



**HEBB**

[www.hebbebikes.com](http://www.hebbebikes.com)

Model 500

USER MANUAL



**Hebb E-Bikes**

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# Hebb Electric

## Welcome

Congratulations on the purchase of your Hebb Electric bike. You're one step closer in realizing a whole new way of commuting that is fast, fun and friendly to the environment.

The hub motor is brushless and uses a technology called Pulse Wave Modulation control, so that it's not subject to wear like a regular DC motor. Planetary reduction gears incorporated into its hub gives it a very strong torque, working in unison with your leg power to flatten out those hills and to overcome headwinds.

Under normal cruising conditions (16 mph), the motor draws about 5 amps at 140 watts with 3 foot pounds torque and has an efficiency of about 80%. Its electric consumption is about 1.0 kWh for 62 miles - even less energy than the food you would consume riding by leg power alone. Making it by far the most efficient vehicle ever made.

While the Hebb pledge to quality means our components are high value and reliable, it's your part to understand safety implications and the possible risks of cycling. So please take some time and read this manual. It explains the bike in detail and how to take care of it, so that you can enjoy using the bike for many years to come.



# Warranty

## **How the warranty applies**

As the makers, we warranty against possible material or construction defects, provided the following conditions are satisfied :

- Proof of purchase. The warranty starts on the date of purchase.
- Only the first owner is entitled to the warranty.
- 2 years for the frame, fork, all mechanical and electrical parts, except normal wear and tear items.
- 1 year for the battery up to 70% depth of discharge from its original rated capacity. This can be verified by the dealer where the bike was purchased.

## **How the warranty does not apply**

- When the bicycle is used negligently or has damage resulting from a traffic accident.
- Normal wear and tear.
- Poor maintenance or modifications that no longer comply with regulations or original specifications.
- Damage due to external causes.
- The bicycle is used for rental.
- The battery pack is used incorrectly or damaged. This also applies to improper charging.
- Compensatory costs arising from damages or accidents, or cost incurred by loss of the bicycle's usage.

## **How the warranty works:**

- Original defective parts that are sent or returned to the dealer for assessment will be replaced by the same or equal value part.
- Labor and transportation charges are not included.



# Regulations and Technical Data

USA regulations allow a power assisted maximum speed of 20 mph. Hebb E-Bikes made for the USA have a motor speed of 250 rpm for a 20 mph top speed and a maximum rated power of 700 watts. The power assist utilizing a throttle can function without the aid of pedaling, however there's nothing to stop you from doing so. Pedaling will greatly increase the mileage you get from your battery.

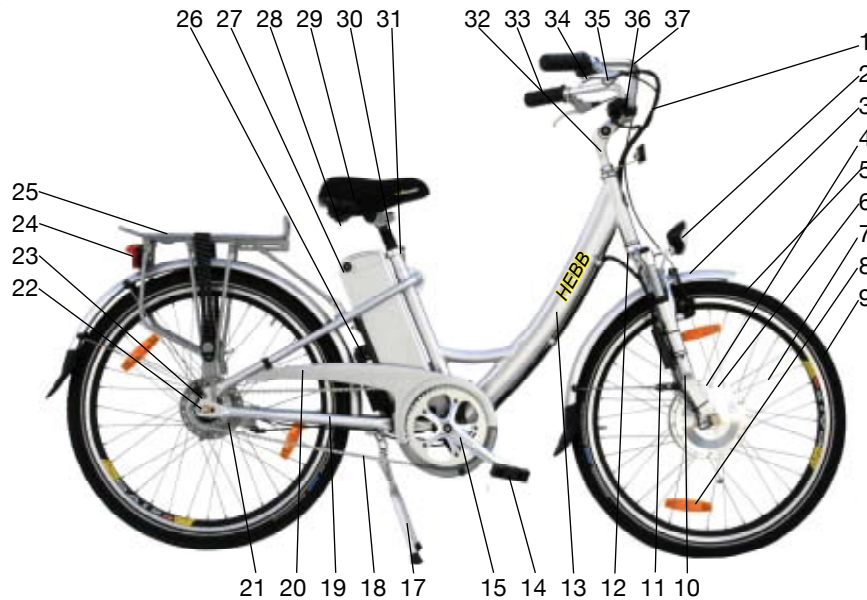
Typically, this means you do not require a license or moped certificate, there is no age limit and you can take cycling paths. It conforms to regulations of normal bicycles. Legal requirements concerning insurance and other regulations of your bicycle may differ in certain municipalities and states, so be sure to check the regulations where you live.

<b>Weight</b>	<b>60 pounds</b>
<b>Motor</b>	<b>350W electric brushless motor with planetary reduction gears</b>
<b>Battery Pack</b>	<b>Lithium ion with battery management circuit 37V 10Ah 7 pounds. Low voltage protection 28V. Discharge temperature limit 5F to 130F</b>
<b>Controller</b>	<b>PWM, LED self-diagnostic system Overload protection 20 amps</b>
<b>Charger</b>	<b>2 Amps Smart Charger Maximum charge time – 6 hours Charging temperature 41F to 95F</b>
<b>Interface</b>	<b>E-Bike throttle with safety ON/OFF switch</b>
<b>Fuse</b>	<b>30 amps</b>



# Model 500

## Parts Identification



- |                              |                                 |
|------------------------------|---------------------------------|
| 1 Brake cables               | 21 Shimano roller brakes        |
| 2 Front LED light            | 22 Shimano Nexus Internal gears |
| 3 Fenders                    | 23 Tensioning bolt and plate    |
| 4 Disc Brakes                | 24 Rear LED Light               |
| 5 Rims                       | 25 Luggage rack                 |
| 6 Spokes (13g)               | 26 Controller / Ignition        |
| 7 Hub motor                  | 27 Battery                      |
| 8 Reflectors                 | 28 Saddle flip catch            |
| 9 Tires 26" x 1.95"          | 29 Saddle                       |
| 10 Suspension front fork     | 30 Seat post                    |
| 11 Motor wire casing         | 31 Seat post clamp (quick fix)  |
| 12 Bearing race              | 32 Head stem                    |
| 13 Frame                     | 33 Handle grip (Throttle)       |
| 14 Pedals                    | 34 Brake levers                 |
| 15 Chain wheel 48T and crank | 35 Gear shifter                 |
| 17 Central support stand     | 36 Battery level gauge          |
| 18 Chain 1/2 x 3/32          | 37 Handlebars                   |
| 19 Chain stay                |                                 |
| 20 Chain guard               |                                 |



# Model 500

## Unpacking

If you have received your bike via UPS or a freight carrier instead of picking it up from your local bike specialist, please read this section before starting to assemble your bike.

Unpacking: Carefully remove the bicycle by lifting it straight out of the box. Be careful not to scratch yourself on the carton staples. Remove the packing material around the bike and stand the bike on a clean flat surface. Be sure to keep any small part packages that come along with the bike. Discard box and packaging material only.



Dispose responsibly, recycle when possible.

This box should contain the Hebb Model 500 bicycle!

- An accessory box included and contains:
  - a. 3 Ignition keys
  - b. 1 Pair of pedals
  - c. 1 Battery charger
  - d. 1 Power cord
  - e. 2 Fuses (30 amps)
  - f. Nylon ties
  - g. Heat shrink tubes (assorted pre-cut sizes)
  - h. 1 Hex Key #5
  - i. 1 Hex Key #3
  - j. 1 Hebb 500 owner's manual
  - k. Shimano Gear and Brakes Manual
  
- 1 Battery, Lithium Ion 37V 10Ah



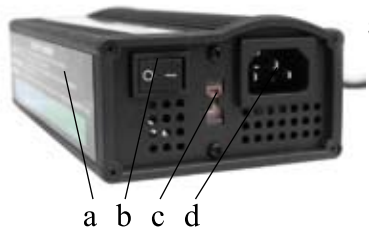
# Model 500 Battery Charging and Care

Before use, the battery needs to be fully charged. The battery charger works much like a laptop computer charger and should be charged via a standard 110v/115v. outlet.

1. Insert charging plug into socket on the battery





2. Plug power cord to charger and to A/C outlet.



3. Turn the “ I/O “ switch on the charger to I.

- a. warning label
- b. on/off switch
- c. a/c voltage switch set at 110v
- d. power cord socket

 It's important that to follow this sequence of actions everytime you charge the battery.

 Do not remove the plug by pulling the cord, always grip the charging port by its metal body.



# Model 500 Battery Charging and Care

Check the indicator lights on the front of the charger.

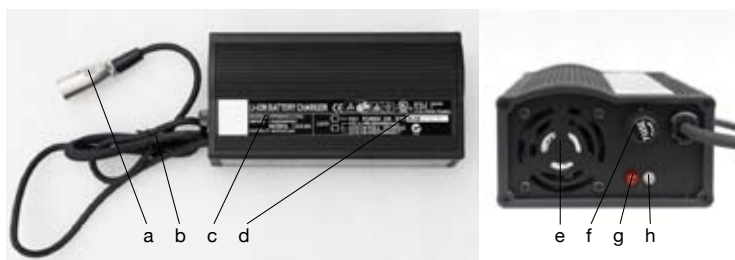
- RED light indicates that the charger is connected and running from an A/C outlet.
- YELLOW light indicates that the battery is charging
- GREEN light indicates that the battery is fully charged


It will take a maximum of 6 hours to fully charge your battery. You may interrupt the charging at any time.


As Li Ion batteries do not suffer from memory effect, it is not required for the battery to be empty to recharge.

Charging everytime you've completed your bike ride is recommended. Kept in good condition, the Li Ion battery will perform 500 charge cycles, with a retention of 70% from its original capacity.

***Please use only the Li ion charger as provided.***



 A new battery might take 2-3 charges before it performs at it's stated capacity.

 Dispose of your battery responsibly.

- a. Male charging plug
- b. Charging cord
- c. Charger specifications
- d. Charger serial no.
- e. Cooling fan
- f. Fuse 10 Amps
- g. Charger 'ON' LED
- h. Charging status LED

If there is an A/C outlet near to where your bicycle is parked, it may not be necessary to remove the battery from the bicycle to charge



# Model 500 Battery Charging

Sometimes after temporary disconnection, the charging status light may give a false green reading. To verify that your battery is fully charged, switch the charger off, wait for the charger lights to go out and switch it back on again. The charging status light should quickly return from amber to green when the battery is fully charged.

The battery may be also charged on the bicycle. Please make sure that the bicycle key is switched off.

If the battery refuses to accept a charge, contact your dealer for more information.

Battery charging is automatically regulated, and there is no danger of overcharging. It is advised that you disconnect the battery and switch the charger off as soon as the charging process is completed.

- ✘ Do not charge the battery in wet conditions.
- ✘ Never allow children to play with the battery or charger.
- ✘ Do not leave your battery in a fully discharged state for long periods of time. The battery will continue to self-discharge, resulting in damage. Even if not using the bike, the battery should be charged at least one time per month for one hour.



# Model 500 Assembly

## Tools required

- Allen / Hex key metric set
- Open-end flat wrenches 6mm - 17mm

**Seat post** Insert into the seat tube of the bicycle frame and align. Tighten clamps and ensure seat is firmly fastened. Tightening torque 12 ft. lbs.

Note: Do not adjust the seat post beyond its maximum extension mark.



**Pedals** are marked “L” and “R” for left and right respectively. Screw in clockwise for the “R” pedal and counter-clockwise for “L”. Tighten both with a wrench firmly but not excessively as the crank threads are made of aluminum alloy.



**Handlebar / Stem / Headset** Handlebar and stem comes pre-assembled. Loosen bolts on the stem and insert and turn the handle bar assembly until it is in right angles with the frame. Then tighten.

Tightening torque 13 ft. lbs.



# Model 500 Assembly

**Front Fender** The supports are attached to the sides and top of the front fork. The fenders are made of poly carbonate and should not rattle when they're securely fastened.

**Brakes** One of the most important safety features on the bicycle is the brakes. To minimize the risk of injury, it's vital to ensure they are correctly adjusted. For more information about the rear Shimano Roller brake, please read the Shimano manual that comes along with your purchase.

👍 If you have little experience with bicycle maintenance, we recommend you consult your local bike shop.

**Tires** Ensure that the tires are inflated to the correct pressure of 50 - 60 psi. Well inflated tires enhances the comfort, safety and efficiency of your ride.



## Model 500 Assembly

**Battery (Note: Make sure the battery is fully charged before the first use):** Insert key into keyhole located by the controller box and turn key counter clockwise while pressing it in, so that it arrives in the open, unlocked position.



Release the catch located at the underside of the seat saddle to flip it over. Locate the battery flanges in their slots in the battery holder; then push the battery firmly into the holder until the connecting pins are firmly in the battery sockets. The fit can be tight when new, so it may be required to apply gentle pressure. Once the battery is in position, lock into place by turning the key one click clockwise to the “OFF” position. Ensure that the key is in “OFF” position until you are ready to ride. Do not use excessive force to fit the battery, which could result in damaging the connection sockets or pins.



# Model 500 Checklist

**Usage** The Hebb 500 is best described as an urban bike and is best suited for usage in an urban environment and paved roads. While cycling, it is your responsibility to be attentive of your environment and traffic rules.

- a. Wear shoes that stay on your feet and grip firmly to the pedals. Do not wear sandals or ride barefoot.
- b. Dress to be visible on the road and avoid loose clothes that will tangle with moving parts of the bicycle.
- c. Keep your speed at levels appropriate to road conditions
- d. Be aware of wet weather conditions, as these affect braking distance. Brake earlier than you normally would on dry roads.
- e. Familiarize yourself with the traffic rules in the state you are riding in.
- f. Avoid cycling in poor weather and visibility conditions such as fog, night, heavy rain and snow. Keep your lights on in such conditions.
- g. Familiarize yourself with the usage of the bike and how to maintain it.

**Inspect** Before every ride, make a quick inspection of your bike's mechanical and electronic features. Be safe, not sorry.

**Frame and fork** Visually check for damage, do not ride if bent or fractured.

**Wheels and tires** Check for missing or damaged spokes. Feel spokes to ensure tightness. wheels should be true (straight) and tires inflated to its correct pressure.

**Handlebar and stem** Tightened firmly in the 'face forward' positions.

**Brakes** Squeeze brake levers. Brake cables should remain unobstructed by other cables or accessories.

**Chain** Turn crank arms to ensure chain runs smoothly. Keep the chain lubricated and clean. Chain tension is adjusted by the tensioning bolt located at the end of the frame.

**Electronics** Red light from the controller unit should be illuminated when the electric bike is 'ON'. All wires should be fastened securely in place.



# How the Hebb E-Bike Works

**Your first ride** Before you wheel your bike out into the world, we recommend you practice handling the bike in a safe area away from obstructions and traffic. The motor may look small, but it's powerful! You'll be riding faster than you think. Turn the key to the 'ON' position. A red LED will illuminate below the key socket. If the light flashes, read the **Troubleshooting** section of this manual. If it shines steadily, you're ready for the next step.

**E-Bike or Throttle Mode** The motor runs as soon as you turn the throttle. Ensure that you are seated and ready to ride before you use the throttle. You may toggle the throttle on and off with the switch located on it. In E-bike mode, the range of your bike will be approximately 25 miles. Weight of the user, the terrain, and how much you use the throttle are all factors in how far you can go.

You can always choose to ride your bicycle as an ordinary bicycle.

**Battery level gauge** When riding a fully charged bicycle, the battery level gauge shows 'green'. Powerful acceleration or uphill riding causes the battery voltage to drop and may bring the level gauge to 'amber' or even 'red' (in the cases of very steep hills). As you continue to cycle and the battery power drops, the level gauge will correspond to the state of charge remaining. When it remains in 'amber' and dips into 'red', you have approximately a 1/3 of the charge left. Best to recharge the battery soon. To prevent the battery from deep discharge, the controller has a low voltage protection cut-off set at 30.0 V. You may reboot the battery if it cuts off, however continued use of the battery by switching off and on will cause deep discharge and permanently damage the battery.



# How the Hebb E-Bike Works

**Lighting system** Hebb bikes features wide angle high performance reflectors at the front, sides and rear. Front and rear LED lights are powered by the main battery; electrical consumption is negligible, be safe, use them often.

**Lock** When parking your bicycle, turning the key to the 'OFF' position and removing it will shut the system off and lock the battery in place. Use a chain lock to further secure your bicycle when necessary. We also recommend you insure your bike against theft.

**Central support stand** This spring loaded stand supports your bike straight up. Use your feet to depress the stand downwards and pull the bike backwards. Ensure the stand is firmly rested on the ground before leaving the bike. Do not sit on the bike with the stand parked. The central support stand is made of aluminum alloy and meant to only take the weight of the bicycle and not with the rider on it.

**Luggage rack** The luggage rack provided comes equipped with a spring loaded catch and elastic strap. If you plan to carry luggage on the rear, make sure everything is securely fastened and clear from the rear wheel. There are many useful accessories that can be fitted on the rear rack, from panniers to child seats. Do however take note that the load limit is 50 lbs.



# Maintenance

Maintaining your bicycle ensures you'll get the most out of every ride and out of the entire life of your Hebb bike. How much of your bike's maintenance you can do yourself will depend on your knowledge, skill, experience and whether you have the necessary tools for the job. Learning from available cycling literature and joining cycling communities can be an enjoyable way of improving your skill and knowledge about maintaining bicycles. Beyond this manual, it is good to consult your Hebb dealer for advice regularly.

**Before every ride:** Perform mechanical safety checks and use a fully charged Battery.

**Every 10 hours of riding** Clean the bike, including chain rings and sprocket. Clean and lightly oil the chain.

**Every 20 - 30 hours of riding** Squeeze the brakes and rock the bike to check for any looseness with each forward or backward movement. If the headset is loose, tighten it or have your dealer check it. Lift the front wheel and rotate handlebars to check for tightness of steering, it may be necessary to lubricate ball bearings. Check and recalibrate the brakes, replace if worn out. Squeeze spokes in adjoining pairs between your thumb and index finger. They all should have the same tension. Have your dealer re-spoke or true the wheel if necessary. Check cables for rust, kinks and fraying, have your dealer replace them if necessary.



# Maintenance

## **Repairing a punctured tire**

If you have a punctured tire, we recommend that you get a bike dealer to repair the tire. You can always, of course, carry out the repairs on your own. As there are no electronic components on the rear wheel, follow standard procedures as with normal bicycles with internal gears. Read the Shimano gear manual provided for more instructions. As the front wheel contains the hub motor, there are additional steps in the case you require the entire wheel to be removed from the bike. A philips head screwdriver will be required to open the cable housing to first unplug the wires than run from the motor to controller. There should be 1 x 6 pin connection and 3 color coded wire connections (Blue, Yellow, Green). Unplug these before proceeding to remove the front wheel. Be mindful of the tightening assembly sequence of washers, nuts and spacers.

## **Hub motor and general inspection**

After 5,000 kms (3,000 miles) of cycling, we recommend you arrange to have a thorough inspection of your bicycle by a dealer. This includes opening up the hub motor to inspect and lubricate the gears.



# Troubleshooting

## Electronic self-diagnostic system

When the bicycle is functioning normally, the red LED that is situated by the controller is lit continually. In the case of an electronic malfunction, the controller comes programmed with diagnostic capabilities to determine where the fault lies. The red LED will emit a series of blinks, count them and refer to the table below for its explanation and solutions.

No. of blinks	Explanation	Solution
2	Brake lever cut off in contact	check brake lever spring, brake levers should return to position (applicable with electric cut-off levers)
3	Brake lever cut off in contact	check wiring connection, inspect for damage to the battery level gauge
4	Throttle not in position	check if throttle spring is faulty
5	Throttle failure	check throttle connections or replace
6	low voltage	recharge battery or loose battery cable connection
7	excessively high voltage	measure battery voltage, contact your Hebb dealer
8	sensor fault	contact your Hebb dealer
9	motor incompatibility	contact your Hebb dealer
10	overheat, thermostat activated	allow to cool, reboot system
11	thermostat failure	replace controller
12	amps control / controller failure	replace controller
No light	Power failure	check battery, power cables or replace controller



# Troubleshooting

The faults listed may not cover every possible failure. In the event of moisture or water entering the controller, haphazard signals might appear. We've designed the Hebb E-Bike to repel water as much as possible, encapsulating circuit boards with silicone resins and connections with silicone grease.

Since this manual simply cannot cover every detail that might occur during the lifetime of your product. Check our websites and dealers website routinely for updates, or contact us directly for more detailed questions you might have.

**Serial Numbers** Record the serial numbers found on your motor, frame, controller, charger and battery here for reference.

Motor s/no. :

Charger s/no. :

Controller s/no. :

Battery serial no. :

Frame no. :

**Proof of purchase** Keep your proof of purchase with the date of purchase clearly marked.



## Contact Us

As people all around the world have begun to realize how easy and beneficial it is to ride our electric bike. At Hebb, our mission is simple - to continue to make the best electric. We're on the constant lookout for ways to evolve our bikes, to find methods and adapt solutions for our bikes to enrich lives everywhere.

We also like to get to know and thank each of our customers. If you have any comments, or suggestions, or perhaps an idea, a project to discuss, or simply would like share your stories and photos with us. Contact us directly, we want to hear from you!

### **Hebb E-Bikes**

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