



ORYX

User Manual

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## 1.Overview of the User Manual

Thanks for purchasing LeaperKim electric unicycle. We will wholeheartedly provide you with satisfactory products and services.

This vehicle is strictly prohibited to drive on the motorway. It must be confirmed that it fits to the requirements of local laws and regulations. Do not use this product in the areas prohibited by laws and regulations. Do not use this product at the speed specified by local laws and regulations.

In order that you can ride LeaperKim electric unicycle more safely, please carefully read and understand all the product information and precautions listed in this manual before riding, and refer to the instruction to use LeaperKim electric unicycle.

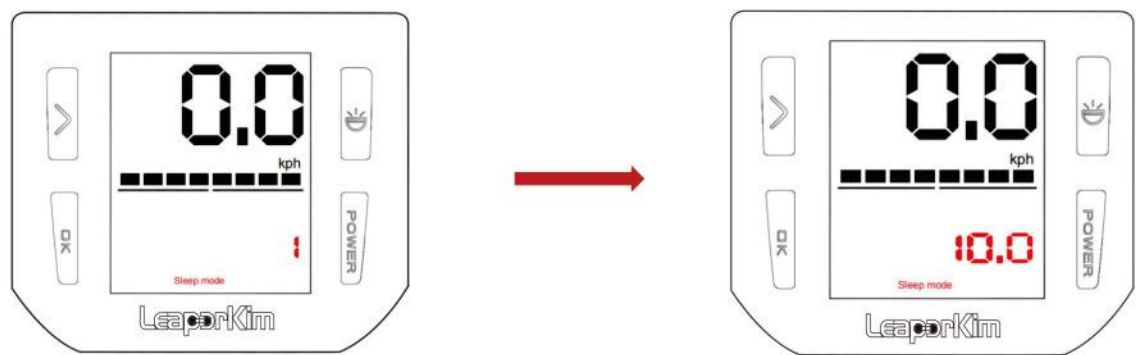
Please maintain the vehicle regularly, which will help to keep the performance and resale value of the vehicle product.

Please keep this manual for future after-sales use.

Your satisfaction with LeaperKim electric unicycles is our driving force!

Guangzhou Coyote Intelligent Equipment Co., Ltd

2.Unlocking Sleep Mode



- Long press and hold the POWER button for 10s, number on display will change from 1 to 10, the vehicle will make a long sound and release button to unlock Sleep Mode;
- Connecting charger will allow you to unlock Sleep Mode directly;

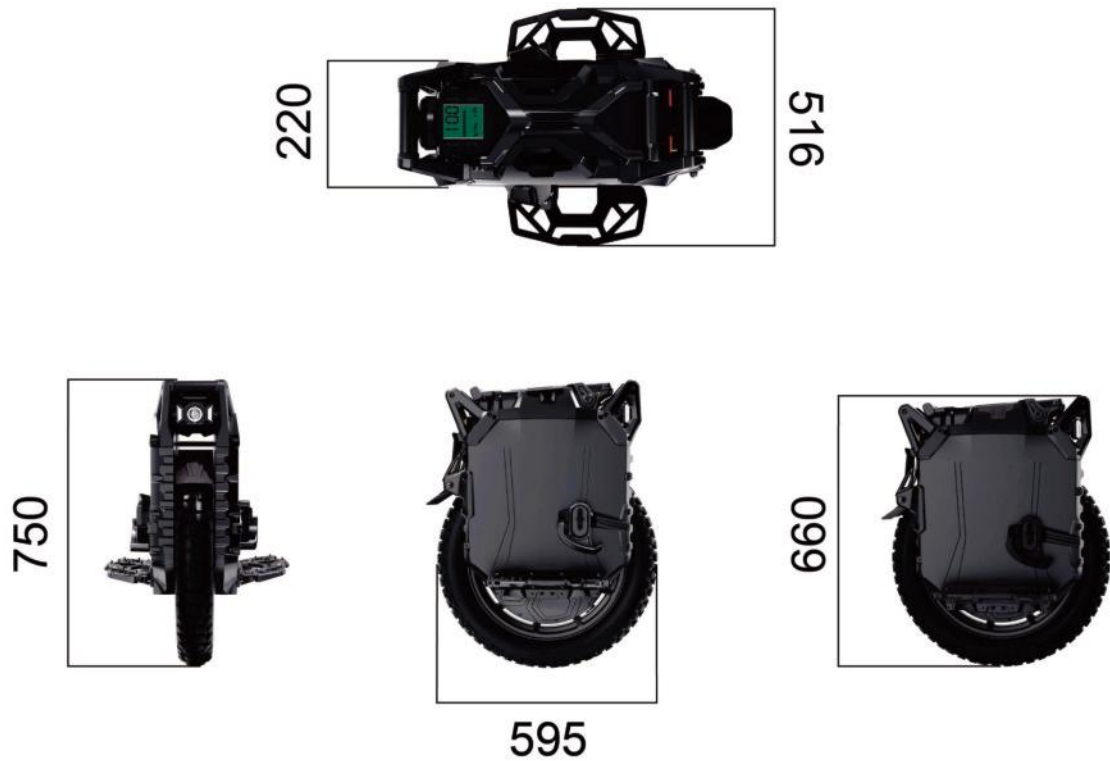
Setting it to Sleep Mode during transportation prevents the 'POWER' button from being accidentally pressed to power it on;

3.Description of Product

3.1 Function Schematic



### 3.2 Product Size Drawing



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### 3.3 Product Specification

Model Name	ORYX
Safe Speed	19km/h
Motor Power	Rated Power 4200W Peak power 10500W
Operating Temperature	-10℃-80℃
Battery	Samsung INR21700-50S,2 groups of batteries, 42 in series and 3 in parallel (176.4V)
Max Load	150kg
Charger	176.4V,5A
Charger Time	6h (5A), 3h(10A)
Color	Black
Dimension and Weight	
Dimension	630mm*220mm*750mm
Net Weight	≈57.5kg
Pedal Dimensions	130mm*310mm
Height of the Pedals from the Floor	Raised height is 270 mm, lowered height is 250 mm.
Hardware	
Shock Absorption	Fastace Mid-mounted Bidirectional Oil-Spring Suspension, damping adjustable,travel range 90mm.
Pedal	Magnesium alloy material.
Intelligent Protection Board	Monitoring of each voltage string, with 6 different zones for temperature monitoring, current display, etc.
Control Board	Double layer control board;aluminum substrate thermal conductivity, the use of copper strips and columns to accelerate the conductivity and heat dissipation, 48 high-voltage mos, support up to 1120A current.
Motor	Magnesium alloy rim, wider and thicker side cover.
Tire Size	3.5-16(595mm)
Trolley Handle	Magnesium alloy hidden trolley handle.
Display	Displays speed, voltage, mileage, mode switching, calibration, battery status, etc.

Charge Port	Dual charging ports support up to 20A
Headlight	20w,2500lm high-brightness lens headlight
Taillight	Turning, braking warning light.
Software	
Fault Self-inspection	High temperature, over-discharge, over-voltage offset and right battery packs, charging current exceeding the set value, motor hall abnormality, high temperature of vehicle, etc.
Angle Protection	Front and back tilt to 68°, the left and right tilt can be set to 35°~75° through display.
Riding Model	Riding hardness value could be set from 0%-100% through display.
PWM Tilt-back	PWM Tilt-back value could be set from 30%-100%through display.
Speed Tilt-back	Speed Tilt-back value could be set from 10kph-200kph through display.
Speed Alarm	Speed alarm value could be set from 10kph 200kph through display
Button Volume	Button volume value could be set from 0-100% through display.
Low Battery Mode	Could be switched on through display.
High Speed Mode	Could be switched on through display.
Low Voltage Protection	Alarm at 136.5V,tilt back at 132.3V.In Low Battery Mode,alarm at 128.1V ,tilt back at 123.9V.
Temperature Alarm	80℃.
Other Functions	Multiple functions adjustable, supports data logging.
Hall Error Fixment Algorithm	Smart Field Weakening to speed up.
No Hall Emergency Mode	Even without Hall it can continue riding on city road.
Smart Field Weakening to Speed up	Increase speed safety margin through software algorithm.
Motor Anti Blocking Rotation	Blocking motor rotation wil not damage motor or controller.
APP	
Vehicle Information	Vehicle speed, voltage, distance and battery information are viewable.
Vehicle Setting	Vehicle mode changing,calibration,power tilt-back seting,speed tilt-back setting, speed alarm setting etc.

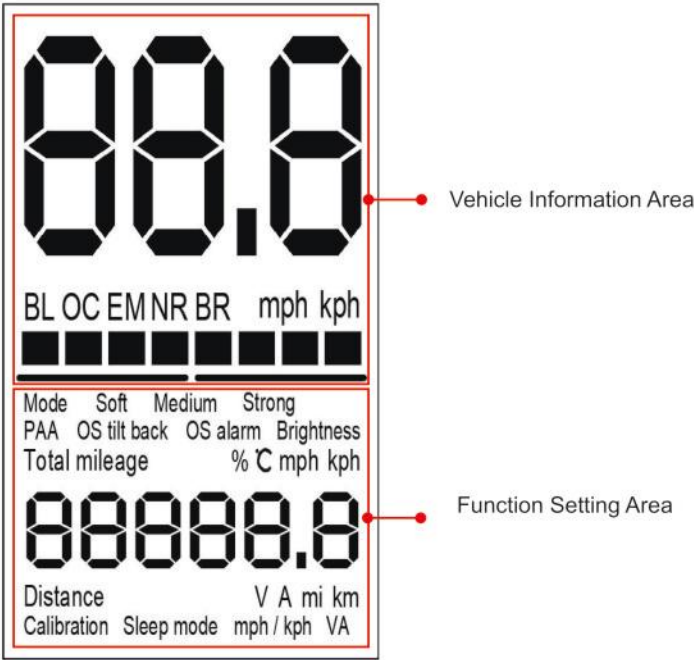
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4.Setting Page

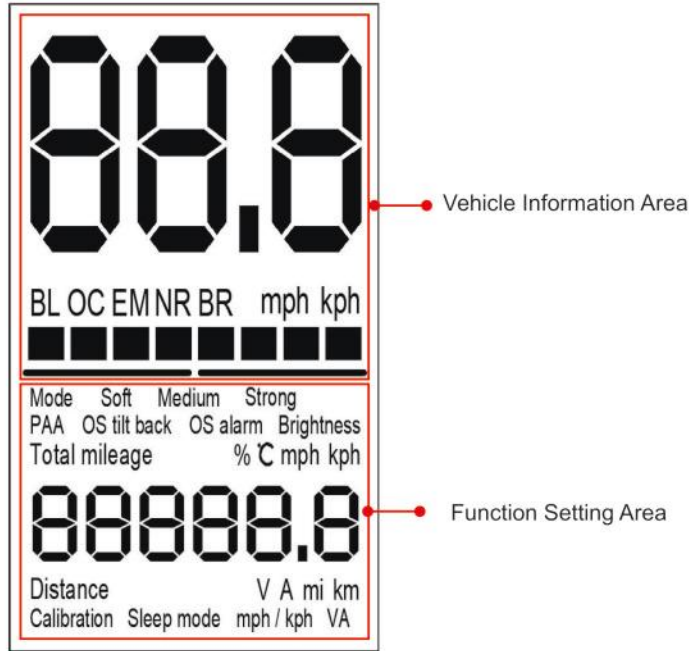
4.1 Introduction of Display Basic Page

After powering on vehicle, press and hold the 'OK' button for 2s, after 2 beeps you will enter the setup page.



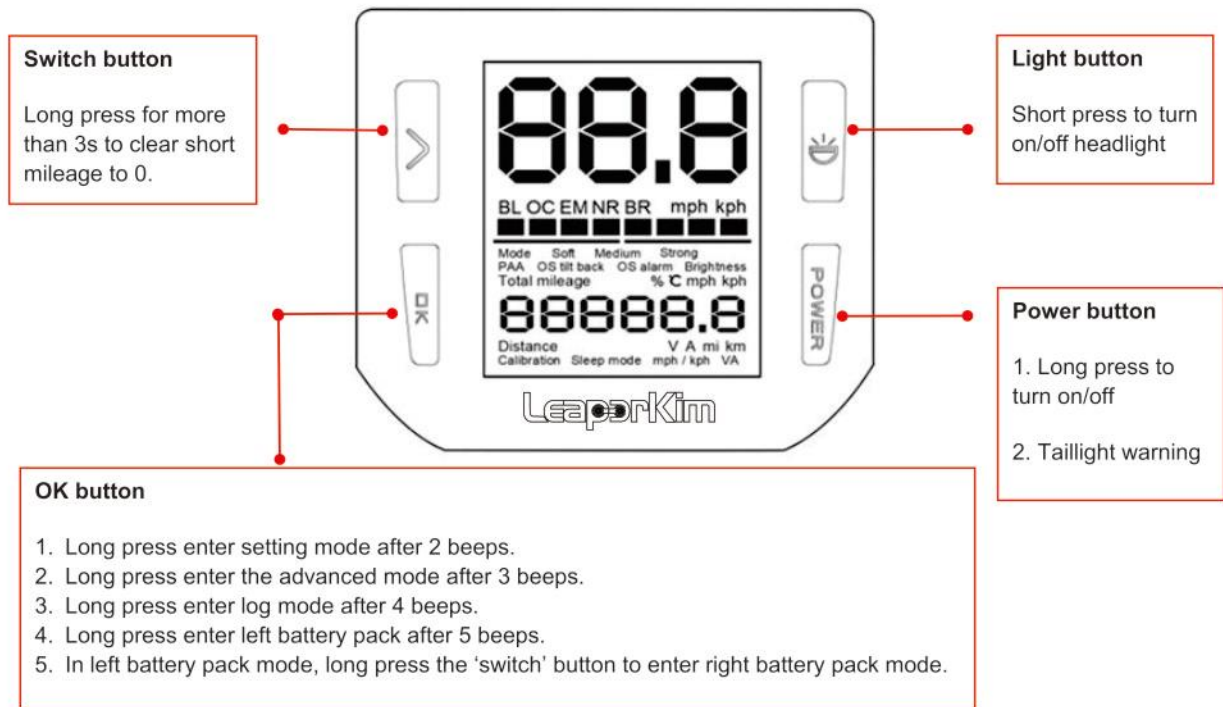
Icon	Name
Distance	Short distance
Total mileage	Total mileage
°C	Bottom board temperature
V	Battery Voltage
A	Output Current
V A	Output Power

4.2 Information



Icon	Name
88.8	Speed per hour
BL	Left battery pack status
OC	—
EM	—
NR	—
BR	Right battery pack status
mph	Miles per hour
kph	Kilometer per hour
■ ■ ■ ■ ■ ■ ■	Vehicle power
— —	Left battery pack signal
— —	Right battery pack signal

### 4.3 Button Settings Introduction



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### 4.3 Button Settings Introduction



1. Power on wheel to enter basic page, long press 'OK' button on the basic page, after release it hearing two beeps to enter setting page;
2. On setting page, press 'Switch' button to select setting item, press 'OK' button to adjust the specific value of the setting item;
3. Short press 'OK' button is for forward settings; Long press 'OK' button for 0.5s and release it immediately after sound hearing one is backward settings;
4. After completed settings, press and hold the 'OK' button for 1s, release it until hearing the sound and display returning to basic page; Wait for 20s, it will save settings automatically, or power off it and re-power on will save it automatically. In these two ways to finish settings ;

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#### 4.4 Password setting



Figure 1

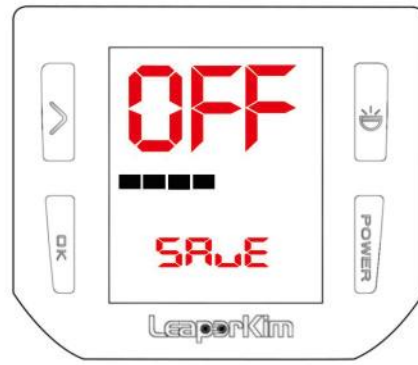


Figure 2

##### Password Setting :

- Step 1: Long press 'OK' button on the basic page to enter setting page; Short press the 'Switch' button to enter — — O P — — interface.
- Step 2: Input the old password (default: 000000). Press the 'Switch' button to select the digit position for modification, and press 'OK' button to change the content. The system will automatically switch to the new password setup page after the old password is verified. (Figure 1)
- Step 3: Set the new password, configure the lock mode(ON: Automatic locking for each operation, OFF: Manual locking mode). SAVE to confirm (Figure 2). Setting the password 000000 will cancel the password function.

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#### 4.5 Lock Mode and Unlock



When in OFF mode, it needs to be locked manually:

- Method 1: Press and hold 'OK' button while pressing 'power' button;
- Method 2: Press 'power' button three times within 1 second, with the third press being a long press;

When in ON mode, automatic locking is enabled;

Unlocking: Enter the correct password and press the ' power' button to confirm.

Restrictions in case of password error:

- If the password is entered incorrectly, the vehicle cannot be power off for 5 minutes. It can be powered on by re-entering the correct password;
- If there are more than four incorrect password attempts, the locking time will be extended;
- If the vehicle stays on the locked interface for more than 20s, moving it will trigger an alarm.

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## 4.6 Pedal Settings



Pedal softness settings:

- Long press 'OK' button to enter the pedal settings;
- Short press 'OK' button to adjust the value;
- Adjust the value from 0 to 32% as Soft; 34% to 66% as Medium; 68% to 100% as Strong;



Pedal angle adjustment:

- Short press the 'Switch' button to enter the pedal angle adjustment;
- Short press 'OK' button to adjust the angle value ,  $\pm 8^\circ$  can be adjusted;
- Foot pedal tilt angle, according to the user's personal habits and preferences to adjust their own;

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## 4.7 Tilt-back Settings



Speed tilt-back settings:

- Short press the 'Switch' button to enter the speed tilt-back settings ;
- Short press 'OK' button to adjust the speed value, the adjustable range is 10kph to 200kph, set it to 200kph is to disable speed tilt-back;
- For example : adjusting the speed value to 20kph, when vehicle's speed reaches 20kph, pedal will be slightly tilt-back to warn user, it has reached speed limit;



Power tilt-back settings:

- Short press the 'Switch' button to enter the power tilt-back settings;
- Short press 'OK' button to adjust the power value, the adjustable range is from 30% to 200%, set it to 200% is to disable power tilt-back settings;
- For example: adjust the power value to 65%, when vehicle driving power reaches 65%, pedal will be slightly tilt-back to warn user, it has reached speed limit;

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#### 4.8 Over-speed Alarm Settings



Function introduction:

- Short press the 'Switch' button to enter the over-speed alarm settings;
- Short press 'OK' button to adjust the speed value, adjustable range of 10kph ~ 200kph, set it to 200kph is to cancel the speeding alarm;
- Buzzer sound reminder, when the vehicle reaches the speed that the user set, buzzer will beep to warn user about the over-speed;

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#### 4.9 Screen Brightness Settings



Function introduction:

- Short press the 'Switch' button to enter screen brightness settings;
- Short press 'OK' button to adjust the brightness of the screen backlight, the adjustment range is 0-100%;

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#### 4.10 Vehicle Balance Calibration

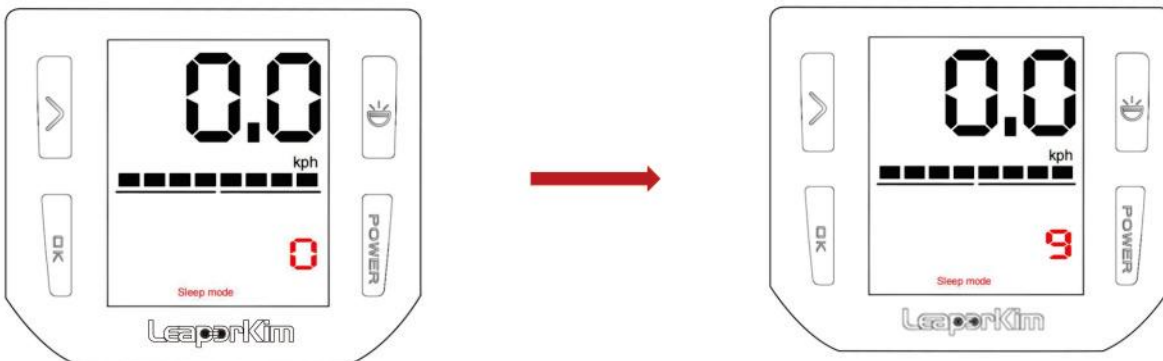


Function introduction:

- Short press the 'Switch' button to enter the Vehicle balance calibration;
- Vehicle leveling settings;
- Horizontally stand up the vehicle, when display shows '0', press 'OK' button display shows '1', vehicle power off, then adjust the horizontal position of the vehicle to complete the horizontal angle adjustment. Keeping the vehicle stationary, press the 'OK' button again, the display will appear '3' and vehicle makes two beeps. These mean the vehicle complete the horizontal calibration setting;

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#### 4.11 Sleep Mode Setting



Function introduction:

- Short press the 'Switch' button to enter the sleep mood setting;
- Short press 'OK' button, screen will show 0 to 9, the vehicle will make a long beep then enter the sleep mode;
- Press 'POWER' button to power off vehicle to finish sleep mode setting;

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#### 4.12 Kilometers/Miles Unit Switching



Switch speed unit:

- Short press the 'Switch' button to enter the km/mi unit setting;
- Short press 'OK' button to switch the vehicle speed unit from mph to kph;

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#### 4.13 Voltage Adjustment

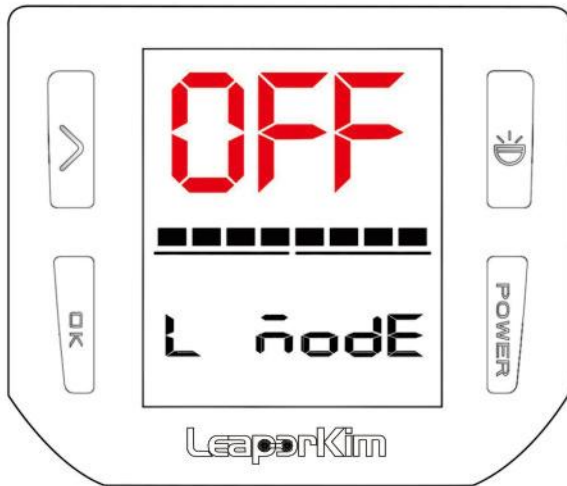


Voltage adjustment:

- Short press the 'Switch' button to enter the Voltage Adjustment;
- Different environment temperature, and different resistance of electronic components will make voltage float. Users can slightly adjust voltage by enter this page and press the 'OK' button;

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#### 4.14 Low Battery Mode Setting



##### Function introduction:

- Short press the 'Switch' button to enter the low battery mode setting;
- OFF mode: alarm when voltage is lower than 136.5V, tilt-back when voltage is lower than 132.3V;
- ON mode: alarm when voltage is lower than 128.1V, tilt-back when voltage is lower than 123.9V;
- Low battery mode is a power emergency mode, use it too often shorten battery life, so it is not recommended to use is at normal situation;
- When the vehicle voltage lower than 136.5V and starts to tilt-back, turn on this mode will have 5km range for emergency;
- Do not ride it too fast, and do not accelerate or decelerate rapidly in this mode;

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#### 4.15 High Speed Mode



##### Function introduction:

- Short press the 'Switch' button to enter the high speed mode;
- OFF mode: Max free-load speed is 130km/h;
- ON mode: Max free-load speed is 150km/h;

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#### 4.16 Angle Protection Settings



Angle protection settings:

- Short press the 'Switch' button to enter the angle protection setting;
- 35°~75° set-able;
- The higher the value set, the greater angle can be inclined;
- When the incline angle of the vehicle is greater than the set value, the vehicle will enter the Angle protection mode and be power off subsequently;

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#### 4.17 Button Volume Settings



Function introduction:

- Short press the 'Switch' button to enter the button volume settings;
- Short press 'OK' button, volume can be set between 0-100;
- The lower the value, the lower the volume of the button;

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#### 4.18 Charging Voltage Settings

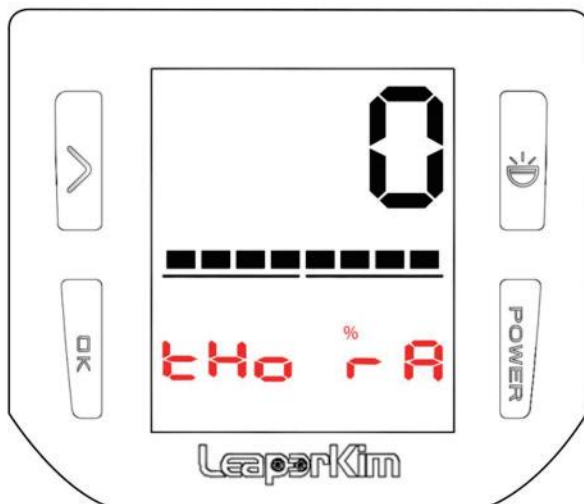


Charging voltage setting :

- Short press the 'Switch' button to enter the charging voltage settings;
- Charging limit voltage can be set;
- Rated voltage of charger is 176.4V. Users can set vehicle charging voltage down to 168V;
- If limit charging voltage is set to 168V, the maximum voltage to complete charging will be 168V;

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#### 4.19 Acceleration Assist Settings



Function introduction:

- Short press the 'Switch' button to enter the acceleration assist settings;
- Acceleration assist, enable faster accelerating, more powerful braking;
- Short press 'OK' button 5 times to unlock acceleration assist settings;
- Value 0 to 100% set-able;

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## 5.Error Codes and Causes

NO.	Code	Cause
1	br tEā	Right battery high temperature alarm
2	bl tEā	Left battery high temperature alarm
3	bt LoY	Battery pack overdischarge alarm
4	u HCGH	Battery pack overpressure alarm
5	E CHNf	Charging current exceeds set value alarm
6	E HALL	Motor Hall error alarm
7	t HCGH	Controller high temperature alarm
8	Er obt	Generator power failure protection
9	FULL "	Over 3s downhill on full charge

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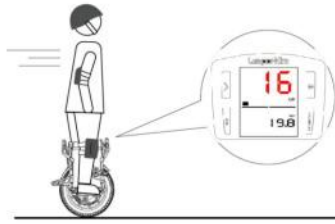
## 6.Mid-mounted Bidirectional Oil-Spring Suspension



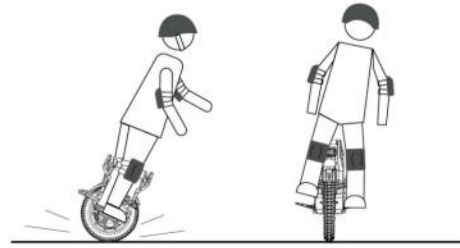
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## 7.Usage Notice

Do not carry out any dangerous



Do not drive at high speed or accelerate sharply when the battery is low.



No jumping or riding on one foot.

This product is not allowed to be disassembled or repaired by non-professional personnel. If the machine is disassembled by oneself, the product warranty service will no longer be covered.

If the vehicle makes alarms, please stop riding it immediately and sent to the professional service center for maintenance in time.

Please carefully read and understand all the product information and precautions listed in this manual and follow the use behavior suggested in this manual to avoid unnecessary loss and injury, otherwise you need to bear all the consequences arising therefrom.

During the production or sales of this product, design changes and further improvement will be carried out continuously. In case of any discrepancy with this manual, please refer to the actual product.

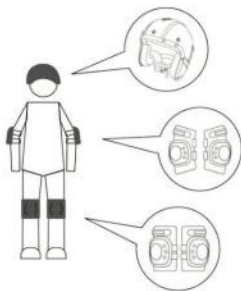
The production is strictly prohibited to drive on the motorway. It must be confirmed that it fits to the requirements of local laws and regulations. Do not use this product in the areas prohibited by laws and regulations. Do not use this product over the speed specified by local laws and regulations.

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## 7.Usage Notice

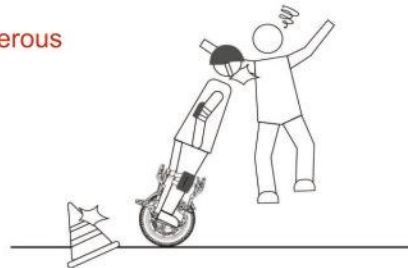
The following persons are prohibited from riding this product:

1. Persons who are under the influence of drugs or alcohol and have limited mobility and reaction ability. Or people with hypertension, cardiovascular and cerebrovascular diseases or other high-risk diseases.
2. Minors under 14 years old, pregnant women, mentally ill and the elderly over 60 years old.
3. Do not use this product in darkness or where vision is obstructed, or on slippery, waterlogged or potholed surfaces.

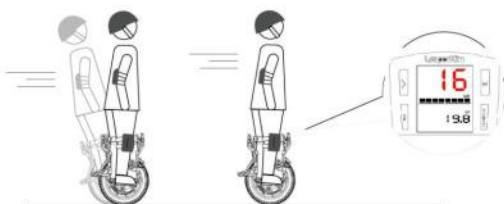


Please wear helmet, knee pads, elbow protectors, gloves and other protective equipment before using this product.

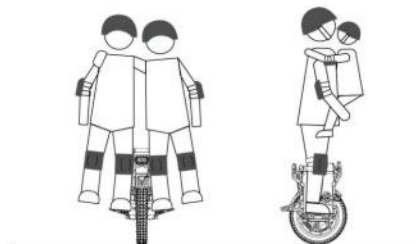
Do not carry out any dangerous



Please control the speed reasonably where there are people or obstacles, and no over-speed riding.



No reversing or over-speed riding.



Do not take anyone with driver.

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## 8.Maintenance

- Use this product frequently, and check whether the screws are loose on time.
- Check the tire pressure on time. The suggested pressure is 2.5-3.0bar.
- Better to put the vehicle in the dry area.
- Charge the battery to full charge at least once every two months if the vehicle is infrequently utilized.
- Avoid recharging when the battery is completely discharged.
- Avoid placing the vehicle in the environment which temperature is above 50 °C or below - 20 °C.
- Do not use chargers other than the standard charger for charging.
- Do not immerse this product in water and wash it with high-pressure water gun.

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## 9.Warranty

NO.	Type	Items	Warranty time
1	Controller	Controller, motor	24 months
2	Battery	Battery packs	18 months
3	Charger	Charger	12 months

The following conditions are not covered by the warranty and need to pay for maintenance :

- The validity period of three guarantees has expired.
- Damage caused by human factors.
- Damage caused by force majeure.
- All kinds of damage caused by failure to use, maintain and transform according to the requirements of the user manual.
- Failure or damage caused by forced use of this product beyond normal conditions.
- The product has been disassembled or maintained by personnel without authorized by our company.
- Malicious damage to warranty content and vehicle body information.
- Other faults or damages not caused by the design, technology, quality, manufacturing and other problems of the product itself.
- Natural wear and tear that does not affect the function.

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10.Packing List

Packing list				
No.	Description	Unit	Qty	Note
1	Unicycle	PCS	1	
2	Charger	PCS	1	
3	User Manual	PCS	1	
4	Vehicle Information Card	PCS	1	



Manufacturer: Guangzhou Coyote Intelligent Equipment Co., Ltd.  
ADD: Part 1 of 3rd floor, No. 45-2, Northern Industrial Road, Xinlou  
village, Baiyun District, Guangzhou, China  
Tel: +86 18950885873  
Email: support@leaperkim.com

**FCC Warning:**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**Caution:** Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 0cm between the radiator and your body.