

# OWNER'S MANUAL

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## Overview

The BTVW6002 and BTVW6004 range extender batteries are specifically designed for Velotric T1 and Velotric T1 ST models. They provide an additional 45% or so of extended range by charging the eBike's built-in battery.

The idea of the range extender battery is similar to that of a portable mobile power bank for a smartphone. However, it can only recharge the built-in battery of the eBike and cannot be used as a standalone power source to drive the entire eBike. This limitation exists because the drive current required for eBike riding can only come from the built-in battery, and the motor may require a current of over 9A, while the range extender battery has a maximum output current of around 3A.

When you turn on the range extender battery at the beginning of a ride, it dynamically monitors the eBike's status. It continuously charges the built-in battery when the eBike is in the OFF mode and parked, as well as dynamically supplements power in assist mode, thus increasing the overall range. Different models support the following eBike types:

Model	Type of E-bikes
BTVW6002	Velotric T1
BTVW6004	Velotric T1/Velotric T1 ST

**▲ NOTE** Please update your Velotric T1 to the latest firmware to compatible with range extender battery.

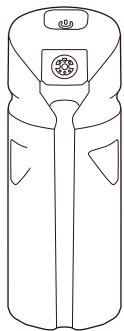
## Specifications

<b>Rated voltage:</b>	36V
<b>Rated capacity:</b>	4.9Ah (176Wh)
<b>Battery cell:</b>	Samsung 50E 21700
<b>Charging Parameters:</b>	DC 42V 2A, approximately 3 to 4 hours (using the original eBike charger)
<b>Maximum Output Voltage and Current:</b>	DC 42V 3A
<b>Protection Level:</b>	IP66
<b>Weight:</b>	Approximately 2.867 lbs (1.3 kg)
<b>Charging Temperature:</b>	5°C to 40°C (41°F to 104°F)
<b>Operating Temperature:</b>	-10°C to 40°C (14°F to 104°F)

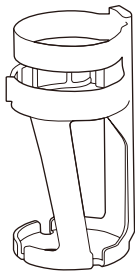
## What's in the Box

The packaging includes the following items:

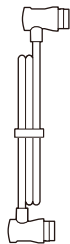
1. Range Extender Battery
2. Range Extender Battery Bracket
3. Discharging Cable
4. Charging Cable



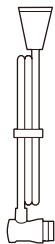
Range Extender  
Battery



Range Extender  
Battery Bracket



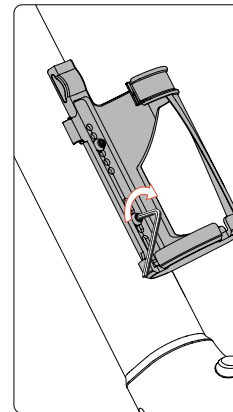
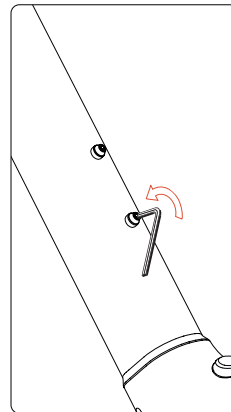
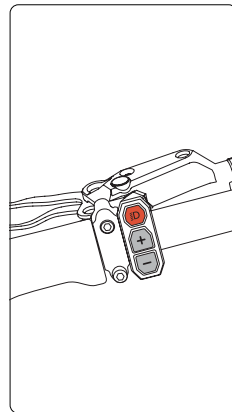
Discharging  
Cable



Charging  
Cable

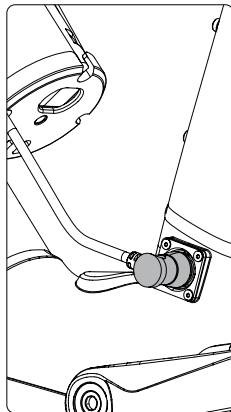
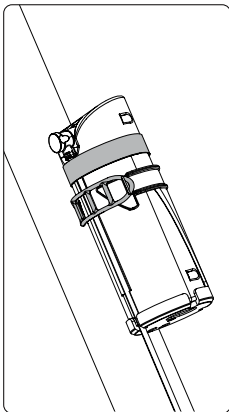
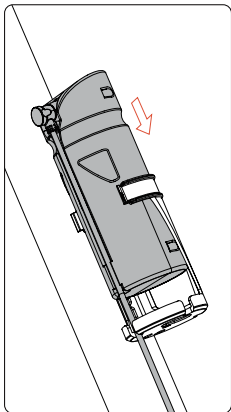
## Installation

1. Long press the "Front Light" button to turn off the eBike.
2. Remove the two mounting bolts on the downtube with a 4mm Allen key and set them aside. Release the rubber buckle, unfasten the velcro, and remove the range extender battery from the bracket.
3. Place the range extender battery bracket on the downtube. Thread the two bolts into the mounting points by hand and tighten them securely with an 4mm Allen key. Torque both bolts to 3 ~ 5 Nm.



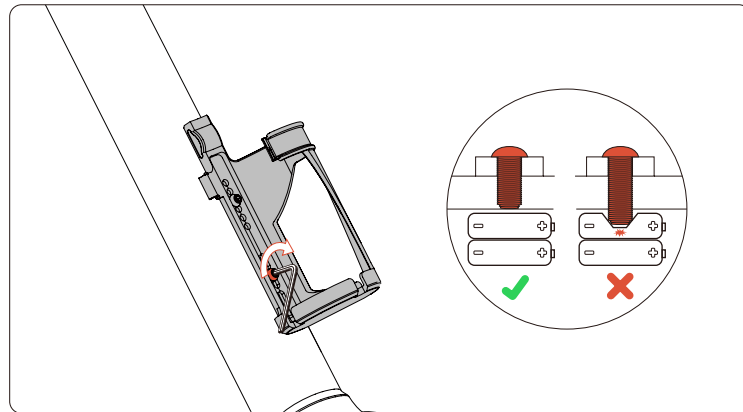
## Installation

4. Place the range extender battery into the bracket. Make sure the side groove of the range extender battery faces toward the bracket opening.
5. Plug the discharging cable into the charging and discharging port on the range extender battery. Secure the discharging cable in the side groove by turning the range extender battery counterclockwise.
6. Fasten the velcro and snap the rubber buckle to secure the range extender battery. Open the rubber cover on the charging port at the bottom of the seat tube. Plug the discharging cable into the charging port.



## Installation

- ▲ NOTE**
1. It is strongly recommended to use the original screws provided with the complete eBike.
  2. If using replacement screws, select the correct screw head type and length; the length should not exceed 10mm to prevent excessive looseness or damage to the built-in battery.
  3. Ensure that the discharging connection wire is routed correctly, and there is no interference with the crank rotation during cycling.



## Charge the eBike

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### Getting Started:

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Connect the range extender battery, press the "Power" button to enter "Smart Charging Mode".

For the safety and convenience of riders, the startup time of the range extender battery in operational mode varies depending on the eBike's different states:

eBike powered on, in gear 0 (No assist mode)	More than 10 seconds
eBike powered on, not in gear 0, parked and not riding	Approximately 6 to 12 minutes
eBike powered off	Approximately 6 to 12 minutes
eBike powered on, not in gear 0, and actively riding	Dynamic charging

After the range extender battery is turned on, it will pulse to display the battery level. Once it enters charging mode, the battery level display will remain on.

Battery level determination should refer to the "Battery Level and Status Indication" chapter.

- ▲ NOTE**
1. After the range extender battery enters charging mode, it will dynamically adjust the charging mode when the eBike's power assist status changes.
  2. If the built-in battery is too low for the eBike to power on, the range extender battery will also be unable to start charging.

## Charge the eBike

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### Turning off the Battery:

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When you do not need to use the range extender battery, long press the range extender battery button for more than 2 seconds to power it off.

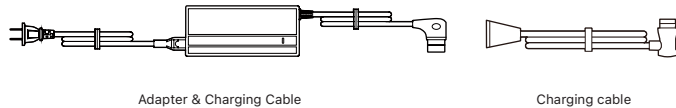
**The range extender battery will automatically stop charging or enter shutdown mode in the following situations:**

1. The range extender battery is not connected to the eBike and remains idle for more than 10 minutes.
2. The range extender battery is connected to the eBike but remains unused for more than 12 hours.
3. The range extender battery is depleted.
4. The eBike's built-in battery is fully charged.

## Charge the Range Extender Battery

1. Charging the range extender battery only requires the use of the Velotric T series eBike charger and the charging adapter cable; there is no need to purchase an additional charger.
2. Connect the charging cable to the range extender battery, and the other end to the eBike charger. Then, connect the charger's AC plug to a power outlet to begin replenishing the range extender battery.
3. Confirm that the range extender battery's charging status indicator is functioning normally. The charger's charging indicator should also be red while charging. When the range extender battery is fully charged, the charging status indicator on the range extender battery will automatically turn off, and the charger's indicator will change to green, indicating that the charging process has stopped.

**▲ NOTE** Lithium batteries are sensitive to temperature, and charging must occur within an appropriate temperature range. In the winter or when the range extender battery has been outdoors during the summer and is brought indoors for charging, the internal temperature of the battery may not immediately be within the allowable charging temperature range, and the range extender battery may not immediately enter the charging state. If you find that the range extender battery cannot charge, simply place the battery in an indoor environment with a temperature of approximately 10°C to 25°C (50°F to 77°F) for approximately 1 hour or more. Once the internal battery temperature has returned to an acceptable range, it will be ready to charge again.



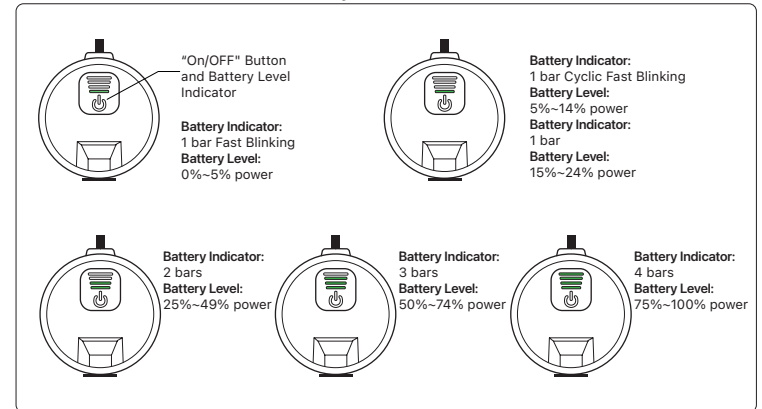
## Battery Level and Status Indicators

The range extender battery features 4 LEDs for battery capacity and status indication.

### Battery Capacity Indication:

Press the button to power on the range extender battery, and the battery capacity will be displayed as follows:

1. When the range extender battery is turned on and is not charging the eBike, the battery indicators will light up intermittently. When it is charging the eBike, the battery indicators will stay on continuously.
2. When the battery level drops below 5%, the range extender battery will turn off its indicators and shut down automatically.

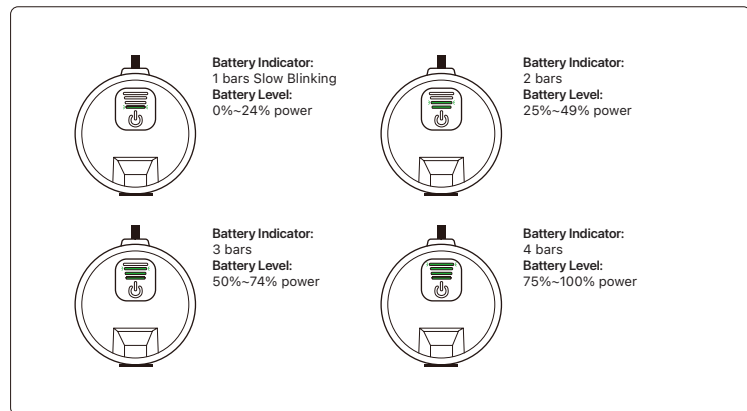


## Battery Level and Status Indicators

### Charging Indicator:

During the charging process of the range extender battery, the status display is as follows:

**▲ NOTE** Once the battery is fully charged, the battery level indicator will remain fully lit for a moment and then automatically turning off.



## Battery Level and Status Indicators

### Power Off Indicator:

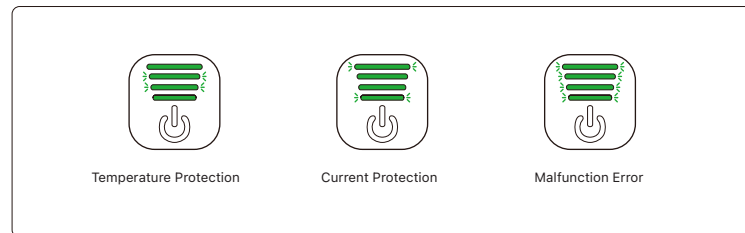
To power off the range extender battery, long press the button for more than 2 seconds. The sequential lighting pattern will illuminate once and then turn off.

### Alert Indicator:

When the range extender battery encounters an alert or malfunction, pressing the button or connecting it to the charger will display the alert status as shown in the diagram.

**▲ NOTE**

1. When seeing an alert, disconnect the range extender battery from the complete eBike and charger, and let it sit to restore normal operation.
2. In the case of temperature protection, battery should be placed in an environment with a temperature range of 10°C to 25°C (50°F to 77°F) for at least 1 hour to recover.
3. If error persists, please contact Velotric or an authorized dealer for assistance.





## Storage

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The battery is initially set to transport mode and must be activated and charged before use.

### Transport Mode:

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To Activate: long press the button for more than 10 seconds; the sequential lighting pattern will illuminate three times and then extinguish.

To Deactivate (Exit Transport Mode): long press the button or connect the charger for more than 5 seconds; the battery level indicator will turn on once.

### Storage Recommendations:

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It is recommended to charge the range extender battery to approximately 70% capacity for storage.

Disconnect the battery from the complete eBike and charger, and store the battery and adapter cable separately in a cool, dry place.

Do not wrap the battery in conductive materials to avoid short-circuiting and damage. During storage, check the battery capacity every month and recharge it to the recommended storage level.

The recommended temperature range for storing the battery is between -20°C to 60°C (-4°F to 140°F), with the ideal storage temperature range being 10°C to 30°C (50°F to 86°F).

Extreme temperatures can affect battery functionality and capacity, with low temperatures potentially impacting battery performance and high temperatures shortening battery lifespan.

The recommended relative humidity range for battery storage is (0% to 70%) RH.

## Precautions

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### **Before using the battery, please read the owner's manual carefully**

1. This battery can only be charged with the accompanying charger. Disconnect the battery from the charger promptly after it is fully charged. Do not leave the battery connected to the charger for more than 5 hours.
2. Do not short-circuit the positive and negative terminals of the battery, and do not disassemble the battery yourself to avoid danger.
3. Dispose of used batteries responsibly or hand them over to qualified local agencies for proper disposal. Do not discard lithium batteries at random.
4. After the battery is depleted, please charge it to full within 24 hours to avoid affecting its performance.
5. When first receiving the battery, connect it to the designated charger and charge it fully before use, to ensure optimal battery performance. Do not get the battery wet, and do not submerge it in water, as this can damage its internal circuitry and functions, and pose risks such as overheating and leakage.
6. It is normal for the battery's outer shell to heat up slightly during use. The battery has comprehensive internal temperature monitoring and protection functions, so it is safe to use.
7. Do not use unauthorized chargers to charge the range extender battery.
8. When connecting and disconnecting the charger and the battery, disconnect from the mains first.

## Precautions

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9. When disconnecting the range extender battery and the adapter cable, please cover the waterproof rubber cap over the eBike's charging port to protect the interface.

10. When charging, maintain a certain distance between the charger and the battery to prevent heat effects.

11. In cold winter conditions, it is normal for the battery capacity to decrease.

12. If you connect the charger to the range extender battery immediately after topping up the entire eBike without letting it sit, it may not enter the charging state right away, especially in hot weather. This is normal, as the temperature rise generated by battery usage may have triggered the battery's active over-temperature charging protection function. In this case, disconnect the charger and the battery and wait for about 1 hour for the range extender battery's internal temperature to return to normal before reconnecting the charger for normal charging.

13. Store the charging and discharging adapter cables properly when not in use to avoid affecting future use.

14. If the range extender battery casing is damaged, stop using it immediately, even if the range extender battery is still functional.

## Maintenance

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Use a dry paper towel or cloth to clean the surface of the battery, keeping the surface and connectors dry.

Keep the battery away from sources of fire, heat, and high voltage. Prevent children from playing with the battery and do not drop the battery.

When not in use for an extended period, store the battery according to the storage guidelines.

If you notice any abnormalities with the battery, please contact Velotric or authorized dealers for assistance.

**1. Which Velotric models are supported?**

— Currently, there are two range extender batteries available: BTVW6002 supports the Velotric T1 model, and BTVW6004 supports both the VelotricT1 and Velotric T1 ST models.

**2. Can the range extender battery be used to solely power the entire eBike for riding?**

— The range extender battery cannot power the entire eBike for riding on its own. It is designed to charge the built-in battery. Due to safety considerations, the output current is limited and thus it is not suitable to serve as the primary power supply for the entire eBike. The driving current required for riding the eBike can only come from the built-in battery, as the motor may need currents higher than 9A, while the maximum output current of the range extender battery is around 3A.

**3. Does the range extender battery have an anti-theft feature when mounted on the eBike?**

— The range extender battery does not have an anti-theft feature when installed on the eBike. It is advisable to remove the range extender battery and place it in a secure location when the eBike is unattended.

**4. Can the range extender battery stay mounted on the eBike at all times?**

— The range extender battery can be installed on the eBike, even if its supplementary charge is not required.

— To charge the built-in battery or the range extender battery, the range extender battery and adapter cable must be removed.

— If not in use for an extended period, it's recommended to remove the range extender battery and adapter cable for separate storage.

**5. Can different models of range extender batteries be used interchangeably?**

— Although different models of range extender batteries may look the same, they are not interchangeable due to different eBike configurations and software features. They must be used according to compatibility guidelines.

— Mixing them could result in malfunctions or damage to the eBike and the range extender battery.

**6. Can the range extender battery be used in rainy weather, and what should be considered?**

— The range extender battery is designed to meet the IPX6 waterproof standard, so it can be used in the rain.

— Make sure the adapter cable of the range extender battery is properly installed to prevent rainwater from entering the connectors.

— Wipe the range extender battery's external surface and nearby connectors dry when used in rain to prevent corrosion and prolong the lifespan of the battery.

**7. Why can't I activate the assist mode after charging my low-battery eBike with the range extender battery?**

— For safety reasons, the eBike has a memory function at low battery levels. If you have confirmed that the range extender battery has charged the eBike, you can park the eBike in a safe location, turn it off, and then restart it to restore driving power.

— For eBikes with low battery that have not been charged, restoring power in this way is not recommended, as it could deplete the built-in battery, making the eBike's lights non-functional and affecting riding safety.

## FAQ

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### **8. Can I purchase multiple range extender batteries for use?**

— The eBike only supports the installation of one range extender battery at a time, but multiple range extender batteries can be used in sequence.

— The range extender battery will not charge if the built-in battery is full, so it can be used only after the built-in battery level has dropped.

# VELOTRIC

## Contact

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Website: [www.velotricbike.com](http://www.velotricbike.com)

E-mail: [help@velotricbike.com](mailto:help@velotricbike.com)

Phone: +1 888-559-3099

Hours: Monday-Friday, 7AM-6PM PST

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