

## The Ergo Cart



## **Contents**

<b>Introduction.....</b>	<b>3</b>
<b>General Safety Rules.....</b>	<b>4</b>
<b>Save These Instructions.....</b>	<b>5</b>
<b>Electronic Drivetrain Introduction.....</b>	<b>6</b>
<b>Charging.....</b>	<b>7</b>
<b>Control Panel Summary.....</b>	<b>8</b>
<b>Joystick Control .....</b>	<b>9</b>
<b>Wiring Diagram.....</b>	<b>10</b>
<b>Troubleshooting.....</b>	<b>11-12</b>
<b>Ergo Safety and Handling.....</b>	<b>13</b>
<b>Battery Replacement.....</b>	<b>14-15</b>
<b>Warranty.....</b>	<b>16</b>



## Introduction:

Carefully read and understand all **ASSEMBLY AND OPERATION INSTRUCTIONS** before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.

Thank you very much for choosing this product! For future reference, please complete the owner's record below:

Purchase Date: \_\_\_\_\_ Purchase Order Number \_\_\_\_\_

Model Number: \_\_\_\_\_ Highlight or Circle 50 or 60

Save the receipt, the warranty, and these instructions. It is important that you read the entire manual to become familiar with this product before you begin using it.

This product is designed for certain applications only. The manufacturer cannot be responsible for issues arising from modification. We strongly recommend that this product not be modified and/or used for any application other than that for which it was designed. If you have any questions relating to a particular application, DO NOT use the product until you have first contacted us to determine if it can, or should, be performed on the product.

For technical questions, please call 800-376-7209

## Intended Use

Kingsley brings an easy way to move heavy loads with the Ergo Cart, a heavy-duty electric powered cart with two powered wheels. It is the perfect way to move books across long distances and up ramps. The electronic powertrain and built-in 24V battery and 350w motors is perfect for moving further distances easily and comfortably with just the push of a button.

## Technical Specifications

<b>Weight</b>	68
<b>Type</b>	Cart Transport
<b>Power Supply</b>	DC 24V, 12 Ah
<b>Motor Type</b>	24V Brushless with permanent magnet
<b>Model</b>	Ergo Cart 60 and Ergo Cart 50
<b>Max Load</b>	500 lbs (136 kg)
<b>Dimensions</b>	60 Series 31.13" W x 34.31" D x 37.44" H 50 Series 25.38" W x 27.06" D x 38.5" H

## General Safety Rules:

**WARNING:** Read and understand all instructions. Failure to follow all instructions listed below may result in serious injury.

1. Always know your Ergo Cart. Take time to fully read the user's manual to understand your product and its operations.
2. Always avoid contact with battery fluid. This may occur under extreme use or temperature conditions.
3. Always dispose or recycle the battery according to local ordinances/regulations.
4. Always protect terminals with insulating tape prior to disposal to prevent electrical shorts.
5. Never charge damaged battery packs and change damaged batteries immediately. If a damaged battery is put to charge, it may cause an electrical short and cause a fire.
6. Never incinerate the battery pack even if it's severely damaged or is completely worn out.
7. Never operate or store the unit or its' batteries in an environment containing explosive or combustible material.
8. Always remove the battery when the unit is not in use for extended periods of time.
9. Always use the supplied charger to charge the battery pack. Other charger types may cause damage to the battery which could result in personal harm and property damage.
10. Never operate the charger with a damaged cord or plug. If the plug is damaged, replace it immediately.
11. Never use the charger to charge other batteries.
12. Never operate the charger if it has received a sharp blow, been dropped, or otherwise damaged in any way.
13. Never charge the battery in damp or wet environments. Do not cover the charger with clothes or similar items during charging. Excess heat buildup to the charger may damage it or start a fire.
14. The use of accessories which are not recommended or supplied by the charger manufacturer may present a risk of fire, electric shock, or personal injury.
15. Always disconnect the charger when the battery is fully charged.
16. Always charge the battery every three months if not in use.
17. Do not exceed the maximum capacity of 600lbs.
18. Always use Kingsley approved mounting hardware, components, and accessories.
19. Do not use the Ergo Cart to move people.
20. Do not operate the Ergo Cart under the influence of alcohol or drugs.
21. Be sure to remove any elements or obstacles that may hinder the safe operation of the unit.

## Save These Instructions:

**CAUTION:** Do not allow people to operate the Ergo Cart until they have read this manual and have developed a thorough understanding of how it works. In addition, allow some time for practice to get used to the electronic drive controls.

**WARNING:** The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions or situations that could occur. It must be understood by the operator that common sense and caution are factors that cannot be built into this product but must be supplied by the operator.

### Working Area

- Be aware of bystanders and obstacles while operating the Ergo Cart. Distractions can cause a loss of control or an accident.

### Personal Safety

- Stay alert, watch what you are doing and use common sense when using the Ergo Cart. Do not use it while you are tired or under the influence of drugs, alcohol, or medication. Lack of attention could lead to personal injury or damage to property.
- Be aware that loose clothing, dangling objects, jewelry and long hair could get caught in the moving parts.

### Ergo Cart Use and Care

- Do not modify the Ergo Cart in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment and void the warranty.
- Periodically check for damaged or worn-out parts before using the Ergo Cart. Replace or repair damaged or worn-out parts immediately.
- Do not exceed the ergo cart's load capacity of 500lbs.
- When the Ergo Cart is not in use, store it in a secure place out of reach of children. Inspect the Ergo Cart for good working condition prior to storage and before re-use.

## Electronic Drivetrain Introduction:

The electronic drivetrain on the Ergo Cart is comprised of an intelligent motor drive control system. The motor controller adopts an intelligent control and motor drive chip to provide a reliable, stable, and efficient speed control scheme. The intuitive LED indicator light and ergonomic joystick makes the Ergo Cart easy to control.

**The main drivetrain characteristics are as follows:**

- Advanced PID driving algorithm and intelligent control to ensure the safety and comfort of the user.
- Soft start, soft stop, and intelligent braking ensure that the Ergo Cart is safer and more controllable in any environment.
- The automatic motor load compensation function ensures that the speed of the Ergo Cart is stable when going up and down ramps.
- The over current, over voltage, overload, over temperature, under voltage, and other protection functions ensure more reliable and safe driving characteristics.
- The power-off protection function ensures that the Ergo Cart can still be controlled and decelerated slowly to a stop once the power is cut off during driving.

## Charging your Ergo Cart:

To charge your Ergo Cart, plug the supplied charger into the charging port shown below and then plug it into the wall. The charger will display a red light while charging and change to green when finished. When it is finished, unplug the charger from the wall then unplug the charger from the cart. The charger has an overvolt protection feature so there is no danger of leaving it on the charger. However, to get the best performance out of the batteries, it is best to disconnect the charger once the batteries are fully charged.



Charging Port with protective cap removed



Charging Port with charging cable plugged in

## Ergo Cart Control Panel Summary:



### 1. Power Switch

Press the button and the buzzer will beep twice, indicating that the controller has powered on normally. Press the key again to shut down the controller. Unless there is an emergency, do not use the switch button to stop the Ergo Cart while driving. If used in such a manner, it may shorten the service life of the Ergo Cart's driving parts.



### 2. Horn

Press the horn button, and the horn will continue to sound until it is released.



### 3. Light

Press the button softly, the built-in headlamp of the controller and the associated LED will illuminate continuously. Press the button again to turn the light off.



### 4. Speed Control

Press the "+" button to increase the speed and press the "-" to decrease the speed.



### 5. Speed Indicator

The speed indicator displays the current speed selected by the user. The speed is divided into five sections with respective power of 20%, 40%, 60%, 80%, and 100% of the maximum speed of 3.7 mph.



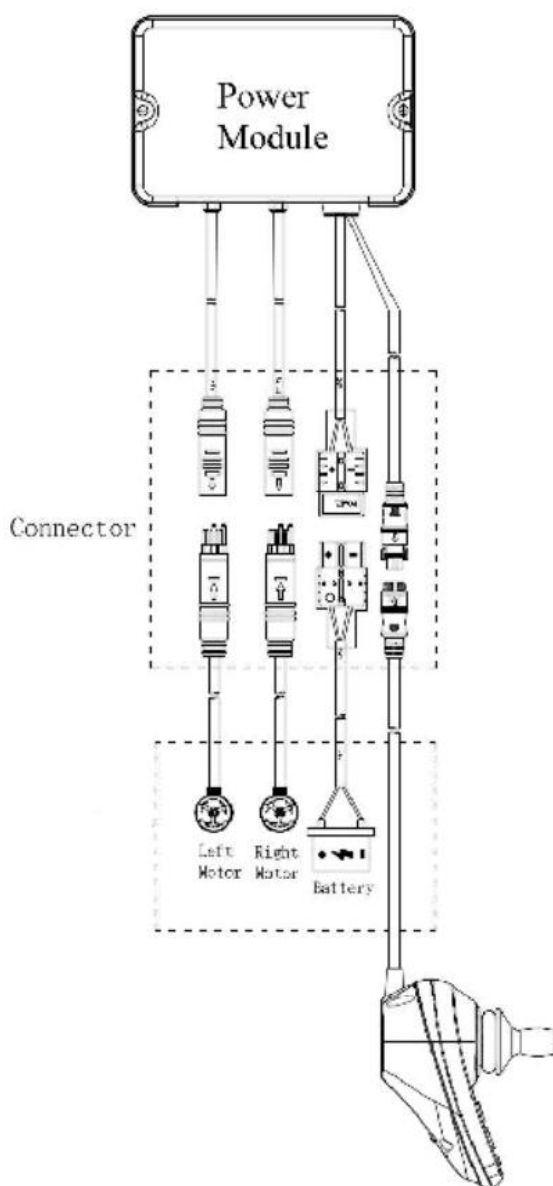
## Joystick Control:

Moving the joystick direction will control the speed and direction of the Ergo Cart. The speed of the Ergo Cart depends on how far the joystick has been actuated. Gently guide the hand-held joystick forward to set the Ergo Cart in motion, propelling it forward effortlessly. Pulling the joystick back initiates a seamless backward movement. Similarly, nudging the joystick to the left swivels the cart in a leftward direction, while rightward nudge rotates the cart to the right. If the power supply is turned on when the joystick is not in the middle position, the controller will give a sound prompt of “tick, tick, tick, tick...”, release the joystick and return it to the middle position, and the sound prompt will disappear. This function can prevent sudden or unexpected actions of the Ergo Cart. If the sound prompt persists after releasing the joystick, then it may be that the joystick components have been damaged. Please do not continue to use this product and consult the manufacturer.



Hold the controller with joystick towards the user.

## Wiring Diagram:



## Troubleshooting:

### Fault Display Description, and Solution

When there is an abnormal condition, the fault information can be judged by the buzzer prompt sound and battery indicator light flashing without using other service tools. Common Faults and solutions are shown in the table below.

Sound&Light Alarm Description	Cause of Fault	Solution
The buzzer has no sound, and the power indicator is not on	①The power is off ②The system is in sleep mode ③The power connection wire is not well contacted	①And②: Press the 'Power' Button, and turn on. ③: Return to factory for repairing.
1 pause 1 short sound (and the battery indicator flashes once)	The battery is seriously low	1. Please charge for 30 minutes before starting. 2. Please go to the place where the battery can be repaired and check the battery voltage. 3. Return to factory for repairing.
1 pause 2 short sound (and the battery indicator flashes twice)	Left motor fault	Diagnose the cause of the left motor fault: 1. Please check whether the left motor is in poor connection or the wire is disconnected. 2. Please switch the left and right motor wires and power on again. If the controller still makes 2 sounds, it is the controller fault and needs to be returned to the factory for inspection. If the controller makes 4 alarms, it is the motor fault.
1 pause 3 short sound (and the battery indicator flashes for three times)	Left motor brake fault	Diagnose the cause of the left motor brake fault: 1. Please check whether the left brake is in poor connection or the brake power off switch is damaged. 2. Please switch the left and right motor wires and power on again. If the controller still makes 3 sounds, it is the controller fault and needs to be returned to the factory for inspection. If the controller makes 5 alarms, it is the motor brake fault.
1 pause 4 short sound (and the battery indicator flashes for four times)	Right motor fault	Diagnose the cause of the right motor fault: 1. Please check whether the right motor is in poor connection or the wire is disconnected. 2. Please switch the left and right motor wires and power on again. If the controller still makes 4 sounds, it is the controller fault and needs to be returned to the factory for inspection. If the controller makes 2 alarms, it is the motor fault.

## Troubleshooting Continued:

1 pause 5 short sound (and the battery indicator flashes for five times)	Right motor brake fault	Diagnose the cause of the right motor brake fault: 1. Please check whether the right brake is in poor connection or the brake power off switch is damaged. 2. Please switch the left and right motor wires and power on again. If the controller still makes 5 sounds, it is the controller fault and needs to be returned to the factory for inspection. If the controller makes 3 alarms, it is the motor brake fault.
1 pause 6 short sound (and the battery indicator flashes for six times)	Controller internal fault	Needs to be returned to the factory for inspection.
1 pause 7 short sound (and the battery indicator flashes for seven times)	Pushrod fault	Needs to be returned to the factory for inspection
1 pause 8 short sound (and the battery indicator flashes for eight times)	Controller internal fault	Needs to be returned to the factory for inspection
1 pause 9 short sound (and the battery indicator flashes for nine times)	Left motor Hall fault	Diagnose the cause of the left motor Hall fault: 1. Please check whether the left motor is in poor connection or the wire is disconnected. 2. Please switch the left and right motor wires and power on again. If the controller still makes 9 sounds, it is the controller fault and needs to be returned to the factory for inspection. If the controller makes 10 alarms, it is the motor Hall line fault.
1 pause 10 short sound (and the battery indicator flashes for ten times)	Right motor Hall fault	Diagnose the cause of the right motor Hall fault: 1. Please check whether the right motor is in poor connection or the wire is disconnected. 2. Please switch the left and right motor wires and power on again. If the controller still makes 10 sounds, it is the controller fault and needs to be returned to the factory for inspection. If the controller makes 9 alarms, it is the motor Hall line fault.

## **Ergo Cart Safety and Handling:**

- Lithium batteries must be properly disposed of. Laws vary by location, and it is the buyer's responsibility to ensure they are recycling the batteries properly.
- If exposed to battery electrolyte, flush with water, immediately contact a physician or emergency services.
- If eye exposure arises, flush with water for 15 minutes, and immediately seek emergency attention.
- Do not modify, disassemble, puncture, cut, crush, or incinerate.
- Avoid charging or storing the Ergo Cart in temperatures greater than 120 degrees Fahrenheit.
- Inspect the general condition of the Ergo Cart before use.
- Keep the ergo cart in good repair by adopting a program of conscientious repair and maintenance.
- If any abnormal vibrations or noise occur, do not operate the Ergo Cart before the problem has been corrected.

## Battery Replacement:

The Ergo Cart is equipped with a pair of 12-volt Lifepo4 batteries. These batteries can be purchased from Kingsley. If any batteries that are used that aren't approved by Kingsley, the warranty will be void. While these batteries boast a significantly extended lifespan compared to traditional lead-acid batteries, replacement may be necessary at some point in the future. To replace the batteries, please complete the following steps.

- First step is to remove the battery cover. To do this, just unscrew the two Phillips head screws shown in the photo below.



- Next, take a photo of the battery box before any wiring is disconnected for future reference. Disconnect the red terminal on the battery highlighted in red. Followed by the black terminal highlighted in yellow and then the remaining two highlighted in any order.

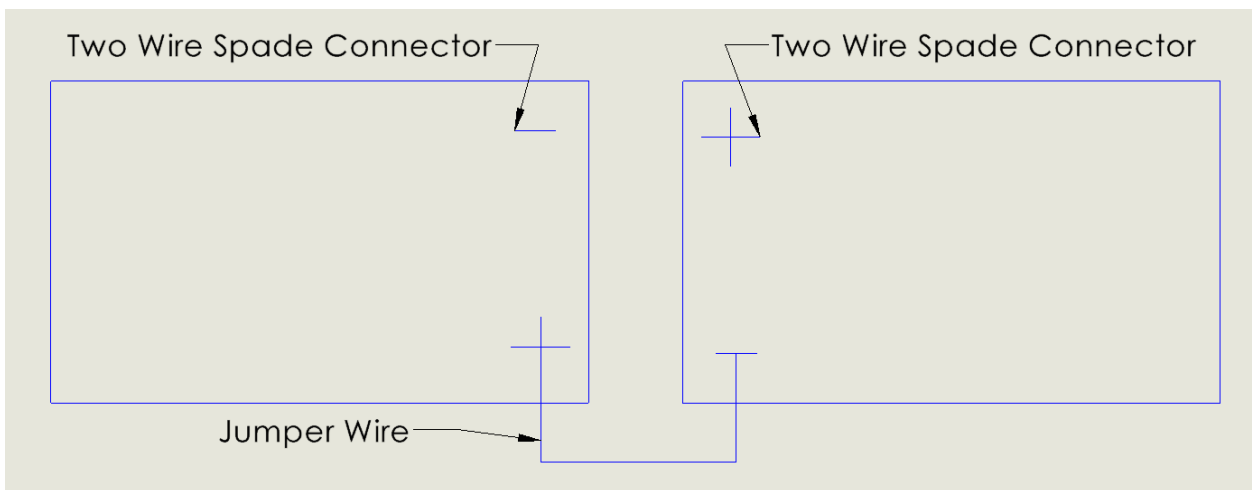


## Battery Replacement Continued:

- Remove the batteries from the battery tray after the terminals have been disconnected. At the bottom of the tray there are two holes that can be used to push the batteries up to allow easier removal.



- The final step is to place the new batteries into the tray in the same position the original batteries were in and replace the terminals in the same position.



## **Kingsley Companies Ergo Powered Warranty:**

All of us at Kingsley appreciate our customers and their needs. The below Ergo Cart warranty is our commitment to provide answers to any Warranty concerns you may have. All Kingsley products go through a vigorous Quality Control procedure at every level of manufacture and again at the point of packaging and shipment. Rest assured that with most shipments, there will never be a Warranty issue. If one does arise, be assured that every effort will be made to return your Ergo Cart to working condition in the shortest time possible.

### **Exclusions & Limitations** to all Warranties herein:

Kingsley uses a “Common Sense” approach to Warranty Exclusions & Limitations.

THIS WARRANTY COVERS ONLY WHAT KINGSLEY HAS MANUFACTURING CONTROL OVER in Design. Manufacture or assembly.

The following is outside our control and resulting damages are not covered under any provision within this Warranty

- Abuse, neglect, or use for other than intended
- Vandalism
- Damage from impact/collision, Accident
- Normal wear & tear
- Natural disasters like hurricanes, hail, tornadoes, excessive winds, earthquakes, etc.
- War or acts of terrorism
- Customer or unapproved Reseller modification of any type voids all Warranties
- Improper operation, maintenance, or storage
- Failure to adhere to the product instructions
- Lack or neglect of needed repair or service
- Exceeding the weight Limit of the unit
- Wear items: Fuses, Tires, Casters

### **The following parts will be repaired or replaced at our discretion, free of charge, for the following allowable time periods from the date of purchase.**

- Five-year limited warranty for structural frame components, metal bracketry, and welds.
- One-year warranty on all electronic parts including controllers, battery chargers, wiring, motor, and controls.
  - Note: an increase in operating noise of the motor does not constitute a defect. With normal wear and tear operating noise is expected to increase.
- Six-month warranty on the batteries.