

CAIRN ADVENTURE 1.0



# WELCOME/ INTRODUCTION

Thank you for choosing a Cairn Cycle. Like you we want to find as many ways of using bicycles as we can. The world of electric bikes is exciting for us not just because it's another bike to have in the shed or because it's fresh and exciting. For us it is that opportunity to finally leave the car at home, do that long ride we have never been able to manage under our own steam or even get the family out to experience the buzz we get from cycling too.

There is however of course, some inherent risks associated with using any bicycle. In this guide we have provided all the information you need to use and ride your bicycle safely and correctly. Please do read through it carefully, even if you are an experienced cyclist. We have tried to make this guide as clear and simple as possible but if there is anything you are still unclear about; we encourage you to please ask us. You can contact us by phone or e-mail using the contact details on our website at;

**[www.cairncycles.com](http://www.cairncycles.com)**

Thanks again and we hope you enjoy your riding  
-The Cairn Cycles Team

- **IMPORTANT INFORMATION ABOUT THIS MANUAL**

This manual is intended to help you get the most out of your Cairn Cycle. We advise that you take your first ride in a controlled environment away from traffic, obstacles and people until you feel comfortable to venture farther afield...

There are inherent risks associated with cycling. This includes the risk of serious or fatal injury. Always follow the instructions in this guide along with any other advice or guides provided to you by Cairn Cycles and the team at The Rider Firm. Failure to follow these instructions may result in serious or fatal injury.

We have included as much as we can in this manual to make your riding experience a pleasant and enjoyable one. If after reading this guide or at any other time during your ownership you have any concerns or doubt about the use, maintenance, repair or any other questions related to your Cairn Cycle then please contact us or seek assistance from a qualified cycle mechanic. Our contact details can be found at;

**[www.cairncycles.com](http://www.cairncycles.com)**



## FRAME

TOP TUBE	1
DOWN TUBE	2
SEAT TUBE	3
SEAT STAY	4
CHAIN STAY	5
HEAD TUBE	6
FORK	7

## COMPONENTS

SEAT POST	8
CRANK ARM	9
FRONT DERAILLEUR	10
REAR DERAILLEUR	11
CHAIN	12
CHAIN RING	13
CASSETTE	14
BRAKES	15

## CONTACT POINTS

HANDLEBAR	16
SADDLE	17
PEDALS	18

## WHEEL

SPOKES	19
HUB	20
RIM	21
TYRE	22
VALVE	23

## FAZUA COMPONENTS

BATTERY	24
MOTOR	25
REMOTE	26
SPEED SENSOR	27



# THE BASICS

- **BIKE FITTING**

*Warning - If you are unsure if your bicycle fits you correctly seek advice from us at [www.cairncycles.com](http://www.cairncycles.com). Riding an incorrectly-sized bicycle can lead to a lack of control and ultimately injury.*

**STAND OVER HEIGHT** - To ensure your bike fits properly you should check that the stand-over height is correct. The stand-over height is the height of the top of the frame, at the point where your crotch would be if you were straddling the bike at rest. Frame design will vary depending on bike type so stand-over height alone is not a guide to correct fit. However, a minimum of one to two inches of clearance is needed for safety and good control of the bike. To ensure the stand-over height is correct, straddle the bike whilst wearing suitable riding shoes standing over the middle of the top tube. If you have one inch of clearance or less, the bike is too big for you.



**SADDLE HEIGHT** - The saddle height is one of the most important factors in making sure you are in control of the bicycle. If you are not comfortable or confident in making the saddle height adjustment yourself, please seek the help of a qualified mechanic.

**ADJUSTING SADDLE HEIGHT** - Please make sure you are wearing suitable clothing, either the same or similar to what you would be wearing when riding.

1. Place the saddle in a position that allows you to get on the bike and sit on the saddle.
2. Place one heel on the pedal.
3. Rotate the crank arm until the pedal is at its lowest point.

If at this point if you feel that, it is a stretch, or you need to adjust your position on the saddle to reach the pedal your saddle is too high. If your leg is bent at the knee this means the saddle is too low.

To adjust the saddle height, you will need to loosen the seat post binder bolt and move the seat post either up or down. This should be until your leg is straight with a slight bend at the knee not locked and not too bent.

**ADJUSTMENT FORE, AFT AND ANGLE** - The other adjustments to your saddle is front to back using the rails of the saddle to optimize your riding position and reach to the handlebar. Correct Fore and Aft can increase performance and handling of your bicycle. You should always stick within the limits of adjustment marked on the saddle rails. The angle of the saddle should be level or as flat as possible. Some people will prefer it tipped up or down, however you should seek advice of an experience bicycle fitter before doing so.

1. Loosen all saddle clamping bolts.
2. Move the saddle Fore and Aft until a comfortable position is achieved.

Once all adjustments are made make sure to tighten all bolts to the recommended torque settings before riding.

*Warning - If you are unsure if your saddle height is correct seek advice from us at [www.cairncycles.com](http://www.cairncycles.com) or seek the advice of an experienced bicycle fitter. Riding an incorrectly adjusted saddle or stand over height can lead to a lack of control and ultimately injury.*

**ADJUSTING STEM AND HANDLEBAR** - There is limited adjustment that a bicycle stem can offer, and it is safety critical it is done correctly. So, it is advised if you need to make this adjustment you seek help from a trained bicycle mechanic. When you receive your Cairn cycle the stem will be fitted in a stock position for the intended use of the bike. The handlebars will need to be fitted. A good place to start with handlebars on a drop bar bike is to make sure the top of the handlebar and shifter hoods are level at 90 degrees horizontal to the ground. Make sure the bike is on a roughly level surface to do this. For a flat handlebar with rise make sure the rise is 180 degrees vertical to the ground and make sure the bar sweeps back and up slightly. For a flat handlebar without rise make sure the bar is level but has some back and up sweep.

*Warning - Adjustments made to handlebars and stems are safety critical and done incorrectly could lead to serious injury or death. If you are unsure what to do, you should seek advice of experience bike fitter or trained bicycle mechanic. Make sure all manufacturers torque settings are followed and never exceeded.*



- **BICYCLE SAFETY M-CHECK**

Ideally every time you ride your bike or at regular intervals you should check your bicycle is safe to ride and that everything is functioning how it should be. For this we have provided a quick and easy guide to follow. The M-Check guide ensures every time you check your bicycle its safe and nothing is missed. If you find anything wrong during these checks, you should fix it or correct the issue before continuing to ride or seek advice from a trained bicycle mechanic.



**1. STARTING AT THE BACK OF THE BIKE, YOU WILL NEED TO CHECK YOUR REAR WHEEL AND TYRES.**

- Are the tyres at an appropriate pressure for the terrain you intended to ride.
- Does the wheel look straight and true? Are there any loose or broken spokes?
- Is the quick release or thru axle tight and done up correctly?
- Is there any play in the wheel bearings?
- Check tyre for damage or wear. Make sure the tyre has no cuts or bulges, it is not cracking or perishing and there is sufficient tread.

**2. MOVING ON TO YOUR GEARING.**

- Can you shift into every gear, smoothly and without issue?
- Is the chain clean and well lubricated?
- Are the gears easy to shift or do the cables feel stiff?

**3. FROM THE GEARING YOU NEED TO MOVE ALONG THE CHAINSTAY AND SEATSTAYS UNTIL YOU REACH THE SEAT POST STARTING WITH THE REAR BRAKE.**

**3A)**

- Is the brake caliper fitted correctly and all bolts are tight?
- Does the brake function properly? Make sure the pads aren't contaminated and it stops you safely.

**3B)**

- Is the saddle tight and set to the correct height?
- Is the seat post clamp holding the seat post in place?

**4. AFTER THE SEAT POST AND SADDLE AREA YOU NEED TO VISUALLY CHECK THE SEAT TUBE FOR FATIGUE, CRACKS OR DAMAGE. ONCE YOU REACH THE BOTTOM BRACKET YOU WILL NEED TO CHECK:**

- The crank spins freely and there is no play or movement in the bearing.
- Chainring bolts are tight.
- Chainrings are in no way damaged, bent or worn.

**5. STEP 5 COVERS THE LARGEST AREA OF THE BIKE, THE MAIN FRAME.**

Make sure to check the complete frame carefully. Make sure to feel as well as look for signs of fatigue, cracks, flaking paint, dents or other defects to the tubes.

**6. ONCE YOU REACH THE FRONT OF THE BIKE YOU HAVE THE HEADSET, STEM AND HANDLEBAR.**

- Make sure the headset is not stiff, moves freely, doesn't catch or have any bearing play.
- Is the stem tight? make sure you cannot move the stem and handlebar independently from the front wheel and fork?
- Is the handlebar clamped by the stem correctly, is the handlebar damaged or dented in anyway?

**7. THE FORK AND FRONT BRAKE.**

- Make sure if it's a suspension fork it is working correctly, moves smoothly through its travel and set up to your rider weight.
- If it is a rigid fork check for any signs of damage or fatigue.
- The front brake check is the same as the rear. Is the brake caliper fitted correctly and all the bolts tight? Does the brake function properly? Make sure the pads aren't contaminated and it stops you safely.

**8. FINAL STEP IS TO REPEAT STEP 1 ON THE FRONT WHEEL**



- **MAINTENANCE**

**BEDDING IN** - After the first few months of owning your Cairn Cycle you will find that gear and brake cables may have stretched, and some nuts and bolts may have loosened requiring adjustment. This is normal and can be performed by any trained cycle mechanic. This part is vital to keeping your bike safe and warranty valid.

**CLEANING** - When your Cairn Cycle gets dirty it's understandable to want to clean the bicycle, either for performance or storage. In most situations the bicycle can be cleaned with a bicycle cleaner, water, brush set and or sponge. The bike should then be dried off with careful attention paid to the drivetrain and areas containing electrical parts. It is imperative the bike is not washed using a high pressure or high-power washer. Although all the electronics on the bicycle are rated to a high IP rating high volumes or prolonged water ingress can cause damage, potentially voiding the warranty.

**LUBRICATION** - The bicycle will need regular lubrication even if you do not plan to clean the bicycle every time. Areas to pay close attention to are; the Drivetrain (Cassette/cogs, chain and derailleurs). It is important that any old grease/lubricant is removed first before re-applying with a bicycle specific lubricant. Make sure to keep lubricants away from any braking surfaces and pads. 'All in One sprays or water dispersants' are not lubricants and sometimes contain degreasing agents and can cause premature wear to parts.

**SERVICE INTERVALS** - Not just from a safety perspective but also for the performance benefits we recommend you have your bike serviced by a trained bicycle mechanic regularly. This is dependent on several factors such as weather conditions and the number of miles ridden. A rough guide would be every 50 to 100 hours. It is also important to have your electric bike system updated every now and again for bug fixes, firmware updates and to make sure you have the latest features installed. This can be done at home if you know how or by a trained bicycle mechanic. We would recommend this is done at least once per year of ownership.





# SAFETY

- RIDER SAFETY

Here at Cairn Cycles we want to make sure that not only is your bicycle safe and comfortable but that you are also equipped and ready with the right safety accessories and information to ride your bicycle. We would recommend following these safety precautions:

- When riding your bicycle, we recommend always wearing a well fitted EN or Snell approved helmet.
- Make sure all clothing is kept away from moving parts, for example gearing, pedals and wheels.
- Always wear suitable footwear. Something that is sturdy, will stay on your foot and grip to the pedal.
- Protect your eyes, wear cycling specific glasses or similar.
- Make sure to wear gloves, they will offer protect in the case of a fall or accident as well as keeping your hands warm in cold weather.
- Where applicable, wear other cycling specific protective clothing. For example, knee and elbow pads.
- When riding in low light or at night, make sure to wear bright or reflective clothing.
- Your bike will come fitted with reflectors but for night riding make sure to fit a good set of lights. White for the front and red for the rear.

*Safety warning - Laws and guidelines are different depending on the country/state or territory you live in. It is your responsibility to check what is and is not required of a cyclist to use or wear in your country/state or territory.*



When riding your bicycle, we recommend always following the Highway code, observe rights of way, trail access regulations and traffic laws where applicable. If you are riding on the road, we would recommend the following actions:

- Make yourself visible to other road users, ride defensively, assert yourself on the road and give yourself space.
- Be careful and cautious in traffic. Make clear your intentions when making changes in directions or when planning to stop. Do not filter through traffic.
- Look ahead, keep your head up and pay attention to upcoming obstacles
- Where designed bike lanes or routes are provided use them.
- Stop at all red and orange traffic lights.
- Riding with headphones will muffle the sound of traffic around you and impair your ability to know where other vehicles/highway users are'
- Do not carry passengers unless it's a small child wearing the appropriate safety clothing and a safety approved seat/trailer or tag-along.

- Never hold on to moving vehicles.
- Never ride under the influence of alcoholic drinks or drugs.
- When riding in wet conditions brake power and grip levels will be reduced. Ride slower, give your self more time to stop or manoeuvre.
- Potholes, manholes, railroad tracks, tram lines, traffic islands and crossings present serious risks for cyclist be careful when approaching, slow down, cover your brakes and look ahead.
- Ride at a speed appropriate to your ability and the conditions.
- Do not perform jumps/stunts or potentially dangerous manoeuvres on your bicycle. To do so is at your own risk.

*Safety warning - Failure to follow these safety recommendations could lead to serious injury or death.*



# BICYCLE PARTS AND FUNCTION

- **WHEELS, QUICK RELEASES AND THRU AXLES**

All Cairn Cycle bicycles are provided with Hunt Bike Wheels. User guides and other information can be found in the Hunt Bike Wheels manual supplied with your bicycle or at [www.huntbikewheels.com](http://www.huntbikewheels.com).

**QUICK RELEASE FUNCTION AND ADJUSTMENT** - Open the quick release fully before fitting the wheels and before closing the quick release ensure the hub is fully engaged in the centre of the fork or frame. Ensure the wheels are centered in the frame/fork before you tighten the quick release. If the clamping force is not enough, then open the lever and adjust the nut on the opposite side by turning the nut clockwise. Then re-close the lever. If the clamping force is too high to close the lever, then open the lever and adjust the nut on the opposite side by turning the nut slightly anti-clockwise. Then re-close the lever. The correct tension when closing the lever should leave a mark on your hand. Only adjust the quick release tension with the adjusting nut on the opposite side to the lever. Do not attempt to turn the adjusting nut with the lever in the closed position. Only use your wheels with the Hunt Bike Wheels quick releases supplied with the bike or a Hunt Bike Wheels replacement set.

**THRU AXLE FUNCTION AND ADJUSTMENT:** Before fitting the thru axle make sure the wheel lines up with the dropout holes. Slide the thru axle all the way through until it reaches the opposite side, engage with the threads and turn the thru axle clockwise to tighten. Tighten until the thru axle cannot be turned anymore and the wheel is fixed in place. If your Cairn Cycle uses thru axles, only use the thru axles supplied by us or the fork manufacturer.



- **BRAKES**

Brakes are one of the most important components on a bicycle from a safety aspect. So proper maintenance, adjustment and understanding of their function is key to a safe bicycle. How they work; make sure to familiarise yourself which brake lever controls which brake. If you have an 'English' set up, the right-hand brake lever will operate the front brake and the left-hand lever will operate the rear brake. In the EU/US and most other countries where you drive on the right this will be the opposite way around.

Your brake lever will need to be adjusted to make sure you can always comfortably reach the brake at all times. Your brakes should perform in a controlled stopping manner as well as emergency stop.

*Warning - Sudden or excessive use of the brakes may cause the rider to either go over the handlebars or skid the rear wheel. To avoid this, apply the brakes slowly, evenly and give yourself plenty of room to stop safely.*

- *Never touch a moving disc rotor, serious injury may occur.*
- *Disc brake rotors, calipers and pads can get hot when in use, never touch immediately after use, make sure all parts have fully cooled before touching.*
- *When the wheel is removed do not squeeze the brake lever. When transporting the bike without the wheels make sure to fit a provided spacer or thick piece of card*

**TYPES OF BRAKE** - There are many types of brakes used on bicycles, on your Cairn Cycle you will only find disc brakes. This might a mechanical disc brake (actuated with a cable) or hydraulic (actuated with fluid - like a car). Disc brakes offer better control and power than other forms of braking and have better 'all weather' stopping abilities. It is important to keep your brake discs clean and totally free of any oil or lubricants. To check the wear on your disc brake pads you need to remove the pads from the caliper. If you have 1 or more millimeters of pad compound, you are okay to continue riding. If you have 1mm or less stop riding immediately and seek replacements. If you are not confident doing this yourself seek advice from a trained bicycle mechanic.

**GEARS/SHIFTERS:** To get the most from your Cairn Cycle you will need to understand how to work your gears efficiently and smoothly. This means knowing how to change the gears, what gear to use in various situations and how to not stress your drivetrain, ultimately increasing its life span. There are many types of shifters used on bicycles. On your Cairn Cycle you will find one of two types. A trigger shifter, this is used on a flat handlebar, mainly on mountain bikes and hybrids. Alternatively, an STI or road shifter, these are found on drop handlebar bicycles for example road, touring or gravel bikes. Regardless of the style you have, both work in the same way. The right-hand shifter will actuate the rear derailleur and the left-hand shifter, if provided, will actuate the front derailleur. It is best to familiarise yourself with which shifter paddle moves the gears in which direction before your first ride.

*Warning - Never operate the gears under these circumstances:*

- *While pedaling backwards or pedal backwards after moving the shifter.*
- *Under load/pressure such as moving off from traffic lights or climbing a hill.*
- *When crossing gears, this is a term used when using the extremes of your gearing ratios. For example - front outer ring and rear largest gear.*

**TYRE AND TUBES** - The tyres fitted to your Cairn Cycle will be appropriate for the style of riding and intended use of the bicycle.

• Tyre inflation and pressure - tyres lose pressure over time and so it is recommended that you check them every time you ride. The tyre will have a maximum pressure or a recommended range. You can find this embossed on the side of the tyre and should never be exceeded. If in doubt go in the middle of the recommended range. Tyre pressure will also depend on the riding you intend to do. A higher pressure will mean lower rolling resistance and less deformation for example on the road; however, this will mean low grip and comfort. Whereas lower pressures will offer more grip and comfort for example off road however this will mean high rolling resistance and great deformation. It's important you understand the balance and set your pressures according to the desired result and the consequences of too much either way.



- Valves and inflating your tyre - to inflate your tyre or tube you will first need to understand what kind of valve you have.

- Presta valves sometimes called a high pressure or continental valve, these are long, thin and will have a small thread head. To inflate these, you need to remove the dust cap and unscrew the top anti-clockwise and tap the valve until you hear or feel air. Then you can connect your pump and inflate. Once inflated remove your pump and make sure to screw back down the valve until tight. Replace the dust cap.

- Schrader valves sometimes called car type or Dunlop valves are shorter and wider than a Presta valve, with the valve located within the stem rather than on top. To inflate a Schrader valve simply remove the dust cap, place your pump on to the valve, pump and then remove when done. Remember to replace the dust cap.

*Warning - Incorrectly fitting of tyres and tubes, over inflating, under inflation, wear and incorrect use can all cause failures and potential injury. Make sure to check your tyres every time you ride before and after for potential issues.*

- **SUSPENSION**

Some Cairn Cycles maybe fitted with suspension, this is to increase comfort and control when using the bicycle on poor roads and un-paved surfaces, tracks and trails. For more information or if you have a problem with your suspension you should seek advice from a trained cycle mechanic, the manufacturer or contact us here [www.cairncycles.com](http://www.cairncycles.com).

*Warning - Suspension forks and shocks are very complicated and contain pressurized oil, air and gas. NEVER disassemble a suspension unit unless you are trained to do so.*

- **ELECTRICAL COMPONENTS**

- Electrical components and motor systems on your Cairn Cycle will differ depending on the model of bicycle you purchase. We provide as much information as we can and include the manuals for all our electric bicycle systems either in your box when you receive your bicycle or they can be found on our website [www.cairncycles.com](http://www.cairncycles.com)

- **BATTERY DISPOSAL**

- As a retailer of electric bicycles it is our responsibility to dispose of or recycle any batteries and battery waste. If you wish to replace a battery on your Cairn Cycle, you will need to get in contact with us to arrange for your battery to be collected. We will provide you with all the information needed, like how to package the battery for transportation and general shipping information. We will ask you to make sure the battery is 100% discharged. Once we have received the battery it will be disposed of in the most environmentally friendly, safe and least impactful way possible.

*Warning - NEVER, disassemble, crush or puncture a Lithium ion battery. Do not dispose of yourself or in your general waste. Never set fire to or submerge a battery under water. Never let the battery be exposed to extreme temperatures in excess of 60 degrees Centigrade or 140 Fahrenheit or lower than minus 20 degrees centigrade or minus 4 Fahrenheit. Keep away from children. In case of a leak contact Cairn Cycles immediately to arrange collection. In the case of fluid in eyes or consumed seek medical advice immediately.*



# WARRANTY

*For more information on your Cairn Cycle warranty visit or contact us via [www.cairncycles.com](http://www.cairncycles.com).*

Cairn Cycles warranty is only valid if it is purchased through Cairn Cycles or an authorised dealer. The warranty is void if your Cairn Cycle was not purchased direct or with an un-authorised dealer, if you are not the original owner, or it has been subject to non-normal use. Non-normal use conditions mean the bike has been subjected to tricks, stunts, skate parks, pump tracks, ramps, bike parks, north shore style, trials riding, commercial or hire activities. All riding should be done within the intended use of the bicycle, see intended uses page for more details. Warranty does not apply to normal wear and tear, abuse, neglect, improper assembly or maintenance as well as crash damage or non-original parts.

- **COMPLETE BIKE** - All bikes will have a 1-year complete bicycle warranty, as long as the bicycle was purchase from Cairn Cycles direct or an authorised dealer. This will cover any defective materials or workmanship for one year from the date of purchase. This will be subject to condition and use within the intended us guidelines.



- **FRAME** - All Cairn Cycles frames will be covered for a period of 5 years from the date of purchase by the original owner. Subject to normal and intended use, regular maintenance and inspection by Cairn Cycles.

- **FORK** - All Cairn Cycles forks (for suspension fork warranty please see the manufacturer's website or manual) will be covered for a period of 5 years from the date of purchase to the original owner. Subject to normal and intended use, regular maintenance and inspection by Cairn Cycles.

- **WHEELS** - All Hunt Bike Wheels are provided with a 3-year warranty against material or workmanship defects. The warranty period runs from the purchase date. For more information visit [www.help.huntbikewheels.com/support/home](http://www.help.huntbikewheels.com/support/home)

- **COMPONENTS** - The individual components of your bicycle will have a warranty period as well, which is specific to the manufacture or the component. These will be either outlined in the provided manuals at point of purchase or the details can be found on the manufacturer's website.

- **MAKING A CLAIM OR QUERY ABOUT WARRANTY** - All claims and queries can be made using the contact details found on [www.cairncycles.com](http://www.cairncycles.com)

- To help process your claim or query as quickly as possible please provide a proof of purchase, frame number and images to support your claim and any other information you can provide is always helpful.

- **REPLACEMENT KEYS** - The last thing you want is a flat battery and lost keys and no key number. So, we hold the details of all Cairn Cycles key numbers. Providing your bike has the original lock barrel, we can help you get new keys cut if you ever lose your key or key number.

- **CRASH OR OUT OF WARRANTY REPLACEMENT** - As riders we understand that it can be heart-breaking when your pride and joy suffers a bad crash or fatigues once the bike is out of warranty. We obviously want you to stay with Cairn so please contact us, and we will do everything we can to help whether that be a discount off a replacement one or guidance as to what you do next. Proof of damage or return of the damaged item may be required to qualify. Cairn Cycles is unable to cover any return transit costs that may occur.



# FATIGUE AND LIFESPAN

Nothing lasts forever we all know that, but here at Cairn Cycles we want to make sure you understand what the lifespan of your bike could be and how material fatigue and wear can affect your bicycle in the future. Firstly, all our bicycles comply with CEN standard ISO 4210 for its intended use. This is a test simulated by a machine covering a rider weight of up to 105kg plus 15kg for your bag or luggage for its intended use. For electric bike systems the standard to which the system needs to be tested to will be different dependent on the country to which the bicycle is being shipped.

If you would like to know more about this, you can contact us via [www.cairncycles.com](http://www.cairncycles.com)

## • FACTORS THAT CAN AFFECT YOUR BIKES LIFESPAN:

- **TERRAIN/IMPACTS** - The terrain, obstacles or impacts your bicycle withstands or encounter can have a huge effect on the lifespan of your bike. For example, hitting potholes or riding fast over rough ground. Impacts don't need to be big to accelerate fatigue.
- **DIRT, SALT AND SAND** - We all know the effects that these things can have on our cars. So imagine the impact these things can have on you bicycle's small and intricate parts.
- **HIGH MILEAGE** - Again the effects high mileage has on your car, the same happens with you bicycle.
- **HIGH RIDER WEIGHT OR CARRYING A LOT OF LUGGAGE** - If the rider and luggage load is close to or exceeds the 105kg + 15kg testing standard the rider can expect a shorter lifespan of those under this weight standard.





- **CRASH DAMAGE** - This should be taken very seriously. Obviously, your priority in an accident is going to be yourself. However just because everything looks straight and okay doesn't mean it is. Make sure you get your bike checked by a trained cycle mechanic as soon as you can before continuing to ride. Any unchecked damage could obviously increase the risk of early fatigue or failure.

- **MATERIALS**

- Material engineering is a complicated and fascinating subject. However, explaining the ins and outs in this manual would take many pages, so here are some basics:

- **METALS** - Most bicycles and components are still made from metals. Either aluminum or steel and some titanium. This is due to their strength, weight and durability. When metals fatigue this causes microscopic cracks in the material a bit like when you try to break a wafer. These grow as fatigue worsens and cracks will get larger until the component or frame breaks. Therefore, it's important to check your bicycle regularly and if you spot anything seek advice from a trained cycle mechanic. Some metals can be susceptible to corrosion. This can be spotted by bubbling, deformation or rust under or on paint and surfaces. Corrosion can erode the material and cause weaknesses that are hard to spot. In general, if you see any of these issues on a component or frame these means the component or frame may have reached or is reaching the end of its lifespan.

- **COMPOSITES (CARBON FIBRE)** - Carbon fibre used correctly has a greater fatigue lifespan than metal structures even more so than welded metal structures. Carbon fibre is very hard to inspect for damage because of its layering process, on the outside it might look fine but internally anything could be happening. Due to the way it is constructed in layers sometimes 'delamination' can occur. This can be down to poor construction or extreme temperatures. This can be spotted by discoloration on the surface of the carbon, delamination or by the sound it makes when tapped. A dull, drum like sound or rattily sound is a cause for concern. If you believe your carbon fibre has had an impact, been pierced, exposed to extreme temperatures or delamination is visible stop riding immediately and have it check by a trained bicycle mechanic.

- **LITHIUM ION BATTERIES** - Lifespans of batteries are measured by the amount of times it is re-charged sometimes called 'charge cycles'. Typically, a battery in your Cairn Cycle will be able to go from fully charged to fully discharged hundreds if not thousands of times. This will depend on how much you are riding the bike or how many years this would be. Over time though the batteries will lose capacity, this is inevitable and irreversible. Below are some handy tips to keeping your battery at its best:

- Keep tabs on its run time compared to when it was new, when the run time drops to below 75% of its original capacity or charging times increase significantly it's time to consider replacing it.

- Routinely check the battery charge status.

- Don't leave the battery on charge longer than you need to, when it is charged remove it from the plug.

- If the battery is going to be stored for a long period of time maybe over the winter, make sure to charge or discharge the battery to 50% of its capacity and charge back to 50% at least every 6 months.

- Make sure to store your battery either on or off the bicycle between 5 and 20 degrees centigrade. That's 40 to 70 Fahrenheit.

- If you do plan to store the battery, make sure to remove it from the bicycle and store it in a safe place, away from fire risks and water sources.



## INTENDED USES

Every Cairn Cycles has an intended use. Bicycles will have multiple uses for different people. However, bicycles of different intended uses are tested to different safety standards, so this is worth considering when planning your riding or purchase. For example, using a bike tested to a road standard on a mountain bike track or trail. This could cause injury or death. As well as voiding any warranty.

### TYPES OF BIKES AND THEIR INTENDED USES:

- Mountain Bike/MTB - >2" off-road tyres, can be a rigid, hardtail or fully suspended bike and can have v-type or disc brakes. Reinforced frame for handling rougher terrain. Suitable for cross country trail use consisting of off-road tracks and way-marked MTB trails that do not include large jumps, drops or man-made stunts. Example of recommended terrain - trail centres, woodland single-track and mountain tracks.
- Road - 1" or up to 700 x 32c/650b x 47c high-pressure road tyres, drop handlebars and low overall weight. Suitable for use on well-surfaced roads and cycle paths. Not designed to withstand potholes or rough surfaces. Example of recommended terrain - city commuting, road-riding.

- Cyclocross and Gravel - 1.5" or above 700 x 33c/650b x 48c tyres for off road and mixed-terrain use. Similar in appearance to a road bike but uses stronger wheels and brakes. Suitable for cycle path, road and smoother or muddy off-road terrain but not designed to cope with rocks and similar high impact obstacles. Example of recommended terrain - city commuting and smooth off-road paths.

- Hybrid - 1.5" or above 700 x 33c/650b x 48c tyres and stronger wheels than a road bike. Generally, with a flat handlebar and sometimes uses suspension forks and disc brakes but not capable of the same intended use as a mountain bike. Suited for roads, paths and smoother surfaced off-road tracks. Example of recommended terrain - forest 'family cycling' trails, city commuting, canal towpaths and country lanes.

- Children's bikes - up to 24" wheels to suit riders under 11 years of age. Suitable for use on any terrain free of traffic and natural hazards.



# CAIRN ADVENTURE 1.0

## CONTACT INFORMATION

ITS Cycling, Unit 8, Huffwood Trading Estate, Partridge Green, Horsham, RH13 8AU, United Kingdom  
[www.cairncycles.com](http://www.cairncycles.com) | +44 (0) 1273 931 428 | [explore@cairncycles.com](mailto:explore@cairncycles.com)

Cairn, the Cairn logo and icon are a trademark of ITS Cycling Ltd and its use and reproduction is only permitted with express prior written permission from ITS Cycling Ltd

