



POWER21SP Floor Scrubber Instruction Manual

We aim to provide safer, higher-end and more user-friendly cleaning equipment with the help of the newest technology and innovative ideas.

Preface

This instruction manual contains all the information that you need to use and maintain the machine. Please read it carefully before getting started.

This instruction manual is an important part of the product and should be kept together with the machine.

In order to ensure your safety, the following instructions must be followed when operating the machine and performing maintenance:

1. Do NOT use the machine after drinking or taking medicine.
2. Turn off the machine before any maintenance or repair.
3. The machine can only be used by trained and competent personnel; children and disabled people are forbidden to use it.
4. Keep the batteries away from sparks, flame and smoke.
5. Do NOT use the machine in places with flammable or explosive liquids, gases and vapor.
6. When operating the machine, do NOT wear loose clothing, and keep your body away from the moving parts of the machine.
7. Do NOT smoke when charging the batteries.
8. In the event of a fire, use a powder extinguisher instead of water.
9. It is crucial to give due consideration to the machine's disposal process. If any hazardous substances fail to meet the required standards, they must be transported to a designated service center for appropriate treatment.

If you have any question, complaint or suggestion, please feel free to contact us and we will be at your service with all our knowledge and enthusiasm.

We wish you a pleasant experience with our product!

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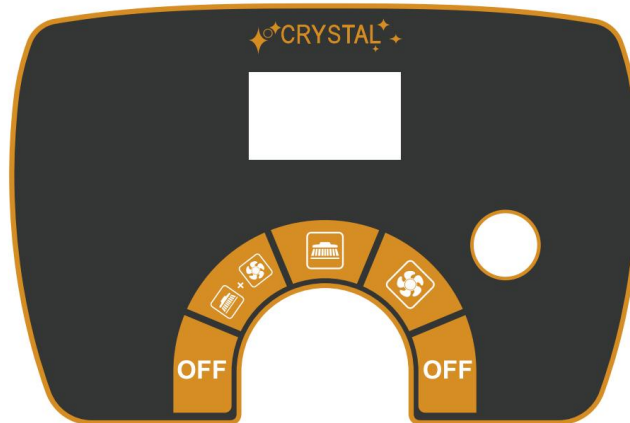
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Chapter 1 General description

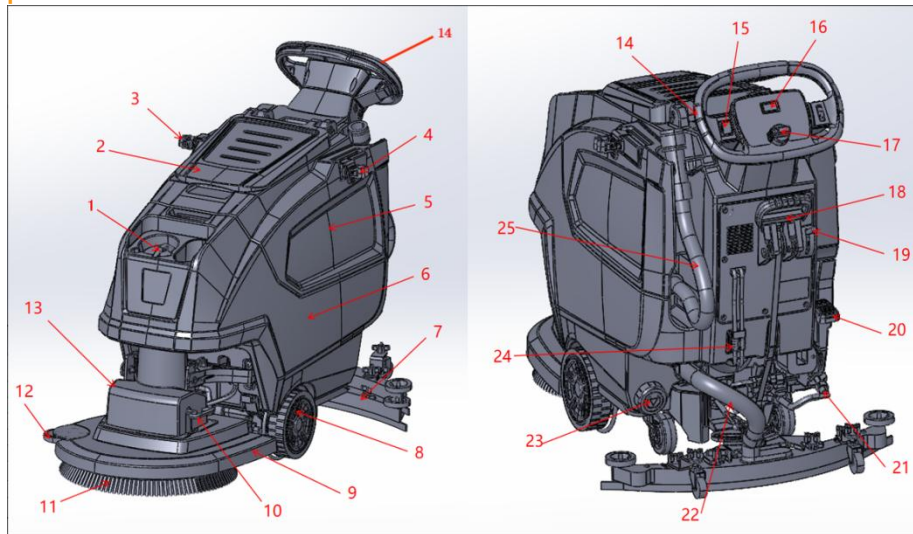
1.1 Suitable scenes

This product can be used in various locations, such as restaurants, schools, hospitals, factories, supermarkets, warehouses & office buildings, and etc. It can clean various hard floors effectively, such as mirror tile floor, marble floor, epoxy floor, PVC floor, emery floor, terrazzo floor, concrete floor, ceramic tile, and etc.

1.2 Control panel and buttons



1.3 Overview of the product



No.	Name	No.	Name	No.	Name
1	Clean water inlet cover	10	Brush plate remover	19	Water flow adjustment lever
2	Sewage tank cover	11	Brush plate	20	Brush pedal
3	Hook	12	Fender wheel	21	Clean water outlet
4	Clip	13	Motor cover	22	Sewage hose
5	Sewage tank	14	Steering Handle	23	Clean water drain port
6	Clean water tank	15	Self-propelled lever	24	Charging port
7	Squeegee	16	Display screen	25	Sewage drain hose
8	Big wheel	17	Function knob		
9	Brush plate cover	18	Lifting handle		

1.4 List of accessories

Upon receiving the product, please verify the presence of the following items. If any items are missing, contact the seller immediately.

Item	Number	Item	Number	Item	Number
Heavy Duty Brush	1	Squeegee	1	Instruction manual	1
External Charger	1	Tool kit	1	Battery set	1
Needle Holder	1	Red Pad	1		

1.5 Consumables and optional items

Consumables/Wearable refer to accessories that will wear out gradually and need to be replaced when they cannot perform.

You can purchase these wearable parts on our website:<https://www.crystalfloorscrubber.com/frequently-bought-accessories>

Consumables and optional items	
Brush Plate	White Pad (softer)
Rubber for Squeegee Assembly	Red Pad (medium softness)
Needle Holder	Black Pad (harder)

Chapter 2 Unloading and assembling the machine

2.1 Unloading the machine

Please remove the outer packaging carefully to avoid damaging the machine shell;

It is recommended to keep the packaging boxes of related products after receiving the goods, so that the machine can be repackaged later when the equipment needs to be transported to other location;

It is prohibited to violently unload the machine from the pallet to avoid damaging the parts;

Place the unloading wooden pallet, remove the wooden blocks that fix the big wheels, and then move the machine backwards to unload the equipment from the pallet.

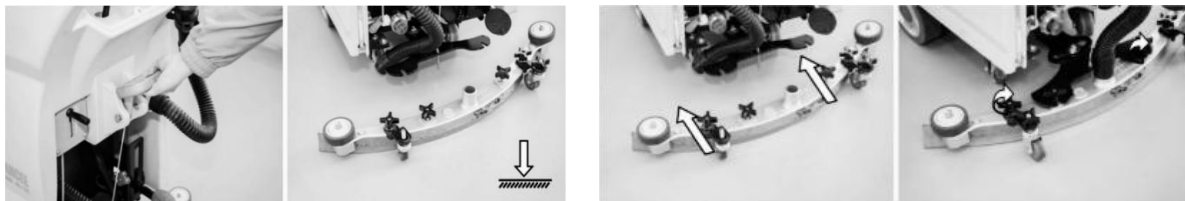
2.2 Assembling the machine

2.2.1 Installing the squeegee

Step 1: Pull down the squeegee lifting handle, and lower the squeegee tail to the ground;

Step 2: Align and push the two innermost knobs on the squeegee assembly into the fork on the machine and turn the knobs to tighten & secure the squeegee assembly;

Step 3: Insert the other end of the suction hose into the suction port of the squeegee to complete the installation.



2.2.2 Connecting the battery cords

Step 1: Lift the sewage tank and check whether the wire harness on the battery is connected and tightened;

Step 2: Connect the disconnected battery poles in series. Note that the positive (+) port is red and the negative (-) port is black. After the connection is completed, put down the sewage tank.

 **Caution:** Battery cables are disconnected in the shipping process to avoid power loss/battery failure. Please make sure the battery cables are all connected before charging/using the machine.



Chapter 3 Checks and adjustments before using the machine

3.1 Check items

3.1.1 Checking the water volume in the clean water tank

Make sure that there is sufficient water in the clean water tank before work. Do NOT do the cleaning without enough water, or dust may be sucked into the suction motor leading to loud noise and low working efficiency.

3.1.2 Checking the water level in the sewage tank

Pay special attention to the water level in the sewage tank. When the floating balls are in the highest position, drain the sewage tank immediately or the suction motor will be burned.



3.1.3 Checking the voltage of the batteries

When the power switch is turned on, the current voltage of the batteries will be displayed on the voltmeter. If the last bar of the voltmeter is flashing, the power is insufficient and please charge the batteries immediately.

Note that deep discharging (e.g. frequently using the machine when the voltage is lower than 21 V) will reduce the service life of the batteries.

3.1.4 Checking the status of the brush plate

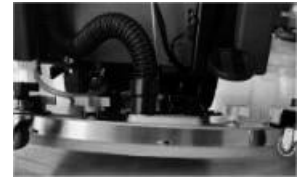
Check whether the brush plate is worn. If so, please replace it.



3.1.5 Checking the status of the rubber

The rubber needs to be replaced if it's worn out or cut.

If the rubber cannot create an airtight situation when it's touching the floor, the suction effect will not be satisfactory.



3.2 Adjustment of the squeegee

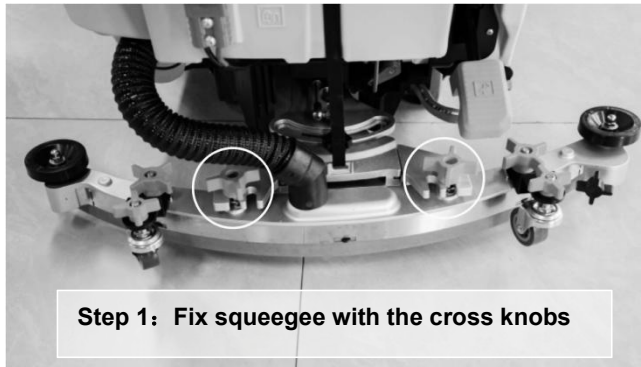
Turn the plastic knob on the universal wheels to adjust the height of the squeegee. It is ideal to have the rubber bent at a 45 degree angle while touching the floor to create an airtight situation for better suction effect.



Chapter 4 Instructions on operating the machine

4.1 Before operation

Make sure the squeegee and sewage hose are installed correctly before operating the machine.



Caution:

Prior to backing up the machine or moving it to a new location, turn off the suction button and lift the squeegee to prevent deformation of the rubber strips and squeegee sheet metal parts.

4.2 Scrubbing the floor

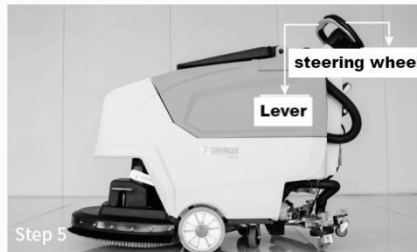
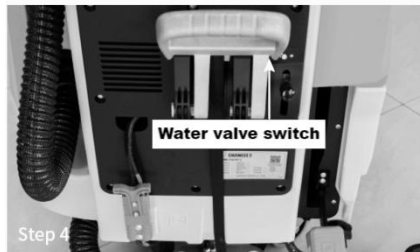
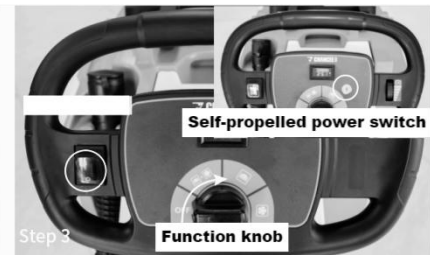
Step 1: Step on the brush pedal to land the brush plate on the floor;

Step 2: Pull the lifting handle to land the squeegee on the floor;

Step 3: Power on, then turn on the cleaning functions of your choice;

Step 4: Turn on the water & adjust the water flow by turning the water valve proportionally (perpendicular to the hose: no water will come out. parallel to the hose: waterway is clear to release water)

Step 5: Hold the steering handle and gently lift up the lever/rod beneath it to start the cleaning job.



4.3 Discharging sewage

Before draining the sewage tank, stop the machine and turn off the power switch.

Put down the sewage draining hose, open the cap and discharge the sewage.

Rinse the sewage tank with clean water.



4.4 Stopping the machine

1. When the work is finished, discharge the sewage tank.
2. Move the machine to an appropriate storage place.
3. Turn off all the buttons on the control panel.
4. Lift the brush plate and the squeegee.

4.5 Charging the batteries

Note: the machine is powered by two 12V maintenance-free lead-acid batteries and the total system voltage is 24V.

1. The total voltage of the batteries will gradually decrease during the work. When the last bar of the voltmeter is flashing, meaning the machine is running out of power and you will need to charge the batteries immediately.
2. When maintaining the batteries, please wear gloves to avoid contact with acid substances.
3. Check whether the battery cords are worn and the connecting parts are loose, and replace them when necessary.
4. Keep the batteries dry and clean and make sure that there are no dust on them, since it is extremely harmful to the batteries and may even cause them to burn in severe cases. Do NOT put any object (especially metallic object) on the batteries either.
5. In order to extend the service life of the batteries, charge them immediately when the cleaning work is finished. Deep discharging is strictly forbidden for it will reduce their capacity and service life.
6. The correct steps of charging the batteries: connect the external charger to the plug on the machine first, and then connect the charger to the wall outlet.

Note: if the machine will not be used for a long period of time, please fully charge the batteries, & disconnect the battery cords/lines to avoid power loss. Batteries should be charged semi-monthly to avoid deep discharging which would result in battery failure.

Chapter 5 Cleaning and maintenance of the machine

5.1 Cleaning of the machine

Proper cleaning and maintenance will increase the service life of your machine, so please check and clean the machine regularly.

1. Check and clean the wheel set and remove entangled objects;
2. Clean the sewage tank and hoses regularly, and use water to flush the dirt in the tank and blockages in the hoses;
3. Clean the dirt under the rubber strips regularly, and wipe the strips with a cotton rag;
4. Check the water filter regularly. When there are impurities in the transparent cover, rotate and unscrew the cover, and rinse it and the filter screen repeatedly with clean water.

Caution:

The machine is not a waterproof device. Do not wash the machine directly with water or it may cause a short circuit in your machine or burn out the original electrical components.

5.2 Maintenance of the machine

5.2.1 Replacement of the brush plate

Step 1: Park the machine on a flat ground. Turn off the power and step on the brush pedal to lower the brush;

Step 2: For installation, place the brush plate right under the flange of the machine and step the brush plate pedal for connection, and complete the installation with a soft step on the brush plate cover

5.2.2 Replacement of the squeegee rubber

Step 1: Park the machine on a flat ground, turn off the machine before replacing the rubber;

Step 2: Rotate the plastic cross knob counter-clockwise to loose the squeegee components;

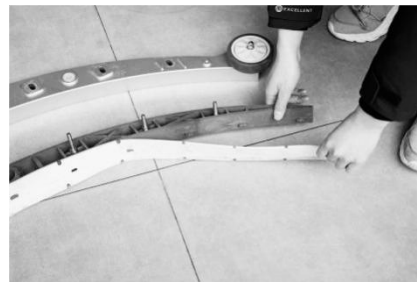
Step 3: Loosen the nut to remove the squeegee plate and front and back rubber strips.



Step 1



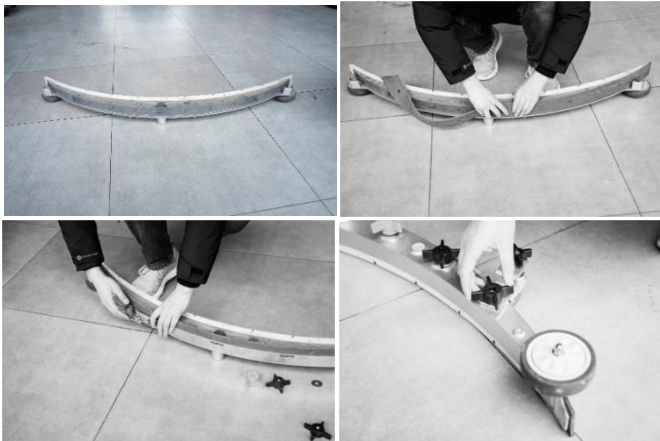
Step 2



Step3

5.2.3 Installation of rubber strips

- Step 1: Align the holes of the front rubber strip with the teeth of plastic bottom plate, then fix the bottom plate on the squeegee plate;
- Step 2: Align the holes of the back rubber strip with the teeth of the other side of the squeegee plate;
- Step 3: Install the rubber strips clamping plate and lock the buckle;
- Step 4: Screw on the knobs on the squeegee plate and install the universal wheels.



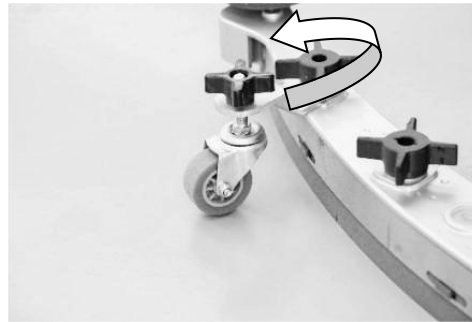
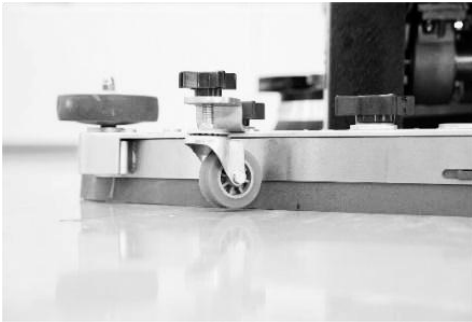
5.2.4 Adjustment of squeegee

Step 1: Place the assembled squeegee on the flat ground, adjust the height of the universal wheels and make it 1/8 inches higher than the bottom side of the rubber strips on both sides;

Step 2: Put the squeegee assembly on the fork of the machine by aligning and turning the two innermost knobs. Turn on the suction function, lower the squeegee to the ground level & check if the rubber is touching the floor and creating an airtight situation;

Step 3: If not, turn the two knobs on top of the two back universal wheels to change the height of the squeegee to create an airtight situation;.

Step 4: Make sure the squeegee assembly is securely locked during the cleaning process.



Chapter 6 Storage and transportation of the machine

6.1 Storage of the machine

- 1.If you do not need to use the machine for a long time, please remove and wash the squeegee and the brush plate, and store them in a dry clean place. We recommend that you store them in an airtight plastic container.
- 2.Make sure that the water tanks are drained and cleaned.
- 3.It's better to charge the battery fully before storing the machine. If you do not use the machine for a long time, charge the battery regularly (at least twice a month) to keep the batteries in good condition

6.2 Transportation of the machine

When lifting or lowering the machine, make sure that it is in a stable position to prevent it from tipping over or falling. When the machine leaves the factory, it is fixed on a wooden pallet and carried on a transport vehicle with appropriate equipment; upon arrival at the destination, a similar setting needs to be arranged to load or unload the machine safely.

When using a forklift to move the machine, the forklift should move the entire box with the machine well-affixed inside it. Do NOT use a forklift to pick up the machine directly or it might damage the machine. Machine could also tip over or fall easily from the forklift and cause property damage or human injury.

Chapter 7 Common problems and solutions

Fault	Phenomenon/Part	Troubleshooting	Solution
Charging failure	Charger failure	If the charger is not connected to the machine, see whether the green light will be on. If the machine is plugged in, the red light is on, and the built-in fan of the charger does not run	Replace the charger
	Charging interface oxidation	Whether there is any obvious oxidation trace on the copper interface	Clean the charging interface oxide
Suction motor not working	Switch	Turn on the switch and check if the switch light is on	Replace the switch
	Connector	Check whether the connector is tightly inserted or has fallen off	Reconnect and tighten the connector
	Controller	Check whether the controller screws and terminals are in good conditions	Contact customer service center
	Suction motor	Use a multi meter to measure whether there is voltage at the input end of the suction motor	
Brush motor not working	Switch	Turn on the switch and check if the switch light is on	Replace the switch
	Connector	Check whether the connector is tightly inserted or has fallen off	Tighten the connector
	Controller	Check whether the controller screws and terminals are tightened & in good condition	Contact customer service center
	Brush motor	Use a multi meter to measure whether there is voltage at the input end of the brush motor	

Water not coming out	Clean water hose	Whether there is any scale in the transparent clean water hose	Clean clean water hose
	Filter	Whether there is impurities on the filter	Clean filter
	Solenoid valve	Measure whether the solenoid valve has input voltage	Check the input voltage of the solenoid valve. If it is normal, remove it and clean the blocked part. Replace the solenoid valve if necessary.
Loud noise	Noises from the rubber strips and sewage suction port	1. Is there any abnormal sound when the rubber strips are lifted? 2. Is there any obvious vibration in the water suction hose?	Adjust the height of the squeegee universal wheels
	Suction motor	1. Is there any abnormal sound when the rubber strips are lifted? 2. Is there still any abnormal sound after the water absorbing hose is pulled out?	Replace the suction motor
Brush plate	Frequent drop	Has the brush plate been lowered to the ground before turning on the switch?	Brush needs to be installed correctly to avoid unnecessary wear and tear. Replace the brush or buckle when necessary
	Worn brush plate buckle	Observe the wear	Replace the brush plate buckle
The machine is not sucking water properly	Floating ball cage clogged	Check the floating balls in the cage	Clean any impurities around the cage or gently tap the cage to get the balls down
	Hose blocked	Clean the water suction hose	Need daily cleaning and maintenance
	Recovery tank sealing circle	Sealing circle aging	Replace sealing circle/strip
	Squeegee	1. Whether the strips are cracked, aged or deformed 2. Whether the strips are wavy	1. Adjust the angle of the squeegee and the height of the universal wheel of the squeegee; 2. Replace the rubber strips

8.1 General description

1. One-year warranty will be honored on the non-wearable parts. Users can easily purchase the wearable parts (brush, pad, needle plate/holder, squeegee rubber, etc.) in the accessories section on our website.
2. The delivery receipt and purchase invoice are certificates for warranty and must be kept properly.

8.2 Cases not covered in the warranty

1. The operator fails to perform maintenance listed in this instruction manual.
2. The surface and/or the structure of the machine are obviously damaged due to improper operation.
3. Disassembly or modification not approved by the original manufacturer.
4. Damage due to weather or force majeure.
5. The warranty is expired or the machine has been used for more than 1,500 hours.

Technical parameters

Category	Self-propelled type
Battery capacity (V/Ah)	2*12V / 2*100 Ah
Suction motor (Hp)	0.4
Brush plate motor (Hp)	0.74
Traction motor (Hp)	0.13
System voltage (V)	24
Brush plate width (In)	21
Squeegee width (In)	31.5
Theoretical working efficiency (sq ft/h)	30,000
Working time (h)	2-5
Clean water tank capacity (Gal)	12
Sewage tank capacity (Gal)	13
Product size (In)	55 * 32.5 * 41
Machine Weight (Lbs)	320

Warranty Card

Property of:		Tel:	
Address:			
Date of purchase:			
Model:		Delivery Date:	
Accessories to be replaced:			
Notes:			

