



ADVANCEBIBETA⁶



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Thank you for flying ADVANCE

Congratulations on your choice of a BIBETA 6 - a quality product from ADVANCE. We hope that you will spend many rewarding hours in the air with it.

This user manual is an important part of the glider. Here you will find instructions and important information about safety, care and maintenance, and that's why we recommend that you read this document carefully before your first flight

Register your BIBETA 6 online on www.advance.ch/warranty; you will then receive product updates or safety-related bulletins about the BIBETA 6 direct from us. This information will also be available to download from our website at www.advance.ch, as will the latest version of this manual and further updated information.

If you have any further questions or problems please contact your dealer or get in touch directly with ADVANCE.

Now we wish you a lot of enjoyment with your BIBETA 6, and always «happy landings».

Team ADVANCE

About ADVANCE

ADVANCE, based in Switzerland, is one of the world's leading paraglider manufacturers. Since it was founded in 1988, the company has consistently pursued its own directions and concepts, both in development and production. The results are quality products with distinctive characteristics.

Behind the ADVANCE brand name is a team of specialists who share the passion and trust in the company's products. At home in the air themselves, they contribute their valuable personal experience and dedication to the working processes.

Total control of the production process and supervision of the working practices at the ADVANCE factory in Vietnam ensure a high standard of workmanship. Long term relationships with fabric and line manufacturers means that ADVANCE knowledge and expertise also finds its way directly into the development of new materials.

ADVANCE attaches great importance to after-sales customer support, and has built up a worldwide service network for this purpose. An on-going interaction with its customers brings in a steady flow of new knowledge that finds its way into ADVANCE products, thus completing the «Circle of Service».



The BIBETA 6

More fun at work

Flying ought to be fun. For the professional tandem pilot, making maybe ten flights a day where efficiency, economy and passenger safety share priority, this can often be hard work. We took account of these strenuous demands when creating the BIBETA 6, and have packed the best features of current tandems into this one product, without compromise, so as to make a working wing that is also fun. BIBETA 6: more fun at work.

Development process

From ADVANCE & tandem professionals for tandem professionals

We engaged a number of current commercial tandem pilots to work closely with us in the design and development of a BIBETA, for the first time. Together with several professional tandem businesses from the tandem Mecca of Interlaken, we identified some present day tandem models as setting the benchmark for each of takeoff, handling and landing characteristics. In a long test programme the BIBETA 6 prototypes were then extensively tried out in commercial use, and continually refined by our development team until each and every desired criterion had been exceeded. At the end the professionals had only one question: when can we get the serial version?

The result

A working glider that combines all the good qualities

The BIBETA 6 is a completely new design and now comes in two sizes - 38 (100 to 180 kg) and 41 (120 to 225 kg). Line sorting is a breeze. A brief shake has the few lines from the three riser levels separating and sorting themselves out quickly. At takeoff the canopy rises smoothly without overshooting, and passenger and pilot are quickly airborne. In flight the BIBETA 6 responds directly and precisely to the smallest steering input. Comfortable brake loading and perfect flare behaviour make landing a reassuring delight. Reinforced diagonals, crossed rods in the intakes, oversized lines and reinforced support points all contribute to this professional tandem's especially long life. Considering its robust build, the BIBETA 6 packs up impressively small, and the light weight is sensational – 6.95 kg for the 41.

Pilot requirements

General advice about paragliding

Flying a paraglider calls for appropriate training and a sound knowledge of the subject, and of course the requisite insurance cover and licences. A tandem pilot must be able to correctly assess the meteorological conditions before taking off. His or her capabilities must match the responsibilities of tandem flying.

The wearing of an adequate helmet, suitable shoes and clothing of pilot and passenger as well as carrying an emergency reserve parachute are indispensable. All components of the equipment must be checked for damage and airworthiness before every flight. A thorough pre-flight check should also be carried out.

The pilot bears sole responsibility when making a tandem flight. Neither the manufacturer nor the seller of a paraglider can guarantee, or be held responsible for, the safety of pilot and passenger.



Using the paraglider for the first time

Delivery

Before delivery every ADVANCE paraglider has to be flown by the dealer and checked for correct settings and trim. When this has been done the dealer enters the date of the first flight on the label attached to a centre rib. This entry, together with a completed warranty card, will ensure that defects in the product attributable to manufacturing faults are covered by the ADVANCE warranty. See 'Warranty' in the section «Service».

Within 10 days of purchasing your glider we ask you to fill in the registration form on the internet, to be found under "Warranty".

Delivery of a BIBETA 6 includes an inner bag, a compression strap, a repair kit, a mini-windsock in the glider colours and a «Getting Started booklet». Available as options are a "Comfortpack 2" rucksack of 130 or 145 litre volume as well as rigid, soft or soft adjustable spreaders.

Lines

The BIBETA 6 is mainly fitted with colour coded, exceptionally length-stable "Magix Pro" Aramid lines from German quality manufacturer Edelrid. The big ear and stabilo lines are also Aramid, but are covered on their lower sections. Brake base lines are of covered Edelrid Dyneema. The broad gauge uncovered lines need no special handling in normal use thanks to their extensive preparation process e.g.

Thermo Shield and UV-Protex-Coating. Normal line care (e.g. storing dry, avoiding mechanical abuse or unnecessary treading) is naturally also appropriate for this product. More information about the lines on the BIBETA 6 product is available on page 28 of this manual. Please read this carefully.

Basic set-up

The basic set-up of the BIBETA 6 at delivery is that which has been found to be ideal by the ADVANCE test team; it is in this condition that the glider was awarded its certification. Any unapproved changes or modifications, such as changes to the line lengths or the attachment of other risers or quicklinks by the owner, will result in the paraglider losing its certification (see the «Certification» section).

Adjustment of the brake lines

The brake line length is set at the factory so that the trailing edge is unbraked (crease-free) in fully accelerated flight with brakes fully released. Fundamentally this setting should be kept.

If the brake lines have to be reset there must be approx. 6–8 cm free line movement (at the rings) between brakes fully released and that brake position that first affects the trailing edge in unaccelerated flight. We recommend that the brake handles are secured using a bowline knot (see illustration in the appendix page 42).



Arranging the brake line guides

The mounted position of the BIBETA 6 brake line guides can be adjusted to suit the height of the pilot. Two loops are provided on the riser to give a choice of guide position.

To change their position untie the brake handle, take the brake line out of the guide ring, unloop the guide and refit it on the other loop. Thread the brake line through the ring and tie it to the brake handle with a bowline knot.

The brake line guide can be looped directly on to the C riser quicklink for an even higher position.

! **Caution:** Brake line length should be adjusted, up or down, to agree with the change in the line guide position!



Speed system/Trimmer

The BIBETA 6 has an accelerate system in the form of trim **1**. It is very effective and easy to use. It provides for a significant increase in speed of ca. 6 km/h.

The BIBETA 6 accelerate system is not only intended to provide a better performance reserve for dealing with strong winds (e.g. slope soaring, strong valley winds), but it also increases the glider's general user-friendliness, mainly when carrying light passengers. In addition, when used with big ears (Vary-Grip-System), **2** the trim improves the most agreeable way of getting down if passenger well-being requires it (see also section «Fast Descent»).

In accelerated flight the rear risers are lengthened and this reduces the angle of attack of the wing. The accelerate system on the BIBETA 6 is so designed that the wing profile remains the same in accelerated flight (reduced angle of attack). This keeps the best wing shape at higher speeds.



The trimmers do not initial adjustment. Just make sure that they are closed before takeoff (neutral position i.e. unaccelerated). To open them in the air press both spring clips on the back of the risers at the same time. **3** You can set any trim position as you wish using these clips. They will not slip even under extreme load. To close the trimmers pull the tapes down as far as possible using the blue loops. **4**

! **Caution:** Keep the trimmer settings symmetrical.

! **Caution:** When the trimmers are open the brake handles will be in a noticeably higher position than in unaccelerated (normal) flight.



Big ears with Vary-Grip

The BIBETA 6 has split A-risers, which make the application of big ears easy. ⑤ A cleat (Vary-Grip-System) makes it possible to fix the outer A-lines so that they can be held in for an extended period. ⑥ The lines can be pulled down and reset in the clamps. With big ears applied the glider can be steered normally using the brakes.



Fitting the optional spreaders

Three optional spreader versions are available to go with the BIBETA 6: Hard Hybrid, Soft and Soft Trim. All three versions can be used with Quickout paraglider carabiners.

! **Caution:** The two Maillon Rapide 5 mm carabiners (650 kg load capacity and /3.250 kg breaking strain) are only allowed to be used for the spreader-harness-connection!

Hard Hybrid Spreaders (295 g*)

The Hard Hybrid spreaders have a central main paraglider support point **1** and a supplied Maillon Rapide 5 mm quicklink (incl. Neoprene cover **4**) to be used for connecting the pilot's end. **3** One end of each reserve connection line is permanently connected at the spreader main support point **2**. The other end **5** goes on the outside of the carabiner through the magnet-closed loop on the Neoprene cover **4** to the harness and finally connects to the reserve.

i **Info:** The Hard Hybrid Spreader can be easily converted to Soft by simply removing the carbon bracing rod **6**.

* incl. connection line, BIPRO 3 quicklink and Neoprene cover



Soft Spreaders (175 g*)

Soft-Spreaders have three different main support points for the tandem glider. **1**

The supplied Maillon Rapide quicklinks (incl. Neoprene covers **4**) are each used to connect a pilot's spreader end **3** to the harness. Reserve connection lines are fixed to a spreader below the main attachment point **2**. The other ends of the connection lines **5** go on the outside of the carabiner through the magnet-closed loop on the Neoprene covers **4** to the harness. The ends then connect to the reserve.

! **Caution:** When fitting the paraglider carabiners make sure that the numbers for the hangpoints are on top. The reserve connection lines must run along the underside of the spreaders. If this is not the case you have the spreaders upside down.

* incl. reserve connection line, Maillon Rapide and Neoprene cover

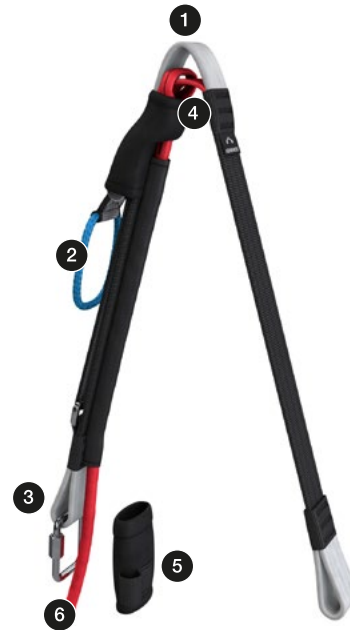


Soft Trim Spreaders (237 g*)

The Soft Trim spreaders have a single support point for the tandem glider **1**. The pilot's height position can be adjusted during flight by means of trimmers **2**, to compensate for the passenger's weight and meet the pilot's requirements.

The carabiner-replacement quicklinks (incl. Neoprene covers **5**) supplied with the spreaders go through the pilot's loops **3** and connect to the harness main supports. One end of each reserve connection is fixed to the spreader main support point **4**. The other end **6** runs on the outside of the carabiner through the magnet-closed loop on the Neoprene covers **5** to the harness. The remaining end attaches to the reserve.

* incl. reserve connection line, Maillon Rapide and Neoprene cover



Suitable harnesses

The ADVANCE BIBETA 6 is certified for harnesses in Group GH (without rigid cross-bracing - see section «Certification»). The suspension points of the chosen harness should ideally have a carabiner distance of approximately 45 cm (equivalent to your shoulder width) and a height of 40 to 48 cm.

The BIBETA 6 is neither suitable nor certified for use with harnesses in group GX (with effective cross-bracing). The use of such harnesses can have a bad effect on both handling and extreme flight characteristics.

Weight range

BIBETA 6 weight ranges for 38 and 41 sizes are given in the «Technical Data» section. The weights quoted are total in-flight weight. This includes the body weights of pilot and passenger including their clothes - and everything else that is to fly (paraglider, harnesses, reserve, instruments etc.).

Flying at lower or upper weight limits can influence the flying characteristics and handling of the paraglider, but does not affect safety. When the BIBETA 6 is flown in the upper part of its weight range the higher wing loading results in a higher trim speed, which results in more agile and dynamic behaviour, and a longer takeoff run.

Certification for solo flying

The Bibeta 6 can be used for solo flying provided the certified takeoff weight range is observed and the original risers are used.

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 BIBETA 6's handling qualities, from the very beginning.

Takeoff

Takeoff preparation

Sorting BIBETA 6 lines is especially simple. A brief shake will separate the three riser levels' few lines. Colour coded A and brake lines make for very effective final line checking.

Before every takeoff carry out the following pre-takeoff checks:

1. Harnesses and helmets done up, reserve OK?
2. Pilot-glider-passenger connections OK?
3. Lines free?
4. Canopy open?
5. Wind direction and strength assessed?
6. Airspace and view clear?
7. Passenger ready?

BIBETA 6 takeoff behaviour is very smooth and straightforward for both forward and backward launches. Nylon wires and light weight ensure that the canopy fills quickly and climbs evenly, without hanging or shooting ahead.

The BIBETA 6 is pulled up using both the inner, wide A-risers. This takes less effort, and the wing will come up very straight. The canopy should always be laid out in a slightly curved shape, so that all A-lines are equally loaded during the pull up.



Tip: To get the BIBETA 6 in just the right curved shape for takeoff stand abeam the centre of each wing after you have sorted the lines; take the brake line and pull it in until all the brake junctions are tensioned.

Light Wind Takeoff (Forwards)

The BIBETA 6 only needs a modest tug in a light wind. It is not necessary to step back and then 'run' into the lines. Lead the glider up with committed and forward-leaning body weight, but without too much pull on the inner A-risers, until the canopy is nicely above you. Any directional correcting during the pull-up phase should be done by going under the glider, without use of brake. After the correction phase and a look at the glider a few brisk steps with determined leaning forward is enough to get you airborne, even in little wind. The takeoff run can be shortened by an appropriate touch of brake.

Strong Wind Takeoff (Backwards)

A backward pull up is recommended for stronger wind. Like a forward takeoff the pull up should be made using the inner A-risers. During the pull up walk towards the BIBETA 6 as necessary to control the rising rate, and correct the direction by walking under the wing. Turning round and lifting off are straightforward.

Normal flight

Best BIBETA 6 glide in calm air is achieved with fully released brakes. Light braking results in minimum sink speed. Appropriate use of trims can significantly improve glide performance relative to headwind, sink rate and expected next climb.

Always be careful not to fly below minimum speed, and avoid overreacting with the brakes.

Turns

The BIBETA 6 turns with precision. It responds directly and progressively to increasing steering input, once the brake line free play has been taken up. The agreeable and compact character of the wing means that weight shift is not necessary to assist turning.

When thermaling set your angle of bank (and turn radius) with inside brake and allow the paraglider to turn evenly in this attitude. Use

outside brake to both steady the outer wingtip and, in particular, keep a constant rate of turn going. Excessive use of outside brake will try to stop the turn, and therefore lose the glider's good climbing qualities.



Caution: To keep good manoeuvrability in thermals it is important to always keep enough flying speed. Do not hold too much outside brake, and avoid overcontrolling.



Tip: If a brake line were to break the BIBETA 6 can be steered with the rear risers (C-risers) if necessary.

Accelerated flight

The BIBETA 6 canopy remains very stable even when accelerated. At their upper speed range however, paragliders fly at a lower angle of attack, and are generally considered to be less structurally stable at high speed. Because of the higher forces and energy, collapses at high speed are more dynamic. See also section “Collapses”.

- You can fly through light turbulence while accelerated thanks to the BIBETA 6's high canopy stability.
- With open trimmers you can also control and stabilise the BIBETA 6 with the brakes in turbulence.



Caution: With open trimmers the steering/braking hand position is significantly displaced upwards, and brake force increases due to the higher airspeed.



Tip: We recommend that you circle in thermals with closed trimmers. You will then be flying closer to best stability and minimum sink configurations.

Collapses

Asymmetric collapse of the wing

The BIBETA 6 is notable for its very solid and stiff canopy. With an active flying technique in normal conditions collapses should be more or less completely avoidable.

If, however, the glider should suffer a greater-than-50 % asymmetric collapse at trim speed the reaction will only be a slight turning tendency, and track can be maintained without problem by means of light braking. Under normal conditions the wing will open by itself.

An asymmetric collapse in accelerated flight will produce a slightly more impulsive reaction due to the higher aerodynamic forces involved at the higher speed. The turning away behaviour at a collapse at fully accelerated speed is a little more dynamic, but is well manageable. After an asymmetric collapse direction should be maintained by careful opposite braking, and wing pressure raised on the collapsed side by brake pumping. This will quicken canopy reopening. Only use just enough brake on the open side so as not to stall this wing.

Poorly flown wingovers can make the wing tips fold in and cause a cravat. Because of the high drag that they produce at the wingtip cravats can cause a strong rotation moment (=spiralling). Oppose this desire to rotate with careful use of opposite brake. Then clear the cravat by

means of the orange stabilo line. Opening a cravat can also be speeded up by pumping. To do this the relevant brake should be pulled down to up to 75 % brake travel within two seconds (no longer), then immediately released.

Symmetrical leading edge collapse (Frontstall)

Following a spontaneous or deliberately provoked (using all A risers) front collapse airflow breaks away from the wing, which pitches back. Pilot and passenger will swing back underneath after a short delay. Wait, without pulling the brakes, until the wing is again overhead and flying forward. After a large front collapse reopening can be delayed. This should not be forced (helped) by excessive brake activity, which could raise the risk of a complete stall.




Caution: After a very impulsively provoked front collapse in accelerated configuration (for example during SIV tandem training) it can happen that the front of the canopy does not open by itself. Help the wing to open with a brief brake impulse by pulling the brakes to 75 % within one second, immediately and completely release them, then be prepared to control the forward surge.



Caution: To simulate a front collapse all A-risers must be taken hold of and pulled down.

Rapid descents


For quick and efficient ways of getting down the ADVANCE test team recommend big ears (with or without speed bar) or the spiral dive – the choice depends on the situation.


 **Tip:** Fast descents should be practised now and then in quiet conditions – so they won't become emergencies when you need them.


Collapsing the Wingtips (Big Ears)


Pull both outer, narrow A-risers down, together and decisively. This will collapse the wingtips, and this configuration can easily be held, either by hand or by fixing the outer A lines in the cleats (Vary-Grip-System). You can pull the lines further through the cleats to increase the folded areas, and resecure them.

To reopen the big ears either let go of the outer A-risers, or free the lines by releasing them from the cleats with a light pull. The wingtips will open by themselves, thanks to the BIBETA 6's high internal wing pressure. While in big ears the paraglider can be steered with the brakes, without problem. (See also chapter "Big Ears System").

 **Caution:** Don't fly spiral dives with big ears applied. The increased wing loading supported by fewer lines can cause damage to the wing.

 **Caution:** Be aware that flying with big ears puts you closer to a stall. Don't rely on the use of big ears with a wet glider – there's more information on this in the chapter "Flying with a wet paraglider".

 **Tip:** If you need to come down fast for passenger reasons, or to fly away from a danger zone, we recommend the following method: Apply big ears and pull the lines in to the marks on the Vary-Grip-System. Then accelerate the glider using the trimmers, as much as conditions will allow.

 **Info:** In the fully accelerated state the big ears do not open by themselves, because of the higher airspeed, dynamic pressure, and a higher stagnation point position. Help the opening with a brief but determined pump: i.e. pull the brakes down within two seconds to full arm's length and release.

Spiral dive

Enter the spiral with a progressive increase of brake application. Head and vision should be directed in the direction of turn. As the bank increases so does the rotation rate and the centrifugal force.

Basically the behaviour of the glider can be divided into two phases: in the first the glider increases its angle of bank and turns in ever decreasing circles. At the second phase the glider bites into the spiral: this means that the wing dives forward relative to the pilot and appears to be aligned with the horizon – the airspeed, g and rate of rotation increase markedly. During the spiral try to maintain the neutral sitting position and don't fight the centrifugal force – your body will be pulled outwards.

Recovery requires a progressive releasing of the brake on the inside of the turn. From a spiral dive with high sink and rotation rates it is essential to carefully apply some inside brake again while recovery is taking place, in order to slow down the natural recovery behaviour and subsequent high energy climb. This is the only way to avoid an excessive pitch up attitude and consequent surge. Make sure you recover with enough height above the ground. Generally one should expect the recovery to take the same amount of time as the entry, but the rate of descent during recovery will be higher!

The BIBETA 6 comes out of the spiral by itself if a neutral sitting position is maintained. Active weight shift to the inside of the turn can lead to greater acceleration and a delayed natural recovery.



Caution: Do not fly spiral dives with big ears; the raised wing loading on a reduced wing area together with the reduction of effective lines can seriously overstress and damage your glider.



Caution: To avoid a collapse enter the spiral carefully when in accelerated flight, because the angle of attack is reduced.



Caution: Remember that you, the pilot, may be familiar with the high g-loading in a spiral dive, but it might upset your passenger a lot. If a descent is required for passenger wellbeing we recommend the Vary-Grip big ears configuration together with a speed increase using the trim system.

B-Stall


The B-stall puts extreme stress on the entire glider as well as threatening its profile shape. This kind of fast descent is not particularly effective either. We recommend that you do not do B-stalls with your BIBETA 6 and so give no instructions here. Because of the wing's high structural stiffness the B-stall is just about impossible to achieve.

Stall

Fullstall

The BIBETA 6 responds early to brake inputs, but the brake travel is also very long. This implies a large safety margin for the pilot, and it is difficult to encourage the BIBETA 6 to fullstall.

Should the glider be stalled, however, and depending on the situation from which you let the glider recover, a vigorous response can result (surging forward with an increased risk of collapse). While shooting forward the wing can be slowed down by appropriate brake. If this is done normal flight can be resumed without further collapse

 **Tip:** We recommend that the simulating of the fullstall is avoided in safety training. The high wing loading means that some reactions could turn out to be very dynamic.



Tip: Fundamentally, you should respond to all out-of-control behaviour by completely releasing both brakes (both hands up).

One-sided stall (spin)

In a tight turn the BIBETA 6 gives early and clear warning of the risk of stalling by strongly rising brake loading. If the wing should stall, however, the BIBETA 6 will react dynamically. Depending on the situation from which you let the glider recover a vigorous response can result (surging forward with an increased risk of collapse). While shooting forward the wing can be slowed down by appropriate brake. If this is done normal flight can be resumed without further collapse.




Tip: We recommend that the simulation of spins and spin entries are not carried out in safety training. The high wing loading means that some reactions could turn out to be very dynamic.



Tip: Fundamentally, you should respond to all out-of-control behaviour, especially the start of spin rotation, by completely releasing both brakes (both hands up).

Deep stall


The BIBETA 6 cannot go into stable parachutal stall by itself. The wing can be brought to the point of parachutal stall, however, by means of the brakes, and can stay there (see chapter “Flying with a Wet Glider”).


 **Caution:** If you are flying tight, slow airspeed circles in significant turbulence you may stall unexpectedly. If this happens let both brakes go immediately.


Landing


Notably good flare behaviour and precise handling make for very easy BIBETA 6 landings. Residual energy trades well for height, allowing you and your passenger to make a gentle touchdown.


Always fly a proper landing circuit with a defined final approach, without rolling and pitching. From a final approach to the ground at trim speed apply the BIBETA 6 brakes continuously, finally going through to full brake. By making this kind of “fully flared” landing the speed can be brought to a minimum, and the passenger sets down softly.

 **Caution:** Steep turn reversals lead to strong swinging of the pilot and passenger, and should not be done near the ground

 **Caution:** Braking will reduce your speed and increase your sink rate, but it will certainly seriously restrict your ability to manoeuvre.

 **Caution:** Getting below minimum speed leads to stalling: this should unquestionably be avoided when top landing, and on final approach.

 **Handle with care:** Never let your glider fall to the ground on its leading edge. The overpressure so caused inside the wing can rip the cell walls and damage the leading edge. The material can be damaged by the friction.

 **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

Flying with a wet glider creates a risk of deep stall. Deep stall is often the result of a combination of factors. The weight of the wet canopy goes up, and this increased weight increases the angle of attack, which always puts the glider nearer the deep stall limit. Added to this, water drops on the top surface have a detrimental effect on the laminar flow of the boundary layer near the leading edge, which distinctly reduces the maximum lift coefficient. If the wet glider is also being flown at its lower weight limit there is a further small effect of an increased

angle of attack, as well as flight at lower airspeed because of the reduced wing loading.

To avoid the risk of deep stall with a wet glider you should brake as little as possible and never use big ears. A further preventative measure is to fly with trimmers open.

These tactics have a small effect on the angle of attack. If the wet glider were still to go into deep stall opening the trimmers is your only recourse. See section “Deep stall”.

Winching

The BIBETA 6 is suitable for winch launching. When taking off in windless conditions, ensure that the paraglider is laid out in an arched or even wedge shape (to avoid risk of the glider rosetting).

Winch launch is only permitted if::

- the pilot has completed a tow training course (only Germany/DHV),
- the winch system is certified for use with paragliders,
- the winch operator has been fully trained in how to winch paragliders.

Acro

The BIBETA 6 was not designed as a tandem-acro wing. However, its eagerness to turn and precise handling allows very nice wingovers, asymmetric spirals and SATs to be flown. Even helicoids have been observed.

Be aware that dynamic manoeuvring puts heavy loading on the structure and can reduce your wing's lifespan. Regular checks of the glider become necessary for your safety. You should also take note of the legal requirements of your country.



Care, repairs and service life

Packing

Pack your BIBETA 6 rib on rib, so that the plastic rods in the leading edge lie flat on each other at the same height. This will maintain the long life of the BIBETA 6 and keep its good inflation and takeoff qualities. Avoid excessive wear on the centre lane by routinely changing the position of the final fold when packing up. Store your glider in a dry and dark place.

Care and 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.
- Regularly remove sand, leaves, stones and snow from the cells.

Openings with Velcro closures are provided at the wing tips for this purpose

- If the glider has been subjected to increased stress (such as a tree landing) have it examined by an expert.
- 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.

Checks

Every 24 months, 150 flights or flying hours – whichever comes first - your BIBETA 6 has to have a check at an approved ADVANCE checking operation. In regular professional use a check every 100 flying hours is acceptable, provided these checks occur within two years and up to a maximum of 300 flights. This recommendation only applies if the wing has been correctly stored, carefully used, and fabric and lines have been regularly inspected by the pilot (at least every 150 flights). At the check the condition of all components are tested according to the strictest guidelines, and with great care. Finally the overall condition of the paraglider is assessed and a check report completed. You can find more information about the check in this manual in the «Service» section, or on www.advance.ch.

The general check procedure for ADVANCE paragliders is a necessary part of the BIBETA 6 manual. The manual also contains the glider's technical fundamentals and line lengths.

Lifetime

The lifespan of a paraglider depends very much on how it is used and the conditions it encounters. A tandem wing in commercial use is often used to the limit, so it is very important that permanent observation of the material and its flying behaviour should be practised, as well as adherence to the check routine as stated above. In particular it must be

understood that the life of the lines, under normal conditions, is much shorter than that of the canopy. Our many years experience shows us that a BIBETA canopy in professional use lasts around 1,000 flights, but the lines considerably less. You should plan for a line change at around half this number of flights.

Canopy

Our many years experience shows us that a BIBETA canopy in professional use lasts around 1,000 flights under ideal conditions. Ideal conditions means takeoffs and landings on good grass, proper dry storage and careful packing. A typical commercial flight lasts 20 minutes.

Potential working life can be less than half of this expectation if the glider is used on stony or sandy and dusty ground, gets into contact with sea water, is not stored properly or is subjected to excessive mechanical trauma. Even an occasional damp pack-and-store can massively reduce the canopy's life. Porosity check results give a good indication of a canopy's condition, and is a very important decisive factor for continued use of the wing.

Lines

The Edelrid "Magix Pro" Aramid lines on the BIBETA are considerably stronger than conventional covered lines, and this continues to apply

as time and use go by. After the standard kink test (5.000 bendings from new) residual strength is 17% more than a comparable covered product. In addition, the thousands of routine line snapping tests carried out by ADVANCE after at least a year's use show Edelrid Aramid line strength to be 20% higher – again when compared to a covered line.

Extensive preparation and inspection complete a depiction of this high quality product. According to the current requirements uncovered Aramid lines have to have at the least the same lifespan as conventional covered line. Despite comprehensive coating (mainly UV-Protec-Coating and Thermo Shield treatment) however, this product also needs the same care as other lines: damp storage, dust, physical abuse by stones or boots - all reduce the lifespan massively.

Paraglider checks at the correct intervals are especially important for commercial use. The line snapping test results indicate when the lines must be changed. It makes sense to change lines when they reach the midpoint of their potential life.

Compared with other products the BIBETA 6 has virtually no Dyneema line. Dyneema lines withstand loading very well, but are generally not stable in length compared to Edelrid Aramid line. We do not expect a BIBETA 6 to need retriming – for this reason.

If, after much use, line surface roughens and makes sorting more difficult, the lines can be treated with candle wax. Run a white candle along the entire line several times until it is shiny and smooth. The lines will again become easy to sort.

Repairs

As a general rule you should not attempt to repair a paraglider yourself. The various seams and lines are made with great precision, and, for this reason, only the manufacturer or an authorised service centre may fit identical replacement parts or replace entire cells. Exceptions to this rule are the replacement of lines and the repair of the small tears or holes in the fabric that may be glued with the self-adhesive ripstop included in the repair kit. After a repair, or the replacement of a line, the glider must always be opened out and checked on the ground before the next flight.

Spare parts such as lines, quicklinks and repair materials for the BIBETA 6 can be obtained from ADVANCE or an ADVANCE Service Centre and/or dealer.

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

BIBETA 6

		38	41
Area flat	m ²	38,1	40,8
Area projected	m ²	32,3	34,5
Recommended Takeoff weight ¹	kg	100–180	120–225
Glider weight	kg	6,70	6,95
Aspect ratio flat		5,45	5,45
Aspect ratio projected		4	4
Span flat	m	14,4	14,9
Span projected	m	11,4	11,8
Certification		EN/LTF B	EN/LTF B
Number of cells		53	53
Number of risers		3+1	3+1
Maximum chord	m	3,25	3,35
Riser lengths	cm	32	32
Max. line lengths incl. risers	m	9,0	9,3
Trims	cm	10	10
Other adjustable/removable devices		1) Vary-Grip 2) Brake line guides	1) Vary-Grip 2) Brake line guides

¹ Pilot, passenger, wing, equipment

Materials used

We routinely inspect and test our materials many times over. Like all ADVANCE products the BIBETA 6 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.

Leading edge	Skytex 38 Universal 9017 E25
Upper surface	Skytex 38 Universal 9017 E25
Lower surface	DOMENICO DOKDO 20 DMF (WR)
Ribs	Skytex 40 hard finish 9017 E29
Intermediate Ribs	Skytex 32 Hard 70032 E4D
Sewing thread	Serafil 60
Base lines	Edelrid/Liros A-8000U-360/230, uncovered, 1.7 mm/1.4 mm, 6843-240, covered, 2.1 mm
Gallery lines	Edelrid/Liros A-8000U-190/130/090/070/050, uncovered, 1.1 mm/0.9 mm/0.8 mm/0.7 mm/0.5 mm
Brake lines	Edelrid/Liros Aramid A-8000U-190/130/090, uncovered, 1.1 mm/0.9 mm/0.8 mm
Upper main brake line	A-8000U-190, 1,1 mm
Lower main brake line	A-7850-240 covered, 1.9 mm
Risers	Polyester 22 mm, 1100 kg, Technora 13 mm, 850 kg
Quicklinks	Maillon Rapide, Inox, 3.5 mm, 750 kg/4 mm, 1000 kg

Certification

The BIBETA 6 has EN and LTF certification. The test reports can be downloaded from www.advance.ch.

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.

During the development of an ADVANCE paraglider, the emphasis is first and foremost on flying behaviour and handling, and not exclusively on the certification test. The result is a well-rounded product with the familiar ADVANCE handling. Nevertheless, the certification rating occupies a significant proportion of the specifications that have to be met.



Service

ADVANCE Service Centres

ADVANCE operates two company-owned Service Centres that carry out checks and repairs of all types. The workshops based in Switzerland and France are official maintenance operations, certified by the German Hanggliding and Paragliding Federation (DHV), which has many years' experience and in-depth product-specific expertise. The ADVANCE worldwide service network includes other authorised service centres which provide the same services. All service facilities use original ADVANCE materials exclusively. You can find all the information about checks and repairs, and the relevant addresses at www.advance.ch.

The ADVANCE website

At www.advance.ch you will find detailed information about ADVANCE and its products, as well as useful addresses which you can contact if you have any questions.

Among the things you will be able to do on the website are:

- complete the warranty card online up to 10 days after purchasing the glider, enabling you to enjoy the full benefits of the ADVANCE warranty.

- find out about new safety-related knowledge and advice concerning ADVANCE products
- download an application form in PDF format which you can use when sending your glider in for a check at ADVANCE.
- find an answer to a burning question among the FAQs (Frequently Asked Questions)
- subscribe to the ADVANCE Newsletter so that you will be regularly informed by e-mail about news and products.

It is well worth visiting the ADVANCE website regularly because the range of services offered is continuously being expanded.

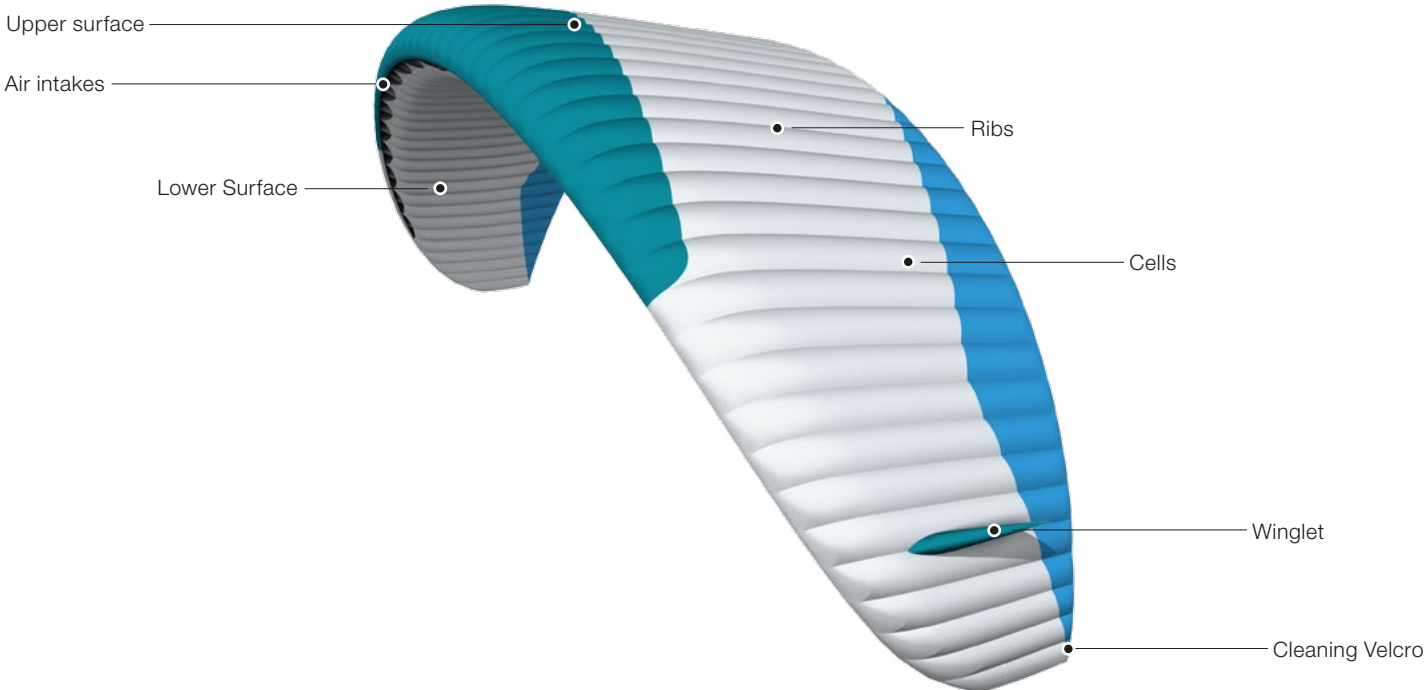
Warranty

In order to enjoy the full benefits of the ADVANCE warranty, you are requested to complete the relevant form on the website in the «Warranty» section within 10 days of purchase.

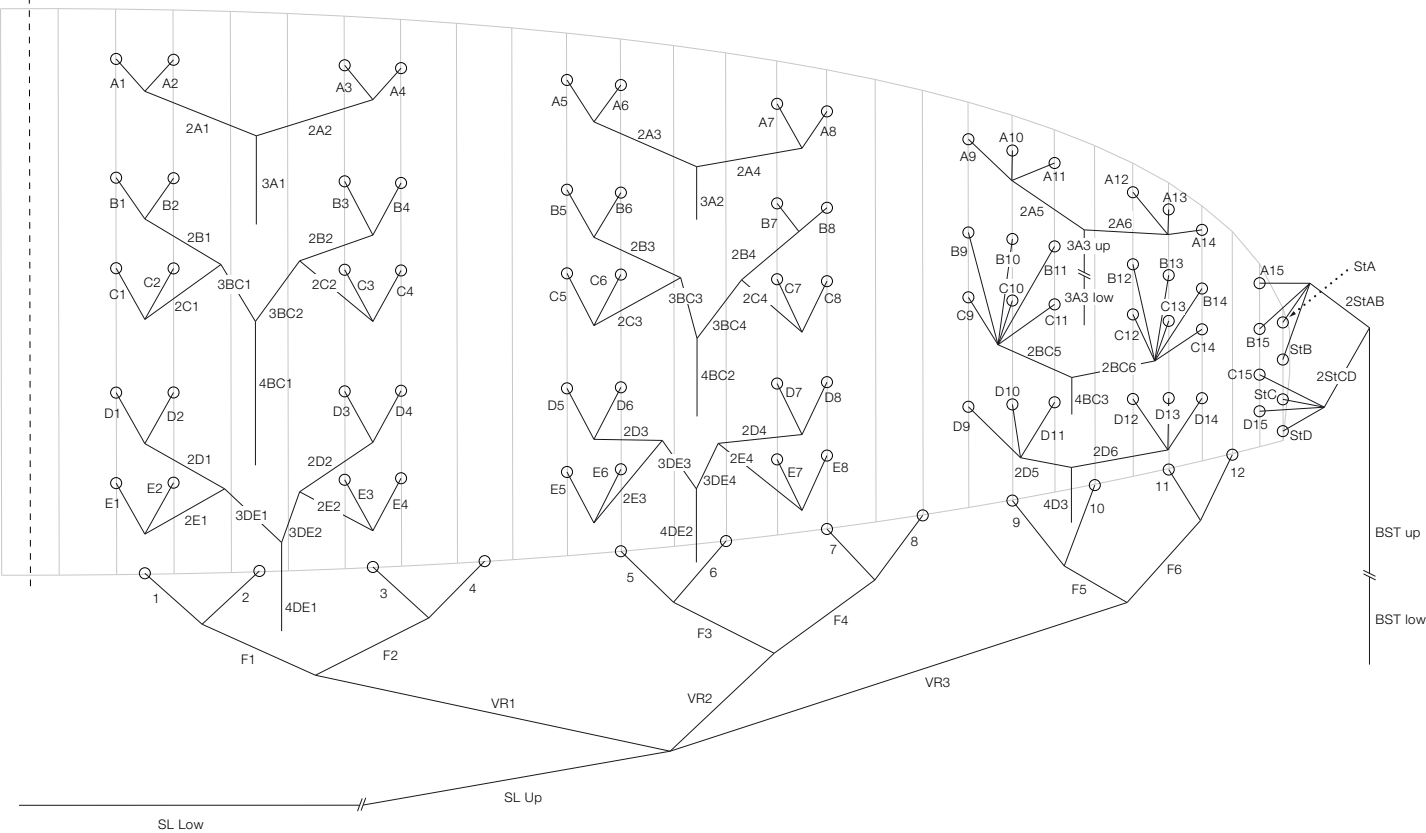
As part of the ADVANCE warranty, we undertake to rectify any defects in our products that are attributable to manufacturing faults. In order for a warranty claim to be made, ADVANCE must be notified immediately on discovery of a defect, and the defective product sent in for inspection. The manufacturer will then decide how a possible manufacturing fault is to be rectified (repair, replacement of parts or

replacement of the product). This warranty is valid for three years from the date of purchase of the product. Warranty and Service Intervals begin from the date of the glider's first flight, recorded on the identification plate. If no date is evident the applicable date is that on which the glider was transferred from ADVANCE to the ADVANCE dealer. The ADVANCE warranty does not cover any other claim. Claims in respect of damage resulting from careless or incorrect use of the product (e.g. inadequate maintenance, unsuitable storage, overloading, exposure to extreme temperatures, etc.) are expressly excluded. The same applies to damage attributable to an accident or normal wear and tear.

Components

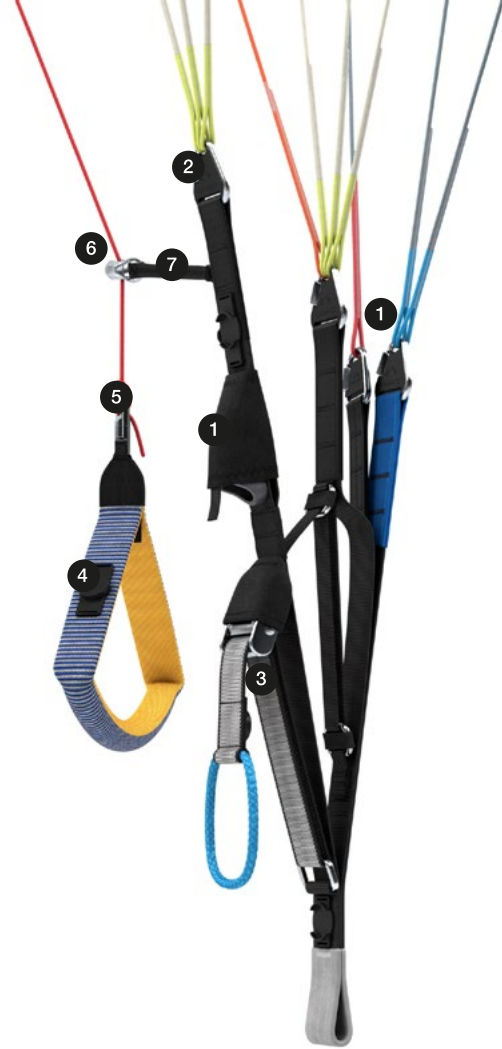


Line plan



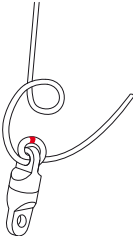
Risers

1. Big ears and "Vary-Grip-System"
2. Quicklinks and Clips
3. Trimmer with clamp
4. Magnet clips
5. Swivel
6. Brake ring
7. Brake line guide, adjustable for height



Bowline Knot

Step 1



Step 2



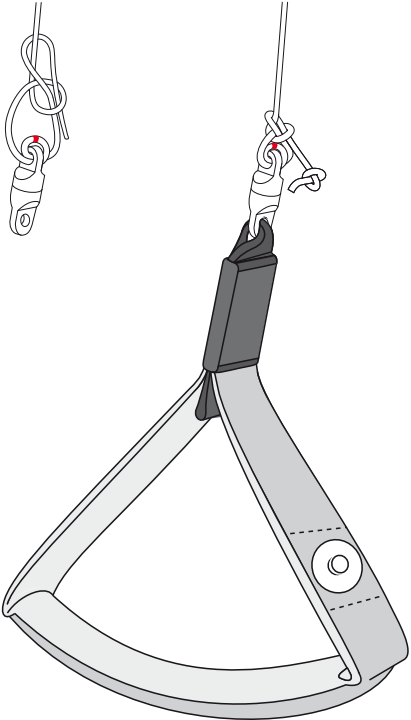
Step 3



Step 4



Step 5





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