



**PARAGLIDERS USA**

**CORE2**

# Core2 Owner's Manual



**Velocity Paragliders USA**  
**(A Division of BlackHawk Paramotors USA Inc.)**

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**PARAGLIDERS USA**

## **Thank You from Velocity...**

Thank you for choosing the Velocity Core2 Paraglider. We strive to produce the finest gliders available, and hope this Core2 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 Core2'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 Paramotor USA Inc., Velocity Paragliders, it's employees, representatives, or dealers, shall not be held liable for personal, third party, or property damages or injuries in any way.**

**Note: The Velocity Core2 was designed for use by your average beginner pilot. Please talk to your Instructor and make sure the Core2 is appropriate for your 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 Core2 owner's manual prior to using this equipment in any way.**



## **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. The BlackHawk Paramotor USA Inc., designers, manufacturer, 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.



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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 caters 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 amazing 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, our gliders compare 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 CORE2 PARAGLIDER:**

Velocity Paragliders USA is excited to officially announce the NEW 2021 Core 2 Paraglider! After many months of testing and feedback from Pilots across the nation, production of this new beginner / intermediate SEMI-REFLEX glider has begun. Velocity Paragliders – a division of BlackHawk – has seen tremendous success over the years with our "Edge" & "Core 1" beginner Paragliders. The Schools and Pilots around the world who have loved the Edge / Core 1 are going to be blown away by the design of the all-new Velocity Core 2. The Core takes learning Powered Paragliding to a whole new level – providing everything you could expect from a beginner-friendly glider, all the way up to intermediate-level Pilots! Instructors, dealers, and pilots are stating this is the easiest inflating glider they have flown, and are amazed at its agility and speed considering it's a beginner glider! As with all of our products, safety is never sacrificed for performance. Boasting

an amazing 9:1 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 Core2 is constructed to the highest standards from the lightest, most durable materials available in the industry.

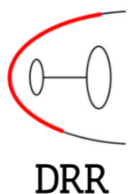
### **For Pilots Who Want It All...**

The combination of unbeatable flare-authority and profound energy-retaining characteristics will provide for extremely mellow landings. The Core 2 is one of Velocity's "easiest kiting gliders ever produced" due to the features mentioned and will become a favorite among Schools or those just getting into the sport. The Core is suitable for Beginners and will easily accommodate Intermediate Pilots who want to push the limits of their skills. This glider will take you from the basement to the ceiling of the second story with ease. Beautiful design, unmatched performance, and extreme durability... Now THAT'S getting 2 the "Core" of the sport and everything that Velocity Paragliders USA stands for. Boasting an incredible 9:1 glide ratio, the efficiency of the Core 2 will quickly make it a standard or "go-to" glider in the Cross-Country PPG community.

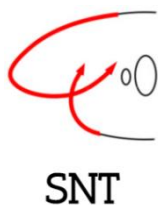
### **Featuring the Latest Technology...**

Velocity Paragliders has incorporated many new features in the design of the Core2, 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.

Here are some of the key technologies built into the Core2 Paraglider:



**DELRON REINFORCEMENT RODS:** The leading edge of the Core2 Paraglider is reinforced by the highest-quality Delron Rods. DRR Technology helps the glider maintain its aerodynamic shape under the stresses of flight. We've put special attention into the design and placement of these rods to maximize the glider's performance, longevity, and efficiency.

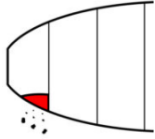


**SMART NOSE TECHNOLOGY:** This is a new addition to the Velocity Core2 Paraglider. Smart-Nose Technology helps reduce glider drag along the leading edge. This not only enhances the glide-ratio... It also has the potential to increase glider performance while thermaling. SNT increases the glider's resistance to stalling under low speeds. It's the perfect addition to our Industry-leading line of Velocity Core2 Paragliders!



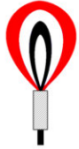
**DELRON TRAILING-EDGE REINFORCEMENT RODS :** We've also put our attention into reinforcing the trailing edge of the glider. Small Delron rods were strategically placed throughout the trailing edge to help the glider maintain a strong Reflex profile. Similar to the leading edge, these rods help maximize the glider's performance, longevity, and efficiency. This makes the Core2 one of our most "reinforced" gliders.





DEP

**DEBRIS EVACUATION POCKET:** Dust, dirt, grass, and even small rocks have been known to make their way into the openings of the Paraglider. It's very important that the glider remain clean for safety, performance, and lifespan. Velocity has made it easier than ever to clean out your glider! It's as simple as opening a pocket.



LWL

**LOOP WITHIN A LOOP:** We were the FIRST to engineer this "simple fix to a big problem." Paramotors create "torque" which causes the glider to fly at a slight angle. To compensate for this, we've created a simple system. A Loop within a Loop. The beauty lies not in the simplicity of the design, but in the straight-and-level flight FINALLY achieved.

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 Core2 noticed the glider's increase in performance and stability right away.

The Core2 's rigid leading edge has been reinforced with new state-of-the-art battens, providing better performance and amazing stability in all weather conditions. Smart Nose Intakes will make sure the wing does not over run the pilot on take-off. On top of all of this the Paraglider wing has been computer analyzed for Optimal Air Flow across the wing. These features create an easy take off for the pilot, a stable flight experience even in mild winds, and increases the Core2 's efficiency of climb, even in low-wind conditions. Pilots will notice the Core2 has a fast and consistent glider response while flying.

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 Core2 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 Core2 Paraglider, it is recommended that your Flight Instructor or Dealer conduct a test inflation, followed by a test flight. The Velocity Core2 is delivered with a stuff-sack, compression strap, repair tape, and this manual.

#### **Speed Bar System...**

The Core2'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 Core2 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.

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.**

**Bowline Knot – Most commonly used:**



**Sheepshank Knot:**



**Double-Sheepshank Knot:**



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.

## **Stuffsack...**

Velocity Paragliders includes a high-quality and durable ripstop KODURA® rucksack with the purchase of your Core2 Paraglider. Proper storage of your glider can increase its longevity. Make sure to store your glider out of the sun and in the provided rucksack when it's not in use. The Core2 rucksack features a 160L capacity (200L for XXL rucksack), 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.

For maximum comfort, the rucksack should be packed carefully. If you are using a free-flight harness, place the glider inside of the harness. Then place the top of the harness in the bottom of the rucksack. The glider side should be next to the back of the rucksack. Lastly, tighten the compression straps (both internal and external straps) and make final adjustments to the shoulder/waist straps. You want your equipment to firmly stay in place while walking with it. Two additional storage pockets have been added for general storage purposes or accessories.

The rucksack should be packed carefully to achieve maximum comfort. First, place the glider inside the harness and then put the top of harness in the bottom of the rucksack with the glider side next to the back of the rucksack. Finally, tighten the internal and external compression straps and adjust the shoulder and waist straps to ensure the equipment stays firmly in place when walking. There are also two storage pockets for accessories.

## **Harness Use...**

The Core2 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 flightworthiness.

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 Core2. It is an amazingly stable glider – much more so than many other gliders out there.

## **Pilot Weight Range...**

It is imperative that the Core2 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 Core2 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 Core2 by your Flight Instructor.
- Fly with a Reserve Parachute and have a full understanding of deployment procedures.
- Make sure you are physically able to handle the demands of this activity on your body.

## 4. FLYING THE VELOCITY CORE2 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 Core2 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.
- Do a final line check by pulling gently on the risers or lines to ensure there are no new knots, tangles, or branches/rocks interfering with your glider lines.

### **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 - Smile!

### **Launching Your Core2...**

**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 Core2 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 Core2 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 Core2. 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...

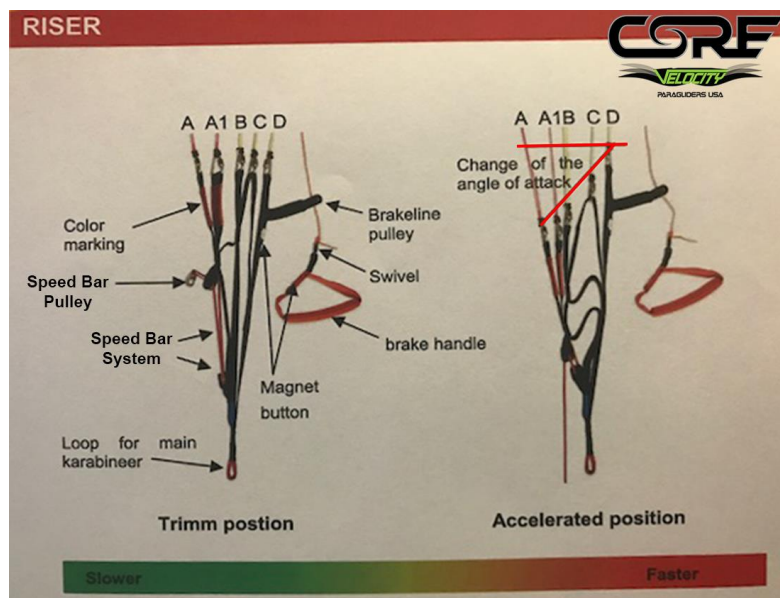
In the case you take off with a line tangle or knot, try and get clear of the ground, traffic, or obstacles **BEFORE** taking corrective action. Remember to always remain calm and not over-correct a situation by panicking. Utilize weight-shift techniques and/or counter-brake the opposite side while pumping 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. This is why checking with your Flight Instructor to assess your skill-level is important 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 Core2 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 Core2 is a 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 Core2 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 its self! As stated, the Core2 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 extremely rare, especially with a Core2 Paraglider, 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.

### ***Flat Spiral or Spin:***

This is yet another rare occurrence 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 gliders 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 Core2 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 Core2, 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 mallions). 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 Core2 will need to settle into a stable B-stall prior to releasing. Upon exiting the B-line stall, the Core2 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 Core2 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 Core2 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 Core2 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 affect your safety. Carefully note the wind speed/direction in the landing zone. The Core2 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 Core2 is suitable for towing use. Pilots must possess the proper training or relevant tow-rating. As mentioned, the Core2 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 Core2 was specifically designed as a crossover-wing – suitable for both applications. With such an efficient glide ratio, the Core2 allows Paramotor pilots to use less gas and stay in the sky longer. This is especially valuable to cross-country enthusiasts. The Velocity Core2 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 Core2 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. CORE2 CARE & GENERAL MAINTENANCE:**

### **Exposure to The Elements...**

The Velocity Core2 is constructed from the most modern and durable materials in the industry. Even though the Core2 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 Core2, 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 stuff-sack, 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 Core2 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: “BlackHawk Paramotor.”

### **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 Core2 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...**

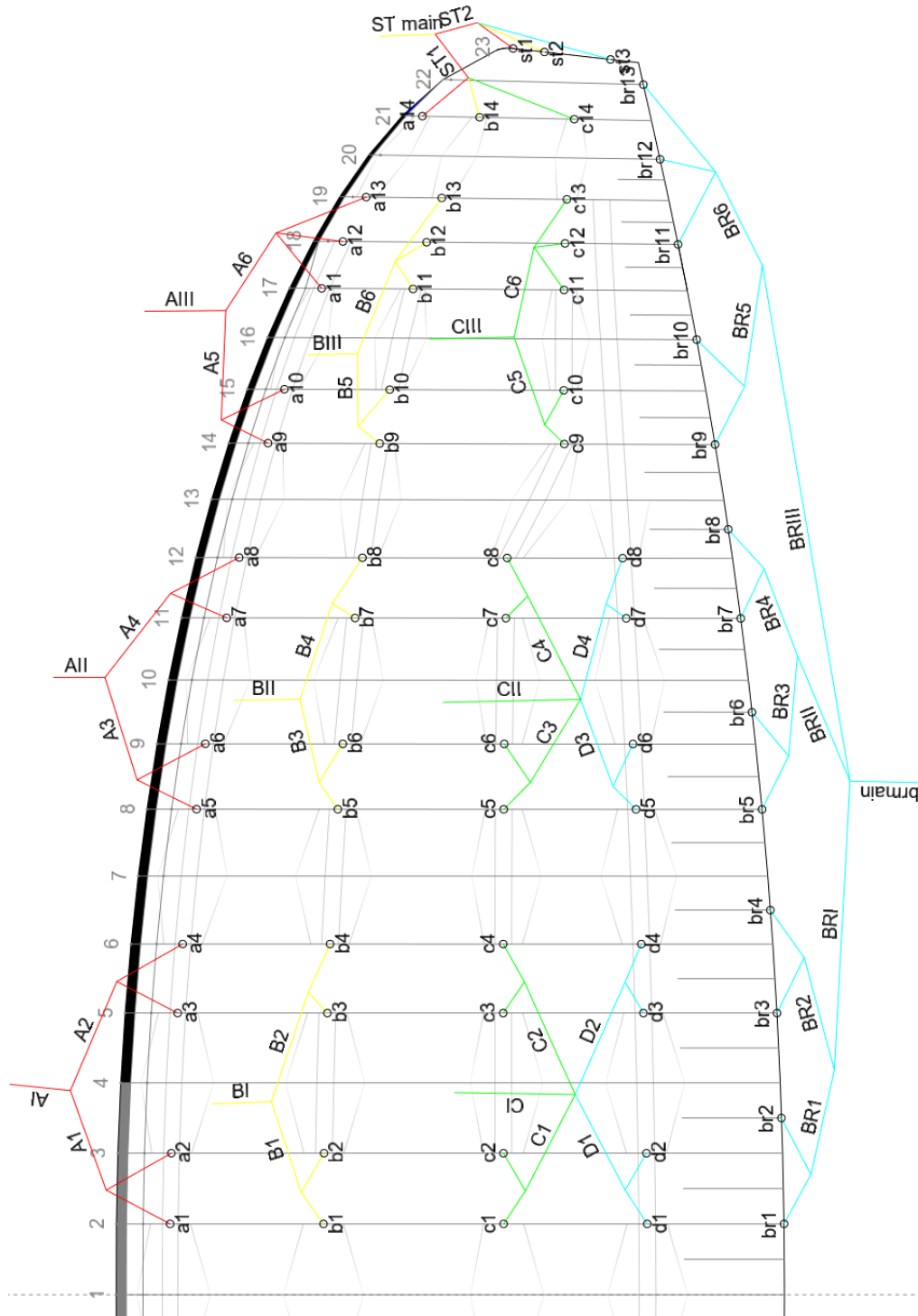
Your Velocity Core2 comes with some glider repair tape. This sticky-back tape is effective in repairing very small holes in the glider. Any holes larger than the effective size of the repair tape should be repaired by a professional. Contact your Velocity dealer or representative to facilitate repairs. 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 installation was done properly and your glider is in safe working order.



## 6. REFERENCE SECTION "A"

The measured values at the lower surface of the tailing edge, cell depth and spacing of the articulation points were determined under tensile load of 50N. The tolerance should not be more than  $\pm 10\text{mm}$  between the below length and reality. All lengths provided are in millimeter measurements.

### Line Guide Diagram





## Line Sheets

### Core 2 20 Line Sizes

CORE2 20			With riser			
	A	B	C	D	Stable	Break
1	6053	5940	6008	6143	5528	6287
2	6015	5902	5971	6107	5503	6143
3	6008	5896	5967	6099	5578	6032
4	6041	5928	6001	6128		5946
5	6028	5920	6000	6120		5942
6	6003	5900	5976	6093		5878
7	5997	5901	5972	6084		5856
8	6021	5929	5996	6091		5870
9	5979	5897	6002			5827
10	5939	5865	5966			5777
11	5889	5825	5916			5744
12	5840	5785	5870			5713
13	5860	5799	5876			5693
14	5682	5600	5722			

### Core 20 Line Specs

Name	Length	Spec	Name	Length	Spec	Name	Length	Spec	Name	Length	Spec	Name	Length	Spec
a1	554	TNL 80	b1	546	TNL 80	c1	552	TNL 80	d1	688	TNL 80	br1	1211	TNL 80
a2	516	TNL 80	b2	508	TNL 80	c2	515	TNL 80	d2	652	TNL 80	br2	1067	TNL 80
a3	509	TNL 80	b3	502	TNL 80	c3	511	TNL 80	d3	644	TNL 80	br3	1094	TNL 80
a4	541	TNL 80	b4	534	TNL 80	c4	545	TNL 80	d4	673	TNL 80	br4	1009	TNL 80
a5	546	TNL 80	b5	543	TNL 80	c5	553	TNL 80	d5	674	TNL 80	br5	1032	TNL 80
a6	522	TNL 80	b6	523	TNL 80	c6	530	TNL 80	d6	646	TNL 80	br6	968	TNL 80
a7	516	TNL 80	b7	525	TNL 80	c7	525	TNL 80	d7	637	TNL 80	br7	968	TNL 80
a8	540	TNL 80	b8	552	TNL 80	c8	549	TNL 80	d8	644	TNL 80	br8	982	TNL 80
a9	559	TNL 80	b9	555	TNL 80	c9	556	TNL 80				br9	972	TNL 80
a10	519	TNL 80	b10	524	TNL 80	c10	519	TNL 80	D1	1754	TNL 145	br10	922	TNL 80
a11	469	TNL 80	b11	484	TNL 80	c11	469	TNL 80	D2	1754	TNL 145	br11	925	TNL 80
a12	420	TNL 80	b12	444	TNL 80	c12	423	TNL 80	D3	1579	TNL 145	br12	894	TNL 80
a13	439	TNL 80	b13	458	TNL 80	c13	429	TNL 80	D4	1579	TNL 145	br13	874	TNL 80
a14	533	TNL 80	b14	452	TNL 80	c14	574	TNL 80						
												BR1	1193	TNL 145
A1	1754	TNL 180	B1	1754	TNL 180	C1	1754	TNL 145	st1	380	TNL 80	BR2	1055	TNL 145
A2	1754	TNL 180	B2	1754	TNL 180	C2	1754	TNL 145	st2	354	TNL 80	BR3	1027	TNL 145
A3	1579	TNL 145	B3	1579	TNL 145	C3	1579	TNL 145	st3	429	TNL 80	BR4	1006	TNL 145
A4	1579	TNL 145	B4	1579	TNL 145	C4	1579	TNL 145				BR5	972	TNL 145
A5	1491	TNL 145	B5	1491	TNL 145	C5	1491	TNL 145	ST1	1140	TNL 145	BR6	936	TNL 145
A6	1491	TNL 145	B6	1491	TNL 145	C6	1491	TNL 145	ST2	1140	TNL 145			
												BRI	1754	TNL 145
AI	3245	TNL 280	BI	3140	TNL 280	CI	3201	TNL 220	ST main	3508	TNL 180	BRII	1754	TNL 145
AII	3403	TNL 280	BII	3298	TNL 280	CII	3368	TNL 220				BRIII	1754	TNL 145
AIII	3429	TNL 220	BIII	3350	TNL 220	CIII	3456	TNL 220						
												brmain	2149	TNL 400

Length is in Millimeter measurements



## Core 2 22 Line Sizes with Risers

CORE2 22		With riser				
	A	B	C	D	Stable	Break
1	6346	6227	6298	6440	5796	6606
2	6307	6188	6261	6404	5773	6456
3	6301	6183	6257	6397	5851	6341
4	6335	6217	6293	6427		6254
5	6323	6209	6293	6420		6249
6	6298	6189	6269	6392		6184
7	6292	6192	6265	6383		6161
8	6317	6220	6290	6390		6176
9	6273	6187	6297			6131
10	6232	6155	6260			6080
11	6178	6112	6206			6045
12	6128	6071	6159			6010
13	6145	6082	6162			5986
14	5959	5877	6001			

## Core 22 Line Specs

Name	Length	Spec	Name	Length	Spec	Name	Length	Spec	Name	Length	Spec	Name	Length	Spec
a1	602	TNL 80	b1	594	TNL 80	c1	601	TNL 80	d1	743	TNL 80	br1	1282	TNL 80
a2	564	TNL 80	b2	555	TNL 80	c2	563	TNL 80	d2	706	TNL 80	br2	1132	TNL 80
a3	558	TNL 80	b3	550	TNL 80	c3	560	TNL 80	d3	699	TNL 80	br3	1162	TNL 80
a4	592	TNL 80	b4	584	TNL 80	c4	596	TNL 80	d4	730	TNL 80	br4	1074	TNL 80
a5	598	TNL 80	b5	595	TNL 80	c5	605	TNL 80	d5	732	TNL 80	br5	1099	TNL 80
a6	573	TNL 80	b6	575	TNL 80	c6	581	TNL 80	d6	703	TNL 80	br6	1034	TNL 80
a7	567	TNL 80	b7	577	TNL 80	c7	577	TNL 80	d7	695	TNL 80	br7	1033	TNL 80
a8	592	TNL 80	b8	605	TNL 80	c8	602	TNL 80	d8	702	TNL 80	br8	1048	TNL 80
a9	613	TNL 80	b9	610	TNL 80	c9	609	TNL 80				br9	1039	TNL 80
a10	571	TNL 80	b10	577	TNL 80	c10	572	TNL 80	D1	1840	TNL 145	br10	987	TNL 80
a11	518	TNL 80	b11	534	TNL 80	c11	518	TNL 80	D2	1840	TNL 145	br11	989	TNL 80
a12	468	TNL 80	b12	493	TNL 80	c12	470	TNL 80	D3	1656	TNL 145	br12	955	TNL 80
a13	484	TNL 80	b13	505	TNL 80	c13	474	TNL 80	D4	1656	TNL 145	br13	931	TNL 80
a14	583	TNL 80	b14	502	TNL 80	c14	625	TNL 80						
												BR1	1251	TNL 145
A1	1840	TNL 180	B1	1840	TNL 180	C1	1840	TNL 145	st1	420	TNL 80	BR2	1106	TNL 145
A2	1840	TNL 180	B2	1840	TNL 180	C2	1840	TNL 145	st2	397	TNL 80	BR3	1077	TNL 145
A3	1656	TNL 145	B3	1656	TNL 145	C3	1656	TNL 145	st3	475	TNL 80	BR4	1055	TNL 145
A4	1656	TNL 145	B4	1656	TNL 145	C4	1656	TNL 145				BR5	1019	TNL 145
A5	1564	TNL 145	B5	1564	TNL 145	C5	1564	TNL 145	ST1	1196	TNL 145	BR6	982	TNL 145
A6	1564	TNL 145	B6	1564	TNL 145	C6	1564	TNL 145	ST2	1196	TNL 145			
												BRI	1840	TNL 145
AI	3404	TNL 280	BI	3293	TNL 280	CI	3358	TNL 220	ST main	3679	TNL 180	BRII	1840	TNL 145
AII	3569	TNL 280	BII	3459	TNL 280	CII	3532	TNL 220				BRIII	1840	TNL 145
AIII	3597	TNL 220	BIII	3514	TNL 220	CIII	3624	TNL 220						
												brmain	2254	TNL 400

Length is in Millimeter measurements

## Core 2 25 Line Sizes with Risers

CORE2 25		With riser				
	A	B	C	D	Stable	Break
1	6761	6634	6700	6852	6176	7059
2	6722	6594	6662	6815	6156	6901
3	6717	6591	6660	6809	6238	6781
4	6753	6627	6698	6841		6690
5	6741	6621	6699	6835		6686
6	6716	6600	6675	6805		6618
7	6710	6604	6672	6796		6595
8	6736	6633	6698	6804		6610
9	6690	6600	6706			6563
10	6646	6565	6666			6508
11	6588	6518	6608			6470
12	6536	6476	6558			6432
13	6549	6485	6559			6402
14	6352	6269	6396			

## Core 25 Line Specs

Name	Length	Spec	Name	Length	Spec	Name	Length	Spec	Name	Length	Spec	Name	Length	Spec
a1	672	TNL 80	b1	662	TNL 80	c1	670	TNL 80	d1	822	TNL 80	br1	1381	TNL 80
a2	632	TNL 80	b2	623	TNL 80	c2	632	TNL 80	d2	784	TNL 80	br2	1224	TNL 80
a3	628	TNL 80	b3	619	TNL 80	c3	630	TNL 80	d3	778	TNL 80	br3	1258	TNL 80
a4	664	TNL 80	b4	656	TNL 80	c4	668	TNL 80	d4	811	TNL 80	br4	1167	TNL 80
a5	672	TNL 80	b5	669	TNL 80	c5	679	TNL 80	d5	814	TNL 80	br5	1194	TNL 80
a6	646	TNL 80	b6	648	TNL 80	c6	654	TNL 80	d6	785	TNL 80	br6	1126	TNL 80
a7	641	TNL 80	b7	652	TNL 80	c7	651	TNL 80	d7	776	TNL 80	br7	1127	TNL 80
a8	666	TNL 80	b8	681	TNL 80	c8	677	TNL 80	d8	784	TNL 80	br8	1142	TNL 80
a9	689	TNL 80	b9	687	TNL 80	c9	686	TNL 80				br9	1133	TNL 80
a10	645	TNL 80	b10	652	TNL 80	c10	646	TNL 80	D1	1961	TNL 145	br10	1078	TNL 80
a11	587	TNL 80	b11	606	TNL 80	c11	587	TNL 80	D2	1961	TNL 145	br11	1080	TNL 80
a12	535	TNL 80	b12	563	TNL 80	c12	538	TNL 80	D3	1765	TNL 145	br12	1042	TNL 80
a13	548	TNL 80	b13	572	TNL 80	c13	538	TNL 80	D4	1765	TNL 145	br13	1012	TNL 80
a14	655	TNL 80	b14	572	TNL 80	c14	699	TNL 80						
												BR1	1334	TNL 145
A1	1961	TNL 180	B1	1961	TNL 180	C1	1961	TNL 145	st1	479	TNL 80	BR2	1179	TNL 145
A2	1961	TNL 180	B2	1961	TNL 180	C2	1961	TNL 145	st2	459	TNL 80	BR3	1148	TNL 145
A3	1765	TNL 145	B3	1765	TNL 145	C3	1765	TNL 145	st3	541	TNL 80	BR4	1124	TNL 145
A4	1765	TNL 145	B4	1765	TNL 145	C4	1765	TNL 145				BR5	1087	TNL 145
A5	1667	TNL 145	B5	1667	TNL 145	C5	1667	TNL 145	ST1	1275	TNL 145	BR6	1046	TNL 145
A6	1667	TNL 145	B6	1667	TNL 145	C6	1667	TNL 145	ST2	1275	TNL 145			
												BRI	1961	TNL 145
AI	3628	TNL 280	BI	3510	TNL 280	CI	3579	TNL 220	ST main	3922	TNL 180	BRII	1961	TNL 145
AII	3805	TNL 280	BII	3687	TNL 280	CII	3765	TNL 220				BRIII	1961	TNL 145
AIII	3834	TNL 220	BIII	3746	TNL 220	CIII	3863	TNL 220						
												brmain	2402	TNL 400

Length is in Millimeter measurements



## Core 2 28 Line Sizes with Risers

CORE2 28		With riser				
	A	B	C	D	Stable	Break
1	7152	7017	7088	7250	6535	7485
2	7112	6977	7049	7211	6517	7320
3	7109	6974	7049	7206	6603	7195
4	7147	7014	7089	7241		7101
5	7136	7008	7091	7235		7097
6	7109	6987	7066	7205		7026
7	7104	6992	7064	7196		7002
8	7131	7023	7091	7204		7019
9	7083	6988	7100			6970
10	7037	6952	7059			6912
11	6974	6902	6996			6871
12	6920	6857	6945			6829
13	6931	6864	6942			6794
14	6723	6639	6768			

## Core 28 Line Specs

Name	Length	Spec	Name	Length	Spec	Name	Length	Spec	Name	Length	Spec	Name	Length	Spec
a1	737	TNL 80	b1	726	TNL 80	c1	735	TNL 80	d1	896	TNL 80	br1	1475	TNL 80
a2	697	TNL 80	b2	686	TNL 80	c2	696	TNL 80	d2	858	TNL 80	br2	1311	TNL 80
a3	693	TNL 80	b3	684	TNL 80	c3	696	TNL 80	d3	853	TNL 80	br3	1349	TNL 80
a4	731	TNL 80	b4	723	TNL 80	c4	736	TNL 80	d4	887	TNL 80	br4	1255	TNL 80
a5	741	TNL 80	b5	738	TNL 80	c5	748	TNL 80	d5	892	TNL 80	br5	1284	TNL 80
a6	715	TNL 80	b6	717	TNL 80	c6	724	TNL 80	d6	862	TNL 80	br6	1213	TNL 80
a7	710	TNL 80	b7	722	TNL 80	c7	721	TNL 80	d7	853	TNL 80	br7	1215	TNL 80
a8	737	TNL 80	b8	753	TNL 80	c8	748	TNL 80	d8	861	TNL 80	br8	1231	TNL 80
a9	761	TNL 80	b9	759	TNL 80	c9	758	TNL 80				br9	1222	TNL 80
a10	715	TNL 80	b10	723	TNL 80	c10	716	TNL 80	D1	2075	TNL 145	br10	1164	TNL 80
a11	652	TNL 80	b11	673	TNL 80	c11	653	TNL 80	D2	2075	TNL 145	br11	1166	TNL 80
a12	598	TNL 80	b12	629	TNL 80	c12	602	TNL 80	D3	1868	TNL 145	br12	1123	TNL 80
a13	609	TNL 80	b13	636	TNL 80	c13	599	TNL 80	D4	1868	TNL 145	br13	1088	TNL 80
a14	723	TNL 80	b14	639	TNL 80	c14	768	TNL 80						
A1	2075	TNL 180	B1	2075	TNL 180	C1	2075	TNL 145	st1	535	TNL 80	BR1	1411	TNL 145
A2	2075	TNL 180	B2	2075	TNL 180	C2	2075	TNL 145	st2	517	TNL 80	BR2	1248	TNL 145
A3	1868	TNL 145	B3	1868	TNL 145	C3	1868	TNL 145	st3	603	TNL 80	BR3	1215	TNL 145
A4	1868	TNL 145	B4	1868	TNL 145	C4	1868	TNL 145				BR4	1190	TNL 145
A5	1764	TNL 145	B5	1764	TNL 145	C5	1764	TNL 145	ST1	1349	TNL 145	BR5	1150	TNL 145
A6	1764	TNL 145	B6	1764	TNL 145	C6	1764	TNL 145	ST2	1349	TNL 145	BR6	1107	TNL 145
AI	3840	TNL 280	BI	3715	TNL 280	CI	3788	TNL 220	ST main	4151	TNL 180	BRI	2075	TNL 145
AII	4026	TNL 280	BII	3902	TNL 280	CII	3985	TNL 220				BRII	2075	TNL 145
AIII	4058	TNL 220	BIII	3964	TNL 220	CIII	4089	TNL 220				BRIII	2075	TNL 145
												brmain	2542	TNL 400

Length is in Millimeter measurements

## Core 2 30 Line Sizes with Risers

CORE2 30			With riser			
	A	B	C	D	Stable	Break
1	7402	7261	7346	7513	6764	7756
2	7361	7221	7306	7474	6747	7587
3	7358	7219	7307	7469	6835	7459
4	7397	7260	7348	7505		7362
5	7387	7255	7351	7500		7359
6	7360	7234	7326	7469		7286
7	7355	7239	7324	7460		7262
8	7383	7271	7351	7469		7279
9	7333	7235	7362			7229
10	7286	7198	7319			7169
11	7220	7146	7253			7127
12	7165	7101	7201			7082
13	7174	7106	7196			7044
14	6960	6874	7006			

## Core 30 Line Specs

Name	Length	Spec	Name	Length	Spec	Name	Length	Spec	Name	Length	Spec	Name	Length	Spec
a1	779	TNL 80	b1	767	TNL 80	c1	777	TNL 80	d1	944	TNL 80	br1	1535	TNL 80
a2	738	TNL 80	b2	727	TNL 80	c2	737	TNL 80	d2	904	TNL 80	br2	1367	TNL 80
a3	735	TNL 80	b3	725	TNL 80	c3	737	TNL 80	d3	900	TNL 80	br3	1407	TNL 80
a4	775	TNL 80	b4	766	TNL 80	c4	779	TNL 80	d4	936	TNL 80	br4	1310	TNL 80
a5	786	TNL 80	b5	782	TNL 80	c5	793	TNL 80	d5	941	TNL 80	br5	1341	TNL 80
a6	759	TNL 80	b6	761	TNL 80	c6	768	TNL 80	d6	911	TNL 80	br6	1269	TNL 80
a7	754	TNL 80	b7	767	TNL 80	c7	765	TNL 80	d7	902	TNL 80	br7	1271	TNL 80
a8	781	TNL 80	b8	798	TNL 80	c8	793	TNL 80	d8	911	TNL 80	br8	1288	TNL 80
a9	807	TNL 80	b9	806	TNL 80	c9	803	TNL 80				br9	1278	TNL 80
a10	760	TNL 80	b10	769	TNL 80	c10	760	TNL 80	D1	2148	TNL 145	br10	1219	TNL 80
a11	694	TNL 80	b11	716	TNL 80	c11	695	TNL 80	D2	2148	TNL 145	br11	1221	TNL 80
a12	639	TNL 80	b12	671	TNL 80	c12	642	TNL 80	D3	1934	TNL 145	br12	1176	TNL 80
a13	648	TNL 80	b13	677	TNL 80	c13	638	TNL 80	D4	1934	TNL 145	br13	1137	TNL 80
a14	766	TNL 80	b14	681	TNL 80	c14	813	TNL 80						
												BR1	1461	TNL 145
A1	2148	TNL 180	B1	2148	TNL 180	C1	2148	TNL 145	st1	571	TNL 80	BR2	1292	TNL 145
A2	2148	TNL 180	B2	2148	TNL 180	C2	2148	TNL 145	st2	554	TNL 80	BR3	1258	TNL 145
A3	1934	TNL 145	B3	1934	TNL 145	C3	1934	TNL 145	st3	642	TNL 80	BR4	1232	TNL 145
A4	1934	TNL 145	B4	1934	TNL 145	C4	1934	TNL 145				BR5	1190	TNL 145
A5	1826	TNL 145	B5	1826	TNL 145	C5	1826	TNL 145	ST1	1396	TNL 145	BR6	1146	TNL 145
A6	1826	TNL 145	B6	1826	TNL 145	C6	1826	TNL 145	ST2	1396	TNL 145			
												BRI	2148	TNL 145
AI	3974	TNL 280	BI	3846	TNL 280	CI	3921	TNL 220	ST main	4297	TNL 180	BRII	2148	TNL 145
AII	4168	TNL 280	BII	4039	TNL 280	CII	4125	TNL 220				BRIII	2148	TNL 145
AIII	4200	TNL 220	BIII	4103	TNL 220	CIII	4232	TNL 220						
												brmain	2632	TNL 400

Length is in Millimeter measurements



## 7. REFERENCE SECTION “B” (WEIGHT SPECIFICATIONS)

Core2 Weight Ranges in Flight							
Core2	20m <sup>2</sup>	22m <sup>2</sup>	25m <sup>2</sup>	28m <sup>2</sup>	30m <sup>2</sup>		
Foot Launch	100lbs - 253lbs	110lbs - 265lbs	158lbs - 298lbs	209lbs - 353lbs	231lbs - 397lbs		

In deciding which glider size is appropriate for you, you need to calculate the total weight of you, the glider, and your equipment. Please add up the total weight of the items listed below to determine the correct Glider Size:

- Pilot Body Weight
- Weight of the Glider
- Weight of your Paramotor Equipment with Fuel

Please see the examples below of total weight averages to ensure you choose the proper glider size. Things like elevation with thinner air require a slight bigger glider. We have also noticed that older pilots prefer a slightly bigger glider for softer slower landings, while a younger pilot might want a slightly smaller glider for faster performance. These factors **DO PLAY** into determining the correct size glider. Please talk to your Authorized BlackHawk dealer or contact us with any questions prior to ordering your wing. BlackHawk is always here to help you maximize your Powered Paragliding experience.

### Examples for Calculating Glider Size with Average Equipment Weight:

#### **FOOT LAUNCH Example Calculations:**

**A Pilot Weighs: 170 lbs**

**AVERAGE PPG WITH Fuel: 70 lbs**

**AVERAGE Glider Weight: 15 lbs**

**TOTAL WEIGHT: 255 lbs**

**APPROPRIATE GLIDER = 22m<sup>2</sup> or 25m<sup>2</sup>**

**\*\*Now, just look at the chart above to see which glider falls within the TOTAL weight. In this example, a size 22 or 25 would be appropriate. It's better to be in the upper level of the weight range, so in the example calculations above, a 25 meter Core2 would be a good choice for a softer landing for a beginner. If you are adding a Lite Trike to your unit, add an additional 35 lbs to your total. As stated, age, elevation, and even additional equipment can factor in, so if there are ANY questions, please contact us or your Authorized Dealer prior to purchasing.**

## 8. TECHNICAL DATA – Glider Specifications



Velocity CORE 2 GLIDER SPECS

SIZE:	20m <sup>2</sup>	22m <sup>2</sup>	25m <sup>2</sup>	28m <sup>2</sup>	30m <sup>2</sup>
Flat Area (m <sup>2</sup> )	20	22	25	28	30
Flat A.R.	4.8	4.8	4.8	4.8	4.8
Flat Span, (m)	9.8	10.3	10.9	11.6	12
Projected Area (m <sup>2</sup> )	17.3	19	21.6	24.3	26
Projected A.R.	3.51	3.51	3.51	3.51	3.51
Projected Span (m)	7.8	8.2	8.7	9.2	9.6
Total Cells	44	44	44	44	44
Closed Cells	10	10	10	10	10
Cord Max (m)	2.58	2.71	2.89	3.06	3.17
Takeoff Weight (kg)	40-70	50-75	72-95	95-125	105-140
Takeoff Weight (lbs)	88-155	110-165	158-210	210-275	231-308
PPG Takeoff Weight (kg)	45-115	50-120	72-135	95-160	105-180
PPG Takeoff Weight (lbs)	100-253	110-265	158-298	209-353	231-397





## PARAGLIDERS USA

*Every effort possible has been made to ensure the accuracy of the information contained in this Velocity Core2 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 Core2 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](http://BlackHawkParamotors.Com) for the latest information regarding this glider and other Velocity products.*