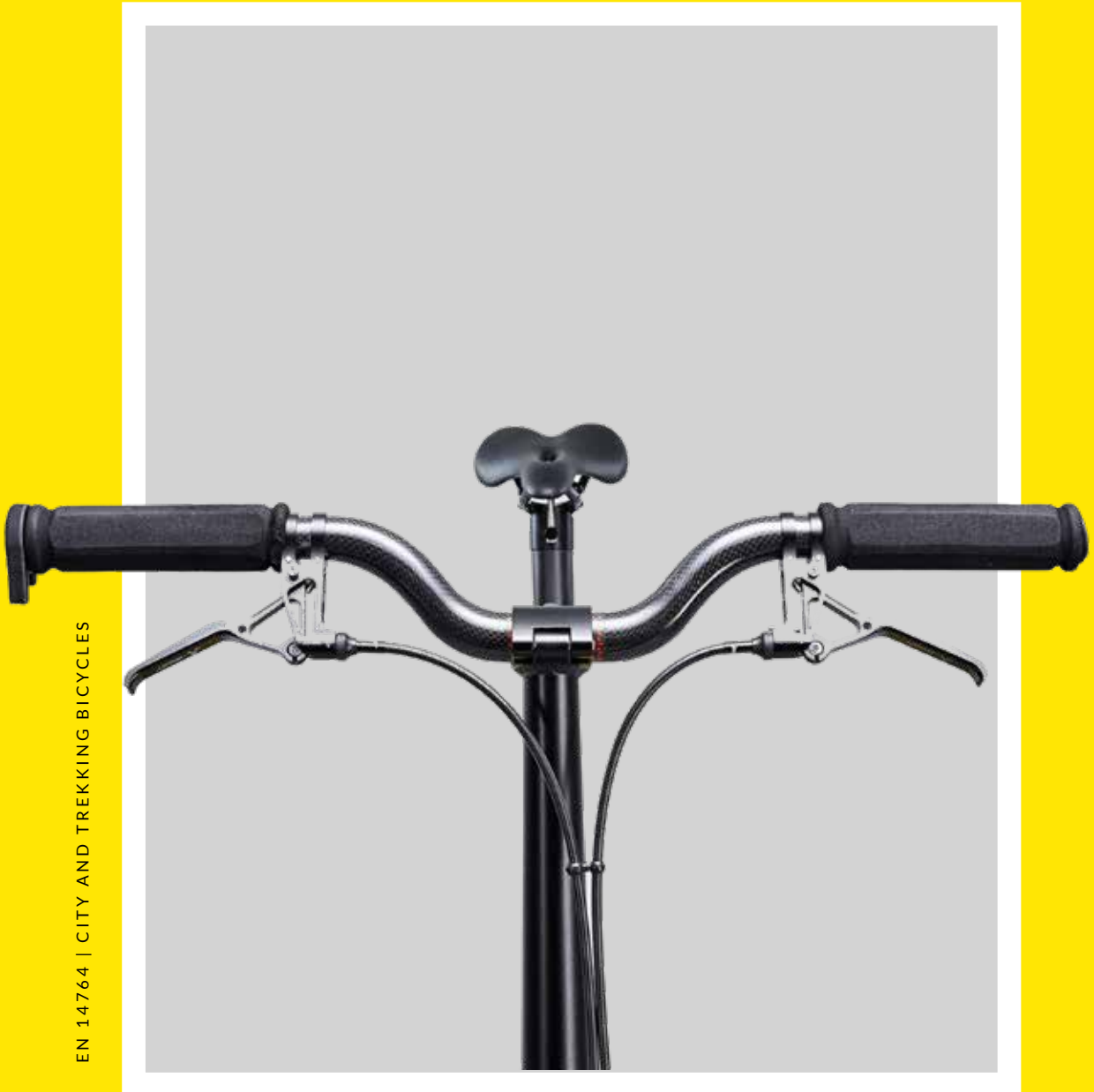


Hummingbird

USER MANUAL



EN 14764 | CITY AND TREKKING BICYCLES





Congratulations!

Thank you for choosing Hummingbird. In the following pages you'll find everything there is to know about the bike. We have put a lot of thought into the design and we truly think that Hummingbird is a beautifully engineered, simple solution which meets all the needs of an urban bicycle.

During the design process, we constantly thought about your riding enjoyment and safety. Even though we cannot anticipate every possible scenario, this manual answers many of the key questions you may have and gives you many tips on using your bike.

You'll also find important information about bicycle technology, maintenance and upkeep, summarised to ensure that you enjoy your new Hummingbird for many years to come.

Last but not least, don't forget to enjoy the ride!

Petre and the Hummingbird Team

A handwritten signature in black ink, appearing to read 'Petre', written in a cursive style.

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Before every ride

Hummingbird is an urban bicycle designed for riding on roads and well-made paths. Hummingbird should not be used for stunts, cross-country riding or extreme sports. Your Hummingbird should be used only for its intended purpose. Misuse may lead to failure of some components and void your warranty.

PRACTICE AT SLOW SPEEDS FIRST

Before riding fast or in more difficult conditions, learn the function and performance of all the mechanisms of your bicycle by riding at slower speeds in a flat, empty space. If you or your local bike shop make adjustments or repairs to your bike, repeat this learning procedure to understand how the changes have affected the bike's performance.

BE CAREFUL WHEN RIDING IN WET CONDITIONS

Even properly aligned and maintained, brakes require greater lever pressure and longer stopping distances in wet weather. Please keep in mind the extra distance it will take to stop. Wet weather causes reduced visibility for both you and motorists. It also reduces traction. Use slower cornering when tyre grip is reduced, such as when riding over wet leaves, painted crosswalks or manhole covers as the slippery surfaces might cause you to lose control.



After riding in wet conditions, make sure you clean the grit off the seat post before lowering it when folding your Hummingbird. Not doing so will result in scratches on the surface of the seat post.

AVOID SHARP POINTS, MOVING PARTS, HOT SPOTS AND PINCH POINTS

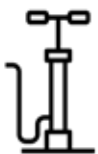
Some parts of your bicycle can injure you if mishandled. Sharp points include the teeth of the chainrings and some pedals. The area where the chain engages the teeth of the chainring (or rear cog) is a pinch point and can cut. Brakes and their parts can get hot. Please mind that moving parts, including wheels, handlebars and clamps can cause injuries if mishandled.

Give Hummingbird a shake and make sure there are no loose parts. We recommend you check:



FASTNERS

Check quick release levers and that the wheel nuts aren't loose



TYRE

Check tyre pressure (between 70-115 PSI or 5-8 BAR)



CRANKS AND CABLES

Check cranks for fatigue and cables for smooth operation and damage



CHAIN

Check for tight links in chain and that the chain turns freely through the gears



WHEELS

Check wheel is true and check rims for wear



BRAKES

Check brakes for function and adjust if necessary. Make sure the brakes feel tight when pulled and that they provide enough braking power. Brakes can be adjusted if necessary.

Hummingbird has brake levers which can be adjusted for reach. If you have smaller hands or find it difficult to squeeze the brake levers, your local bike shop can either adjust the reach or fit shorter reach brake levers

Get ready to ride

1



BRAKES

Are you familiar with the braking system? Please be aware that Hummingbird is fitted with the right hand lever as the front brake. You can have your arrangements changed to fit your needs (left hand lever as the front brake).

The right brake lever operates the front brake and the left lever operates the rear brake.

CLOTHING

Wear bike appropriate clothing when possible. Be aware that loose articles of clothing like shoes with long laces and scarfs can get caught in the moving parts of Hummingbird. We recommend never ride without wearing a helmet!

2



3



SEATING POSITION

Are the saddle and handlebar in the right position? The saddle should be adjusted so that with the pedal in its lowest position, you can just reach it with your heel. Check that you can stay in the saddle and still reach the ground with your tiptoes.

Do not extend seatpost past minimum and maximum insertion point marked at the back of the seatpost.

SHIFTING (MULTISPEED HUMMINGBIRD)

Shifting with an internal gear hub drivetrain is simply a matter of rotating the gripshifter to the indicated position for the desired gear ratio.

After you have rotated the shifter to the gear position of your choice, ease the pressure on the pedals for an instant to allow the hub to complete the shift. The numerically lowest gear (1) is for the steepest hills. The numerically largest gear (4) is for the greatest speed..



4

Shifting from an easier, “slower” gear (like 1) to a harder, “faster” gear (like 2 or 3) is called an upshift. Shifting from a harder, “faster”, gear to an easier, “slower”, gear is called a downshift. It is not necessary to shift gears in sequence. Find the “starting gear” right for you — a gear which is hard enough for quick acceleration but easy enough to let you start from a stop without wobbling — and experiment with upshifting and downshifting to get a feel for the different gears. At first, practice shifting where there are no obstacles, hazards or other traffic, until you have built up your confidence. Learn to anticipate the need to shift and shift to a lower gear before the hill gets too steep. If you have difficulties with shifting, the problem could be mechanical adjustment. Refer to the maintenance chapter for help.

Fitting your Hummingbird

RIDER HEIGHT

The Hummingbird accommodates riders up to a height of 152cm to 200cm (from 5'1" to 6'5")

MAX. RIDER WEIGHT

The rider's maximum weight including baggage should not exceed 110kg (265 lbs)



The best riding position is the one that you are most comfortable in, but a badly adjusted bicycle may lead to back or joint pain and can reduce your control. Check your saddle is at the correct height and that you can reach the handlebars and brake levers comfortably.



The saddle can be moved up and down, forward and back and angled up and down so play around with it to get the best fit. When riding, your hips should remain stationary and your knee should have a slight bend. About 20~25° away from fully locked.



The saddle should be roughly parallel to the ground, but if it's not comfortable, tip the nose down to relieve pressure on the crotch or up to distribute your weight over a greater area of the saddle.

Folding & unfolding Hummingbird

Hummingbird has a revolutionary folding system that takes less than 5 seconds.

Watch our video guide following this link: bit.ly/HummFold

(NOTE: To unfold Hummingbird please follow steps 1 to 4 in reverse order)



STEP 1

Unlock the swing arm by pulling on the quick release lever located above the crankset. Slightly lift the bike up as the swing arm starts to pivot and bring it under the frame.



STEP 2

Unlock the stem by clicking the safety pin and pull on the lever. Start tilting the handlebars and tuck them under the swing arm.



STEP 3

Open the seatpost clamp and drop the seatpost all the way down. Quick release pedals can be detached and slotted into the brake bridge.



STEP 4

For a more compact fold you can attach the front wheel to the swingarm. To do so, open the front quick release axle and the brake caliper quick release to increase the tyre clearance. Pull the front wheel out and clamp it on the dropout extension located on the swing arm. Tighten quick release until wheel is secure. Put seatpost in the gap between stem and rear wheel.

General care & inspection

Each Hummingbird is carefully inspected before it is shipped to you. However, if you are not satisfied with your Hummingbird please get in touch via email at hello@hummingbirdbike.com

Some parts of your Hummingbird are subject to functional wear. The amount of wear depends on the maintenance of the bike and the riding conditions (mileage, riding in the rain, dirt, salt etc.) Bicycles that are often left outside are subject to increased wear.

These parts require regular maintenance and care, but will eventually reach the end of their life (depending on the intensity of use and riding conditions). These parts must be replaced when they reach their wear limit.



CHAIN



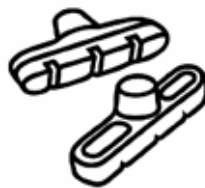
SADDLE
COVER



CHAIN RING,
SPROCKETS



GRIPS



BRAKE PADS



SHIFT AND BRAKE
CABLES



RIMS



LIGHTS



TYRES



The pads and rim are subject to functional wear. Sporty use or riding in wet terrain shortens the life of the pads. Check the pads regularly and replace them as needed. You can acquire replacements from Hummingbird or from your local bike shop.

Rim brakes not only wear out the pad, but also the rim itself. Therefore, check the rim regularly such as when inflating the tyre. The sidewall of the rim contains a tiny groove that functions as a wear indicator. When this groove is no longer visible, the rim must be replaced. If deformations or cracks in the rim sidewalls occur when inflating the tyre, the rim has reached the end of its service life and needs to be replaced.



The bearings on Hummingbird are designed to ensure a long lasting life, service-free. However, environmental conditions such as rain, dirt etc. cause these moving parts to wear out. These areas must be cleaned regularly. Depending on the operating conditions it is possible that these parts may need to be replaced due to wear, which will become evident through development of bearing play.



We designed Hummingbird with as many standard parts as possible and as such, you can service your bicycle by approaching any authorised bicycle repair shop. You can contact us for any assistance and service advice. Upon request we can refer you to your nearest qualified bike shop.

TAKING CARE OF YOUR CHAIN

The best way to prolong the life of a chain is to clean and lube it regularly. Clean the chain in situ using a chain cleaner, then lube each roller individually, keeping the lube away from the outside of the chain. Try to avoid the temptation to run the chain backwards and apply lube in a hurry — it's wasteful and can overload the links. When you've finished, wipe off any excess lube with a cloth.

When cleaning the chain, avoid driving any degreaser or cleaning products into your bottom bracket or freehub body as this can strip the grease from these parts, causing all sorts of problems. Lastly, always wipe down and relube the chain after wet rides to avoid it rusting and seizing up.



INSPECTION OF THE COMPOSITE PARTS OF YOUR HUMMINGBIRD

Carbon fibre is a synthetic polymer that is heated to high temperatures until they carbonise. The result is a black, extremely light and firm fibre, smaller than a human hair with a tensile strength four times higher than the best steel alloys – at just a quarter of the weight. The fibres are preimpregnated with a special resin which when cured at high temperature bonds together all the fibers making the part a single solid composite piece.



Inspect for cracks, broken, splintered or delaminated areas. Any crack is serious. Do not ride any bicycle or component that has a crack of any size.



Delamination is serious damage. Composites are made from layers of fabric. Delamination means that the layers of fabric are no longer bonded together.



Undamaged areas will look glossy, shiny or “deep,” as if one was looking into a clear liquid. Delaminated areas will look opaque and cloudy. The surface shape may change and may have a bump, a bulge, soft spot, or not be smooth and fair. If you then tap a delaminated area, you will hear a different sound, usually duller, less sharp.



Either a crack or delamination can cause creaking noises while riding. Think about this noise as a serious warning signal. A well maintained bicycle will be very quiet and free of creaks and squeaks. Investigate and find the source of any noise. It may not be a crack or delamination, but whatever is causing the noise must be fixed before riding.



Do not ride a bicycle or component with any delamination or crack. Riding a delaminated or cracked frame, fork or other component could lead to complete failure, with risk of serious injury or death.



If you were involved in a crash, first check yourself for injuries and take care of them as best you can. Seek medical help if necessary. Next, check your bike for damage. After any crash, take your bicycle to your local bike shop for a thorough check. All components such as carbon composites, handlebars, stems, cranksets, brakes etc. which have sustained an impact must not be ridden until they have been disassembled and thoroughly inspected by a qualified mechanic.



Adjusting your Hummingbird



ADJUSTING THE BRAKES

When the brakes are not applied, the brake pads should be 2 to 4mm from the rim. If the brake pads are too close to the rim, the brake is too tight. Brake pads should be aligned with the rim surface. If the brakes are not properly adjusted, take your bicycle to your local bike shop for service. Every month, make sure you check the brake cables on your bicycle for kinks, rust, broken strands and frayed ends. Also check the housing for bent ends, cuts, stretched coils, and wear. Replace any part which does not pass inspection.

Every month inspect the brake pads on your bicycle for wear. Brake pads have shallow grooves in their braking surface. If any of these grooves are less than 2 mm deep, replace the pads.

ADJUSTING THE BRAKE PAD CLEARANCE TO THE RIM

To increase the pad clearance, turn the barrel adjuster clockwise. To reduce the pad clearance, turn the barrel adjuster counter-clockwise. The barrel adjuster is located at the top of the brake itself, where the cable enters the caliper.

If the brake pads cannot be adjusted properly in this manner, loosen the cable clamp bolt and re-attach the cable. Turn the adjusting barrel clockwise so the threads on the adjusting barrel are not exposed above the caliper, or outside the lever. Hold the brake pads against the rim, pull the cable snug, and tighten the cable clamp bolt to the torque specification (see Torque Settings)



ADJUSTING THE ALIGNMENT OF THE BRAKE PADS

Loosen the brake pad fixing bolt and align and tighten the brake pads.

After the brakes are adjusted, test the brakes. Apply maximum braking force to the levers. Ensure the cable does not slip, the pads close toward the rim at the right angles and the pads do not contact the tyre.



QUICK RELEASE SETUP

The seat post clamp works exactly like the traditional wheel clamp fastener. The binder uses an over-center cam action to firmly clamp the seat post

Riding with an improperly tightened seat post can allow the saddle to turn or move and cause you to lose control and fall. Before you ride your Hummingbird, make sure you check that the seat post is securely clamped.

ADJUSTING THE SEAT POST CLAMP MECHANISM

The action of the cam squeezes the seat collar around the seat post to hold the seat post securely in place. The amount of clamping force is controlled by the tension adjusting nut. Increase clamping by changing the tension - adjust the nut clockwise, while keeping the cam lever from rotating.

Turning it counterclockwise while keeping the cam lever from rotating reduces clamping force. Less than half a turn of the tension adjusting nut can make the difference between safe and unsafe clamping force.



WHEEL QUICK RELEASE SETUP

The wheel hub is clamped in place by the force of the over-center cam pushing against one dropout and pulling the tension adjusting nut, by way of the skewer, against the other dropout. The amount of clamping force is controlled by the tension adjusting nut.

TYRES

Never inflate a tyre beyond the maximum pressure marked on the tyre's sidewall. Exceeding the recommended maximum pressure may blow the tyre off the rim, which could cause damage to the bike and injury to the rider.

You can inflate the tyres with the Hummingbird pump supplied with the bike, but we recommend getting a floor pump with a pressure indicator dial for home use.

The Presta valve has a narrower diameter and it is designed to hold higher pressure. To inflate a Presta valve tube using a Presta headed bicycle pump, remove the valve cap; unscrew (counterclockwise) the valve stem lock nut and push down on the valve stem to free it up. Then push the pump head on to the valve head and inflate.

Do not begin any adjustments or service on your Hummingbird unless you have been guided by a specialised technician. We recommend that significant mechanical repairs should be carried out by a qualified bicycle mechanic. Improper adjustment or service may result in damage to the bicycle or in an accident which can cause serious injury.





INFLATING YOUR HUMMINGBIRD'S TYRES WITH THE PRESTA VALVE

Check The Valve & Deflate The Bike Tyre
Find the valve and remove any dust-cap.



CHECK THE VALVE

If the presta valve hasn't been opened for a while release a short hiss of air to check it's not stuck. The same process, holding the valve open longer, deflates the bike tyre.



PRESTA VALVE

A presta valve is locked with a tiny acorn nut, unscrew this before you inflate a bike tyre and press the stem down to release air.



CONNECT THE PUMP

The hose or pump connection may screw on or press on. Some push fit connections lock with a cam lever. To check the correct operation of the connection look at the rubber washer and move the lever back and forth. The the 'locked' position squeezes the washer, the 'on-off' position lets the washer relax. The rubber washer in a pump connector wears out with use. It needs to be replaced when it stops gripping valves to give an air-tight sea.



INFLATE THE TYRE

If your pump or hose has a push fit, press the connection on parallel to the presta valve to avoid releasing air or bending the presta valve stem.

Fully open and fully close the pump with each stroke. It's important to press the piston right to the end of it's travel to force air into the tyre. If you stop too soon the air in the pump will tend to compress rather than flow into the tyre.

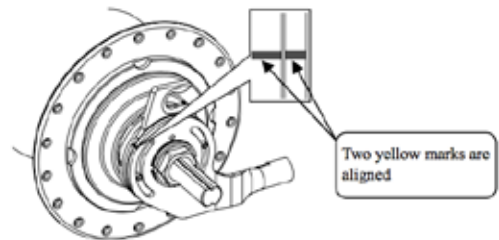


ADJUSTING THE CHAIN TENSION

Hummingbird is equipped with horizontal dropouts, where the wheel can slide forward or backward to change the tension of the chain. Gradually loosen the rear wheel axle fasteners located on each side of the rear wheel. Slide the wheel to re-tension the chain, and center the wheel in the frame. Tighten one fastener and check chain tension. When grasped in the middle of the chain, run between the front and rear sprockets, there should be about 12 mm (0.5 inches) total up-and-down movement. After you are happy with the tension, make sure both fasteners are tight and wheel is centered in the dropouts. Please note that an overly tight or loose chain can damage the drive-train prematurely.

STURMEY ARCHER GEAR ADJUSTMENT (MULTISPEED HUMMINGBIRD)

If moving the shift control one click repeatedly fails to result in a smooth shift to the next gear chances are that the mechanism is out of adjustment. Take the bike to your local bike shop to have it adjusted or refer to the Sturmey user manual found here: bit.ly/Sturmey



LUBRICATION AND CLEANING

Once a month clean and oil the chain. When lubricating or cleaning your chain, always place a rag behind the chain to avoid getting oil on the rest of the bicycle. It is important to use a synthetic chain oil or something similar. We found that a dry lube such as a paraffin based product gives the best results. Please refer to the use instructions of the lubrication product.

We do not recommend cleaning the chain with solvents while on the bike as they can damage the finish of your Hummingbird.

RECOMMENDED TOOLS

- Torque wrench with lb-in or Nm gradations
- 2, 2.5, 4, 5, 6, 8, 10 mm allen key wrenches
- 15 mm open-ended wrench
- Bicycle tire pump with gauge
- Puncture repair kit
- Tyre levers

***For replacement parts, call us at +44 (0) 1295 273 355 or email at hello@hummingbirdbike.com

Servicing



FIRST SERVICE

On the first few rides the wheels might be subject to a bedding-in process or cables may stretch, making gear shifting imprecise. In the first 30 days Hummingbird must be taken to a bike shop for inspection and adjustments if necessary.



REGULAR ANNUAL SERVICE

If you have been riding regularly through the year we recommend that you have your bike thoroughly checked. Depending on how much you cycle, the repair of worn-down parts may be necessary already.

The annual service can be carried out by our skilled staff at Hummingbird, upon request. Please contact us at +44 (0) 1295 273 355 or email us at hello@hummingbirdbike.com

Alternatively, you can take Hummingbird to any authorised bicycle shop. We have tried our best to make Hummingbird as easy to service as possible. Still, there are some unique design features that might require further instructions. Please do contact us with any enquiries.



HUMMINGBIRD SAFETY CHECK

If you ride your Hummingbird less than 1,000 km (620 miles) a year, it requires less servicing. Please service when required - consult the maintenance table for further details. We have developed a maintenance schedule to help you enjoy your Hummingbird for many miles.

To be able to enjoy your Hummingbird for many years it needs to be serviced regularly. The schedule given in chapter "Maintenance" is a rough guide for cyclists who ride their bike between 1,500 and 2,500 km (930 and 1,550 miles) a year. If your Hummingbird does harder service, either because your mileage is consistently bigger or because you ride a great deal on poor road surfaces, it will require shorter maintenance periods. This includes frequent rides in the rain, as well as in wet conditions. If a component needs to be replaced, make it a rule to only use original parts.



THE FIRST 2 YEARS

During the warranty period (1 year for components and 5 years for the frame), Hummingbird make available all your essential spare parts. In the event of unavailability, Hummingbird will offer spare parts of equal or higher value.

Never work on your bicycle unless you feel absolutely confident in your skills!

If you are in doubt or if you have any questions, contact us at hello@hummingbirdbike.com

Maintenance

When performing basic maintenance please be aware of the moving and clamping parts.

Bicycles are subject to wear and high stresses. Different materials and components may be affected in different ways. If the design life of a component has been exceeded, it may suddenly fail, possibly causing injury.

Any form of crack, scratch or change of coloring may indicate that a component requires replacing.

Remember to maintain, clean and lubricate your Hummingbird using appropriate cleaning and lubing products. Please refer to the maintenance table for specific lubrication locations and schedules.



CLEANING YOUR BIKE

Dirt and salt from riding during the winter or in sea air harm your Hummingbird. You should therefore make a habit of regularly cleaning all the components of your Hummingbird and protecting them from corrosion.

Do not clean your Hummingbird with a steam jet. This cleaning method is quick, but it entails serious drawbacks: as the water is ejected at high pressure in a narrowly focused jet, it may pass through seals and penetrate bearings. This leads to the dilution of lubricants and consequently to greater friction and onset of corrosion. This destroys and impairs the functionality of the bearing races in the long term. Steam jet treatment also tends to abrade paint and decals.

A more suitable way of cleaning your Hummingbird is with a soft cloth and a multisurface cleaner spray.

Cleaning your Hummingbird by hand gives you the opportunity to identify any defects in the paint or worn or defective components at an early stage.

After drying your Hummingbird you can polish its coating and metal surfaces with hard wax. Apply the hard wax also to hubs, bolts and nuts etc.

Use a hand-held atomizer for parts with small surfaces. Polish waxed surfaces with a soft cloth to give them a nice shine and make them water-repellent. Inspect the chain after you have finished cleaning and grease or lubricate it, if necessary.

Maintenance Table

COMPONENT	SERVICE CHECK	FREQUENCY			
		BEFORE EVERY RIDE	MONTHLY	ANNUALLY	OTHER
Lights	Check batteries	*			
Tyres	Check Pressure	*			
Tyres	Check for wear and damage		*		Replace if necessary
Brake pads	Check for wear and damage		*		
Brake cables	Visual check for wear and damage		*		
Geared hub	Regrease			☛	
Bottom bracket	Check for play		*		Replace every 6,000 KM
Chain	Check and/or lubricate	*			
Chain	Replace				Every 1,000 KM
Crank	Check and/or retighten			☛	
Paint	Polish				At least every 6 months
Wheels	Check trueness and tension		*		Retrue if necessary
Handlebar	Visually inspect			☛	Replace if necessary
Folding stem	Check for play and/or lubricate		*		
Headset	Check for play		*		Replace bearings if necessary every 6,000 KM
Pedals	Check for bearing play		☛		
Pedals	Check locking mechanism	*			
Nut and bolts	Check and/or retighten		☛		
Valves	Check for wear		*		
Seatpost	Remove and regrease			☛	
Gear/brake cables	Remove and regrease			☛	
Mudguards	Visually inspect and/or retighten			☛	

Jobs marked “*” you should be able to do yourself, provided you have a certain degree of manual skill, a little experience and suitable tools. If you come across any defects, take appropriate measures without delay.

If you have any questions call us at +44 (0) 1295 273 355 or email at hello@hummingbirdbike.com



General information

URBAN CYCLING

The Hummingbird is designed for use as an urban bicycle on paved roads only. Other uses, such as jumps or stunts, may cause damage to the frame and risk rider injury.

Some places require the use of lights and other accessories. Riding in some areas can be restricted. Check out your local laws and regulations and follow them when you're out riding.

Always be on the lookout for potholes and other dangers, like car doors opening. Think about your own visibility and try to avoid entering driver blind spots. Always fall behind vehicles when entering a junction. When possible, do not ride on the inside of the road in junctions, as turning vehicles might not see you.

Luggage carriers can be fitted on Hummingbird to the handlebar stem and seatpost. Hummingbird is not suitable for use with a trailer bicycle.

A bicycle trailer can be attached to Hummingbird. Please refer to the trailer manufacturer's instructions for fitting.

Hummingbird is suitable for attachable luggage carriers as long as the maximum weight limit is not exceeded.

Hummingbird is designed for a single rider. Please do not carry children or passengers on your Hummingbird.



STAY ALERT

Don't wear headphones or sunglasses that affect your vision. Don't ride if you have consumed alcohol.



WEIGHT

You and your gear have to weigh less than 110 kg (240 lbs). If carrying extra weight or bags, make sure the bike is stable. Hummingbird is designed for one rider only.



VISIBILITY

Riding in low light or poor visibility is much more dangerous than in normal lighting conditions. Always ride with lights and reflectors.

Riding a bike is fun. Riding the Hummingbird is REALLY fun - but we do want you to keep an eye on the safety regulations and respect your surroundings.

So here's a few key pointers for you to consider before going out for a ride.



1. Never ride without a helmet and make sure you always wear appropriate clothing.

2. Never ride your bike with incomplete or improper maintenance. You could endanger your life or the lives of others.

3. Make sure your front wheel, handlebar stem and seat post quick release levers are tightly closed in place. When tight, the levers should have a firm feel and prevent any rotation or rattle. If you're unsure, drop by your local bike shop and ask a technician to demo the proper way.

Sign up to TfL's cycle training to increase confidence on two wheels and make you feel safer: tfl.gov.uk/cycletraining.

Hummingbird Electric



SAFETY INFORMATION

Read all safety warnings and all instruction. Failure to follow the warnings and instructions may result in serious injury. Save all safety warnings and instructions for future reference.

- ✎ DO NOT open the unit yourself. Hummingbird Electric is maintenance-free and must be repaired only by qualified experts and only with original spare parts. Any unauthorized attempt to open the unit will void warranty claims.
- ✎ DO NOT make any modification to your Electric Hummingbird and DO NOT remove the anti rotational plates from your bike. This would yield to an incorrect behavior by your bike and it may result in serious injury.
- ✎ DO NOT use the bike without the protection covers for the charging connector (see Figure 1). Warranty is void if the bike is being used without protecting the connector. Please observe all national regulations on registering and using e-bikes.
- ✎ The term “battery pack” refers to an internal part of the Hummingbird system. DO NOT try to access the battery pack.
- ✎ Your Hummingbird must not be subjected to direct mechanical impacts. There is a risk that the battery pack and the electronics will be damaged.
- ✎ Protect the battery system against severe heat, fire and immersing into water. Danger of fire and explosion.
- ✎ Vapors can escape in case of damage or improper use of the battery. Avoid contacts with those vapors, as they can irritate the respiratory system.
- ✎ Charge the battery pack only with original Zheus battery charger. Damage can occur while using non original charging devices.
- ✎ IF your Hummingbird wheel has a 6 pin connector (see Figure 1), please be careful to insert the 6 pin charger plug in the 6-pin connector in the proper way. Otherwise short circuits can occur. Warranty is void if charger is not inserted correctly. Do not short circuit the pinout of the charging connector.
- ✎ Keep the battery charger away from rain or moisture. Keep the battery charger clean. Danger of electric shock
- ✎ Before any charging operation, check the battery charger status (cable, plug, connectors). If any damage is detected, DO NOT use the charger and contact a qualified retailer.

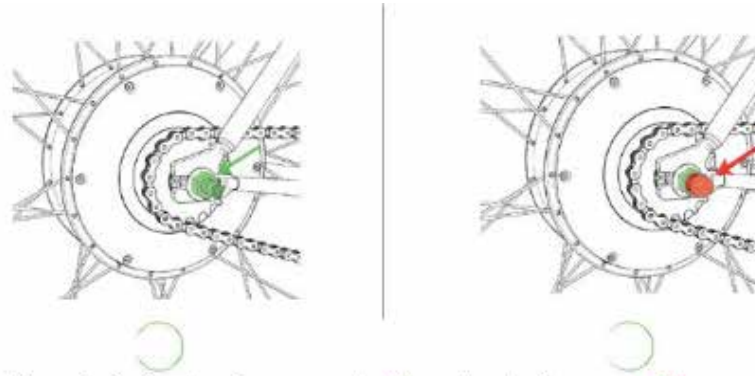


Figure 1: 6-pin charging connector (1) and protection cover (2)

SAFETY INFORMATION

- Before any charging operation, check the battery charger status (cable, plug, connectors). If any damage is detected, DO NOT use the charger and contact a qualified retailer.
- Do not operate the battery charger on flammable surfaces.
- Vapors can escape in case of damage or improper use of the charger. Avoid contacts with those vapors, as they can irritate the respiratory system.
- Keep the charger out of children reach.



Getting started

INTENDED USE

Hummingbird Electric is intended to be used exclusively with the bike which was sold with. Any attempt to mount the motor in one on another bike will void warranty claims. Hummingbird Electric is not permitted for competition and race use.

INITIAL OPERATION

The motor can only be activated when the battery state of charge is sufficient. In order to check the battery state of charge of your Hummingbird please refer to 4.1.

TURNING ON THE SYSTEM

The motor turns on automatically when the rear wheel reaches a speed higher than 5 km/h. Thus, to turn on your Electric Hummingbird just start pedaling your bike as usual or spin the wheel while you lift the bike, as explained in Figure 2.

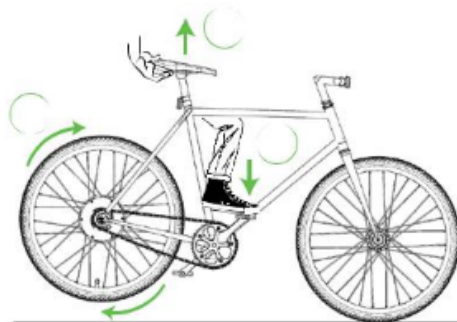


Figure 2: in order to turn on BIKE all in one, lift the bike (1), push the pedal (2) such that the rear wheel reaches at least 5 km/h (3).

TURNING OFF THE SYSTEM

The motor turns off when no activities are detected within 2 minutes.

WHEN A SMARTPHONE IS CONNECTED the system will stay active for 10 minutes. If your Electric Hummingbird is electronically locked, the system will stay active as long as possible (see 4.2 for details)

Your e-ride

It is recommended to gather first experience with Electric Hummingbird away from roads with heavy traffic. The motor is an advanced powertrain for e-bikes that helps you in reducing your pedaling effort. The system is compliant to the EU laws on Electric Pedal Assisted biCycle (EPAC).

ACTIVATION PROCEDURE

When Electric Hummingbird is turned on, the motor assistance is not yet activated for safety reasons. In order to activate the motor assistance, you must perform all the following steps:

1. Ride the bike and reach 8 km/h
2. Pedal backwards 3 times continuously

The bike will slow down while performing the step 2, due to the regenerative braking function (see 2.2).

MOTOR ASSISTANCE

The motor assists the rider up to 25 km/h and with a maximum power of 250W just if you are pedalling. As soon as you stop pedalling, the motor will stop pushing.

The generated power depends on several factors including the bike speed, the pedaling speed and the motor settings. For instruction on how to change the motor settings please refer to 4.5

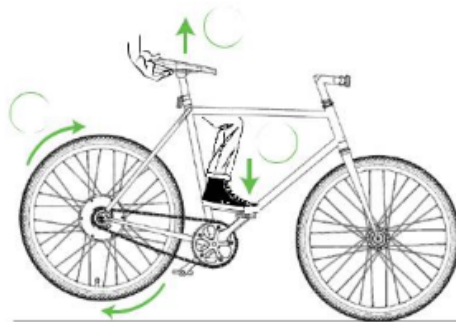


Figure 2: in order to turn on BIKE all in one, lift the bike (1), push the pedal (2) such that the rear wheel reaches at least 5 km/h (3).

REGENERATIVE BRAKING

Electric Hummingbird features a regenerative braking function; this allows you to slow down the bicycle using the electric motor as a generator recharging the batteries thanks to the integrated Kinetic Energy Reccuperation System (KERS). In order to activate the regen-erative braking you need to pedal backwards. As soon as you stop pedalling, the motor will stop braking.

CAUTION: Regenerative braking DOES NOT substitute safety mechanical brakes. Please do NOT remove the mechanical brakes from your bike. Regenerative braking WILL NOT BE AVAILABLE when your Electric Hummingbird is fully charged.

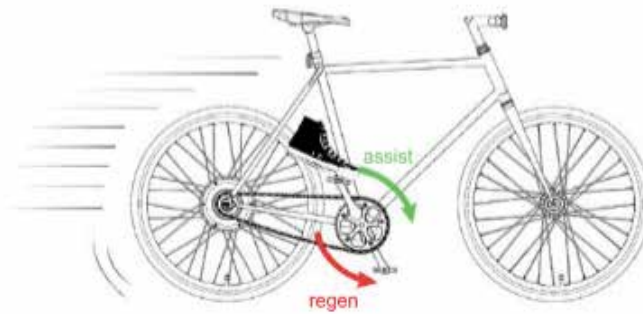


Figure 4: motor assistance and regenerative braking

CHARGING HUMMINGBIRD ELECTRIC

To charge Electric Hummingbird, simply remove the protection cap from the charging connector (1) and plug in the Zehus charger (2). Then connect the Zehus charger to a power outlet (110~240 V).

The charging time is approximately 3 hours for a complete charge. While Hummingbird Electric is charging the charger LED must turn RED. When Hummingbird Electric is completely charged, the charger LED turns GREEN (3).

NOTE: when the charger get disconnected from the bike, Hummingbird Electric will turn off.

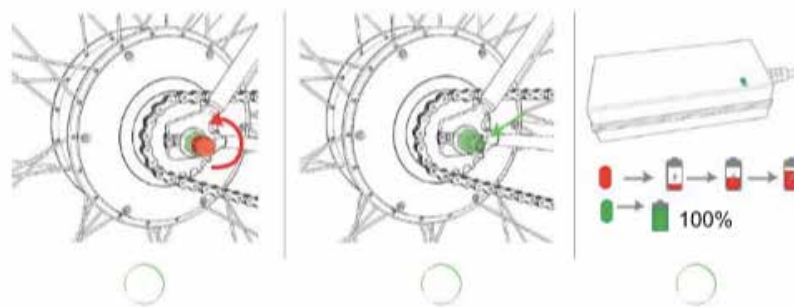


Figure 5: charging BIKE all in one

CHANGING GEARS

Although Hummingbird Electric is intended to be used as a single speed hub, you can decide to change the sprocket or the crankset. If you change one or more of these components by yourself, BIKE all in one performances could be not optimal. Please contact a retailer in order to update your bike firmware with your new gear set.

Whenever you change tire size (e.g from 700x23c to 700x35c), please contact the retailer to update your bike firmware. Otherwise the displayed speed could not be correct.

CAREFUL HANDLING

Please observe the operating storage temperature of Hummingbird Electric. Protect the charging connector from impacts that can damage it. The components can be damaged if exposed to extreme temperatures.

CAUTION: ALWAYS seal the connector on Hummingbird Electric with the proper protection cap (5) before riding. Using Hummingbird Electric without the protection cap will void the warranty.

The app

In order to access all the function of Hummingbird Electric, you would have to connect a smart-phone through the bitride app.

WHAT IS THE BITRIDE APP?

The bitride app helps you to act smarter during the everyday mobility; bitride also allows you to connect to a variety of devices via bluetooth, including your Hummingbird Electric.

WHICH DEVICES DOES THE APP SUPPORT?

Devices with Android 4.2.3 or newer are supported; iPhone 4s, iPhone 5, iPhone 5s, iPhone 5c, iPhone 6, iPhone 6+ are also supported.

HOW DO I GET THE APP?

You can download the bitride app from the Google Play store (for Android devices) or from the Apple store by searching for "bitride" or by using the links below.



iPhone



<https://goo.gl/ryvMuY>

Android™



<https://goo.gl/yo1axU>

HOW MUCH IS THE APP?

The bitride app is available for free.

HOW DO I INSTALL BITRIDE?

Depending on your mobile device, go either to the Apple Store or to Google Play and search for the bitride app. The detailed procedure is listed below.

On iPhone:

- o Open App Store
- o Tap the search icon
- o Enter "bitride" in the search field
- o Select bitride in the search results
- o Follow the standard installation procedure
- o Register with a valid e-mail address

On Android:

- o Open Google Play
- o Tap the search icon
- o Enter "bitride" in the search field
- o Select bitride in the search results
- o Follow the standard installation procedure
- o Register with a valid e-mail address

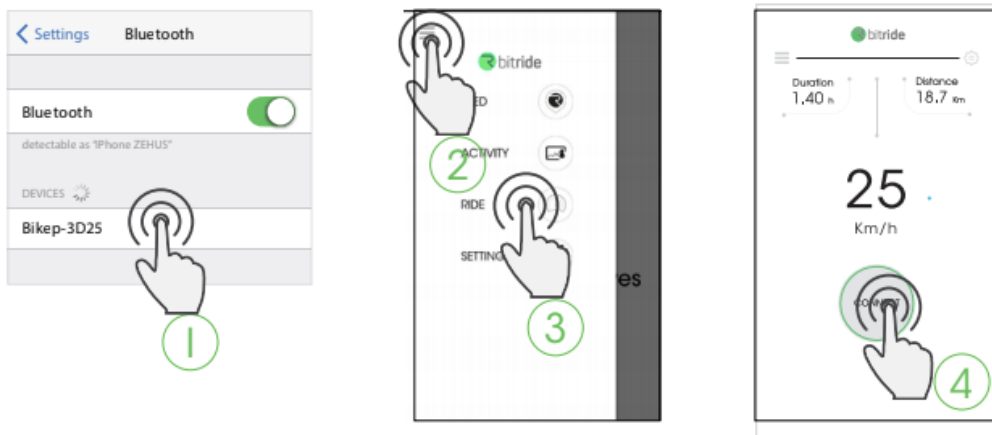
NOTE: bitride connects through bluetooth to your Hummingbird Electric. When first connecting to a factory reset Hummingbird Electric, the name of the device will be Bike-XXXX, where XXXX is a number.

Once your Hummingbird Electric is turned on (see 1.3), you can connect bitride to the bike. Depending on your mobile device the procedure may change.

CONNECTING BITRIDE ON IPHONE

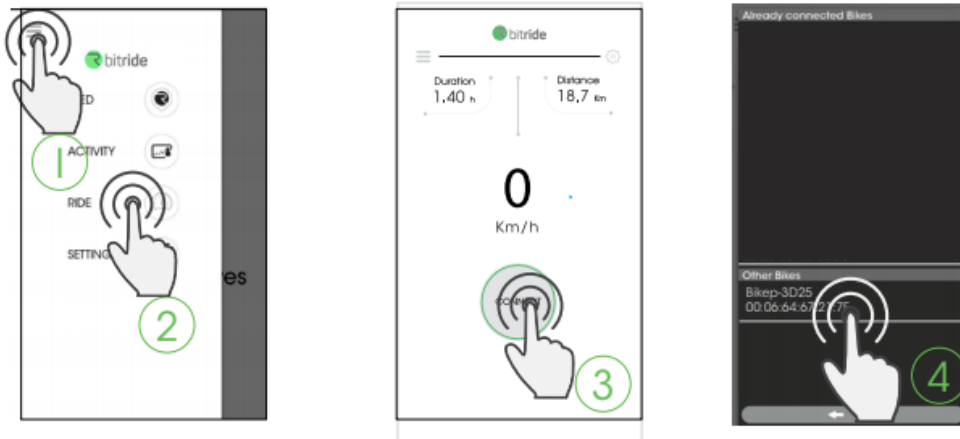
- o Open the bluetooth settings screen
- o Tap your Hummingbird Electric name
- o Wait for connection
- o Launch bitride
- o Using the upper screen menu, select RIDE
- o Press CONNECT

! NOTE: If you have an iPhone bitride will auto-connect to your Hummingbird Electric after the first time the device is paired.



CONNECTING BITRIDE ON ANDROID

- o Launch bitride
- o Using the upper screen menu, select RIDE
- o Press CONNECT to access the connection menu
- o Tap your Hummingbird Electric name
- o Wait for connection



BIKE REGISTRATION (FIRST USE)

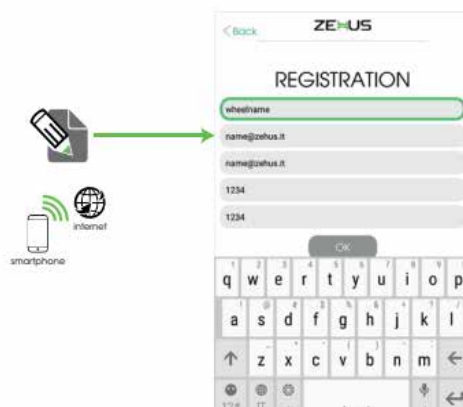
NOTE: it is not mandatory to perform this action. Your Hummingbird Electric is ready to go with the default motor settings (see 4.5)

In order to use your Hummingbird Electric together with bitride, you need to register it using your bitride app. By registering to bitride you will be able to:

- o change your Hummingbird Electric name
- o change your motor settings
- o access to online fault diagnosis
- o access to remote maintenance
- o access to remote anti theft service: if you reported your Hummingbird Electric as “stolen” any attempt to connect to your Hummingbird Electric will be reported to our servers

To register your Hummingbird Electric please fill in the registration form in the app welcome screen by providing:

- o a bike name for your Hummingbird Electric
- o a valid e-mail address: a validation code will be sent to you in order to complete the registration
- o a 4-digit PIN code that you set as security for your Hummingbird Electric



BITRIDE HMI

Even if it is possible to use Hummingbird Electric with out the bitride app, you can access more features if you connect it to a smartphone.

To access the “ride” screen tap the hamburger menu on the upper left side of the screen and select RIDE. To access the online dashboard please connect to your Hummingbird Electric by following the instruction in 3.6.

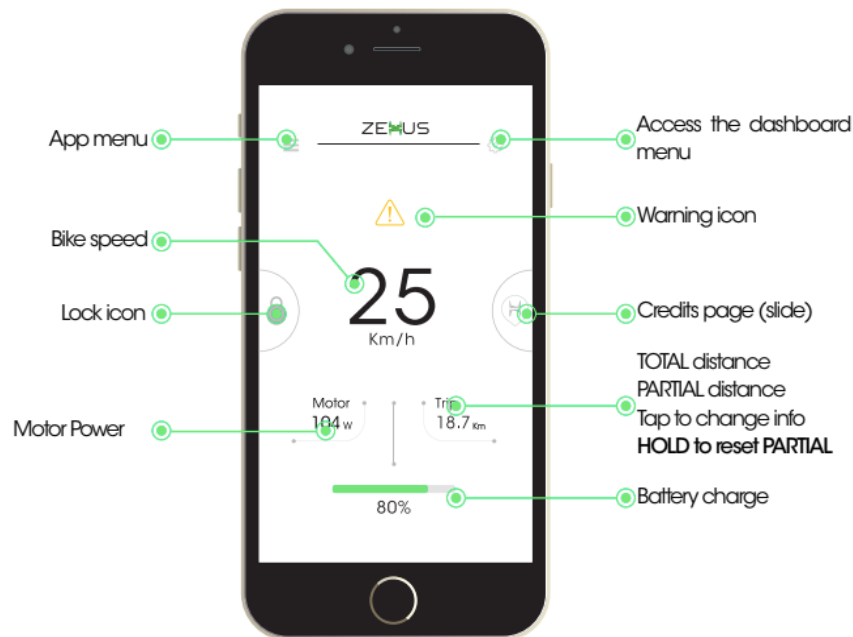


Figure 6: bitride dashboard for BIKE all in one

USING THE DASHBOARD (FIG 6)

The bitride dashboard for Hummingbird Electric displays the following information:

- o Bike SPEED [Km/h] or [mi/h]
- o Total ODO [Km] or [mi]
- o Partial ODO [km] or [mi]
- o Motor Power [W]
- o State of charge of the battery [%]
- o Warning icon (see 4.7)

LOCK / UNLOCK YOUR ELECTRIC HUMMINGBIRD (FIG 7)

Hummingbird Electric features an electronic lock that can be enabled by swiping to the right the lock icon . This function makes the rear wheel of your bike stiffer and very difficult to pedal on.

This function is available when the battery charge is greater than 20% AND the bike is at 0 km/h. This function is unavailable while charging your Hummingbird Electric. Once the lock is activated this will work even if you disconnect your smartphone from the bike.

To unlock the bike, just connect your smartphone and swipe to the right the unlock icon.

! NOTE: the embedded electronic lock will not prevent thieves from stealing your bike. Please use an additional mechanic lock during prolonged stops. The embedded electronic lock drains a little energy from the battery. You can check the remaining energy on the lock screen of your smartphone.

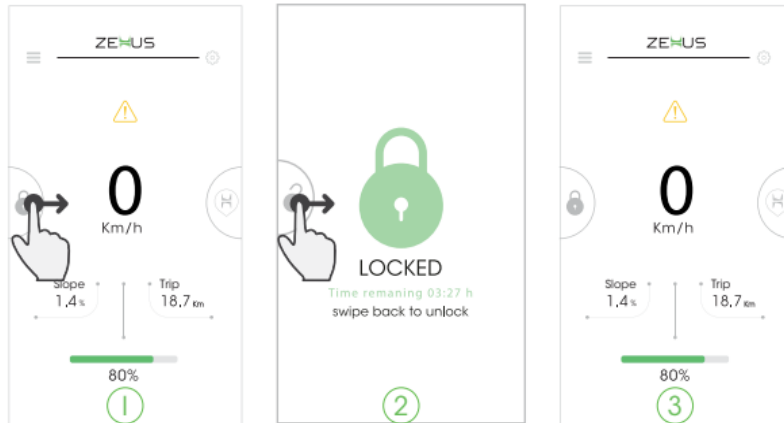


Figure 7: locking / unlocking BIKE all in one

DASHBOARD MENU (FIG 8)

In this screen you can customize the motor assistance while pedalling (see also 4.5), the amount of regenerative brake (KERS) and the units you prefer to display speed and distance. Furthermore, you can perform the factory reset of your Hummingbird Electric by sliding the factory reset icon on the right side of your screen. For any modification performed in this screen the bike must be still (speed must be 0 km/h).

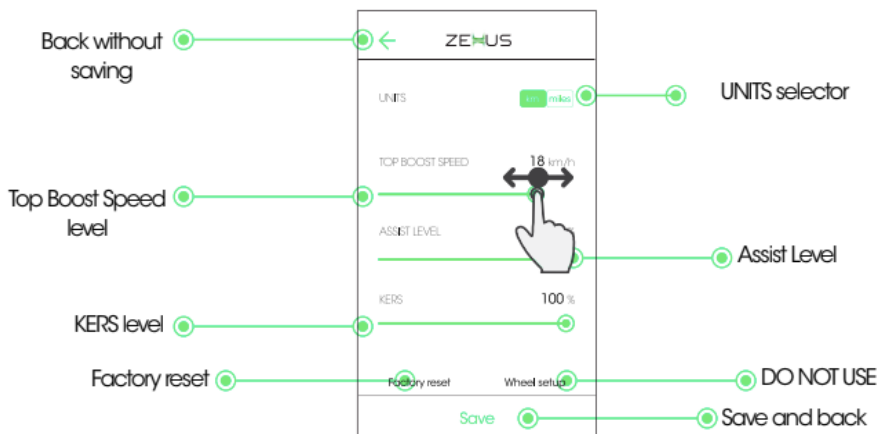


Figure 8: dashboard menu

PERFORMING A FACTORY RESET

In order to perform a factory reset on your Hummingbird Electric, please tap the hyperlink “factory reset” on the dashboard menu. The app will ask you to insert the pin of your bike to perform the factory reset.

This procedure will reset the bike name, the bike PIN and the e-mail associated with your Hummingbird Electric.

MOTOR SETTINGS

Your Hummingbird Electric let you customize the motor assistance while pedalling by selecting 2 different parameters: Top Boost Speed and Assist Level.

By changing the TOP BOOST SPEED parameter (0 to 25 km/h), you set the speed the motor assists you at the maximum level. For higher speed than this limit the assistance will decrease to be 0W at 25 km/h.

By changing the ASSIST LEVEL parameter (0% to 100%), you set the maximum level of assistance of the motor. 100% means 250W peak. Please refer to Figure 9 and Figure 10 for further information.

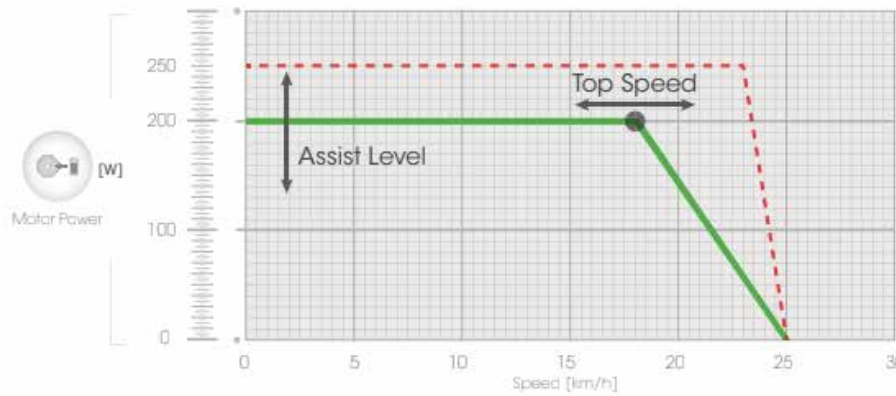


Figure 9: motor settings and power limitations

Note: the assistance also depends on your pedalling power. Figure 9 and Figure 10 is intended to explain the motor settings and NOT to give you detailed information about the effective motor power.

The default motor settings are:

- o Top Boost Speed: 10 km/h
- o Assistance: 60%
- o KERS: 100%

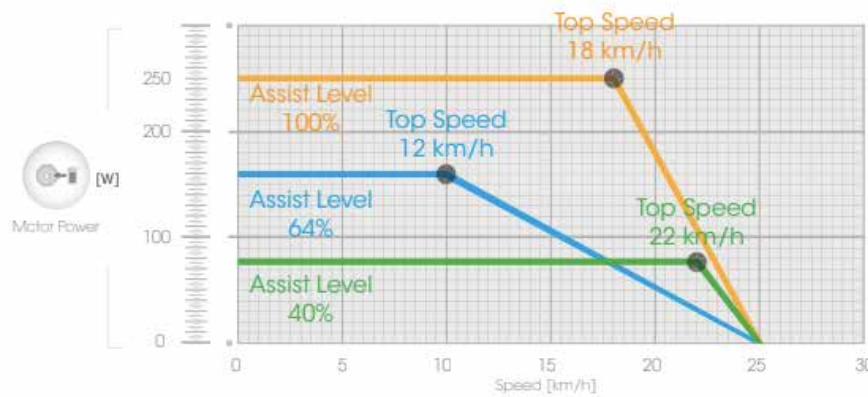


Figure 10: example of different motor settings

INFLUENCES

The range of Hummingbird Electric depends on many factors as:

- o Motor settings
- o Tire pressure
- o Road conditions and route profile
- o Head winds and ambient temperature
- o Weight of the driver and luggage
- o Age and using condition of the battery pack
- o Rider pedaling effort

It is very difficult to predict a range for the different operational modes indicated above.

WARNING ICONS

Warning icons let you understand when there is something wrong with your BIKE all in one functioning (see 4.1). If you experience a problem that prevent you from using your Hummingbird Electric correctly, please contact our customer care on our website or at hello@hummingbirdbike.com Icons can appear both yellow (warning) or Red (severe risk or damage).

The warning icons that can appear on your bitride app in the dashboard are:



TEMPERATURE WARNING

This icon appears when the temperature inside the hub reaches a critical level. The system will automatically set the amount of power not to be damaged.



CONNECTIVITY WARNING

This icon appears when there is a connectivity problem with the bike. Even if the bluetooth is connecting to the bike, it could be possible to get this warning.



PEDALLING SENSOR WARNING

This icon appears when there is a problem with the pedaling sensor. Please contact us to get this component fixed!



BATTERY WARNING

This icon appears when there is a problem with the battery pack. Please contact us to have your battery pack fixed!



POWERTRAIN WARNING

This icon appears when there is a problem with the electric powertrain. Please contact us to get the powertrain fixed!



CHARGING WARNING

This icon appears when you are charging Hummingbird Electric.



WARNING ICON

Tap on this generic Icon to be prompted for the problem / useful info (e.g. activation needed, scheduled maintenance, etc.)

Technical data

DRIVE UNIT	
Rated power	250W
Maximum torque	20 Nm
BATTERY PACK	
Rated voltage	29.2V
Rated capacity	5300 mAh
Energy	154.8 Wh
HUB	
Weight	3.2Kg
Operating temperature	-20°C to +70°C
Storage temperature	-40°C to +60°C
Charging temperature	-20°C to +60°C
Degree of protection	IP54
CHARGER	
Voltage input	100-240 V, 50/60 Hz
Output voltage	31.2 V
Charging current	1.5 A
Charging time (approx)	3 h

e-Maintenance

CAUTION: Every maintenance procedure (even cleaning Hummingbird Electric) must be done with the "BIKE" mode enabled. On the contrary, severe injury may occur.

CLEANING YOUR ELECTRIC HUMMINGBIRD

Please keep Hummingbird Electric hub clean. Clean it with a soft, damp cloth. Hummingbird Electric may not be immersed in water or cleaned with high pressure cleaner. DO NOT use a high pressure water jet to clean Hummingbird Electric. For service, firmware upgrades, battery substitutions and repairs on the hub, please refer to authorized Zehus dealers.



TRANSPORT

Item with internal battery packs are subject to Dangerous Goods Legislation requirements. Private users can transport such undamaged items by road without further requirements. When being transported by commercial users or third parties (e.g. air transport or FWD agencies), special requirements on packaging and labeling must be observed (e.g. ADR regulations). If necessary, an expert for hazardous materials can be consulted when preparing the item for shipping.

Dispatch Hummingbird Electric only when the housing is undamaged. Tape or mask off the 6-pin connector in such a manner that the connector itself cannot be damaged or broken. Inform your parcel service that the package contains dangerous goods.

Only for EC countries:

According to European Guideline 2012/19/EU, electrical devices/tools that are no longer usable, and according to European Guideline 2006/66/EC, defective or used battery packs/batteries Hummingbird Electric must be collected separately and disposed of in an environmentally correct manner.

Battery pack

The battery pack is protected against deep discharging, overcharging, overheating and short circuit through the Battery Management System (BMS). In case of dangerous situation an electronic protection will switch the battery pack off. Although the battery pack is protected from deep discharging, it is recommended to fully charge the battery pack before the first use of the bike.

CHARGING

The battery pack can be recharged at any time without shortening its lifespan. Interrupting the charging process does not damage the battery pack.

In order to recharge Hummingbird Electric connect the charger plug to the charging connector located on the right side of the Hummingbird Electric axle. Then connect the charger plug to an outlet (see 2.3, Figure 5). Check the mains voltage: it must match the one indicated below the charger itself! The charging procedure will start as soon as the charger is connected both to Hummingbird Electric and to the mains. While charging, the LED located on the charger is red. The system is deactivated while charging the battery pack.

When the charging procedure is over, the LED located on the charger turns green. Disconnect the charger from the mains and from Hummingbird Electric. Be careful when touching the charger, it can heat up considerably while charging. Remember to seal the connector on Hummingbird Electric with the proper protection cap (see Figure 1). Using Hummingbird Electric without the protection cap will void the warranty.



STORAGE

Hummingbird Electric has to be stored at the right temperature. The battery pack life can be maximized by following the rules for a correct storage and handling. In case of malfunctioning your battery pack will have to be replaced, please contact Hummingbird at hello@hummingbirdbike.com.

! Note: when not using the bike for long periods it is recommended to charge the battery pack to 60% and to check the battery condition at least every 6 months. Before using the bike after a long period it is recommended to fully charge the battery.

Store Hummingbird Electric in a well-ventilated location, dry if possible. Protect the hub from moisture and water. The optimal storage temperature is +20°C and the bike must be stored between -40°C and +60°C. It is preferred not to leave the bike under the direct sunlight during hot summer days.

Warranty

During the warranty period Hummingbird warrants the bike to be free from any defect in materials or workmanship used at the time of manufacture. Your Hummingbird warranty commences from the date of purchase.

BEST PRACTICE

Read your owners manual and follow the recommendations for inspection and servicing ensuring you keep records of all service, repair or warranty repairs completed on your Hummingbird

Ensure that the way you use your Hummingbird is not classed as 'misuse' by following the guidance provided in your user manual

Keep your sales invoice in a safe place for future reference



WHAT WE WILL COVER

Your Hummingbird frame and swing arm components are covered for 5 years.

Other non-wearing parts (crank arms, calipers, seat post, folding stem etc.) are covered for 1 year.

WHAT WE WILL DO

Any part found to be defective during this period will be repaired or replaced by Hummingbird. This is the sole remedy offered under this warranty and any part replaced under the warranty terms will be covered for the remaining warranty period of the bike

Hummingbird may, at its discretion, make repairs to or replace defective parts falling outside of the warranty period, however such work shall not be deemed any admission of liability



WHAT WE WILL NOT COVER

The bike must not have been misused, inadequately maintained, incorrectly serviced, modified, be fitted with components not recommended or supplied by Hummingbird, be used in extreme climates or expose to severe conditions, or be used on a commercial basis

The bike must have been serviced at the recommended intervals (these can be found in the Hummingbird User Manual) and service documents made available for inspection

Components expected to wear as part of their normal function are excluded from this warranty, unless there is a manufacturing defect in the part. Components expected to wear as part of their normal function on the Hummingbird are; tyres, brake pads, chains and sprockets.

Other items excluded from the warranty are; the saddle, paint/lacquer, decals or anodised aluminium component finish where deterioration has been caused by normal wear and tear, exposure or lack of correct maintenance

In the event the frame number plate has been removed, tampered with or cannot be clearly identified the warranty will be invalidated.

In the event of a warranty claim it is the responsibility of the owner to arrange for suitable transportation of the bike to the agreed repair location. Furthermore Hummingbird will not be liable for expenses incurred whilst the bike is off the road including costs associated with loss of use, inconvenience, lost time, commercial losses or consequential damages.



THE LEGAL BITS

This warranty shall be interpreted in accordance with English law and as such any question arising in relation to the warranty shall be subject to the jurisdiction of the English courts.

Any statement, condition, representation, description or warranty otherwise contained in any catalogue advertisement or other publication shall not replace, override or vary the terms contained within this warranty document.

Misuse of your bike shall include but is not limited to; bikes used for racing, jumping, track riding or other non-standard use. In addition, the user manual highlights that the bike is designed for use on roads and well-made paths. It is not designed for cross country riding.

This warranty can be transferred to subsequent owners of the Hummingbird but will only apply for the stated duration from the original date of sale.

Claims made outside the country of original purchase may be subject to additional fees and restrictions.

This warranty does not affect your statutory rights

Legal requirements

Each country has its own guidelines around cycling, which we highly recommend reviewing before riding your Hummingbird. According to the Highway Code in Great Britain, your bicycle must be fitted as follows:

UNITED KINGDOM

For further information see:

<http://www.direct.gov.uk/>

<http://www.dft.gov.uk>

<http://www.ctc.org.uk/>

U.S.A.

For further information see:

<http://bikeleague.org/>

StateBikeLaws

EUROPE

For further information see:

<https://ecf.com/>

JAPAN

For further information see:

<http://www.japancycling.org/v2/info/biking.shtml>



LIGHTING, REAR LIGHTS, REFLECTORS

At night the bicycle must be fitted with the following lighting: front light, white rear light, amber pedal reflectors. In addition, it should be fitted with: front reflector, white spoke reflectors.

It is not required that the prescribed lighting is mounted upon sale of the bicycle. If it is, however, it must comply with these regulations.

Bicycles that are only used with good daylight visibility, such as road racing bicycles, are exempt from the lighting regulations.



SIGNALING DEVICES

It is recommended that a bell be fitted.



CYCLE HELMETS

Wearing a cycle helmet is not compulsory.



TAKING CHILDREN WITH YOU

There are no rules as to the transport of children with bicycles.



TRAILERS

There are no rules as to the usage of trailers.



OTHER ISSUES

Using cycle lanes is not compulsory.

Hummingbird parts



- | | |
|----------------|-----------------------------------|
| 1. Headset | 9. Crankset |
| 2. Brake Lever | 10. Chain |
| 3. Handlebar | 11. Wheel |
| 4. Handlepost | 12. Swing Arm |
| 5. Brakes | 13. Seatpost |
| 6. Fork | 14. Saddle |
| 7. Frame | 15. Swing Arm Quick Release Lever |
| 8. Pedal | |

Torque settings

This page lists the torque specifications for all parts used on your Hummingbird. If you do not understand what torque is, or are unfamiliar with how to determine bolt size, talk to your local bike shop or contact us.

Some parts are labelled with the torque specifications; always follow the information printed on the part. Torque is a measurement of the tightness of a threaded fastener, such as a screw or a bolt, determined by using a torque wrench. The torque specifications in this manual are listed to help you determine the correct tightness of parts and their threaded fasteners.

COMPONENT	TORQUE VALUES
Front and Rear brake caliper fixing bolt	7 Nm / 70 lb*in
Brake cable clamp bolt	5.7 Nm / 50 lb*in
Brake pad bolt	6 Nm / 60 lb*in
Shifter/Brake levers	5.7 Nm / 50 lb*in
Crank with double bolts on left arm	12-14 Nm / 106-120 lb*in
Chainring bolts	8 Nm / 79 lb*in
Mudguard strut bolts	2.9 Nm / 25 lb*in
Pedal axle	34 Nm / 300 lb*in
Seatpost saddle cradle double bolts	6.8 Nm / 60 lb*in
Folding stem steerer clamp double bolts	5.2 Nm / 46 lb*in
Headset compression cap	5.7 Nm / 50 lb*in
Rear wheel nut fasteners	27 Nm / 240 lb*in



Enjoy the ride!