

FLOOR SCRUBBER

MODEL: F450



CE

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Push type scrubber	错误！未定义书签。
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— Instructions

1.1 Content and Purpose

The following content points out potential hazardous situations. Carefully read these instructions and take necessary preventive and protective measures. The essence of this machine operation manual is to prevent injury. Safe prevention without accidents is necessary. Most accidents occur during work without paying attention to basic safety rules. A careful and cautious user is the best guarantee to stay away from accidents, even stronger than some other preventive measures. When using the machine, be sure to pay attention to your surroundings and nearby people, especially children

.1.2General description

Before any maintenance or repair, please turn the start switch to the off position and remove the key from the main power switch.

The machine must be used by authorized personnel with qualifications. Children and disabled individuals are not allowed to use this machine.

Keep the battery away from sparks, flames, and smoke.

Do not use in places with dangerous, flammable, or explosive gases, liquids, or water vapor.

Please keep loose clothing, hair, fingers, and any other part of your body away from the machine's air vents and any moving parts.

Remember to turn off the power when the machine stops.

Do not use the machine in areas where the slope exceeds the rated value of the machine.

Please do not smoke while charging the battery.

Do not use this machine in very dirty areas. If the ground dust is thick, please clean it before using this product machine.

The machine should be stored at a temperature between -10 ° C and 40 ° C.

When using the machine, the temperature should be between -10 degrees and 40 degrees, 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 a fire, please remember to use a powder fire extinguisher instead of using water to extinguish the fire.

When there is a malfunction in machine operation, it should be determined that the malfunction is not caused by a lack of scheduled maintenance.

If some parts need to be replaced, you can purchase spare parts from the original manufacturer or authorized dealer.

Confirm the proper operation and safety conditions of the machine, and professionals or service centers must work in accordance with the relevant maintenance sections of this manual.

Even if the machine needs to be dismantled and scrapped, someone should be present to pay attention. Because certain harmful substances (such as batteries, waste oil, etc.) have met the standards and should be sent to specific centers for treatment.

1.3 Safety requirements related to batteries

It is necessary to avoid the battery being in a low voltage state and charge it as soon as possible;

To avoid leakage, please keep the battery dry and clean, especially removing pollutants such as metal dust;

It is prohibited to place metal parts (such as tools) on the battery to prevent the battery from short circuiting

and burning out;

The charging room should have good ventilation;

Do not connect or disconnect the battery when the key switch is in the ON position;

Before disassembling the battery, disconnect the negative (-) battery wire first, and then disconnect the positive (+) battery wire. When rewiring, be sure to pay attention to the polarity of the battery, as incorrect connections can damage electrical components;

Avoid direct contact between the positive and negative electrodes, as it can cause high current short circuits, generate high heat, and even have the possibility of fire.

1.4 General safety regulations

In addition to the provisions made in this manual, it is also necessary to comply with the required general safety regulations and accident prevention guidelines. Even if you have used a similar floor scrubber before, please read the instructions carefully. Reading the manual in advance will save you a lot of time in the future. It is crucial for you to be familiar with all the accessories, controls, and their functions before starting to use them. Read this manual thoroughly to avoid getting flustered after turning it on.

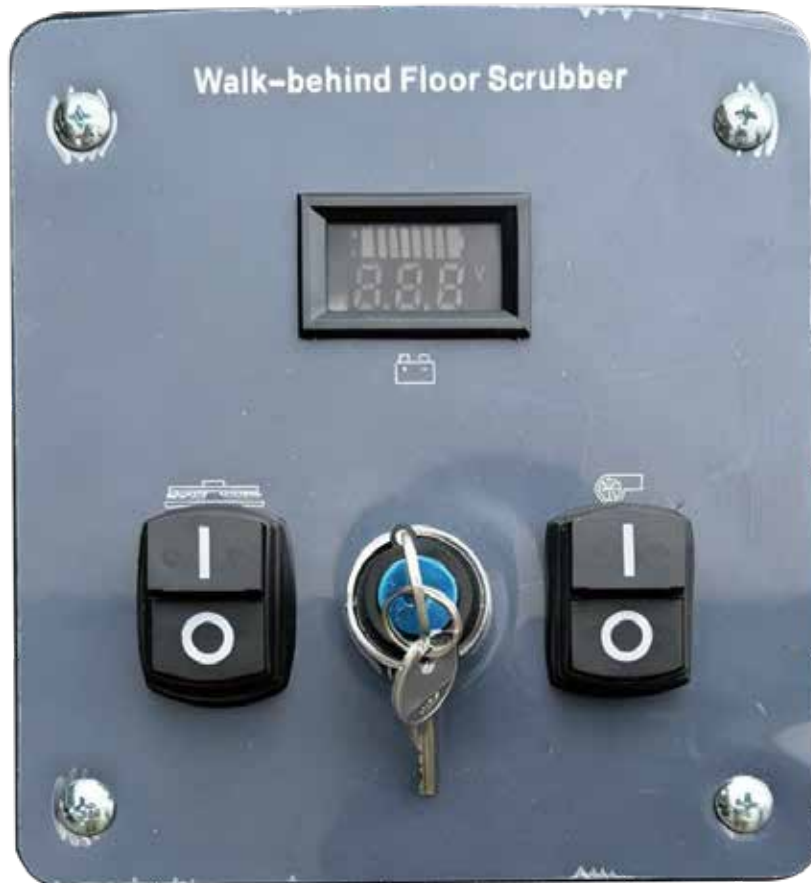
二 Performance parameter

Name	Unit	Value	Remarks
Cleaning eff	m ² /h	2150 m ² /h	
Brush width	mm	500mm	
Squeegee width	mm	800mm	
Cleaning width	mm	500mm	
Brush speed	Rpm	150Rpm	
Brush motor power	W	24V/450W	
Vacuum motor power	W	24V/300W	
Drive motor power	W	/	
Clean water tank	L	30L	
Recovery tank	L	35L	
Battery capacity	V/AH	DC24V/50ah	
Working time	H	3-4H	

Machine Weight	KG	65KG (without batteries)	
Dimension	mm	1150 × 710 × 950 mm	

≡ The use of machines

3.1 Machine buttons: panel introduction



F450 control panel

- 1. Display screen (multifunctional display, can display voltage and battery level. If the voltage is below 21V, the machine will power off and prompt the need to charge the battery in a timely manner)
- 2. Brush motor (Start this button to start the brush motor, turn off this button to stop the brush motor from working.)

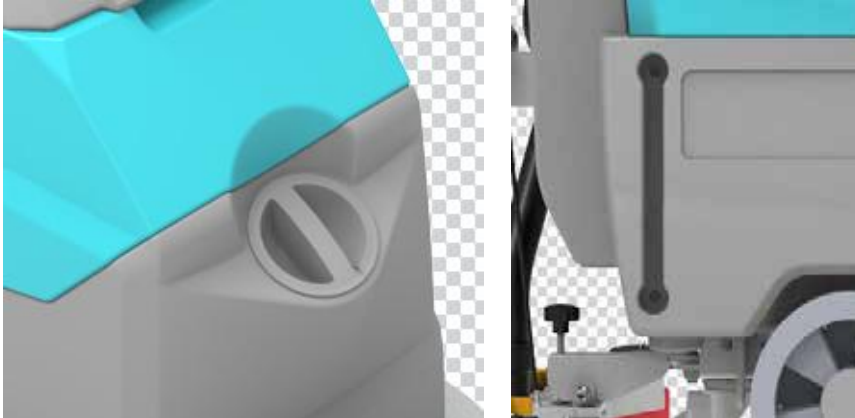
3.1.2 Charging of battery

- The charging socket cable requires a power cord with a diameter of at least 4mm.
- Attention: The charger should be moisture-proof, waterproof, and drop proof.
- Each charge must ensure sufficient charging time (6-8 hours in summer and 6-10 hours in winter). Ensure that the battery is fully charged during operation.

- Equipped with a built-in charger, it is more convenient to use.

3.1.3 Add water to the water tank

Water inlet: The machine comes with a standard water inlet hose, which can be pulled out to add water. Before using the machine, open the water tank cover and inject clean water into the water tank. Pay attention to the cleanliness of the water quality to prevent blockage of the waterway. The water level gauge can observe the height of the water level in the tank



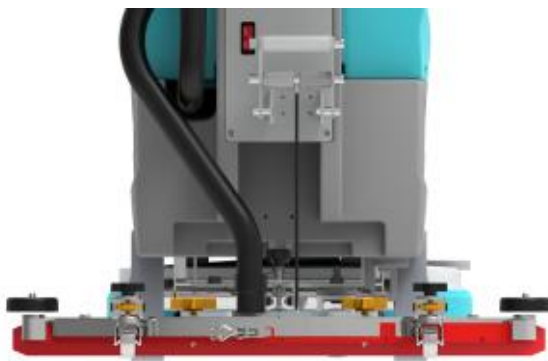
3.2 The operation process of the machine

Before startup

Before normal operation of the machine, confirm that the suction scraper has been installed correctly and that the suction pipe is inserted into the suction nozzle of the scraper

Adjust the water volume to the appropriate position through the water valve switch under the machine head (depending on the dryness of the ground)

It depends on the degree, the machine must be operated with water, and dry suction should be avoided to prevent dust from entering the suction motor and causing it to malfunction



Step 1: Insert the conical mouth of the suction pipe into the sewage hole of the water tank, and insert the other end into the suction and scraping suction port



Step 2: Open panel work buttons 2, 3, or 4, and lower the suction rope. It can work.

3.3Precautions for machine operation

Avoid stopping the machine in the same place for a long time and allowing the brush to clean;

This will leave unnecessary marks on the ground.

When cleaning epoxy flooring, it is necessary to add a scouring pad or replace the soft bristle brush to prevent the brush from wearing out the epoxy flooring

When adding clean water to the machine, it is important to ensure that the water quality is clean to prevent impurities from blocking the drain valve and filter screen, which may prevent water from flowing out

After the machine has been working for a period of time, it is necessary to discharge the sewage from the sewage tank in a timely manner to avoid excessive infiltration of sewage into the suction motor and damage.

To clean floors with severe oil stains, please add an appropriate amount of cleaning agent to the clean water tank for better cleaning effect, and drip an appropriate amount of defoamer into the sewage tank

Agent to prevent the foam in the sewage tank from immersing in the suction motor and causing burning

After each work is completed, please rinse the sewage tank in a timely manner to keep the machine well maintained.

After winter operation, please discharge the clean water from the water tank in a timely manner to avoid freezing and affecting reuse.

3.4、Machine maintenance and upkeep

3.4.1 Daily maintenance (after each use)

Drain and clean the sewage tank.

Drain the clean water tank and clean it with hot water not exceeding 60 degrees Celsius as needed.

Remove the scouring pad and brush for cleaning. If there is wear and tear, flip or replace the scouring pad.

Wipe the absorbent strip and lift it up to prevent damage to the strip.

Check the wear condition of the edge of the water absorbing rubber strip. If there is any wear, adjust the two sides of the rubber strip up and down.

Use a multi-purpose cleaner and a damp cloth to wipe the machine. For safety reasons, do not use high-pressure spraying or water pipes to rinse the machine when cleaning. To avoid electronic component malfunctions.

Check the wear of the brush head skirt and replace it if there is any wear or damage.

To charge the battery, in order to extend its lifespan and ensure optimal performance of the machine, it is necessary to wait for at least 30 minutes of machine usage before charging the battery.

3.4.2 Monthly Maintenance

Remove the water tank filter from under the machine and clean the filter screen, ensuring to empty the water tank before removing the filter.

Clean the top of the battery to prevent electrode corrosion.

Check if the battery connection wire is loose.

Check and clean the sealing strip of the sewage tank cover, and replace it if it is damaged.

Spray silicone dry lubricant on all pivot shafts and rollers, and then cover them with a layer of

waterproof lubricant to ensure smooth operation of the wheel axle.

Check if the nuts and bolts on the machine are loose.

Check if the machine is leaking.

3.4.3 Quarterly maintenance

Check the wear of the drive motor, vacuum motor, and brush disc motor every 250 hours. When the length of the carbon brush wears out within 10 millimeters, it needs to be replaced. If the machine needs to be sent for repair, please contact an authorized service center.

Warning: Electric shock hazard. Please disconnect the battery connection cable before repairing the machine.

3.4.4. Handling Machinery

When using trucks or trailers to transport machinery, please be sure to follow the following bundling procedures

Raise the brush head to the handling position and use the recommended loading dock to load the machine.

Place the front of the machine close to the front of the truck or trailer, place the machine properly, lower the brush head, and turn off the power.

Place obstacles behind each driving wheel to prevent the machine from sliding.

Use ropes to secure the top of the machine to prevent tilting. You must install brackets on the truck or trailer board. For safety reasons: When handling the machine, please use the recommended loading and unloading platform to load and unload the machine from the truck or trailer, and secure the machine to the vehicle board with ropes.

3.4.5 Storage of Machines

Please charge the battery before storage and do not store it when the battery is fully charged.

Thoroughly drain and rinse the sink box in the sink.

Store the machine in a dry place and keep the brush head in a raised position.

Open the sewage tank cover for ventilation. Caution: Do not expose the machine to rain and store it indoors.

If storing the machine in a cold environment, please ensure that all liquids inside the machine are completely drained.

四 Daily maintenance and replacement of vulnerable parts

4.1 regular inspection

Regular maintenance and inspection		interval (h)				
		4	50	100	200	500
1	Battery level detection	√				
2	Is the main brush wired and wrapped with silk	√				

3	Check for debris in the water tank		√				
4	Check the buttons and electronic products on the control panel			√		√	
5	Check the wear level of the brush			√	√		
6	Check if there are impurities in the filter		√				

4.2 Brush disk replacement and installation

4.2.1 Park the machine on a flat surface and put down the floor scrubber.

4.2.2 Rotate the plastic cross nut counterclockwise to remove the brush disc cover

4.2.3 Press the brush disk work button again, lift the floor cleaning brush disk, grasp the brush disk holder, slightly lift it up, swing it left and right quickly, and the brush disk can be removed; When installing the brush disc, ensure that the flange is aligned with the brush disc buckle hole, and rotate it in any direction to complete the installation. Tip: The driving brush disc adopts forward and reverse buckles, and can be installed regardless of the direction of rotation.

4.3 Replacement and installation of absorbent rubber strip

4.3.1 Park the machine on a flat surface, turn off the main power switch, and ensure that the machine is in a power-off state.

4.3.2 Use a lifting hand to lower the water absorbing scraper; After rotating the plastic handle in reverse, remove the water absorbing scraper component.



4.3.3 Unscrew the nut of the suction scraper component, remove the bottom plate of the suction scraper component, and remove the front and rear rubber strips of the suction scraper



4.3.4 Install the water absorbing rubber strip. 1. Align the front rubber strip hole with the protrusion of the absorbent plastic component. 2. Fix the plastic components onto the water absorbing cast aluminum base plate. 3. Align the rear rubber strip hole with the protrusion of the absorbent plastic component.

4. Use pressure strips to secure both ends.
5. Tighten the nut



4.4 Battery maintenance and upkeep

The F450 floor scrubber power system is powered by two 12V maintenance free lead-acid batteries connected in series, with a system voltage of 24V.

4.5.1 When the machine has been operating for a period of time and the battery level drops, and the last cell of the battery level display is flashing,

Indicates low battery level and requires timely charging;

When maintaining the battery, please wear protective gloves to avoid contact with acidic substances in the battery;

4.5.3 Check whether the battery connection wire is worn and whether the contact parts are loose, and replace them if necessary;

4.5.4 The battery terminals should be kept clean and dry, without any debris or dust covering them, which is extremely detrimental to the battery

In severe cases, it can burn the battery.

!!! Attention

To ensure the battery has a long service life, it should be charged promptly after the machine is operated, and deep discharge is strictly prohibited.

The correct charging method for lead-acid batteries: first plug in the battery, then plug in the mains power; After being fully charged, first disconnect the mains power and then disconnect the battery plug.

If the machine is not used for a long time, please fully charge the battery and disconnect the positive terminal of the battery before storing it.

!!! Warning

◆ During the use of batteries, the capacity of deep discharge batteries will decrease and their lifespan will be shortened.

4.5 Precautions and disassembly of suction motor

4.5.1 After daily use of the machine, please discharge the sewage from the sewage tank in a

timely manner to prevent the water level from being too high and being sucked into the suction motor, which may burn out the motor.

4.5.2 If there is too much foam during the use of the machine, it is recommended to use defoamer solution to prevent foam from entering the filter screen, entering the suction motor and causing the motor to burn.

4.5.3 Disassembly of suction motor: The suction motor is fixed at the bottom of the sewage tank. Before removal, 1. Drain the sewage tank, turn off the main power switch, and keep the machine powered off; 2. Flip the sewage tank over and pull out the suction motor socket. 3. Loosen the fixing nut of the suction motor and remove it.

4.5.4 Installation of suction motor: 1. Align the installation hole of the suction motor with the screw of the sewage tank and tighten it with anti slip nuts. 2. Connect the suction motor socket to the machine circuit to complete the installation.

4.6 Disassembly and assembly of solenoid valve and filter

Disassembly and assembly of filter: The filter is located in front of the front wheels of the machine. After a period of use, if it is found that the machine has a small or no water output, most of the reasons are due to clogging of filter particles and impurities. You need to loosen the transparent cover at the bottom of the filter and remove the internal filter screen for cleaning.



五 Analysis Table of Common Problems with Floor scrubbers

Problem	Cause	treatment method
The machine cannot be operated	The battery is out of battery	Battery charging
	Battery malfunction	Replace the battery
	The main fuse is blown	Replace the fuse
Brushing motor does not work	Brush the disk and lift it off the ground	Lower the brush disc
	Insufficient machine voltage	Charging in time
	Brush disk switch malfunction	Please contact the service center

	Disk flashing controller malfunction	Please contact the service center
fan not working	The sewage tank is full of water	Timely discharge of sewage
	Insufficient voltage	Please charge in a timely manner
	The suction motor is burnt out	Replace the suction motor
	Carbon brush wear	Please contact the service center
Small or no water outflow	The filter screen of the clean water tank is blocked	Clean or replace the drain valve of the clean water tank
	The solenoid valve is damaged	Replace the solenoid valve
Low efficiency in recycling wastewater	Blockage of suction pipe	Timely and regularly clean the suction pipe
	Wear of absorbent rubber strip	Replace the water absorbing rubber strip
	The drain pipe cover is not tightly closed	Cover the sewage pipe tightly
	Fault in the suction motor	Replace the suction motor
	The sealing strip of the sewage tank is damaged	Replace the sealing strip
Reduced working hours	The voltage of two batteries is not equal	Please contact the service center
	Battery charging malfunction	Repair or replace the charger

六 Maintenance

The lifespan and operational safety of the machine must be ensured through proper and routine maintenance. The following is a table of routine maintenance requirements. Under suitable working conditions, the maintenance interval can be changed, which must be determined by the professional responsible for maintenance.

To perform maintenance operations, the machine must be stopped (by removing the start switch key), so please carefully read the safety section of the instruction manual.

Terms of Use:

Environmental temperature: -10 °C to 40 °C;

Relative humidity of the air: 5% to 70%;

An environment free from conductive dust and explosion hazards;

An environment that does not contain gases or vapors that corrode metals;

Indoor use, ventilated, vibration free environment, with a front and rear space of at least 300mm.

Maintenance Schedule:

Maintenance operation	At the time of delivery	Every 10H	Every 50H	Every 100H	Every 200H	Every 500h
Brush disk height adjustment inspection						
Is the brush disc wired or wrapped with silk						
Complete inspection of water absorption scraper cleaning						
Check the sealing strip of the water tank cover						
Tightening inspection of screws and nuts						
Check the wear of the brush disc						
Replacement of absorbent rubber strip						

Warranty Coverage:

- Under the following usage conditions, no warranty is provided
- Failure to carry out maintenance according to the maintenance manual, resulting in mechanical damage or malfunction
- Mechanical appearance or structure damage caused by improper human operation
- Disassembly or modification without the consent and approval of the original factory
- Damage caused by weather or force majeure
- Exceeding the warranty period by 1 year or using for more than 1500 hours.