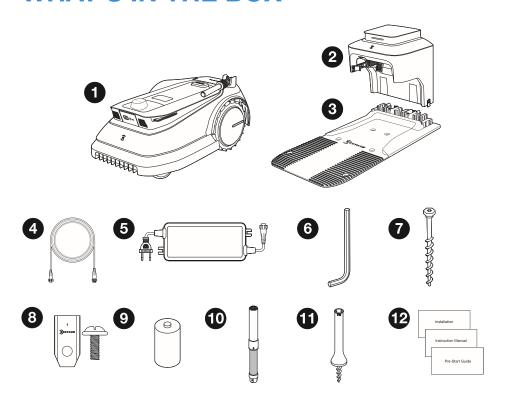




# Installation

InstallationE	N	I	P04
InstallationD	E	I	P36
InstallationF	R	I	P68
Instruction Manual			
Instruction Manual	N	I	P100
Betriebsanleitung	E	I	P124
Manuel d'utilisation F	R	ı	P148

# UNPACKING WHAT'S IN THE BOX

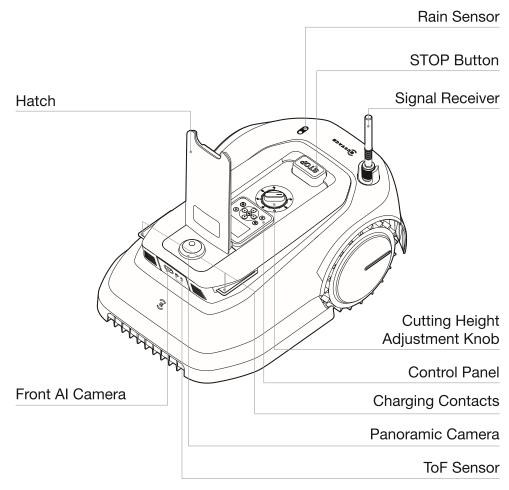


- 1 GOAT
- 3 Base
- **5** Power Supply
- 7 Peg ×8
- 9 Dry Cell ×6
- 11 Navigation-assisted Pole ×2

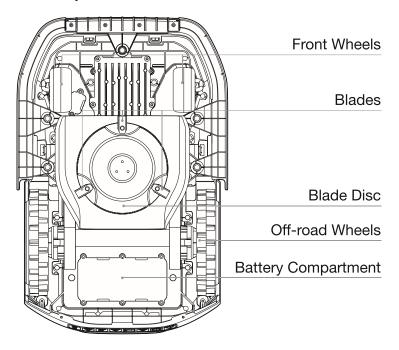
- 2 Pile
- 4 Extension Cable
- 6 Hex Key
- 8 Spare Blade Kit ×9
- 10 Beacon ×2
- 12 Installation, Instruction
  Manual and Pre-Start Guide

# GETTING FAMILIAR WITH YOUR GOAT PRODUCT DIAGRAM

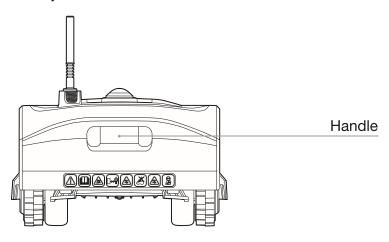
**GOAT (Top View)** 



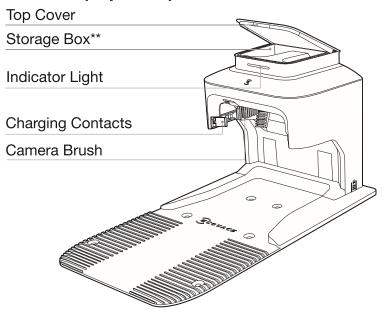
## **GOAT (Bottom View)**



# **GOAT (Back View)**

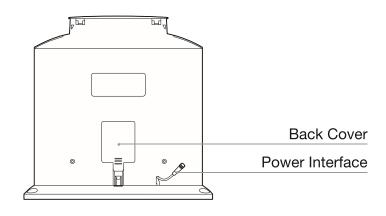


#### Station\* (Top View)



- \* Station is composed of the Pile and the Base.
- \*\* You can put the Spare Blade Kits and Panoramic Camera cover into the Storage Box.

#### **Station (Back View)**

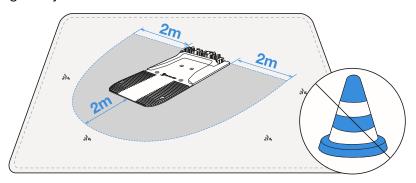


#### **INSTALLATION**

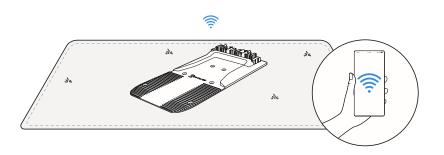
Before use, here are some steps you need to complete. Please follow the instructions below to install the Station.

# 1 Assemble the Station

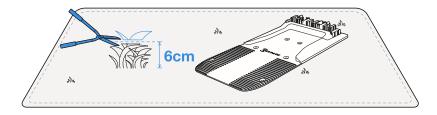
- 1. Place the Station on an open and flat lawn with no slope or rock. Ensure that there are no objects (e.g. trees, balls or houses) within 2 m on left and right, and 2 m in front of the Station.
- GOAT can still guard your property with the Panoramic Camera when charging in the Station. For a better guarding result, please try to guarantee that there is a broad view in front so that your GOAT can better guard your lawn.



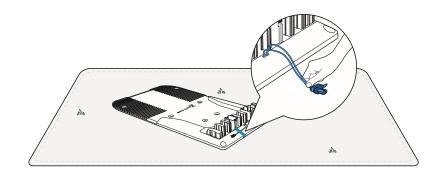
2. If you want to remotely control your GOAT, put the Station as close as possible to a place with strong Wi-Fi signal.



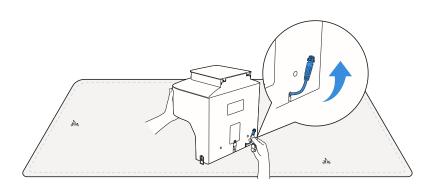
3. Make sure that the grass around the Station is no longer than 6 cm. Overgrown grass may affect the recharging.



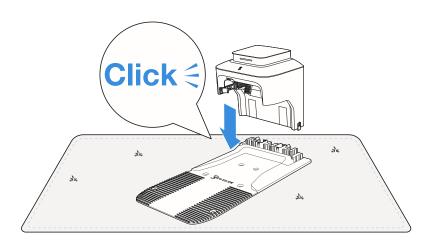
4. Remove the sticker. Put the Base connector outward in case it is squeezed during the operation.



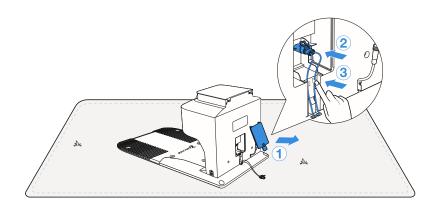
5. Pull out the Power Interface and stick it into slot.



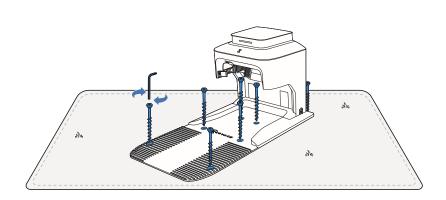
6. Insert the Pile into the Base until you hear a "click".



7. Remove the Back Cover. Insert the Base connector into the Pile connector until you hear a "click". Then, gently put the cable into slot as shown in the picture and close the cover.

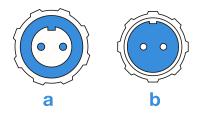


8. Fix the Station to the ground in the selected area with Pegs, using the supplied Hex Key.



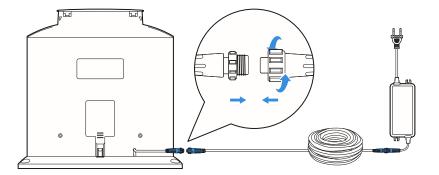
# **2** Connect the Power Interface with the Power Supply

1. Align the notch (a) with the groove (b).



2. Screw the nut until they are locked into each other.

**Note:** You can choose to use the Extension Cable by connecting it to Power Interface if needed.

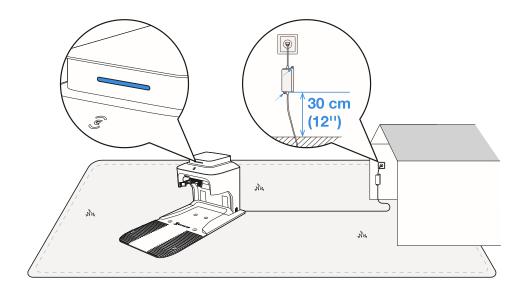


#### **3** Plug into the Power Outlet and Charge up GOAT

1. The Indicator Light on the Station will be solid blue if all connections are correct. If there is something wrong with the connection, it will be red.

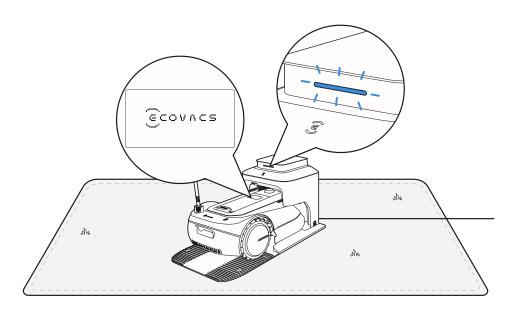
Note: Keep the Power Supply at least 30 cm/12" above the ground.

**Note:** When Indicator Light is red, it may look pinkish if you observe the Station from a front view under the strong sunlight.



- 2. Remove the foam from the Signal Receiver. Pull the nut towards the head of GOAT, lift the Signal Receiver up and turn the nut clockwise to tighten. Take off the Panoramic Camera cover and put it into Storage Box.

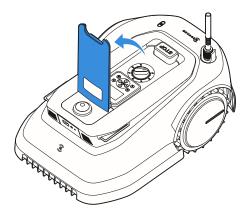
3. Put GOAT on charge. Make sure that the charging contacts of GOAT have completely connected to those of the Station. The Indicator Light on the Station will blink blue and GOAT will be powered on automatically.



# LET'S START EXPERIENCING! CONNECT YOUR GOAT WITH APP

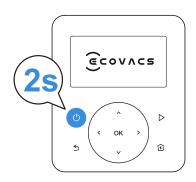
#### **Preparation:**

- 1 Make sure that your GOAT has been powered on. If not, please take the following actions:
- 1. Open the Hatch.



2. Press and hold (1) for 2s on GOAT until the display lights up.

Note: Your GOAT will be automatically powered on when it docks with the Station.



#### Set the Language

Press  $\wedge$  or  $\vee$  to select the language you prefer and then press **OK** to confirm.





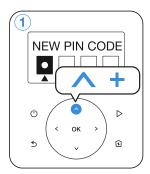


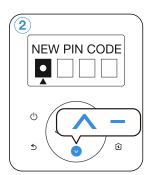
#### **3** Set the PIN code

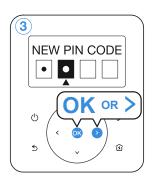
There is no default PIN code. Please follow the instructions and set your PIN code.

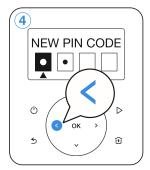
1. Press  $\land$  or  $\checkmark$  to choose the number you prefer (0-9). Press OK or  $\gt$  to set the next number. Use the same method to complete the rest numbers. During the process, you can press  $\lt$  or  $\gt$  to modify the number you have already set.

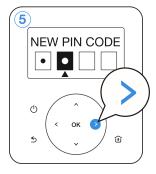
**Note:** If your PIN code is set to be "0000", the display will show "Too simple, please reset!". Please press **OK** to reset the PIN code.

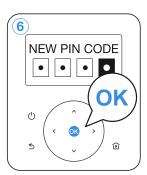






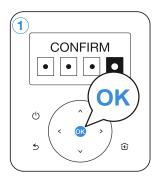


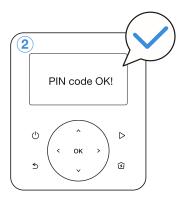




2. Re-enter the PIN code you just set on by following step 1. Then, the display will show "PIN code OK!".

**Note:** If the PIN code you enter on CONFIRM page is inconsistent with the one you set before, the display will show "PIN codes do not match!". Please press **OK** to re-enter your PIN code.





#### **4** Download ECOVACS HOME App

Before you start, make sure that:

- Your mobile phone is connected to a Wi-Fi network.
- The 2.4GHz band wireless signal is enabled on your router.

**Note:** After installing ECOVACS HOME App, please complete the registration and login.



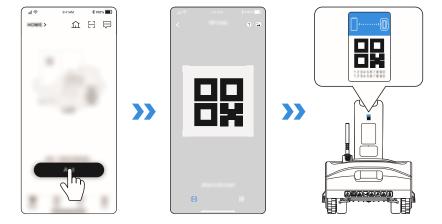


#### **5** Connect GOAT to the Internet

#### 1. Bluetooth Connection

- Scan the QR Code on the GOAT or select GOAT manually via the App.
- Turn on Bluetooth on your phone to connect your GOAT.
- \* on the display will light up after successful connection.

**Note:** Ensure your phone has Bluetooth function and your GOAT is within the connectable distance (10 m).



#### 2. Wi-Fi Connection

- Make sure your GOAT and your phone are in the same router environment.
- Follow the instructions in the App to complete the connection.
- on the display will light up after successful connection.

Note: Please use a 2.4GHz network.

• You also can purchase the additional Connection Module so that GOAT can be connected even without Wi-Fi.



#### **How to unbind your GOAT?**

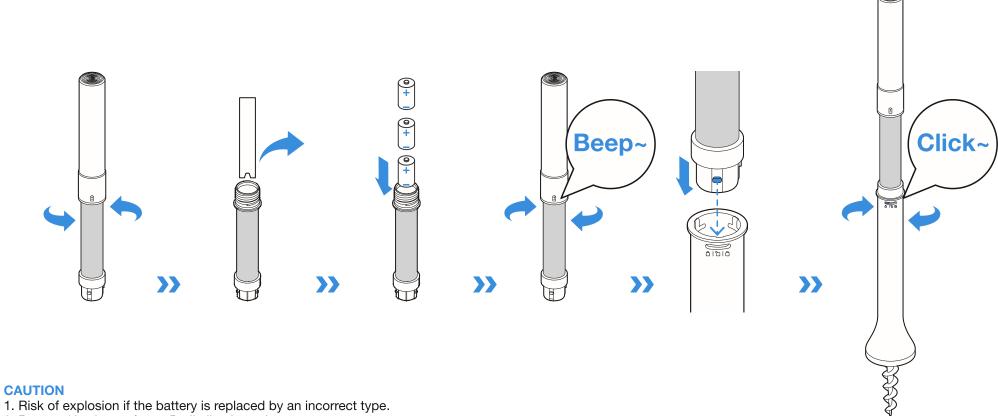
Allowing binding to one App account currently, your GOAT is unable to be bound to another App account before unbinding. You can unbind your GOAT in the App. Feel assured to take this operation which would not erase the working data such as schedules of your GOAT. You also can cancel the account in *Mine->Settings->Account and security->Cancel Account->Confirmation cancellation* via the App.

### INSTALL THE NAVIGATION BEACON

Note: Navigation Beacon is composed of the Beacon and the Navigation-assisted Pole.

#### **1** Assemble the Navigation Beacon

- 1. Disassemble the Beacon by turning the upper Beacon counterclockwise.
- 2. Please remove the protection materials inside the Beacons and then install the Dry Cells.
- 3. Pay attention to the correct match of positive and negative polarity.
- 4. Assemble the Beacon by turning the upper Beacon clockwise. You will hear the sound of "beep" if the Beacon is correctly connected.
- 5. Insert the Beacon into the Navigation-assisted Pole by aligning projections on the Beacon with grooves of the Navigation-assisted Pole.
- 6. Turn Beacon clockwise until you hear a "click".



#### **CAUTION**

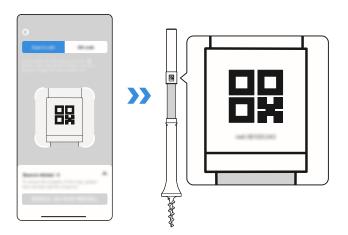
- 2. Powered by 3pcs of type D alkaline batteries.

#### Bind the Navigation Beacon to GOAT

Scan the QR code or input the passkey on the Navigation Beacon to add your beacon via the App. Then you will hear a sound of "beep" if the Navigation Beacon is successfully bound.

Please make sure when you try to bind the Navigation Beacon:

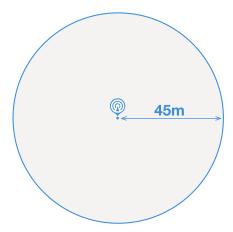
- Keep the Navigation Beacon near GOAT (within 1 m) when operating.
- DO NOT lay it on the ground.
- DO NOT hold the upper Beacon.
- Make sure that the Signal Receiver on GOAT is lifted up.
- Up to 10 Navigation Beacons can be bound to one GOAT.
- Put the Navigation Beacon to be unbound near your GOAT and unbind it in the App. If not, you cannot unbind the Navigation Beacon thoroughly. The binding relationship still exists even if you remove the Navigation Beacon from App by force. By the way, the Navigation Beacon removed by force can be rebound to the current GOAT and unable to be bound to other GOAT.



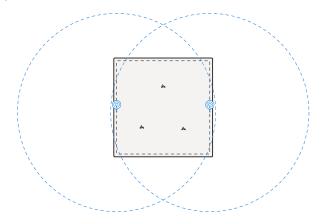
#### **3** Install the Navigation Beacon

#### **General principles:**

1. Signal coverage radius of each Navigation Beacon is 45 m.



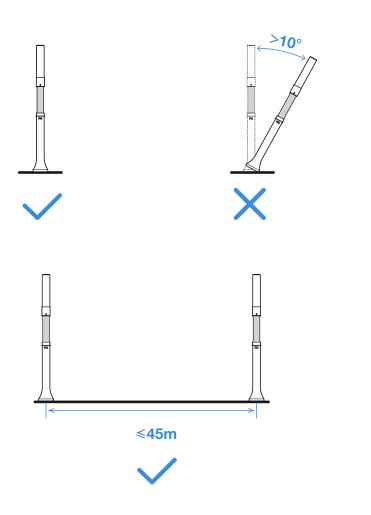
2. Make sure that signal coverages overlap each other to cover the lawn as much as possible.

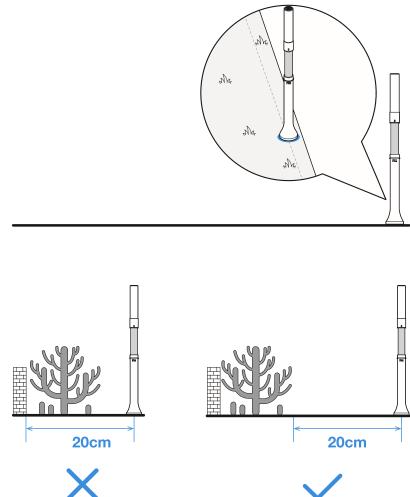


3. Keep the Navigation Beacon perpendicular to the ground and should not tilt over 10°. You can make use of the Spirit Level (not supplied) to check its tilt.

Note: To have a larger signal coverage, please keep the distance between two Navigation Beacons as far as possible and within the communication range (45m).

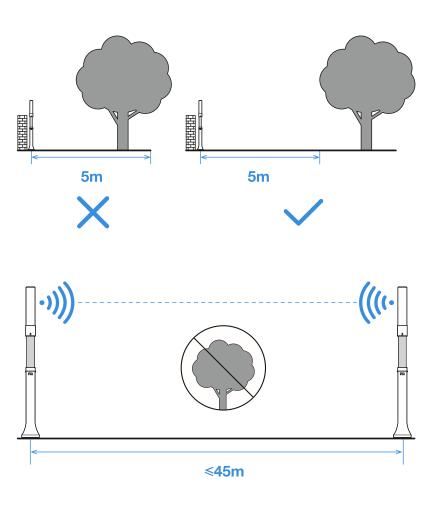
the Navigation Beacons at the edge of the lawn. Keep the Navigation Beacon over 20 cm away from the obstacles (taller than 60 cm, such as metal objects, trees, shrubs, and flowers) close to the lawn edge.



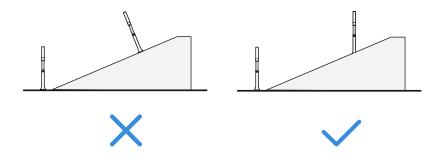


4. To ensure the best mowing performance, it is recommended to install

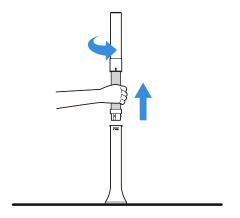
5. To improve the signal coverage, keep the Navigation Beacon over 5 m away from the obstacles close to the center of lawn taller than 60 cm, such as metal objects, trees, shrubs, flowers, bricks, walls and so on. Make sure that there are no obstacles between two Navigation Beacons for better signal communication.



6. If the lawn where your GOAT works has a slope, make sure that the Navigation Beacon is perpendicular to the ground during operation.



- 7. To prevent the Navigation Beacons from being stolen, taken away by kids and damaged over the winter, it is recommended to remove the Beacons from the Navigation-assisted Poles when your GOAT is not working and put the Beacons back to the original position when your GOAT works next time.
- Location failure may occur when the Navigation Beacons are moved during use.

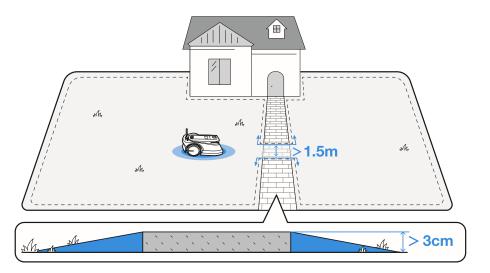


### RECOMMENDED INSTALLATION

#### Before you start, please read the following instructions carefully:

- 1. How to Define Your Lawn Shape
- When your lawn is all connected without paths in it, please follow the installation recommendation.
- When your lawn is divided by paths with a height lower than 3 cm, you could take your lawn as a whole and follow the installation recommendation.
- When your lawn is divided by paths with a height higher than 3cm, please place an object with a slope equal in height to the path (e.g.uphill mat) and take your lawn as a whole, and follow the installation recommendation.

**Note:** If there is a terrace, a pet house or other obstacles within or alongside your lawn, please check the height of the obstacles, if the height is lower than 60 cm, you could take the area of a terrace, a pet house or other obstacles and the lawn as a whole, check the shape of this whole area and then follow the installation recommendation. If the height is higher than 60 cm, please contact our Customer Service team for help.



- 2. Lawn with Trees and Hedges
- When there are few trees and hedges on your lawn or they are mainly scattered at the edge of the lawn with a height lower than 60 cm, see point 5 in "3. Install the Navigation Beacon" for more information.
- When there are plenty of trees and hedges scattered over the lawn with height higher than 60 cm, please contact Customer Service for help.

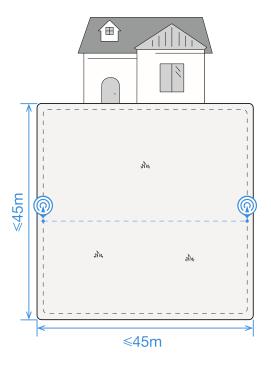
**Note:** Your GOAT is equipped with 2 Navigation Beacons. You can confirm the number of Navigation Beacons you need and the layout by comparing our recommendations with your own lawn. It is recommended to purchase more Navigation Beacons to achieve a better signal coverage.

#### See the table below for detailed information.

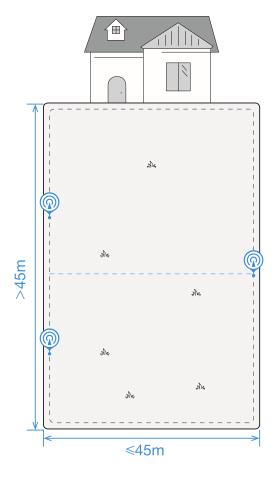
Note: Keep the Navigation Beacon away from trees, pools and pet houses.

#### 1 The lawn is on one side

- Side length: ≤ 45 m (all sides)
- The number of Navigation Beacon needed: 2

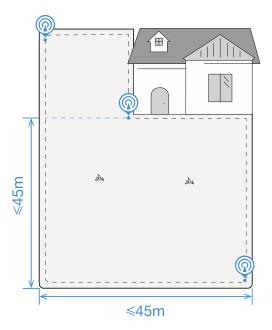


- Side length: 45-90 m (the distance marked out on left long side)
- The number of Navigation Beacon needed: 3

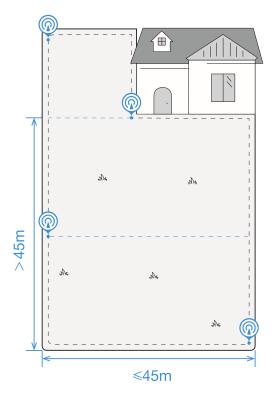


# 2 L-shaped lawn

- Side length: ≤ 45 m (all sides)
- The number of Navigation Beacon needed: 3

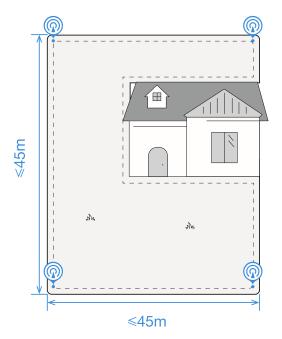


- Side length: 45-90 m (the distance marked out on left long side)
- The number of Navigation Beacon needed: 4

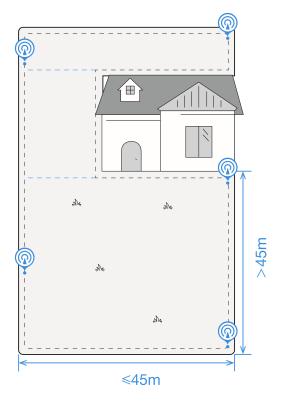


# **3** U-shaped lawn

- Side length: ≤ 45 m (all sides)
- The number of Navigation Beacon needed: 4

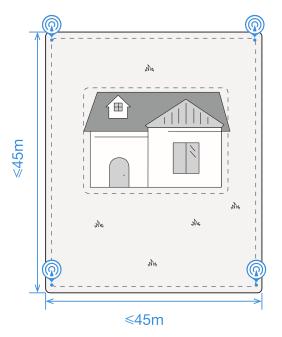


- Side length: 45-90 m (the distance marked out on right long side)
- The number of Navigation Beacon needed: 5

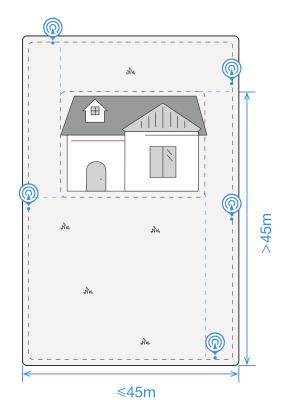


# 4 O-shaped lawn

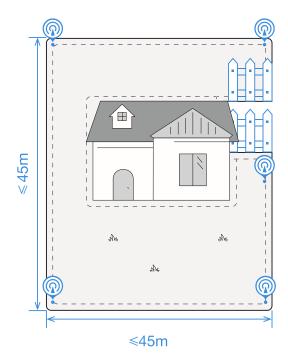
- Side length: ≤ 45 m (all sides)
- The number of Navigation Beacon needed: 4



- Side length: 45-90 m (the distance marked out on right long side)
- The number of Navigation Beacon needed: 5



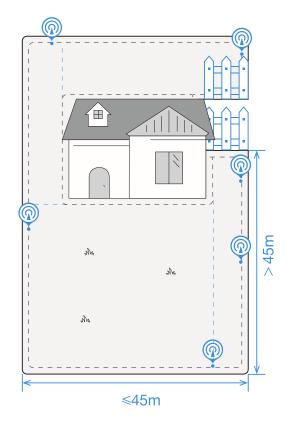
- Side length: ≤ 45 m (all sides)
- The number of Navigation Beacon needed: 5





\* With the obstacle higher than 60 cm

- Side length: 45-90 m (right long side)
- The number of Navigation Beacon needed: 6

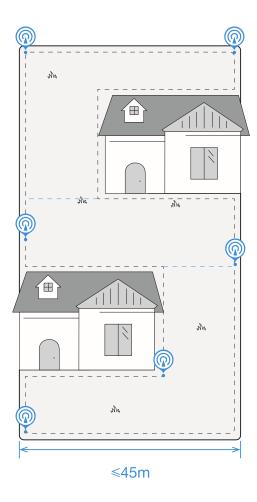




\* With the obstacle higher than 60 cm

#### **5** Irregular-shaped lawn

- Side length: ≤ 45 m (bottom short side)
- The number of Navigation Beacon needed: 6

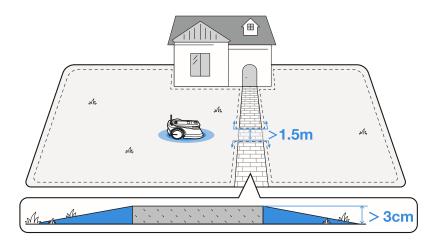


**Note:** If your lawn type is very complex, it is recommended to contact Customer Service for a more reasonable plan.

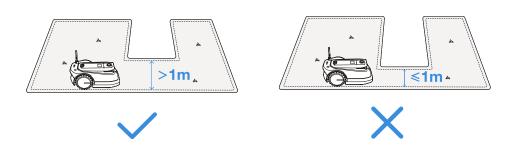
## **CREATE THE MAP**

#### 1 Before mapping, the following tips need to be noted:

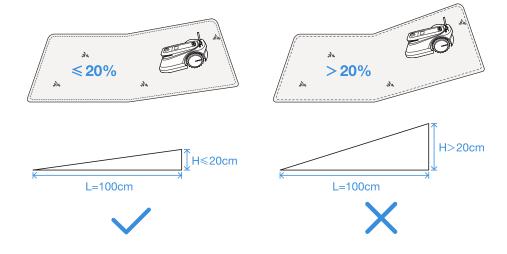
- 1. If your lawn is divided by paths with a height lower than 3 cm, please create a channel wider than 1.5 m when you create the map.
- 2. If your lawn is divided by paths with a height higher than 3 cm, please place an object with a slope equal in height to the path first (e.g. uphill mat) and create a channel wider than 1.5 m when you create the map.



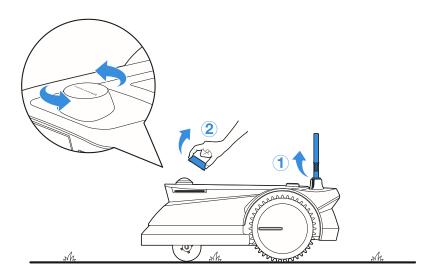
3. DO NOT map in the corridor narrower than 1 m.



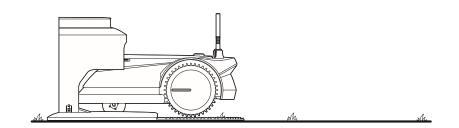
4. Do not create the virtual boundary on a slope that exceeds 20%.



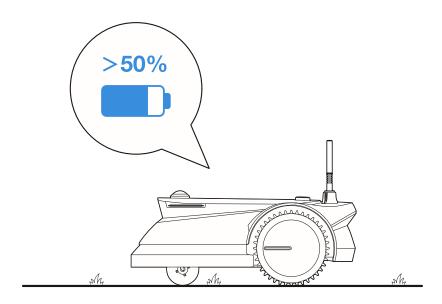
- 5. Make sure that Signal Receiver is lifted up and Panoramic Camera cover on your GOAT is removed.
- \* It is recommended to put the Panoramic Camera cover in Storage Box.



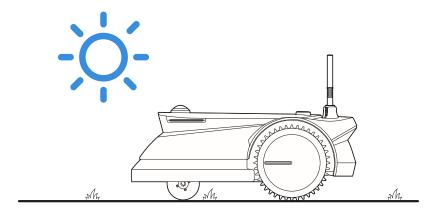
6. Your GOAT correctly docks with the Station.



7. The battery level of your GOAT is more than 50%.

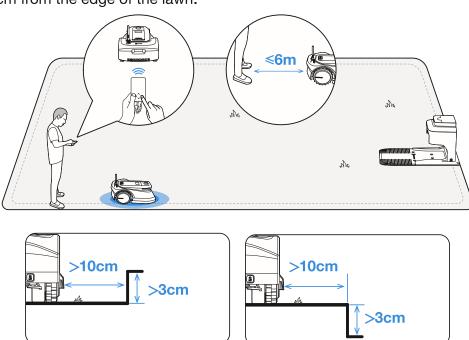


8. The map must be built between 8 am to 6 pm in order to get full sunlight.

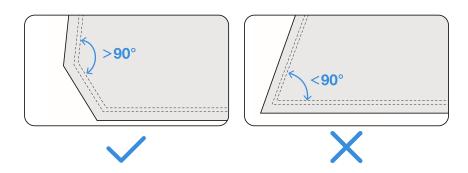


## 2 Map out the Virtual Boundary

Let GOAT start from the Station and follow GOAT within 6 m. If the height difference is more than 3 cm, please keep your GOAT at least 10 cm from the edge of the lawn.

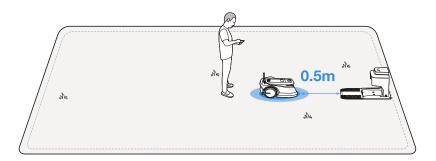


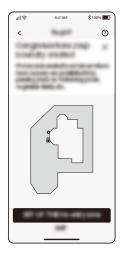
• Make sure that the turning angle is greater than 90°.



#### **3** Return to the Station

When controlling the GOAT to the place near the Station, you will receive a message from the App about whether to complete the boundary setup. Continue controlling your GOAT to the place 0.5 m in front of the Station and make sure that GOAT faces the Station. Then tap " 1 in the App. Your GOAT will automatically go back to Station to make a closed virtual boundary.

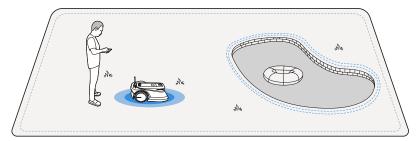




#### 4 Set up No-Entry Zone

Though GOAT can automatically adjust its direction when hitting solid obstacles such as stones or trees, it is still necessary to set up No-Entry Zones for objects you want to protect, such as a flowerbed, a trampoline and a vegetable plot. To protect your GOAT, areas where GOAT is prohibited from passing also should be set as No-Entry Zones, such as raised tree roots, exposed wire, pool and slope that exceeds 45%.

- Follow the instructions in the App.
- Control your GOAT to Return to the Station after the setup completes.

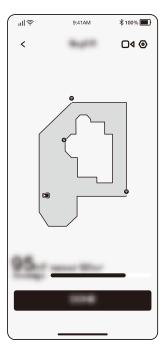


#### **6** Map Learning

After completing the boundaries, your GOAT needs to autonomously walk within the map to get familiar with the layout of your lawn. Then, a complete map will be generated automatically.

Depending on the size and complexity of your lawn, the learning time will vary from 20 minutes to 1 hour.

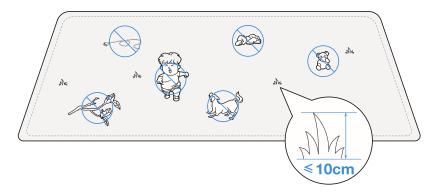
After completing the Map Learning, you can get the schedule automatically generated according to the actual lawn area and unlock more functions, such as different mowing modes, map editing and so on.



## START USING YOUR GOAT

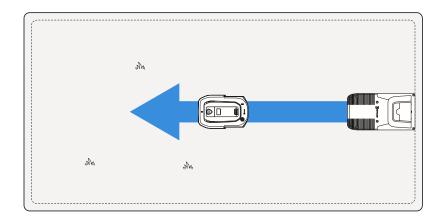
#### Tips before first mowing:

1. Cut the grass to a height of no more than 10 cm with your manual lawnmower and clear away obstacles including debris, piles of leaves, toys, wires and stones. Do not let your children play on the lawn when your GOAT is mowing.



2. Set the mowing direction you need.

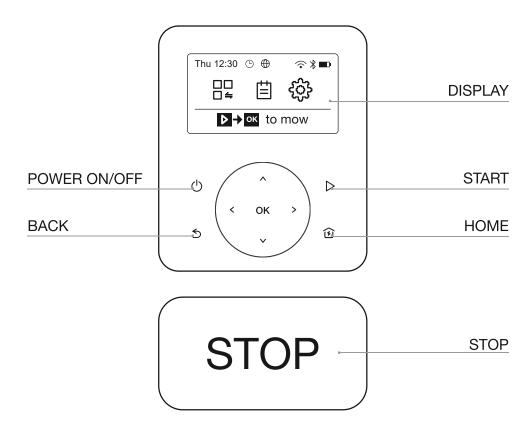
**Note:** Your GOAT will adjust its direction after departing from the Station and go straight forward to mow by default.



# NOW COMES THE MOST EXCITING PART! START YOUR GOAT FOR THE FIRST TIME

#### GET PREPARED: LET'S GET FAMILIAR WITH THE CONTROL PANEL ON YOUR GOAT.

#### 1 Control Panel



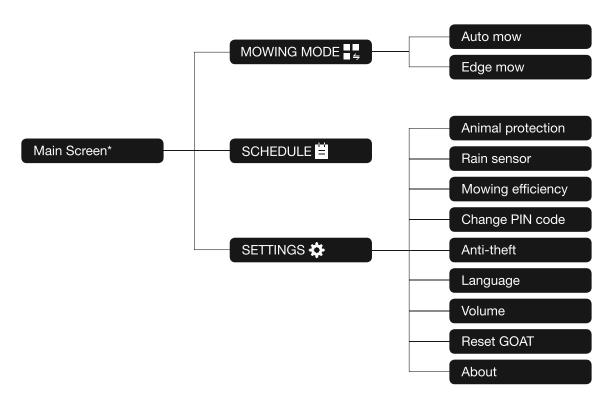
# 2 Icons on display

	Battery level (Timely reflects the battery level of your GOAT.)		
<b>5</b>	Charging (Indicates GOAT's successful docking with the Station.)		
*	Bluetooth (Lights up when your GOAT is successfully connected with the App through Bluetooth.)		
<b>?</b>	Wi-Fi (Lights up when your GOAT is successfully connected with the App through Wi-Fi.)		
<b>(</b>	Connection (Lights up when additional Connection Module is installed.)		
	Guarding (Lights up when you are using Video Manager in the App or related guarding functions.)		
<u></u>	Schedule (Lights up when Schedule is on.)		

## **3** General Setting

- 1. Press 5 to back to Main Screen.
- 2. Press > or < to select "MOWING MODE ♣ ", "SCHEDULE " or "SETTINGS ♦ ". Then press OK to enter.
- 3. Select the item you need by pressing  $\checkmark$  or  $\land$  . Then press OK to start detailed operations.
- 4. Press 5 to go back.

#### Frame of Functions on Display



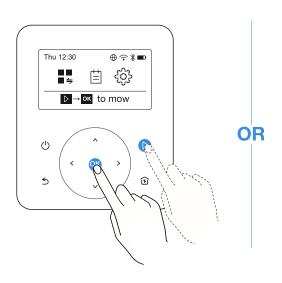
<sup>\*</sup> It might be renewed according to the software version.

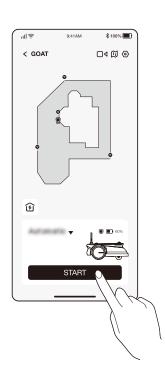
# YOUR GOAT IS READY FOR MOWING NOW! PRINCIPLE FUNCTIONS AND OPERATIONS OF YOUR GOAT

#### 1 Start

Press  $\triangleright$  , then **OK** . GOAT will start mowing. Or you can start mowing via the App.

**Note:** Make sure the grass has been cut to a height of no more than 10 cm with your manual lawnmower.

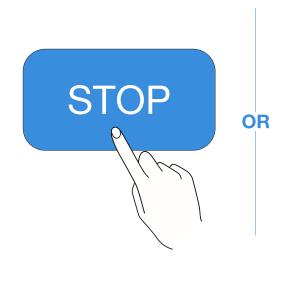


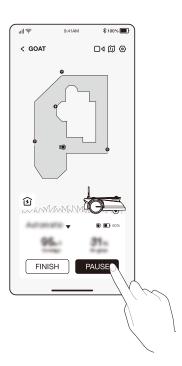


#### 2 Pause

Press on GOAT or stop it via the App.

• For security, your GOAT will be locked and cannot be started directly via the App after stop is pressed. Please enter your PIN code on the Control Panel first.



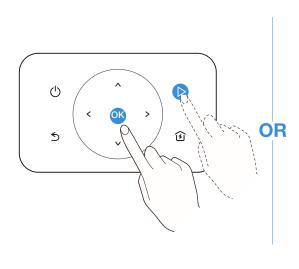


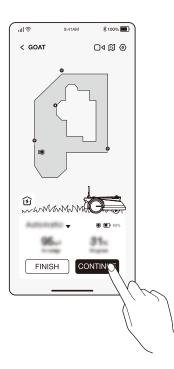
# **3** Resume Mowing

Press ▷ and then OK on GOAT or tap the button in the App to resume mowing.

**Note:** It is necessary to enter your PIN code before resuming when encountering the following situations:

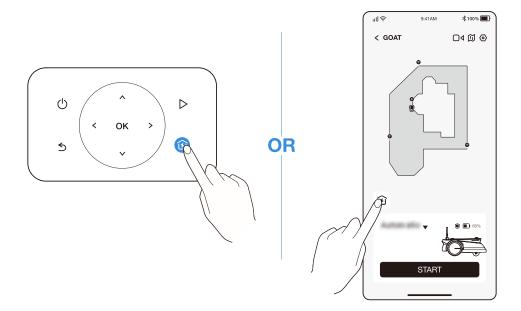
- Your GOAT is lifted up or tilted.
- stop is pressed.
- Your GOAT is restarted.





#### 4 Return to the Station

Send GOAT to the Station by pressing ② or via the App.



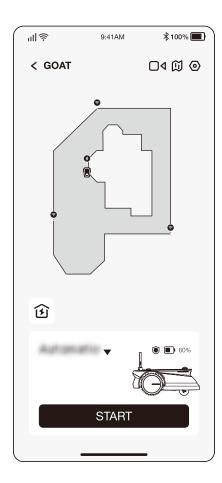
# ECOVACS HOME APP WHERE YOU CAN EXPLORE MORE

The App, is very powerful with multiple functions. Do not consider it simply as a remote control.

You can do many things via the App, such as completing various settings remotely, experiencing different mowing modes, editing the map freely and adjusting the mowing schedules.

Moreover, you can view the scenery of your lawn directly through the App.

Supporting the OTA (Over-the-Air) update, the new software update will automatically happen Over-the-Air with your confirmation so that you can experience more functions.

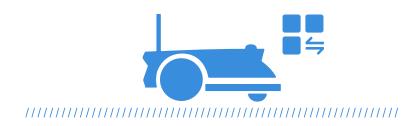


### **HOW YOUR GOAT WORKS**

The following part will help you know how your GOAT works. GOAT is a smart robot equipped with AI and several sensors. It can deal with various complicated scenes autonomously.

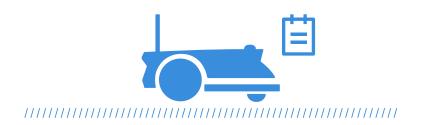
# **1** Mowing mode

You can switch modes on your GOAT or via the App.



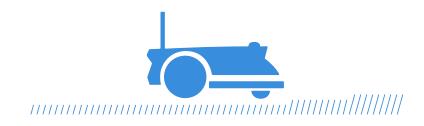
# 2 Schedule

GOAT automatically generates the mowing schedule according to the lawn area. Modify the pre-set in the App at any time. Supporting two schedules, GOAT enables you to set and switch based on different seasons.



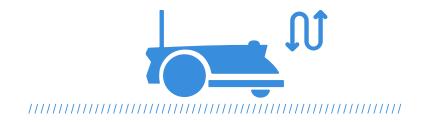
# **3** Cutting height

GOAT is a smart robot for maintaining your lawn well. Before starting, make sure that the grass is no longer than 10 cm. If longer, cut the grass roughly with a manual lawnmower. Then your GOAT will keep the grass nicely clipped within a height of 6 cm.



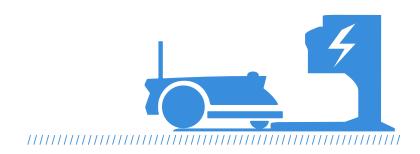
# 4 Programmed cutting

With programmed cutting, your GOAT mows along an S-shaped path to achieve maximum efficiency.



# 6 Autonomous recharging

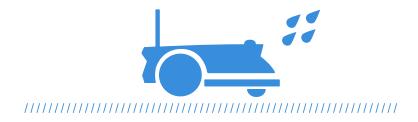
When the battery is low, your GOAT will pause the task autonomously and go back to the Station to charge itself. When fully charged, your GOAT will resume the unfinished mowing task of the day.



## 6 Rain sensor

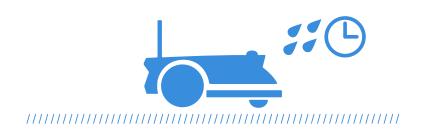
With waterproof level of IPX6, your GOAT will be very pleased to stay outside. However, mowing under heavy rain will not bring out the best result. Your GOAT, equipped with the Rain Sensor, will pause mowing and return to the Station automatically when a certain amount of rainwater is detected. When the rain stops, GOAT will automatically resume the mowing task. It is recommended to mow in dry weather for the best mowing result.

You also can inactivate it on your GOAT or via the App to mow on rainy days.



# Rain delay time

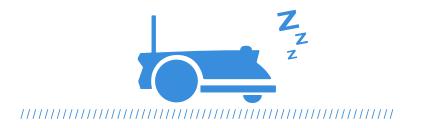
The lawn may still be wet after the rain stops. For a better mowing result, your GOAT will resume mowing 3 hours after the Rain Sensor detects that the rain has stopped by default. You can change the rain delay time via the App.



# **8** Animal protection

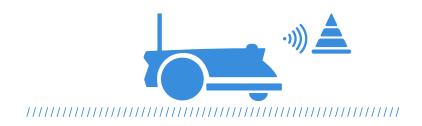
With the aim to protect nocturnal animals, GOAT will stop mowing from 7 pm to 7 am the next day.

You also can inactivate it on your GOAT or via the App to mow at night.



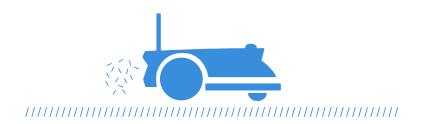
# 9 Smart obstacle avoidance

Equipped with ToF Sensor, your GOAT can detect objects and avoid them in advance. The height of obstacles to be avoided can be set in your ECOVACS HOME App. Moreover, some obstacles can precisely be avoided by AI recognition.



# 10 No need for disposal of grass clippings

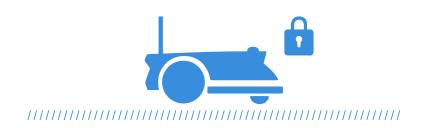
Daily mowing with your GOAT leaves short clippings, which will be scattered evenly on the lawn as the best fertilizer.



# 1 Safety and PIN code protection

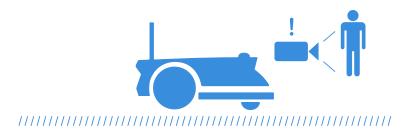
The PIN code you set for your GOAT at the first startup is used to prevent being stolen and operated by children. When GOAT is off map or lifted, it will automatically lock itself and raise an alarm. You can unlock it by entering the PIN code.

**Note:** You can change the PIN code on your GOAT in "SETTINGS .-> Change PIN code" or in the App in *Settings->Safety Settings->Change PIN code* 



# 12 Video guarding

Not merely a robot, GOAT enables you to see your lawn remotely and in real time through the top Panoramic Camera and Front Al Camera. With the ability to detect humans by Al, your GOAT can release the voice alarm and simultaneously send you the alarm message when it detects humans entering your lawn.



# Original Instructions IMPORTANT READ CAREFULLY BEFORE USE KEEP FOR FUTURE REFERENCE

Read the instructions carefully. Make sure you understand the instructions and be familiar with the controls and the proper use of the appliance. Please understand that you can reduce the risk by following the instructions and warnings in this manual, but you cannot eliminate all the risks.

Lawn Mowing Robot (hereinafter referred to as "GOAT") has many built-in safety sensors, however, safety risks still exist.

All related residual risks have been described or informed in this manual.

Description of intended use: Intelligent lawn mowers are mainly used in mowing grass, especially in parks, private villa yards, and football fields.

For machines used in public areas, that warning signs shall be placed around the working area of the machine. They shall show the substance of the following text: WARNING! Automatic lawnmower!

Keep away from the machine! Supervise children!

DO NOT modify the mower by yourself. Modifications

could interfere with mower operations, result in serious injury and/or damage, or void the Limited Warranty. Use only Ecovacs approved parts and accessories.

# **WARNING**

Never allow children, persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge or people unfamiliar with these instructions to use the machine, local regulations may restrict the age of the operator.

To avoid using the machine and its peripherals in bad weather conditions especially when there is a risk of lightning.

Before each mowing session, check that all parts of the mower can function normally.

Periodically inspect the area where the machine is to be used and remove all stones, sticks, wires, bones, and other foreign objects.

NEVER allow children to touch the power supply unit, charging station, blades, the battery compartment, or any parts with gaps such as the wheels.

# **WARNING**

Never to operate the machine and/or its peripherals with

defective guards or shields, or without safety devices, or if the cord is damaged or worn.

Keep away from the rotating blades! DO NOT put hands or feet under or near the rotating blades.

Keep a safe distance from the mower when operating.

DO NOT overreach. Keep your balance at all times and always be sure of the footing on slopes. Walk, never run while operating the machine or its peripherals.

# **WARNING**

Never allow children to be in the vicinity or play with the machine when it is operating.

# **WARNING**

DO NOT touch moving hazardous parts before they have come to a complete stop.

## **WARNING**

For the purposes of recharging the battery, only use the detachable supply unit provided with this appliance (CH2203).

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

#### Safe Usage:

Not to connect a damaged cord to the supply or touch a damaged cord before it is disconnected from the supply

for the reason that damaged cords can lead to contact with live parts; keep extension cords away from moving hazardous parts to avoid damage to the cords which can lead to contact with live parts; to connect the machine and/or its peripherals only to a supply circuit protected by a residual current device (RCD) with a tripping current of not more than 30 mA.

Unplug the Power Supply from the power socket and then untangle when the power cord or the extension cable is damaged or entangled during use. During the operation, pull the body of the plug rather than the cord to avoid the hazard. Contact Customer Service and let the skilled professional to repair or replace the cord.

Please use the extension cable manufactured by ECOVACS. If you have any problem, contact Customer Service.

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.

Press the STOP Button at once when the mower makes the abnormal sound or raises the alarm.

In case of leakage of electrolyte flush with water or neutralizing agent, ask for medical help once it gets contact with the eyes etc.

If there are abnormal vibrations, please restart the mower. If the problem persists, please Contact Customer Service.

# **European Union Compliance Statement**

Information on Disposal for Users of Waste Electrical & Electronic Equipment



This symbol on the product or on its packaging indicates that used electrical and electronic products should not be mixed with unsorted municipal waste. For proper treatment, it is your responsibility to dispose of your waste equipment by arranging to return it to designated collection points.

Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling.

To return your used device, please use the return and collection systems or contact the retailer where the product was purchased, which is free of charge, please contact your local authority for further details of your nearest designated collection point.

Penalties may be applicable for incorrect disposal of this waste, in accordance with your national legislation.

#### Information on Disposal for Users of used batteries



This symbol means that batteries and accumulators, at their end-of-life, should not be mixed with unsorted municipal waste. Your participation is an important part of the effort to minimize the impact of batteries and accumulators on the environment and on human health. For proper recycling you can return this product or the batteries or accumulators it contains to your supplier or to a designated collection point, which is free of charge.

Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling.

Penalties may be applicable for incorrect disposal of this waste, in accordance with your national legislation.

there are separate collection systems for used batteries and accumulators.

Please, dispose of batteries and accumulators correctly at your local community waste collection/recycling center.

# Restriction of the use of certain hazardous substances (RoHS) Directive

Ecovacs Home Service Robotics Co., Ltd. hereby declares the whole product including parts (cables, cords, and so on) meets the requirements of RoHS Directive 2011/65/EU and amendment Commission Delegated Directive (EU) 2015/863 on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("RoHS recast" or "RoHS 2.0").

#### **Radio Equipment Directive**

Ecovacs Home Service Robotics Co., Ltd. hereby declares that the product listed in this section comply with the essential requirements and other relevant provisions of the Radio Equipment Directive 2014/53/EU.

## **Machinery Directive**

Ecovacs Home Service Robotics Co., Ltd. hereby declares that the product listed in this section comply with the essential requirements and other relevant provisions of the Machinery Directive 2006/42/EC.

## **Europe Authorised Representative:**



Ecovacs Home Service Robotics Co., Ltd. hereby declares that the product comply with the essential requirements and other relevant provisions of the RoHS

Directive 2011/65/EU and amendment Commission Delegated Directive (EU) 2015/863, the Radio Equipment Directive 2014/53/EU and the Machinery Directive 2006/42/EC.

The declaration of conformity can be viewed at the following address: <a href="https://www.ecovacs.com/global/compliance">https://www.ecovacs.com/global/compliance</a>.

## **UK Compliance Statement**

# Information on Disposal for Users of Waste Electrical & Electronic Equipment



This symbol on the product or on its packaging indicates that used electrical and electronic products should not be mixed with unsorted municipal waste. For proper treatment, it is your responsibility to dispose of your waste equipment by arranging to return it to designated collection points.

Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling.

To return your used device, please use the return and collection systems or contact the retailer where the product was purchased, which is free of charge, please contact your local authority for further details of your nearest designated collection point.

Penalties may be applicable for incorrect disposal of this waste, in accordance with your national legislation.

#### Information on Disposal for Users of used batteries



This symbol means that batteries and accumulators, at their end-of-life, should not be mixed with unsorted municipal waste. Your participation is an important part of the effort to minimize the impact of batteries and accumulators on the environment and on human health. For proper recycling you can return this product or the batteries or accumulators it contains to your supplier or to a designated collection point, which is free of charge.

Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling.

Penalties may be applicable for incorrect disposal of this waste, in accordance with your national legislation.

there are separate collection systems for used batteries and accumulators.

Please, dispose of batteries and accumulators correctly at your local community waste collection/recycling center.

### The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Ecovacs Home Service Robotics Co., Ltd. hereby declares the whole product including parts (cables, cords, and soon) meets the requirements of The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012.

#### **Radio Equipment Regulations 2017**

Ecovacs Home Service Robotics Co., Ltd. hereby declares that the product listed in this section comply with the essential.

requirements and other relevant provisions of Radio Equipment Regulations 2017.

#### Supply of Machinery (Safety) Regulations 2008

Ecovacs Home Service Robotics Co., Ltd. hereby declares that the product listed in this section comply with the essential requirements and other relevant provisions of The Safety of Supply of Machinery (Safety) Regulations 2008.

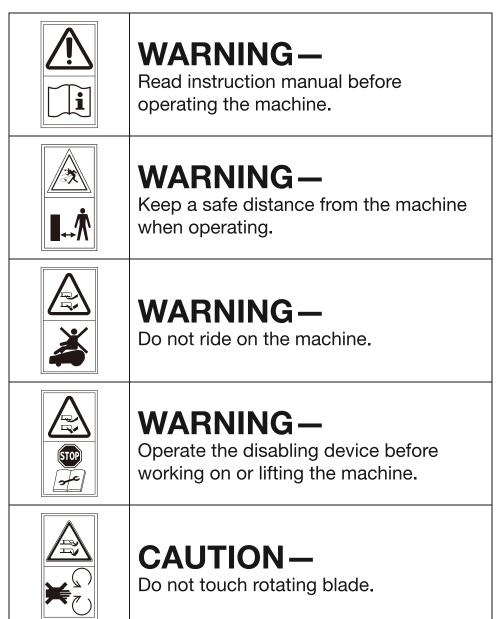
## **UK Authorised Representative:**



Ecovacs Home Service Robotics Co., Ltd. hereby declares that the product comply with the essential requirements and other relevant provisions of the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012, the Radio Equipment Regulations 2017 and the Supply of Machinery (Safety) Regulations 2008.

The declaration of conformity can be viewed at the following address: <a href="https://www.ecovacs.com/global/compliance">https://www.ecovacs.com/global/compliance</a>.

## **SYMBOLS**



(ii)	Class III	
===	Direct current	
~	Alternating current	
CE	This product conforms to the applicable EC Directives.	
UK	This product conforms to the applicable UK legislation.	
	Polarity of the charging port	
	Before charging, read the instructions.	

# **Sensors**

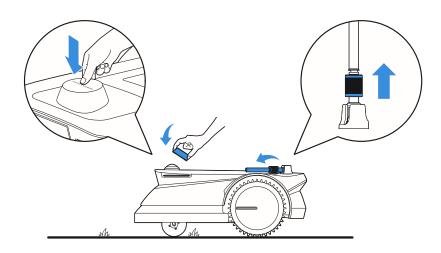
Name	Description	
Panoramic camera	To perceive the environmental information around GOAT, help GOAT to build a map, and assist in the positioning and navigation of GOAT.  Horizontal: 360 degrees; Vertical: 50 degrees	
Al camera	To perceive the environmental information in front of GOAT, identify special targets, and optimize the working performance.  Horizontal: 150 degrees; Vertical: 80 degrees	
ToF sensor	To perceive the obstacle information in front of GOAT and help GOAT to avoid obstacles actively.  Horizontal: 90 degrees; Vertical: 70 degrees  The farthest perception distance is between 3 m and 4 m.	
Rain sensor	To detect whether it is raining, and help GOAT decide whether to continue mowing.	
GPS sensor	To obtain the absolute position of GOAT for anti-theft and retrieval.  Range: Detect the longitude and latitude coordinates of GOAT's position.	
Beacon	To help GOAT obtain the relative distance with the Beacon and create a map.  Range: Taking the Beacon as the center, the effective signal range is within a radius of 45 m.	

### **MAINTENANCE**

In order to get the best mowing performance and prolong GOAT's service life, it is necessary to clean and check your GOAT every now and then. The contents below will tell you how to maintain your GOAT.

## **⚠ WARNING**

- REMEMBER TO POWER OFF GOAT BEFORE OPERATION.
- ALWAYS WEAR PROTECTIVE GLOVES WHEN REPLACING THE BLADES AND PERFORMING CLEANING.
- COVER THE PANORAMIC CAMERA. PULL THE NUT UPWARD AND TURN IT COUNTERCLOCKWISE TO LAY SIGNAL RECEIVER DOWN. WHEN REPLACING THE BLADES AND PERFORMING CLEANING.



## 1 Regular Maintenance

To keep GOAT running at peak performance, perform maintenance tasks and replace parts with the following frequencies:

Part	Replacement Frequency
Blades"1"	About 6-8 weeks
Dry Cells	Replace when App prompts
Camera Brush	About every 1 year

**Note:** Please utilize only the battery which is the original one or that of the same model as specified by ECOVACS.

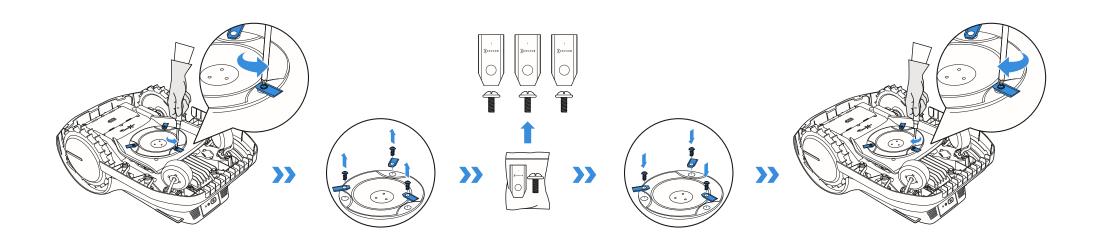
## Specific Maintenance

1. Replace the Blades

## **⚠ WARNING**

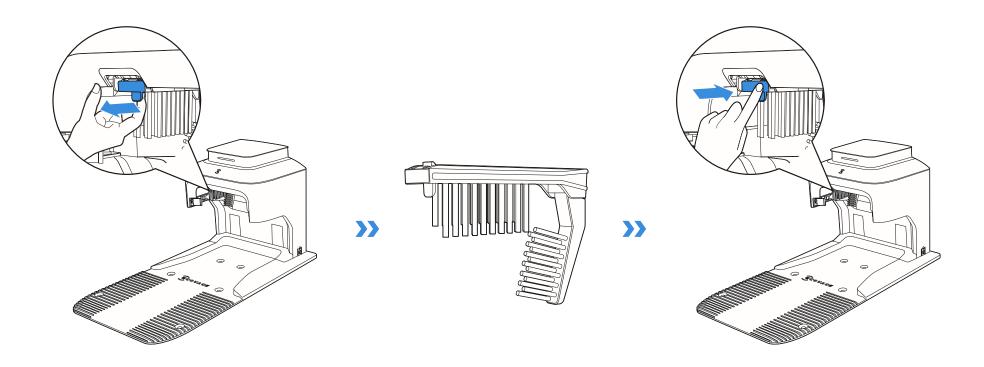
Remember to power off GOAT before operation. **ALWAYS wear protective gloves when replacing the Blades.** Please only use the Blades manufactured by ECOVACS and use new screws when assembling Blades.

- Power off GOAT.
- A PUT ON THE PANORAMIC CAMERA COVER AND LAY SIGNAL RECEIVER DOWN.
- <u>M</u> GENTLY TURN GOAT OVER ON A SOFT SURFACE.
- Loosen the Screws with the screwdriver.
- Remove the Screws and Blades.
- Tighten the new Blades and Screws. Make sure that the Blades can spin freely.

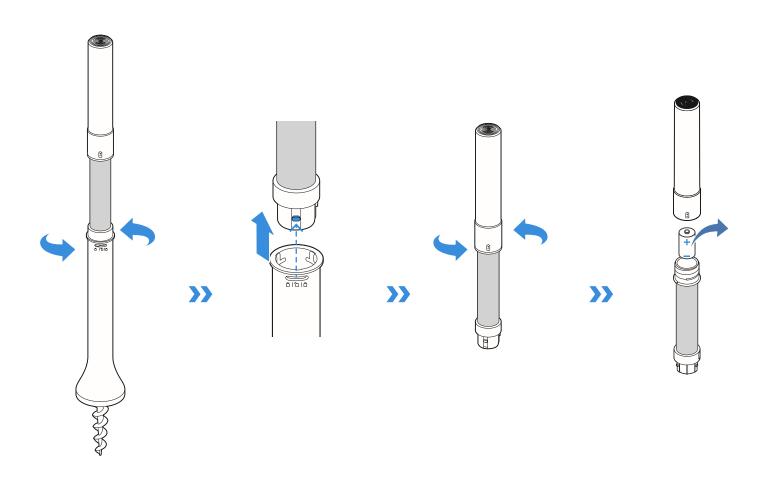


## 2. Replace the Camera Brush

- Pull old Camera Brush out from the Station by grabbing the hook on it.
- Slide the new Camera Brush along the slot into the Station until you hear a "click".



- 3. Replace the Dry Cells in Navigation Beacon
- Turn the Beacon counterclockwise until the projection points at "and remove the Beacon from the Navigation-assisted Pole.
- Disassemble the Beacon by turning the upper Beacon counterclockwise.
- Take out the Dry Cells and replace them with new ones.
- Refer to "INSTALL THE NAVIGATION BEACON-Assemble the Navigation Beacon" for detailed Navigation Beacon assembly.

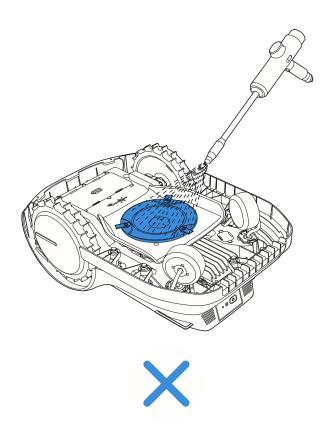


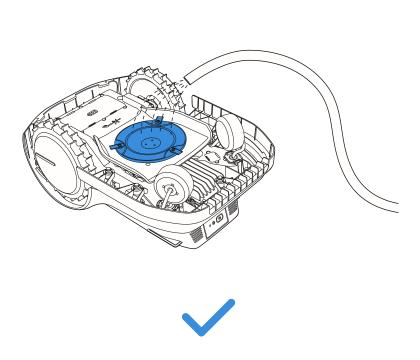
4. Clean the Blade Disc, Chassis, Off-road Wheels and Front Wheels

## **WARNING**

ALWAYS wear protective gloves. DO NOT use the high pressure washer. High pressure water can enter the sealings and damage electronic and mechanical parts.

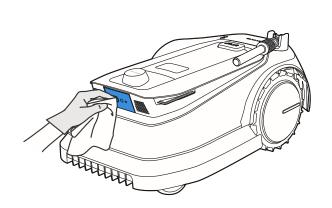
- Power off GOAT.
- A PUT ON THE PANORAMIC CAMERA COVER AND LAY SIGNAL RECEIVER DOWN.
- <u>M</u> GENTLY TURN GOAT OVER ON A SOFT SURFACE.
- Clean the Blade Disc and the chassis with a brush.
- Check that the Blade Disc can rotate freely and Blades can spin freely.
- Clear the mud from the Off-road Wheels and Front Wheels by using a brush to have a fine grip.

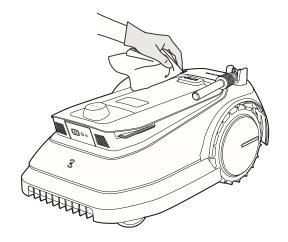


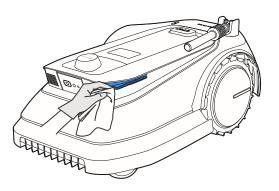


#### 5. Clean the Other Components

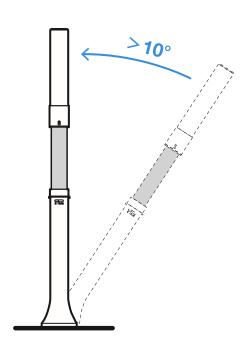
Wipe the components with a clean, dry cloth. Avoid using cleaning sprays or detergents.

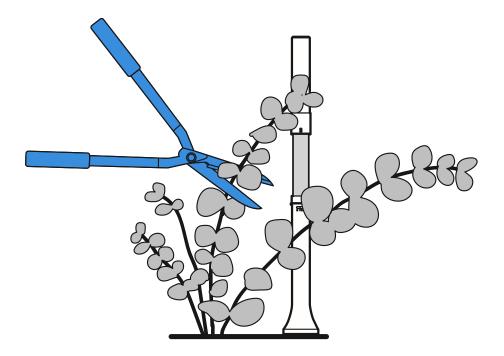






- 6. Check the Navigation Beacon Regularly
- If the Navigation Beacon tilt angle exceeds 10°, reinstall the Navigation Beacon firmly to the ground at the original position.
- If there are branches and tendrils on the Navigation Beacon which may cause signal interference, please clear them away in time.





### STORAGE OVER THE WINTER

#### **GOAT**

- Power off your GOAT after it is fully charged.
- Clean it thoroughly.
- Store in a cool, well-ventilated and dry place indoors.

#### **Station**

- Unplug the Power Supply from the power socket.
- Disconnect Power Supply from the Station.
- Store the Station and Power Supply in a cool, well-ventilated and dry place away from direct sunlight.

**Note:** It is necessary to put the Station in the original position for working on a new season. Otherwise, it may lead to location fault and map invalidation.

#### **Navigation Beacon**

- Turn the Beacon counterclockwise until the projection points at "and remove it from the Navigation-assisted Pole."
- Store the Beacon in a cool, well-ventilated and dry place indoors.
- If you are not intended to use the **Navigation Beacon** for a long time, please take out the Dry Cells.

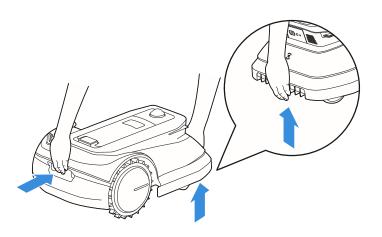
**Note:** It is necessary to reinstall the Beacon to the original position. Otherwise, it may lead to location fault and map invalidation.

#### **TRANSPORTATION**

It is recommended to use the original package to protect GOAT when you intend to transport GOAT for a long distance. Remember to power off your GOAT before carrying out any transportations and handle it gently. DO NOT pick up your GOAT while it is still running or in the Station.

#### How to pick up your GOAT properly?

Pick up your GOAT by holding the handle and the head at the same time. Make sure that the Blade Disc faces towards the ground.



#### **BATTERY**

For long-time storage, it is recommended to charge GOAT every 6 months. The Limited Warranty does not cover battery damage caused by over-discharge. The battery CANNOT be charged when the ambient temperature is above 40°C / 104°F or below 5°C / 41°F. The recommended temperature for GOAT operation is between 5-40°C / 41~104°F. The storage temperature range is -20~75°C / -4~167°F.

**Note:** The life-span of GOAT's battery depends on the frequency of usage and the total hours of use. It is also non-rechargeable. DO NOT dispose disused or faulted battery casually. Check with your Local Authority for advice.

# **FUNCTION MESSAGES**

This part will tell you the explanation about function messages GOAT displays.

Message	Meaning	
MAP CREATING	Your GOAT is mapping in the App.	
MAP LEARNING	Your GOAT is learning the map autonomously.	
MAP EDITING	The map is being edited via the App.	
AUTO MOWING	Your GOAT is mowing the whole lawn.	
EDGE MOWING	Your GOAT is mowing along the boundary of the whole lawn including No-Entry Zone.	
RETURNING	Your GOAT is returning to the Station.	
GUARDING	Your GOAT is on spot-guarding.	
CAMERA CLEANING	Camera Cleaning is in progress.	
Paired!	Navigation Beacon is paired successfully with your GOAT.	
Upgrading	Your GOAT is upgrading the firmware.	

## **FAULT MESSAGES**

Smart as GOAT, it will tell you the errors when things go wrong so that you can find the way to fix them. See the table below for the detailed information.

Message	Cause	Action
Too simple. Please reset!	The PIN code you set is too simple.	Do not set the PIN code as 0000.
PIN codes do not match!	When you are changing the PIN code, the PIN codes you entered twice are inconsistent.	Make sure that the new PIN codes you entered twice are consistent.
Wrong PIN code!	The PIN code you entered is wrong.	Enter the correct PIN code.
Wrong PIN code has been entered 5 times. Try again later.	Your GOAT is locked after entering the wrong PIN code constantly over five times.	Enter the correct PIN code 1 hour later.
No map now. Please use App to map!	Your GOAT has no map.	Please create a map in the App.
No schedule yet!	Your GOAT has no schedule.	Activate a schedule on your GOAT after setting it in the App.
GOAT tilted!	Your GOAT is tilted.	Put your GOAT back to the ground.  * You should enter your PIN code on the Control Panel before controlling your GOAT in the App.
GOAT lifted!	Your GOAT is lifted up when it is working.	Put your GOAT back to the ground.  * You should enter your PIN code on the Control Panel before controlling your GOAT in the App.
Sensor fault!	Your GOAT has a sensor malfunction.	Please contact Customer Service.
Battery fault!	Your GOAT has a charging malfunction.	Please contact Customer Service.
Left / Right rear wheel fault!	Your GOAT has a Rear Wheel malfunction.	Clean up the Rear Wheel.

Message	Cause	Action
Cutting system blocked!	Your GOAT has a cutting system malfunction.	<ol> <li>Clean up the the wheels, the areas around wheels and the Blade Disc.</li> <li>Check if there is water under the Blade Disc. If any, please move your GOAT to a dry place.</li> <li>Check if the height of the grass is longer than 10 cm. If If yes, please firstly cut it roughly with a manual lawnmower.</li> </ol>
Bumper fault!	Your GOAT has a Bumper malfunction.	<ol> <li>Gently tap the Bumper and make sure it bounces back.</li> <li>If the problem still exists, please contact Customer Service.</li> </ol>
GOAT trapped!	Your GOAT is trapped.	Move your GOAT away from the current place.     Clear away the obstacles around your GOAT.
Alarm! Off map!	Your GOAT is out of map under the condition of activated Off-map Alarm.	Move your GOAT back into the map and enter the PIN code on Control Panel.

## **TROUBLESHOOTING**

If there is something wrong with your GOAT when working, you can consult the table below. Please contact our Customer Service if the problems still exist.

Issue	Cause	Solution	
Red Indicator Light on the Station blinks.	The Base connector is not correctly connected to the Pile connector.	Make sure that the Base connector is correctly connected to the Pile connector. If the problem still exists, please contact Customer Service.	
The Indicator Light on the Station	Station current and voltage are unstable.	Please contact Customer Service.	
The Indicator Light on the Station becomes solid red.	There is something wrong with Camera Brush motor.		
GOAT stops within the working area.	There is something wrong with the Station location or Navigation Beacon signal.	<ol> <li>Check if the Station or Navigation Beacon is moved. If it happens, place it in the original position.</li> <li>Check if Navigation Beacon runs out of battery. If it happens, please replace the Dry Cell in it.</li> <li>If the problem still exists, please remap.</li> </ol>	
	GOAT fails to dock with the Station.	<ol> <li>Check if the Station is connected to the power outlet. If correctly connected, the Indicator Light of the Station will be solid blue.</li> <li>Check if the Base connector is correctly connected with the Pile connector.</li> <li>Check if the Station reflective film is blocked.</li> <li>Check if there are obstacles near the Station. If it happens, please remove the obstacles.</li> <li>If the problem still exists, please contact Customer Service.</li> </ol>	
	GOAT fails to complete the Map Learning.	<ol> <li>Check if there are obstacles or hollows on the lawn. If any, please clear them away and restart Map Learning.</li> <li>According to prompts in the App, adjust the Navigation Beacon's position and remap.</li> </ol>	
	GOAT is trapped or suspended.	<ol> <li>Move GOAT to a safe place and then continue working.</li> <li>If relocation failure occurs after moving, control/place GOAT into the Station and restart it.</li> </ol>	

Issue	Cause	Solution
GOAT stops working and returns to the Station.	Battery is too hot or too cold.	Wait until its temperature returns to normal. If the problem persists, please contact Customer Service.
	Battery is low or signal is weak.	Wait until the battery is full and signal is strong.

# **TECHNICAL DATA**

	Product Name	Lawn Mowing Robot
	Model	MPB11-11
Basic Information	Brand	ECOVACS
Basis illicimation	Dimensions: Length (mm) × Width (mm) × Height (mm)	650×433×277
	Net Weight (kg) (Battery Included)	13
	Rated Voltage	21V ===
	Working Capacity (m²)	1600
Mower Parameters	Cutting Width (cm)	22
	Cutting Height (cm)	3-6
	Charging Time (min.)	90
	Measured Sound Power Level Lwa	59 dB(A)
Naisa Fraissiana	Sound Power Uncertainties Kwa	3 dB(A)
Noise Emissions	Sound Pressure Level LpA	51 dB(A)
	Sound Pressure Uncertainties KpA	3 dB(A)

	Bluetooth®	2400MHz ~ 2483.5MHz
	Wi-Fi	2400MHz ~ 2483.5MHz
Connectivity Frequency Range		GSM:EGSM 900:Uplink:880-915MHz,Downlink:925-960MHz DCS 1800: Uplink:1710-1785MHz,Downlink:1805-1880MHz
		WCDMA: BAND I: Uplink:1920-1980MHz,Downlink:2110-2170MHz BAND VIII: Uplink:880-915MHz,Downlink:925-960MHz
	Cellular Network	LTE: E-UTRA BAND 1: Uplink:1920-1980MHz,Downlink:2110-2170MHz E-UTRA BAND 3: Uplink:1710-1785MHz,Downlink:1805-1880MHz E-UTRA BAND 7: Uplink:2500-2570MHz,Downlink:2620-2690MHz E-UTRA BAND 8: Uplink:880-915MHz,Downlink:925-960MHz E-UTRA BAND 20: Uplink:832-862MHz,Downlink:791-821MHz E-UTRA BAND 28: Uplink:703-748MHz,Downlink:758-803MHz E-UTRA BAND 38: Uplink:2570-2620MHz,Downlink:2570-2620MHz E-UTRA BAND 40: Uplink:2300-2400MHz,Downlink:2300-2400MHz Available frequency bands for LTE Band 28 in Europe are 703-736MHz(TX), 758-791MHz(RX)
	GNSS	GPS L1 C/A:1575.42MHz±1.023MHz BeiDou B1I: 1561.098 ±2.046 MHz GLONASS L1: 1597.78~1605.66 MHz
	Beacon	CH9:7987.2MHz
	Bluetooth®	≤20dBm
	Wi-Fi	≤20dBm
MAX. radio-frequency power	Cellular Network	EGSM 900: 25 dBm to 35 dBm DCS1800: 22 dBmto 32 dBm WCDMA:+24dBm+1.7/-3.7dB LTE: E-UTRA Band28:23dBm+2.7/-3.2dB other Bands:23dBm±2.7dB
	GNSS	Only receive but not transmit
	Beacon	≤0dBm/50MHz

Driving Motor	Rated Speed (r/min)	64
	Top Speed (r/min)	70
Blade Motor	Speed (r/min)	2300
	Battery Type	Lithium-ion
Battery (Mower)	Rated Voltage	18.5 V
	Rated Capacity	5200 mAh
	Battery Type	Dry Cell
Battery (Beacon)	Rated Voltage	4.5 V
	Rated Capacity	18000 mAh
Navigation Reason	Usage Temperature	-15~40°C / 5~104°F
Navigation Beacon	Storage Temperature	-18~50°C / -0.4~122°F
	Supply Unit Model	GM95-210300-2DG
Dower Supply	Input Voltage	100-240 V
Power Supply	Output Voltage	21 V
	Output Current	3 A
	Model	CH2203
Station	Input Voltage	21 V
	Input Current	3 A
	Output Voltage	21 V
	Output Current	3 A

**Note:** Technical and design specifications may be changed for continuous product improvement. Explore more accessories at <a href="https://www.ecovacs.com/global">https://www.ecovacs.com/global</a>.



# **Need Help?**

Save the trouble for return.

Contact us, we are here to help!

## **Ecovacs Home Service Robotics Co., Ltd.**

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