

# Manual Book



**KMHK4500**

**Walk-behind Hand-push Floor Sweeper**

Please read this manual carefully before operation/please properly keep it.

# PREFACE

Thanks for choosing this product! It is extremely important that you read through this manual, which contains all the information that you need to use and maintain the appliance. Only with correct operation and regular maintenance can the machine be kept in its best working condition.

This instruction manual is an important part of the product and should be kept together with the appliance until it is discarded. If the manual is lost, please contact us immediately and we will be glad to provide you with a new one.

In this manual we use illustrations to show the components and functions of the appliance. You may find that some of them are slightly different from those of your product. However, all the instructions and suggestions presented here still apply to your machine and should be followed strictly during the operation.

Some components of the product may be harmful or dangerous and we have tried our best to include them in this manual. It is the user's obligation to pay special attention to them and take precautions before the work. However, since it is impossible for us to point out all potential dangers, we expect you to be extremely cautious during the work so as to protect the appliance, yourself and other people in the working area.

Only accessories of the original manufacturer can be used on the appliance. Using accessories from other sources may lead to low working efficiency or even accidents in extreme cases.

We usually modify or improve our products to meet the latest market demand. However, this is NOT suitable for appliances that have been sold. We reserve the right of making necessary changes to our products without further notification.

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

We wish you a pleasant experience with our product!

# MACHINE DATA

Please fill out at the time of installation for further reference.

Model No. \_\_\_\_\_

Serial No. \_\_\_\_\_

Date of Purchase \_\_\_\_\_

Date of Installation \_\_\_\_\_

Sales Rep. \_\_\_\_\_

Customer No. \_\_\_\_\_

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# CHAPTER I GENERAL INSTRUCTIONS

## **1.1 GENERAL DESCRIPTION**

It is very important that you read the manual carefully and take precautions before operating and maintaining the appliance. The best guarantee against any accident is a careful and cautious user, which might be better than other precautions available. When using the appliance, pay special attention to the people in the working area.

This appliance is NOT intended for use by persons with reduced physical or mental capabilities, or lack of experience and knowledge, unless they are given permission and supervision by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

The machine works by using a suction motor to draw surface debris and dust into the rear dust bin. Therefore, the correct way to use the water spray dust suppression function is to first spray water to suppress dust, then turn off the water spray function and wait a moment later, then turn on the suction motor. Otherwise, too much water condenses into clumps when it comes into contact with dust. It will clog the suction motor's filter. Another important point: do not use the machine in rainy weather, as excessive water can burn out the suction motor.

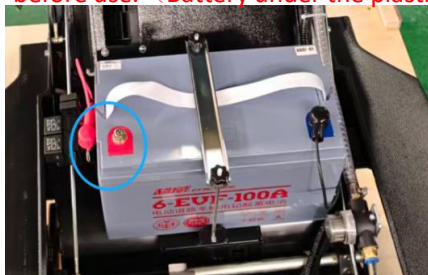
## **1.2 SAFETY GUIDANCE**

- Before any maintenance and repair, turn off the main switch and remove the ignition key.
- The appliance can only be used by qualified personnel. Children and disabled people are strictly forbidden to use it (unless they are given permission and supervision).
- Keep the batteries away from sparks, flames and smoke.
- Do NOT use the appliance in places where dangerous, flammable or explosive gases, liquids or water vapor are presented.
- The appliance can only be used to collect regular garbage. It is strictly forbidden to collect string, belts, high-temperature particles, accumulated water and flammable, toxic, corrosive or radioactive materials with it.
- Keep loose clothing, hair, fingers and other parts of your body away from the air vent and moving parts of the appliance.
- When the appliance is not used, turn off the main switch and remove the ignition key, so as to ensure it will not be started accidentally.

- Do NOT use the appliance in slopes with an inclination larger than the fixed value.
- Do NOT smoke when charging the batteries.
- In extremely dirty places, we recommend that you sweep the area manually and then use the appliance for further cleaning.
- The appliance should be stored at a temperature between -10 °C and 40 °C.
- When using the appliance, the temperature should be between -10 °C and 40 °C, and the humidity between 30% and 95%.
- Do NOT use the appliance as a means of transportation.
- When the appliance is not moving, stop the brushes to avoid scarring the ground.
- In the event of a fire, use a POWDER extinguisher rather than water.
- When a failure is produced, make sure that it is NOT due to the lack of regular maintenance.
- If some components or spare parts need to be replaced, you can purchase them from the original manufacturer or an authorized distributor.
- To make sure that the appliance is in the proper operating and safety condition, the user and/or the service center must follow the instructions presented in the section of maintenance of this manual.
- Attention must be paid even when the appliance is about to be discarded. Since some harmful substances (such as batteries, waste oil, etc.) have met the required standards, they should be sent to a specific center for treatment.

### **1.3 SAFETY PRECAUTIONS OF THE BATTERIES**

- The battery must **NOT** be in a low voltage state; charge the battery **as soon as possible** when the voltage is below **42 V**; **Due to the characteristics of lead-acid batteries, prolonged low battery levels or failure to recharge in time can cause irreparable damage to the battery. The seller shall not be held responsible for the resulting consequences.**
- **For safer transportation: The manufacturer will disconnect the battery cable before the machine leaves the factory. Consumers should reconnect the battery before use. (Battery under the plastic tank)**



- To avoid electric leakage, keep the batteries dry and clean;
- Do NOT put metallic objects on the batteries to prevent them from being short-circuited and burned;
- The charging room should be well ventilated;
- When the main switch is turned on, do NOT install or remove the batteries;
- Before installing or removing the batteries, disconnect first the negative wire (-) and then the positive one (+). When rewiring, pay special attention to the polarity of the batteries, as wrong connection would probably damage electrical components of the appliance;
- Avoid direct contact between the positive and the negative electrodes, because it would cause short circuits, high heat or even fire.

#### **1.4 GENERAL SAFETY REQUIREMENT**

In addition to those mentioned in this manual, the general safety requirements must also be observed. Even if you have used a similar product before, we recommend that you read this manual carefully so that you can save much time in the future. It is vital that you become familiar with all the accessories and components before turning on the appliance. Read our instructions carefully so that you will not be confused when you get started.

#### **1.5 UPON RECEIVING THE MACHINE**

All machines are checked carefully before being packed and delivered. When you receive your product, please check whether the outer package is complete and undamaged. If there is obvious damage, make a declaration to the shipping company and contact your sales representative; if not, open the package and check whether the machine is undamaged and whether the following items are presented:

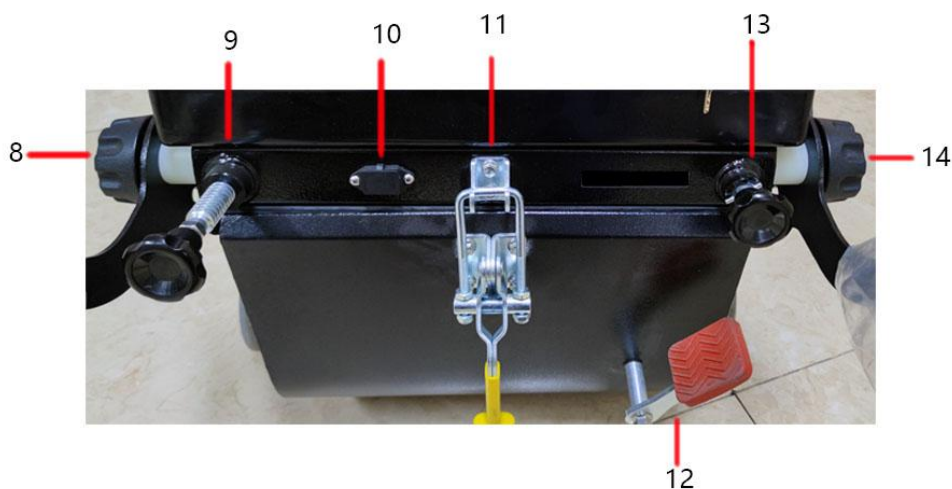
- Manual book
- Tools bag

# CHAPTER II OPERATION

## 2.1 CONTROLLING PANEL



1	Circuit-breaker	6	Power switch	11	Debris tank buckle
2	Voltage display	7	/	12	Filter shake pedal
3	Brush button	8	Hand knob tightening	13	Cylindrical brush adjustment
4	Vacuum motor	9	Side brush adjustment	14	Hand knob tightening
5	Sprinkler button	10	Charging port		





## **2.2 STARTING THE MACHINE**

- Turn the ignition key to the right position means “on”. The current voltage of the batteries will be displayed in three seconds. In the case of low power, turn off the switch and charge the batteries before using the machine.
- Push or pull the machine to the working area.
- Press the brush button and the vacuum motor button.
- In a poor working environment, stop the cleaning and use the shaking handle regularly.
- Check and empty the debris hopper regularly.
- For the water-filling type, check the amount of water and add additional water regularly.

## **2.3 CAUTIONS**

- During the work, you can decide whether to start the shaking device according to the amount of garbage left on the ground.
- The machine cannot collect garbage when the HEPA filter is blocked or the debris hopper is full.
- Empty the debris hopper immediately once the work is finished.
- If the temperature is below freezing, empty the water tank once the work is finished.
- When the brushes are started, do NOT leave the machine in one place for a long time, because it would leave marks on the ground.
- If you need to collect large garbage, lift the front wheel slightly.
- The filter should be shaken regularly to prevent it from being blocked.
- When the brushes are worn and the cleaning efficiency is reduced, you can lower them slightly using the screws at the rear part of the machine. Do NOT lower the brushes too much or the brush fuse may be blown.

## **2.4 STOPPING THE MACHINE**

- Turn off the brush and vacuum motor.
- Turn the ignition key to the left position means “off”.
- Remove the ignition key.

## CHAPTER III DAILY MAINTENANCE

Note: if the machine is not about to be used within 30 days, disconnect the batteries and store them in a clean and dry place.

### **3.1 FIRST USE**

If the machine is used for the first time, do the following checks once the work is finished:

- whether the joint parts are loosened, and
- whether all the accessories on the machine surface are undamaged, and
- whether the brushes are overly worn.

#### **Alert!**


Before maintaining the machine, make sure that the main switch is turned off and the ignition key is removed.

### **3.2 ADJUSTING THE POSITION OF THE MAIN BRUSH(cylindrical brush)**

When the main brush becomes worn and the cleaning efficiency is reduced, you can lower the main brush slightly using the main brush adjusting knob.

#### **Note:**

1. The main brush adjusting knob can be found at the right part of the machine. We already do proper adjustment, so no need to change it anymore. After one month using, you can check the cleaning efficiency, then decide whether adjust or not.
2. The main brush achieves the best cleaning effects when the width of its contact surface with the ground is between 3 and 5 mm.

 **Important: It is important to note that the bristles of the roller brush should not be in too much contact with the ground, otherwise it will cause greater friction when the brush plate rotates and burn the brush plate motor.**

### **3.3 REPLACING THE MAIN BRUSH**

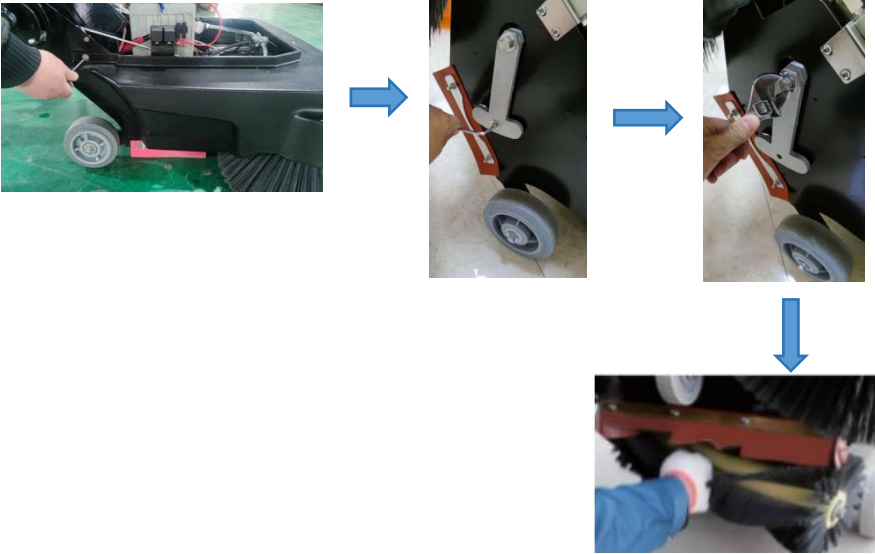
Replace the main brush when it is seriously worn and cannot be used any longer.

- 1. Remove the shell screws.
- 2. Remove the bottom shell screws.
- 3. Remove the main brush tightening screws.
- 4. Lift the machine slightly and take out the main brush.
- 5. Install the main brush onto the machine and tighten the screws.
- 6. Set the main brush adjusting screw to the initial position. Pay attention to the width of the surface between the brush and the ground.

- 7.Install the shell.

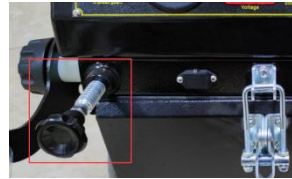
**Note:**

Wear gloves so that you will not be hurt by the bristles.



### **3.4 ADJUSTING THE POSITION OF THE SIDE BRUSHES**

- Adjust the position of the side brushes when one or both of them is/are worn and the cleaning efficiency is reduced, using the knob on the left side of the rear part.



### **3.5 REPLACEMENT OF THE SIDE BRUSH(ES)**

When the side brush(es) is/are seriously worn and cannot be used any longer, replace it/them following the instructions below.

- Turn off the main switch.
- Take out the old brush(es) and Lift the machine slightly and loosen the four screws at the bottom of the side brush(es).
- replace it/them with the new one(s).
- Adjust the position of the new brush(es).



**3.6 SHAKING THE FILTER**

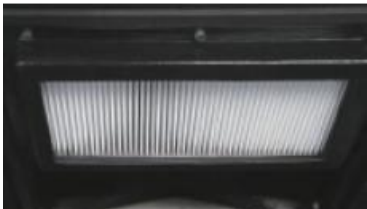
The filter should be shaken regularly to remove dust on it, or it will be blocked leading to a low working efficiency of the machine.

- Step up the pedal repeatedly on the side of the debris hopper .



**3.7 MAINTENANCE OF THE FILTER**

- Turn off the machine and take out the debris hopper.
- Scrape the filter bottom gently with a thin and smooth cloth. It is strictly forbidden to wash the filter with water.
- Check whether there are cracks on the filter and replace it if necessary.



**3.8. CHARGING THE BATTERIES**

- When the power alerting light is flashing, turn off the machine and charge the batteries.
- When the charging process is finished, disconnect the AC plug before the DC plug. Only when the charger is disconnected can the DC plug be removed.



**Alert!**

Do NOT touch the battery terminals and the DC plug!

**3.9 WATER FILLING (OPTIONAL)**

- The water filling port is on the top of the cover. Open the gap and add water into the tank.

**Note:**

When the temperature is below freezing, empty the water tank after using the machine.

## CHAPTER IV MACHINE TROUBLESHOOTING

Problem	Cause	Remedy
Main brush not working	Main brush fuse blown	Replace main brush fuse
	Main brush motor burned	Replace main brush motor
	Thermal overload activated	Wait 10 minutes and restart
	DC contactor burned	Replace DC contactor
Side brush(es) not working	Side brush fuse blown	Replace side brush fuse
	Side brush motor burned	Replace side brush motor
	Thermal overload activated	Wait 10 minutes and restart
	DC contactor burned	Replace DC contactor
Suction motor not working	Suction motor fuse blown	Replace suction motor fuse
	Suction motor burned	Replace suction motor
	Thermal overload activated	Wait 10 minutes and restart
	DC contactor burned	Replace DC contactor
Main brush, side brush(es) and suction motor not working	Thermal overload activated	Wait 10 minutes and restart
	DC contactor burned	Replace DC contactor
No spray	Pump fuse blown	Replace pump fuse
	Pump motor burned	Replace pump motor

Pumps works and little spray	Nozzle blocked		Cleanse nozzle
	Filter blocked		Cleanse filter
Pump works and no spray	Valve burned		Replace valve
	DC48V/DC24V transformer burned		Replace DC48V/DC24V transformer
Warning light not working	Main switch not turned on		Turn on main switch
	Main switch fuse blown		Replace main switch fuse
	Batteries lack electricity		Check whether total battery voltage is 48 V (42-52.8 V)
	Main switch broken		Replace main switch
Machine not working	Machine walking	Controller broken	Replace controller
		Accelerator broken	Replace accelerator
		Driving motor broken	Replace driving motor
	Machine not walking	Batteries lack electricity	Check whether total battery voltage is 48 V (42-52.8 V)
		Main DC contactor burned	Replace main DC contactor
		Main switch broken	Replace main switch

# CHAPTER V MAINTENANCE AND WARRANTY

Regular maintenance is necessary in order to keep the machine in its best conditions, extend its service life and ensure operators' safety. Under certain circumstances the maintenance interval can be modified, but this must be determined by professional personnel. When performing maintenance, make sure that the machine is turned off and the ignition key is removed.

## **5.1 WORKING CONDITIONS**

- Temperature: -10°C ~ 40°C
- Relative humidity: 5%~70%
- No electricity-conductive and explosive gases or dust are presented
- No corrosive gases or vapor are presented
- Well ventilated indoor environment

## **5.2 MAINTENANCE TIMETABLE**

Items	Upon receiving	Every 10 h	Every 50 h	Every 100 h	Every 200 h	Every 500 h
Height of brushes	X	X				
Are bristles entangled?		X				
Belt of main brush	X			X		
Suction motor and filter		X				
Fenders	X		X			
Nuts and screws					X	
Is brake pedal worn?					X	
Are brushes worn?					X	
Are all driving chains tightened?						X

### **5.3 WARRANTY SCOPE**

The following cases are NOT covered in the warranty:

- The operator fails to perform maintenance according to the Operator Manual, resulting in damage or failure of the machine.
- The surface and/or the structure of the machine are obviously damaged due to improper operation.
- Disassembly or modification not authorized by the original manufacturer.
- Damage due to weather or force majeure.
- The warranty is expired (one year calculated from the next day of receiving the machine) or the machine has been used for more than 1,500 hours.

## **CHAPTER VI SPECIFICATIONS**

Number	Item	Unit	Parameter
1	Cleaning width	mm	1,050
2	Cylindrical brush width	mm	435
3	Side brush width	mm	300
4	Debris hopper capacity	L	35
5	Working time	h	3-4
6	Cleaning efficiency	m <sup>2</sup> /h	4,500
7	Power unit	V/Ah	12/100
8	Main brush motor power	W	200
9	Side brush motor power	W	90*2
10	Walking speed	km/h	0-8
11	Total weight	kg	90
12	Product size	mm	1,080 * 1,050 * 1,080



## Warranty Card

User's name		Tel	
Address		Bill No.	
Date of purchase		Machine No.	
Type		Date	
Accessories to be replaced			
Fault description			

**Note:**

The following cases are **NOT** covered in the warranty:

- The operator fails to perform maintenance according to the Instruction Manual, resulting in damage or failure.
- The surface and/or the structure of the machine are obviously damaged due to improper operation.
- Disassembly or modification not approved by the original manufacturer.
- Damage due to weather or force majeure.
- The warranty is expired (one year after the purchase) or the machine has been used for more than 1,500 hours.