

## Environmental tips



Please dispose of the package, used components (battery) and hazardous fluid (antifreeze and machine oil) properly according to local waste disposal regulations to ensure environmental safety.

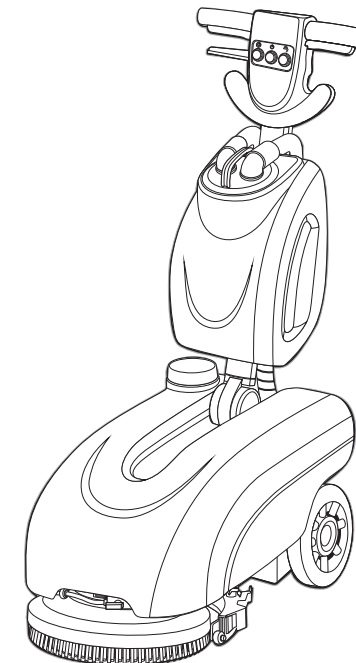


Please remember to recycle them for further use if possible.

# PUSH-BEHIND FLOOR SCRUBBER

## 202 SERIES

## Product Manual



Applicable model:

A202、Q202、K202、Y202、T202.

This manual contains important safety precautions and instructions on the correct operation of product. Please read this carefully before using the product.

**IMPORTANT STATEMENT:**

The content of this manual is for all users. Manufacturer reserves the right to update and revise the content of this manual as when necessary. If there will be further inquiries, please contact the distributor or manufacturer.

**NOTE:**

Batteries and chargers mentioned in this manual are options, which are not included in the sales and after-sales service of the product.

Thank you for buying this product. Before operating it, please read this manual completely and carefully to make sure that you are familiar with the product and can assemble components correctly. Please save this manual for future reference.

### Description:

Function: Floor scrubbing.

For area: Smooth hard ceramic tiles or marble floor in factories, shopping malls, parking places, plazas, hotels, hospitals, schools, waiting rooms in the transportation system, etc.

### Description of symbols in this manual



Warning

Content starting with this symbol is information closely related to operator's safety. If this symbol appears in a certain chapter, it refers to relevant information starting with the "Warning" sign and it should be read carefully.



Attention

Content starting with this symbol indicates possible causes of failure of the product. If this symbol appears in a certain chapter, it means relevant message with an "Attention" symbol should be read carefully.



Note

Content starting with this symbol provides supplementary information.

### Description of symbols on the machine



It means important notes to be followed during operation.



Read the product manual.



Stay away from flammable source and corrosive liquids.



Stay away from naked fire.



Please read the operating manual and instructions on use before starting the floor scrubber.



Indicates high power voltage and the area should be kept from water spill.

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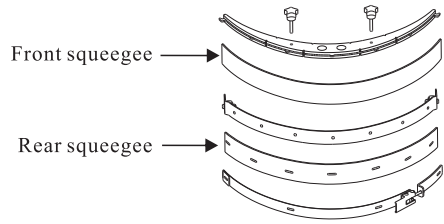
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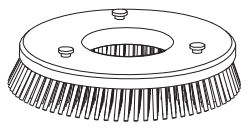
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## 202 Series Push-behind Floor Scrubber Optional Spares

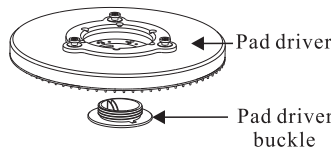
Description: 1. 202 series: A202, Q202, K202, Y202, T202.  
2. The following pictures are only for reference, so products are subjects to what you get.



- Front squeegee: standard squeegee with 7 holes
- Front squeegee: oil-resistant squeegee
- Front squeegee: customized hole position
- Rear squeegee: standard squeegee
- Rear squeegee: oil-resistant squeegee



Brush: 14" brush with 0.7mm bristles



Pad driver: 14" floor scrubber pad driver

Remark: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## PACKING LIST

### Standard configuration

No.	Name	Unit	Quantity
1	Main unit	Piece	1
2	Squeegee assembly	Set	1
3	Product manual	Copy	1
4	Conformity certificate	Piece	1



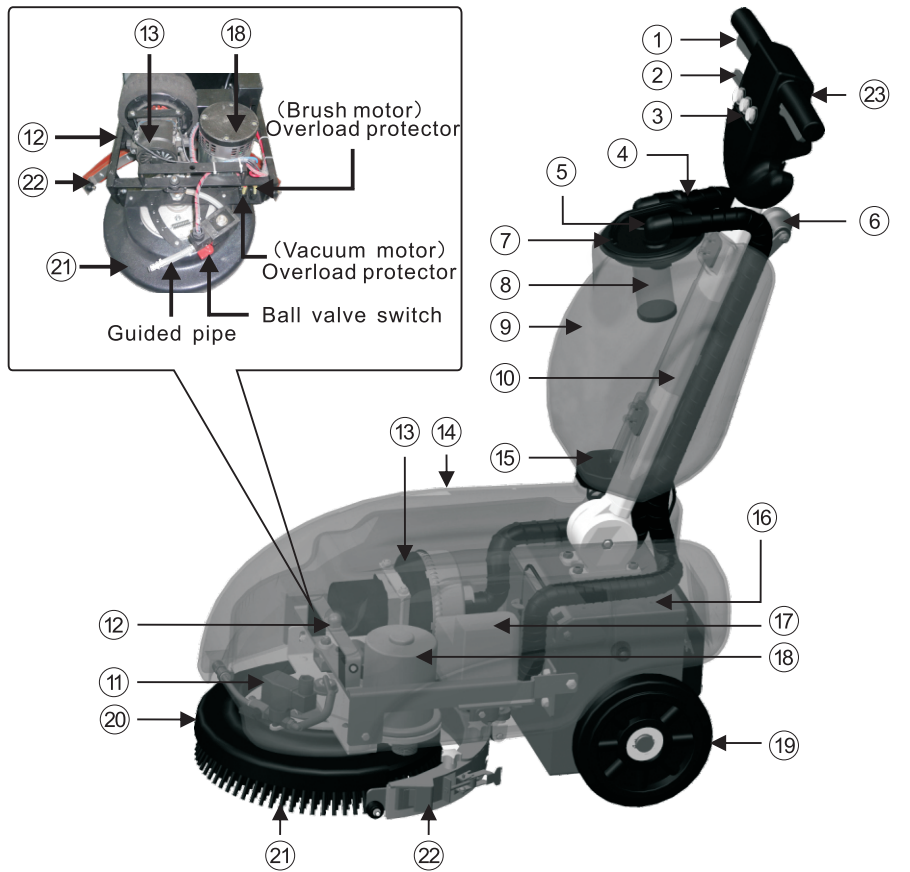
Batteries and chargers are not included in standard configuration. Optional batteries and chargers will be packed in separate cases if purchased.

### ● Unpacking check

Check the product on receiving immediately. If there will be obvious damages on the product, please keep the packing materials and contact the local distributor.

# OPERATION INSTRUCTIONS

## Key components



- |                            |                              |                     |
|----------------------------|------------------------------|---------------------|
| ① Brush motor switch       | ⑨ Recovery tank              | ⑰ Circuit board     |
| ② Handle adjustment switch | ⑩ Handle adjustment assembly | ⑱ Brush motor       |
| ③ Control panel            | ⑪ Solenoid valve             | ⑲ Wheel             |
| ④ Vacuum hose              | ⑫ Solution tank frame        | ⑳ Brush cover       |
| ⑤ Suction hose             | ⑬ Suction motor              | ㉑ Brush             |
| ⑥ Squeegee lever           | ⑭ Solution tank              | ㉒ Squeegee assembly |
| ⑦ Recovery tank lid        | ⑮ Solution tank lid          | ㉓ Serial number     |
| ⑧ Float net                | ⑯ Battery cover              |                     |

# WARRANTY INFORMATION

## Disclaimer

**Manufacturer takes no responsibility under the following cases:**

1. Any damage due to inadequate use of power supply.
2. Any damage due to alteration by unauthorized agents.
3. Any damage of parts due to improper use, storage or handling of machine.
4. Any damage due to operating machine under adverse conditions.
5. Any damage due to overloading to machine.
6. Any damage due to unattended safety precautions before leaving the machine.
  - Stop on level surface.
  - Set parking brake.
  - Turn off machine and remove key.
7. Any machine damage or personal injury due to use other types of charger.
8. It is not intended for use by persons (including children) with reduced physical, sensory mental capacities, or lack of experience and knowledge. Children should be supervised to ensure that they do not play with the appliance.

## AFTER-SALES SERVICE

### After-sales service

If there are any questions, contact local after-sales service agent or manufacturer.

Warranty card	Fill out the warranty card after purchasing the product and store the warranty card for future use.
Under warranty	Provide the after-sales service agent with the warranty card, the invoice and the part that needs to be repaired.
Exceed warranty period	The after-sales service agent repairs the product and charge according to situations.

The product must be repaired by manufacture's approved after-sales service agents.

### Limited warranty statement

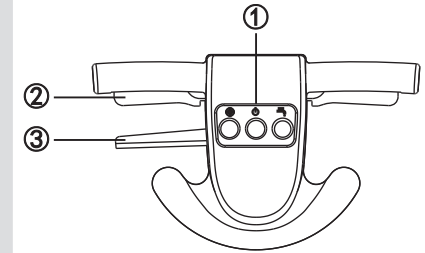
1. Manufacturer's authorized distributors are responsible for the after-sales service of the product.
2. Recommended replacement intervals and duration of limited warranty of spares and consumables are as follows:

Name	Recommended replacement intervals	Name	Recommended replacement intervals
Brush motor	/	Filter	800hours
Vacuum motor	600hours	Wheel	1000hours
Sprinkling motor	/	Brush assembly	100hours
Traction motor	/	Plastic hoses	800hours
PCB	/	Bumper wheel	1000hours
Linear actuator	/	Squeegee	200hours
Controller	/	Pulling rope	/
Batteries	12months	Belts	800hours
Charger	/	Fuse	/
Solenoid vale/Switch/ Power adaptor	/	Other rubber components	/
Chain	1000hours		

## OPERATION INSTRUCTIONS

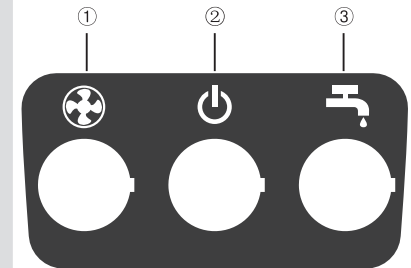
### Control components

- ① **Control panel**  
Operation control rocker switches.
- ② **Brush motor rocker switch**  
Press this rocker switch to turn on or off the brush motor.
- ③ **Handle adjustment switch**  
Keep on pressing this switch, then turn the handle to adjust its height.



### Control panel

- ① **Suction rocker switch :**  
Press this rocker switch to turn on or off the suction motor.
- ② **ON/OFF rocker switch :**  
Press this rocker switch to switch on or off the machine.
- ③ **Sprinkling rocker switch:**  
Press this rocker switch to turn on or off the sprinkling motor.

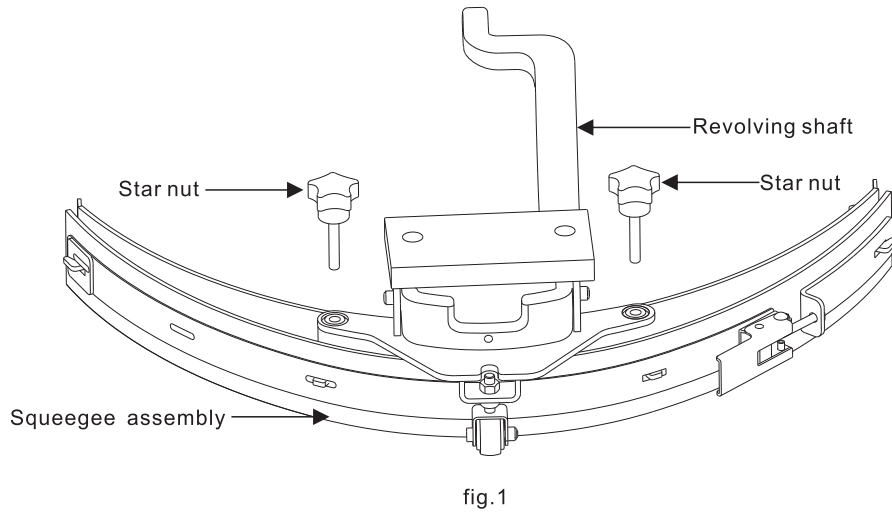


# OPERATION INSTRUCTIONS

## Assembling parts

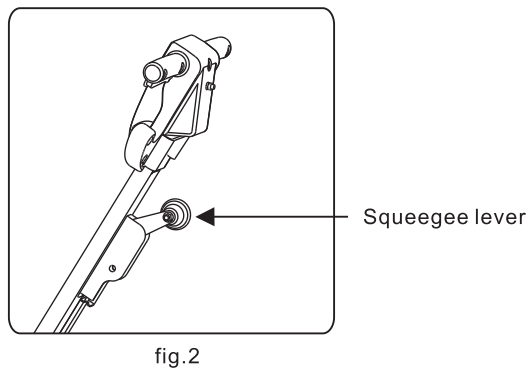
### 1. Squeegee assembling

Unfasten the two star nuts to connect the squeegee assembly with the revolving shaft assembly.(fig.1)



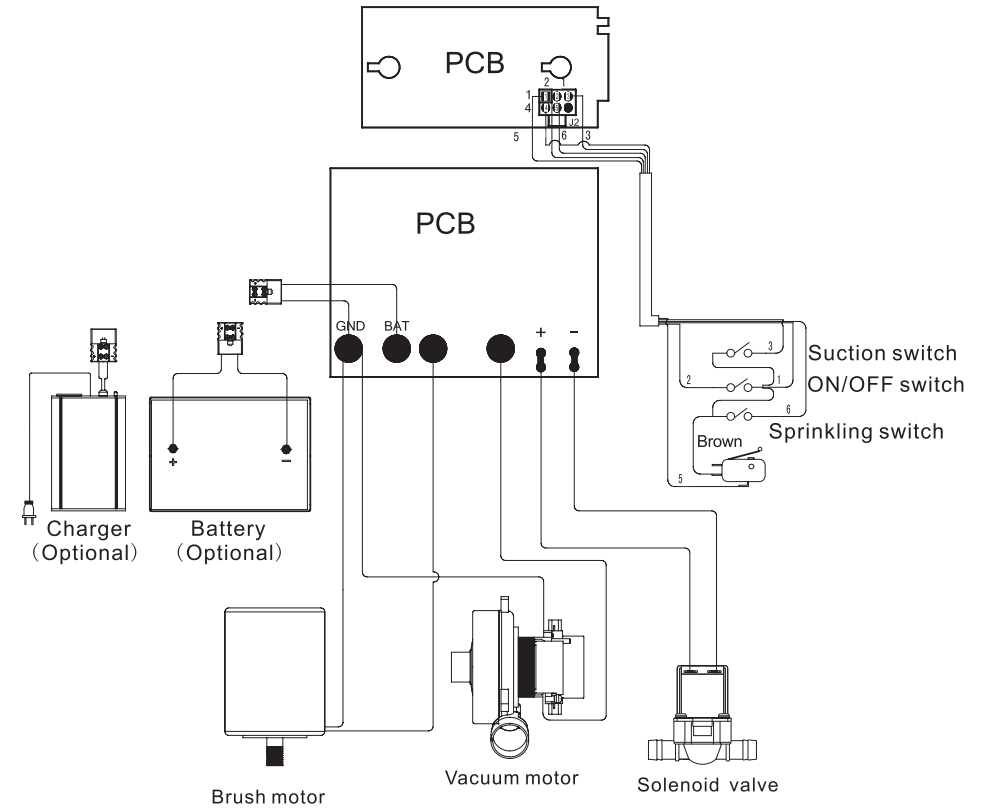
### ● Raise and descend the squeegee

After the cleaning work, lift up the squeegee assembly and remove the brush in case that the squeegee assembly and the brush deform. Pull the squeegee height handle upward to raise the squeegee assembly; pull it downward to descend the squeegee assembly. See the instructions on how to remove the brush on page 6. (fig.2)



# TECHNICAL DETAILS

## Wiring diagram





# TECHNICAL DETAILS

## Technical specifications

Description	Unit	Data
Protection level	IPX	3
Operating tension	V	12
Suction motor	W	220
Suction vacuum	mm/H <sub>2</sub> O	600
Brush motor	W	250
Brush speed	rpm	140
Solution tank capacity	L	11.6
Recovery tank capacity	L	12.9
Squeegee width	cm	47
Theoretical working capacity	m <sup>2</sup> /h	1500
Brush diameter	inch	14
Cleaning width	cm	35
Brush pressure	Kg.f	25
Maximum gradient	%	2
Minimum turning radius	cm	60
Machine dimension	cm	42x41x90

\*Protection level: overload current protection, short circuit, power-down protection, reversed polarity protection.

# OPERATION INSTRUCTIONS

## Assembling parts

### 2. Battery assembling

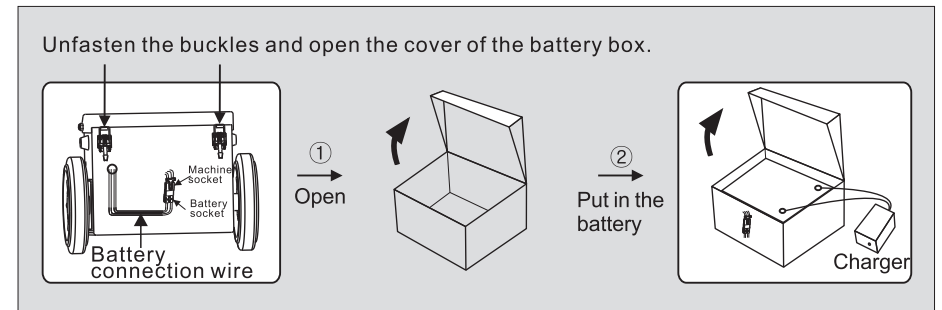
(Battery assembly is not included in standard configuration, purchase it if necessary.)

#### ⚠ Attention

1. The battery assembly will be dangerous if not connected and assembled correctly, so let trained personnel connect and assemble the battery assembly.
2. In case of danger, check the batteries and accessories before assembling them.
3. Make sure the machine is switched off.
4. Stay away from fire.
5. Assemble the battery in ventilated places.
6. Put the batteries in position carefully, and then connect the cables correctly.

#### Steps:

1. Unpack the machine, and put it on the floor.
2. Take out the battery from case.
3. Unfasten the buckles on the battery box to open the cover of the battery box(①).
4. Put the battery in the battery box carefully and make sure it is horizontal. Then connect the battery socket with the machine socket(②).
5. After this, turn the cover of the battery box back and fasten the buckles.



### 3. Brush assembling

#### ⚠ Attention

- Do not operate any function button while hands are touching the brush, in case of injuries.
- Make sure the scrub pad is placed with the center of the pad driver and screw the pad driver buckle. Afterwards, you can work as follows.

1. Make the operation handle vertical and put the machine downward on the floor. Then, align the brush with the three-blade plate and rotate the brush 30° to the left. After that, the brush assembling will be finished and place the machine well.(fig.3)
2. If the brush is needed to change, hold on and rotate it 30° to the right to remove the brush.(fig.4)

# OPERATION INSTRUCTIONS

## Assembling parts

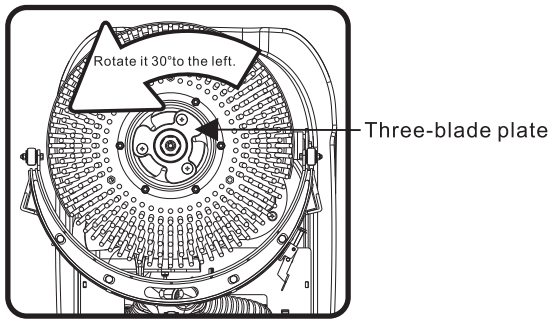


fig.3

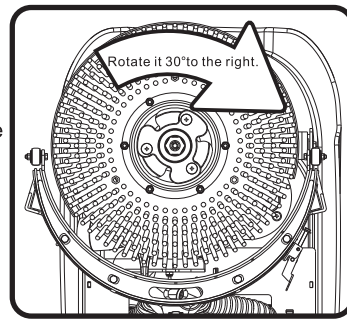


fig.4

### 4. Recovery tank assembling

- ① Unpack the machine and the recovery tank ;
- ② Make the handle of the machine vertical. Then hold the recovery tank and align the two buckles on it (fig.5) with the two buckles on the handle (fig.6); release the recovery tank to lock the buckles and finishing assembling the recovery tank.
- ③ After this, connect the vacuum hose and the suction hose with the connectors on the recovery tank lid. (fig.7)

#### ⚠ Attention

Attach suction hose(Left) to the left side connector, the vacuum hose should connect with the right connector. Do not make them cross to avoid damaging vacuum motor.

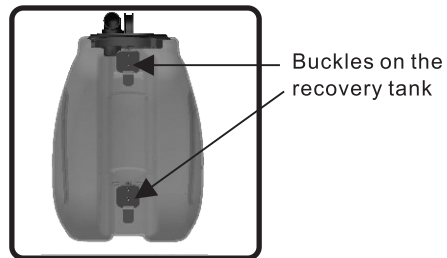


fig.5

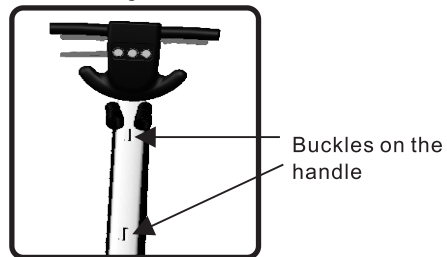


fig.6

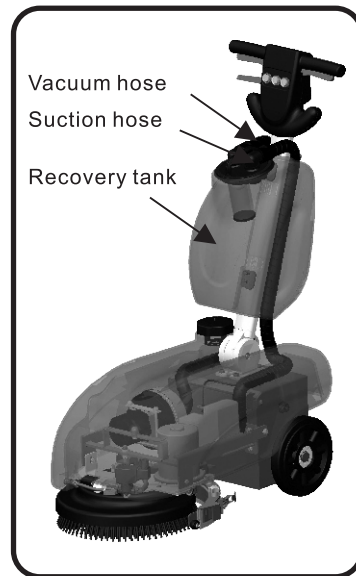


fig.7

# MAINTENANCE GUIDE

## Trouble shooting



**Note:** Before contacting the repair agent or our customer service department, please check the followings for possible solutions.

Problem	Cause	Solution
The motor does not run	<ol style="list-style-type: none"> <li>1. The machine socket has not been connected well with the battery socket.</li> <li>2. The related motor switch has not been switched on.</li> <li>3. The voltage of the machine is not normal or stable.</li> <li>4. The indicator lights blinks abnormally.</li> <li>5. The load of brush motor or vacuum motor is strong.</li> </ol>	<ol style="list-style-type: none"> <li>1. Connect the machine socket well with the battery socket.</li> <li>2. Switch on the related switch.</li> <li>3. Make sure the voltage of the machine be the specified voltage.</li> <li>4. Turn off the power, and then, turn it on again.</li> <li>5. Press the overload protectors on the solution tank rack frame.</li> </ol>
No water comes out or the water flow is small	<ol style="list-style-type: none"> <li>1. The filter or hose joint is obstructed</li> <li>2. The floor being cleaned is too dry. Water supply is normally insufficient when cleaning a new-building for the first time.</li> <li>3. The solenoid valve or the sprinkling motor is obstructed.</li> <li>4. Turn off ball valve switch or the outlet capacity is too small.</li> </ol>	<ol style="list-style-type: none"> <li>1. Remove the filter and the hose joint and clean them.</li> <li>2. When the ground is too dry, sprinkle some water on it before the cleaning work.</li> <li>3. Clean the solenoid valve and the sprinkling motor.</li> <li>4. Twist the ball valve switch to adjust the solution water.</li> </ol>
Water suction power is weak	<ol style="list-style-type: none"> <li>1. The seal ring of the soiled water recovery tank lid gets loose.</li> <li>2. The hose hoop gets loose.</li> <li>3. The suction motor gets loose or tilted.</li> <li>4. The suction hose is obstructed.</li> <li>5. The hose is broken.</li> </ol>	<ol style="list-style-type: none"> <li>1. Attach the seal strip properly without space.</li> <li>2. Check the hose hoop and install it properly.</li> <li>3. Open the silencer lid, make sure the motor is installed correctly and properly.</li> <li>4. Clean out the air inlet and outlet.</li> <li>5. Repair the broken hose.</li> </ol>
The terminal poles of the batteries become hot or fused.	<ol style="list-style-type: none"> <li>1. The cable ends are not screwed tight.</li> <li>2. There are black metal pads between the cable ends and the terminal poles.</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten the screw.</li> <li>2. Take the pads out and connect the ends of the cable closely to the poles of the batteries.</li> </ol>
Water could not be completely sucked.	<ol style="list-style-type: none"> <li>1. The water suction motor does not work.</li> <li>2. The water suction hose is obstructed.</li> <li>3. There are foreign objects in the squeegee.</li> <li>4. The squeegee is excessively worn out.</li> <li>5. The height of the squeegee is not suitable.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the motor.</li> <li>2. Remove the foreign object.</li> <li>3. Remove the foreign object..</li> <li>4. Put another side of the squeegee forward or replace the squeegee.</li> <li>5. Adjust the height of the squeegee.</li> </ol>
The machine could not clean thoroughly	<ol style="list-style-type: none"> <li>1. The brush motor doesn't run.</li> <li>2. The dirt is too stubborn.</li> <li>3. The brush is excessively worn out</li> <li>4. The brush is obstructed by a foreign object.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the motor.</li> <li>2. Use a special effect detergent and sprinkle it on the floor.</li> <li>3. Replace the brush.</li> <li>4. Remove the foreign object.</li> </ol>

# MAINTENANCE GUIDE

## Daily maintenance

### 4. Maintain the brush

- ① Hold on the brush and rotate it 30° to the right to remove the brush(fig.15&fig.16), and then clean them.
- ⚠ Attention: Do not rotate it 360° to the right in case that the strap falls off brush assembly. (as the brush assembly exploded diagram)
- ② If the machine will lay idle for long time, the brush should be removed, cleaned and air-dried, otherwise, the load of the brush motors may be too strong when it is being used again and even worse, can't operate normally.(fig.17)

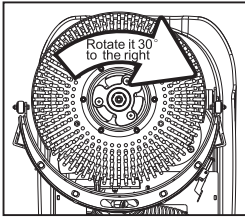


fig.15

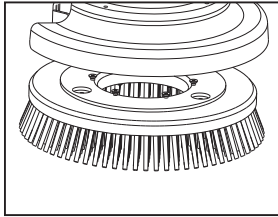


fig.16

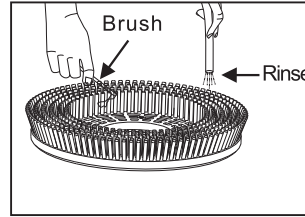
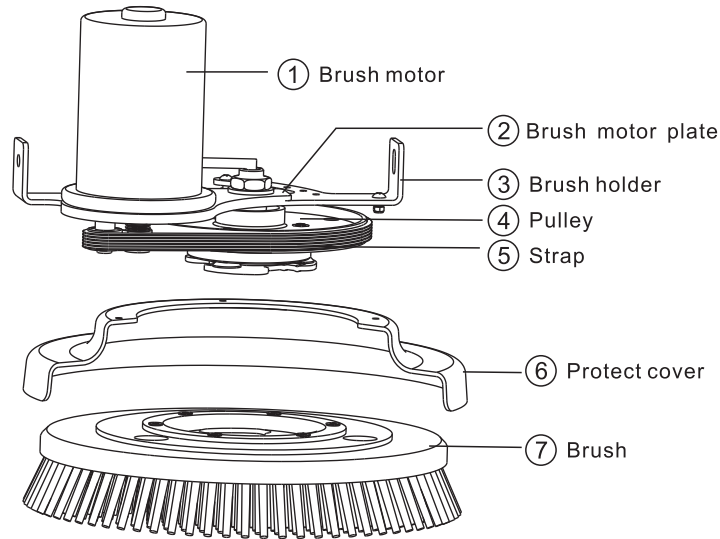


fig.17

### ● Brush assembly exploded diagram

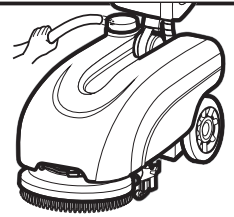


# OPERATION INSTRUCTIONS

## Preparation before starting the machine

### 1. Fill water into the solution tank

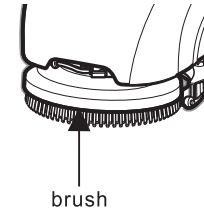
- ① Open the lid of the solution tank, then fill water or dilute neutral detergents into the solution tank from the inlet mouth.
- ② The temperature of water should be lower than 50°C.



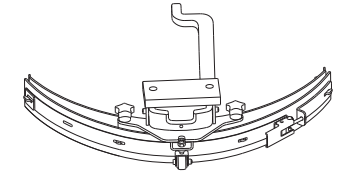
### ⚠ Attention

To avoid shortening the service life of the machine, detergents added into the solution tank should be less foamy and less volatile neutral detergents with a PH of 5-9. When using detergents, defoamer should be added into the recovery tank to prevent the foamy with dirt flowing into the vacuum motor to damage the motor. Manufacturer shall not responsible for the damage of the vacuum motor due to the absence of the defoamer.

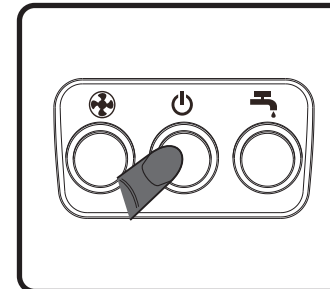
2. Check whether the brush is assembled well. If not, assemble the brush according to the instructions of "Brush assembling" on Page 6.



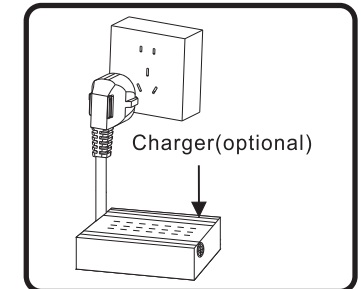
3. Check whether squeegee assembly is assembled well. If not, assemble the squeegee assembly according to the instructions of "Squeegee assembling" on Page 4.



6. Press the switches on the control panel to make sure the water sprinkling motor, the brush motor and the suction motor are ready for work. Check whether the battery level is enough for the cleaning work. When the battery level is low, the buzzer will buzz. At this time, turn off the machine and charge the battery.



Turn off the machine



Charger

# OPERATION INSTRUCTIONS

## Operation steps

After the preparation work, operator can use the machine to begin the cleaning work.

1. Check whether the sprinkling button and the vacuum button are turn off. Then switch on the ON/OFF switch on the control panel(fig.8-a), the machine will in manual state.
- 2.Put down the squeegee lever to ensure that the squeegee is totally touched with the floor to work(fig.8-b)
- 3.Press the sprinkling button on the control panel(fig.8-a), the solenoid valve begins to work, the machine starts sprinkling water.
- 4.Hold on the brush motor switches on both sides(fig.8-c), the brush can clean the floor.
- 5.After cleaning the work, lift up the squeegee lever and release the brush motor switches. Then, press the sprinkling button, vacuum button, ON/OFF switch to stop all cleaning work.

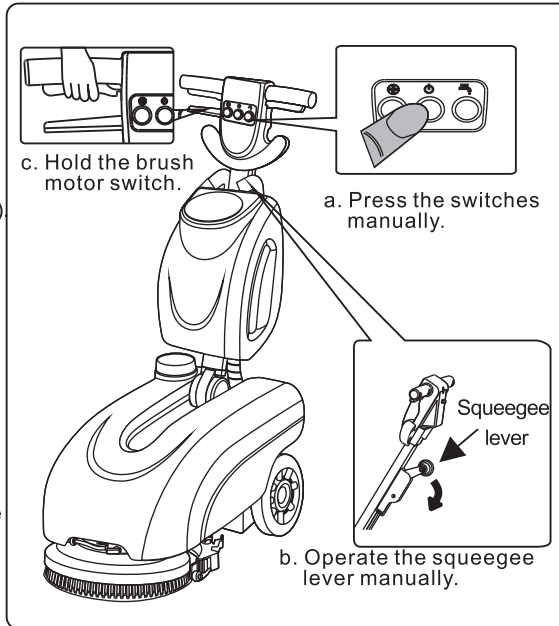


fig.8



## Note

During the cleaning work, please check and guarantee that the ball is near the top of the stainer after hearing the dull sound. It indicates that the soiled water has reached to the safety level.

During the cleaning work, change the water flow according to the condition of the floor. The ball valve above the brush cover can be used to adjust the water flow. After the cleaning work, pull the water pipe from the quick connector can discharge water in the solution tank.(fig.2)

If the load of brush motor or vacuum motor is too strong, take out of the recovery tank, and then separate the solution tank from the machine. After that, press the overload protector on both side of solution tank rack frame(as "key components" on Page2 ).

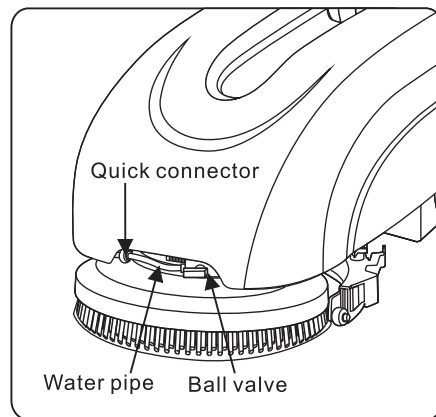


fig.9

# MAINTENANCE GUIDE

## Daily maintenance

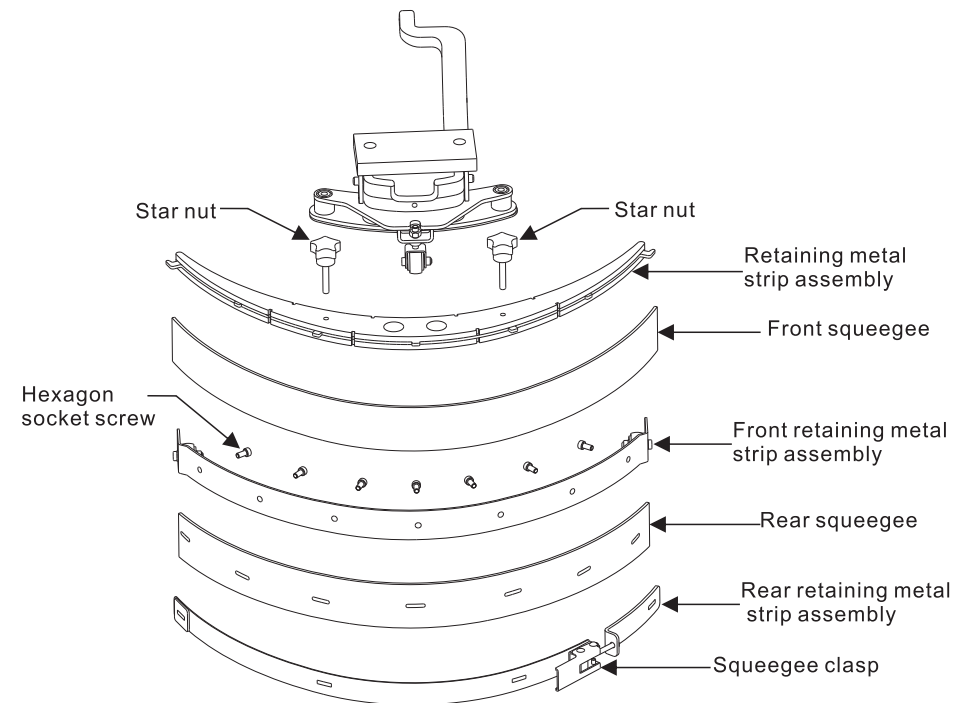
### 3. Maintain the squeegee assembly

Remove, clean and air-dry the squeegee regularly to prolong its service life. The whole squeegee assembly can be removed to be cleaned and air-dried.

⚠ Attention: Don't dry the squeegee by exposing it to sunshine.

#### The procedure to remove the squeegee:

- ① Turn the two star nuts anticlockwise to remove the squeegee assembly.
- ② Loose the seven hexagon socket screws to take out the front squeegee and the front retaining metal strip assembly.
- ③ Release the squeegee clasp to loosen the rear retaining metal strip assembly.
- ④ After taking out the retaining metal strip assembly, the rear squeegee can be removed.
- ⑤ After that, check to confirm the wearing condition of the squeegee and turn to an untouched side for use. Each squeegee has 4 sides for switching use.



# MAINTENANCE GUIDE

## Daily maintenance

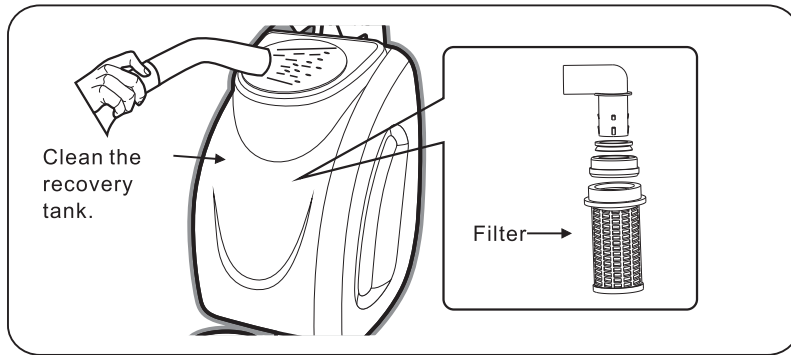
### ! Attention

When the cleaning work is over:

1. Disconnect the machine socket from the battery socket.
2. Drain the soiled water from the recovery tank and wash it with clean water.
3. Check to make sure the water suction hose is clear.
4. Wash the brushes and squeegees, and air-dry them.

### 1. Maintain the recovery tank

- Clean the recovery tank every time the cleaning work is finished. Take out tools and other things on the cover of the tank. Then discharge all the soiled water in the soiled water recovery tank. After this, use clean water to wash the soiled water recovery tank, and air-dry it. Keeping the soiled water recovery tank clean can prevent sludge or foreign objects from blocking the tank.
- Clean the float net periodically (fig.1).



### 2. Maintain the solution tank fig.12

- If the machine will not be used for a long time, press the switch of the connector to discharge all the water in the solution tank in case solution in the tank deteriorates. (fig.13)
- If the machine will be transported or stored when the environment temperature is lower than 4°C, discharge all water in the solution tank. After this, twist down the ball valve. Then, press the sprinkling water switch to sprinkle all the water stayed in the sprinkling water motor. Otherwise, because of low temperature, the water may freeze and damage the sprinkling water motor, solenoid valve and the hoses. (fig.14)

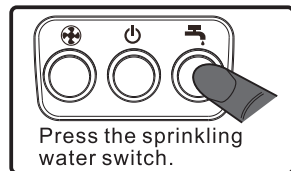


fig.14

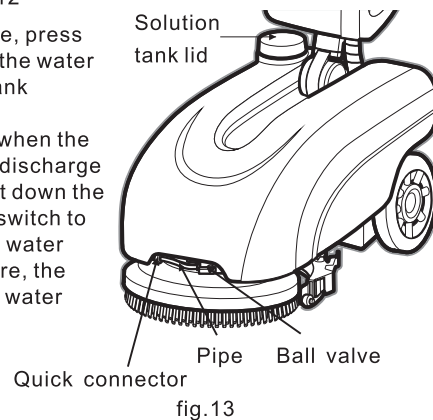


fig.13

# SAFETY PRECAUTIONS



This chapter contains important information about the safe use of the machine. Please read it carefully.

## Don'ts

<p>1. Do not put anything on the machine;</p>	<p>2. Do not put hands into the spinning parts while the machine is operating;</p>
<p>3. Do not block the air-discharge hose or the air ventilation area; Do not move, change or cover the safety information sign;</p>	
<p>4. To ensure personal safety, the machine must be operated by a trained technician. (New users can be trained the basic operation skills in the field by sales agent or distributor.)</p>	

## Notes before using

1. This machine is designed for larger area floor cleaning indoor. Please read this manual thoroughly and carefully before starting the machine.
2. Do not disassemble or refit the machine without permission. There is an engineering design product and is tested in production. Manufacturer takes no responsibility for accidents or damage as a result of unauthorized disassembling or refitting the machine.
3. Contact dealer or manufacturer immediately in case of any breakage or failure in starting the machine upon unpacking the product.
4. Make sure the voltage of power supply accords with the voltage on the nameplate of the machine. Manufacturer takes no responsibility for damage or human injuries caused by using wrong power supply.
5. Do not overload the machine. Manufacturer takes no responsibility for damage to any components as a result of overloading.
6. Do not use the machine under adverse condition, such as acid/alkaline rich area, working temperature lower than 10°C or above 35°C. Manufacturer takes no responsibility for damage, accidents or injuries as a result of operating the machine under adverse conditions.
7. In case of any abnormalities, please contact authorized after-sales service center immediately.

# SAFETY PRECAUTIONS



## Warning

### Safety precautions

1. If problem happens while the machine is operating, cut off the power first. After having inspected and solved the problems, restart the machine.
2. The end of the battery cable should connect to the terminal holders of the battery directly to ensure safety. If there is metal pad between them, the temperature of the battery and the cable may become too high and, even worse, the battery and the cable may fuse or damaged.
3. Put the machine on ventilating places while charging.
4. Water spills should be avoid when cleaning the machine itself. Electronic parts inside the control panel are sensitive to water spills and may cause damage in water ingress.
5. Do not inhale the exhausted gas or use the machine near flammable liquids, gas or suspended particles.
6. Batteries should be charged outside the machine. Keep the machine from any heat source and make sure it is ventilated.
7. Disconnect the battery socket from the machine socket and disconnect the battery socket from the charger socket before maintaining the machine.
8. This machine can only be assembled with brushes of the designated size. Being assembled with brushes of other sizes may result in damage to the machine.
9. Be careful and move the machine at the low speed when it is working on slopes or sliding floor, especially when it is moving backward.
10. Do not let the machine keep on scrubbing the same place, otherwise, the area/floor may be damaged.
11. To prevent the machine from unauthorized operating, turn off the power and pull out the key from the ON/OFF switch.
12. Make sure the machine will not move accidentally when it is left unattended.
13. If the user use the non-original batteries or chargers, please contact the manufacturers in advance in order to avoid accidents.

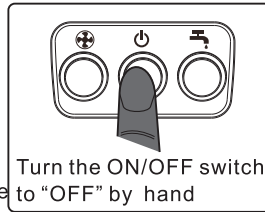


fig.10

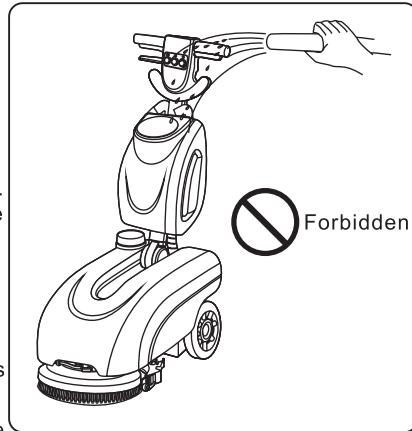


fig.11

# IMPORTANT PRECAUTIONS

## Working conditions

### 1. Working environment temperature

- The machine can only work in the 10°C-35°C environment.

### 2. Sensibility to strong acid and strong alkali

- Do not put strong acid or strong alkali liquids into the water tank to deal with stubborn dirt, in case those liquids damage the components of the water channel. If those liquids are needed, sprinkle them on the floor directly.
- The detergents put into the water tank should be neutral detergents with a PH of 5-9.

### 3. Cleaning areas

- If there are too much dirt and big rubbish on the floor, such as wastepaper, plastic bags, fruit peel, fruit seeds and so on, it is recommended to sweep the floor first, and then use the machine to clean the floor, in case big objects block the water suction hose.

## Notes on moving

1. While driving, keep the machine from colliding with other objects. Before entering a narrow space, check whether the machine can get in.
2. Avoid driving the machine over rough places in case of mechanic damage, which will shorten the servicing life of the machine.
3. The width of the aisle should be at least 47cm for the machine with the squeegee assembly to get through. If the width of the aisle is less than 47cm, remove the squeegee assembly, and then let the machine get through. Do not force the machine to get through, which may result in mechanical problems.

