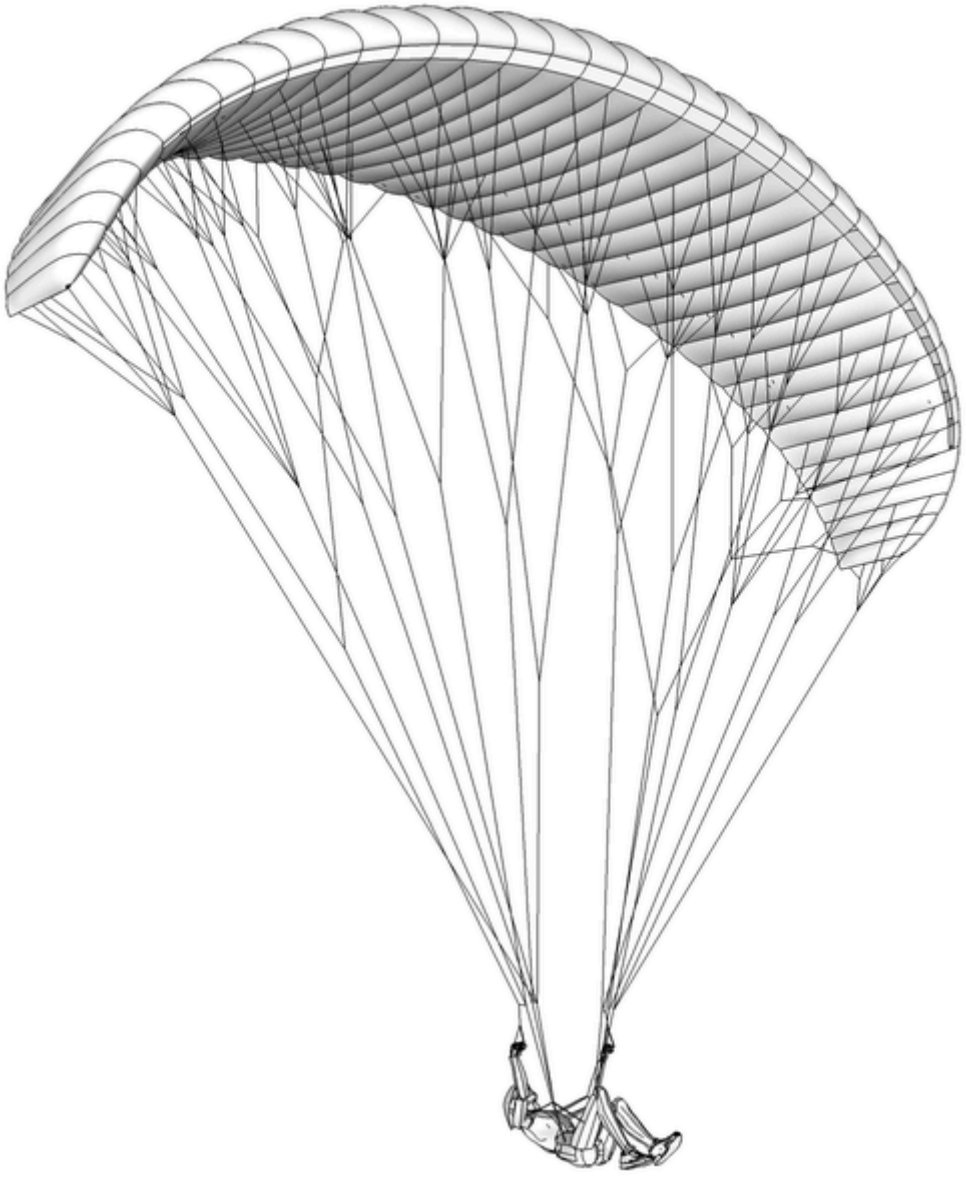
SONATA 2

Manual version 1.03 dated 2 January 2026



Congratulations

Congratulations on choosing a PHI SONATA 2! You have found a reliable companion that will gently take you into the third dimension. Nothing unsettles it, and it will guide you safely through the air. Whether you are a beginner or an experienced pilot, you will love it!

This manual contains important information on the use of your paraglider. We therefore recommend reading the following pages carefully before your first flight. If you have any questions or suggestions, please contact us at info@phi-air.com.

Further information about this and our other products is available at phi-air.com.

To benefit from all service and warranty provisions, you must register your paraglider on our website under SERVICE / REGISTRATION.

PHI

The PHI brand stands for experience, expertise and passion. The PHI team consists of highly experienced experts and enthusiasts. Our standard is first-class technical professionalism; our goal is to keep pushing the boundaries.

The PHI SONATA 2

The PHI SONATA 2 is an EN A paraglider with 40 cells and many technical features that combine a very high level of safety, good performance, precise handling and plenty of fun. The use of highly robust 30D Dominico fabric, additional diagonal reinforcements and special separate finger diagonals provides outstanding durability and shape stability.

Technical overview

The SONATA 2 has 40 cells across its wingspan, with five closed cells at each wingtip. These form a dimensionally stable, uniform wing. The aerofoils combine high performance with very forgiving flight characteristics.

Four line levels on the canopy lead to four risers on each side. The outermost A-lines are attached to a separate riser to make big ears easier. The suspension system is highly simplified, improving clarity and reducing line drag.

The foot-operated speed system is attached to the front A-riser.

For easier identification, all A-lines are red at the maillon.

The B-lines are green.

The stabilo line on the B-riser is red (orange).

The C-main lines are blue.

All brake lines are yellow.

Safety

The SONATA 2 has exceptionally long brake travel before the stall point and a high degree of inherent damping around all axes. It is very stable in turbulent air. If the canopy nevertheless collapses, its reaction is relatively undynamic, as is typical of the A class.

The A ratings for the manoeuvres in the EN / LTF tests confirm the wing's large safety margins.

Handling

Although the maximum brake travel is very long, the control response is short and direct, with low brake pressure, good progression and excellent feedback. The SONATA 2 can be flown very sensitively in thermals using comparatively small brake inputs.

Performance

The PHI SONATA 2 offers solid performance in every area: it climbs well, glides well and still has performance in reserve when flying into wind.

Intended pilots

The SONATA 2 can be flown safely by a very broad range of pilots. This wing's very forgiving flight characteristics make it easy even for a complete beginner to learn to fly and enjoy this newfound freedom. More advanced pilots, including those with many years of experience, will also enjoy this wing for a long time.

Pilot requirements

A paraglider in the safest classification, A, does not place high demands on the pilot. Nevertheless, anticipation and personal responsibility are essential.

Every pilot flying independently must be able to judge whether their skills and equipment are adequate for the actual flying conditions. Even with equipment offering maximum passive safety, errors of judgement can have devastating consequences.

It is the pilot's sole responsibility to avoid such errors by continuing to develop their theoretical knowledge and practical skills, and by making considered decisions appropriate to their ability.

The pilot is also responsible for using suitable protective equipment and keeping all equipment in proper working order at all times.

Pilots who understand these principles can enjoy paragliding safely.

Before using the paraglider

First flight

Every PHI paraglider must be test-flown and checked by a PHI dealer before being sold to the customer. This first flight, including the date and the pilot's name, must be recorded on the wing's identification label, located in the opening of the central cells.

Registration

To benefit from all service and warranty provisions, you must register your paraglider on the PHI website under SERVICE / REGISTRATION.

Scope of delivery

The PHI SONATA 2 is supplied with a concertina packing bag and repair kit.

Modifications to the paraglider

On delivery, the specifications correspond to those for which the wing was certified. Any unauthorised modification, such as changing line lengths or modifying the risers, invalidates the certification!

Only the main brake line may be lengthened slightly:

The main brake line has a mark indicating where the brake handle is tied. This setting may be adjusted slightly to provide sufficient brake travel in extreme flight situations and during landing, while ensuring that the brakes do not remain applied, particularly in accelerated flight.
We recommend seeking expert assistance to avoid incorrect adjustment or an incorrectly tied knot. An incorrect knot can come undone unexpectedly, leaving only limited control of the wing. A brake line that is too short can also seriously impair the wing's flight characteristics and invalidate its certification.

Suitable harnesses

The choice of harness has a significant effect on the SONATA 2's flight characteristics. Some harnesses allow particularly effective weight shifting, but transmit turbulence to the pilot with relatively little damping. Less agile harnesses do not allow extreme weight shifting, but the pilot is subjected to less sideways tilting in turbulence.

A competent flying school can provide individual advice on this.

Certified weight range

The SONATA 2 is certified for use only within a specified weight range. This means the total all-up weight of the pilot, paraglider, harness and any other equipment.

When flying the SONATA 2 in the lower half of its certified weight range, expect reduced agility and more damped flight characteristics. In strong turbulence, the canopy will be less stable.

Flying the SONATA 2 in the upper half of its weight range increases the wing's dynamic response and stability. Trim speed also increases slightly. However, the wing's inherent damping, including after collapses, decreases slightly.

Flying the SONATA 2

We recommend making your first flights on a new wing in calm conditions to become familiar with its flight characteristics. A few launches on a training slope or some ground handling are also recommended to develop a feel for the wing and its reactions.

Launching

Before launch, the pilot must ensure that all equipment is in proper condition, particularly the wing, harness and reserve parachute. Check the identification label and make sure you are within the certified weight range.

Essential pre-launch checks:

1. **Fastened in: leg straps and chest strap on the harness closed; helmet chin strap fastened.**
2. **Connected: risers correctly connected to the carabiners without twists; speed system correctly connected; carabiners closed.**
3. **Lines: A-lines on top; all lines sorted; brake line running freely to the brake pulley.**
4. **Canopy: wing laid out in an arc at the launch site, with the leading edge open.**
5. **Wind and airspace: wind suitable for launch; airspace clear.**

The pilot must visually check that the canopy is fully inflated overhead and that there are no knots in the lines.
The final decision to launch must be made only after all problems have been resolved.
Otherwise, abort the launch immediately for safety reasons!

The SONATA 2 inflates very easily during both forward and reverse launches. The wing rises steadily and stays on course, without a tendency to overshoot strongly. Overall, its launch behaviour is very simple and forgiving, requiring no knowledge beyond the standard forward and reverse launch techniques taught at a flying school.

We generally recommend practising regularly on a training slope or by ground handling in wind.

Straight flight

The SONATA 2 achieves its best glide at trim speed, with the brakes fully released. In calm air, this gives the greatest distance for a given height.

In a headwind or sinking air, using the speed system gives the best glide. In turbulent air, always take into account the more dynamic reactions to a collapse during accelerated flight and therefore maintain a greater safety margin above the ground.

Warning!
Never use the speed system without sufficient clearance above the ground!
A safe altitude allows the wing to reopen by itself after a large collapse, or allows the pilot to recover it actively. There must also be sufficient height available to deploy the reserve parachute if a problem, such as a cravat, cannot be resolved.

In strong turbulence, lightly applying both brakes is recommended to increase stability and obtain the brake feedback needed for active flying.

Active flying means continuously controlling and correcting the angle of attack and airspeed in turbulent air.

With a well-developed active flying technique, most collapses can be prevented before they develop. Some of the necessary responses can also be learnt through ground handling, for example by trying to keep the wing stabilised overhead without looking at the canopy.

Turning

A turn combines inside brake, outside brake and weight shift. The skill lies in applying the correct amount of each. The SONATA 2 has sensitive handling, so small control inputs are sufficient for precise turns.

The SONATA 2 loves modern, dynamic thermal flying. We recommend keeping the outside brake released and maintaining speed in the turn. The SONATA 2 carves efficiently around the turn and makes dynamic use of the lift. Tight, controlled turns and changes of direction without pendular movement require practice and should be the aim of every pilot.

Warning!
If the wing can no longer be controlled with the brake lines, for example because they are tangled following an inadequate pre-launch check, the SONATA 2 can also be steered to a limited extent using the C-risers. Combined with weight shift, this allows reasonably effective directional corrections. A safe landing is also possible using this technique. Pull the C-risers down only slightly to avoid a stall.

Warning!
Pulling the brake lines too far or too quickly can cause a stall!
An asymmetric stall gives a clear warning: the wing begins to slide around the turn, while the inside half of the wing stops flying and becomes soft. Release the inside brake immediately at this stage!

Landing

The SONATA 2 is easy to land. On final approach into wind, allow the wing to glide with a little brake applied. At approximately 1 m above the ground, progressively apply more brake to increase the angle of attack and flare the wing. Once minimum speed has been reached, pull the brakes fully down.
In a strong headwind, apply the brakes carefully. Only stall the canopy, with care, once the pilot is standing securely on the ground.
Avoid steep changes of direction on final approach, as they can cause pendular movement.

Warning!
A full stall, even at a height of just two metres, can cause the pilot to hit the ground very hard. Therefore, pull the brakes fully down only immediately before touchdown.

Rapid descent manoeuvres

Warning!
Practise all rapid descent manoeuvres in calm air and with sufficient safety altitude, so that you can use them safely in an emergency in turbulent air.
The following applies to all extreme flight manoeuvres and descent techniques:
- First practise under an instructor's supervision during training or an SIV course.
- Before starting a manoeuvre, make sure the airspace below you is clear.
- Continuously monitor your height above the ground throughout the manoeuvre.

Big ears

Big ears are very effective and easy to perform on the SONATA 2. To initiate them, grasp the outer A-risers (red, orange) at the top, at the maillons, and pull them down symmetrically. Keep the brake handles in your hands without taking an extra wrap. As long as the risers are held down, the wingtips remain folded and the sink rate increases.

If the ears do not fold in fully on initiation, repeat the action, pulling the A-risers more quickly and/or grasping the outer A-main line above the riser. A more decisive pull and a longer pull on the outer A-line make it easier to fold in the wingtips.

We recommend also using the speed system to increase the sink rate and forward speed. This also compensates for the increased angle of attack caused by the additional drag of the folded ears.

To exit the manoeuvre, simply release the A-risers upwards. The SONATA 2 will then recover on its own.

If the ears do not fully reinflate by themselves, a brief brake input can help them reopen. Make sure the brake input is brief and release the brakes immediately afterwards.

B-line stall

Initiate a B-line stall by pulling the B-risers down symmetrically by approximately 20 cm. The initial force required is relatively high but decreases as the risers are pulled farther down. For the best grip, hold the risers at their upper end, at the maillons.

As soon as the risers are pulled down, the wing loses its forward speed and enters a stable parachutal descent. The pilot swings slightly ahead of the wing. The farther the B-risers are pulled down, the higher the sink rate, up to approximately 9 m/s.

If they are pulled too far, the wing begins to rotate slowly around its vertical axis. In this case, raise your hands until the rotation stops. Asymmetric pulling can also cause rotation.

Exit the B-line stall by raising your hands promptly.

Keep hold of the brake handles throughout the manoeuvre without taking an extra wrap around your hands. When exiting, make sure the brakes are fully released.

Spiral dive

The spiral dive is the most demanding rapid descent technique and should be learnt only at a substantial altitude, ideally during an SIV course.

Initiation can be divided into two phases:

First, fly increasingly steep circles using weight shift and brake on the inside. The G-forces then begin to rise rapidly and the wing's nose tilts increasingly towards the ground, until, in a fully developed spiral dive, the leading edge is almost parallel to the horizon.

During initial attempts, exit well before the spiral dive is fully developed, to practise recovering without pendular movement. Recover by reducing the inside brake with your body in a neutral position. To ensure a smooth exit without swinging, apply more inside brake again as soon as the wing clearly starts to return upright or its bank angle decreases significantly.

As described above, the actual spiral motion begins only during the transition when the wing tips nose-down. At this point, the pilot is pushed towards the outside of the harness and should allow this movement to avoid entering a stable spiral dive (see below). The sink rate can now be varied using the inside and outside brakes.

If the pilot keeps their weight on the outside, reducing the inside brake is sufficient for the SONATA 2 to slow the spiral steadily. Continue the recovery as described above.

If the pilot shifts their weight significantly to the inside, the SONATA 2 may continue spiralling even when both brakes are released. In this case, apply both brakes or the outside brake, and of course shift your weight to the outside.

Sink rates in a spiral can be approximately 10 m/s to 20 m/s. The load on the body exceeds 4 G and, depending on the pilot's physical condition, may cause loss of consciousness in extreme cases.

It is therefore essential to approach this manoeuvre gradually, both to master active, controlled recovery and to learn how your body responds to these loads.

Warning!
Recovering from a stable spiral dive requires unusually high physical effort because of the high G-loads!

Warning!
Because of the wing's high performance and dynamic response, exiting a spiral dive too quickly can cause a significant climb. This may also bring you into your own wake turbulence (rotor)!

Collapses

Asymmetric collapse

One side of the paraglider may collapse when flying into strong turbulence. This occurs when turbulence reduces the angle of attack on that side so far that lift is no longer generated. The lines unload and that side of the wing collapses.

Such a collapse may affect only a small part of the wingspan, in which case the SONATA 2 shows no significant reaction. With larger collapses affecting 50% or more of the wingspan, the wing reacts noticeably:

The increased drag on the collapsed side causes the SONATA 2 to begin turning towards that side. At the same time, the wing pitches forward because of the smaller lifting area and the resulting higher airspeed.

The pilot can prevent this turn and pitch by applying brake on the uncollapsed side.

This response is particularly essential near the ground. Practise it with induced collapses at a substantial altitude, preferably during an SIV course.

Applying too much brake on the open side can cause an asymmetric stall (see Asymmetric stall or spin).

Frontal collapse

A frontal collapse, often misleadingly called a front stall, is also caused by turbulence. Unlike an asymmetric collapse, it involves the entire leading edge folding down.

The SONATA 2 recovers from a frontal collapse on its own, as it does from an asymmetric collapse.

However, we recommend lightly applying both brakes to speed up reinflation.

Stalls

Asymmetric stall or spin

A wing enters a spin when airflow breaks away over one half of the wing. The canopy rotates around its vertical axis, with the centre of rotation within the wingspan. The inside half of the wing flies backwards.
There are two causes of a spin:
- One brake line is pulled too far and too quickly, for example when initiating a spiral dive.
- Too much brake is applied on one side during slow flight, for example when thermalling.

If an accidentally initiated spin is stopped immediately, the SONATA 2 returns to normal flight without significant height loss. Release the excessively applied brake until airflow is restored over the inside half of the wing.

Warning!
After a prolonged spin, the paraglider may surge forward on one side. This may cause a sudden collapse or a cravat.

Full stall

A full stall is a complex manoeuvre whose correct execution cannot be explained completely in this manual. If you want to learn this manoeuvre, do so under the supervision of a pilot who has mastered it, preferably during an SIV course.

The available brake travel before a stall depends on the wing size! In turbulent air, the stall may occur significantly earlier or later. To use the full brake travel of your wing, you must develop a feel for the stall point through repeated full stalls and asymmetric stalls.

Parachutal stall

A parachutal stall is a flight condition with no forward speed and a high sink rate. The pilot can deliberately initiate it by applying strong, symmetrical brake input. It is, in a sense, the stage before a full stall.

The SONATA 2 recovers from a parachutal stall on its own when the brakes are fully released.

A heavily used wing with porous fabric and/or lines out of trim, for example after many winch launches or spiral dives, may remain in a stable parachutal stall. This can occur, for example, after exiting a B-line stall too slowly or after a large frontal collapse.

A wet wing, flying in rain or flying in very cold air can further increase the tendency to enter a parachutal stall.

In a stable parachutal stall, push the A-lines forwards or pull them down, or, better still, use the speed system. The wing will then return to normal flight after a slight pendular movement. In a parachutal stall close to the ground, assess whether there is enough height for this movement. If not, a hard landing in parachutal stall is preferable.

Warning!
Applying the brakes during a parachutal stall causes the wing to enter a full stall!

Cravats

A cravat occurs when part of the wing, especially after a collapse or stall, becomes caught in the lines and cannot reopen by itself. This flight condition did not occur during any of our extensive SONATA 2 test flights, but it cannot be ruled out completely on any paraglider.

In the event of a cravat, we recommend the following responses:

1. **Counter-braking: as with a collapse, the wing tends to turn towards the trapped side. If the pilot does not apply counter-brake on the open side, this turn can in some cases develop very quickly into a stable spiral dive, requiring extremely high recovery forces or potentially becoming impossible to recover from.**
2. **Pumping the brake to reopen the wing: a decisive pull on the brake on the trapped side may release the cravat. Throughout this action, use the other brake to keep the wing flying straight.**
3. **Pulling the stabilo line: if braking does not help, a strong pull on the stabilo line may release the cravat. This line is on the outer edge of the B-riser and is orange.**
4. **Collapsing the trapped side: some cravats can be released by inducing a collapse on the trapped side.**
5. **Full stall: a pilot who has mastered the full stall has an effective method for releasing cravats.**
6. **Reserve parachute: if you lose control of the wing, or if you are not absolutely certain that you have enough height for further attempts to reopen it, deploy your reserve parachute without hesitation!**

Many pilots hesitate far too long before deploying their reserve, or do not use it at all even though there was enough time. These accidents usually have devastating consequences. By contrast, a descent under an open reserve parachute rarely results in serious injury.

Make a habit of regularly rehearsing reserve deployment, at least mentally. For example, during flight, quickly reach for the reserve handle as you would if you needed to use it.

Many clubs and flying schools also offer opportunities to practise throwing a reserve, for example in a sports hall. The most realistic practice is, of course, an actual reserve deployment, for example during an SIV course.

All of this helps you avoid hesitating to deploy your reserve in an emergency, or forgetting under stress that you have a reserve parachute at all.

Winch launching

The SONATA 2 requires no special procedures for winch towing. Make sure you climb away from the ground at a shallow angle.

We recommend using a tow-release adapter. It connects to the top of the main carabiner and links it to the tow release.

Speed system

Installing the speed system

Most harnesses have two pulleys on each side; some lightweight harnesses have two simple rings instead. Route the two supplied speed-system cords downwards through the two pulleys or rings and secure them to the foot bar at the bottom.

Correct length adjustment is important. If the cords are too short, the wing may remain permanently accelerated, which must always be avoided. The speed bar may also become harder to reach.

If the cords are too long, it may no longer be possible to accelerate the wing to its maximum speed.

When first installing the speed system, we recommend setting the cords slightly too long so that you can assess the slack during flight. You can then shorten the cords by that amount if necessary.

Using the speed system in flight

Before launch, when connecting the risers to the main attachment points of the harness, also connect the speed-system Brummel hooks to the corresponding hooks on the risers at the upper speed-system pulley.

In flight, the SONATA 2 can now be accelerated using the speed bar. This reduces the angle of attack and increases airspeed. The increase over trim speed is approximately 13 km/h. Using the speed system is useful for improving glide into wind or through sinking air, and for making faster progress on cross-country flights.

Warning!
Applying brake during accelerated flight not only greatly reduces performance, but also increases the tendency to collapse, unlike in unaccelerated flight!

Changes of direction during accelerated flight can be made either by weight shift or by applying the speed system asymmetrically. If more acceleration is applied on the left, the wing turns right.

Speed-system geometry

Using the full available speed-system travel shortens the A-risers relative to the C-riser by 15 cm or 17 cm, depending on size: see Technical data.

Care and maintenance

General handling advice

With correct and careful handling, the paraglider will remain in technically sound condition for many years, even with intensive use. During normal use, observe the following advice:

Do not expose the paraglider to sunlight unnecessarily, for example by leaving it lying in the sun for a long time before launch or after landing.

When packing, avoid unnecessarily sharp bends in the polyamide rods in the leading edge wherever possible.

If the wing is wet or even slightly damp when packed, it must subsequently be dried in a dry environment.

During landing or ground handling, avoid allowing the leading edge to strike the ground hard. The resulting loads on some components may be high enough to cause damage.

Protect the lines from dirt and sharp stones. Never step on the lines on stony ground.

Moisture combined with dirt can cause the line sheaths to shrink over time, putting the paraglider out of trim. Salt water, including sweat, damages the line material and reduces its strength.

Storage

Ideally, store the paraglider in a dry place protected from light. Avoid prolonged storage at very high temperatures, for example in a car in midsummer.

For longer storage periods, do not compress the paraglider tightly; instead, keep it loosely packed in its inner bag.

Transport

The paraglider can be packed very compactly for transport. The nylon monofilaments used to reinforce the leading edge are highly resistant to permanent deformation.

If a very small packed volume is required, a compression bag may be used. To keep the weight as low as possible, make sure the paraglider is dry when packed. The nylon fabric absorbs water in humid conditions and becomes heavier.

If vibration occurs during transport, for example on a motorcycle, make sure the metal fittings (maillons) do not touch the canopy fabric. Use a bag for the risers.

Cleaning

Use only water and a soft cloth or sponge to clean the canopy. Do not use solvents!

Remove any sand, dirt or small stones that collect inside the wing. Sand in particular abrades the fabric coating and seams.

Repairs

Repairs should be carried out only by the manufacturer or authorised repair centres. If in doubt, contact PHI directly at info@phi-air.com.

Exceptions are replacing lines and repairing small tears (up to 5 cm, provided no seam is affected) or holes in the fabric using original PHI self-adhesive repair fabric. Repair fabric in the required colour, with instructions, is available from your flying school or directly from PHI.

Inspection

The general inspection interval is two years, unless the inspector specifies a shorter interval because the wing is in borderline condition.

Wings used commercially, such as school wings and tandem wings, must always be inspected annually. Annual inspection is also recommended for wings subjected to high loads, for example more than 150 flight hours in two years or regular acro manoeuvres. We also recommend annual inspection if you frequently fly in environments that place high stress on the materials, such as very stony areas, salty air or, especially, after contact with salt water.
In these cases, even more than usual, it is also the pilot's responsibility to check the wing regularly for damage.

Every inspection must be confirmed by an inspection stamp. Failure to comply invalidates the certification. For further information on maintenance inspections, see the inspection instructions on the PHI website (http://www.phi-air.com), under Downloads: Check.
These instructions are continuously updated in line with technical developments, experience and knowledge.

Registration and warranty

To benefit from all service and warranty provisions, you must register your paraglider on our website under SERVICE / REGISTRATION.

See the PHI website for further details.

Respect for nature and the landscape

Finally, we ask you to practise our sport with as little impact as possible on nature and the landscape. In addition to obvious considerations such as leaving no litter, avoid frightening animals, including birds of prey and wildlife, by flying close to them. Especially in the colder months, this stress can be life-threatening for animals.

Disposal

The plastic materials used in a paraglider require appropriate disposal. Please return retired wings to PHI, where we will dismantle and dispose of them.

PHI

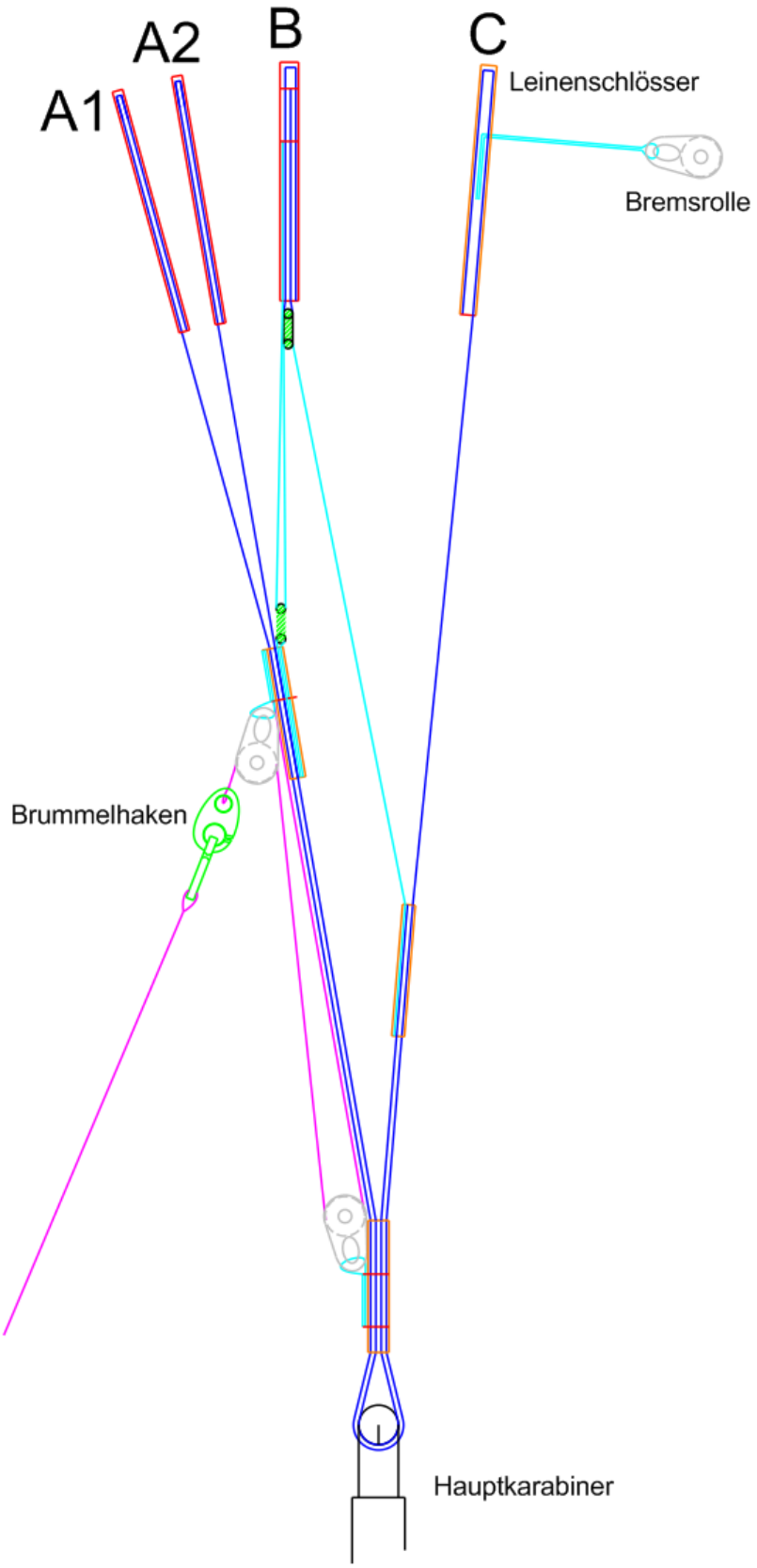
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Technical data

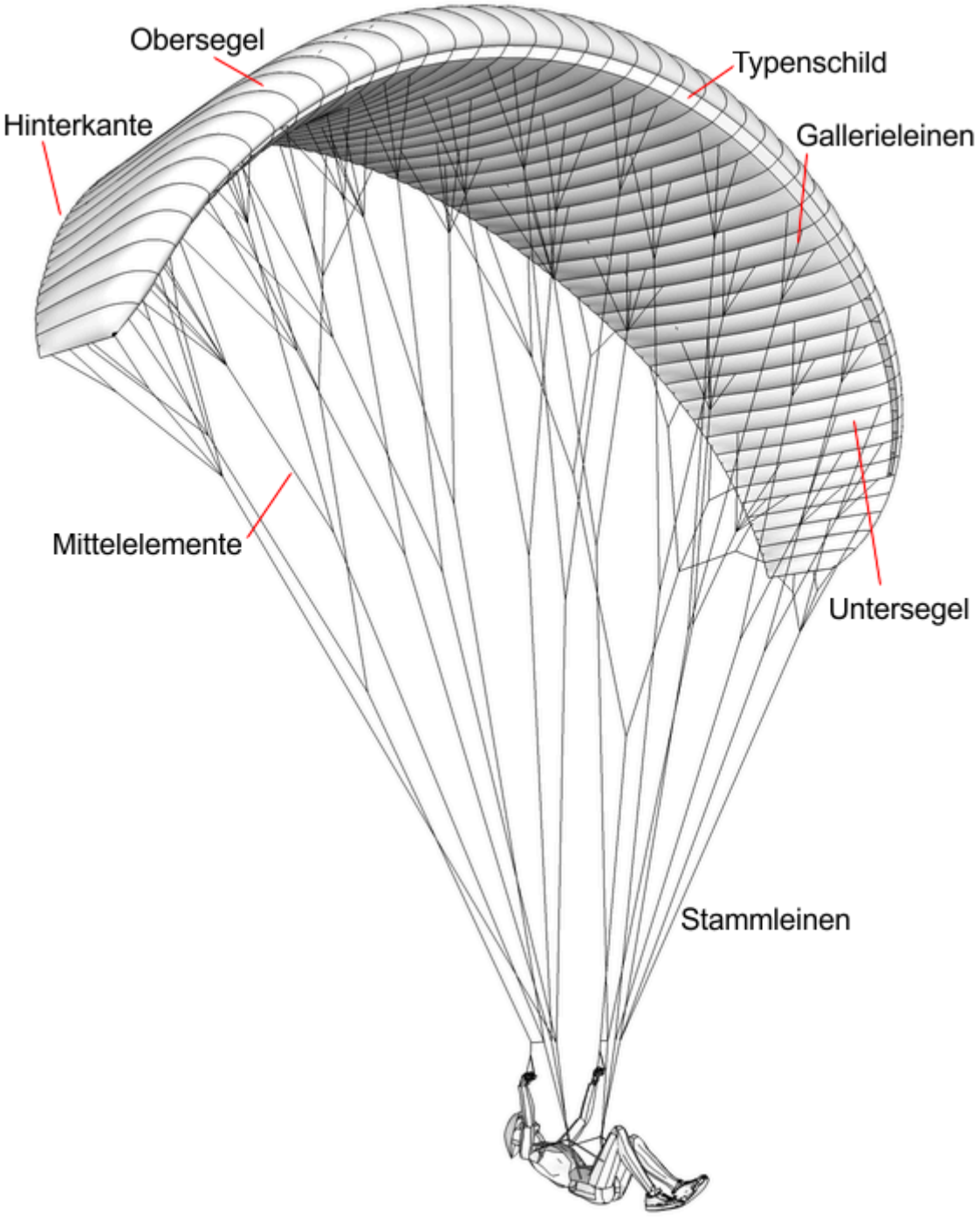
SONATA 2						
Size		**18**	**20**	**22**	**24**	**26**
Number of cells		40	40	40	40	40
Projected span	m	8.08	8.48	9.01	9.38	9.79
Projected area	m²	18.55	20.5	22.71	24.64	26.81
Projected aspect ratio		3.52	3.51	3.57	3.57	3.57
Flat span	m	10.05	10.57	11.1	11.56	12.05
Flat area	m²	21.43	23.71	26.1	28.32	30.81
Flat aspect ratio		4.72	4.72	4.72	4.72	4.72
Line length	m	6.11	6.42	6.74	7.05	7.32
Maximum chord	m	2.65	2.79	2.93	3.05	3.18
Minimum chord	m	0.63	0.66	0.7	0.73	0.76
Weight	kg	4	4.35	4.75	5.05	5.35
Standard weight range	kg	55-75	65-85	75-95	90-110	105-130
Extended weight range	kg	75-85	85-95	95-110	110-125	130-145
Certification (EN/LTF)		A	A	A	A	A
Extended paramotor weight range	kg	55-130	65-130	75-150	90-150	105-150
DGAC certification		Pending	Pending	Pending	Pending	Pending
Material		Porcher Skytex 38, Easyfly				
Number of risers		R10 (3+1)				
Riser length	mm	500	500	540	540	540
Speed-system travel	mm	150	150	150	175	175
Maximum brake travel	cm	>60	>60	>65	>65	>65
Main carabiner spacing	cm	44+-2	44+-2	48+-2	48+-2	48+-2

Warning!
Maximum brake travel depends on several factors. In practice, it may be less than stated in this table. The values refer to the test conditions used for testing to EN 926-2, in calm air, and are only approximate guidelines.
Turbulence, which is common in real flying conditions, reduces the maximum brake travel. The stall occurs earlier!

Riser overview



Wing overview



Schematic line plan

