



Notice

- This manual provides the necessary instructions for the operation and maintenance of the machine.
- Read and understand this manual thoroughly before operating or using the machine, and operate the machine carefully.
- Maintain the machine regularly in accordance with the maintenance instructions provided in the operator's manual.

:: Use original manufacture or equivalent parts for repairs.

:: Do not use flammable liquids; never work near or in areas where flammable liquids, gases or combustible ash are present.

Dusty premises to operate the machine.

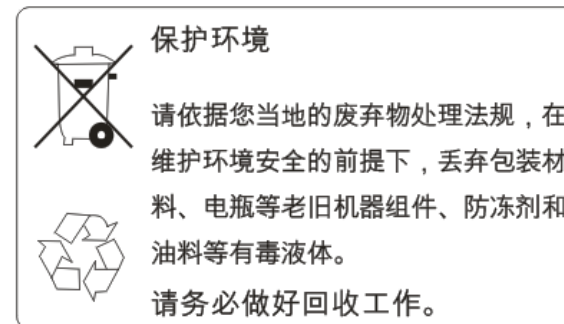
- This machine is not equipped with an explosion-proof motor. If the machine is used in a field with flammable gases, liquids or combustible dust

If the machine is used in a facility, the electric motor may generate sparks during start-up and operation, which may cause a fire.

Causes flash fire or explosion.

- Do not pick up flammable materials or reactive metals.

- Hydrogen gas is released from the battery. Keep away from sparks or open sources of ignition. Keep the battery compartment open while charging.
- Warning: Danger of electric shock. Disconnect the battery wires before servicing the machine.
- WARNING: Rotating brush operates. Keep both hands away. Turn off the power before servicing the machine.





Warning!

◆ Before using the scrubber, please read and familiarize yourself with the contents of the manual.

◆ This scrubber is only used as hard floor cleaning equipment, if it is used for other purposes beyond the instructions in this manual, our company will not be responsible for any damage or liability caused by this.

◆ This scrubber should avoid getting involved in long fiber materials such as rope wire, corrosive chemicals, high temperature debris, etc. when operating, otherwise the brush type may be damaged or cause other safety accidents.

◆ This scrubber is designed to operate in areas where there are various kinds of dirt and debris and other dirty areas on hard surfaces.

Any kind of modification may affect its performance, life span, or even safety of use and may violate the law. The damage caused by the modification is not covered by the "Three Packages".

◆ When the machine is on, do not put any part of your body into the rotating parts to avoid the machine from rotating and causing injury to your body.

◆ The machine must be parked on level ground, and should avoid parking

on slope, otherwise it will cause other safety accidents.

◆ When opening the hood, installing accessories or maintenance or overhauling, you must first disconnect the power of this scrubber.

◆ The battery should be in a well ventilated place when charging, and should be charged in time when the power is low.

◆ When you finish the work, you should remove the key and keep it in a safe place in time to avoid the operation by unauthorized personnel.

◆ When stopping the machine, the machine should lift all the brushes and suction steak, which can prolong the service life of consumable parts and maintain the machine.

◆ Do not flush the machine directly with a water gun or high-pressure water gun.

◆ Do not use the machine in a place where there is too much dust.

◆ The temperature requirements for storage and operation of this machine must be 32° F to 104° F (0° C to +40° C).

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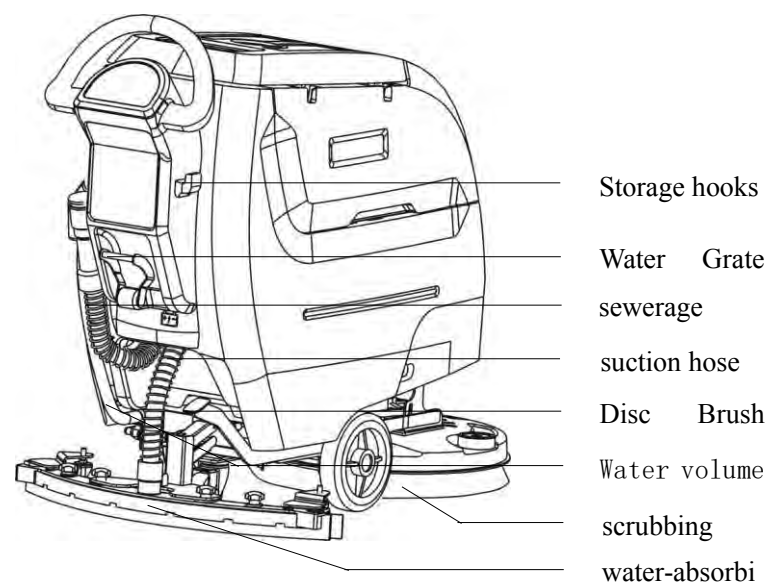
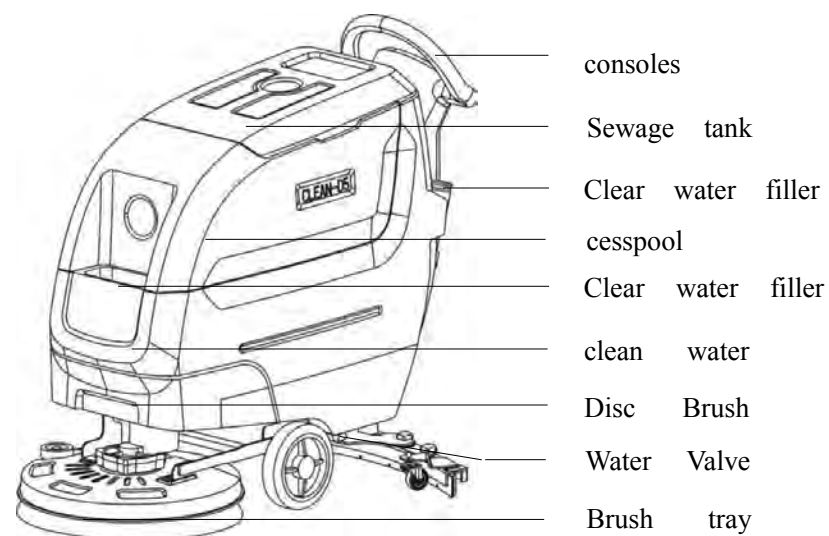
1. Performance parameters (self-propelled)

vehicle type	unit	Clean-D5
Whole machine	mm	1260*550*1050
Weight (with battery)	KG	160
currents	V	24
total power	W	1000
water flow	L/Min	3.0
Cleaning width	mm	510
Cleaning efficiency	m ²	2200
Vacuum suction	mmH ₂ O	1720
Drive method	W	brush
Disc Brush Motor	W	550
Suction motor	W	450
Suction rake width	mm	780
battery pack	/	2*12V; 100AH/3HR
Charging time	H	6-8
Clear water tank capacity	L	50
Sewage tank capacity	L	60
Brush plate pressure	KG	28
working hours	H	≈3.5
noise	dB	65
Climbing degree (no load)	%	<8%

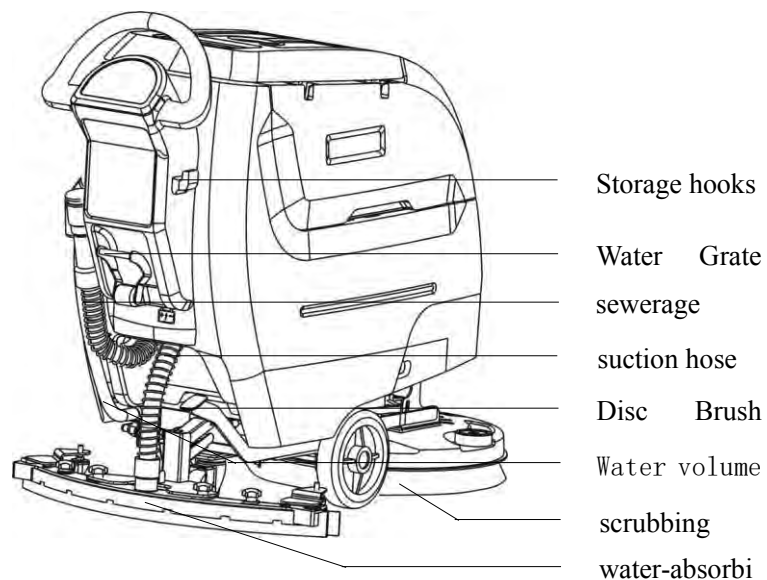
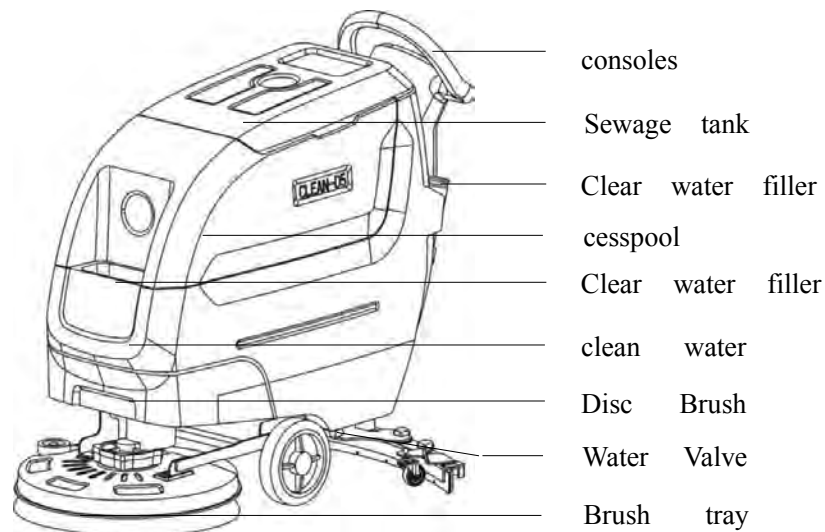
1. Performance parameters (self-driven)

vehicle type	unit	Clean-D5A
Whole machine	mm	1260*550*1050
Weight (with battery)	KG	180
currents	V	24
total power	W	1300
water flow	L/Min	3.0
Cleaning width	mm	510
Cleaning efficiency	m ²	2350
Vacuum suction	mmH ₂ O	1720
Drive motor	W	300
Disc Brush Motor	W	550
Suction motor	W	450
Suction rake width	mm	780
battery pack	/	2*12V; 100AH/3HR
Charging time	H	6-8
Clear water tank capacity	L	50
Sewage tank capacity	L	60
Brush plate pressure	KG	28
working hours	H	≈ 3.0
noise	dB	65
Climbing degree (no load)	%	<8%

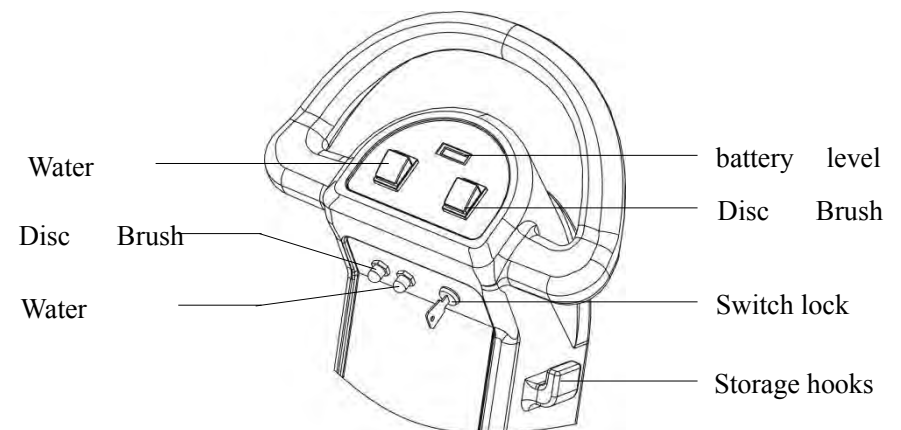
2. Complete machine construction (self-propelled)



2. Complete machine construction (self-propelled)



3. Control system (self-propelled)



(1) Power key switch:

Twisting the key to the right will turn the vehicle power on, twisting it to the left will turn it off.

(2) Brush plate switch :

When the switch is pulled forward, the brush motor drives the brush plate to start, and when the switch is pulled backward, the motor turns off.

(3) Power display.

Display the current battery power, as long as the machine is in the power on state this light must be on, the power meter is

The power level is displayed from right to left, i.e. the highest voltage is on the far right.

(4) Suction switch.

When the switch is pulled forward, the suction motor starts, and when the switch is pulled backward, the motor turns off.

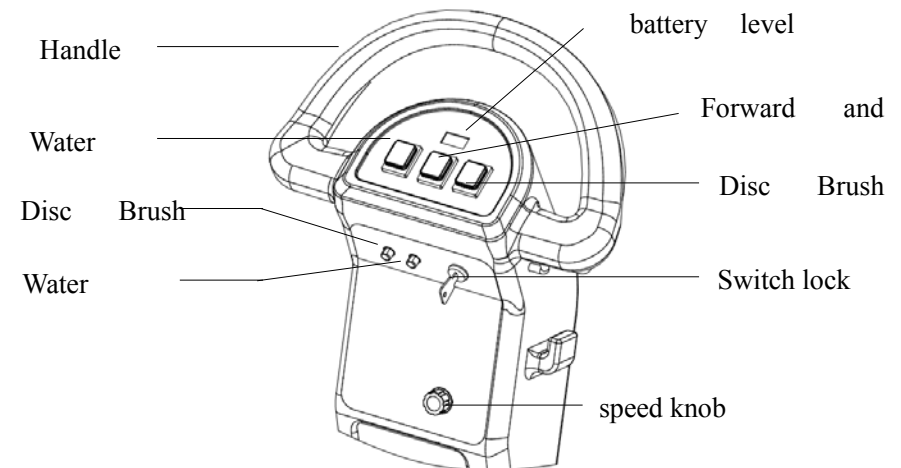
(5) Overload protector.

Divided into disc brush overload protector and water absorption overload protector, mainly to protect the corresponding motor safety; when the corresponding motor overcurrent or short circuit, the corresponding overload protector will pop up.

Warning!!!

- ◆ Brush tray components should be lifted after completing the job to prevent deformation and wear of the brushes.
- ◆ The suction rake components should be lifted after completing the job to prevent deformation of the suction rubber strips.
- ◆ The scrubber should never be parked on a slope.
- ◆ No more than 50% of the water capacity can be stored in the fresh water or waste water tanks when the climb exceeds 5%.

3. Control systems (self-propelled)



(1) Switch lock:

Twisting the key to the right will turn the vehicle power on, twisting it to the left will turn it off.

(2) Brush plate switch :

When the switch is pulled forward, the brush motor drives the brush plate to start, and when the switch is pulled backward, the motor turns off.

(3) Power display.

Display the current battery power, as long as the machine is in the power on state this light must be on, the power meter is

The power level is displayed from right to left, i.e. the highest voltage is on the far right.

(4) Suction switch.

When the switch is pulled forward, the suction motor starts, and when the switch is pulled backward, the motor turns off.

(5) Overload protector.

Divided into disc brush overload protector and water absorption overload protector, mainly to protect the corresponding motor safety; when the corresponding motor overcurrent or short circuit, the corresponding overload protector will pop up.

(6) Forward-backward switch.

When the switch is pulled forward, the whole car travels forward, and when the switch is pulled toward, the motor recedes.

(7) Speed knob.

When rotating clockwise, the travel speed is accelerated, and when rotating counterclockwise, the travel speed is reduced.

(8) Handle switch.

Start and stop the whole vehicle forward and backward.

Warning!!!
◆ The brush tray components should be lifted after completing the job to prevent deformation and wear of the brushes.
◆ The suction rake components should be lifted after completing the job to prevent deformation of the suction rubber strips.
◆ The scrubber should never be parked on a slope.
◆ No more than 50% of the water capacity can be stored in the fresh water or waste water tanks when the climb exceeds 5%.

4. Machine commissioning and pre-operation checks

4.1 Pre-operation checks

1. Check if the appearance is clean. Note: Do not use this machine in a flammable and explosive environment.

2, check whether the battery wiring contact is good to prevent short circuit failure.

3、 Use the key to turn on the machine and check whether the power is sufficient, if the power is too low, please do not continue

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Suggestions!!!
When working with this scrubber, cleaning at a speed of 55-65 meters per minute is optimal.

off the power immediately and charge the battery, always before using

Make sure the battery is fully charged.

4. Check that the disc brush or needle holder is properly installed and completed.

5、 Check if the water pick is installed correctly (the rubber strip has been installed).

6. Ensure that the sewage tank is fouled out.

4.2 Machine commissioning

4.2.1 Disc Brush Installation

1. Make sure that the machine is at a standstill and that the brush motor has been turned off.

2. Step down the disc brush lifting lever (see diagram of the entire machine construction) and lift the disc brush assembly off the ground.

3. Remove the supplied disc brush and align the disc brush snap with the flange snap below the disc brush motor.

And rotate the disc brush to the left by hand, and install it until both hands leave the disc brush without dropping it to pass.

4. Then step down on the disc brush lift lever to lower the disc brush assembly to the ground.

5. If you need to use the needle holder, you should first place the fiber pad on the needle holder and then perform the procedure with the disc

Brush the same installation.

4.2.2 Water Grate Assembly Installation

1. Start by lifting the water grate retaining plate assembly off the ground.
2. Unscrew the two middle handgrips on the water pick assembly and place the water pick assembly on the fixed plate of the water pick.
Inside the fixed card slot.
3. Insert the water suction hose into the corresponding port of the water pick assembly. (See the diagram of the complete machine construction)
4. Lock the water steak assembly on the fixed plate, and then lift the water steak puller plate, put the locked water steak assembly to the ground, pull forward the water suction press brake, turn on the water suction motor, check whether the rubber strip pressure ground is reasonable, and make appropriate adjustments.

4.2.3 Clear water tank filling

The machine is equipped with two water injection ports.

1. The front is a bucket filler, and the tank cover of the fresh water filler needs to be removed to fill the water.
2. The rear is equipped with a hose filling hole, and the rear filling hole is located above the water volume scale orifice.
(See diagram corresponding to the construction of the machine)

Hint!!!

◆ When using a bucket to fill with water, you need to make sure the bucket is clean. To add cleaner, contact your local agent.

5. Machine operation

Once the inspection is complete, you can begin to carry out the work.

1. Check the water volume of the water scale tube, if the water volume is insufficient, the appropriate amount of water should be added first before operation.
2. Cover the water tank to ensure that the water tank is properly covered and a preliminary seal is formed.
3. cover the sewer cap and place it in the sewer clamp.
4. Press the foot pedal as instructed and place the disc brush on the ground;
5. lowering the water grate puller plate and lowering the water grate assembly to the ground.
- 6, open the water valve switch, and adjust to the appropriate amount of water; (see the corresponding schematic diagram of the entire machine structure)
- 7、 Press the switch of disk brush motor, start the disk brush motor, pay attention to whether there is abnormal and abnormal noise, if there is abnormal, the
The power should be turned off immediately.
- 8、 Press the suction motor switch, start the suction motor, pay attention to whether there are abnormalities and strange noise, if there are abnormalities

The power should be turned off immediately.

9、Pushing the machine forward starts the floor cleaning with the automatic floor scrubber. **(self-propelled)**

10、Adjust the speed knob clockwise, pull the forward switch forward, and then hold the switch handle afterwards, the whole car

Walk forward. **(Self-driven)**

11、To stop the cleaning work, please turn off the water valve switch first and lift up the disc brush and water rake successively.

6. During the operation of the machine

1. When working on slopes or slippery ground, operate at low speed and do not operate on slopes exceeding 3 degrees.

On the job.

2. When the whole machine is started, keep walking so as not to damage the ground.

3. If the water squeegee assembly leaves drag marks on the floor after absorbing water, test the squeegee strip with a rag to remove the debris.

(Please clean the area to be cleaned beforehand to avoid drag marks.)

4. If there is too much foam in the effluent tank, use defoaming solution to defoam the tank in time.

(Please contact your local agent)

5. In the process of use, always observe the power display meter, when the red indicator light flashes, the electric

The bottle is about to go into over-discharge and should stop further operation, please replenish the electricity in time. **(self-propelled)**

6. During use, always observe the power display meter, when the voltage is as low as 20.4V, the power

The last cell of the meter is flashing continuously and the driver stops when the voltage is as low as 20V. **(Self-driven)**

It is recommended that the brush, suction, and water spray functions be discontinued; retain only the drive travel.

It is recommended to consider charging when the power meter is showing the second cell on the left.

7. When the clear water in the clear water tank is used up, turn off the disk brush motor and water valve switch, and lift the disk brush to ensure continued operation until the ground sewage is all sucked, then the suction motor and close and Lifting water rake assembly.

7. After the machine work is completed

7.1 Sewage tank drainage

1. After each cleaning job or before refilling the fresh water tank, the effluent in the sewage tank should

Drain and clean the sewage tank.

2. Take off the drain hose, pull off the open sewer cap, and put it in a drain bucket or drain to drain.

3. Open the cover of the sewage tank and flush the inside of the tank with water.

4. Clean the float screen located inside the waste water tank.
5. clean the water full protector located in the sewage tank.

(Self-driven)

Warning!!!

- ◆ When the fresh water tank is filled again, foam or water may get inside the float unit and damage the suction motor if the sewage tank is not drained.

7.2 Clear water tank drainage

The fresh water tank should be drained and cleaned after each cleaning job.

1. Open the ball valve switch located next to the left rear wheel of the fresh water tank and allow all the fresh water in the tank to drain.
2. Unscrew the transparent cover of the filter assembly to also drain the clear water from the clear water tank. Please clean the strainer in the filter.

Hint!!!

- ◆ When the fresh water tank is filled again, foam or water may get inside the float unit and damage the suction motor if the sewage tank is not drained.

7.3 Battery charging

1. Place the charger and machine in a well-ventilated area.
2. Turn off the power to the machine.
3. Plug the charger's AC power cord into a well-grounded electrical outlet.

4. Plug the DC output of the charger, into the charging port of the machine.

5. The charger starts charging automatically, if the battery is fully charged, the charger will turn off automatically.

6. At the end of charging, first unplug the plug ice dragon connected to the AC power supply, then the charger's transmission

The out end is unplugged from the machine.

Warning!!!

- ◆ When charging this machine, the heart must use the original charger that came with the vehicle.

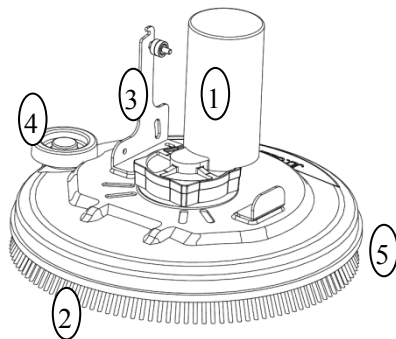
8. Cleaning systems

The cleaning system consists of motor, scrubbing brush, and spraying system to form a complete cleaning system.

Warning!!!

- ◆ When cleaning work on the machine, do not put stay in the same place rotation, long stay in the same place, will damage the ground scrubbing

8.1 Schematic



1、Brush plate motor: mainly used for brush plate ground cleaning rotation drive role.

2、Wash the floor brush: mainly used for all kinds of regular ground cleaning, decontamination role.

3, disc brush guide plate: mainly used to support and guide the entire cleaning system up and down, with into the process of rising, and has the role of guiding the tilt angle.

4、Anti-collision wheel: protects the brush cover and plays a guiding role in the walking process.

5、Water blocking skirt: mainly used in the process of washing the floor, to prevent the scrubbing brush from dumping water appear.

8.2 Methods of operation

The brush lift mechanism of this scrubber is operated in the mode of foot pedal lift.

The foot pedal will have the foot down and slightly pull to the right after and release the foot, brush plate parts placed on the ground, at this time, then open the panel brush plate button, start the brush plate to start the rotation work, brush plate rotation start work, the water from the water tank also automatically out of the water tank.

To stop the brush tray, simply lift the tray up and turn off the brush tray switch.

8.3 Inspection and maintenance

Problematic	reason	Treatment
The brush plate	Loose swivel rod set	Tighten the
Heavier brush plate lift	Swivel rod set screw too tight	Loosen the tightening screws appropriately

8.4 Maintenance practices

1、When the scrubber is stationary for a long time, the scrubbing brush should be lifted to avoid deformation of the bristles, which affects the next

Sub-cleaning effect.

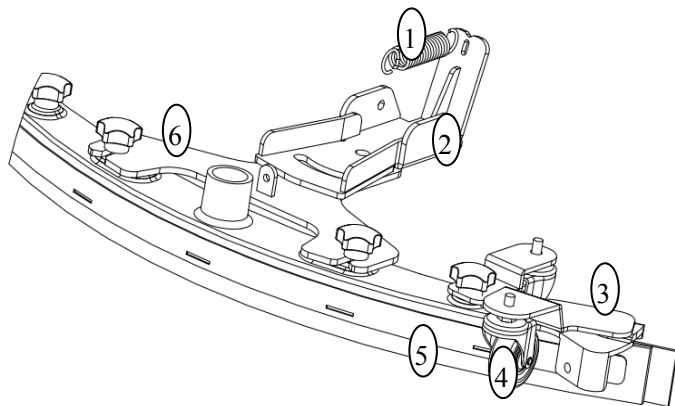
2、While cleaning is in progress, remove metal tangles from the bristles in a timely manner to reduce the brush plate electrical

The load on the machine, while avoiding damage to the consistency of the ground, improves the overall performance of the work.

3, should avoid cleaning lime, cement, sulfuric acid and other easily solidified, flammable objects.

9. Water absorption system

9.1 Schematic



1. Pressurized tension springs: direct connection to the frame chassis and the swing arm of the water pickup, mainly the water pickup set

Piece plus pressure action.

2, water steak rotating plate: and water steak components and water steak rotating swing arm directly connected, mainly water steak

The role of the component swinging from side to side.

3、Water Grill Components: Important components for sewage collection.

4, Support universal wheel: for the height adjustment of the water steak rubber strip, factory has been debugged to the best value.

5, After the water-absorbing rubber strip: it is a consumable part, please replace and maintain it as required when using.

6、Water rake fixed plate: the water rake assembly in walking, lifting, rotating an important part.

9.2 Methods of operation

The lifting mechanism of the water steak component of this scrubber is operated in the manual lifting mode.

After lowering the lifting handle on the lower side of the console, i.e., with the water rake parts placed in the ground, then turn on the

The suction button on the panel and the suction motor starts the work of sucking water.

This scrubber requires the suction motor to be turned off first and then the water scoop assembly to be lifted after the suction motor has stopped.

9.3 Commissioning of Water Grubs

Water rake with the use of time, the rubber strip wear, water absorption effect will have a certain impact, in order to achieve complete removal of stains, the following corresponding debugging is required.

1、Set the height of the two supporting gimbals at the back of the water rake to the same height, and when stationary, you need to suspend

The empty distance from the ground is about 2mm-3mm.

2、Rotate serial number (4) until the rear adhesive strip is tightly pressed against the floor.

9.4 Adhesive strip replacement

The adhesive strips are rectangular sharpened edges and are replaced after all four edges have been fully used.

1、First loosen the pressure plate that is pressed on the front and

rear adhesive strips.

2. Then remove the front and rear adhesive strips.

3, After removing the new adhesive strip needed.

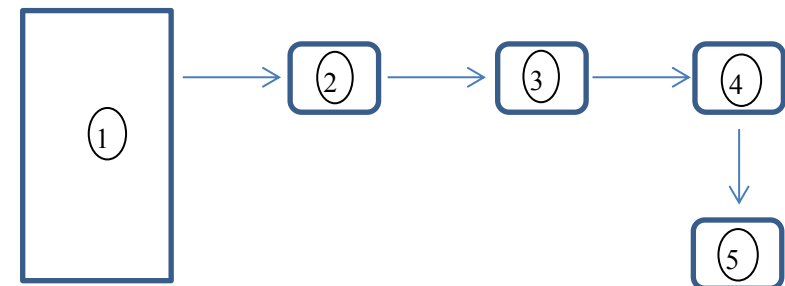
4, Just install the new adhesive strip in the order you just removed it.

Maintenance tips!!!

After each floor cleaning, the water rake assembly needs to be lifted and the rubber strips need to be cleaned.

10. Water system

10.1 Schematic



1、Clear water tank: It is one of the core accessories for the whole vehicle to reserve water for cleaning the ground.

2、Ball valve switch: installed on the left side of the front wheel, used to adjust the size of the water output.

3、Filter: Installed on the right side of the front wheel to filter impurities in the water system.

4、solenoid valve: installed in the upper part of the brush plate assembly, to control the switch role of the water.

5、Water outlet: located in the middle part of the brush tray, supplying water for the brush cleaning process.

10.2 Methods of operation

The complete water system and the cleaning system are designed to work on a synchronous principle.

When the brush motor is in rotating operation, the water output is also on by default; when the brush motor stops working, the water output is also automatically turned off.

When the water output does not meet the requirements, the water volume can be adjusted by the ball valve switch.

10.3 Inspection and maintenance

Problematic image		reason	Treatment
1	water outlet not producing	Clogged filters	Cleaning filters
2		Solenoid valve	Check the circuit and
3		Clogged spout	Remove debris from
4	Leaky spout	Solenoid valve	Clean foreign matter
5		Damaged joints	Replace the connector
6		Leakage at the	Refixing the bandage
7	Low water output	Discounted	Adjust the water pipe to
8		Insufficient	Clean the solenoid valve

11. Inspection and maintenance

11.1 Regular inspections

Regular maintenance and inspection		Interval (h)				
		4	20	50	20	500
1	Battery level detection	√				
2	Carbon brush inspection of					√
3	Is the brush tangled with	√				
4	Check the fresh water		√			
5	Check the instrument panel					√
6	Check the brushes for wear			√		
7	Timely cleaning of upper	√				
8	Check for wear on the		√			
9	Check the use of suction	√			√	
10	Checking the clear water	√				
11	Checking water pickup	√				

11.2 Battery maintenance

This scrubber system is powered by 2 12V maintenance-free batteries in series, with a system voltage of 24V.

- 1、When the machine operates for a period of time, the battery power will drop, when the last frame of the power display meter in the flashing light, indicating that the electric display is insufficient, need to charge in time.
2. When performing maintenance on the battery, wear protective gloves and avoid contact with battery acid.
- 3, the top of the battery and electrodes shall be anti-corrosion treatment, repeatedly wipe with a brush dipped in soda water, but shall not pour this solution into the battery.
- 4、Check if the battery connecting wire is worn and the contact parts are loose, please replace if necessary.
- 5, the battery on the power output terminals, should be kept clean and dry, can not have debris and dust covered in the above, the battery is extremely unfavorable, will shorten the battery life or even burn the battery.

Hint!!!

- ◆ In order to make the battery have a long service life, when the machine is finished, it should be charged in time, do not make the battery in a discharged state for a long time.

12. Troubleshooting methods

Question	reason	Treatment
Brushes do not produce water	Clogged water lines	Check and unblock water
	Low water in the tank	Fill up the water tank
	Solenoid valve failure	Replacement of solenoid valves
Brush plate motor stop working	Damaged brush plate	replacements
	Loose wire harness plug	Repair or replacement
	Panel switch failure	replacements
	Motor overcurrent	Overload protection
	No suction sound from the contactor	Check the line signal or replace the contactor.
Suction motor stop working	Damaged water-absorbing	replacements
	Loose wire harness plug	Repair or replacement
	Panel switch failure	replacements
	Faulty	replacements
	No suction sound from the contactor	Check the line signal or replace the contactor.
water absorption There are water	Foreign matter at the absorbent tape	Eliminate foreign objects
	Absorbent tape not taut	Reinstall the adhesive strip

Warning!!!

- ◆ The battery capacity will be reduced and the life of the battery will be shortened by deep discharge during use.
- ◆ Since the battery releases hydrogen gas, it is important to keep the battery box open and away from sparks or sources of ignition when charging to prevent a hazard from the hydrogen gas released from the battery.

Not enough suction. or cannot absorb	Sewage tank cover not in place	Put the lid on the sewage tank
	Broken lid seal	Seal replacement
Not enough suction. or cannot absorb water	The drain cover is not in place.	Cover the drain pipe
	Sewage tank is full of sewage	Get the sewage out.
	Clogged suction hose	Cleaning the suction
Water absorption is not clean	Water rake with clearance from the grate gimbal	Adjustment of the water
	The angle of the rubber strip after	Adjusting the angle of the rubber strip behind
Vehicle immobilized (self-propelled)	Low battery level	recharge batteries
	Corrosion of power supply terminals	Disconnect the power and remove the nut.
	Loose or damaged	Repair or replacement
	Microswitch damaged	replacements
	Loose electrical	Repair or replacement

	The whole car cannot be backed up	Microswitch signal not connected
The whole car is not powered up	Bad key.	Key replacement
	Loose key connection cable	Check the wiring
	Poor power cord contact	Check the wiring

13. Explanation of machine fault codes (self-driven)

Image		reason	Treatment
1	Power meter 1st cell flashing	undervoltage	Charge Now
2	Power meter 2nd cell flashing	Drive motor	Check the motor and connection
3	Power meter 3rd cell flashing	Drive motor Long-term	Stop working. Increase interval
4		Drive motor Shorted	Check the motor connection wire
5	Power meter 4th cell flashing	Sewage tank full	Emptying of sewage tank
6	The 5th cell of the power meter	Drive motor Long-term	Stop working. Increase interval
8	The 6th cell of the power meter	Wrong charging	Plug in the correct charging cable

9	The 7th cell of the power meter flashes	Accelerator high-end,	Accelerator replacement
10		Bad contact on the accelerator plug	Plug in and connect the wires
11		Wrong boot sequence.	Turn on the key first, then step on
12	The 8th cell of the power meter flashes	Controller failure	Replace the controller
13	The 10th cell of the power meter flashes	Battery voltage mismatch	battery replacement

[Battery Maintenance Guide]

This product is selected from lead-acid batteries, which are maintenance-free, maintenance-free and have automatic pressure release function.

The principles of use are: charge as you go, charge as soon as you use it, and do not drain the power often (minimum protection voltage).

1). What is a short circuit and how does it affect battery performance?

Refers to a battery where the positive and negative terminals are connected to produce a strong current; the internal positive and negative groups are connected. When charging, the electric The voltage rises very slowly and always remains low; the electrolyte temperature rises very high and fast; the electrolyte density rises very slowly or hardly changes; the terminal voltage drops rapidly when the current is discharged.

2). What is over-discharge and how does it affect battery performance?

It is the amount of power stored inside the battery that continues after the minimum operating voltage is reached during discharge

Continuously in the discharge of the phenomenon. After the battery produces over-discharge, the voltage drops drastically in a very short time, when the whole battery internal reaction system is disturbed, such as repeated over-discharge again, the positive electrode will lose its activity, which will affect the service life of the battery. Reduce the battery use time and extend the battery charging time.

3). How should I store the battery after use?

The battery is a sensitive product, if it is not used for a long time, it is best to remove the battery from the machine and put it in a room temperature, dry place; because the battery is placed inside the machine, and the electrical appliances and circuit boards are not disconnected, it will form a continuous micro-discharge of the battery.

4). Why is the battery life short?

The battery is undercharged for a long time and not charged for a long time after discharging, in the process of use, there is a phenomenon of over-discharging from time to time, and the standard charger is not chosen when charging, which leads to the phenomenon of

over-charging, and in the process of use, the voltage difference between battery packs is produced, and a low-voltage working condition is formed for a long time.