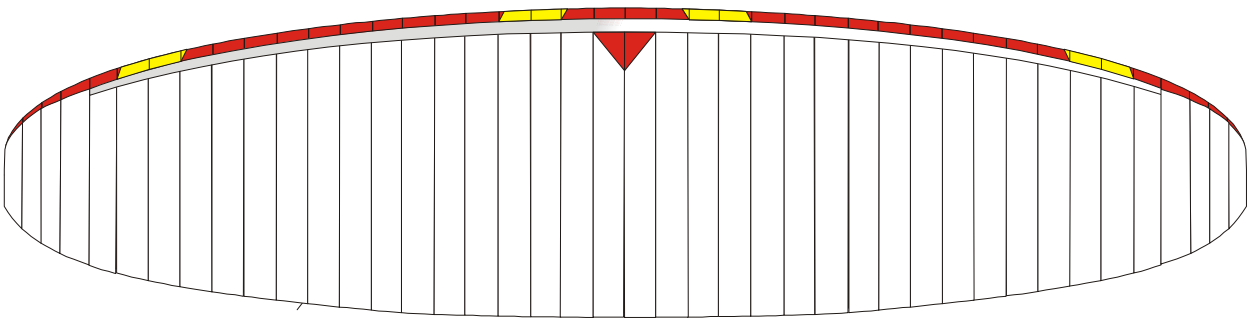
User Manual

AIR SYSTEMS
paragliders & kites

Phoenix

(Also known as LoveR)



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Congratulations!
It was a wise decision to buy an Air Systems paraglider!

Many thanks for your confidence in our fine air products and we are sure you will enjoy every moment in the air with your new *Phoenix*.

The *Phoenix* is a paraglider of the most modern design and is manufactured with the highest precision. This new glider is an excellent compromise between pleasure, performance and safety, as reflected by the AFNOR Standard rating it has received.

We highly recommend you to read this manual through carefully as the information provided here will enable you to learn some important aspects about your new glider.

W A R N I N G

Paragliding is a dangerous sport that can, and often does, result in injury or death. Do not attempt to fly this aircraft until you have received the proper training from a licensed instructor. Training will still not guarantee your safety and care must be observed at all times whilst operating this equipment. You alone must judge the flying conditions, including weather, wind, congestion, launching areas and landing area before you fly. Paragliders require regular maintenance and checks and these should be performed each time the glider is unpacked. Your glider should give many safe, happy hours of use but over time the materials it is constructed from will degrade due to solar radiation, dirt, sand, dust, water, oil, wind and material stress. All of these factors will affect the performance and safety of the glider, thereby increasing the risk of injury or death. Read this manual before you fly. Never modify your glider in any way as this will void the warranty, safety and AFNOR rating of the glider. Always wear a helmet and protective clothing and continually update your training with the latest techniques from a licensed school.

G L I D E R N A M E

The *Phoenix* received its name from the mythological bird. The glider was originally called the ***LoveR*** (Love Air) and is certified with AFNOR as such. This you will see on the AFNOR certificate. It was decided to market the glider outside of the home country of Slovenia with a new brand name and colour scheme. Because of this re-branding it was felt the glider deserved the name Phoenix, as it was being reborn, just like the mythological bird.

P h o e n i x

Because it is easy to use and safe to fly, the *Phoenix* is a glider for pilots that have successfully completed their early school training. Its exceptional performance capabilities will also be highly appreciated by the experienced pilot allowing them to expand their cross-country potentials. The *Phoenix* will help the pilot to develop his feeling and to optimise his flying skills with its very precise handling and informative feedback.

T E C H N I C A L D E T A I L S

Phoenix	SMALL	MEDIUM	LARGE
Number of cells	42	42	42
Area projected / m2	23,2	25,6	28,5
Aspect ratio projected	4,0	4,0	4,0
Wing span real / m	9,2	10,2	10,7
Lines strength / kg	80/160/200	80/160/200	80/160/200
Average line length / cm	612	643	679
Total line length / cm	358	376	391
Max. depth of wing / cm	281	285	291
Weight of wing / kg	6	6,5	7
Take off weight / kg	65 - 85	80 -105	95 -125
Naked Pilot weight / kg	50 -70	70 - 85	80 +
Certification	**AFNOR Standard**	**AFNOR Standard**	**AFNOR Standard**

P R O D U C T I O N

We use the latest and best materials available in the world. The **Air Systems** factory is well known throughout the world for our high quality standards. We have 25 years of experience in the field of air products construction and building and our R&D team works very hard to ensure production will continue to such high standards. We have a team of test pilots that continuously updates our designers with information about real gliders in use, pilot feedback, deteriorations processes, performance and stability figures - all with just one purpose; To ensure you can buy the best available gliders on the market today!

T H E M A T E R I A L S

Air Systems products are made from best materials available in the world today. We extensively test all the chosen materials for their qualities long before we decide to use them in our production.
We perform deterioration tests to ensure you excellent longevity and before our glider reaches you, its design has undergone demanding quality tests.
Each glider is test flown by our test pilot before it departs our factory to be delivered to you.

Upper and lower surfaces, cell ribs:
Nylon Porcher Marine New Skytex medium, 44 gr/m2

Reinforcement of the leading edge and trailing edge:
Polyester/Mylar 25 mm

Reinforcement of the leading edge lower surface:
Polyamid 12 mm

Suspension lines:EDELRID
Aramid HMA sheathed, polyester Kern; (80 kg), (160 kg), (200 kg)

Risers:
Polyester Guth&Wolf 25 mm, 2000 kg

Quick links:
Austrialpin mini fly, 1000 kg

Stitching thread:
Polyester

CARE & MAINTENANCE

The lifetime of the canopy can vary considerably depending upon the care that you take with its use and maintenance. Other than ultra violet rays the principal causes of wear are transport and storage.

- Do not pack the canopy very tightly.
- Avoid violent shocks to the upper surface (e.g. when the canopy falls to the ground whilst ground handling) or any rubbing against the ground as these wear the stitches and the coating.
- Do not leave the canopy folded for several days if it is either damp or tightly packed.
- Immediately remove any salt or sand that enters the cells, as this enters the stitches and causes wear during each successive folding.
- Only clean the canopy with soft water and a neutral soap. Allow the canopy to dry in a place that is dry and airy but not in direct sunlight.
- Following a crash or violent landing on the leading edge, always have the canopy checked by your sales agent. The canopy should be checked in a similar fashion if you note a deterioration of performance or behaviour.
- Avoid moving your glider too quickly from a cold to a warm location without giving it some air - water can condense on the glider as a result.
- Allow us to conduct a general check annually.

The life of a wing may vary in big proportion according to the care given to the
utilisation and maintenance.

Brakes:

There should be a minimum 15 cm free play between the brakes released position and the start of action on the canopy. This will prevent the trailing edge from being deformed when using the speed system. It is better to have long brake line and to fly with a wrap around the hand than to have too short a brakes resulting in deterioration in glider performance. We strongly advice not to shorten your brake lines more that 7 cm from the factory setting. You can seriously change gliders response to brake input (spin and stall danger).

Speed System:

Use of the speed system allows you to fly with an even greater speed range. As the A, B and C risers are being pulled down, the canopies angle of attack is reduced and you fly faster. Sink rate will also be increased when flying with higher speeds. You have to learn how to use the speed system in order to fully understand its advantages. As we are sure you have learned in the school, the glider is less stable when operating the speed system therefore ensure you have enough height above the ground when using the speed system! Some manoeuvres are more dynamic when using speed bar. When flying in turbulent conditions we advice you not to use more as one third or half of available speed bar travel since the glider is more prone to collapse in such a configuration.

Active piloting:

As all paragliders, the *Phoenix* will prefer to be flown actively. That means you have to keep your weight centred beneath the wing. If the wing starts to surge forward, brake it; if it drops behind your head (when entering a thermal for example), let the brakes up. It is recommended to feel some pressure in the brakes all the time, in such a manner you will be able to predict and to prevent the closures, even before they occur.

Start Check:

- Lines free
- Canopy open
- Harness and helmet buckles properly closed
- Check of reserve parachute pins and bridle
- Wind direction and strength observed and evaluated.
- Airspace and visibility clear

Take off:

The *Phoenix* is suited to forward and reverse inflations.
Lay the canopy out so as to maintain its elliptical form at the leading edge. Hold the risers below the large quick link then advance until the suspension lines are under light tension. The *Phoenix* is equipped with split 'A' risers. By holding just the front riser on each side for inflation the centre of the glider will inflate before the tips to give a cleaner, easier inflation.

Position yourself in a central position relative to the canopy. At the start of take off, gently accelerate and guide the risers until the canopy is above the head, without either pulling down or pushing the risers excessively forward, (this would pull the leading edge down resulting in an obstructed airflow to the cells). The canopy should rise progressively and evenly. The canopy will cease to rise if not guided by the risers. The *Phoenix* inflates easily and rises without any overshooting.

Launching by winch:

The *Phoenix* is suited to tow or winch launching. The glider does not require any modification or particular manoeuvre for this type of launch.
Winch launch is only permitted if:

- The pilot has a winch / tow endorsement.
- The winch system is certified for use with paragliders.
- The operator has fully learnt how to winch paragliders.

Normal flight:

The *Phoenix* glides best with brakes in the hands up position. This is the so-called trim speed. Lightly applying brakes will reduce the sink rate but also reduce the speed and best glide. We recommend that flights across critical areas (such as crossings over water) be flown at the best glide position, ie Trim Speed. When flying through turbulence the application of a small amount of brake will increase stability. More experienced pilots will understand the value of Polar Curves and will be better able to understand the importance of brake positions.

Turns:

The *Phoenix* possesses very comfortable brake pressure. It will respond to brake application in an immediate and proportional manner to the amount of brake applied.
To familiarise with this make your first turns in a gradual and progressive manner. To make the most efficient turns in thermal conditions, having found the core of the thermal we advise you to fly with approx 30% brakes and to control the radius of your circle with the inside brake; it is unnecessary to release the outside brake.

FAST DESCENT METHODS

Big ears:
The *Phoenix* has a special baby 'A' riser for easier big ears manoeuvre.
It has to be pulled down in order to collapse wing tips on each side. This is best done one side after the other, not together.
You will be able to steer the *Phoenix* with weight shift. Reduction should be at least 1/3 of the wing surface. A descent rate of 3 - 4 m/s is achieved.
For faster descend we recommend spiral dive.
Important: do not attempt spiral dives with big ears as this manoeuvre results in extremely high loads and can unduly stress the glider.

Using speed system with big ears:
In order to quickly reduce height and fly away from danger we recommend the following: After applying big ears push the speed bar in order to reduce angle of attack. You will descent faster.

Spiral dive:
The spiral dive is entered into by gradually applying brake on one side. The desired bank angle is controlled by the amount of brake applied. This should be supported by weight shifting. At the same time the pilot's head and field of view should be oriented in the direction of the turn.
To exit the spiral raise the inside brake gradually. Depending on the steepness of the spiral it is possible that the glider could do another rotation even after releasing the brake.
Sometimes modern gliders that are aeronautically efficient, tend to stay in the rotation, particularly if the risers are set too close together. If that occurs, you have to stop the spiral dive with small amount of opposite (outer) brake.

B line stall:
It seems that B stall is no longer favourite manoeuvre for fast descents.
For obvious reasons – the glider loses lift. The manoeuvre can unduly stress and damage the glider over time. If however you still would like to try it then take the B line quick links and pull them firmly down towards shoulder level.
A descent rate of 5 – 7 m/s is achieved. Release the risers quickly. The *Phoenix* will then immediately resume normal flight.

We strongly advise against other (older) fast descend methods, such as A-stall, full stall etc. They can be dangerous are unnecessary.

All fast descent methods should be practised first. Only in that fashion you will be able to feel confident enough in the air. We strongly recommend you to take part in an SIV course.

Symmetrical or asymmetrical collapses:
The *Phoenix* conveys a highly satisfying solid feel and an active flying style will virtually eliminate collapses. However, it is the nature of our sport that collapses will inevitable occur. Larger collapses (over 50%) are characterised by a reasonably dynamic turn, which is easily controlled. For these situations we recommend the following:
Weight shift to the open side. Try to rotate with any ensuing turn so as to reduce the potential for the risers twisting (sitting up in the harness may help). This will maintain airspeed and internal pressure promoting a fast reopening. Depending on the severity of the turn apply the brakes on the open side so as not to enter a spiral dive but be aware of creating a potential stall if too much brakes is applied. The object is to fly the glider in a desirable direction (avoiding obstacles) and then reopen the collapsed side using a generous pumping action.

Frontal Stall:
This can occur when flying in turbulent conditions. The leading edge of the glider collapses down and in most cases it reopens immediately. You can slightly pull down both brakes symmetrically in order to help the glider reopen.

Parachutal stall / full stall:
The progressive application of both brakes will reduce the forward speed as is evidenced by the reduction of the presence of wind noise. After minimum speed the glider goes into a momentary phase of parachutal stall which, if the brakes are pulled further down, is followed by a full stall with the glider falling behind the pilot.
The *Phoenix* does not possess a stable parachutal (or deep) stall.

Stall and full stall can be very dangerous when performed near the ground and should only be trained under SIV training courses (and over the water).
Wrong release of full stall can result in canopy surging beneath the pilot. Release of the brakes should only be whilst the glider is in front of the pilot.

Spin:
The *Phoenix* is very resistant to spin, but if you try very hard to enter into a spin, perhaps you might succeed. If that occurs, release the pulled brake and be ready to dampen the dive, as glider will surge forward.

Landings:
We recommend you to select a landing site that you are familiar with that has no obstacles. Always land directly into head wind. Approach the desired landing spot and, after you have descended enough, get out of the harness and be ready to touch down. When you are 1 – 1,5 m above the ground gently pull both brakes fully and compensate the gliders forward speed by running as necessary. Try to avoid the canopy falling ahead of you onto the leading edge since this can damage the glider internally.

G L I D E R C H E C K A N D R E P A I R:

Every glider should undergo a detailed factory check every year. Materials used can change through the time and use, so we strongly recommend you to let us inspect your glider annually for deterioration, inspection and lines length measurements and make any necessary repairs. This is inexpensive and can greatly extend the life of your glider.

If you have an accident (tree landing, flying into any obstacles or objects etc.) immediately send your glider back to our factory or to your retailer agent. Problem lies in the fact that broken or over tensioned lines are virtually impossible to see on your own, no need to stress the point that flying such a glider can result in fatal consequences.

Smaller holes or bruises on the canopy however can be taken care of by the pilot himself, with the use of special repair tape.

Never replace broken lines yourself, since original lines are measured and cut under precise tension. You have to be supplied with original Air Systems replacement lines.

Harness:
The *Phoenix* can be flown with any harness type.
However it was developed and tested with Air Systems harnesses that offer the best possible balance between efficiency and security.

We would like to remind you that different harnesses have different geometrical solutions, thus resulting in slightly different behaviour of the glider. The most important thing with the harness is the positioning of its attachment points and the arrangement of the straps. The lower the attachment points are, the easier it is to turn the glider when weight shifting. Movements of the glider are directly transferred to the harness and the pilot.
The same importance goes for the chest strap – it defines distance between the attachment points. The more open it is (we recommend distance of 40 – 48 cm), the more information you will receive through the flight and also better turning capacity. Smaller distance between attachment points (< 35 cm) would result in more solid feel of the glider and worse reopening behaviour after collapse. DO NOT DEVIATE SIGNIFICANTLY FROM THE SETTING THE GLIDER WAS TESTED AT, AS THIS CAN BE DANGEROUS. The test setting can be found on your AFNOR certificate, supplies with all *Phoenix* gliders.

We strongly recommend the use of a harness without any cross bracings (GH type).
Don't even think of using any harness without quality back protection.

G U A R A N T E E

The *Phoenix* is guaranteed against any manufacturing fault for a period of one year.
The guarantee will not cover:
• Damages due to: lack of cleaning or care, poor use, accidents, overloading, use in extreme conditions (intense heat or cold) or the inexperience of the pilot.
• Normal wear from regular use.
The guarantee will be extended annually by a further year up to a maximum of three years or 300 hrs airtime, (whichever is achieved first), providing the glider receives an annual inspection by return to our factory, via our agent.

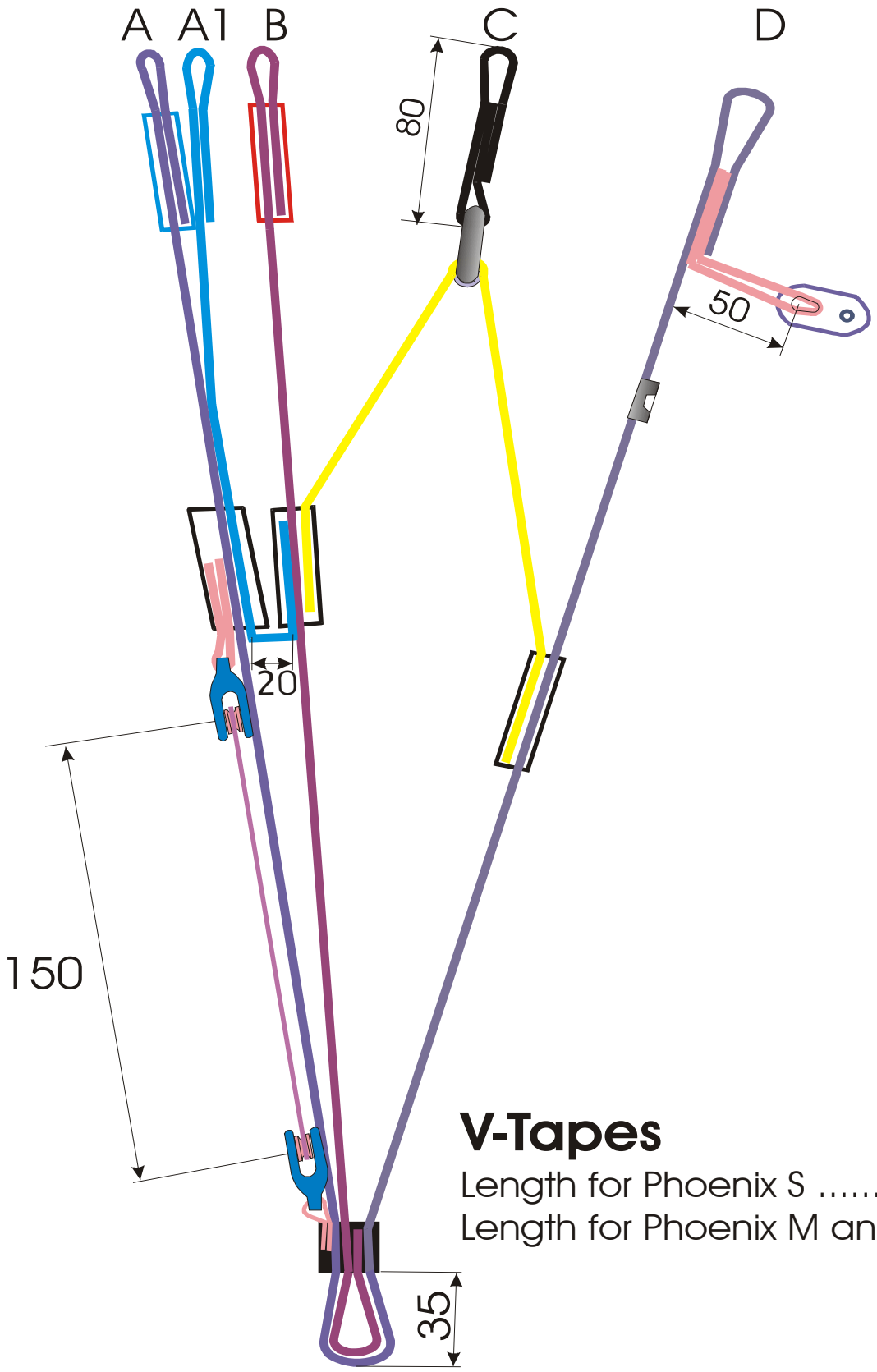
C E R T I F I C A T I O N

The *Phoenix* carries *SHV STANDARD* test certificate for all 3 sizes.

Our R&D team believes that testing results should not be overestimated, since they are performed under controlled environments and in smooth air conditions.

Certificate results indicate only passive security of the glider. Much more important, from our point of view, is the capability of the glider to perform well in real flying conditions with an active pilot. Real security lies with the pilot and his/her skills.

Pilots should never forget that paragliders have to be piloted actively, whatever the conditions in the air are.



V-Tapes

Length for Phoenix S 50cm
Length for Phoenix M and L 55cm

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