

FLOOR SCRUBBER

MODEL: A1-530



INSTRUCTION MANUAL

► INTRODUCTION

Each new machine is supplied with this Operation Manual, containing complete operating instructions and maintenance procedures.



Before performing any operation or maintenance work, you must read this operation manual in full and familiarize yourself with the equipment.

This equipment delivers exceptional floor maintenance and cleaning performance. To ensure optimal performance at the lowest operating costs, please strictly adhere to the following operating guidelines.

- The equipment must be operated in strict compliance with the operating procedures.
- This equipment must be maintained strictly in accordance with the maintenance instructions.
- This equipment must be maintained using original manufacturer parts or parts of equivalent quality.

PROTECT THE ENVIRONMENT



Please dispose of packaging materials and used components (such as batteries and liquids) in an environmentally friendly manner and comply with local waste disposal regulations.



Please always consider possible recycling.

► INTENDED PURPOSE

The A1 is an industrial/commercial walk-behind floor scrubber designed for cleaning flat and hard surfaces (e.g., concrete, tiles, stone, plastic). Typical application areas include schools, hospitals/medical facilities, office buildings, and retail centers.



Do not use this machine on soil, grass, artificial turf, or carpeted surfaces.

The machine is intended for indoor use only and is not suitable for public roads.

Do not use the machine for purposes other than those described in this operating manual.

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► SAFETY PRECAUTIONS

This manual uses the following hazard symbols to alert operators to potential hazards.



WARNING: Hazards or unsafe operations that may result in serious or fatal injury.

CAUTION: This notice covers the operational procedures that must be strictly followed to ensure safe machine operation.

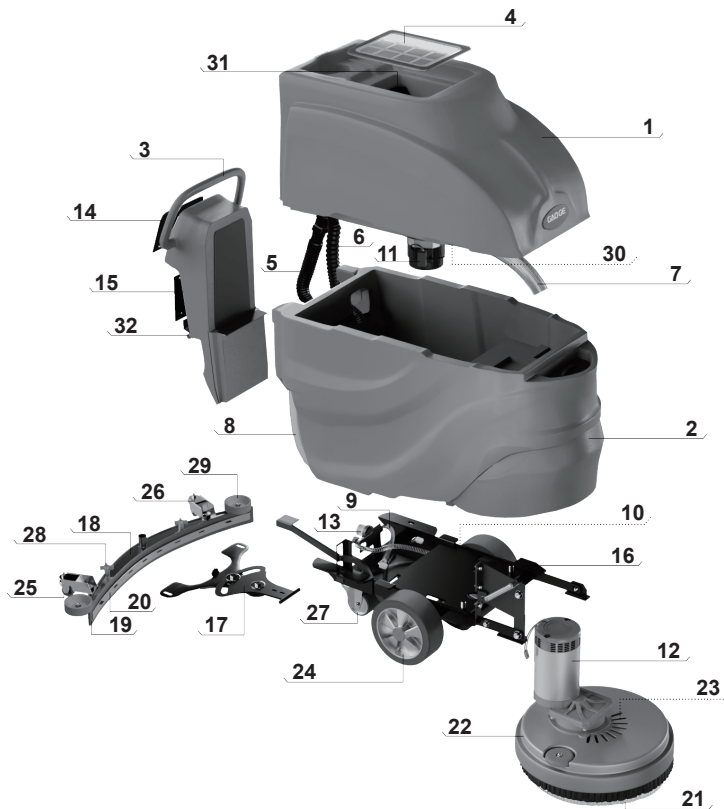
The following information alerts operators to potential hazards. Always remain vigilant to scenarios where these hazards may occur and thoroughly familiarize yourself with the locations of all safety devices on the machinery. Immediately cease operation if any machine damage or operational malfunction is detected.



WARNING

- ① Ensure no electrical sparks or open flames are near the battery, as this poses a risk of explosion or fire.
- ② Flammable liquids may cause explosions or fires.
Never inhale any flammable liquids, flammable gases, solvents, or acidic/alkaline liquids.
- ③ Flammable materials or reactive metals may cause explosions or fires.
Never use this machine to process such substances.
- ④ Operation of the equipment by untrained or unauthorized personnel is strictly prohibited.
The use of this equipment by children or individuals with disabilities is not allowed.
- ⑤ In case of fire, use a dry powder fire extinguisher. Water must not be used under any circumstances.
- ⑥ The machine's operational atmospheric humidity range is 30% to 95% (non-condensing).
- ⑦ Operate strictly within the manufacturer-specified climbing angle limit. When working on slopes with minimal gradients and elevations:
 - Exercise extreme caution during lateral operation.
 - Reverse operation is strictly prohibited.
 - Retract brush disc and water absorption rake assemblies when traversing inclines.
- ⑧ All machine maintenance and repair operations must be performed with the battery terminals disconnected.
- ⑨ Operation in special environments (e.g., pharmaceutical industry, hospitals, chemical plants) must strictly comply with all applicable safety standards and regulations.
- ⑩ Ensure no tools are left above battery terminals to prevent potential short circuits and explosion risks.
- ⑪ The machine's circuits and motors are water-resistant treated, however, the following cleaning specifications must be strictly observed:
 - High-pressure water jet cleaning is strictly prohibited.
 - Cleaning must be performed using low-pressure, non-corrosive water.
- ⑫ The filling funnel must remain installed during water tank refilling operations to prevent foreign object ingress that may damage the pump or clog the hydraulic system.

► MACHINE COMPONENTS



- | | | |
|---------------------|----------------------------------|--------------------------|
| 1. Dirty water tank | 14. Control panel | 27. 3-inch swivel caster |
| 2. Clean water tank | 15. Key panel | 28. Nut |
| 3. Console housing | 16. Chassis | 29. Anti-collision wheel |
| 4. Sewage tank lid | 17. Squeegee kit holder | 30. Vacuum motor cover |
| 5. Drain pipe | 18. Suction rake bracket | 31. Float cage |
| 6. Suction hose | 19. Squeegee rubber | 32. Handle kit |
| 7. Air outlet duct | 20. Squeegee steel frame bar set | |
| 8. Water level hose | 21. Brush | |
| 9. Steel wire hose | 22. Brush disc cover | |
| 10. Solenoid valve | 23. Flange | |
| 11. Vacuum motor | 24. Wheel | |
| 12. Brush motor | 25. 2-inch swivel caster | |
| 13. Filter | 26. Universal wheel holder | |

► OPERATING CONTROLS

Centralized mechanical control panel with intuitive operation. First lower the scrub brush and suction squeegee, then turn on the key switch, and finally press the scrub brush + water suction switch to start operation.



- ① Start key
- ② Brush plate switch
- ③ Squeegee plate switch
- ④ Voltage display

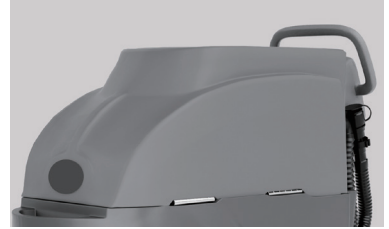
► MAIN STRUCTURE

DIRTY WATER TANK

The large-capacity water tank design ensures operational efficiency, while the integrated water float ball device provides enhanced protection for the motor.

Before use, check the following:

1. Whether the dirty water tank lid is securely closed.
2. Whether the cleaning access cover at the bottom of the dirty water tank is properly closed and tightened.
3. Whether there is air leakage in the suction hose.

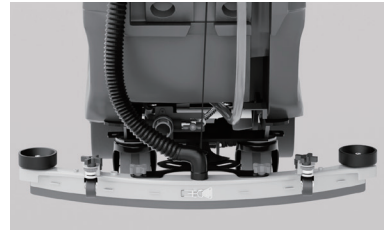


SOLUTION WATER TANK

The sandwich-structured design features a hollow inner wall of the tank, allowing for clean water injection to save space and enhance equipment efficiency.

SQUEEGEE

The cast aluminum water absorption squeegee is robust and durable, while the natural rubber strip offers wear-resistant longevity. During machine operation, the scraping rubber of the suction squeegee maintains a slight rearward tilt at a specific angle relative to the ground surface.



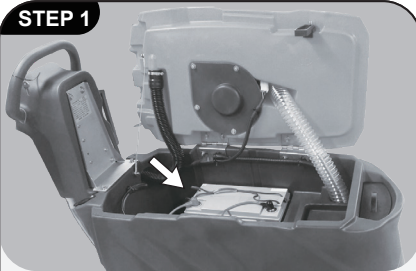
BRUSH

The extra-large brush plate doubles the efficiency and needs to be rinsed after use.

Check the height of the brush plate of the floor scrubber every week. If the brush is worn out or the bristles are twisted, it is best to reassemble them to avoid the different inclinations of the bristles causing the brush motor to overload and vibrate too much.

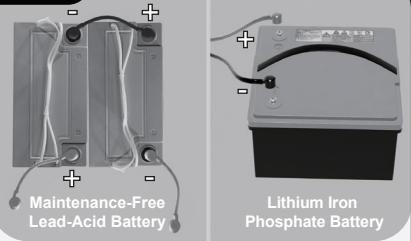
► INSTALLATION AND OPERATION

STEP 1



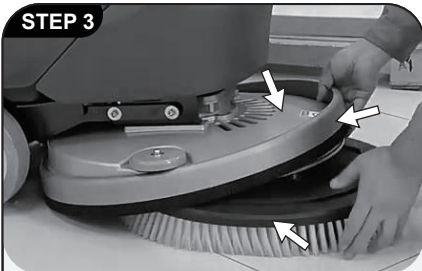
Open the dirty water tank cover and put in the battery.

STEP 2



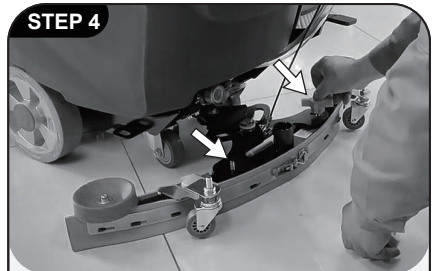
Connect the battery's positive and negative terminals with wires as shown in the picture, and then connect them to the device.

STEP 3



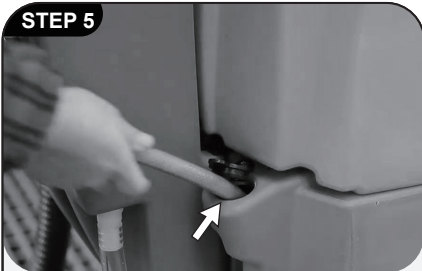
Install the brush plate and protective cover. Mount the new scrub brush onto the drive hub. Ensure it is securely fastened to the brush plate drive hub.

STEP 4



Install the squeegee assembly and tighten the knob securely. Connect the vacuum hose to the squeegee assembly, inspect the rubber blade, and make necessary adjustments.

STEP 5

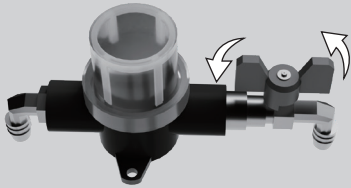


Use a hose to pour clean water into the water injection port.

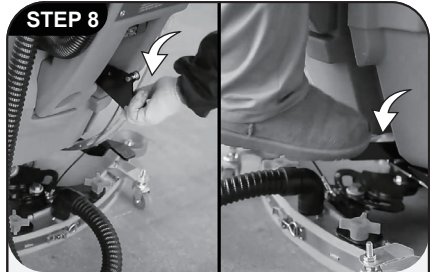
STEP 6



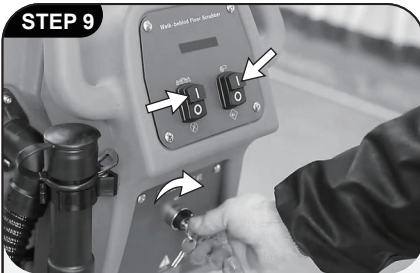
If cleaning agent is added, an antifoaming agent must be simultaneously added to the dirty water tank to prevent motor damage.

STEP 7

Adjust the drain valve to the proper setting for optimal water flow control.

STEP 8

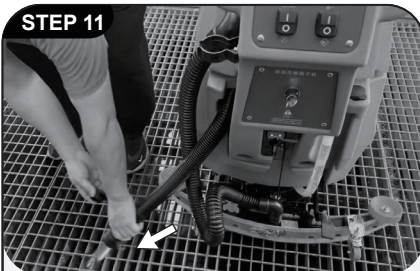
Pull down the squeegee and step on the brush plate.

STEP 9

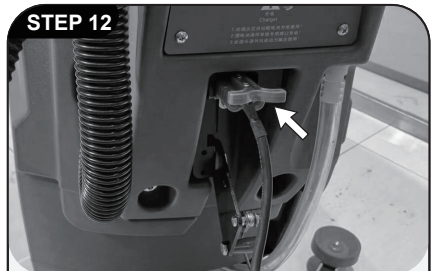
Turn on the ignition switch and activate the brush plate and squeegee functions.

STEP 10

Begin floor cleaning. Do not use this device to clean large debris to avoid clogging the suction hose and prevent vacuum motor damage caused by overloading.

STEP 11

After use, turn off the machine and drain the dirty water.

STEP 12

When only three battery bars remain, the machine must be charged.

► OPERATIONAL PRECAUTIONS

PRE-OPERATION CHECK

- Remove dust from the floor.
- Verify the charge level indicators on the battery gauge. (refer to the battery gauge)
- Inspect wear condition of brushes/cleaning pads.
- Check the wear of the squeegee rubber blade and adjust the angle appropriately.
- Check the wear on the brush head skirt.
- Ensure the wastewater tank is empty and that a clean floating filter ball cage has been installed.

NOTE: Before starting the machine, ensure all safety devices are properly positioned and functioning correctly.

DURING MACHINE OPERATION

- Ensure a 5 cm overlap between adjacent cleaning paths.
- Maintain continuous machine travel to prevent floor damage.
- If streaking occurs after using the squeegee, clean the rubber blade with a lint-free cloth to remove debris. Pre-sweep surfaces to eliminate potential contaminants that cause streaks.
- When using detergent for cleaning, add defoamer solution to the wastewater tank to suppress foam formation.



WARNING: Prevent foam ingress into the filter assembly to avoid suction motor damage. Foam accumulation may disable the safety switch mechanism.

- When cleaning heavily soiled areas, first raise the squeegee to begin cleaning and allow the solution to soak for 3-5 minutes. Then lower the squeegee and repeat the cleaning process.
- Replace the scouring pad as needed based on the cleaning scenario.
- Monitor the battery power consumption (refer to the battery gauge).
- Check the remaining liquid level through the clean water tank level gauge. The traditional floor cleaning method consumes approximately 10 liters every 10 minutes.
- When the solution in the clean water tank is depleted, empty the waste water tank first before refilling with fresh solution.
- When the operator leaves the machine, park it on level ground and remove the key.
- After cleaning is completed, perform the daily maintenance procedures.

► BRUSHES AND SCOURING PADS

To ensure optimal performance, always use the correct brush type for cleaning tasks. Recommendations for using brushes and scouring pads are as follows:

White soft nylon brush

Recommended for cleaning coated floors without damaging the surface.

White polishing pad

Recommended for maintaining high-gloss or polished floors.

Red buffer pad

Recommended for gently scrubbing away light dirt without damaging the floor.

Black gravity scrub pad

Recommended for aggressively removing heavy coatings or substrates, or for ultra-intensive cleaning.

INSTALL BRUSH AND SCRUB PAD

1. Park the machine on level ground and remove the key.
2. First place the scrub pad on the needle adapter, then install the drive plate. Secure the scrub pad by tightening the central lock.
3. Align the needle adapter/brush mounting stud with the motor drive plate latch, then press the brush motor switch.
4. To remove the needle adapter and brush, step on the brush head lifting pedal to raise the brush head off the ground, then press the brush motor switch.
5. Step on the brush head lifting pedal to raise the brush head off the ground.

NOTE: For instructions on using brushes and scrub pads, refer to the usage recommendations for brushes and scrub pads provided above.

► DRAIN THE WATER TANK

Drain and clean the dirty water tank after each use.
Regularly clean the clean water tank to remove any corrosion.

Move the machine to the drainage area, turn off the power key, and drain the water according to the following instructions:

1. Rotate the drain pipe cap of the dirty water tank counterclockwise and remove it.
2. Open the dirty water tank cover and rinse the tank.
3. Remove and rinse the floating filter screen located inside the dirty water tank.

NOTE: For safety reasons, before leaving the machine to drain, please ensure that the machine is parked on level ground, turned off, and the key is removed.

► BATTERY INSTALLATION



WARNING: When installing the battery, ensure the machine key is in the OFF position and remove the key to prevent electric shock hazards!

FOR SAFETY REASONS: Wear protective gloves and eye protection when servicing the machine or handling the battery and battery terminals. Avoid contact with battery acid.

- Park the machine on level ground, shut down the machine, and remove the key.
- Lift the wastewater tank and place it into the battery compartment. Before connecting the battery, ensure that the electrodes and terminals are clean. Use an electrode cleaning wave and a soft brush as needed.

NOTE: Do not drop the battery into the battery compartment, as this may cause damage to both the battery and the machine.

- Connect the cables correctly according to the battery electrodes.

NOTE: Apply a thin layer of non-metallic grease or protective spray to the connected terminals to prevent battery corrosion.

- After the battery is securely installed, check the charge level on the battery indicator. Recharge the battery as needed.

► BATTERY CHARGING



WARNING

To extend the battery life and ensure the machine's optimal performance, the battery must be charged only after the machine has been used for at least 30 minutes. Do not leave the battery in an uncharged state for extended periods. The following charging instructions apply to the charger provided with this machine.

The battery's lifespan is limited by the number of charging cycles. To avoid permanent damage, ensure the battery is never fully discharged. Charge according to the specific type of battery installed.

MAINTENANCE-FREE LEAD-ACID BATTERY

Charge immediately when the voltage reading is $\leq 22V$.

LITHIUM IRON PHOSPHATE BATTERY

Charge immediately when the voltage reading is $\leq 24V$.

CHARGE THE BATTERY USING AN EXTERNAL CHARGER

IMPORTANT NOTE: Before charging, ensure the charger settings match the battery type.

1. Move the machine to a well-ventilated area.
2. Place the machine on a flat, dry surface and turn it off.
3. Before charging, check the electrolyte level in each cell of the battery.

FOR SAFETY REASONS: When servicing the machine, wear protective gloves and eye protection when handling the battery and battery terminals. Avoid contact with battery acid.

4. When charging, open the side of the wastewater tank to ensure ventilation. (As shown in the figure)



WARNING: The battery releases hydrogen gas, which poses a risk of explosion or fire. Keep away from electrical sparks or open flames near the battery. Keep the battery compartment open during charging.

5. Plug the charger into the machine's charging port. (Figure ①)
6. Plug the battery charger into the power outlet.
7. The charger will automatically shut off after the battery is fully charged.



NOTE: The machine cannot be operated when connected to the charger.



WARNING: Do not disconnect the charger's DC cable from the machine's charging port while the charger is operating, as this may cause an arc discharge. If it is necessary to disconnect the charger during charging, first unplug the power cord from the outlet.

8. After charging is complete, check the electrolyte level again.



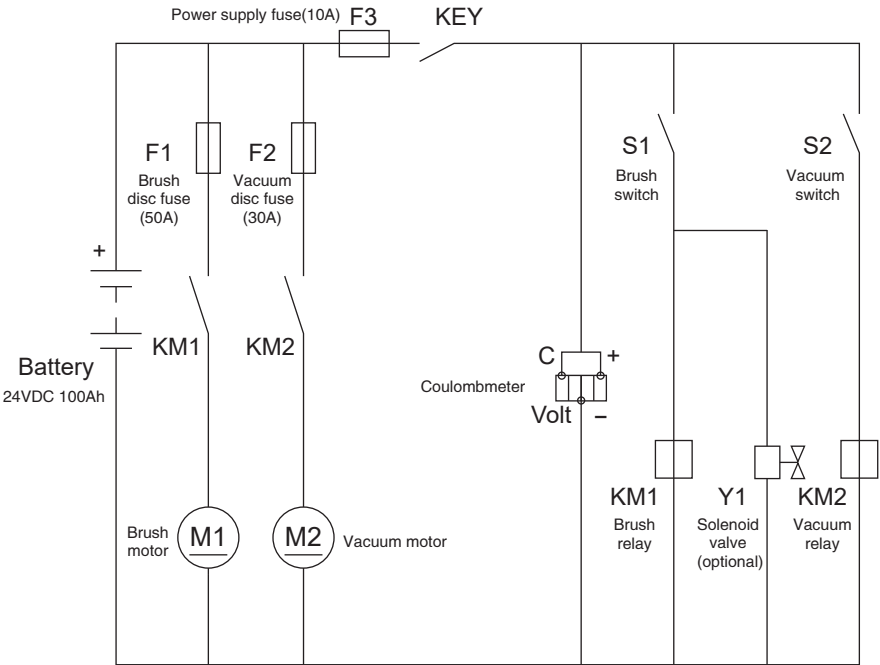
WARNING

Please select the appropriate charger based on the battery type. Before charging, ensure that the charger settings match the battery type.

This device must be charged using the original manufacturer's charger or a charger with equivalent quality specifications.

►CIRCUIT DIAGRAM

ELECTRICAL SCHEMATIC—A1-530



► TROUBLESHOOTING GUIDE

When a fault is detected in the drive system, operation should be halted. Please refer to the table below to determine the cause of the fault.

FAULT	CAUSE	SOLUTION
The machine cannot operate normally.	1.The battery is not properly connected.	Reconnect the battery and the machine properly.
	2.Low battery.	Charge the battery.
	3.The brush switch is in the "0" position.	Turn the switch to position "1".
	4.Brush motor overheated shutdown.	Release the drive handle, switch the brush control to 0, and allow the motor to cool down for at least 45 minutes.
	5.Fuse, gearbox motor damaged.	Replace the fuse, gearbox, and motor with new ones.
Uneven cleaning results.	The brush or cleaning pad has worn out.	Replace with a new brush or scouring pad.
Poor water suction.	1.The water-absorbing rubber strip has worn out.	Replace the squeegee rubber with a new one.
	2.The suction hose and suction port are clogged or damaged.	Remove the blockage or replace the affected part with a new one.
	3.Induction switch failure or water is full.	Empty the wastewater tank or replace the sensor.
	4.The water suction motor has no power supply or a motor malfunction.	Check if the power cord is properly connected. If the following condition applies, replace the motor.
The battery fails to charge or has a shorter runtime than normal.	1.The power cord or battery is not properly connected to the charger.	Connect the power cord to the charger or attach the battery charger cables to the battery terminals.
	2.Insufficient electrolyte level.	Add distilled water and fill each cell as per the instructions.
	3.The electrodes and terminals of the connecting wires are oxidized or dirty.	Clean and apply petroleum jelly to the electrodes and terminals.
Excessive foam.	Is a low-foam detergent being used, or is the floor heavily soiled?	Add defoamer to the waste tank. If the floor is heavily soiled, it can also generate excessive foam. Dilute the cleaning solution as needed.
Brush motor startup failure.	1.The machine brush is dry or operating on a very rough surface.	Open the drain valve.
	2.The motor is damaged.	Replace the motor.

FAULT	CAUSE	SOLUTION
The water suction fan or disk brush motor is not operating.	1.The power cord of the water suction motor is not securely connected, or the water suction motor is damaged.	Check the power connection of the water suction motor. If the motor is damaged, replace it.
	2.The recovery water tank is full.	Drain the wastewater promptly.
	3.The disk brush is not lowered or the battery is depleted.	Lower the disk brush or charge the battery.
Uneven cleaning results.	1.Insufficient water in the clean water tank.	Refill the clean water tank.
	2.The outlet pipe is blocked.	Clear the outlet pipe.
	3.The solenoid valve is damaged.	Replace the solenoid valve.
Insufficient water supply to the disk brush.	1.Check if the electric ball valve is open.	Open the ball valve.
	2.Check if the drain rod screw is loose.	Tighten the drain rod screw.
Unsatisfactory cleaning results.	1.Check the wear condition of the disk brushes and replace them if necessary. 2.Adjust the disk brush's ground pressure (via adjustment of the sensor block). 3.Use an appropriate disk brush depending on the floor surface conditions.	
Poor water suction performance of the suction rake.	1.Check if the scraping rubber of the water scraper rake is clean and free of solid residue. 2.Replace damaged rubber and adjust the angle of the water scraper rake. The scraping rubber should be curved backward by 5mm along its length, and its inner edge must tightly contact the fixed plate inside the scraper rake to ensure an airtight seal. 3.Inspect the overall sealing condition of the machine.	

► MACHINE MAINTENANCE

Please strictly adhere to the daily, weekly, and monthly maintenance procedures to ensure the machine remains in optimal working condition!



Warning: Electric shock hazard. Disconnect the battery terminals before servicing the machine.

DAILY MAINTENANCE (AFTER EACH USE)

1. Drain and clean the waste water tank.
2. Remove and rinse the floating filter screen inside the waste water tank.
3. Drain the clean water tank, and rinse the tank with hot water not exceeding 60°C if necessary.
4. Remove the cleaning pad/brush for cleaning. If worn, flip or replace the cleaning pad.
5. Wipe the squeegee blade. Store the squeegee assembly in the raised position to prevent blade damage.
6. Check the wear on the scraper edge of the squeegee blade. If worn, swap the blade ends.
7. Wipe the machine with a multi-purpose cleaner and a damp cloth.

NOTE: For safety purposes, do not use high-pressure spray or flush the machine with a water hose during cleaning to avoid causing malfunctions in electronic components.

8. Check the wear condition of the brush head skirt. Replace immediately if worn or damaged.
9. Charge the battery only after the machine has been used for more than 30 minutes each time, to prolong the battery's service life and ensure optimal machine performance.

MONTHLY MAINTENANCE (EVERY 80 HOURS OF USE)

1. Remove and clean the clean water tank filter from beneath the machine.
Ensure the clean water tank is emptied before removing the filter.
2. Clean the battery terminals to prevent corrosion (refer to "Battery Maintenance").
3. Check the battery terminals for looseness.
4. Inspect and clean the seal on the waste water tank lid. Replace if damaged.
5. Spray silicone-based dry lubricant on all pivots and rollers, then apply a layer of water-resistant lubricating oil to maintain smooth axle operation.
6. Check all nuts and bolts on the machine for tightness.
7. Inspect the machine for leaks.

QUARTERLY MAINTENANCE

1. Every 250 hours: Inspect the carbon brush wear on the drive motor (drive-type models), vacuum motor, and brush motor.
2. Replace carbon brushes when their length is worn down to within 10 mm. If the machine requires servicing, contact an authorized service center.

► MACHINE PARAMETERS

MODEL	A1-530	COMMENTS
Working width	530mm	
Squeegee width	830mm	
Working capacity	2200m ² /h	
Brush diameter	505mm	
Brush motor	24V500W	
Motor speed	180rpm	
Vacuum motor	24V500W	
Motor pressure	120mbar	
Clean/Dirty water tank	50L/55L	
Batteries	12V100Ah*2	
Noise level	≤60dB(A)	
Net/Gross weight	134/195kg	
Brush pressure	25kg/cm ²	
Max gradient	2%	
Rated power	1150W	
Machine size(L*W*H)	1270*550*1090mm	



FLOOR SCRUBBER INSTRUCTION MANUAL

Zhangjiagang Gaoge Cleaning Equipment Co. , Ltd.

📍 www.gaogecleaning.com

📍 Houcheng Tanshang Industrial Park , zhangjiagang , Jiangsu , China