PARAGLIDERS USA

Elektra Owner's Manual

VERSION 1.0 – Updated November, 2014

Velocity Paragliders USA

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PARAGLIDERS USA

Thank You From Velocity...

Thank you for choosing the Velocity Elektra Paraglider. We strive to produce the finest gliders available, and hope this Elektra will provide you with years of amazing flight experiences. This manual will provide the necessary information to properly operate and care for your glider. Please read this entire manual before using your glider. A thorough understanding of this manual will help to keep you safe and maximize the Elektra's full potential.

Please retain a copy of this manual for future reference, and to pass it down to the next owner, should you decide to sell this glider.

Fly safe, and enjoy all this sport has to offer.

-The Velocity Team

SAFETY NOTICE:

This sport is as safe as YOU make it. By purchasing our equipment, you are fully responsible for being a certified Paragliding/Paramotor Pilot, and accept all risks inherent with this type of activity (including possible injury or death). Using this equipment in any other way than it was intended greatly increases these risks. BlackHawk Paramotors USA Inc, Velocity Paragliders USA, its employees, representatives, or dealers, shall not be held liable for personal, third party, or property damages or injuries in any way.

Note: The Velocity Elektra was designed for use by experienced and qualified pilots. Please talk to your Instructor and make sure the Elektra is appropriate for your skill level.

If you do not fully understand all contents of this manual, contact your primary Paragliding or Powered Paragliding Instructor or qualified Velocity Dealer prior to use. Pilot safety is paramount and our first priority.

Make sure you completely read and fully understand the entire contents of this Velocity Elektra owner's manual prior to using this equipment in any way.

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1. ABOUT VELOCITY PARAGLIDERS USA:

Velocity welcomes you to the next generation of Paragliders. We provide pilots around the globe with the most innovative, and precisely-designed gliders available. Through years of expert analysis and feedback from world-class pilots, Velocity has made its mark as one of the leading manufacturers of Paragliders.

Our line of products cater to both free-flight and motored aviation enthusiasts. Our beginner-friendly gliders boast extreme stability and safety without sacrificing performance. Our intermediate and advanced gliders have won global endorsement from some of the world's top pilots.

Technology rapidly changes in this sport, and Velocity's team of expert engineers stay on top of the latest industry breakthroughs. Our customers can expect the absolute best product, at unbelievably affordable prices. In fact, compare the cost and quality of our gliders compared to others on the market that cost over $4,000! With friendly, US based customer support, we ensure that questions are answered promptly and with integrity.

We will always recommend gear that is customized to each individual's needs, and provide a product that will last for years to come. Additionally, we specialize in custom glider colors or logo printing to give you that "personal look" to your Paraglider! Simply contact us and tell us what you would like. If you are in the market for a new Paraglider, we hope you consider one of our amazing products. We look forward to earning your business.

-Mike Robinson, Velocity Paragliders USA

2. INTRODUCING THE ELEKTRA PARAGLIDER:

We have provided our customers with exactly what they asked for… "A high-performance crossover wing that will fit the needs of both motored and free flight pilots." The NEW versatile Elektra Paraglider made its debut at the 2013 Salton Sea Fly-In, and pilots were lining up to test-fly it. Since then, it has become our best-selling, most sought-after glider for both upper-beginner and advanced pilots. Top-rated pilots from around the world are raving about the Elektra's incredible lift characteristics, one of them stating, "It's the closest feeling to free flight I've ever experienced with a motor on my back!" As with all of our products, safety is never sacrificed for performance. Boasting an amazing 9.4:1 glide ratio, the efficiency of this wing will allow you to use less fuel, stay in the air longer, and reduce the wear on your engine. The Elektra is constructed to the highest standards from the lightest, most durable materials available in the industry.

For Pilots Who Want it All…

The Velocity Elektra is the perfect glider for motored and non-motored soaring. Pilots who are new to cross-country flight will enjoy the Elektra's ease of operation and responsiveness to pilot input. Experienced cross-country pilots can expect exceptional performance and speed, without sacrificing the safety features Velocity is known for. The Velocity Elektra is one of the most versatile gliders on the market today. Many Powered Paragliding pilots have ventured into the realm of free-flight with the Elektra due to its capability of handling all types of flight. The Elektra is ideal for ridge soaring, hill thermaling, cross-country flight, Powered Paragliding, or simply learning how to kite. Versatility, stability, performance & safety – all rolled into one amazing glider.

Featuring the Latest Technology...

Velocity Paragliders has incorporated many new features in the design of the Elektra, making it one of the most modern gliders available. Each new design feature, down to the smallest detail, was incorporated with versatility and performance in mind. As previously mentioned, safety was not sacrificed and is our number one priority.

Velocity has shortened the total length of the lines and their thickness in order to reduce drag. Less lines means less weight. These thinner, unsheathed lines, are located on the upper cascade of the glider. The internal composition of the glider has been vastly improved compared to that of previous glider designs, therefore increasing stability by a large margin. Velocity's Team Pilots who test-flew the Elektra noticed the glider's increase in performance and stability right away.

The Elektra's leading edge has been reinforced with new state-of-the-art battens, providing better performance and amazing stability in all weather conditions. A new hi-tech lightweight fabric has been introduced on the non-load-bearing ribs.

Responsiveness in relation to brake pressure has improved with the implementation of a new brake-line configuration. Pilots will notice a fast and consistent glider response while turning. This feature, as well as others, increases the Elektra's efficiency of climb, even in low-wind conditions. The brake handles feature an attached swivel to prevent the brake line from twisting after use.

A newly-added unique acceleration system was incorporated to enhance the pilot's feedback through the use of a speedbar. Less pressure is needed to engage the speedbar than previous glider designs. This system helps the pilot to be more aware of the glider's specific angle of attack, while improving the overall glide ratio.

All Velocity Paragliders are constructed from the strongest, lightest, and most modern materials available. This ensures a long-lasting and durable glider. By purchasing the Velocity Elektra Paraglider, you can be assured you are getting the best possible glider of its class.

Manufacturing Standards...

Every Velocity Paraglider is manufactured to the highest standards, by one of the most longstanding glider manufacturers in the world. Decades of industry experience, combined with highly-skilled staff produce these one-of-a-kind Paragliders. Extreme care goes into the construction of each glider, ensuring precise design, unmatched quality, and pilot safety. Stringent quality control tracks the materials used in constructing each glider, guaranteeing authenticity and consistency. These measures are taken to provide our customers with the confidence that they are flying the best Paraglider possible.

3. BEFORE YOU FLY:

Pre-Flight Safety Inspection...

Upon taking delivery of your Elektra Paraglider, it is recommended that your Flight Instructor or Dealer conduct a test inflation, followed by a test flight. The Velocity Elektra is delivered with a speed-bar system, stuff-sack, compression strap, repair tape, and this manual.

Speed Bar System...

The Elektra's speed-bar system increases maximum flight speed. This is accomplished by lowering the glider's angle of attack, allowing it to penetrate the wind more sharply. The speed-bar system is foot-operated, and guided by pulleys. Additional speeds of 6-8 MPH (10-13 km/h) can be attained with the speed-bar fully engaged.

NOTE: It is important that the speed-bar system be correctly installed. This includes the proper routing of the system through the harness, and proper attachment to the risers via the provided hooks. The adjusted length of the speed-bar should be initially done while on the ground by sitting in the harness. Make sure your legs are fully extended when the speed system reaches its full length of travel. Having a second person hold the risers taut while conducting this adjustment is helpful. Additional fine-tuning may be required after your test flight and should be done while on the ground. If you have any questions, as previously stated, talk to your Flight Instructor or Dealer prior to flight.

Brake Line Adjustment...

The primary brake lines on the Velocity Elektra will need to be fine-tuned to the perfect length, based on the type of use, and this should ONLY be done by a qualified Instructor or Dealer. Different pilots desire different brake-line lengths, specific to their flying style and/or equipment (Weight-shift, Powered Paragliding, Paragliding, High-Hang Points, Quads, Trikes). Talk to your Instructor about which length is recommended for your personal needs, and make sure to kite the glider after adjustment / prior to flight.

In some cases, pilots may prefer to fly with a half-wrap on the brakes or by holding the toggles on the knot. This is commonly done on cross-country flights, or when greater input is required for a specific maneuver.

If for some reason you need to make adjustments to suit your personal needs or flying style, it is highly recommended that you not exceed 2 cm (0.8 inch) of adjustment with each test flight. Drastic adjustments may result in over or under-responsiveness of the glider to inputs. On average, there should be a minimum of 10 cm (4 inches) free brake travel when the glider is flown hands-free. Lack of proper free-travel could result in unintentional brake input being applied, especially when the speed bar is fully engaged. A proper knot for the brake toggle attachment is also important for pilot safety. We recommend a “sheepshank,” “double sheepshank” or “bowline” knot.

Examples of Common Knots...

Seek help from your Flight Instructor or Dealer if you have any questions or need help with adjustments. The following knots are for visual reference only. YouTube has demonstration videos which show how to tie these knots, however, we recommend your Flight Instructor or Dealer personally show you how to tie them, and then supervise you through many practice knots.

Bowline Knot – Most commonly used:

Sheepshank Knot:

Double-Sheepshank Knot:

Stuffsack...

Velocity Paragliders includes a high-quality and durable ripstop stuffsack with the purchase of your Elektra Paraglider. Proper storage of your glider can increase its longevity. Make sure to store your glider out of the sun and in the provided stuffsack when it's not in use. The Elektra rucksack features a 160L capacity (200L for XXL stuffsack), an ergonomic shape/design for carrying comfort, and provides for an even distribution of weight. Prior to placing your glider in the rucksack, please have a qualified Flight Instructor show you the proper way of doing so. This will prevent line tangles and possible damage to the glider.

Harness Use...

The Elektra Paraglider is compatible with virtually all types of harnesses. There are many types of harnesses on the market today, and you should always check with your Flight Instructor to make sure your harness is acceptable for use. This includes its condition, safety features, and flightworthyness.

The adjustment of your flight or training harness can affect the performance and stability of the Paraglider. The adjustment of your chest strap controls the distance between carabiners and should be initially done under the supervision of your Flight Instructor. When your chest strap is in more of a closed position, the glider has a greater tendency to maintain a stable spiral. Excessive lengthening of the chest strap provides greater feedback from the glider and can decrease stability. There is no need to over tighten the chest strap while flying the Elektra. It is an amazingly stable glider – much more so than many other gliders out there.

Pilot Weight Range...

It is imperative that the Elektra is flown within the weight ranges provided in the reference section of this manual. The weight ranges listed are the TOTAL WEIGHT while in flight... This INCLUDES the weight of the pilot, glider, harness, accessories, and Paramotor if flying with a motor. If you are in doubt, the easiest way to check is to simply stand on a weighing scale with all your equipment.

Pre-Flight Safety Considerations...

In order to fly the Velocity Elektra Paraglider, you should:

- Conduct a complete pre-flight inspection of ALL your equipment – not just the glider.
- Have proper & thorough training from a certified Instructor.
- Possess sufficient practical, theoretical, and general flight experience for this class of glider.
- Ensure you have the proper licensing or insurance needed to fly in your area.
- Be in the right state of mind (unaffected by extreme stress, and not under the influence of any substance whatsoever). Check with your doctor if taking any prescription medication.
- Only attempt to fly in conditions appropriate for your skill level and equipment.
- Always wear a helmet and any other protective gear your Flight Instructor recommends.
- Use a certified harness, approved for use with the Elektra by your Flight Instructor.
- Fly with a Reserve Parachute and have a full understanding of deployment procedures.
- Make sure your are physically able to handle the demands of this activity on your body.

4. FLYING THE VELOCITY ELEKTRA PARAGLIDER:

Prior to flight, we strongly recommend practicing kiting with the glider in the area and conditions you plan to fly in. This includes multiple inflations of the Elektra to in order to become comfortable with the gliders responsiveness. Every glider responds differently, including different sizes of the same model of glider.

Preparation for Flight...

It's important to follow a consistent method of pre-flight checks, setting up of your glider, and preparing for flight. The following are some things we recommend:

- Once you arrive at the given site you will be flying from, be sure to check all conditions that may affect flight: Wind speed & direction, airspace, thermal cycles, patterns of turbulence, etc.
- Inspect all parts of your glider, harness, reserve chute, helmet, communications gear, and any other equipment like Powered Paragliding gear.
- Make sure your launch/landing site does not contain any obstacles, and is large enough to accommodate you by a generous margin.
- Properly lay your glider out using the method you were shown by your Flight Instructor. Double check your lines and risers to make sure they are clear.
- Put your helmet and harness on, making sure ALL straps are fully secured.
- When connecting your glider to your harness, make sure there are no twists or loops in your lines or risers.
- If using the speed bar system, make sure all connections are secure, and all lines are free of obstructions.
- Conduct a final line check by pulling gently on the risers or lines to ensure that each and every line is in perfect working order. Ensure there are no knots, tangles, or branches/rocks interfering with your glider lines. Pay close attention to any signs of wear, stretching, or damaged lines. If you have ANY concerns, have a Certified Flight Instructor or Authorized Dealer inspect your glider before use.

Basic Pre-Flight Check List:

- Reserve parachute: Connected properly & handle/pins are intact
- Buckles are closed/secure (including helmet & harness points)
- Lines are all clear
- Canopy is open and facing directly into wind
- Airspace clear – no other pilots launching/landing

Launching Your Elektra...

Remember: Kiting and ground-handling is a perishable skill – If you don't use it, you lose it! Practice kiting regularly, even if you are not flying.

Light or Zero-Wind Launch:

The Velocity Elektra was designed to inflate steadily in light or no-wind conditions. As you were shown in your training, simply use the A-risers to guide the glider up, keeping your arms bent and hands at shoulder level. Your arms should rise upward in an arcing-motion. Wait for the glider to fully inflate and rise above your head (don't push or force the risers). The Elektra wants to fly... There is no need to pull hard on the risers. Run with your glider into the wind as it's guided up over your head. Make sure the canopy is fully-inflated and all lines are clear before you commit to take-off. If there is any question or irregularity prior to being airborne, abort the launch right away by stalling the glider. On steep free-flight launches, stall one side of the glider while running parallel to the hill. If one side of the glider comes up before the other (and the situation is easily recoverable), run towards the lower side instead of fighting against the force. An impulse-launch (where you start running with slack lines close to the glider) is not needed with the Elektra. If there is any question, check with your Flight Instructor before flight.

Higher-Wind Launch:

Like you were shown in training, a reverse-launch is recommended in higher-wind conditions. While holding the brakes, turn around so you are facing the wing – passing one set of risers over your head as you turn. Always turn in the same direction, as shown by your instructor, to maintain consistency. Inspect your risers and lines once you turn to ensure you didn't tangle up any lines in the process. Build a "wall" by partially inflating your glider, again making sure your lines are properly sorted out. Check that your airspace is clear and then gently pull the glider up utilizing the A-risers. Once the glider reaches the 11:00 position over your head, check it gently with the brakes. Once the glider is stable, turn and launch. In higher-wind conditions, be prepared to take a couple steps toward the glider as it catches the wind and rises.

NOTE: Launching in dangerously high wind conditions can be extremely unsafe. Make sure you have practiced high-wind launches WITH an instructor, on multiple occasions, before attempting it unsupervised.

Tangles or Knots in Your Lines...

In the case you take off with a line tangle or knot, try and get clear of the ground, traffic, or obstacles BEFORE taking corrective action. Remember to always remain calm and not over-correct a situation by panicking. Utilize weight-shift techniques and/or counter-brake the opposite side while pumping the knotted or tangled side with your brake. Use caution and don't fly too slowly to avoid stalling the glider or spiraling. If the knot doesn't easily release and is too tight to pump out, navigate to your landing site immediately and land safely.

Minimum Sink & Optimal Glide...

Minimum sink speed is achieved by applying approximately 20 cm (8 inches) of brake input. The theoretical optimal glide-speed, in calm air, is realized at the hands-free position. Many factors can affect this such as wind conditions, weight of the pilot/gear, and the size of the glider. This is a general reference.

Accelerating Flight With the Speed Bar System...

As your experience as a pilot grows and you have the desire to fly faster, the speed bar system may be used. Check with your Flight Instructor to make sure you are ready to take this step. Many pilots who enjoy long cross-country flights will appreciate having this feature. The speed bar system can improve your glide-ratio in headwinds and allow you to penetrate more effectively in strong wind conditions. **NOTE: When flying with any acceleration system such as a speed bar, the glider is less stable and the risk of collapse is increased. Additionally, the glider reacts more radically when a collapse occurs on speed bar compared to flying at normal trim-speed. Therefore it is important to check with your Flight Instructor to assess your skill-level prior to use.**

Engage the speed bar system by pushing the speed bar progressively with your feet. Be ready to control the roll by utilizing weight-shift, and to control the pitch by varying the amount of speed bar being applied. Maintain a consistent and very light pressure on the brakes so you can “feel” how the canopy is responding. Avoid using your speed bar system while flying close to the ground, and refrain from using it in turbulent conditions. If a collapse occurs while using the speed bar system, immediately disengage the bar BEFORE taking any other corrective actions.

Active Piloting...

We designed the Velocity Elektra to maintain a high internal pressure, making it more stable and resistant to collapse. Even though it has a high level of passive safety, we always recommend that you remain an "active pilot" at all times. This is a good habit to have in general and will help you react faster should a deflation occur. The key to being an active pilot is keeping the glider above your head at all times, and reacting quickly to correct the glider if needed. If you react quickly, less input will be needed to achieve the desired reaction from your glider. If the glider drifts to one side, smoothly apply the opposing brake and/or weight-shift until normal pressure returns. If it falls back behind you, apply less brake. If it surges in front of you, counter brake until it returns to the ideal overhead position. The Velocity Elektra is a very responsive glider, as you will find out when such conditions present themselves. Most of what "active piloting" entails is simply common sense, and applying the basics you learned from your Flight Instructor. In all cases, maintain adequate airspeed and avoid drastic over-corrections.

In Turbulent Conditions...

On rare occasions, a collapse or deflation may occur while flying in turbulent air. Velocity gliders are designed to quickly recover without any input from the pilot in most situations. If you are ever in doubt, let up on the brakes and allow the glider to fly. In the rare case the glider surges very quickly in front of you should be the only time you should stop it with the brakes. Below are a few things that may help you to recover the wing faster in a tough situation:

NOTE: The following information is a general guide or reference for those who have already had proper training. In no way is this manual a substitute for proper instruction by a certified Flight Instructor. If these topics have not been thoroughly covered in your training, talk to your Instructor before flying the Elektra Paraglider.

Asymmetric Collapse:

An asymmetric collapse occurs when one side of the glider deflates, and is one of the most common collapses pilots experience. In most cases, you won't even notice the collapse until the glider has re-inflated itself! As stated, the Elektra maintains amazing internal pressure. The pilot may notice the pressure on one brake toggle go slack for a moment. In some cases, after the glider re-inflates from an asymmetric collapse, the glider will turn slightly in the direction of the collapsed side. If you are close to the ground or other pilots, this can be an undesirable situation. You can maintain your course by weight-shifting away from the collapsed side or correcting the glider by applying the brake on the opposite side of the collapse. In most cases, this is all the action needed to correct the situation. In the rare case the collapsed side fails to inflate, pump the brake on the collapsed side with a firm / smooth pumping motion. Once the glider has fully re-inflated, allow it to regain its normal speed.

If a large collapse occurs, or you suffer an asymmetric collapse while using the speed bar, please note the following: Taking into account the variances in pilot weight and its effect on momentum / inertia while flying, the pilot might continue to travel forward or to the side, away from the wing. In this circumstance, the pilot must wait until the pendulum motion subsides and they are positioned back under the canopy. At that moment, and with precise timing, the pilot will then carefully counter brake to stop the pendulum motion. Reacting too quickly with a large collapse could cause the glider to stall. As stated before, make sure these topics are covered in your training with a certified Flight Instructor.

Symmetric Collapse:
A Symmetric collapse is also known as a “frontal” collapse or deflation. As with other types of collapses, Velocity Paragliders will normally reopen quickly on their own, without the need for pilot input. In most cases, after a frontal collapse, the glider will regain normal speed with a small surge. To prevent the glider from stalling, make sure you do not over-correct or apply brake too early when the glider is positioned behind you.

Cravat - A Portion of the Glider is Wrapped Around Lines:
A cravat most commonly occurs after the glider suffers a serious collapse and the wingtip becomes wrapped up or trapped in the glider lines. This is quite rare, but is possible after major collapses or cascading situations. Even though this is extremely rare, the pilot should know how to correct such a situation safely. Brake or weight-shift on the opposite side of the cravat. Begin pumping the brake on the tangled side. The Velocity Elektra was designed with an additional stabilizer / winglet main line which connects to the C riser. This stabilizer line normally becomes slack in a cravat occurs. Pulling this line down completely until the line becomes tight will normally cause the cravat to come out. If you are unsure of which line this is, please ask your Flight Instructor to show you.

Flat Spiral or Spin:
This is yet another rare occurence for pilots. Those who do a lot of thermaling or free-flight rely on only the wind for lift. In the case where the wind changes abruptly, pilots have the chance of experiencing a flat spin. In this circumstance, simply let up on the brakes right away and wait for the glider to surge forward. If the glider looks like it is going to travel too far forward, check it promptly with the brakes. Be sure to never release a spin if the glider is far back behind you. A stall should be avoided at all costs. Always release the spin when it is above or in front of you.

“Cascade of Events:”
This is a chain of events where the pilot over-reacts or over-corrects a situation, causing another situation to arise. Sometimes this “cascade of events” gets worse with each over-correction by the pilot, eventually resulting in the deployment of a reserve chute. Remember: sometimes over-correcting is worse than no input at all. Velocity gliders want to fly, and fly straight. If in doubt, let the glider do its job.

Methods of Losing Altitude...
Powered Paragliding Pilots have the advantage of controlling their altitude with their Paramotor. Free-flight pilots utilize natural lift created by the earth's ridges. In some rare cases, both types of pilots may find themselves in a situation where extreme lift prevents them from controlling their altitude. Storm conditions and drastic weather changes are examples which may cause this to happen. In the event the pilot cannot control their altitude or locate a sink-pocket, there are several techniques which can be used. The examples below are for general information purposes and as previously stated, are not a substitute from learning these maneuvers from a certified Flight Instructor. Initially attempting these maneuvers MUST be done under the supervision of a certified Flight Instructor. NOTE: These techniques can place above-average stress on the glider, therefore reducing the glider's lifespan.

Big Ears:
Big ears is one of the more common methods of losing altitude, allowing the pilot to continue flying straight and maintaining altitude. This maneuver should be executed by pulling one wing-tip in at a time, and by using the outer portion of the A-line on each side. The Velocity Elektra comes equipped with a "big ears kit" to help make this process easier. Red handles are velcroed to the risers and can be pulled in an outward/downward motion. Pulling "big ears" will reduce your speed by approximately 3 mph (5 km/h). You have the option of using the speed-bar system in combination with this maneuver to maintain forward speed while increasing your sink. You can still have control of your steering by utilizing weight-shift.

Upon completing the maneuver or when the desired altitude is achieved, you can simply release the lines and pump the brakes as needed. The glider's edges will re-inflate almost immediately. The release should be done smoothly and progressively as with most maneuvers. Make sure to release the big ears when you reach approximately 100 meters from the ground if possible. If you cannot do this, maintain your big ears until you flare for landing, rather than releasing them on the landing approach - Due to possible wind gradient close to the ground, combined with low airspeed and a greater wing-load with big ears, this is a safer method.

Spiral Dive:
WARNING: ***This maneuver can cause a pilot to lose consciousness due to extreme/sudden changes in altitude. Pilots who are dehydrated or not conditioned for this type of maneuver can increase the chances of losing consciousness. This is an advanced maneuver and should be practiced at an SIV clinic, with proper safety gear (such as a reserve chute) and under the direct supervision of a certified Flight Instructor.***

This advanced form of losing altitude can be very effective in a situation where it's needed. While practicing a spiral with the Velocity Elektra, make sure you are in ideal conditions to get a gradual feel for how the glider responds. To begin, weight-shift into the spiral while applying brake gradually and consistently. As the glider accelerates, wait for two turns and you will enter the spiral dive. Once you are "locked into the spiral," your body positioning will naturally move to the opposite side of the turn. Applying more or less inner brake will allow you to control your descent rate and bank angle. With a high-speed spiral, you may need to apply slight brake pressure on the opposite side to prevent the outer wing-tip from collapsing.

Exiting the spiral must be done in a controlled manner, assisting the glider. In order to exit the spiral dive, your body position in the harness must be centered, or ideally on the opposite side of the harness to the turn. Begin by weight-shifting to the outside of the turn. Pull the outer brake until the wing begins to decelerate and your body moves closer to an upright position. Next, release the outer brake, allowing the glider to continue decelerating for one or two additional turns. Apply a short brake-pump on the inside brake, right before the glider exits the spiral to burn off any remaining momentum. The final brake-pump will help prevent oscillating when you exit the spiral. As mentioned in the warning above, descending too quickly can cause the pilot to lose consciousness. It is recommended to aim for a maximum sink-rate of 14 meters per second.

B-Line Stall:
A B-line stall is an effective way to lose altitude, without the potential negative effects on the pilot from excessive G-forces. As with all descent maneuvers, this should be practiced under the direct supervision of a certified Flight Instructor. Reach up to the B-risers (just below the maillons). Gently pull the risers while twisting your hands. The initial attempt may be difficult, however, as the glider brakes the airfoil, the resistance will lessen. Once you have entered the maneuver, make sure to not release quickly. The Elektra will need to settle into a stable B-stall prior to releasing. Upon exiting the B-line stall, the Elektra achieves a gentle dive, without the tendency to enter a deep stall like other gliders. Make sure both hands release gradually, and with the same timing.

Deep Stall:
The Velocity Elektra is an extremely stable glider, and doesn't have the tendency to stall – much less go into or stay in a deep stall. In the rare circumstance you find yourself in a deep stall, place your hands on the A-risers, pushing forward to gain speed. There are a few modern harnesses and speed-bars on the market which allow you to reach the speed-bar without using your hands. If you are flying with such a setup, engage the speed-bar. DO NOT attempt to steer out of a deep stall or apply the brakes, as it may risk causing a total stall to occur. Additionally, if you are flying at low altitude (near the ground) do not attempt to exit a deep stall. Sink rates while in a deep stall exceed that of a reserve parachute. That being said, and as previously mentioned, do not risk stalling/collapsing the glider close to the ground. It would be better to remain upright in your harness as much as possible, and brace for a hard impact (similar to a parachute landing). DO NOT attempt to flare prior to hitting the ground while in a deep stall.
A deep stall can be recognized by the glider becoming soft/deflated and the airflow around your ears decreasing. This rare situation is normally caused by flying in extremely turbulent conditions, or by exiting a stall with too much brake being applied. If your glider becomes wet, the risk of stalling is increased. If you end up flying through rain or thick fog and know your glider is wet, attempt to accelerate slightly. NEVER attempt “big ears” in a situation like this. Note that glider lines being stretched by activities like acro/hard-towing, or deteriorated fabric porosity (excessive sun exposure) may increase the glider's tendency to enter a deep stall.

Alternative Steering Methods...
If for some reason, you do not have the use of your brakes, here are a couple of alternative ways you can steer the glider: The Velocity Elektra can turn by utilizing the D-risers. Use caution with this method and do not over-steer. Over-steering can possibly send the glider into a spiral. The most common and safe alternate steering method is the simple weight-shift. If flying with a Powered Paraglider, check to see if your manufacturer offers a weight-shift kit option. BlackHawk Paramotors USA is one example of such a manufacturer.

“Acro Flight” or Aerobatics...
The Velocity Elektra Paraglider is not designed for acro or “aerobatic” flight. Acro maneuvers greatly increase the chances of injury or even death if done improperly. Extreme flight of any kind places unnecessary strain on the various parts of the glider and will shorten its lifespan.

Landing Procedures...

Survey flight sites and landing areas to the best of your ability from the ground before flying. If possible, select a familiar landing area and make sure there are no obstacles which could effect your safety. Carefully note the wind speed/direction in the landing zone. The Elektra is a very efficient glider with a low minimum flying speed. This assists in achieving a gentle landing in all conditions. Always approach your landing zone with sufficient airspeed. Do not make your final turn too late or too steep. Prior to landing, slide your legs forward in the harness ("getting out of your seat") until you reach the standing position. NEVER land while in your seat or sitting position. Even if you have a padded harness or airbag system (passive safety features), you risk back injury resulting from the high impact.

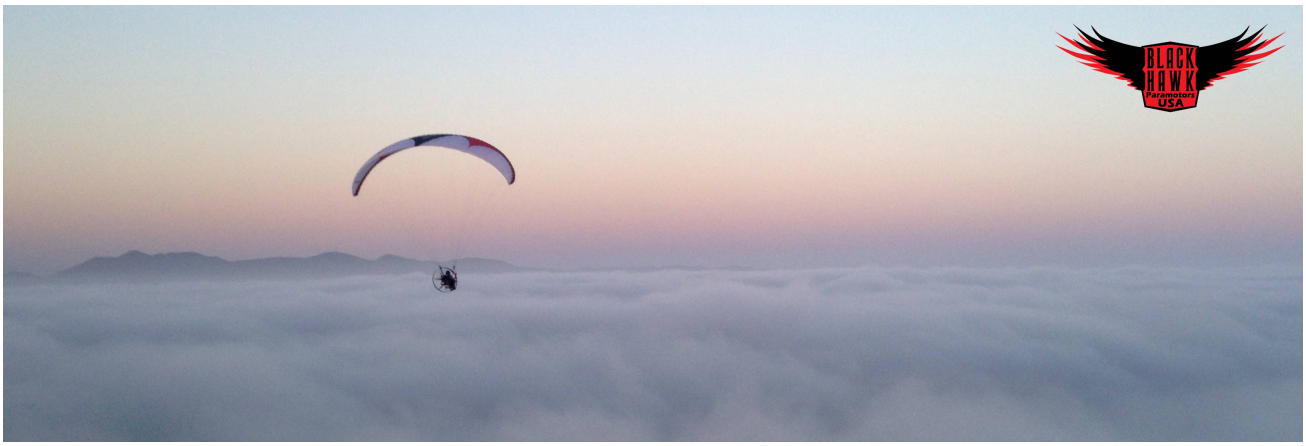
ALL launch and landing procedures should have been thoroughly covered in your training. If you feel that any of this information is foreign or unfamiliar, we recommend taking a refresher-course with a certified Flight Instructor. Never attempt to fly without proper training.

Towing...

The Velocity Elektra is suitable for towing use. Pilots must possess the proper training or relevant tow-rating. As mentioned, the Elektra is extremely stable/efficient and does not have the tendency to deep-stall. In most normal towing situations, there will be plenty of margin to counter-steer the glider. Towing requires specific equipment, personnel with specialized skills, specific techniques, and relevant safety precautions.

Powered Paragliding or Paramotoring...

Paragliding and Powered Paragliding certifications may differ, however, the Elektra was specifically designed as a crossover-wing – suitable for both applications. With such an efficient glide ratio, the Elektra allows Paramotor pilots to use less gas and stay in the sky longer. This is especially valuable to cross-country enthusiasts. The Velocity Elektra has many passive safety features and is extremely stable in flight – again, many features that appeal to Paramotor pilots. Launching with a Powered Paraglider on your back can be more challenging than a basic Paragliding launch. That being said, the Elektra offers amazing life characteristics and will minimize the time it takes to be off the ground. Powered Paragliding requires specialized training and a unique skill-set. As with all forms of flight, seek instruction from a certified Flight Instructor.



5. EKELTRA CARE & GENERAL MAINTENANCE:

Exposure to The Elements...

The Velocity Elektra is constructed from the most modern and durable materials in the industry. Even though the Elektra offers unsurpassed durability, there are steps you can take to extend its life, keep your glider airworthy, and keep the glider "looking like new." Most importantly, you can enjoy many years of SAFE operation. The most common factors that affect a glider's integrity are careless ground handling (dragging your glider on the ground), improper packing or storage, unnecessary exposure to the elements or UV light, exposure to chemicals, heat, and moisture.

Ground Handling & Kiting...

While ground handling your Elektra, please try and avoid the following:

- Dragging or pulling the glider across the ground. Make sure you lift all parts of the glider off the ground when carrying it to a desired location.
- Slamming the glider into the ground while deflating – especially the leading edge. This causes shock and unnecessary wear to the upper surface / edges of the glider.
- Walking or stepping on any parts of the glider. This includes the lines and risers. The Kevlar line inside the line sheath can be sensitive to sharp bending.
- Make sure to untangle the lines to the best of your ability prior to inflating the glider – especially in high-wind conditions.
- ALWAYS put your glider back in a protective stuffsack, immediately after ground handling. Leaving your glider sitting in the sun is one of the main contributing factors to porosity breakdown.
- Avoid excessive moisture (like wet grass or ground).

Packing Your Glider for Storage or Transport...

NOTE: Over time, folding the glider can weaken the materials, therefore pack the glider as loosely as possible. For shipping or travel, this may not be an option. If you are simply storing your glider at home between flights, keep it loose. There are several methods used to pack and store a glider. Velocity & BlackHawk Authorized Training Centers utilize the best methods. Ask your authorized dealer or Flight Instructor to demonstrate these methods. We recommend using the "accordion" method for prolonged storage in order to preserve the glider's profile reinforcements, shape, and rigidity. This method can take time to do properly and is easier to accomplish with an assistant. First, gather the wing at the trailing edge, moving from the center to its tips. Next, follow the same process with the leading edge, making sure to keep the profiles neatly aligned. The Elektra comes with a "leading edge strap." Use this to secure the leading edge profiles, and then fold them to the inside. Lastly, fold each side of the glider to the appropriate width, starting from the trailing edge. At this point, the glider can be finally folded in the normal manor. NOTE: A glider folding video can be found on our YouTube Channel: "BlackHawkParamotor."

Transporting Your Glider or Long-Term Storage...

The number one thing to consider is making sure you store your glider in a dry location. Moisture can accelerate the aging of the glider's materials, including the fabric, lines, and reinforcements. NEVER place your glider in storage while it is wet, sandy, or after it has been exposed to salty water. Make sure it is 100% completely dry. If possible, leave the stuffsack or rucksack open for a

period of time to let any residual moisture to evaporate. Do not store your glider with objects or debris in the cells. Make sure your storage location is cool as well. Excessive heat (like a storage shed in the sun or placing the glider close to a heat source) can also breakdown the glider materials. Never transport or store the glider close to chemicals like gasoline or solvents.

Cleaning Your Glider...

ONLY clean your glider if it is absolutely necessary (like after being exposed to salt water). Make sure to use lukewarm water and a soft rag. Never use harsh detergents or abrasive agents to clean your glider. As stated before, make sure your glider is 100% completely dry before returning it to storage. Dry your glider in the shade to prevent excessive UV exposure.

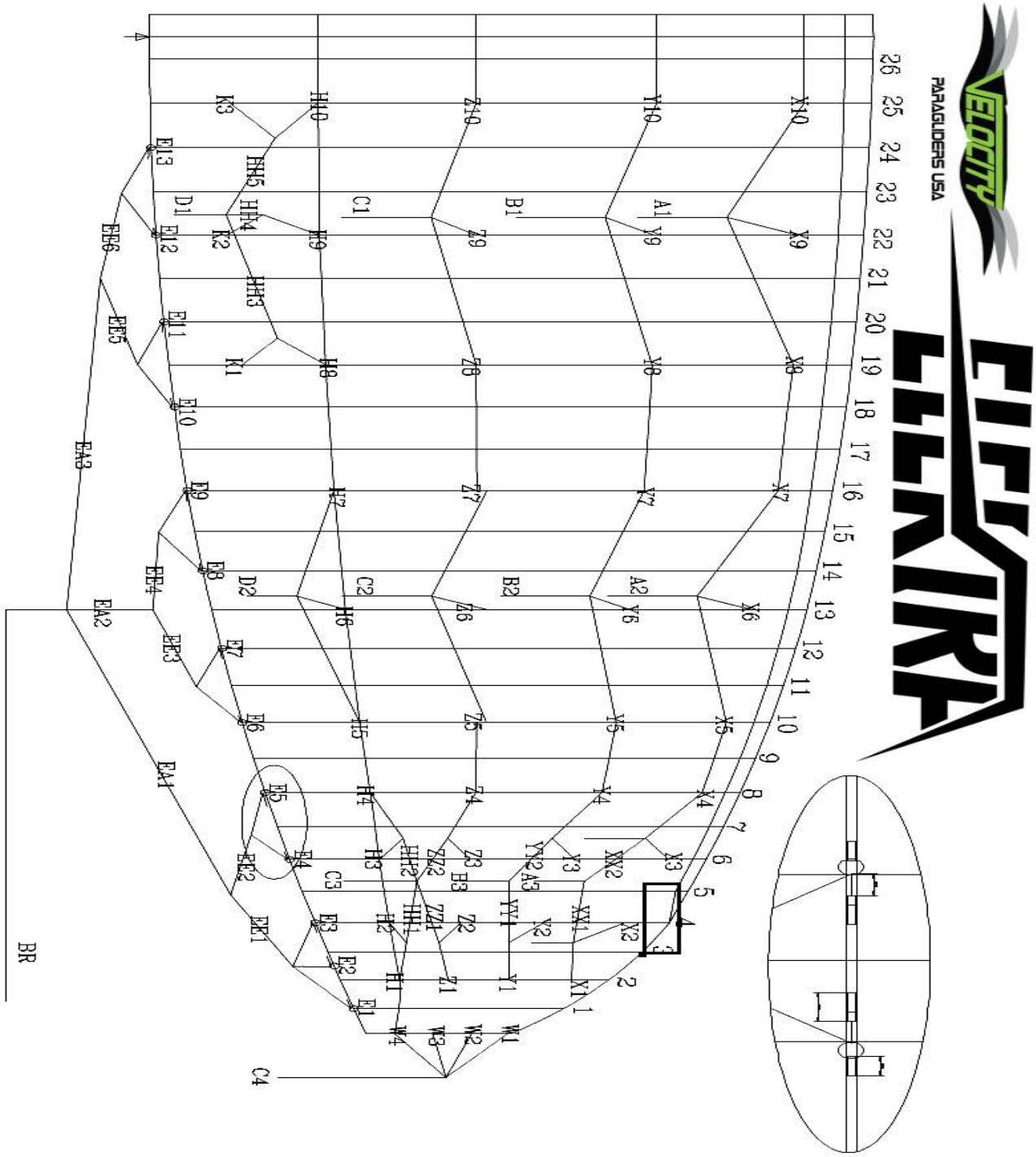
Preflight & Annual Safety Inspections...

Velocity Paragliders highly recommends that your Elektra is thoroughly inspected by an authorized dealer or Flight Instructor annually, or after every 100 hours of use (whichever comes first). In addition to annual inspections, you must perform a general preflight inspection every time you fly. This includes all parts of the glider to make sure they are in perfect working order. Pay close attention to frayed lines, tears in the glider cloth, stretched lines, misshaped reinforcements, or any deterioration in porosity. Make sure all lines are properly secured at the connection points. Check all risers and connectors. If you are using a speed-bar system or accessory, carefully check to make sure all parts are in working order and connected properly. If you let anyone else besides yourself fly your glider, make sure all adjustments (like the trimmers) are adjusted back to your normal flying configuration. If there are any questionable circumstances, wait to fly until a certified Flight Instructor checks the issue and gives you the go-ahead.

Glider Repairs...

Your Velocity Elektra comes with some glider repair tape. This sticky-back tape is effective in repairing very small holes in the glider. Any holes larger than the effective size of the repair tape should be repaired by a professional. Contact your Velocity dealer or representative to facilitate repairs. Any damaged lines should only be replaced by an authorized Velocity dealer. Before installing a replacement line, make sure to compare it to its counterpart line on the other side of the glider. After a line has been replaced, always kite the glider for a reasonable time prior to flight. This is to ensure the instillation was done properly and your glider is in safe working order.

6. REFRENCE SECTION "A" (LINE GUIDE DIAGRAM)



NOTE: This diagram is also available on our website for download. For line size charts specific to your size Elektra, please visit the Elektra website page.

7. REFRENCE SECTION "B" (TECHNICAL DATA SHEET)

ELEKTRA	21	23	26	28	30	33
Flat Area	20.44m2	22.38m2	25.30m2	27.26m2	29.18m2	32.11m2
Flat Span	10.53m	11.02m	11.72m	12.16m	12.58m	13.20m
Flat A/R	5.42	5.42	5.42	5.42	5.42	5.42
Projected Area	17.80m2	19.48m2	22.03m2	23.73m2	25.41m2	27.96m2
Projected Span	8.54m	8.94m	9.50m	9.86m	10.21m	10.71m
Projected A/R	4.1	4.1	4.1	4.1	4.1	4.1
Chord Root	2.44m	2.55m	2.71m	2.82m	2.92m	3.06m
Chord Tip	0.49m	0.51m	0.54m	0.56m	0.58m	0.61m
Cell Number	53	53	53	53	53	53
Glider Weight	5.10 Kg	5.40 Kg	5.80 Kg	6.25 Kg	6.55 Kg	7.15 Kg
Weight in Flight	55-71 Kg	63-81 Kg	76-97 Kg	84-107 Kg	93-117 Kg	106-132 Kg

PARAGLIDERS USA

Every effort possible has been made to ensure the accuracy of the information contained in this Velocity Elektra Manual. The purpose of this manual is to serve as a general reference guide. As stated many times throughout this guide, this is NOT a substitution for actual flight instruction or training from a certified Flight Instructor.

This Velocity Elektra manual is subject to digital or print modifications at any time, without prior notice. Customers take responsibility to check with their Velocity dealer or representative to make sure they possess the latest version of this manual. Please visit BlackHawkParamotors.Com for the latest information regarding this glider and other Velocity products.

WARNINGS – MUST READ BEFORE USING THIS EQUIPMENT:

1. All Velocity gliders must be fully inflated on flat ground prior to the first flight. The very first flight must be conducted by an authorized BlackHawk or Velocity dealer / instructor, before the final pilot or owner takes delivery of the glider.
2. Paragliding & Powered Paragliding is an extremely dangerous activity which can result in serious injury or death.
3. BlackHawk Paramotors USA Inc & Velocity Paragliders USA (a division of BlackHawk Paramotors USA Inc), it's designers, manufacturers, dealers, instructors, retailers, and representatives do not guarantee your personal safety when using this equipment, nor do they take any responsibility for any damage, injury, or death as a result of using this equipment. By using this equipment you agree to and fully understand the risks and this statement.
4. All Velocity & BlackHawk equipment should only be used by qualified and competent pilots, or under the direct supervision of a fully-qualified and competent Flight Instructor.
5. As a pilot, you alone must take FULL responsibility to ensure you have received proper training. You must also take responsibility for understanding the correct and safe methods of operating this equipment.
6. This equipment must be used for the purposes it was designed, and with all proper safety gear. All safety procedures must be followed before and during use.
7. DO NOT modify, change, add, or replace any parts of this equipment. Contact an authorized dealer or the manufacturer if a replacement part is needed.
8. This equipment requires careful and regular care. This includes annual and pre-flight inspections.

9. It is the pilot's responsibility to ensure the glider is in perfect working order and condition. If there is any question, check with your dealer or Flight Instructor. Over time, age, solar radiation, dirt, dust, grease, water, wind, stress, and other variables will degrade the materials, performance and safety of the glider, thereby increasing the risk of injury or death.
10. Make sure you have completely read and fully understand the entire contents of this manual prior to using this equipment.
11. ALWAYS wear appropriate safety gear when flying or ground handling this equipment.