

**ALL TERRAIN**

M O V E R



**Before using your All Terrain Mover, please carefully read and understand all the instructions. Failure to follow these guidelines may result in serious personal injury and property damage. The mover, its manufacturers, and sellers shall not be held liable for such consequences. Do not allow any person to operate or assemble the mover until they have read this manual and fully understand how the mover works.**

The All Terrain Mover is a remote-controlled heavy-duty trailer mover. It enables you to move your trailers, caravans, campers, boats etc. in narrow spaces and around corners. It can safely and efficiently relocate trailers where it's not feasible or desirable to do so with a tow vehicle.



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# ONE Product Overview

## 1.1 Packing List

### ● Standard Configuration



1 Mover



2 Remote Control



3 Charger



4 User Manual



5 Wrench  
(For Quick-release Batteries)

### ● Two Upper Mounting Connector Solutions

#### ➢ Standard Bracket



Planar Connector  
Standard Bracket  
Special Wrench  
Mounting Bolt×6  
Ring Latch  
Bracket Bolt x 2  
Bracket Nut x 2

#### ➢ Universal Bracket



Planar Connector  
Universal Bracket  
Special Wrench  
Mounting Bolt×6  
Ring Latch  
Bracket Bolt x 2  
Bracket Nut x 2

	{	200mm×2
		170mm×2
	}	110mm×2

## 1.2 Mover Specifications

Parameter	Model	All Terrain 2500	All Terrain 4500
Size(mm)		540x482x250	540x482x250
Overall Weight(kg)		36(Quick Release 16Ah)	43(Quick Release 16Ah)
No-load Speed(m/min)		12	9
Full Load Speed(m/min)		10	7
Towing Load(kg)		2500	4500
Slope on Concrete(°/(%))		6°/(10%)	6°/(10%)
Tongue Weight(kg)		300	450
Battery Voltage(V)		25.2	25.2
Battery Capacity(Ah)		16	16
Battery Life(h)		1.4	1
Charging Time(h)		Fast charging for 1	Fast charging for 1

Note: 1.The battery time is the test result of each vehicle model under standard load, asphalt road surface, and a temperature of around 20 degrees Celsius.

2.The recommended weights of RVs on the different road surfaces and slopes can be found in section 3.4.

## 1.3 Battery Specifications

Version	Quick-release Version
Type	TKB16-A0
Nominal Voltage(V)	25.2
Nominal Capacity(Ah)	16
Size(mm)	405×145×85
Weight(kg)	3.675
Nominal Energy(Wh)	403.2
Maximum Charging Voltage(V)	29.4
Minimum Discharging Voltage(V)	18.6
High Temperature Warning For Discharge	The status indicator light turns red at 50 °C
	The battery cuts off power output at 60 °C
	The battery recovery discharge at 55 °C
Low Temperature Warning For Discharge	The battery cuts off power output at -20 °C
	The battery recovery discharge at -10 °C
High Temperature Warning For Charge	The battery limited charging at 50 °C
	The battery recovery charging at 45 °C
Low Temperature Warning For Charge	The battery limited charging at 0 °C
	The battery recovery charging at 5 °C

## 1.4 Safety Warnings

- Do not use the product on slopes beyond stated limits. Per instructions on page 36 of this manual; the front of the mover must face uphill when moving uphill or downhill.
- Avoid getting the product wet. Do not submerge the product in saltwater or freshwater.
- Carefully read all instructions. The operator of the mover must exercise common sense, caution, and full judgment when assessing situations not covered or cautioned in this manual.
- The mover is designed for specific applications only. The manufacturer will not be responsible for issues arising from modifications made to the mover. Do not modify the mover or use the mover for any application other than its intended purpose.
- Stay alert! Do not operate if you are in poor physical condition. Do not operate the mover while under the influence of drugs or alcohol.
- Do not allow the mover to be operated by children.
- Operators should never place any part of their body under or in the path of any portion of this mover or the load being supported or moved.
- This mover must be installed and used in strict accordance with these instructions.
- Before each use of the mover, check for functionality and charge level. Carefully inspect the mover for any part that appears to be damaged to determine if the mover will operate properly.
- When servicing, use only factory replacement parts.
- Have wheel chocks in place before and after use in case of emergency.

- The mover is designed for the weight of the drawbar to be loaded over the top of the machine, if there is excessive load applied from the side, it may cause failure and must be avoided.
- The mover is designed for use on various road surfaces, though sufficient firmness is required to sustain traction and effective operation. Moving weight over the drawbar to increase downforce on the mover will assist traction, particularly on softer surfaces.
- The mover must not be attached to your trailer whilst the trailer is being towed by a vehicle.
- Never exceed the maximum rated load capacity of the mover. Please refer to this manual to confirm the mover's rated load capacity. If you have any doubts about the usage situation, please send us photos or videos of the scenarios, and we will provide feasible suggestions and solutions based on the actual road conditions.

## 1.5 Battery Safety Warnings

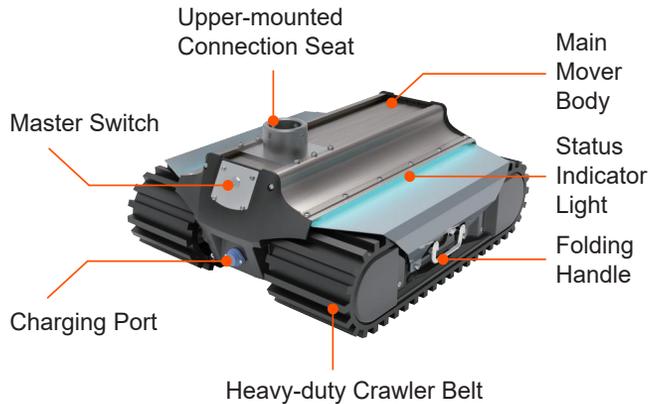
- Please charge the battery completely before first use. The lithium battery installed in this mover has only been charged to partial capacity.
- It is vital that you charge the battery to its full capacity before operating the machine to ensure high performance and long cycle life. First time charging may take 6-8 hours (see charging instructions).
- Recharge the mover periodically! Charge it once every two months.

- To keep the battery healthy, the mover should be operated once every one to two months.
- Before long-term storage of the mover, please fully charge the battery. Do not store the mover in direct sunlight or at high temperatures. High temperatures may cause the battery to activate its protection mechanism.
- Failure to follow these instructions may damage the battery and result in losing the battery warranty!
- When the battery voltage/capacity alarm is triggered (indicated by the red indicator light), operating with a heavy load may cause the battery to enter output protection mode. Please charge the battery promptly to avoid affecting your usage.

# TWO Product Introduction

## 2.1 Product Illustrations

### 2.1.1 Mover Body

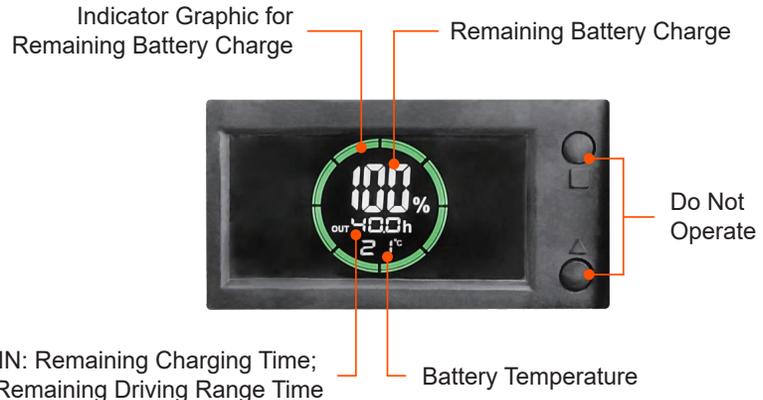


1 Front view

Part	Function/Feature	Refer In Detail To
Master Switch	Short press the mover to turn it on; long press it to turn it off.	/
Charging Port	Use it to charge the battery.	4.1
Folding Handle	Hold it to handle the mover.	/
Upper-mounted Connection Seat	Connect the upper-mounted connector.	3.2
Status Indicator Light	Indication of the mover's operating status; it lights up in cyan after being turned on; it remains constantly on when the mover is stationary and blinks when the mover is running.	3.1
Main Mover Body	Hard anodizing process of aluminum alloy, it has high strength and excellent corrosion resistance.	/
Heavy-duty Crawler Belt	Adapt to different road surfaces and provide stronger driving force	/



2 Rear view



Part	Function/Feature
Voltmeter	Display battery power information. (There is a protective film attached from the factory. Please remove it before use.)
Emergency Stop Switch	In case of an emergency, press the button to quickly turn off the mover and ensure safety.

## 2.1.2 Remote Control



Part		Function/Feature	Refer In Detail To
Power Switch		Used to power on and off the remote control.	3.1
Control Rocker		Control the mover to move forward, backward and turn.	3.1
Charging Port		Remote control charging — TYPE-C interface	3.1
Cruise Control		Press this button to activate the cruise control. When the "speedometer" icon is displayed on the screen, it indicates that the cruise control has been activated. Press this button again to turn off the cruise control function, and the "speedometer" icon on the screen will disappear.	3.1
Other Buttons		It is for in-factory use only. The user doesn't need to make any adjustments, and accidental touches won't affect its functions.	3.1
Screen	Remote control voltage	It displays the voltage status of the remote control. The fully charged voltage is approximately 4.1V. When the voltage is lower than 3.7V, the remote control will beep an alarm. Please charge the remote control in a timely manner.	3.1
	The icon of the cruise control	Display the activated state of the cruise control function.	3.1
	Signal	If there is a grid, it indicates that the remote control has been successfully connected; if there is no grid, it means that the remote control has not been successfully connected.	3.1
	Hybrid Control	It is displayed by default, which indicates that the normal differential steering function can be ensured.	3.1
	Lock	It indicates that the remote control has been debugged, and the functions of each numeric button have been locked.	3.1

### 2.1.3 Charger



Fast Charging

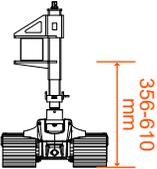
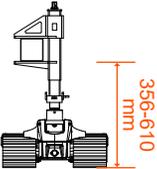
### 2.1.4 Planar Connector&Standard Bracket



### 2.1.5 Planar Connector&Universal Bracket



Part	Function/Feature
Fast charging charger	<ul style="list-style-type: none"><li>①Charging current of 10 amperes;</li><li>②It takes about 1.5 to 2 hours to fully charge a 16Ah battery;</li><li>③The red light of the charger stays on, indicating that it is charging. When the green light stays on, it means the charging is complete.</li></ul>

Part	Feature	Dimension Drawing	Optimal Chassis Height	The Applicable Height of The A-frame Beam	The Applicable Width of The A-frame Beam	Note	Refer In Detail To
Planar Connector& Universal Bracket	It is recommended to use a planar connector and a universal bracket, which can be used on a sloped road surface.		356mm-610mm (About to 14-24inch)	50mm-160mm (2-6.3inch)	Boat trailer: 50mm/75mm/ 100mm/130mm (2inch/3inch/ 4inch/5inch)	The ground clearance of the A-frame beam chassis	3.2.1
Planar Connector& Standard Bracket	It is recommended to use a planar connector and a standard bracket, which can be used on a sloped road surface.		356mm-610mm (About to 14-24inch)	50mm-160mm (2-6.3inch)	RV: 50mm(2inch)	The ground clearance of the A-frame beam chassis	3.2.1

## THREE Assembly and Usage

### 3.1 Instructions for Mover and Remote Control Usage

#### **Familiarize with the Product:**

**Read the operation manual. Practice moving the mover on a flat surface without connecting a trailer before load operation. After getting familiar with it, proceed with load operation.**

**It is recommended to practice using the mover on a flat road surface before slope-climbing operation.**

#### 3.1.1 Pre-start Inspection

- Appearance
  - Carefully check if there is any damage to the mover's appearance, foreign objects, etc. that may affect the mover's operation. If so, clean the foreign objects or obtain spare parts for repair in a timely manner.
- Upper Connector assembly
  - Check whether the upper connector parts are secure to avoid accidental loosening or breakage and detachment during use.
- Road Surface Condition
  - It is recommended to start the mover on a flat road surface.

- Emergency Stop Switch

- Confirm whether the emergency stop switch is in the released position. If not, rotate the emergency stop switch button clockwise to release it.

### 3.1.2 Remote Control Startup

- The mover is controlled by the remote control. The mover's movement can be controlled only after the remote control and the mover are powered on simultaneously;
- Check that the Cruise Control switch is off on the remote control before starting up the mover.
- Long-press the ON button to power on the remote control;
- Check that the remote control screen signal is connected, and the battery voltage is higher than 3.7V, as shown in the diagram. If the voltage is too low, charge it promptly; otherwise, the mover may not be able to respond to commands correctly.



### 3.1.3 Mover Startup

- Startup
  - Briefly press the main switch button. The mover will power on and self-check. The status indicator light and the main switch light will turn on. After the self-check is passed, the status indicator light will change from dark blue to cyan. At this time, the mover can be operated.
- Battery Check

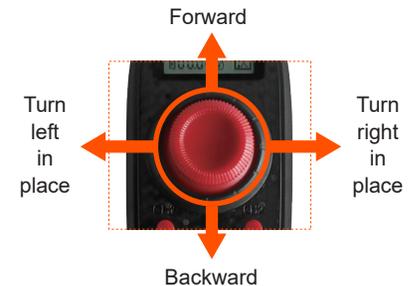
- Check the battery power. If the power is less than 25%, charge it promptly; otherwise, the mover may not be able to respond to commands correctly.
- When the battery voltage is lower than 23.5V or the power is lower than 25% (voltage has priority), a low-power alarm will be triggered. The status indicator light will turn red and emit a buzzer alarm.

- Status Indicator Light

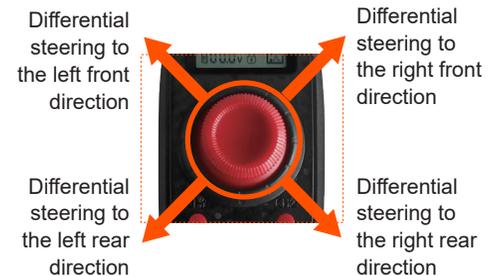
- When the mover is in a stationary state, the status indicator light is always on. When moving, the status indicator light flashes in a breathing pattern.
- If the color of the status indicator light is abnormal, refer to section 5.3 for troubleshooting.

### 3.1.4 Mover Movement

- As shown in the diagram, this is the forward-moving direction of the front of the mover.
- Forward
  - Push the joystick forward to accelerate, and release it to decelerate. When the joystick returns to the center position, the target mover speed is 0, and the mover decelerates to a stop.
  - When going uphill, it is recommended to accelerate slowly and maintain a low speed. At this time, gently push the forward joystick and keep a small joystick opening to achieve slow control of acceleration and speed.



- Backward
  - Pull the joystick backward to accelerate, and release it to decelerate. When the joystick returns to the center position, the target mover speed is 0, and the mover decelerates to a stop.
- Steering (This mover has two steering modes: differential turning and in-place turning)
  - Mover Differential Steering Mode: When the joystick triggers the front-back and left-right channels simultaneously, it is the differential turning mode (steering-during-movement mode), and steering with a certain steering radius can be carried out at this time.
  - Mover In-place Turning Mode: When the joystick only triggers the left-right channels, the mover performs in-place turning.
- Cruise Control
  - In cruise control mode, the cruise control speed can be increased by pushing the joystick forward and decreased by pulling the joystick backward. Each increase or decrease is accompanied by a "beep" sound prompt. The direction can also be adjusted. At this time, differential steering mode is the default. Press the OK button on the remote control again to cancel the cruise control function.



**! ATTENTION**

This function is only recommended for use on flat roads over long distances; It is suggested to get familiar with it in the unloaded vehicle state before using it with a loaded vehicle.

### 3.1.5 Remote Control Shutdown

- In the powered-on state of the remote control, long-press the ON button to shut down the remote control;
- The remote control has an automatic power-off function. After the remote control is turned on, if there is no operation within 15 minutes, the remote control will issue a buzzer alarm as a reminder. If there is still no operation within 1 minute, the remote control will automatically turn off.

### 3.1.6 Mover Shutdown

- In non-emergency situations, it is recommended to long-press the main switch button for three seconds. After the indicator light goes out, release the button to shut down the mover normally;
- In emergency situations such as accidents, you can gently press the emergency stop switch with your foot for emergency braking. When the emergency stop switch is pressed, the mover will stop running immediately and shut down;
- If there is no operation within 15 minutes, the mover will automatically shut down.

#### **WARNING**

- ① It is prohibited to use the cruise control function when reversing on sloped roads. This working condition poses a safety risk. The cruise control function must be turned off when operating on slopes.
- ② The cruise control on/off button is located at the back of the remote control, near the position controlled by the index finger. Avoid accidental operation during use.

③When the mover's current rises sharply due to improper operation (such as overloading, using too steep a slope, or getting stuck, etc.), to prevent accidents, the mover will enter an over-current alarm state. At this time, the indicator light will turn red, and the mover cannot be remotely controlled. You need to restart the mover to unlock the alarm status.

④During the use of the mover, the overall temperature of the machine will rise with the increase of use time. When the battery temperature is higher than 50 degrees, a high-temperature alarm will be triggered, and at this time, the indicator light will turn red. When the battery temperature reaches 60°C, the mover will enter a self-protection state, cut off the power output, and enter a shutdown state. Please let it cool down before restarting and using it.

⑤After the mover prompts that the battery level is too low, please charge it promptly. Over-use may cause the mover to shut down directly when the battery level is below the safety threshold, posing a safety risk.

### ATTENTION

①When operating the mover to accelerate or decelerate, do it slowly to avoid the mover tipping over due to the inertia of the RV. Especially when going up and down slopes, ensure slow operation.

②When pressing the emergency stop switch, gently tap it perpendicular to the panel direction. Kicking it forcefully or applying excessive oblique force may damage the emergency stop switch.

③The emergency stop switch is for emergency situations. Try not to use this function in daily use.

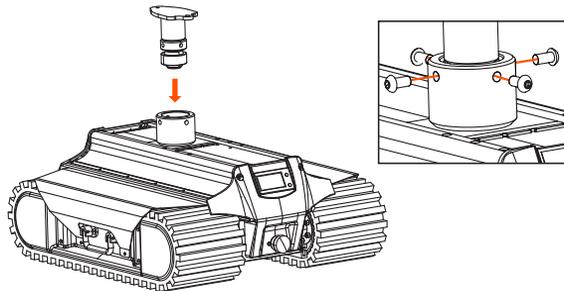
④When the voltage of the remote control is lower than 3.7V, please charge it promptly.

- ⑤ The remote control has a disconnection-stop function. When the remote control is turned off or the signal is blocked, the mover will stop moving immediately.
- ⑥ When it is necessary to remotely stop the mover under non-remote-control-failure circumstances, you can turn off the remote control to make the mover stop running.
- ⑦ If your trailer has an internal brake, the trailer brake must be released before operating the mover.

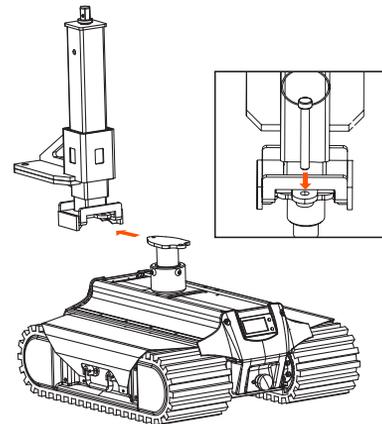
## 3.2 Assembly Instructions

### 3.2.1 Planar Connector&Standard Bracket/Universal Bracket Assembly

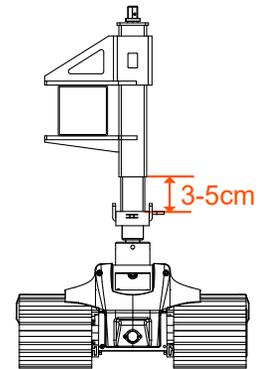
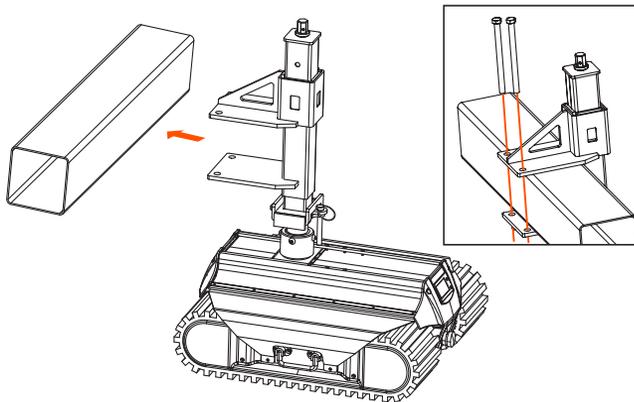
The Planar Connector can be used on slopes in conjunction with the standard bracket and universal bracket;  
Check the height of the RV's A-frame beam. Installation is recommended to be carried out on a flat road surface;  
The Planar Connector needs to be installed at the upper connection socket of the mover, and the standard bracket needs to be installed on the A-frame beam.



- ① Installation of planar connector on the mover.  
Place the planar connector into the top connection seat of the mover. The bearing and the installation ring should be perpendicular to the installation holes for easy installation;  
Tighten the 4 included installation bolts for the planar connector.

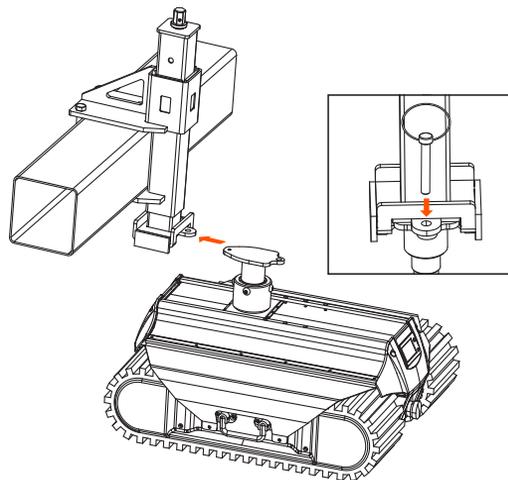
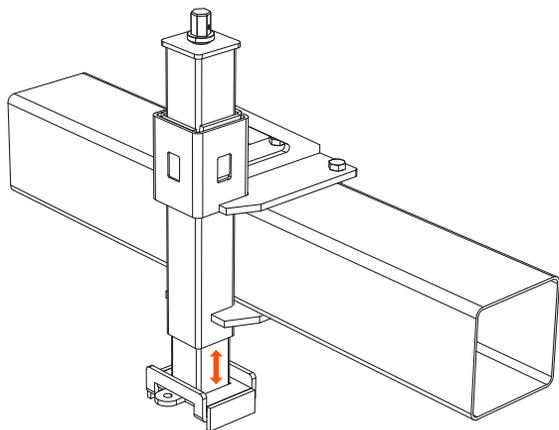


- ② Connect the bracket to the mover and insert the locking pin.



- ③ Move the mover to the A-frame beam of the RV. Adjust to the appropriate height through the lifting handle. Adjust the clamp at the upper part of the bracket to above the A-frame beam. Move the mover to connect the bracket to the A-frame beam;  
Insert the M12 bolts and tighten the bolts and nuts.
- ④ After the bracket installation is completed, stow the support wheels. Adjust the bracket to a position suitable for the load. It is recommended that the lifting cylinder be 3-5 cm higher than the underlying base surface.
- ⑤ After releasing the handbrake and removing the rear wheel chocks, ensure that there are no abnormalities with the wheels and the surrounding environment, and then the RV can be moved by the mover.

- The bracket has been installed on the A-frame beam of the RV



- ① The support wheels of the RV are firmly supported, and the handbrake is pulled up;  
Adjust the height of the slot at the bottom of the bracket to match the height of the mover planar connector.

- ② Use the remote control to move the mover forward, and slowly slide the mover planar connector into the slot at the bottom of the bracket until the pin holes are aligned;  
Insert the locking pin.

## ● Removing the Mover

- For RV parking, pull up the handbrake. After the support wheels are firmly supported, adjust the height of the mover's adjustable bracket so that the mover is not under stress;
- When parking, it is recommended to place wheel chocks at the rear wheels to prevent the RV from shifting;
- Pull out the limit pin at the connection between the mover and the bracket. Remotely control the mover to retreat.

**If the RV is parked on a slope, ensure that the support wheels are firmly supported, pull up the handbrake, and place wheel chocks at the rear wheels of the RV.**



### WARNING

- ① When connecting the bracket on a slope, to ensure safety, in addition to ensuring that the support wheels are functioning properly and the handbrake is tightened, it is recommended to use wheel chocks to block the rear wheels of the RV to prevent the RV from losing control.
- ② When connecting the planar bracket to the mover, be sure to insert the locking pin to ensure operational safety.
- ③ When the mover is mounted on the RV, it is prohibited to use a pickup truck, SUV, or other front vehicles to tow the RV.
- ④ The crank handle on the bracket is detachable. Do not lift the bracket by the handle to prevent the bracket from falling, as it may disengage and cause an accident.



### ATTENTION

- ① During the installation of the bracket, ensure that the guide wheels effectively support the RV and the handbrake is pulled up.
- ② When connecting the bracket to the A - frame beam, it is recommended to gently operate the remote control to adjust the bracket to the appropriate position.

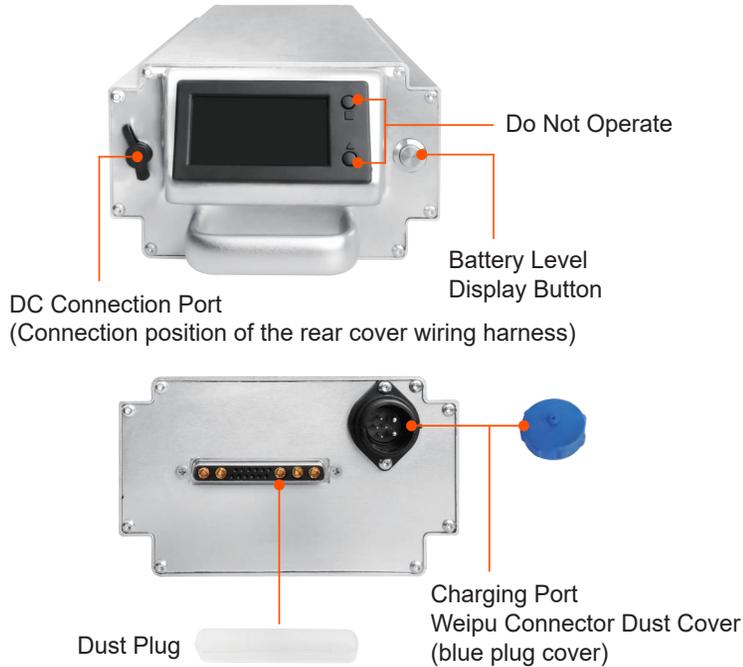
## 3.3 Instructions for Quick-Release Battery Usage

### 3.3.1 Battery Installation Warning

- Do not install or remove the battery outdoors in rainy weather;
- After removing the battery, do not place it casually. The battery dust plug should be installed promptly;
- If the quick-release battery has not been used for more than two months, it is highly recommended to inspect the battery and charge it to maintain maximum battery life and performance;
- Do not store the battery in direct sunlight or high-temperature environments.
- Confirmation of Charging Environment: Charge the battery indoors. Ensure that there is no clutter piled up around the battery, and no metal objects near the battery port to prevent short-circuits or the risk of electric shock;
- During the operation of the mover, the overall temperature of the mover will rise as the usage time increases. Charging the quick -release battery at this time may trigger the temperature protection function, which will cut off the charging circuit and cause the charger's green light to turn on. Therefore, please allow the mover to stand still and cool down before charging to avoid this situation;
- When charging the quick-release battery separately, it is essential to use the dedicated charger provided by our company. The dedicated charger can ensure the matching of current and voltage, preventing the risk of fire or battery damage caused by using non-dedicated chargers;
- Do not engage in behaviors that severely damage the battery, such as knocking, dropping, or allowing liquid intrusion;
- Failure to comply with these instructions may damage the battery and void its warranty.

### 3.3.2 Battery Body Description

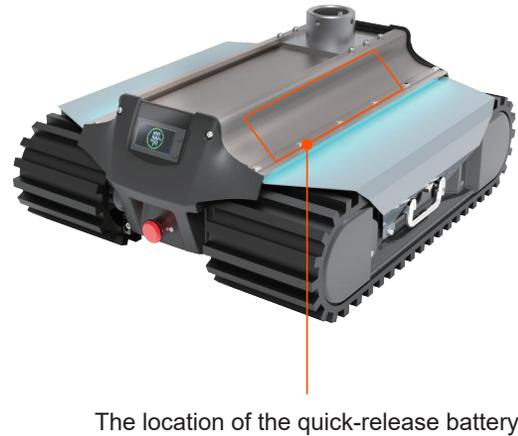
- Product picture



Don't knock or bump.

Install the dust plug in time after removing the battery.

- Battery location



### 3.3.3 Battery Charge Display

- Individual display

The quick-release battery is equipped with a separate battery level display button as shown in the product illustration in 3.3.2. Press and hold the battery level display button of the quick - release battery, and the battery meter will light up, displaying relevant information about the current battery. Release the battery level display button of the quick-release battery, and the battery meter will turn off.

- In-vehicle display

When the quick-release battery is located inside the mover, the power-on and power-off methods are the same as the main body's.

### 3.3.4 Charging Method

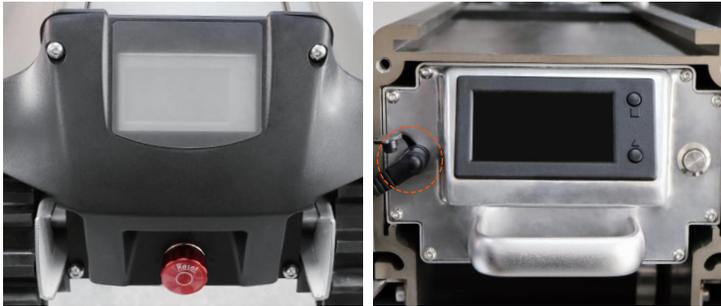
There are two charging methods for the quick-release battery: charging while on the vehicle and charging separately.

- In-vehicle charging

Refer to Section 4.1 of the instruction manual for the specific operation procedures.

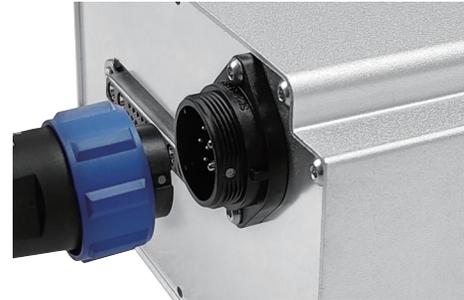
- Separate charging

- ① Battery dismantling



As shown in the figure, remove the four screws on the rear cover, disconnect the connection wire between the rear cover and the quick-release battery, and then horizontally pull out the quick-release battery.

- ② Charge



When charging, as shown in the figure, align the white dot on the charger plug with the white dot on the base of the quick-release battery and then insert it. After insertion, tighten the collar on the charger plug in a clockwise direction. At this point, the indicator light on the charger turns red, indicating that the charging is in progress.

### ③ Full-charge indication

When the battery is fully charged, the indicator light on the charger turns green and the battery level indicator shows 100%. At this point, unplug the charger plug and retighten the cover of the quick-release battery base to ensure the safety of the battery and protect it from dust.

### ④ Battery installation

Push the quick-release battery horizontally into the main body. Connect the wiring harness of the quick-release battery on the rear cover to the DC port. Install the rear cover (make sure to tighten the four screws on the rear cover). The installation is then complete.

#### **WARNING**

After disassembling and taking out the quick-release battery, be sure to install the dust covers for the charging port and the connection port at the first time to prevent short circuits.

#### **ATTENTION**

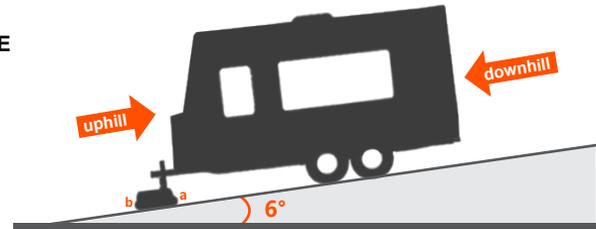
- ① Before installing the quick-release battery, be sure to remove the dust covers from the charging port and the connector.
- ② When installing the quick-release battery, make sure to push it into place and install the rear cover and tighten it.

## 3.4 Usage Methods and Precautions in Different Scenarios

### 3.4.1 Recommended Load For Each Road Surface And Slope

OPTIMAL

POSSIBLE ISSUE



Operate uphill and downhill according to the illustration. It is recommended that the gradient be 6° or less.

(a is the front of the mover, b is the rear of the mover)

Recommended RV weight(kg)	Model	All Terrain 2500				All Terrain 4500			
	Road Surface	Asphalt / Concrete	Compacted Dirt Road	Grass	Gravel	Asphalt / Concrete	Compacted Dirt Road	Grass	Gravel
Flat road		2500	2500	2500	2500	4000	4500	4500	4500
6°(10%) slope		2000	2000	2000	NA	3500	3500	3500	NA
The mover turns in place		2500	2500	2000	NA	4500	4500	3500	NA
RV rotates around the rear axle		2500	2500	2000	NA	4500	4500	3500	NA

## ● Scenarios on Cement/Asphalt Roads

### ① Flat road—Towing

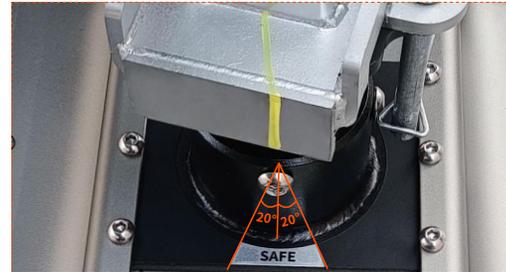
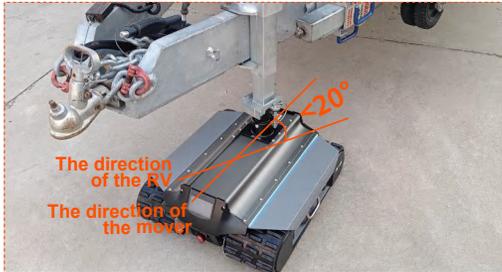
- On flat roads, the mover can tow the RV forward or backward;
- However, it is necessary to avoid the mover and the RV's wheels entering potholes on the road, as shown in the right diagram. In this situation, the local slope of the rear wheels is large, and it is easy to exceed the towing limit of the mover.



### ② Uphill—RV backing up the slope

- Slope conditions can cause the weight to transfer differently between the RV and the mover, which may lead to poor ground contact or the weight pressing on the mover. During the use, it is necessary to focus on the load of the mover and the contact between the crawler and the ground to determine whether the mover can provide sufficient driving force. Once the crawler slips, all driving force will be lost;
- Ensure that the mover tows the RV in reverse uphill, and the mover's front faces uphill (the mover moves forward towards the slope, and the mover's start switch faces uphill);
- The use of a bracket connector is required. The mover can effectively climb slopes up to 6°. Please use it with confidence. If necessary, you can climb one wheel at a time. In special working conditions (such as small steps), you can reduce the difficulty of passage and ensure operational safety by building a small slope road;

- Control the angle between the mover and the RV when going uphill; On steep slopes, the angle between the centerlines of the mover and the RV is recommended to be less than 20 degrees. Otherwise, it is likely to cause danger or the mover to tip over. You can determine this angle by the angle markings on the mover body and the straight-line markings on the bracket;



- When the road surface adhesion is low, you can go uphill at an angle or increase the downward pressure of the mover to obtain ground adhesion;
- When the rear wheels reach the top of the slope and enter the flat surface from the slope, it is recommended to gently operate the remote control to complete the slope-climbing at a slow speed.

### ③ Uphill—Sudden change in slope gradient

- During operation on a large slope, if there is a sudden change in slope gradient and the vehicle resistance increases significantly, be sure to release the remote control button and stop moving immediately. Ensure that the RV and the mover do not vibrate or shake;

- During gentle pushing, some minor road surface changes can be tolerated. If the crawler slips, try to increase the downward pressure. Avoid jerking the joystick. It is recommended to slowly push the joystick to cross the slope;
- For slopes with slight steps, when transitioning from a flat road to the slope, the mover is prone to displacement at the moment of climbing up. It is recommended that the operator move slowly forward in such situations, adjust the position, and then climb up the slope. Especially when backing up the slope, it is recommended to straighten the vehicle before reaching the bottom of the slope.



#### ④ Downhill

- Ensure that the mover tows the RV downhill in the front, and increase the mover's running speed in a timely manner when the rear wheels cross the top of the slope to adapt to the downhill inertia of the RV;
- When the mover enters the slope during downhill travel, it is recommended to travel downhill at a constant speed;
- In downhill situations, it is recommended that the mover move downhill in reverse, that is, the main switch of the mover faces the trailer to avoid the risk of forward tipping during downhill travel.

#### ⑤ Characteristics of mover's load—bearing during uphill and downhill

- Due to the bracket being installed on one side of the A-frame beam, the forces on the left and right crawlers of the mover are different, and it will deflect slightly during operation;

- After climbing uphill, because the force on the mover on the slope is rather uneven, there may be a slight deviation in the forward direction, or the single-sided crawler may lose adhesion. In such cases, it is recommended to stop running. At this time, adjust the direction by moving downhill slowly, and then let the mover climb the slope again. This is relatively safe; (Use the 4/5 o'clock direction of the remote-control joystick to move the mover's tail to the right; use the 7/8 o'clock direction to move the mover's tail to the left and backward.)
- The angle between the position of the mover and the center-line position of the RV is recommended to be less than 20°.

### ● Grass-covered Road

#### ① Flat road—Towing

- It is preferable to drive in a straight line as much as possible on grass covered terrain. Increase the radius of turns (the angle between the mover's travelling direction and the RV centreline should be <20 degrees);
- Small-radius turns or in-place rotation of the trailer may create pits or crevasses in the softer surface and there is risk that the mover or trailer tyres may submerge in the terrain and resist movement;
- Avoid creating pits as much as possible in grass-covered road conditions. Auxiliary plates can be laid in advance for use on grass.

#### ② Uphill—RV backing up the slope

- The grass-covered road surface features undulations and uneven slopes;

- During the process of backing up the slope, due to the increased downward pressure and the relatively soft lawn surface, the mover may sink as a whole and dig into the soil, losing adhesion and being unable to continue climbing the slope;
- When backing up the slope, if the local slope of the rear wheels is too large (above 6°), it is difficult to continue going uphill. The mover cannot obtain sufficient downward pressure, digs into the soil, and sinks, unable to complete the uphill climb;
- On soft lawns and soft dirt roads, insufficient surface adhesion friction may prevent the completion of backing up the slope on the target slope. If this occurs, it is recommended to use auxiliary plates to adjust the surface adhesion and the mover's downward pressure to attempt to complete backing up the slope.

## ● Gravel Road

There are additional risks and precautions required when operating the mover on gravel terrain that the user should understand. Please read and adhere to advice in this section.

### ① Flat road

- Straight driving and in-place turning are possible on gravel roads. It is not recommended to use the mover on fine or very loose pebbles as these materials may enter the interior of the mover's body and damage the driving system;
- Monitor the tyres adhesion and driving direction as these can be impacted by the varying sizes of rocks and gravel on such surfaces.

## ② Uphill—RV backing up the slope

- There is a wide variety of gravel surfaces. When considering the operation of the mover on a gravel incline, be sure that the surface is sufficiently firm for the mover to retain traction and adhesion to the surface. Operating on softer gravel terrain is not recommended as it may cause the mover to dig into the ground and sink, therefore unable to push the RV. At the same time, fine and loose gravel may enter the interior of the mover's body, causing damage to the driving system;
- The uneven gravel causes the mover's forward direction to deviate from the target angle, and requires continuous angle adjustment. The mover may get stuck in the gravel, making it easier for gravel to enter the mover's driving system and cause damage;
- Monitor for slipping during the process of reversing and turning on a slope (the road surface is soft and the gravel is uneven). At this time, the slipping process may cause the mover to turn at an angle that is too large between the mover and the RV, resulting in crawler displacement, which is dangerous.

### **WARNING**

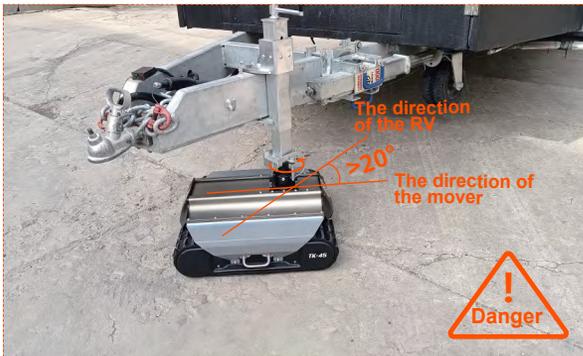
#### ● Usage on Slopes and Incline

① Do not use the mover on slopes steeper than 6 degrees.

This rated value is affected by various factors, including but not limited to different road surfaces, weight distribution, changes in load-bearing capacity, and the use of multi-axle trailers. If in doubt, contact the seller to confirm the usage plan.

② Do not attempt to tow on extremely steep slopes or wet and greasy surfaces. If the mover cannot secure the trailer or the crawler cannot grip the ground adequately, it is recommended to use wheel chocks on the trailer wheels during operation to ensure safety.

- ③Continuous uphill and downhill operations are not recommended. Long-term climbing may cause the mover to overheat and thereby trigger protection mechanisms.
- ④Do not engage the cruise control function during uphill or downhill climbing.
- ⑤Do not position the RV at the lower side of an incline with the mover following. The weight distribution away from the mover may impact adhesion and traction to the surface and pose a safety risk.
- ⑥During operation on slopes, if there is a sudden change in slope and the vehicle resistance increases significantly, release the control rocker immediately and stop moving to avoid the RV and the mover shaking due to rear-wheel stalling. In this situation, it may cause the mover to turn at an excessive angle between the mover and the RV, resulting in crawler displacement. This working condition is extremely dangerous. At this time, adjust the position and direction of the mover first. When restarting, gently push the forward button, and feel and observe the RV's slope-crossing status to ensure safety.
- ⑦Control the angle between the mover and the RV centerline when going uphill. On steep slopes, the angle between the mover and the RV must not exceed 20 degrees. Otherwise, it is likely to cause danger or the mover to tip over.



In the illustration on the left side, the angle between the centerline of the mover and the centerline of the RV has nearly reached 90°. In this state, the mover withstands a large downward component force from the RV on the slope, which causes a tendency for the mover to tip over. This working condition is very dangerous, and it is essential to control the angle difference during the process of movement.

- ⑧ Do not use the mover on uneven gravel roads. Small gravel may enter the drive system and cause malfunctions.
- ⑨ Be cautious of changing directions (forward to reverse) on gravel roads as this may cause the mover to dig into the ground and allow gravel to enter the interior system.

### **! ATTENTION**

- ① When the mover moves in reverse, accelerates, or crosses slopes, the rear of the mover may slightly tilt up because the center of gravity is behind the RV, making it prone to tipping up during acceleration. During operation, slowly push the remote-control joystick to avoid such situations.
- ② During climbing, if the mover triggers a low-battery alert, it is recommended to fully charge the battery before continuing to climb.
- ③ During uphill operations, if the angle between the mover and the RV fails to meet the requirements for backing up the slope, it is recommended to come down from the slope, adjust the angle, and then perform the backing-up-the-slope operation.
- ④ The tongue weight of the mover can be adjusted by changing the height of the lifting bracket (for double-axle RVs, move the bracket upward to increase the downward pressure of the mover). (If the rear wheels are on a slope, raising the bracket will be more difficult. It is recommended to reverse the vehicle down the slope before raising the bracket.)
- ⑤ In the downhill working condition, to avoid risks, the handbrake of the RV can be used to control the downhill speed and ensure safety.

#### 3.4.2 Usage Recommendations and Precautions for Dual-Axle Vehicles

- For dual-axle vehicles, the All Terrain 4500 is preferable to provide greater strength in turning and manoeuvring.

- When towing a dual-axle RV, it is recommended to make turns with a large radius for safer maneuvering of the RV's position.
- When turning in place on flat ground (rotating around the rear axle), it is necessary to adjust the forward direction of the mover in real-time during operation to move along a complete circular path. However, at this time, parasitic resistance is generated by the four wheels of the rear axle, which may cause the rear wheels to skew and the tires to slide and wear on the road surface. The resistance in this working condition is very high, so safety must be emphasized.
- Slow Movement at Low Speed: Perform moving operations at low speed to better control the movement of the mover and the RV, especially in narrow spaces or complex terrains.
- Acceleration: When accelerating, gradually increase the power and observe the reactions of the mover and the RV to avoid incoordination between the mover and the RV due to sudden acceleration.
- Stable Movement: Maintain a stable movement speed on flat roads to reduce unnecessary shaking.
- Fine-Tuning Operations: On a flat road surface, it is recommended to use fine-tuning operations when approaching the target, precisely controlling the direction and distance to ensure accurate parking.
- Slope Roads: On slopes  $< 6^\circ$ , the mover and the RV can be slowly moved forward or backward diagonally, but the use of movers on slopes above  $6^\circ$  is prohibited. If there are uneven or locally steep areas, it is recommended to bypass them.
- When driving on slopes, the slope can be crossed by first using one RV's wheel and then the second wheel.

## WARNING

When the rear wheels of the RV are on a slope, it is prohibited to operate the RV to rotate around the rear axle. This may cause the angle between the mover and the RV to be too large. The mover will be affected by the component force of the slope resistance of the RV, resulting in one-side crawler leaving the ground and the mover tipping over, posing a high safety risk, as shown in Diagram 1 on the next page.

## ATTENTION

① Always pay attention to the balance of the mover and the RV. When encountering large obstacles, first stop to assess the road conditions and then consider whether to pass slowly.

If encountering rugged terrain that exceeds the mover's operational capabilities, promptly disassemble the mover and replace it with a pickup truck or other vehicle for towing and repositioning.

② When turning in place (rotating around the rear axle), parasitic resistance is formed between the two rear axles. The tires will slide on the ground, leaving marks, and the tires will deflect. Please do not operate over-loaded, as over loaded operation will trigger the mover's self-protection shutdown.

③ For wet and soft lawn conditions, as shown in Diagram 2 on the next page, in-place turning of dual-axle vehicles is not recommended. When the ground is soft, the four wheels of the dual-axle vehicle will dig out pits. When the depth of the pits is relatively large, it will be dangerous. In severe cases, the mover cannot pull out the entire vehicle. In such situations, the road surface needs to be repaired or auxiliary plates need to be added for operation.



①



②

## FOUR Charging Instructions

### 4.1 Mover Charging

- When the mover gives a low battery alarm or the battery runs out and the battery output protection causes the mover to shut down, the mover needs to be charged.
- When charging, as shown in the figure, first unscrew the cover of the charging base of the mover counterclockwise, then align the white dots on the charger plug with the white dots on the base of the mover and insert them. After insertion, tighten the collar on the charger plug clockwise. At this time, the indicator light on the charger is red.



- This product can be charged whenever powered on or off. When the mover is powered off, it will wake up the voltmeter, and you can check the charging process at any time through the voltmeter.
- Pay attention to the battery temperature during charging. If the temperature is too high, it may trigger the battery's charging protection. Please cool it down before continuing charging.
- When the battery is fully charged, the indicator light on the charger turns green, and the voltmeter shows 100%. At this time, pull out the plug of the charger, and tighten the cover of the base of the mover again, and the charging process is over.

## 4.2 Remote Control Charging

- When the remote control gives an alarm for low battery(the voltage is lower than 3.7V) or cannot be turned on because of low battery, it is necessary to charge the remote control.
- When charging the remote control, use the attached USB-to-Type-c cable. As shown in the figure, insert the Type-c plug into the Type-c port on the left side of the remote control, and connect the USB plug to the USB socket including but not limited to the mobile phone charger, computer, car, power bank, etc, and then start charging.



- The remote control can be charged when it is powered on or off. It can also be used during the charging process.
- When charging, a light will illuminate at the rocker position. When the light goes out, the charging is complete. (When the light is bright, you can cover it with your hand to observe)

### ATTENTION

- ① The remote control is equipped with a 1200mAh lithiumion battery.
- ② Do not use a fast-charging charger with an output exceeding 5V 2A.
- ③ Chargers with communication protocol requirements cannot be used to charge the remote control.

## FIVE Maintenance

### 5.1 Cleaning

After use, if there is dirt, you can rinse the tracks and the outer cladding. Remove cobblestones, soil, weeds, etc. from the tracks, and then gently clean them with a small amount of water and a brush or cloth. For the body of the mover, you can wipe it with a damp cloth.

Do not use soap, detergent, or a high-pressure washer.

### 5.2 Storage

After use, be sure to remove the mover from the RV, and store the remote control together with the mover.

Please store the mover in a room-temperature and dry environment as much as possible, and avoid storing it in a humid, closed, high-temperature or sub-zero environment for a long time.

Avoid storing it in an environment with ionizing radiation, corrosive gases and salt spray.

## 5.3 Fault Feedback Instructions

Serial Number	Description	Solution
1	The mover cannot be turned on.	<ol style="list-style-type: none"> <li>1. Confirm whether the emergency stop switch is released.</li> <li>2. Charge the mover and confirm whether the problem is caused by the low battery level of the mover.</li> <li>3. Check whether the quick-release battery can display the battery level normally. If not, replace the battery; Check whether the quick-release battery is installed in place. If not, reinstall it and confirm that the battery is properly installed.</li> <li>4. If there are no problems above, please contact customer service.</li> </ol>
2	The remote control cannot be turned on.	<ol style="list-style-type: none"> <li>1. Connect the charger and confirm whether the problem is caused by the low battery level of the remote control.</li> <li>2. If there are no problems above, please contact customer service.</li> </ol>
3	The status indicator light shows red, but the remote control can operate the mover.	<ol style="list-style-type: none"> <li>1. If the voltage is lower than 23.5V or the battery level is lower than 25% (voltage takes precedence), charge the mover, and confirm whether it is caused by the mover's low battery level.</li> <li>2. If the output current of the entire mover is greater than 50A during overloaded operation, please reduce the operating load.</li> <li>3. If the battery temperature is higher than 50℃, please let it stand still or remove the battery for heat dissipation.</li> <li>4. If there are no problems above, please contact customer service.</li> </ol>
4	The status indicator light shows red, and the remote control cannot operate the mover.	<ol style="list-style-type: none"> <li>1. At this time, the current output of the mover exceeds the limit, and the mover shuts down. Please restart it and reduce the operating load.</li> <li>2. Check whether the RV has encountered large obstacles or slopes. If so, remove the obstacles or adjust the travel route to avoid abnormal road conditions.</li> </ol>

Serial Number	Description	Solution
5	The mover suddenly shuts down during driving.	<ol style="list-style-type: none"> <li>1. Confirm the battery charge level. If the battery level is too low and exceeds the battery safety threshold (voltage/battery level), the battery will shut down. Please charge it in a timely manner.</li> <li>2. Confirm the temperatures of the mover and the battery. If the temperature is too high, the battery will enter the self-protection mode and cut off the output.</li> <li>3. The status indicator light is in the red state before the above two situations occur.</li> <li>4. If there are no problems above, please contact customer service.</li> </ol>
6	The battery cannot be charged.	<ol style="list-style-type: none"> <li>1. If the battery temperature is higher than 50°C during charging, the charging will stop. Please let it stand still to cool down to room temperature before charging again.</li> <li>2. If the charger plug is not inserted firmly, it may cause a charging failure. Please check whether there is any looseness at the connection positions of the charging cable and the mover body/battery, the charging cable and the charger, and the charger and the mains socket respectively.</li> <li>3. If there are no problems above, please contact customer service.</li> </ol>
7	Suddenly stop charging during charging.	<ol style="list-style-type: none"> <li>1. Check the battery temperature (which can be confirmed by checking the temperature of the mover body/battery case). If the temperature is too high, it is a self-protection of the battery. Charging can be resumed after placing it to cool down.</li> <li>2. If there are no problems above, please contact customer service.</li> </ol>
8	Other issues.	Please contact customer service.

## SIX Warranty Service

### 6.1 Warranty Period

- The effective product warranty period is two years from the date of purchase, and the date marked on the invoice or payment voucher shall be regarded as the date of purchase.
- During the product warranty period, the installation and use of the product are required to comply with the product instructions.
- This warranty is applicable only to the original consumer purchaser and is not transferable.

### 6.2 Non-Warranty Situations

- Any modification, product damage caused by exceeding the use recommendation of the product or failing to follow the instructions, is not covered by the warranty;
- Collision and burning accidents caused by the artificial problems other than the products themselves are not covered by the warranty;
- Damage caused by unauthorized modification, disassembly, shell opening, etc. without following the official manual is not covered by the warranty;
- Damage caused by incorrect installation, use and operation not guided by the instruction manual is not covered by the warranty;
- Without official instructions, the customer repairs the parts by him/herself or asks an unauthorized service organization to repair/-modify the parts;

- Damage caused by non-official circuit modification or improper use of battery packs and chargers is not covered by the warranty;
- Damage caused by intentional destruction or using under environmental conditions that do not conform to the product user manual;
- Damage caused by connecting peripherals, additional equipment or accessories not recommended in the user manual;
- Damage caused by insufficient discharge due to power shortages or the use of faulty batteries;
- Altering or tearing off the identification label, serial number, or production date on the product or component to the point of unrecognizability;
- Loss-of-function caused by not using in the country where it was originally designed, manufactured or approved for use;
- Normal wear and tear or normal aging of the product;
- Vulnerable parts that are consumed over time, except when there is a failure due to manufacturing defects;
- Damage to the appearance, including but not limited to scratches and dents;
- Damage caused by accidents, negligence, improper use, natural events or other external causes;
- Other circumstances that do not apply to the warranty.





