metered pull on the front risers with your arms stretched back and down and running against the wind.



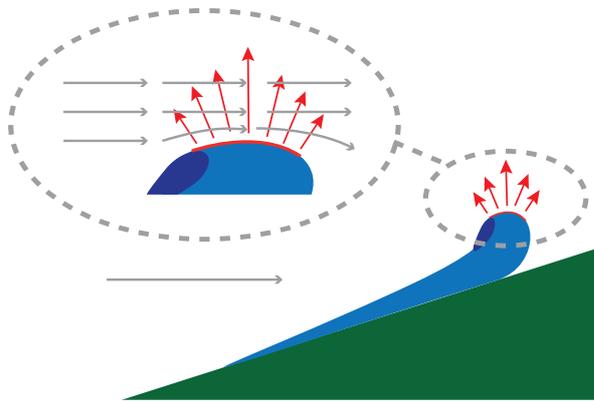
NOTE: Unlike other gliders, it is not necessary to inflate the Papillon HORIZON with aggressive pulling or even fast running. That is also true when there is little to zero wind. Measured pulling up is the simplest and safest way to launch the Papillon HORIZON.

Once the canopy is above you, you let go of the risers and only keep the control lines in hand. Keep running quickly, but not too fast, adapted to the wind situation. After a visual check of the canopy, for which you possibly apply some brake pressure to stabilize the wing, the acceleration phase begins. With big, bold steps and still arms you reach take-off speed.

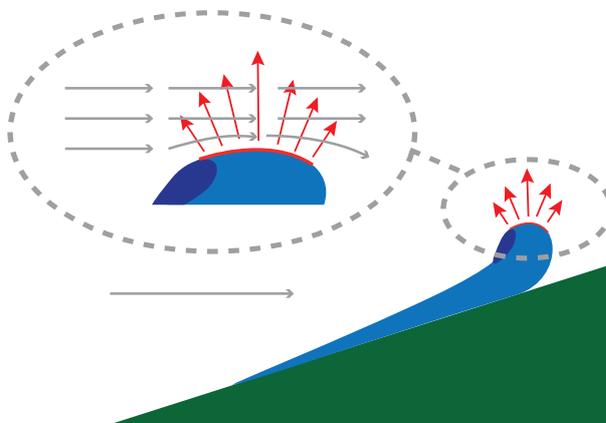
You take off the ground but remain ready to run in order to react to an unexpected drop. Only sit down with sufficient ground clearance. The control lines are not released.

In flat launch sites you pay attention to the acceleration phase. Large, long and expansive steps with little brake are ideal here. In steep terrain, on the other hand, you pull gently and apply brake pressure to stabilize. The glider must not be allowed to over shoot as collapses in the lift-off phase on steep slopes can become unpleasant. Since take off is very quick in steep terrain, it is a good idea to have an experienced pilot friend who observes and checks the take-off during the lift-up phase.

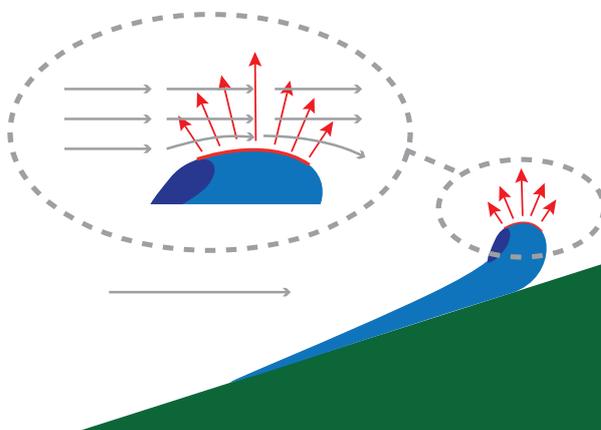
In flat terrain take-off may be more impulsive. After inflating and lifting the paraglider, perform a detailed visual check of the canopy. The running speed is reduced and adapted to the wind situation. In the steep launch site, the start is initiated with a small impulse and then a clear brake pull.



With an adequate launch impulse/input the canopy lifts off. The lifting force caused by the pronounced curvature of the profile at the leading edge is sufficient to lift a portion of the wing with its own weight.



As the canopy rises, the effective curved surface increases and with it the lifting force until it is strong enough to lift off the entire weight of the canopy.



Thereby and by the air entering the cell openings in the canopy's leading edge the profile becomes fully inflated. The forward force of the aerofoil profile accelerates the canopy forward. In order to stabilize the wing above the pilot a slight brake pull is used.

Reverse Launch

In strong winds and challenging conditions a reverse launch is recommended, as this allows better control of the canopy. Possible cravats and disorders of the canopy can be detected in the launch phase already. Thus, the control phase is simpler and an asymmetric rising of the wing can be corrected early on.

To perform a reverse launch, face the canopy and cross the risers when clipping in. If you want to turn to the right, turn the risers to the right before hooking-in and after sorting the lines. Make sure that the green loop is hooked into the carabiner on the right and the red loop into the carabiner on the left side.

Always untwist in the direction in which the upper riser is attached to the harness. Before lifting the wing, hold the brake lines and make sure that they are not twisted or reversed! Then take all the A-risers in one hand and step slightly out of the middle of the glider onto the side where you have only the control loop in your hand. With this control loop the ascent of the canopy is controlled until the canopy can be stabilized centrally above you.

Thereafter, take all A-risers in one hand. With the second hand, the rising of the canopy is controlled. To perfect the reverse launch technique, we recommend taking part in a reverse launch training.

Turning

The Papillon HORIZON has a high agility and reacts to steering inputs directly and instantly. You can fly flat turns with little altitude loss by shifting your body weight. A combined steering technique of appropriate pull on the inner brake line and shift of body weight is the best way for a coordinated turn. The turn radius depends on the amount of pull on the brake line. At about 75 % of the brake line travel, the Papillon HORIZON increases bank significantly and performs a fast steep turn that can lead to a spiral dive.



ATTENTION: A rapid pull on the brakeline may cause a negative spin!

Active Flying

The Papillon HORIZON should be flown with light braking on both sides when there is turbulent air. An increased angle of attack provides better stability. When entering heavy thermals or strong turbulences be careful that the canopy does not get behind you. To avoid that, release the brakes a bit to get an increase in speed when entering the updraft. If the canopy gets in front of you when leaving an updraft or entering a downdraft, the brakes must be applied to counter that. Accelerated flight, however, is advisable when flying through downdraft zones.

The Papillon HORIZON is naturally very stable due to its unique way of construction. Active flying in turbulent air (as described above) significantly increases safety. Collapsing and deforming of the canopy can be avoided through active flying.

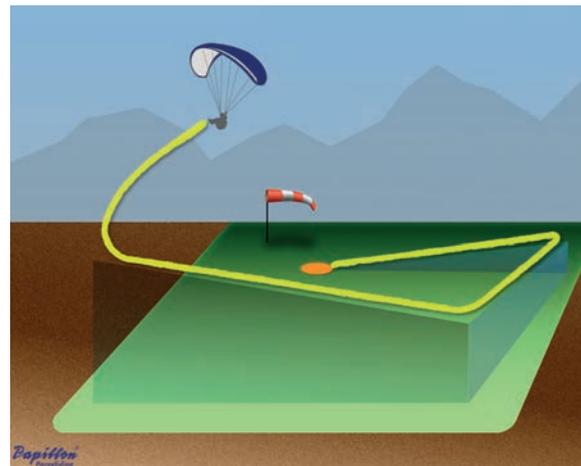
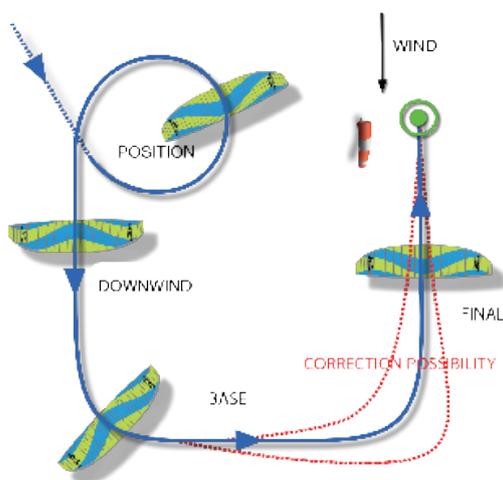
Landing

The landing should always be upwind. At a safe altitude the wind direction and strength are judged and the landing pattern and approach are planned.

The normal landing pattern begins at the position, where any remaining excess altitude is decreased, in case of a left pattern by flying left circles. The downwind, base and final legs follow. Final approach is into the wind.

Throughout the entire pattern the paraglider is flown with a slight brake pull for maximum canopy stability. The landing spot serves as a reference point and is constantly observed.

On the approach legs you have good correction possibilities (dashed red lines).



Straighten up in the harness at least 5 metres above ground. In about one metre above ground pull the brakes fully to perform a landing stall in order to reduce the rate of descent and airspeed. The touchdown is simplified and standing landings are easily possible.

Don't pull the brakes too early. Especially in the final approach it would be dangerous if a stall occurred in 3, 4 or 5 metres already. The best landings are those with a nice flare.

Due to its excellent flaring characteristics the Papillon HORIZON is very easy to land, when the brake is applied at the right moment.

The final approach is carried out in trim speed, if possible. In thermal conditions a final approach with maximum canopy stability (10-20% brake pull) is recommended.



ATTENTION: Remember that landing requires your highest concentration again. So plan your landing in such a way that you are safely on the ground before your mental and physical performance diminishes.

Strong Wind Landings

In strong winds you fly several base legs before the landing point with semicircles into the wind (called an "eight setup"). Begin a short final approach into the wind in about 10 to 20 metres above ground using slight brake pressure.

Do not turn with the wind as airspeed and wind speed add up. A landing at a high ground speed could be dangerous.

After touchdown turn around quickly and bring the canopy down by using the C-risers in order to avoid being dragged across the ground.

Landing on Slopes

A landing on the slope is always done sideways to the slope and never against it due to the increasing risk of injury. Hang landings require some routine. At the beginning of the flying career areas with large landing fields are recommended.

Top Landings

Landings at the launch site require wind or thermals. Therefore, they are recommended only for experienced pilots with lots of groundhandling experience.



ATTENTION: During a strong wind take off attempt, ground handling and landing the leading edge can hit the ground with high speed. This is to be avoided because otherwise the ribs, the sewing or the fabric can be damaged!

RAPID DESCENT

In any situation where you have to get down ASAP for different reasons (e.g. thunderstorms, extreme updraft or other dangers) there are a couple of techniques to do so:



ATTENTION: The described maneuvers stress your paraglider more than normal and should only be performed for practice or in a real emergency situation!



„Big Ears“

Another important and in many cases recommended rapid descent method is called „Big Ears“. By pulling on the outer A-lines, the „ears“ of the paraglider (usually two to four cells) are collapsed. The sink rate increases, while the airspeed remains approximately constant. This can help, for example, to escape cloud suck, whereas in a spiral the paraglider would still remain in the area of suction under the cloud.

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 speedsystem should be actuated. The glider remains fully steerable by weightshifting and descends at an elevated sink rate (4-7m/sec, depending on how many cells are folded in).

Once the A-risers are released, the folded wingtips re-inflate automatically, if not, you may pump the brakes gently.

Due to the high wingload „big earing“ is a very stable flight condition even in turbulent conditions. Please be aware that you reduce the trimspeed during „big ears“, but this can be compensated by applying the speedbar.

Since the wing loading increases and the airspeed remains roughly the same due to the greater drag, the stall speed increases.

The HORIZON shows an unproblematic behaviour during this manoeuvre.



NOTE: The HORIZON facilitates big ears with a special big ear aid (separate riser with big ear icon).



B-Stall

This manoeuvre offers the possibility to descend comfortably and safely: By pulling down the B-risers the wing is folded along its lateral axis and thereby stalled, which causes a sink rate of about 6 to 9 metres per second.

Entry

Keep the brake handles in your hands. Sit up and at the same time take the B-risers. Make sure that really the B-risers are taken and not the C-risers. This could happen if a pilot incorrectly starts counting from the trailing edge instead of the leading edge of the wing.



NOTE: The HORIZON facilitates big ears with special big ear aid (separate riser with big ear icon).

With the Papillon HORIZON the B risers are labelled to avoid confusion.

The B-risers are pulled down slowly, thus slowing down the entire paraglider. After a pull of about 15-20 cm the stall occurs. Slowed down like this, the canopy barely falls behind the pilot with an increasing sink rate.

The Manoeuvre

Look immediately upwards, if the desired B-stall occurred. Then look down to control the loss of altitude and the area below you. Then alternately look upwards and downwards.

Should an atypical deformation of the canopy occur, immediately release the B-risers and recover from the manoeuvre. A slight turning tendency is normal, because the manoeuvre often cannot be initiated 100 percent symmetrical. The wind may also have an influence. If the change in direction feels unpleasant, just recover and repeat the manoeuvre.

Recovery

By a brisk - but most importantly symmetrical - release of the B-risers, the manoeuvre is terminated. The canopy dives forward to reattach the airflow and end the stall. Do not prevent this pitching forward by braking. Pilots with an active flying style tend to stop this desired pitching moment.

The difference of the forward pitching moment after a B-stall and the pitching moment after a thermal flight is that the paraglider needs to accelerate after a B-stall while it simply swings back and forth in the turbulences caused by thermals.

ADVANCED HANDLING

Even though the Papillon HORIZON 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 maneuvers may only be executed in calm air and in sufficient altitude under professional supervision (e.g. safety training). Once again we mention that a rescue system is required by the law. The following extreme flight figures and flight maneuvers 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 maneuvers are dangerous if performed without the appropriate knowledge, enough altitude or necessary introduction. A wrong execution of these described figures and maneuvers may have fatal consequences!

Spiral Dive

Like a normal turn, initiating the spiral dive is easy with the Papillon HORIZON.



ATTENTION: The spiral is considered an extreme manoeuvre and should be flown only under expert guidance above water. Owing to the high physical stress the manoeuvre is only recommended for experienced pilots.

Entry

For a first circle a turn is flown tighter with body weight and inner brake. For the 2nd circle the bank is increased. The outer brake line is also pulled with increasing speed. In the 3rd circle the wing banks into the spiral and reaches sink rates of about 10 m/s.

Spiral phase

With the outer brake (10 to 30%) you can control the bank angle, the sink rate and the speed during the manoeuvre. Thereby a G-load of about 2.5 to 4 acts on the body.

Note: The wing should not be forced into the spiral too quickly as this could cause a stall on one side with extreme sink rates, the wing could even flip over.

Recovery

To recover from a spiral release the brake pressure on the inner brake, neutralize the body weight and increase the pressure on the outer brake. Before being fully recovered, the paraglider will continue to turn for one or two more circles. The speed and bank angle will be reduced. The regulation takes place via the outer brake.

Note: Trying to recover too quickly can cause a collapse when the wing swings behind the pilot. When recovering too slowly, a full recovery might not be achieved and the rapid loss of altitude may continue. If that happens, the dynamic may be reduced by applying brakes on both sides. The brake pressure increases during the manoeuvre because of the increased G-force. If the recovery is not possible, deploy the rescue!



ATTENTION: If the initiation is too fast there is a danger of a spin, in this case release the brakes and try a smoother initiation.

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 Papillon HORIZON except for when there is a very high bank. With shifting the bodyweight while applying the brake it is possible to fly the highest possible wingovers.

Full Frontal

A negative AoA caused by turbulences or the simultaneous pull-down of the A-risers by the pilot, results in a frontal collapse of the leading edge. The Papillon HORIZON recovers from a frontstall by itself very quickly. Smooth and symmetric applying of the brake positively influences the re-opening of the canopy.

Collapses

Even with its high stability and very well responses in turbulences, strong turbulences can cause the canopy of the Papillon HORIZON to collapse. Usually that situation is not dangerous and resolves itself automatically without any further input. To support the recovery, firmly apply the brakes on the affected side and simultaneously steer opposite to the open side. When a large part of the canopy collapses the counter steering is to be exercised in moderation in order to avoid a complete interruption of the airflow.

How to avoid collapses

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 test- and competition pilot Ernst Strobl:

The best way to avoid collapses upfront 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 thermally active day. Watch your canopy, collapses most of the time, announce themselves. Light braking in turbulences mostly avoids a collapse. You should have already practiced 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 too 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 brakelines adjustment and your armlength.

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 not 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.

Deep Stall

If the wing stalls but is still filled with air, you are in a deep stall. Strictly speaking, this is not a flight because no airflow is attached to the canopy. Further brake pull leads to a full stall, a stall with partial emptying of the canopy, forward folded ears and backward flight.

The Papillon HORIZON is not stall sensitive. If in a stall, caused by overpulling on the brakes or rear risers or a delayed B-stall exit, the release of the brakes or rear risers, recovers the stall. Should the stall be caused by an extreme flight condition or configuration (i.e. takeoff weight too low), a symmetric forward push on the A-riser or use of the speed system recovers the stall.



ATTENTION: Practicing stalls should be done with enough safe altitude. Never apply asymmetric brakes during a stall, it could cause a spin.



ATTENTION: If the HORIZON is in deep stall, the brake should only be released after approx. 3 seconds if the height above ground is sufficient. The glider will finish the manoeuvre on its own. In case of low altitude or little flight experience we recommend deploying the rescue system.

Fullstall

The stall is recognized by the decrease of wind noises and by a high rate of descent (5 - 20m/s).

There can be several causes: pilot errors (too much brake application, changing wind conditions or deficiencies of the canopy (high air permeability due to aging)).

The pilot should allow the wing to re-establish airflow. Modern paragliders like the Papillon HORIZON recover independently. To do so, release the brakes (but keep them in your hands), so that the wing can accelerate again.

Partial Stall

A stall can also occur on one side only by a rapid strong pull on one brake. The wing enters a sudden, highly accelerated rotation around its vertical axis, with almost no bank. This uncontrollable flight condition is called (flat) spin. The pilot releases the brakes.

The secure paragliders of the new generation end a spin independently and immediately. In a stable spin with sufficient altitude, the manoeuvre can be terminated with a full stall, at a lower altitude you have to deploy the reserve.

Negative Turn

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 center, while the inside flies backwards.

In order to exit a negative spin, the applied brake is released, where the stalled side of the wing can pick up speed or one exits through a full stall, by braking the flying side into a stall as well.



ATTENTION: The Spin and the Fullstall are unpredictable and dangerous flight figures and should only be executed in a safety training under supervision and never be executed intentionally. There is danger of a riser twist. With a riser twist the brake lines can get blocked.



ATTENTION: Fullstalls and negative turns/spins as a descent method are dangerous, because a wrong exit, regardless of glider type, can have fatal consequences.

Emergency Piloting

In any situation where normal steering is not possible, the Papillon HORIZON can easily be steered and landed with the back risers. Turns can be flown with weightshift, however be careful that the glider doesn't lock into a spiral.

Transport and storage

When transporting the glider don't expose it to any liquids. It has to be packed completely dry. Always store the HORIZON away from UV radiation. Furthermore never store the wing together with acids or similar goods. A dry storage is of utmost importance!



ATTENTION: After a longer storage period the glider needs to be checked.

Repairs

Basically only authorized service centers may execute repairs on paragliders. Small damages like tears or small holes up to a size of 2 x 2 cm, where a repair without special equipment is possible, the pilot may do by himself. The included self-sticky tape from the repair-kit is to be used for that. Tears or holes need to be fixed from both sides. Please take care that the repair tape sticks out at least 2cm beyond the damaged area on all sides. The self-sticky tape can be cut into the right form. Rounding off the corners prevents it from becoming detached.

MAINTENANCE AND CARE

Maintenance and care

Since only high-quality material is used for the Papillon HORIZON it will be unrelievedly airworthy for many years at good care and maintenance. The aging of your Papillon HORIZON depends on the total flying time, the conditions in which you fly in, the amount of UV radiation it is exposed to and the intensity and quality of care. A couple of tips for maintenance and care:

Long lasting exposure to UV radiation and extreme acro maneuvers reduce the strength of every material over time.

- Do not leave your Papillon HORIZON out in the sun more than necessary, but put it back into the backpack after your flight.
- Consider the choice of terrain when choosing a take-off site to lay out your glider.
- Placing the opening reinforcements on top of each order prolongs the life time of your glider.
- Do not drag your glider on the ground and pack it on a patch of grass.

Please consider that:

- the lines need to be checked for damage regularly.
- the lines are not being bent unnecessarily and you don't step on the lines when laying out the glider.
- lines need to be checked after overloads (tree or water landings etc.) for their strength and correct length and exchanged if necessary.
- lines need to be checked for their correct length in case of changing inflight handling characteristics.
- the main brake lines aren't knotted too many times at the grip since every knot weakens the line.

To clean the canopy only use warm water and a soft sponge. Never apply any chemicals for cleaning, since they weaken the material and damage the coating. Store your glider at a dry and dark location away from any chemicals. After 24 months or 150 flight hours, whichever occurs first, your Papillon HORIZON has to be inspected by the manufacturer or importer. In case of extreme use we are glad to do that earlier. You know best about the condition of your glider.

Nature and environment-friendly behaviour

We ask you to perform our sport in a manner, that impacts nature and environment with minimum intensity. Please do not walk off marked paths, don't leave any waste, don't make noise uselessly and respect the sensitive biological equilibrium in the mountains. Especially at take-off areas maximum care for nature is necessary.

The synthetic materials your glider is build of must be depolluted appropriately. At the end of its life-cycle please return your glider to us, we will take care of recycling and removal.

FLYING ACCESSORIES

Harness

All certified harness systems with mounting at about breast height are compatible with the Papillon HORIZON. The lower the mounting point of the harness, the better you can steer the Papillon HORIZON by shifting your bodyweight. Please keep in mind, that also your harness is exposed to extreme loads.

If you have any questions regarding the use of your harness with the Papillon HORIZON please contact us. We are happy to help!

Suitable Rescue Systems

It is required by law and absolutely necessary for safe operation of your paraglider that you always carry a rescue system. When choosing your rescue system, watch out that it is approved and suitable for the intended takeoff weight.

In the Papillon Shops we will be pleased to advise you personally and assist you with the choice of the flight equipment, which best suits your needs and requirements.



PRESUMPTION OF RISK

The usage of the Papillon HORIZON inhereits certain dangers of bodily harm or even death of the user of this product or a third party. With the use of the HORIZON you consent to all known and unknown risks and accept probable and improbable risks of injury. The dangers innate with the practice this kind of sport can be reduced by adhering to the warning notes in the manual, as well as the required attention to detail on each flight. The risks inherent to the sport can be reduced to a large degree, if one adheres to both the maintenance guidelines, which are listed in this operating manual, as well as using common sense.

Liability claim and renouncement of exlution

With the completion of the purchase of a Papillon HORIZON you express your in consent with the following points of legal specifications:

THE RENOUNCEMENT EXCLUSION OF ALL LIABILITY CLAIMS,

deriving from the use of the Papillon HORIZON and or either compenents thereof, now or in the future, against the PAPILLON PARAGLIDERS - GLEITSCHIRM DIREKT GmbH and all other contracting parties.

Releasing PAPILLON PARAGLIDERS - GLEITSCHIRM DIREKT GmbH and all other contracting parties of all liability claims concerning loss, damage, injury or expenses that you, your next of kin, relatives or any other user of the Papillon HORIZON could suffer as a result of the usage of the HORIZON. This includes but is not limited to lawful or contractual liability on behalf of PAPILLON PARAGLIDERS - GLEITSCHIRM DIREKT GmbH and all other contracting parties as a result of the of production and processing the Papillon HORIZON and all its components. With the occurrence of death or disability, all directives stated here come into force and bind their beneficiaries, next of kin, trustees, legal successors and/or representatives. The PAPILLON PARAGLIDERS - GLEITSCHIRM DIREKT GmbH and all other contracting parties express no verbal or written representation and deny assertively that this was done with exception of what is specified here and in the manual of Papillon HORIZON.

Safety Advice and Liability

This glider complies with EAPR regulations, for the tested type, at time of delivery (see appendix). Any unauthorized alteration is followed by the expiration of the operating licence! The operation of the glider is at your own risk and the pilot needs to make sure that the aircraft is checked for its airworthyness before every flight. We also take it as a given that the pilot is in posession of the required certificate of qualification and that the given legal requirements are met. Use of the equipment is at your own risk! The manufacturer and the dealer don't take any liability for accidents and possible consequential damages. Please consider all safety notes, cautions and warnings for safe flying.

RELEASE OF LIABILITY, RENOUNCEMENT OF ENTITLEMENT

Hereby you declare, that - prior to use of the Papillon HORIZON - you have read and understood the Papillon HORIZON user manual in its entirety, including directions and warnings, which are included in this user manual.

Moreover you declare to carry responsibility - prior to granting the use of Papillon HORIZON to a third party - through transferring ownership temporary or permanently, for this other user to have read and understood the Papillon HORIZON user manual in its entirety, including directions and warnings, which are included in this user manual.

Place and date

Signature of the first pilot

Place and date

Signature of the second pilot

Place and date

Signature of the third pilot

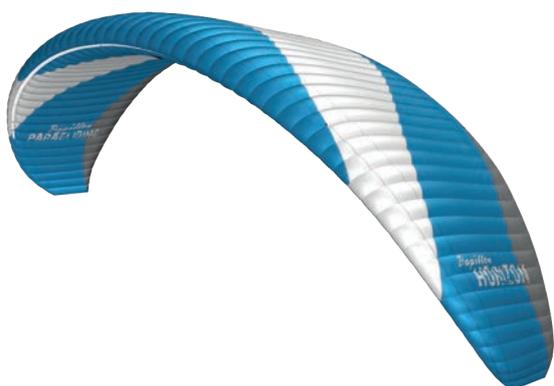
PAPILLON PARAGLIDERS - GLEITSCHIRM DIREKT GmbH does not take responsibility, liability and/or guarantee for inspections and repairs that are not performed by Papillon.

TECHNICAL DATA PAPILLON HORIZON

	55	65	80	95
Start weight Startgewicht	55-80	65-90	80-105	95-120
Flat area Fläche ausgelegt	22,6m ²	24,8m ²	27,2m ²	29,2m ²
Projected area Fläche projiziert	19,641m ²	21,553m ²	23,639m ²	25,377m ²
Flat wingspan Spannweite ausgelegt	11,26m	11,795m	12,353m	12,799m
Projected wingspan Spannweite projiziert	9,127m	9,561m	10,013m	10,374m
Flat AR Streckung ausgelegt	5,61	5,61	5,61	5,61
Projected AR Streckung projiziert	4,241	4,241	4,241	4,241
Chord: center / wingtip Flügelteiefe: Mitte / Stabulo	2,445 / 0,547 m	2,561 / 0,572 m	2,682 / 0,601 m	2,779 / 0,627 m
V-trim V-Trim	39 (+/-1) km/h	39 (+/-1) km/h	39 (+/-1) km/h	39 (+/-1) km/h
V-max V-Max.	54 (+/-2) km/h	54 (+/-2) km/h	54 (+/-2) km/h	54 (+/-2) km/h
Bridle height Abstand Tragegurt-Kappe	6,869m	7,195m	7,535m	7,807m
Nr. of cells Zellenanzahl	59	59	59	59
Glider weight Gewicht	4,3 kg	4,7 kg	5,3 kg	5,7 kg
Bridle length Gesamt Leinenlänge	230,219m	238,925m	274,066m	306,446m
Line diameter Leinendurchmesser	0,55 / 0,65 / 0,7 / 1,1 1,2 / 1,3 / 1,45 / 1,6 mm	0,55 / 0,65 / 0,7 / 1,1 1,2 / 1,3 / 1,45 / 1,6 mm	0,55 / 0,65 / 0,7 / 1,1 1,2 / 1,3 / 1,45 / 1,6 mm	0,55 / 0,65 / 0,7 / 1,1 1,2 / 1,3 / 1,45 / 1,6 mm
Speed system / trimmer Fuß Beschleuniger / Trimmer	Yes / No Ja / Nein			
Certification Zulassung	EN-B / LTF-B	EN-B / LTF-B	EN-B / LTF-B	EN-B / LTF-B
Certified standards and procedures Angewandte Testverfahren	LTF 91/09 & EN 926-1:2006, 926-2:2013			
Folding lines used for certification Faltleinen für Testflüge benutzt	No Nein	No Nein	No Nein	No Nein
Certification No. Zulassungsnummer	EAPR-GS-0661/17	EAPR-GS-0662/17	EAPR-GS-0663/17	EAPR-GS-0664/17

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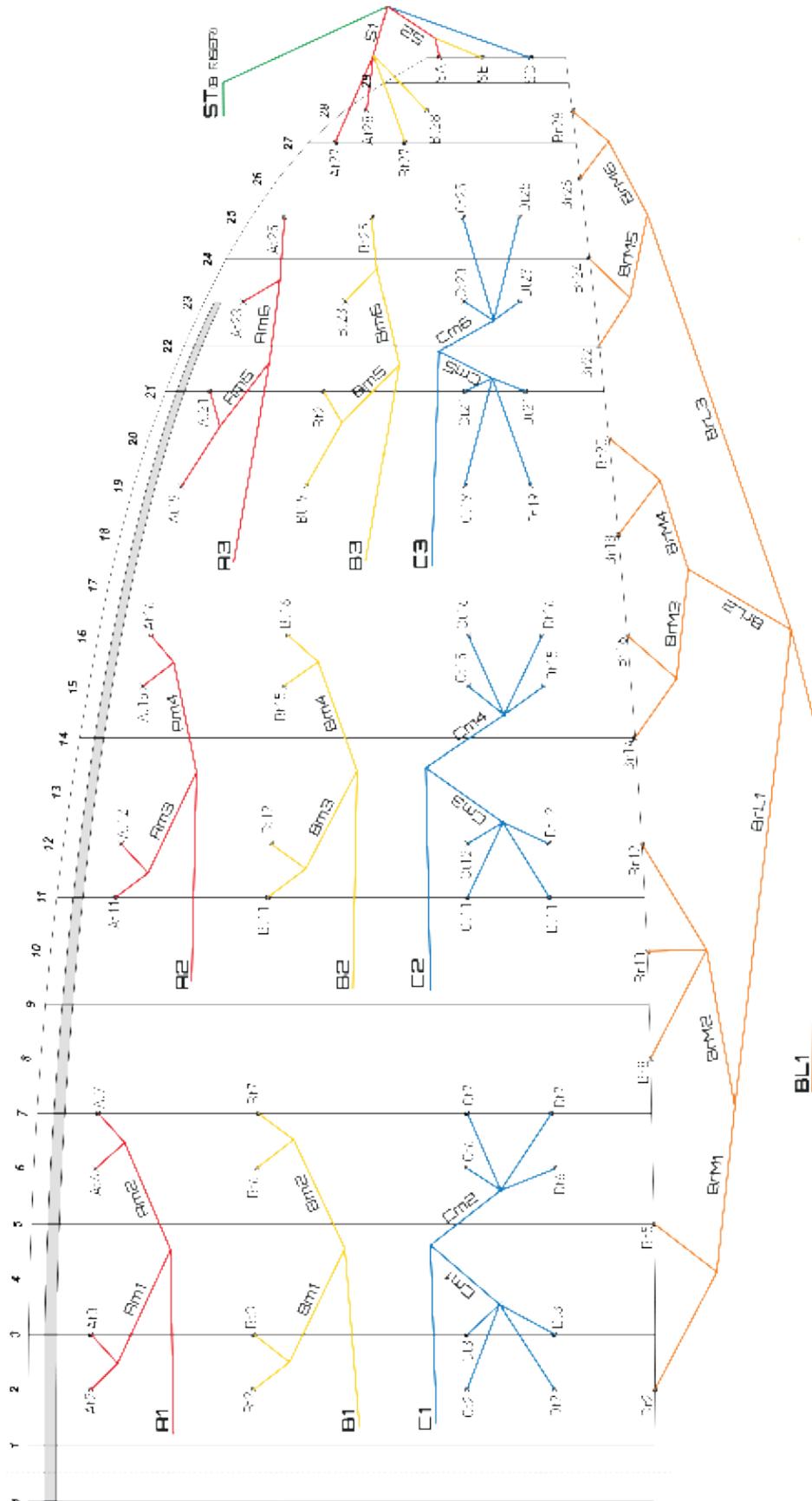
COLOR-INFO PAPILLON HORIZON



COLOR 1

COLOR 2

LINE CODE PAPILLON HORIZON



LINE PLAN PAPILLON HORIZON 55

HORIZON 55					rev 4	
A-Lines						
rib 2	430	1970	4110		6510	
rib 3	410				6490	
rib 6	410	1940			6460	
rib 7	435				6485	
rib 11	460	1990	3990		6440	
rib 12	435				6415	
rib 15	450	1940			6380	
rib 16	460				6390	
rib 19	1005	1480	3790		6275	
rib 21	915				6185	
rib 23	1010	1290			6090	
rib 25	960				6040	
rib 27	660	800			5855	
rib 28	550				5745	
Stabilo	460	730			5585	
B-Lines						
rib 2	450	1930	4050		6430	
rib 3	425				6405	
rib 6	445	1890			6385	
rib 7	455				6395	
rib 11	465	1950	3945		6360	
rib 12	440				6335	
rib 15	465	1890			6300	
rib 16	480				6315	
rib 19	920	1520	3770		6210	
rib 21	835				6125	
rib 23	920	1350			6040	
rib 25	870				5990	
rib 27	635				5830	
rib 28	575				5770	
Stabilo	505		4395		5630	
C-Lines (Ankerstich)						
rib 2	920	1500	4140		* 6560	
rib 3	890				6530	
rib 6	890	1470			6500	
rib 7	920				6530	
rib 11	915	1430	4140		* 6485	
rib 12	885				6455	
rib 15	925	1350			6415	
rib 16	935				6425	
rib 19	920	1350	4030		* 6300	
rib 21	820				6200	
rib 23	900	1170			6100	
rib 25	850				6050	
Stabilo	1300				5695	
D-Lines						
rib 2	995				6635	
rib 3	975				6615	
rib 6	975				6585	
rib 7	995				6605	
rib 11	985				6555	
rib 12	955				6525	
rib 15	990				6480	
rib 16	995				6485	
rib 19	970				6350	
rib 21	865				6245	
rib 23	945				6145	
rib 25	890				6090	
Brake-Lines						
rib 2	1055	2110	1810	570	1650	7195
rib 5	890					7030
rib 8	1030	1860				6920
rib 10	940					6830
rib 12	100					5990
rib 14	920	1620	1980			6740
rib 16	850					6670
rib 18	920	1490				6610
rib 20	885					6575
rib 22	885	1050	2340			6495
rib 24	790					6400
rib 26	720	1070				6350
rib 28	660					6290

* Double loop on the C lines

EAPR	EAPR
Incl. Riser	Ex. Riser
7040	6510
7020	6490
6990	6460
7015	6485
6970	6440
6945	6415
6910	6380
6920	6390
6805	6275
6715	6185
6620	6090
6570	6040
6385	5855
6275	5745
6115	5585
6960	6430
6935	6405
6915	6385
6925	6395
6890	6360
6865	6335
6830	6300
6845	6315
6740	6210
6655	6125
6570	6040
6520	5990
6360	5830
6300	5770
6160	5630
7075	6545
7045	6515
7015	6485
7045	6515
7000	6470
6970	6440
6930	6400
6940	6410
6815	6285
6715	6185
6615	6085
6565	6035
6210	5680
7150	6620
7130	6600
7100	6570
7120	6590
7070	6540
7040	6510
6995	6465
7000	6470
6865	6335
6760	6230
6660	6130
6605	6075
7185	
7020	
6910	
6820	
5980	
6730	
6660	
6600	
6565	
6485	
6390	
6340	
6280	

LINE PLAN PAPILLON HORIZON 65

HORIZON 65					rev 4	
A-Lines						
rib 2	475	2060	4275		6810	
rib 3	455				6790	
rib 6	460	2020			6755	
rib 7	480				6775	
rib 11	500	2080	4160		6740	
rib 12	470				6710	
rib 15	495	2020			6675	
rib 16	500				6680	
rib 19	1070	1540	3955		6565	
rib 21	970				6465	
rib 23	1065	1350			6370	
rib 25	1010				6315	
rib 27	705	840			6135	
rib 28	590				6020	
Stabilo	500	760			5850	
B-Lines						
rib 2	495	2010	4235		6740	
rib 3	470				6715	
rib 6	485	1970			6690	
rib 7	510				6715	
rib 11	510	2030	4130		6670	
rib 12	485				6645	
rib 15	510	1970			6610	
rib 16	520				6620	
rib 19	970	1590	3955		6515	
rib 21	885				6430	
rib 23	975	1410			6340	
rib 25	930				6295	
rib 27	680				6110	
rib 28	615				6045	
Stabilo	545		4590		5895	
C-Lines (Ankerstich)						
rib 2	970	1570	4335	*	6875	
rib 3	935				6840	
rib 6	955	1530			6820	
rib 7	975				6840	
rib 11	985	1490	4325	*	6800	
rib 12	950				6765	
rib 15	990	1410			6725	
rib 16	1000				6735	
rib 19	970	1410	4220	*	6600	
rib 21	870				6500	
rib 23	960	1220			6400	
rib 25	910				6350	
Stabilo	1380				5970	
D-Lines						
rib 2	1050				6955	
rib 3	1025				6930	
rib 6	1030				6895	
rib 7	1055				6920	
rib 11	1060				6875	
rib 12	1025				6840	
rib 15	1065				6800	
rib 16	1065				6800	
rib 19	1020				6650	
rib 21	920				6550	
rib 23	1000				6440	
rib 25	940				6380	
Brake-Lines						
rib 2	1125	2205	1890	660	1650	7530
rib 5	945					7350
rib 8	1105	1930				7235
rib 10	1015					7145
rib 12	1075					7205
rib 14	985	1690	2060			7045
rib 16	915					6975
rib 18	990	1550				6910
rib 20	955					6875
rib 22	940	1100	2445			6795
rib 24	840					6695
rib 26	770	1120				6645
rib 28	705					6580

* Double loop on the C lines

EAPR	EAPR
Incl. Riser	Ex. Riser
7340	6810
7320	6790
7285	6755
7305	6775
7270	6740
7240	6710
7205	6675
7210	6680
7095	6565
6995	6465
6900	6370
6845	6315
6665	6135
6550	6020
6380	5850
7270	6740
7245	6715
7220	6690
7245	6715
7200	6670
7175	6645
7140	6610
7150	6620
7045	6515
6960	6430
6870	6340
6825	6295
6640	6110
6575	6045
6425	5895
7390	6860
7355	6825
7335	6805
7355	6825
7315	6785
7280	6750
7240	6710
7250	6720
7115	6585
7015	6485
6915	6385
6865	6335
6500	5970
7470	6940
7445	6915
7410	6880
7435	6905
7390	6860
7355	6825
7315	6785
7315	6785
7165	6635
7065	6535
6955	6425
6895	6365
7520	
7340	
7225	
7135	
7195	
7035	
6965	
6900	
6865	
6785	
6685	
6635	
6570	

Complete length is 1800mm, Handle fixed on 1650mm

LINE PLAN PAPILLON HORIZON 80

HORIZON 80					rev 4		
A-Lines							
rib 2	510	2140	4450			7100	
rib 3	485					7075	
rib 6	500	2100				7050	
rib 7	520					7070	
rib 11	545	2160	4310			7015	
rib 12	520					6990	
rib 15	545	2100				6955	
rib 16	555					6965	
rib 19	1145	1600	4100			6845	
rib 21	1035					6735	
rib 23	1140	1400				6640	
rib 25	1080					6580	
rib 27	755	870				6380	
rib 28	640					6265	
Stabilo	545	790				6090	
B-Lines							
rib 2	530	2090	4395			7015	
rib 3	505					6990	
rib 6	515	2050				6960	
rib 7	535					6980	
rib 11	560	2110	4275			6945	
rib 12	530					6915	
rib 15	550	2050				6875	
rib 16	565					6890	
rib 19	1040	1650	4090			6780	
rib 21	950					6690	
rib 23	1040	1460				6590	
rib 25	990					6540	
rib 27	730					6355	
rib 28	660					6285	
Stabilo	595		4755			6140	
C-Lines (Ankerstich)							
rib 2	1020	1630	4495	*		7145	
rib 3	995					7120	
rib 6	1010	1590				7095	
rib 7	1035					7120	
rib 11	1040	1550	4485	*		7075	
rib 12	1010					7045	
rib 15	1060	1460				7005	
rib 16	1065					7010	
rib 19	1030	1460	4375	*		6865	
rib 21	930					6765	
rib 23	1020	1270				6665	
rib 25	960					6605	
Stabilo	1450					6205	
D-Lines							
rib 2	1105					7230	
rib 3	1085					7210	
rib 6	1100					7185	
rib 7	1120					7205	
rib 11	1125					7160	
rib 12	1085					7120	
rib 15	1130					7075	
rib 16	1140					7085	
rib 19	1095					6930	
rib 21	980					6815	
rib 23	1065					6710	
rib 25	1000					6645	
Brake-Lines							
rib 2	1180	2290	1960	750	1650	7830	
rib 5	995					7645	
rib 8	1165	2010				7535	
rib 10	1065					7435	
rib 12	1125					7495	
rib 14	1035	1760	2140			7335	
rib 16	965					7265	
rib 18	1050	1610				7200	
rib 20	1015					7165	
rib 22	995	1140	2540			7075	
rib 24	890					6970	
rib 26	820	1160				6920	
rib 28	750					6850	
EAPR							
						Incl. Riser	Ex. Riser
						7640	7100
						7615	7075
						7590	7050
						7610	7070
						7555	7015
						7530	6990
						7495	6955
						7505	6965
						7385	6845
						7275	6735
						7180	6640
						7120	6580
						6920	6380
						6805	6265
						6630	6090
Complete length is 1800mm, Handle fixed on 1650mm							
* Double loop on the C lines							

LINE PLAN PAPILLON HORIZON 95

HORIZON L					rev 4	
A-Lines						
rib 2	550	2220	4610		7380	
rib 3	520				7350	
rib 6	535	2180			7325	
rib 7	555				7345	
rib 11	580	2240	4480		7300	
rib 12	550				7270	
rib 15	570	2180			7230	
rib 16	580				7240	
rib 19	1205	1660	4260		7125	
rib 21	1095				7015	
rib 23	1205	1450			6915	
rib 25	1145				6855	
rib 27	810	900			6650	
rib 28	695				6535	
Stabilo	595	820			6355	
B-Lines						
rib 2	565	2170	4550		7285	
rib 3	540				7260	
rib 6	560	2120			7230	
rib 7	580				7250	
rib 11	590	2190	4430		7210	
rib 12	560				7180	
rib 15	590	2120			7140	
rib 16	600				7150	
rib 19	1105	1710	4230		7045	
rib 21	1015				6955	
rib 23	1100	1520			6850	
rib 25	1045				6795	
rib 27	780				6620	
rib 28	710				6550	
Stabilo	640		4940		6400	
C-Lines (Ankerstich)						
rib 2	1090	1690	4640	*	7420	
rib 3	1055				7385	
rib 6	1070	1650			7360	
rib 7	1095				7385	
rib 11	1120	1600	4630	*	7350	
rib 12	1075				7305	
rib 15	1120	1520			7270	
rib 16	1120				7270	
rib 19	1090	1520	4515	*	7125	
rib 21	985				7020	
rib 23	1090	1310			6915	
rib 25	1030				6855	
Stabilo	1540				6480	
D-Lines						
rib 2	1170				7500	
rib 3	1145				7475	
rib 6	1160				7450	
rib 7	1180				7470	
rib 11	1190				7420	
rib 12	1155				7385	
rib 15	1185				7335	
rib 16	1190				7340	
rib 19	1145				7180	
rib 21	1030				7065	
rib 23	1135				6960	
rib 25	1065				6890	
Brake-Lines						
rib 2	1235	2370	2040	840	1650	8135
rib 5	1045					7945
rib 8	1215	2085				7830
rib 10	1120					7735
rib 12	1180					7795
rib 14	1095	1820	2225			7630
rib 16	1020					7555
rib 18	1100	1670				7485
rib 20	1060					7445
rib 22	1060	1180	2630			7360
rib 24	945					7245
rib 26	855	1215				7190
rib 28	785					7120

* Double loop on the C lines

EAPR	EAPR
Incl. Riser	Ex. Riser
7910	7380
7880	7350
7855	7325
7875	7345
7830	7300
7800	7270
7760	7230
7770	7240
7655	7125
7545	7015
7445	6915
7385	6855
7180	6650
7065	6535
6885	6355
7815	7285
7790	7260
7760	7230
7780	7250
7740	7210
7710	7180
7670	7140
7680	7150
7575	7045
7485	6955
7380	6850
7325	6795
7150	6620
7080	6550
6930	6400
7935	7405
7900	7370
7875	7345
7900	7370
7865	7335
7820	7290
7785	7255
7785	7255
7640	7110
7535	7005
7430	6900
7370	6840
6995	6465
8015	7485
7990	7460
7965	7435
7985	7455
7935	7405
7900	7370
7850	7320
7855	7325
7695	7165
7580	7050
7475	6945
7405	6875
8145	
7955	
7840	
7745	
7805	
7640	
7565	
7495	
7455	
7370	
7255	
7200	
7130	

Complete length is 1800mm, Handle fixed on 1650mm

REQUIREMENT FOR LTF/EN B - CERTIFICATION

Harness-Dimensions

Weight	A-Dimension	B-Dimension
< 50 kg	38 cm	38 cm
50-80 kg	42 cm	42 cm
> 80 kg	46 cm	46 cm



Control Travel

HORIZON Size	max. symmetrical control travel at max. weight
55	> 55 cm
65	> 60 cm
80	> 60 cm
95	> 65 cm

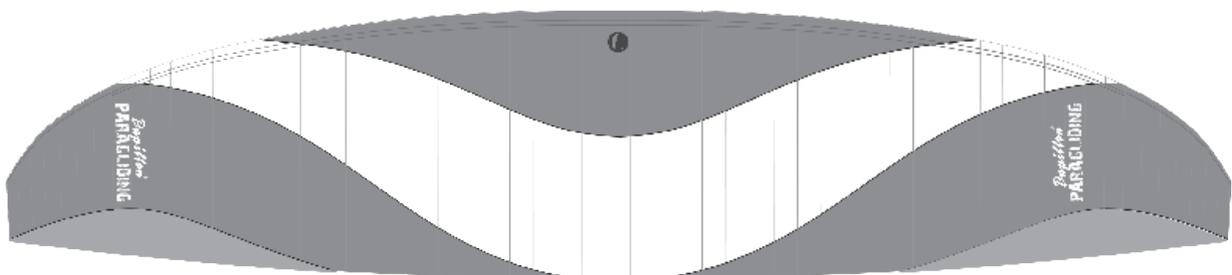
INSTRUCTION LEAFLET FOR REPAIRS & 2-YEARLY-CHECK

Last name:	First name:
Street address:	ZIP code, city:
Country:	Phone number:
E-mail address:	
Glider model and color:	
Serialnumber:	
Coments/notes:	

- 2-yearly-check
- Air permability check
- Call-back at sighting of the glider
- Line check inkl. strength test
- Repair of the marked damage



Obersegel / Top



Untersegel / Bottom

PAPILLON PARAGLIDERS
Wasserkuppe 46
D-36129 GERSFELD

Fax: +49 (06654) 82 96
Tel. +49 (06654) 75 48

info@papillon-paragliders.com
papillon-paragliders.com

LINE ORDER FORM

Last name:	First name:
Street address:	ZIP code, city:
Country:	Phone number:
E-mail address:	
Glider model and color:	
Size:	
Serialnumber:	
Comment/notes:	

Line ID-code	quantity

PAPILLON PARAGLIDERS
Wasserkuppe 46
D-36129 GERSFELD

Fax: +49 (06654) 82 96
Tel. +49 (06654) 75 48

info@papillon-paragliders.com
papillon-paragliders.com

REPLY CARD

Last name:	First name:
Street address:	ZIP code, city:
Country:	Phone number:
E-mail address:	
Product:	
Serialnumber:	
Date of purchase:	
Purchased at:	
Pilot since:	
Number of flights per year:	
Club:	

Yes, I would like to get informed on the newest activities and developments of Papillon Paragliding.

PAPILLON PARAGLIDERS
Wasserkuppe 46
D-36129 GERSFELD

Fax: +49 (06654) 82 96
Tel. +49 (06654) 75 48

info@papillon-paragliders.com
papillon-paragliders.com



MAINTENANCE MANUAL

as developer and manufacturer for paragliders,
harnesses and rescue parachutes

English Rev. 1.2 Effective: June 2017

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TOPIC OF THE INSPECTION AND REINSPECTION INTERVALS

Regular inspection according to aircraft inspection ordinance for standardized evaluated gliders. For school gliders after 1 year, aircraft for recreational use after 2 years. Tandem gliders for commercial purposes annually, non commercial use every 2 years to be inspected. The inspection shall take place in the aforementioned intervals, or no later than 150 hours. Ground handling needs to be included in the sum of flight hours.



ATTENTION: in the case any abnormal flight behavior, the manufacturer should be informed and the canopy, if necessary, sent in for inspection.

Who may inspect/test?

Besides the manufacturer or the by him approved person or instance is authorized the owner of the glider to warrant the bi-annual inspection and only if in compliance with pre-requisites set forth.

Individual personal prerequisites for the inspections

Personal prerequisites for the inspection of individually owned solo gliders for recreational use only:

- Holder of a valid unrestricted license for paragliders or equivalent accredited license.
- An adequate orientation in the operation by the manufacturer. For this a 3 month formation with the manufacturer is necessary.
- If a glider was tested for personal use exclusively, then its use by a third party is not allowed.

Individual personal prerequisites for the inspection of gliders, RG, GZ, used by third parties or for tandem purpose:

- A for the testing prescribed professional training.
- A vocational activity in the production or maintenance of GS, RG, GZ or one of a technically similar nature. Of which 6 month within the last 24 in a manufacturing operation recreational free flight aircraft.
- An at least 2 week, subject to charge, relevant training course at the operation of the manufacturer.
- An applicable orientation for each type of device, which is to be refreshed annually.

Necessary equipment and documentation

- Gauge, preferably Kretschmer (brand) with manual.
- Bettsometer with manual.
- Maintenance directions by manufacturer.
- Original materials and -spare parts, as well as original material-record for the device.
- Assertion of airworthiness for the device.
- Airsports device identification tag (see manual).
- Line length table (see manual).
- Line length logs (if available).
- Inspection log (collecting main) to the documentation.
- Lighttable for visual inspection of the reserve.

DURING THE INSPECTION THE FOLLOWING STEPS ARE TO BE TAKEN IN:

Positive identification of the device:

Positive identification of the aircraft (Type, size, etc.) on the basis certification seal or placard.

- Are the pertinent manufacturer documents available?
- If certification seal and/or placard are in place, are they readable and correct?
- If not so: Please obtain from manufacturer or dealer in question.

The determined values/modifications are to be noted in an inspection log!

Inspection of the reserve parachute

Before packing the reserve parachute this is to be checked by packer. If the parachute was deployed for a rescue, then it is subject to an inspection. If a folded reserve parachute is re-packed again a deployment check is to be staged, to be determined is if the force for deployment is between a minimum of 3kg and maximum of 6kg.

Testing of the topsail, undersail, seams, reserve parachute of

Holes and tears

The topsail and undersail of both paragliders as well as reserve parachutes must, for each cell (paragliders) and each gore (parachutes), from the leading edge to the trailing edge, submitted to the following checks. If in one of the following attributes anomalies are discovered, the glider is to be sent in to the manufacturer for inspection.

- Check for holes smaller or larger tears, deformations and abraded areas.
- Deficiencies in the coating, other aberrations in the canopy like e.g. old repairs.
- With reserve parachutes a light-table is to be used for an inspection for holes, tears and deformations.

Abrasion and deformities

With large and critical abrasion and deformations, the entire cell panel in question must be replaced by the manufacturer. The determined values/modifications are to be noted in the testing log!

Testing of the ribs

Visual inspection of the chambers (from the leading to the trailing edge) whether the stitching in the seams, cell partition ribs and reinforcements are in good shape, thus without tears, deformations, abrasions or damage of the coating.

With torn ribs, defective, loose or missing stitching in the seams the glider must be returned to the manufacturer or authorized inspection operation. The determined values/modifications are to be noted in the inspection log!

Check of the tear resistance

To be conducted with the Bettsometer at the following points (B.M.A.A. approved patent number GB2270768 Clive of bed Sails)

The test sequence is to be inferred from the operating instruction the Bettosometer.

- In both the top and undersail where the A-lines connect, push a needle-thick hole and check the tear resistance.
- The limit value of the measurement is determined at 500g, and a tear width of fewer than 5mm.

The determined values/modifications are to be noted in the inspection log!

Porosity check of the canopy

At all following measuring points the air porosity has to be more than at least 20 sec. (by Kretschmer).

At smaller air permeability values the paraglider must be returned to the manufacturer.

Measuring points: The porosity measurements by the Kretschmer measuring method (please consider operating instruction) are to be conducted at the following points on the canopy check on both under and upper sail.

- Center cell approx. 20-30cm back from leading edge
- 3rd Cell off center both to the left/right approx. 20-30cm back from leading edge
- 10th Cell off center both to the left/right approx. 20-30cm back from leading edge

The determined values/modifications are to be noted in the inspection log!

Connection parts

Check of the webbing and maillons

- are there abrasions, buckling, tears, strong signs of wear obvious?
- Is all the stitching fast and firm?
- Is the accelerator running free and intact?
- Are brake toggle attachments still firmly sewn on?
- Are the maillons corrosion free, are the sleeves of the gates free moving on the thread?

Measure under a load of 5 kg. The determined values are to be compared with the specifications from the EAPR-Technical data sheet. Allowable variations are to be inferred from the manufacturer directions. If the webbing or parts thereof are defective, spare parts are to be ordered from the manufacturer and replace the defective parts with original parts. The determined values/modification are to be note in the inspection log!

Lines

Test of the line tensile strength:

Line selection: select a middle, lower cascade of the A, B and a C- lines as well as if available a middle A and B upper cascade, and stress test for tensile strength testing device on their tensile strength. Tension velocity of the tension cylinder: $v=30\text{cm/min}$ Tear/tensile strength values: the determined values/modifications are to be noted in the inspection!



ATTENTION: Each size (line diameter) is to be assigned a fixed value.

In case the lines cannot withstand the indicated load/stress or pass tensile strength test, all other lines must also be changed. If the checked lines fulfill the test criteria, only those are replaced by new lines. All replaced lines are to be marked in the proximity of the maillon (seam) with a black felt marker pen and noted in the inspection log with the date of the exchange and the logged of hours of flight time of the glider. During the next test for tensile strength an original line, neighbouring the replaced line is to be sampled. The various line diameters are allocated a minimal Sewing length!

Check of the line length and line attachments

Bottom cascade, upper cascades and brake lines for, breaks, abrasions, visual check. First the A-lines, then B. etc.

- Are all lines adequately sewn and attached to the line attachments?
- Is the sheathing of the lines even are exactly?
- Are all loops, knots, seams in good shape?
- Are there any abrasions present?

Measuring the line lengths:

- The lines must be measured with a load of 5 kg, in order to obtain comparable results. The relevant line lengths are in the technical data sheet of the user manual.
- The measurement takes place in accordance with DHV method, from the maillon to the canopy (inclusive attachment loop at the sail).
- The numbering takes place from the center toward the stabilo. Measuring the opposite facing of the wing can under same conditions also be conducted by a symmetry comparison.
- The results are again noted in the inspection log and should be compared side by side to line lengths of the EAPR technical data sheet. The tolerance in deviation of these values should not exceed more than $\pm 1,5\text{cm}$
- If a line is defective, it is to be exchanged immediately. Please acquire the identification reference marking of the line from the line plan, order from the manufacturer and replace accordingly or have it replaced.

The determined values/modifications are to be noted in the inspection log!

Occasional check of trim and adjustment

Before a test flight a visual inspection of the canopy and lines is to be conducted with the glider laid out as well as pulled up inflated.

In particular attention should be paid to the length of the brake lines with the canopy inflated. Only if all doubts are cleared concerning faulty adjustment of the brake lines, a check flight may be conducted.

Description of the materials and technical data

See manual of your paraglider.

Miscellaneous

- All measurement and repair work at paraglider and rescue system must be documented completely in the inspection log.
- When packing or repacking the reserve parachute, special attention is to be paid to the particular packing directions of the manufacturer! See rescue/reserve equipment manual.
- With the exchange of parts or component modules only original materials or original replacement parts may be used!
- With sewing work the original sewing pattern is to be kept, patching and thread material of same strength and quality as original!
- The inspection survey and/or test log must be signed, complete with place and date!
- The period for recordkeeping is 4 years.

COMPLETED CHECK - VERY IMPORTANT!

Before you perform any checks and/or repairs yourself on your glider, we ask to read you the following pages carefully. You inform yourself hereby about prerequisites and conditions of a done in person bi-annual inspection.

- According to new DHV regulation, the customer (Glider-owner) can conduct the 2-yearly check of the canopy with the help of the inspection directions and all necessary testing equipment and documents in person on his own responsibility. In addition the wing does not have to be sent in to the manufacturer.
- The 2-yearly check may only be conducted by the glider owner personally, if he fulfils the prerequisites, or an inspection station authorized by the manufacturer. Inquire therefore with the manufacturer on authorized inspection stations.
- The owner of the canopy must be aware of the responsibility, which he takes with a self conducted 2-yearly check of the glider. The self performed 2-yearly check is only legally effective, if this is acknowledged after the check with date, name (in capitals) and signature on or beside the placard.
- Reserve equipment re-packing interval in accordance with DHV: Every 4 months a repacking is required. Allowed period of operation: 8 years, afterwards up to 12 years with an annual check
- About insurance-legal consequences of yourself performed 2-yearly inspection you should inform with your insurer in a timely fashion.
- An inspection is valid only if the inspection log is completely filled out. Inform also about possible revisions of the inspection directions with the manufacturer before the inspection.
- Important: If the necessary efforts for the maintenance inspection cannot be carried out (required equipment and documents), should the canopy be sent in to the manufacturer.
- Any warranty and guarantee will be voided for paragliders, harnesses and reserve parachutes, which are checked, controlled, repaired, packed or repacked, test-flown and/or have other maintenance work done by personnel not authorized by Papillon Paragliders!
- All maintenance work must in be accordance with the maintenance specifications of the operation manual and the special maintenance directions of the manufacturer and the publications of the IHB to be conducted.
- With any abnormal appearances during the performance of maintenance is the technical manager to be informed, who has to decide on how to proceed.
- With the replacement of parts or component modules only original materials or original party may be used!

PAPILLON PARAGLIDERS

Wasserkuppe 46

36129 Gersfeld

Fon: +49 (0)6654 - 75 48

Fax: +49 (0)6654 - 82 96

info@papillon-paragliders.com

Further information: papillon-paragliders.com

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