

X4

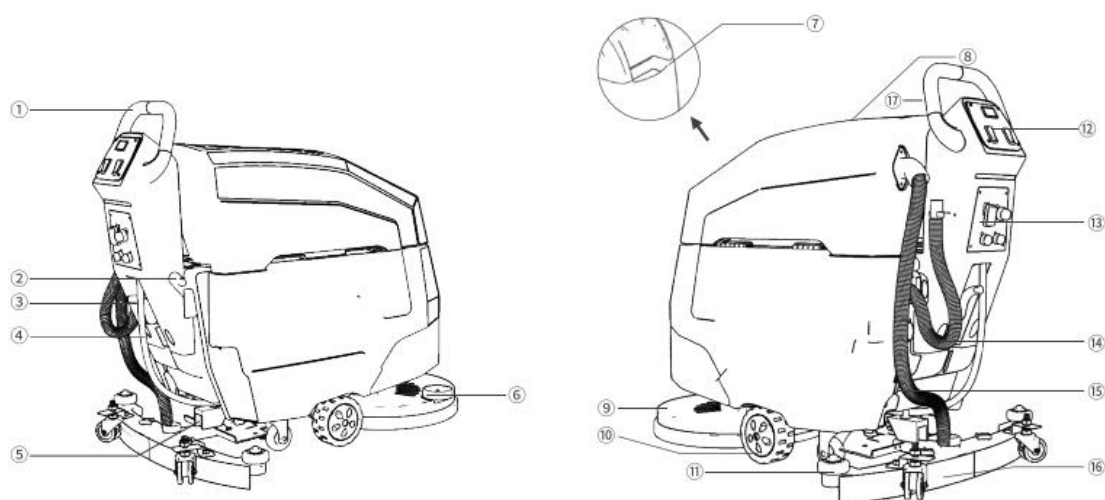
FLOOR SCRUBBER

Operating instruction

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Parts



- | | |
|--------------------------|-----------------------------------|
| ① Armrest | ② Booster handle (optional) |
| ③ Squeegee lift handle | ④ Water level gauge |
| ⑤ Brush plate lift pedal | ⑥ Brush disc anti-collision wheel |
| ⑦ Clean water inlet | ⑧ Wastewater tank cover |
| ⑨ Brush | ⑩ Tires |
| ⑪ Anti-collision wheel | ⑫ Center control panel A |
| ⑬ Center control panel B | ⑭ Sewage pipe |
| ⑮ Suction pipe | ⑯ Squeegee |
| ⑰ Travel switch | |

Performance parameters

Category	Self-propelled	Ordinary
Drive motor power	300w	/
Fresh water tank capacity	55L	
Recovery tank capacity	65L	
Battery capacity	24V/100Ah	
Operating hours	2-2.5h	2-3h
Total Weight	160.5kg	150kg
Product Size	1300*820*1070mm	
Cleaning efficiency	3300m ² /h	
Brush width	18 inch	
Squeegee width	840mm	
Cleaning width	520mm	
Brush speed	19rpm5	
Brush motor power	550w	
Suction motor power	550w	

Chapter 1 Description

1.1 Content and Purpose

The following content points out potentially dangerous situations, please read these instructions carefully and take necessary precautions. The essence of this machine operating manual is to prevent injuries, and most accidents are caused at work by not heeding basic safety rules. A careful and careful user is the best guarantee against accidents, even stronger than some other precautions. When using the machine, be sure to pay attention to your surroundings and people nearby, especially children.

1.2 General Instructions

- Before any maintenance and repair, please turn the start switch to the off position, and please remove the key from the main power switch.
- The machine must be used by qualified and authorized personnel. Children and disabled persons are not allowed to use the machine.
 - Keep the battery away from sparks, flames and smoke.
 - Do not use it in a place where dangerous, flammable or explosive gas, liquid or water vapor is present.
 - This machine can clean general garbage. It is strictly forbidden to clean silk ropes, belts, high-temperature sundries, accumulated water, flammable or toxic and harmful substances, so as to avoid entanglement, burning the main brush and side brush, and making them unable to work normally.
 - Please keep loose clothing, hair, fingers and other body parts away from the machine's air vents and any moving parts.
 - When the machine stops, remember to turn off the power.
 - Do not use the machine where the inclination exceeds the rated value of the machine.
 - Please do not smoke while charging the battery.
 - Do not use the machine in a very dirty area. If the road garbage is thick, please repeat the sweeping work twice or more.
 - The machine should be in temperature between -10°C to 40°C.
 - When using the machine, the temperature should be between -10°C and 40°C, and the humidity should be between 30% and 95%.
 - Do not use the machine as a means of transportation.
 - When the machine is not moving forward, do not let the brush continue to rotate to avoid damage to the ground.
 - In case of fire, please remember to use powder fire extinguisher instead of water.
 - When the machine operation fails, make sure that the failure is not caused by lack of regular maintenance.
 - If some parts need to be replaced, you can buy spare parts from the original manufacturer or authorized dealer.

- Confirming that the machine is in proper operation and safe condition, professionals or service center must work in accordance with the maintenance section of this manual.

- Even if the machine is to be dismantled and scrapped, someone should be there to observe it. Because some harmful substances (such as batteries, waste oil, etc.) have met the standards, they should be sent to a specific center for processing.

1.3 Safety requirements for batteries

- It is necessary to avoid the battery being in a low voltage state, and it should be charged as soon as possible.

- To avoid leakage of electricity, please keep the battery dry and clean, especially to remove contaminants such as metal dust.

- It is forbidden to put metal parts (such as tools) on the battery to prevent the battery from being short-circuited and burnt out.

- The charging room should be well ventilated.

- Do not connect or remove the battery when the key switch is in the ON position.

- Before removing or installing batteries, first disconnect the negative (-) battery wire, and then disconnect the positive (+) battery wire. When rewiring, be sure to pay attention to the polarity of the battery, as wrong connection will damage electrical components.

- Avoid direct contact between the positive electrode and the negative electrode, because it will cause a large current short circuit, generate high heat and even cause a fire.

- When the machine is not used for a long time or the machine is repaired, it is necessary to disconnect the battery cable.



1.4 General safety regulations

In addition to the provisions made in this manual, the required general safety regulations and accident prevention guidelines must also be observed.

Even if you have used a similar sweeper before, please read the instructions carefully. Reading the instructions beforehand will save you a lot of time in the future. It is important that you become familiar with all accessories and controls and their functions before you start using them. Read through this manual so you don't get scrambled when you turn it on

Chapter 2 Instruction

2.1 Buttons/Panels of the Machine



Center control panel A



Center control panel B

2.1.1 The core control keys of the machine

- Power/Voltmeter (The display device can display the current battery voltage, please charge when the voltage is lower than 21V)
 - Power switch (start this switch, the device is powered on)
 - Water suction button (start this button, the suction motor starts to work)
 - Brushing button (start this button, the brushing motor starts to work)
 - Remove the flashing button (start this button, you can remove the flashing disk)
 - Forward and backward switch (start this button to control the machine to move forward or backward)
- Speed control switch (press the tortoise button, the machine runs at low speed; press the rabbit button, the machine runs at high speed)

2.1.2 Charging the battery

- The charging socket cable requires at least a power cable with a diameter of 4mm.
- Note: The charger is placed on a stable platform, and pay attention to moisture-proof, waterproof and drop-proof.
- The charging time must be guaranteed for 6-10 hours per charge. Make sure the battery is fully charged when working.
- During the transportation of the charger, please do not carry the power cord by hand to avoid loosening the terminals.



2.1.3 Adding water to the water tank

Before using the machine, open the water tank cover and pour clean water into the water tank. Pay attention to the clean water quality to prevent the waterway from being blocked.



When the machine is used to clean the epoxy floor, it is necessary to replace the ordinary brush plate with the needle plate and add a cleaning pad for cleaning, which can effectively protect the ground from wear and tear. For installation, refer to "3.2 Brush plate replacement and installation" for operation.

2.2 The operation process of the machine

● Before the normal operation of the machine, make sure that the squeegee is installed correctly, and the sewage suction pipe is inserted into the suction port.

1. Use the handle to lower the squeegee tripod;



2. Pass the squeegee fixing screw through the tripod eyelet and tighten the plastic knob;



3. Insert the conical mouth of the suction pipe into the sewage hole of the water tank, and insert the other end into the suction port of the squeegee.



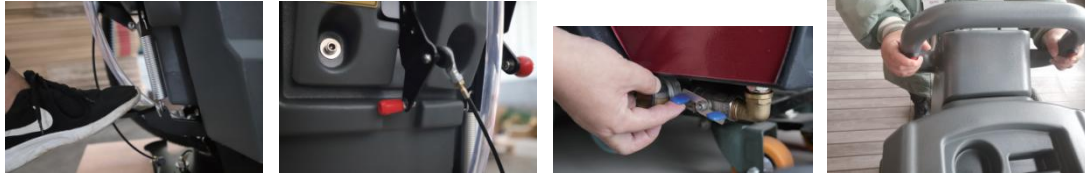
Power display

After turning on the main power switch, the voltmeter will display the battery voltage value. When the voltage is lower than 21V or the last bar is flashing, please charge it first.

Start the machine

- Lightly step on the foot lever and put down the scrubbing brush;

- By pulling the handle, put down the squeegee head;
- Open the water valve;
- Turn on the main power switch, start the brush plate switch button and the water absorption motor switch button;
- Hold the handle tightly and keep driving at a constant speed. (Ordinary paragraph)
- Turn on the speed control switch (note: the speed should not be too fast when cleaning), lightly press the travel switch to keep the machine running smoothly. (Self-propelled)



Stop of the machine

- Loosen the travel lever first; (this step is only for self-propelled drive models)
- Close the brush switch button;
- Close the drain valve;
- Close the switch button of the water suction motor;
- Turn off the main power switch;
- Lightly step on the foot lever to lift the scrubber;
- By pulling the handle, lift the squeegee head.

2.3 Precautions for machine operation

- Avoid stopping the machine for a long time in the same place and let the brush clean; this will leave unnecessary marks on the ground.
- When cleaning the floor is epoxy floor, it is necessary to add a cleaning pad to avoid the abrasion of the epoxy floor by the brush.
- The machine is filled with clean water, and attention should be paid to the clean water, so as not to block the water discharge valve with impurities.
- After the machine works for a period of time, it is necessary to discharge the sewage from the sewage tank in time to prevent the sewage from immersing in the suction motor and causing it to burn.
- To clean the ground with serious oil pollution, please put an appropriate amount of detergent in the clean water tank to achieve better cleaning effect, and at the same time drop an appropriate amount of defoamer into the sewage tank to prevent the sewage tank foam from immersing in the suction motor and causing burning.
- After each work is completed, please flush the sewage tank in time to keep the machine well maintained.
- After the operation in winter, please drain the clean water tank in time to avoid freezing and affect the reuse.

Sewage tank discharge sewage

- Turn off the main power to make sure the machine stops;
- Open the cover of the sewage pipe and discharge the water;
- The sewage tank can be properly rinsed with clean water.



Machine storage and maintenance

- If the machine will not be used within 30 days, store the machine in a clean and dry place and disconnect the battery connector.

Chapter 3 Routine Maintenance and Disassembly and Replacement of Wearing Parts

3.1 Periodic Inspection

Regular maintenance and inspection		Intervals (h)				
		4	50	100	200	500
1	Battery level detection					
2	Motor carbon brush inspection					
3	Whether the main brush is wired, the silk is entangled					
4	Check for debris in the tank					
5	Check the buttons and electronics on the control panel					
6	Check the brush for wear					
7	Check the filter for impurities					
8	Check the sprinkler joint for leaks					

3.2 Brush disk replacement and installation

- Park the machine on a flat ground, turn off the main power switch, and ensure that the machine is in a power-off state;
Lightly step on the foot lever to keep the brush disk lifted;

- For the direction of the brush plate, hold the brush, turn it to the right, and the brush plate can be removed; rotate it to the left to complete the installation.

Note: When installing, make sure the flange is aligned with the brush plate button holes.



- For the replacement of the dial, the dial can be purchased through our company's business platform. The specific replacement is to place the cleaning pad at the bottom of the dial and make it fit firmly with the dial. Please refer to the installation of the dial on the machine. "Notice".

3.3 Replacement and installation of the absorbent strip

- Place the machine on a flat ground, turn off the main power switch, and ensure that the machine is powered off.

- Put down the squeegee through the handle; after rotating the plastic handle in the opposite direction, take out the squeegee assembly.



- Unscrew the squeegee assembly nut, remove the bottom plate of the squeegee assembly, and remove the front and rear rubber strips of the squeegee.



- Install the squeegee blade.

1. Align the front rubber strip eyelets with the protrusions on the plastic squeegee assembly



2. Fasten the plastic components to the squeegee cast aluminum base plate



3. Align the eyelet of the rear rubber strip with the squeegee plastic assembly to the protrusion;



4. Use the pressure strip to snap on both ends



5. Tighten the nut.



3.4 Battery Maintenance

The power system of this washing machine is powered by two 12V maintenance-free lead-acid batteries in series, and the system voltage is 24V.

- When the machine works for a period of time, the battery power drops, and when the last bar of the power display meter is flashing, 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 the acid substance of the battery;

- Check whether the battery connecting wire is worn and the contact parts are loose, and replace it if necessary;

- The terminal of the battery should be kept clean and dry, and there should be no debris and dust covering it, which is extremely unfavorable to the battery, and will burn the battery in severe cases.

!! Notice

- ◆In order to make the battery have a long service life, it should be charged in time after the machine is finished, and deep discharge is strictly prohibited.

- ◆The correct charging method of the lead-acid battery: first insert the battery, then plug in the mains; when fully charged, first cut off the mains, and then pull out the battery plug.

- ◆If the machine is not used for a long time, please fully charge the battery, disconnect the positive pole of the battery, and store it.

!! Warn

During the use of the battery, the capacity of the deeply discharged battery will decrease and the life span will be shortened.

3.5 Maintenance and disassembly of suction motor

- After the daily use of the machine, please discharge the sewage from the sewage tank in time to prevent the water level from being too high, being sucked into the suction motor and burning the motor.

- During the use of the machine, if there is too much foam, it is recommended to use a defoamer solution to prevent the foam from entering the filter screen and into the suction motor, causing the motor to burn out.

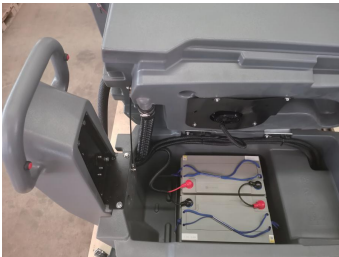
- Removal of suction motor:

The suction motor is fixed at the bottom of the sewage tank. Before removing:

1. Empty the sewage tank first, turn off the main power switch, and keep the machine powered off;
2. Turn the sewage tank sideways and pull out the suction motor pair socket;
3. Loosen the fixing nut of the suction motor and take out the suction motor.

- Installation of suction motor:

1. Align the mounting holes of the suction motor with the screw of the sewage tank, and then tighten it with a non-slip nut;
2. The installation can be completed by plugging the suction motor pair socket with the machine line.



3.6 Self-propelled drive controller diagnosis and disassembly

- The first-generation self-propelled controller is located inside the clean water tank; the X4 second-generation self-propelled controller is located inside the handle. Rated voltage: 24V; Output current: 60A;

- During the use of the machine, when the machine does not move, you can use a multimeter to measure the positive and negative poles of the power cord of the controller to check whether there is any voltage. When it is determined that there is no voltage, it can be judged that the controller is burned out.

Disassembly and assembly of the first-generation self-propelled X4 controller:

1. Turn off the main power supply to ensure that after the machine is powered off, the sewage is drained and the sewage tank is turned over.
2. Loosen the positive and negative wiring of the power supply, and drive the positive and negative wiring of the motor.

3. Use the M4 Allen wrench to loosen the fixing screws of the controller and the iron plate to remove it.

(Note: When installing, the positive and negative wiring cannot be wrongly connected)

Disassembly and assembly of the second-generation self-propelled controller:

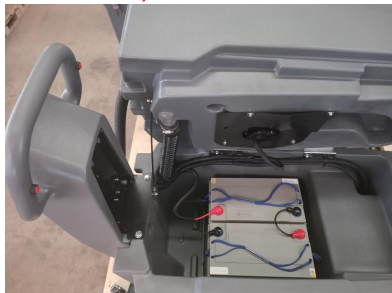
1. Turn off the main power supply to ensure that after the machine is powered off, the sewage is drained and the sewage tank is turned over.

2. Remove the handle iron plate fixing screws.

3. Loosen the positive and negative wiring of the power supply, and drive the positive and negative wiring of the motor.

4. Use the M4 Allen wrench to loosen the fixing screws of the controller and the iron plate to complete the removal.

(Note: When installing, the positive and negative wiring cannot be wrongly connected)



3.7 Filter maintenance and removal



Chapter 4 Analysis Table of Common Problems of Floor Scrubber

Problem	Reason	Solution
Machine doesn't work	Battery dead	Charge
	Battery failure	Replace the battery
	Battery wiring loose	Tighten the battery wiring
	Main fuse blown	better fuse
Brush motor does not work	The brush head is lifted off the ground	Lower the brush head
	Brush disc motor circuit breaker tripped	Reset brush circuit breaker button
	Main brush switch failure	Please contact the service center
	Motor carbon brush wear	Please contact the service center
fan not working	Suction motor noise is too loud	Please contact the service center
	Suction motor burned out	Replace the suction motor
	Carbon brush wear	Please contact the service center
Little or no water flow out	Clogged water tank drain valve or water pipe	Clean or replace the solution tank drain valve
	Drain valve closed	Open the drain valve
Inefficient recycling of sewage	recovery tank full	Drain the recovery tank
	Absorbent strip wear	Replace the absorbent strip
	Suction motor failure	Replace the suction motor
	Damaged recovery tank seal	Replace the seal
Shorter working hours	The voltages of the two batteries are not equal	Please contact the service center
	Battery charging failure	Repair or replace the charger

Chapter 5 Maintenance

Machine life and operational safety must be ensured by proper and routine maintenance of the machine. The routine maintenance requirements are tabulated below. Under suitable working conditions, the maintenance interval can be changed, which must be determined by the professional responsible for the maintenance. To perform maintenance operations, the machine must be stopped (remove the start switch key), so please read the safety section of the manual carefully.

Conditions of Use

- Ambient temperature: $-10^{\circ}\text{C} \sim 40^{\circ}\text{C}$
- The relative humidity of the air: $5\% \sim 70\%$
- No conductive dust, no explosion hazard environment
- An environment that does not contain gases or vapors that corrode metals
- Indoor use, ventilated, non-vibration environment, front and rear space at least 300mm

Maintenance schedule

Maintenance operation	On handover	Every10h	Every50h	Every100h	Every200h	Every500h
Brush Disc Height Adjustment Check						
Whether the brush plate is wired or entangled						
Squeegee Cleaning Complete Inspection						
Tank cover seal inspection						
Screw and nut tightening inspection						
Check the wear of the brush disc						
Replacement of absorbent strips						
Main brush and drive system motor carbon brush inspection and replacement						

Warranty

Warranty is not covered under the following conditions of use:

- Failure to perform maintenance in accordance with the maintenance manual may result in mechanical damage or failure.
- The mechanical appearance or structure is obviously damaged due to improper operation.
- Disassembly or modification not approved by the original factory.
- Damage due to weather or force majeure.
- More than 1 year of warranty or more than 1500 hours of use.



Warranty card

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

Warranty Conditions

1. Within the day when the user purchases this product, the motor is guaranteed for one year (more than 7 days from the date of purchase, no replacement, only warranty);
2. Before using the equipment, you must understand the instructions and safety instructions;
3. Man-made damage to the warranty parts will not be guaranteed within the warranty;
4. During the warranty period, users who do not follow the operating instructions or those who dismantle and repair by themselves will not be covered by the warranty (if repair is required, a cost will be charged);
5. The buyer can go to the designated point of the seller for maintenance with the invoice, or send the machine back to our company for repair (return freight and insurance premiums are paid by themselves).



