



# PASHA<sup>7</sup>



## USER MANUAL

Version 1.0 Stand 02.2022



## Contents

MAC PARA COMMUNITY .....	2
GENERAL .....	3
WARNING .....	3
OVERALL PLAN .....	5
TECHNICAL DESCRIPTION .....	6
PREPARATION .....	9
FLYING THE PASHA 7 .....	10
RANGE OF USE .....	17
EXTREME FLYING MANOEUVRES .....	18
LOOKING AFTER YOUR PARAGLIDER .....	22
RISER .....	27
LINE PLAN .....	28
LINE PLAN PASHA 7 .....	29
ADJUSTING BRAKE LINES .....	30
OVERALL LINE LENGTHS .....	31
TREATING NATURE WITH RESPECT .....	32
MATERIALS .....	33
CHECKS .....	34
TEST FLIGHT CERTIFICATE .....	35
TECHNICAL DATA .....	35

## MAC PARA COMMUNITY

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[MACPARA.com](http://MACPARA.com)



[OfficialMacPara](https://www.youtube.com/OfficialMacPara)



[fb.com/MACPARA](https://fb.com/MACPARA)



[flymacpara](https://flymacpara)



## GENERAL

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### Dear MAC PARA pilot

We congratulate you on your purchase of a MAC PARA paraglider. Extensive development work and numerous tests make the Pasha 7 a high performance tandem paraglider with maximum possible safety. The Pasha 7 is constructed as for professional as for cross-country flying. The Pasha 7 offers very easy inflation and simple ground-handling characteristics by take-off, excellent handling in flight and easy landing. Please read this manual carefully before you start, this way you will get the most out of your glider, and enjoy many nice flights.

## WARNING

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### Please read this manual carefully and note following details:

Paragliding is a sport, which demands, besides the optimum equipment, a high degree of attentiveness, good judgement, and theoretical knowledge. Paragliding can be a dangerous sport, which may lead to injury and death. This paraglider meets at the time of delivery requirements of the European Norm EN 926-1 and EN 926-2 or LTF (German Certificate of Airworthiness). Any alternations to the paraglider will render its certification invalid! The use of this paraglider is solely at the user's own risk! Manufacturer and distributor do not accept any liability. Pilots are responsible for their own safety and their paraglider airworthiness. The paraglider carries no warranty! The author assumes that the pilot is in possession of a valid paragliding licence for glider's category, insurance etc.

Before delivery, as well as during production, each paraglider goes through a strict visual inspection, and is test-flown by your dealer. Stamps on the placard, together with a completed test-flight certificate, confirm this. Check that the paraglider has been test-flown before your first take-off. If it has not, consult your dealer.

Any inadequate use or misuse increases the risks considerably. The Pasha 7 must not be used outside the certified weight range. The Pasha 7 must not be used during rain or snow-fall. The Pasha 7 must not be used in high or gusty winds. The Pasha 7 must not be used in cloud and fog. The Pasha 7 must not be used by pilots without sufficient knowledge or experience.

If, after carefully reading this handbook, you still have questions, suggestions or criticism regarding this product do not hesitate to contact your dealer or us. We will be glad to help and advice.

**MAC PARA wish you nice flights with your Pasha 7.**

Version 1.0 Stand 1.2.2022



## Operating limits

The Pasha 7 has been tested by DHV certification laboratory to EN-B / LTF-B category as tandem paraglider. Solo flying is possible if the certified take-off weight range is observed and the original risers are used. The Pasha 7 has been load and shock-tested and passed with a load corresponding to 8G of the maximum weight in flight. Its flying tests have shown that the glider remains stable and controllable over a wide range of normal and abnormal flight conditions. Nevertheless, turbulence and gusting winds can lead to a partial or complete collapse of the canopy. Therefore never fly in such conditions.

The Pasha 7 must not be used outside the certified weight range.

The Pasha 7 must not be used during rain or snow-fall.

The Pasha 7 must not be used in high or gusty winds.

The Pasha 7 must not be used in cloud and fog.

The Pasha 7 must not be used by pilots without sufficient knowledge or experience.

The Pasha 7 must not be used for aerobatics / extreme flying or flight manoeuvres at an angle greater than 90°.

The Pasha 7 must not be used when the canopy is wet.

The Pasha 7 has been certified for a defined weight range. We strongly recommend that you respect these weight ranges. If you want better speed, precise handling, and generally fly in strong conditions you should choose to fly in the middle to top part of the weight range.

The EN 926-2:2013 describes the weight measurement with: "All weights are subject to an acceptable tolerance of  $\pm 2$  kg". Therefore a slight overload of the wing would be within EN tolerances. However, flying over the maximum weight further increases the dynamic flight behaviour.

Before delivery, as well as during production, each paraglider goes through a strict visual inspection, and is test-flown by your dealer. Stamps on the placard, together with a completed test-flight certificate, confirm this. Check that the paraglider has been test-flown before your first take-off. If it has not, consult your dealer.

## Liability

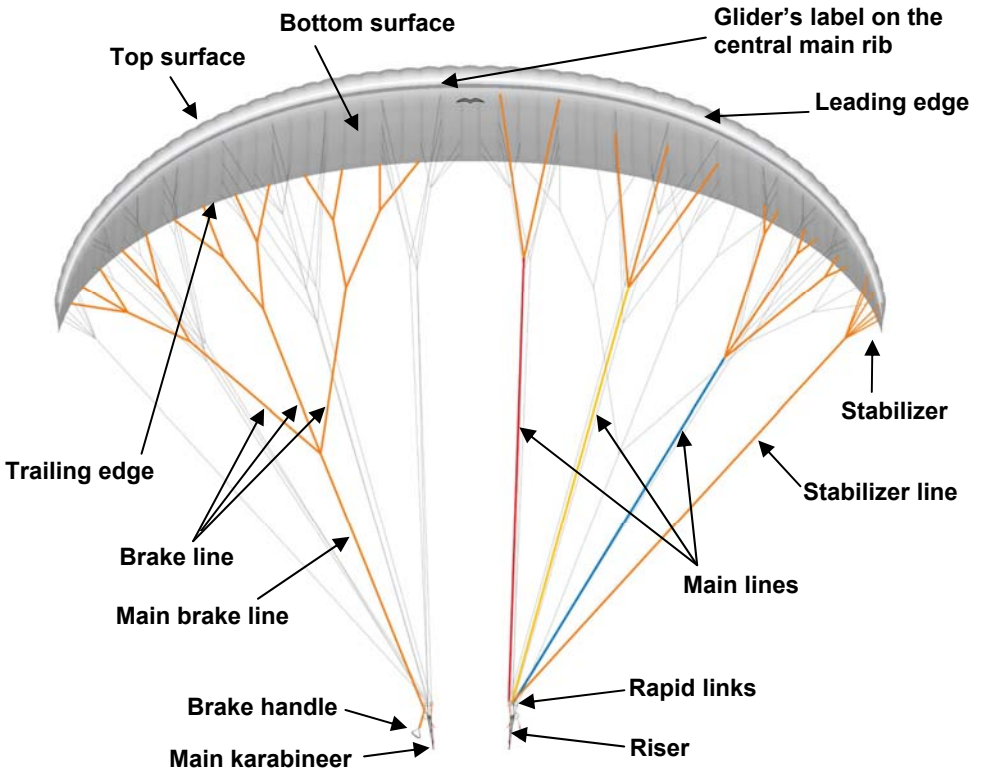
Use of the paraglider is at the pilot's own risk! Pilot is responsible for his own safety and his paraglider airworthiness. The paraglider carries no warranty! The manufacturer cannot be held liable for any personal injury or material damage which arises in connection with this paraglider.

The certification and warranty shall be rendered invalid if there are changes of paraglider construction, or changes to the brake lines beyond the permissible tolerance levels, or incorrect repairs to the glider, or if any inspections are missed (annual and 2-yearly check).



## OVERALL PLAN

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## TECHNICAL DESCRIPTION

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### Construction of the canopy

The canopy of the PASHA 7 consists of 61 cells over the wingspan. The wingtips are slightly pulled down and this produces a kind of stabilizer. The Pasha 7 is a second rib diagonal-construction paraglider. Every main rib is attached to the 4 or 5 suspension lines. Between these main suspension ribs, intermediate ribs are suspended by diagonal segments. These segments do not lead to top surface of canopy but are attached at 80% of rib's height. This construction ensures a smooth top surface and precise aerofoil reproduction.

The internal reinforcements maintain the precise form of the canopy and provide stability. The cell openings on the under-surface of the profile's nose provide airflow into the glider. Stretch resistant flares, integrated with diagonal ribs at the suspension points, ensure an even distribution of load throughout the canopy.

A stretch resistant Mylar-reinforcements combined with Nitinol wires help to keep aerofoils in right shape and this guarantees a high level of stability. Large cross spots allow effective airflow inside the canopy, providing good re-inflation without reducing the profile accuracy.

The Pasha 7 is a blend of proven Nylon fabrics from Porcher Sport - Skytex 38 and Skytex 32. Like any synthetic material, this can deteriorate through excessive exposure to UV. Various forms of Nitinol wires are used in the Pasha 7 (rigid construction), which help maintain the shape of the leading edge and the stability of the canopy.

### Rigging system

The gallery lines of the Pasha 7 are made of proven strong and stretch resistant covered and non-covered Aramid / Kevlar lines and covered Dyneema lines. The entire rigging system comprises individual suspension lines looped and stitched at each end. The main lines of the Pasha 7 are made of proven strong and stretch resistant covered Aramid / Kevlar lines. The lines have strengths from 140 kg up to 420 kg.

The suspension lines are comprised of "cascaded top lines" (attached to the under-surface), "cascaded middle lines" (cascade 1 and 2), and "main lines". Main lines lead to the "quick link" (a small carabiner which connects lines and risers).

The two central A-lines are attached to the main A-riser. The outermost A-line is attached to the A1-riser. The 3 B-main lines and the stabilizer line per side are attached to the B-riser. The 3 C-main lines per side are attached to the C-riser. The 2 D-main lines per side are attached to the D-riser.

The main brake lines leads through the pulleys on the D-riser. The line & riser connections are made to triangular quick links (karabiners) fitted with a rubber "O-ring" in the form of a "figure eight" which prevents any slipping of the lines on the quick link.



## Brake Lines

The "brake lines" are not load carrying suspension lines. They lead from the trailing edge of the canopy to the main brake lines and run through the pulleys on the D-risers to the brake handles. A mark on the main brake line indicates the position of the brake handle. This adjustment, on the one hand, allows sufficient brake to be applied during extreme flying situations and when landing, while on the other hand, this ensures that brakes are not permanently applied to the canopy (especially when fully accelerated).

We are convinced it is better to have slightly long brake lines and to fly with a wrap (one turn of line around the hand) to maximize performance of your glider. The brake line lengths have been set carefully. This trimming should not be altered.

## Risers

The Pasha 7 is equipped with 5 (4+1) risers per side. The A-riser is covered with coloured webbing, to allow for easy identification. The main suspension loop, on the bottom of the riser, is covered red. This is where the main karabiner of spreader bar should be hooked in, which then in turn connects the risers to the harness.

Each of the riser sets of the Pasha 7 has a lockable trimmer. The trim system shortens and lengthens the B, C and D risers and changes the angle of attack. In neutral position of normal flight all risers have equal length 39 cm. This neutral position is marked with a white line on the trimmer straps. When you pull down the trim straps from the white marker (neutral setting), the D-risers up are shortened of 3 cm. When you open the trims (push the trim buckles), the D risers are extended by up to 6 cm from the neutral setting.

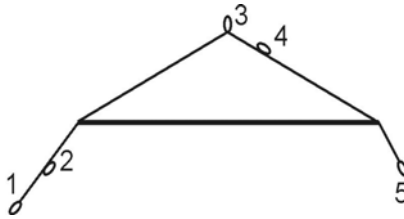
The risers do not feature speed-system.

## Tandem spreader bar

The tandem spreader-bars allows varied attachment possibilities, allowing for the difference in heights and weights of pilot and passenger. Changing the main attachment (karabiner - min. strength 24 kN) position can allow for weight difference: the front position (3) for heavier passengers or if their weights are the same and the back position (4) for lighter passengers. The passenger weight is always compared to the weight of the pilot!

The rescue system bridle must be connected to main suspension point on the spreader-bar (3 or 4). It is possible to use a separator karabiner (min. strength 24 kN) for the rescue system, clipped in to the same loop as the main karabiner. The rescue system bridle must not be connected only to the pilot's or passenger's harness or to the spreader-bar's hang points.

**WARNING: The karabiners used in position 3 or 4 must be karabiners designed for tandem flight, which means the minimum strength must be 24kN. (Recommendation Austrianpin Powerfly, Austrianpin Delta). This applies also to the karabiner used for the attachment of the rescue system in Position 3 or 4.**



1 and 2 - Passenger's hang point.

3 - Main suspension and rescue system attachment point, when passenger is heavier than the pilot or when passenger **is the same** weight as the pilot.

4 - Main suspension and rescue system attachment point, Main suspension and rescue system attachment point, when passenger **is lighter** than the pilot.

5 - Suspension point for the pilot.





## PREPARATION

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### Preparing for take-off

As for any aircraft a thorough pre-flight check must be made prior to each flight on the Pasha 7! Before every launch check lines, risers and canopy for damage! Do not launch with even the slightest damage!

Also check the quick links connecting the lines and the risers. They have to be closed tight. Put on the harness with maximum care and check the handle of the safety system and that all the flaps of the outer container are fastened securely and correctly. The main karabiner must also be checked carefully. Replace it if any damage is visible, or generally after 300 flying hours. Finally connect the risers to spreader bars with the main karabiners. It is important to ensure that the hook points on each spreader bar are equal.

Check carefully that they are properly closed. Attention! Never fly with an open main karabiner! Do not take-off if you find any damage on your equipment!

### Harness

For flight comfort and safety it is very important that you fly with a suitable, properly adjusted harness. It is important to set up your harness correctly before flying the glider. Make sure to spend time adjusting your harness's different settings until your sitting position is completely comfortable. The Pasha 7 is certified for use with GH type harnesses with variable cross-bracing. The Pasha 7 is neither suitable nor certified for use with harnesses in group GX (with rigid cross-bracing).

The suspension points of the harness should have a carabiner distance of approximately 45 cm (equivalent to your shoulder width) and a height of 40 to 48 cm. When choosing a harness, remember that the height of the attachment points (i.e. distance from the carabiners to the seat plate) affects the sensitivity of the glider and the relative brake travel. The lower position of the carabiners, the more sensitive the glider is to weight-shift.

### Rescue System

We recommend that you always fly your Pasha 7 with reserve parachute suitable for your maximum all up flying weight. It is a mandatory requirement to carry an approved reserve for use in emergency situations where the paraglider fails and recovery is not possible. The reserve is fitted according to the manufacturer's instructions.

Note: Carry out your first flights only during stable weather, and in a familiar area or on a training slope. You should steer gently and carefully to begin with so that you can become accustomed to the reactions of the glider without stress.



## FLYING THE PASHA 7

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### Pre-flight check

Brand-new gliders must be flown in calm conditions at first. It is recommended to fly light spirals in both directions so that the handshake connections between the lines become tight up.

Follow a consistent routine every time you fly. This is very important for safety. Having unpacked and laid out the paraglider in a slight horseshoe pattern the following checks must be made:

#### **Material check:**

- Canopy without any damage.
- Risers without damage.
- Maillons (quick links) closed tight.
- Are the brake lines freely and firmly connected to the handle?
- Are the lines free from knots, tangles or other damage?  
All main lines run free from the riser to the canopy, brake lines are free.
- Stitching of the main lines near the risers is o.k.

#### **Putting on the harness:**

- Rescue handle and deployment pins are secure.
- Buckles (leg-, front riser) are closed.
- Main karabiners are closed.

#### **Before take-off:**

- Is your personal equipment in order (harness, carabiners, reserve, helmet)?
- Is passenger equipment in order (harness, carabiners, helmet)?
- Risers are not twisted.
- Brake handles are in hands and brake lines are free.
- Pilot's position relative to the wing is centred (all lines have same tension).
- wind direction
- obstacles on the ground
- free airspace

Note: If there are obvious creases in the glider as a result of tight packing or long term storage, carry out some practice inflations before your first launch and smooth out the trailing edge a little. This ensures that the flow profile is correct during launch. This is particularly important in low temperatures.

When laying out the glider, the wind direction should be observed. The canopy should be deployed into the wind so both halves of it are loaded symmetrically. The paraglider should be arranged in a semicircle against the wind. This ensures that the A-lines in the centre section of the canopy will tension before the ones at the wing tips. Thus the canopy inflates evenly and an easy launch in the desired direction is guaranteed.



All lines and risers should be carefully untangled and arranged in a way that they do not catch on anything. It is equally important to untangle the brake lines so that they are clear and cannot catch on anything during launch. The brake lines should run freely through the pulleys to the trailing edge of the canopy.

Make sure the risers are not twisted; this can prevent the brake lines from running freely through their pulleys. It is often impossible to untangle lines during flight.

It is important that no lines are looped around the canopy. Also called a “line-over”, this may have disastrous consequences during take-off.

Finally connect the risers with spreader bars by using the main karabiners. Check carefully that they are closed properly.

## Launching

Your Pasha 7 will launch with either the forward or reverse technique. The wing should be laid out in a pronounced arc, with the centre of the wing higher than the tips.

The trimmers should be adjusted to neutral position or 4 cm released in according to the wind and terrain.

**By light wind we generally recommend the use of both A-risers (A and A1) for take-off.** Depending on the launch technique, and wind conditions the pilot can alternatively use only middle A-risers to inflate the canopy.

### Forward Launch - Nil wind

When gently holding the A-risers move forward positively, your lines should become tight within one or two steps and the Pasha 7 will immediately start to inflate. You should maintain a constant pressure on the risers until the wing is overhead. It is important to guide the A-risers smoothly upwards in an arc, keeping your elbows bent and hands at the level of the shoulders. Do not pull down or push the risers forward excessively, or the leading edge will deform and possibly collapse making taking-off more difficult and potentially dangerous. Once the wing comes overhead, it may require a brake input from stopping it overflying you. Once the Pasha 7 is inflated correctly, accelerate smoothly off the launch.

### Reverse Launch - Light to Strong Winds

This method of launch makes it easier for the pilot to control the rising of the canopy and is therefore recommended. Take the brakes and turn around to face the wing. Pass one set of risers over your head as you turn. Make sure the lines are free from knots or tangles. Check that the airspace and visibility are clear. Gently pull up the glider in an arc with the A-risers. When the glider is overhead, brake it gently if necessary, turn around and launch. In stronger winds, be prepared to take a few steps towards the glider whilst braking as it inflates. This will take some of the energy out of the glider and it will be less likely to overfly you or inadvertently pull you off the ground. The reverse-launch technique can be used in surprisingly light winds too.



**Warning!** Make sure that the steering lines are not wrapped around the main lines during the reverse launch. In this case, any faster pull on steering line can damage the sheath on the main lines.

## Tips for the take-off

- Practice ground-handling regularly to improve your take-off skills!
- If the glider comes up slightly off-centre, make small corrections by moving towards the lower side.
- In stronger winds, take only central A-main line per side over rapid links in one hand and the outermost B-main line per side in other hand while you hold brake toggles in your hands. Pull on A-lines and control the speed of rise with the B-lines. Be prepared to take a couple of steps towards the canopy. By a good procedure the wing tips can't rise earlier than the centre of the canopy.
- The pilot must work actively to keep the glider on the ground in higher winds (wind speeds from approximately 6 m/s), otherwise the glider may rise above the pilot unintentionally.
- During reverse launch and ground handling, care should be taken that the brake lines do not rub over the riser. This may cause damage to the riser or lines.

## Flying it

The glider is delivered with a standard set-up and its speed varies in the range from 37 - 48 km/h depending on the wing loading and position of the trimmers. Trim speed (brakes fully released, trim in neutral position) is the best glide speed in calm air. In turbulence fly with closed trimmers and brakes lightly applied (5 – 15 cm) to avoid canopy collapse. If the canopy pitch forward, this should be corrected by prompt braking. A pitch movement of the canopy backwards is corrected by loosening the brakes in good time. In a calm air the Pasha 7 can reach its minimum speed (depending on the wing loading) by application of 70 cm up to 75 cm of the brake range.

During your first few flights, familiarize yourself with your glider's speed range and corresponding brake positions and pressures.

**NOTE!** Always fly with sufficient clearance from the terrain and always keep the brake handles in your hands!

**NOTE!** Flying too slowly close to stall speed increases the risk of an unintentional asymmetric stall or full stall. This speed range should therefore be avoided and used only on landing during the final stage of the flare.

## Accelerated Flight

The angle of attack is changed by the trimmers. The speed difference between "closed" and "open" position of the trimmers is up to 6-7 km/h. The glider is less stable at higher speed and it could collapse easily. Never let go of the brake handles during faster trimmer setting.



## Steering - turning

The Pasha 7 is a responsive paraglider and reacts directly and instantly to any steering input. The Pasha 7 performs best in turns when it is flown with sufficient speed and weight-shifting. Enter a turn with good airspeed, weight shift and then apply the brake. Once established in the turn, regulate your speed and turn radius with weight-shift and the outer brake. Make your first turns gradual and progressive. Too much braking increases the sink rate. Any weight-shift has a greater effect the more loosely the chest-strap is fastened. If the brakes are applied more, the bank attitude increases and the glider will fly a fast turn increasing in steepness, which will eventually become a spiral dive.

## Alternative (emergency) steering

If for some reason it becomes impossible to control the Pasha 7 with the brake lines the outermost D-lines may be used to steer and land the canopy. Attention! Of course the range is much shorter (5 – 15 cm) than with the brakes. It is also possible to control the direction of the flight by pulling on a stabilizer line or by weight-shifting.

## Active Flying

The Pasha 7 has good pitch stability. Nonetheless, in turbulence or during manoeuvres, the glider may pitch. If the glider pitches in front of you, apply brake to slow it down. If the glider drops behind you, ease off the brakes to allow it to speed up. The objective is to reduce the pendulum effect by adjusting the angle of attack and speed of your glider so that glider and pilot are travelling at the same speed. When the conditions are turbulent, be more active and anticipate the movements of the wing. Practice active flying to eliminate collapses in all conditions. Try to keep tension on the brakes approximately equal to the weight of your arms. This allows you to stay relaxed and sensitively feel the internal pressure in the wing through the brakes. If you feel a loss of pressure in one or both sides of the wing, quickly apply the appropriate brake(s) to regain pressure. Release the brake promptly as soon as normal pressure is resumed. If you miss the above timing and get a collapse, be sure to first raise your hands and release the brakes before considering any other corrective actions.

## Rapid descent techniques

Many flying situations call for a very rapid descent to avoid a dangerous situation, e.g. the escape from a cumulus cloud or approaching rain. All rapid descent methods should be practised in calm conditions and at sufficient altitude so that a pilot is then able to employ them effectively if extreme conditions arise.

Spiral dives and “Big ears” are generally the most common methods of descent for paragliders. Spiral dives attain higher descent rates, but the g-forces can be significant and the manoeuvre is more physically demanding. Big ears can achieve a moderate rate of descent with the advantage of forward speed and manoeuvrability. Always try to avoid the need to use these descent techniques. Thoroughly check the conditions before launch, and pay close attention to how the day develops.



## Spiral dive

The spiral dive is the most effective method for making a rapid descent, and can allow sink rates of up to 20 m/s to be reached. It is suitable where there is a high ascent rate and little wind.

However, the very high G-forces make it difficult to sustain a spiral dive for long and it can place high loads on the passenger, pilot and glider.

The Pasha 7 fulfils the EN spiral dive requirements and has no tendency to remain in a stable spiral dive under normal conditions. Note! The certification test flights are carried out with a defined carabiner distance. Deviations from this defined setting, unapproved harnesses or spirals with excessive sink can change the manoeuvre considerably; pilot action may be required. In such cases, exit the spiral by weight-shifting to the outside and progressively applying the outside brake.

Before entering a spiral, make sure you have adequate height for recovery. To initiate a spiral, look in to the direction you want to turn, weight shift and smoothly pull down on the inside until the glider enters the spiral. Once in the spiral you should re-centre your weight shift and apply a little outside brake to keep the outer wing tip pressured and inflated. Spirals with descent rates above 10 m/s are not recommended. Very high descent spiral dives with high speeds and G-forces can be very disorientating and could lead to a loss of vision and even black out. Always pay particular attention to your altitude. Always maintain ground clearance of 150 – 200 m. The manoeuvre must be exited at this height above ground.

To exit the spiral, check your weight is centred (or slightly towards the outside) and progressively release the inside brake. As the glider starts to exit the spiral, you may also choose to reduce the pendulum moment by briefly re-applying the inside brake.

Attention! Due to energy retention, the glider will climb a lot after a deep spiral-dive release. If you apply inner brake and decelerate the glider for two or three turns, big pendulum effects can be avoided.

**WARNING!!** Practise spiralling with caution and lower sink-rates to get a feel for the gliders behaviour. A pilot who is dehydrated or not accustomed to spiralling can lose consciousness in a steep spiral dive!

### Spiral dive with tucked ear (asymmetric side collapse)

The spiral is the most effective descent, but has the disadvantage of the high G load on the pilot and passenger. To avoid this G-load, you can fly a spiral dive with one ear collapsed on the outside and achieve almost the same sink rates with a greatly reduced G-load. However, the material stress is high.

The spiral dive is initiated by pulling on A1-riser ( the ear collapses) and holding the hand on the A1-riser. With the other hand you carefully initiate a spiral. Your seating position remains neutral. Recovering is done simply by slowly releasing the inside brake. Higher sink rates are achieved when 50% of the leading edge is folded.



## Big ears

Big ears are the simplest method for rapid descent. The advantage is that the horizontal speed is higher than the sink rate (3-5 m/s), unlike a spiral dive or a B-line stall. This rapid descent technique is used to quickly and horizontally exit a dangerous area in the desired direction. It is even possible to land using big ears (for example top-landing).

In order to collapse the outermost part of the wing, pull the A1-risers down. The Pasha 7 easily tucks the wingtips and enters a stable descent mode. The pilot keeps hold of the brake handles along with the A1-risers in his hands. By braking on one side and weight-shifting, the canopy remains steerable. In order to increase the sink rate as well as the horizontal speed, this manoeuvre should be done together with using of the trim system. Release the trim system after big ears are induced. Big ears substantially reduce the risk of canopy stability problems in turbulent air. To exit big ears release the A1-risers. The canopy does slowly self-recover. To quicken the recovery, the pilot can dynamically pull down and immediately release the brakes of the glider.

**WARNING!** Never do big ears in spirals, as this may drastically reduce the number of lines taking the already high loads, causing structural failure.

Pasha 7 has the cleat on the D-riser which makes it possible to fix the outer A-lines so they can be held in for an extended period. With big ears applied, the Pasha 7 can be steered using the brakes. Before using the cleats it is necessary to uncover the neoprene safety covers by pulling the red webbing on it up. After the big ears manoeuvre, put the neoprene cover down to avoid catching any lines.

**NOTICE:** The outside A-line is divided in two pieces (A0 and A1) due to fast and easy repair if the cover of A0 line is damaged. Line A0 is Liros TSL500, length after sewing is 70,0cm (valid for all sizes of Pasha 7).





## B-line stalls

**WARNING:** Although it is possible to induce a B-stall with the Pasha 7, we recommend avoiding this manoeuvre, as very high loads occur on the ribs. This drastically shortens the lifetime of the canopy!

**Attention!** All rapid descent techniques should first be practised in calm air and with sufficient height so the pilot can use them in emergency situations! By far the best technique is to fly correctly and safely, so you never have to descend rapidly!

## Approach and Landing

To avoid excessively demanding situations on the approach to landing, it is important to initiate the process at an adequate altitude. This leaves you enough time to observe and appropriately deal with wind direction and any other gliders in your vicinity.

The Pasha 7 is easy to land. The final leg of the landing approach must be into the wind. Adopt an upright position in your harness by sliding your legs forward, ready to make contact with the ground. During this final glide the paraglider should be decelerated slowly and at approximately one meter above the ground, according to conditions, the pilot should flare the canopy. The glider may climb again, gaining height, if too much brake is used too early. Higher wing loading results in a higher ground speed. Make sure you always land into the wind.

In nil wind situations, be prepared to run fast. In stronger winds, use only the minimum amount of flare necessary to sufficiently minimize your vertical and horizontal speed. If you flare too hard in strong winds, the glider will climb rapidly upwards and backwards, and you may get injured. In strong winds, turn to face your wing as soon as your feet touch the ground. Immediately stall the glider as rapidly as possible with the brakes or rear risers. Be prepared to run towards your wing.

**Attention!** Do not allow the canopy to fall onto the leading edge with energy. This can destroy the material and affects the life of the ribs at the leading edge!

Ground handling on rough surfaces will accelerate the ageing process of your wing.





## RANGE OF USE

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### Towing

The Pasha 7 may be tow-launched. It is the pilot's responsibility to use suitable harness attachments and release mechanisms and to ensure that they are correctly trained on the equipment and system employed. All tow pilots should be qualified to tow, use a qualified tow operator with proper, certified equipment, and make sure all towing regulations are observed. When towing you must be certain that the paraglider is completely over your head before you start. In each case, the maximum tow force needs to correspond to the all up weight of the pilot. We recommend use the **trimmers released over Neutral position!** There is sufficient margin to counter-steer the glider in a normal towing situation.

**WARNING!!** Please always ensure that the brake lines are adjusted to the lengths recommended here. Setting them shorter could lead to a tendency to stall during towed flight. Apart from this, there are no special procedures.

### Aerobatics

The Pasha 7 was not developed or tested to be used for aerobatics (acro). By engaging in such an activity, you voluntarily assume an increased risk of injury or death. Any type of acrobatic manoeuvre at all on the Pasha 7 is contrary to law and illegal. The pilot would be putting his/her and passenger life at risk. Acrobatics involves a risk of unpredictable flight attitudes, which could lead to damage to material and structural failure.

### Tandem paragliding

The Pasha 7 is intended for tandem paragliding. The Pasha 7 can be used for solo flying if the certified take-off weight range is observed and the original risers are used.

### Paramotoring

The Pasha 7 is not intended for powered flying with line types described at end of this user manual. Powered version of Pasha 7 is equipped with different types of lines warranting higher loads. DGAC documentation is in process.

Note!! Although, motorized flight can be a great success due to the gliders very easy take-off characteristics, stability and good handling, always use a certified combination of engine - harness and glider. If in doubt check with your federation. Contact the manufacturer or importer for the current legality of motorized flight.

**Warning!!** The Pasha 7 must never be used for jumps from an aircraft.



## EXTREME FLYING MANOEUVRES

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### Dangerous situations

Any pilot who flies in turbulent conditions or who makes an error in handling the glider is at risk of getting into an extreme situation. Extreme wind conditions or turbulence which goes unnoticed by the pilot for too long may leave the wing in an unusual flying position, requiring special reaction and skills on the part of the pilot. The best way to learn how to react calmly and correctly in a serious situation is to attend safety training, where you will learn how to manage extreme situations under the guidance of a professional.

All of the extreme flight figures and flight attitudes described here are dangerous if they are carried out with inadequate knowledge, without the right safety altitude or without training. Always keep within the recommended limits. Avoid aerobatics and extreme loading such as spirals together with big ears. This will prevent accidents and avoid overloading the glider.

In turbulent conditions, always keep enough distance from rock faces and other obstacles. Time and sufficient altitude are needed to recover from extreme situations.

Note! Deploy your reserve if the corrective manoeuvres described in the following sections do not return the glider to a controllable flying position or if there is not enough altitude for correction.

### SIV / Safety training

The Pasha 7 is optimised for tandem paragliding and is intended only for experienced pilots who are able to demonstrate above-average experience and competence in safety training. The Pasha 7 is under no circumstances suitable for a pilot's first experience with safety training.

During a safety training course, avoid subjecting the materials of your paraglider to excessive stress. Uncontrolled flight positions may occur which are outside the manufacturer limits of the paraglider. This may cause premature ageing, or even structural failure.

Stretching of the lines and/or canopy material after safety training can lead to a general deterioration in flight characteristics.

Damage as a result of safety training is not covered by the warranty. Be sure to perform any simulated collapses correctly. In particular, full speed asymmetric collapses performed incorrectly may result in unpredictable collapse behaviour and impulsive re-opening. This behaviour may require considerable pilot skill to manage safely.

### Deflations

Due to the flexible form of a paraglider, turbulence may cause a portion of the wing unexpectedly to collapse. If you get a collapse, the first thing to do is to control your direction. You should fly away from the ground or obstacles and other pilots.



## Asymmetric collapse

Use active flying techniques to virtually eliminate collapses in normal flying conditions. Nevertheless, if you do get a collapse, stabilize your weight in your harness and do not allow yourself to fall to the collapsed side.

Basically when asymmetric collapse is induced the Pasha 7 will re-open spontaneously from closures of up to 70% with a change of direction from 90° of up to 180°. The time this takes, and the associated height loss, can however be noticeably reduced by appropriate action by the pilot. Control your course with weight-shift and a little outside brake. The deflation should re-inflate spontaneously.

If you react immediately, 30% brake on the open side should suffice to hold the canopy on a straight course. In the event of a big collapse, this braking should be applied very carefully to avoid stalling the remaining inflated wing. The pilot's correction for direction can be aided by a pumping out the deflation; a slow, long pumping action of the brake of the deflated side of the wing helps the canopy to re-inflate. If the glider does not self-recover and the pilot does not correct the canopy can enter a stable spiral dive!

**Attention!!** It wasn't necessary to feature the Pasha 7 with special folding lines to perform the manoeuvre. But nevertheless the accelerated asymmetric collapse must be performed correctly in a proper way and this preferably by safety trainings.

It is important to take the outermost A1-riser together with A-main riser firmly in one hand. At the beginning of pulling the move (in the direction of pilot's body) must be slow and after the move of approx. 5 cm, it can only be strongly pulled down. In case the A1-riser is not properly held along with the main A-riser, it may happen that the wing tip opens faster. The opening is then distinctive with the risk of a cravat.

## “Cravat” / Line-over

A cravat occurs when a wing tip becomes stuck between the glider lines, for example, following a bad take-off preparation. On the Pasha 7, a cravat is unlikely to occur. If you do get a cravat, first control your direction. Do this by using weight-shift and enough counter-brake to stop the turn, but not too much to risk a stall of the opposite side.

A cravat can generally be opened by a short, fast pull on the brake line of the cravat side. If not, on the Pasha 7, there is a separate stabilizer main line that goes down to the A riser. This line usually becomes slack in the event of a cravat. Pull this line down completely until it becomes tight and the cravat normally comes out.

Note! Counter-steering too strongly on the inflated side of the glider can result in a stall and to further uncontrolled flight manoeuvres.

Always remain aware of other aircrafts and terrain when dealing with a problem on your wing. Do not hesitate to throw your reserve parachute if the rotation in a cravat is increasing uncontrollably, especially if you are at low altitude.



## Symmetric collapse (Front stall)

A negative angle of attack can also cause central part or all of the leading edge of the glider to collapse. Symmetric (frontal) collapses will normally re-open without pilot input. The paraglider will pitch forward and then regain speed. Assist this process if necessary with a symmetric application of the brakes. Take care not to apply too much brake for too long as this may stall the wing.

In the case of extreme front stalls across the entire wing chord, the wing tips may move forward making the glider form a U-shape. Again, recovery is by light symmetrical braking on both sides. Take care that both wingtips return to normal flight evenly.

If you get a collapse while in accelerated flight, release the speed bar immediately. Then apply the normal procedure for unaccelerated asymmetric collapse.

**Attention!** It wasn't necessary to feature the Pasha 7 with special folding lines to perform the manoeuvre. But nevertheless the accelerated symmetric collapse must be performed correctly in a proper way and this preferably by safety trainings. It is important to take the two outermost A-lines together (approx. 10cm above the quick links) firmly in your hands. Do not use the central A-lines! At the beginning of pulling the move (in the direction of pilot's body) must be slow and after the move of approx. 5 cm, it can only be strongly pulled down. By this way the leading edge collapses properly over its span. In case you use all A-risers for this manoeuvre and you do it without initial pulling it may happen that the leading edge collapses over all depth in the centre of the wing. The result may be an asymmetric opening and the risk of a big cravat increases!

## Parachutal stall (deep stall)

Paragliders can go into a deep stall for some reasons: brake lines too short (no slack), altered trim/line length and changes to profile characteristics caused by moisture (e.g. flying in rain). Paragliders have a particular tendency to stall if the wing-loading is too low. An out-of-trim glider, caused by changes in line lengths due to prolonged use, may also have a higher deep stall tendency.

In a deep stall, the airflow from the front reduces and the glider goes into a stable flight attitude without forward momentum. The paraglider sinks almost vertically at 4-5 m/s and there is noticeably less flight noise.

The Pasha 7 has no tendency to get into a deep stall. Should this nevertheless occur, make sure your brakes are fully released, the glider will then normally recover on its own immediately. If the glider still doesn't recover either put your hands on the A-risers and push forward or use the speed bar to accelerate to get the wing into a normal flying position. After you have landed, the glider and the length of the lines must be checked.

Flying in strong turbulence or exiting a deflation with too much brake applied can cause this situation. A wet glider also has a higher deep stall tendency, and you should do everything you can to avoid flying in the rain. If you do pass through some rain never make big ears! Apply speed bar until you are confident that the wing has dried out.

Never apply the brakes, including any wraps taken, in a deep stall.

**Attention!** If brakes are applied while in a parachutal stall, the glider may suddenly enter a full stall!



## Full-stall

The full stall happens when the maximum possible angle of attack is exceeded. The most common cause is going below the minimum speed or flying near the minimum speed combined with the effects of turbulence. In full stall, the paraglider loses its forwards travel, surges backwards and deflates. If the brakes are held down, the canopy comes up over the pilot again. The result is an almost vertical descent with a sink rate of approx. 8m/s.

To induce a full stall, apply full brake on both sides. The glider slows down steadily until it stalls completely. The canopy suddenly surges backwards a long way. In spite of this uncomfortable reaction of the canopy, both brake lines must be consequently held down with all your strength until the canopy is stabilized (directly overhead). This usually takes 3-6 seconds. The Pasha 7 generally flies backwards during a full stall but doesn't always form a front rosette. A frontal rosette can be formed by entering the full stall slowly. When entering (braking) fast, the canopy will not always form the desired front rosette.

To recover from a full stall, smoothly release symmetrically both brakes until 90% of leading edge reopens. After that, the brakes are completely released when the glider canopy is filled and in front of the pilot. This prevents the canopy from pitching too far forward. As this is done, the canopy accelerates forwards dynamically and picks up speed.

Note! If the canopy has gone back during the full stall, the brakes must be held down, otherwise the canopy may surge forward and, in an extreme case, end up underneath the pilot. Hold the brakes down until the canopy is above you again.

**WARNING!!** If the brakes are released rapidly and asymmetrically, the glider may surge almost 90° and suffer an extensive asymmetric collapse.

## Spin (or negative spin)

The spin is a stable flight manoeuvre, in which one side of the canopy stalls, while the other side continues to fly forward. Pulling brake on one side too fast or too hard can result in a negative spin. During a spin the canopy turns relatively fast around the centre section of the canopy while the inner wing flies backwards (hence the term negative).

There are two usual reasons for an unintentional spin:

- One brake line is being pulled down too far and too fast (e.g. when inducing a spiral dive)
- When flying at low speed one side is being braked too hard (e.g. when thermaling).

If a spin occurs, just release the brakes and wait for the glider to surge forward, checking it with the brakes if it surges too far. Never release the spin if the glider is far back behind you, always try to release it when the glider is above or in front of you! Depending on the type of release and the dynamics of the rotary movement, the canopy may surge forward on one side and collapse asymmetrically. In the case of a longer spin, the pilot may release the brakes only at the moment when the glider is in its rotary motion above or in front of the pilot. If the spin does not stop, check whether you have released the brakes fully (including wraps)!

**WARNING!!** If you are LOW and are in an unintentional spin, or if the canopy is caught in a cravat USE YOUR RESERVE.



## Wingover

To induce a wingover the pilot flies consecutive alternating turns to gradually steepen the angle of bank. During wingovers with a high bank angle, the outside wing begins to unload. Further increase of the angle of bank must be avoided, because any possible resulting collapse may be quite dynamic!

**WARNING!! Full-stall, spin and wingover (over 90 degree angle of bank) are prohibited aerobatic manoeuvres and may not be performed during normal flying. Incorrect recovery procedures or overreacting of the pilot may have dangerous consequences! Attention! The Pasha 7 is not designed to be used for aerobatics.**

### Alternative (emergency) steering

If for some reason it becomes impossible to control the Pasha 7 with the brake lines the outermost D-lines may be used to steer and land the canopy. Attention! Of course the range is much shorter (5-15 cm) than with the brakes. It is also possible to control the direction of the flight by pulling on a stabilizer line or by weight-shifting.

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## LOOKING AFTER YOUR PARAGLIDER

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Looking after your canopy correctly will prolong the life of your paraglider.

### Packing the paraglider

To prolong the life of your wing and to keep the Nitinol wires reinforcements in the best possible condition it is very important to pack the wing carefully. It is therefore recommended to use the bag packing method exactly as shown so that all of the cells rest alongside each other and the plastic reinforcements are not unnecessarily bent.

The leading edge reinforcements on the front edge are placed on top of each other to avoid bending or misshaping them. This method of packing ensures that the leading edge is treated carefully, which will increase the glider's life, performance and launch behaviour.

If the reinforcements have been bent or misshapen, they distort more easily during flight, creating an altered air inflow which can lead to a loss in performance and changes in flight behaviour. The leading edge reinforcements also perform an important function on launch. Therefore, the less they have been bent, the more easily the glider will inflate and launch.

### Storing and transporting the glider

Even if your paraglider was completely dry and was nicely packed up after the flight, for longer-term storage you should if possible take it out of the backpack and spread out flat. This is the best care for the reinforcements.

Store the paraglider in a dry space at ambient temperature away from chemicals and UV light. It should be stored at a temperature between 10° and 25° C and in relative humidity between 50 and 75%. Never pack or store the glider wet. This shortens the life of the cloth. Always dry glider thoroughly before any packing or storage. Make sure too that the paraglider is not stored in a place where animals such as mice, dogs or cats could use it as a place to sleep.



Do not store the paraglider near any chemicals. Petrol, for example, causes the material to disintegrate and can cause considerable damage to your paraglider. When your equipment is in the garage, keep it as far away as possible from any spare petrol cans or oil containers.

The glider should not be exposed to extreme heat (e.g. in the boot of the car during summer). Do not store your paraglider near radiators or other heat sources. Always transport your glider in the special bag and use the backpack provided for the rest of the equipment.

When sending your wing as a parcel, take extra care with packing.

## Care

Care is essential to ensure that the fabric and glider remain durable and retain their qualities. The glider should therefore be protected from unnecessary UV light.

Do not unpack your glider until immediately before flight and pack it up straight after landing. Modern paraglider fabrics have better protection against the sun, but UV rays in particular are still one of the decisive factors in how the fabric ages. The colours will fade first and then the coating and fibres will begin to age.

When choosing a place to launch, try to find somewhere which is smooth and free of stones and sharp objects. Do not stand on the glider. This weakens the fabric, especially if it is on a hard or stony surface.

Pay attention to the behaviour of spectators at the launch site, especially children: do not hesitate to draw their attention to the sensitive nature of the fabric.

When you are packing up your glider, make sure that there are no insects trapped inside. Many insects produce acids when they decompose, which can cause holes in the fabric.

Grasshoppers make holes by biting through the fabric and also excrete a dark liquid which stains. Keep animals away when you are packing up. Insects are not attracted by any particular colours, contrary to what is commonly believed.

Various diameters of Nitinol wires are used in the Pasha 7 (rigid construction), which help maintain the shape of the leading edge and the stability of the canopy. To ensure that the Nitinol wires keep their shape, it is important that you pack the glider correctly as described in the section "Packing the paraglider".

The Nitinol wires on the Pasha 7 can all be replaced through small pockets. If you notice that a Nitinol wire has been damaged or misshapen because of incorrect use, this can be replaced by MAC PARA or authorised workshops.

Ensure that the lines are not folded tightly. It's extremely important to avoid any sharp bending of the lines, especially the main lines. Pay careful attention to the lines to avoid damaging them. Any over stretching of lines apart from the strain imposed during normal flight, should be avoided as over stretching is irreversible.

Be careful, not to allow snow, sand or stones to enter inside the canopy's cells: the weight can change the angle of attack, or even stall the glider; additionally the sharp edges can destroy the cloth!



Check main line lengths inclusive risers and quick links after 100 flight hours or after tree or water landings. Lines can stretch or shrink. If you suspect that the flight features of your paraglider have changed, contact MAC PARA or an authorised supplier as soon as possible.

Don't tie any unnecessary knots in the lines. Packing methods where special knots are made in the lines as used on parachutes and reserve parachutes are not suitable for packing the lines used on paragliders.

Never drag the wing over rough ground! This will damage the cloth on the wear points. When preparing the wing on a take-off with rough ground, don't pull the wing over it (i.e. by pulling the brakes). Please try to pack the wing on soft ground.

Uncontrolled strong wind take-offs or landings can result in the leading edge of the canopy hitting the ground at high speed which may cause rips in the profile and damage the rib material. Any repairs on paragliders are very expensive.

Clean the paraglider with fresh water after contact with salt water. Salt water crystal can reduce line strength, even after rinsing in fresh water. Replace lines immediately after contact with salt water. Also check canopy material after water landings, as waves can place uneven forces and cause cloth to distort in specific areas. Always remove gliders from the water by holding only the trailing edge.

Clean the paraglider with water and a soft sponge. Do not use any chemicals or spirits for cleaning, as these can permanently damage the cloth.

Do not pack your glider too tightly after use and, even though it is very comfortable, never sit on the backpack with the glider inside.

## Maintenance

### Identification label

MAC PARA gliders have an identification label on central rib. It is helpful to provide the type designation of the paraglider if you are contacting your MAC PARA dealer with any queries or ordering replacement parts or accessories, to ensure accurate identification.

### Regular inspections

Risers and quick-links, lines and fabric must be inspected regularly for damage, abrasion and correct operation.

### Tissue and Canopy check

A full visual check should be carried out: All the components of the wing (stitching, ribs, diagonals, lines, tabs, etc.) should be checked for signs of deterioration.

The tearing resistance of the cloth - A non-destructive test following the TS-108 standard which specifies minimum tear strength for sky diving canopies should be made using a Bettsometer. (B.M.A.A. Approved Patent No. GB 2270768 Clive Betts Sails).





## Risers

Visual inspection for signs of wear or abrasion. Differences to manual lengths should not exceed +/- 5 mm.

## Lines

Measuring the length of the lines is part of the regular paraglider inspection. The overall length (riser lines + mid lines + upper lines) has to be checked under 5 kg of tension, in order to ensure reproducible results for a comparison with the lengths in the check sheets.

The lines have a considerable influence on flight behaviour. Correct line length and symmetry are also important for performance and handling. Therefore we recommend a geometry inspection every 100 hours or once a year.

Strength of the lines - An upper, middle and lower A-line, along with a lower B-line should be tested for strength. Each line is tested to breaking point and the value recorded. The minimum value is 14 G for all A+B lines, calculated from the maximum certified flying weight of the glider. The added minimum strength for the middle lines and for the top lines should be the same. If the breaking strength is too close to the minimum value calculated, the professional should give a period after which you will have to test the strength of the lines again.

Lengths of the lines - The difference between the measured length and the original length should not exceed +/- 10 mm. The changes that could appear are a slight shrink on the D's and/or a slight stretch on the A's and B's. The consequences of these changes can include a slower trim speed, difficult inflation etc.

The overall length measurement may deviate from the manufacturer's specifications within limit of +/- 40 mm. The basis for the trimming is only the official length information in this manual as a reference. I.e., the differences in the lengths of the lines (A, B, C, D) on each rib must correspond to the differences given in this manual.

Environmental conditions such as high temperatures or moisture can affect lines lengths. Check the lines lengths regularly, particularly if you notice any change in launch or flight behaviour. The lines lengths should be checked if you have landed in water or if the lines have got wet through. Lines age and lose strength even if the paraglider is used infrequently or not at all. This can affect the safety and function of your paraglider.

Signs of wear are slight bumps or changes in flying characteristics. The lines must then be replaced immediately. Use only inspected and approved lines, which can be obtained through MAC PARA.

Do not under any circumstances use knots to shorten the lines. Any knot will weaken the line considerably and may cause the line to break in case of high load. The overhand knot and bowline knots described are permitted only for connecting the main brake lines/brake handle.

Finally, a flight test to confirm that the wing behaves normally should be carried out by a professional.



## Inspection periods

Failure to observe the inspection periods shall render invalid the certification and warranty. A properly completed logbook with details of all flying and training will help you to comply with these periods. A trim check should be performed after 100 flight hours or during the first 12 months (preferably by an authorized workshop).

A qualified professional should perform a full maintenance inspection no later than 24 months or after 200 hours (including ground handling), whichever is sooner. Subsequent full inspections should be made annually or after 200 hours.

A full inspection will give you peace of mind and extend your glider's lifetime. Additional inspections should be performed by a qualified person following a crash or violent landing on the leading edge, or if you note a deterioration of performance or behaviour.

Ground handling time must be at least doubled when calculating the total hours of use because of the increased wear and tear on the glider. It is your responsibility as a pilot to ensure that your wing is airworthy at all times. We recommend replacing the line set at least every 300 hours.

## Repairs

Tears in the canopy must be professionally sewn. Adhesive patches are only adequate for very minor damage (max. 10 cm).

Repairs should only be carried out by the manufacturer, distributor or authorized workshops. Only original spare parts may be used!

Any changes to the canopy lines or risers, except those approved by the manufacturer, will void the certificate of airworthiness.

## Disposal

The synthetic materials used in a paraglider need professional disposal. Please send disused canopies back to us: we will dismantle and dispose of it.

## In Conclusion

The Pasha 7 is a modern paraglider. You will enjoy many safe years of flying with your Pasha 7 if you look after it correctly and adopt a mature and responsible approach to the demands and dangers flying can pose. It must be clearly understood that all air sports are potentially dangerous and that your safety is ultimately dependent upon you.

We strongly urge you to fly safely. This includes your choice of flying conditions as well as safety margins during flying manoeuvres. We recommend once more that you only fly with a certified harness, reserve parachute, and helmet. Also the certification placard must be present on the glider.

Every pilot should be suitably qualified, have a valid license and 3rd party insurance. The Pasha 7 is delivered with bag, MAC PARA backpack, repair kit and user manual.



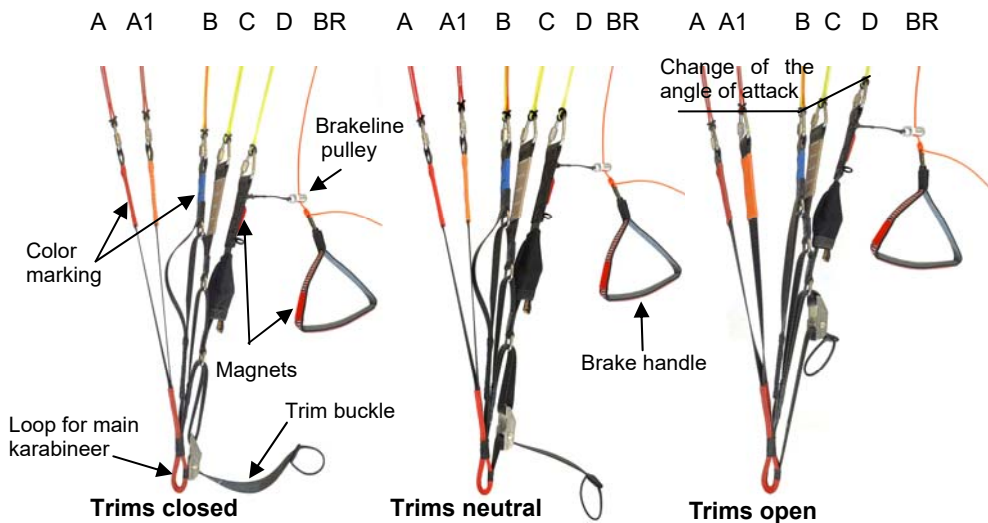
# RISER

## Pasha 7 riser lengths

	A	A1	B	C	D
Trims open	415	415	430	450	480
Trims neutral	415	415	415	415	415
Trims closed	415	415	410	410	395

Risers are equipped with trimmers. Length tolerance of risers is +/-5mm.

The lengths are measured from the main attachment point to the lower edge of rapid links.



Slower



## LINE PLAN

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### Line descriptions:

The following printed line plans show the line configurations.

### Line types in colors

**Aramid/Polyester A-8000U-050**

**Aramid/Polyester A-8000U-070**

**Aramid/Polyester A-8000U-090**

**Aramid/Polyester A-8000U-130**

**Aramid/Polyester A-7343-140**

**Aramid/Polyester A-7343-190**

**Aramid/Polyester A-7343-230**

**Aramid/Polyester A-7343-340**

**Aramid/Polyester A-7343-420**

**Aramid/Polyester A-6843-080**

**PPSL 180**

**TSL 500**

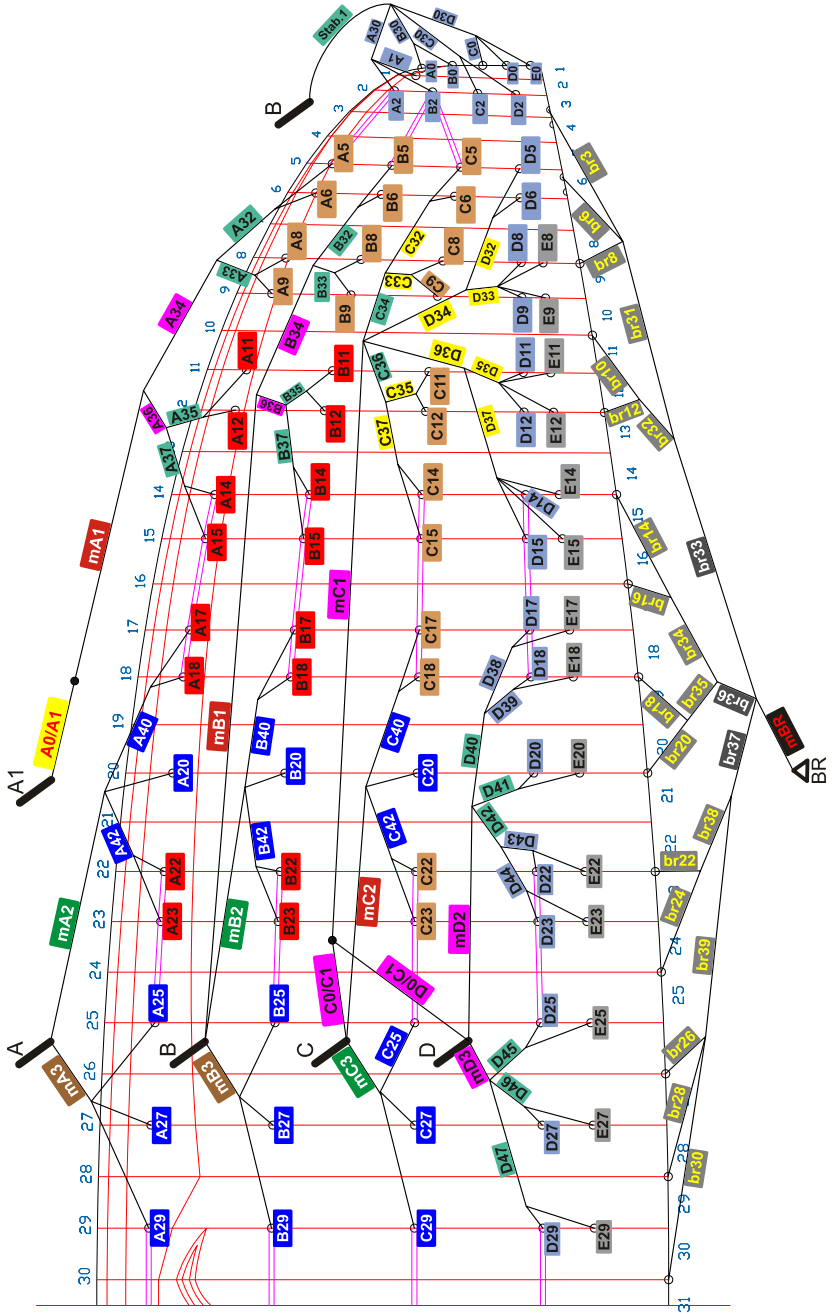
**Dynema/Polyester A-7850-100**

**Dynema/Polyester A-7850-130**

**Dynema/Polyester A-7850-240**



# LINE PLAN PASHA 7





## ADJUSTING BRAKE LINES

The brake lines lead from the trailing edge of the canopy to the main brake lines which then run through pulleys on the D-risers to the brake handles. A mark on the main brake line indicates the position of the brake handle.

The glider is delivered with a standard set-up and its speed can reach 37 – 48 km/h depending on the take-off weight. The brake-lines should always be adjusted so that the first brake-lines just come under tension when the brake handles have been pulled 5 - 10cm. The test results relate to this brake-line adjustment.

This adjustment, on the one hand, allows sufficient brake to be applied during extreme flying situations and when landing, while on the other hand, it ensures that the canopy is not permanently braked (especially when fully accelerated). This trim should not be altered. In extreme situations any other settings may lead to the glider reacting differently to versions which have been tested.

**NOTE!!** If in doubt about the brake-line adjustment, it is preferable to leave them too long, as any necessary shortening can easily be achieved by wrapping them round your hand.

The length of the control lines measured from the first cascade line is and the available brake travel before stalling the wing depends on the size and loading.

Pasha 7	39	42
Main brake line length	280cm (+30)	293cm (+30)
Brake range by max. loading app.	greater than 80cm	greater than 85cm

(The publication of the brake travel is claimed by the EN 926.)

The Pasha 7 risers have adjustable positions for the guide pulleys for the main brake lines to suit each pilot's physical build, harness hang-points, and style of flying. Standard pulleys are placed in the top position, which fits most cases – see picture.

**CAUTION:** If you change the position of the guide pulley then it is necessary to change the position of the brake handle by the same length as the distance between the loops for the hanging guide pulleys.



Upper position of brake guide pulley



Lower position of brake guide pulley



# OVERALL LINE LENGTHS

## Overall line lengths Pasha 7

All overall lengths are measured from riser's main attachment point up to the tissue of canopy on attachment points. Brake lines are measured from the Swivel on brake handle up to the trailing edge.

### Pasha 7 - 39

Center	A	B	C	D	E	BR
1	9001	8920	9005	9165	9238	9756
2	8943	8858	8944	9106	9180	9413
3	9004	8921	9011	9164	9232	9214
4	9031	8954	9036	9183	9248	9099
5	8972	8891	8976	9123	9187	9041
6	8914	8832	8916	9065	9125	8909
7	8967	8882	8974	9097	9150	8781
8	9009	8926	9013	9137	9179	8735
9	8989	8906	8977	9106	9160	8717
10	8894	8818	8891	9016	9070	8616
11	8752	8700	8770	8883	8932	8534
12	8745	8693	8766	8876	8919	8504
13	8610	8569	8634	8727	8762	8362
14	8560	8523	8585	8677	8706	8398
15	8514	8492	8543	8600		
16	8533	8505	8535	8598		
17	8127	8084	8119	8198		
18	8058					
19	8051	8015	8053	8084	8166	

### Pasha 7 - 42

Center	A	B	C	D	E	BR
1	9362	9272	9356	9527	9600	10183
2	9298	9206	9295	9470	9542	9819
3	9361	9273	9357	9526	9597	9614
4	9387	9306	9391	9542	9614	9495
5	9324	9240	9330	9480	9551	9430
6	9266	9179	9269	9423	9485	9298
7	9321	9233	9327	9455	9510	9165
8	9363	9280	9369	9495	9542	9117
9	9335	9257	9329	9463	9519	9099
10	9239	9167	9239	9366	9423	8993
11	9089	9041	9117	9233	9282	8905
12	9081	9037	9116	9224	9268	8872
13	8943	8905	8970	9067	9102	8724
14	8890	8857	8922	9012	9044	8759
15	8841	8825	8878	8940		
16	8860	8842	8868	8937		
17	8448	8401	8435	8518		
18	8375					
19	8367	8328	8365	8399	8483	



## **TREATING NATURE WITH RESPECT**

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Finally the call to practise our sport with respect for nature and wildlife! Don't walk outside marked routes, don't leave any waste, don't make needless noise and respect the sensitive biological balance in the mountain eco system: especially in the take-off area!





## MATERIALS

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### Tissue

(PORCHER SPORT, Rue du Ruisseau B.P. 710,38290 ST. QUENTIN FALLAVIER, FRANCE)

Top Sail - Leading Edge - SKYTEX 38 Universal, 38 g/m<sup>2</sup>

Top Sail - Trailing Edge - SKYTEX 32 Universal, 32 g/m<sup>2</sup>

Bottom Sail - - SKYTEX 32 Universal, 32 g/m<sup>2</sup>

Main ribs, Diagonals - SKYTEX 40 HF, 40 g/m<sup>2</sup>

Ribs - SKYTEX 32 HF, 32 g/m<sup>2</sup>

Reinforcement Ribs - W382 Polyester 180 g/m<sup>2</sup>

Reinforcement Ribs attach. points - F06098 Polyester 90 g/m<sup>2</sup>

### Lines

(ROSENBERGER TAUWERK, GERMANY)

Cascade lines A,B,C - Dynema/Polyester PPSL 160, Breaking Load 160 kg

(EDELMAN+RIDDER+CO. Achener Weg 66, D-88316 ISNY IM ALLGEAU, GERMANY)

Upper cascade E - Aramid 8000/U-050, Breaking Load 50 kg

Upper cascade D - Aramid 8000/U-070, Breaking Load 70 kg

Upper cascade - Aramid 8000/U-090, Breaking Load 90 kg

Upper cascade - Aramid 8000/U-130, Breaking Load 130 kg

Middle cascade - Aramid/Polyester A-7343-090, Breaking Load 090 kg

Middle cascade - Aramid/Polyester A-7343-140, Breaking Load 140 kg

Middle cascade - Aramid/Polyester A-7343-190, Breaking Load 190 kg

Main lines A1,B1,C2,D3 - Aramid/Polyester A-7343-230, Breaking Load 230 kg

Main lines A2,B2,C3 - Aramid/Polyester A-7343-340, Breaking Load 340 kg

Main lines A3,B3 - Aramid/Polyester A-7343-420, Breaking Load 420 kg

Main lines C1,D2 - Aramid/Polyester A-7343-190, Breaking Load 190 kg

Stabiliser lines - Aramid/Polyester A-7343-140, Breaking Load 140 kg

Brake lines - Dynema/Polyester A-7850-100, Breaking Load 100 kg

Brake lines middle cascade - Dynema/Polyester A-7850-130, Breaking Load 130 kg

Main brake line - Dynema/Polyester A-7850-240, Breaking Load 240 kg

### Attachment straps

(STAP a.s., 407 80 VILEMOV, CZECH REPUBLIC)

STAP-POLYESTERBRIDLE 13 mm, Breaking Load 70 kg

### Risers

(MOUKA TISNOV Ltd, Koráb 133, 66601 Tišnov, Czech Republic)

Polyester 367 040 025 912 25x1,5 mm Breaking Load 800 kg

### Thread

(AMANN SPONIT Ltd, Dobronická 635, 148 25 PRAHA 4, CZECH REPUBLIC)

Lines-SYNTON 60, Main lines-SERAFIL 60, Canopy-SERAFIL 60, Riser-SYNTON 20

### Rapid links

(ELAIR SERVIS, CZECH REPUBLIC)

NIRO TRIANGLE 200 - Max. Load 200 kg

### Rigifoils

Rigifoils - Nitinol 0.6 mm, 0.8 mm



# CHECKS

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Name	Company	Date	Signature & Stamp



## TEST FLIGHT CERTIFICATE

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Paraglider type:

Serial number:

Test flown on: \_\_\_\_\_

by  
**MAC PARA TECHNOLOGY**

Confirmation by dealer: \_\_\_\_\_

### TECHNICAL DATA

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Bi-place EN-B Size		Pasha 7 39	Pasha 7 42
Zoom flat	[%]	96	100
Area flat	[m <sup>2</sup> ]	39,35	42,70
Area projected	[m <sup>2</sup> ]	34,19	37,10
Span flat	[m]	14,42	15,02
Aspect ratio flat	-	5,30	5,30
Root cord	[m]	3,39	3,53
Cells	-	61	61
Weight	[kg]	6,85	7,35
<b>Weight range*</b>	<b>[kg]</b>	<b>120-190</b>	<b>135-220</b>
Weight range*	[lbs]	264-418	297-484
Min.speed	[km/h]	24-25	24-25
Max.speed	[km/h]	36-38	36-38
Top speed (accelerator)	[km/h]	46-48	46-48
Glide ratio	-	9,7	9,7
Min. Sink rate	[m/s]	1,10	1,10

\*pilot equipped = weight naked + cca. 15-20 Kg (33-44 lbs)



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