

Ningbo Kaabo Technology Co., Ltd.

Mantis King

User Manual

Company Introduction

Kaabo Co. LTD., is a company who manufacture high quality electric scooters and accessories at market-leading prices since 2013.

Our scooters are about the joy of player. Each model has been handcrafted to give scooters true freedom. Take to the open road, or cross terrain which would be impossible on a normal scooter – Kaabo scooters push the boundaries of what 's possible.

Our Story

'KAABO ' focus on "high-power" electric scooters. Since 2016, the electric scooter market has become increasingly competitive.

After 7 years of development, Kaabo has accumulated more than 25 patents, especially in terms of how to maintain the stability and safety of the vehicle under high speed and long battery life. We have obtained a lot of practical data to ensure the quality of the product.



Please read the user manual carefully.

Do not use the product until you understand its functions.

Do not rent the product to anyone who can't operate the product.

*For the first time, the user should use it with a slow speed' for safety.

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Before Reading Manual

This manual contains important information to help you to use your product more safely. For safe use, it is marked as 'Danger', 'Caution' and 'Warning' depending on the degree of danger and the meaning is as below.



Danger: Indicates a hazardous situation that could be a result of serious injury.



Warning: Indicates a potentially hazardous situation that could be a result in light injury.



Caution: Indicates a potentially hazardous situation that could be a result in serious injury.

1) Safety guidelines and restrictions

* Even if it is within the warranty period, you may be liable for any accident caused by any of the following causes.

**1. Be careful of water!**

This product and components are not waterproof. Don't let the water get into the product and components.
* Never use it, if the road is wet due to the rain, snow, hailstone.

* If you wash or spread water to electric devices, it can result in malfunction or fire.

**2. Beware of folding and spinning parts!**

If parts of the body, as a finger or hair, get caught in the spinning or folding parts of the product, this may lead to severe injuries. Please be careful.

**3. No acrobatics**

Stunts and jumps such as jumping and dropping are prohibited as they can cause a great impact on the product and can cause malfunction and accidents.

**4. No companion boarding**

This product is intended for one adult only, so children, infants, or two people are prohibited from boarding.

**5. Don't tune by yourself**

Do not open or tune the electric parts (battery, controller or motor system).

**6. Comply with the related laws**

Unlicensed, driving after drinking, loading cargo on the scooter is prohibited. (More than bike or bicycle license is required)
Please comply with the Road Traffic Act and related laws and regulations according to the place of use.

**7. Beginners and seniors are encouraged to use at low speed**

Beginners who are not accustomed to use the product, seniors and others should avoid high speed mode driving and recommend low speed driving. In addition, please use after practice how to ride safely in a wide place.

**8. Do not sudden brake with front brake**

If there is a risk of overturning, sudden deceleration should be done safely. Do not apply any unusual behaviors or artificial forces, such as stopping with your feet.

**9. Do not accelerate downhill**

Slow down at downhill. When reducing the speed, to prevent brake overheat, use the brakes properly to reduce the heat on the disk with proper brake use.

**10. Do not drive on steep slopes**

Acceptable gradeability is different for each product. Excessive hill roads exceeding the specification may cause damage to the product (parts) due to temperature cut, overcurrent or low voltage cut, which may cause the product to malfunction.

**11. Safety warning when lifting the product**

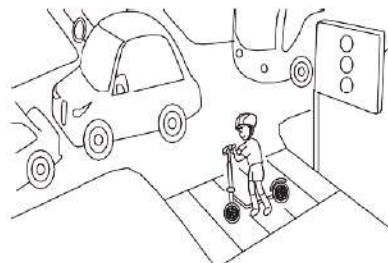
If the product is lifted by holding only the handle, there is a possibility that the product may be damaged due to deformation of the folding part due to load or movement of the product. When lifting the product, be sure to hold the product's body (footrest) with one hand and hold the handle with the other hand so that you do not get hurt in your back or knees.

**12. Be sure to wear safety equipment**

For the safety of passengers, be sure to wear a full face helmet and the other protective gear (knee, elbow, hand, upper body) and do not wear shoes such as slippers, high heels that interfere with driving.

2) Precaution before driving

- Night driving should be avoided in any case, be sure to wear helmets and other guards (knees, elbows, hands, upper body, etc.) and drive safely.
- Select the mode that suits you and drive. In order to cope with the sudden situation, exercise to slow down to hold the brake at all times.
- When turning left / right, slow down to avoid danger of overturning or slipping. And then slowly turn safely.
- To go to backward, it is safe if you getting off from the product after stopping before moving.
- It is prohibited to use in a slippery place, a crowded place, a steep slope, roads with a risk of accident, uneven road.
- When crossing a pedestrian crossing, get off from the product for pedestrian safety.
- Do not drive in a threat any other means of transport, such as animals, pedestrians, bicycles, motorcycles, cars, etc.
- If you pass the speed bumps and obstacles, be sure to slow down.
- When decelerating or braking, do not stop with using foot, but stop with using brake appropriately.
- Be careful that there is a risk of burns due to heat from motor and brake (especially disk rotor) after driving.
- It is prohibited to drive with all the way by holding the handle with one hand.
- Do not ride or drive when the kick stand is down.



Electric wiring diagram

As the drawing is too large and space is limited, please refer to the last two pages for details



Handle



Body frame





Top : Standard battery charger(2A), Standard tool, User manual, Labeling, Body(Lithium battery included)

Do not hold the handlebar only when lifting the product from the box. Please be careful that the fixing slide of the folding part may be damaged, and a safety accident such as a part of the body may be caught. Therefore, when lifting the product, it is necessary to raise the handle bar first, and then slowly lift the body (footrest) of the product with both hands and do not damage the folding part.

Check whether the display screws are tightened



Make a note of the serial number

The serial number can be used to check information such as date of purchase, warranty period, etc., and product information can be checked even if the product is lost or stolen. (May vary depending on branch office situation.)



1) Product folding and Suspension adjustment



1. Open the protection

Pull off protection pin(1) and rotate it to open status.



2. Folding the Stem

Turn down the folding wrench(2) and folding hook automatically away from cross pin. Put down the folding rod and snap the folding hook into position.

3. suspension adjustment

Adjust the red button to change the stiffness of shock absorbers



2)How to start**Step1. Turning on the main switch**

When turning on the product, you can start driving by turning on the main power switch first (when using the built-in battery) and turning on the power of the LCD panel. When driving is finished, turn off the LCD panel and turn off the main power.

* The power of the instrument panel will turn off automatically after a few minutes of inactivity. At this time, the LED lamp is also turned off, so turn it off with the LED lamp button when you turn it on again, and turn off the main power switch after use.

**Step2. Stance for driving**

After tilting the kickstand, find a stable position on the footrest and then hold the handle grip comfortably. Be careful not to raise your foot on the rear fender.

**Step3. Acceleration and deceleration**

Acceleration can be performed by using the throttle of the instrument panel while driving, and the deceleration or stop can be performed by holding the brakes on the handle.

**Caution**

Before driving, be sure to check the folding part, the handle part, the part where the Caution main fixing part of the product is fastened well. And check the position of the fixing slide, the QR lever locking status and the folding part fixing status.

Throttle malfunction caution

Regardless of whether the throttle is operated or not, the motor sensor may continue to operate, causing malfunctions such as sudden acceleration. In this case, holding the brake lever to cancel the operation. This phenomenon may be caused by corrosion of the throttling, immersion of the throttle, disconnection of the magnet, broken off levers, and breakage of the spring. Do not bounce the throttle lever strongly.

3)How to stop

Be sure to use the rear brake first for decelerating when stopping while driving. For safe stop, it is necessary to practice slow down after deceleration with rear brake.

Always use the front and rear brake levers together to stop smoothly and safely after decelerating with the rear brake.



Set the use and strength of the electronic brake among the detailed functions of the instrument panel before driving. When the brake lever works, the electronic brake works together to increase the braking force.

Tip:Check for safe braking

- For safe braking, check whether the brake lever and disc caliper connection (wire damage, external breakage, etc.) are damaged before and after driving, and check brake wear and looseness of brake inner core (Inner wire). In the case of hydraulic brakes, it is also necessary to check the oil leakage or deficiency and always check that the braking force is sufficient.
- Due to various factors such as road surface condition and speed, it may not be possible to stop when brake is operated as expected. The electronic brake and ABS functions are auxiliary functions to further increase the braking force and used. The user should understand the function and expect the operation timing when use this function.

4)Product folding



See the attachment for more details



See the attachment for more details

Option 1



Option 2









1) Basic charging method

1. Open the charging port cap and connect it to the connector of the charger and connect it to the household outlet.
2. Charging status indicator
3. Be sure to close the charging port cap when driving or storing except when charging.
4. When connecting the connector to the charging port, metallic sparks due to voltage difference may be splashed, but this is normal



* Failure of the charger and abnormal conditions can cause electric shock and fire. Learn the correct usage and prevent safety accidents in advance.

 <p>1. Manufacturers and sellers are not responsible for any problems arising from any disassembly, modification, or mixing with other chargers.</p>	 <p>2. The charger is forbidden to be used in places subject to high humidity, heat, flammable materials, confined spaces, or where there is no ventilation such as in a car.</p>
 <p>3. The charger is not waterproof. It is thoroughly controlled to prevent moisture from entering the charger.</p>	 <p>4. Children and pets should not be allowed to approach the charger when they come into contact with them, as they may cause an electric shock.</p>
 <p>5. If the charger lamp does not light, charger fall, strong external shock, long time charge, or cable cover damage, discontinue use immediately and contact the service center.</p>	<p>6. Unplug the charger when you are away from the home for long periods of time.</p> 

7. Use only genuine charger.
8. Do not insert conductors into the charging port.
9. Do not touch the plug for about 10 seconds after unplugging the charger. There is a risk of electric shock from instantaneous discharge.
10. Do not remove the terminal during charging. Charge the internal circuit of the charger and cause malfunction.
11. Do not operate the product during charging.
12. Charging terminals should be firmly contacted during charging and should not be used if terminals are corroded or damaged.
13. When disconnecting the charger from the product, it is safe to hold the terminal without holding the wire.



Caution

* **Short-circuit Caution:** Be careful not to short-circuit the battery because short-circuiting of the battery is very dangerous.

* **Over current Note:** The battery of this product is designed to automatically shut off the power supply to protect the battery when the over current is over 100A.

* **Low Voltage Caution:** The battery of this product is designed to be automatically shut off when the voltage drops below 48V. Do not use the product in the low voltage state.

- Care Lithium batteries should be protected from direct exposure to children and pets.
- Performance
 - Lithium battery is affected by external temperature. In winter, when the temperature is low, the performance of the battery is temporarily deteriorated and the mileage and power output is reduced.
 - Lithium battery has a characteristic that discharge performance is reduced by more than 15% when charging / discharging 300 times or more. If usage time is shortened due to long usage, it should be replaced with a genuine one through the nearest point.
- Charging
 - Lithium battery should be used only with genuine battery and charger supplied from the manufacturer. Any problems caused by use of battery made by the manufacturer, mixed use, or using the charger are not covered by the manufacturer.
 - Charging the lithium battery with a non-genuine charger may cause malfunction or fire.
 - The lithium battery should be charged in a well-ventilated, dry place and around the charger in a place where there is no inflammable material.
 - Lithium battery should be charged at 0 ~ 45 °C and discharged within -10 ~ 60 °C. Charging or discharging at a temperature outside this range may cause malfunction, fire or explosion.
 - In case of moving from cold outside to warm indoor, please charge it after 1 ~ 2 hours. This is to prevent condensation from occurring inside the product due to temperature difference.
- Storage
 - Lithium batteries should be kept away from snow, rain and direct sunlight. Do not store or charge them in a trunk or hot room. Select a dry place and store at room temperature (10 ~ 20 °C).
 - When storing for more than 3 months, charge the remaining battery level to 70 ~ 80% (do not store full charge).
- Trouble symptom, safety
 - Lithium battery should be discontinued immediately if it is damaged or leakage of battery, sour odor, appearance deformation, etc., and contact the place of purchase to get technical support and service.
 - If overheat, smoke or ignition is detected in a product with lithium battery, immediately stop charging and use, move the product outdoors as soon as possible, and then use a fire extinguisher to evolve. Do not spray water or immerse the product in order to evolve, which is more dangerous.
 - Lithium battery pack has very high energy density, so if you charge the battery for a long time in case of



short-circuit, leakage, bad battery, etc., there is a possibility of ignition. Therefore, you should avoid charging for a long time without a person, and charging must be done while the person is aware that the risk of unexpected fire can be avoided.




- Misuse If the lithium battery is short-circuited or the polarity is changed, or if the battery is impacted, malfunction or fire may result. If you think that the battery has been impacted, you should stop charging and using it and visit the nearest point for inspection.
- Water inflow It should be controlled to prevent water inflow into the lithium battery. There is a risk of fire or electric shock if the charger is connected while moisture is present.
- Caution Disconnect the battery from the main unit and prohibit recharging, reinstalling, or using other applications.
- Disposal Disposal When disposing of the lithium battery, the battery should be separated from the product at the point of purchase or near the point so that the charge and discharge terminals are not short-circuited. Dispose of it as industrial waste when disposing of it.



Danger

Battery disassembly prohibited

Battery disassembly, modification and repair are not covered under warranty.

 Mantis King		
Version Name	Mantis King GT	Mantis King PLUS
Color	 	
Battery Type	Li-Ion battery pack 21700	
Battery model	Samsung / LG	Power battery
Configuration	60V24A	60V 20A
Motor power	1100Wh *2 quick separation brushless motor	1000Wh *2 quick separation brushless motor
Max.Speed	25km/h	
Max.Range	Around 90KM(75kgs load, 25km/h flat road continuous riding basis)	Around 70 KM(75kgs load, 25km/h flat road continuous riding basis)
Climbing Angles	<30 °	
Max. load	120kg	
Charger	2*67.2V2A GX16-3 1+2-	
Charging time (use 2A*2)	6 hrs	5 hrs (Standard charge:2A*1)
Charging time (use 5A *2 fast charger)	2.5 hrs (Optional charger)	2 hrs (Optional charger)
Shock Absorber	Front and rear damping&spring adjustable oil spring shock absorber	Front and rear damper spring-adjustable oil spring shock
Brake	full oil hydraulic 140mm brake+EABS	

Light system	LED front light+LED breathing deck light+rear red brake and yellow turn light	
Controller	Sine Wave	
Unfolding size	1274*661*1339mm	
Folding size	1274*661*563mm	
N.W.	33.2 KGS	31.5 KGS
Tyres	10*3.0inch street/off road pneumatic tyre	
Display	TFT Display	Kaabo Display
Product material	Handle, frame, bar material 6061- t6 aluminum alloy and 6082- t6 aluminum forging; Cover PP; Shaft scm440;	
Litterae Credentiales	IPX5 ; EN17128	

Upgrade point from the previous generation :

1. Higher waterproof grade, IPX5
2. Add front and rear turn lights and mobile phone configurable atmosphere lights.
3. Adding an electronic control box, battery, and electronic control system separation, the cables will be simpler, more convenient for after-sale, the capacity of waterproof will be better.
4. Sine wave configuration, add TFT large screen display, new UI design (more beautiful. Intelligent), all kinds of working state can power, temperature monitoring, can DIY you driving mode.
- 5.MANTIS KING GT handle and shock absorber rod lengthened, more suitable for European and American people riding.
6. Add front and rear adjustable shock absorbers, more suitable for different body weight, increase riding comfort.

*The specification can be changed by manufacturer without notice to improve the quality and safety for users.

*The distance can be affected by loaded weight, wind direct (wind speed), road condition, slope and tire condition.

MEMO

Adjustable color pedal lamp



1. Nearly 100 lighting modes available
2. Free choice of colors
3. Color brightness and change speed can be adjusted at will