A-series Airwheel

MARS ROVER User Manual

Airwheel Intelligent Pioneer www.airwheel.net





About Airwheel

Established in 2004, Airwheel Technology was initiated by a group of pioneers who took constant adventure to reshape the world with edged technology. With a global view, the U.S.-based enterprise started to build since its establishment R&D centers located in L.A., Beijing, and Changzhou, a marketing center in Beijing and a manufacturing center in Changzhou. As the leader in global portable intelligent transport industry, we have been dedicated to extend the fun and benefit of cutting-edge technology to everywhere in the world.

Our Success, Built by Our Customers

Airwheel is keen to exchange opinions and share its fruitful achievements with customers in a simple manner. It is Airwheel's unyielding aim to satisfy and exceed customers'anticipation. We believe that trust is a pleasure worth passing down via every customer, which in turn challenges us to give genuine responses everyday.

Our Concept, Originated From the Nature and Innovation

The brand name "Airwheel" consists of two elements: Air and Wheel. Air implies the environment, our living space. And wheel symbolizes the spirit of constant progress and the endless vitality of life. Being an adventurer of science-tech, Airwheel is more of a pilgrim of the nature deep inside. Following the notion of "Eco-friendly Innovation", we've always been seeking the balance between science-tech and the nature, which runs through every part of the design, R&D, manufacturing and sales. It is our ideal to bring our customers back to the nature with Airwheel's portable intelligent transport products.

Our Design, Inspired by Interactions and Experience

Focusing on the development of safe, solid and humanized products, Airwheel is broadly identified with its modern concise design and fresh comfortable user experience. Airwheel owes its standard-setting products to the care of details and a customer-oriented design concept. We persist with continuous upgrade of user experience of material, function and safety propelled by customers'opinions and our innovation.

Our Advantage, Contributed by Cooperation and Service

As the leader in global portable intelligent transport industry, Airwheel has built long-term partnership with tech titans like SONY, Panasonic, Google and Qualcomm. A strong tie with premium business partners will not only bring win-win scenarios, but also create for customers more reliable products with guaranteed user experience.

With advantages in capital and global strategy, Airwheel will continue to provide customers with all-around and interactive service via efficient and humanized resource integration and cooperation.

About User Manual

This manual includes safety use instructions. Please make sure this manual is read through and fully understood before use.

Packing Details

Airwheel A series (A3) scooter body	1 unit	hexagon wrench	2 pcs
scooter stem, saddle	1 pcs	battery charger	1 unit
remote key	2 pcs	user manual	1 pcs
warranty card	1 pcs	other accessories	1 pcs

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1. Introduction

Airwheel A3 is the state-of-the-art means of transportation adopting aerospace attitude control theory, fuzzy software algorithm, and gyroscope system to maintain balance by leaning forward and backward. Riders can control the vehicle to go forward, accelerate, decelerate, brake, etc. by leaning forward or backward. Also, turning A3 is achieved by simply turning the handlebar which will cause the differential of rotational speed on both wheels, e.g. when the handlebar is turned anti-clockwise, the rotational speed on the right wheel will be faster than that on the left wheel, thus the unit will turn left. In the meantime, the turning-sensing system will be activated (turn light will flash).

Being green and eco-friendly, Airwheel A3 can be stowed in the trunk of a car, facilitating a low-carbon travel style.



Forward



Accelerate



Decelerate



Brake



Backward

2. Installation

2.1 Unpack

After receiving the package, hold the two clasps and place the box vertically on the ground. Open the box and make sure the foam box inside is placed with the Top side upwards. Open the small cover to take out user manual and charger, then open the big cover to take out the scooter stem. When taking out the scooter stem, lift it firstly to the height of the scooter body, then move it horizontally through the clasp area. Take out the saddle and then lift up the foam box. Pull the scooter body carefully towards the ground. When the scooter body tilts to a certain angle, it will roll out.



The box includes three main parts: scooter body, scooter stem and saddle. Please follow the above steps when unpacking so as to avoid potential injuries caused by improper operation. Given the weight of the scooter body, please lift it upward with care. Better find someone for necessary help. Please pay attention to the front and rear end of the scooter body, and do not lift it by the fenders, otherwise your fingers may be caught.

2.2 Check Packing Contents

After opening the packing box, take out the scooter stem and the saddle. Then take out the scooter body.



Given the weight of the scooter body, please lift it upward with care. Better find someone for necessary help. Please pay attention to the front and rear end of the scooter body, and do not lift it by the fenders and the tires, otherwise your fingers may be caught.

2.3 Preparation

Before installation, please find in the standard accessories a set of 2 hexagon wrenches. Please retain this tool kit, it is useful for maintenance and transportation of the unit. As metric standard tools, you may find replacement at home or in a hardware store.

A pair of work gloves is recommended to protect your hands from dirt and scratches.

2.4 Installation

- 1. Take out the scooter stem and put down the kick stand (see 5.3) to fix the scooter body. Insert the connector below the stem into the 15-pin plug, then fix them with 5 M6*20 screws and the hexagon wrench. (see I-1)
- 2. Fix the front and rear supporting plates of the saddle with 2 M6*20 screws. (see I-2)
- 3. Fix the saddle on the scooter body with 6 M6 screws. (see I-3)





When installing the scooter stem, please check the direction of the 15-pin connector and make sure the stem is inserted correctly. (see I-1) Also make sure to align the fool-proof groove properly and then fasten it with 4 exclusive screws. (see I-2)

3. Safety

There are risks of riding or driving any vehicle. Airwheel A3 is no exception. Please make sure this manual is read through and fully understood before getting started, and be alert when riding.

Important Note:

Sharp acceleration or deceleration or speeding via overly leaning forward or backward are strictly forbidden. When power level indicators show only one bar left, riding is not recommended. When it happens during the riding, please keep a low speed and recharge the Airwheel as soon as possible. Use the electronic brake button with special caution before getting proficient control of the Airwheel or under uncontrollable situation.
Do not ride Airwheel when risking any accidental falls. Safety goes first.

Attention:

- 1.Do wear helmet, gloves, elbow/knee pads or other necessary protection gears. diseases
- 2.Do not ride Airwheel on rough or bumpy surfaces,
 - such as muddy or gravel roads.
- 3.Do not ride Airwheel on wet, slippery surafces, especially icy ones.
- 4.Do not ride Airwheel on slopes of over 15° gradient.

cardiac-cerebral vascular disease, or other high risk diseases to ride Airwheel. 8.Do not ride Airwheel in extremely cold winter. 9.Do not ride Airwheel in the rain. 10.Do keep slow speed when riding Airwheel on slopes. 11.Do not ride Airwheel in other unadvised situations

5.Do not allow children under 15 or the aged above 60 to ride Airwheel.

caused by either personal or objective reasons.

The user must do a great deal of practice and get full controlling skills before going on road. Lack of controlling skills or improper operation deviated from user manual may lead to injuries and damages to the user or the third party. Airwheel is only responsible for failure and damages of the product, and takes no responsibility for any personal injuries and property damages.

3.1 Safety Guidelines and Riding Etiquettes

- 1. Please learn and abide by local laws and regulations when riding Airwheel A3. Be careful and considerate of others, and take precaution of accidents and collisions.
- 2. Please ride at safe and proper speed and make sure your Airwheel is under control.
- 3. Respect pedestrians and avoid startling pedestrians, especially children. When approaching from behind, announce yourself and slow down to walking speed when passing.
- 4. Keep a safe distance from other Airwheel A3 riders and always avert from obstacles. Unless there's ample space for other pedestrians, please do not ride side by side with fellow Airwheel players.
- 5. Please avoid riding in poor light unless necessary, and make sure in this scenario you ride at slow, safe speed with care and geared with mounted driving lights if possible.
- 6. Please relax your body when riding, bend your knees and elbows slightly and look straight forward.
- 7. Riding backward can be dangerous. For emergency, ride slowly backward in necessary avoidance of obstacles.

Please accelerate slowly by leaning forward slightly and avoid sharp acceleration. You may lose balance and get yourself hurt in aggressive acceleration. Ignorance to instructions is the main cause of accidental falling over.

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.

FCC ID: 2AHQH-CHJ-C70K2

FCC statement

This equipment has been tested and found to comply with the limits for a Class B digitaldevice, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmfulinterference in a residential installation. This equipment generates, uses and canradiate 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 particularinstallation.

• If this equipment does cause harmful interference to radio or televisionreception, which can be determined by turning the equipment off and on, theuser 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.

RF exposure warning

• The equipment complies with FCC RF exposure limits set forth for an uncontrolled environment.

The equipment must not be co-located or operating in conjunction with any other antenna or transmitter.

NOTE: Any changes or modifications not expressly approved by the granteeof this device could void the user's authority to operate the equipment.

3.2 Initiative Safety Measures

Please read through this manual and make sure it is fully understood.

- Do not allow others try your Airwheel A3, unless he/she has read through this manual.
- Please do wear safely gears while riding Airwheel A3. Make sure your helmet is comfortably fit and qualified for safety protection. Riders may wear glasses, elbow/knee pads according to their own experiences.
- Please do not ride Airwheel A3 when you are feeling unwell or not able to follow the instructions in the manual.
- Please stop riding immediately when Airwheel A3 starts alerting for low battery or over speed. Charge your Airwheel in time to ensure safe and smooth use.
- Make sure to power off Airwheel before moving it. Do not lift Airwheel A3 on the wheel in case your fingers get caught between the tire and case.
- Check your Airwheel A3 carefully for any loosened or damaged parts every time prior to use and do not ride before proper troubleshooting.
- The maximum speed of Airwheel A3 is 17km/h. High speed may bring risk to the riding. For safety concern, please ride with steady speed.

Steering with your body leaning against the scooter stem is very likely to cause accidents and injuries. Always make sure to keep one-fist distance from the scooter stem and the handlebar. Do not lean against the scooter stem, this contributes to most of the accidents.

3.3 Warned Scenarios



4. Learning Tips

4.1 Before Getting Started

For first-timers, be sure to equip yourself with comfortable sportswear and sneakers. Warm up your body and keep your body agile. Considering the average human athletic skills, the height of pedal is set 247mm from ground only, which guarantees your safety in case of falling over. A Helmet, gloves, knee and ankle pads are also essential for first-timers. To start, please bring Airwheel A3 to open space and watch out for obstructions and bumpy terrains.



4.2 Learning Tips

Learning Airwheel A3 is much easier than learning how to ride a bicycle. Most starters only needs 3 minutes to get a hang of it. You'll need a learning partner standing in front of Airwheel A3 and holding the handlebar with both hands to help stabilize the handlebar for the first time.

- Turn on power switch, then press A on the remote control. Fold up the kick stand.
- Sit on the saddle and put down the paddles at each side. Hold the handlebars and look straight forward.
- Keep calm and relaxed and look forward as shown below.



Please keep calm and relaxed, it is much easier than learning how to ride a bicycle. Starters can stand upright and relaxed and rely on your learning partner to hold on to the handlebar. After getting used to standing on Airwheel A3, you're good to go. Note: The more relaxed you are, the better balance you'll get.

4.3 Go Forward and Backward

Push the handlebar gradually forward to feel the acceleration and stopping of Airwheel A3 and then restore the status quo ante to feel the acceleration and deceleration. Steer at a slow speed and feel the motion controlled by your center of gravity.

Look back and lean gradually backward to control Airwheel A3 fall back, and then restore the status quo ante to feel the deceleration and brake. Keep practicing and pay attention to the wall and other obstacles to avoid falling over.



For starters, please steer in a slow and mild manner. Remember that the more relaxed your body is, the better balance you'll get. Please avoid drastic shakes in the fore-and-aft direction or an abrupt shift on your center of gravity, which will probably cause slip or falling over.

4.4 Stop and Brake

Attitude brake

Stop the unit by shifting your center of gravity to the opposite direction of travelling:

When the unit is in motion, gradually lean backwards to stop the unit.

Electronic brake

During riding, press down the electronic brake button to decelerate or brake. Release the button when the unit stops.

Starters can choose an open space to practice stopping unit and keeping balance. Note: Device may tilt forward or backward when the Electronic Brake button is pressed down. The user should stay calm, keep balance and be careful.



Standard Brake Manner

Electronic Brake

Please try to stop the unit in a gradual and mild manner, avoid abrupt brakes. When using the electronic brake, user may be forced to lean backward. The user should stay calm and keep balance. On the typical asphalt pavement, the braking distance of an Airwheel A3 travelling at top speed is roughly 4 meters. Given this fact, please decelerate beforehand when expect obstacles or traffic lights. Please do not accelerate or brake on slippery surface, otherwise you may suffer falling over or even injuries.

4.5 Make Turns

Airwheel A3 will conduct turns as per the movement of the handlebar. Push the handlebar left or right to make turns on the corresponding direction.

1. First practice turning on one spot by moving the handlebar gradually towards the direction you wish to turn to. Airwheel A3 will turn on the spot sufficiently to the desired extent until you restore the handlebar. Keep practicing to get the skills.

2. Turn when in the motion. After getting a hang of going forward, backward and turning on one spot, you may try to make turns while going slowly forward. Keep your knees slightly bent and prepare to lean toward the turning direction in accordance with the control

shaft. Keep practicing.



Sharp turns are dangerous whenever on one spot or in the motion. You will probably lose balance or even get thrown out. In this scenario, please decelerate and steer at a slow speed when making turns, which will help with better balance during a turn.

4.6 Get Off

You may ask your learning partner to help hold the handlebar when getting off Airwheel A3 for the first time. Instructions:

1. Hold onto the handlebar and step on the ground with two feet. Then fold up the pedals and get off the unit. Turn off the power and put down the kick stand.

2. When moving off the saddle of Airwheel A3, do hold your hands on the handlebars before powering off the unit. Otherwise, Airwheel

A3 will slip forward and cause potential risks.



Please relax when getting off the unit and avoid shifting the handlebar, which will cause the unit to turn and your panic. As a result, an overly firm grip on the handlebar is not recommended. Make sure to power off the unit and put down the kick stand.

4.7 Important Note for Starters



Warnings

- 1. Starters under 18 or over 45 are supposed to find yourself learning partners.
- 2. Make sure to check the power level and tire before riding.
- 3. Please control speed before riding smoothly.

4.8 Download APP



Calibration steps

- 1. Use App to lock the unit.
- 2. Please operate according to the tips of APP.
- 3. After hearing the long beep sound, reboot the unit to complete calibration.

Scan the QR code to download APP

*Support Android 4.3 or higher, iOS 7.0 or higher.

5. Usage

5.1 Components

(See 9.1)

- 1. Handlebar
- 2. Human-Machine Interface (HMI)
- 3. Motor
- 4. Scooter Stem
- 5. Saddle

5.2 Get Started

To get started, adjust the scooter stem of Airwheel A3 to the upright position. Power on the unit before turning on the remote control, and you'll hear a beep prompt to indicate that the unit is ready to use. Put feet on the pedals and start to ride.

In case the scooter stem is biased severely to one side, this indicates Airwheel A3 is not ready to use. Get the unit in proper gyro-balanced state before getting on.



5.3 Kick Stand

Airwheel A3 comes with a kick stand. To park Airwheel A3, pull the knob at the side to release the kick stand.



Always release the kick stand when the unit is off. To prevent misuse of Airwheel A3 by others, we strongly suggest you power off the unit when you're not around. In addition, do not get on and steer Airwheel A3 when the kick stand is released, otherwise the kick stand can be damaged and may cause accidents.

5.4 Remote Key



The buttons on the remote key and their functions are shown above. The controlling distance can reach 10 meters. There're 4 buttons on the remote key: A. Power Button. B. Headlight Switch. C. Unspecified. D. Unspecified.

6. Maintenance

6.1 Cleaning and Storage

- Please clean your Airwheel A3 timely after usage to keep your Airwheel A3 in top shape.
- Use a soft wet cloth dipped with alcohol to wipe the main body of the unit.
- Use a wet towel to clean the tires and fenders. Then wipe and dry them in flowing air to avoid rust.
- For stubborn stains or scratches, you may apply some tooth paste on it and scrub it with a tooth brush repeatedly.
- Store Airwheel A3 in a dry and cool place indoor when it's not in use. Expose to sunlight or freezing outdoor environment will lead to accelerating aging of the exterior materials.

Make sure to power off Airwheel A3, unplug the charger and seal the charge port cap before cleaning, otherwise the unit maybe short-circuited by water and damaged. Do not use a car-washing water cannon to clean Airwheel A3 or submerge the whole unit in water, this may cause water leakage into the unit and unserviceable damages.

6.2 Screw Connection

All of the screws on Airwheel A3 have been specifically processed against loose. Yet for safety concerns, please check connections on the wheel hub, scooter stem, battery case, fender, platform casing and display panel ect. regularly for loosened connection or abnormal noise. In case of any loosened connection, please check the screws on the connection joint and fasten them.

6.3 Tire Pressure

Generally the tire pressure of Airwheel A3 ranges between 2.0~2.2KG/cm². High tire pressure contributes to smaller friction force and longer battery range, yet delivers less damping effect.

6.4 Transportation and Storage

Please handle Airwheel A3 as per the following steps:

- 1. Please make sure Airwheel A3 is powered off.
- 2. Please remove the scooter stem before storing Airwheel A3 in the car trunk.
- 3. Please ask for necessary help when having difficulty with lifting the unit into the car trunk.

6.5 Remove Battery Pack

Fold up the kick stand and lay flat the unit. Unfasten the four M6*20 hexagon screws with an M5 hexagon wrench. Remove the battery case and take out the battery pack.



Mail us only the battery case if the battery case needs to repair.

Use a soft cloth or foam chunks to protect the unit against scratches when it's laid flat. Make sure the battery case is well connected and screws are fastened. Erect the unit vertically and try to power it on and off to check if the indication panel is working properly.

7. Limited Warranty

Please retain the warranty and proof of purchase (i.e.receipt). Limited Warranty Terms (Non-Artificial Damage Only):

After-sales service:

1. 1 year for the main body (one month for wearing parts, i.e. casings and tires).

2. 6 months for the battery.

The following situations will not be covered by the warranty:

- 1. Malfunction due to misuse.
- 2. Malfunction caused by unauthorized modifications, disassembling or repair.
- 3. Accidental damage or malfunction due to improper storage.
- 4. Discrepant warranty/proof of purchase and product.
- 5. Exterior damages due to usage.
- 6. Disassembling parts unspecified by this manual.
- 7. Damage or malfunction caused by riding on rainy days or dipping in water.

8. Specifications

Specifications	Parameters	Remark
Weight	34kg	Standard Accessory
Speed	6~ 15km/h	
Max. Climbing Angle	~ 15°	Riders weighing 60kg get up to 18°
Battery Capacity	520Wh	Protection board with SOC equalization
Working Temperature	-10° C ~40° C	Best at 20° ~30° C
Max. Load	120kg	
Charge Voltage	AC220V 50~60Hz	Optional:110V/110V-240V
Charge Time	520Wh: ~ 180min	
Size	Height:1134mm, Length: 720mm, Width: 438mm	
Wheel Size	16 inches	
Pedal Height	247mm	
Saddle Height	740mm	





9.2 Charging Notes

Charge Note: Plug Airwheel to the charger before connecting the charger to power supply.



9.3 Relation between Range and Load

Similar to the relations between fuel consumption and cargo load, range per charge is related to rider's body weight. In light of the conclusion we draw from practical tests (rider's weight: 60kg; riding speed: 7km/h and constant; road condition: smooth and flat), range per charge falls by 1.5~2.0km for each additional gain of 10kg.



9.4 FAQ

Q: How to set up the Airwheel?

A: Please refer to the Installation part in this user manual.

Q: How to charge the Airwheel?

A: Please charge the unit with the charger included in standard accessories. The charger is 110V/220V ready chargeable.

Q: My Airwheel tilts backward in motion, is it normal?

A: It's normal when Airwheel is running on low battery. You can simply solve it by powering off the unit and charge it to the full. In another scenario, the unit may also tilt backward when it's running at a high speed to shift the rider's center of gravity backward and prevent further acceleration.

Q: Can I customize Airwheel to lift the speed limit?

A: Sorry can't. Over speed protection is designed to ensure player's own safety during usage.

Q: How can I tell whether my Airwheel is fully charged or not?

A: There's a charging indicator light on the charger. A red indicator light indicates that Airwheel is under charging and a green one indicates that Airwheel is fully charged or not charged.

Q: Can I ride it on motorways?

A: Please don't unless it has a motor license. In most countries, you're supposed to steer it only on non-motorized vehicle lanes.

Q: Should I power off Airwheel to charge or not?

- A: Please power off Airwheel for charging.
- Q: What if program crashes?

A: Please restart the program.

9.5 Road Test

Airwheel's battery range is closely related to ambient temperature, weight, riding manner and battery discharge capacity. Test condition: environment temperature:30°C; tester's weight: 60kg; test venue: indoor stadium. The tester riders Airwheel at a constant speed of 8km/h using standard riding manner without any tricks.

Test result: 10% battery capacity remained when test finished. However in practice, lithium battery will conduct a discharge restriction for user's safety and battery life expectancy, which will reserve 30% battery capacity.



9.6 Contact Us

Please contact us as per the following info for any inquiries regarding riding, maintenance and safety issues or any problems and failure during your usage. We'll be glad to offer you prompt assistance.

Scan the official QR code on the back cover with your smart phone and get linked to our official website to learn more about Airwheel's latest updates and new products.

After-sales Info

Please visit our official website for the address of the service center and other related info.

Authorized by: Airwheel Technology Holding (USA) Co.,Ltd.

Manufactured/Dealed by: Changzhou Airwheel Technology Co., Ltd.

Address: FI.9 Zhongchuang Building, No.396 Tongjiang Rd (M), Xinbei District, Changzhou, Jiangsu.

Website: www.airwheel.net

E-mail: after-sale@airwheel.net

Airwheel Technology Holding (USA) Co.,Ltd.



E-mail:business@airwheel.net Website:www.airwheel.net