

## 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.

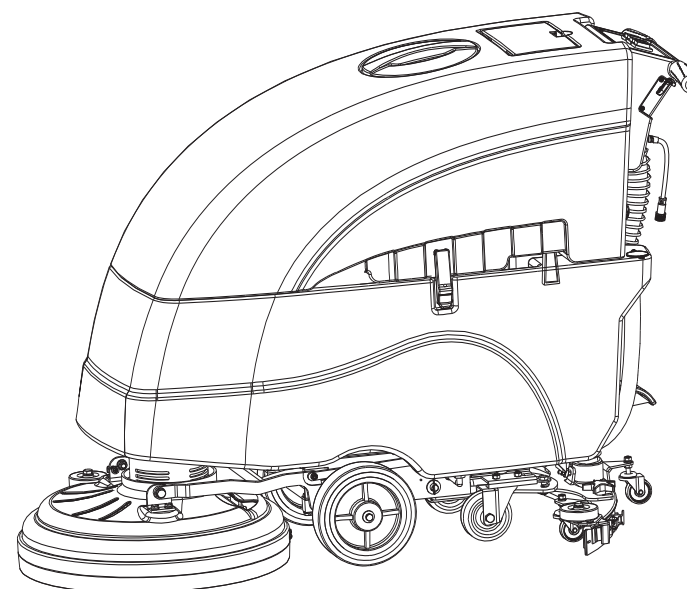


Please remember to recycle them for further use if possible.

## PUSH-BEHIN FLOOR SCRUBBER

### 503 SERIES

### Product Manual



Applicable model:

A503、Q503、K503、Y503、T503.

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

Version: A/0-2014

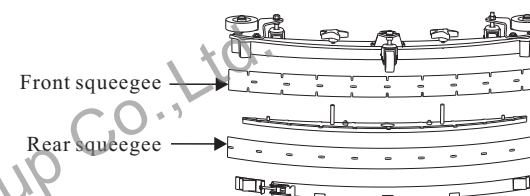
### IMPORTANT STATEMENT

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.

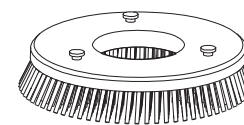
## 503 Series Push-behind Floor Scrubber Optional Spares

Description: 1. 503 series: A503、Q503、K503、Y503、T503.

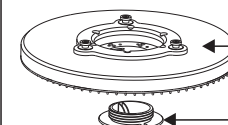
2. The following pictures are only for reference, so products are subjects to what you get.



- ☐ Front squeegee: standard squeegee with 9 holes
- ☐ Front squeegee: oil-resistant squeegee
- ☐ Front squeegee: customized hole position
- ☐ Rear squeegee: standard squeegee
- ☐ Rear squeegee: oil-resistant squeegee



- ☐ Brush: 20" brush with 0.7mm bristles
- ☐ Brush: 20" brush with 0.4mm bristles



- ☐ Pad driver: 20" floor scrubber pad driver

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

# 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.

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 floor in shopping malls, hotels, houses, 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.



Stay away from naked fire.



Stay away from flammable source and corrosive liquids.



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



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



The maximum temperature of cleaning water is 50°C.



Read the product manual.

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# AFTER-SALES SERVICE

## After-sales service

If there are any questions, contact local after-sales service agent or manufacturer at: 020-86060888.

|                        |   |
|------------------------|---|
| 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.  
The name list of after-sales service agents can be found on our website:  
<http://www.byclean.net>.

## Limited warranty statement

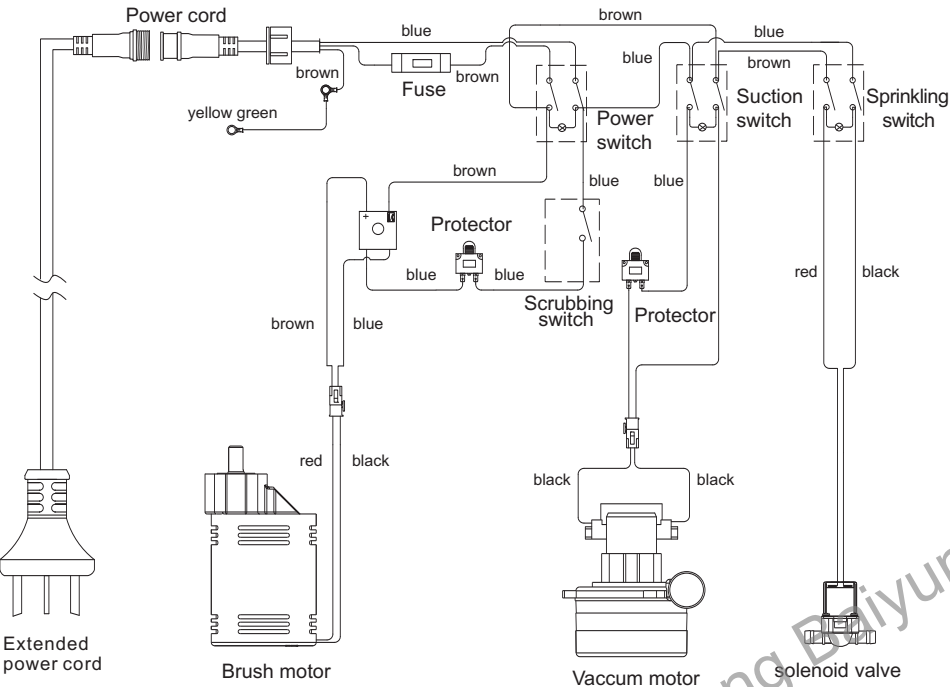
1. Manufacturer's authorized distributors are responsible for the after-sales service of the product.
2. This limited warranty shall last for 12 months from the date of original purchase of the product. Recommended replacement intervals and duration of limited warranty of spares and consumables are as follows:

| Name             | Recommended re-<br>placement intervals | Duration of limited warranty |
|------------------|--|------------------------------|
| Squeegee         | 200 hours                              | Not covered                  |
| Brush            | 100 hours                              | Not covered                  |
| Side rubber band | 1000 hours                             | Not covered                  |
| Vacuum motor*    | 600 hours                              | 12 months                    |
| Traction motor*  | 1200 hours                             | 12 months                    |
| Brush motor*     | 1200 hours                             | 12 months                    |
| Suction hose     | 700 hours                              | Not covered                  |
| Drain hose       | 700 hours                              | Not covered                  |
| Gear chain       | 1000 hours                             | 12 months                    |

\* Carbon brush of motor is not under warranty.

# TECHICAL DETAILS

## Wiring diagram



# PACKING LIST

## Standard configuration

| No. | Name                   | Unit  | Quantity |
|-----|------------------------|-------|----------|
| 1   | Main unit              | Piece | 1        |
| 2   | Extended power cord    | Piece | 1        |
| 3   | Squeegee assembly      | Set   | 1        |
| 4   | Suction hose           | Piece | 1        |
| 5   | Double-pockets bucket  | Piece | 1        |
| 6   | Conformity certificate | Piece | 1        |
| 7   | Product manual         | Piece | 1        |



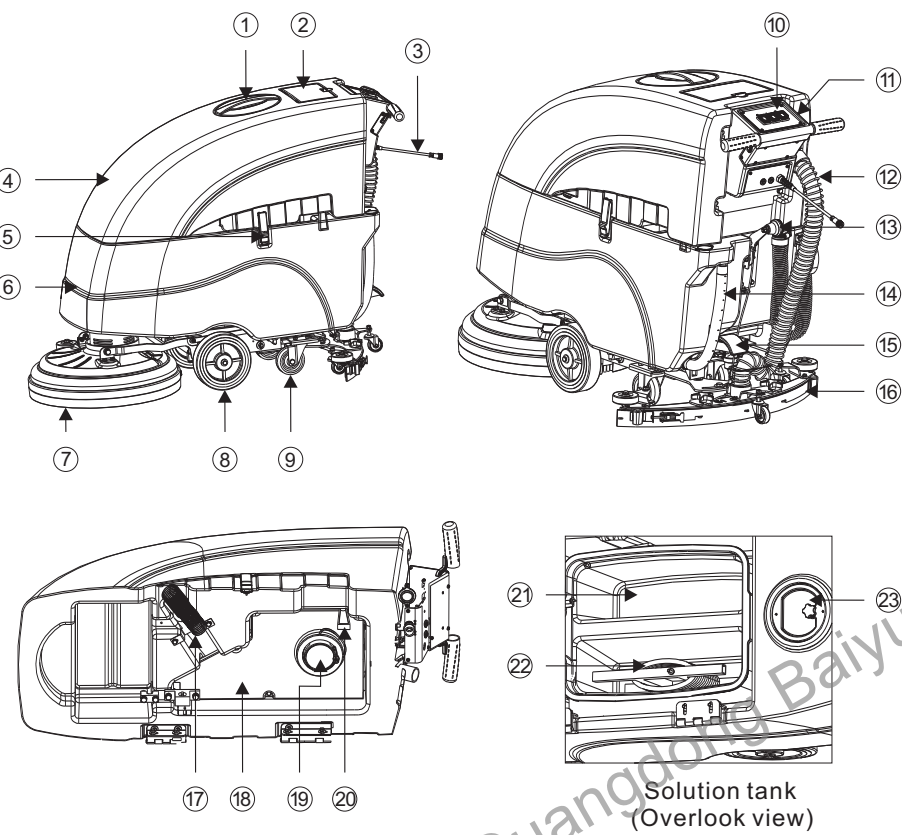
Batteries and chargers are not included in standard configuration. Optional batteries and chargers will be packed in separate cases if purchased.

### • 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 Recovery tank cover
- ② Tool box
- ③ Power cord
- ④ Recovery tank
- ⑤ Fixed buckle
- ⑥ Solution tank
- ⑦ Brush assembly
- ⑧ Front wheel
- ⑨ Universal wheel
- ⑩ Control panel
- ⑪ Control board
- ⑫ Suction hose
- ⑬ Squeegee lever
- ⑭ Solution gauge
- ⑮ Pedal
- ⑯ Squeegee assembly
- ⑰ Air exhaust tube
- ⑱ Silencer lid
- ⑲ Vacuum motor
- ⑳ Supporting rod assembly
- ㉑ Buckets
- ㉒ Extended power cord
- ㉓ Solution tank lid

# TECHNICAL DETAILS

## Technical specifications

| Description                          | Unit               | Data      |
|--------------------------------------|--------------------|-----------|
| Protection level                     | IPX                | 2         |
| Operation tension                    | V                  | 220       |
| Vacuum motor                         | W                  | 550       |
| Suction vacuum                       | mmH <sub>2</sub> O | 1720      |
| Brush motor                          | W                  | 550       |
| Brush speed                          | rpm                | 240       |
| Noise level                          | dB                 | ≤78       |
| Solution tank capacity               | L                  | 48        |
| Recovery tank capacity               | L                  | 55        |
| Maximum solution supply              | L/min              | 2.6       |
| Squeegee width                       | cm                 | 75        |
| Theoretical working capacity         | m <sup>2</sup> /h  | 2000      |
| Brush diameter                       | inch               | 20        |
| Cleaning width                       | cm                 | 51        |
| Brush pressure                       | kg.f               | 0-30      |
| Maximum gradient                     | deg                | 8         |
| Minimum turning radius               | cm                 | 90        |
| Power cord                           | m                  | 0.5       |
| Extended power cord                  | m                  | 25        |
| Machine dimension (without squeegee) | cm                 | 136x56x98 |

# MAINTENANCE GUIDE

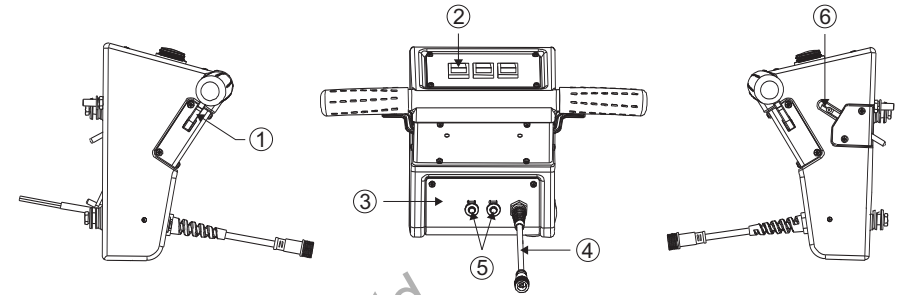
## Trouble shooting

**Note:** Before contacting the repair agent or our customer service department, please check the following 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 switch has not been turned on.</li> <li>3. The voltage of the machine is not normal or stable.</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 motor switch.</li> <li>3. Make sure the machine is working with stable voltage.</li> </ol>  |
| No solution comes out or the solution flow is small     | <ol style="list-style-type: none"> <li>1. The filter or connector in the solution channel is obstructed.</li> <li>2. The floor being cleaned is too dry. Solution supply is insufficient when cleaning a new building for the first time.</li> <li>3. The solenoid valve or the sprinkling motor is obstructed.</li> </ol> | <ol style="list-style-type: none"> <li>1. Remove the filter and the connector and clean them.</li> <li>2. When the ground is too dry, sprinkle some water on it before cleaning work.</li> <li>3. Clean the solenoid valve and the sprinkling motor.</li> </ol>  |
| Vacuuuming is weak                                      | <ol style="list-style-type: none"> <li>1. The seal ring of the recovery tank lid failed.</li> <li>2. The hose clip loosened.</li> <li>3. The vacuum motor loosened.</li> <li>4. The suction hose is obstructed.</li> <li>5. The suction hose is broken.</li> </ol>   | <ol style="list-style-type: none"> <li>1. Attach the seal strip properly.</li> <li>2. Check the hose clip and install it properly.</li> <li>3. Open the silencer lid, make sure the motor is installed correctly and properly.</li> <li>4. Clear out the air inlet and outlet.</li> <li>5. Repair the suction hose.</li> </ol> |
| Soiled water could not be completely sucked.            | <ol style="list-style-type: none"> <li>1. The suction hose is obstructed.</li> <li>2. There are foreign objects in the squeegee.</li> <li>3. The squeegee is excessively worn out.</li> <li>4. The height of the squeegee is not suitable.</li> <li>5. The vacuum motor does not work.</li> </ol>                          | <ol style="list-style-type: none"> <li>1. Remove the foreign objects.</li> <li>2. Remove the foreign objects.</li> <li>3. Use another side of the squeegee or replace the squeegee.</li> <li>4. Adjust the height of the squeegee.</li> <li>5. Check the motor.</li> </ol>   |
| The machine could not clean thoroughly                  | <ol style="list-style-type: none"> <li>1. The brush motors don'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>   |
| The brushes stops circling and the buzzer keeps buzzing | <ol style="list-style-type: none"> <li>1. The load of the brush motors is too strong. (The electricity current is over 45A.)</li> </ol>  | <ol style="list-style-type: none"> <li>1. Switch off the machine and adjust the pressure between the brushes and the floor, then, restart the machine.</li> </ol>  |

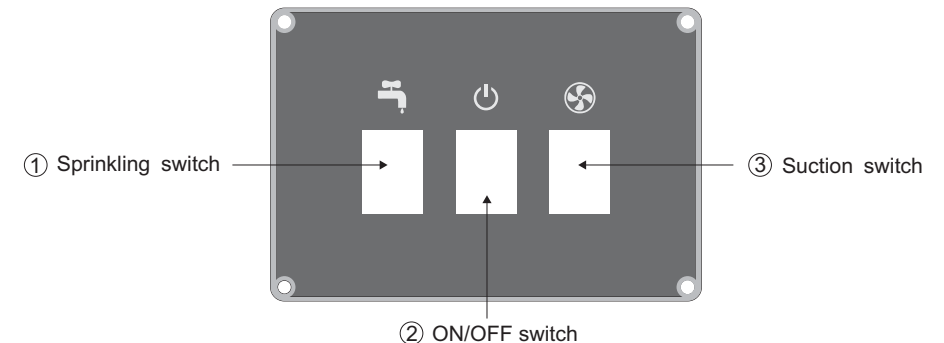
# OPERATION INSTRUCTION

## Description of control components



- ① Brush handle: Hold it on, the brush will work, release it the brush stops to work .
- ② Operation panel: Press buttons and display the machine's states.(see the details as the control panel instruction)
- ③ Rectifier: AC/DC power transition.
- ④ Machine water-proof socket: connect the extended power cord to the machine .
- ⑤ Overload protector: Protect the brush motor and the vacuum motor.
- ⑥ Pin: Pull it backward, at the same time, pull the handle to adjust the height of control board.

## Control panel



- ① Sprinkling switch:  
Press this switch, the solenoid valve begins to work. 0.5 second later, the sprinkling motor starts to work. Press this switch again , the sprinkling motor stops working. Just seconds later, the solenoid valve stops working.
- ② ON/OFF switch:  
After connecting the power, press this switch, the machine start to work. Press it again, the machine will stop to work.



# OPERATION INSTRUCTIONS

## Control panel

### ③ Suction switch:

Press this switch, the vacuum motor begins to work. Press it again, then, the vacuum motor stops working.

## Assembling parts

### 1. Squeegee assembling

Turn the star nuts on the center of the squeegee frame anticlockwise to unfasten them. Then slide the bolts of the star screws into the slots of the squeegee lifting plate and use the star nuts to fasten the assembly by turning them clockwise. After this, connect the suction hose to the suction inlet at the squeegee frame. The three universal wheels on the squeegee frame are for adjusting the height and balancing of the squeegee assembly. (fig. 1)

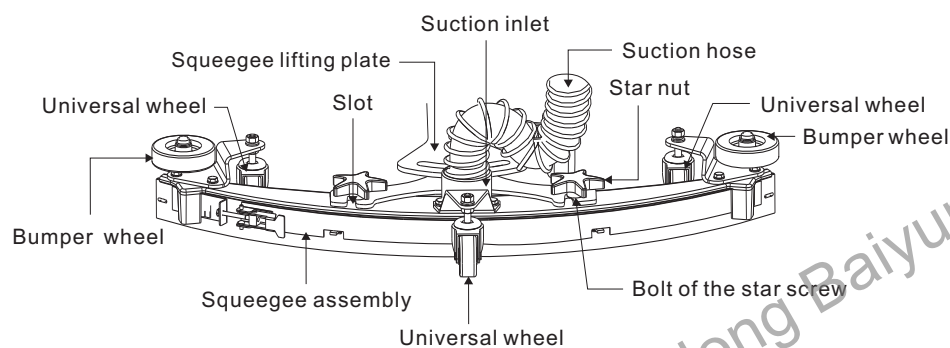


fig. 1

### 2. Connecting power cord

Open the fixed buckles on the machine and lift up the recovery tank. After that, take out of the extended power cord, connect the machine water-proof socket with the water-proof socket. (fig.2 & 3).

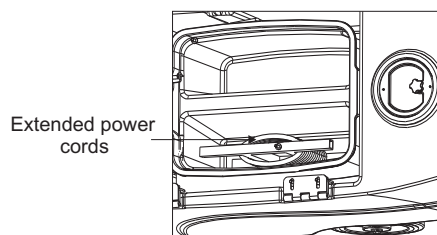


fig. 2

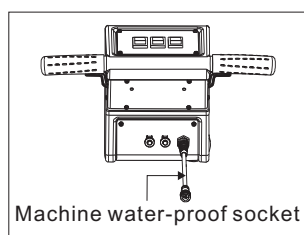
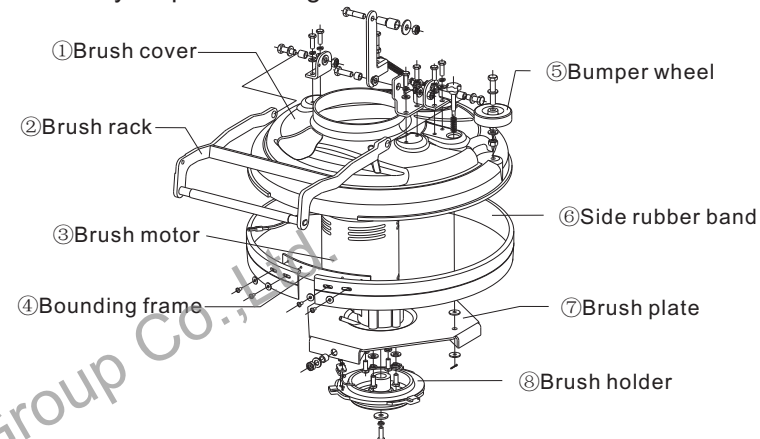


fig. 3

# MAINTENANCE GUIDE

## Daily maintenance

### ● Brush assembly exploded diagram



## Periodic maintenance

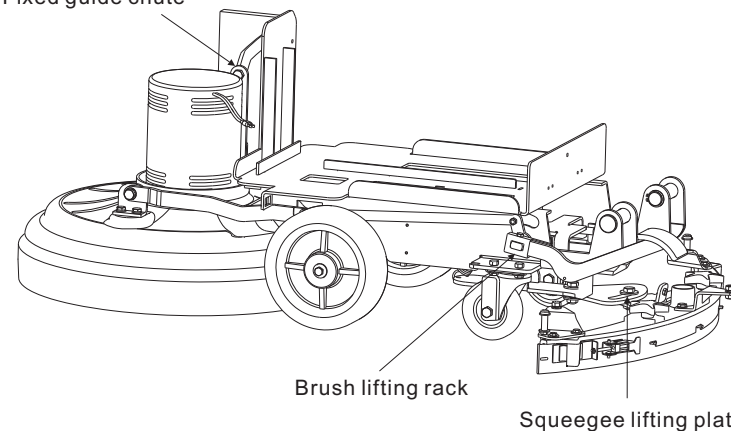
1. Apply lubricating grease or oil to the moving components regularly.
2. Apply electrostatic oil or kerosene oil regularly to frequently used strong current sockets to prolong their service life.



### Note

Apply lubricating grease to areas shown below at recommended 3-month for intervals.

Fixed guide chute





# MAINTENANCE GUIDE

## Daily maintenance

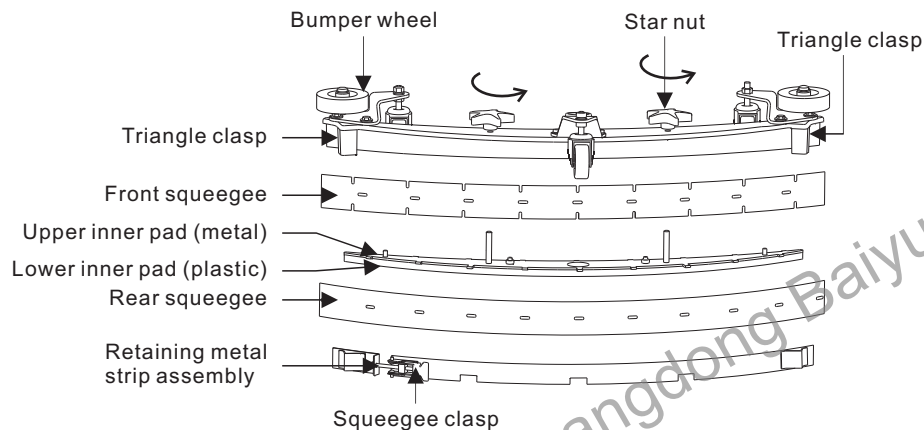
### 3. Maintain the squeegee assembly

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 Release the squeegee clasp to loosen the retaining metal strip assembly. Then pull the two triangle clasps downwards to take out the retaining metal strip assembly.
- ③ After taking out the retaining metal strip assembly, the rear squeegee can be removed.
- ④ Loosen the upper and lower inner pads and then the front and rear squeegees can be removed. 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.



### 4. Maintain the brushes

Step on the pedal to make sure the brushes lift up(fig.13). Then,remove the brushes by hands(fig.14) for cleaning. If the machine will stay idle for a long time, the brushes should be removed, cleaned and air-dried (fig.15), else, the prolonged loading to the brush motors may cause failure or be unable to function properly.

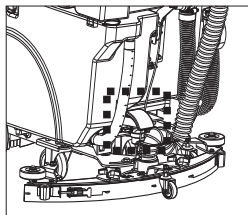


fig.13

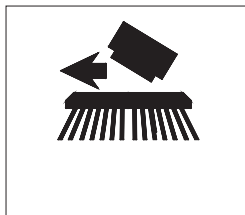


fig.14

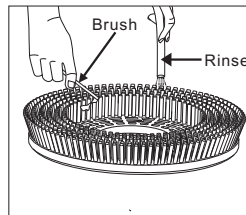


fig.15

# OPERATION INSTRUCTIONS

## Assembling parts

### 3. Brush assembling

- ❗ Attention:
  - Do not press the function buttons when hands are contacting the brush to avoid 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 Step on the pedal and move it rightward into the restraint slot and lift the brush up. Then, push the brush inward until it is right under the brush cover(fig. 4).
- ② Step on the pedal and move it leftward to release it and lower the brush(fig. 5).
- ③ Switch on the machine and hold on the brush handle to assemble the brush(fig. 6).

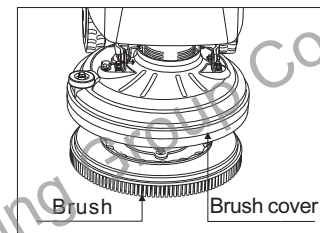


fig. 4

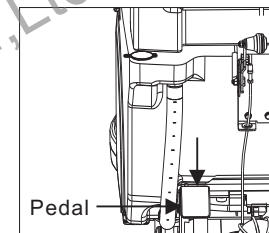


fig. 5

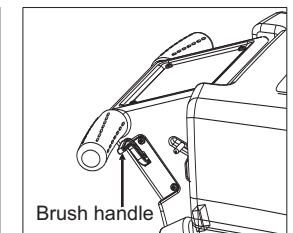


fig. 6

### 4.Tool box adjustment

Pull the pin backwardly, and then pull the brush handle upward or backward to adjust the height of the control board(fig.7). The tool box is used to place tools.

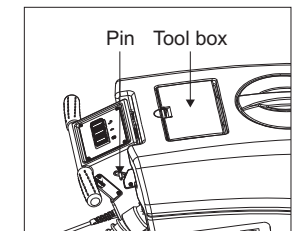


fig. 7

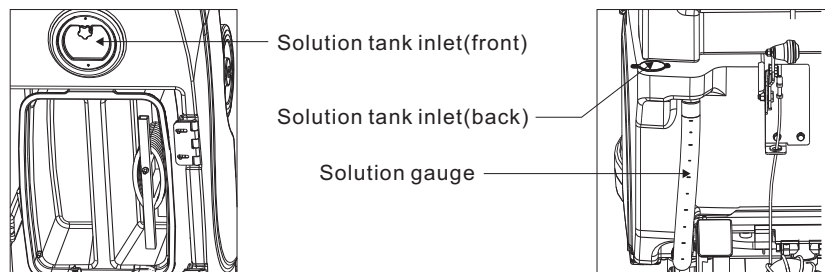
## Preparation before starting the machine

### 1. Fill the solution tank

- (1) Open the lid of the solution tank, then fill water or dilute neutral detergent into it.
- (2) Observe the solution gauge to see whether the amount of solution is enough for the cleaning work.(Do not over-fill the tank.)
- (3) The temperature of water filled into tank should not be higher than 50℃.

# OPERATION INSTRUCTIONS

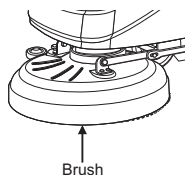
## Preparation before starting the machine



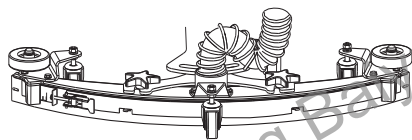
### ! Attention

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.

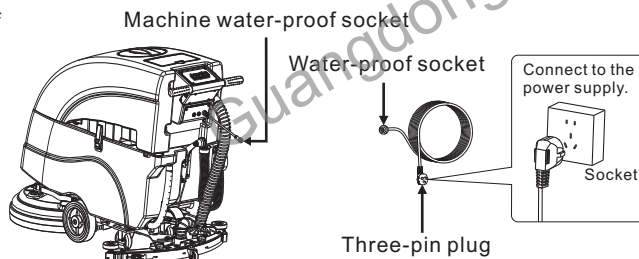
2. Check whether the left and right brushes are well assembled. If not, assemble the brushes according to the instructions of "Brush assembling" on page 5.



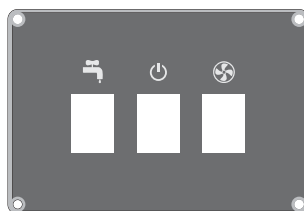
3. Check whether the squeegee assembly is well assembled. If not, assemble the squeegee assembly according to the instructions of "Squeegee assembling" on page 4.



4. Connect the water-proof socket of the extended power cord to the machine water-proof socket, and the three-pin plug to the socket of power supply.



5. Press the ON/OFF switch to turn on the machine. Press the function buttons on the panel to make sure the vacuum pump and the sprinkling pump are ready for work.



# 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 and make sure the 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 drain all the soiled water in the recovery tank. After this, use clean water to wash the recovery tank, and air-dry it. Keeping the recovery tank clean can prevent sludge or foreign objects from blocking the tank(fig.9).
- Clean the strainer periodically (fig. 10).

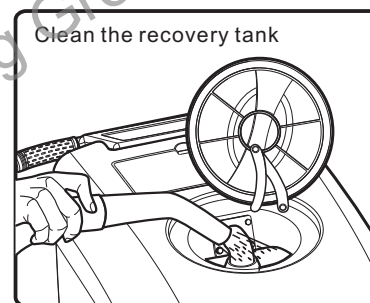


fig. 9

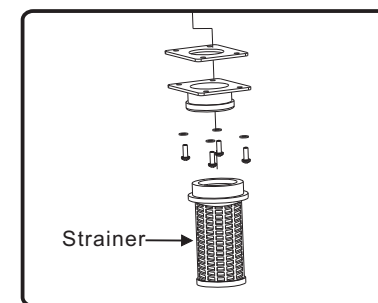


fig. 10

### 2. Maintain the solution tank

- If the machine will not be used for a long time or will be stored or in transit under the temperature below 4℃, take out the solution gauge to drain all the solution in the solution tank (fig. 11), in order to prevent solution from changing state. After this, remove the cover of filter. Then, press the sprinkling switch to drain all the solution stayed in the sprinkling system and clean the filter if necessary. Frozen solution in the sprinkling system, solenoid valve and the hoses will cause damage to machine (fig. 12).

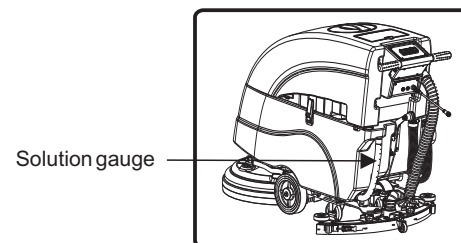


fig. 11

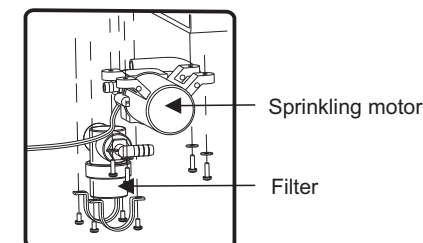


fig. 12

# IMPORTANT PRECAUTIONS

## Working conditions

### 1. Working environment temperature

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

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

- Do not put strong acid or strong alkali liquids into the tank to deal with stubborn dirt, in case those liquids damage the components of the solution channel. If those liquids are needed, they can be sprinkled on the floor directly.

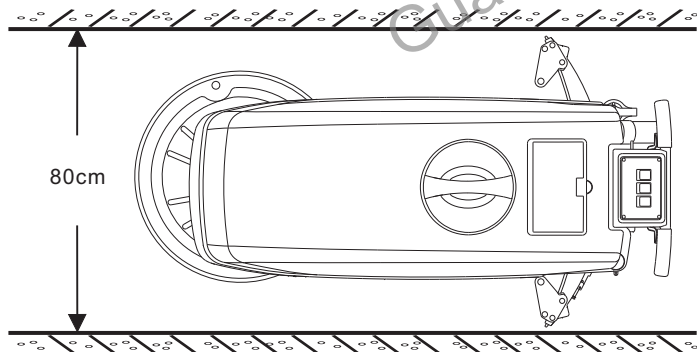
- The detergents put into the solution tank should be neutral detergents with a PH of 5-9.

### 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 order to avoid big foreign objects block the suction hose.

## Notes on ridding

1. While driving, prevent the machine from bumping with other objects. Before entering a narrow space, check whether the machine is fit.
2. Driving the machine over rough places may cause damages, which will shorten the service life of the machine.
3. When the machine comes to declined ramp, drive with slow speed and move gradually with backward mode. (i.e. machine with heavy weight running down slope may lost control in acceleration.)
4. The width of the aisle should be at least 80cm for the machine with the squeegee assembly to get through. If the width of the passage is less than 80cm, remove the squeegee assembly, and then let the machine get through. Do not force the machine to get through, which may result in machine damages. Lift the squeegee assembly when moving backward.



# OPERATION INSTRUCTIONS

## Operation steps

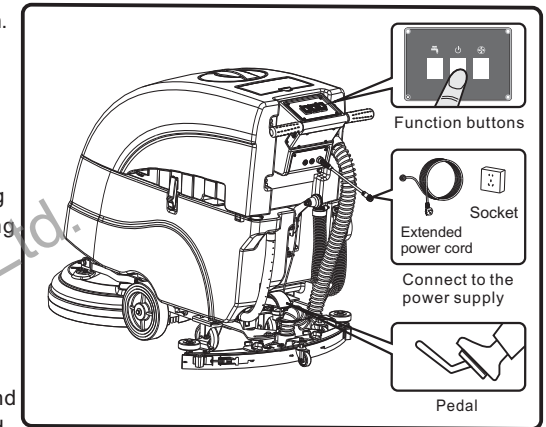
After the preparation work, operator can ride on the machine and begin the cleaning work.

1. Firstly, switch on the ON/OFF switch.

After this, the machine begins to work.

2. Press the function switches on the control panel to start the functions of sprinkling, vacuuming (lower the squeegee first), and then scrubbing (hold on the brush handle) according to the cleaning work.

3. After the cleaning work, switch off the ON/OFF switch to cut off power. Then, pull the three-in-pin plug out of the socket of the power supply, and disconnect the extended power cord socket with the machine socket. By this way, it can protect the life service of the extended power cord.



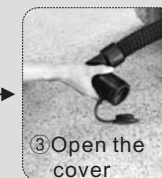
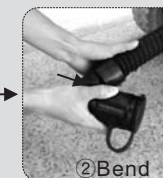
4. Drain the soiled water and clean the recovery tank after the cleaning work.




### Note:

During the cleaning work, please check the amount of solution in the solution tank by the solution gauge. When the solution is consumed, stop the functions of sprinkling, vacuuming and scrubbing. Then drain the soiled water into the drainage system with the following steps:

- a. Take down the soiled water discharge hose;
- b. Bend the hose as shown in the picture;
- c. Open the cover of the hose;
- d. Lay the hose horizontally;
- e. After discharging soiled water, fill the solution tank and continue the cleaning work.



# SAFETY PRECAUTIONS

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

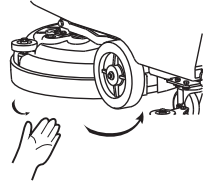
## Don'ts

1. Do not put anything on the machine;



Forbidden

2. Do not put hands into the spinning parts while the machine is operating;



Forbidden

3. Do not block the air-discharge hose or the air ventilation area;



Forbidden

4. Do not move, change or cover the safety information sign;



Forbidden

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.)

## Notes before using

1. This machine is designed for medium 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 caused by 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. 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(fig. 8).
3. Do not use the machine near flammable liquids, gas or suspended particles.
4. Disconnect the battery socket from the machine socket and disconnect the battery socket from the charger socket before maintaining the machine.
5. 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.
6. Be careful and avoid the machine moving too fast when it is working on slopes or sliding floor.
7. Do not let the machine keep on scrubbing the same place, otherwise, the area/floor may be damaged.
8. To prevent the machine from unauthorized operating, turn off the power and pull out the key from the ON/OFF switch.
9. Make sure the machine will not move accidentally when it is left unattended.
- 10.If the users use the non-original batteries or chargers, please contact the manufactures in advance in order to avoid accidents.

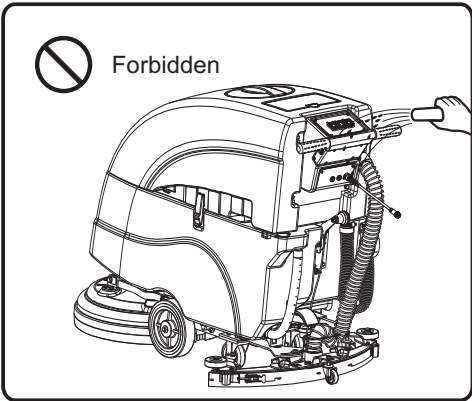


fig. 8