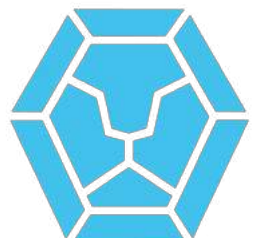


Quick Guide to **R3 VAC** **MAGIC MODE**



LIONSBOT
INTERNATIONAL

Thank you for purchasing the R3 Vac, a professional vacuum robot.



INTRODUCTION

<u>Introduction</u>	1	<u>For Future Maps</u>	15
Content Page.		Learn how to create a new map in the future	
<u>Checklist</u>	2	<u>Manual Cleaning</u>	16
Check through the parts of R3 Vac		Learn how to clean manually	
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Find out what R3 Vac can do.		Learn how to maintain R3 Vac	
<u>Debris Collection</u>	4	<u>Cleaning Settings</u>	21
Find out what R3 Vac can and cannot vacuum		Find out the optimal cleaning settings for different floor types	
<u>Obstacle Detection</u>	5	<u>Annex: Office</u>	22
Find out what R3 Vac can and cannot detect		Find out how to clean an office with a case study	
<u>Setting Up</u>	6	<u>Annex: Hotel</u>	24
Learn how to set up R3 Vac		Find out how to clean a hotel with a case study	
<u>Creating A Map</u>	8	<u>Annex: Consumables</u>	26
Learn how to create a cleaning map in 3 steps		List of consumables for reordering	

CHECKLIST

PACKAGING 1 | R3 VAC AND MAGICTAG

CONTAINS:



HEPA filter



Vacuum Hose



Side brushes (x2)



Main bristle brush



Microfiber roller brush

FLOOR TOOL

TO INSTALL:



Dust bag (6L)

TO SETUP:



MagicTag

PACKAGING 2 | CHARGING STATION



REQUIRE INSTALLATION:



AC power cord

SPECIFICATIONS

PATH WIDTH

R3 Vac can pass through a pathway of minimum **80cm**. (~31 inches)



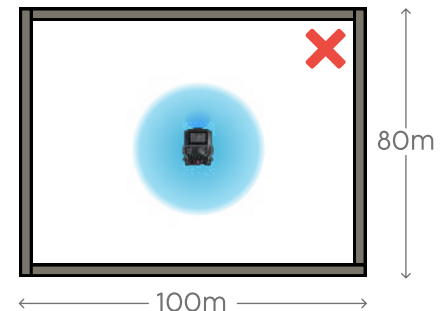
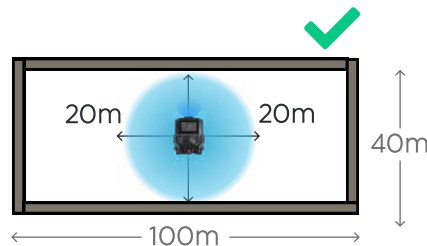
CLEANING UNDER TABLES

R3 Vac can move under tables of minimum height **70cm** (~27 inches), from ground to underneath of table.



OPERATING AREA

R3 Vac is capable of cleaning an area maximum **40m** (~131 ft) wide.



RUNTIME

Depending on the modes, R3 Vac can clean continuously for **2-3** hours per charge.

3.0hrs



ECO

2.5hrs



STANDARD

2.0hrs



MAX

OTHERS

Length **521 mm / 20.5 in**

Width **482 mm / 19 in**

Height **655 mm / 25.8 in**

Weight **53kg / 116.8 lbs**

Cleaning Width **350mm / 18.8 in** (w/o side brushes)
550mm / 21.7 in (with side brushes)

Efficiency **1000-2000m²** per charge depending on cleaning settings

MagicTag Lifespan **12-15 months** (estimated)

DEBRIS COLLECTION

✓ WHAT CAN BE VACUUMED



Paper bits **15mm x 15mm**
(~0.6 inches)



Condiments
eg. salt, pepper



Food crumbs



Hair and lint



Dust and dirt



Small wrappers

✗ WHAT CANNOT BE VACUUMED



Sharp objects



Plastic Bags



Magnetic objects*



Liquid spillage

For debris **> 4mm (~0.15 inches) in height**, R3 Vac's performance may be interfered.

For debris **< 4mm (~0.15 inches) in height** and **< 15mm (~0.6 inches) in length and width**, R3 Vac's performance is at its most optimal.

NOTE

- *Magnetic object may get stuck within vacuum hose.
- Do note that these are just rough guidelines and that R3 Vac's performance depends on the floor type as well as the cleaning mode used (Eco, Standard, Max).

OBSTACLE DETECTION

✓ WHAT CAN BE DETECTED

R3 Vac can detect obstacles that are > **5cm** (~2 inches) **in height**.

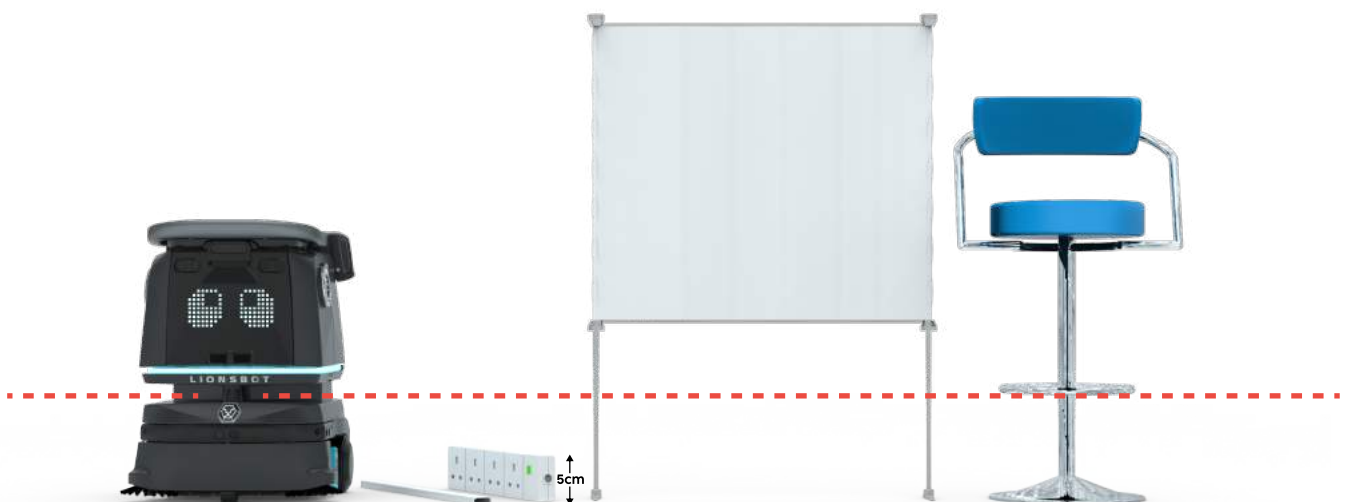
This includes objects like parcels or boxes, dustbins, canned drinks and office trolleys.



✗ WHAT CANNOT BE DETECTED

R3 Vac cannot detect obstacles that are < **5cm** (~2 inches) **in height** or have **thin supporting structures** (will appear as a dot on the map).

This includes cable trunking, extension cords, cables, and structures that have a central post with a flat base.



NOTE

- Do note that these are just rough guidelines and that R3 Vac's performance depends on environment.
- These examples are only limited to static objects, excluding dynamic objects like sudden movements.

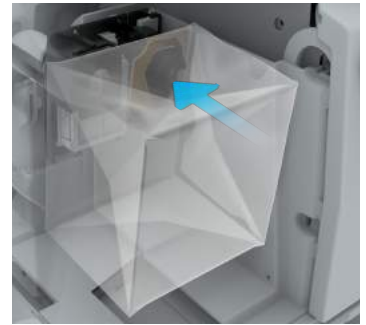
SETTING UP

1

INSTALL DUST BAG

Open the right door.

Fit dust bag fully into the dust outlet.

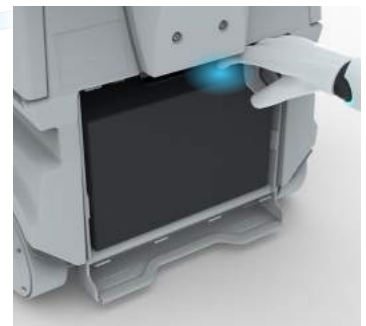


2

POWER ON BATTERY

Unclip battery cage behind R3 Vac.

Push button on the battery to switch on.



NOTE

This action is only required for certain batteries and if starting up R3 Vac **for the first time**.

3

POWER ON ROBOT

Insert the key into the key switch and turn to "ON". Click "Next" to continue **once R3 Vac is done setting up**.

Release E-stop if needed and press the reset button.



4

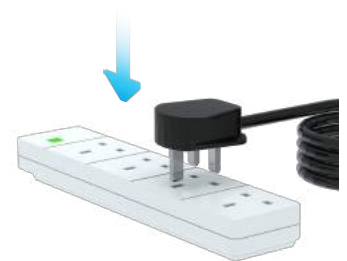
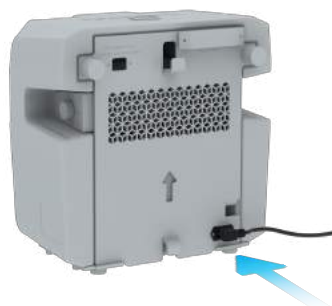
ATTACH AC POWER CORD

While R3 Vac is setting up,

Plug power cord to the bottom right socket at the back of the Charging Station.

Connect power cord provided to the nearest socket.

Power on.



NOTE

- This power cord must be plugged in to the Charging Station **at all times**.
- Charging Station must be placed against the wall, with cables tucked in behind.

SETTING UP

CHARGE ROBOT

R3 Vac must be switched on and set up.

5

Push R3 Vac to Charging Station. Align charging connectors of R3 Vac and Charging Station. Push until a “**click**” sound is heard.

Place handlebar down to start charging **until 100%**.

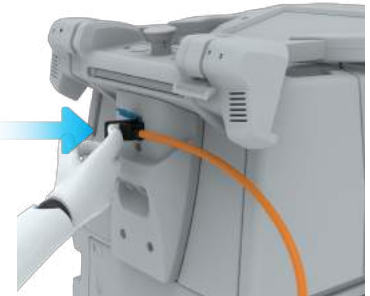


IF R3 VAC CANNOT BE SWITCHED ON

Unplug the charging cable behind the Charging Station.

Attach charging cable to the socket underneath the blue flap of R3 Vac to start charging.

Charge for **2 hours**.



NOTE

- Always attach the charging cable back to the Charging Station after use.
- This charging method is only when R3 Vac is **0%** and cannot be switched on at all.

After switching on the R3 Vac, please follow the onscreen instructions to complete the set up.

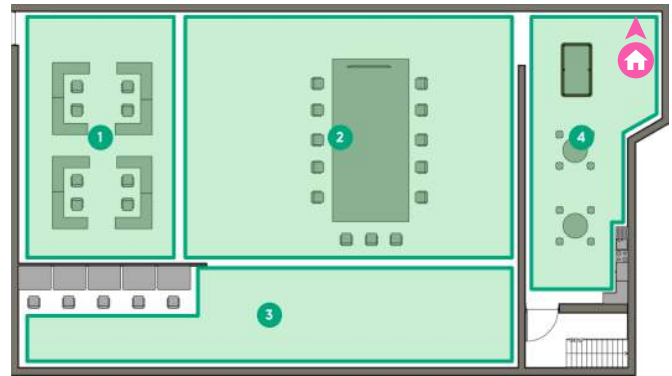
CREATING A MAP

OVERVIEW

This is an example of the cleaning map users should obtain at the end of this section.

Steps

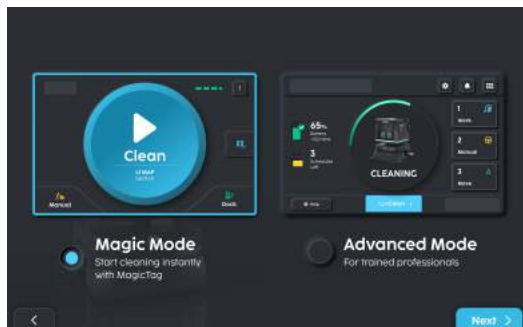
- 1 SET UP HOME POINT
- 2 CREATE CLEANING GROUP
- 3 RESTRICTED AREA (OPTIONAL)



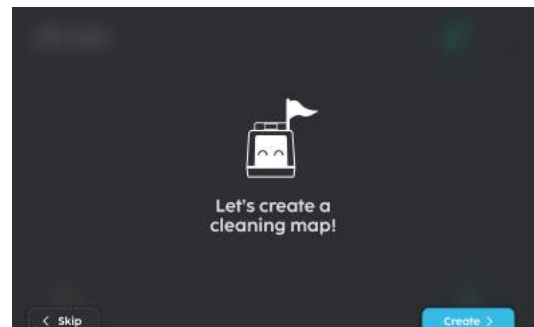
STEPS

After setting up R3 Vac,

SELECT MAGIC MODE



CLICK "CREATE"



1 SET UP HOME POINT PART 1



What is Home Point?

Each Map contains **one** Home Point.

Home Point is where R3 Vac start cleaning from and end cleaning at.



Do not set up both MagicTag and Charging Station in the same map.



OR



CREATING A MAP

1 | SET UP HOME POINT PART 2

FINDING A GOOD HOME POINT (SAME FOR MAGICTAG)



Near a corner with no obstacles within **50cm** (~19 inches).



At the ends of hallway or near a corner with minimal human traffic.



Not at pantry, near lifts, stairs, or cluttered area.



Not in the middle of hallway with heavy human traffic.

1.1 CHOOSE BETWEEN MAGICTAG OR CHARGING STATION

Once you have decided which device to setup with, bring it **near** R3 Vac to connect.



What is MagicTag?

Stores one cleaning map and acts as a Home Point within the map.

PREFERRED IF

- No electrical sockets near cleaning area.
- Little or no space to place a Charging Station.



What is Charging Station?

Allows user to charge R3 Vac.

Stores one cleaning map and acts as a Home Point within the map.

PREFERRED IF

- Wish to charge R3 Vac automatically after cleaning.
- Wish to set R3 Vac to run scheduled cleaning.

DEPLOYMENT PROCESS

1 | SET UP HOME POINT PART 3

1.2 SET UP HOME POINT

After successful detection, push R3 Vac to desired location for Home Point.

Please read through the requirements for the respective home device.

REQUIREMENTS TO SET UP CHARGING STATION

At desired location, ensure that Charging Station is:

- Placed against a wall.
- Cables are tucked in behind.

REQUIREMENTS TO SET UP MAGICTAG



- **Vertically on plain background.**
- Well-lit setting.

VS



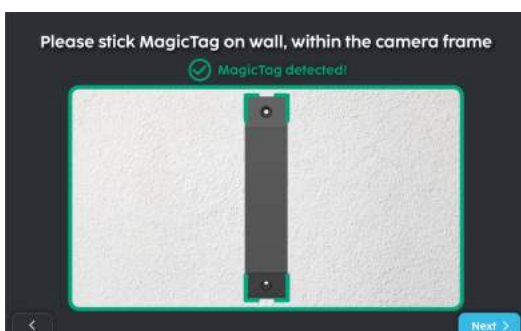
- **Not at an angle.**
- Not on glass, mirrors, or patterned surfaces.
- Not in a dimly-lit setting.

For the rest of the instructions on setting up Home Point, please refer to on-screen instructions.

NOTE

When setting up MagicTag, please stick MagicTag within the camera frame for R3 Vac to detect.

This screen is displayed if detection is successful.



TROUBLESHOOTING

If R3 Vac cannot detect MagicTag within the camera frame after a few tries, try moving R3 Vac further or nearer to the MagicTag or try a different wall background.

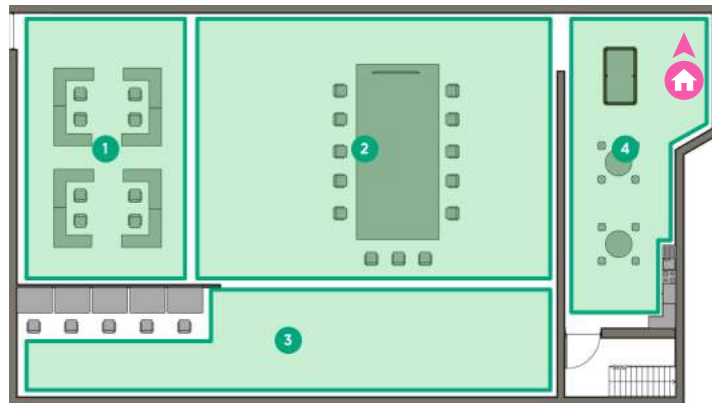
CREATING A MAP

2 | CREATE CLEANING GROUP PART 1

What is Cleaning Group?

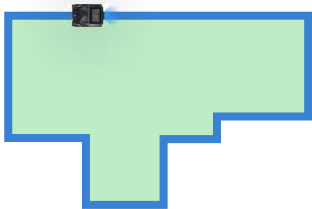
Each map has cleaning group(s). Each cleaning group has clean area(s).

To exclude certain areas, user can choose to create clean area 1, 2, 3 and 4 separately. These clean area(s) will be grouped into a single cleaning group at the end.



2.1 CHOOSE BETWEEN BOUNDARY OR ROUTE

Upon choosing between Boundary or Route to map clean area, bring R3 Vac to starting point of desired clean area.



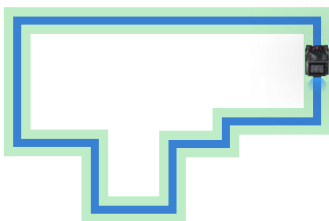
What is Boundary?

R3 Vac will clean the area within the boundary.

PREFERRED IF



- Cleaning large area with minimal obstacles within.



What is Route?

R3 Vac will clean the path along the route.

PREFERRED IF



- Cleaning tight or large areas with many obstacles within.

2.2 CREATE CLEAN AREA

After selection, push R3 Vac to desired clean area first.

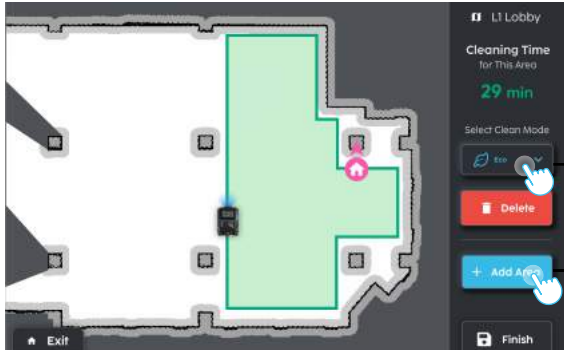
Press "Start" **before** pushing R3 Vac around to create boundary or route of clean area.

Press "Stop" once done.

CREATING A MAP

2 | CREATE CLEANING GROUP PART 2

2.3 AFTER CREATING A CLEANING AREA (WITH BOUNDARY)



2.3.1 Cleaning modes eg. Eco, Max and Standard, can be edited for each clean area.

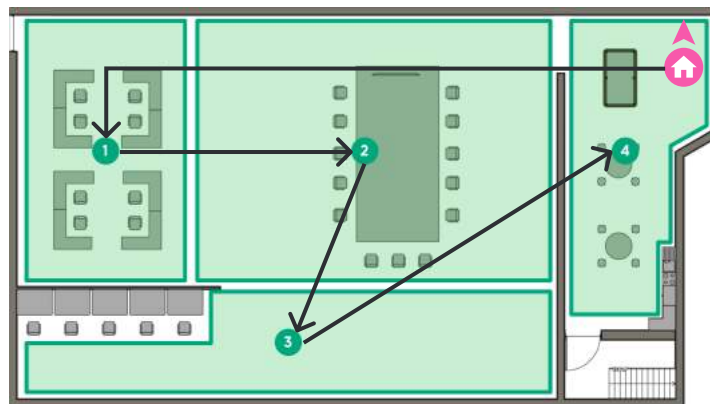
2.3.2 Setting up another clean area is possible. Same procedure applies.

2.4 NAME CLEANING GROUP

Name the finalised cleaning group for better reference for others in the future.

EXAMPLE ON HOW TO CREATE CLEANING GROUP

Using the previous diagram as an example,



1. Select boundary.
2. Push R3 Vac from Home Point to area 1.
3. Press "Start" and push R3 Vac around to create boundary of area 1.
4. Press "Stop" once done. Clean area 1 is complete.
5. Click "Add area" and push R3 Vac to area 2 now. Repeat for area 2, 3 and 4.

NOTE

- Switching between boundary and route is possible when creating clean area.
- **Only** press "Start" if R3 Vac is at desired clean area.

2.5 SAVE CLEANING GROUP

Push R3 Vac back to the Home Point to save the cleaning group that was just created.

CREATING A MAP

3 | RESTRICTED AREA PART 1 (OPTIONAL)

Skip if no restricted areas are required and proceed to subsection “[Cleaning](#)” to start cleaning.

What is Restricted Area?

R3 Vac will stay clear of restricted areas when cleaning.

It can either be an area that user do not wish to clean or obstacles that user wish R3 Vac will avoid.

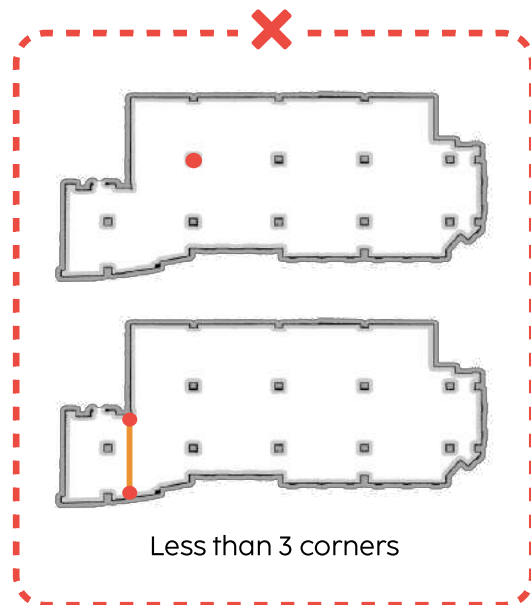
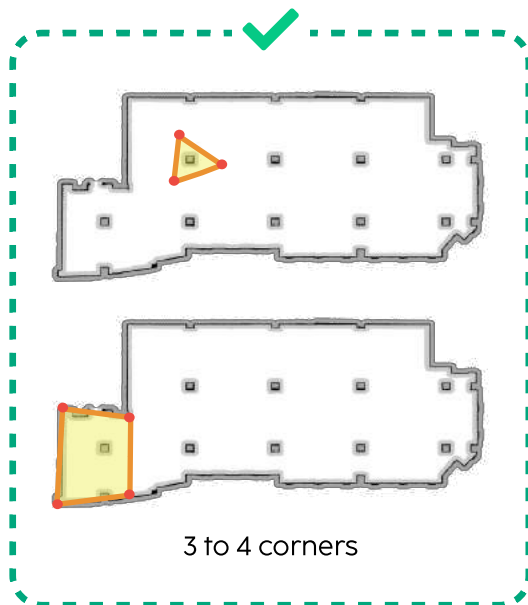
3.1 ADDING IN RESTRICTED AREA



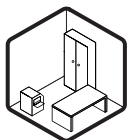
3.1.1 Select type of restricted area.

3.1.2 Tap **at least 3** corners to form a restricted area.
(Refer to example below for more information)

EXAMPLE OF A GOOD AND BAD RESTRICTED AREA



3.2 AREAS TO AVOID



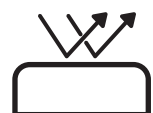
Dynamic layouts (e.g.
warehouse, factory)



Extreme temperatures
eg. rain, snow, sun



Flammable or
corrosive liquids



Strong reflections

CREATING A MAP

3 | RESTRICTED AREA PART 2 (OPTIONAL)

3.3 AREAS TO BEWARE OF



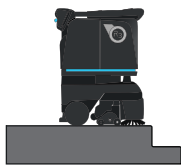
Cables, cable trunking



Carpets, doormats



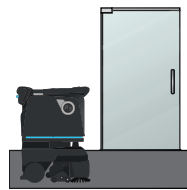
Puddles of water



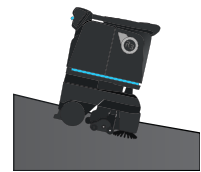
Stairs, escalators



Cliffs, ledges



Glass doors, mirrors



Slopes

NOTE

- Switching between types of restricted is possible when creating area of restriction.

CLEANING



INITIATE CLEANING

Push R3 Vac to Home Point.

Place handlebar down.

Click on “Clean”.



ROBOT CARE

After every cleaning,

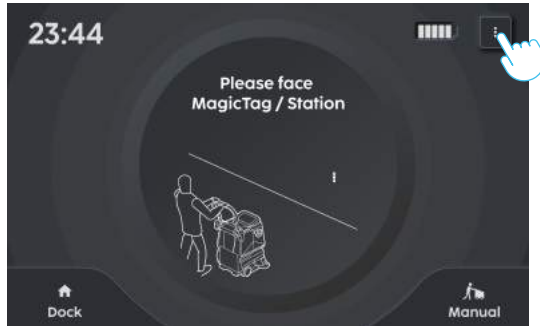
Click on “Robot Care” to watch videos on how to maintain R3 Vac daily.

FOR FUTURE MAPS

What is a map?

Map contains cleaning group. R3 Vac will clean this cleaning group stored within the map whenever it is brought to the Home Point.

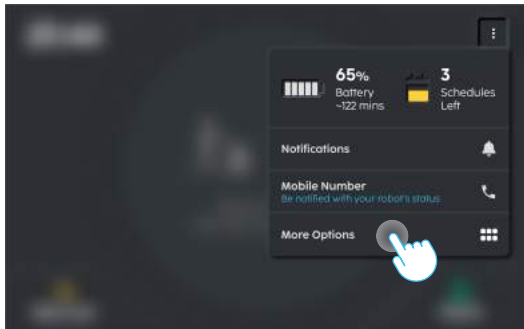
These are the steps to take if user decides to create **another** map in the future.



1

CLICK ON MENU BUTTON

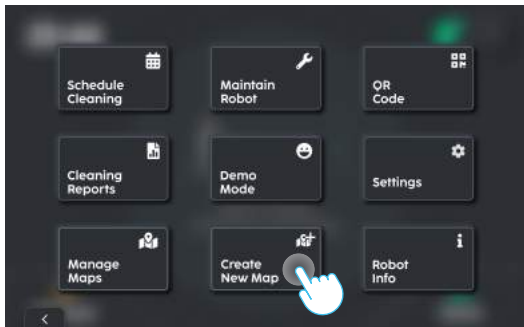
Located at the top right hand corner of the screen.



2

CLICK ON “MORE OPTIONS”

Otherwise, users can view notifications or add a number to be notified with R3 Vac's status.



3

CLICK ON “CREATE NEW MAP”

Refer to “[Deployment Process](#)” for more information.

NOTE

Creating a new map will **replace** the existing map if a map has been set up with MagicTag or Charging Station.

MANUAL CLEANING

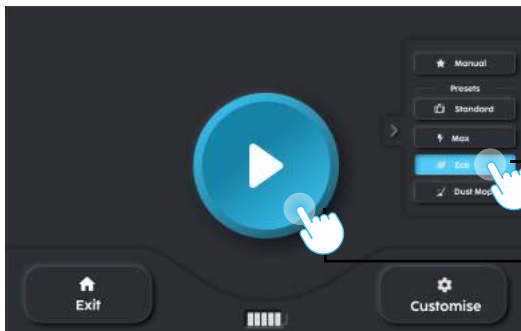
1 | CLICK ON MANUAL



1.1 While handlebar is **up**, click on “Manual”.

2 | MANUAL CLEANING

2.1 START MANUAL CLEAN



2.1.1 Select cleaning mode.

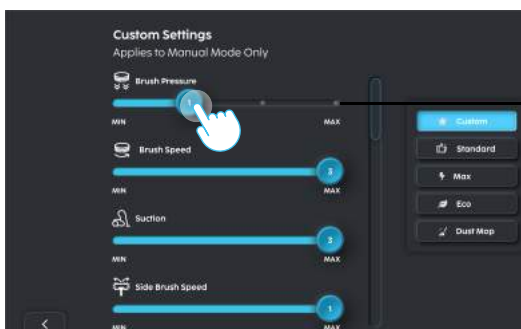
2.1.2 Click on the blue button to start.

2.2 CUSTOMISE CLEANING SETTINGS (OPTIONAL)

All roles can customise settings for custom mode, **only** admin and superadmin can customise for preset mode.



2.2.1 Customise the cleaning settings of selected mode.

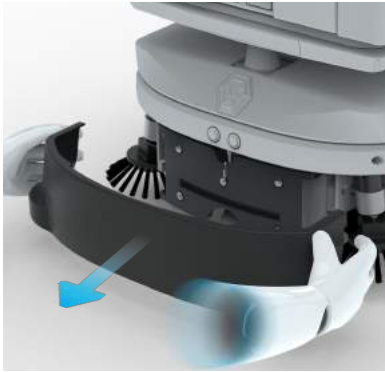


2.2.2 Drag to edit the intensity of cleaning setting.

MAINTENANCE

DAILY

1. CLEAN SIDE BRUSH

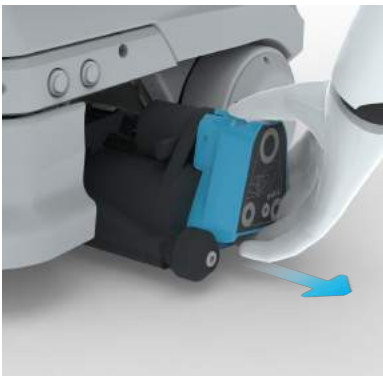


1.1 Remove bumper of robot.



1.2 Using a microfibre cloth, clean dirt within bristles of side brush.

2. CLEAN FLOOR TOOL



2.1 Push on button and pull out floortool.



2.2 Twist to unlock vacuum hose from floortool.



2.3 Click vacuum function under "[Robot Care](#)", clean dirt within brushes.

3. CHARGE ROBOT



3.1 Align charging connectors. Push until "click" sound is heard.



3.2 Place handlebar down.

MAINTENANCE

WEEKLY

1. REPLACE DUST BAG



1.1 Open the right door.



1.2 Check if dust bag is full.
If full, remove dust bag.



1.3 Hold new vacuum bag by the collar and install it.

2. CLEAN SENSORS



2.1 Using a microfibre cloth,
clean left camera sensor.

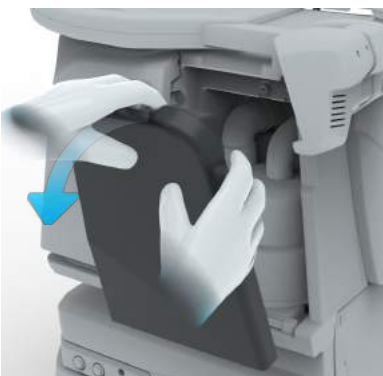


2.2 Using a microfibre cloth,
clean right camera sensor.



2.3 Using a microfibre cloth,
clean LIDAR sensor.

3. CHECK DUST INLET FOR CHOKAGE



3.1 Open the left door.



3.2 Pull out the dust inlet hose.

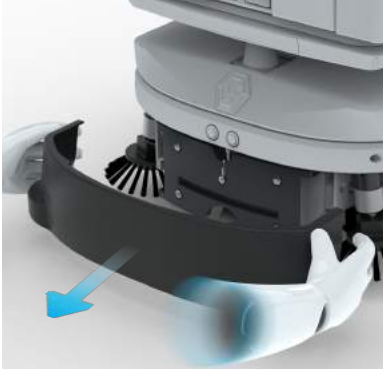


3.3 Using a microfibre cloth,
clean dirt within hose.

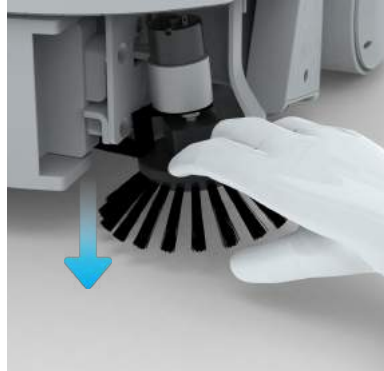
MAINTENANCE

EVERY 1-3 MONTHS

1. REPLACE SIDE BRUSHES



1.1 Remove bumper.

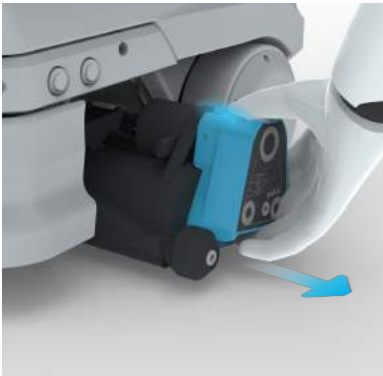


1.2 Push down side brushes to uninstall.



1.3 Align new side brushes and push up to install.

2. REPLACE MAIN BRISTLE BRUSH AND MICROFIBRE BRUSH



2.1 Push on button and pull out floortool.



2.2 Twist to unlock vacuum hose from floortool.



2.3 Remove brushes from floortool.



2.4 Align new bristle brush and push in to install.



2.5 Align new microfibre brush and push in to install.



2.6 Twist the end of microfibre brush to lock it.

MAINTENANCE

EVERY 3-6 MONTHS

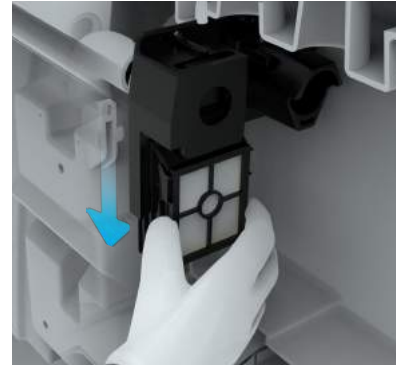
REPLACE HEPA FILTER



1 . Open right door.



2 . Remove vacuum bag.



3 . Replace HEPA filter by pulling it downwards.

PREVENTIVE CHECKS

CHECK WHEELS AND CASTER WHEEL



1 . Lie R3 Vac on its back.



2 . Using a microfibre cloth, clean dirt on R3 Vac's wheels and caster wheel.

NOTE

Please contact the technician if abnormal rattling sounds are heard from R3 Vac's motor.

CLEANING SETTINGS

 Eco
  Standard
  Max
 |
  Brush Pressure
  Brush Speed
  Vacuum Suction

Depending on the different floor types, the **optimal** cleaning settings for each cleaning mode is listed below.

HARD FLOOR





 2
 2
 1



✓

 2
 2
 2



 2
 3
 3

THICK CARPET





 1
 2
 1



✓

 1
 2
 2



 1
 3
 3

THIN CARPET





 3
 2
 1



✓

 3
 2
 2



 3
 3
 3

ANNEX: OFFICE

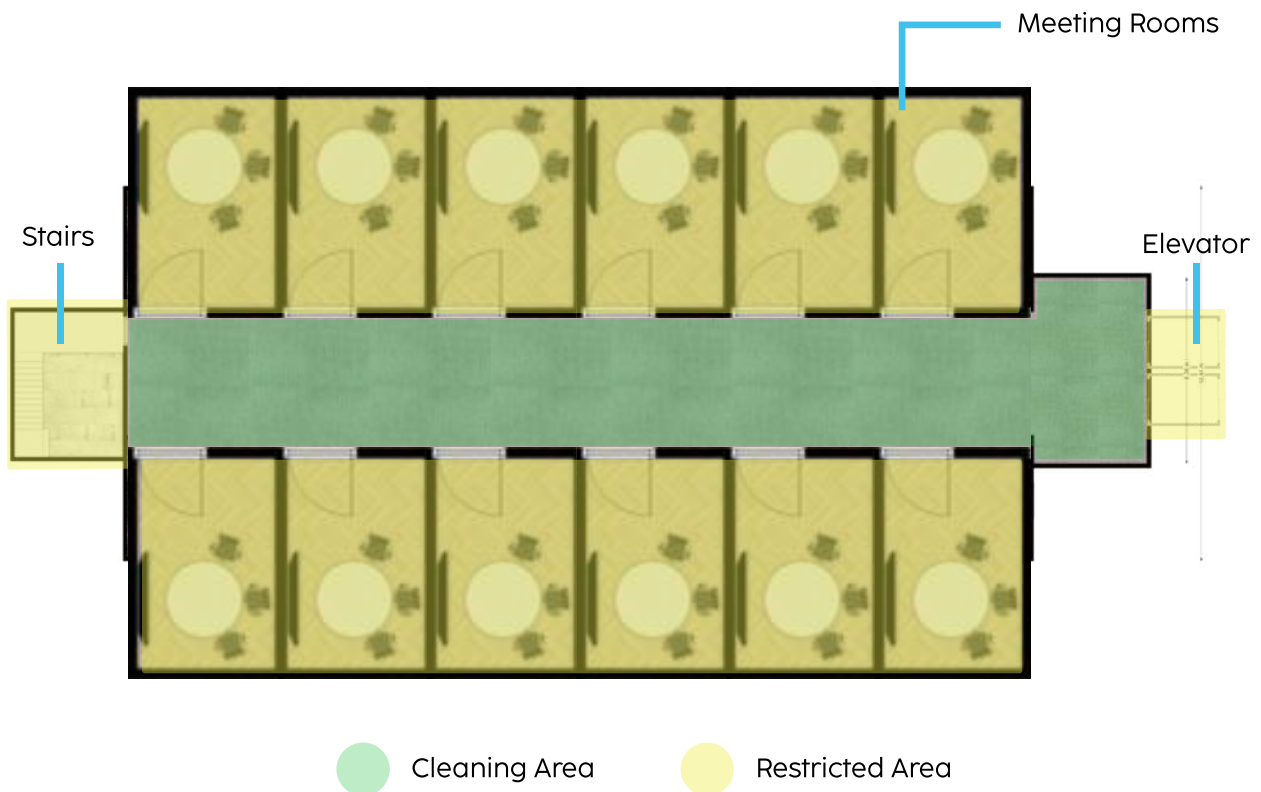
It is highly recommended to map clean area during **non-peak hours**, whereby human traffic is low. This is to minimise dynamic obstacles eg. people moving around, being mapped within clean areas.

Hallways

For best cleaning results, please avoid

- Obstacles like stairs and ramps.
- Areas with loose carpet.

Recommended to use **Boundary**



ANNEX: OFFICE

Pantry

For best cleaning results, please avoid

- Potted plants
- Single-legged table and chairs with thin support structure and wide base

Recommended to use **Route** for narrow areas near Tables & Chairs

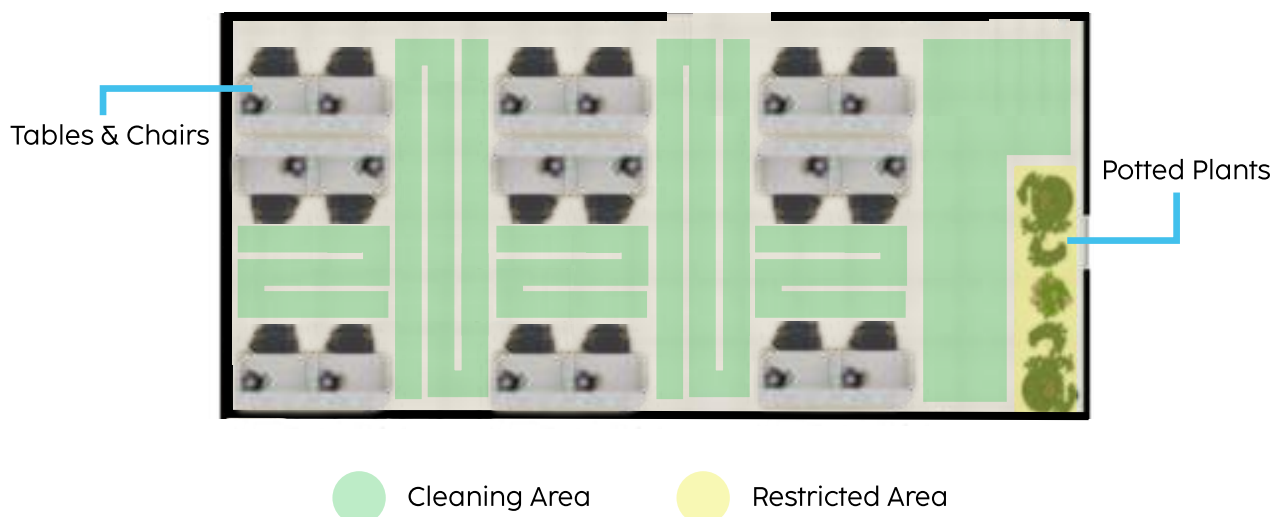


Workspace

For best cleaning results, please avoid

- Areas with loose cables, cable trunkings, extension cords.
- Structures eg. TV and boards with thin support structure

Recommended to use **Route** for narrow areas near Tables & Chairs



ANNEX: HOTEL

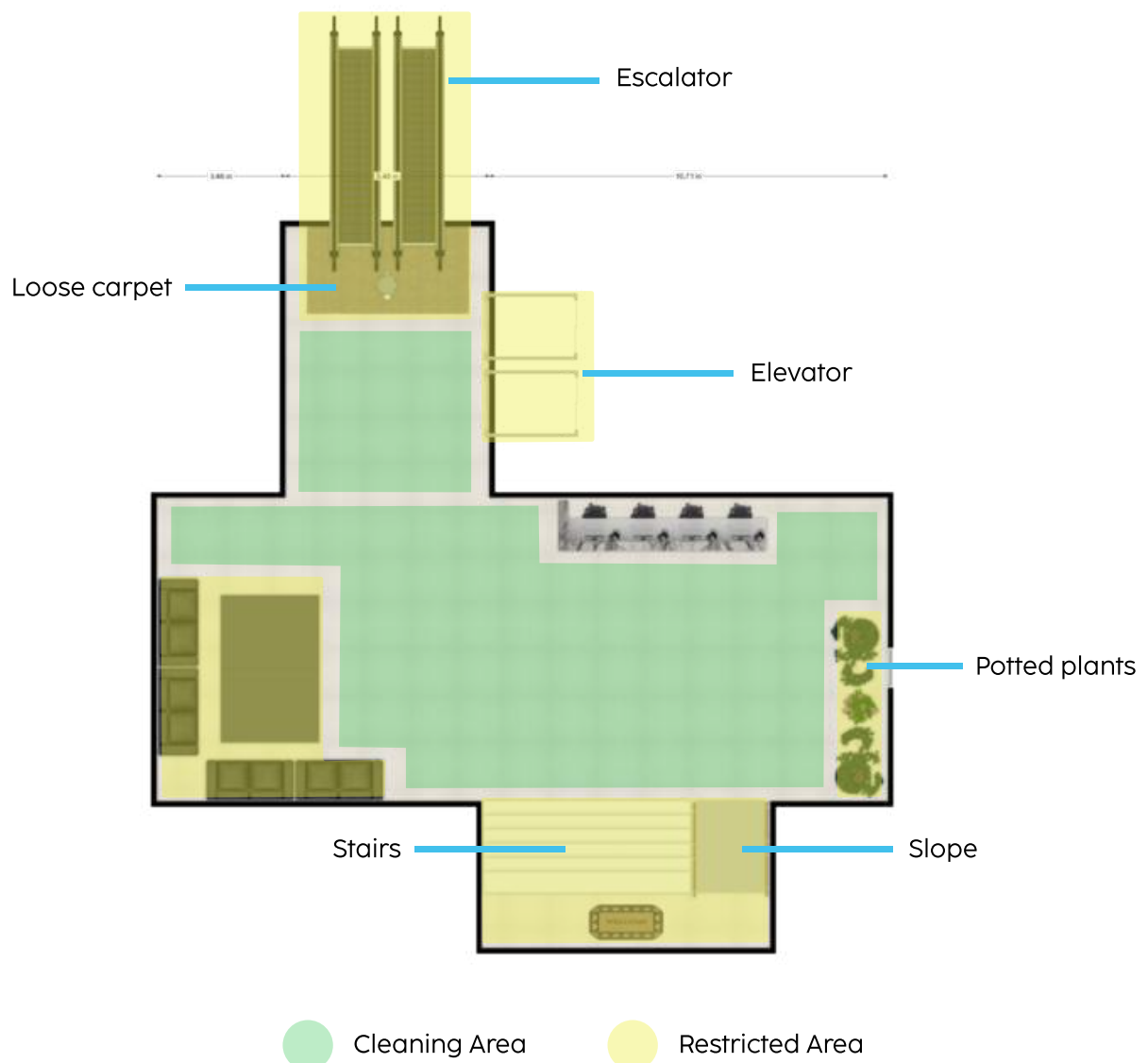
It is highly recommended to map clean area during **non-peak hours**, whereby human traffic is low.

This is to minimise dynamic obstacles eg. people queuing or moving around with or without luggage, being mapped within clean areas.

HOTEL LOBBY

For best cleaning results, please avoid

- Obstacles like stairs, escalators, slopes and elevators.
- Areas with loose carpet.
- Areas with loose cables, cable trunkings, extension cords.
- Structures eg. banners, potted plants.



ANNEX: HOTEL

HOTEL BALLROOM

For best cleaning results, please **clear all set-up** before every cleaning eg. tables, chairs and stage.

Also, please avoid

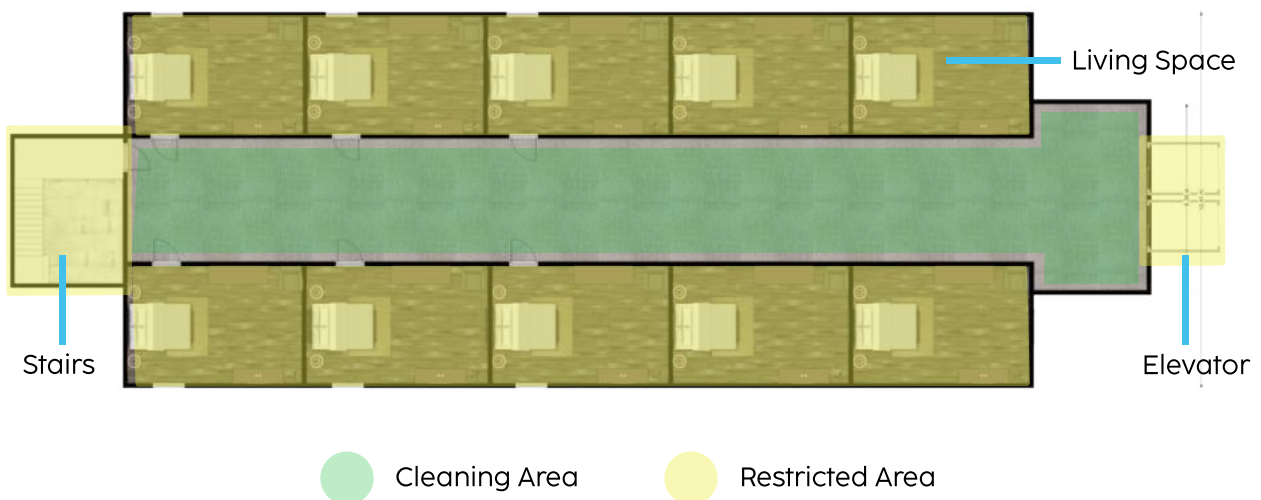
- Loose curtains.
- Structures eg. banners, potted plants.



HOTEL CORRIDORS

For best cleaning results, please avoid

- Obstacles like stairs, escalators, slopes, elevators.



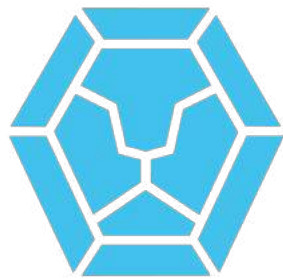
NOTE

It takes **0.5-2 hours** to clean an estimated floor area of **100-400 m²**.

Recommended to charge R3 Vac after cleaning **2-3 floors**.

ANNEX: CONSUMABLES

SPT-00007	10 x Side Brush	
SPT-00008	10 x Microfiber Roller Brush	
SPT-00009	10 x Main Bristle Brush	
SPT-00010	100 x Microfiber Dust Bag	
SPT-00011	10 x HEPA 13 Filter	
SPT-00012	10 x Vacuum Hose	
SPT-00013	10 x Microfiber Dust Bag 2 x HEPA 13 Filter	
SPT-00014	Vacuum Hose	
SPT-00015	2 x Microfiber Roller Brush 2 x Main Bristle Brush	2 x Side Brush 1 x PU Flap
SPT-00026	5 x MagicTag, Wall	
SPT-00027	5 x MagicTag, R3 Vac-CS	



LIONSBOT