



ADVANCEPI<sup>3</sup>



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# Thank you for flying ADVANCE

Our sincere thanks for choosing an ADVANCE quality product with Swiss engineering.

## **Operating Manual**

This manual is an important part of this flying equipment. It provides guidance for flight and use in practice, as well as important information about safety, care and maintenance. We encourage you to read through the manual carefully before your first flight.

## **Registering the product**

Register your PI 3 in your MyADVANCE Account under [www.advance.ch/warranty](http://www.advance.ch/warranty), to see recent updates and get safety-relevant findings about your product by email.

## **About ADVANCE**

For more than 30 years the needs and feelings of paraglider pilots have been at the centre of our priorities. We are pilots ourselves, and are thus motivated to respond to the trust and confidence of others – with new ideas, leading products, perfect service and a unique product appearance.

Have fun

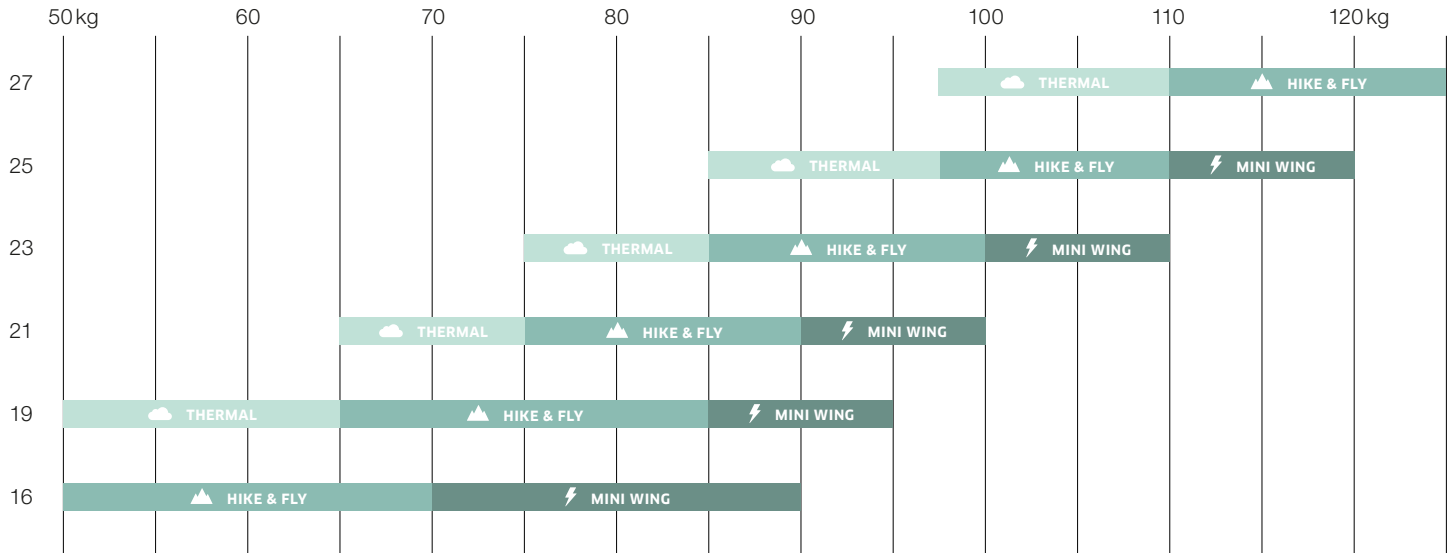
We wish you many rewarding experiences with your PI 3, and many wonderful hours in the air!

Team ADVANCE

# PI3 – Light versatility

Enjoy the freedom and the versatility – in the air and on the ground.  
The new PI 3 is one of the lightest low-pack-volume serial wings on the market, and, with four sizes and three specified weight ranges per size, is also one of the most versatile paragliders currently available.

Whether for thermaling, Hike & Fly, or use as a Mini Wing, it's you who decide with the new PI 3.



## One wing, many uses

Each PI 3 size is subdivided into three weight ranges «Thermal», «Hike & Fly» and «MiniWing ». These classifications are a function of wing loading, and require different levels of piloting ability:

### Thermal

In the thermaling range of up to 3.5 kg/m<sup>2</sup> the PI 3 with its well balanced canopy is easy to fly, offering maximum passive safety. In this range the PI 3 is suitable for beginners and leisure pilots.

### Hike & Fly

The Hike & Fly range – wing loading between 3.5 and 4.5 kg/m<sup>2</sup> – is the right choice for those who like to walk up with light equipment and have some dynamic fun on the flight down. 19, 21, 23, 25 and 27 sizes require a safe and active flying style, as well as some Intermediate-level experience. The PI 3 16 is a small wing and requires Expert experience, even in the Hike & Fly Range.

## Mini Wing

In the Mini Wing Range with a wing loading of 4.5 kg/m<sup>2</sup> and up, the PI 3 is clearly an action wing. It requires a very experienced pilot who flies actively and can sort out wing disturbances almost before they happen. Because of a higher flying speed and much higher descent rate in the turn, the PI 3 as a Mini Wing, is also demanding to land.



**High wing loading:** the higher the wing loading the more agile a canopy becomes, and the more demanding will be its behaviour in extreme situations. This principle applies even more so as the wing itself gets smaller. In referring to the MiniWing ethos we draw attention to PI 3 flying characteristics in this weight range, especially when applied to the 16 and 19 size wings.

# Pilot requirements

## General advice about paragliding

Flying a paraglider calls for appropriate training and a sound knowledge of the subject, as well as, of course, the necessary insurance cover and licence. A pilot must be able to correctly assess the weather conditions before taking off. His or her capabilities must be adequate for the paraglider used. The paraglider pilot is also required bear a sense of responsibility towards the natural world, especially regarding the preservation of wildlife and landscape.

Wearing an adequate helmet, suitable boots and clothing, and the carrying of an emergency parachute are essential. Before every flight all items of equipment should be checked for damage and airworthiness. A proper pre-takeoff check must also be carried out.

Every pilot bears sole responsibility for their participation in the sport of paragliding. Neither the manufacturer nor the seller of a paraglider can guarantee or be held responsible for the pilot's safety.

## Requirements

Detailed depiction of recommended and extended weight ranges is provided in the 'Technical Data' section. The weight figures quoted there apply to total in flight weight – pilot's weight plus clothes, all the equipment (wing, harness, reserve, instruments etc.; in fact everything that is to go into the air).

## Loading and wing size

The PI 3 has different EN/LTF classifications depending on wing size, its three wing loading ranges, and the demands each combination makes of its pilot.

As a general rule, flying qualities and handling become more demanding at higher wing loading, and steering response is more direct. We can also say that, for simple aeromechanical reasons, smaller wings are more agile (move around faster) than large ones, have shorter brake travel, and are therefore considered to be more demanding to fly – even when flown at their lower wing loadings.

# Pilot requirements

## Beginner – EN/LTF A Certification

The PI 3 21, 23, 25 and 27 sizes have recommended takeoff weight ranges of 65 – 85 kg (sizes 21), 75 – 95 kg (sizes 23) and 85 – 105 kg (sizes 25) and 97 – 115 kg (sizes 27) respectively, and demonstrate maximal passive safety. This is reflected by the EN/LTF A certification.

As such, the PI 3 makes a good school glider, suitable for beginners. These pilots will continue to feel happy and relaxed under this quiet and well-balanced wing, long after they have completed the basics. Leisure flyers will appreciate the PI 3's comfortable handling and notably good performance. The recommended takeoff weight range for all these sizes applies to the thermal area, and here the PI 3 demonstrates its good climb and glide abilities.

## Intermediate – EN/LTF B

The PI 3 is certified EN/LTF B for the takeoff weight range of the 19 (50 – 95 kg) and the extended ranges of the 21 (85 – 100 kg), 23 (95 – 110 kg), 25 (105 – 120 kg) and 27 sizes (115 – 125 kg).

These weight ranges are intended for pilots with a competent active flying style. They can recognise and prevent collapses at their onset, or deal with them without overreacting.

## Expert – EN/LTF C

Short lines and short brake travel give the PI 3 16 an EN/LTF C over its whole weight range (50 – 90 kg).

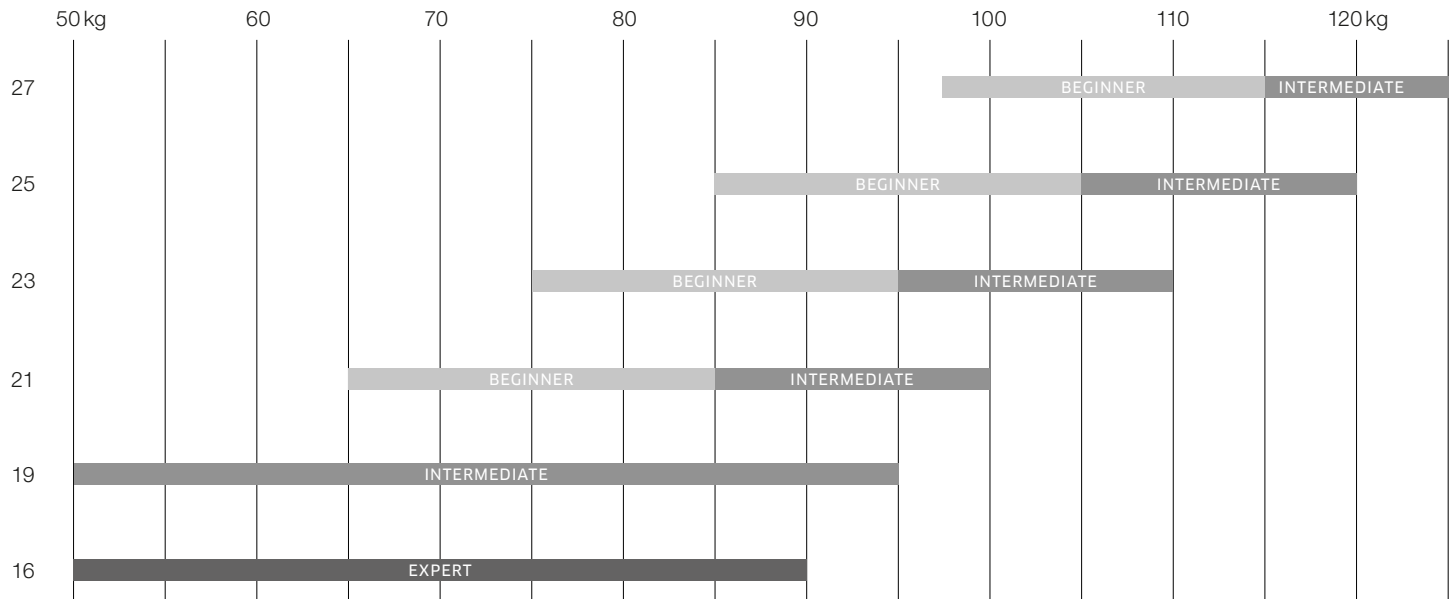
In these weight ranges experts are called for who fly with anticipation and foresight, and know how to handle high flying speeds.



**High wing loading:** Smaller wings are generally considered to be more agile – this applies when compared with a larger version of the same paraglider model when flown at the same wing loading.



# Pilot requirements



EN/LTF A = Beginner

EN/LTF B = Intermediate

EN/LTF C = Expert

# Handle with Care

The ADVANCE PI 3 is designed to be as light as possible for its specific areas of use. This places significant demands on those who use and look after it. The owner should become very familiar with the product, its qualities and requirements. Because of its specialised materials and construction the PI 3 can suffer wear and damage if it is carelessly or ignorantly used.

The PI 3 should never be dragged over the ground. Pointed and sharp objects such as stones or twigs can damage the lines and fabric. ADVANCE recommend that you choose your takeoff surface carefully.

**!** **Caution:** ADVANCE considers it important that you are aware of and respect the PI 3's lightweight materials. The PI 3 will provide long-term enjoyment, but only if you look after it carefully. Always bear the «Handle with Care» label in mind; the lifetime of this product depends largely on your care.



# Getting started

The PI 3 belongs to the “Light sport aircraft” category with an empty weight of less than 120 kg.

## Delivery

Every ADVANCE paraglider has to be flown by the dealer before delivery to check for correct settings and trim. The dealer finally enters the date of the first flight on the type placard fastened on a rib at the centre of the wing. This entry confirms that defects in the product that can be attributed to manufacturing faults are covered by the ADVANCE warranty. Register your paraglider under [www.advance.ch/warranty](http://www.advance.ch/warranty), and benefit from the ADVANCE warranty for three years. See under “Warranty” in the “Service” section.

Delivery of a PI 3 includes a LIGHTPACK rucksack, a COMPRESSBAG, a repair kit, a mini-windsock in the wing colour and a «Getting Started» booklet.

## Basic settings

At delivery the basic set up of the PI 3 will be the original trim situation that the ADVANCE test team found to be best. Certification was also gained in this condition. Any alterations or changes to the paraglider, such as altering the line lengths or fitting different risers or quicklinks, will result in a loss of the glider’s certification. See section «Certification».

## Adjusting the brake lines

The length of the brake lines has been set at the factory so that, with hands fully up, the trailing edge remains unbraked in accelerated flight – (no crease in the wing). Basically, this setting should be kept.

If the brake line length does have to be reset there should be 8 -10 cm (depending on the glider size) of initial free brake line movement between the brakes fully released position in unaccelerated flight, and that point where the lines first affect the trailing edge. We recommend a bowline knot for attaching the handles. See illustration in the appendix.

## Adjusting the speed system

Adjust your PI 3 speed system correctly before your first flight. Make sure that the speed lines run freely through all the pulleys in your harness. Connect the speed lines to the risers with the Brummel hooks. Finally check that your final settings allow the full accelerate travel to be used. To do this hang the harness up, sit in it and get someone to hold up the risers as if in flight.



**Caution:** The speed system is correctly adjusted when you can use the full travel available on the risers. Make certain that the speed lines are not set too short, thus causing the wing to be pre-accelerated all the time.



**Caution:** Even though the PI 3 has a high degree of stability in accelerated flight you should only use as much speedbar as you feel comfortable with.

## Suitable harnesses

Basically the PI 3 can be flown with any harness that does not have rigid cross bracing (see section “Certification”).

ADVANCE recommends the EASINESS 3 or the STRAPLESS 2 as an ideal combination with the PI 3.

For the tests the following settings were used for the harnesses:

- All-up in-flight weight less than 80 kg: carabiner distance  $40 \pm 2$  cm, height  $40 \pm 1$  cm
- All-up in-flight weight 80 to 100 kg: carabiner distance  $44 \pm 2$  cm, height  $42 \pm 1$  cm
- All-up in-flight weight more than 100 kg: carabiner distance  $48 \pm 2$  cm, height  $44 \pm 1$  cm



# Flight characteristics

We recommend that you make your first flights with your new glider in quiet conditions, in a familiar flying area. A few pull-ups at an easy site will give you confidence in the PI 3's handling qualities, from the very beginning.

## Takeoff

### Connecting the Risers

The PI 3 has an “Easy Connect System” on the risers, to simplify connecting the risers. Each riser has coloured sewing running up the back of the C-riser, red for left and blue for right, in the direction of flight.

The coloured sewing facing the pilot, and the riser running cleanly upward to the lines confirm that the riser has not been connected with an 180 degree twist. For additional assistance all ADVANCE harnesses have the same marking on their suspension loops (red to red, blue to blue).

The “Easy Connect System” also enables you to clip in while facing the wing. This can be helpful for a reverse takeoff in windy weather.

### Takeoff preparation

Before every takeoff carry out the following pre-takeoff:

1. Reserve checked: pins and cables correct, reserve handle stowed?
2. Harness and helmet secured?
3. Lines free?
4. Canopy open?
5. Wind direction and strength assessed?
6. Airspace and field-of-view clear?

PI 3 takeoff behaviour is very straightforward. The PI 3 comes up evenly, whether there's little or a lot of wind, without hanging back or shooting in front. Because of its light cloth the PI 3 rises exceptionally easily, so it is very important that you modulate your pull-up impulse for the wind and takeoff slope.

This means:

- Less impulse needed in wind and/or on a steep slope.
- A sensible and well-judged pull in zero wind and/or on a shallow slope.



**Tip:** Before takeoff arrange the canopy into the correct shape. While sorting the lines pull the wingtips towards you (just enough) with the brake lines to achieve the ideal leading edge curve – so that the wingtips do not inflate before the centre.



**High wing loading:** A higher wing loading means that lift-off, minimum and flying speeds will all be noticeably higher; so, after the pull up and canopy check, you must accelerate (run) to a higher speed before the wing can lift you off the ground. The optimal angle of attack for lift-off is minimum sink - about 15% brake. More brake than this (instead of enough speed) is not ideal.

### **Light wind takeoff (Forward)**

The PI 3 takes off in a well-behaved manner and only needs a moderate pull up – even in very light wind, so it is not necessary to step back and ‘run into the lines’. Lead the wing up with positive leaning forward, but not much pull on the A-risers, until the canopy is happily overhead. Any directional corrections required while the canopy is rising should be made by moving under the wing centre – not by using brake. After corrections and a look up at the wing a few brisk steps (while still leaning forward) will have you in the air – even in light or no wind. The take-off run can be shortened by careful use of brake (but not too much).


### **Takeoff in strong wind (Reverse)**


The reverse takeoff is traditionally recommended for strong winds, but is becoming increasingly useful for modern easy-rising paragliders in moderate conditions. In strong wind control the canopy rising rate by walking (not running – big steps instead, shoulders back) towards the PI 3 as necessary, while maintaining body weight against the wing. Turning round and lifting off is easy with the PI 3.




**Caution:** PI 3 16 and 19 sizes have shorter lines. The lighter canopy has less far to travel as it rises, so will reach its overhead position sooner than sizes 21, 23, 25 and 27.



 **Tip:** In strong wind it is possible to arrange the complete PI 3 pull-up without holding the A-risers. Ease both brakes and briefly step/lean back against the lines (and the wind) to give the initial impulse (as required). This technique leaves you with permanent brake control.

 **Tip:** Playing with the glider on flat ground in wind gives a good feeling for the wing. You can get to know PI 3 characteristics well, and safely investigate takeoff, stalling, pitching and collapsing behaviour without your feet leaving the ground. The ADVANCE test team have a motto: One hour's ground training is worth ten flights.

 **Handle with care:** Ground practice puts extra wear on the wing.

## Normal flight

In quiet air the PI 3 glides best with fully released brakes. Light braking slows the wing to minimum sink speed.

Despite the wing's high level of stability, an active flying style is recommended in turbulence. Collapses can then be virtually avoided. The technique implies that the canopy always remains overhead the pilot, in other words roll and pitch disturbances should be opposed and corrected.

- When the angle of attack increases (e.g. wing goes back when encountering a thermal, pilot's weight swings forward) brakes must be released briefly but fully, until the canopy returns to its normal overhead position.
- When wing goes forward (e.g. angle of attack reduces, pilot is left behind) the wing must be immediately arrested with brief but strong braking.



**High wing loading:** rolling activity increases with wing loading.



**Tip:** If the PI 3 rolls from side to side in turbulence this cycling can be arrested by brief and symmetrical brake of ca. 20%.



**Caution:** Always be careful not to get below minimum flying speed, and do not overcontrol when applying controlling brake.

## Turning

The PI 3 has precise steering response. Once the free brake line travel has been taken up the wing reacts directly and progressively to increasing steering demands. Steering can be effectively assisted by weight shift. Angle of bank can always be increased, steadied or reduced by brake line position and load.

Outside brake should be used to steady the outside wingtip and control the rate of turn.



**High wing loading:** High wing loading means high descent rates in the turn. Very good flightpath anticipation and knowledge of the terrain are essential near the ground.



**High wing loading:** The PI 3 dives for speed very quickly during dynamic changes of direction. This implies that the wing picks up speed quickly when it needs it, and this is reflected in high rates of descent while turning.



**Caution:** Make sure that your PI 3 has enough speed while turning in thermals - to keep adequate ability to manoeuvre. Go easy on the outside brake.



**Tip:** If a brake line should break or become detached you can steer your PI 3 by careful use of the C-risers.


## Accelerated flight


The PI 3 has a speed system, and the wing is extremely stable in accelerated flight. However, at the lower angles of attack associated with accelerated flight, paragliders are generally considered to be less stable at high speeds. The higher forces associated with higher speed mean that accelerated collapses can be very impulsive. See also section “Collapses”.


If you fly into strong turbulence, first completely release the speedbar before you apply the necessary stabilising brake.

The PI 3’s good canopy stability does allow you to fly through turbulence when accelerated, and to do this you must use active speedbar. This means adapting the speedbar position to a changing angle of attack and pitch attitude, instead of doing this with the brakes. Pitch changes can be kept to a minimum and best glide performance maintained. The following instructions assume a middling speedbar datum position.

- If the wing goes back (e.g. angle of attack increases) push the speedbar - briefly but positively (to push the wing towards its correct position).
- If the wing goes forward (angle of attack decreases) release the speedbar until the wing is again overhead.

 **Caution:** Even though the PI 3 has good canopy stability you should only apply as much speedbar as you feel happy with. Don't overdo it.

 **Tip:** Do not fly with brake and speedbar applied at the same time, otherwise you will be choosing the worst possible gliding situation, to no advantage.

 **Tip:** For best glide always choose your airspeed taking into account current headwind, sinking air and the expected quality of your next climb.

## Collapses


### Asymmetric wing collapse (on one side)

The PI 3 has a very stiff and stable canopy. Collapses are rare, especially at high wing loadings, and if an active flying style is employed collapses can be almost totally avoided in normal flying conditions.

If the paraglider does experience a 50%+ side collapse at trim speed it will react with a modest tendency to turn, and heading can be maintained by light countersteering. The paraglider will normally reopen quickly, without assistance from the pilot.

It is important that you then completely release the brakes and allow the glider to regain normal flying speed.

Badly flown wingovers can cause a wingtip to fold in from the side, and create a cravat. The high drag of a cravat can create a strong and immediate desire to turn, quickly leading to a spiral. Prevent this rotation from developing by quickly but carefully applied opposing brake. Then open the cravat by pulling its orange stabilo line. Opening a cravat can also be done quickly by pumping its brake. To do this apply 75% brake on the offending side, reaching this value within two seconds, then release it immediately.

 **High wing loading:** Deliberately simulating collapses is discouraged. At high wing loading the PI 3 has a very collapse-resistant wing, but its reactions to asymmetric wing collapse could turn out to be dynamic.

### Symmetrical collapse (Frontstall)

If the front of the wing folds, normal airflow breaks down, the wing stops flying and the pilot swings forward – the wing appears to fall behind. The pilot returns under the wing after a short delay. Wait, without applying brake, until the wing is overhead and flying forward again. After a big front collapse the reopening can be delayed; overreaction with the brakes should be avoided, especially when controlling a surge

or attempting to help the glider resume normal flight in some way. Such excessive pilot assistance risks a fullstall. Hands up when possible – let it fly.



**High wing loading:** Deliberately provoked collapses are discouraged. At high wing loading the PI 3 has a very collapse-resistant wing, but its reactions to extreme flight situations could turn out to be dynamic, and dealing with them difficult.



**Info:** If you wish to simulate a frontstall at normal wing loadings make sure that you pull all the A lines down together. This advice applies in particular to the Standard Risers, where you must grasp the separated big ears riser together with the main riser, on each side.

## Fast descents

The ADVANCE test team recommends big ears or the spiral dive as fast and efficient ways of getting down.



**Tip:** Practise fast descents occasionally in easy conditions, so that they do not become emergencies when needed.

## Big ears (folding both wingtips)

To apply big ears pull both outer A lines down briskly at the same time. This is achieved using the outer split A-risers (Standard Risers) or by directly pulling the red marked outer A lines (Light Risers). This action folds the wingtips, and you can easily hold them in place. Forward and vertical speeds can be increased by applying speedbar in this configuration. Release the A lines to reopen the ears. Internal wing pressure will then do this without further assistance.



**Caution:** Do not fly spirals or dynamic direction changes with big ears applied. Raised loading carried by few lines can damage the structure.



**Caution:** Be aware that big ears bring the wing closer to the stalling angle of attack. Be careful with the brakes during flight with big ears, and do not do big ears with a wet paraglider.

## Spiral dive

We recommend a neutral weight distribution in the harness with no active weight steering attempt - as the simplest and most comfortable way to do this manoeuvre. Enter the spiral by progressively applying one brake. Head and field of view should be directed in the turn direction. As the angle of bank increases so will the airspeed, rate of turn, rate of descent and centrifugal loading (g force).

The behaviour of a turning paraglider can be divided into two phases: to begin with a normal turn increases its angle of bank and tightens its radius. The wing carries an increasing pilot weight – the airspeed builds. At the second phase the paraglider enters its spiral mode: in its search for more speed in order to carry the ever-heavier pilot the wing dives to a vertical flightpath and appears, to the pilot, to be tracking laterally around the horizon. Airspeed, descent speed, rate of rotation and g all increase markedly. This is the steep spiral. At the same instant the pilot's weight becomes mostly supported by the risers on the inside of the turn, and the harness tips to the outside. Do not resist this or try to sit up straight by transferring more weight to the inside risers: keep the neutral sitting position – even though it is, looks and feels out of balance.

To recover: progressively reduce the inside brake - a reversal of the entry procedure. Nothing will appear to happen to begin with, but this does not mean that anything is wrong. When the wing starts to take-up its original bank angle and rise above the horizon the glider is leaving the spiral mode. It will then try to recover quickly, but with too much speed for straight flight; and careful reapplication of some inside brake is required to keep the turn going while the speed reduces. This pro-turning phase does not last long, and feels like one side of a wingover, but if this is not done, excess speed will cause a zoom climb: the wing will pitch back and the pilot will climb, followed by a forward surge – maybe accompanied by collapsing, cravating etc..

Make sure you start the recovery with plenty of height above the ground. This also requires that you started the manoeuvre with a lot of height. To recover takes about the same time and number of turns as the entry - but recovery starts with a very high vertical speed, and uses more height.



**Caution:** The PI 3 was tested according to current certification requirements. With the neutral sitting position and release of the inside brake a spiral will recover by itself. If the pilot transfers his weight to the inside while the spiral mode is engaged, and vertical speed is high, the spiral may become stable (keep going by itself). In this situation active outside weightshift and outside brake are required to recover from the locked-in spiral.

**Carabiner** distance of more than 44 cm can additionally encourage strong acceleration and rotation, from which the spiral may not recover by itself.



**High wing loading:** At high wing loading high vertical speed can be reached very quickly.

## Stall

### One-sided stall (Spin)

ADVANCE do not recommend deliberate spinning for the PI 3 because of the dynamic behaviour that may result.

When carrying out tight thermaling turns the PI 3 gives early and clear warning of the approaching risk of stall by strongly rising brake loading. If, however, the paraglider should stall, immediately release the brakes fully, to allow the PI 3 to return to normal flight.



**High wing loading:** If one side of the wing is deliberately stalled the PI 3 can react extremely dynamically. ADVANCE advise expressly against provoking a one-sided stall.



**Tip:** As a basic principle both brakes should be immediately and fully released at the onset of all out-of-control situations. This applies especially to an incipient spin.

### Fullstall

The fullstall can be a very dynamic affair with a PI 3, particularly at high wing loading. ADVANCE do not recommend it.

### B-Stall

The B-Stall is possible to do, but this will strongly challenge all the structure and the permanent shape of the profile.


So we recommend that you do not carry out regular B-Stalls, but it has to be said that the manoeuvre does present difficulties to the pilot. As a rule the B-Stall is considered more difficult for lighter pilots because of the strength required; in fact this ability depends on personal muscle power to weight ratio.


### Parachutal stall


It has not proved possible to establish a dry PI 3 in stable parachutal stall. If the canopy is wet the PI 3, like every paraglider, is more prone to parachutal stall. If a wet paraglider were to stay in parachutal stall, recovery should be made by applying the speed system. See section “Flying with a wet paraglider”.


## Landing


Always fly a proper circuit with a defined final approach. Approach with enough speed, and apply brake as the ground approaches to flatten out the descent angle, then smoothly continue to full brake to reduce the groundspeed at touchdown. If there is no headwind expect to make a few steps of landing run.


 **Caution:** Steep turn reversals will encourage strong PI 3 swinging, and should be avoided near the ground.

 **Caution:** Significant braking prior to landing reduces airspeed, raises the sink rate and steepens the flightpath. It also greatly reduces your ability to manoeuvre.

 **Caution:** Flight below minimum airspeed leads to stalling. This should always be avoided when top landing or on final approach.

 **High wing loading:** High airspeed, and high rate of descent in the turn, make extra demands on the PI 3 pilot when landing at high wingloading.

 **Handle with care:** Never let your wing fall to the ground on its leading edge. The resulting overpressure inside the wing can tear the ribs and damage the leading edge.

 **Handle with care:** After landing in water the canopy can quickly fill up, and become very heavy. The canopy should be lifted out of the water by its trailing edge, giving the water a chance to run out. Otherwise it might tear under this unaccustomed heavy load.

## Flying with a wet paraglider (Risk of parachutal stall)

Flying with a wet paraglider raises the risk of parachutal stall. Such parachutal stall is often the result of a combination of several factors. The weight of the water moves the canopy's centre of mass rearwards, changing its trim resulting in a higher angle of attack, thus bringing the glider closer to its stall boundary. Then there's the bad effect of the surface water drops on the laminar flow boundary layer near the leading edge, significantly lowering the maximum achievable lift coefficient. If the wet glider also flies near its lower weight limit the angle of attack is further slightly raised, and the airspeed is lower anyway at the lighter wing loading, further reducing the stalling speed margin.

To minimise the risk of parachutal stall you should brake the glider as little as possible. If the wing does go into parachutal stall you should only recover by applying the speed system. See also section "Parachutal stall".

## **Winching**

The PI 3 is not recommended for winching because of its lightweight construction.

## **Acrobatics**

The PI 3 is not suitable for acro flying because of its lightweight construction.

## **Tandem flying**

The PI 3 is not certified for tandem flying.

## **Paramotoring**

The PI 3 is not certified for Paramotoring.





# Packing

## Packing

The PI 3 comes with a COMPRESSBAG, which forms a compact and space-saving package to pack in the PIPACK or a reversible EASINESS harness. Space then remains for clothes and instruments etc..

Always pack your PI 3 with the nose wires stacked on top of each other. Fold the PI 3 to the width of the bottom of the COMPRESSBAG, then fold it in five. Lay it in the COMPRESSBAG and pull the cord completely in, then close the side zips to squeeze the air out.

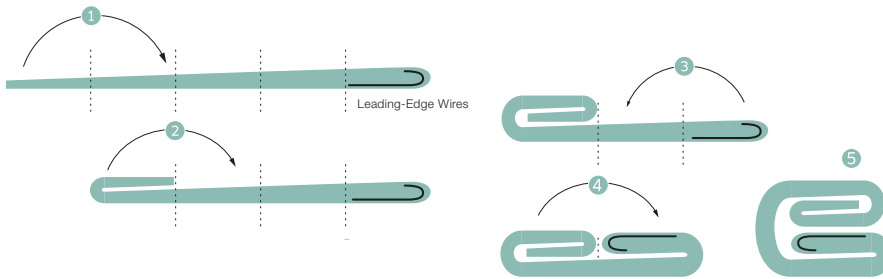
To reduce wear at the wing centre you should randomly change the lane which carries the final chordwise fold. Always store your wing in a dry and dark place.

## Store Open

For extended storing you should undo the COMPRESSBAG zips and release the cord so that the wing does not stay permanently compressed. It's best left to breathe when possible.

## Packing with the Tubebag

Packing in a sausage bag is good for the wing, and is easy to do. It avoids undesirable sliding over the ground. Also the shape-retaining storage in a Tubebag promotes long glider life.



# Maintenance and checks

## Maintenance

Ultraviolet light, heat, humidity, sea water, aggressive cleaning agents, unsuitable storing and physical abuse (dragging across the ground) speed up the ageing process.

The life of a paraglider can be extended significantly by observing the following advice:

- Allow a wet or damp glider to dry by leaving it completely unpacked at room temperature, or outside in the shade.
- If the glider gets wet with salt (sea) water rinse it thoroughly with fresh water.
- Clean the glider only with fresh water, and a little neutral soap if necessary. Do not use solvents under any circumstances.
- If the glider has been subjected to increased stress (such as a tree landing) have it examined by an expert.
- Regularly remove sand, leaves, stones and snow from the cells. Openings with Velcro closures are provided at the wing tips for this purpose.
- Do not leave the glider out in the sun unnecessarily before and after flight (UV light).
- Do not subject the packed glider to excessive temperature

fluctuations, and do ensure adequate air circulation to prevent condensation forming.

- Do not drag the glider across the ground.
- When landing, make sure that the canopy does not fall on its leading edge.



**Handle with care:** All these points are especially important for a lightweight glider.

## Check

The PI 3 has to have a check every 24 months, or 100 flights, or 100 flying hours – whichever comes first – at an approved ADVANCE checking organisation. At the check the condition of all materials is inspected according to strict guidelines, and with great care and attention to detail. Finally, the overall condition of the paraglider is assessed and recorded in a test report. There's more information about the check in the "Service" section of this manual, or on [www.advance.ch](http://www.advance.ch).

# Repairs and disposal

## Repairs

A paraglider is a lifting surface of complex construction. Seams and lines have been made with great precision. In general, therefore, an unauthorised individual should not carry out paraglider repairs. Only the manufacturer or an authorised Service Organisation should replace components with identical parts, or refit complete cells.

Small repairs become exceptions to this principle. Examples could be repairs to small tears or holes with self-adhesive Ripstop material, or replacing lines. In every case of repair or line change the paraglider must be pulled up on the ground before its next flight, and visually checked.

Your paraglider is delivered with a repair kit containing self-adhesive Ripstop. Other parts, such as lines, quicklinks, softlinks or risers can be obtained from your ADVANCE dealer, an ADVANCE Service Center or direct from ADVANCE. Addresses are on [www.advance.ch](http://www.advance.ch).

## Canopy Repairs

Tears up to 3 cm in length, and very small holes that do not meet a seam, can be patched with the self-adhesive Ripstop from your repair kit. Make sure that the patch is cut out in a round or oval shape, and is big enough to generously overlap the damage. The similar piece of sticky Ripstop on the inside of the repair should be of a different size. Detailed instructions can be found on [Eine detaill www.advance.ch](http://www.advance.ch).

## Line repairs

A damaged line must be changed, without exception. The easiest option is to go to an ADVANCE Service Centre or your ADVANCE dealer. Alternatively you can order the specific replacement line direct from ADVANCE or an ADVANCE dealer and fit it yourself. All the addresses are on: [www.advance.ch](http://www.advance.ch). Under "Service" on [www.advance.ch](http://www.advance.ch) there are detailed instructions for identifying your line so that you can order it, and then fit it correctly on the wing.

## What to do if the leading edge gets damaged?

If a leading edge wire breaks or its seam rips the glider must be taken to an ADVANCE checking facility where the wire can be replaced or sewn back in. To guarantee a long lifespan it is important that the wing is not allowed to fall on its leading edge after landing, otherwise the fabric can be damaged by abrasion. But mainly there is a risk, as in all paragliders, that the crossports could tear.

## **Disposal**

Environmental protection plays an important role in the selection of materials and the manufacture of an ADVANCE product. We use only non-hazardous materials that are subjected to continuous quality and environmental impact assessments. When your paraglider reaches the end of its useful life in a number of years time, please remove all metal parts and dispose of the lines, canopy and risers in a waste incineration plant.

# Technical details

<b>PI 3</b>		<b>16</b>	<b>19</b>	<b>21</b>	<b>23</b>	<b>25</b>	<b>27</b>
Flat surface	m <sup>2</sup>	16.0	19.0	21.0	23.0	25	27.0
Projected surface	m <sup>2</sup>	14.0	16.7	18.4	20.1	21.9	23.7
Recommended takeoff weight <sup>1</sup>	kg	50-90	50-75	65-85	75-95	85-105	97-115
Increased takeoff weight <sup>1</sup>	kg	–	75-95	85-100	95-110	105-120	115-125
Glider weight <sup>2</sup>	kg	1.85	2.15	2.55	2.75	2.95	3.15
Aspect ratio		4.5	4.5	4.5	4.5	4.5	4.5
Projected aspect ratio		3.5	3.5	3.5	3.5	3.5	3.5
Flat span	m	8.5	9.3	9.8	10.2	10.7	11.1
Projected span	m	7.0	7.6	8.0	8.4	8.7	9.1
Certification Recommended takeoff weight		C	B	A	A	A	A
Certification increased takeoff weight		–	B	B	B	B	B
Number of cells		38	38	38	38	38	38
Number of risers		3	3	3+1	3+1	3+1	3+1
Accelerator travel max.	cm	11	11	11	13	13	13
Trims		-	-	-	-	-	-
Max length of the risers	cm	48	48	48	51	51	51
Max sym. brake tavel at max. weight	cm	57	61	62	69	70	71
Other adjustable/removable/variable devices		no	no	no	no	no	no

<sup>1</sup> Pilot, wing, equipment

<sup>2</sup> The weight of the wing can vary by up to 100g due to unavoidable manufactured fluctuations in the density of such light fabric.

## Materials used

We routinely inspect and test our materials many times over. Like all ADVANCE products the PI 3 is designed and produced as a result of the latest developments and contemporary knowledge.

We have chosen all the materials very carefully, under conditions of the strictest quality control.

Sizes	<b>21,23,25,27</b>	<b>16,19</b>
Leading edge	Skytex 32, 70032 E3W	Dominicotex 10D
Upper surface	Skytex 32, 70032 E3W / Skytex 27, 70000 E3H	Dominicotex 10D
Lower surface	Skytex 32, 70032 E3W / Skytex 27, 70000 E3H	Dominicotex 10D
Profiles	Skytex 32, 70032 HF E4D / Skytex 27, 70000 HF E91	
Sewing fill	Serafil 60	
Main lines	Edelrid Technora, 8001-230/190/130/090, uncovered, 1.4mm. 1.2mm, 1mm, 0.8mm / 0.7mm / 0.5mm	
Gallery lines	Edelrid Technora, 8001-090 / 070 / 050, uncovered, 0.8mm / 0.7mm / 0.5mm	
Brake lines	Edelrid Technora 8001-090 / 070 / 050, uncovered, 0.9mm / 0.7mm / 0.5mm	
Uper steering lines	Edelrid Technora 8001-190, uncovered, 1.1 mm	
Lower steering lines	Edelrid Dyneema, 7850-240, covered 1.9 mm	
Risers	Polyester / Technora 12 mm	Polyester / Technora 7 mm
Quick links	Dyneema DC 300	

## Certification

The PI 3 has EN and LTF certification. The certification test reports can be downloaded from [www.advance.ch](http://www.advance.ch).

The following certification categories were awarded to the different sizes and their weight ranges:

- 16er: 50 kg – 90 kg: EN/LTF **C**
- 19er: 50 kg – 75 kg: EN/LTF **B**, 75 kg – 95 kg: EN/LTF **B**
- 21er: 65 kg – 85 kg: EN/LTF **A**, 85 kg – 100 kg: EN/LTF **B**
- 23er: 75 kg – 95 kg: EN/LTF **A**, 95 kg – 110 kg: EN/LTF **B**
- 25er: 85 kg – 105 kg: EN/LTF **A**, 105 kg – 120 kg: EN/LTF **B**
- 27er: 97 kg – 115 kg: EN/LTF **A**, 115 kg – 125 kg: EN/LTF **B**

Certification ratings can only provide limited information about a paraglider's flying behaviour in thermally active and turbulent air. The certification grading is based primarily on provoked extreme flight manoeuvres in calm air.





# Service

## **ADVANCE Service Center**

ADVANCE operate two company Service Centres who carry out checks and repairs of every kind. The workshops based in Switzerland and France have many years of experience and an extensive bank of product-specific know-how. The ADVANCE worldwide Service Network includes other authorised centres who provide the same quality of service. All these organisations use ADVANCE original materials exclusively. All information about annual checks and repairs, and the relevant addresses can be found on [www.advance.ch](http://www.advance.ch).

## **Product registration**

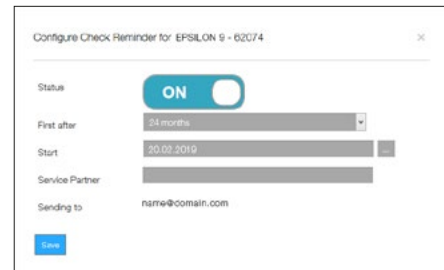
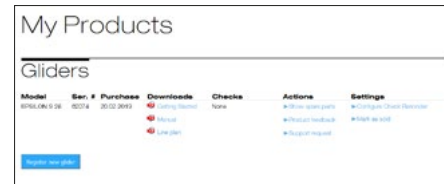
If you register your product within ten days of purchase on your MyADVANCE Account you benefit from the extended ADVANCE warranty. This is valid for three years for defects attributable to manufacturing errors. Otherwise the liability laws of your country apply.

In the MyADVANCE Account you will find all documents relating to your harness as PDFs, e.g. the manual, other information, safety updates and much more. There you can look at spare parts for your product and place support questions direct.

## Warranty

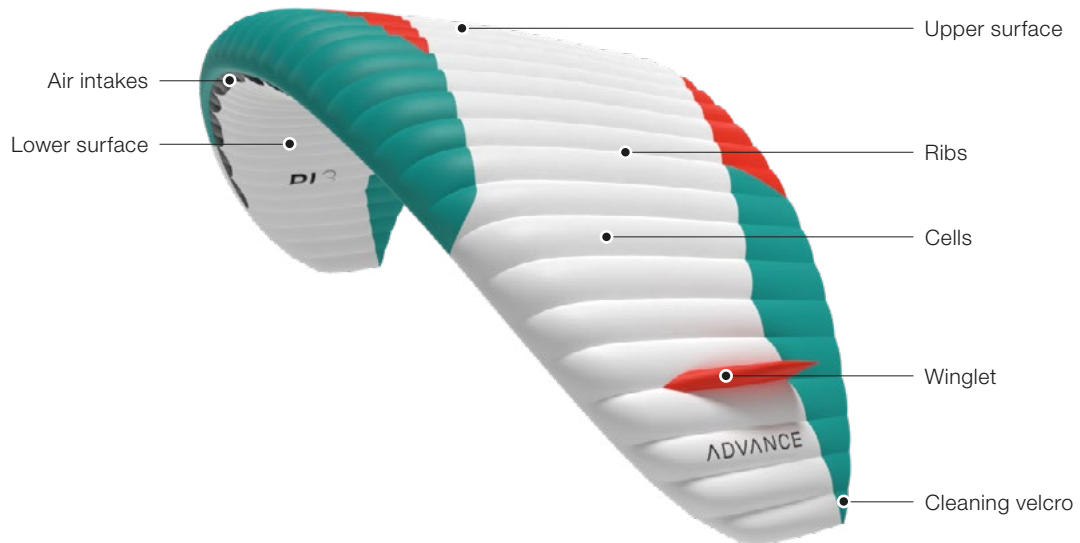
As part of the ADVANCE warranty we are obliged to correct possible defects in our products that can be attributed to manufacturing faults. Damage caused by overloading is specifically excluded. For warranty claims to be valid, ADVANCE must be informed immediately upon discovery of a defect and the defective product must be sent in for inspection. The manufacturer then decides how to remedy any manufacturing defect (repair, replacement of parts or replacement of the product). Basically, the legal warranty obligations of your country apply. If you register your product with ADVANCE online within 10 days of purchase this cover will be extended by 12 months. The duration for the warranty and service intervals begins on the date of the first flight, entered on the type certificate placard. If no such date is shown the date of transfer from ADVANCE to the dealer becomes relevant.

Otherwise the ADVANCE guarantee does not include any further claims. In particular, no warranty is given for damage resulting from careless or incorrect use of the product (e.g. insufficient maintenance, unsuitable storage), overloading, exposure to extreme temperatures, etc.). The same applies to damage resulting from an accident or normal wear and tear.



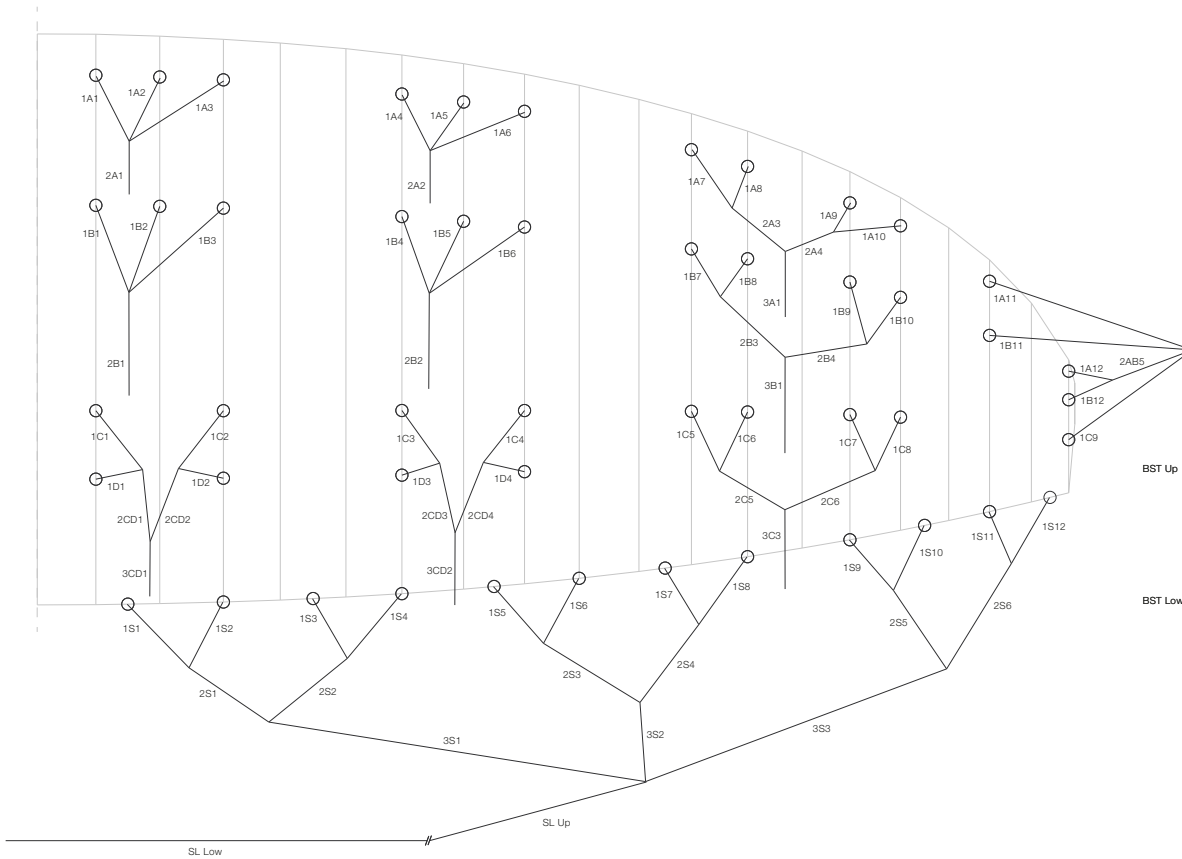
MY ADVANCE

# Wing parts



# Line plan

16 / 19 / 21 / 23 / 25 / 27



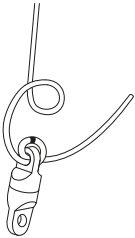
# Risers

1. Softlinks
2. Split A-risers from size 21
3. Speed system pulleys
4. Brummel hooks
5. Poppers
6. Ceramic rings
- 7.«Easy Connect System»
8. Orange Stabilo line



# Palstek instructions

Step 1



Step 2



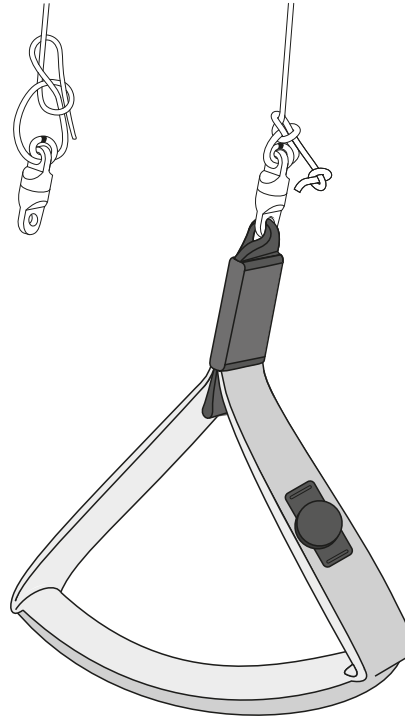
Step 3



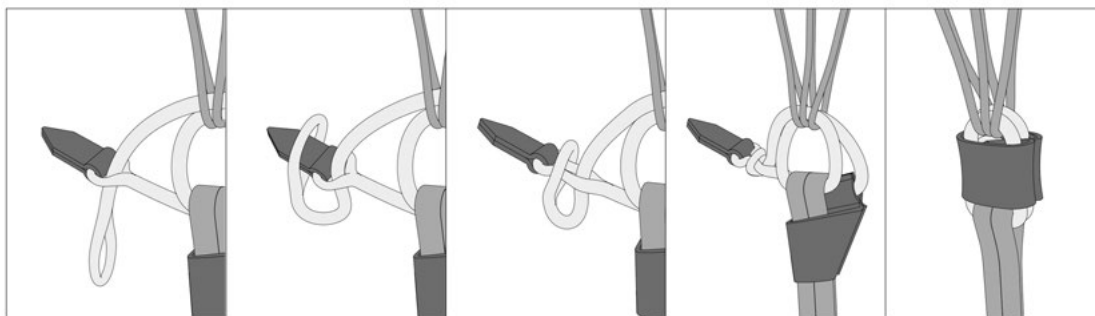
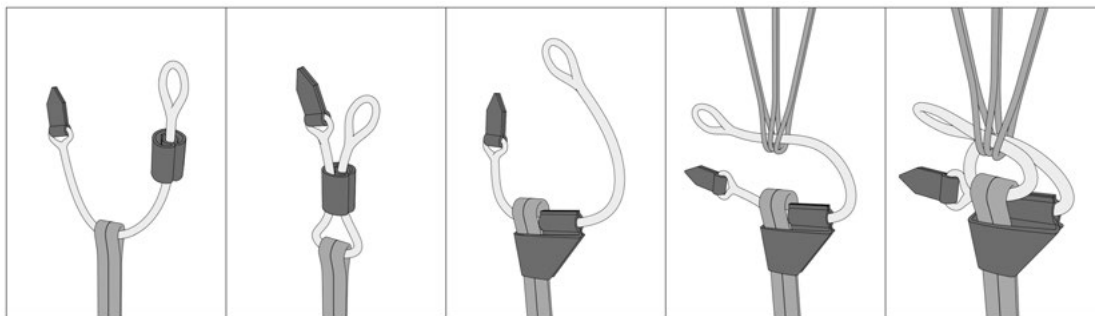
Step 4



Step 5



# Softlink instructions





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