



**RADROVER**  | **RADROVER ST** 

**RAD POWER<sup>®</sup> BIKES**

**OWNER'S MANUAL**

Welcome

Thank you for purchasing the RadRover® from Rad Power® Bikes.

We take pride in bringing you a quality product that will offer years of enjoyment. Please read and understand this manual fully before assembling and riding your bike.

If you have questions after reading this manual, please reference the Rad Power Bikes Help Center, contact us by email, and/or give us a call on the phone.

**We are here to help!**

**Rad Power Bikes Help Center:** [www.radpowerbikes.ca/help](http://www.radpowerbikes.ca/help)

**Email:** [can-support@radpowerbikes.com](mailto:can-support@radpowerbikes.com)

**Phone:** 1-877-299-9404 x 2

Thanks for riding Rad!

## Using This Manual

This manual contains details of the product, its equipment, and information on operation, maintenance, and other helpful tips for owners. Read it carefully and familiarize yourself with the ebike before using it to ensure safe use and prevent accidents. This manual contains many warnings and cautions concerning the safe operation and consequences if proper 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 Rad Power Bikes immediately.

The notes, warnings, and cautions contained within the manual and marked by the triangular Caution Symbol at the right of this page should be given special care. Users should also pay special attention to information marked in this manual beginning with **NOTICE**.



Keep this manual, along with any other documents that were included with your bike, for future reference, however all content in this manual is subject to change or withdrawal without notice. Visit [www.radpowerbikes.ca/help](http://www.radpowerbikes.ca/help) to view and download the latest version. Rad Power Bikes makes every effort to ensure the accuracy of its documentation and assumes no responsibility or liability if any errors or inaccuracies appear within.

Assembly and first adjustment of your bike from Rad Power Bikes requires special tools and skills and it is recommended that this should be done by a certified, reputable bike mechanic if possible.

Because it is impossible to anticipate every situation or condition that can occur while riding, this manual makes no representations about the safe use of bikes under all conditions. There are risks associated with the use of any bike that cannot be predicted or avoided and are the sole responsibility of the rider.

# Table of Contents

- Using This Manual .....1**
- General Info .....3**
- Assembly Instructions.....6**
- Battery Charging.....18**
- Operation.....24**
- Maintenance .....38**
- Troubleshooting .....43**
- Warnings and Safety.....45**
- Limited Warranty .....50**
- Link to Assembly Video and Online Resources .....52**

## General Info

### Assembly and Fit

Correct assembly and fit are essential elements of ensuring your bicycling safety, performance, and comfort. Even if you have the experience, skill, and tools to complete these essential steps before your first ride, Rad Power Bikes recommends having a certified, reputable bike mechanic check your work.

**NOTICE:** If you do not have the experience, skill, and tools to complete assembly and fit, Rad Power Bikes highly recommends having a certified, reputable bike mechanic complete these procedures as well as any future adjustments or tuning.

**NOTICE:** A critical aspect of assembling your bike by Rad Power Bikes is securing the front wheel and checking the tightness of the rear wheel axle nuts. All bikes by Rad Power Bikes use a quick release front wheel mounting mechanism and the rear wheel is bolted on. These mechanisms may become loose or unsecured during shipment or over time. The torque and security of all wheel mounting hardware should be inspected upon arrival and on a regular basis. Both wheels need to be properly secured before operating your bike.

### Mandatory Equipment and Use Locations

Before all rides, ensure you have all required and recommended safety equipment and are following all laws pertaining to using an electric bike in your region. For example, these laws may specify the need for mandatory equipment, use of hand signals, and where you can ride.

### Changing Components or Attaching Accessories

The use of non-original components or spare parts can jeopardize the safety of your ebike, void your warranty and, in some cases, cause your ebike to not conform with laws pertaining to your bike.



**The replacement of original components or installation of third-party accessories or accessories from Rad Power Bikes not explicitly recommended for your bike model is at your own risk. Using aftermarket accessories or components that have not been tested by Rad Power Bikes for safety and compatibility may void your warranty, create an unsafe riding condition, damage to property or your bike by Rad Power Bikes, or result in serious injury or death.**

## Safety Check Before Each Ride

Always check the condition of your bike before you ride in addition to having regular maintenance performed. If you are unsure of how to conduct a complete check of the condition of your bike before every ride, you should consult a certified, reputable bike mechanic for assistance. See the Pre-Ride Safety Checklist for more information.

## Electrical System

The electrical system on your ebike offers various levels of power assistance and lighting for different operating conditions and user preferences. It is critical that you familiarize yourself with all aspects of your ebike's electrical system and check to see that it is working correctly before every ride. The front and rear brake levers contain safety power cutoff switches, which disable the hub motor's assistance when applied, and both levers should be checked for correct operation. The throttle should provide smooth acceleration when gradually applied. If the throttle, brake lever cutoff switches, pedal assistance, or lighting are functioning abnormally, intermittently, or not working, please discontinue using your ebike immediately and contact the Rad Power Bikes Product Support team for assistance.

## Brakes

Ensure brakes are working correctly, all braking system components are free from damage, and properly secured. When you fully squeeze the brake levers, ensure neither the front nor rear brake levers touch the handlebar. Take your bike to a certified, reputable bike mechanic to have the brakes repaired if you find a problem.

## Tires and Wheels

Your wheels should always spin straight and must be repaired or replaced if they wobble side to side or up and down when spinning. If your wheels become untrue or spokes loosen, which can happen with normal use, we recommend that a certified, reputable bike mechanic performs all wheel tuning and truing operations on your bike from Rad Power Bikes. Do not attempt to true wheels or tighten spokes unless you have adequate knowledge, tools, and experience. Ensure the tires and inner tubes are in good working condition without any visual damage and have the correct amount of air pressure. Always replace tires and inner tubes with punctures, cuts, or damage before you ride. Tires without the correct amount of air pressure can reduce performance, increase tire and component wear, and make riding your bike unsafe.

## Quick Release Levers

Quick release levers are located on your ebike for securing the seatpost and the front wheel to the bike. These provide convenience to the user since they allow the front wheel to be removed and the seatpost to be adjusted without tools. Since quick release levers can be loosened during transportation, or accidentally between or during rides, it is important that you regularly check to ensure these components are properly secured.

## Accessories, Straps, and Hardware

Ensure all hardware is secured and all approved accessories are properly attached per the specific component manufacturer's instructions. It is good practice to look over all hardware, straps, and accessories before each ride and if you do discover something is wrong or find something you are not sure about, have it checked by a certified, reputable bike mechanic.

## Suspension, Handlebar, Grips, and Seat Adjustments

The suspension fork on your ebike will affect the handling of the bike so you must understand how it works before use. The suspension fork should be properly adjusted for your weight and terrain. Ensure the handlebar and handlebar stem are properly aligned, fitted to the user, and secured to their recommended torque values. Handlebar grips should not move easily on the handlebar end. Loose, worn, or damaged handlebar grips should be replaced before you ride and can be purchased from [www.radpowerbikes.ca](http://www.radpowerbikes.ca). The seat and seat post should be properly aligned, fitted to the user, and the seat post quick release should be properly tightened, fully closed, and secured before riding.

## Battery Charged, Secured, and Unplugged

Ensure the battery is adequately charged and operating properly. The battery gauge on the LCD display and charge status indicator on the battery should read similarly. Ensure the battery charger is unplugged from the outlet, battery, then stored in a safe location before you ride. The battery MUST be locked onto the frame battery mount properly before use. Do not operate the electrical system if the battery is removed.

Fully Assembled RadRover Step-Thru



(Not pictured: RadRover Step-Thru in Black, RadRover in black, RadRover in white)



# Assembly Instructions

**NOTICE:** The following steps are only a general guide to assist in the assembly of your ebike and are not a complete or comprehensive manual of all aspects of assembly, maintenance, and repair. Consult a certified, reputable bike mechanic to assist with assembly, repair, and maintenance of your ebike.

**Step 1: Unpack the bike.** Open the bike box and remove the small box inside. With the help of another person capable of safely lifting a heavy object, remove the RadRover from the bike box. Carefully remove the packaging material protecting the bike frame and components. Please recycle packaging materials especially cardboard and foam whenever possible. Open the small box and carefully set out all contents.

**Ensure all the following pieces are included with the RadRover or RadRover Step-Thru:**

- Front Wheel
- Manual(s)
- Assembly Toolkit
- Handlebar Stem faceplate bolts (4x)
- Front Wheel Quick Release (in fork protector plate)
- Charger
- Pedals (marked left and right)
- Fender bolts (4x)
- Keys (2x, identical)
- Headlight
- Rear Fender (installed)
- Front Fender

If there are any missing parts, please contact Rad Power Bikes.

**Step 2: Install handlebar onto stem** as shown in the assembly video for the RadRover located in the Help Center at <http://www.radpowerbikes.ca/help>.

- A. **Place the handlebar on the stem correctly.** Trace the front brake cable directly up from the front brake caliper to the left handlebar and ensure the cables and wires are not twisted.
- B. Locate the four handlebar faceplate bolts in the accessory box.



**Ensure the correct four bolts are used to install the handlebar faceplate. The handlebar faceplate bolts use a 5 mm Allen wrench and are silver with NO blue threadlocker.**

- C. **Centre the handlebar** and tighten the four stem faceplate bolts evenly and part way.
- D. **Adjust the stem angle** using the Allen bolts on the side of the stem if desired. Adjust the handlebar so the grips are approximately parallel to the rear rack.
- E. **Secure to the recommended torque value.** Once adjusted properly, use a torque wrench with a 5 mm Allen bit to evenly tighten the four stem faceplate bolts (shown at right) to the recommended torque value, 10 Nm.



**Get help from a bike fitting professional** for safety and optimal fit and bike ergonomics. Consult a certified, reputable, and local bike fitting specialist for assistance properly fitting the bike to a rider.

### Step 3: Install the front wheel.

**Locate the quick release lever**, which holds the protector plate in place during shipment. Open the lever and remove the thumb nut and cone spring (opposite the lever). Remove the quick release skewer from the plate, keeping the washer and other cone spring in place on the lever side.



**Install the skewer into the front wheel axle** from the brake rotor side. Reinstall the cone spring so it points toward the wheel hub then thread the thumb nut onto the skewer only a couple turns, leaving room for the fork dropouts. Make sure the lever is open and carefully lower the fork onto the axle and brake caliper.

**Fully seat the skewer in the fork dropouts** (and the brake rotor in the caliper) and add tension to the lever by turning the thumbnut. When there is enough resistance to hold the quick release lever in line with the axle, close the lever using the palm of your hand without touching the brake rotor.

**When properly installed**, the front wheel should be fully seated and centred in the dropouts of the front fork, the brake rotor should be in between the brake pads in the brake caliper, and the quick release lever should be fully and properly secured. Ensure the front wheel and quick release lever are properly secured before moving on to the next step.

**For detailed instructions please view the RadRover Assembly Video** available in the Help Center at

<http://www.radpowerbikes.ca/help>.



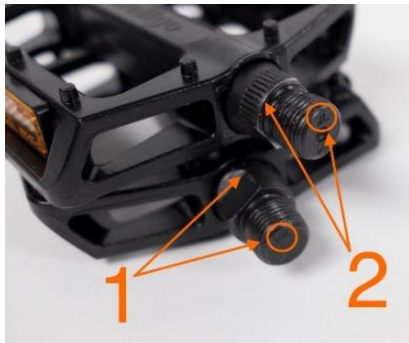
**Never touch the brake rotor, especially when the wheel and/or bike is in motion, or serious injury could occur. Hand oils can cause squeaking and decrease brake performance; do not touch the brake rotor while inspecting, opening, or closing the quick release lever.**

**Step 4: Install the pedals.** Locate the pedal with a smooth pedal axle exterior and an “R” stamped into the end of the pedal axle (1, below), which indicate it is the right pedal. The right pedal goes on the crank on the right side of the bike (which has the drivetrain gears and is the same as a rider’s right side when riding).

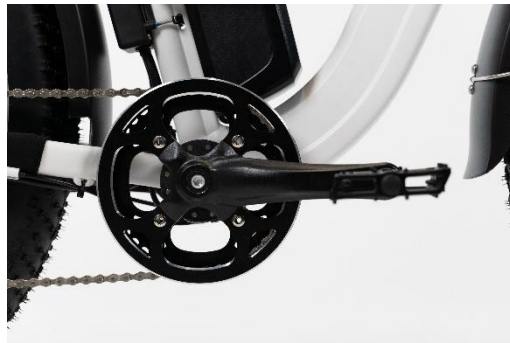
**The right pedal (1) is threaded so that it is tightened by turning clockwise.** Carefully thread the right pedal onto the crank on the right side of the bike slowly and by hand. Do not cross thread or damage the threads.

**The left pedal (2) is reverse-threaded and tightens counterclockwise.** Ensure the remaining pedal has notches on the exterior of the axle and an “L” stamped into the end of the axle (2, below), indicating it is the left pedal. Carefully thread the pedal onto the left crank by hand slowly. Do not cross thread or damage the threads.

**Torque each pedal to 35 Nm.** Use a pedal wrench to avoid damage caused by wider wrenches.



Identifying marks



Right pedal (1) tightens clockwise



Left pedal (2) tightens *counterclockwise*

**Step 5: Install the front fender and headlight** as shown in the assembly video available from [www.radpowerbikes.ca/help](http://www.radpowerbikes.ca/help).

- A. **Remove the fender and headlight mounting bolt** from the fork arch and set aside.
- B. **Place the fender in position.** From the back of the front tire, pass the front fender mounting point under the front fork arch.
- C. **Plug in the headlight.** Locate the two sides of the red, two-pin headlight connector, carefully align the internal pins and notches and external arrows, then press directly together without twisting to fully seat the connection.
- D. **Attach the headlight and fender to the fork arch.** Pass the headlight mounting bolt through a washer, the headlight mount, the fender mounting point, the fork arch mounting point, a second washer, and thread the locknut onto the bolt end. Use a 5 mm Allen wrench at the bolt head and a 10 mm wrench on the locknut at the bolt end and tighten partway. Attach the fender mounting arms to the front fork. Ensure the fender is centred and torque all mounting bolts to the recommended torque value (6 Nm).
- E. **Adjust the headlight angle** to illuminate the road ahead and not blind oncoming traffic. Use a 3 mm Allen wrench and 8 mm wrench to loosen the headlight angle adjustment bolt, tilt the headlight to the optimal position, and then tighten in place securely.



**Step 6: Inflate tires.** Check that the tire beads and tires are evenly seated around the rims. Use a pump with a Schrader valve and pressure gauge to inflate each tire to the recommended pressure indicated on the tire sidewall, 20 PSI (1.38 Bar). Do not overinflate or underinflate tires.



**Step 7: Set the desired seat height.** Open the quick release lever by hinging it open fully. Ensure the seat post clamp opening is aligned with the notch at the front of the seat tube. Adjust the seat post up or down to a comfortable height, while ensuring the seat post is inserted into the frame past the minimum insertion point.

If needed, use the thumb nut to add tension to the clamp so there is some resistance when the lever is in line with the clamp bolt, but do not overtighten. Close the quick release lever to secure the seat post and check that it cannot move. See the Adjusting the Seat section of this manual for more details.

**Step 8: Always check that the battery is locked to the frame** of the RadRover before riding. The Start-Up Procedure section of this manual has more information on the key positions of the battery; on and locked to the frame, off and locked to the frame, and off and unlocked (ready for removal from the frame). Operate the electrical system when the battery has been adequately charged and the battery is secured to the mounting receptacle on the frame.



**STEP 9: Ensure all hardware is tightened properly** following recommended torque values.

Recommended Torque Values

Hardware Location	Hardware	Torque Required (Nm)
Handlebar Area	Handlebar Stem Clamp Bolts	15
Handlebar Area	Stem Faceplate Bolts	10
Handlebar Area	Brake Lever Clamp Bolt	6
Handlebar Area	Shifter Clamp Screw	6
Brakes	Caliper Adapter to Frame	6-8
Brakes	Caliper to Adapter	6-8
Brakes	Brake Cable to Caliper Clamp	6-8
Brakes	Disc Brake Rotor to Hub	7
Seatpost Area	Seat Angle Adjustment Bolt	20
Rear Dropout Area	Rear Axle Nuts	40
Rear Dropout Area	Rear Torque Arm Bolt	5
Rear Dropout Area	Derailleur Bash Guard Mounting Bolts	5
Rear Dropout Area	Derailleur Hanger Mounting Bolt	6
Rear Dropout Area	Derailleur Mounting Bolt	10
Rear Dropout Area	Derailleur Cable Pinch Bolt	6-8
Rear Dropout Area	Kickstand Mounting Bolts	8
Bottom Bracket and Crank Area	Bottom Bracket and Lockring	60
Bottom Bracket and Crank Area	Crank Arm Bolt into Bottom Bracket Spindle	35
Bottom Bracket and Crank Area	Pedal into Crank Arm	35
Bottom Bracket and Crank Area	Chainring Bolts	10
Bottom Bracket and Crank Area	Controller Mounting Bolts	6
Fenders	All Fender Mounting Bolts and Hardware	6
Rear Rack	Mounting Hardware for Rear Rack	7

**Step 10: Review the remainder of the manual.** Once the bike has been assembled per the above instructions and the assembly video available from [www.radpowerbikes.ca/help](http://www.radpowerbikes.ca/help), read, understand, and follow the procedures outlined in the remainder of the manual before operating the bike.

**NOTICE:** If you have any questions regarding the assembly of your bike, contact Rad Power Bikes. If you are not able to ensure all the assembly steps in the assembly video are performed properly, or you are unable to view the assembly video, please consult a certified, reputable local bike mechanic for assistance in addition to contacting Rad Power Bikes for help.

**NOTICE:** Ensure all hardware is tightened properly following recommended torque values and all safety checks in the following sections are performed before the first use of the bike.



**Do not extend any components including the handlebar stem, seatpost, or seat saddle beyond any minimum insertion marking etched into the components. Ensure that all hardware is properly tightened (to the values in the Recommended Torque Values table) and components are secured before moving on to the next step, otherwise damage to the bike, property, serious injury, or death could occur.**



## Adjusting the Seat Height

For most users, the seat height should be set by placing the ball of their foot on the pedal when the crank is at its lowest point. In this orientation their leg should almost be fully extended, with a slight bend at the knee. The correct seat height should not allow leg strain from overextension and the hips should not rock from side to side when pedalling. To adjust the seat height:

- 1) Open the quick release lever by swinging the lever open and outward fully (depicted at right).
- 2) Move the seat up and down by sliding the seat post in or out of the seat tube. Set the desired seat height.

**NOTICE:** Ensure the 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 (as shown at right). If the seat post projects from the frame beyond these markings (shown far right), the seat post or frame may break, which could cause a rider to lose control and fall. Ensure the minimum insertion markings on the seat post are inside the seat tube of the frame (like pictured above).

- 3) After tightening the adjustment nut (opposite the quick release lever) on the seat post quick release properly, close the quick release lever fully so it looks like the image at right and the seat cannot move up, down, to the left, or right.



Before using the bike, always check to ensure all latches, levers, and quick releases are properly secured and undamaged. Check that they are correctly secured before every ride and after every time the bike is left unsupervised, even for a short time. Otherwise, the handlebar stem and/or seat post may come loose and can result in loss of control, damage to the bike, property, serious injury, and/or death.

## Adjusting the Seat Position and Angle

To change the angle and horizontal position of the seat:

- 1) Use a 6 mm Allen wrench to loosen the seat adjustment bolt on the clamp positioned immediately underneath the seat, above the rear wheel. Do not remove the bolt fully.
- 2) Move the seat backwards or forwards and tilt to adjust the angle. A seat position horizontal to flat ground is desirable for most riders. Do not exceed the limit markings on the seat rail, which show the minimum and maximum horizontal movement allowed.
- 3) While holding the seat in the desired position, use a 6 mm Allen wrench to tighten the seat angle adjustment bolt securely to the recommended torque value.



**Prior to first use, be sure to tighten the seat clamp via the seat adjustment bolt properly. A loose seat clamp or seatpost adjustment bolt can cause damage to the bike, property, loss of control, a fall, serious injury, or death. Regularly check to make sure that the seat clamp is properly tightened.**

## Adjusting the Suspension Fork

The suspension fork can move up and down up to 80 mm to cushion bumps in the riding surface, which can make riding on a rough road or trail smoother and more comfortable. Depending on a rider's preference, the suspension fork can be locked out as a rigid fork, which will typically yield higher efficiency while pedalling.

**The lockout lever (1)**, located on top of the right side of the suspension fork, can be turned counterclockwise until it stops to completely lock out the suspension fork's travel. To unlock the lockout lever, turn the knob clockwise until it stops.



When the lockout lever is unlocked, resistance can be adjusted by turning **the preload adjustment knob (2)**, located on the top of the left side of the suspension fork. To soften the ride, subtract resistance by turning the preload adjustment knob counterclockwise, in the direction of the small “-” on the knob. To make the suspension stiffer when going over bumps, add resistance by turning the preload adjustment knob clockwise, in the direction of the small “+” on the knob.

## Rider Comfort

Depending on a rider's preference, ability, and amount of experience with bike and ebike riding, lowering the seat so the rider can put one or both feet on the ground without dismounting from the seat may offer a safer and more comfortable experience while operating the bike.

Generally, for the most comfortable riding position and best possible pedalling efficiency, the seat height should be set correctly in relation to the rider's leg length, as described in the Adjusting the Seat Height section, allowing the knee to be slightly bent with the ball of the foot on the pedal and the pedal at the lowest point at the bottom of the pedal stroke.

To obtain maximum comfort, riders should not overextend their arms' reach when riding. It is generally advised to ensure the handlebar and brake lever angles allow for a comfortable arm position and relatively straight line from forearms, wrists, and hands. Ensure the handlebar angle is adjusted so that it allows the handlebar to remain clear of the rider's body while turning.

A bike fitting professional, such as a certified, reputable bike mechanic who specializes in bike fit, should be consulted to ensure you have a good fit.

**NOTICE:** If you have any questions regarding the proper fit of your bike please consult a certified, reputable local bike mechanic for assistance fitting the bike to a rider or contact Rad Power Bikes.

# Battery Charging

## Charging Procedure

Follow these steps for charging your bike from Rad Power Bikes:

1. **Ensure the battery is off** by inspecting the key port markings (1, below). If needed, align the key port with the “off” icon (the small circle with an “X” inside) by inserting the key into the key port and rotating to align the key with the off icon as shown (at right).
2. **Remove the rubber cover on the charging port** (2, below) on the opposite side of the battery from the key switch.
3. **Plug the charger into the battery’s charging port.** With the battery on or off the bike, place the charger in a flat, secure place, and connect the DC output plug from the charger (round barrel connector) to the charging port on the side of the battery (2, below).
4. **Plug the charger into a power outlet.** Connect the charger input plug (110/220-volt plug) to the power outlet. Charging should initiate and will be indicated by the LED charge status lights on the charger illuminating as two red lights.
5. **Unplug the charger from the outlet, then the charging port.** Once fully charged, indicated by one charging indicator light turning green (and one remaining red), unplug the charger from the wall outlet first and then remove the charger output plug from the battery charging port.



Always charge your battery in temperatures between 10 °C – 25 °C (50 °F – 77 °F) and ensure the battery and charger are not damaged before initiating charge. If you notice anything unusual while charging, please discontinue charging and use of the bike and contact Rad Power Bikes Product Support for help.



## Battery Charging Information

- **Check the charger, charger cables, and battery for damage** before beginning each charge.
- **Always charge in a safe area** that is cool\*, dry, indoors, away from direct sunlight, dirt, or debris, in a clear area away from potential to trip on the charging cords, or for damage to occur to the bike, battery, or charging equipment while parked and/or charging. \*Always charge your battery in temperatures between 10 °C – 25 °C (50 °F – 77 °F).
- **The battery can be charged on or off the bike.** To remove the battery, turn the key to the off and unlocked position (see the Start-Up Procedure section for details), remove the key from the key port by pulling directly backwards without twisting, and then carefully pull the battery forwards and up until the battery detaches from the receptacle. See the When the Battery is Removed section for more information for off-bike battery handling.
- **The battery should be recharged after each use**, so it is ready to go the full range per charge next ride. There is no memory effect, so charging the battery after short rides will not cause damage.
- **Charging the battery normally takes 3-7 hours.** In rare cases, it may take longer to allow the battery management system to balance the battery, particularly when the bike is new or after long periods of storage. Balance the battery during the first three charges. See the Balancing the Battery section for more information.
- **The charge indicator lights** will show two red lights while the battery charges. When charging is complete, one indicator light will turn green, so one green, and one red will be illuminated. Ensure the lights face upward when charging.
- **Remove the charger from the battery within one hour of the green light indicating a complete charge.** The charger is designed to automatically stop charging when the battery is full, but unnecessary wear of the charging components could occur if the charger is left attached to the battery and a power source for longer than 12 hours. Detach the charger within one hour, or as soon as possible, once the green light indicates a complete charge to avoid unnecessary wear of charging components.
- **Never charge a battery for more than 12 hours at a time.**
- **Do not leave a charging battery unattended.**



Failure to follow Battery Charging Best Practices could result in unnecessary wear to the charging components, battery, and or charger, and could lead to an underperforming or non-functional battery and replacement will not be covered under warranty.

### When the Battery Is Removed

- Ensure the battery is turned off and the key is removed from the key port whenever it is being removed or off the bike.
- Be careful not to drop or damage the battery when lifting the battery off the frame or while loose from the bike.
- Do not touch or damage the “+” and “-” terminal contacts on the bottom of the battery and keep them clear of debris.
- Do NOT operate the bike with the electrical system in the on position, or damage to the electrical system can occur.



**Use caution to avoid damage to battery connector terminals, which are exposed when the battery is unlocked and removed from the frame of the bike. In the case of damage to the terminals or battery mounts, please discontinue use and contact Rad Power Bikes Product Support immediately.**

### When Installing the Battery onto the Bike

- Ensure the battery is off and the key is out of the key port before sliding the battery onto the frame mount receptacle.
- Do not force the battery onto the receptacle; slowly align and gently push the battery down into the receptacle.
- Ensure the battery has been properly secured to the bike before each use by carefully pulling upward on the battery with both hands to test the security of the attachment of the battery to the mount once locked.

### Charging Time


When the input and output plugs of the charger are connected properly, and the battery is not fully charged, the two red charging indicator lights should illuminate; when charging is complete, one red and one green light should illuminate. The time the charger takes to fully charge the battery is dependent on various factors including distance travelled, riding characteristics, terrain, payload, and battery age. The following table provides an estimate of charge time based on most common distances travelled in regular operation:


Distance Travelled	Estimated Time to Fully Recharge
8 km (5 mi)	1 hour
16 km (10 mi)	1.5 hours
24 km (15 mi)	2.5 hours
32 km (20 mi)	3.5 hours
40 km (25 mi)	4.5 hours
48 km (30 mi)	5.5 hours
72 km (45 mi)	7 hours

**Notice:** The battery may take longer to charge when fully depleted, when very new, and after 3-5 years of regular use. If your battery does not seem to be charging normally, taking longer to charge than expected, or you are experiencing substantial reduction in range, please discontinue use and contact Rad Power Bikes immediately.

## Charger Safety Information

- The charger should only be used indoors in a cool, dry, ventilated area, on a flat, stable, hard surface.
- Avoid charger contact with liquids, dirt, debris, or metal objects. Do not cover the charger while in use.
- Store and use the charger in a safe place away from children and where it cannot suffer damage from falls or impact.
- Fully charge the battery before each use to ensure it is ready to go the full range per charge, to extend the life of the battery, and help reduce the chance of over-discharging the battery.
- Do not charge the battery with any chargers other than the one originally supplied from Rad Power Bikes or a charger designed for use with your specific bike purchased directly from Rad Power Bikes.
- The charger works on 110/220 V 50/60 Hz standard home AC power outlets and the charger automatically detects and accounts for incoming voltage. Do not open the charger or modify voltage input.
- Do not yank or pull on the cables of the charger. When unplugging carefully remove both the AC and DC cables by pulling on the plastic plugs directly, not pulling on the cables.
- The charger will get hot when operating as designed. If the charger gets too hot to touch, you notice a strange smell, or any other indicator of overheating, discontinue charger use immediately and contact Rad Power Bikes Product Support.

 **Charge the battery only with the charger originally supplied with the bike from Rad Power Bikes, or a charger purchased directly from Rad Power Bikes, designed for use with your specific bike serial number, as approved by Rad Power Bikes. Never use an aftermarket charger, which can result in damage, serious injury, or death.**

 **Please take special care in charging your bike from Rad Power Bikes in accordance with the procedures and safety information detailed in this manual. Failure to follow proper charging procedures can result in damage to your bike, the charger, or personal property, and/or cause serious injury or death.**

## Balancing the Battery

When you first receive your bike and for the first three times you charge your battery from Rad Power Bikes, follow the procedure outlined below to ensure the cells that power the battery are balanced and operating as efficiently as possible.

**Note:** Since the battery should arrive with between 50-75% of a charge, it should be able to be ridden without initially charging once assembled and verified as safe by a certified, reputable bike mechanic. Charging normally before the first ride is also fine.

1. **After the first, second, and third ride**, regardless of distance ridden or the amount of battery used, charge the battery and leave the charger attached to the battery and the outlet for **as close to 12 hours as possible (but not longer than 12 hours)**. **Note:** this may require leaving the charger attached to the battery and outlet even after the charger illuminates one green (and one red) light indicating the battery is full.
2. **Disconnect the charger from the outlet then the battery once the first balance charge (long charge as close to, but not longer than, 12 hours) is complete** and store the bike until you are ready for your next ride.
3. **Ride the bike again** with power assistance as normal, and discharge part (or all) of the battery capacity.
4. **Repeat steps 1-3 for a total of three balance charging sessions (as close to, but not longer than, 12 hours).**
5. **After the third balance charge and fourth ride, begin normal charging procedures** including:
  - Charging the battery after each ride according to the Battery Charging Information section.
  - Removing the charger from the battery as close to the green charge light indicating the battery is full, which will typically occur between 3-7 hours.
  - Never leaving the battery charging for longer than 12 hours.
  - Never leaving the battery/charger unattended while charging.

Repeat battery balancing steps 1-5 only after a period of long-term battery storage (see the Long-Term Battery Storage section), if experiencing noticeable range decline, when instructed to do so by Rad Power Bikes Product Support, or up to once per month with frequent use as proactive battery maintenance. Do not perform battery balancing more than once per month.



## Long-Term Battery Storage

If storing your bike from Rad Power Bikes for longer than two weeks at a time, follow the instructions below to maintain the health and longevity of your battery.

- Charge (or discharge) the battery to approximately 75% charged.
- Power off the battery either locked to the frame or unlocked and removed from the frame for storage (see Start-Up Procedure Section for key-position details).
- Store the battery in a dry, climate controlled, indoor location between 10 °C – 25 °C (50 °F – 77 °F).
- Check the battery every month, and if necessary, use the Rad Power Bikes charger to charge the battery to 75% charged.



**Please follow the above instructions for storing your bike and battery from Rad Power Bikes. Failure to follow proper battery storage procedures can result in a non-functional battery. Replacement will not be covered under warranty.**



**If the battery is physically damaged, non-functional, performing abnormally, or was dropped or involved in a crash, with or without obvious signs of damage, please discontinue use and charging and contact Rad Power Bikes immediately.**



**Do not cover up the charger when plugged in or charging. The charger air cools and needs to be on a hard, flat surface in an open space. Use the charger with the indicator lights facing upward. Do not use with the charger inverted, which can inhibit cooling and reduce charger lifespan.**



**Do not open the battery housing, which will void the warranty and can result in damage to the battery or property or cause serious injury and/or death.**

## Operation

**NOTICE:** Do not perform any of the steps in the Operation section of this manual until you have read this entire manual, since there are important details related to safety in the following sections.



**Read and understand all sections of this entire manual before operating the bike for the first time. There are important safety warnings throughout the whole manual that must be followed to prevent dangerous situations, accidents, damage to the bike, damage to property, injury, or death.**



**Users must follow the instructions and warnings contained in this manual for safety. Do not attempt to operate your bike from Rad Power Bikes until you have adequate knowledge of its control and operation. Damage caused by failing to follow instructions is not covered under warranty and could result in dangerous situations, accidents, injury to you and others, damage to the bike, damage to property, injury, or death. Contact Rad Power Bikes if you have any questions about assembly or operation.**



**Users must become accustomed to the bike's power control system before operating. The throttle mechanism allows full power to be activated from a stop and inexperienced users should take extra care when first applying the throttle. The pedal assistance feature is also a powerful option and users should fully research and understand how to operate it before first use. Not taking care to familiarize yourself and practise the operation of the power system on your bike from Rad Power Bikes can lead to damage, serious injury, or death.**

## Battery Key Positions

**Familiarize yourself with the key port and key positions** before riding the bike. The photo below shows the key port aligned in key position 1, in line with the small open circle icon. In key position 1, the battery is in the “on” position, with the battery locked to the frame, and the key removed so the bike is ready to ride.

Key Position/Icon	Description
1	On, locked to frame
2	Off, locked to frame
3	Off, unlocked from frame (for battery removal)
4	Key identifier code

- Anytime the battery is in key position 1, (on, locked to the frame) the display power button will turn the bike on and off, but the battery cannot be removed.
- If the battery is in key position 2, (off, locked to the frame) no buttons or controls can be activated, the bike will remain off, and the battery cannot be removed.
- Anytime the battery is in key position 3, (off, unlocked from the frame) the battery must be removed from the bike before moving or riding the bike. Ensure the key is removed before sliding the battery off the mount.



## Handlebar Features

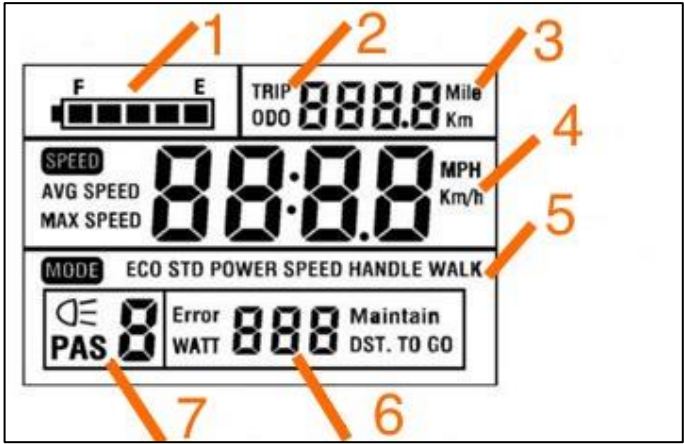


Location on Handlebar	Component
1	Bell
2	LCD Display Remote
3	LCD Display
4	Shifter
5	Throttle

### LCD Display Information

The table and image below show the various features and information displayed on the LCD display.

Location	Information on Display
1	Battery Charge Indicator
2	Distance (Odometer, Trip Odometer)
3	Distance Unit (Kilometres (Km), miles (Mile))
4	Speed Unit (Kilometres per hour (Km/h), miles per hour (MPH))
5	Operation Mode
6	Watt Meter, Error Code Indicator
7	Pedal Assist Level



### LCD Display Controls

The display is controlled using the 3-button display remote mounted on the left side of the handlebar (depicted at right). The top button shows an arrow pointing up (1), the middle button is labelled "MODE" (2), and the bottom button shows an arrow pointing down (3). Reference the LCD Display Operations table in this manual for instructions on how to perform various operations using these buttons and, when applicable, other components of the bike.



## LCD Display Operations

Operation	Directions
Turn on bike	Press and hold MODE (2) until power engages
Turn on headlight, taillight, and LCD display backlight	Press and hold MODE (2) and up arrow (1) until light illuminates
Activate brake light	When bike is on, squeeze brake lever
Activate flash mode on taillight	When bike and taillight are on, press rubber button on bottom left of taillight housing
Increase pedal assist (PAS) level	Press and release up arrow (1)
Decrease pedal assist (PAS) level	Press and release down arrow (3)
Toggle odometer, trip odometer	Press and release MODE (2)
Toggle current speed ("SPEED"), average speed ("AVG SPEED"), and max speed ("MAX SPEED")	Press and hold up arrow (1) until speed display changes
Turn on walk mode	While dismounted, press and continue to hold down arrow (3)
Charge device using USB port	Locate USB port on LCD edge closest to rider and unplug rubber cover. With LCD powered off, plug USB charging cable (not included) into USB port on LCD display and device (not included), and then turn on bike by pressing and holding MODE until power engages.



**Walk mode should only be used while dismounted from the bike and with both hands on the handlebar. Always keep at least one hand on a brake lever to allow quick cutoff of the motor assistance if necessary and to maintain control of the bike.**

**Notice:** The USB Charging Port charges many, but not all, devices. The USB charge rate from the display will supply power to many phones, but larger phones, which require higher power in order to charge, may not register charging. If the display indicates "USB" it will supplement battery power for the phone, but the state of charge of the phone may still decrease.

## Start-Up Procedure

After the bike has been properly assembled following the assembly video, all components are secured correctly, and you have read this entire manual, you may turn the bike on and select a power level following the steps outlined below:

1. **Test the battery lock security.** Ensure the key port is aligned with the circle containing an “X,” in the “off, locked” position (2) indicating the battery is off and locked onto the frame mount. If needed, insert the key and align with the “off, locked” icon (2). Remove the key and carefully use both hands to pull up on the battery to test that the lock is secure.
2. **Ensure proper handlebar and seat adjustment** of the bike to the rider. For details see the “Adjusting the Seat Height” and “Adjusting the Seat Position and Angle” section. Note that lowering the seat so the rider can put one or both feet flat on the ground without dismounting from the seat may offer a safer and more comfortable introduction to operating the bike. Ensure the handlebar faceplate bolts and seatpost quick release are fully and properly secured.
3. **Turn the bike on.** Insert the key and turn clockwise to the open circle icon of “on, locked” position (1), as shown (at right). **Remove the key** by pulling directly backwards without twisting so the key barrel remains in the “on, locked” position. Locate the LCD display Remote (near the left handlebar grip). Hold down the centre “mode” button for approximately 2 seconds until power is delivered to the LCD display.



**Ensure the key is removed from the battery before mounting or operating the bike. Leaving the key inside of the battery key barrel while mounting, operating the bike, pedalling, dismounting, and/or removing an unlocked battery from the frame can cause damage to the key or battery, and/or cause injury.**

4. **Turn on the headlight and taillight** if needed or desired. Once the LCD display is on, hold down the top (up arrow) and middle (mode) buttons (located on the LCD display Remote) for approximately 2-3 seconds until the lights illuminate.
5. **Select the desired level of pedal assistance (PAS)** between level 0 through 5 using the up and down arrows on the display remote. Level 1 corresponds to the lowest level of pedal assistance, and level 5 corresponds to the highest level of pedal assistance. Level 0 indicates pedal assistance is inactive. Start in PAS level 0 or 1 and adjust from there.
6. **Begin riding carefully.** With the proper safety gear and rider knowledge, you may now operate your bike from Rad Power Bikes. On a flat surface, in a low gear (1 or 2), most riders should be able to begin pedalling the bike with pedal assist level 0 or 1. You may also use the throttle to accelerate and maintain your desired speed.
7. **The throttle** is used by slowly and carefully rotating the throttle backwards, toward the rider. The throttle is active whenever the bike is turned on. Do not use the throttle unless you are on the bike.



**Do not use the throttle while dismounted. Avoid accidental application of the throttle while dismounted; anytime you are moving the bike while dismounted, ensure the bike is powered off to prevent accidental application of the throttle.**

**NOTICE:** Even if you are an experienced bike user, please take the time to read and implement the guidelines described in the owner's manual accompanying your ebike by Rad Power Bikes, and any manuals included with each subcomponent.



## Brake Light Features and Operations

Your ebike by Rad Power Bikes comes equipped with a taillight/brake light that is integrated into the electrical system. Anytime the bike is powered on, squeezing one or both brake levers on the handlebar will cause the brake light to illuminate.

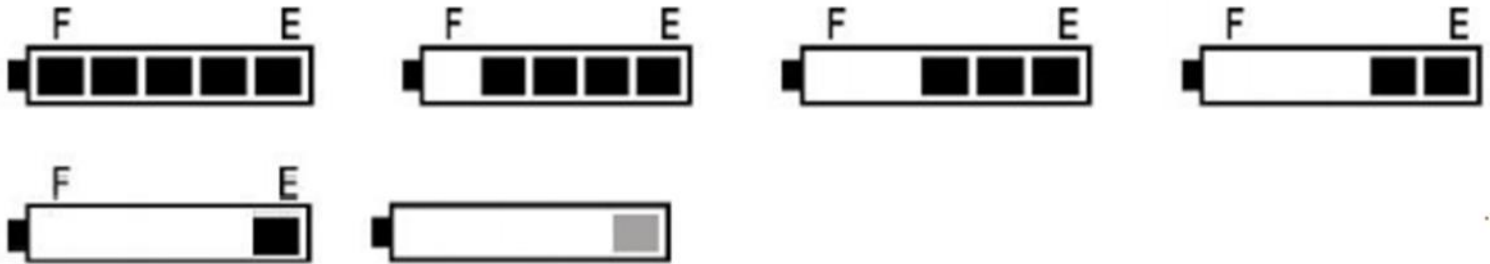
For increased visibility, the taillight's "solid mode" can be turned on by using the LCD display remote, by pressing and holding the MODE and up arrow buttons when the bike is powered on. When in solid mode, the rear light will illuminate, and when the brake levers are squeezed, the brightness of the rear light will increase as the brake light activates. The taillight is also capable of flashing (in "flash mode"), while powered on.

To activate flash mode, power on the bike and taillight following the steps above, then, while dismantled from the bike, press the rubber flash mode button on the bottom left side of the taillight housing (circled at right). When in flash mode, squeezing the brake lever(s) will illuminate a brighter, solid brake light. Flash mode will continue if the headlight is turned off but requires (the above) activation by pressing the flash mode button once the bike has been turned off and back on again.



## Battery Charge Level Indicator

The LCD display on the handlebars of your bike from Rad Power Bikes features a battery charge level indicator (like a fuel gauge on a car). This indicator calculates battery life based on the battery power output (instantaneous voltage reading) and can fluctuate while riding if power demand and/or output changes. Once one bar is left on the display, users should charge the battery as soon as possible. At lower states of charge, the bike may limit power output to prevent damage to the battery. When the battery is fully depleted, the last bar will begin to flash, warning the user to charge the battery as soon as possible.



## Best Practices for Extending Range and Battery Life

**Notice:** Follow the best practices listed below to help extend your range and battery life.

- Whenever possible, avoid applying full throttle when the bike has slowed to very low speeds, has stalled, or stopped.
- Pedal to assist the motor when climbing hills and accelerating from a stop.
- Reduce your power consumption whenever possible.
- Do not climb hills steeper than 15% in grade.
- Avoid sudden starts and stops.
- Accelerate slowly.

## Driving Range

The range of your bike from Rad Power Bikes is the distance the bike will travel on a single full charge of the onboard battery. The range values in this manual are estimates based on expected usage characteristics of bikes by Rad Power Bikes. Some of the factors that affect range include changes in elevation, speed, payload, acceleration, number of starts and stops, ambient air temperatures, tire pressure, and terrain.

We suggest that you select a lower assistance level when you first get your bike from Rad Power Bikes 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 bike from Rad Power Bikes, you can then adjust your riding characteristics if you so desire.

The following table provides general range estimates based on various factors. This table is meant to help owners understand the factors that can contribute to decreased range, but Rad Power Bikes makes no claims to the range that individual users might experience in a particular use case.

<b>Expected Range</b>	<b>Operating Condition(s)</b>
40 km (25 mi)	Hilly Terrain Heavy Payload Windy High Pedal Assist Level/ High Throttle Use Light Pedalling
56 km (35 mi)	Flat Terrain Normal Payload Not Windy Medium Pedal Assist Level/ Moderate Throttle Use Light Pedalling
72 km (45 mi)	Flat Terrain Normal Payload Not Windy Low Pedal Assist Level/ Minimal Throttle Use Moderate to Heavy Pedalling

## Carrying Loads

### MAXIMUM PAYLOAD CAPACITY FOR RADROVER

The total maximum weight limit, or payload capacity, of the RadRover (275 lb or 125 kg) includes the weight of the rider as well as clothing, safety gear, cargo, accessories, passengers, etc. The RadRover is compatible with the optional rear rack and front rack accessories that are not included in the base price of the bike and are available for purchase from [www.radpowerbikes.ca](http://www.radpowerbikes.ca).

**Total maximum payload: 275 lb (125 kg)**

**Optional rear rack maximum payload: 45 lb (20 kg)**

**Optional front rack maximum payload: 22 lb (10 kg)**



The optional RadRover rear rack is designed for no more than 45 lb (20 kg) of total cargo, regardless of any third-party rear rack accessories that might carry a higher weight rating. Heed this 45 lb (20 kg) limit, or damage to your bike, property, and/or cargo, and serious injury or death of the rider and/or passenger can occur.



You **MUST** hold onto the bike whenever loading a passenger or cargo. The kickstand is not designed to be used for loading a passenger or cargo. Do not assume the bike is stable and balanced when using the kickstand. Always hold onto the bike when a passenger or cargo is being loaded, in place, or attached to the ebike.



It is the user's responsibility to ensure a potential passenger on the RadRover is adequately experienced and healthy enough to ride safely as a passenger. Serious injury or death can occur if passengers are inexperienced or in poor health such that it impacts their ability to ride as passengers safely.



Never leave the bike unattended with a child on the bike. Ensure the child is removed from the bike before you look away or walk away from the bike, otherwise the bike could tip over and cause serious injury to your most precious cargo.

## Carrying a Child

The use of certified and approved child seating and equipment, including the optional RadRover rear rack, are required whenever carrying a child. Check all regulations in the area where you operate the RadRover to ensure carrying a passenger, a child, or cargo is allowed. Follow the stated weight limits for the bike and accessories; do not overload the RadRover. Ensure hands and feet are always kept away from wheels, especially when the bike is in motion. A child should not ride as a passenger on the back of the RadRover unless they are seated in a properly fitted and approved child safety seat.



The optional RadRover rear rack is equipped with a mounting window (like the one highlighted in the photo at right) for the Thule Yepp Maxi Easyfit child carrier. For installation instructions, safety notices, general information, and tips on safe operation of this accessory, visit the manufacturer's website at [www.thule.com](http://www.thule.com) or contact Rad Power Bikes.



**Notice:** The following list provides important additional tips for the safe operation of the RadRover when used for carrying a child.

- Increased weight from a child passenger will increase the time it takes to slow the bike when braking, so plan your stops accordingly. Ensure both front and rear brakes are properly adjusted, maintained, and applied.
- Ensure that rider and the child passenger are wearing a properly fitted and approved bicycle helmet.
- A passenger should sit directly over or forward of the rear wheel on the rear rack, and no more than 20 lb (9 kg) should be loaded over the rear 1/3 of the optional rear rack.

## Carrying Cargo

Carrying a cargo load involves additional risks, which require special attention and care. Braking, acceleration, and balancing are all significantly affected by the addition of cargo loaded on the ebike. To safely operate your ebike while carrying cargo, you must get used to the differences in braking, steering, balance, etc. that come with the extra weight. Users should practise riding on a flat and open area with light cargo before attempting to carry heavier loads.

**Notice:** The following bulleted list provides important tips for the safe operation of the ebike when used for carrying cargo.

- Cargo should be loaded as low as possible to lower the centre of gravity and improve stability, but cargo should not interfere with any moving components or the ground.
- Ensure your loads are properly secured and periodically check that nothing loosens, risks interfering with any moving components, or could touch or drag on the ground.
- Become proficient at controlling the ebike with cargo in a flat, open area before riding on roads or hills. Know your limits and plan routes accordingly.



**Hills that are normally easy to climb and descend without cargo can become challenging and dangerous once cargo is loaded onto the bike, as the extra weight affects steering, braking, and balance as well as the amount of power it takes to go uphill.**



**Do not use the front brake by itself. Apply the rear brake first, then the front brake, and use both brakes for all braking operations. Braking with only the front brake can cause excessive stress on components, damage to the bike and parts, and/or loss of control.**



**It is always the user's responsibility to ensure that cargo or a passenger loaded on the ebike does not interfere or impact the user's ability to safely operate the ebike. Serious injury or death can occur if cargo or a passenger impacts the user's ability to safely operate the ebike.**

## Parking, Storage, and Transport

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

- When pushing or carrying the bike manually, turn off the power to avoid accidental acceleration from the motor.
- Turn the power and any lights off to conserve battery.
- Ensure the battery is locked to the frame in the off position or use the key to remove the battery and bring it with you for security or storing in a temperature-controlled location.
- Park indoors when possible. If you must park outdoors in rain or wet conditions, you should leave your ebike outside for only a few hours and then park it in a dry location as soon as possible to allow all the systems to dry out. As with a regular bike, an ebike used in wet conditions needs more frequent maintenance to prevent rust, corrosion, etc. and to ensure all systems are working safely.
- In public places, your bike from Rad Power Bikes must be parked in accordance with local rules and regulations.
- Locking up your bike is recommended to ensure your bike is secure and the chance of theft is reduced. Rad Power Bikes makes no claims or recommendations on the proper lock hardware or procedures to secure your bike, but we do recommend you take appropriate precautions to keep your bike safe from theft.
- Do not park, store, or transport your bike from Rad Power Bikes on a rack not designed for the bike's size and weight.
- Use a rack compatible with the width of tires used on your bike. Some racks may not accommodate all tire widths.
- When carrying your bike on a rack for transport, unlock the battery, remove the key, and then remove the battery. This will reduce the weight of the bike, make lifting and loading easier, and allow you to protect the battery by transporting it in the cab of a vehicle.
- Avoid transporting bikes from Rad Power Bikes on a vehicle rack during rain, as this may cause water damage to the electrical components. Contact Rad Power Bikes Product Support if you have questions about preventative measures.

# Maintenance

## Basic Bike Care

To ensure safe riding conditions you must properly maintain your bike from Rad Power Bikes. Follow these basic guidelines and see a certified, reputable bike mechanic at regular intervals to ensure your bike is safe for use and fun to ride. See the Pre-Ride Safety Checklist and Recommended Service Intervals sections in this manual for more detailed information.

- Properly maintain batteries by keeping them fully charged when between uses of up to two weeks apart. See Long-Term Battery Storage section of manual for information on storing the battery for longer than two weeks between rides.
- Never immerse or submerge the bike or any components in water or liquid as the electrical system may be damaged.
- Periodically check wiring and connectors to ensure there is no damage and the connectors are secure.
- To clean, wipe the frame with a damp cloth. If needed, apply a mild non-corrosive detergent mixture to the damp cloth and wipe the frame. Dry by wiping with a clean, dry cloth.
- Store under shelter; avoid leaving the bike in the rain or exposed to corrosive materials. If exposed to rain, dry your bike afterward and apply anti-rust treatment to chain and other unpainted steel surfaces.
- Riding on the beach or in coastal areas exposes your bike to salt, which is very corrosive. Wipe down your bike frequently and wipe or spray all unpainted parts with anti-rust treatment. Damage from corrosion is not covered under warranty so special care should be given to extend the life of your bike when used in coastal areas or areas with salty air or water.
- If the hub and bottom bracket bearings have been submerged in water or liquid, they should be taken out and re-greased. This will prevent accelerated bearing deterioration.
- If the paint has become scratched or chipped in the metal, use touch up paint to prevent rust. Clear nail polish can also be used as a preventative measure.
- Regularly clean and lubricate all moving parts, tighten components, and adjust as required.
- Regularly inspect all pre-attached and optional component hardware to ensure proper torque spec, secure attachment, and good working condition.



**If you do not have the experience, skill, and tools to complete maintenance and adjustment of your bike, Rad Power Bikes strongly recommends having a certified, reputable bike mechanic maintain, tune, and ensure the bike is safe to ride.**



## Recommended Service Intervals

Regular inspection and maintenance are key to ensure Rad Power Bikes function as intended, and to reduce wear and tear on their systems. Recommended service intervals are meant to be used as guidelines. Real world wear and tear, and the need for service, will vary with conditions of use. We generally recommend inspections, service, and necessary replacements be performed at the time or mileage interval that comes first in the following table.

Interval	Inspect	Service	Replace
Weekly, 160-321 km (100-200 mi)	<ul style="list-style-type: none"> <li>- Check hardware for proper torque: See Recommended Torque Values chart.</li> <li>- Check drivetrain for proper alignment and function (including the chain, freewheel, chainring, and derailleur).</li> <li>- Check wheel trueness and for quiet wheel operation (without spoke noise).</li> <li>- Check condition of frame for any damage.</li> </ul>	<ul style="list-style-type: none"> <li>- Clean frame by wiping frame down with damp cloth.</li> <li>- Use barrel adjuster(s) to tension derailleur/brake cables if needed.</li> </ul>	<ul style="list-style-type: none"> <li>- Replace any components confirmed by Rad Power Bikes Product Support or a certified, reputable bike mechanic to be damaged beyond repair or broken.</li> </ul>
Monthly, 402-1207 km (250-750 mi)	<ul style="list-style-type: none"> <li>- Check brake pad alignment, brake cable tension.</li> <li>- Check bike is shifting properly, proper derailleur cable tension.</li> <li>- Check chain stretch.</li> <li>- Check brake and shifter cables for corrosion or fraying.</li> <li>- Check spoke tension.</li> <li>- Check accessory mounting (rack mounting bolts, fender hardware, and alignment).</li> </ul>	<ul style="list-style-type: none"> <li>- Clean and lubricate drivetrain.</li> <li>- Check crankset and pedal torque.</li> <li>- Clean brake and shift cables.</li> <li>- True and tension wheels if any loose spokes are discovered.</li> <li>- Balance the battery.</li> </ul>	<ul style="list-style-type: none"> <li>- Replace brake and shift cables if necessary.</li> <li>- Replace brake pads if necessary.</li> </ul>
Every 6 Months, 1207-2011 km (750-1250 mi)	<ul style="list-style-type: none"> <li>- Inspect drivetrain (chain, chainring, freewheel, and derailleur).</li> <li>- Inspect all cables and housings.</li> </ul>	<ul style="list-style-type: none"> <li>- Standard tune-up by certified, reputable bike mechanic is recommended.</li> <li>- Grease bottom bracket.</li> </ul>	<ul style="list-style-type: none"> <li>- Replace brake pads.</li> <li>- Replace tires if necessary.</li> <li>- Replace cables and housings if necessary.</li> </ul>

## Pre-Ride Safety Checklist

**Notice:** Before every ride, and after every 40-72 km (25-45 mi), we advise following the pre-ride safety checklist.

Safety Check	Basic Steps
1. Brakes	Ensure front and rear brakes work properly. Check brake pads for wear and ensure they are not overworn. Ensure brake pads are correctly positioned in relation to the rims. Ensure brake cables are lubricated, correctly adjusted, and display no obvious wear. Ensure brake levers are lubricated and tightly secured to the handlebar. Test that the brake levers are firm and that the brake, motor cutoff functions, and the brake light are functioning properly.
2. Wheels and Tires	Ensure tires are inflated within the recommended limits posted on the tire sidewalls and hold air. Ensure tires have good tread, have no bulges or excessive wear, and are free from any other damage. Ensure rims run true and have no obvious wobbles, dents, or kinks. Ensure all wheel spokes are tight and not broken. Check axle nuts and front wheel quick release to ensure they are tight. Ensure the locking lever on the quick release skewer is correctly tensioned, fully closed, and secured.
3. Steering	Ensure the handlebar and stem are correctly adjusted, tightened, and allow proper steering. Ensure the handlebar is set correctly in relation to the forks and the direction of travel.
4. Chain	Ensure the chain is clean, oiled, and runs smoothly. Extra care is required in wet, salty/otherwise corrosive, or dusty conditions.
5. Bearings	Ensure all bearings are lubricated, run freely, and display no excess movement, grinding, or rattling. Check headset, wheel bearings, pedal bearings, and bottom bracket bearings.
6. Cranks and Pedals	Ensure pedals are securely tightened to the cranks. Ensure the cranks are securely tightened and are not bent.
7. Derailleur and Mechanical Cables	Check that the derailleur is adjusted and functioning properly. Ensure shifter and brake levers are attached to the handlebar securely. Ensure all shifter and brake cables are properly lubricated.

8. Frame, Fork, and Seat	<p>Check that the frame and fork are not bent or broken.          If either frame or fork are bent or broken, they should be replaced.          Check that the seat is adjusted properly, and seat post quick release lever is securely tightened.</p>
9. Motor Drive Assembly and Throttle	<p>Ensure hub motor is spinning smoothly and motor bearings are in good working order.          Ensure all power cables running to hub motor are secured and undamaged.          Make sure the hub motor axle bolts are secured and the torque arm and torque washers are in place.</p>
10. Battery	<p>Ensure battery is charged before use.          Ensure there is no damage to battery.          Lock battery to frame and ensure that it is secured.          Charge and store bike and battery in a dry location, between 10 °C – 25 °C (50 °F – 77 °F).          Let bike dry completely before using again.</p>
11. Electrical Cables	<p>Look over connectors to make sure they are fully seated and free from debris or moisture.          Check cables and cable housing for obvious signs of damage.          Ensure headlight, taillight, and brake light are functioning, adjusted properly, and unobstructed.</p>
12. Accessories	<p>Ensure all reflectors are properly fitted and not obscured.          Ensure all other fittings on bike are properly secured and functioning.          Inspect helmet and other safety gear for signs of damage.          Ensure the rider is wearing a helmet and other required riding safety gear.          Ensure the mounting hardware is properly secured if fitted with a front rack, rear rack, basket, etc.          Ensure the taillight and taillight power wire are properly secured if fitted with rear rack.          Ensure fender mounting hardware is properly secured if fitted with fenders.          Ensure there are no cracks or holes in fenders if fitted with fenders.</p>



**Your cables, spokes, and chain will stretch after an initial break-in period of 80-160 km (50-100 mi), and bolted connections can loosen. Always have a certified, reputable bike mechanic perform a tune-up on your RadRover after your initial break-in period of 80-160 km (50-100 mi) (depending on riding conditions such as total weight, riding characteristics, and terrain). Regular inspections and tune-ups are particularly important for ensuring that your bike remains safe and fun to ride.**

## Tire Inflation and Replacement

The RadRover employs 26" x 4" rubber tires with inner tubes. The tires are designed for durability and safety for regular cycling activities and to be checked before each use for proper inflation and condition. Proper inflation, care, and timely replacement will help to ensure that your bike's operational characteristics will be maintained, and unsafe conditions avoided.

Rad Power Bikes recommends **20 psi/1.4 bar** for the stock tires on the RadRover. Always stay within the manufacturer's recommended air pressure range as listed on the tire sidewall.



**It is critically important that proper air pressure is always maintained in pneumatic tires. Do not underinflate or overinflate your tires. Low pressure may result in loss of control, and overinflated tires may burst. Failure to always maintain the air pressure rating indicated on pneumatic tires may result in tire and/or wheel failure.**



**Inflate your tires from a regulated air source with an available pressure gauge. Inflating your tires from an unregulated air source could overinflate them, resulting in a burst tire.**

Even tires equipped with built-in flat-preventative tire liners, like those that come with bikes by Rad Power Bikes, can and do get flats from punctures, pinches, impact, and other causes. When tire wear becomes evident or a flat tire is discovered, you must replace the tires and/or tubes before operating the bike or injury to operators and/or damage to your bike could occur.



**When changing a tire or tube, ensure that all air pressure has been removed from the inner tube prior to removing the tire from the rim. Failure to remove all air pressure from the inner tube could result in serious injury.**



**Using aftermarket tires or inner tubes, not provided by Rad Power Bikes may void your warranty, create an unsafe riding condition, or damage to your bike by Rad Power Bikes. If required by law, ensure replacement aftermarket tires have enough reflective sidewall striping.**

For more information on tire or tube replacement procedures, or questions about tire inflation, visit [www.radpowerbikes.ca/help](http://www.radpowerbikes.ca/help) and contact Rad Power Bikes Product Support.

Email: [can-support@radpowerbikes.com](mailto:can-support@radpowerbikes.com) or Call: 1-877-299-9404 x 2

# Troubleshooting

## Basic Troubleshooting

	Symptoms	Possible Causes	Most Common Solutions
1	<b>The bike does not work</b>	<ol style="list-style-type: none"><li>1. Insufficient battery power</li><li>2. Faulty connections</li><li>3. Battery not fully seated in tray</li><li>4. Improper turn on sequence</li><li>5. Brakes are applied</li><li>6. Blown 40a discharge fuse</li></ol>	<ol style="list-style-type: none"><li>1. Charge the battery</li><li>2. Clean and repair connectors</li><li>3. Install battery correctly</li><li>4. Turn on bike with proper sequence</li><li>5. Disengage brakes</li><li>6. Replace 40a discharge fuse</li></ol>
2	<b>Irregular acceleration and/or reduced top speed</b>	<ol style="list-style-type: none"><li>1. Insufficient battery power</li><li>2. Loose or damaged throttle</li><li>3. Misaligned or damaged magnet ring</li></ol>	<ol style="list-style-type: none"><li>1. Charge or replace battery</li><li>2. Replace throttle</li><li>3. Align or replace magnet ring</li></ol>
3	<b>The motor does not respond when the bike is powered on</b>	<ol style="list-style-type: none"><li>1. Loose wiring</li><li>2. Loose or damaged throttle</li><li>3. Loose or damaged motor plug wire</li><li>4. Damaged motor</li></ol>	<ol style="list-style-type: none"><li>1. Repair and or reconnect</li><li>2. Tighten or replace</li><li>3. Secure or replace</li><li>4. Repair or replace</li></ol>
4	<b>Reduced range</b>	<ol style="list-style-type: none"><li>1. Low tire pressure</li><li>2. Low or faulty battery</li><li>3. Driving with too many hills, headwind, braking, and/or excessive load</li><li>4. Battery discharged for long period of time without regular charges, aged, damaged, or unbalanced</li><li>5. Brakes rubbing</li></ol>	<ol style="list-style-type: none"><li>1. Adjust tire pressure</li><li>2. Check connections or charge battery</li><li>3. Assist with pedals or adjust route</li><li>4. Balance the battery; contact Product Support if range decline persists</li><li>5. Adjust the brakes</li></ol>
5	<b>The battery will not charge</b>	<ol style="list-style-type: none"><li>1. Charger not well connected</li><li>2. Charger damaged</li><li>3. Battery damaged</li><li>4. Wiring damaged</li><li>5. Blown charge fuse</li></ol>	<ol style="list-style-type: none"><li>1. Adjust the connections</li><li>2. Replace</li><li>3. Replace</li><li>4. Repair or replace</li><li>5. Replace charge fuse</li></ol>
6	<b>Wheel or motor makes strange noises</b>	<ol style="list-style-type: none"><li>1. Loose or damaged wheel spokes or rim</li><li>2. Loose or damaged motor wiring</li></ol>	<ol style="list-style-type: none"><li>1. Tighten, repair, or replace</li><li>2. Reconnect or replace motor.</li></ol>

## Error Detection

Your bike from Rad Power Bikes is equipped with an error detection system integrated into the display and controller. In the case of an electronic control system fault an error code should display. The following error codes are the most common and can aid in troubleshooting. If your bike has an error code displayed at any time it is recommended that you cease operation and contact Rad Power Bikes immediately. Additional information on error codes can be found at [www.radpowerbikes.ca/help](http://www.radpowerbikes.ca/help).

Error Code	Definition
21	Abnormal Current
22	Throttle Fault
23	Motor Phase Fault
24	Motor Hall Fault
25	Brake Applied While Turning On or Brake Switch Fault
30	Communication Fault

# Warnings and Safety

## General Operating Rules

**Notice:** Pay special attention to all the general operating rules below before operating your bike from Rad Power Bikes.

- When riding, obey the same road laws as all other road vehicles as applicable by law in your area.
- For additional information regarding traffic/vehicles laws, contact the road traffic authority in your area.
- Ride predictably, in a straight line, and with the flow of traffic. Never ride against traffic.
- Use correct hand signals to indicate turning.
- Ride defensively; to other road users you may be hard to see.
- Concentrate on the path ahead. Avoid potholes, gravel, wet or oily roads, wet leaves, curbs, train tracks, speed bumps, drain gates, thorns, broken glass, and other obstacles, hazards, and puncture flat risks.
- Cross train tracks at a 90-degree angle or walk your bike across.
- Expect the unexpected such as opening car doors or cars backing out of driveways.
- Be careful at intersections and when preparing to pass other vehicles or other cyclists.
- Familiarize yourself with all the features and operations of the bike by Rad Power Bikes. Practise and become proficient at shifting gears, applying the brakes, using the power assist system, and using the throttle in a controlled setting before riding in riskier conditions.
- Wear proper riding clothes including closed-toe shoes. If you are wearing loose pants, secure the bottom using leg clips or elastic bands to prevent them from being caught in the chain or gears. Do not use items that may restrict your hearing.
- Check your local rules and regulations before carrying cargo.
- When braking, apply the rear brake first, then the front brake. If brakes are not correctly applied, they may lock up, you may lose control, and you could fall.
- Maintain a comfortable stopping distance from all other objects, riders, and vehicles. Safe braking distances are based on factors such as road surface and light conditions among other variables.



**The following safety notes provide additional information on the safe operation of your bike from Rad Power Bikes and should be closely reviewed. Failure to review these notes can lead to serious injury or death.**

- All users must read and understand this manual before riding their bike from Rad Power Bikes. Additional manuals for components used on the bike may also be provided and should be read before installing or using those components.
- Ensure that you comprehend all instructions and safety notes/warnings.
- Ensure the bike fits you properly before your first use. You may lose control or fall if your bike is too big or too small.
- Always wear an approved bicycle helmet whenever riding a bike and ensure that all helmet manufacturer instructions are used for fit and care of your helmet. Failure to wear a helmet when riding may result in serious injury or death.
- Ensure correct setup, tightening, and torquing to recommended torque values is performed on your bike before first using it and check the setup, tightening, and condition of components and hardware regularly.
- It is your responsibility to familiarize yourself with the laws and requirements of operating this product in the area(s) where you ride.
- Ensure the handlebar grips are undamaged and properly installed. Loose or damaged grips can cause you to lose control and fall.
- Do not use this product with standard bike trailers, stands, vehicle racks, or accessories that Rad Power Bikes has not tested for safety and compatibility and have verified as safe and compatible with the bike. Contact Rad Power Bikes to check if your equipment will work with the bike.
- Off-road riding requires close attention, specific skills, and presents variable conditions and hazards. Wear appropriate safety gear and do not ride alone in remote areas. Check local rules and regulations about whether off-road ebike riding is allowed.
- **DO NOT ENGAGE IN EXTREME RIDING.** This includes but is not limited to jumps, stunts, or any riding that exceeds your capabilities. Although many articles/advertisements/catalogues depict extreme riding, this is not recommended nor permitted, and you can be seriously injured or killed if you perform extreme riding.



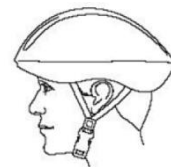
- Bikes and bike parts have strength and integrity limitations, and extreme riding, including but not limited to jumps, stunts, etc., should not be performed as it can damage bike components and/or cause or lead to dangerous riding situations in which you may be seriously injured or killed.
- Failure to perform and confirm proper installation, compatibility, proper operation, or maintenance of any component or accessory can result in serious injury or death.
- After any incident, you must consider your bike unsafe to ride until you consult with a certified, reputable bike mechanic for a comprehensive inspection of all components, functions, and operations of the bike.
- Failure to properly charge, store, or use your battery will void the warranty and may cause a hazardous situation.
- You should check the operation of the brake motor cutoff switches before each ride. The brake system is equipped with an inhibitor that cuts off power to the electric motor whenever the brakes are squeezed. Check proper operation of brake motor cutoff switches before riding.
- Extreme care should be taken when using the pedal assistance sensor and throttle on this product. Ensure you understand and are prepared for the power assistance to engage as soon as pedalling is underway.
- Users must understand the operation of the twist throttle and pedal assistance sensors before using the bike and must take care to travel at speeds appropriate for the usage area, riding conditions, and user experience level. Always use the lowest assist level until you are comfortable with the bike and feel confident in controlling the power.
- Any aftermarket changes to your bike from Rad Power Bikes not expressly approved by Rad Power Bikes could void the warranty and create an unsafe riding experience.
- Because electric bikes are heavier and faster than normal bikes, they require extra caution and care while riding.
- Take extra care while riding in wet conditions including decreasing speed and increasing braking distances. Feet or hands can slip in wet conditions and lead to serious injury or death.
- Do not remove any reflectors or the bell.

## Helmets

It is strongly advised that a rider and child passenger always wear a properly fitting and approved bicycle safety helmet when riding. Once safely dismounted from the bike, a child's helmet should be removed. Bicycle helmets should only and always be used for bicycle riding.



**When riding a bike, always wear a properly fitted helmet that covers the forehead. Many locations require specific safety devices. It is your responsibility to familiarize yourself with the local laws, rules, and regulations where you ride and to comply with all applicable laws, including equipping yourself and your bike as the law requires.**



## General Warnings



**Like any sport, bicycling involves risk of damage, injury, and death. By choosing to ride a bike, you assume the responsibility for that risk, so you need to know, and practise the rules of safe and responsible riding and the proper use and maintenance of this bike. Proper use and maintenance of your bike reduces risk of damage, injury, and death.**



**Biking and controlled substances do not mix. Never operate a bike while under the influence of alcohol, drugs, or any substance or condition that could impair motor functions, judgement, or the ability to safely operate a bike or another vehicle.**



**The RadRover is designed for use by persons 18 years old and older. Riders must have the physical condition, reaction time, and metal capability to ride safely and manage traffic, road conditions, and sudden situations, as well as respect the laws governing electric bike use where they ride, regardless of age. If you have an impairment or disability such as a visual impairment, hearing impairment, physical impairment, cognitive/language impairment, a seizure disorder, or any other physical condition that could impact your ability to safely operate a vehicle, consult your physician before riding any bike.**

## A Note for Parents and Guardians

As a parent or guardian, you are responsible for the activities and safety of your child. The RadRover is not designed for use by children under the age of 18. If you are carrying a passenger in a child safety seat, they should also be wearing a properly fitted and approved helmet. Additional safety information can be found in the Helmet section of this manual. See the Carrying a Child section of this manual for more information on keeping a child safe when being transported in an approved child safety seat attached to the optional rear rack of the RadRover.

## Wet Weather



**It is recommended to not ride in wet weather if avoidable. Ride in wet weather only if necessary.**

This electric bike is not meant for use in puddles, heavy rain, or streams. Never immerse or submerge this product in water or liquid as the electrical system may be damaged.

- In wet weather you need to take extra care when operating this bike.
- Decrease riding speed to help you control the bike in slippery conditions.
- Brake earlier since it will take longer to slow than when operated in dry conditions.
- Take care to be more visible to others on the road. Wear reflective clothing and use approved safety lights.
- Road hazards are more difficult to see when wet; proceed with caution.

## Night Riding



**It is recommended to not ride at night if avoidable. Ride at night only if necessary.**

- Wear reflective and light-coloured clothing.
- Slow down and use familiar roads with street lighting, if possible.
- Ensure tire wall, pedal, and other reflectors are installed and unobstructed.
- Ensure head light and taillight/brake light are functioning correctly and use them.

## Limited Warranty

### Warranty Info

Every bike by Rad Power Bikes is covered under a manufacturer's one-year all-inclusive warranty for the original owner against all manufacturing defects. Rad Power Bikes warrants this product, including all individual components against defects in material or workmanship as follows:

#### RAD POWER BIKES LIMITED 1 YEAR WARRANTY

Warranty details below are subject to change at any time; for the most current warranty version, visit [www.radpowerbikes.ca/warranty](http://www.radpowerbikes.ca/warranty). Rad Power Bikes' bike components including frame, forks, stem, handlebar, headset, seat post, seat, brakes, lights, bottom bracket, crank set, pedals, rims, wheel hub, freewheel, derailleur, shifter, battery, motor, throttle, controller, wiring harness, display, kickstand, reflectors, and hardware are warranted to be free from manufacturing defects in materials and/or workmanship for a 1-year period from the date of original purchase.

Rad Power Bikes' lithium ion batteries are warranted to be free from manufacturing defects in materials and/or workmanship for a 1-year period from the date of original purchase. The battery warranty does not include damage from power surges, use of improper charger, improper maintenance or other such misuse, disassembly, normal wear, or water damage.

### Warranty Exclusions

- Liability for material defects does not cover normal wear and tear, which occurs from the manufacturers' intended use of the product. Components such as the battery, motor system, braking system, drivetrain system, seat, grips, and pedals are all subject to intended use-related wear and are not covered under the warranty from normal wear.
- Damage arising from the use of the bike in a competition or other applications outside of normal intended use.
- Damage arising from improper tools, improper assembly, or improper maintenance performed on the bike.
- Damage resulting from adding non-standard equipment, parts, or modifications.

## Additional Warranty Terms

This warranty does not cover any damage or defects resulting from failure to follow instructions in the owner's manual, acts of God, accidents, misuse, neglect, abuse, commercial use, alterations, modification, improper assembly, wear and tear, installation of parts or accessories not originally intended or compatible with the bike as sold, operator error, water damage, extreme riding, stunt riding, or improper follow-up maintenance. This warranty does not include normal wear and tear or consumable parts designed to wear down over time, including tires, tubes, brake pads, cables and housing, spokes, and handlebar grips.

Rad Power Bikes will not be liable and/or responsible for any damage, failure, or loss caused by any unauthorized service or use of unauthorized parts. In no event shall Rad Power Bikes be responsible for any direct, indirect, or consequential damages, including without limitation, damages for personal injury, property damage, or economic losses, whether based on contract, warranty, negligence, or product liability in connection with their products. All claims to this warranty must be made through Rad Power Bikes. Proof of purchase is required with any warranty request.

## Additional Information on Wear

Components of the RadRover are subject to higher wear when compared to bikes without power assistance. This is because the RadRover can travel at higher average speeds than regular bicycles and has a greater weight. Higher wear is not a defect in the product and is not subject to warranty. Typical components affected are the tires, brake pads and rotors, suspension forks, spokes, wheels, and the battery.



**When the useful life of a component is surpassed it can cause unexpected loss of function. This can result in serious injuries or even death. Therefore, pay attention to wear characteristics such as cracks, scratches, or changes in the colour or operation of components which could indicate useful life has been exceeded. Worn components should be replaced immediately. If you are unfamiliar with regular maintenance, a certified, reputable bike mechanic should be consulted.**

## Link to Assembly Video and Online Resources

### Assembly Video

Please visit the “Help Center” section of the Rad Power Bikes website ([www.radpowerbikes.ca/help](http://www.radpowerbikes.ca/help)) to view the official RadRover Assembly Video.

### Online Resources

For more information on best practices, please visit the Rad Power Bikes website ([www.radpowerbikes.ca](http://www.radpowerbikes.ca)), Help Center ([www.radpowerbikes.ca/help](http://www.radpowerbikes.ca/help)), or contact Rad Power Bikes Product Support with any questions.

# **We are here to help!**

**If you have questions, please:**

**Access Rad Power Bikes Help Center ([www.radpowerbikes.ca/help](http://www.radpowerbikes.ca/help)),**

**Contact us directly by email to [can-support@radpowerbikes.com](mailto:can-support@radpowerbikes.com), or**

**Call Rad Power Bikes Product Support 1-877-299-9404 x 2**

**Ride RAD!**