



Gleitschirm / Paraglider

VOLT

EN/LTF-C

**Betriebshandbuch und Serviceheft
Manual and Service Book**

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WELCOME TO AIRDESIGN

CONGRATULATIONS ON THE PURCHASE OF YOUR NEW PARAGLIDER.
WE WISH YOU MANY ENJOYABLE HOURS OF FLYING.

We would like to be able to inform you of the latest news and developments at AIRDESIGN as well as offer relevant advice and special promotions. Please register your new paraglider by completing the registration form (in the annex) and return it to us.

You may also register online on our web-site at www.ad-gliders.com. Please check the website for more details.

If you wish, you can register for the AIRDESIGN newsletter.
Simply provide us with your e-mail address and you will always be up to date with the very latest news from the AIRDESIGN world.

Up to the minute news and information is available on our Facebook page under "AIRDESIGN gliders". Become a fan and you are online with us whenever you login to Facebook.

More information about the VOLT can be found on our website: www.ad-gliders.com.

For any further questions, please contact your nearest AIRDESIGN dealer or contact us directly at AIRDESIGN.

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1. Disclaimer and important advice for your own safety

Please read carefully and follow this important advice:

- This Paraglider is an air-sport-vehicle with the obligation of type testing and with a glider weight of less than 120kg. It is not usable as skydiving-glider or for openings in free-fall.
- This paraglider complies, at the time of delivery, with the certification requirements of the German LTF (Lufttüchtigkeitsforderung) and with the European Norm EN - LTF 91/09 & EN 926-1:2006, 926-2:2005
- Paragliders must not be flown by persons without a valid qualification unless under the instruction of a suitably experienced and qualified, registered paragliding school. Flying a paraglider without the proper knowledge, skills and qualification is dangerous.
- The national regulations for flying paragliders must be obeyed in all circumstances.
- The pilot must respect and comply with the rules of law.
- This paraglider must only be used within the certified weight limits.
- This paraglider is used exclusively at your own risk.
The manufacturer or distributor cannot be held responsible for any damages arising to persons, property or other materials which occur as a result of the use of this paraglider.
- All liability arising from the use of this paraglider is exclusively that of the pilot in charge. The manufacturer or distributor is excluded from any liability resulting for the use, misuse or otherwise, of this paraglider.
- It is the owner's and/or pilot's obligation to monitor and to maintain the airworthiness of this paraglider. To make sure the paraglider always flies with optimum characteristics, take care of the paraglider and make regular checks.
- Any change made to the structure of the paraglider renders it uncertified (non-conformity of type-testing) and invalidates any warranty. Structural repairs to paragliders must only be made by an appropriately experienced and recognised service centre. All changes and/or repairs must be recorded in the service history record in this manual.
- It is an implied requirement that the pilot flies a paraglider that matches his skill level. A pilot should not fly a paraglider outwith his ability to meet the demands of the paraglider in all states and conditions of flight.
- The glider must be 'test' flown by an expert before the first use. The 'conformity checked by' box on the certification sticker affixed to the wing must be countersigned with the signature of the testing pilot and date of the test flight.
- Appropriate towing equipment must be used. Never tow or winch the paraglider with a car, motorboat, or mechanical or other means without appropriate towing gear and /or appropriately qualified operators.
- Ensure before towing or winching that the operator has the proper experience and qualifications relevant to the type of tow/winch operation.
- Acrobatics are not allowed.
- Flying in rain or with a wet paraglider is not allowed. Pilots should always land well before any risk of contact with rain. Flying a wet paraglider can, in certain circumstances, lead to a deep-stall state.
- Before flying a new paraglider practice launch and control techniques on a flat field or training slope.

- Make the first flights with a new paraglider at a site that you use regularly and when meteorological conditions are favourable. Be aware that your new paraglider may have different characteristics from anything you have flown or trained with. Ensure that you allow adequate space for the landing approach.
- When flying always wear helmet and gloves, as well as suitable shoes and clothing.
- Always make sure that the wind direction and speed as well the general meteorological situations are within the pilot's capabilities and favour safe flight.

Please read this manual carefully and thoroughly.

IMPORTANT SAFETY NOTICE

By the purchase of this equipment, you are responsible for being a certified paraglider pilot and you accept all risks inherent with paragliding activities including injury and death. Improper use or misuse of paragliding equipment greatly increases these risks. Neither AirDesign nor the seller of AirDesign equipment shall be held liable for personal or third party injuries or damages under any circumstances. If any aspect of the use of our equipment remains unclear, please contact your local paragliding instructor, AirDesign dealer or the AirDesign importer in your country.

2. Construction

Stephan Stiegler - the AirDesign designer and test-pilot - has one aim in mind as he designs, tests and trims new gliders: "The glider must be easily flyable but with top performance in its class." In his own words "I guess the top issue for the VOLT is that it performs like the PURE and is easy to fly"

The AirDesign PURE generated an huge interest and following in a very short time due to its ease of flying in combination with the top performance in the EN-D class.

AirDesign have now refined the PURE genes to bring the PURE flying sensation into the EN-C class. The result is the brand-new VOLT. The VOLT is aimed at sports class, cross-country and competition pilots who want ease of handling with top-end performance in the class.

VOLT is the result of another year of development, testing and trimming and combines the characteristics and flying sensations of the 'big-brother' PURE with the handling and recovery of the recreational sport class.

VOLT performance is beyond many current LFT/EN D gliders. VOLT is stable and solid but sensitive enough to give perfect feedback to the pilot.

Precision in handling reaches a new level in the LFT/EN C class.

Brake input is absolute precise but with slightly longer travel and slightly less pressure than the PURE. This makes the VOLT a real excitement when doing thermals. The climb-rate is at its best - climbing is that easy you don't even notice it.

Launch characteristics are impeccable.

The immediate feeling of comfort and stability is becoming a trademark of AirDesign gliders.

In the words of the AirDesign gliders architect, Stephan Stiegler: "It's one of the best gliders I ever made ... a glider perfect for those pilots coming into the EN-C class as well as those who maybe wary of moving onto the new EN-D wings"

Technical details:

- performance airfoil from PURE - competition technology with safety
- certified without folding lines
- 3-Line-System : a 3-line concept with the inner C lines split to form short D lines. Unsheathed ,race' lines are used in the upper two cascades to reduce drag.main lines with sheated aramid lines.
- back positioned attachments which improves stability and reduces pitching
- Polyamide rods in the leading edge keep the profile in perfect shape and improve stability and launch characteristics.
- 3D Cut : a technical sail cutting method used across the leading edge area. This produces improved air flow and increased performance.
- The 2-in-1 progressive brake line layout improves climb characteristics. The center brake fan is attached slightly in from the trailing edge to improve climb. At the tips, the line runs through small rings on the trailing edge to gather the tip and assist precise turning whatever the conditions.
- brake-shift option: This gives the pilot the option to modify the way of turning the wing and adapt to different flying conditions. This is achieved by shifting the brake (hand) either to the inside or outside which results in a steeper or flatter turning.
- Mini-ribs in the trailing edge improve surface finish and reduce drag.
- Performance style, reinforced 12mm risers, adjustable brake handles and dirt-holes at the wing tips complete the quality finish.

3. Technical Data

				
SIZE	S	SM	M	L
AREA FLAT (m ²)	23.07	24.79	26.39	28.57
AREA PROJECTED (m ²)	19.59	21.05	22.41	24.26
SPAN FLAT (m)	11.96	12.40	12.79	13.31
SPAN PROJECTED (m)	9.36	9.71	10.01	10.42
ASPECT RATIO FLAT	6.2	6.2	6.2	6.2
ASPECT RATIO PROJ.	4.47	4.47	4.47	4.47
CELLS	59	59	59	59
TOTAL LINE LENGTH	279	290	299	311
TOTAL LINES	208	208	208	208
LINE DIAMETERS	0.8/0.9/1.8			
WEIGHT (kg)	5.7	6	6.3	6.6
V-TRIM/V-MAX (km/h)	37/54	37/54	37/54	37/54
LTF/EN CATEGORY	C	C	C	C
TAKE OFF WEIGHT (kg)	70-85	80-95	90-105	100-120

4. Pilot target group

Many years of flying, designing and competing have convinced us that a pilot who is comfortable flying a glider, will fly more, have more fun and achieve more in cross-country flying and in competition ...

Pilots who are looking for the maximum performance in the LTF/EN C class with no compromise in passive safety or agility and who rightly demand precise handling will feel totally at home with the VOLT.

The handling characteristics of the VOLT combined with the evidence from the test manoeuvres show us that high performance can be manageable and recoverable. VOLT is not a 'high-end' LTF/EN C glider. It's simply a 'perfect' sports class glider – suitable for improving pilots moving up into the Sports class as well as those who maybe unsure about the latest LTF/EN D gliders.

All pilots flying in this class should be flying regularly and be experienced in 'active-flying' in all conditions.

LTF and EN category

The AirDesign VOLT has been classified as EN-C and LTF-C.

The glider has been type-tested for “**one-seated**” use only.

Suitability for training

The AIRDESIGN VOLT is NOT suitable for training or use in the school environment.

Recommended weight range

The VOLT must only be flown within the certified weight range as stated in the technical data under section 3. The take-off weight includes pilot plus clothing, glider, harness, equipment etc.

The VOLT reacts to a variation in loading with a slight reduction or increase of trim-speed. The performance remains more or less the same.

5. Harness

The VOLT is type-tested for use with all modern harnesses – rated as GH.

6. Towing / winching

The VOLT is suitable for towing/winching. The use of a suitable tow-adaptor is not obligatory but is helpful and gives more confidence during towing.

Hint!

Towing is only recommended if:

- The pilot has received towing instruction
- The winch and release-links are suitable for towing paragliders
- The winch operator is experienced and qualified for towing paragliders

Attention: Danger of accident!

The most common reason for accidents during towing is when the pilot releases the A-riser too early during take-off. The pilot should make sure that the glider is completely overhead when giving the command for start.

7. Practical Flying

This manual is not an instruction manual for learning how to fly.

It is assumed that the pilot has had proper training leading to a recognised qualification and has the ability to fly a paraglider in the EN/LTF-C class.

a. Pre-flight check

A careful pre-flight check is recommended before every flight.

The lines, risers, maillons and canopy should be checked for damage. Do not take off if there is the smallest amount of visible damage.

Ensure that the main Karabiners between harness and risers are undamaged and are closed.

The harness must be put on with greatest care and all straps secured correctly.

Check the correct position of the reserve (rescue) handle and make sure the pins of the reserve (rescue) are in place.

The lines and risers should be sorted carefully. Check that the risers are not twisted and that the brake lines are running free. All lines must run from riser to canopy free from tangles or knots – during flight it is often not possible to release knots in lines.

Lines lay directly in contact with the ground. Therefore, take care that they don't get caught or snagged during take-off.

No lines should be underneath the canopy, line-overs can cause accidents.

The canopy should be laid out in a circular shape facing the wind so that all lines become tensioned evenly when inflating.

ATTENTION: NEVER TAKE OFF (START) WITH OPEN KARABINAS!

b. Check-list – pre-flight-check

Lay the glider out into a slight arc and check that:

- Canopy is dry and undamaged
- Cell openings are free of obstructions
- Risers are without damage and all stitching is intact

- Maillons on lines are closed correctly
- All lines are free from tangles or knots
- Brakes lines run freely through the pulleys
- Knots on brake lines are secure

After putting on harness check the:

- Position of reserve (rescue) handle and pins
- Leg loops and strap are fastened correctly
- Main Karabiners are closed

Before launch check that:

- Speed-system is connected correctly and runs smoothly through the pulleys
- Risers are not twisted
- Place brake handles in the hands and check brake lines are free
- Position pilot in centre of wing
- Check wind direction
- Check take off area is clear
- Check airspace is free from congestion

c. Take-off

The key to successful launching is to practice ground-handling on flat ground as often as possible.

The VOLT inflates easily and steadily using forward or reverse launch techniques. There is no tendency for the canopy to hang back during inflation. To forward (alpine) launch in light or nil wind there is no need to pull the risers hard. Allow the glider to stabilise overhead and run positively forward checking the canopy is fully inflated and clear of any knots or tangles.

Reverse launching is recommended in strong wind.

The glider has split A-risers. For launching you can take either just the inner A-line riser or both.

For launching in tail-wind it might help to use just the inner A-line riser to avoid the tips accelerating ahead of the centre of the wing while inflating.

d. Turning flight

You will notice the very precise handling from the first flight. The VOLT is easy to turn at any bank angle, from flat through to steeply banked turns.

Brake pressure is progressive which enables the pilot to feel the wing and helps prevent unintentional stalling.

In turbulent air the VOLT is easy to centre in a thermal and absorbs turbulence very effectively which improves pilot comfort in flight.

The webbing attachment for the brake-line pulley is intentionally long making it possible to move the brake handle either to the inside or outside of the riser.

For example: if the glider turns flat: make a steeper or faster turn by moving the inside hand towards the centre of wing. The glider then speeds up in the turn and the angle of bank becomes steeper. When doing the opposite – moving the arms away from the body - the glider turns flatter and the climb becomes more efficient. We call it “brake-shifting”. Please find more information at our website or facebook (www.ad-gliders.com, www.facebook.com/AirDesignGlider).

**ATTENTION: PULLING THE BRAKES TOO FAST AND
DEEP INCREASES THE RISK OF STALLING THE WING!**

When entering an asymmetric stall (negative): the glider starts to slide into the turn. The inner wing stops flying, loses pressure and becomes soft. At this point the brakes have to be released immediately.

In the unlikely event that a brake line releases from the brake handle or breaks, the glider is manoeuvrable using the C-risers. By pulling gently on the C-risers it is possible to steer the glider and land safely.

e. Brake line length

The brake-line length of your new VOLT has been finely tuned by AIRDESIGN test pilots and it should not be necessary to adjust it.

If you feel it is necessary to adjust the brake-line length to suit physical build, height of harness hang points, or style of flying we recommend you ground handle the glider before you test-fly it and carry out this process after every 20mm of adjustment.

There should always be free brake travel when the glider is flown hands-up. This means when you look at your brake lines in flight with your hands up, there should be a slight bow, or arc, to the line – the brake lines should not be tight. This is to prevent the brakes being applied when the speed-system is used.

Brake lines that are too short:

- May lead to fatigue from flying with your hands in an unnatural position
- May impede recovery from certain manoeuvres
- Will certainly reduce your glider's speed range.

Brake lines that are too long will:

- Reduce pilot control during launch
- Reduce control in extreme flying situations
- Make it difficult to execute a good flare when landing.

Each brake line should be tied securely to its control handle with a suitable knot.

Other adjustments or changes to your VOLT lead to a loss of warranty, airworthiness and validity of certification and may endanger both yourself and others.

If you have any suggestions for improvements let us know and our test pilots will try out your ideas in a controlled situation.

f. Active flying

Flying with a little brake applied equally will slightly increase the angle of attack and help to prevent deflations and allow the pilot to experience more direct feedback. This allows the pilot to feel the air and the glider which can help prevent collapses.

The aim of active flying is to keep the glider above the pilot's head in all situations by responding correctly to the glider's movements using the brakes and weight shift.

When entering a strong or rough thermal it is important that the glider is not too far back or able to enter a dynamic stall. To avoid this, it is often helpful to release the brakes slightly when entering, which gives the glider a little more speed. Equally, when exiting a strong climb

it may be necessary to brake more to prevent the glider from diving forward.

The VOLT is designed to be flown actively. To aid this, the C-risers are fitted with a control ball which helps the pilot to hold the C-riser comfortably. When flying in turbulence, instead of pulling the brakes it is possible to pull down the C-risers. This stabilises the glider and avoids deformation of the wing. This also works to keep the glider on course and to make small corrections in direction.

The VOLT may be flown using the C-riser technique when accelerated as well as at trim speed. Controlling the glider using the C-risers is more efficient than using the brakes. Speed is not significantly affected and the performance loss is reduced.

NOTE: Pulling the C-risers down while flying in turbulence does not completely erase the possibility of deformations. Be aware that strong turbulence can still cause the wing to collapse.

g. Accelerating

The speed system on the VOLT comes supplied with 'quick hooks' ready to attach to a speed bar of choice. The complete speed system should be checked to ensure it runs smoothly by hanging in the harness before flying.

In particular, check that the speed system won't be engaged when in normal flight.

Unnecessary knots and loops in a speed system are not recommended.

When pushing the speed bar the angle of attack of the glider is reduced. The glider speeds up but at the same time is more sensitive to deformation.

In spite of the exceptional stability of the VOLT, any accelerated collapse will be more dynamic than the same event experienced at trim speed and will require quicker reactions to maintain normal flight.

Always keep both hands on the controls when flying fast or in turbulence and be ready to release the speed system immediately at the first sign of a collapse.

When flying through strong sink or into a headwind it is useful to fly faster using the speedbar. Use the speed system carefully when flying close to the terrain and maintain enough height from the ground or other obstacles to recover in the event of a collapse.

DO NOT BRAKE WHILE FLYING FULLY ACCELERATED – THIS MAY RESULT IN A COLLAPSE OF THE WING.

h. Landing

The VOLT is easy to land, however, on your first flights you may be surprised at how well it glides. Take account of this when making your landing approach and give yourself the opportunity for S-turns or a longer approach than you might be used to.

For a normal, into-wind landing evenly pull the brakes all the way down when you are close to the ground and straighten up to land on your feet. The glider will stop almost completely as the brakes are fully applied. Avoid landing directly out of a turn or wing-over since the momentum of the pilot will be much greater due to the pendulum effect.

Attention:

After touching down do not allow the glider to dive overhead and fall in front of you. If the leading edge hits the ground hard the structure of the cell walls may become damaged.

i. Towing and winching

When towing or winching, the glider must be above the pilots head before starting. In the initial phase the tension should not be too high – a pilot climbing at a flatter angle has more control.

Tension of more than 90kp is not allowed. In any situation, the maximum permitted tension on the line must not exceed the pilot’s weight.

The pilot must be informed and aware of the national requirements for towing. This includes matter such as; tow/winch licence requirements, qualified tow operators, suitability of glider for towing, if winch and towing-links are certified etc.

In general, the regulated and enforced regulations must to be followed.

j. Asymmetric and frontal collapses

As with any paraglider collapses can occur. “Active flying” as described in point “f” can help avoid deformations.

You should always maintain course and direction by weight-shifting away from the collapsed side. This can be reinforced by applying a small amount of brake on the opposite side to the deflation. If the collapse stays in, the glider can be re-inflated by pumping the brake on the collapsed side in a firm and smooth manner. Be aware that the brake travel is shorter when the glider is collapsed and the glider can stall with less brake input.

If you experience a big collapse while accelerated, the canopy will fall behind the pilot due to the difference in inertia between the pilot and the canopy. You must wait until you pendulum back under the canopy before dealing with the deflation. Reacting too early can risk stalling the glider completely. Release the speed-bar immediately if you have a big collapse during accelerated flight and, while keeping weight-shift neutral, apply slight brake to the open side. Let the glider enter a turn if space allows in order to avoid a spin or stall.

To assist in the reopening of a frontal collapse the pilot should pull both brakes equally at the same time. This also reduces the dive after the glider reopens.

NOTE: Pulling too much brake during a frontal collapse recovery can stall the glider or cause the glider to revert from the frontal collapse directly into a deep-stall.

k. Reopening a cravat

In extreme conditions it is possible that the wing tip(s) can become trapped between the lines. In general, this would happen only after a big uncontrolled collapse or during extreme manoeuvres.

If this cravat occurs, in the first instance use the techniques described for releasing asymmetric collapses.

If it fails to release, take hold of the stabilo line and pull hard towards yourself until the trapped section of the wing is released.

A full-stall should be the last option to reopen a cravat and is a manoeuvre for experienced pilots only and should be attempted only if there is sufficient altitude. At low altitude it is important to stabilise the rotation, if any, and if necessary use the reserve (rescue) if this is not possible.

I. Negative spin

We recommend that this manoeuvre is only carried out during a safety training course over water and under supervision. The intention in this situation is for a pilot to discover the point-of-spin and to control it. This demands a high level of experience and skill.

The longer the time between the glider entering a spin and the pilot attempting to recover, the more chance there is of it becoming out of control.

As the glider surges forward slow it down with the brakes to avoid the possibility of an asymmetric collapse. Always wait for the glider to be in front of you or above you when releasing a fully deployed spin - never release the spin while the wing is behind you because the glider would dive very far in front of you or even underneath.

m. Full-stall

This is an extreme manoeuvre that should rarely, if ever, be required.

To induce a full stall, pull both brake-lines down smoothly. Hold them down, locking your arms under your seat until the canopy falls behind you and deforms into a characteristic crescent shape. In spite of how uncomfortable it may feel as the glider falls backwards, be careful not to release the brakes prematurely or asymmetrically. If the brakes are released while the glider is falling backwards the surge and dive forwards is very fast and the glider may shoot in front and even underneath you.

In a full stall the canopy will oscillate back and forth. To stabilise this, the pilot can release the brakes slowly and for approximately 1/3 of the brake travel and then hold at this level. Holding at this position allows the wing to refill slightly across the span. When releasing the brakes without pre-filling the ears mostly will most probably hook in the lines and this can result in a cravat.

After pre-filling the glider stabilizes its movements and the brakes can be eased until the glider recovers speed and flies again.

ATTENTION: The full stall requires a lot of height and demands certain skills to recover. It is important this manoeuvre is not practiced without qualified supervision. It should preferably be practiced during a safety training course.

n. Rapid decent manoeuvres

i. Spiral

The spiral dive is an effective way of making a fast descent. During the spiral dive the pilot and glider will experience strong centrifugal forces which strain the glider. As such it should be considered an extreme manoeuvre. Due to the rapid height loss during a spiral, pilots must always take care that they have sufficient altitude before initiating the manoeuvre and that the airspace is free around the pilot.

Initiation: Weight shift and smoothly pull on one brake (the same side you are weight shifting into) so the glider goes from a normal 360-degree turn into a steep turn and from there into a spiral dive. Once established in the spiral the descent rate and bank angle can be controlled with weight shift and the releasing or pulling of inner brake. As the glider banks in front of the pilot maintain the spiral by keeping the brake pressure constant, at this point weight-shift can be neutralised. Descent is controlled by pulling more on the inner brake. A slight pull on the outside brake helps to keep the glider stable.

Recovery: The VOLT recovers from a spiral spontaneously as soon as the brakes are released and weight shift returns to neutral. To exit, allow the spiral to slow down for a turn or two by slowly releasing the inner brake. Once the glider starts to exit the spiral, control your descent rate and bank angle with weight shift and the outer and/or inner brake to prevent any strong climbs out of spiral. Always finish a spiral dive at a safe altitude.

The VOLT does not show any tendency for a stable spiral. That means the glider does not remain in spiral after releasing the brakes. If the glider should, in rare cases, remain in a stable spiral the pilot should first weight-shift to the outside and then brake slightly more on the outside.

ATTENTION: In a stable spiral the G-forces are very high. Be aware that it may therefore require considerable more input and effort to recover from this state.

ATTENTION: The VOLT is an agile high performance glider. When exiting a spiral too fast the conversion of energy may result in the glider climbing quickly and entering its own turbulence. This may cause the glider to collapse. We advise that you allow the VOLT to exit from the spiral dive in a controlled manner.

You should take care to use only moderate spirals so as not to put unnecessary load on you and your lines.

IMPORTANT SATEFY NOTICE! A pilot who is dehydrated and/or not accustomed to spiralling can lose consciousness during a steep spiral dive!

ii. B-line stall

This is an effective way of making a moderate to rapid descent but doesn't allow any forward speed.

Initiation: Take hold of the B-risers (both sides at same time) just above the maillons and slowly but smoothly pull them down, twisting your hands until the canopy shows a span-wise crease at the B-line attachment points and stops flying forward. It is difficult to pull at first but becomes easier as the airfoil creases. Your sink rate will increase while your forward speed will reduce to practically zero.

Recovery: Let go of the risers smoothly but determinedly and symmetrically, the glider will speed up and gain forward movement. The brakes are kept in your hands at all time during this manoeuvre. When exiting take care not to pull the brakes.

ATTENTION: IF THE B-RISERS ARE PULLED DOWN TOO MUCH THE WING MAY LOOSE ITS SPANWISE FORM OR THE TIPS COME IN FRONT OF THE CENTRE OF THE WING. IN THIS INSTANCE THE B-RISERS MUST BE RELEASED IMMEDIATELY.

iii. "Big-ears"

This is the easiest and safest technique for descent while maintaining forward speed.

Depending on how much of the wing-tip you deflate, 3m/s to 5m/s sink rate can be achieved.

While in big-ears your forward speed can be increased by using the speed system.

The tendency for the wing to collapse is reduced while flying with big-ears.

The VOLT can be steered with big ears in by weight-shift alone.

Initiation: Reach up high and take hold of the metal maillon (quick-link) of the "outer" A-riser on each side of the glider. Pull both sides down simultaneous. Hold them in firmly. The tips will fold in. Make sure the lines are pulled down equally on each side and your big ears are even.

Recovery: the ears might stay slightly tucked under but a gentle pump on the brakes will accelerate the opening.

NOTE: It may happen that the big ears shake or appear unstable. Taking a wrap on the brake line before pulling in the ears can prevent this.

iv. “Big-ears” with B-line

As an alternative to the “big-ears” done by the outer A-line it’s possible to do “big-ears” with the outer B-line instead. Like this the tips make a partial B-stall which gives a very similar result compared to doing it with the A-line. To release just put the B-lines up again. The advantage by doing so is that the ears are more stable and have no tendency to shake. A disadvantage would be that the ears cannot be alternated in size. This manoeuvre works in trim speed as well when accelerated.

ALL RAPID DESCENT MANOUVRES SHOULD BE FIRST PRACTICED IN CALM AIR, WITH SUFFICIENT ALTITUDE AND WITH QUALIFIED SUPERVISION.

REMEMBER:

A wrong manoeuvre at the wrong time may change a straightforward situation into a dangerous problem. Extreme manoeuvres also expose your glider to forces which may damage it.

- Practice these techniques under qualified supervision preferably during a safety training course
- Before initiating a manoeuvre make sure that the airspace below is clear of obstructions or other pilots.
- During manoeuvres watch both the glider and altitude above the ground.

8. Maintenance and Repairs

The materials used to construct your VOLT have been carefully chosen for maximum durability. If you treat your glider carefully and follow these guidelines it will last you a long time. Excessive wear can occur by bad ground-handling, careless packing, unnecessary exposure to UV light, exposure to chemicals, heat and moisture.

Ground-handling

- Choose a suitable area to launch your glider. Lines caught on roots or rocks lead to unnecessary strain on the attachment tabs during inflation. Snagging lines may rip the canopy fabric or damage lines.
- When landing, never let the canopy fall on its leading edge. The sudden pressure increase can severely damage the air-resistant coating of the canopy as well as weaken the ribs and seams.
- Dragging the glider over grass, soil, sand or rocks, will significantly reduce its lifetime and increase its porosity.
- When preparing for launch or when ground-handling, be sure not to step on any of the lines or the canopy fabric.
- Don't tie any knots in the lines.

This glider will remain airworthy and in good condition for many years, if well cared for and packed correctly.

Packing the glider:

It is strongly recommended to concertina pack your glider by folding it rib onto rib, in order to preserve the shape of the leading edge and therefore help maintain inflation characteristics and performance.

The VOLT has nylon wire support in the leading edge which cannot break, but if packed badly (bending during packing) and stored for a long time may deform.

The AIRPack inner-bag can help you to pack easily and properly.

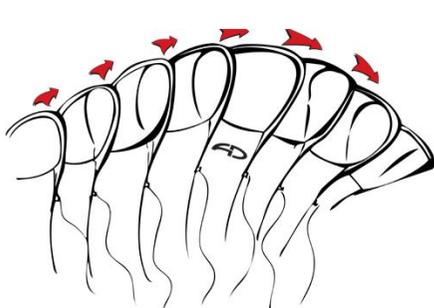
For details see the accessories section of the www.ad-gliders.com website.

Packing your AirDesign glider.

1. Lay the lines / risers / harness at the trailing edge of the wing. Collect the lines together and lay them as much as possible on top of the wing fabric. This protects the lines during packing and storage.

2. Starting either at one tip or at the centre of the wing, gather all the leading edge cell walls together so that the polyamide rods are side by side.

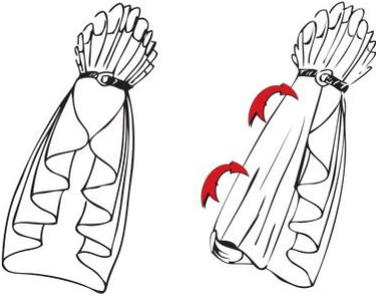
IMPORTANT NOTE: if you are packing the glider on rough ground, first gather the wing into a 'cauliflower' by pulling in the lines and then pack the leading edge. Dragging the canopy over rough ground will damage the fabric.



3. Lay the leading edge flat on the packing bag / Airpack and secure with the internal strap just below the end of the polyamide rods.

4. Adjust the packed leading edge to ensure all polyamide rods are flat against each other.

5. Fold the rest of the wing in from the tips on each side using the same concertina procedure and then fold one side half lengthwise on top of the other.



6. Fold the wing up from the trailing edge into 2 or 3 folds, removing excess air and making sure that the packed leading edge is kept flat and outermost. DO NOT fold the leading edge back inside the wing. This may damage / distort the polyamide rods.

7. For Packing bag - Undo the clip holding the leading edge in place and secure around the folded glider. Close the bag with the side clip and top drawstring.



Storage

- Avoid packing your glider when it is wet. If there is no other way, then dry it as soon as possible away from direct sunlight and heat. Be careful to avoid storing your canopy when damp or wet: this is the most common reason for canopy degradation.
- Do not let your glider come into contact with seawater. If it does, rinse the lines, canopy and risers with fresh water and dry it away from direct sunlight before storing.
- After flight or when storing, always use the inner protection sack (or AIRPack).
- When storing or during transport make sure your glider is not exposed to temperatures higher than 50°C.
- Never let the glider come into contact with chemicals. Clean the glider with clean lukewarm water only. Never clean using abrasives.

- For long-term storage do not pack the glider too tightly. Leave the rucksack zip open when possible to allow any moisture to evaporate.

Transport:

Some materials used in the construction of the glider are sensitive to temperature. Therefore, the pilot should ensure that the glider is not exposed to excessive heat. For instance, do not leave the glider in a car during hot summer days.

When packing to send by post use appropriate packing material.

Cleaning:

For cleaning just use only a soft sponge and clean water.

Do not use solvents, cleaners or abrasives.

Repairs:

Repairs must be done exclusively by the manufacturer, importer or authorised persons.

Use only original parts.

In case of questions please contact AIRDESIGN directly.

Material wear:

The VOLT consists mainly of Nylon cloth.

This material does not lose much strength or become porous through exposure to UV radiation. However, despite this, the pilot should take care to not expose the glider unnecessarily to sunlight. Unpack shortly before take-off and pack the glider right after landing.

The VOLT is lined with unsheathed Aramid lines in the top- and middle cascades and with sheathed Aramid-lines at the main-lines. Take care not to stress any line mechanically. Overloading should be avoided as a stretching is non-reversible. Continuous bending of Aramid lines at the same spot weakens the strength.

When putting the glider to the ground avoid dirt and dust as much as possible. Dirt can get between the fibres of the lines which may shorten the lines and damage the covering.

When lines get caught during take-off, they can stretch or even break. Do not step on lines.

Sharp edges on the ground can damage the sheathing.

A brake line tangled around other lines can tear or cause damage.

Take care that no snow, stones or sand get into the canopy. The weight can pull down the trailing edge and slows the glider. In the worst case scenario, the glider can be caused to stall.

When launching in strong winds the canopy can, if not controlled, overshoot and hit the ground hard. This can lead to tears in the ribs or damage the sail or stitching.

When landing, avoid the leading edge hitting the ground in front of the pilot. This can damage the materials in the leading edge.

After landings in trees or water the line length must be checked. After contact with salt water wash the glider immediately with clean water.

Avoid contact between the fabric and sweat.

Do not pull the glider over rough ground; this can damage the cloth at the contact points.

Do not too pack the glider too tightly.

The total line length documents for each size of the VOLT are found in the annex.

9. Checking the glider

Even with the best possible care each glider is subjected to a certain ageing which can affect the flying characteristics, performance and safety.

A thorough inspection of all components, including checking suspension line strength, line geometry, riser geometry and permeability of the canopy material is mandatory.

2-Years Inspection:

After **24 months or 150 flight hours** (whichever occurs first) the glider must be inspected. This check will be made by the manufacturer, importer, distributor or other authorised persons. The checking must be proven by a stamp on the certification sticker on the glider as well in the service book.

In the event that a glider is NOT checked according to this schedule, the airworthiness warranty of the glider is invalidated.

More information about servicing and inspections can be found in the document "Inspection Information" available on the AIRDESIGN website www.ad-gliders.com

Ground-handling times must be multiplied by factor of 2 due to the greater contact with abrasive surfaces.

Respecting nature and environment:

Finally, we would ask each pilot to take care of nature and our environment. Respect nature and the environment at all times but most particularly at take-off and landing places.

Respect others and paraglide in harmony with nature.

Do not leave marked tracks and do not leave rubbish behind.

Do not make unnecessary noise and respect sensitive biological areas.

The materials used on a paraglider should be recycled.

Please send old AIRDESIGN gliders back to us AIRDESIGN offices. We will undertake to recycle the glider.

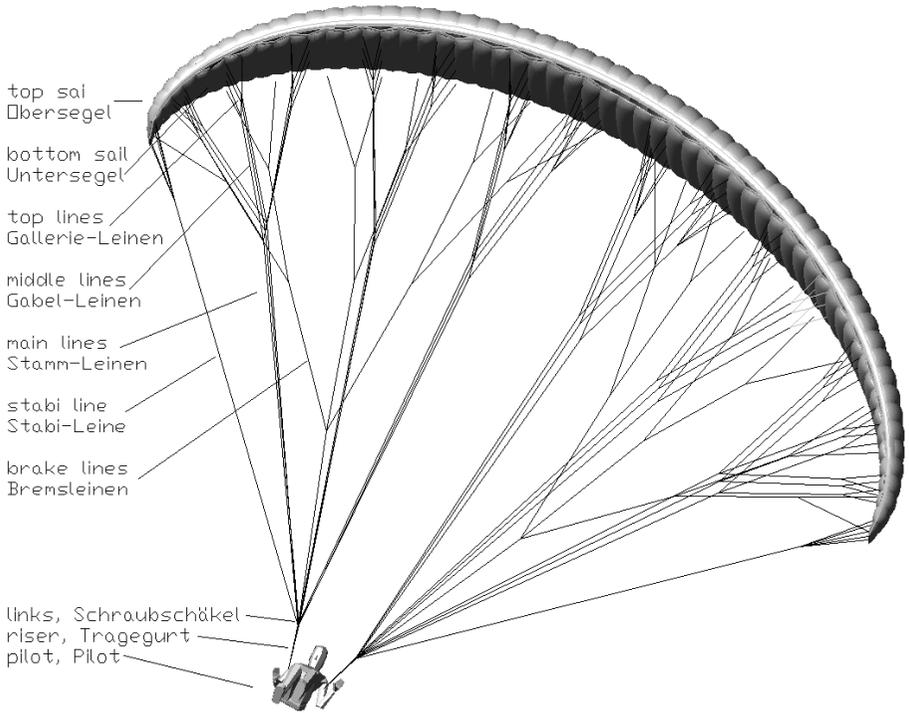
10. The Final Word

The VOLT will give you hours of fun and satisfaction in the air. We wish you lots of good flights. Treat your glider well and have respect for the demands and dangers of flying. Even the safest glider cannot help avoid a situation where a pilot misjudges the circumstances or makes errors. We ask all pilots to fly with care and to respect the national and international laws with regard to our sport.

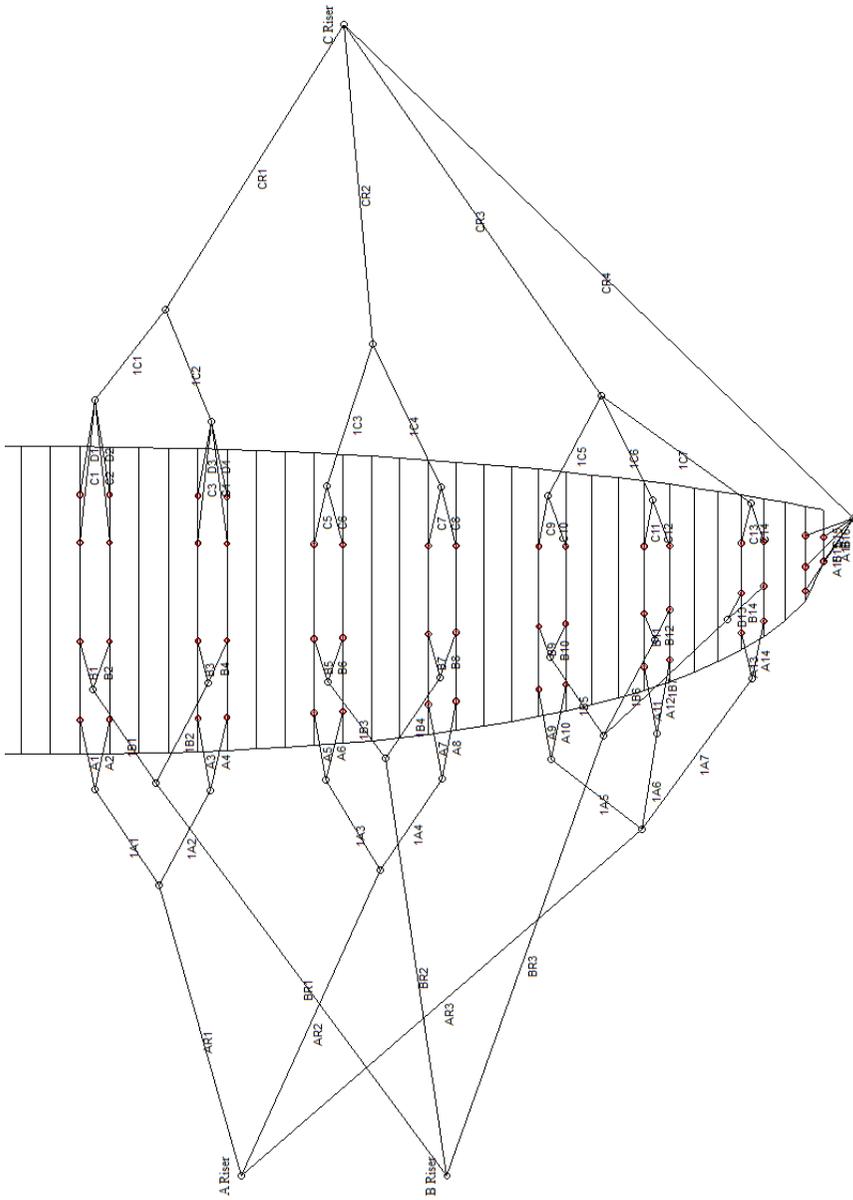
SEE YOU IN THE SKY!

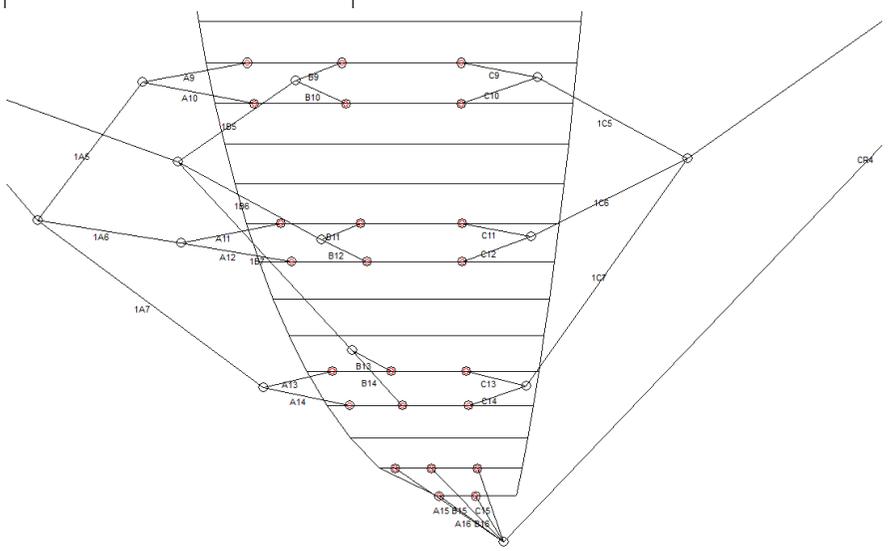
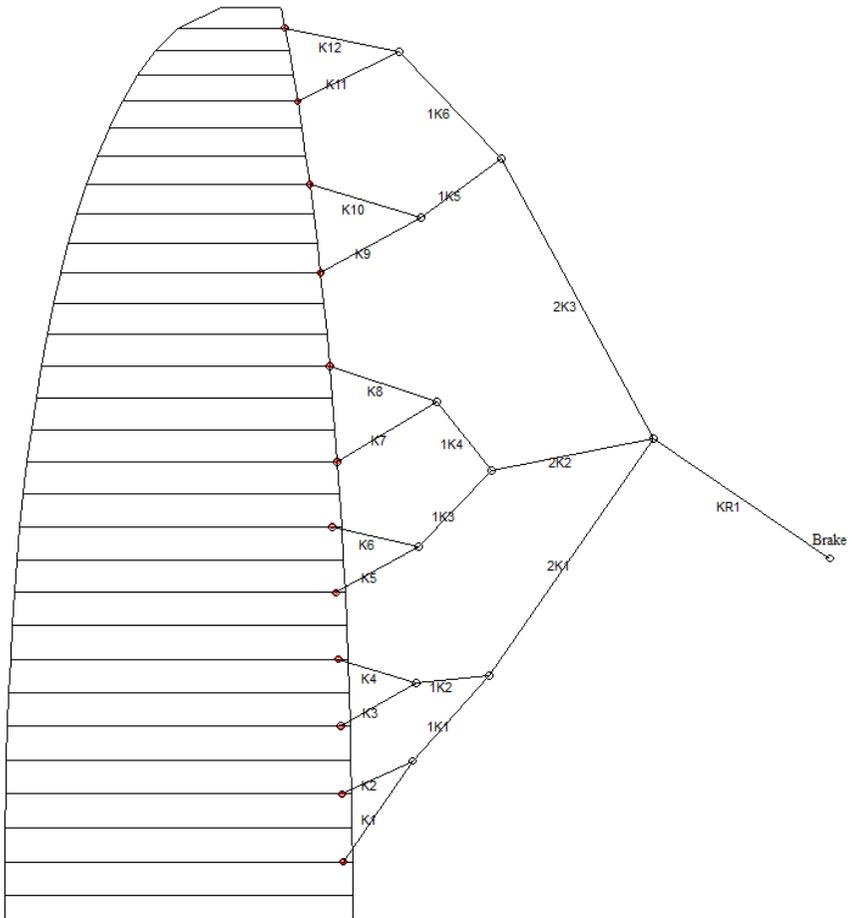
A. ANHANG - ANNEX

a. Übersichtszeichnung – Overview

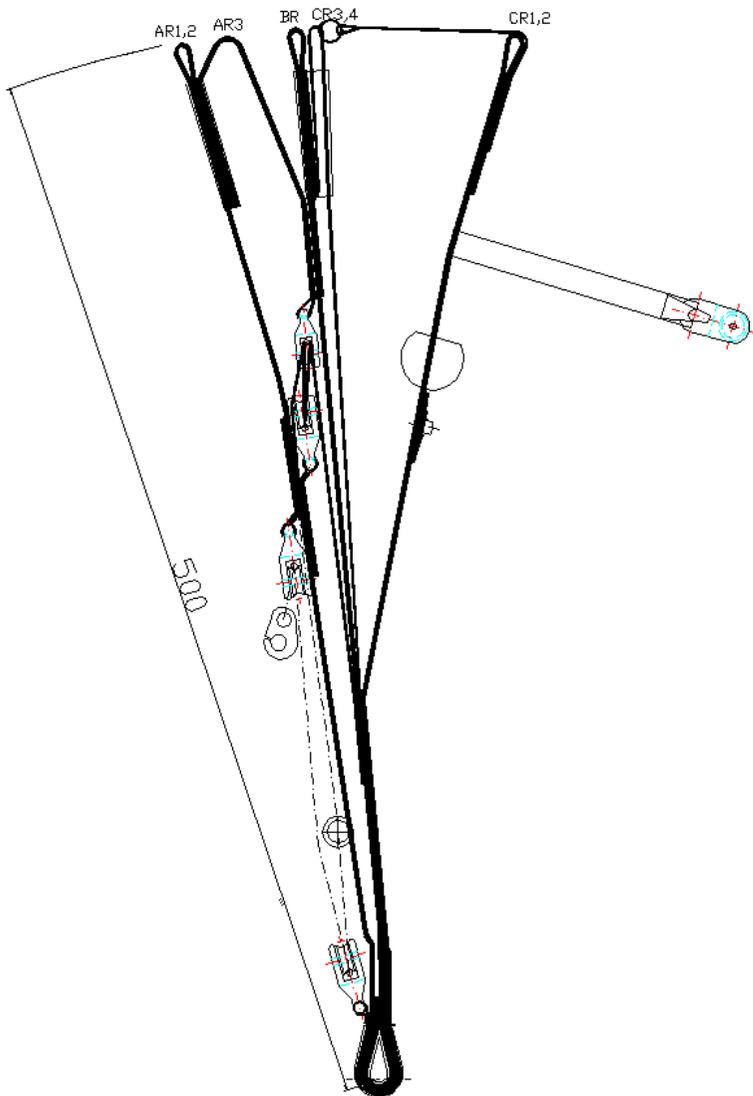


b. Leinenplan – line plan





c. Tragegurt - Riser



Die Längen des Tragegurtes sowie der Beschleunigerwege entnehmen sie bitte der EBL/DDP unter Anhang C.

Please find length for riser and accelerator in EBL/DDP in section C.

B. Material – Materials

Segeltuch/Sail:

- Obersegel/Top Sail: Porcher Skytex 40
- Untersegel/Bottom Sail: Dominico 30D
- Rippen/Ribs: Dominico 30D hard

Leinen/Lines:

- Gallerie Leinen/Top lines: EDELRID 8000/U-090
- Gabel Leinen/Middle lines: EDELRID 8000/U-130
- Haupt Leinen/Main lines: EDELRID 7343-280

Tragegurt/Riser: COUSIN 12mm Technora

Schraubschäkel/Maillons: 4,3mm JOO-TECH/Korea

C. EBL/DDP



Erklärung über Bauausführung und Leistung (EBL)
Declaration of Design and Performance (DDP)

Gleitschirm - Paraglider

- | | |
|--|--|
| 1. Musterprüfung / Type testing | EAPR-GS-7520 |
| 2. Gerätemuster / Test sample: | VOLT M |
| 3. Musterprüfinhaber / Type testing holder: | AIRDESIGN GmbH
Rhombergstraße 9, 3.Stock
A-6067 Absam
AUSTRIA |
| 4. Datum der Musterprüfbescheinigung / Date of type testing certification: | xx.xx.xxxx |
| 5. Nachgewiesene Normen und Verfahren:
Certified standards and procedures | LTF 91/09
EN 926/1 & 926/2 |

6. Merkmale und Betriebsgrenzen / Characteristics and limitation

6.1.	Gerätegewicht (ohne Packsack) System weight (without carrier bag):		6,3 kg		
6.2.	Zulässiges Startgewicht min and max Min. and max. Takeoff weight	min:	90 kg	max:	105 kg
6.3.	Anzahl der Sitze Number of seats		1		
6.4.	Klassifizierung Classification	LTF	x	EN	x
6.5.	Gurtzeugbeschränkung Harness limitations		GH		
6.6.	Fußbeschleuniger Foot accelerator		Ja / Yes		
6.7.	Trimmer (von Hand zu bedienen): Trim device (hand operated):		Nein / No		
6.8.	Projizierte Fläche Projected area		22,41 m²		
6.9.	Windschlepp geeignet Suitable for towing		Ja / Yes		

7. Tragegurtlängen / Riser length mm:

	A	A3	B	C3	C1/2
normal	520	520	520	520	520
Beschleunigt / Accelerated	350	370	390	450	510

8. Leinenlängen / line length: mm

	A	B	C	D	E	BR
1	7380	7335	7425	7540		8190
2	7340	7290	7380	7500		7980
3	7310	7255	7340	7455		7855
4	7330	7275	7355	7465		7735
5	7280	7230	7305			7690
6	7240	7195	7265			7540
7	7200	7155	7220			7490
8	7215	7170	7235			7460
9	7160	7140	7200			7410
10	7095	7075	7130			7375
11	6950	6935	6985			7310
12	6925	6910	6955			7320
13	6875	6865	6890			
14	6885	6860	6880			
st15	6520	6505	6565			
st16	6415	6465				
17						
18						
19						

9. Art der Messung / Kind of measuring: **von innen nach aussen, / from center to tip**
10. Besonderheiten / particularities: **keine / none**
11. Betriebsanweisung in der Fassung vom:
Manual version dated **Rev. 1 - 01.03.2012**
12. Nachprüfanweisung in der Fassung vom:
Periodical check instruction version: **Rev. 5 -01.03.2012**
13. Nachprüffristen / Periodical checks: **alle 2 Jahre oder 150 Flugstunden
every 2 years or after 150 flight-hours**

Bad Grönenbach, xx.xx.2012

Diese Erklärung wurde elektronisch erstellt und ist ohne Unterschrift gültig
This explanation was provided electronically and is valid without signature

Erklärung über Bauausführung und Leistung (EBL)

Declaration of Design and Performance (DDP)

31.05.2012



EBL-GS-DB - Stand 01.11.2010 - V4

Gleitsegel - Paraglider

Musterprüfung / Type testing

EAPR-GS-7577/12

Gerätemuster / Test sample

VOLT L

Musterprüfinhaber / Type Testing Holder

AIRDESIGN GmbH.
Rhombergstraße 9, 3 Stock
6967 Absam
AUSTRIA

Datum der Musterprüfbescheinigung / Date of type testing certification	31.05.2012
Art der Prüfung / Type of testing	vereinfacht
Bezug / reference	7520

Nachgewiesene Normen und Verfahren <i>Certified standards and procedures</i>	LTF 91/09 & EN 926
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Gerätegewicht ohne Packsack / System weight without bag - kg	6,9 kg
Zulässiges min. Anhängelast / Allowable min. payload	100 kg
Zulässiges max. Anhängelast / Allowable max. payload	125 kg
Anzahl der Sitze / Number of seats	1
Klassifizierung / Classification	C
Fußbeschleuniger / Foot accelerator	ja / yes
Trimmer (von Hand zu bedienen) / Trim device (hand operated)	nein / no
Schulungstauglich (Herstellerangabe) / suitable for training	Nein / no

Verwendung von Falteinen zur Flugerprobung/Foldinglines	keine / none
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Tragegurtlängen mm/ Riser lenght mm	A	A2	B	C	D	E
Offen-normal / open-normal	530	530	530	530	530	0
Beschleunigt / Accelerated	340	360	400	460	490	0
Geschlossen / closed	0	0	0	0	0	0

Leinenlängen / line length: mm

	A	B	C	D	E	Br
1	7730	7670	7755	7870		8580
2	7690	7630	7710	7830		8360
3	7650	7595	7665	7780		8235
4	7675	7615	7685	7795		8110
5	7620	7565	7640			8055
6	7580	7525	7600			7900
7	7540	7485	7550			7860
8	7555	7505	7565			7830
9	7495	7460	7535			7780
10	7425	7400	7470			7745
11	7275	7255	7320			7675
12	7250	7230	7285			7675
13	7200	7175	7215			
14	7205	7165	7195			
15	6830	6810	6860			
16	6725	6760				
17						
18						
19						
20						
21						
22						
23						
24						
25						

Art der Messung / Kind of measuring	Fangleinen ohne Tragegurt und Schäkel bis Untersegel unter 50N Zuglast / Lines without riser and links up to lower surface undertension load 50N
-------------------------------------	---

Besonderheiten / particularities	keine - none
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Betriebsanweisung in der Fassung vom / Manual version dated	
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Nachprüffristen / Periodical checks	
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Bad Grönenbach, 31.05.2012

Diese Erklärung wurde elektronisch erstellt und ist ohne Unterschrift gültig
This explanation was provided electronically and is valid without signature

D. SERVICE BOOKLET - SERVICEHEFT

Model: **VOLT**

Size/Größe: S SM M L

Serial number/Seriennummer: _____

Colour/Farbe: _____

Date of purchase/Kaufdatum: _____

Date of first flight/Erstflug: _____

Pilot (1. Owner/ Halter)

First name/Vorname: _____

Family name/Nachname: _____

Street/Straße: _____

City/Wohnort: _____

Post code/PLZ: _____

Country/Land: _____

Telephone/Telefon: _____

Fax: _____

Email: _____

Pilot (2. Owner/ Halter)

First name/Vorname: _____

Family name/Nachname: _____

Street/Straße: _____

City/Wohnort: _____

Post code/PLZ: _____

Country/Land: _____

Telephone/Telefon: _____

Fax: _____

Email: _____

Pilot (3. Owner/ Halter)

First name/Vorname: _____

Family name/Nachname: _____

Street/Straße: _____

City/Wohnort: _____

Post code/PLZ: _____

Country/Land: _____

Telephone/Telefon: _____

Fax: _____

Email: _____

Please ensure that your Service centre signs after each check, here.

Bitte achten Sie darauf, dass Ihr Service-Betrieb nach jeder Inspektion abstempelt und unterschreibt.

Service 1

Date/Datum: _____

Type of service/Art der Serviceleistung

stamp - signature
Stempel - Unterschrift

Service 2

Date/Datum: _____

Type of service/Art der Serviceleistung

stamp - signature
Stempel - Unterschrift

Service 3

Date/Datum: _____

Type of service/Art der Serviceleistung

stamp - signature
Stempel - Unterschrift

Please ensure that your Service-station signs after each check here.
Bitte achten Sie darauf, dass Ihr Service-Betrieb nach jeder Inspektion abstempelt und unterschreibt.

Service 4

Date/Datum: _____

Type of service/Art der Serviceleistung

stamp - signature
Stempel - Unterschrift

Service 5

Date/Datum: _____

Type of service/Art der Serviceleistung

stamp - signature
Stempel - Unterschrift

Service 6

Date/Datum: _____

Type of service/Art der Serviceleistung

stamp - signature
Stempel - Unterschrift

E. Registry Of Product - Produktregistrierung

Model/Modell: VOLT

Size/Größe: S SM M L

Serial Number/Seriennummer: _____

Date of Purchase/Kaufdatum: _____

First Flight/Erstflug: _____

Check Flight made from/Eingeflogen von: _____

Customer/Käufer:

Family Name/ Nachname: _____

First Name/Vorname: _____

Address/Adresse: _____

Tel: _____

Fax: _____

Email: _____

Stamp of Distributor and Signature/Händlerstempel und Unterschrift

Product Registration: cut off and send to AIRDESIGN, or register online at: www.ad-gliders.com
Produktregistrierung abtrennen und einschicken, oder online registrieren unter:
www.ad-gliders.com