



YZ-X5

Floor Scrubber

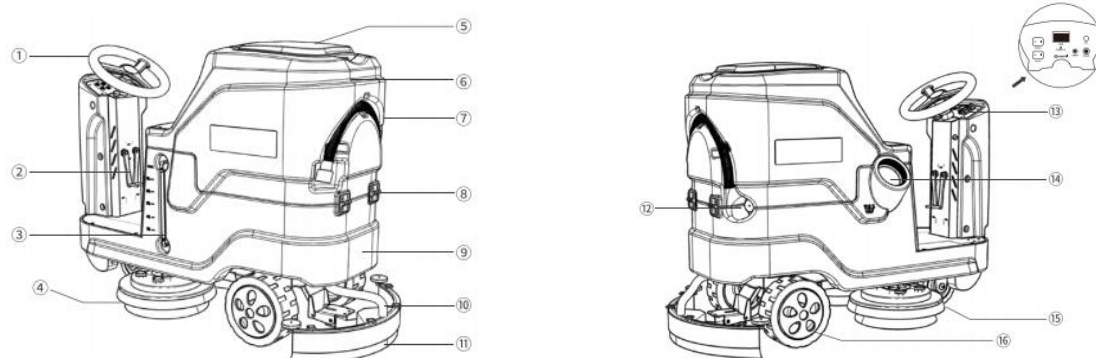
operation instructions

Yangzi.Make cleaning easier

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Parts



- ① Armrest ② Lift rocker ③ Water level gauge ④ Left brush
- ⑤ Recovery tank cover ⑥ Wastewater tank ⑦ Sewage discharge pipe ⑧ Hinge
- ⑨ Clean water tank ⑩ Suction pipe ⑪ Squeegee ⑫ Sewage outlet
- ⑬ Center control panel ⑭ Clean water inlet ⑮ Right brush ⑯ Tires

Performance parameters

Category	Double Brush	Double Brush Dosing	Single Brush	Single Brush Dosing
Cleaning efficiency	3650m ² /h		3650m ² /h	
Brush size	13 inch *2		21 inch	
Squeegee width	1000mm		1000mm	
Brush speed	230rpm		230rpm	
Brush motor power	380w*2		550w	
Suction motor power	500w		500w	
Drive motor power	500w		500w	
Fresh water tank capacity	80L		80L	
Recovery tank capacity	85L		85L	
Power unit	24V/100Ah		24V/100Ah	
Operating hours	2-3h		2-3h	
Total Weight	211kg		198kg	
Product Size	1480*1000*1100mm		1480*1000*1100mm	

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

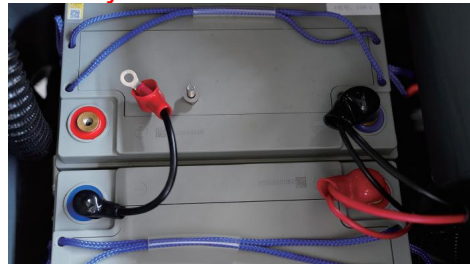
- Before any maintenance and repair, please turn the start switch to the off position, and please remove the key from the main power switch.
- The machine must be used by qualified and authorized personnel. Children and disabled persons are not allowed to use the machine.
- Keep the battery away from 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 corrosion and damage to the brush plate and water-absorbing strip, 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 between -10°C and 40°C , and the water inside the machine is frozen at minus 10°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 pay attention. 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.

Warning: When the machine is not used for a long time, the battery should be fully charged and then disconnected from the battery



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 vital 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 Use of the Machine

2.1 Keys/Panels of the Machine

2.1.1 The core control keys of the machine

- Charge/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)
- Forward and backward switch (start this button to control the machine to move forward or backward)
- Accelerator pedal (control the driving speed of the machine, the greater the pressure, the faster the driving speed)



X5 single/dual control panel

- Suction lift handle (Figure ①: Lift the handle to lift the suction lift)
- Brush plate lift handle (Figure ②: Lift the handle to lift the brush plate)



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 to 10 hours each time it is charged. 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, close the water valve, and pour clean water into the water tank. Pay attention to the clean water quality to prevent the waterway from being blocked.

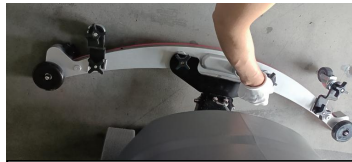
- When the machine is used to clean the epoxy floor, it is necessary to replace the ordinary brush plate with the needle plate and add a cleaning pad for cleaning, which can effectively protect the ground from wear and tear. For installation, refer to "3.2 Brush plate replacement and installation" for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

2.2 The operation process of the machine

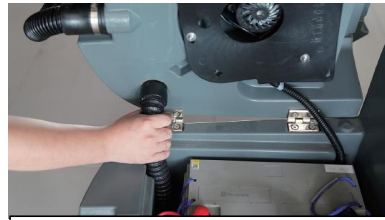
Before the normal operation of the machine, make sure that the squeegee is installed correctly, and the sewage suction pipe is inserted into the suction port.



Step 1: Put down the squeegee tripod through the handle;



Step 2: Pass the squeegee fixing screw through the eyelet of the tripod and tighten it with the plastic knob:



Step 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.

The squeegee has been debugged at the factory and can be used after installation.

- Confirm that the water valve switch at the bottom of the right side of the machine is turned on when driving normally.



Power display

- After turning on the main power switch, the voltmeter will display the battery voltage value. When the voltage is lower than 21V, please charge it in time.



Start the machine



Step 1: Pull down the left and right lift handles and put down the squeegee head;

Step 2: Pull down the right lift handle and put down the scrubbing plate;

Step 3: Turn on the main power switch, start the brush switch button and the water suction motor switch button.

- Firmly hold the steering wheel and lightly step on the accelerator pedal to keep the machine running smoothly. (Note: do not wash too fast)

Instruction 1: In the forward direction of the machine, the forward and backward switch button is toggled forward.

Instruction 2: In the backward direction of the machine, the forward and backward switch button is toggled backward. (Note: When backing up, please raise the squeegee head and the scrubber plate)

Instruction 3: If you need to stop quickly or operate on an inclined surface, you can control the machine by releasing the accelerator.

Stop of the machine

- Close the brush switch button first;
- Raise the right lift handle to lift the scrubber plate;
- Close the switch button of the water suction motor;
- Lift the left lift handle to lift the squeegee head;
- Turn off the main power switch.

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 detergent into the sewage tank

Foaming agent to prevent the recovery tank foam from immersing in the suction motor and causing burns.

- 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 ensure that 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 and put down the scrubber;
- Rotate the plastic handle counterclockwise to remove the water retaining strip brush;
- Lift up the scrubbing brush plate, grab the bristles, lift it up slightly, shake it left and right, and the brush plate can be removed;

When installing the brush plate, make sure that the flange plate is aligned with the button hole of the brush plate, and the installation can be completed by rotating in any direction.

Noted: Ride-on brush discs are made of positive and negative buckles, and the installation can be completed no matter which direction is rotated.



- 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. Please refer to the installation instructions for operation.



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.



Step 1: Align the holes of the front rubber strip with the protrusions of the plastic assembly of the squeegee;

	Step 2: Attach Plastic Assembly to Squeegee Cast Aluminum Base Plate;
	Step 3: Align the holes of the rear rubber strip with the plastic components of the squeegee to the protrusions;
	Step 4: Use both ends of the bead to snap together;
	Step 5: Tighten the Nuts.

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, when the power display meter is lower than 21V, 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 sundries 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

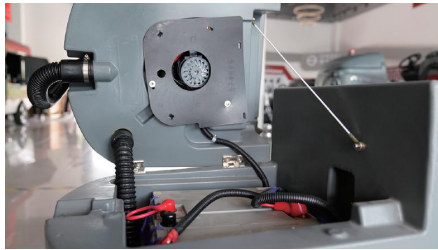
- After the daily use of the machine, please discharge the sewage from the sewage tank in time to prevent the water level from being too high, being sucked into the suction motor and burning the motor.
- During the use of the machine, if there is too much foam, it is recommended to use a defoamer solution to prevent the foam from entering the filter screen and into the suction motor, causing the motor to burn.
- 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 Controller function, diagnosis and disassembly

- X5 controller is CM2010C type; fixed inside the machine head, it is a high-performance permanent magnet brushless motor controller.
- Drive function: Full-bridge power MOSFET control, realizes stepless control of forward, backward, driving and braking, and realizes soft start and flexible braking.
- Downhill speed limit and anti-backslip function: Do not exceed the maximum allowable speed when going downhill, and reverse the speed limit when parking on a slope.
- Brake function: When the brake switch is valid, the vehicle decelerates and brakes immediately, and finally stops.
- Diagnostic function: You can observe the number of flashes of the panel indicator lights to determine the corresponding fault cause. For example: when the controller fails, the control panel indicator will flash 7 times continuously, then pause for 2-3 seconds and then flash 7 times continuously, and so on.



Controller Troubleshooting Instructions



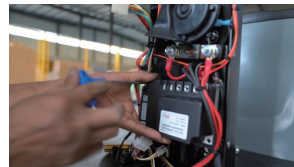
Controller LED flashes	Fault description	possible reason
Flash 1 time	low voltage fault	Battery voltage is too low
Flashes 2 times in a row	Motor open circuit fault	Motor wiring is open
Blink 3 times in a row	Overcurrent/Motor or Short Circuit	1. Long-term overload operation;
Flashes 5 times in a row	High/low temperature	2. Motor short circuit/motor wiring short circuit
Blink 6 times in a row	Charge inhibition	1. Long-term overload operation;
Blink 7 times in a row	Jerk failure	2. The electromagnetic brake is not released
Blink 8 times in a row	Control failure	Charging
Blink 9 times in a row	Electromagnetic failure	1. Force speed high/low out of range;
Blink 10 times in a row	High voltage fault	2. The accelerator tap is off

- Controller disassembly:

1. Unscrew the battery cable to keep the machine powered off; use an M4 Allen key to unscrew the plastic head fixing screw and open the plastic head box.



2. Unplug the control panel cable and the connector port of the controller, unscrew the positive and negative wiring of the controller, and the positive and negative wiring of the walking motor; unscrew the fixing screws of the controller and the iron plate of the machine head, and the controller can be disassembled.



3. The reverse process of controller installation and removal.

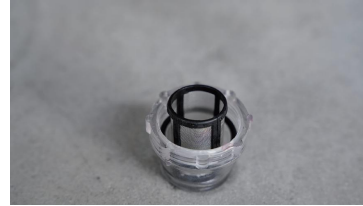
(Note: When the controller is wired, the positive and negative wires cannot be wrongly connected)

Tip: When the machine is out of power or cannot be moved due to failure, push down the handle of the drive motor to release the electromagnetic brake function, which can be easily pushed.

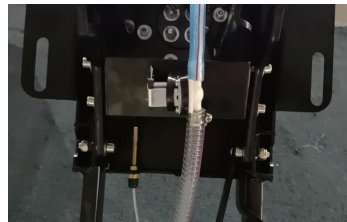


3.7 Disassembly and assembly of solenoid valve and filter

●Filter disassembly: The filter is located on the right side of the front wheel of the machine. After using for a period of time, if it is found that the water output of the machine is small or there is no water, most of the reasons are that the filter particles are blocked by impurities. It is necessary to unscrew the transparent cover at the lower part of the filter and pull out the inner filter to clean it.



●Solenoid valve disassembly: The solenoid valve is located in front of the brush plate motor, and the solenoid valve is fixed to the iron plate by a nylon tie; when replacing, just cut off the tie and pull out the solenoid valve outlet pipe. (Note: During installation, the clean water pipe should be completely in and out of the solenoid valve outlet to prevent loosening.)



Chapter 4 Analysis Table of Common Problems of Floor Scrubber

Problem	Reasons	Approach
Machine is inoperable	battery dead	battery charging
	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
	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						
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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).

