

User Manual



World's Leading Home Cleaning Robots



RedHawk
(MGRV01)

Vacuum cleaners and homes with germs
are now history!



Milagrow Business and Knowledge Solutions (P) Limited
796, Phase V, Udyog Vihar, Gurgaon - 122 016, Phone : +91-124-4309570-79
Fax : +91-124-4309580, e-mail : customercare@milagrow.in

Specifications are subject to change without prior notice with the purpose of product enhancement and quality improvement. Brand Names and Brand Logos are trademarks or registered trademarks of those companies. Milagrow Business & Knowledge Solutions has rights only on the Milagrow brand name mentioned in the catalogue.

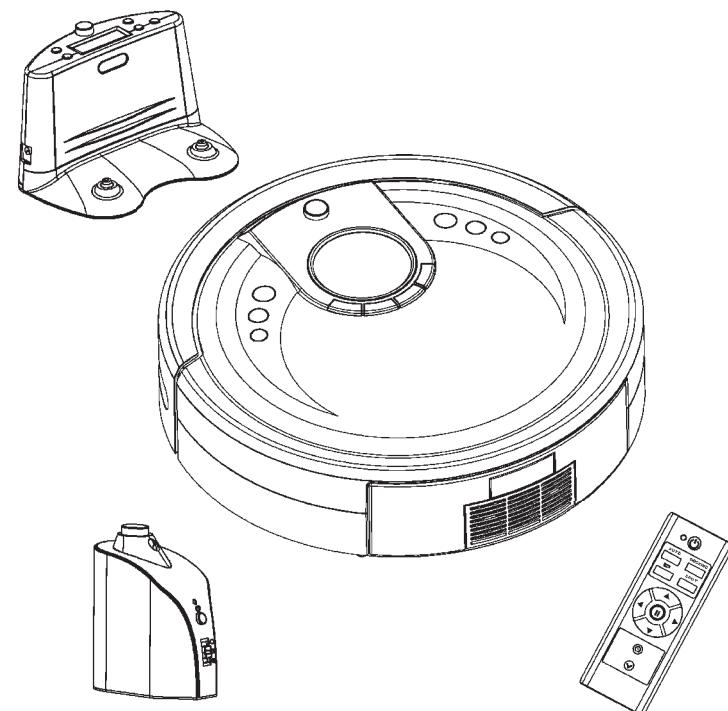
Auto Scheduling Auto Charging UV Disinfection Auto Obstacle Detection All Surface Cleaning Auto Disentanglement

MILAGROW 

REDHAWK MULTIFUNCTION ROBOTIC AUTO VACUUM CLEANER

MODEL NO. : MGRV01
Auto Charging With Remote Controller, Mop and UV Lamp

OPERATING MANUAL



 Thank you for purchasing RedHawk! Please read this manual carefully before using! Please follow the safety precautions below:

These safety precautions are provided to avoid human or property damage, so please read carefully and understand the meaning of the following symbols:

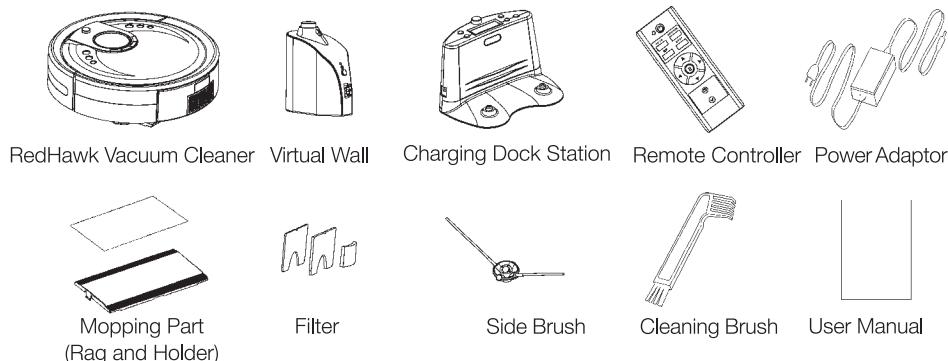
	Violation of the safety instructions may cause injury or death!		Violation of the safety instructions may cause slight personal injury or damage of the product.
---	---	---	---

 Warning!	
	No one other than service personnel designated by the company are allowed to disassemble, repair or alter this product, otherwise, fire, electric shock or personnel injury may be caused.
	Never touch the electric wire of the electrical appliance with a wet hand, otherwise, electric shock may be caused.
	Avoid putting your clothes or any part of your body (head or finger, etc.) into the brush or wheel of the machine, otherwise, personal injury may be caused.

 Caution!	
	The power should be turned off when transporting or storing the robot for a long time, otherwise, the battery may be damaged.
	Check the charger and the socket for proper connection so as to avoid fire.
	Please use the Robot cautiously in the presence of children to prevent the children from being scared or hurt.
	Make sure to prevent the Robot from absorbing water or any other liquid, otherwise, the product may be damaged.
	Never use the Robot outdoors, otherwise, the product may be damaged.
This product is not applicable to (physically, sensibly or mentally) disabled people or those lacking relevant knowledge and experience (including children) unless they are under care of their guardians and provided with relevant guidance on the usage of the product.	

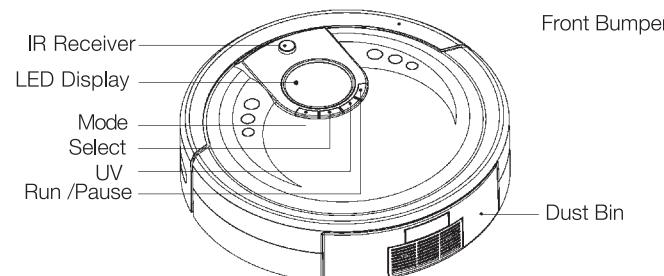


😊 Components

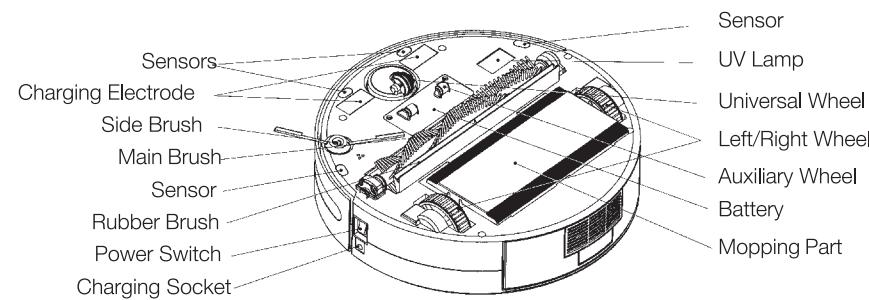


😊 Names of Parts

" Top of the RedHawk:

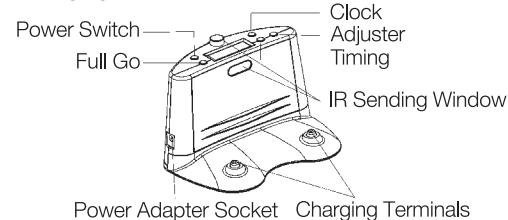


" Bottom of the RedHawk:

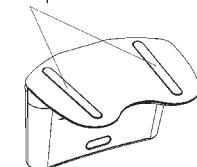


😊 Names of Parts

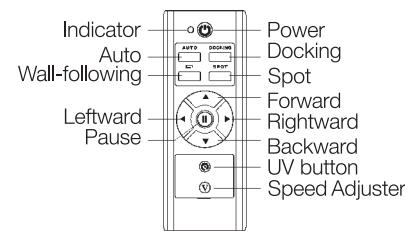
1. Charging Dock Station



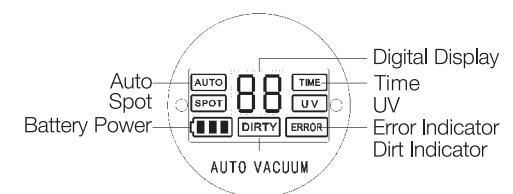
Floor Skidproof Pads



2. Remote Controller



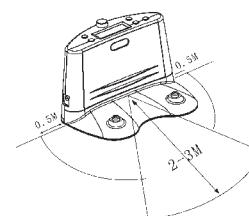
3. LED Display



😊 Cleaning Preparations

Installation of the Charging Dock Station

1. Place the Charging Dock Station on level ground with the back against the wall.
2. Make sure that there's no obstacle and uneven ground in the area within 3 m in front of the base and 0.5 m respectively, on the left and right of it. (See figure 1)
3. Ensure that IR sending window on the base is clean without dust or something else covered, otherwise, the function of self-charging will be influenced.
4. Connect the output plug of the adapter to the Power socket of the Dock Station. (See figure 2)
5. Tidy up the electric wire along the wall to avoid obstructing the operation of the Robot.



Installation and Disassembly of the Mopping Part

1. Attach the enclosed Mopping Rag to the Mopping Holder. (See Figure 1)
2. Align the protruding fastener at the end of the holder (See Figure 2) to the sunken positions on the inner sides of the 2 wheels (See Figure 3) and press them down. Then both ends of holder will be locked.
3. After installing the Mopping Rag (See Figure 4), mopping can be done while sweeping and vacuuming, the cleaning effect will be better.
4. After using, just pull the holder out.
5. It's recommended to wash and twist dry the mopping cloth before using the Mopping function.

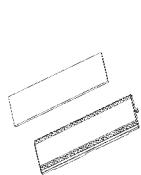


Figure 1

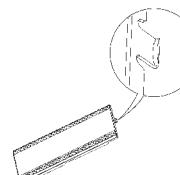


Figure 2

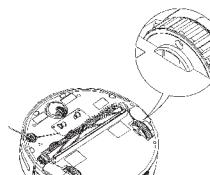


Figure 3



Figure 4

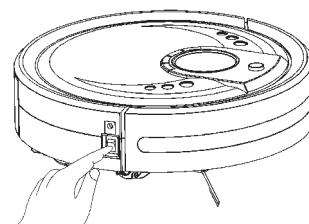
Fix the Mopping Rag on the Holder



The mopping part is mainly designed to cooperate with Robot adjunctively to fulfill cleaning floors, you can disable this function. In case of non-use of this part for a long time, please remove the Mopping Holder and store it with the Mopping Rag in a dry environment.

Turning On/Off Auto Vacuum Cleaner

1. Press the power switch when the Cleaner is turned Off (see the figure below), the display will be On and the screen will flash for 3 seconds along with a startup sound, and the Robot is then turned into the Standby status.
2. In the Standby status of the Robot, the current working mode will be displayed (default show as 'AUTO 1 UV' and the battery level on the screen).
3. Turn off the power in the Standby status, the display will be shut.
4. In the power-off status of the Cleaner, the Remote Controller cannot work.



Charging

A. Manual Charging

1. You can directly charge the Cleaner with its power adaptor or with the Charging Dock Station.
2. When charging directly via the power adaptor, please connect the output plug of the adaptor with the charging socket on the Robot. (See Figure 1)
3. When charging with the Charging Dock Station, please first connect the adaptor to it, and then place the Cleaner tightly against the Dock Station to ensure a nice contact between the Charging Electrode of the Cleaner and the charging terminal on the Dock Station. (See Figure 2)
4. During the charging process, the display will show the charging status, and the battery level bars will turn red from the 1st bar to the 3rd bar in order repeatedly. (See Figure 3)
5. Upon completion of the charging, the display will show 3 fully red bars. (See Figure 4)

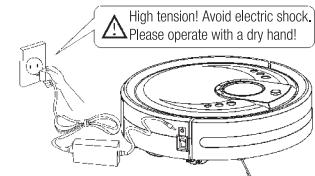


Figure 1



Figure 2



Figure 3



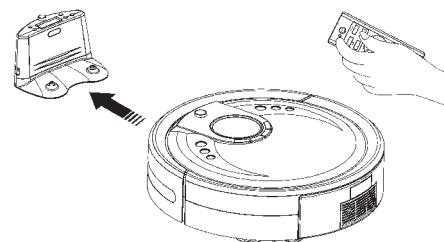
Figure 4



1. Take out the battery before disposing of the Robot.
2. Always remember to cut off power before removing the battery.
3. Recycle or dispose off the battery properly.
4. To avoid explosion, never throw it into fire!

B. Self-Charging

1. The cleaner will automatically start to search the charging dock station for recharge when the battery level is lower than 15% during the cleaning process.
2. When pressing the Docking button on the cover of the Robot or the Remote Controller, the function of self-charging will also be enabled.
3. During the above Docking mode, press any other button on the Cleaner or Remote Controller, the Cleaner will stop searching and enter the Standby status. The directional buttons on the Remote Controller can also be used to support the Search function.



The Cleaner can find the Charging Dock Station when it reaches the area about 3 m in front of the base within the 90° fan-shaped region.

😊 How to use the function of the button on the Cover:

- In the Standby status, press the mode button  to choose AUTO, SPOT, DOCKING in turn, and corresponding indicator will come on accordingly.
- AUTO: Auto Cleaning Status, in this status, press the select button  to switch between 1, 2 and 3 secondary modes, the display will show corresponding digit.

Modes:

- The Cleaner will work until the battery is used out and then search the Charging Dock Station automatically for recharge.
- The cleaning work will last for 30 minutes.
- The cleaning work will last for 15 minutes.

- SPOT: Spot Cleaning, in this status, press the selection button  to switch between 1, 2 and 3 secondary modes, the display will show corresponding digit.

Modes:

- Cleaning along the spiral route (working for 1-4 minutes).
- Cleaning along the zigzag route (working for 1-4 minutes).
- Cleaning following the walls (working for 10 minutes).

- DOCKING: Self-charging Mode, in this mode, it can automatically search the Charging Dock Station.

- Select Button : This enables you to select 1, 2, 3 secondary modes orderly in the primary models of AUTO/SPOT.

- UV Button : This allows you to turn On or Off the UV Lamp during the cleaning process, press once to turn On and press again to turn Off. (The UV Lamp is on when the Cleaner is turned on)

- Run Button  When the SPOT/AUTO/DOCKING mode is selected, press this button to start the particular mode.



The UV Lamp is applied for sterilization, please do not look straight at it.

😊 Dirt Detection Function

In order to achieve better effect of cleaning, this product provides the Dirt Detection Function, during the operation of the Robot, if it reaches a place with a lot of dirt or debris, the dirt indicator on the LED Display will turn on, and the Robot will increase the cleaning intensity to such areas.

😊 Control with the Remote Controller:

1. The Power Button

When the power switch of Cleaner is on, press this button to ensure the Robot enters the Sleep status, which can save electricity and all indicators will be off, press this button again to enter the Standby status. When the Cleaner enters the Sleep status, it can not be started by pressing any button on either the cover or the Remote Controller before this button is pressed again to make the Robot enter Standby status.

2. AUTO Button:

Press this button, the Robot will work in the Auto Cleaning mode till the battery is used out, and then it will automatically search the Charging Dock Station for recharge.

SPOT Button

Press this button, the Robot will work in the Spot Cleaning mode in the spiral way.

DOCKING Button

Press this button to allow the Robot to automatically search the charging base for recharge.

Wall-following Button 

After pressing this button, the Robot will be in a mode to clean along the walls.

UV Button 

Press this button to turn On or Off the UV Lamp

Speed Adjuster 

Press this button to select three different levels of walking speed. The default speed of the Cleaner is the optimal speed, therefore, when it is reset, the Robot will restore the default speed.

Pause button 

Press this button to pause the operation of the Robot, corresponding indicator will flash. Press this button again to resume the original mode. If you press any other button after pressing this button, the Cleaner will start working in the new mode.

3. Directional Buttons (Forward, Backward, Leftward, Rightward):

Press the Arrow Buttons to control the Robot to walk in the designated direction.

Forward 

Press this button to make the Robot clean forward and it will automatically stop when it meets an obstacle.

Rightward 

Press this button once to make the Robot turn right by about 10° then clean forward and automatically stop when it meets an obstacle, if you need a larger angle, please press and hold this button till the satisfactory angle is achieved.

Leftward 

Press this button once to make the Robot turn left by about 10° then sweep forward and automatically stop when it meets an obstacle, if you need a larger angle, please press and hold this button till the satisfactory angle is achieved.

Backward 

Press this button once to make the Robot walk backward for about 0.3 m, if you need a longer distance, press and hold this button till the Robot reaches a satisfactory location.



If more than one above buttons are pressed at the same time, the status will be uncertain.

The effective distance of the Remote Controller is 5-7 m, which varies according to different surroundings.

Charging Status

1. When the Cleaner is being charged manually, it will not work when you press any button unless you pull out the plug of the power adaptor.
2. Full charging time is 3-5 hours, for the first 3 times of charging of a new Cleaner, please ensure it to be charged for more than 12 hours each time, please try to use out the battery power before charging (ensure a 12-hour charging before you use the Robot for the first time).
3. If you press the AUTO button on the Remote Controller while the Cleaner is being charged on the Charging Dock Station, the Robot will draw back from the Dock Station and turn around to walk 1 m ahead, and then it will enter the AUTO mode for working.
4. The Robot will enter the Standby status when the power supply is cut off during the charging process.
5. While the Robot is being recharged on the station, if the preset time is reached, the Robot will draw back from the station and turn around to walk 1 m ahead, and then it will enter the AUTO mode for working.
6. By pressing the Full-Go button on the Charging Dock Station, when the Cleaner has been fully charged on the Dock Station, it will draw back from the Dock Station and turn around to walk 1 m ahead, and then it will enter the AUTO mode for working.
7. While the Robot is searching the station for recharge, if the battery power is lower than 8% of the capacity, the Robot will stop searching and enter the parking mode in a clear and bright place, and it will sound a 'Toot' every 30 seconds.
8. During the charging process, the digital display will show the time of charging, 10 times of the displayed value equals to the actual time of charging (min.)



The working time of the Robot will also be shown during the cleaning process, but the value displayed is the actual time of working (min.).

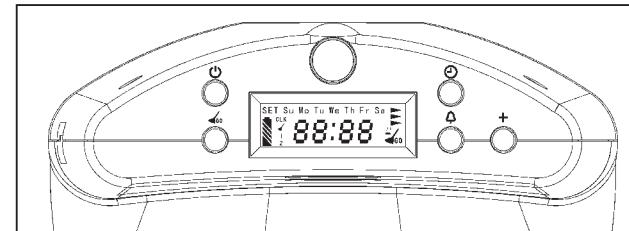
How to use the Charging Dock Station:

There are 5 buttons as shown in the figure below, including: Power Switch  Full-Go Button  Clock Button  Timing Button  Adjusting Button 



During the process of setting, the Power Switch has the function of 'cancel' and the Full-Go Button has the function of 'confirm'.

Connect the power socket on the Dock Station with external power supply, and then press the power button  to start the charging station (power on), the base will enter the LCD detection status and show all content of the LCD as shown in the figure below:



The auto Charging Dock Station has no Memory function. If its power is off, all settings are cancelled and return to the default

1. Time Setting:

In normal operation status, press the clock button  to enter the time setting status; press once to switch between settings of minutes and hours, the current value of the selected item being set will flash, by using this button, you can set the standard time. Press the adjusting button '+' to adjust minutes, and hours. After time setting is finished, press the Full-Go button  to save the setting values. If no button is pressed within 30 seconds, the base quits the setting status without saving the values.



Press the Power Switch Button  or Timing Button  It will quit the time setting status without saving the timing value.

2. Weekday Setting:

After finishing settings of Hour and Minute, enter settings for weekdays. Press '+' key to select the day of the week. When a certain day is selected, the corresponding day logo will flash for 5 seconds then stop, which indicates this day has been selected. If you dont want to choose this day press the '+' key again when it is flashing, then it will go to selection process of the next day. Selection can be made for 7 consecutive days, or one or several days in one week. Press  to save setting and return to normal working. If weekday setting is not selected, the machine will work every day as default setting.

3. Timing Clean Setting:

In normal operation status, press the timing button  to enter the Timing Clean setting status; press once to switch between settings of minutes and hours, the current value of the selected

item being set will flash, by using this button, you can set the standard time. Press the adjusting button '+' to adjust minutes, and hours. After Timing Clean setting is finished, press the Full-Go Button  to save the setting values. If no button is pressed within 30 seconds, the base quits the setting status without saving the values.

⚠️ Press the Power Switch Button  or Timing Button  will quit the time setting status without saving the timing value.

4. Auto Clean Setting:

In normal working status of the charging base, press the full-go button  to enable the Full-Go function (when the battery is recharged fully, the Robot will automatically start the cleaning work). Press this button again, this function will be disabled.

⚠️ When the Robot is fully charged, if both the Timing Cleaning function and the Full-Go function are enabled, the Timing Cleaning will have priority.

When the battery power of the Cleaner is low, it may be unable to seek the Charging Dock Station for recharge. In this case, please manually put the cleaner on the Dock Station and press the '+' Button for recharge.

😊 Virtual Wall

The virtual wall is an accessory, it sends some special IR signals to form a blocked area to prevent the Cleaner from entering unnecessary areas. It is so named 'Virtual Wall' because this function acts like a wall.

1. Before using the Virtual Wall, install the batteries as shown in Figure 3. Open the bottom cover of the Virtual Wall, install 2 pieces of A batteries (pay attention to the correct polarity). After the installation, close the bottom cover and tighten the screws.
2. Select the distance selector of the Virtual Wall according to the actual requirements; pull the shift switch to the top position to select the low level (0~4 m), to the middle to select the medium level (4~7 m) and to the bottom to select the high level (above 7 m). See Figure 2, the lower the level, the lower the power consumption and longer the working time of batteries, therefore, you should try to select a lower level whenever possible.
3. Press the Power Button on the Virtual Wall, the indicator will flash. When the voltage is normal, the indicator will twinkle at each longer interval. If the batteries are in low power, the indicator will flash faster, indicating that the batteries should be replaced. To avoid wrong start-up, you should press and hold the switch for a comparatively longer time (about 3~5 seconds) when turning on the power.
4. The Virtual Wall takes effect with IR signals, therefore, its functional range is a sector of about 15°, when the power is turned on, you should place it at the entrance of the area that you don't want the Cleaner to clean, the Cleaner won't enter such area then.
5. The Virtual Wall uses 2 pieces of A (1.5V) batteries, when batteries power is short, you should replace them. Continue to use the batteries with extremely short power and it may corrode the Virtual Wall.

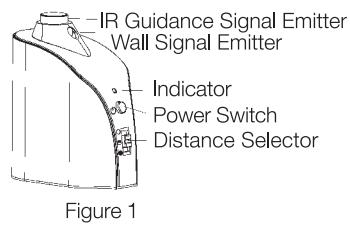


Figure 1

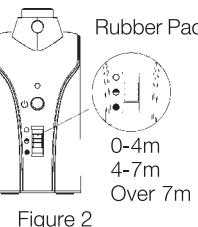


Figure 2

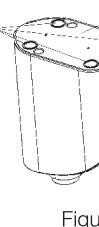


Figure 3

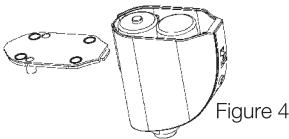


Figure 4

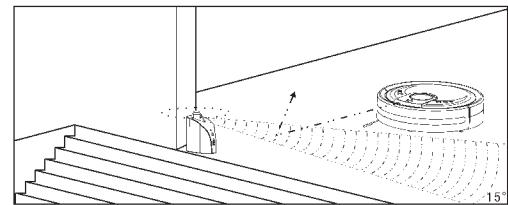
1. You need to use a screwdriver to open the bottom cover of the Virtual Wall (see Figure 3)
2. Please refer to Figure 4 for the installation of batteries to avoid wrong polarity that may damage the Virtual Wall.



1. Take out the battery before disposing of the Cleaner.
2. Always remember to cut off power before removing the battery.
3. Recycle or dispose of the battery properly.
4. To avoid explosion, never throw it into fire!

😊 How to Use the Virtual Wall

1. The Virtual Wall should generally be placed at the doorway of the room you plan to clean.
2. You can also place the Virtual Wall in any proper place to prevent the Cleaner from entering the blocked area.
3. Ensure no obstacle is placed in front of the Virtual Wall when you plan to block a particular area.



😊 Dust Bin

1. Press the button on the Dust Bin by hand. (See Figure 1)
2. The Dust Bin will be ejected. (See Figure 2)
3. Then you can take it out easily. (See Figure 3)
4. Just push it by force to install the Dust Bin.



⚠️ Ensure the Dust Bin is fixed tightly after cleaning the machine

How to Clean the Dust Bin

1. First, open the dust-proof clapboard and dump the dust and debris collected. (See Figure 1)
2. Then clean it with cleaning brush (See Figure 2)

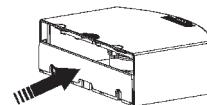


Figure 1

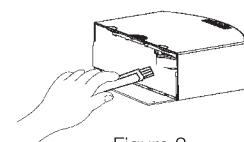


Figure 2



Rinsing by water
is prohibited!

Side Brush

1. Nip the tow fasteners of the side brush with one hand (see Figure 1) and pull the side brush upward with the other hand to take out the side brush.
2. Installation: Align the side brush with 2 fasteners and press it down to fasten the side brush (See Figure 2)

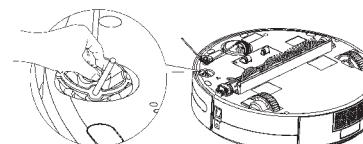


Figure 1

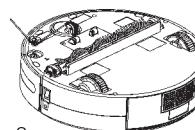


Figure 2

How to Replace and Clean the Filter

Removal and Clean:

1. Hold the middle part of the filter bracket located on the suction inlet by hand (See Figure 1) and then draw horizontally (See Figure 2).
2. Take out the scouring pad (See Figure 3) and the filter sponge (See Figure 3) in order.
3. Put a finger into the bottom of the suction outlet and draw it out (See Figure 4).
4. Take out the filter sponge inside the outlet window (See Figure 5).
5. The scouring pad and the filter sponge can be cleaned in water and then reinstalled after drying. Its recommend to generally clean them.

Installation:

1. Suction Inlet: Install the filter sponge and the scouring pad onto the filter mesh bracket orderly, and then install them into the Dust Bin.
2. Suction Outlet: First install the filter sponge in the outlet window, and then insert the top end of the outlet window into the Dust Bin, and then press the fastener at the lower end to fix it.



Figure 1

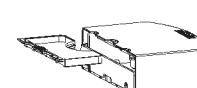


Figure 2



Figure 3



Figure 4



Figure 5

Main Brush

How to Remove the Main Brush

1. Hold the brush and push it slightly leftward. (See Figure 1)
2. Then take out the brush. (See Figure 2)



Figure 1



Figure 2

How to Install the Center Brush

1. Hold the brush (the end which the brush axis stuck out will be insert in the Cleaner first), See Figure 1.
2. Inset the end show in Figure 1 into the left end of the Cleaner and slightly push it inward, the other end of the brush will then be inserted into the right end of the Cleaner. (See Figure 2)

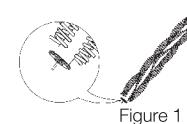


Figure 1

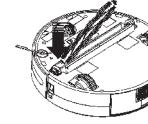
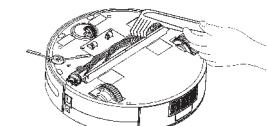


Figure 2

How to clean Center Brush

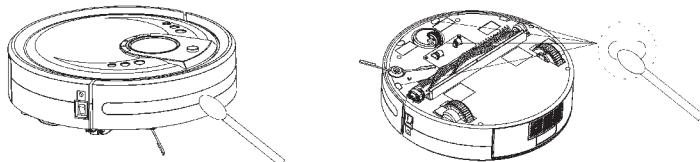
For a better cleaning effect, please regularly clean out the hair, yarn and large debris entwined or adhered on the main brush and the dust on the suction inlet .

1. Directly use the cleaning brush to clean paper scraps or minute particles.
2. Entwined hair, yarn or similar objects should be cut by scissors or pulled out by hand while carefully rotating the main brush.



Cleaning Sensors

1. The sensors should be cleaned by cotton swab or soft cloth.
2. The wall-following sensors are installed in the front bumper of the Cleaner, the ground detection sensors are installed at the front bottom of the Cleaner (see the Figure below)



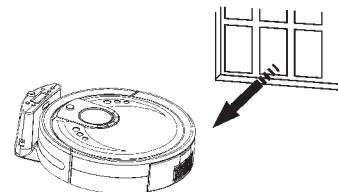
 To ensure a more effective cleaning of this Robot, please clean the sensors regularly.

Storing the Robot

The Robot should be stored in a ventilated and dry place.

Troubleshooting

Inspect the Cleaner yourself before you request for a repair.



A. The Robot stops while working

1. Check if the selected cleaning time is over.
2. Check if there's any error information on the LED display and refer to the following explanations to solve it.

B. The Cleaner fails to work or the cleaning ability is weakened

1. Check the battery status.
2. Check whether the Dust Bin, the filter and the inlet of suction are cleaned; whether the side brush is working.
3. Check whether the Cleaner is turned on.

C. The Remote Controller does not work

1. Check the battery status of the Controller.
2. Check the battery status of the Cleaner.
3. Wipe the IR sensor or the beam sensor of the Controller with a clean and dry cloth.
4. Keep proper distance between the Cleaner and the Controller, and then operate the Controller directly facing the IR receiver on the cover of Robot.

D. The Robot fails to fulfill self-charging

1. Check whether the power supply is normally connected with the adaptor and Charging Dock Station.
2. Check the battery power, if it's too low, please manually charge it with the adaptor.

E. Increased noise when cleaning

1. Clean the dust box and the filter.
2. Check whether the brushes are too dirty.

F. Check whether the LED screen on the Cleaner has error information. The solution is as follows:

Fault Code	Indicated Problem	Solution
00	Left wheel is jammed by obstacle or lift up	Check the left wheel, clean the obstacle
01	Right wheel is jammed by obstacle or lift up	Check the right wheel, clean the obstacle
02	Mid-brush is jammed with obstacle	Check the mid-brush, clean the obstacle and keep it rotating smoothly
03	Front wheel is jammed by obstacle	Check the front wheel, clean the obstacle
04	Sensor head malfunction in the bottom	Clean the sensor head, clean up the dust
05	Wall detector sensor head malfunction	Check sensor head in front cover
06	Front cover is jammed and can not work freely	Check and clean up if the front cover is jammed by obstacle
07	No rotation from mid-brush	Check the mid-brush, ensure correct installation
08	Dust Bin is not properly installed	Check the Dust Bin, clean the dust on electrode contact sheet

If above malfunctions can not be solved, please contact professional maintenance personnel.

Technical Parameters

Model	M-788
Standard Color	Red/Silver
Dimensions	Diameter: 35 cm Ht: 11 cm
Weight	3.5 kg
Speed	23 cm/Sec
Charging Time	3 - 5 hours
Operation Time	50 - 70 min
Noise Grade	65 dB
Input	24V - 1A
Rated Power	45 W
Place of Origin	China