

BIGHORN EBIKE 2020 MANUAL



WELCOME

First off, welcome to the Wattwheels family! We're so happy to have you on board! You've picked a great model and, in this manual, we're going to break down the basics to make sure that your bike remains in top shape and performs to the highest standard.

You're about to experience the ride of your life. In order to get you out and having fun as quickly and as safely as possible please read the all the manual carefully, paying close attention to the safety section.

Also, we highly recommend familiarizing yourself with local laws for e-bikes and the components of the model that you have before your first ride.

Wattwheels assumes that all persons involved in: using, repairing, maintaining, cleaning, or disposing of this or any Wattwheels product must have fully read and understood the content and meaning of these operating instructions.

Additionally, Wattwheels claims no responsibility for any injury or damage resulting in improper use of any electric bike.

READY TO GET STARTED? LETS RIDE!

USING THIS MANUAL

This manual contains details of the product, its equipment, and information on its operation and maintenance. Read it carefully and familiarize yourself with the Bighorn before using it to ensure a safe use and prevent tragic accidents. This Manual contains many Warnings and Cautions concerning the safe operation and consequences if safe setup, operation and maintenance are not performed. All information in this manual should be carefully reviewed and if you have any questions you should contact your local retailer immediately.

Because it is impossible to anticipate every situation or condition which can occur while riding, this manual makes no representations about the safe use of bicycles under all conditions. There are risks associated with the use of any bicycle which cannot be predicted or avoided, and which are the sole responsibility of the rider. You should save this manual, along with any other documents that were included with your bicycle, for future reference, however all content in this manual is subject to change or withdrawal without notice. Visit www.wattwheels.co.nz to download the latest version. Wattwheels makes every effort to ensure accuracy of its documentation and assumes no responsibility of liability if any errors or inaccuracies appear within. Assembly and first adjustment of your Bighorn Bike requires special tools and skills and it is recommended that this should be done by a trained bicycle mechanic if possible.

LET'S GET STARTED:

1. COMPLETELY CHARGE THE BATTERY BEFORE THE FIRST USE

(Red light is on when battery is charging, green when fully charged. Approx. time is around 4-5 hours)

(PLEASE BE CAREFUL NOT TO PRESS THE BRAKES LEVERS WHILE THE FRONT WHEEL IS NOT INSERTED. DOING SO WILL RESULT IN THE BRAKES PADS CLAMPING TOGETHER, AND YOU WILL NOT BE ABLE TO INSERT THE FRONT WHEEL WITHOUT BLEEDING THE BRAKES IN WHICH YOU WILL NEED A BIKE WORKSHOP TO PERFORM)

2. ATTACH THE HANDLEBARS

3. ATTACH THE PEDALS

(Beware: The left-hand pedal has a reverse thread. To tighten, please turn anti-clockwise, right hand pedal is clock-wise))

4. ATTACH THE SEAT POST

5. ATTACH THE FRONT MUDGUARD AND ATTACH FRONT LIGHT (if applicable)

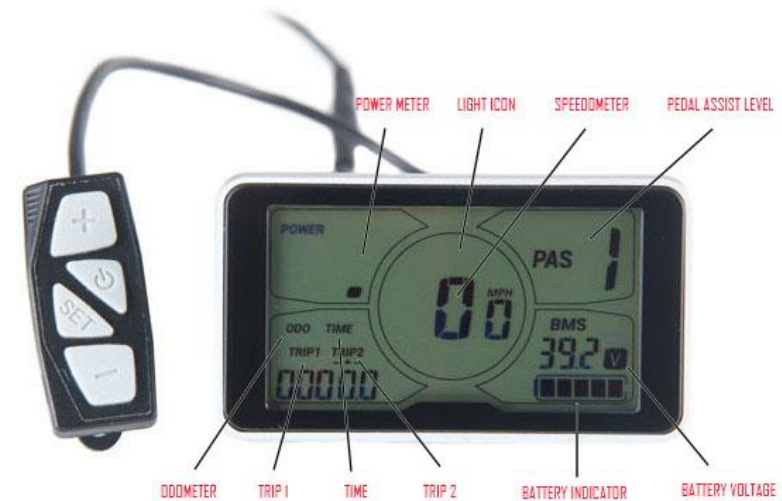
6. INSERT THE FRONT WHEEL WITH QUICK RELEASE

7. CHECK ALL SCREWS AND BOLTS ARE TIGHT, SEAT POST THE CORRECT HEIGHT AND BRAKES WORKING PROPERLY

LCD DISPLAY FEATURES

The image shows the various features and information displayed on the LCD display. The display is controlled using the 4-button remote mounted on the left side of the handlebar. For more information on the LCD display

and operation please refer to the relevant section in this document.. This is also on located online at www.wattwheels.co.nz/manuals



LIGHTS & BACKLIGHTS



To activate the lights press on/off button quickly located on the keypad. A little icon should appear above the speed reading indicating the light is on. To turn off , press on/off button again.

TRIP/ODO & TIME

To toggle between the modes press the set key to switch between them. The selected item is underlined

BATTERY DISPLAY CAPACITY

The LCD readout on the handlebar of your Bighorn Bike features a battery capacity gauge (much like the fuel gauge on an automobile). It is recommended that users stop operating the bike on electric once the bike starts flashing on the last bar and recharges%. Remember you can still ride without using the electric motor or display!

THROTTLE

The Throttle is located on the left-hand side of the handlebars in the form of a thumb piece. Please be careful as these throttles are set to operate the Bighorn from stationary so any slight press of this will propel the Bighorn forward. The throttle can be used when taking off from a stationary start, as a cruise control or just if you're in need of a break! Please be aware using the throttle will drain the battery much quicker than normal riding. Also, the throttle is not designed to climb steep hills. To get the maximum amount of power from the Bighorn on steep gradients select the highest level of PAS and use the lowest gear.

When using the throttle from a standing start please ensure you start in a lower gear and low PAS. Starting the bike in Level 5 PAS and the highest gear will put a lot of stress on the motor and can wear out the motor faster



PAS (Pedal assist modes)

Pedal assist modes start from 1 and goes up to 5. Refer to the Display manual at the bottom of this document. PAS level 1 is the first pedal assist level and will give you some slight assistance. Press the up and down arrows on the control panel to toggle between the levels. As you select the higher levels, the assistance will increase with level 5 basically doing all the work for you. Using higher levels of PAS will drain the battery faster. The recommended level is PAS 1-3 to ensure good battery life. Note- PAS 0 means no assistance from the motor and you would have this on if you wanted to ride without assistance but measure km/speed etc.

BRAKES

The Bighorn electric bikes are equipped Shimano MT200 hydraulic disk brakes. Please be aware the hydraulic disk brakes are very strong, so care is to be taken when braking initially when getting familiar with the bike. The front wheel brake is located on right hand side with the rear wheel brake on the left. For riders which prefers the brakes the other way around please get your nearest bike shop to switch over if required.

WALK MODE

To activate walk mode press the + button down for three seconds and the bike will slowly propel itself forward at a walking pace around 6km/r

SHIFT SENSOR

On our mid-drive bikes we have included a shifter sensor which is designed to protect the motor system and allow quieter, smoother gear changes. The system works by cutting the motor for a split second when changing gears therefore allowing a smoother gear change and puts less stress on the chain and motor system. For some people they may prefer to disconnect this system to get a slightly better response when changing gears. Please contact your local e-bike store if you wish to get this disconnected or Wattwheels directly.

TYRE PRESSURE

To avoid flats, keep tire pressure at the recommended PSI. On off-road terrain a slightly lower PSI will provide more grip, but flats can occur. We recommend a pressure of between 35-60PSI

DRIVING RANGE

The range of your Bighorn Bike is the distance the bike will travel on a single full charge of battery pack. The range values in this manual are estimates based on expected usage characteristics. Some of the factors which effect range include changes in elevation, speed, payload, and acceleration, number of starts and stops and ambient air temperatures. Tyre pressure and terrain are also important variables to consider. We suggest that you ride conservatively when you first get your Bighorn Bike to get to know your bike and travel routes. Once you become familiar with the range requirements of your travel

routes, and the capabilities of your Bighorn Bikes you can then adjust your riding characteristics if you so desire.

The following table provides general estimates and outlines various factors effecting range and their combined estimated effects on range. This table is meant to help owners understand the factors that can increase or decrease range, but Bighorn Bikes makes no claims to the range that individual users might obtain. The battery gauge located on the display it is good to note the the 1st two bars typically drop faster than the remaining bars. If this happens don't be alarmed as this is normal as is due to the BMS (battery management system) we use in the bikes. As mentioned it is good to do a few smaller rides first to get familiar with the bike and the range you can get depending on what settings you have the bike on.

Expected Range	Operating Conditions
50 Km	<ul style="list-style-type: none">o Hilly Terraino Heavy Payloado Windyo High Speedso Light Pedaling
75 Km	<ul style="list-style-type: none">o Flat Terraino Normal Payloado Not Windyo Medium Speedso Light Pedaling
100+ Km	<ul style="list-style-type: none">o Flat Terraino Normal Payloado Not Windyo Low Pedal Assist Levelo Moderate to Heavy Pedaling

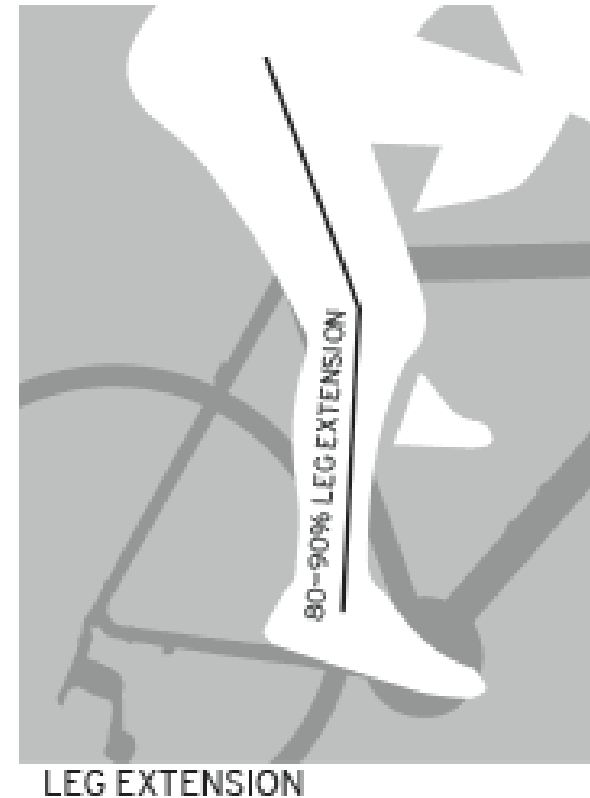
ADJUSTING THE SEAT HEIGHT

Use the quick release lever to free the seat post and pull upwards or push downwards to reach desired height.

Notice: Ensure seat post and seat are properly adjusted before riding. Do not raise the seat post beyond the minimum insertion marking etched into the seat post tube. If your seat post projects from the frame beyond these markings, the seat post or frame may break, which could cause you to lose control and fall. Prior to first use, be sure to tighten the seat clamp properly. A loose seat clamp or seat post binding bolt can cause damage to the bicycle or can cause you to lose control or fall. Periodically check to make sure these the seat clamp is properly tightened.

RIDER COMFORT

To obtain maximum comfort, the rider should not overextend his or her arms reach when riding. In order to obtain the most comfortable riding position and offer the best possible pedaling efficiency, the seat height should be set correctly in relation to the rider's leg length. The correct saddle height should not allow leg strain from over extension, and the hips should not rock from side to side when pedaling. While sitting on the bicycle with one pedal at its lowest point, place the ball of your foot on that pedal. The correct saddle height will allow the knee to be slightly bent in this position.



BATTERY & CHARGING

The battery can be either charged by leaving the battery in the bike or by removing it. To charge while in the battery open the rubber cap located on the frame and plug the charging pin into the slot.



To remove the battery turn the wheel slightly so you have better access to battery. Turn the key to the unlock position and then turn the lever on the battery case to release the battery



Removing the battery from the bike when storing it for a long period of time is recommended. In this case store it in a cool, dry area away from water. The charge left in the battery should be 50%-75% for long storage times.

Cleaning the battery and battery housing should only be done while disconnected and powered off. Use a dry rag, and if need be a lightly damp rag.

DO NOT spray with high-pressured water to prevent damage or possible short-circuiting. Only charge the battery with the supplied charger as others may not function properly, and this increases the possibility of fire or explosion.

Do not store the charger or battery in a wet/damp place or in direct sunlight.

Lithium-ion batteries are meant to be recharged with 10%-15% of the charge remaining to prevent damage to the cells. Keep both the battery and charger out of the reach of children and If there appears to be an issue with the charger or battery, stop use immediately and contact either the manufacturer or Wattwheels at admin@wattwheels.co.nz

BEST PRACTISES FOR EXTENDING BATTERY LIFE

- o Pedal to assist the motor when climbing hills and accelerating from a stop.
- o Avoid sudden starts and stops.
- o Accelerate slowly
- o Keep within the recommended weight limit

Charging:

- Firstly, insert plug of the charger into charging socket of the battery box.
- Second, Insert the charger into the socket of the home power supply. It shows the power has already been put through when the indicator lamp of the charger is on.
- It is charging when the indicator light is red. When the light turns from red to green, it indicates that the battery is fully charged.



- After the green light is on, the charger is in little electric current and "fill slowly mode". It will not be harmful to the battery if left to charge for a longer period or overnight. We do recommend not leaving for longer than 48hours if possible

Please don't use the charger of other brands to charge. The electric apparatus contains a high-pressure circuit.

USEFUL TIPS

- While starting or climbing, please ride with feet auxiliary as much as possible, otherwise the energy consumption will be very high. By doing this it can lengthen the life of battery and motor.
- This specified load of the Electric Bicycle is 130kg, please don't overload.
- While riding if the level of charge shows only one bar is recommended to ride without power in PAS 0 at this time and charge as soon as you can.
- Turn off the display and remove the key, while parking or storing the bike.
- Inspect the bolts on a regular basis, to ensure that they are tight and all components are secure.
This is especially important if you are riding in demanding conditions.
- As with all bikes pay particular attention to the crank bolts, as they are subject to more loosening forces than any other bolt.
- Regularly check the brake pads, the provided Shimano pads should be replaced if they have:
 - Been contaminated
 - Have less than .8mm of material
 - Cracks or deformation
- To replace the brake pads or perform other maintenance take it to a qualified bicycle mechanic at your local bike shop.
- Properly inflate your tyres according to riding conditions. Under-inflated tyres are prone to get flats, especially if riding off-road.

- Please don't dismantle and repair parts by yourself. Please go to your local bike repair shop. This bike comes with a manufacturer's warranty (document included) so any standard repairs please contact Wattwheels and we will arrange a service agent close to you to look at the bike. We carry spare parts so anything electrical that a standard bike shop doesn't have we will ship to your nearest retailer

PARKING, STORAGE & TRANSPORT

Please follow these basic parking, storage and transport tips to ensure your bike is well cared for on and off the road.

- o When pushing the vehicle manually, turn off the power to avoid accidental acceleration from the motor.
- o It is recommended to park indoors.
- o Switch the power off, and any lights to conserve battery. Remove the key from the bike and ensure the battery is locked to the frame or removed and brought with you for security.
- o In public places, your Bighorn Bike must be parked in accordance with local rules and regulations.
- o If you have to park outdoors in rain, or wet conditions you should only leave your Bighorn Bike outside for a few hours and proceed to park the bike in a dry location afterwards in order to allow all the systems to dry out. Much like a regular bike, use in wet conditions mandates a more regular maintenance schedule to ensure your bike does not become rusty, corroded and to ensure all systems are always working safely.
- o Do not park, store, or transport your Bighorn Bike on a rack that is not designed for the size and weight of the bike.
- o Wide tyres, as used on Bighorn Bikes, cannot fit into all bike racks, please select an appropriate rack for the width of tyres used on your bike.
- o Locking up your bike is recommended to ensure your bike is secure and the chance of theft is reduced. Bighorn

Bikes makes no claims or recommendations on the proper lock hardware or procedures to secure your bike, but we do recommend you take the appropriate precautions to keep your Bighorn Bike safe from theft.

- o When storing your bike or carrying your bike on a rack for transport, you can remove the battery pack to reduce the weight of the bike and make lifting and loading easier.

SAFETY CHECK

Safety Check	Basic Steps
1. Brakes	<ul style="list-style-type: none"> o Ensure front and rear brakes work properly. o Ensure brake pads are not over worn and are correctly positioned in relation to the rims. o Ensure brake control cables are lubricated, correctly adjusted and display no obvious wear. o Ensure brake control levers are lubricated and tightly secured to the handlebars.

2. Wheels and Tyres	<ul style="list-style-type: none"> o Ensure tyres are inflated to within the recommended limits displayed on the tire sidewalls. o Ensure tires have tread and have no BULGES OR EXCESSIVE WEAR. o Ensure rims run true and have no obvious wobbles or kinks. o Ensure all wheel spokes are tight and not broken. o Check axle nuts and quick releases to ensure they are tight. If your bicycle is outfitted with quick release axles, ensure the locking levers are correctly tensioned and in the closed position.
3. Steering	<ul style="list-style-type: none"> o Ensure handlebar and stem are correctly adjusted and tightened, and

	<ul style="list-style-type: none"> allow proper steering. o Ensure the handlebars are set correctly in relation to the forks and the direction of travel.
4. Chain	<ul style="list-style-type: none"> o Ensure the chain is oiled, clean and runs smoothly. o Extra care is required in wet or dusty conditions
5. Bearings	<ul style="list-style-type: none"> o Ensure all bearings are lubricated, run freely and display no excess movement, grinding or rattling. o Check headset, wheel bearings, pedal bearings and bottom bracket bearings.
6. Cranks and Pedals	<ul style="list-style-type: none"> o Ensure pedals are securely tightened to the cranks. o Ensure the cranks are securely tightened and are not bent.
7. Derailleurs	<ul style="list-style-type: none"> o Check that the derailleur(s) are adjusted and functioning properly. o Ensure shift and brake levers are attached to the handlebar securely. o Ensure all brake and shift cables are properly lubricated.
8. Frame and Fork	<ul style="list-style-type: none"> o Check that the frame and fork are not bent or broken. o If either are bent or broken, they should be replaced.
9. Accessories	<ul style="list-style-type: none"> o Ensure all reflectors are properly fitted and not obscured. o Ensure all other fitting on the bike are properly secured and functioning. o Ensure rider is wearing helmet and any other required riding safety gear.
10. Motor Drive Assembly and Throttle	<ul style="list-style-type: none"> o Ensure mid-motor is spinning smoothly and the motor bearings are in good working order.

11. Battery Pack	<ul style="list-style-type: none"> o Ensure battery is charged before use. o Ensure there is no damage to battery pack. o Lock battery to frame and check to see that it is secured.
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BASIC TROUBLESHOOTING

Symptoms	Possible Causes	Most Common Solutions
1	It doesn't work	<ol style="list-style-type: none"> 1. Insufficient battery power 2. Faulty Connections 3. Battery not fully seated in tray 4. Improper turn on sequence 5. Brakes are applied
2	Irregular acceleration and/or reduced top speed	<ol style="list-style-type: none"> 1. Insufficient battery power 2. Loose or damaged throttle
3	When powered on the motor does not respond	<ol style="list-style-type: none"> 1. Loose wiring 2. Loose or damaged throttle 3. Loose or damaged motor plug wire 4. Damaged motor
4	Reduced range	<ol style="list-style-type: none"> 1. Low tire pressure 2. Low or faulty battery 3. Driving with too many hills, headwind, braking, and/or excessive load 4. Batter discharged for long period of time without regular charges, aged or damaged.
5	The battery won't charge	<ol style="list-style-type: none"> 1. Charger not well connected 2. Charger damaged 3. Battery damaged 4. Wiring damaged

6	Wheel or motor makes strange noises	<ol style="list-style-type: none"> 1. Damaged motor bearings 2. Damaged wheel spokes or rim 3. Damaged motor wiring 	<ol style="list-style-type: none"> 1. Replace 2. Repair or replace 3. Repair or replace motor.
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ERROR DETECTION

Your Bighorn Bike is equipped with an error detection system integrated into the LCD display and motor controller. In the case of an electronic control system fault an error code should display. The error codes are listed below and can help detect what the issue is on the bike. If your bike has an error code displayed at any time it is recommended that you cease operation and contact your local dealer or Wattwheels.

0 normal

2 Current error or MOS damaged

3 Motor stalling

4 Under voltage

5 Brake error(Start detection)

6 Hall error

7 Throttle error(Start detection)

9 Over voltage

A communication controller receiving error

SERVICING

2-3 Months:

DATE: _____

RETAILER: _____

MECHAINIC: _____

12 Months:

DATE: _____

RETAILER: _____

MECHAINIC: _____

6 Months :

DATE: _____

RETAILER: _____

MECHAINIC: _____

24 Months:

DATE: _____

RETAILER: _____

MECHAINIC: _____

warranty

To activate your warranty please go to
<https://www.wattwheels.co.nz/warranty> or ring us on 0800 311 011

Wattwheels Ltd warrants that all new products are warranted to the Buyer against manufacturing defects in materials and/or workmanship for the following periods:

Motor/Battery	24 months
Frame	60 months (Folding bikes & trikes is 36months)
Additional Components	12 months

For commercial operations where the bikes are being used a hire bike then the following applies:

Motor/Battery	12 months
Frame	24 months (Folding bikes is 18months)
Additional Components	6 months

The warranty period is calculated from the point of delivery. The original receipt of purchase is required to establish proof of purchase and must be provided to Wattwheels for all warranty claims. Wattwheels will require the customer to complete a MANDATORY standard procedure for warranty claims that will involve media such as photos and videos to help Wattwheels after sales staff establish the fault with the product.

Goods we sell are subject to a full comprehensive warranty. The costs/inconvenience caused by the loss of use of the product, is not covered whilst the warranty procedure takes place. The warranty for replacement

components will be based on the date of delivery. Under no circumstance will a replacement component have a warranty date different than the original date of delivery. If a replacement is necessary due to a defect in materials and/or workmanship, then upon return to Wattwheels, the component will be replaced during the warranty period.

Wattwheels will have no obligation under this warranty in the event the product is damaged or destroyed as a result of any of the following events: components used on a non Wattwheels product, damage or destruction by abuse; collision; theft; improper maintenance or mishandling of the product; natural forces such as wind, lightning, hail, etc.; any wilful or negligent act; penetration, or opening of the product casings in any manner. Replacement will be honoured only by Wattwheels.

This is Wattwheels exclusive warranty. No party is granted express or implied authority to change or annul this warranty in any manner. Implied warranty including that of merchant-ability and fitness for a particular purpose are expressly limited in duration to the duration of this warranty. Wattwheels disclaims any liability for special, incidental or consequential damages.

This warranty is not meant to suggest or imply that the products cannot be broken or will last forever. It does mean that the product is covered subject to the terms of the warranty. This warranty applies only to the original Buyer of the product and is not transferable to subsequent owners or any other party. This warranty is void if the product is subjected to abuse, neglect, improper repair, improper maintenance, alteration, modification, an accident or other abnormal, excessive, or improper use, at the sole discretion of Wattwheels.

Warranty Exclusions

This warranty does not cover:

- normal wear and tear
- damage or failure from abuse, neglect, misuse, or accident
- damage from stunt riding, ramp jumping, acrobatics, competitive events, such as bicycle racing, bicycle motocross racing, or similar activities or any activity that is not consistent with the intended use of the product

- damages resulting from improper charging of the battery pack or use of any charger not supplied by Wattwheels
- installation of any parts, accessories, or electrical component(s) not originally intended for or compatible with the product as sold, or any modification of the frame or any component(s) originally supplied; tires, brake pads, chains, lights, motors, battery packs, displays, or vehicle controllers that have been opened for any purpose whatsoever, other than by Wattwheels
- All warranties are void if the product is used for any purpose other than the reasonable intended use of the product. Additionally, this warranty does not cover damage associated with commercial use.
- Aftermarket components or modifications

All implied warranties, including the warranties of merchantability and fitness for a particular purpose, are limited in duration to that of the express warranties stated above.

Warranty Procedure

Proof of purchase must be provided. The original Purchaser must contact a Wattwheels representative to discuss the problem with the product. The original Purchaser is responsible for the return of the product, undamaged in transit, to Wattwheels for warranty work and for the costs associated with shipping the component(s) when returning them. If Wattwheels determines a warranty claim is valid and conforms with this warranty, Wattwheels will replace component(s). For valid warranty claims hereunder, Wattwheels will reimburse the original Purchaser for shipping costs incurred as a result of returning the product to Wattwheels for warranty work at standard ground shipping rates, and Wattwheels will pay for shipping costs to return the product to the original. You must retain and send us the receipts for shipping.

Limited Liability

Unless otherwise provided, the sole remedy under the above warranty, or any implied warranty, is limited to the replacement of defective parts at the sole discretion of Wattwheels. In no event shall Wattwheels be responsible for direct, incidental or consequential damages, including, without limitation,

damages for personal injury, property damage, or economic losses, whether based on contract, warranty, negligence, product liability, or any other theory.

Cancellation

Buyer has a 14 day period to cancel an order for a full refund. After the cancellation period, no refunds will be awarded. The Goods will be delivered with no returns.

Returns

Our extensive quality control means that our products are thoroughly tested and ultra-reliable by industry standards. All products are warranted to work as described on arrival and for the warranty period. If there is a warranty claim, it will be assessed by Wattwheels and new parts will be delivered upon claim's approval. Wattwheels will accept the return of warranted components. If there is a major fault with the product, contact Wattwheels immediately. Wattwheels will not accept returns for change of mind.

Questions

Please contact us at admin@Wattwheels.co.nz