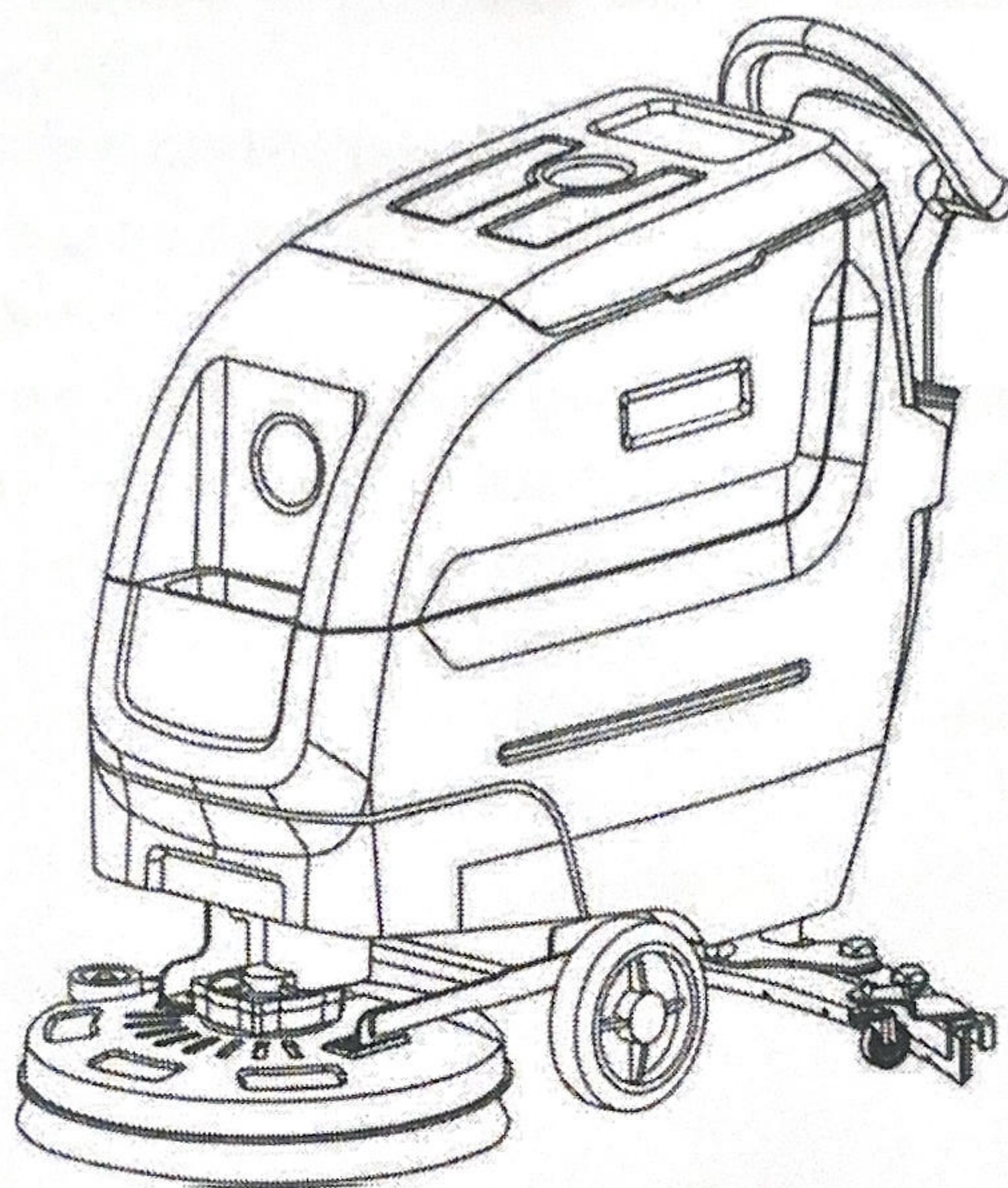


User manual



Walk behind scrubber



MODEL : Clean-D5/D5A



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 dust are present.
- 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, the electric motor may generate sparks during start-up and operation, which may cause a fire or explosion.
- Do not pick up flammable materials or reactive metals.
- 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.



Protect the environment

Please dispose of packaging materials, old machine components such as batteries, and toxic liquids such as antifreeze and oil in accordance with your local waste disposal laws and regulations, while maintaining environmental safety.



Please be sure to recycle well.



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 water absorbent 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).

Table of Contents

1. Performance parameters
2. Complete machine structure
3. Control system
4. Machine commissioning and pre-operation inspection
5. Machine operation
6. During the operation of the machine
7. After the machine operation is completed
8. Cleaning systems
9. Water absorption system
10. Waterway system
11. Inspection and maintenance
12. Troubleshooting methods
13. Fault Code Analysis

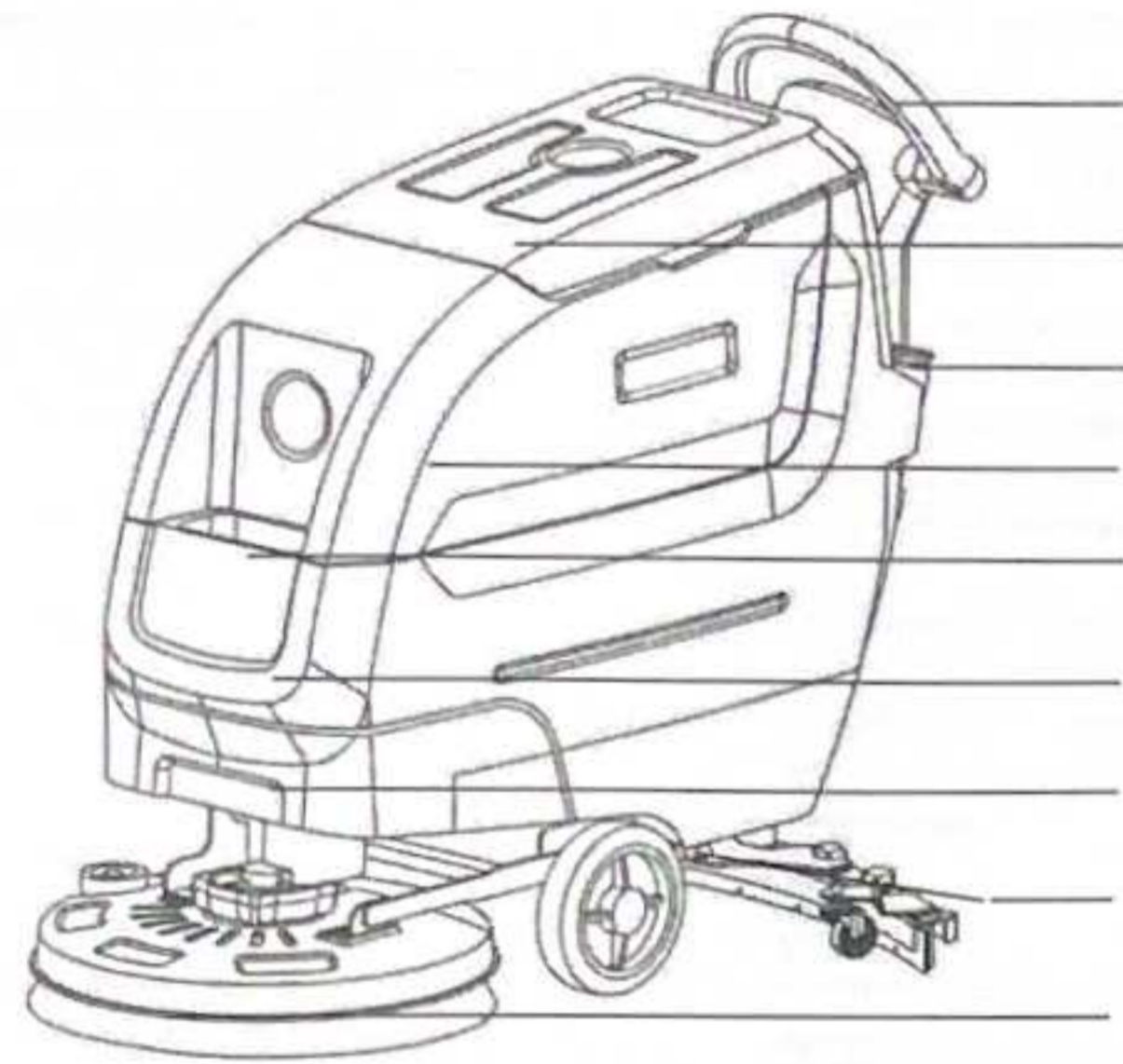
1. Performance parameters (hand push)

Vehicle Type	unit	Clean-D5
Whole Machine Size(L*W*H)	mm	1260*550*1050
Weight (with battery)	KG	120
Rated Voltage	V	25.6
Total Power	W	1000
Water Flow	L/Min	3.0
Cleaning Width	mm	510
Cleaning Efficiency (Theoretical)	m ²	2000
Vacuum Suction	mmH ₂ O	1720
Drive Method	W	brush
Disc Brush Motor	W	550
Suction Motor	W	450
Suction Rake Width	mm	820
Battery Pack	/	1*25.6V; 100AH
Clear Water Tank Capacity	L	50
Sewage Water Tank Capacity	L	60
Brush Plate Pressure	KG	28
Working Hours	H	≈3.5
Noise	dB	68
Climbing Degree (no load)	%	<8%

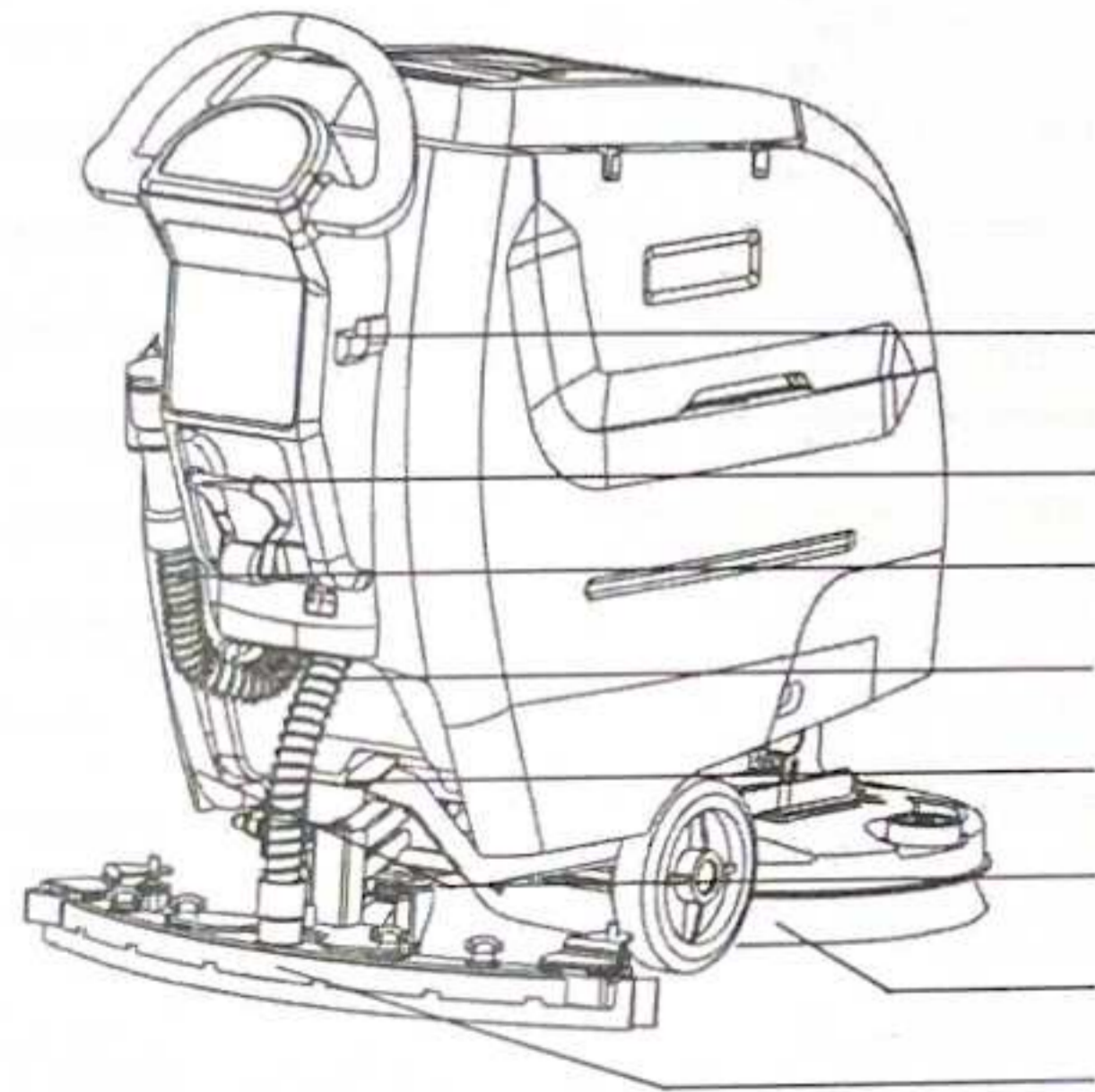
1. Performance parameters (self-propelled)

Vehicle Type	unit	Clean-D5A
Whole Machine size(L*W*H)	mm	1260*550*1050
Weight (with battery)	KG	130
Rated Voltage	V	25.6
Total Power	W	1300
Water Flow	L/Min	3.0
Cleaning Width	mm	510
Cleaning Efficiency (Theoretical)	m ²	2200
Vacuum Suction	mmH ₂ O	1720
Drive Motor	W	300
Disc Brush Motor	W	550
Suction Motor	W	450
Suction Rake Width	mm	820
Battery Pack	/	1*25.6V; 100AH
Clear Water Tank Capacity	L	50
Sewage Tank Capacity	L	60
Brush Plate Pressure	KG	28
Working Hours	H	≈ 3.0
Noise	dB	68
Climbing Degree (no load)	%	<15%

2. Complete machine construction (hand push)

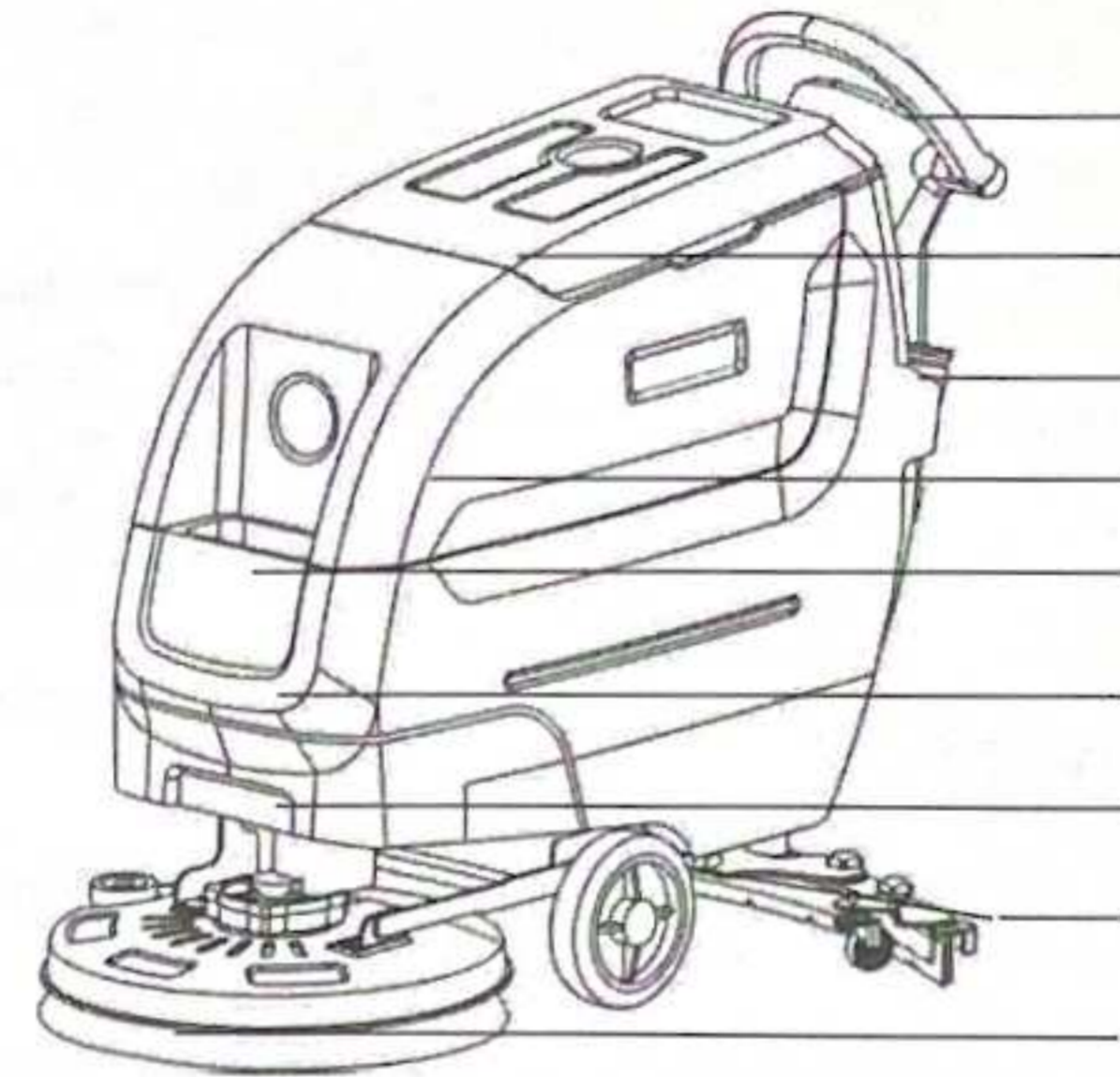


- Consoles: The console has been upgraded, please see "3. Control systems(hand push)"for details.
- Sewage Tank Cover
 - Clear Water Filler (tube type)
 - Sewage Tank
 - Clear Water Filler (bucket type)
 - Clean Water Tank
 - Disc Brush Motor Cover
 - Water Valve Switch
 - Brush Disk Assembly

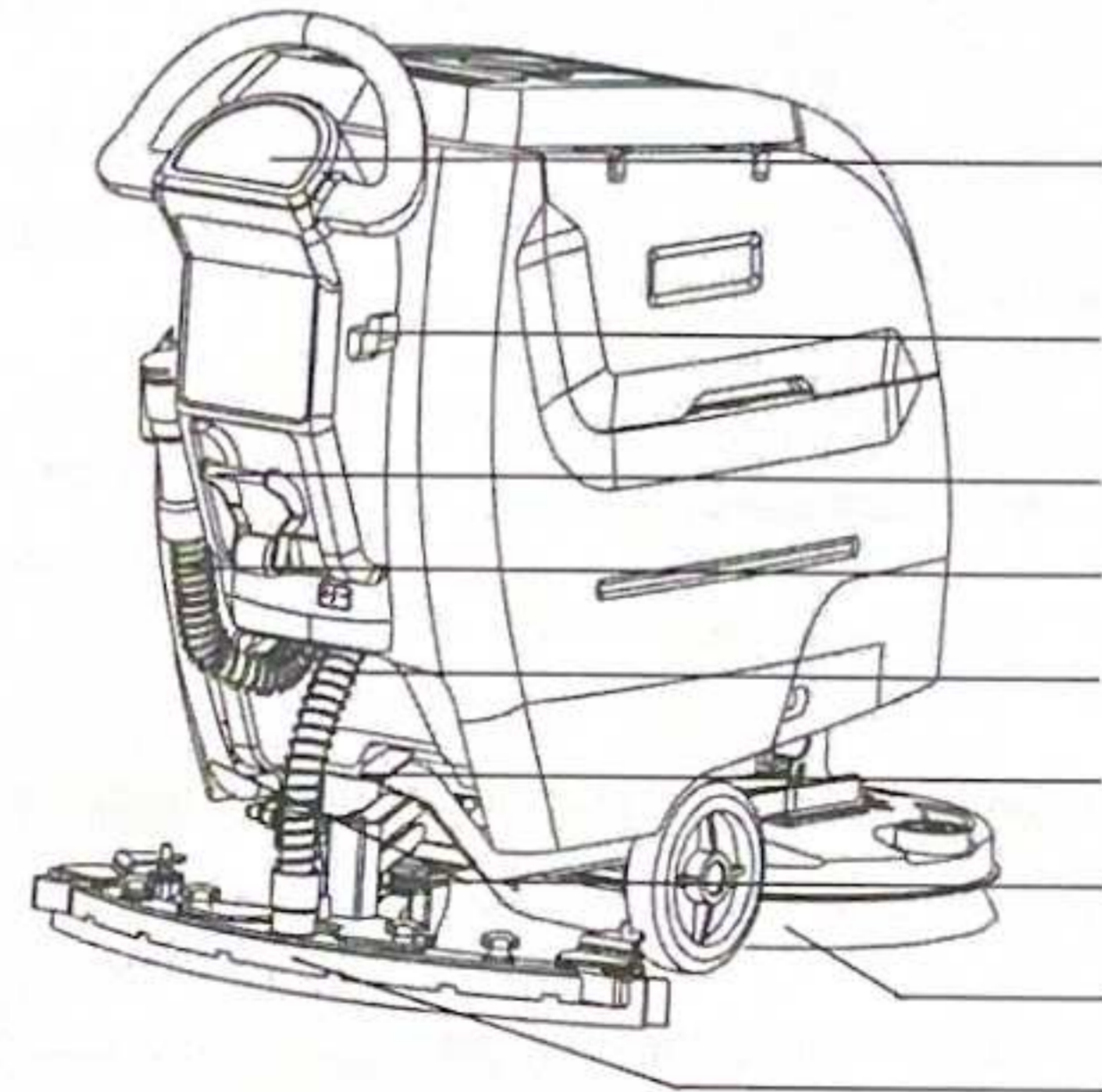


- Storage Hooks
- Squeegee Puller Plate
- Drain Hose
- Suction Hose
- Disc Brush Lifting Bar
- Water Volume Scale Tube
- Disc Brush
- Water-absorbing Steak

2. Complete machine construction(self-propelled)

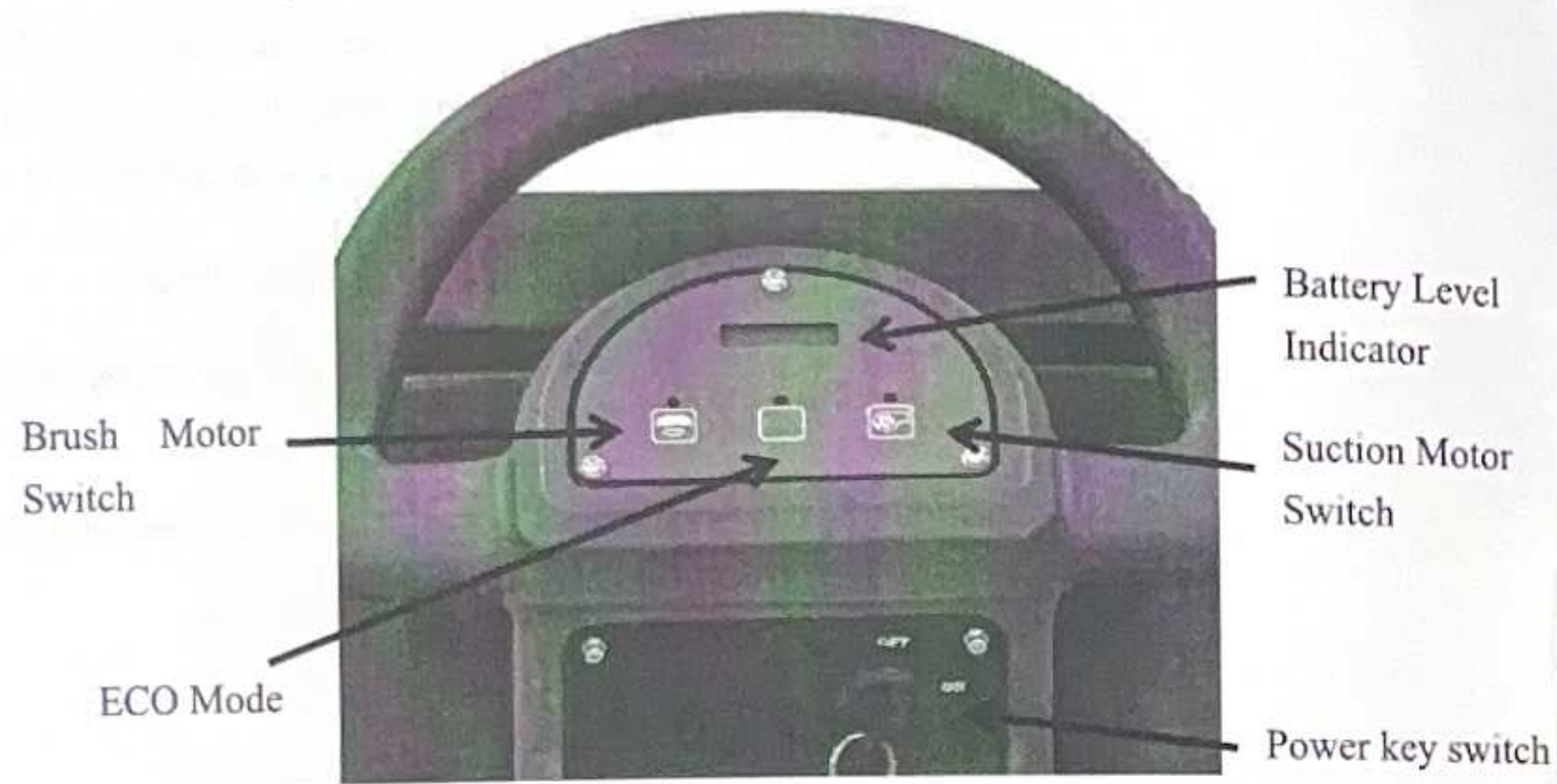


- Consoles: The console has been upgraded, please see "3. Control systems(self-propelled)"for details.
- Sewage Tank Cover
 - Clear Water Filler (tube type)
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- Consoles: The console has been upgraded, please see "3. Control systems(self-propelled)"for details.
- Storage Hooks
 - Squeegee Puller Plate
 - Drain Hose
 - Suction Hose
 - Disc Brush Lifting Bar
 - Water Volume Scale Tube
 - Disc Brush
 - Water-absorbing Steak

3. Control system (hand push)



(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 Motor Switch:

Press this switch to start the brush motor, press this switch again to turn off the brush motor.

(3) Battery Level Indicator:

Display the current battery power, as long as the machine is in the power on state this light must be on, the power level is displayed from right to left, i.e. the highest voltage is on the far right.

(4) Suction Motor Switch:

Press this switch to start the suction motor, press this switch again to turn off the suction motor.

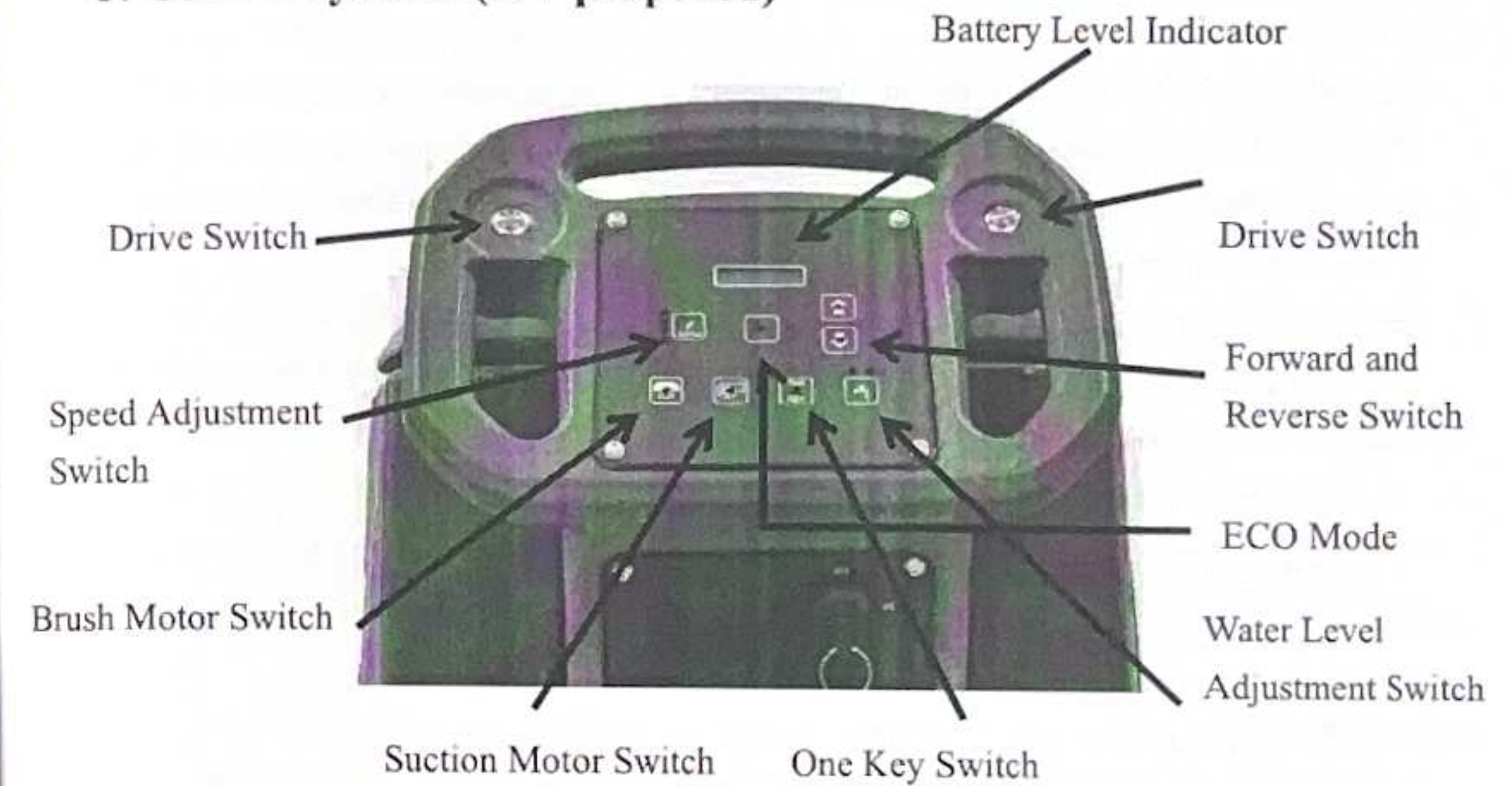
(5) ECO Mode:

Energy saving, environmentally friendly, clean and efficient.

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 clean water or dirty water tanks when the climb exceeds 5%.

3. Control systems (self-propelled)



(1) Battery Level Indicator:

Display the current battery power, as long as the machine is in the power on state this light must be on, the power level is displayed from right to left, i.e. the highest voltage is on the far right.

(2) Speed Adjustment Switch:

Four indicator lights and four speed gears. From bottom to top, the speed gears are from low to high.

(3) ECO Mode:

Energy saving, environmentally friendly, clean and efficient.

(4) Forward and Reverse Switch:

When the forward switch is pressed, the machine moves forward.

When the reverse switch is pressed, the machine reverses.

(5) Brush Motor Switch:

Press this switch to start the brush motor, press this switch again to turn off the brush motor.

(6) Suction Motor Switch:

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

(7) One Key Switch:

Pressing this switch will turn on full auto mode.

(8) Water Level Adjustment Switch:

Two indicator lights and two water volume adjustment positions. From left to right, the water volume increases from small to large.

(9) Drive Switch:

You can press both switches at the same time or just one. Pressing this switch, the machine will move. Pressing this switch again, the machine will stop.

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 clean water or dirty 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 to use the machine, turn 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 whether the water steak is installed correctly (the rubber strip has been installed).
6. Ensure that the sewage tank dirt 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.

Suggestions!!!

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

4.2.2 Water Grate Assembly Installation

1. Start by lifting the water grate retaining plate assembly off the ground.
2. Unscrew the two handles in the middle of the water pick assembly and place the water pick assembly in the fixed slot of the water picket fixing plate.
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 pipe cap and place it in the sewer pipe 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 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. **(hand push)**
10. Adjust the speed knob clockwise, pull the forward switch forward, and then hold the switch handle afterwards, the whole car walk forward. **(Self-propelled)**
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 sewage tank, please use defoaming solution to pour into the sewage tank for defoaming 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 bottle is about to go into over-discharge and should stop further operation, please replenish the electricity in time. **(hand push)**
6. In the process of use, always observe the battery indicator, when the voltage is low enough, the last cell of the power meter will keep flashing and the driver stops working finally. **(Self-propelled)**

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-propelled)

Warning!!!

- ◆ When the clean 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 Clean water tank drainage

The clean 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 clean 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 clean water from the clean water tank. Please clean the strainer in the filter.

Hint!!!

- ◆ When the clean 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 out end is unplugged from the machine.

Warning!!!

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

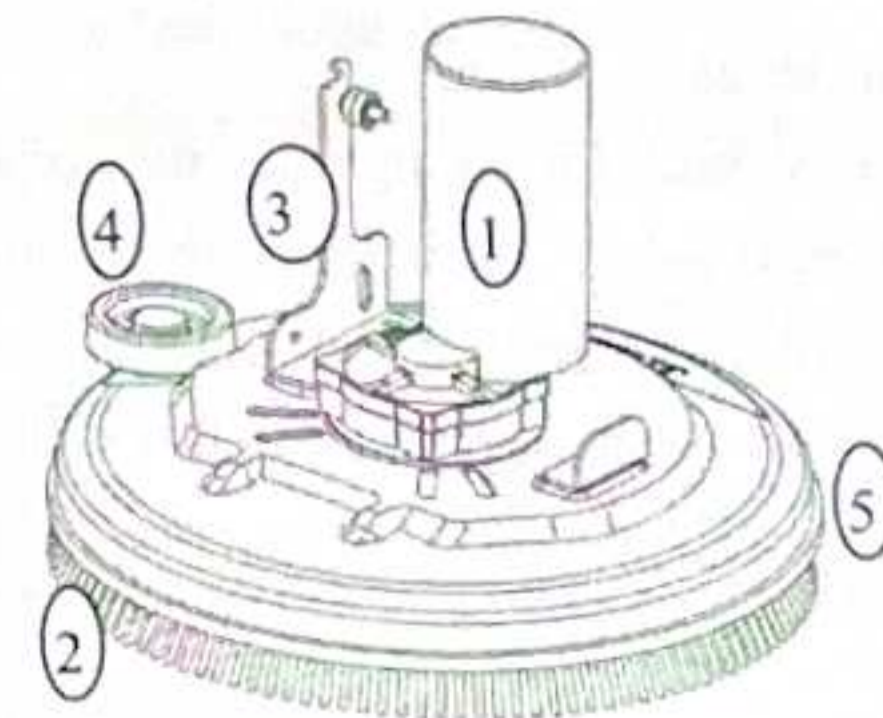
8. Cleaning systems

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 Image	Reason	Treatment
The brush plate oscillates significantly from side to side	Loose swivel rod set screw	Tighten the fastening screws
Heavier brush plate lift	Swivel rod set screw too tight	Loosen the tightening screws appropriately

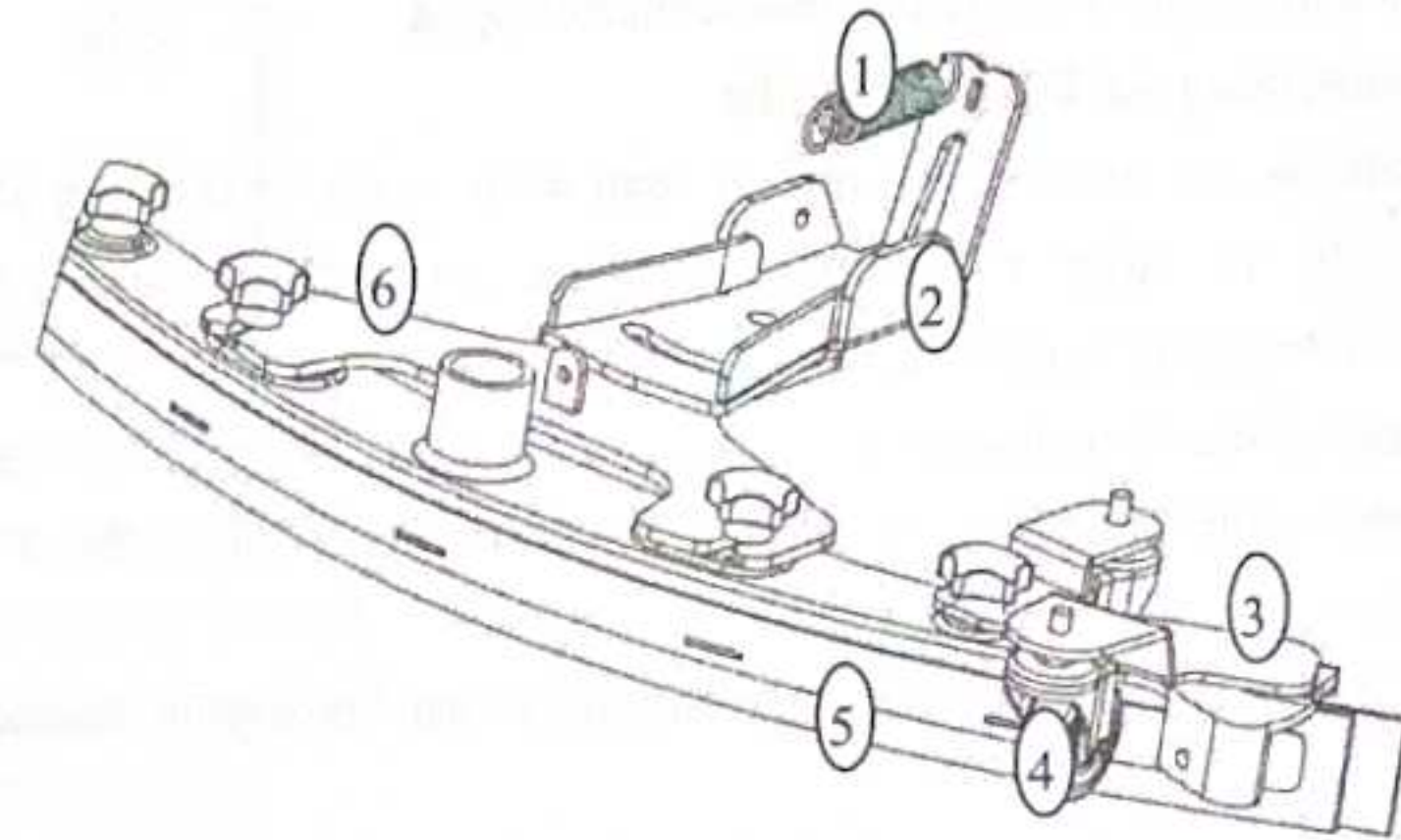
8.4 Maintenance practices

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 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 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 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 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.

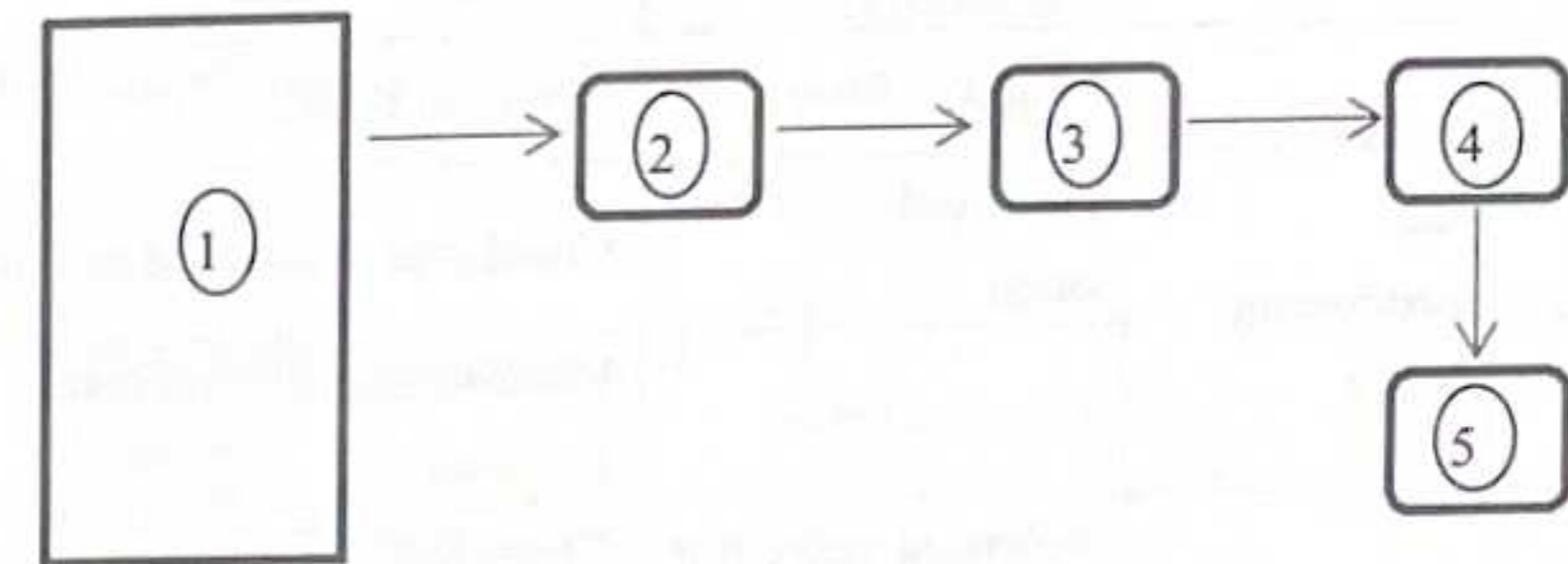
1. First loosen the pressure plate that is pressed on the front and rear adhesive strips.
2. Then remove the front and rear adhesive strips.
3. After removing the new adhesive strip needed.
4. Just install the new adhesive strip in the order you just removed it.

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. Clean 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 water	Clogged filters	Cleaning filters
2		Solenoid valve not open	Check the circuit and wiring
3		Clogged spout	Remove debris from inside the spout
4	Leaky spout	Solenoid valve not closed	Clean foreign matter inside the solenoid valve
5		Damaged joints	Replace the connector
6		Leakage at the interface	Refixing the bandage
7	Low water output	Discounted water pipes	Adjust the water pipe to be folded
8		Insufficient opening of the solenoid valve	Clean the solenoid valve foreign body

11. Inspection and maintenance

Regular maintenance and inspection		Interval (h)				
		4	20	50	200	500
1	Battery level detection	√				
2	Carbon brush inspection of motors					√
3	Is the brush tangled with threads and filaments	√				
4	Check the fresh water filter		√			
5	Check the instrument panel and all electronic switches					√
6	Check the brushes for wear and tear			√		
7	Timely cleaning of upper and lower water tanks	√				
8	Check for wear on the suction rubber		√			
9	Check the use of suction and discharge hoses	√			√	
10	Checking the clear water discharge	√				
11	Checking water pickup	√				

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.

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-propelled)

Image		Reason	Treatment
1	Power meter 1st cell flashing	Under voltage	Charge Now
2	Power meter 2nd cell flashing	Drive motor connection open circuit	Check the motor and connection wires
3	Power meter 3rd cell flashing	Drive motor Long-term overload operation	Stop working. Increase interval time
4		Drive motor Shorted connection cable	Check the motor connection wire
5	Power meter 4th cell flashing	Sewage tank full of water	Emptying of sewage tank effluent
6	The 5th cell of the power meter flashes	Drive motor long-term overload operation	Stop working. Increase interval time
7	The 6th cell of the power meter flashes	Wrong charging port plugged in	Plug in the correct way
8	The 7th cell of the power meter flashes	Accelerator high-end, Low end out of range	Accelerator replacement
9		Bad contact on the accelerator plug	Plug in and connect the wires

10		Wrong boot sequence.	Turn on the key first, then step on the gas
11	The 8th cell of the power meter flashes	Controller failure	Replace the controller
12	The 10th cell of the power meter flashes	Battery voltage mismatch	Battery replacement

12. Troubleshooting methods

Question	Reason	Treatment
Brushes do not produce water	Clogged water lines	Check and unblock water lines
	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 motor	Replacements
	Loose wire harness plug or damaged	Repair or replacement
	Panel switch failure	Replacements
	Motor overcurrent	Overload protection return
	No suction sound from the contactor	Check the line signal or replace the contactor.
Suction motor stop working	Damaged water-absorbing motor	Replacements
	Loose wire harness plug or damaged	Repair or replacement
	Panel switch failure	Replacements
	Faulty water-absorbing microswitch	Replacements
	No suction sound from the contactor	Check the line signal or replace the contactor.
Water marks when absorbing water marks.	Foreign matter at the absorbent tape	Eliminate foreign objects
	Absorbent tape not taut or creased	Reinstall the adhesive strip

Not enough suction. or cannot absorb water	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 sewage tank 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 pipe
Water absorption is not clean	Wear and tear of the absorbent adhesive strips	Replace the rubber strip
	Water rake with clearance from the ground	Adjustment of the water grate gimbal height above ground
	The angle of the rubber strip after the water pickup is too large	Adjusting the angle of the rubber strip behind the water pick
Vehicle immobilized (self-propelled)	Low battery level	Recharge batteries
	Corrosion of power supply terminals	Disconnect the power and remove the nut, Clean up the terminals and put them back on.
	Loose or damaged governor	Repair or replacement
	Micro switch damaged	Replacements
	Loose electrical connection speed plug	Repair or replacement
	The whole car cannot be backed up	Micro switch signal not connected