Floor Washing Robot Vacuum S10 Ultra

User Manual

This appliance can be used by children aged from 8 years and above . Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

The appliance is only to be used with the power supply unit provided with the appliance.

WARNING: For the purposes of recharging the battery, only use the detachable supply unit provided with this appliance.

This appliance contains batteries that are only replaceable by skilled persons.

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

The appliance is only to be used with the power supply unit provided with the appliance.4.

Please read this user manual carefully before using the product and keep it in a safe place.
If you have any questions during use, please contact us at support-eu@3itech.com. Our service personnel will answer your questions.
For more information, please log in to the 3i official website: www.3itech.com
For more information, please follow us:

3i Facebook

3i Instagram

3i YouTube

Tips: Due to continuous product improvements, there may be differences between the User Manual and the actual product. In such cases, the actual product takes precedence.

Contents

Safety instructions

Restrictions

・Please use this product in accordance with the User Manual. Any loss or injury caused by improper use shall be borne by the user.
・This product contains coolant. Do not tilt or put the station upside down. After moving or transportation, the water recycling system needs to be placed still for 4 hours before use to avoid malfunctions. You can use other functions first.
・This product is intended for floor cleaning in a home environment only. Do not use it in outdoor, non-floor, commercial, or industrial environments.Do not use it in an environment higher than 35°C or lower than 0°C. To avoid causing overheating or material aging that will affect the life of the device, do not expose it to sunlight.
・Put away the fragile products, wires, and sundries such as vases and plastic bags on the floor. Otherwise, the robot will be obstructed or slightly collided during operation, which may cause damage to your valuables at home.
・When the robot is working, operate it through buttons, voice, or screen. To avoid human injury or product damage, do not forcefully drag the robot.
・Do not place any objects on the static or running robot. Do not place the robot upside down on the floor for a long time. Otherwise, the robot will be damaged.
・To ensure the floor cleaning effect and the product stability, use the cleaning solution for this product.Keep the cleaning solution away from heat sources and make sure it is out of reach of children and pets.
・Turn off and unplug the robot before cleaning and or maintaining the robot and station.Do not wipe with a wet cloth or rinse the robot and station with any liquid.After cleaning washable parts, dry them before installation and use.
・Before transportation of the robot, make sure it is turned off. It is recommended to use the original packaging box for protection.
・This product must not be used by children unless supervised or instructed by a guardian who can ensure that they can use the product safely.Keep children and pets as far away as possible while the robot is in operation.
・Do not use the robot to clear up hard or sharp objects such as decoration scraps, glass, and nails. Otherwise, the robot will be damaged.
・To avoid accidents, do not use it to clean any burning objects, such as unextinguished cigarettes and mosquito coils.
・To avoid product damage, do not use the lidar protective cover as a handle to carry the robot.Do not use it in a suspended environment without a guardrail, including the duplex floors, open balconies, and tops of furniture.
・If the power cord is damaged, replace it with special accessories or special components purchased from its manufacturer or maintenance department.

Battery and charging

・Do not use any third-party batteries, power cords, or stations. The station model can only be S10 Ultra.
・Do not disassemble, repair, or modify the battery or station without authorization.
・Do not wipe or clean the charging spring plate of the station with a wet cloth or wet hands.
・Do not place the station close to any heat sources such as the heating radiators.
・Disused batteries must be handed over to professional recycling organizations for disposal. Do not dispose of them randomly.
・If the robot will not be used for a long time, it must be turned off after fully charged and placed in a cool and dry place. It is recommended to charge the battery at least once every 3 months to avoid battery damage.

Notes on environmental protection

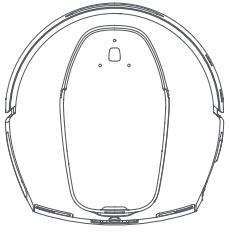
The built-in lithium-ion battery of this product contains chemicals that can cause environmental pollution.The battery must be removed by a professional and handed over to a battery recycling station for disposal.

Battery removal procedure
The procedure applies only to the discarding of the robot and is not intended for daily operation.
1. Make the robot run without touching the station until the battery is too low to clean.
2. Turn off the robot.
3. Remove the bottom case of the robot.
4. Pressing the buckle to remove the battery connector, and then remove the battery.

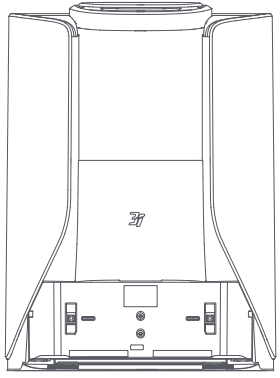
Caution:

・When removing the batteries, make sure that the power is exhausted and keep the robot from the station.
・Please disassemble the whole battery pack. Do not damage the battery pack case. Otherwise, short circuit or leakage of hazardous materials may occur.
・In case of contact with the effusion of the battery, rinse it with plenty of water and seek medical attention promptly.

Packing list



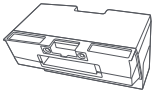
Robot



Base station

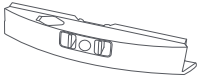
Accessory list

Tip: The illustrations of the product, accessories, and user interface in the user manual are schematic diagrams and for reference only.
Due to product updates, there may be slight differences between the actual product and the schematic diagrams. In this case, the actual product shall prevail.



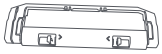
Dust Box × 1
(already installed on the robot)

Filter × 1
(already installed in the dust box)

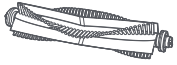


Sewage Box × 1
(already installed on the robot)

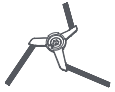
Roller Mop × 1
(already installed on the robot)



Main Brush Cover × 1
(already installed on the robot)

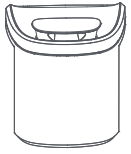


Main Brush × 1
(already installed on the robot)

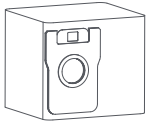


Side Brush × 2
(already installed on the robot)

Silver Ion Module × 1



Water Tank × 1
(already installed in the station)



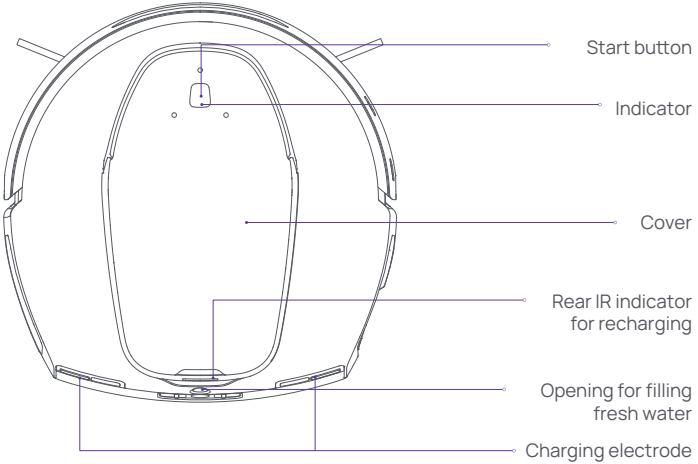
Dust Bag × 1
(already installed in the station)

Cleaning Solution × 1

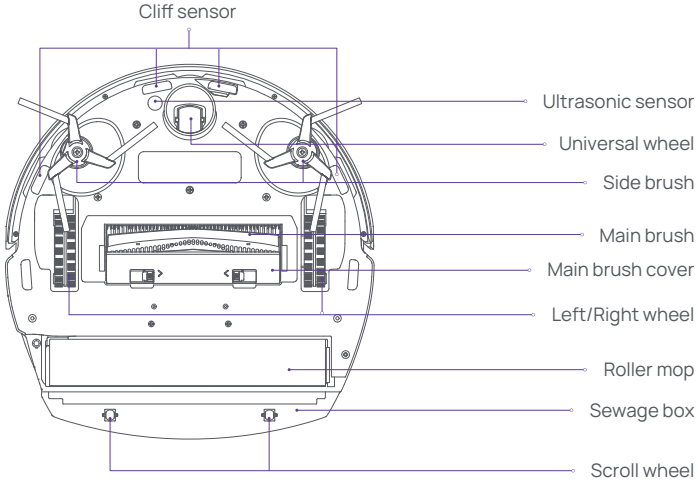
Carbon Rod × 1

Main Products

Robot front view



Robot rear view



Start button

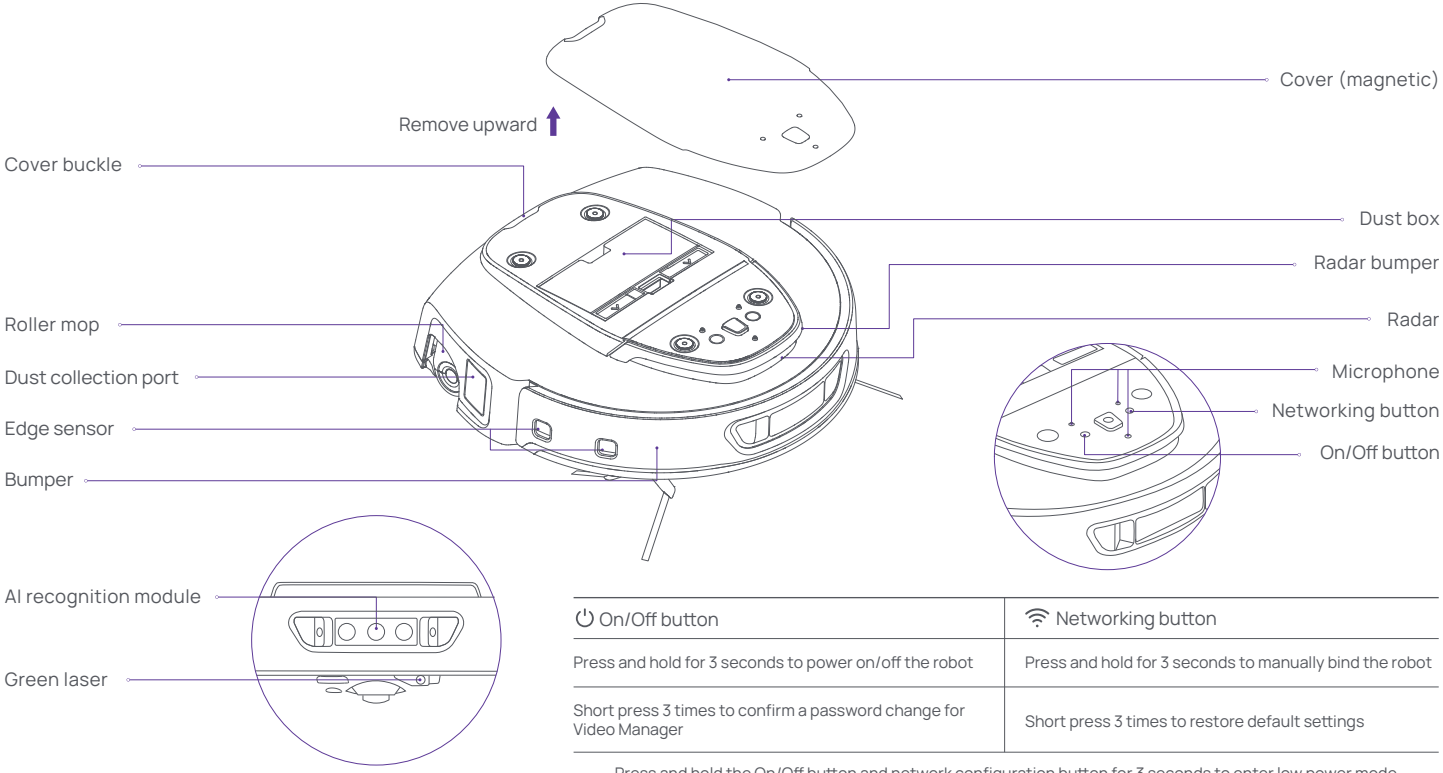
Press and hold for 3 seconds to make the robot back return to the station.
Short press to start/pause cleaning.
Short press 3 times to activate/deactivate the child safety lock.

Robot indicator status

Steady white	Working/standby	Steady yellow	Network unavailable
Breathes white	Station working/starting	Breathes yellow	Resumable charging in progress
Flashes white	System upgrade/Video Manager/Restore defaults	Flashes yellow	Abnormal status
Off	Power off/DND time	The blue light is always on	Low power mode

Main Products

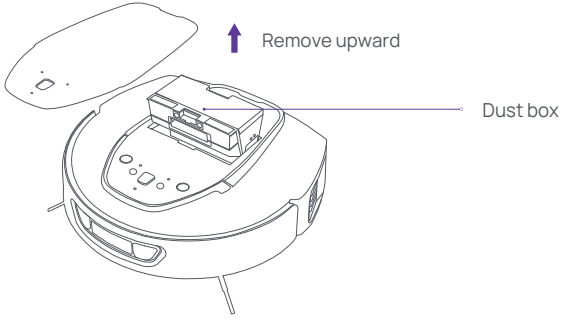
Interior view

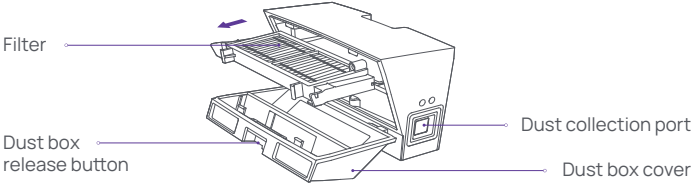


On/Off button	Networking button
Press and hold for 3 seconds to power on/off the robot	Press and hold for 3 seconds to manually bind the robot
Short press 3 times to confirm a password change for Video Manager	Short press 3 times to restore default settings
Press and hold the On/Off button and network configuration button for 3 seconds to enter low power mode	

Main Products

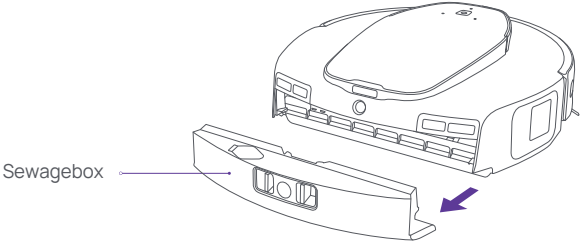
Dust box

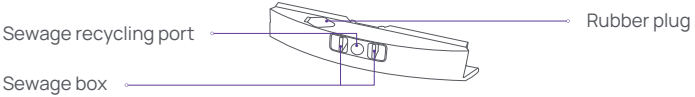


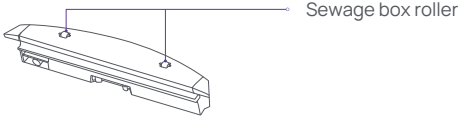


Tips:
- The dust box must be installed for daily use. Otherwise, the robot will not start.
- Please remove the dust box regularly. Rinse the filter and internal garbage with clean water.

Sewage box



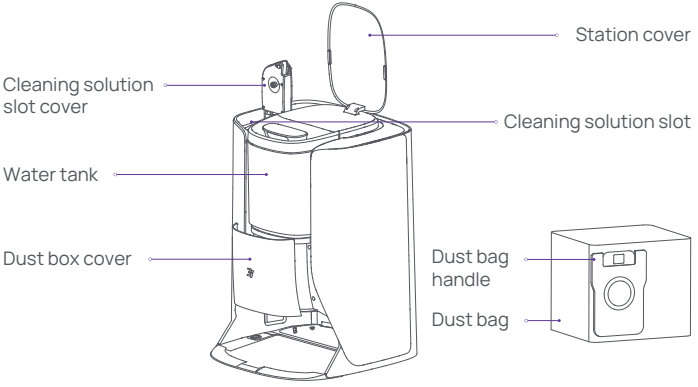


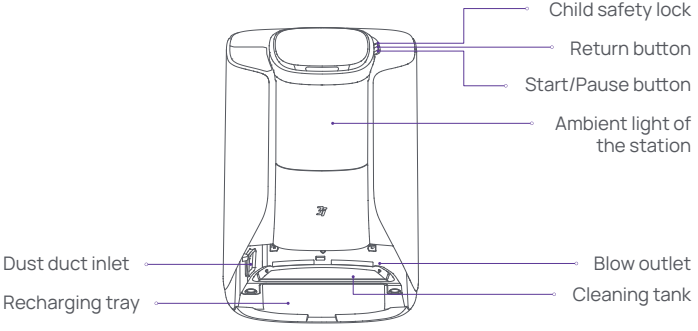


Tips:
- The sewage box must be placed and removed forward. Before moving or turning the robot, remove the sewage box to avoid water leakage into the main unit.
- The sewage box must be installed for daily use. Otherwise, the robot will not start.
- Periodically remove the sewage box and rinse with fresh water from the sewage recycling port.

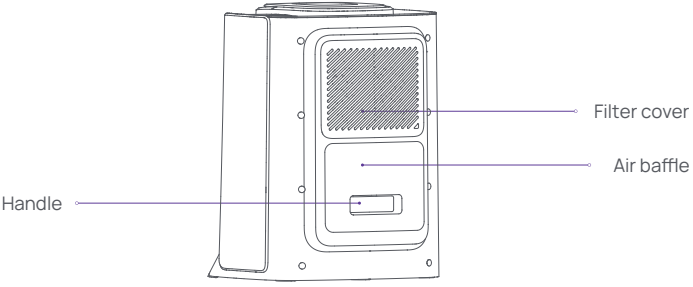
Main Products

Front view of the station

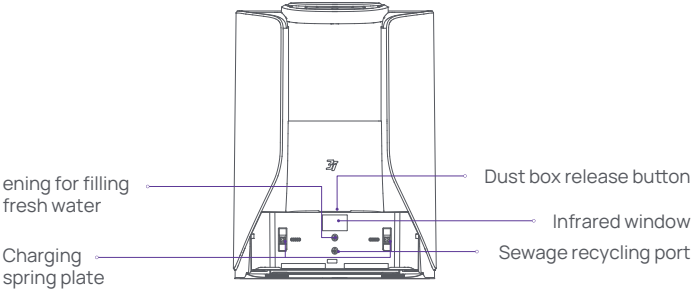




Back view of the station

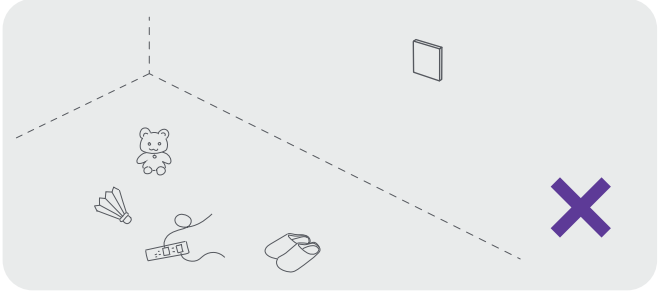


Interior view of the station

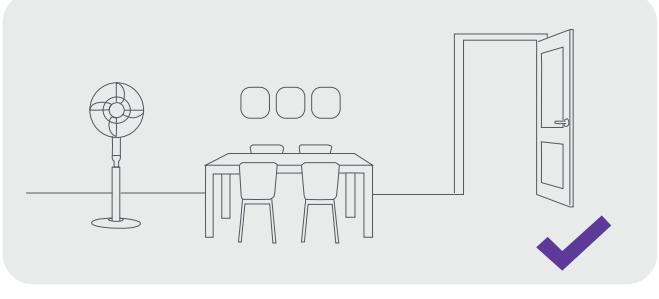


Preparation

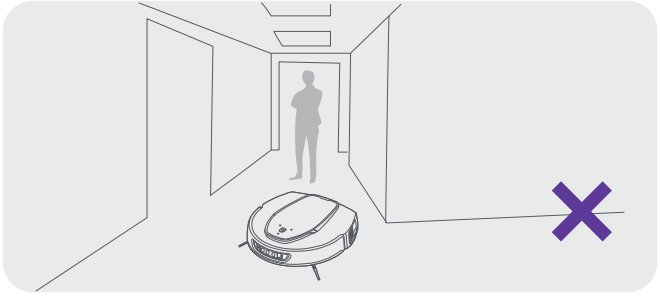
1. Before using the robot for the first time, tidy up any cables, rags, slippers, toys, and other sundries scattered on the floor.



2. Open the door of the area to be cleaned, and arrange the tables, chairs, and furniture neatly.

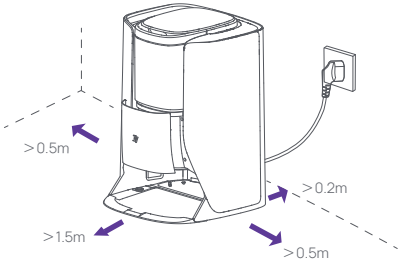


3. When the robot is working, do not stand in front of the robot, at the door-sill, or in narrow places in the aisle. Otherwise, the robot will fail to recognize the related place.



Initial use

1. Place the station against wall and connect power cord.



Tips:

・When moving the station, do not tilt it.

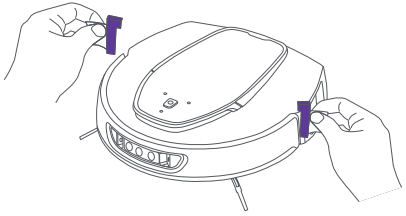
・Make sure that no objects are placed within 19.7inch on the left and right sides and 1.5 m in front of the station. There must be a distance of at least 7.9inch between the station and the wall.

・Before use, organize and put away the excess part of the power cord to avoid being dragged by the working robot. Otherwise, a power failure of the station may be caused.

・Before use, make sure that the water tank, cleaning solution, and dust bag are installed in place.

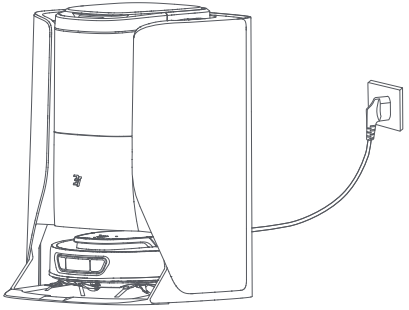
2. Remove the bumper strips

Before use, remove the bumper strips on both sides of the robot.



3. Charging

Align the robot with the charging spring plate on the bottom of the station and push it with the front camera facing outward.



Ambient light status of the station:

Steady white	Standby/Charging/Air drying
Breathes white	Dust collection/Water change/Cleaning
Breathes yellow	Abnormal status

Tips:

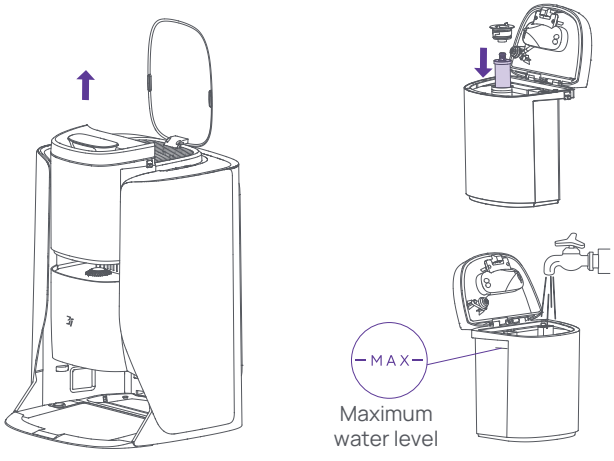
・When the robot is charged for the first time, it is recommended to fully charge it to protect performance of the battery.

・When the battery is low, the robot may fail to power on. You need to charge the robot in the station.

・The robot will power on automatically when connected to the station. It cannot be powered off during charging.

4. Install the carbon rod and add clean water

Open the station cover and take out the water tank. Install the carbon rod, add clean water below the maximum water level, place the tank in its position, and press it tightly.

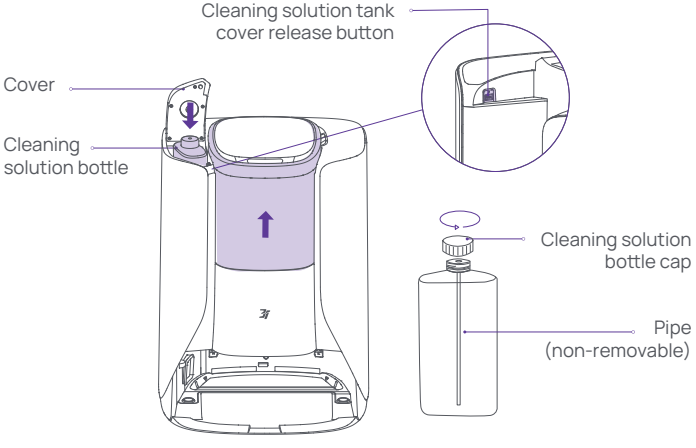


Tips:

- Do not inject hot water into the water tank. Otherwise, the water tank will be deformed.
- It is prohibited to add any cleaning products to the water tank.

5. Add the cleaning solution

Remove the water tank, and open the cleaning solution tank cover. Unscrew the cleaning solution bottle cap, and put the cleaning solution bottle into the special slot for the station. Press the slot cover downward to clamp the bottleneck.



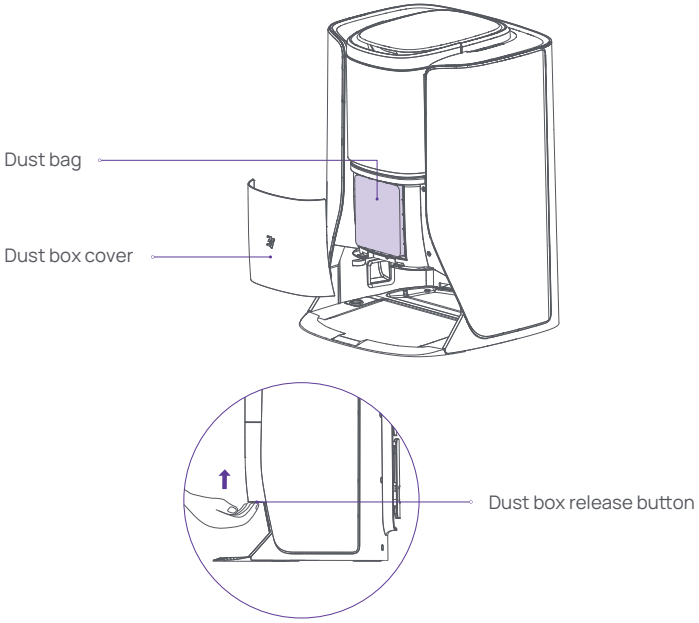
Tips:

- To avoid damaging the robot, do not use any unofficial cleaning solution or other cleaning products.
- The robot injects cleaning solution automatically. Do not manually add cleaning solution into the water tank.
- After the cleaning solution in the station is used up, add the designated cleaning solution in time to avoid affecting the cleaning effect.
- To open the cleaning solution tank cover, remove the water tank first and then press the cover release button on the side.

Initial use

6. Check the dust bag

Locate the dust box release button at the bottom of the dust box. Open the dust box cover and check if the dust bag has been installed.



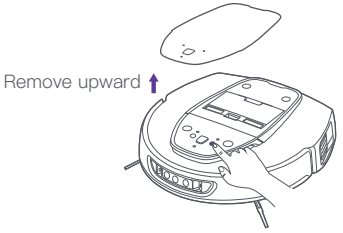
Tips:
Make sure the dust bag has been installed before use. Otherwise, the operation of the station will be affected.

Connecting to your mobile phone

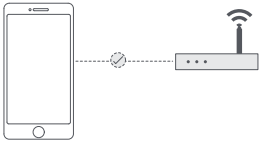
a. Scan the QR code below to download and install the app. Register an account and log in to the app with your account.

b. Configure the robot network

1. Press and hold the networking buttonfor 3 seconds. The robot will give a prompt indicating that the Wi-Fi will be reset to start the network configuration. Then, you can start to configure the network.



2. On the interface for adding a robot on the mobile app, add 3i Floor Washing Robot Vacuum S10Ultra, then select manual addition and connect to the Wi-Fi.



Functions

Power on/off

Press and hold the power-on button for 3 seconds. The indicator will be on and the robot will be powered on.
If the power is lower than 10% when the robot is outside the station, the robot will power off automatically.
When the robot is working, you can press and hold the power-on button for 3 seconds to power off the robot.

Tip: During charging, the robot will power on automatically and can not be powered off. If you need to power off the robot, move it out of the station first.

Start/Pause

You can short press the start button to start cleaning and short press it again to pause cleaning. When you press and hold the start button for 3 seconds, the robot will return to the station.

Map building

The first time you power on the robot, place it into the station and short press the start button on the station. The robot will start to build a map.
If there is no map in the app, place the robot in the station and select map building in the app. The robot will start to build a map. After the map is built, the robot will return to the station automatically.

Tip: During map building, keep the robot away from children and pets and do not move the robot or station.

Area-specific cleaning

Use the app to set the designated area. The robot will clean the designated area as instructed.

Overall automatic cleaning

In the app, select overall automatic cleaning. The robot will automatically plan the path, adjust the cleaning parameters (when AI recognition is enabled), and clean room by room. After cleaning is finished, the robot will return to the station.

Scheduled cleaning

You can set a scheduled cleaning task through the app. The robot will automatically start cleaning at the specified time and return to the station automatically after the cleaning is finished.

Tip: If the DND mode is enabled, the scheduled cleaning task will not be executed during the DND period.

Resumable cleaning

The robot supports resumable cleaning. When the battery is low during the cleaning process, the robot will automatically find the station for charging. After charging is finished, the robot will return to the interrupted point to continue cleaning.If you end the cleaning task manually during the charging process, the resumable cleaning will be canceled.

Functions

No-go area

You can set the no-go area through the app to prevent the robot from entering the area that doesn't need to be cleaned.

Tips:

・Before using this function, you need to save the map in the app.

・Moving the robot or significant changes in the home environment may cause the map to become invalid, resulting in the loss of the no-go area.

Return to station

If you press the return button in the app when the robot is powered on and outside the station, the robot will end the current task and return to the station.
If the robot is pulled out of the station forcibly during the charging process, the robot will return to the station automatically 35 seconds later.
When the power is too low during work, the robot will automatically return to the station for charging. When the power is sufficient, the robot will automatically return to the interrupted point to continue cleaning.
After finishing the cleaning task, the robot will automatically return to the station.

Dust collection

After the robot finishes the cleaning task and returns to the station, the station will automatically collect dust for the robot. If you press the return button in the app when the robot is working, the robot will automatically return to the station and trigger dust collection. When the robot is idle in the station, you can press the dust collection button in the app to trigger dust collection.

Tips:

・When the battery is too low and the robot returns to the station for charging, dust collection will not be performed. Dust collection will be triggered only when the task is finished.

・Dust collection will not be performed if you trigger the dust collection function too frequently through the app.

・In the DND period, the robot will not collect dust but will charge itself by default. You can change it on the "DND" interface in the app.

Rinsing

After finishing the cleaning task and returning to the station, the robot will carry out the rinsing task.

Tips:

・The robot will start rinsing only after the water change is completed.

・The rinsing task will be interrupted if the power supply of the station is disconnected, the robot leaves the station, the sewage box is full, or the water tank is not installed in place. You need to check before rinsing.

・In the DND period, the robot will not carry out the rinsing task but will charge itself by default.You can change it on the "DND" interface in the app.

・In the DND period, the robot will not carry out the rinsing task but will charge itself by default. You can disable it through the app.

Hot air drying

After finishing the cleaning task and returning to the station, the robot will carry out the hot air drying task.
Press the hot air drying button in the app to trigger the hot air drying function.

Tip: In the DND period, the robot will not carry out the air drying task but will charge itself by default.You can change it on the "DND" interface in the app.

Water purification and recycling

After the robot finishes the cleaning task and returns to the station, the station will automatically recycle the sewage in the robot and refill it with clean distilled water.The water recycling system purifies the sewage into sterile distilled water by distillation. At the same time, it collects water from the air by condensation to replenish the consumption. In this way, the station does not need to add clean water or empty sewage.

Functions

Distillation and disinfection

The distillation and disinfection system heats the sewage recovered to the station into slightly boiling water (90°C), which effectively kills H1N1 virus, Staphylococcus aureus, Candida albicans, Escherichia coli, and other germs.After the triple treatment of distillation and disinfection, silver ion sterilization module, and Unilever herbal cleaning solution, the sterile distilled water achieves a 99.9% degerming effect for floor mopping.

Carpet recognition

After recognizing the carpet during the cleaning process, the robot automatically enables suction enhancement. You can disable this function in the app. If you enable the carpet avoidance function in the app, the robot will automatically bypass the carpet.

Tip: The robot may misrecognize children's floor mats, yoga mats, sponge mats, and hard short-wool carpets, which, however, will not affect normal use.You can set the no-go area to prevent the robot from entering the area that doesn't need to be cleaned.

Cleaning along the edge

When the robot is cleaning the corners and legs of tables and chairs, the roller mop automatically expands to clean along the edges. After finishing cleaning along the edges, the roller mop automatically retracts. The roller mop also automatically retracts during obstacle avoidance when cleaning along the edges.

Resetting/Restoring the system

Short press the networking button 3 times to restore the default settings.

DND mode

In the DND period, the robot does not respond to resumable cleaning or scheduled cleaning and does not provide active voice announcements.The DND mode is enabled by default, and the default time period is from 10:00 pm to 8:00 am.You can disable and modify the DND mode through the app.

Tip: In the DND period, the indicator goes off after the robot has been charged for 1 minute.

Sleep

The robot will automatically enter the sleep state if it is not running or not operated for more than 5 minutes in the non-charging state. The robot will end the sleep state and automatically power off when the power is lower than 10%. You can wake up the robot by pressing buttons on the robot or station or through the app.

Tip: The robot will not enter the sleep state when it is in the station.

Maintenance

Robot

Accessory name	Recommended cleaning frequency	Recommended replacement frequency
Side brush	Once every month	Every 3-6 months
Roller mop	Once every month	Every 3 months
Main brush	Once every month	Every 6-12 months
Dust box filter	Clean as needed	Every 6-12 months
Sewage box	Once every month	/
Dust box	Once every month	/
Cliff sensor/Rear IR indicator for recharging	Once every month	/
Camera/Dual–wire laser	Once every month	/
Universal wheel	Clean as needed	/

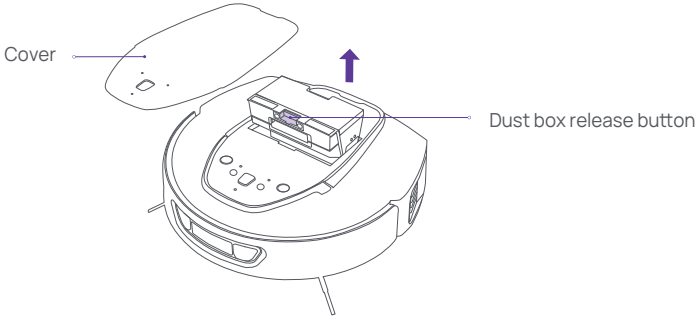
Base station

Accessory name	Recommended cleaning frequency	Recommended replacement frequency
Dust bag	Clean as needed	Replace as needed, typically every 2–3 months
Cleaning solution	/	Replace as needed, typically every 2–3 months
Station filter	Clean as needed	Over 2 years
Cleaning tank	Once every month	/

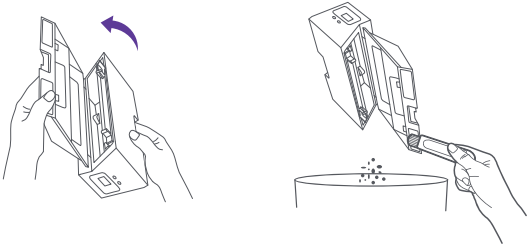
Maintenance

Dust box

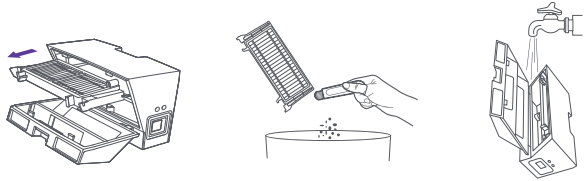
1. Open the robot cover. Press and hold the dust box release button to remove the dust box.



2. Open the dust box cover as shown in the figure. Dump the trash and clean the dust box with the cleaning brush.



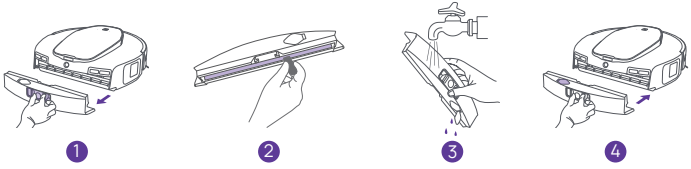
3. Remove the filter as shown in the figure. Clean the dust box and filter with the cleaning brush, rinse with water, and dry them. After that, install them in place.



Tips:It is recommended to clean the dust box thoroughly at least once every two weeks. Be sure to dry the dust box and filter before use.

Sewage box

1. Press and hold the sewage box release button to remove the sewage box.
2. Clean the sewage tank with a cleaning brush.
3. Rinse and dump the residual water in the sewage box.
4. Flatten the rubber plug and install the sewage box in place.



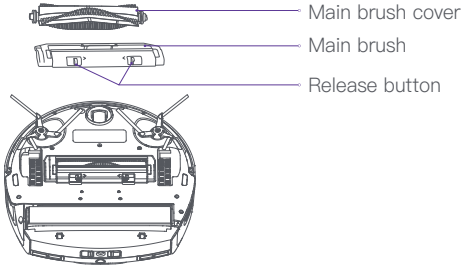
Tips:

- After mopping, take out the sewage tank and clean it in time to avoid odor and mold.
- The sewage box must be placed and removed forward. Before moving or turning the robot, remove the sewage box to avoid water leakage into the main unit.
- Clean the sewage tank regularly.

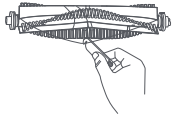
Maintenance

Main brush

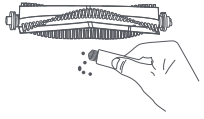
1. Turn the robot over, and press and hold both release buttons to remove the main brush cover.
2. Take out the main brush upward.
3. Use the blade on the cleaning brush to cut hairs tangled on the main brush and thoroughly clean the main brush.
4. Install the main brush and then the main brush cover. Press the main brush cover to install it in place.



Main brush cleaning method



Cut the hairs



Clear the dirt

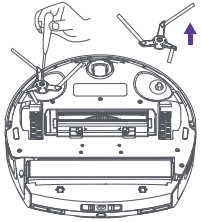
Tips:

・To ensure the cleaning effect, it is recommended to replace the main brush every 6-12 months.

・The sewage box must be placed and removed forward. Before moving or turning the robot, remove the sewage box to avoid water leakage into the main unit.

Side brush

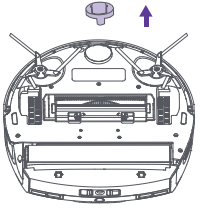
1. Turn the robot over and remove the side brush screws.
2. Remove and clean the side brush.
3. Install the side brush and tighten the screws.



Tips:To ensure the cleaning effect, it is recommended to replace the side brush every 3-6 months.

Universal wheel

1. Turn the robot over and pull the universal wheel upward.
2. Clear the hairs and dirt from the universal wheel.
3. Install the universal wheel in place.

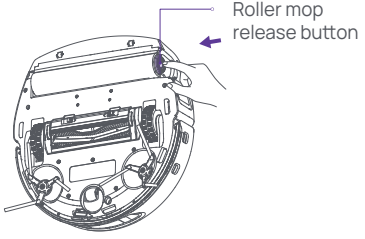


Maintenance

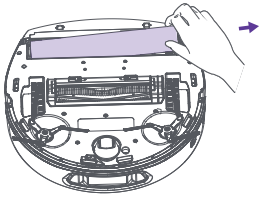
Roller mop

1. Turn the robot over, and press and hold the roller mop release button. Lift the roller mop upwards and pull it to the right to remove it.
2. Use the cleaning brush to clear the dirt from the roller mop, and then thoroughly rinse the roller mop.
3. Install the roller mop and press the roller mop release button to install it in place.

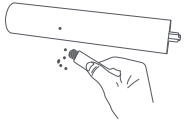
Roller mop removal procedure:



1

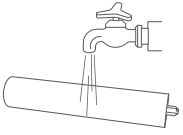


2



Clear the dirt

3



Cleaning the roller mop

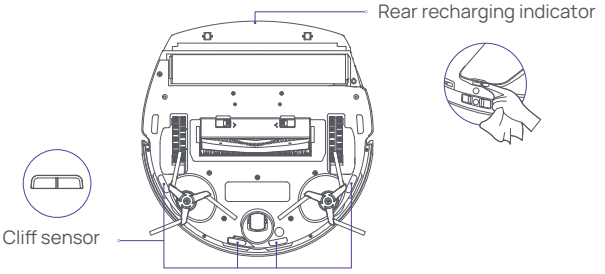
4

Tips:

- To ensure the mopping effect, it is recommended to replace the roller mop every 3 months.
- The sewage box must be placed and removed forward. Before moving or turning the robot, remove the sewage box to avoid water leakage into the main unit.

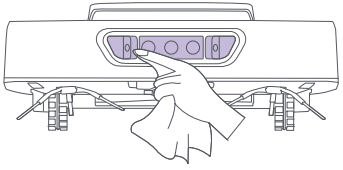
Cliff sensor/Rear recharging indicator

Clean the cliff sensor and rear recharging indicator regularly with a soft dry cloth.



Camera/Dual-wire laser

Clean the camera/dual-wire laser regularly with a soft dry cloth.



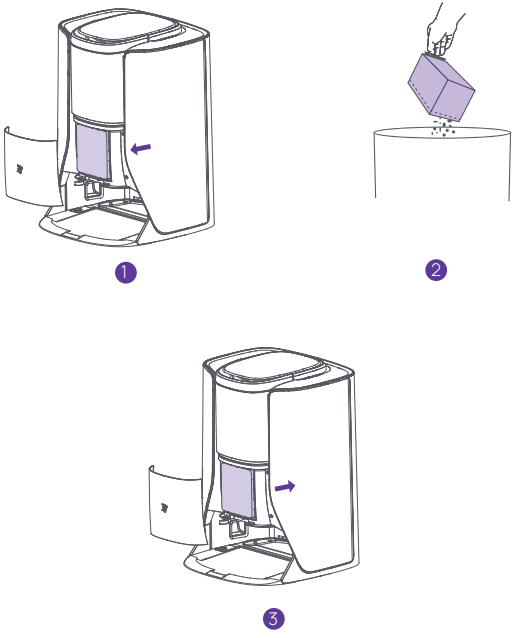
Tips:

- Do not use chemicals such as detergents or sprays to clean the camera/dual-wire laser.

Maintenance

Dust bag

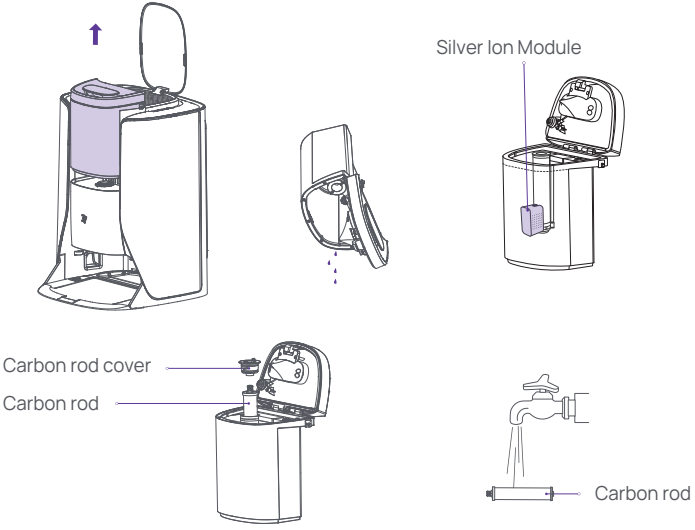
1. Open the dust box and remove the dust bag filled with trash.
2. Wipe the dust box with a rag and install a new dust bag.
3. Close the dust box.



Tips:To avoid affecting the effect of dust collection, replace the dust bag when it is full of trash.

Water tank

1. Open the cover of the station and take out the water tank.
2.Pour out the remaining water and pull out the filter tube in the water tank.
3. Pry open the filter cover and clean the filter cover and nylon mesh.
4. Take out the carbon rod and silver ions and rinse them thoroughly with water.
5. Re - install the filter tube, carbon rod, and silver ions, and then fill it with purified water.
6.Install the water tank back and close the cover of the base station.



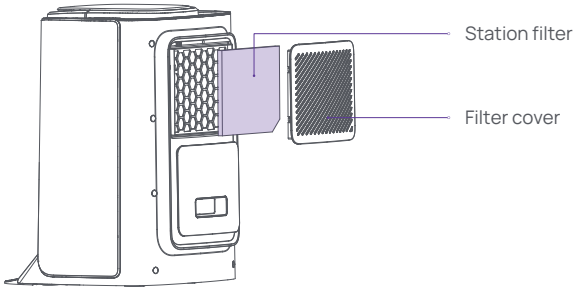
Tips:

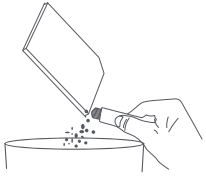
- It is recommended to clean the water tank and add clean water at least once every 2 weeks.
- It is recommended to replenish the cleaning solution of the specified brand when the cleaning solution at the station runs out.

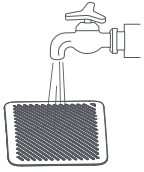
Maintenance

Station filter

1. Press and hold the filter cover release button to remove the station filter.
2. Clear the dust on the filter and filter cover.
3. Install the station filter and filter cover in place.







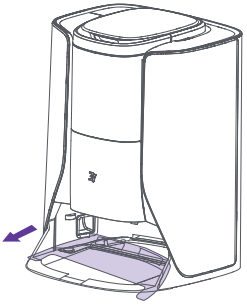
Tips:

・After cleaning the station filter regularly, be sure to dry the filter cover and the station filter before use.

・It is recommended to replace the station filter every 1-2 years.

Cleaning tank/Recharging tray

Remove the cleaning tank as shown in the figure. Clean the cleaning tank and charging tray to avoid odor and mold.



Tips:It is recommended to clean the cleaning tank and charging tray once a month.

FAQs

Symptom	Solution
Fails to power on	Battery power is low. Fully charge the battery before use.
Fails to start cleaning	Battery power is low. Fully charge the battery before use.
Fails to recharge	There are too many obstacles near the station. Place the station in an open area. The robot is too far away from the station. Place the robot near the station.
Abnormal behavior	Power off the robot and power it on again.
Abnormal noise during cleaning	The main brush, side brush or left/right wheels may be entangled with foreign objects. Power off the robot and clear the foreign objects.
The cleaning performance declines or dust falls from the robot.	The dust box is full. You need to clean the dust box. The filter is clogged. You need to clean the filter. The main brush is entangled with foreign objects. Remove the foreign objects from the main brush.
Robot is offline	The Wi-Fi signal is not good. Make sure the robot is in an area with a good Wi-Fi signal. The Wi-Fi is disconnected. Reset the Wi-Fi and download the latest app to try to connect again.
Fails to perform resumable cleaning	Verify that the robot is not in the DND mode. It cannot work in this mode. The robot will not perform resumable cleaning when you press the charging button on the robot or in the app or carry the robot back to the station.
Fails to charge	Make sure that there is enough space around the station, and that the surface of the charging spring plate is free of dust and coverings. The ambient temperature is too low (below 0°C) or too high (above 35°C).
Fails to perform scheduled cleaning	If the device network is not configured, the time cannot be synchronized and the scheduled cleaning will not be started. Verify that the robot is not in the DND mode. It cannot execute the scheduled cleaning in this mode.
The robot is always offline	Check that the device network is successfully configured and is always within Wi-Fi coverage.
Fails to connect to app	Make sure the station and the robot are within Wi-Fi coverage with a good signal. Reset the Wi-Fi according to the user manual before pairing.
Fails to clean the mop	The water tank of the station is short of water. Fill up the water tank with clean water. The clean water outlet is clogged. Unblock it as soon as possible.

Troubleshooting

Fault prompt	Solution
Verify that the laser ranging sensor is not blocked before starting the device	The laser ranging sensor is blocked or stuck by foreign objects. If you cannot remove the covering or foreign objects, move the robot to another position for startup.
Wipe the cliff sensor and move the robot to another position for startup	The robot is suspended in midair. Move the robot to another position for startup. Check whether the cliff sensor is too dirty. If yes, wipe the cliff sensor.
Place the robot on the floor for startup	Wheels are suspended in midair. Move the robot to another position for startup.
Clear the obstacles around the robot and retry	The robot may be stuck or trapped. Clear the obstacles around the robot.
Dust box has been removed	Install the dust box and filter in place.
Sewage box has been removed	The robot fails to perform the cleaning function. Check that the sewage box is installed.
No-go area detected. Please move the robot away from this area	The robot is in a no-go area. Move the robot away from this area.
Check and remove foreign objects from the collision sensor	The collision sensor is stuck. Tap the robot several times to remove the foreign matter. If there is no foreign matter, move the robot to another position for startup.

Fault prompt	Solution
Dust bag is full	Please check and replace the dust bag in time.
The water tank and sewage tank are full. Pour some water from the water tank	Check the water tank and pour some clean water to make sure it is below the maximum water level.
Water tank has been removed	The station cannot add water. Check whether the water tank is installed and fill it with clean water.
Failed to return to station. Please move the robot back to the station	The robot cannot detect the position of the station. Put the robot back to the station for charging.
The battery is too low. Please charge the battery	The robot cannot start normally due to the low battery. Charge the robot in the station.
Dust bag is not installed	The station cannot collect dust. Check that the dust bag is installed.
Positioning failed. Please move the robot back to the station for charging and rebuild the map	The robot cannot locate the current area. Move the robot back to the station for charging and rebuild the map.
Failed to build a map. Please rebuild the map	Rebuild the map. Do not move the station during the building process.
The target area is unreachable. Cleaning is not completed	The robot fails to reach the target area. Reset the target area.

Parameters of Floor Washing Robot Vacuum S10 Ultra

List of robot sensors

Name	Quantity	Function	Detection distance/ Working range
Single-photon radar	x1	Positioning and navigation	0.11 m to 8 m
IMU gyroscope	x1	Motion control	/
Accelerometer	x1	Speed control	/
200MP RGB	x1	Obstacle avoidance and AI recognition	1920*1080 pixels
Dual-wire laser	x1	Machine obstacle avoidance	5 cm to 50 cm
Ultrasonic module	x1	Carpet detection	3 cm±0.5 cm
Right edge infrared sensor	x2	Sensing along the wall	≤ 1.5 cm
Radar collision sensor	x2	Radar collision protection	/
Front collision sensor	x2	Body collision protection	/
Infrared floor detection	x6	Preventing falls from cliff	≤ 10 cm
Hall sensor for dust box presence detection	x1	Detecting dust box installation	≤ 1 cm
Hall sensor for sewage box presence detection	x1	Detecting sewage box installation	≤ 1 cm
Hall sensor for full sewage box detection	x1	Detecting full water of the sewage box	≤ 1.2 cm
Silicon microphone	x3	Voice interaction	≤ 5 cm

List of station sensors

Name	Quantity	Function	Detection distance/ Working range
Hall sensor for water tank presence detection	x1	Detecting water tank installation	‹ 1.9 cm
Hall sensor for detecting high and low water levels of water tank	x3	Dual detection of high water level and detection of low water level for clean water	‹ 1.9 cm
Hall sensor for detecting high water level of transit sewage tank	x1	Detecting full sewage	‹ 1.1 cm
Hall sensor for detecting high and low water level of transit water tank	x2	Detecting full water and lack of water in transit water tank	‹ 1.9 cm
Cleaning solution detection sensor	x1	Detecting the availability of cleaning solution in the pipe	/
Dust bag detection sensor	x1	Detecting dust bag installation	1.2 cm
Temperature and humidity sensor	x1	Detecting temperature and humidity of the external environment	0-100% RH/ -40°C to 125°C
Heat-resistant liquid level sensor	x1	Preventing water overflow when there is no water tank or water overflow during boiling when water level is too high	/
Main unit presence switch	x1	Preventing the device from filling water, pumping sewage, and collecting dust when the main unit is absent	/
Hall sensor for cleaning tray presence detection	x1	Preventing the absence of a cleaning tray	/
Sensor for detecting full water of cleaning tray	x1	Preventing leakage when the cleaning tray is full of water	/

Parameters of Floor Washing Robot Vacuum S10 Ultra

Robot

Name	Robot vacuum
Model	HOME-S10U
Dimension	367×360×109 mm
Working power	55 W
Working voltage	14.4 V ⎓
Battery capacity	5200 mAh
Net weight	5.6 kg
Wi-Fi	Wi-Fi IEEE 802.11b/g/n 2.4 GHz/5G RF 2.4G Bluetooth 4.2

Base station

Robot Vacuum Station	HOME-S10U
Rated frequency	50/60 Hz
Rated input power	850 W
Rated voltage	220V-240 V~
Rated Output 4	20V⎓1.5A
Refrigerant	R1234yf/ 0.080kg
Drying mode power	90W
Max.Allowable Pressure on High/Low Pressure	1.9Mpa/1.7Mpa
Net weight of station	21.7 kg
Station dimension	460×471×606 mm

WARNING:
For the purposes of recharging the battery, only use the detachable supply unit provided with this appliance.
This appliance contains batteries that are only replaceable by skilled persons.

WARNING:
Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater.
Do not pierce or burn.

Appliance shall be installed, operated and stored in a room with a floor area larger than 4 m^2.

Correct Disposal of this product
This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.

Checks to the area
Prior to beginning work on systems containing FLAMMABLE REFRIGERANTS,safety checks are necessary to ensure that the risk of ignition is minimised. For repair to the REFRIGERANTING SYSTEM, the following precaution shall be completed prior to conducting work on the system.

Work procedure
Work shall be undertaken under a controlled procedure so as to minimise the risk of a flammable gas or vapour being present while the work is being performed.

General work area

All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided.

Checking for presence of refrigerant

The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.

Presence of fire extinguisher

If any hot work is to be conducted on the refrigerating equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO2 fire extinguisher adjacent to the charging area.

No ignition sources

No person carrying out work in relation to a REFRIGERATING SYSTEM which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. “No Smoking” signs shall be displayed.

Ventilated area

Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

Checks to the refrigerating equipment

Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer’s maintenance and service guidelines shall be followed. If in doubt, consult the manufacturer’s technical department for assistance.
The following checks shall be applied to installations using FLAMMABLE REFRIGERANTS:

-The actual REFRIGERANT CHARGE is in accordance with the room size within which the refrigerant containing parts are installed;
-The ventilation machinery and outlets are operating adequately and are not obstructed;
-If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant;
-Marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected.
-The refrigerating pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

Checks to electrical devices

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment, so all parties are advised.
Initial safety checks shall include:
-The capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;
-The no live electrical components and wiring are exposed while charging, recovering or purging the system;
-There is continuity of earth bonding.

Repairs to sealed components

During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.
Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc.
Ensure that the apparatus is mounted securely.
Ensure that seals or sealing materials have not degraded to the point that they no longer serve the purpose of preventing the ingress of flammable atmospheres. Replacement parts shall be in accordance with the manufactur-

er's specifications.

Repair to intrinsically safe components

Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.
Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating.

Replace components only with parts specified by the manufacturer. Other parts may result in the ignition of refrigerant in the atmosphere from a leak.

Cabling

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

Detection of flammable refrigerants

Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.
The following leak detection methods are deemed acceptable for all refrigerant systems.
Electronic leak detectors may be used to detect refrigerant leaks but, in the case of
FLAMMABLE REFRIGERANTS, the sensitivity may not be adequate, or may need
re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.)
Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL
of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25% maximum) is confirmed.
Leak detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.
– bubble method,
– fluorescent method agents.
If a leak is suspected, all naked flames shall be removed/extinguished.

If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak. Removal of refrigerant shall be according to removal and evacuation.

Removal and evacuation

When breaking into the refrigerant circuit to make repairs – or for any other purpose conventional procedures shall be used. However, for flammable refrigerants it is important that best practice be followed, since flammability is a consideration. The following procedure shall be adhered to:
a) safely remove refrigerant following local and national regulations;
b) purge the circuit with inert gas;
c) evacuate;
d) purge with inert gas;
e) open the circuit by cutting or brazing.
The refrigerant charge shall be recovered into the correct recovery cylinders if venting is not allowed by local and national codes. For appliances containing flammable refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants. This process might need to be repeated several times.
Compressed air or oxygen shall not be used for purging refrigerant systems.
For appliances containing flammable refrigerants, refrigerants purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. When the final oxygen-free nitrogen charge is used, the system shall be vented down to atmospheric pressure to enable work to take place.
Ensure that the outlet for the vacuum pump is not close to any potential ignition sources and that ventilation is available.

Charging procedures

In addition to conventional charging procedures, the following requirements shall be followed.
-Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimise the amount of refrigerant contained in them.
-Cylinders shall be kept in an appropriate position according to the instructions.

-Ensure that the refrigerating system is earthed prior to charging the system with refrigerant.
-Label the system when charging is complete (if not already).
-Extreme care shall be taken not to overfill the refrigerating system.
Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak-tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

Decommissioning

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of recovered refrigerant. It is essential that electrical power is available before the task is commenced.
a)Become familiar with the equipment and its operation.
b)Isolate system electrically.
c)Before attempting the procedure, ensure that:
-mechanical handling equipment is available, if required, for handling refrigerant cylinders;
-all personal protective equipment is available and being used correctly;
the recovery process is supervised at all times by a competent person;
-the recovery equipment and cylinders conform to the appropriate standards.
d)Pump down refrigerant system, if possible.
e)If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
f)Make sure that cylinder is situated on the scales before recovery takes place.
g)Start the recovery machine and operate in accordance with instructions.
h)Do not overfill cylinders (no more than 80 % volume liquid charge).
i)Do not exceed the maximum working pressure of the cylinder, even temporarily.
j)When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
k)Recovered refrigerant shall not be charged into another refrigerating system unless it has been cleaned and checked.

Labelling

Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant. The label shall be

dated and signed. For appliances containing FLAMMABLE REFRIGERANTS, ensure that there are labels on the equipment stating the equipment contains FLAMMABLE REFRIGERANT.

Recovery

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.
When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i. e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.
The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of all appropriate refrigerants including, when applicable, FLAMMABLE REFRIGERANTS. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.
The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.
If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that FLAMMABLE REFRIGERANT does not remain within the lubricant. The evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safely.


This symbol shows that this appliance uses a flammable refrigerant.If the refrigerant is leaked and exposed to an external ignition sourcethere is a risk of fire.


This symbol shows that the operation manual should be readcarefully.


This symbol shows that a service personnel should be handling thisequipment with reference to the installation manual


This symbol shows that information is available such as the operating-manual or installation manual.