



## Instruction Manual



**Product model: KR-H150**

**KR-H150 Ride-on Floor Scrubber**

## **Introduction**

**Each new model is provided with this manual, so as to provide necessary operation and maintenance instructions.**

When operating or repairing the machine, please read this manual completely and understand the machine well.

This machine will provide excellent service. However, if you pay attention to the following points in daily operations, you can get twice the result with half the effort.

- Be very careful when operating the machine.
- Regular maintenance of the machines - according to the maintenance instructions provided by each machine.
- Use supplied components or similar components when maintaining the machine.

Please complete the following at the time of installation for future reference.

Model number-

Machine serial number-

Machine option-

Sales representative-

Sales representative's Tel-

Customer number-

Installation date-

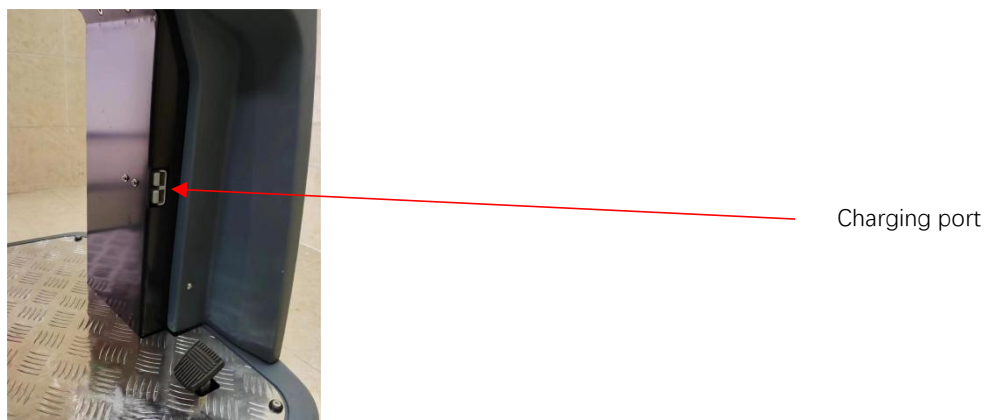
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## 1. Specification

Model	Unit	KR-H150
Size (Length*Width*Height)	mm	1700×985×1350
Weight (w/battery)	KG	420
Voltage	V	24
Total Power	W	2250
Water flow	L/Min	5.0
Cleaning Width	mm	850
Clean Efficient	m <sup>2</sup>	6300
Suction power	KPA	220mbar
Drive moto	W	850
Brush moto	W	2*550
Vacuum moto	W	600
Squeegee width	mm	1150
Charging time	H	8-10
Solution tank capacity	L	145
Recovery tank capacity	L	165
Brush pressure	KG	45
Brush	inch	16" *2
Max gradient	%	≈25

## 2. Structure Map



### 3.Control system



- 1.Speed switch
- 2.Battery volume indicator
- 3.Forward and backward switch
- 4.Indicator light
- 5.overload protection
- 6.Brush lift-down switch
- 7.Power switch
- 8.Squeegee life-down switch
- 9.Brush circuit breaker
- 10.Vacuum circuit breaker

(1) Power key switch: When the key is turned and pulled to the ON position, the vehicle power is turned on. When the key is turned and pulled to the OFF position, the power is turned off.

(2) Adjust the forward and reverse button to the forward gear (the machine must not go backwards when the brush tray and suction blade are on the ground).

(3) Power display: Displays the current power of the battery. This light will be on as long as the machine is turned on. The power meter displays the power from right to left, that is, the rightmost one is the highest voltage. When the voltage is as low as 20.2V, the brushing, air suction, and water spray functions are stopped and the driving function is retained. When the voltage is lower than 20V, all functions of the vehicle stop working.

(4) Brush button: Pull the brush button forward, and the brush plate will slowly descend. Pull it backward, and the brush plate will rise slowly.

(5) Water suction button: Pull the water suction button forward, the squeegee will drop, and the water suction motor will start. Pull it backward, the squeegee will rise, and the water suction motor will turn off.

(7) Horn switch: The horn switch is in the middle of the steering wheel. When you press it down, the horn will sound. When you release it, the horn will not sound.

(8) Emergency stop switch: Press this switch to control the system to power off, and pull out the emergency stop button to control the system to power on.

## **Warning! !**

- After completing the work, the brush plate components should be lifted to prevent brush deformation and wear.
- After completing the operation, the squeegee component should be lifted to prevent the water-absorbing strip from deforming.
- Never park the floor scrubber on a slope.
- The vehicle cannot climb more than 25 degrees, and there must be no stored water in the clean water tank and sewage tank.

## **4. Machine commissioning and pre-operation inspection**

### 4.1 Inspection before operation

1. Check whether the appearance is clean. Note: Please do not use this machine in flammable and explosive environments.
2. Check whether the battery wiring contact is good to prevent short circuit failure.
3. Use the key to turn on the machine and check whether the battery is sufficient. If the battery is too low, please do not continue to use the machine. Turn off the power immediately and charge the battery. Make sure the battery is fully charged before use.
4. Check whether the disk brush or needle seat is installed correctly.
5. Check whether the squeegee is installed correctly (the rubber strip has been installed).
6. Ensure that the dirt in the sewage tank is removed.

## 4.2 Machine debugging

### 4.2.1 Disk brush installation

1. Make sure the machine is at rest.
2. Take out the disk brush that comes with the machine, align the disk brush buckle with the flange buckle under the disk brush motor, and use your hands to rotate the disk brush left and right to cover the flange buckle, and keep your hands away from the disk brush without falling off. .
3. If you need to use the needle seat, please first place the fiber pad on the needle seat, and then perform the same installation method as the disc brush.

### 4.2.2 Installation of squeegee components

1. First lift the squeegee fixing plate assembly off the ground.
2. Unscrew the two black cross bolts in the middle of the squeegee assembly, and place the squeegee assembly in the fixed slot of the squeegee fixing plate.
3. Insert the water suction hose into the corresponding mouth of the squeegee assembly. (See the corresponding schematic diagram of the entire machine structure)
4. Press the water-absorbing button, place the locked squeegee assembly on the ground, check whether the rubber strip is pressed properly, and make appropriate adjustments.



### 4.2.3 Filling the clean water tank

The clean water filling port is located on the left rear of the machine. Pick up the water filling cap and add clean water into the water tank.

hint! !

When using a bucket to fill with water, make sure the bucket is clean. To add detergent, please contact your local agent.

## 5. Machine operation

Once the inspection is complete, work can begin.

1. Check the water volume of the visual hose. If the water volume is insufficient, add an appropriate amount of water before working;
2. Close the water tank cover and ensure that the water tank cover is properly closed and a preliminary seal is formed;
3. Cover the sewage pipe cover and place it in the sewage pipe clamp;
4. According to the dryness of the ground, adjust the amount of water to the appropriate amount;
5. Sit in the driving position and adjust the appropriate operating position.
6. Turn on the key and put the vehicle in a powered state.
7. The panel indicator light is on, the forward and reverse switches are placed on the forward gear, and the speed switch is placed on the minimum speed (far left).
8. Move the brush plate and water suction switch forward, put down the squeegee and brush plate, the water suction motor works, step on the foot

switch, the brush plate works, the solenoid valve opens, and at the same time slowly increase the speed switch, and the vehicle moves forward. start working.

9. To stop the cleaning work, first close the brush tray button, lift the brush tray and disconnect the solenoid valve. After moving forward for 5 seconds, turn off the water suction button, open it until the sewage comes out, release the sewage, clean the sewage tank and squeegee, and complete. Finally, park the car and adjust the speed to the slowest, press the key switch and pull out the key. If the battery gauge indicates the middle position, it should be charged.

Suggestion!!

When using this floor washing machine, it is best to clean at a speed of 80-90 meters per minute.

Note! !

When the whole vehicle is in reverse state, the water suction pump will automatically lift up, but the water suction motor will not work.

## **6.During operation**

1. When operating on a slope or slippery ground, please operate at low speed and do not operate on a slope exceeding 3 degrees.
2. After starting the machine, keep walking to avoid damaging the ground.
3. If the water-absorbing component absorbs water and leaves drag marks on the floor, please wipe the scraper with a rag to remove the rubbish. (Please clean the area to be cleaned in advance to avoid drag marks.)
4. If there is too much foam in the sewage tank, please use defoaming liquid and pour it into the sewage tank for defoaming in time. (Please contact the local agent) During use, always observe the power display meter. When the voltage is as low as 20.2V, stop the brushing, air suction, and water spray functions, and the drive can still move forward. When the voltage is lower than 20V, all functions of the vehicle stop working. (Please predict in advance)

5. When the sewage in the sewage tank is full, the water suction motor stops working. Please drain the sewage and fill it with clean water.

hint! !

When the sewage in the sewage tank is full, the water suction motor stops working.

## **7.After operation**

### 7.1 Drainage of sewage tank

After each cleaning work is completed, or before refilling the clean water tank, the sewage in the sewage tank should be drained and the sewage tank should be cleaned.

1. Take out the sewage pipe, unplug the sewage pipe cover, and put it in a drainage bucket or drainage channel to start draining.
2. Open the sewage tank cover and rinse the inside of the sewage tank with clean water.
3. Clean the float filter located in the sewage tank.
4. Clean the water-filled protector located in the sewage tank.

Warning! !

When the clean water tank is filled with water again, if the waste water tank is not drained, foam or water may enter the float device and damage the suction motor.

### 7.2 Drainage of clean water tank

After each cleaning job, the solution tank should be drained and cleaned.

1. Open the ball valve switch located next to the left rear wheel of the clean water tank to drain all the clean water in the clean water tank.
2. Unscrew the transparent cover of the filter assembly to drain the clean water in the clean water tank. Please clean the filter in the filter.

Hint! !

When the clean water tank is filled with water again, if the sewage tank is not drained, foam or water may enter the float device and damage the water suction motor.

### 7.3Charging

1. Place the charger and machine in a well-ventilated place.

2. Turn off the machine power.
3. Plug the charger's AC power cord into a well-grounded power outlet.
4. Insert the DC output end of the charger into the charging port on the front column of the machine. (See the corresponding schematic diagram of the entire machine structure)
5. The charger automatically starts charging. If the battery is fully charged, the charger will automatically shut down.
6. When charging is completed, first unplug the plug connected to the AC power supply, and then unplug the output end of the charger from the machine.

Warning! !

When charging this machine, be sure to use the original charger that comes with the car.

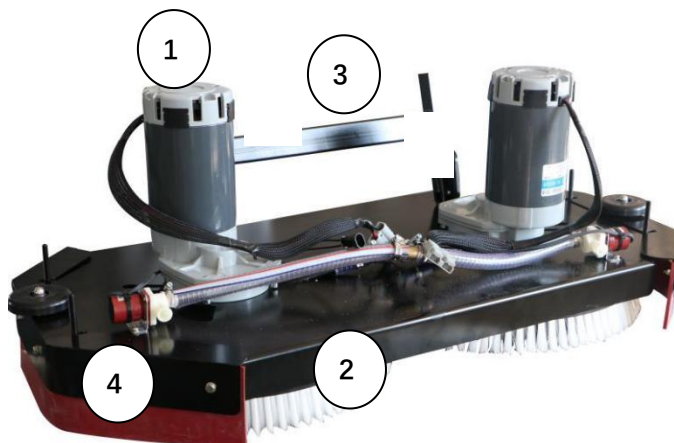
## 8、 Cleaning system

The cleaning system consists of a motor, scrubbing brush, and spray system to form a complete cleaning system. (Figure 8.1)

Warning! !

When starting up the cleaning work, do not stay in the same place while rotating the brush disk. Staying in the same place for a long time will damage the floor scrubbing.

8.1 Figure



1. Brush disc motor: Mainly used to drive the rotation of the brush disc for floor cleaning.

2. Floor scrubbing brush: Mainly used for cleaning and decontamination of various conventional floors.

3. Lifting mechanism: Mainly used for the rotational function of lifting and lowering the entire cleaning system.

4. Water-retaining rubber: prevent sewage from being thrown out during the cleaning process and causing secondary pollution.

### 8.2 Operation method

The brush plate lifting mechanism of this floor washing machine adopts a push rod motor to control the lifting with one button.

Pull the brush tray button forward, and the brush tray will slowly descend. Pull it backward, and the brush tray will slowly rise. When the brush tray button is pressed, the brush tray push rod motor will turn on and lower the brush tray assembly. When the brush tray assembly drops to the ground When the brush plate is pressed, press the foot switch to start rotating the brush plate.

### 8.3 Inspection and maintenance

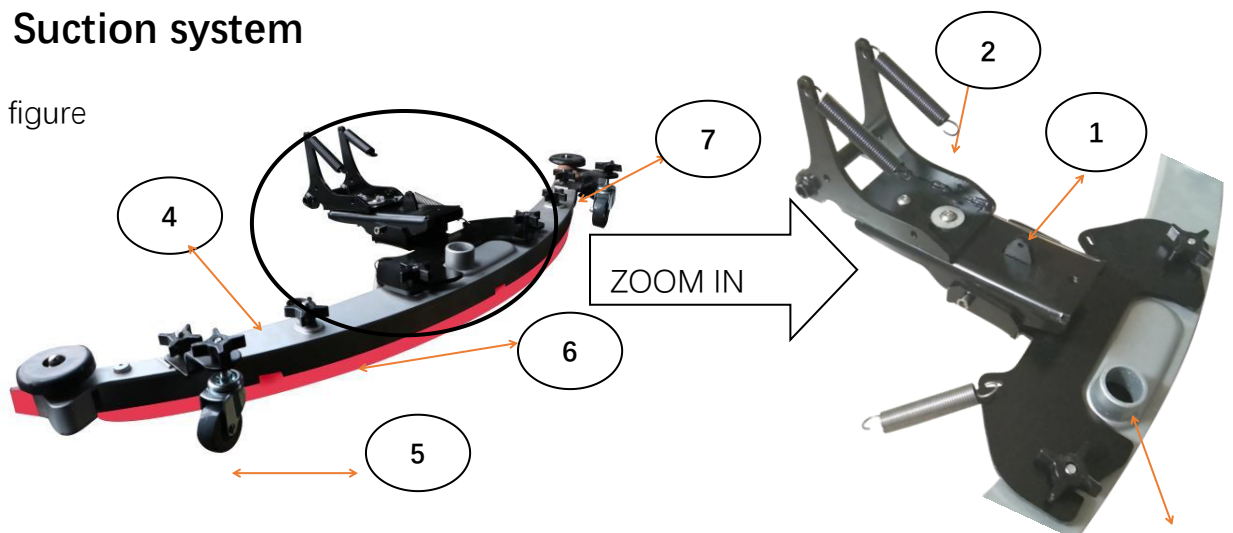
	Question	Reason	How to solve
1	The brush plate swings obviously from left to right	Rotary rod fixing screw loose	Tighten the fastening screws
2	The sides of the brush plate are uneven	Rotary rod fixing screw loose	Tighten the fastening screws

### 8.4 Maintenance methods

1. When the floor washing machine is stationary for a long time, the floor scrubbing brush should be lifted up to avoid deformation of the bristles and affecting the next cleaning effect.
2. When cleaning is in progress, metal entanglements on the bristles should be removed in time to reduce the load on the brush motor, avoid damaging the consistency of the ground, and improve the overall work efficiency.
3. Avoid cleaning lime, cement, sulfuric acid and other easily solidified, corrosive and flammable objects.

## 9. Suction system

9.1 figure



1. Squeegee connection seat: Directly connected to the lifting motor chain, it mainly plays the role of lifting and lowering the squeegee assembly.

2. Squeegee rotating frame: a transmission bridge used for the straight movement, turning and return of the squeegee assembly.
3. Sewage suction pipe mouth: It is an important part for sewage suction, connecting the squeegee assembly and the sewage tank hose.
4. Squeegee assembly: an important component used for sewage collection.
5. Support universal wheel: used to adjust the height of the squeegee strip. It has been adjusted to the optimal value before leaving the factory.
6. Rear water-absorbent strip: It is a consumable part. Please replace and maintain it as required during use.

## 9.2 Operation method

The water suction lifting mechanism of this floor washing machine adopts a push rod motor to control the lifting with one button.

When the water suction button is pressed, the water suction push rod motor starts and lowers the squeegee assembly, and at the same time, the water suction motor starts working.

## 9.3 Debugging the squeegee

As the squeegee is used for extended periods of time, the rubber strips wear out and the water absorption effect will be affected to a certain extent. In order to achieve the effect of completely removing stains, the following corresponding adjustments are required.

1. Adjust the height of the two support universal wheels behind the squeegee to the same height. When stationary, it needs to be suspended about 2mm-3mm above the ground.
2. Rotate the four-corner handle nut until the rear rubber strip is tightly pressed against the ground.

## 9.4 Replacement of rubber strips

The adhesive strip is rectangular and should be replaced after both sides have been fully used.

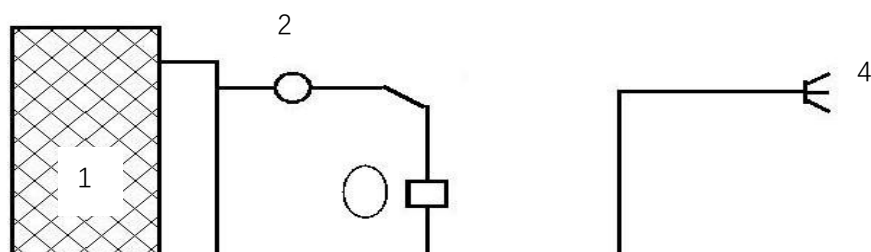
1. First loosen the pressure plate that is tight on the front and rear rubber strips.
2. Remove the front and rear rubber strips.
3. After taking out the required new adhesive strip.
4. Install the new strips in the same order as they were just removed.

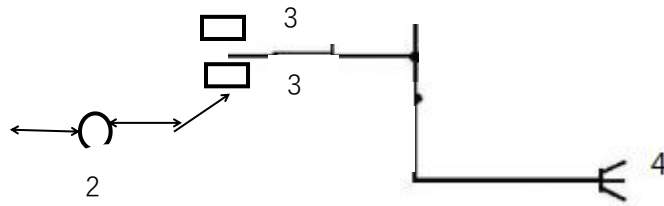
Maintenance tips! !

After each floor cleaning is completed, the squeegee assembly needs to be lifted and the rubber strips need to be cleaned.

# 10. Waterway system

## 10.1 Schematic diagram





1. Clean water tank: It is one of the core accessories for the vehicle to reserve water for cleaning the ground.
2. Filter: Installed on the left and right sides of the front driving wheel of the clean water tank to filter impurities in the water system.
3. Solenoid valve: installed on the upper part of the brush plate assembly, one on each side of the symmetrical left and right sides, to control the amount of water and turn off the water.
4. Water outlet: Located in the middle of the brush plate, it supplies water during the brush cleaning process.

### 10.2 Operation method

The vehicle waterway system and cleaning system are designed to work synchronously. When the brush plate is working, the solenoid valve is open. When the brush plate is not working, the solenoid valve is closed, and the ball valve adjusts the water volume independently.

### 10.3 Inspection and maintenance

Question	Reason	How to solve
1	filter clogged	Clean the filter
2	The solenoid valve is not open	Check whether there is any foreign matter blocking, whether the circuit is short-circuited, etc.
3	The main ball valve is not open	Turn on the ball valve switch
4	The water outlet is blocked	Clear debris from the water outlet (water outlet of clean water tank)
5	Water output is too small	There is air inside the water pipe Disassemble the water pipe and remove the air

6		Discount on water pipes	Adjust the water pipe to be folded
7		Ball valve is not opened enough	Open the ball valve wider

### 11.1 Regular maintenance

Regular maintenance and inspection		Intervals				
		4	20	50	200	500
1	Battery power detection	√				
2	Motor carbon brush inspection					√
3	Whether the brush is entangled with wires or silk objects	√				
4	Check water filter		√			
5	Check the instrument panel and various electronic switches					√
6	Check brush wear			√		
7	Clean the upper and lower water tanks promptly	√				
8	Check the wear of the absorbent rubber		√			
9	Check the use of suction and discharge pipes	√			√	
10	Check the water discharge situation	√				
11	Check the water absorption of the squeegee	√				

### 11.2 Battery maintenance



This floor scrubber system is powered by four 6V maintenance-free batteries connected in series, and the system voltage is 24V.

1. After the machine has been operating for a period of time, the battery power will decrease. When the last bar of the battery indicator flashes, it means that the battery indicator is insufficient and needs to be charged in time.
2. When maintaining the battery, please wear protective gloves to avoid contact with battery acidic substances.
3. The top of the battery and the electrodes must be anti-corrosion treated and wiped repeatedly with a brush dipped in soda water, but this solution must not be poured into the battery.
4. Check whether the battery cable is worn and whether the contacts are loose, and replace it if necessary.
5. The power output terminals on the battery should be kept clean and dry, and should not be covered with debris or dust. This is extremely detrimental to the battery and will shorten its service life or even burn out the battery.

hint! !

In order to ensure that the battery has a long service life, it should be charged in time after the machine operation is completed, and do not leave the battery in a discharged state for a long time.

warn! !

During the use of the battery, the capacity of the deeply discharged battery will be reduced and its lifespan will be shortened.

Since the battery will release hydrogen gas, the battery box must be kept open during charging and kept away from sparks or fire sources to prevent the hydrogen gas released from the battery from causing danger.

## 12. Troubleshooting methods

Question	Reason	How to solve
The brush does not produce water	waterway blocked	Check and clear waterways
	Water tank is low	Fill the water tank

	Solenoid valve failure	Replace solenoid valve
Brush plate motor stops working	Brush plate motor damaged	replace
	Wire harness connector loose or damaged	Repair or replace
	Panel switch failure	replace
Water suction motor stops working	Water suction motor is damaged	replace
	Wire harness connector loose or damaged	Repair or replace
	Panel switch failure	replace
There are water marks when absorbing water	There is foreign matter on the absorbent strip	Eliminate foreign matter
	The absorbent tape is not tight or wrinkled	Reinstall the strip
Insufficient suction or failure to absorb water	The sewage tank lid is not closed properly	Close the sewage tank lid
	Broken lid seal	Replace sealing ring
	The drain pipe cap is not closed properly	Close the drain pipe cap
	The sewage tank is full of sewage	Drain the sewage cleanly
	Suction pipe blocked	Clean the suction pipe
Absorbing water is not clean	Water-absorbent strip wear	Replace the strip
	There is a gap between the squeegee and the ground	Adjust the height of the squeegee universal wheel from the ground

	The angle of the rubber strip behind the squeegee is too large	Adjust the angle of the rubber strip behind the squeegee
The vehicle cannot move	Anti-flying protection	Release the foot pedal, let it return to its original position, and turn off the power source, then turn on the power and reset, then press your foot Pedal start floor washing car
	Oxidation (corrosion) of power terminals	Disconnect power, remove nuts, clean terminals Clean and reinstall.
	Battery is low	Charge
	Proximity switc	replace
	Loose electrical connector	Repair or replace

## After-sale statement

The company has a complete after-sales service system and a sales commitment to customer satisfaction.

1. From the date of purchase, except for the easy-wearing and consumable parts, the other major components are guaranteed for one year.
2. Users must hold a valid purchase invoice and product warranty card for the product being sent for repair. The warranty period is calculated from the date of issuance of the invoice. Users should properly keep the warranty card and purchase invoice. If the user loses the purchase invoice, the validity period should be calculated based on the factory date.
3. According to national regulations, the following items are not covered by free warranty.
  - Damage caused by improper handling, installation, use, maintenance and storage by the user.
  - Without warranty certificate and valid purchase invoice.
  - The warranty certificate number does not match the physical product code or has been altered.
  - Product damage caused by force majeure.
  - The free warranty period has expired.
4. Product damage caused by accident, abuse, neglect, or damage to its spare parts caused by incorrect use is not covered by the warranty terms. At the same time, our company does not bear any responsibility for direct or indirect losses.

Products that have exceeded the warranty period or are not within the scope of free warranty will also be warmly serviced for you.

## **[Battery Maintenance Guide]**

This product uses lead-acid batteries, which are maintenance-free and have automatic pressure relief functions. The principle of use is: charge as you go, charge immediately after use, and do not discharge the battery frequently (minimum protection voltage).

- 1).What is a short circuit and what impact does it have on battery performance?  
It means that the positive and negative electrodes of the battery are connected to produce a strong current; the internal positive and negative electrode groups are connected. During charging, the voltage rises very slowly and always remains at a low value; the temperature of the electrolyte rises very quickly and quickly; the density of the electrolyte rises very slowly or has almost no change; the terminal voltage drops rapidly during current discharge.
- 2).What is over-discharge and what impact does it have on battery performance?  
It refers to the phenomenon that the power stored inside the battery continues to be discharged after it reaches the minimum operating voltage during discharge. After the battery is over-discharged, the voltage drops significantly in a short period of time. At

this time, the internal reaction system of the entire battery is disordered. If the battery is over-discharged repeatedly, the positive electrode will lose activity, which will affect the service life of the battery. Reduce battery usage time and extend battery charging time.

3). How to store the battery after use?

The battery is a sensitive product. If it will not be used for a long time, it is best to take the battery out of the machine and put it in a dry place with normal temperature; because the battery is placed inside the machine and the electrical appliances and circuit boards are not disconnected, it will The battery is continuously slightly discharged.

4). Why is the battery life short?

The battery is undercharged for a long time and does not charge for a long time after being discharged. During use, overdischarge often occurs. The standard charger is not used when charging, resulting in overcharge. The voltage between used battery packs is generated. Difference, resulting in low voltage working state for a long time.

## **Hefei Kuer Environmental Protection Technology Co. LTD**

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