



Papillon®
42
LTF/EN B

MANUAL

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Please read this manual
before you fly your new Papillon P42
for the first time.



Doppler
PARAGLIDING

PAPILLON P42:

Thank you for choosing the PAPILLON P42. We would like to thank you for your trust and wish you many pleasant flights!

The tandem glider, where you could forget that you are flying a tandem glider. Its handling is agile, its turning ability high and its control pressure low - making it almost like a solo glider. It reacts precisely and without delay to control impulses and is therefore very easy to turn. The P42 reliably converts thermal energy into height.

The experience of Papillon Paragliding, Europe's largest paragliding school went into the development of the P42.

If you have any questions about your flight equipment, please do not hesitate to contact us.

See you UP in the sky!
Your Papillon-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 P42 as easy and safe as possible.

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**WELCOME
TO THE PAPILLON WORLD OF PARAGLIDING!**



PAPILLON P42

The tandem glider, where you could forget that you are flying a tandem glider. Its handling is agile, its turning ability high and its control pressure low - making it almost like a solo glider. It reacts precisely and without delay to control impulses and is therefore very easy to turn. The P42 reliably converts thermal energy into height.

The P42 can be started very well with a low take-off speed and therefore short take-off distance. Thanks to its good low-speed flight characteristics and high performance, the P42 glides very well when landing, making it easy to land.

Due to the intelligent material mix of the P42 and its high-quality manufacturing, a low canopy weight and long service life can be achieved.

The Sharknose ensures high stability and an extended inflow area. His canopy reactions are moderate and subdued. In addition to the Sharknose, the PPN supports increased profile fidelity along the leading edge. Elaborate calculations of the ballooning and optimized wing pre-stressing ensure the perfect flow 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. In the rear area, Miniribs (MRB) and the Brake Gathering System (BGS) ensure efficient power transmission of the brakes.

The riser is equipped with a new trimmer system. The effective system prevents the profile from warping by not only accelerating the D and C levels, but also changing the B level in relation to the angle of attack. As a result, the shape of the profile is retained, resulting in significantly better gliding. A special clamping device is mounted on the D-risers, which allows the pilot to fix the brake lines in any position. This way you can take care of the passenger even in turbulent conditions. A separate A-riser makes flying with Big Ears easy.



P42

Usage

The P42 has been developed and tested exclusively for use as a paraglider for foot and winch launch. Improper use is not permitted. The P42 was not built and tested for aerobatics. It is not suitable or approved for this purpose. If you perform aerobatics with the P42, your life is in danger. When performing aerobatic manoeuvres, unpredictable flight positions can occur as well as an overload of material and pilot.

The P42 is a light aircraft with a mass of less than 120 kg in the class of paragliders.

The P42 is designed for two-seat operation. In order to ensure safe flight operations, all persons and equipment involved must have the required licences and certificates. This applies to the pilot, harness, rescue system and tandem suspension. The P42 is type-tested and classified according to LTF/EN B.

Motorised Paragliding

The P42 is not certified for paramotor usage.

Winching

Take the following points into account:

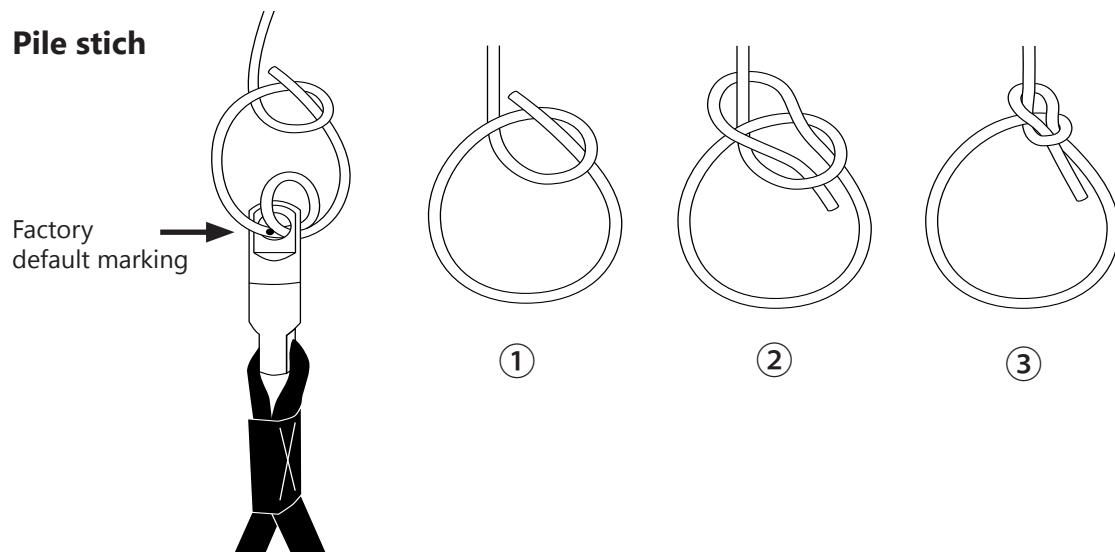
- Do not use a tow line tension over 150 kp with the Papillon P42.
- If you are not operating at your usual winch, get acquainted with the local procedures. Every visitor on unfamiliar flying grounds needs to get a good briefing by a local pilot.
- Never winch the Papillon P42 with loads outside the 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.



Safety precautions

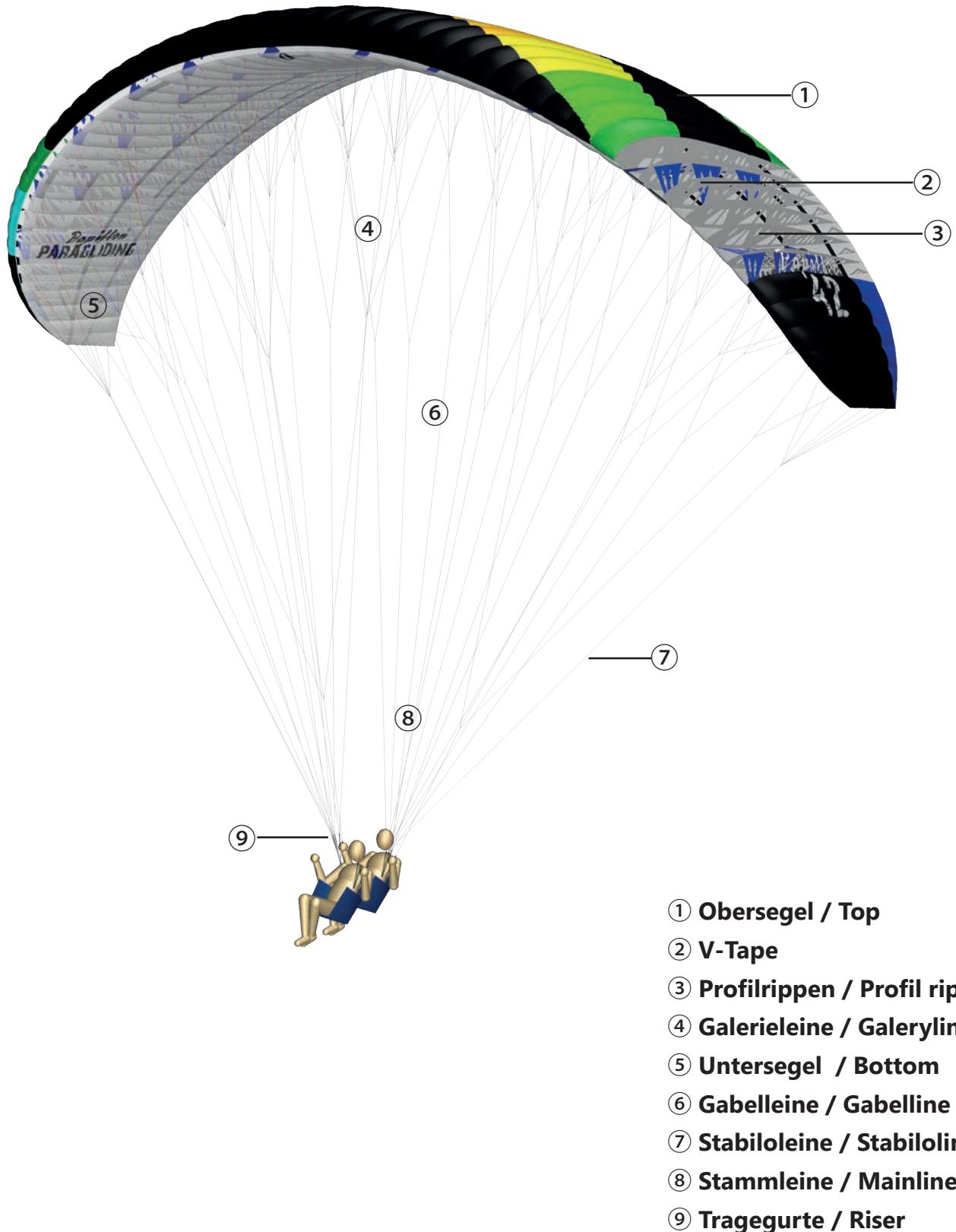
- Before the first flight, the canopy, lines, all connections and sutures, the shackles and brake lines, as well as any twisted lines must be checked by appropriately trained personnel and confirmed in the type plate.
- Make your maiden flight in a familiar flying site and calm conditions.
- Test your Papillon P42 only over water.
- In a „dynamic flight“ not only you are exposed to high loads but also the glider. Do not underestimate this!
- Only fly the P42 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 P42.
- The use of suitable, certified and in the respective country approved accessories (helmet, harness, reserve) is a requirement for the use of the Papillon P42.
- 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 P42 only in wind strengths, in which you are able to control the wing to 100%. Do not use the Papillon P42 in wind with a great gust factor. Never use the glider with approaching thunderstorms or if probability of those or 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



Risers

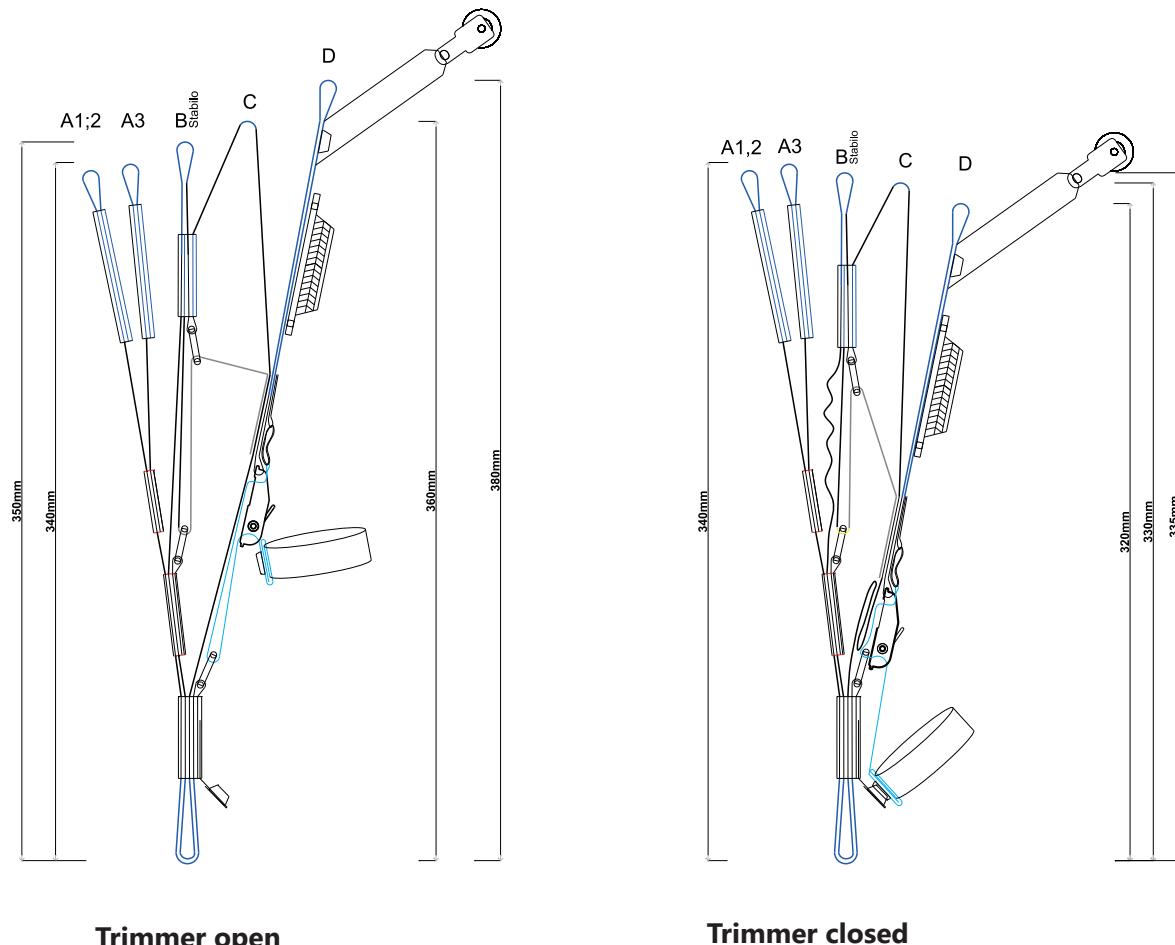
The A- and B- risers are colour-coded and equipped with the Pilot Assistant System to ensure a clear identification during take-off and flight. The D riser is equipped with the BRAKE-FIX-CLIP. The neoprene-covered clamping device allows the pilot to fix the brake lines in any position. This way you can take care of the passenger even in turbulent conditions.

Trimmer

The P42 is equipped with a new trimmer system. The effective system prevents the profile from twisting by not only accelerating the D and C planes, but also changing the B plane in relation to the angle of attack. As a result, the shape of the profile is retained, resulting in significantly better gliding.

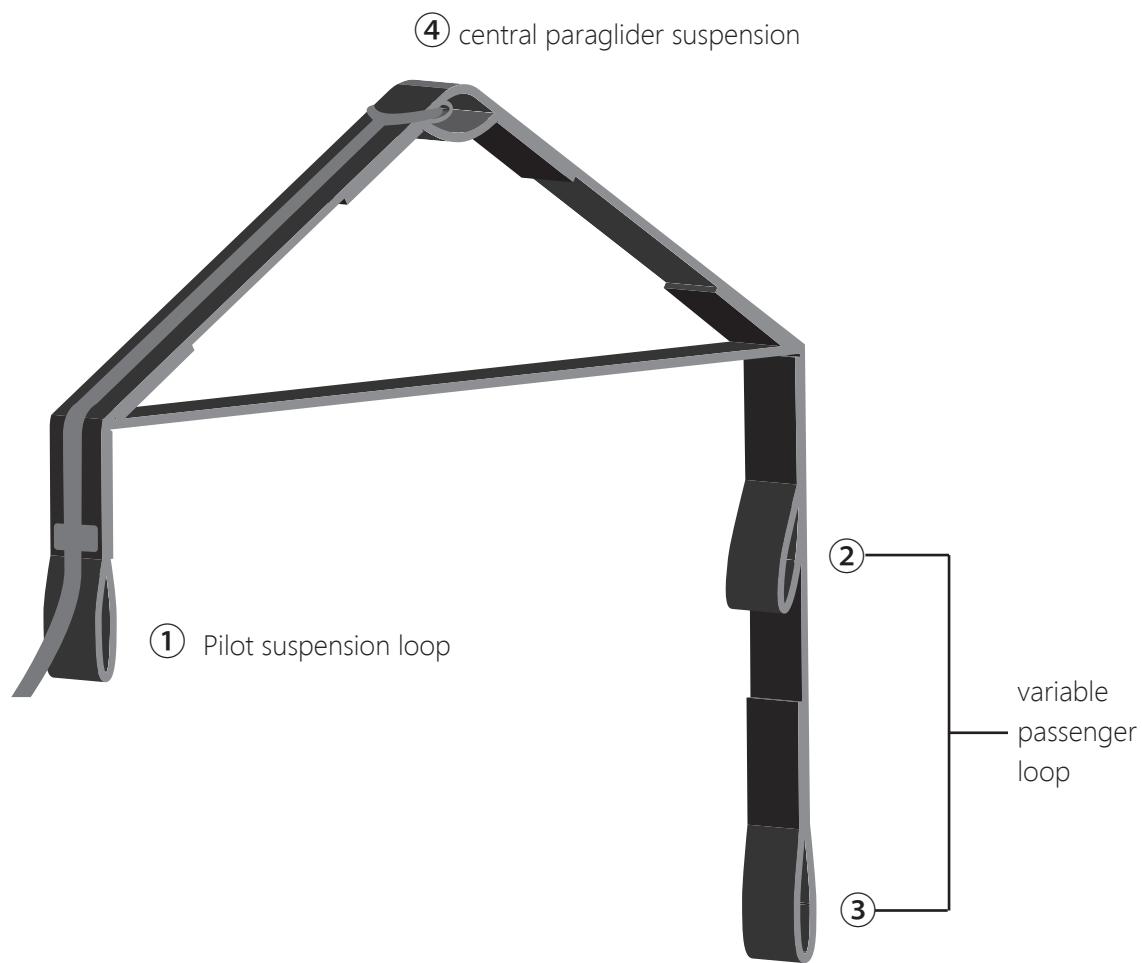
Papillon recommends keeping the trimmer closed during take-off and landing. All extreme flight conditions (e. g. collapses) are more dynamic at higher speeds.

In addition, the P42 is equipped with a replaceable trimmer band. This can be easily replaced by a carabiner covered with neoprene. Other adjustable, removable or variable devices are not available.



Distance suspension

The P42 is delivered with a hard spreader. However, soft spreads can also be used. The two-seater distance suspension has a suspension loop for the pilot (1), two suspension loops for the passenger (2+3) and the central paraglider suspension (4). The pilot hangs himself/herself in loop 1. loop 3 is provided for small passengers and loop 2 for larger passengers. Care must be taken to ensure that it is symmetrically suspended. Unsymmetrical suspension can cause the pilot and passenger to be in an uncomfortable flight position and make it difficult to control the glider.



INFORMATION FOR TANDEM PILOTS

Dealing with the passenger

The launching place should be chosen away from the big hustle and bustle. It is advisable to carry out warm-up exercises with the passenger before the start and to practice the take-off run in succession or side by side, depending on the chosen technique. It is especially important to point out that the start consists of two phases: the lifting phase and the acceleration phase. Practical experience has shown that many passengers get into their harness far too early because of the brake during the take-off run and thus provoke a false start. It has therefore proved to be a good idea to explain that the paraglider must first be lifted with slow steps in order to have correction possibilities, but that it must then be brought up to speed like any other aircraft before it can take off.

Exception: In case of strong headwinds, the passenger and the pilot have to push themselves against the wind during the wind-up phase (preferably by grabbing the T-bar) in order not to be knocked over backwards.

Equipment

Passenger's clothing should be adapted to the temperature and include ankle-high shoes with a non-slip sole and a helmet. Gloves are also recommended. Integral helmets offer better protection, but should be equipped with a removable or wide chin strap because of the possible danger of suffocation in case of vomiting (panic). Please remember to inform the passenger in good time, not only on the mountain, about the necessary equipment.

Terrain

When choosing the launch site, special attention must be paid to the special requirements of tandem flying, i. e. a possibly longer take-off phase and a limited correction possibility must be taken into account. In addition, care must be taken to ensure that the run-up section is completely free of obstacles. When choosing the landing site, a longer glide distance has to be taken into account due to the generally higher speed of double-seaters, as well as the limited manoeuvrability at ground level. The landing site should be free of obstacles and turbulence.

Instruction of the passenger

The following commands are defined for the start run:

- Lifting (better: 3-2-1 go)
- run
- stop
- right
- links

From the command "Run", the passenger has to put pressure on the paraglider. In case of aborted take-off, the pilot immediately calls "Stop". The direction of a possible aborted start must be determined before the start! In particular, the pilot should bear in mind that the higher wing loading requires a longer take-off distance and a higher flight speed than in single-seater operations. The further flight phase must also be discussed with the passenger before take-off. It is important to note that if the passenger refuses to do so, the start must not be forced.

It has also proved helpful to point out to the passenger that he/she should not look downwards, but should focus attention on other aspects of the flight in order to avoid possible fear of heights. Also in this phase the pilot actively involves the passenger in all activities, although only the pilot is responsible for the proper execution. After the lines have been laid out and sorted, the pilot will assist the passenger in putting on the harness. It is advisable to carry out a seat test, the easiest way is to use another pilot who lifts the passenger in his harness on the karabiners from the ground. In this way, the seating position in flight can be controlled and any necessary corrections can still be made. The control of the leg and the chest straps is of crucial importance! Seatbelts with an airbag or protector have proven their worth, as many passengers tend to sit in the grass instead of running out when landing.

Pre-flight check

A thorough pre-flight check is required for each aircraft, including the P42, and our experience has shown that tandem paragliders are often flown by several people. Please double-check if you are not the only pilot using this paraglider. If you lend your glider, please inform the lender of this fact as well. Also make sure that the lender knows the operating limits of the P42 and has the necessary qualification certificate. Before every take-off check the lines, risers and canopy for damage. Even in the case of small defects it is not advisable to start. After the paraglider has been unpacked and laid out in a semicircle, the following must be observed:

The paraglider should be laid out in such a way that the lines in the centre of the paraglider are tensioned a little earlier than the lines at the wingtips when the A-risers are pulled. This ensures an easy and directionally stable start. When laying out the glider, please pay attention to the wind direction, so that both halves of the paraglider are loaded symmetrically when being pulled up against the wind. Carefully separate the lines and arrange the risers. The A-lines deserve special attention. They must run freely and without entanglement from the A-risers to the canopy. It is also important that the brake lines are completely unobstructed and cannot get stuck during the launch. If the risers are not twisted, the brake lines run freely through the eyelet to the rear edge of the glider. Make sure that no lines run under the canopy. A line throw-up at the start can have fatal consequences. It is highly recommended to involve the passenger in the pre-flight check to familiarize him/her with the equipment.

Suspension and check

The decision as to whether the passenger is to be attached to a longer or shorter loop of the T-Bar (if present) must be made taking into account the passenger's height and any difference in weight. If the passenger is smaller than the pilot, it must be attached to the lower suspension loop. This prevents the co-pilot from being lifted off the ground too early and also keeps the pilot's visibility clear.

After attaching the pilot to the T-Bar with risers and fastening the carabiners, he asks the passenger to stand in front of him in order to be able to attach him correctly. He is prompted to follow the process visually. Don't forget: the carabiners of the passenger are also to be secured (except Twistlock). The passenger is located in front of or beside the pilot during all phases of the flight. For safety reasons, suspensions that allow the co-pilot to be positioned behind the pilot are not permitted!

Launching the paraglider

The paraglider is lifted by the pilot as described in the chapter "Flight Practice/The Start".

It is important that the pilot carefully checks whether the glider is filled correctly. In the event of problems, the start will be terminated immediately, otherwise, if the glider is properly filled and the lines are free, the decision to start will be made and communicated to the passenger with the command "Run". After the "Run" command, rapid acceleration to the take-off point takes place. If the passenger runs too timidly, the command "Run" must be repeated loudly and the passenger must be encouraged to run faster if necessary by pressure from the pilot.

Flight

After take-off, the passenger is asked to look up to see the open canopy. This builds confidence in the glider (and calms the nerves). It is also important to ask the passenger whether he or she is comfortable in the harness and not just sitting on the front edge of the seat board. If the passenger's knees are clearly lowered, he or she is not yet in the correct position, but if his or her knees point upwards, the pilot recognizes that his or her passenger has already slipped into the harness. If necessary, it will help the passenger to slide into the harness properly after a sufficient ground distance. Only then does he or she adjust his or her own harness to avoid too much unrest.

Always keep in mind that a tandem glider has a larger turning radius and reacts slower than your solo glider. But also in the tandem the handling can be decisively improved by shifting the weight. Overfilled thermals are taboo for tandem pilots!

The sitting position in a row means that you cannot look into the passenger's eyes. Therefore, it is important to constantly exchange encouraging and inspiring words during the flight, in order to counteract a possibly arising fear of heights or even just an unease, or to recognize this already in the beginning. A good piece of advice in such a case is to target the horizon and not look down. Generally speaking, the more relaxed the pilot is towards the passenger and the more tranquillity he or she radiates, the more trust the passenger will gain and the more he or she will enjoy the flight.

Landing

Passengers should be prepared for landing only during flight. Too much information prior to take-off means that the passenger is only unnecessarily overtaxed.

Especially for longer flights, it is advisable to stimulate the blood circulation of the legs of the pilot and passenger by exercising before landing. The wind direction at the landing site, altitude and air traffic must be checked at a sufficient height and before the position is flown. Particularly in the case of double-seated flights, this is of crucial importance due to the generally higher approach speed and limited mobility. A downwind landing with a tandem carries a high risk of injury!

The landing approach should be dimensioned on a large scale. Corrections near the ground should be avoided due to the pendulum inclination. The landing should always take place next to each other, as practice has shown that many passengers do not run out despite being asked to do so and sit down instead. It would be possible for the pilot to hit the passenger's helmet with his chin and knock his teeth out or at least bite his tongue, or to fall over the passenger and hurt him.

Also point out to the passenger that he or she should not rest his or her hands on the ground when landing because of the risk of injury. Before landing in a stabilized final approach, it has proved to be a good idea to press the passenger with one leg to the side and, on command, ask him to slip out of the harness into the upright position. Then take the step position to be able to run out more easily! The position of the passenger must be checked by the pilot!

Carry out the final approach in the medium to high speed range in order to be able to flare for the final approach.

After the flight

After the flight, the passenger should be given the opportunity to describe his or her experiences or ask questions, as there is often a need to share what he or she has experienced.

THE FLIGHT - IN GENERAL

Flying experience

This manual is only focusing on the points of the technique of flying that are important for the Papillon P42. 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 P42 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.



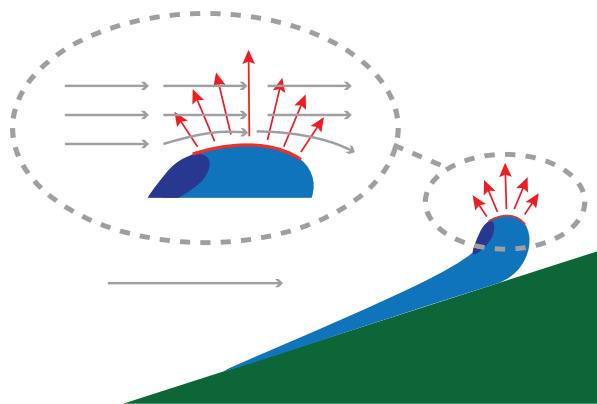
NOTE: Unlike other gliders, it is not necessary to inflate the Papillon P42 with aggressive pulling or even fast running. That is also true when there is little to zero wind. Measured pulling up is the simplest and safest way to launch the Papillon P42.

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.

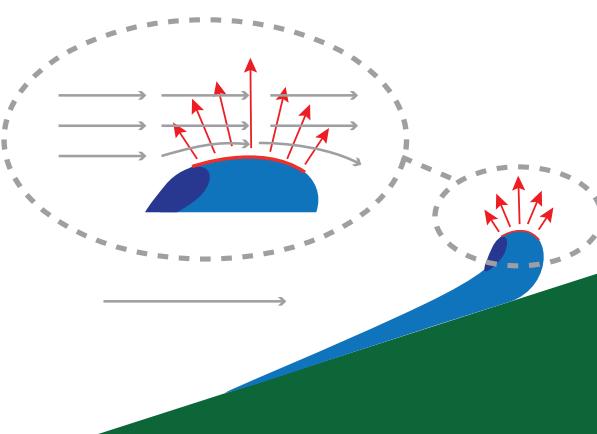
You take off the ground but remain ready to run in order to react to an unexpected drop. Only sit down with sufficient ground clearance. The control lines are not released.

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.

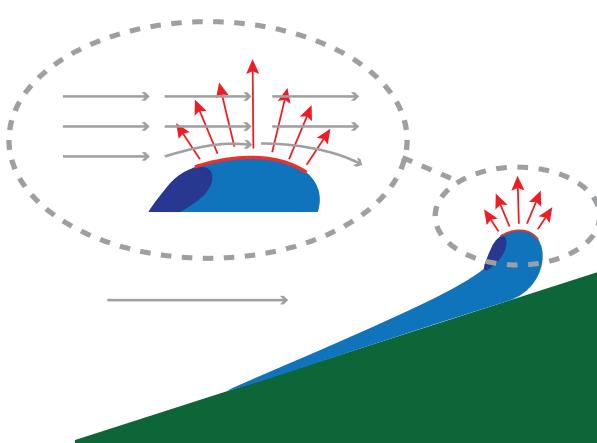
In flat terrain take-off may be more impulsive. After inflating and lifting the paraglider, perform a detailed visual check of the canopy. The running speed is reduced and adapted to the wind situation. In the steep launch site, the start is initiated with a small impulse and then a clear brake pull.



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 P42 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 P42 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 P42 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 P42 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.

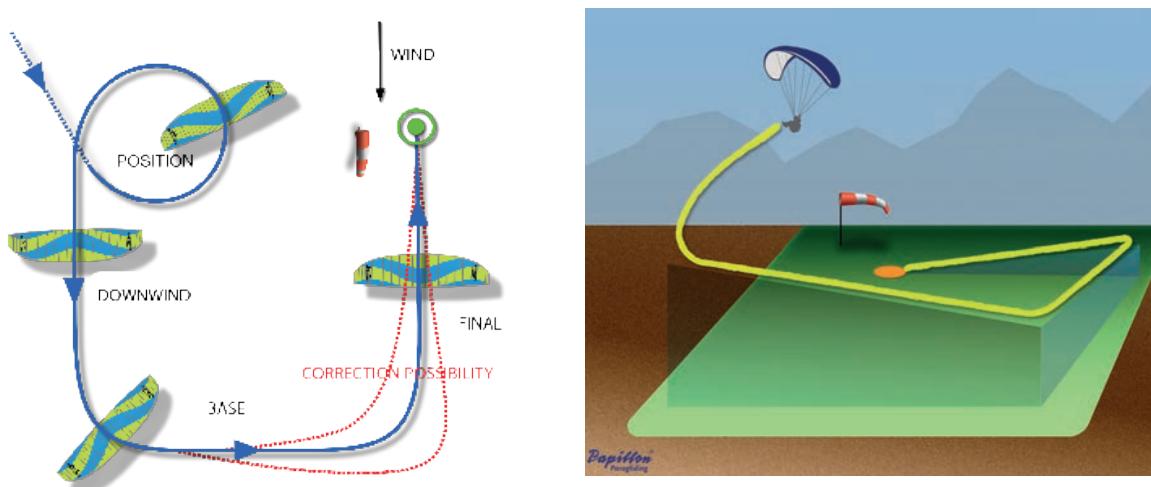
Landing

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 P42 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 earring" 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 P42 shows an unproblematic behaviour during this manoeuvre.



NOTE: The P42 facilitates big ears with a special big ear aid (seperate 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 P42 facilitates big ears with special big ear aid (separate riser with big ear icon).

With the Papillon P42 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 P42 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 P42.



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 P42 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 P42 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 P42 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 P42 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 P42 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 P42 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 though a full stall, by braking the flying side into a stall as well.



ATTENTION: The Spin and the Fullstall and 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 P42 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 P42 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 P42 it will be unrelievedly airworthy for many years at good care and maintenance. The aging of your Papillon P42 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 P42 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 other 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 P42 has to be inspected by the manufacturer or importeur. 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 approved harnesses with suspension at chest height are suitable for the Papillon P42. The lower the suspension point of the harness, the better the Papillon P42 can be controlled by shifting the weight.

For the pilot, special tandem harnesses have proven to be effective and provide optimum freedom of movement during take-off, flight and landing. A simple, uncomplicated harness is recommended for the passenger. Too many adjustment options confuse the passenger. Important for the passenger harness is a good protector, preferably a shock-absorbing foam protector, because some passengers tend to sit down at the first touch on the ground instead of running along. Consider that the relative braking distance also changes with the height of the suspension of the harness.

The P42 is approved for harnesses without rigid cross bracing. The suspension height of the harnesses used in the test flights was 42cm between seat board and carabiner and a horizontal distance of 46cm between the chest straps.

If you have any questions regarding the use of your harness with the Papillon P42, please contact us. We are happy to help!

Suitable Rescue Systems

Not only is it mandatory to carry a suitable and approved rescue parachute, it is absolutely vital for the safe operation of a paraglider. When selecting the rescue parachute, ensure that it is suitable and approved for the intended take-off weight.

Special tandem rescue devices are necessary here. The suspension loop (s) of the rescue must be connected to the V-lines and attached to the appropriate suspension of the spreader (in case of attachment to the pilot harness, there is a danger that the passenger will hang about one meter lower). This could cause serious injury to the passenger during landing!

The rescue must be stowed in the pilot's harness, and an incorrect opening on the part of the pilot or passenger must be ruled out. Learning how to handle the rescue equipment during a safety training course is highly recommended, as the tandem parachutes of today are extremely difficult to pull in due to the developing forces with their more than 40 sqm after a parachute launch. The advantage here is the use of approved separating karabiners, which can be purchased from specialist retailers. When purchasing the separating karabiners, care must be taken to ensure that they are approved for the intended load range.

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 P42 inherits certain dangers of bodily harm or even death of the user of this product or a third party. With the use of the P42 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 exclusion

With the completion of the purchase of a Papillon P42 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 P42 and or either components 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 P42 could suffer as a result of the usage of the P42. 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 production and processing the Papillon P42 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 P42.

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 airworthiness before every flight. We also take it as a given that the pilot is in possession 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, RENOUACEMENT OF ENTITLEMENT

Hereby you declare, that - prior to use of the Papillon P42 - you have read and understood the Papillon P42 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 P42 to a third party - through transferring ownership temporary or permanently, for this other user to have read and understood the Papillon P42 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 P42

42

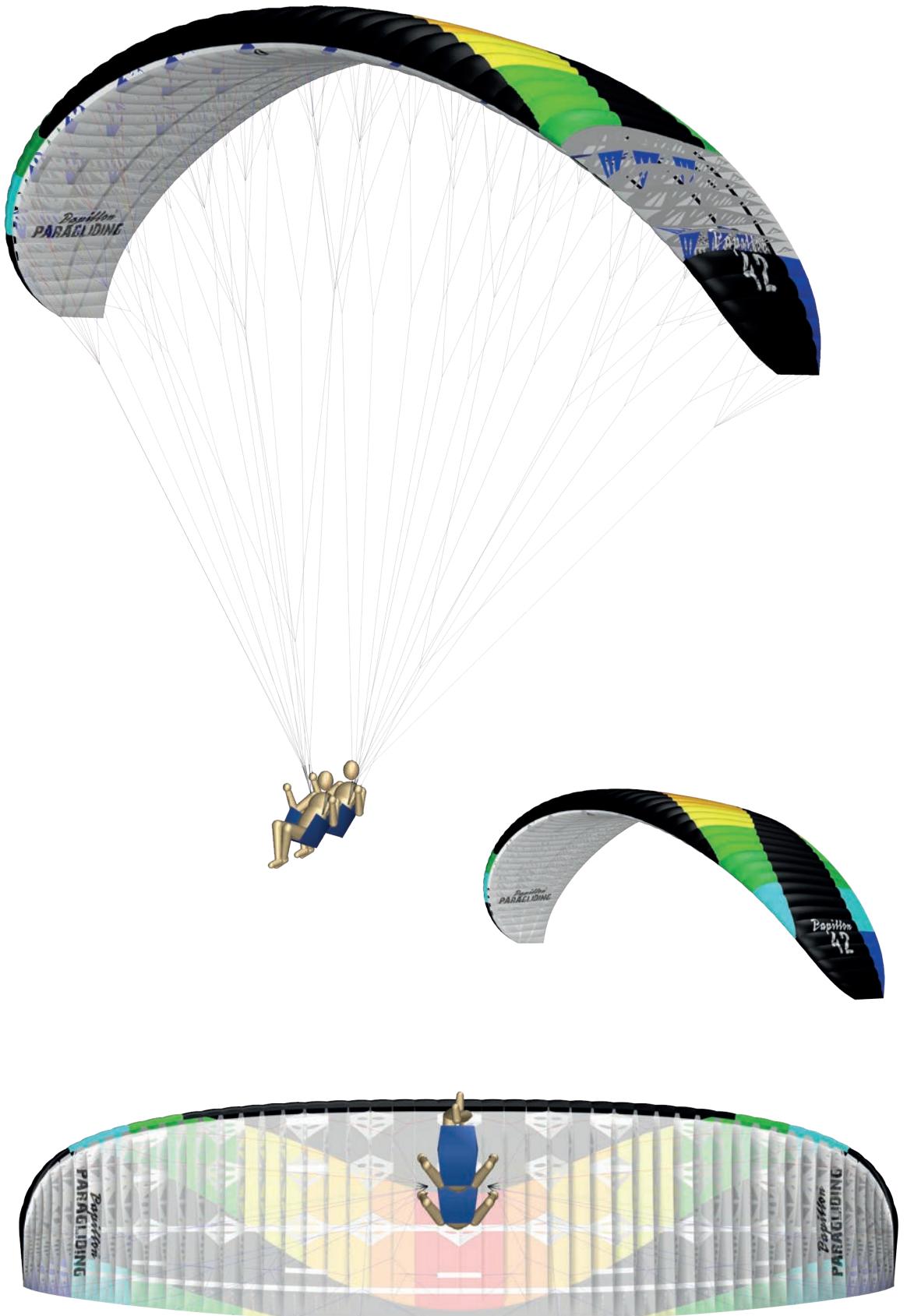
Start weight Startgewicht	140-230 kg
Flat area Fläche ausgelegt	42,5 m ²
Projected area Fläche projiziert	36,0 m ²
Flat wingspan Spannweite ausgelegt	15,149 m
Projected wingspan Spannweite projiziert	11,898 m
Flat AR Streckung ausgelegt	5,4
Projected AR Streckung projiziert	3,931
Chord: center / wingtip Flügeltiefe: Mitte / Stabilo	3,422 / 0,780 m
V-trim V-Trimm	37-40 km/h
V-max V-Max.	43-46 km/h
Bridle height Abstand Tragegurt-Kappe	9,09 m
Nr. of cells Zellenanzahl	52
Glider weight Gewicht	GT 7,3kg // PRO 8,3kg
Bridle length Gesamt Leinenlänge	457,52 m
Line diameter Leinendurchmesser	0,9 / 1,1 / 1,3 / 1,5 / 1,8 / 2,2mm
Speed system / trimmer Fuß Beschleuniger / Trimmer	Nein / Ja No / Yes
Beschleunigerweg max.way of acceleration	60 mm
Certified standards and procedures Angewandte Testverfahren	LTF 91/09 & EN 926-1:2006, 926-2:2013
Folding lines used for certification Falteinen für Testflüge benutzt	Nein No
Certification No. Zulassungsnummer	

:Irrors and omissions expected. Subject to change without notice.

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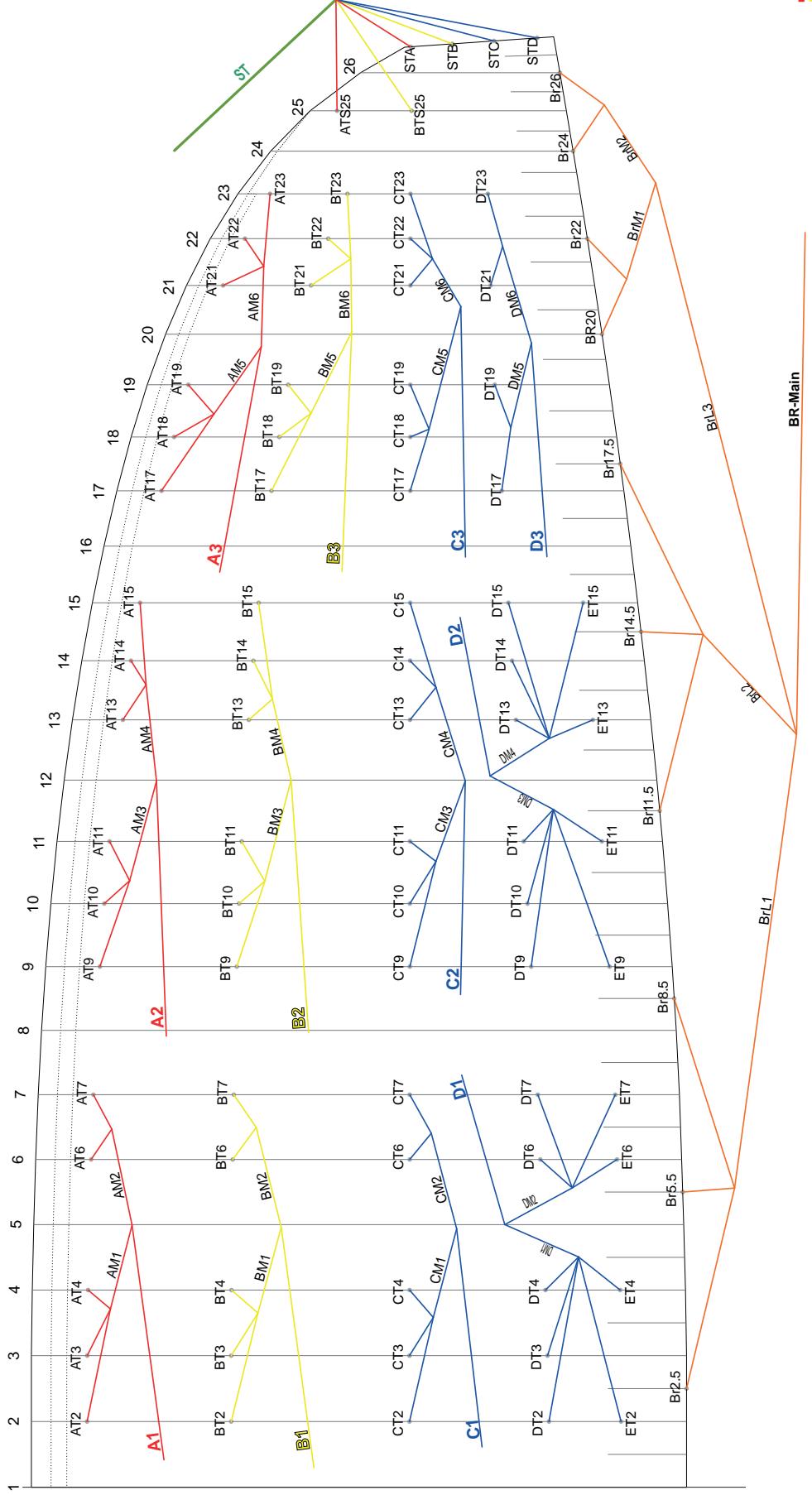
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COLOR-INFO



LINE CODE P42

A B C+D BR ST



LINE PLAN P42

P42		29.10.2015		Line plan Rev 3		Mesurements EAPER (final)		Difference: Line plan & EAPR measurements		P42		Line configuration -rev 2	
						A-Line		A-Line		A-Line		A-Line	
Rib # 2	1151	1900	5690			8741		8755	14	Rib # 2	DC 100	TSL 190	TSL 380
Rib # 3	1055					8645		8657	12	Rib # 3	DC 100		
Rib # 4	1050					8640		8649	9	Rib # 4	DC 100		
Rib # 6	600	2330				8620		8633	13	Rib # 6	DC 100	TSL 190	
Rib # 7	637					8657		8670	13	Rib # 7	DC 100		
Rib # 9	1147	2100	5415			8662		8659	-4	Rib # 9	DC 100	TSL 190	TSL 380
Rib # 10	1050					8565		8568	3	Rib # 10	DC 100		
Rib # 11	1035					8550		8552	2	Rib # 11	DC 100		
Rib # 13	993	2100				8508		8510	2	Rib # 13	DC 100	TSL 190	
Rib # 14	975					8490		8492	0	Rib # 14	DC 100		
Rib # 15	1033					8548		8548	-1	Rib # 15	DC 100		
Rib # 17	940	1550	5950			8440		8440	-3	Rib # 17	DC 100	TSL 190	TSL 280
Rib # 18	829					8329		8326	-6	Rib # 18	DC 100		
Rib # 19	784					8284		8278	-7	Rib # 19	DC 100		
Rib # 21	763	1450				8163		8157	-9	Rib # 21	DC 100	TSL 190	
Rib # 22	700					8100		8093	7	Rib # 22	DC 100		
Rib # 23	715					8115		8107	5	Rib # 23	DC 100		
Rib # 25	1273					7873		7880		Rib # 25	DSL70		
Stabi	1037					7637		7642		Stabi	DSL70		
						B-Line		B-Line		B-Line		B-Line	
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Rib # 4	1050					8538		8557	19	Rib # 4	DC 100		
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Rib # 7	637					8555		8573	18	Rib # 7	DC 100		
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Rib # 18	832					8297		8292	-5	Rib # 18	DC 100		
Rib # 19	787					8252		8250	-2	Rib # 19	DC 100		
Rib # 21	767	1425				8107		8100	-7	Rib # 21	DC 100	TSL 140	
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Rib # 11	1018					8618		8617	-2	Rib # 11	DC 100		
Rib # 13	1012	2042				8554		8547	-7	Rib # 13	DC 100	TSL 190	
Rib # 14	975					8517		8511	-6	Rib # 14	DC 100		
Rib # 15	1016					8558		8553	-6	Rib # 15	DC 100		
Rib # 17	940	1550	5965			8455		8451	-4	Rib # 17	DC 100	TSL 140	TSL 190
Rib # 19	791					8306		8302	-5	Rib # 19	DC 100		
Rib # 21	783	1425				8173		8172	-1	Rib # 21	DC 100	TSL 140	
Rib # 23	714					8104		8103	-1	Rib # 23	DC 100		
Stabi	1160					7766		7766	6	Stabi	DSL70		
						E-Line		E-Line		E-Line		E-Line	
Rib # 2	1257					8927		8921	-7	Rib # 2	DC 60		
Rib # 4	1162					8832		8825	-8	Rib # 4	DC 60		
Rib # 6	735					8837		8833	-4	Rib # 6	DC 60		
Rib # 7	763					8865		8860	-5	Rib # 7	DC 60		
Rib # 9	1275					8875		8873	-2	Rib # 9	DC 60		
Rib # 11	1125					8725		8719	-6	Rib # 11	DC 60		
Rib # 13	1108					8650		8647	-4	Rib # 13	DC 60		
Rib # 15	1089					8631		8624	-8	Rib # 15	DC 60		
						Brake-Line		Brake-Line		Brake-Line		Brake-Line	
Rib # 2,5	3495		4270	1695		9460		9475	15	Rib # 2,5	DSL70	PPSL 120	DSL 300
Rib # 5,5	3113			. + 200		9078		9098	20	Rib # 5,5	DSL70		. + 200
Rib # 8,5	2990					8955		8973	18	Rib # 8,5	DSL70		
Rib # 11,5	2946		4210			8851		8865	14	Rib # 11,5	DSL70	PPSL 120	
Rib # 14,5	2739					8644		8659	15	Rib # 14,5	DSL70		
Rib # 17,5	2744					8649		8670	21	Rib # 17,5	DSL70		
Rib # 20	1187	900	4800			8582		8601	19	Rib # 20	DSL70	PPSL 120	
Rib # 22	1075					8470		8488	18	Rib # 22	DSL70		
Rib # 24	806	1090				8391		8407	16	Rib # 24	DSL70	PPSL 120	
Rib # 26	780					8365		8382	17	Rib # 26	DSL70		
Complete length of main brake line: 1938mm Handle on: 1735mm													

Including riser					
A	B	C	D	E	Brake
9120	9023	9073	9182	9286	9470
9022	8924	8975	9087	9190	9098
9014	8922	8966	9081	9198	8973
8998	8899	8956	9066	9225	8863
9035	8938	8989	9101	9238	8659
9024	8948	9005	9125	9084	8670
8933	8852	8906	9013	9012	8601
8917	8835	8879	8982	8989	8488
8875	8785	8825	8909		8410
8857	8772	8803	8876		8384
8913	8829	8863	8918		
8805	8717	8768	8816		
8691	8613	8655	8667		
8643	8577	8615	8537		
8522	8453	8465	8468		
8458	8397	8406	8131		
8472	8411	8387			
8245	8143	8038			
8007	8001				

Riser / trimmer position					
offen/normal	365	365	380	395	405
speed	365	365	365	365	365
geschl.	365	365	365	355	340

With out riser					
A	B	C	D	E	Brake
8755	8658	8708	8817	8921	9470
8657	8559	8610	8722	8825	9098
8649	8557	8601	8716	8833	8973
8633	8534	8591	8701	8860	8863
8670	8573	8624	8736	8873	8659
8659	8583	8640	8760	8719	8670
8568	8487	8541	8648	8647	8601
8552	8470	8514	8617	8624	8488
8510	8420	8460	8544		8410
8492	8407	8438	8511		8384
8548	8464	8498	8553		
8440	8352	8403	8451		
8326	8248	8290	8302		
8278	8212	8250	8172		
8157	8088	8100	8103		
8093	8032	8041	7766		
8107	8046	8022			
7880	7778	7673			
7642	7636				

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:

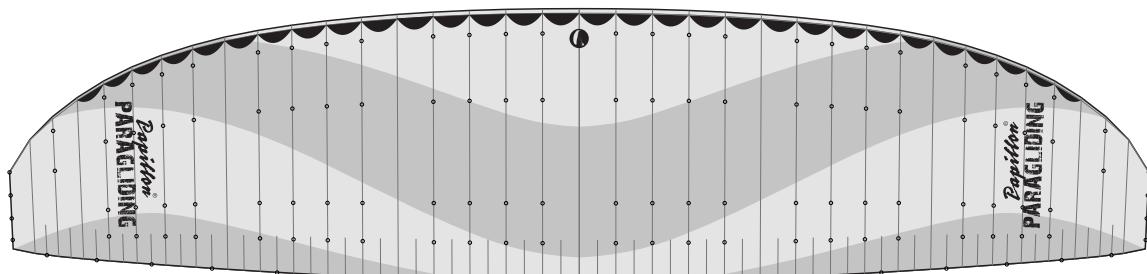
Serialnumber:

Comments/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

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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

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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.

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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 Bettosometer 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 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 + /- 1,5cm
- 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 fulfills 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!

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