



HERO SERIES STANDING WHEELCHAIR Use'r Manual

**LY-ESB220(HERO1)
LY-ESB120(HERO2)
LY-ESA120(HERO3)
LY-ESA120-N(HERO3-N)
LY-ESB140(HERO4)**



ISO 9001

CE FDA



CONTENTS

INTRODUCTION	1
CHARACTERISTIC OF HERO	2
SAFETY	3-6
FEATURE GUIDE	7
SPECIFICATIONS	8
CONTROLLER AND OPERATION (HERO1)	9-11
TROUBLE CODES (HERO1)	12
CONTROLLER AND OPERATION (HERO2.HERO3.HERO3-N.HERO4)	13
HEADREST ADJUSTMENT (HERO1.HERO2.HERO3.HERO3-N.HERO4)	14-15
OPERATION (HERO1.HERO2.HERO3.HERO3-N.HERO4)	16-32
THE CHARGER (HERO1.HERO2.HERO3.HERO3-N.HERO4)	33-36
THE BATTERIES	37
BATTERY WIRING LOOM (HERO1)	38
EMI/RFI	39-41
MAINTENANCE	42
WARRANTY	43
LIMITATIONS AND EXCLUSIONS	44
BASIC TROUBLESHOOTING	45

⚠ WARNING !

Failure to heed the warnings in this user's manual may result in personal injury.

⚠ CAUTION !

Failure to heed the cautions in this user's manual may result in damage to your HERO.

SUGGESTION !

To enhance user's driving experience and to maximize comfort and convenience that we suggest you would follow.

The Battery will disconnect the red wire, the positive (+) terminal to conserve battery power during transportation. Please connect the red wire before use the HERO.

INTRODUCTION

Congratulations on the purchase of your new Comfort Power Chair. Your power chair design combines the most advanced state-of-the-art components with modern, attractive styling. We are certain that the design features and trouble-free operation of your power chair will add convenience to your daily living and ensure complete satisfaction.

At Comfort, your safety is important to us. **Please read and follow all of the instructions in this manual before you attempt to operate your power chair for the first time.** These instructions were produced for your benefit. Your understanding of these instructions is essential for the safe operation of your new Comfort Power Chair.

Comfort is not liable for damage to property or personal injury arising out of the unsafe use of a Comfort Power Chair. Comfort is also not liable for any property damage or personal injury arising out of the failure of any person and/or user to follow the instructions and recommendations set forth in this manual or any other instructions or recommendations contained in other power chair related literature issued by Comfort or contained on the Comfort Power Chair itself.

This user's manual is compiled from the latest specifications and product information available at the time of publication. We reserve the right to make changes as they become necessary. Any changes to our products may cause slight variations between the illustrations and explanations in this manual and the product you have purchased.

Please read the maintenance warranty, and make sure the Authorized and the seal. Keep the maintenance warranty to protect your rights.

The user's manual is one part of your power chair. If you want to sell your power chair, don't forget to give the user's manual. Take the user's manual when driving .If you experience any problem with your power chair that you are not able to solve, or if you do not feel capable of safely following any of the instructions and/or recommendations contained in this manual, please contact your authorized Comfort provider for assistance.

⚠️ WARNING !

Do not modify your power chair in any way not authorized by Comfort. Unauthorized modifications may result in personal injury and/or damage to your power chair.

CHARACTERISTIC of HERO

- Prevents joint contracture of lower extremities.
- Improves bowel & bladder's function.
- Helps prevent pressure sores from prolonged sitting
- Slackens osteoporosis and calcium loss in bone.
- Increase personal confidence and overcome the physiological obstacle.
- Effective on the leg to weight bearing adaptation \ mechanism of body weight support training.
- Prevents postural hypotension and improve cardiopulmonary function.
- Rebuild the working ability in standing position, and become more independent & self care ability.
- Can use standard appliance, increase adaptation ability.

SAFETY

⚠️ WARNING !

Do not operate your HERO for the first time without completely reading and understanding this user's manual.

- The first time operating the HERO, you should be attended by a family member or a friend.

Practice more

- As you begin using your HERO during daily activities, you will probably encounter situations in which you will need some practice. Simply take your time and you will soon be in full and confident control as you maneuver through doorways, on and off elevators, up and down ramps, and over moderate terrain.
- Transferring onto and off of your HERO requires a good sense of balance. Always have an attendant or healthcare professional present while learning to properly transfer yourself.

Positioning belts

- If you require a positioning belt to safely operate your HERO, make sure it is fastened securely.

Public streets and roadway

- It may be difficult for traffic to see you when you are seated on your HERO. You should not operate your HERO on public streets and roadways.

Negotiate steps or escalators

- Never use your HERO to negotiate steps or escalators.

Elevator

- If you are in the doorway of an elevator when the door begins to close, push on the rubber door edge or allow the rubber door edge to contact the HERO and the door will reopen.

Doors

- Determine if the door opens toward or away from you. Drive your HERO gently and slowly forward / backward to push / pull the door open.
- Keep a watch for pedestrians, obstacle, pothole particularly when reversing.

Reaching and Bending

- Do not bend, lean, or reach for objects. If you have to pick them up from the floor by reaching down between your knees. Such use may cause your HERO to tip and result in personal injury.

Battery

- The batteries are heavy. See specifications table. If you are unable to lift that much weight, be sure to get help. Lifting beyond your capacity can result in personal injury.

SAFETY

- Always protect the batteries from freezing and never charge a frozen battery. Charging a frozen battery may result in personal injury and / or damage to the battery.

Prescription Drugs / Physical Limitation

- Consult your physician if you are taking any prescribed or over-the-counter medication which may impair your operation of the HERO.

Alcohol

- Do not drive under the influence of alcohol or drugs, speak to your doctor first if you are unsure about driving or taking medication.

Weight

- Avoid putting all of your weight on the footplate. Such use may cause your HERO to tip and result in personal injury.
- Comfort HERO is designed for one person only, passengers are prohibited.

Ramp · Obstacle

- Approach slowly, as you encounter a ramp or incline.
- Do not drive up or down an incline that is more than 10 degree.
- If you must stop when climbing, accelerate slowly.
- Avoid prolong climbing
- When driving down a ramp, keep your HERO1's speed adjustment set to the lowest speed setting and driving in the forward direction only.
- On any sort of an incline or decline, never place your HERO1 in freewheel mode while seated on it or standing next to it.
- Do not attempt to have your HERO proceed backwards down any step, curb, or other obstacle.

Cornering Information (HERO1)

Excessively high cornering speeds can create the possibility of tipping. Factors which affect the possibility of tipping include, but are not limited to, cornering speed, steering angle (how sharply you are turning), uneven road surfaces, inclined road surfaces, riding from an area of low traction to an area of high traction (such as passing from a grassy area to a paved area—especially at high speed while turning), and abrupt directional changes. High cornering speeds are not recommended. If you feel that you may tip over while cornering, reduce your speed and steering angle to prevent your HERO1 from tipping.

SAFETY

⚠️ WARNING !

- When cornering sharply, reduce your speed. When using your HERO1 at higher speeds, do not corner sharply. This greatly reduces the possibility of a tip or fall. To avoid personal injury or property damage, always exercise common sense when cornering.
- Take wide swings with your HERO1's front wheel around any tight corners, and your HERO1's rear wheels will follow a wide arc. Not cut the corner short, and not bump into or get hung up on any railing corners.

Outdoor Driving Surfaces

Your HERO1 is designed to provide optimum stability under normal driving conditions—dry, level surfaces composed of concrete, blacktop, or asphalt. However, Comfort recognizes that there will be times when you will encounter other surface types. For this reason, your HERO1 is designed to perform admirably on packed soil, grass, and gravel. Feel free to use your HERO safely on lawns and in park areas.

- Reduce your HERO1's speed when driving on uneven terrain and/or soft surfaces.
- Avoid tall grass that can become tangled in the running gear.
- Avoid loosely packed gravel and sand.
- If you feel unsure about a driving surface, avoid that surface.

Inclement Weather Precautions

- Comfort recommends that you do not operate your HERO in icy or slippery conditions or on salted surface. Such use may result in an accident, personal injury, or adversely affect the performance and safety of your HERO.
- Comfort recommends that you do not expose your HERO to any type of moisture at any time (rain, snow, mist, or wash) . Such expose can damage your HERO. Never operate your HERO if it has been expose to moisture until it has dried thoroughly.

Stairways

- Do not attempt to move an occupied HERO between floors using a stairway. If moving a HERO between floors by means of a stairway, the occupant must be removed and transported independently of the HERO.
- Do not attempt to lift the HERO by any removable parts. Lifting by means of any removable parts of a HERO may result in injury to the user or damage to the HERO.

SAFETY

Follow these instructions for moving the HERO between floors when an elevator is not available:

- 1.Remove the occupant from the HERO.
- 2.Remove batteries from HERO. Refer to installing / removing batteries.
- 3.Bend your knees and keep your back straight.
- 4.Using non-removable parts of the HERO, lift the HERO off of the ground and transfer the HERO up or down the stairs.
- 5.The HERO should not be lowered until the last stair has been negotiated and the HERO has been carried away from the stairway.

SPECIFICATIONS

HERO3-N



HERO4



Item no	HERO1	HERO2	HERO3 HERO3-N	HERO4
Motor Output	450Wx24Vx2pcs	Max Outpower 6000NT	Max Outpower 6000NT	Max Outpower 6000NT
Battery	50AHx12Vx2pcs	2.9AHx12Vx2pcs	2.9AHx12Vx2pcs	2.9AHx12Vx2pcs
Batteries Weight	31kgs	2.2kgs	2.2kgs	1.3kgs
Charger	24Vx5AMP	(24Vx0.2AMP)	(24Vx0.2AMP)	(24Vx0.2AMP)
N.W. (depends on size : S · M · L · XL)	89.5-98.4	41.5-49.6	30.5~31.5	40.3
Brakes	Magnetic brake	Hand brake	Hand brake	Hand brake
Max loading	120kgs	120kgs	120kgs	120kgs
Range	30km	N/A	N/A	N/A
Front Wheels	8"	8"	8"	8"
Rear Wheels	12"	22"/24"	22"/24"	22"/24"
Maximum Speed	8.5km/h	N/A	N/A	N/A

CONTROLLER AND OPERATION

(HERO2、HERO3、HERO3-N、HERO4)



Operation :

- 1、Power : PressUp-key ▲ or Down-key ▼ power signal will be bright.
- 2、Press, ▲ standing wheelchair will be up.
- 3、Press, ▼ standing wheelchair will be down.
- 4、Power volume signal : Operation up and down , power volume signal will be bright showing the power volume situation ; There are green, orange and red, total 3 colors. Green is for full volume, red is for 30% only, which required urgently charging to avoid over discharging. While charging, this light will also be bright to show the charging situation.

HEADREST ADJUSTMENT

(HERO1、HERO2、HERO3、HERO3-N、HERO4)

Adjustable Headrest

Adjust 1

Turn the back button of headrest by anti-clockwise. Adjust the height and turn the button by clockwise for locked.



Adjust 2



Turn the back button of headrest by anti-clockwise. Adjust the height and turn the button by clockwise for locked.

Adjust 3

Using the hexagon spanner to release the screw as picture A.



HEADREST ADJUSTMENT

(HERO1、HERO2、HERO3、HERO3-N、HERO4)

Adjustable Headrest

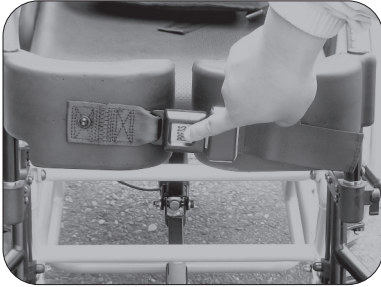
Adjust 4

And then to adjust the headrest angles to a proper position and then lock the screw tight on the position as picture A.

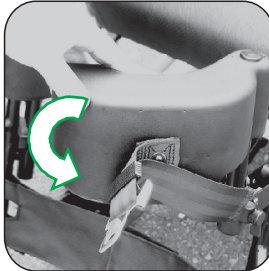
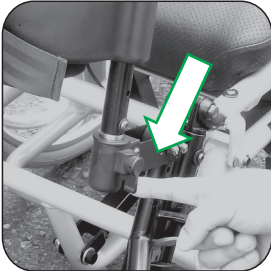


OPERATION

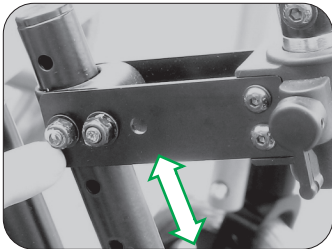
(HERO4)



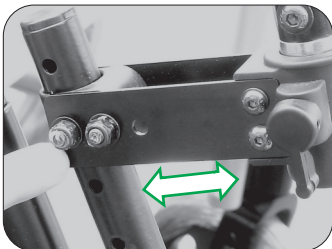
A · Push the button of knee protector, and then release the belt.



B · Unlock both side of knee protectors (as above left image).
Move away the knee protectors (as middle image).
Or lift the knee protectors (as right image).



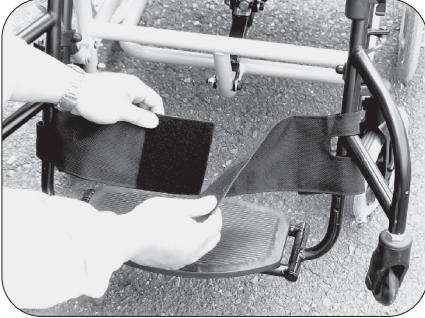
C1 · Take off screws of fixed slice on both sides of knee protector, and move up and down to adjust height of knee protectors.



C2 · Take off screws of fixed slice on both sides of knee protector, and move front and back to adjust depth of knee protectors.

OPERATION

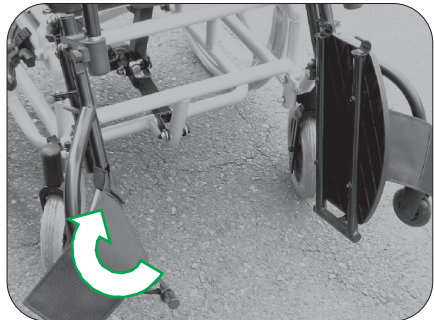
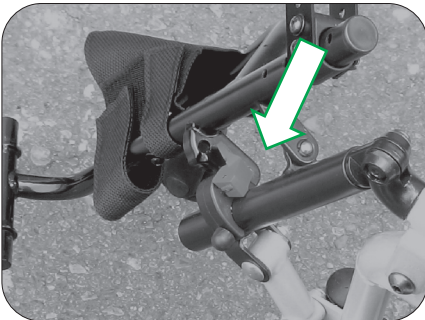
(HERO4)



C · Release the foot part belt.



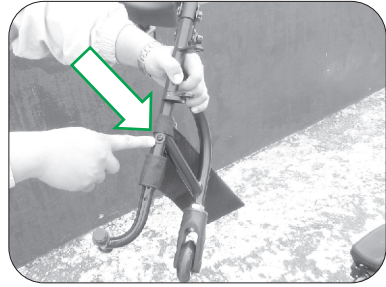
D · Move upward the footrest.



E · Unlock the footrest (as left image), and footrest can be moved outside (as right image).

OPERATION

(HERO4)



F、Take off screws back the footrest, and adjust the height of footplate.

Push handle set



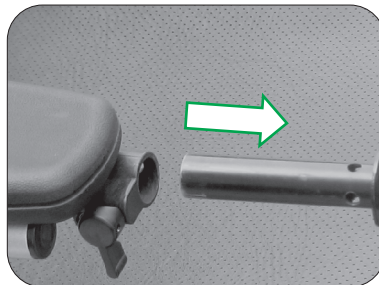
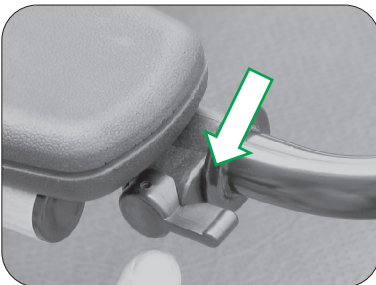
A、Adjustable height positions provided by several screws unlocked on the push handle.



B、Armrest can be flipped back directly.



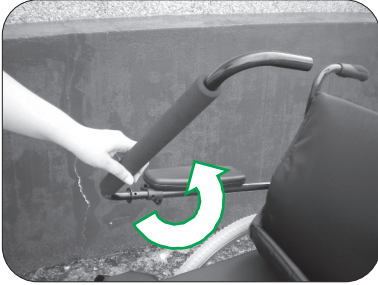
C、Image1-Armrest can be added with guard rail. (Optional)Image 2-Unlock the right side switch down.



D、Guard rail can be moved aside and fixed at 90° angle.

OPERATION

(HERO4)



E. Guard rail can be moved aside and fixed at 90° angle.



F. Push handle are with 2 knobs on the right down back (as left image). Unlock the knobs, lift the push handle, and the push handle can be separated from the wheelchair.

Rear wheel set.



A. Push still the wheel cover (as left image). Pull directly (as right image), and the rear wheel can be taken off.

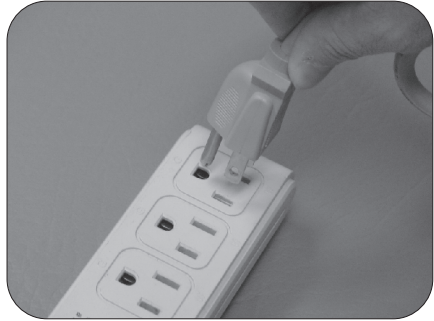
THE CHARGER

(HERO2、HERO3、HERO3-N、HERO4)

Instruction : HIWIN



Picture a



Picture b

1. To open the black bag behind the frame (as picture a), and to put the plug into the switch to be charged (as picture b).
2. While charging, the power indicating light on the controller will be bright showing the power situation. Green is for full, orange is for 50% and red is for 30% only. Please see page 13 of controller operation.

THE BATTERIES

1. We recommend deep-cycle batteries that are sealed and maintenance free. Both sealed lead-acid and gel cell are deep-cycle batteries that are similar in performance in your HERO. Do not use wet-cell batteries, which have removable caps.
2. Following situations will combust HERO1 more power, and the driving distance will decrease.
 - Incline
 - Winter
 - Over-weight
3. Following rules will keep the batteries work longer:
 - Avoid charging after the batteries use out, charging after all day HERO use on a daily basis.
 - Unplug the hub in 40 hours after the batteries fully charged.
 - Charge every three days to keep the batteries full after infrequent or sporadic HERO use.

⚠ WARNING !

- Do not remove the caps from sealed batteries. Water cannot be added to sealed batteries.
- Avoid using the batteries in an airless place.
- The batteries acid could cause blindness or burning. If the batteries acid contacts eyes, skin, clothes, or articles, rinse with water as soon as possible. If battery acid is ingested, drink lots of water, and seek medical assistance immediately.
- Do not use other HERO's batteries to avoid damage to your HERO.
- When your HERO is being transported, make sure your HERO and its batteries are secured.

SUGGESTION !

- The batteries would degenerate and the drive distance would decrease after normal use for some time.
- You can change the batteries if the drive distance becomes half after charging full.
- Change two batteries at the same time to optimize the best effect.

EMI/RFI

EMI/RFI Warnings

Laboratory tests performed by the Food and Drug Administration (FDA) have shown that radio waves can cause unintended motion of electric HERO. Radio waves are a form of electromagnetic energy (EM). When electromagnetic energy adversely affects the operation of an electrical device, that adverse effect is called Electromagnetic Interference (EMI) or Radio Frequency Interference (RFI).

EMI/RFI Frequently Asked Questions (FAQS)

The following FAQ summarize what you should know about EMI/RFI. Use this information to minimize the risk that EMI/RFI will adversely affect your HERO.

Where do radio waves come from?

Radio waves are emitted from the antennas of cellular phones, mobile two-way radio (such as walkie-talkies and CBs), radio stations, TV stations, amateur radio (HAM) transmitters, wireless computer links, microwave sources, and paging transmitters. Radio waves are a form of EM. Because EM is more intense closer to transmitting antennas (sources of emission), the EM fields from two-way radios are of special concern to electric HERO users.

If EMI/RFI affects my HERO, what kind of motion should I expect?

This is difficult to predict. The answer would depend on a number of factors:

- The strength of the radio waves.
- The construction of your particular HERO.
- The location of your HERO (whether it is on level ground or on an incline).
- Whether or not your HERO is in motion.

The motion of any electric HERO affected by EMI/RFI can be erratic. The HERO may come to a sudden stop or move in an uncontrolled manner. Also, it is possible for EMI/RFI to release the brakes of an electric HERO. Some intense EMI/RFI can even damage the control system components of an electric HERO.

EMI/RFI

Is there any way to know for certain whether or not radio waves are the cause of any unintended motion of my HERO?

Unfortunately, EMI/RFI may be difficult to recognize, since the signals from radio sources are invisible and may be intermittent. However, the FDA recommends that you report all incidents of unintended motion or unintended brake release of your electric HERO to the HERO's manufacturer and, if possible, determine whether or not there was a radio wave source nearby at the time of the incident.

One precaution you can take against inadvertent motion of your HERO is to make certain that you or someone else is not the cause of the unintended motion.

- Turn off your HERO by removing the key from the key switch when you are getting on or off your HERO.
- Never leave the key in the key switch of an unattended HERO.

Are all HERO's susceptible to EMI/ RFI ?

Each make and model of electric HERO differs in its ability to resist EMI/RFI. That is, each HERO has a particular level of resistance to EMI/RFI. This resistance is measured in volts per meter (V/m) . A higher resistance level offers greater protection against EMI/RFI. In other words , an electric HERO with a high resistance level is less likely to be affected by a strong radio source than is an electric HERO with a low resistance level.

What is the FDA doing about the problem?

The FDA has written to electric HERO manufacturer and requested that those manufactures test their new models of HERO to be certain that they provide a reasonable degree of resistance against EMI/RFI. The FDA has stated that all newly manufactured models of electric HERO should have a resistance level of at least 20 V/m. This resistance level provides a reasonable degree of protection against the common sources of EMI/RFI.

EMI/RFI

The FDA has also requested or recommended that:

- Electric HERO manufacturers clearly label new products with that product's resistance level or state that the resistance level is not known.
- The labeling or informational material supplied with new electric HERO must explain what the resistance level means and warn users about the possibility of EMI/RFI and how to avoid it.
- Electric HERO manufacturers undertake an educational program to inform electrical HERO users and their caregivers about the problems associated with EMI/RFI and about the actions they can take to minimize the risk of EMI/RFI.
- While there is no exact way to tell if your HERO is totally safe, an immunity level of 20 V/m is generally achievable and useful. This product has been tested and passed at an immunity level of 20 V/m. Adding accessories and components or modifying the unit may change the susceptibility to EMI/RFI.

What can I do to find out if my HERO is likely to be affected by EMI/RFI?

If you have had your HERO for some time and have not experienced any unintended motion, it is not likely that you will have a problem in the future. However, it is always possible that EMI problems could arise if you are close to a source of radio waves. Therefore, it is very important for you to be alert to this possibility.

What can I do to reduce the risk of my HERO being affected by EMI/RFI?

Here are some precautions you can take:

- Do not turn on or use hand-held personal communications devices, such as citizen's band (CB) radios or cellular phones, while your HERO is turned on.
- Be aware of nearby radio wave transmitters, such as radio or TV stations and hand-held or mobile two-way radios. Try not to operate your HERO too close to those transmitters. For example, if you are on an electric HERO with a resistance level of at least 20V/m, you should remain at least three feet from a hand-held two-way radio and at least ten feet from a mobile two-way radio.
- Be aware that adding accessories and/ or components, or modifying your HERO in any way, may change its EMI/RFI resistance level and may make it more susceptible to interference from radio wave sources.

What should I do if my HERO moves unexpectedly?

If unintended motion or unintended brake release occurs, turn off your HERO (by removing key) as soon as it is safe to do so.

MAINTENANCE

Daily Care

- Please charge after prolong driving.
- Keep your HERO in a dry place or put a waterproof over it to prevent moisture ingress when it is not being used.
- Please wipe your HERO with dry clean cloth as often as possible. Using water may damage the electronic assembly.
- Avoid using benzene, gasoline..., these would deface your HERO.

Monthly Maintenance

- Please check all the connectors to prevent from disconnecting.
- Check if all screws of controller, batteries and differential have been tightly screwed.
- Charge at least every three months to maintain high efficiency of battery.

Half—year Maintenance

- Check front/rear wheel bearing if there is abnormal sound in axles.

Annual Maintenance

- Please get your annual maintenance by the authorized Comfort provider.

WARRANTY

This warranty is extended only to the original purchaser/user of our products. Your original sale receipt will be necessary as proof of purchase before any warranty service is rendered.

PLEASE COMPLETE FILLED OUT AND RETURN YOUR COMFORT WARRANTY REGISTRATION CARD WITHIN 30 DAYS OF YOUR PURCHASE.

COMFORT warrants products sold thru authorized dealer/distributor only. COMFORT warrants your products to be free from defects in material and workmanship under normal use for the following time periods.

- **Main Frame: 3 years**
- **Drive train : 1 year (including controller, transaxle, motor, brake)**
- **Charger: 1 year**

Warranty Exclusions

- ABS plastic shrouds and footrest covers (wear items and not warranted)
- Batteries (the battery manufacturer provides a six-month limited warranty)
- Tires and tire tubes (wear items and not warranted)
- Upholstery and seating (wear items and not warranted)
- Labor, service calls, shipping, and other charges incurred for repair of the product

If the original purchaser/user finds a defective frame, and or a specific part, and believe it is due to manufacture defect, that component will be repaired or replace, at COMFORT's option and discretion. This warranty does not cover any labor charges including, but not limited to, charges incurred for installation of replacement parts or additional fees may be imposed by the dealer or service agent. All transportation costs and shipping damage incurred while submitting parts for repair or replacement are the responsibility of the original purchaser.

For warranty service, please contact your authorized dealer/distributor from whom you purchased your Comfort product.

Controller, motor, charger, transaxle(gear box) warranty void if disassembly or modify.

LIMITATIONS AND EXCLUSIONS

The forgoing warranty shall not apply to purchase Comfort products from unauthorized dealer/distributor, improper operation, serial number has been removed or defaced, modification through the use of unauthorized parts or attachments, accidental damage, or problem cause by neglect or misuse, damage repairs made to any components/parts without consent of COMFORT, or products damage by circumstance beyond COMFORT's control, and such evaluation will solely determined by COMFORT. The warranty shall not apply to problems arise from normal wear and tear or failure to adhere the instructions.

The forgoing warranty shall not be applied to the following:

- 1.If it is not inspected regularly according to the stipulations of Comfort.
- 2.If it is incorrectly maintained.
- 3.If the HERO is not operated according to user's manual or exceeding the limitation or capacity stated in the user's manual (with respect to rider or weight).
- 4.If extra components or accessories are used or carried in conjunction.
- 5.If the HERO is driven in inhospitable places or under extraordinary conditions.
- 6.If the HERO is modified without Comfort's permission.
- 7.If it is affected by smoke, medical / chemical substances, bird droppings, salt, acid rain, flying rock and metal particles, and other external factorsetc.
- 8.If it is affected by causes such as typhoon, flood, fire and earthquake, and other natural disasters etc.

The forgoing warranty is exclusive and in lieu of other express and implied warranties. COMFORT shall not be liable for any consequential or incidental damages whatsoever.



COMFORT ORTHOPEDIC CO., LTD.

No. 120, Nan Shiang Tsuen, Shoei Shang Shiang, Chia-Yi, Taiwan, R.O.C.

Tel: 886-5-2892093 Fax: 886-5-2890070

E-Mail: comfort5@ms6.hinet.net

www.comfort.com.tw

0911500