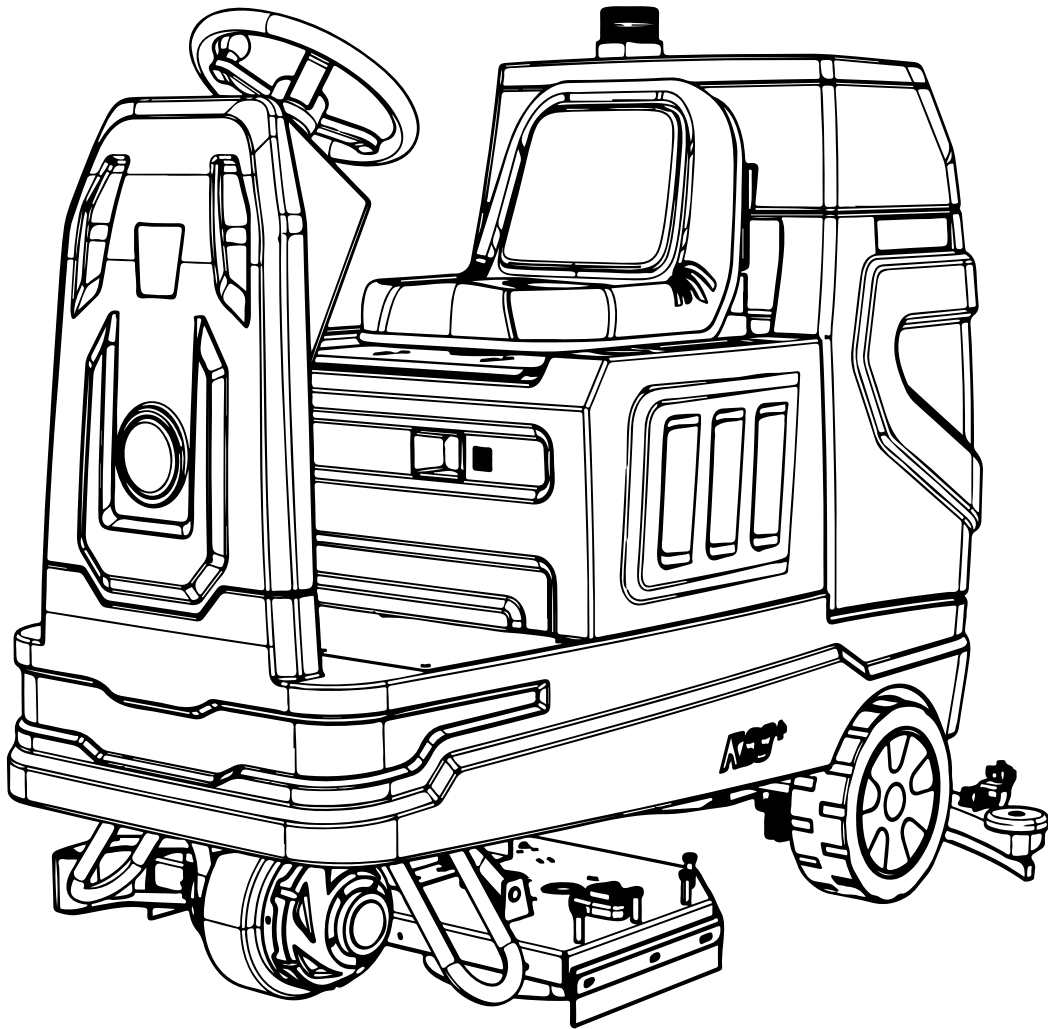


# K88+

## Ride on Floor Scrubber

### Operation Instructions



11/2023

Do not use this device without reading this manual.



# Preface

Thank you for choosing our cleaning equipment. We are confident to provide you with this equipment, which is produced through the latest technology and strict quality control.

This manual is designed to help you understand the equipment operation and maintenance, so you can have a more comfortable and efficient product experience. Please read through this manual before using equipment.

## Safety Precautions

To ensure the safety of you and your device, please follow these important usage rules!

Do not use this device under the influence of alcohol or medication.

Before any maintenance or repair, please turn off all switches.

This machine must be used by qualified and authorized personnel. Minors and disabled persons are not allowed to use it.

Keep sparks, flames, and smoke away from batteries.

Do not use it in places with dangerous, flammable, or explosive gases, liquids, or steam.

Dress appropriately and do not wear loose clothing or jewelry; keep clothing, gloves, and hair away from moving parts.

Please do not smoke while charging the battery.

In the event of a fire, remember to use a powder fire extinguisher rather than water.

Even when the machine is to be dismantled and scrapped, the process must be watched because some harmful substances (such as batteries, waste oil, etc.) meet the standards and should be sent to a specific center for processing.

## Safe Use


1. Before using the equipment, please read this user manual carefully, which will ensure that you are familiar with the control and maintenance requirements of the equipment and help you use the equipment safely.


2. If the machine is used by other people, please be sure to hand over the instruction manual together and tell them to read this manual carefully before using it.


While reading this user manual


This manual covers all configurations of this series of products; therefore, you may find that some of the information does not apply to your device.

All information, specifications and illustrations in this manual will be effective once it is published. Our company reserves the right to change specifications or designs without prior notice.

In this manual, we use (  ) symbol along with the word "Warning" to indicate the existence of a hazard that may result in death or serious personal injury; to avoid or reduce the hazard, the steps must be strictly followed.

In this manual, we use (  ) symbol along with the word "Caution" to indicate the existence of hazards that may cause minor or moderate personal injury or equipment damage; to avoid or reduce the hazard, the steps must be strictly followed.

A mark similar to this (  ) indicates that the arrow points in the direction of the equipment's forward direction.

An arrow similar to this (  ) indicates movement or action.

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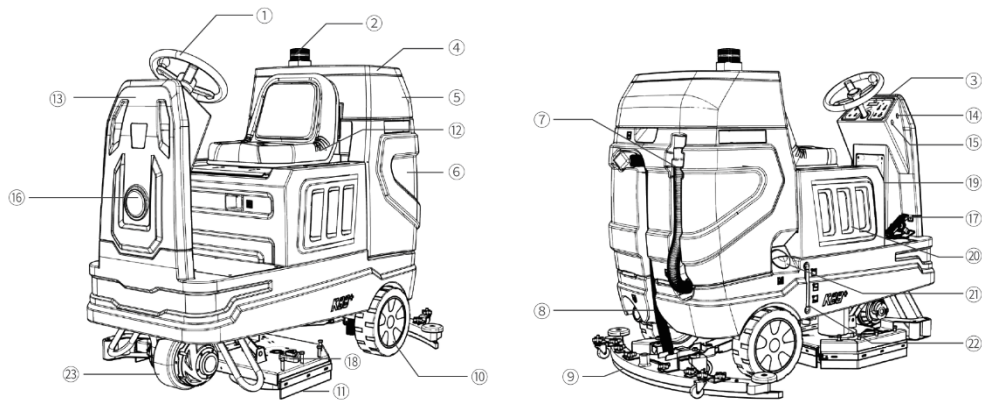
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# Chapter 1 Product Introduction

## 1.1 Applicable scenarios

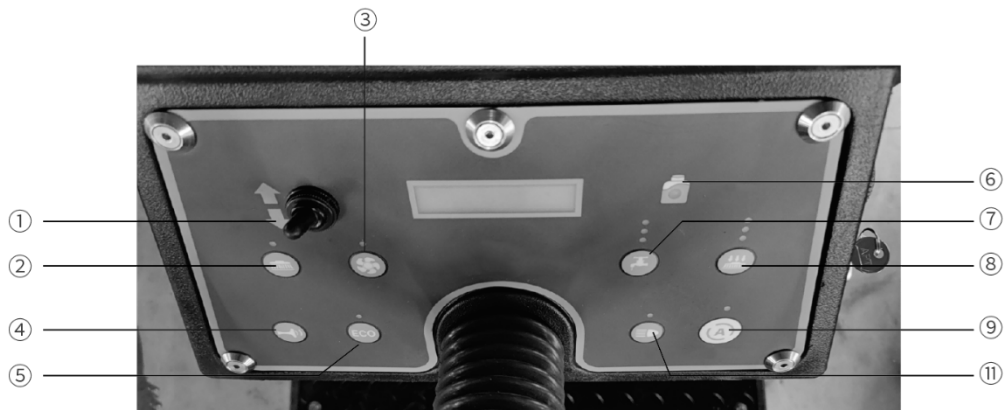
This equipment can be used in a variety of scenarios, including commercial and industrial places , such as hotels, schools, hospitals, industrial offices, supermarkets, office buildings, etc.; for epoxy floors, PVC floors, terrazzo, wear-resistant floors, tiles and cement floors , wooden floors, rubber floors, different floors can be cleaned with brush plates made of different materials.

## 1.2 Equipment Overview



NO.	Name	Function
①	Steering wheel	Control driving direction
②	Warning light	Remind pedestrians to pay attention to the vehicle
③	Control panel	Main function console
④	Sewage tank cover	Clean the recovery tank
⑤	Suction motor case	A rotational cabin for placing the suction motor
⑥	Integrated water tank	An integrated water tank for holding clean water and collected sewage
⑦	Sewage draining tube	Discharge sewage from the recovery tank
⑧	Sewage suction tube	Suck ground sewage into the tank
⑨	Squeegee	Collect ground sewage
⑩	Rear wheel	Driven wheel
⑪	Brush plate	Clean the ground
⑫	Seat	Driver's seat
⑬	Machine nose	For bearing the control panel and the steering wheel
⑭	Key switch	For powering on and shutting down the machine
⑮	Emergency stop switch	Press this switch in case of emergency to power off the machine
⑯	Headlight	For lighting
⑰	Accelerator	For machine acceleration and deceleration
⑱	Brush plate removal buckle	For removing the brush plate
⑲	Charger interface	Connect the charger
⑳	Clean water inlet port	Show clear water capacity
㉑	Storage cabin	A place where small objects can be placed and accessed
㉒	Water level gauge	Show clear water capacity
㉓	Driving wheel	The main wheel plays a driving role

### 1.3 Controlling panel/Buttons.



NO.	Name	Function
①	Forward and backward switch	Control the machine to move forward/ backward
②	Scrubbing switch	Start and stop floor scrubbing
③	Sewage suction switch	Start and stop sewage suction
④	Horn switch	For whistling
⑤	ECO switch	Economic mode
⑥	Full recovery tank indicator	Remind the driver of full recovery tank
⑦	Brush plate pressure adjustment switch	Adjust the pressure between the brush plate and the ground
⑧	Water level adjustment switch	Adjust the water output volume
⑨	Sewage suction and floor scrubbing switch	One key to start the sewage suction and floor scrubbing modes
⑩	Headlight switch	Turn the headlight on/ off
⑪	Electricity meter	Display the current machine voltage

### 1.4 Accessories List

When you open the packaging box, you will find that it contains the following components. Please check the components listed in the table. If there are anything missing, please contact us in time.

NO.	Name	Quantity
①	Host	1
②	Charging cable	1
③	Squeegee assembly	1
④	Tool kit	1
⑤	Operation instructions	1
⑥	Warranty card	1

## 1.5 Consumables and Optional Accessories

The consumables of this equipment are listed in the table below. When any of them is worn, you need to purchase or replace it.

This equipment can cope with different scenarios through different optional accessories, which you can purchase through suppliers or manufacturers.

Consumables	Optional Accessories
Pad holder	Pad holder
Brush plate	Cleaning pad (red)
Rubber strip	Cleaning pad (white)
Cleaning pad (red)	Lithium battery
Cleaning pad (white)	Lead-acid maintenance-free battery

## Chapter 2 Unloading and assembling the machine.

### 2.1 Installing the squeegee

#### Warning

Please carefully disassemble the outer package to avoid damage to the machine shell.

It is recommended to keep the packaging boxes after receiving the goods so that the machine can be repackaged during later product transportation or return or exchange.

It is prohibited to violently unload the machine to avoid damaging the parts.

Remove the machine backwards from the pallet.

### 2.2 Installation

#### 2.2.1 Connecting the battery cables.

**Step 1:** Open the seat to check whether the wire harness on the battery is connected and tightened.

**Step 2:** Connect the disconnected battery poles in series. Note that the positive (+) port is red, and the negative (-) port is black. After the connection is completed, put down the seat.

#### Caution

Due to the different distances of logistics routes, to avoid battery loss during long journeys, the battery cables have been disconnected at the factory.



#### 2.2.2 Squeegee installation

**Step 1:** Park the machine on a flat ground.

**Step 2:** Turn on the key switch, adjust the mode selection switch to the suction, lower the swing tail to the ground and then turn off the key switch.

**Step 3:** Align the squeegee with the hole and install it on the swing tail, then tighten the cross knobs of the squeegee.

**Step 4:** Insert the other end of the suction tube into the suction port of the squeegee to complete the



## Chapter 3 Inspection and adjustment before use

### 3.1 Check the battery.

After turning on the power key switch, the battery meter will display the current voltage of the battery. When the voltage is about 21V, please charge it in time.

#### **⚠Caution**

During the use of the battery, deep discharge will cause the battery capacity to decrease and its life to be shortened. For example: the battery is often used below 21V and is not charged in time.



### 3.2 Check clean water level

#### **⚠Caution**

Observe the water level of the solution tank through the water level tube. Please ensure that there is sufficient water and avoid using the suction motor when there is no water. Otherwise, the motor may take in dust. In severe cases, the noise of the suction motor will become louder, or the suction power will be insufficient.



### 3.3 Check sewage level

When the sewage warning light on the panel alarms, please discharge the sewage immediately.

#### **⚠Caution**

Please pay attention to the sewage water level in the recovery tank. When the sewage warning light is on, please discharge the sewage in time. The recovery tank is equipped with a water level sensing device. So, when there's too much water, the suction motor will stop working.



### 3.4 Check the wear of the brush plate.

Put the brush plate on the ground. If the bristle length is close to 1.5cm, please replace the brush plate in time. For details, see [ 5.2.1 Replacement and installation of brush plate]

#### **⚠Caution**

If the worn brush plate is not replaced in time, it will lead to wear of the water retaining strips, and even damage the brush plate motor.



### 3.5 Check the wear of the rubber strips.

Check whether the strips are damaged, deformed, aged, or cracked. If so, please replace them in time. For details, see [5.2.2 Replacement and Installation of Rubber Strips].

#### **⚠Caution**

When the machine moves backward, you shall raise the squeegee to prevent deformation of the strips and squeegee sheet metal parts.





## Chapter 4. Operation instructions

### 4.1 Driving

**Step 1:** Turn on the main power key switch of the machine.

**Step 2:** Press and hold the lever switch to move the machine forward and backward;

**Step 3:** When you need the machine to stop, release the lever until the machine comes to a complete stop.

**⚠ Caution**

When the machine needs to be moved backwards or changed places, the brush plate and squeegee should be raised off the ground to avoid wear of the brush plate and deformation of the rubber strips or squeegee sheet metal parts.



Turn on the key switch.



Forward gear



Press the accelerator.

### 4.2 Scrubbing

**Step 1:** Open the water valve.

**Step 2:** Open the key switch of the main power supply.

**Step 3:** Step down the lifting rod of the brush plate to put it down.

**Step 4:** Step down the lifting rod of the squeegee to put it down.

**Step 5:** Move the forward lever to clean.

**⚠ Caution**

Avoid stopping the machine in the same place for a long time with the brush plate working, as this will leave unnecessary marks on the ground.



Turn on the key switch.



Press the start button.



Press the accelerator.

## 4.3 Discharging sewage

**Step 1:** Drive the machine to a site that meets the sewage discharge standards, stop the machine, and turn off the power.

**Step 2:** Remove the sewage tube from the clamp at the rear of the machine, place it downwards, open the tube cover, and discharge the water. The inner wall of the tank can be appropriately rinsed with clean water.

### ⚠Caution

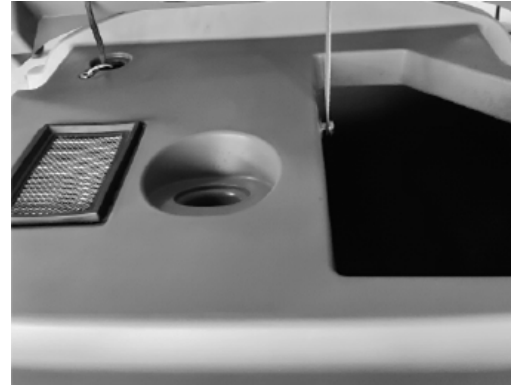
When flushing the recovery tank, do not splash water into the suction port to prevent the motor from burning out.



Turn on the key switch.



Draining sewage



Suction port

## 4.4 Shutting down.

**Step 1:** When the machine is not in use, empty the water tanks.

**Step 2:** Drive the machine to the parking site.

**Step 3:** Turn off the main power switch and remove the key.

**Step 4** Step down the lifting lever of the squeegee and the brush plate to lift them.



Empty the solution tank.



Sewage tube



Empty the recovery tank.



Turn off the power Lift the squeegee and the brush plate.

## 4.5 Charging

The correct way to charge battery is to plug in the battery first, then the mains power; after charging, cut off the mains power first, and then the battery plug.

The power system of this floor scrubber is composed of 2 12V maintenance-free lead-acid batteries connected in series or 2 X12V liquid-filled batteries or a whole 24V lithium battery, and the system voltage is 24V.

When the machine has been operating for a period, the battery power will drop. When the last two bars of the power meter are red, or the voltage is

lower than 32V, it means that the power is insufficient and needs to be charged in time.

When maintaining the battery, please wear protective gloves to avoid contact with acidic substances of the battery.

Check whether the battery connection wire is worn and whether the contacts are loose and replace it if necessary; the battery terminals should be kept clean and dry, without debris and dust covering them, otherwise it will be extremely detrimental to the battery, and in serious cases, it will burn the battery.

To ensure that the battery has a long service life, it should be charged in time after the machine finishes working, but deep discharge is strictly prohibited. When the machine is not used in a long time, please fully charge the battery, and store the battery with the positive pole (+) disconnected.

#### **Caution**

During use of the battery, deep discharge will cause the battery capacity to decrease and its life to be shortened. For example: the battery is often used when the voltage is below 32V and is not charged in time. If the machine will not be used for a long time, it needs to be fully charged in advance, and as shown in the figure below, you should cut off the connecting wires on the battery and wrap them with insulating tape to prevent the battery from losing power due to long-term non-use.



## Chapter 5 Cleaning and maintenance

**Proper cleaning and maintenance will increase the service life of your machine, so please check and clean the machine regularly.**

### 5.1 Cleaning

Check and clean the wheel set and remove entangled objects.

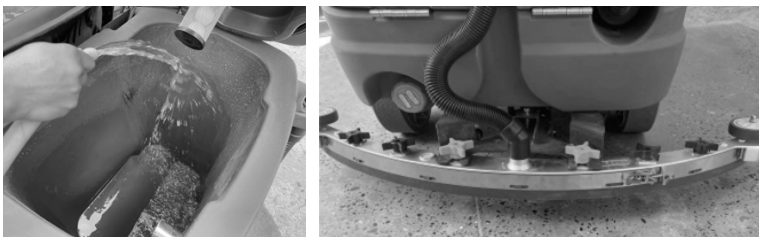
Clean the sewage tank and sewage tubes regularly and use water to flush the dirt in the tank and blockages in the tubes.

Clean the dirt under the rubber strips regularly and wipe the strips with a cotton rag.

Check the water filter regularly. When there are impurities in the transparent cover, rotate and unscrew the cover, and rinse it and the filter screen repeatedly with clean water.

#### **Caution**

The machine is not a tightly waterproof device. Do not flush the machine directly with water in that it may cause a short circuit in your machine or burn out the original electrical components.



Clean the rubber strips.

### 5.2 Maintenance

#### 5.2.1 Replacement and installation of brush plate

Step 1: Park the machine on a flat ground, keep the brush plate raised, turn off the main power switch, and make sure that the machine is powered off.

Step 2: Press the brush plate down with your hand to remove it.

Step 3: When installing the brush plate, ensure that its inner diameter is aligned with the magnetic iron ring, and lift it upward to a certain distance.

Then the magnetic iron ring will attract the brush plate to complete the installation.

**⚠Caution**

There are two types of cleaning pads with different hardness. Choose the more suitable one according to the site.

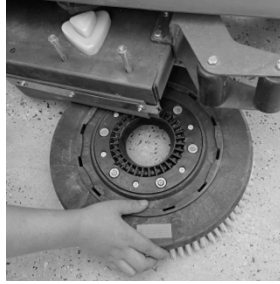
**Replacing the pad holder:** The pad holder can be purchased through our company's platform. The specific replacement is to place the cleaning pad at the bottom of the pad holder and make them fit firmly.

The cleaning pad and the pad holder must fit neatly together, then install the pad holder on the machine. The steps are the same as that of the brush plate.

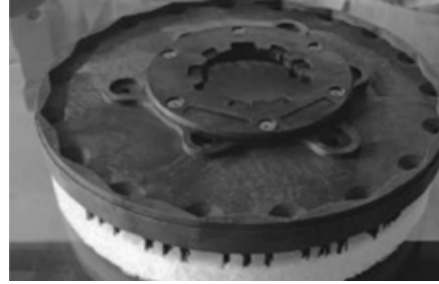
The cleaning pad must be soaked in clean water before using it for the first time for 10-15 minutes. A dry scouring pad will damage the floor.



Turn off the power.



Remove& install the brush



Install the pad holder and the cleaning pad.

### 5.2.2 Replacement and installation of rubber strips

#### Removing the squeegee rubber strips

**Step 1:** Park the machine on a flat ground, turn off the main power switch after lifting the squeegee. Make sure that the machine is in a powered-off state.

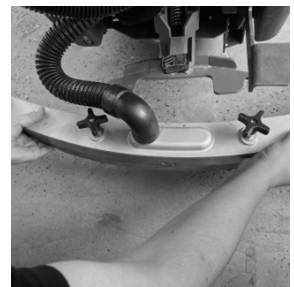
**Step 2:** Adjust the mode selection switch to suction, lower the squeegee to the ground and turn off the power.

**Step 3:** Rotate the plastic knobs in the opposite direction and take out the squeegee assembly.

**Step 4:** Remove the rubber strips.



Lift the squeegee.



Remove the squeegee.

Unscrew the squeegee knobs and remove the universal wheel.

Pull up the clasp of the rubber strip pressure plate and remove the plate.

Remove the bottom plate of the squeegee assembly and then remove the front and rear rubber strips.



Step 4-1



Step 4-2



Step 4-3



Step 4-4

### 5.2.3 Installing the squeegee rubber strips.

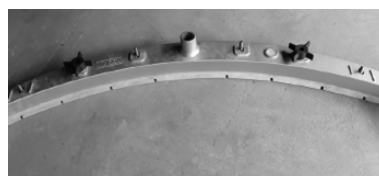
**Step 1:** Align the holes of the front rubber strip with the protrusions of the plastic component of the squeegee.

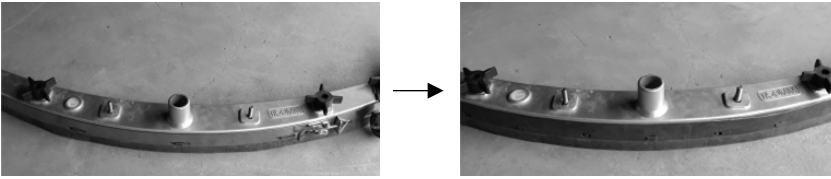
**Step 2:** Fix the plastic bottom plate on that of the squeegee and install the two black screws.

**Step 3:** Align the holes of the rear rubber strip with the protrusions of the plastic component of the squeegee.

**Step 4:** Install the rubber strip pressure plate and lock the clasp.

**Step 5:** Install the squeegee universal wheel.





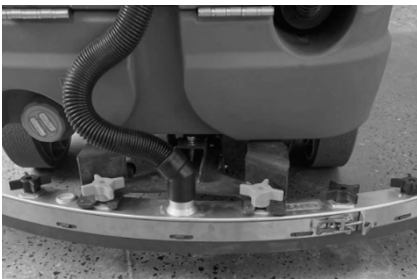
### 5.2.4 Adjustment of the rubber strips

**Step 1:** Lower the squeegee assembly to observe whether the strips can touch the ground.

**Step 2** Push the machine to check whether the rubber strips are slightly bent.

**Step 3:** If there is a gap between the rubber strips and the ground, you can adjust the component upward through the squeegee universal wheel.

**Step 4:** If the rubber strips are too close to the ground, you can adjust the component downward through the universal wheel.



Step 1



Step 2



Step 3

## Chapter 6 Transportation and Storage

### 6.1 Transportation

If the machine and corresponding accessories need to be lifted, it is recommended that you put them on a pallet and then lift them up with a forklift. Clean water and sewage must be drained when transporting the machine.

During transportation, to prevent various situations from slipping and damage caused by collisions, it is necessary to ensure that the binding is firm, the center of gravity is stable, and the driving safety is ensured. For the transportation vehicles that are in contact with the surface, the surface should be installed with soft pads or hard cardboard packaging. Load and unload lightly, and it is strictly prohibited to drop, hit, roll, press heavily, or put the machine upside down.

### 6.2 Storage

Before storing the machine, clean it. For details, see [Chapter 5 5.1 Cleaning].

For machines that will not work in a long time, anti-rust treatment should be done before storage, check the easily corroded parts of the machine, and apply butter.

If the machine will not be used within 15 days, store the machine fully charged in a clean, dry, and away from flammable places.

If the device is not used for a long time, first fully charge the device battery, disconnect the battery connector, and store it at room temperature above 0 degrees. Keep the battery and ask for replenishment once a month.

In areas with lower temperatures, clean water and sewage need to be drained to prevent the water tanks from cracking due to freezing of clean water or sewage.

## Chapter 7 Common Problems

Problem	Phenomenon/Part	Troubleshooting method	Solution
Charging failure	Charging failure	If the charger is not connected to the machine, see whether the green light will be on. If the machine is plugged in, the red light is on, and the built-in fan of the charger does not run	Replace the charger
	Charging interface oxidation	Whether there is any obvious oxidation trace on the copper interface	Clean the charging interface oxide
Suction motor not working	Fuse	Check if the fuse is burnt	Replace the fuse
Brush plate motor not working	Fuse	Check if the fuse is burnt	Replace the fuse
Water not coming out	Clean water tube	Whether there is any scale in the transparent tube of the clean water tube	clean water tube
	Filter cover	Whether there is dirt on the filter cover	Clean filter cover
	Solenoid valve	Measure whether the solenoid valve has input voltage	Check the input voltage of the solenoid valve. If it is normal, remove it and clean the blocked part. Replace the solenoid valve if necessary.
Loud noise	Resonance of water absorbing rubber strips and sewage suction port	1. Is there any abnormal sound when the rubber strips are lifted? 2. Is there any obvious vibration in the water absorbing tube?	Adjust the height of the squeegee universal wheel
	Suction motor	1. Is there any abnormal sound when the rubber strips are lifted? 2. Is there still any abnormal sound after the water absorbing tube is pulled out?	Replace the suction motor
Brush plate	Frequent drop	Has the brush plate been lowered to the ground before turning on the switch?	This behavior is an incorrect operation and may easily cause the brush plate buckle to wear. Replace the buckle when necessary.
	Buckle wear	See the brush plate buckle for wear	Replace the brush plate buckle
The machine not sucking water properly	Floating ball cage clogged	Check whether there are two floating balls in the cage	Matters needing attention in daily use
	Tube blocked	Clean the water suction tube	Daily cleaning and maintenance
	Recovery tank sealing circle	Sealing circle aging	Replacement of accessories
	Water marks on the ground	1. Whether the strips are cracked, aged, or deformed 2. Whether the strips are wavy	Replacement of rubber strips
Machine not walking	Solenoid brake	Check whether the solenoid brake is on the downward gear when the machine is not powered on	Contact customer service center
	Accelerator	1. Short-circuit the accelerator connector. If the machine can move, there is something wrong with the accelerator pedal. 2. The fault lamp flashes 7 times.	
	Controller	Use a multimeter to measure whether the controller has input voltage	

## Chapter 8 Technical parameters

Category	Numerical value
Cleaning width	850mm
Squeegee width	1200mm
Continuous working time	4-4.5h
Theoretical working efficiency	6200 m <sup>2</sup> /h
Battery capacity	24V/200Ah
Suction motor power	650w
Brush plate motor power	450W*2
Driving motor power	850W
Clean water capacity	130L
Sewage capacity	150L
Total weight	505L
Working size	1500*1200*1400mm

## Warranty Card

Name		Tell	
Postal address		Bill No.	
Purchase time		Number	
Product model		Date	
Replace accessories			
Fault description			

