

# USERS MANUAL



S8



**HEARTWAY MEDICAL PRODUCTS CO., LTD.**

Part no:70030171

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# TECHNICAL SPECIFICATIONS

## **AVIATOR**



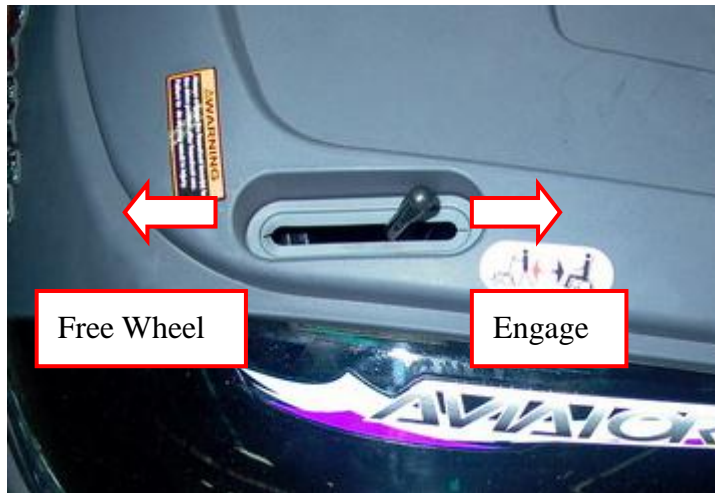
MODEL	S8
WEIGHT CAPACITY	185kgs(400 lbs)
SEAT: TYPE/SIZE	20" A2
DRIVE WHEEL	330mmx100mm(13"x4")
FRONT CASTER (WHEEL)	330mmx100mm(13"x4")
REAR CASTER (ANTI-TIPPER)	None
MAX SPEED	8MPH (13KM/H)
BATTERY SPECIFICATIONS	12V 50Ah x 2pcs or 12V 62Ah x 2pcs(Optional)
BATTERY RANGE	35km/45km
CHARGER TYPE	5Amp, Off Board 120/240 Volt, 50/60Hz
CONTROLLER TYPE	Dynamic Rhino 110Amp
MOTOR TYPE	700W 4-POLE MOTOR
WEIGHT: W/ BATTERY	108kgs(238 lbs)
WEIGHT: W/O BATTERY	80kgs(176 lbs)
TURNING RADIUS	1160mm (45.6")
SUSPENSION	FULL
LENGTH	1570mm
WIDE	700mm / 800mm (X Version)
HEIGHT	1350mm
SEAT WIDTH	510mm
SEAT HEIGHT	460mm
SEAT DEPTH	480mm
BACK HEIGHT	770mm
WHEEL BASE	970mm
GROUND CLEARANCE	120mm
LEG ROOM	400mm



# SAFETY INSTRUCTION

## ◆ OPERATION OF SCOOTER

1. To prevent injury to yourself or others, always ensure that the power is switched off when getting on or off of the scooter.
2. Always check that the drive wheels are engaged (drive mode) before driving.



(Fig.1)

3. Do not switch off the power when the scooter is still moving forward. This will bring the chair to an extremely abrupt stop.



(Fig.2)



(Fig.3)

#### 4. Emergency Brake (Optional)



#### ◆ General

1. Always use a seat belt, and keep your feet on the scooter all the time.
2. Do not over load the scooter with it's maximum weight capacity of 135kg (300 lbs)
3. Do not attempt to lift or move a power scooter by any of its removable parts. Personal injury and damage to the power chair may result.
4. Never try to use your scooter beyond its limitations as described in this manual.
5. Do not operate your vehicle if it is not functioning properly.
6. Do not connect any electrical or mechanical device to the scooter. Failure to obey this instruction may result in injury and will void the warranty.
7. Never use electronic radio transmitters such as CB, walkie-talkies, portable computers or cellular phones while using the vehicle without first turning the scooter off.

#### ◆ Use While Under The Influence Of Medication Or Alcohol

1. Check with your physician if you are taking any medication that may affect your ability to operate your power scooter safely.
2. Do not operate your scooter while you are under the influence of alcohol, as this may impair your ability to operate your power scooter in a safe manner.

#### ◆ Electromagnetic interference (EMI) from Radio Wave Sources

The rapid development of electronics, especially in the area of communications, has saturated our environment with electromagnetic (EM) radio waves that are emitted by television, radio and communication signals. These EM wave are invisible and their strength increases as one approach

the source. All electrical conductors act as antennas to the EM signals and, to varying degrees, all power wheelchairs and scooters are susceptible to electromagnetic interference (EMI). The interference could result in abnormal, unintentional movement and/or erratic control of the vehicle. The United States Food and drug Administration (FDA) suggests that the following statement be incorporated to the user's manual for all power scooter like the S9. Power wheelchairs and motorized scooters (in this section, both will be referred to as powered wheelchairs) may as susceptible to electromagnetic interference (EMI), which is interfering electromagnetic energy emitted from sources such as radio stations, TV stations, amateur radio (HAN) transmitter, two-way radios and cellular phones. The interference (from radio wave sources) can cause the powered wheelchair to release its brakes, move by itself or move in unintended directions. It can also permanently damage the powered scooter's control system. The intensity of the EM energy can be measured in volts per meter (V/m). Each powered scooter can resist EMI up to a certain intensity. This is called "immunity level". The higher the immunity level the greater the protection. At this time, current technology is capable of providing at least 20 V/m of immunity level, which would provide useful protection against common sources of radiated EMI.

Following the warnings listed below should reduce the chance of unintended brake release or powered scooter movement that could result in serious injury:

1. Do not turn on hand-held personal communication devices such as citizens band (CB) radios and cellular phones while the powered scooter is turned on.
2. Be aware of nearby transmitters such as radio or TV stations and try to avoid coming close to them.
3. If unintended movement or brake release occurs, turn the powered scooter off as soon as it is safe.
4. Be aware that adding accessories or components, or modifying the powered scooter, may make it more susceptible to interference from radio wave sources  
(Note: It is difficult to evaluate the effect on the overall immunity of the powered scooter).
5. Report all incidents of unintended movement or brake release to the powered scooter manufacturer, and note whether there is a radio wave source nearby.

**TURN OFF YOUR POWERED SCOOTER AS SOON AS POSSIBLE WHEN EXPERIENCING THE FOLLOWING:**

- Unintentional scooter movements
- Unintended or uncontrollable direction.
- Unexpected brake release

The FDA has written to the manufacturers of power scooters asking them to test new products to be sure they provide a reasonable degree of immunity against EMI. The FDA requires that a powered wheelchair should have an immunity level at least 20 V/m, which provides a reasonable degree of protection against more common sources of EMI. The higher the immunity level, the greater the protection. Your powered scooter has an immunity level of 20 V/m which should protect against common sources of EMI.

# ENVIRONMENTAL CONDITIONS

Environmental conditions may affect the safety and performance of your power scooter. Water and extreme temperatures are the main elements that can cause damage and affect performance.

## A) Rain, Sleet and Snow

If exposed to water, your power scooter is susceptible to damage to electronic or mechanical components. Water can cause electronic malfunction or promote premature corrosion of electrical components and frame.

## B) Temperature

Some of the parts of the power scooter are susceptible to change in temperature. The controller can only operate in temperature that ranges between 18°F(-8°C) and 122°F (50°C).

At extreme low temperatures, the batteries may freeze, and your power scooter may not be able to operate. In extreme high temperatures, it may operate at slower speeds due to a safety feature of the controller that prevents damage to the motors and other electrical components.

# WARRANTY

## Quality/ Warranty Declaration

Products are to be fit for purpose and of excellent quality and performance. For valid warranty claims Heartway will, at their discretion, replace/ repair/ refund items mutually agreed to be defective.

Heartway's warranty as following:

- (1) Frame: two year limited warranty
- (2) Electronic Components and Charger: one year limited warranty.
- (3) Controllers: one and half year limited warranty
- (4) Batteries: not warranted.
- (5) Consumables (wheel tires, arm pads, and seat cushions): not warranted.

Any damage or defect of any nature occurring from the misuse of the product is not to be covered. The warranty is to start from the date of arrival of our products.

# ASSEMBLY INSTRUCTION

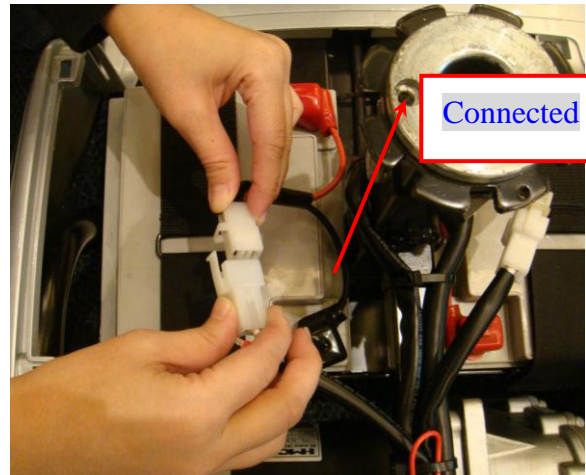
It is very easy to assemble your S8 scooter. Please follow the procedure below.

## Installing the Batteries:

Remove three screws as shown on Fig.1 and take off the cover. Connect both battery cables probably (+ / - pole ,Red is positive, black is negative)



(Fig.1)



(Fig.2)

## Adjustments for Seating Comfort:

### 1. Armrest Position Adjustment



(Fig.3)

Turn the round plate and adjust to your position. Anticlockwise will move the armrest upward and clockwise will be downward

## 2.1 Seat Rotation

- Press the seat swivel lever downward.
- Rotate your seat by clockwise or counter-clockwise direction.



(Fig.4)



(Fig.5)

## 2.2 Seat Position Adjustment

- Push the seat adjust lever upwards.
- slide your seat backward or forward to your desired position
- let the lever lock into your preferred position.

Note: The distance of adjustment from backward to forward is 150mm.



(Fig 6)

# OPERATION AND CONTROL PANEL

## 1. Control Panel Layout




LCD (Liquid Crystal Display) Power Scooter Control Panel, TN Type






















Function & Adjustment Buttons

## 2. Functions

### 2-1 Function Descriptions

FUNCTION		SPECIFICATION
1	Temperature	“°C” / “°F” modes
2	Clock	Hour / Minute display and setting
3	Odometer Trip Meter	<b>ODO</b> (99999 max), <b>TRIP</b> (999.9 max) Sum of distance and time
4	Speedometer	7 Segment display (2 1/2 digits +1 decimal) “ <b>km/h</b> ” and “ <b>mph</b> ” symbol
5	High /Low Speed & Turn Status	Indicated as icon  and 
6	Power Indicator	Battery remaining capacity and charging indicator (6 squares + Battery icon)
7	Headlight	Blue LED Including “Power-Saving” mode
8	Position Light	Orange LED Placed inside headlight, used while rainy or gloomy weather
9	Brake Light	Including “Brake-Mode” and “Parking Mode”
10	Left-Right Direction Indicators	Green LED Flash mode Auto switch-off after 30 seconds
11	Parking Light	Red LED Including “Parking Mode” Right/Left indicators flash simultaneously
12	Malfunction Messages	Red LED Malfunction code: 7 Segment display (1digit) + warning symbol 
13	Power-On-Self-Test	All LED illuminated

## 2-2 Buttons & Indicators

ITEM	DESCRIPTION												
	<p>Function &amp; Adjustment Buttons:</p> 												
<p><b>LED Indicators</b></p>	<table border="0"> <tr> <td data-bbox="459 790 539 869"></td> <td data-bbox="555 842 798 875">Left-Indicator (Green)</td> <td data-bbox="922 790 1002 869"></td> <td data-bbox="1018 842 1276 875">Right- Indicator (Green)</td> </tr> <tr> <td data-bbox="459 902 539 981"></td> <td data-bbox="555 954 798 987">Position Light (Amber)</td> <td data-bbox="922 902 1002 981"></td> <td data-bbox="1018 954 1197 987">Headlight (Blue)</td> </tr> <tr> <td data-bbox="459 1014 539 1093"></td> <td data-bbox="555 1066 813 1099">Warning Indicator (Red)</td> <td data-bbox="922 1014 1002 1093"></td> <td data-bbox="1018 1066 1260 1099">Parking Indicator (Red)</td> </tr> </table>		Left-Indicator (Green)		Right- Indicator (Green)		Position Light (Amber)		Headlight (Blue)		Warning Indicator (Red)		Parking Indicator (Red)
	Left-Indicator (Green)		Right- Indicator (Green)										
	Position Light (Amber)		Headlight (Blue)										
	Warning Indicator (Red)		Parking Indicator (Red)										
<p><b>LCD Backlight</b></p>	<p>Illumination: 700 mcd min (Orange color)</p>												
<p><b>Connector</b></p>	<p>CON1: 20PIN</p>												

## 3. Usage Conditions

ITEM	SPECIFICATION
<p><b>Voltage</b></p>	<p>DC 24 V</p>
<p><b>Operation Voltage</b></p>	<p>DC 16 ~32 V</p>
<p><b>Storage Temperature</b></p>	<p>-40°C ~ 90°C</p>
<p><b>Operation Temperature</b></p>	<p>-25°C ~ 55°C</p>
<p><b>Meter Angle at Handle Cover</b></p>	<p>30° of elevation while scooter assembly (LCD orientate to 6 o'clock)</p>

## 4. Characteristics Test

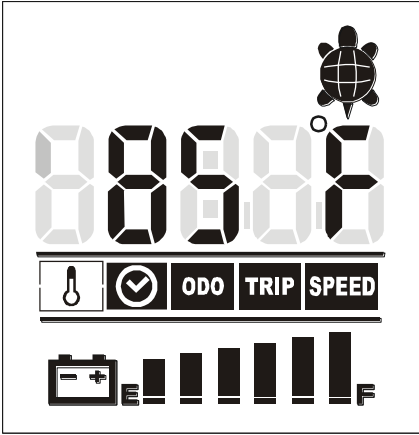
### General Characteristic Performance Test ( $20 \pm 5^\circ\text{C}$ )

#### Hardware Circuit:

ITEM	SPECIFICATION	RESULT (n = )
Lowest Operation Voltage	16V max	___ V
Consuming Current ( $V_B = 24.0\text{V}$ )	Dynamic: 200 mA max (backlight and all of LED illuminated)  Static: 5 mA max (Key Off status)	___ MA  ___ mA

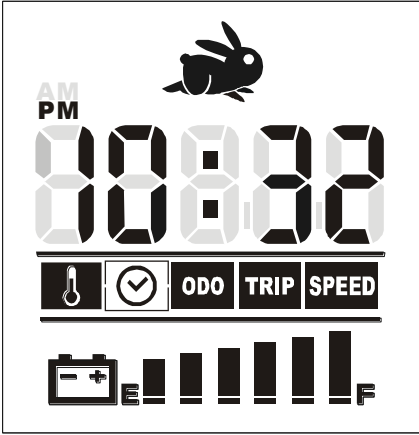
## 5. Operation of Control Panel

### 5-1. Temperature Meter

ITEM	DESCRIPTIONS
Operation Feature	Temperature sensor (NTC) detects and transfers the signal to a temperature value.
Tolerance	$\pm 2^\circ\text{C}$
Working Mode	<p>Press <b>MODE</b> to switch to TEMP-Mode:</p>  <p>* Display Range : <math>-20^\circ\text{C} \sim 50^\circ\text{C}</math> / <math>-4^\circ\text{F} \sim 122^\circ\text{F}</math></p>

ITEM	DESCRIPTIONS
<b>Setting Mode (Unit Switch)</b>	<ul style="list-style-type: none"> <li>● Press <b>MODE</b> + <b>SET</b> for more than 2 seconds to enter Setting-Mode, and the backlight illuminates in the meantime.</li> <li>● When “°C” or “°F” flashing, press <b>SET</b> to switch °C / °F.</li> </ul>
<b>Exit Setting Mode</b>	<p>Under Setting-Mode, when</p> <ol style="list-style-type: none"> <li>1) idle for more than 20 seconds,</li> <li>2) press <b>MODE</b> + <b>SET</b> for more than 2 seconds,</li> </ol> <p>the system will save the last setting value automatically and back to Working-Mode.</p>

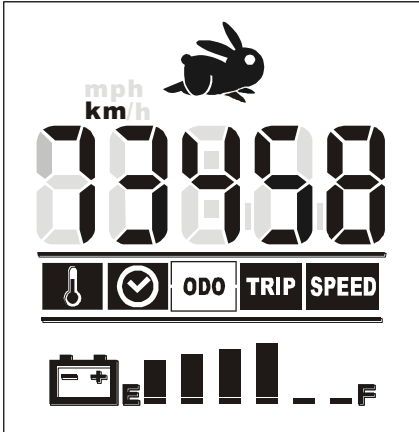

### 5-2. Clock

ITEM	<u>DESCRIPTIONS</u>
<b>Tolerance</b>	±2 sec. (per day)
<b>Initial Setting Value</b>	『Hour : Min』 mode : 『AM 12:00』
<b>Working Mode</b>	<p>Press <b>MODE</b> to switch to CLOCK-Mode:</p>  <p>● Display Range : AM12:00 ~ PM11:59 During 1 to 9 o'clock, “0” of tens on Hour digits won't show on LCD.</p>

ITEM	<b><u>DESCRIPTIONS</u></b>
<b>Setting Mode (Time Switch)</b>	<p>Press <b>MODE</b> + <b>SET</b> for longer than 2 seconds to enter Setting-Mode, the backlight illuminates in the meantime.</p> <ol style="list-style-type: none"> <li>1) When “Hour” digit is flashing, press <b>SET</b> to increase the number, and then press <b>MODE</b> into “Min” setting mode.</li> <li>2) When “Min” digit is flashing, press <b>SET</b> to increase the number, then press <b>MODE</b> back to “Hour” setting mode.</li> </ol> <ul style="list-style-type: none"> <li>● If press <b>SET</b> for longer than 2 seconds, the number will increase continually till the button released.</li> <li>● The setting value runs cyclically ( only 2 sec. from 0 to 9)</li> </ul>
<b>Exit Setting Mode</b>	<p>Under Setting-Mode, when</p> <ol style="list-style-type: none"> <li>1) idle for longer than 20 seconds</li> <li>2) press <b>MODE</b> + <b>SET</b> for longer than 2 seconds,</li> </ol> <p>the system will save the last setting value automatically and back to Working-Mode.</p>

### 5-3. Odometer

ITEM	<b><u>DESCRIPTIONS</u></b>
<b>Operation Features</b>	OptoCoupler sensor detects the signal and then converts into a distance value.
<b>Units Switch</b>	<p>When speedometer was set as</p> <ul style="list-style-type: none"> <li>「<b>km/h</b>」, the odometer displays as kilometer.</li> <li>「<b>mph</b>」, the odometer displays as mile.</li> <li>「<b>/h</b>」, means the odometer is displaying as travel hours.</li> </ul>





ITEM	<u>DESCRIPTIONS</u>
ODO Mode	<p>Press <b>MODE</b> switching to 『ODO』 mode</p>  <ul style="list-style-type: none"> <li>● Display Range:00000~99999</li> <li>● When the total distance ran to 99999km or 62149mile (99999÷1.609mile), the digits will be reset to zero “00000”.</li> </ul>
TRIP Mode	<p>Press <b>MODE</b> switching to 『TRIP』 mode</p>  <ul style="list-style-type: none"> <li>● Display Range:0.0~999.9</li> <li>● When the distance goes to 999.9, the counter will stop, please press <b>SET</b> for 3 seconds to reset to zero “0.0”.</li> </ul>

## 5-4. Speedometer

























ITEM	<b><u>DESCRIPTIONS</u></b>
<b>Operation Features</b>	OptoCoupler sensor detects the signal and then converts into a speed value. When drive shaft runs at 2100 rpm, speedometer will display “60km/h”.
<b>Tolerance</b>	+15~20%
<b>Digits range</b>	0.0 ~ 30.0      Display Rate : 0.5
<b>Setting Mode (Units Switch)</b>	<ul style="list-style-type: none"> <li>● Press <b>MODE</b> + <b>SET</b> for longer than 2 seconds to enter Setting-Mode, backlight illuminates in the meantime.</li> <li>● When 『km/h』 / 『mph』 / 『h』 are flashing, press <b>SET</b> to switch the unit.</li> </ul>

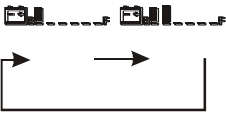


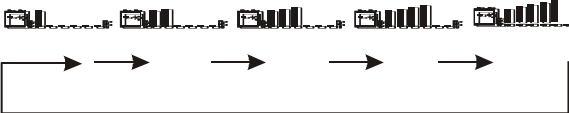


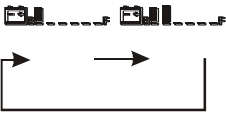


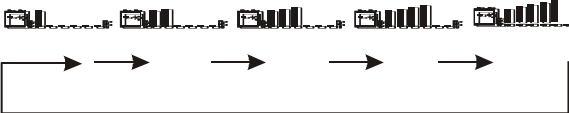


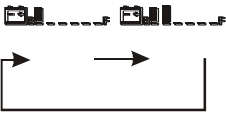


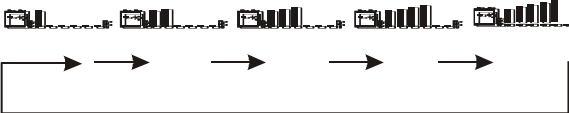




5-5. High/Low Speed & Turn Indicators



ITEM	<u>DESCRIPTIONS</u>
<b>Operation Features</b>	<ul style="list-style-type: none"> <li>● Press  to switch High / Low speed. (*Control signals: TRN, with memory storage)</li> <li>● Take exterior turn-switch as determinant signal (*Control signals: TRN)</li> </ul>
<b>Symbols of Status</b>	<p>High Speed: </p> <p>Low Speed: </p> <p>Turn Status:  (Flashing)</p>
<b>Flicker Frequency</b>	1 second

5-6. Power Indication



ITEM	<b><u>DESCRIPTIONS</u></b>																
<b>Battery Remaining Capacity</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th data-bbox="512 322 751 427" style="text-align: center;">Remaining Capacity (%)</th> <th data-bbox="751 322 1235 427" style="text-align: center;">Scale Bar</th> </tr> </thead> <tbody> <tr> <td data-bbox="512 427 751 582" style="text-align: center;">100 (6)</td> <td data-bbox="751 427 1235 582" style="text-align: center;">  </td> </tr> <tr> <td data-bbox="512 582 751 732" style="text-align: center;">85 (5)</td> <td data-bbox="751 582 1235 732" style="text-align: center;">  </td> </tr> <tr> <td data-bbox="512 732 751 884" style="text-align: center;">70 (4)</td> <td data-bbox="751 732 1235 884" style="text-align: center;">  </td> </tr> <tr> <td data-bbox="512 884 751 1037" style="text-align: center;">55 (3)</td> <td data-bbox="751 884 1235 1037" style="text-align: center;">  </td> </tr> <tr> <td data-bbox="512 1037 751 1189" style="text-align: center;">40 (2)</td> <td data-bbox="751 1037 1235 1189" style="text-align: center;">  </td> </tr> <tr> <td data-bbox="512 1189 751 1402" style="text-align: center;">30 (1)</td> <td data-bbox="751 1189 1235 1402" style="text-align: center;">                       and icon  is flashing                 </td> </tr> <tr> <td data-bbox="512 1402 751 1525" style="text-align: center;">20</td> <td data-bbox="751 1402 1235 1525" style="text-align: center;">                     Warning LED  is flashing                 </td> </tr> </tbody> </table>	Remaining Capacity (%)	Scale Bar	100 (6)		85 (5)		70 (4)		55 (3)		40 (2)		30 (1)	 and icon  is flashing	20	Warning LED  is flashing
Remaining Capacity (%)	Scale Bar																
100 (6)																	
85 (5)																	
70 (4)																	
55 (3)																	
40 (2)																	
30 (1)	 and icon  is flashing																
20	Warning LED  is flashing																
<b>Flicker Frequency</b>	2 seconds																
<b>Operation Characters</b>	<ul style="list-style-type: none"> <li>● The scale status only decrease, won't increase.</li> <li>● When the remaining capacity was less than 30%, warning sound (“Bi-Bi” - two short sounds) act at 1 second intervals.</li> <li>● While (1) Key OFF (2) Charging-Mode (3) Sleep-Mode, the warning sound will be released.</li> </ul>																

ITEM	<b><u>DESCRIPTIONS</u></b>														
<b>Charge Indication</b>	<table border="1"> <thead> <tr> <th data-bbox="427 255 667 342">Remaining Capacity (%)</th> <th data-bbox="667 255 1374 342">Scale Bar</th> </tr> </thead> <tbody> <tr> <td data-bbox="427 342 667 512">40 (2)</td> <td data-bbox="667 342 1374 512">  </td> </tr> <tr> <td data-bbox="427 512 667 685">55 (3)</td> <td data-bbox="667 512 1374 685">  </td> </tr> <tr> <td data-bbox="427 685 667 857">70 (4)</td> <td data-bbox="667 685 1374 857">  </td> </tr> <tr> <td data-bbox="427 857 667 1030">80 (5)</td> <td data-bbox="667 857 1374 1030">  </td> </tr> <tr> <td data-bbox="427 1030 667 1202">90 (6)</td> <td data-bbox="667 1030 1374 1202">  </td> </tr> <tr> <td data-bbox="427 1202 667 1352">100 (7)</td> <td data-bbox="667 1202 1374 1352">  </td> </tr> </tbody> </table>	Remaining Capacity (%)	Scale Bar	40 (2)		55 (3)		70 (4)		80 (5)		90 (6)		100 (7)	
	Remaining Capacity (%)	Scale Bar													
	40 (2)														
	55 (3)														
	70 (4)														
	80 (5)														
	90 (6)														
100 (7)															
<b>Increase Frequency</b>	0.5 second														
<b>Operation Character</b>	<ul style="list-style-type: none"> <li>● Scale status only decrease, won't increase.</li> <li>● Take the PIN3(CH3) of charger as the determinant signal, when CH3 is grounded (L), LCD will enter Charging-Mode, not limited by "KEY ON" or "KEY OFF".</li> <li>● Any pressing of button will illuminate LCD backlight, and switch off automatically if no more pressing after 5 seconds.</li> </ul>														
<b>Remarks</b>	Above scale bar status only for reference, the accurate diagnosis is still subject to the indicator of charger.														

### 5-7. Headlight

ITEM	<b><u>DESCRIPTIONS</u></b>
Operation Feature	<p>Take exterior headlight switch as determinant signal.</p> <ul style="list-style-type: none"> <li>● Press button  to switch on/off LED .</li> <li>● LCD backlights will be turned on/off when headlight switching on/off.</li> </ul>
Power Saving Mode	<ul style="list-style-type: none"> <li>● When motor is resting, power modulate down to 30% (Headlight)</li> <li>● When motor acts, power modulate up to 100% (Headlight)</li> </ul>
Usage Condition	While (1) KEY OFF (2) Power-Saving Mode (3) Sleep-Mode, the function will be disabled.
Determinant Condition	<ul style="list-style-type: none"> <li>● Power-Saving ⇨ Full-Power : React immediately</li> <li>● Full-Power ⇨ Power-Saving : 5 sec delay</li> </ul>
Remarks	<p>(1) Loop Load: 24V/50W max</p> <p>(2) With “short circuit” and “overload” protection</p>









### 5-8. Position Light

ITEM	<b><u>DESCRIPTIONS</u></b>
Operation Feature	<p>Take exterior position-light switch as determinant signal.</p> <ul style="list-style-type: none"> <li>● Press button  to switch on/off LED .</li> <li>● LCD backlights will be turned on/off when back-up lamp switching on/off.</li> </ul>
Usage Condition	While (1) KEY OFF (2) Power-Saving Mode (3) Sleep-Mode , the function will be disabled.
Remarks	<p>(1) Loop Load: 24V/50W max</p> <p>(2) With “short circuit” and “overload” protection</p>


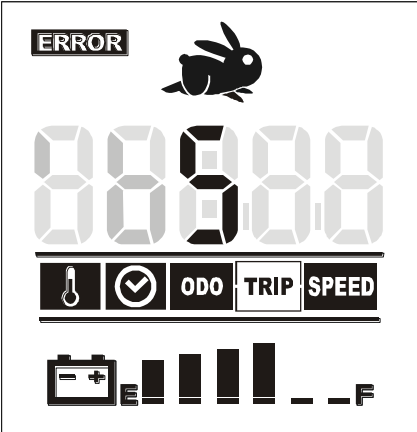
5-9. Brake and Reversing Light

ITEM	<b><u>DESCRIPTIONS</u></b>
Operation Feature	Take exterior WIP / RBK / Headlight / Back-up lamps switch as determinant signal.
Control Mode	<ul style="list-style-type: none"> <li>● Judge to be “Brake” or “Handbrake” state, when WIP (accelerator) signal changed from actuated to neural position, and will recover automatically after 3 seconds (Brake-Light Mode).</li> <li>● Judge to be “Reverse” state, the brake light flashes (Reversing-light Mode)</li> <li>● When the headlight and position light was turned on/off, and the brake light will be turn on/off simultaneously.</li> </ul>
Usage Condition	While (1) controller closed (2) Charging-Mode, the function will be disabled.
Determinant Condition	<ul style="list-style-type: none"> <li>● Parking status is adjusted by “motor direction” and “controller”</li> <li>● Warning sound of parking was managed by controller</li> </ul>
Remarks	(1) Loop Load: 24V/50W max (2) With “short circuit” and “overload” protection (electric type)
Flicker Frequency	1 second

5-10. Direction Indicators and Parking Light

ITEM	<b><u>DESCRIPTIONS</u></b>
<p><b><u>Operation</u></b></p> <p><b><u>Feature</u></b></p>	<p>Take exterior left-right direction indicators and parking lamp switch as the determinant signal.</p>
<p>(Control Mode)</p> <p><b>Left-direction lamp</b></p> <p><b>Right-direction lamp</b></p> <p><b>Parking lamp</b></p>	<p>Press button  once, the left-indicator  start to flash, and the warning sound act simultaneously, then press button again to switch off the indicator.</p> <p>Press button  once, the right-indicator  start to flash, and the warning sound act simultaneously, then press button again to switch off the indicator.</p> <p>Press button  once, the right /left/ park indicators    start to flash, warning sound act, then press button again to turn off above indicators.</p>
<p><b>Usage Condition</b></p>	<p>While (1) KEY OFF (2) Charging-Mode (3) Sleep-Mode, the function will be disabled.</p>
<p><b>Flicker Frequency</b></p>	<p>1 second</p>
<p><b>Warning Sound Frequency</b></p>	<p>One short “Bi” sound per second</p>
<p><b>Determinant Condition</b></p>	<p>Left-Right indicators have priority to Parking lamp. &lt;Ex.&gt; If “Parking lamp” turned on already, now you start “Right indicator” function, the flashing indicator lamps will change from both side (left &amp; right) to right side, and the “Parking lamp” function will be closed.</p>
<p><b>Remarks</b></p>	<p>(1) Load circuit for left-direction light: 24V/50W max (2) Load circuit for right-direction light: 24V/50W max (3) With “short circuit” and “overload” protection</p>

5-11. Malfunction Messages

ITEM	<b><u>DESCRIPTIONS</u></b>																																									
Operation Feature	Take the connector pin (KEY) of controller as determinant signal, then converts it into digital code.																																									
Usage Condition	<p data-bbox="459 421 1326 524">When the controller send out an error message, warning indicator  start flashing with controller signal at same time, the “Error message code” will show on LCD screen.</p> <div data-bbox="691 546 1109 976" style="border: 1px solid black; padding: 5px; text-align: center;">  </div>																																									
Flicker Frequency	1 second																																									
<table border="1" data-bbox="236 1126 1267 1621"> <thead> <tr> <th data-bbox="236 1126 432 1279">Controller message (Flicker)</th> <th data-bbox="432 1126 592 1279">Message code</th> <th data-bbox="592 1126 751 1279"><b>ERROR</b> symbol</th> <th data-bbox="751 1126 1267 1279"><b><u>Status</u></b></th> </tr> </thead> <tbody> <tr> <td data-bbox="236 1279 432 1317">1</td> <td data-bbox="432 1279 592 1317">--</td> <td data-bbox="592 1279 751 1317">--</td> <td data-bbox="751 1279 1267 1317">Battery needs charge soon.</td> </tr> <tr> <td data-bbox="236 1317 432 1355">2</td> <td data-bbox="432 1317 592 1355">2</td> <td data-bbox="592 1317 751 1355">On</td> <td data-bbox="751 1317 1267 1355">Low-voltage, needs charge now</td> </tr> <tr> <td data-bbox="236 1355 432 1393">3</td> <td data-bbox="432 1355 592 1393">3</td> <td data-bbox="592 1355 751 1393">On</td> <td data-bbox="751 1355 1267 1393">Over-voltage</td> </tr> <tr> <td data-bbox="236 1393 432 1431">4</td> <td data-bbox="432 1393 592 1431">4</td> <td data-bbox="592 1393 751 1431">On</td> <td data-bbox="751 1393 1267 1431">Over-current</td> </tr> <tr> <td data-bbox="236 1431 432 1469">5</td> <td data-bbox="432 1431 592 1469">5</td> <td data-bbox="592 1431 751 1469">On</td> <td data-bbox="751 1431 1267 1469">Park Brake lost or faulted</td> </tr> <tr> <td data-bbox="236 1469 432 1507">6</td> <td data-bbox="432 1469 592 1507">6</td> <td data-bbox="592 1469 751 1507">On</td> <td data-bbox="751 1469 1267 1507">Accelerator not align center</td> </tr> <tr> <td data-bbox="236 1507 432 1545">7</td> <td data-bbox="432 1507 592 1545">7</td> <td data-bbox="592 1507 751 1545">On</td> <td data-bbox="751 1507 1267 1545">Accelerator broken or faulted</td> </tr> <tr> <td data-bbox="236 1545 432 1583">8</td> <td data-bbox="432 1545 592 1583">8</td> <td data-bbox="592 1545 751 1583">On</td> <td data-bbox="751 1545 1267 1583">Motor broken or faulted</td> </tr> <tr> <td data-bbox="236 1583 432 1621">9</td> <td data-bbox="432 1583 592 1621">9</td> <td data-bbox="592 1583 751 1621">On</td> <td data-bbox="751 1583 1267 1621">Others</td> </tr> </tbody> </table>			Controller message (Flicker)	Message code	<b>ERROR</b> symbol	<b><u>Status</u></b>	1	--	--	Battery needs charge soon.	2	2	On	Low-voltage, needs charge now	3	3	On	Over-voltage	4	4	On	Over-current	5	5	On	Park Brake lost or faulted	6	6	On	Accelerator not align center	7	7	On	Accelerator broken or faulted	8	8	On	Motor broken or faulted	9	9	On	Others
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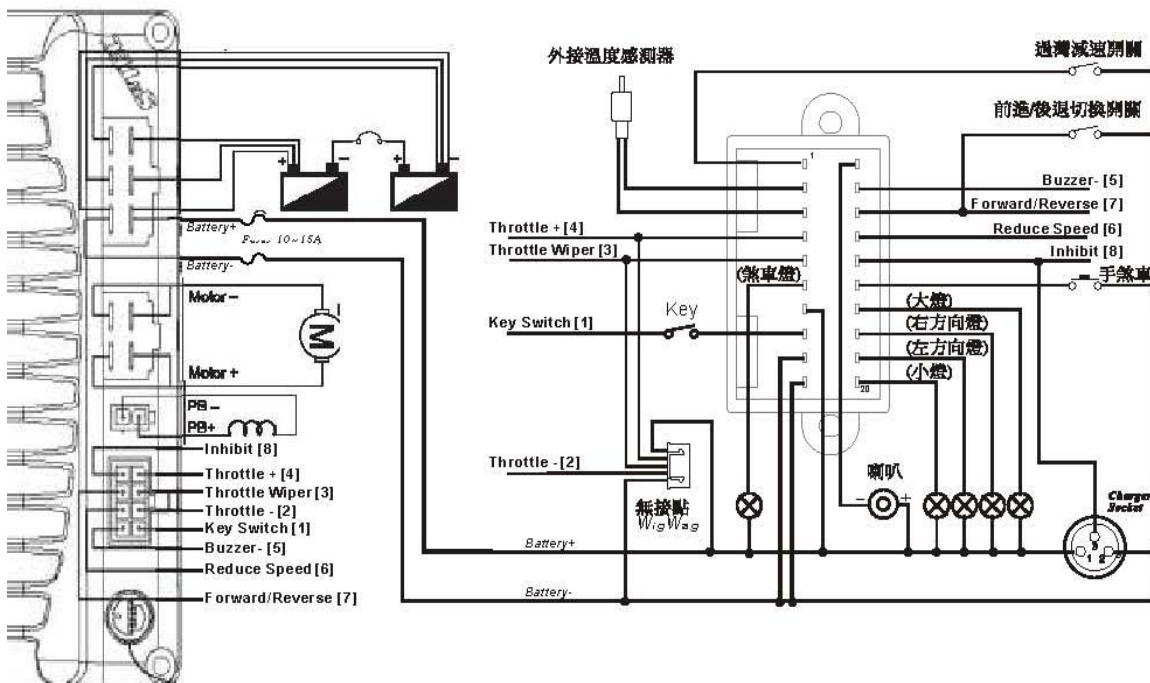
## 5-12. Power-On-Self-Test

ITEM	<b><u>DESCRIPTIONS</u></b>
Initial Status	When scooter power on, the control panel will take a self-test first; the backlight and all LCD segments will be tuned on for 3 seconds, then switch automatically to the default working mode.
LCD Backlight	When press <b>MODE</b> + <b>SET</b> buttons, the LCD backlight will illuminate and turn off automatically if the button doesn't be operated for longer than 5 seconds.

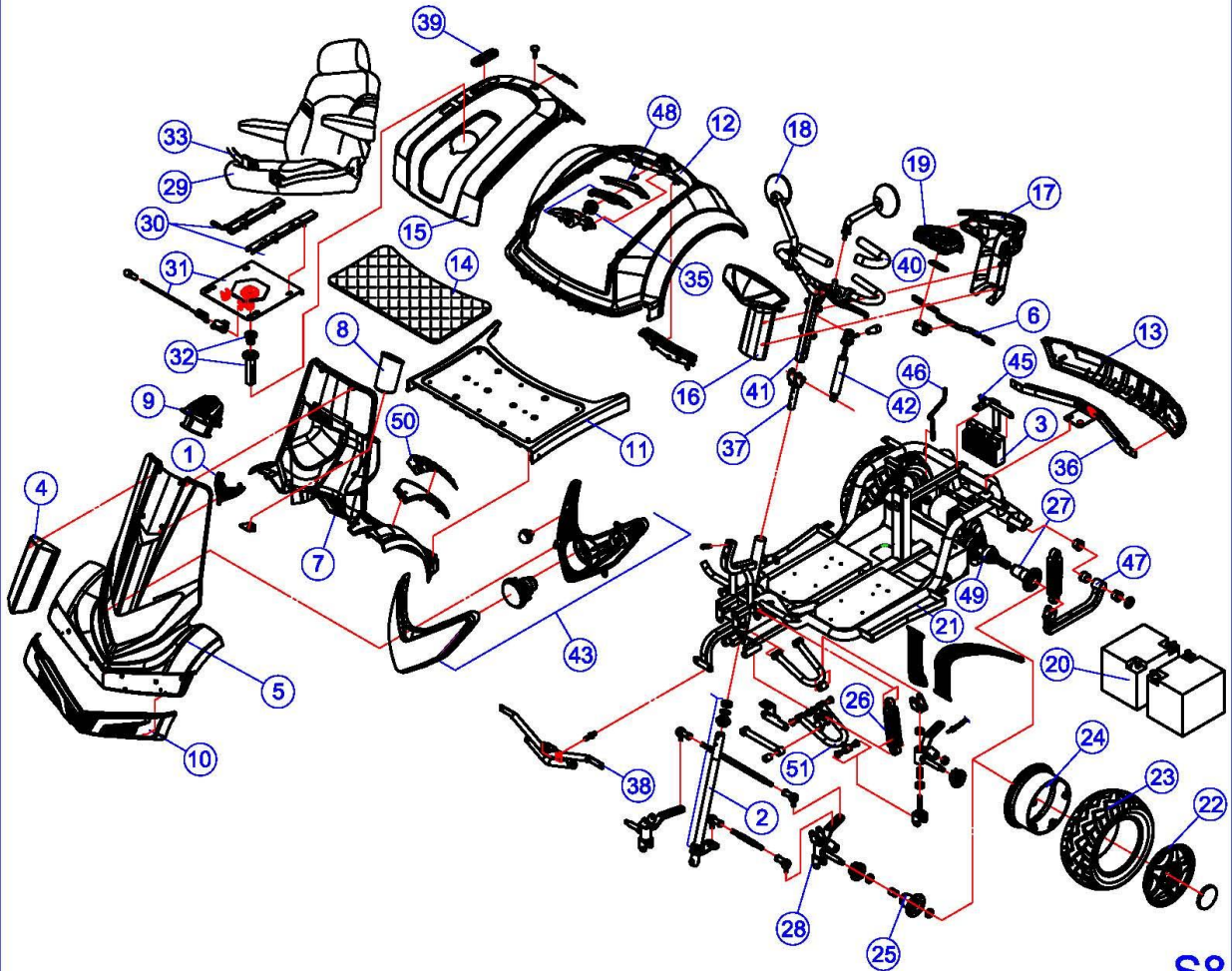
## 6. System Configuration

ITEM	SPECIFICATION
<b><u>Controller</u></b>	RHINO Series
Wig-Wag	CTE NCW-K001
Bulbs	24V / 50W max

## 7. Circuit Diagram



- |                        |                        |                              |
|------------------------|------------------------|------------------------------|
| ① CP SHIELD            | ⑱ REAR VIEW MIRROR     | ⑳ REAR LIGHT                 |
| ② WELDED STEERING STEM | ⑲ CONTROL PANEL        | ㉑ REAR BUMPER BRACKET        |
| ③ CONTROLLER           | ⑳ BATTERY              | ㉒ FOLD BRACKET               |
| ④ FR CAP               | ㉑ BATTERY              | ㉓ FRONT BUMPER BRACKET       |
| ⑤ FF COVER             | ㉒ ALIUMINUM RIM        | ㉔ PLUG                       |
| ⑥ WIGWAG               | ㉓ TYRE                 | ㉕ SPACER FOR POETNTIAL METER |
| ⑦ FR COVER             | ㉔ INNER RIM            | ㉖ TILLER FRAME               |
| ⑧ DRINK BRACKET        | ㉕ FIXING BOLT WITH HUB | ㉗ TILLER RAM MECHANISM       |
| ⑨ RUBBER DUST COVER    | ㉖ SUSPENTION           | ㉘ HEAD LIGHT                 |
| ⑩ FRONT BUMPER         | ㉗ HUB                  | ㉙ REAR LAMP                  |
| ⑪ MAIN FRONT SHROUD    | ㉘ FRONT AXLE           | ㉚ SUPPORT BRACKET            |
| ⑫ REAR COVER           | ㉙ CAPTAIN SEAT ASM     | ㉛ RELEASE LEVER              |
| ⑬ LAMP CAP             | ㉚ SEAT SLIDING RAIL    | ㉜ SUSPENTION BRACKET         |
| ⑭ CARPET               | ㉛ SEAT BASE            | ㉝ CP SHIELD                  |
| ⑮ MAIN REAR SHROUD     | ㉜ SEAT SLIDING POST    | ㉞ TRANSAXLE                  |
| ⑯ FRONT TILLER COVER   | ㉝ SAFETY BELT          | ㉟ FRONT FLOOR                |
| ⑰ REAR TILLER COVER    | ㉞ REAR LAMP            | ㊱ DOUBLE A ARM               |



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