



E-BIKE

Extended 2.0 DE

Owner's Manual



IMPORTANT

This user manual is specific to your KHS Extended 2.0 DE e-Bike and should be used in addition to the KHS Bicycle Owner's Manual. Both contain important safety, technical, and performance information, which should be read before your first ride. Please retain this information for future reference. The Owner's Manual should also be read because it has additional important information relating to the bicycle, bicycle maintenance and rider safety.

WARRANTY

Please refer to the written warranty information provided in the Owner's Manual.

INTENDED USE

The KHS Extended 2.0 DE is intended for General Purpose Riding use only. The Extended 2.0 DE is classified as a Pedelec/EPAC. It will provide motor support while pedaling. When you stop pedaling, the motor will stop providing assistance.

RIDING TIPS

Here are some tips to increase the battery range and reduce excess wear on the bicycle and components.

- Pay attention when approaching a turn. Be sure to stop pedaling before turning and keep the crank/pedal on the side of the turn at the top of the stroke to prevent the pedal from hitting the ground while turning.
- Learn to ride efficiently and keep your eyes on the road ahead. Excessive use of the brakes drains the battery quicker than necessary. More energy is needed to recover the speed.
- Shift gears regularly to stay in an optimal cadence range and downshift before coming to a stop.
- Reduce pedal force before initiating a gear shift to reduce drivetrain wear.
- Check the tire pressure regularly. Lower tire pressure can cause extra drag on the tires.
- If the bicycle is exposed to cooler weather, keep the battery stored indoors until you begin to ride.
- Do not expose your bicycle and battery to prolonged excessive heat or direct sunlight.

BEFORE YOUR FIRST RIDE

Even if you are an experienced cyclist or e-Bike owner, we recommend you read this section of the Owner's Manual before riding this bicycle.

BEFORE EVERY RIDE

Battery

- Are all the connections plugged in completely?
- Do you have sufficient battery charge?
- Is the battery properly inserted and locked in the frame?

Display

- Is the display functioning correctly?
- properly inserted and locked in the frame?

BEFORE YOUR FIRST RIDE

Battery

- Is the battery fully charged?

Display

- Are you familiar with the function of the display features?

GENERAL MAINTENANCE

For information about general maintenance please refer to the KHS Bicycles Owner's Manual.

- Great care should be taken not to damage the bicycle frame and bicycle components.
- When riding listen for any creaks. A creak can be a sign of a problem with one or more components or frame/fork. If you continue to hear creaks, please arrange to bring your bicycle to your KHS Authorized Dealer for repair or inspection. If they notice anything out of the ordinary, they will contact KHS directly to discuss.
- Exposure to harsh elements, especially salty air (such as riding near the ocean or in the winter), can result in galvanic corrosion of components such as the crank and spindle and bolts, which can increase wear and shorten bicycle lifespan.
- Lifespan and the type and frequency of maintenance depends on many factors, such as use, rider weight, riding conditions and/or impacts. Components may be subject to increased wear at different rates, depending on the component. Drivetrain and brake components are especially subject to wear. Periodically have your Authorized KHS Dealer inspect your bicycle and components.
- Regularly lubricate the chain, drivetrain, and cables.
- DO NOT USE High-Pressure water spray on the bearings, gears, and chain. Even water from a garden hose can penetrate bearing seals and crank interfaces, increasing bearing and crank wear. Use a clean, damp cloth and bicycle cleaning agents for cleaning.
- DO NOT expose the bicycle to prolonged direct sunlight or excessive heat, such as inside a car parked in the sun or near a heat source such as a radiator.

BATTERY & CHARGER INFORMATION



BATTERY AND CHARGER INFORMATION

Your bicycle is powered by a Lithium-Ion (Li-Ion) battery.

- Only operate the battery between the temperature range of -20 degree Celsius (-4F) and +70 degree Celsius (+158F).
- Only use the supplied battery and battery charger sold with this bicycle, even if another fits.
- Always turn the battery off before connecting or disconnecting the charger to the battery.
- Turn off the battery, unplug the charger from the battery and remove the battery from the bicycle before performing work of any kind, such as installation, maintenance, cleaning and/or repair. When transporting or handling the battery separately from the bicycle, ensure the battery of OFF. Touching the contacts when the battery in ON can result in electric shock and/or injury.
- Before riding the bicycle, make sure the battery is properly secured in the frame.

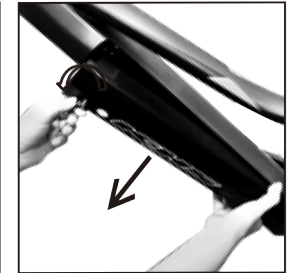
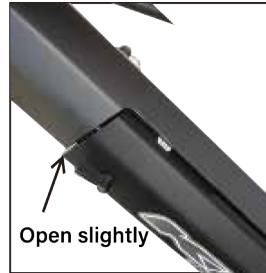
E-BIKE OPERATION

The battery is shipped in hibernation mode. To use the e-bike the first time, activate the battery by fully charging it.

1. We recommend that the battery have at least 80% charge before using.
2. Adjust the seat post height to fit you.
3. Press “” for 1 second on the LCD to turn on.
4. Press “” to set the assistance level to <1>.
5. We recommend that you start riding with the gear in the middle cog (about 4 or 5 on the shifter).
6. To start moving, simply start pedaling. You may use throttle to help you start, but release the throttle as soon as the bike is moving.
7. Adjust the power assistance level between <1> and <5> using the (+) and (-) buttons. We recommend <1> or <2> on flat road; <3> or <4> on hilly road.
8. Shift the gear to the middle cog before you come to a stop. If you are finished riding, set the power assist level to 0.
9. After every ride, we recommend that you charge the battery to at least 80-90%.



BATTERY PACK REMOVAL INSTRUCTIONS

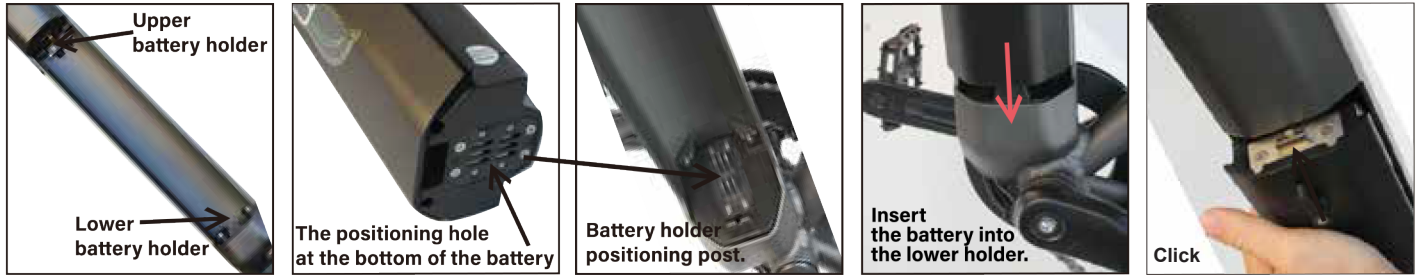


REMOVE THE BATTERY PACK. We recommend standing on the left side of the bike.

- Standing on the left side provides better leverage
- Insert the key into the right side of the downtube. Turn the key clockwise and open the battery slightly.
- Hold the battery pack with your right hand, and with your left hand turn the removal lever counter-clockwise.
- Pull the battery out of the downtube.



BATTERY PACK INSTALLATION INSTRUCTION

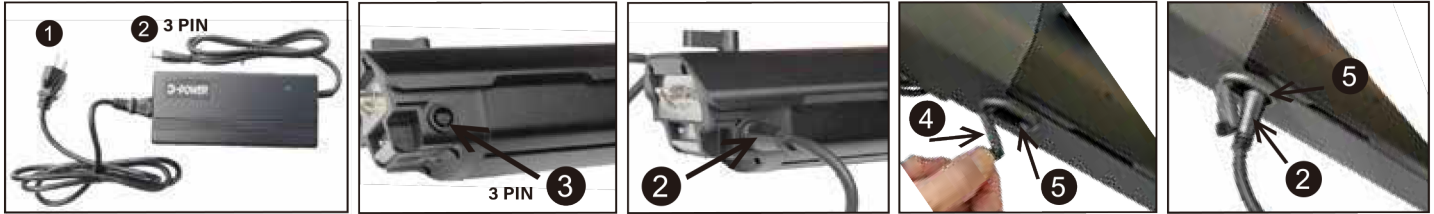


INSTALLING THE BATTERY PACK. We recommend standing on the left side of the bike.

- Hold the battery pack with both hands and align the connectors to the bottom battery holder.
- Press the battery into the upper battery holder until it clicks.
- Turn the key and keep it in a secure location.



BATTERY PACK CHARGING



Off-Bike battery charging

1. Confirm the voltage of the battery and the charger are the same (48V).
2. Insert the round plug (3-Pin) of the charger ❷ into the battery socket (3-Pin). ❸
3. Plug the charger ❶ into a household 110V -220V socket.

On-Bike battery charging

1. Lift up the protective rubber cover ❹ of the charging port to the battery.
2. Insert the round plug (3-Pin) of the charger ❷ into the battery socket (3-Pin) ❺
3. Plug the charger ❶ into a household 110V -220V socket.



LED indicator 8 Red light indicates charging. Green light indicates fully charged.

If after 8 hours of charging and the LED indicator is still Red, Stop charging and report to supplier for service.

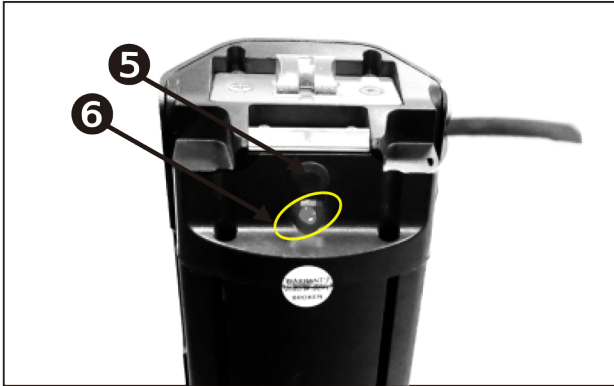
Decide whether to charge the battery On-Bike or Off-Bike and plug in the charger according to instructions on page 10.

The battery should be fully charged after 5-6 hours of charging.

If the LED indicator is Red, it is still charging. If the LED indicator changes to Green, it is fully charged.

If charging the battery off the bike, reinstall the battery according to instructions on page 9.

CAPACITY DISPLAY ON BATTERY



(a) Push button ⑤ to activate the Power Meter.


(b) ⑥ LED Lamp indicator

FLASHING	15%
RED	30%
GREEN	50%
BLUE	80%

※ We recommend always charging the battery after every ride.

※ Automatic shutdown system.

To save power, the battery will automatically shut down after the bicycle stops for 10 minutes.

※ To restart, press the “” key on the handlebar display for 2 seconds.

BATTERY STORAGE AND CAUTIONS

- If used the bike in or after a rainy day, remove the battery and wipe it dry.
- If not using the bike for a long period of time, remove the battery from the bike and store it in a dry environment.
- Check the battery energy status, and charge every three months.

CAUTION when charging:

- (a) It is strictly forbidden to use uncertified and different voltage chargers to charge the battery.
- (b) Avoid direct sunlight. Charge in dry and well ventilated environment.
- (c) For best charging efficiency, we recommend charging in environment temperature within 32°F~104°F (0°C~40°C).
- (d) Battery performance deteriorates over time whether the battery is used or not.

Performance also deteriorates with usage.



Follow the instructions indicated here could extend the battery life and performance.

E. Model vs Battery vs Charger

<i>Model</i>	<i>Battery</i>	<i>Charger</i>
Easy 24	36V	36(42)V
Extended 2.0 & Envoy 200	48V	48(54)V
Extended 2.0DE	48V(3pins)	48(54)V (3pins)

LCD OPERATION

One Switch

- On  : Push for 1 second.
- Off  : Push for 2 seconds.



LCD dashboard content description

Power output and battery level indicators section

- POWER output indicator:

Each cell means 2A (current) of output



- BATTERY level indicator:

100~90% 90~80% 80~60% 60~40% 40~20% 20~10% 10% Flashing



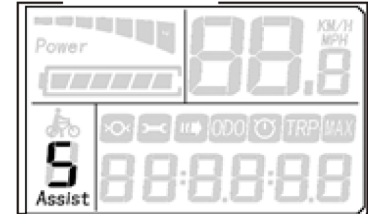
When the battery is almost empty only one cell is flashing, the motor will stop soon.

If ERROR Code  appears, charge or change the battery ASAP.



Power assistance level indicator section

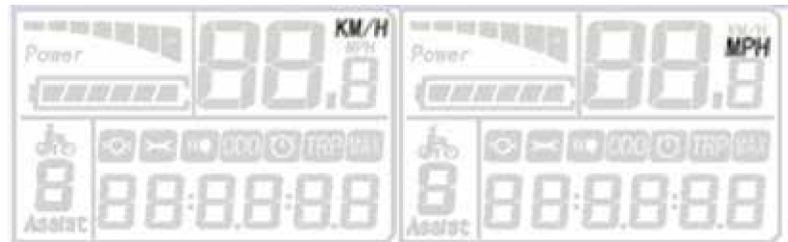
■ Push  to increase power assistance level (0, 1, 2, 3, 4, 5)

■ Push  to decrease power assistance level (5, 4, 3, 2, 1, 0)




Speed indicator section : MPH vs KM/H


■ Push  and  simultaneously for 2 seconds
to change the speed unit between Miles Per Hour (MPH)
and Kilometers Per Hour (KM/H).








Additional information section

■ Push  button briefly each time will cycle through the following functions :




 This icon will appear when applying brake. It will also appear if energy cut-off system malfunctions.

 Error code will flash once a second. Please refer to P.18 & P.19 for the meaning of the Error code.

 Cycle through the information automatically  →  →  → 

 Odometer recorded by the system since the manual reset, see *NOTE 3.

 Time since the system was turned on.

 Distance traveled since system was turned on.

 Max speed since system was turned on.

* NOTE 1: Distance and speed units will depend on the selected MPH or KM/H unit in the Speed Indicator section.

* NOTE 2: To clear all info except for odometer, push  and  together for 2 seconds.


* NOTE 3: To clear all info including odometer push  and  together for 10 seconds.

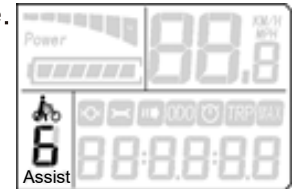
Throttle

- Push the throttle lever, the bike will go without pedaling.
We do not recommend using throttle for long periods of time.
It will reduce riding range and adds to motor wear.





Walking Mode 3.8MPH(6KM/H)

- Press  On control panel button for 2 seconds to start the walking mode.
- Releasing the button will immediately stop the walking mode.
- Walking mode will cause the motor to run up to 3.8MPH (6KM/H).



It is designed to assist when pushing the bike up hill or when you need to walk with your bike. When engaged, the power assistance indicator will show Assist 6.

LCD Backlight and(Front & Rear lights)

- On : Press and hold  On control panel for 1.5 seconds to turn on.
- Off : Press and hold  On control panel for 1.5 seconds to turn off.



If shown, there's an error. The indicated numeric codes are defined as follows:

<i>Error code</i>	<i>Definition</i>	<i>Solution(s)</i>
1	Voltage too low 48V system: battery is under 42V 36V system: battery is under 32V	Charge or replace the battery.
2	Brake is stuck or shorted	<ol style="list-style-type: none"> 1. Check the F/R brake to make sure it's not stuck. 2. Unplug the brake wire to see if message goes away. If it does, the wire may be shorted.
4	Cadence (RPM) sensor no signal or no phase	<p>At power on with power assistance level (0), error code (4) may appear. The code should disappear automatically after 30 seconds, or when you start pedaling.</p> <p>If you start pedaling, but the code stays on within the first 30 seconds, then it indicates there is no signal from the Cadence (RPM) sensor.</p> <p>*Sensor is to be replaced</p>

6	Controller temperature exceeds 158°F (75°C)	Power off and wait until the temperature decrease back to normal in about 10 min.
7	Motor is abnormal	<ol style="list-style-type: none"> 1. Check the connection between motor and controller. 2. Motor requires repair.
9	Motor overcurrent	<ol style="list-style-type: none"> 1. Shutdown and restart the system. 2. Motor requires repair.
14	Wheel diameter sensor abnormal	<ol style="list-style-type: none"> 1. Wheel sensor is inside the HUB motor. 2. HUB motor requires repair.
15	Voltage too high 48V system: battery is above 60V 36V system: battery is above 44V	Replace the battery.
17	Lost or abnormal communication between LCD and controller.	<ol style="list-style-type: none"> 1. Shutdown and restart the system. 2. Check the connection between LCD and the controller. 3. Controller or LCD may require repair.



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