

ROBOT LAWN MOWER

USER MANUAL



Please read this manual carefully before use
Please keep this manual for future reference

CE ROHS

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1. INTRODUCTION AND SAFETY

1. INTRODUCTION AND SAFETY

1.1 Introduction

The products are manufactured by Zhejiang Tianchen Intelligence&Technology Co., Ltd.
www.exgain-tech.com

Thank you for purchasing our product. You will have and enjoy the extra free time while using our robot lawn mower to mow your lawn. You will be impressed with your lawn's appearance and best of all, Tianchen robot makes it for you.

The robot mower may be used only by those who know how to operate it after reading and understanding the instructions in this manual.

Model: E1800
CE, RoHs approved.

Product, product specifications and this document are subject to change without notice. All other trademarks are property of their respective owners.

IMPORTANT!

The following pages contain important safety and operating instructions. Please read and follow all instructions in this manual. Carefully read and review all safety instructions, warnings and cautions contained in this manual.

Failure to read and follow these instructions, warnings and cautions statements may result in severe injury or death to persons and pets or damage to personal property. It's not permitted to modify the original design of robot. All modifications are made at your own risk.



WARNING

Robot lawn mower can be dangerous if incorrectly used!

IMPORTANT INFORMATION

Read through the Operators Manual carefully and understand the content before using your Robot.

1.2 Symbols on Mower

These symbols can be found in the mower. Study them carefully so you understand their significance.

1. The symbol is pasted on the top cover, Please read the means carefully before use the appliance.



1. WARNING-this is a dangerous power tool. Use care when operating and follow all safety instructions and warnings.

2. Read the owners/operating manual carefully and follow all safety instructions before operating the machine.

3. Objects can be thrown from mower while operating, keep a safe distance from the machine when operating, take caution.

4. Keep children, pets and bystanders away from mower when operating.

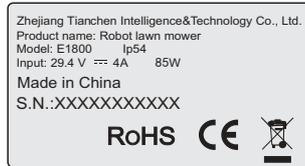
5. WARNING-Operate the disabling device before working on or lifting the machine.

6. Never use a high-pressure washer or even running water to clean the mower.

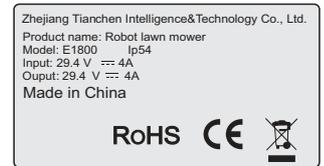
7. Sharp rotating blades. Keep hands and feet away and do not attempt to lift mower from this area.

8. WARNING-Do not ride on the machine.

2. Specifications symbol



Pasted on mower



Pasted on charging station

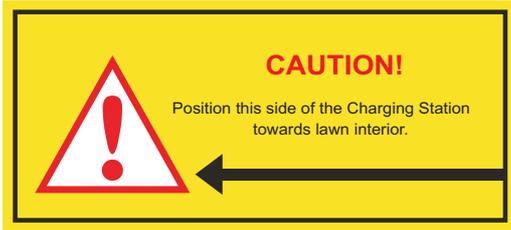
S.N.: XXXX XX XX XXX
year month date number



: Waste electrical products should not be disposed of as household waste. Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice.

1. INTRODUCTION AND SAFETY

4. Charging station symbol.



This label is pasted on charging station, please make sure to position this side towards lawn interior. Failure to do may result in damage to property or persons.

5. Warning symbol.

DANGER! Sharp rotating blade. Keep hands and feet away. Serious injury can occur.



1.3 Symbols in the User Manual

These symbols can be found in this user manual.



A warning box indicates a risk of personal injury exist.



An information box indicates a risk of material damage exist, especially when the stated instructions are not followed. The box is also used where there is a risk of user error.

1.4 Safety instructions

- Read the owners/operation manual carefully and follow all the safety and warning instructions.
- This machine has sharp rotation blades! Never allow the mower to operate unattended; keep bystanders, children and pets away from mower when in operation.
- Never allow anyone to ride or sit on mower.
- Never allow anyone or person who is not familiar with the safe operation of the mower to operate the mower.
- Keep hands and feet away from the cutting blades and other moving parts.
- Never attempt to service or adjust the mower while it is in operation.

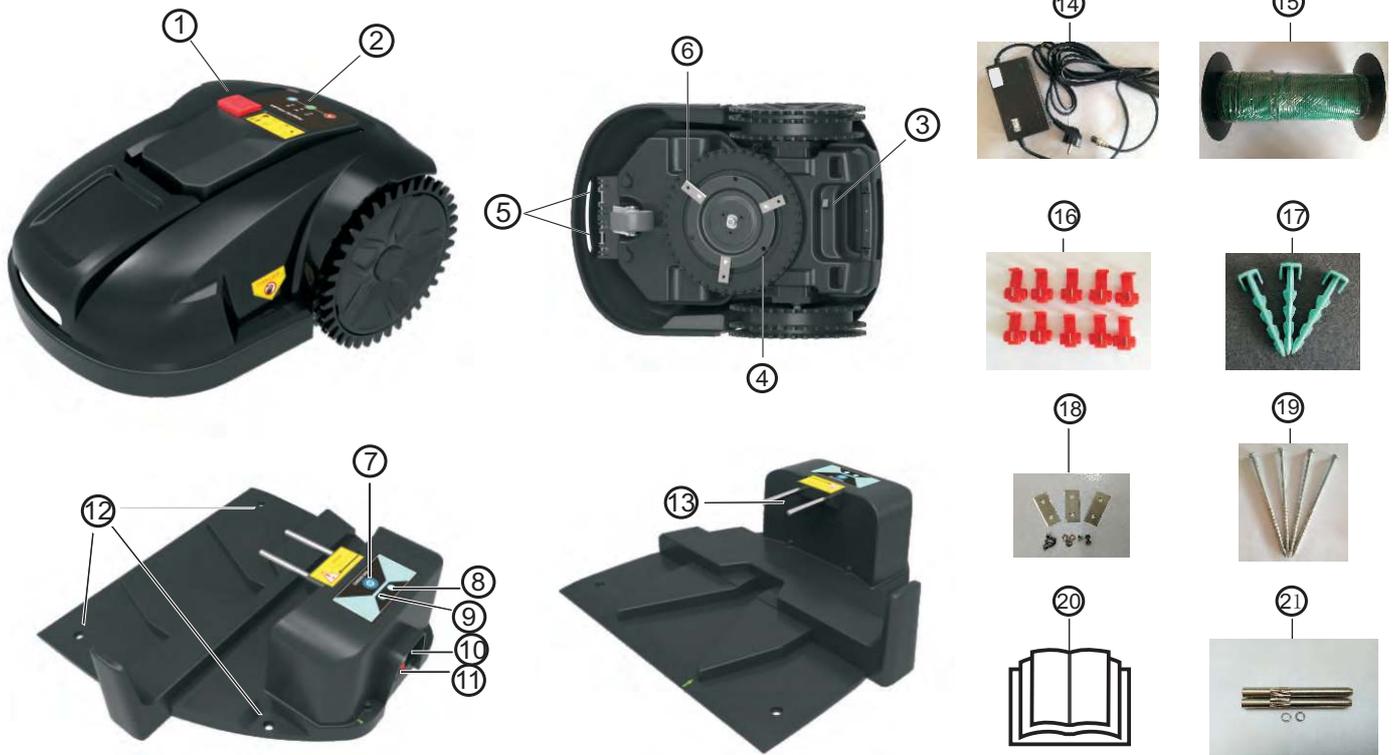
- Inspect and clear the mowing area of all debris (toys, tree branches, items of clothing, anything with a height less than 6cm) before operating the mower.
- Never raise the mower or attempt to inspect the blades while the mower is operating.
- Always turn off the power before lifting the mower or attempting any adjustment.
- When operating the mower in manual mode, maintain a safe distance from behind or around the mower and wear proper foot apparel.
- Do not operate the mower on slopes greater than 30 degrees or use it in manual operation on slopes where a firm footing is not possible.
- Do not operate the mower if any safety feature or device is damaged or inoperable.
- Do not attempt to disable or defeat any safety feature or device.
- Use heavy gloves when inspecting or servicing the blades.
- Wear eye protection and use gloves when installing the virtual wire and driving the wire stakes/pegs. Firmly drive all pegs in order to keep the wire from becoming a tripping hazard.
- Do not use the charging station power supply with an extension cord.
- Use only the original equipment power pack and power supply/charger with this mower.
- Do not use the power supply/charger if the cord has become damaged.
- Do not place metal objects in the area of the charging sheets on the charging station.
- Do not place metal objects across the charging heads of the mower.
- Do no spray water directly into the docking area of the charging station or onto the control panel on charging station.
- The mower has sharp rotating blades! Please care the mower when it is mowing, in case of serious injury occur.
- Keep the lawn mower in perfect operating conditions by performing the maintenance procedures outlined by the manufacturer. Good maintenance guarantees better performance and longer service life.
- In order not to irreversibly damage electric and electronic parts, do not wash the robot with water jets at a high pressure and do not plunge it partially or thoroughly in water, as it is not watertight.
- It is absolutely forbidden to use the robot in explosive and flammable environments.
- The operator or user is responsible for accidents or hazards occurring to other people or their property.
- Fill up all small holes and even all small mounds inside working area. It's to keep the robot with perfect operating.

2. PRESENTATION

2. PRESENTATION

This chapter contains information you should be aware of before placing the installation.

2.1 What's in box



- ① Emergency button
Press it to turn on the mower .
Press it to turn off the mower.
- ② Control panel
- ③ Power button
- ④ Cutting height adjustment knob
- ⑤ Charging sheet
- ⑥ Blade
- ⑦ Home button
Press it when the mower is on,
it goes back to charging station
automatically.
- ⑧ Charging light
Red: charging
Green: full charged / idle.
- ⑨ Virtual wire light
Colorless: in good connecting
Red: Broken wire/ idle
- ⑩ Power terminal
- ⑪ Virtual wire terminal
red terminal
black terminal
- ⑫ Hole for stake
- ⑬ Charging head

- ⑭ Charger
- ⑮ Virtual wire (100m):
Used to mark mowing area and
create a virtual wall for the mower.
- ⑯ Virtual wire connectors (10pcs):
Used to connect virtual wire.
- ⑰ Pegs (100pcs):
Used to fix the virtual wire to the
ground around the lawn perimeter
and around obstacles.
- ⑱ Blades for replacement (3pcs)
- ⑲ Stakes (4pcs):
Used to fix the charging station to
the ground.
- ⑳ English user manual
- ㉑ Charging head
- ㉒ Cutting height adjustment spanner

Consumable parts:

- 1. Blades
- 2. Virtual wire
- 3. Virtual wire connectors
- 4. Pegs
- 5. Stakes
- 6. Rear running wheels
- 7. Front wheels
- 8. Cutting height adjustment
spanner

2. PRESENTATION

2.2 Function of E1800

- Lift sensor

There are lift sensors located between the top and middle cover. If the mower is lifted from ground, it will stop working within 1 second.

- Tilt sensor

There are tilt sensors installed on the mower too, when the mower is tilted over 30 degrees in any direction, it stops working within 2 seconds.

- Bump sensor

The whole top cover is movable. Both front and side of mower equipped with bump sensors that will activate when the mower strikes solid, fixed object when that object is at least 6cm in vertical height from the supporting surface of the mower. When the bump sensor activated, the mower will back up for working.

- Rain sensor

There are two rain sensors located on the mower. The mower will go back to the charging station automatically when it's raining.

Rain sensors can be selected ON/OFF from APP.

Turn on: the mower will go back home if it is raining.

Turn off: the mower will go on mowing when it is raining.

- Wifi

The IOS user can search "EGROBOT" in the Apple Store to download the application.

The Android user search "EGROBOT" in the Google Play to download the application.

- Touch sensor

Touch the handle when the mower is cutting, it will cease function.

- Area working time setting(mowing schedule)

Set up one week (From Monday to Sunday, once for each day) cutting schedule from APP. This function should be used together with **Area location setting**.

- Cutting width: 21cm

- Easy cutting height adjustments

The cutting height could be adjusted on the mower bottom cover cutting height adjustment knob via the equipped spanner.

- Auto recharge system

When the mower senses a low battery situation, it will shut off the cutting motor and search for the virtual wire. Once found it will follow the virtual wire to the charging station for recharge automatically. Once charging is complete, the mower will back up a few centimeters ready to go again in stand by mode.

- Emergency stop switch

There is an emergency button located on the top of mower and in red color.

Press it to turn on the mower .

Press it again to turn off the mower.

- Two cutting modes

There are two cutting modes of the mower, go straight and go circle (high efficiency).

In Auto, mower selects cutting mode intelligently.

It goes straight if the grass is sparse or it has been cut off, and it goes circle if the grass is dense or long.

In manual mode, the mower will go where you direct it.

- Virtual wire

The robot lawn mower can't be operated without a virtual wire. (we suggest to use 100m-600m of virtual wire). The mower will follow virtual wire to charging station, the virtual wire acts as a virtual fence. It will get on the virtual wire until it meets charging sheets, then it gets off from virtual wire and starts cutting inside.

- Mower stops working if virtual wire is cut off or charging station is power off.

If virtual wire is cut or broken, or the charging station loose power, the mower will stop working within 3 seconds

- Four steps to safely start the mower

1. Connect charging station with power supply by charger and make sure the recharging light is in green color.
2. Connect virtual wire to charging station and make sure it is in good connecting(virtual wire light in colorless).
3. Turn on the power button
4. Press emergency button and start auto mode.

- Overload protect

The cutting motor and running motor are monitored continuously during operation for any situation that may cause these motors to over-load.

In the event this is detected, the mower stops operating.

- Waterproof

Waterproof design, there is an inner cover under top cover which protect inside parts from humidity.

The waterproof class is IP54.

- Gyroscope

The mower has gyroscope to keep it going straight on inclines.

- Area location setting(Subarea setting)

You can select Subareas for the mower to cut. This works well for large lawn. See Section 6.4.

- Different languages selection on App.

- Range

There are four range options, user can choose the distance when robot hit virtual wire according the condition of different lawns.

2. PRESENTATION

2.3 Technical data

Model No.	E1800S	E1800	E1800T	Battery			
Mower technical data				Type of battery	Lithium		
Gross weight	17KGS			Battery capacity	2.2Ah	4.4Ah	6.6Ah
Net weight	14KGS			Charging time	≤1.5hours	≤2hours	≤3hours
Mower size	52*39*27cm(LWH)			Average working time	45mins	2-3hours	3-4hours
Rated power	85W			Functions:			
Noise	≤60db			Follow virtual wire walking is optional	✓		
Qty for cutting blades	3pcs			Mower is disabled without power to charging station	✓		
Cutting height	2.5-5.5cm			Mower is disabled if virtual wire is cut or broken	✓		
Cutting width	18cm	21cm		Cutting height adjustment	✓		
Cutting speed	35m/min			Rain sensor	✓		
Blades rotate speed	3000rpm			Auto recharge	✓		
Hill capability	30degree Max slope			Intelligent spiraling	✓		
Max ambient functioning temp.	40°C			Go straight	✓		
Coverage(for once charging)	200m ² ±20%	500m ² ±20%	700m ² ±20%	Anti theft	✓		
Working capacity	1000m ² ±20%	1500m ² ±20%	1800m ² ±20%	Lift sensor	✓		
<p>Note: How large an area is mow per recharged depends primarily on the condition of the blade and the type of grass, growth rate and humidity. The shape of garden is also significant. If the garden mainly consists of open lawns, mower can mow more area per hour than if the garden consists of several small lawns separated by trees, flower beds and passages.</p>				Tilt sensor	✓		
				WIFI Application	✓		
				Bump sensor	✓		
				Waterproof	✓		
				Touch sensor	✓		
				Time set-up system	✓		
				Emergency switch	✓		
				Password set-up	✓		
Charging station and virtual wire				Passwd set-up	✓		
Charging station size	44*48.2*15cm(LWH)			Gyroscope	✓		
Virtual wire maximum length	600m/0.5mm			Language option	✓		
Standard virtual wire length	100m/0.5mm			Subarea setting	✓		
				Range option	✓		

2.4 Working route



3. INSTALLATION

3. INSTALLATION

This chapter describes how you to install this mower. Before starting the installation, read the previous chapter 2. Presentation.

Read the whole of this chapter before starting the installation. How the installation is made also affects how well the mower will work. It is therefore important to plan the installation carefully.

3.1 Preparations

Training

- Read the instructions carefully. Be familiar with the controls and the proper use of the mower.
- Never allow people unfamiliar with these instructions or children to use the mower. Local regulations may restrict the age of the operator.
- The operator or user is responsible for accidents or hazards occurring to other people or their property.

3.2 Hardware adjustments

Blade adjustment

The mowing system used by this mower is based on an effective and energy efficient principle. Unlike normal lawn mowers, the mower cuts the grass instead of striking it off.

Rain sensors on the mower is optional, suggest operate the mower in dry weather to obtain best possible result.

Even though the mower can mow in rain, wet grass collects on mower easily and the risk of slipping on steep slopes increases.

The blades must be in good condition to obtain the best mowing result. In order to keep the blade sharp for as long as possible it is important to keep the lawn free from branches, small stones and other objects (especially the objects less than 6cm height). Please fill up small holes and even out small mounds to make sure lawn is flat.

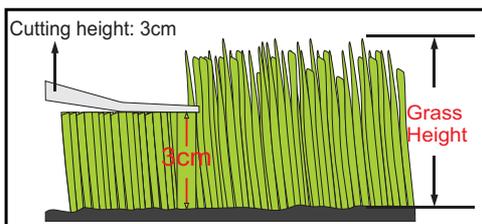
How to adjust the cutting height:

1. Turn power off
2. Use height adjustment spanner rotate knob clockwise.
3. Adjust cutting height device manually 2.5cm-5.5cm.
4. Use tool rotate knob anticlockwise.



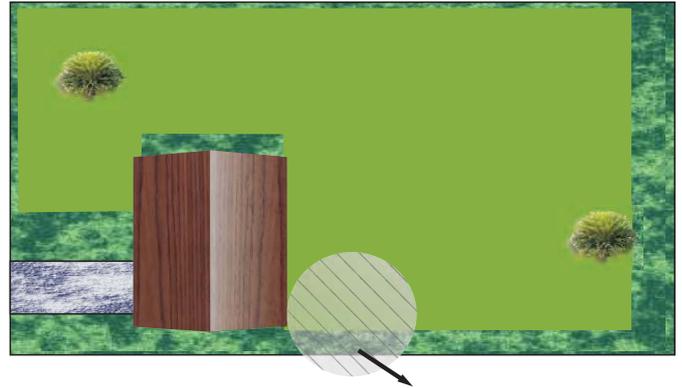
Cutting height adjustment knob

Cutting height explanation: take 3cm level for example.



3.3 Charging station installation

- Choose best installation place, please make sure it is flat, no water, no magnetic interference and no obstacle in the front of charging station.

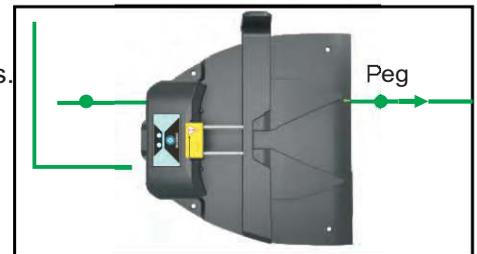


Charging station best install place:

1. Make sure it is flat
2. No magnetic interference
3. No water and far away from puddle
4. No obstacle in front of charging station

- Please fix the charging station on horizontal place and correct direction.

- Lay virtual wire as picture shows.



- Fix the charging station with four stakes by hammer.

IMPORTANT INFORMATION

Before locate the charging station, please make sure mower must follow the virtual wire and back to station in **CLOCKWISE** direction.

IMPORTANT INFORMATION

Do not tread or walk on the charging station plate.

3. INSTALLATION

3.4 Virtual wire installation

The virtual wire can be installed in one of the following ways:

- Securing the wire to the ground with pegs.

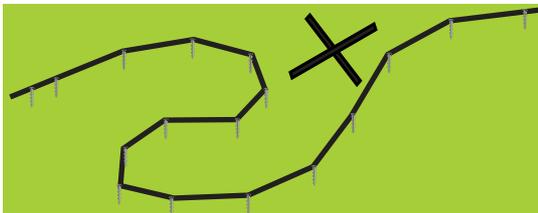
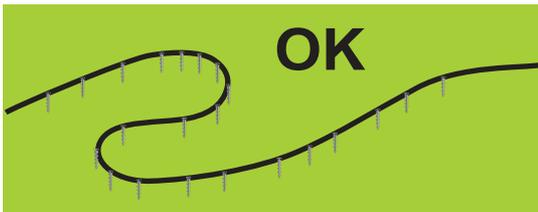
It is preferable to staple down the virtual wire, if you want to make adjustments to the virtual wire during the first few weeks of operation.

- Bury the wire

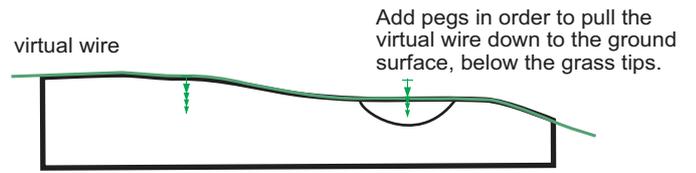
It is preferable to bury the virtual wire(max depth: 5cm) if you want to detach or aerate the lawn.

If necessary both methods can be combined so one part of the virtual wire is stapled down and the remainder is buried.

- Install virtual wire with pegs 1 meter apart. It's best to use smooth radius corners than sharp angles. See pictures.



- Bury virtual wire below grass and fasten it on the ground with pegs, so that the mower should not cut the wire.



IMPORTANT INFORMATION

Hard or dry ground may cause pegs to break when driving them in. In extreme cases, watering the lawn where the pegs will be driven.

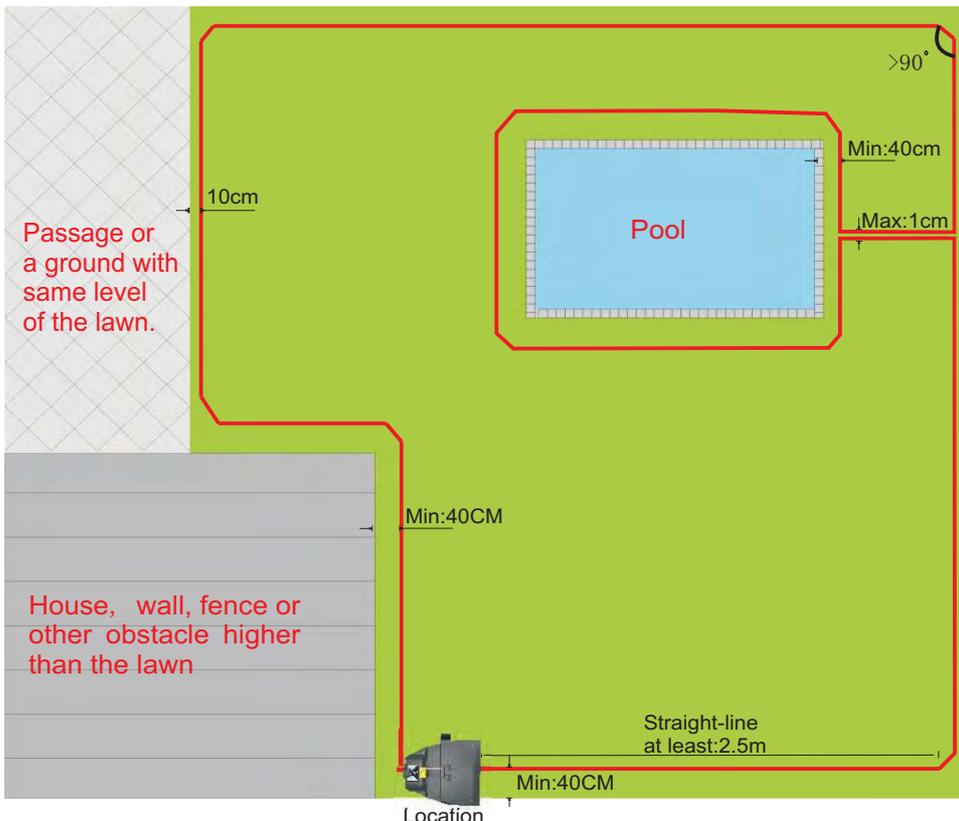
- A minimum distances between the front of the charging station and an obstacle is 2 meters. And make sure the distance from corner to front of charging station is at least 2.5 meters. Make sure to lay a 2.5 meters minimum straight-line of virtual wire in front of charging station.

- If a high obstacle, for example a house, wall, fence or other obstacle which is higher than the cutting lawn borders the working area, the virtual wire should be laid at least 40cm from the obstacle. This will prevent mower from colliding with the obstacle.

- If a passage or a ground with same height of cutting lawn, the virtual wire should be laid at least 10cm from the edge.

- A minimum distance between the pool edge of virtual wire is 40cm.

- A minimum distance between two corners is 1meter.



- A maximum distance of the virtual wire to and from the island is 1cm, and fix the two wires with one peg.

- There are two types of set up of the virtual wire around the charging station.

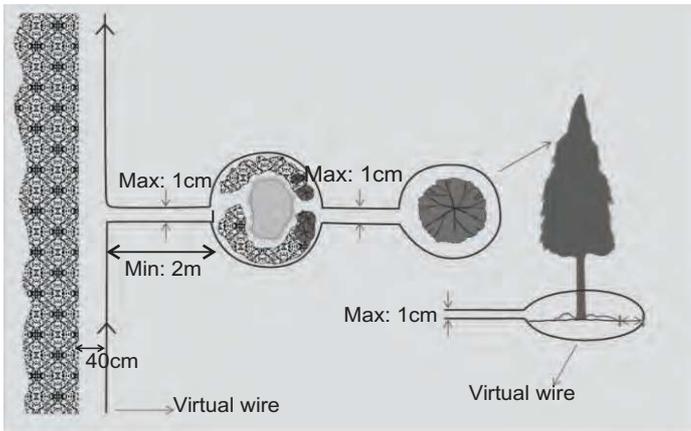
Put the charging station near corner. please take location for reference.

Please make sure to set a straight-line at least of 2.5m in front of charging station. The charging station should be far away from puddle.

3. INSTALLATION

- Use the virtual wire to isolate areas inside the working area by creating islands around obstacles that can not withstand a collision, for example, flower beds and fountains. Run the wire out to the area, route it around the area to be isolated and then back along the same route. If pegs are used, the wire should be laid under the same peg on the return route. When the virtual wire to and from the island with a maximum distance of 1cm, the mower can drive over the wire.

- If protected obstacles are grouped closely together isolate them individually. Continuous virtual island if obstacles are close to edge, leave them out of the mowing area.

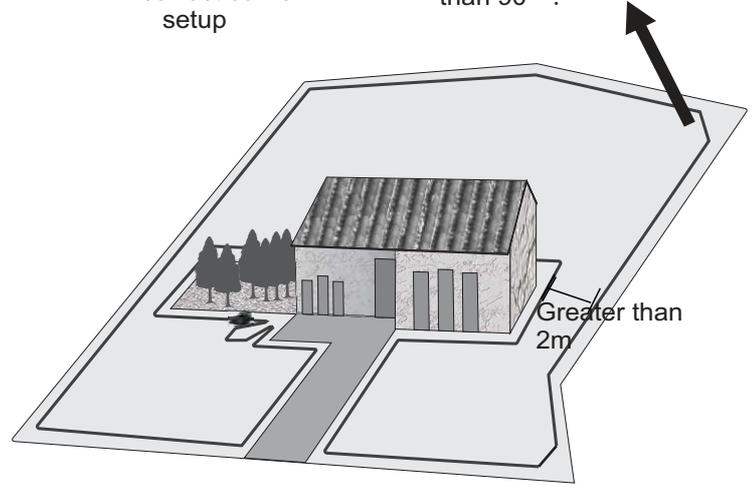


- Care must be taken not to create a corner sharper than 90 degrees when setting up virtual wire. A corner sharper than 90 degrees can cause the mower to lose track of virtual wire. We can make greater than 90 degrees corner like follow picture shows.



Incorrect corner setup

Correct corner set up, using several angle to avoid an angle of less than 90° .



Proper setup in sharp corners

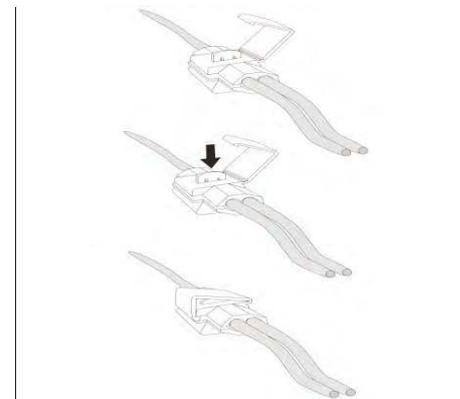
- The distance between charging station and virtual loop should be 2 meters at least.



Virtual wire connecting

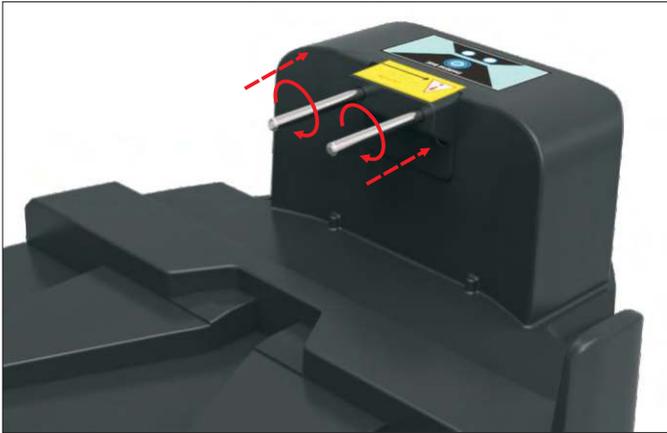
- Joining the virtual wire .
If the virtual wire is not long enough and needs to be spliced: Use supplied wire connector. It is waterproof and gives a reliable electrical connection.

To splice: Insert both cable ends in the connector. Now press down the button on top of the connector fully. Use a pair of pliers or the like, as the button on the connector is difficult to press down by hand.



3. INSTALLATION

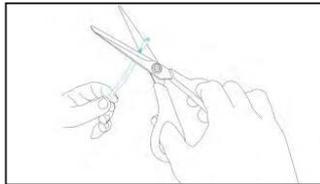
3.5 Charging head installation.



Please fasten the charging heads on the charging station in clockwise.

3.6 Virtual wire and charging station connecting.

1. Cut the two ends of virtual wire to a length of 1cm that's convenient for reaching the virtual wire terminal on charging station. Strip the two ends of wire.



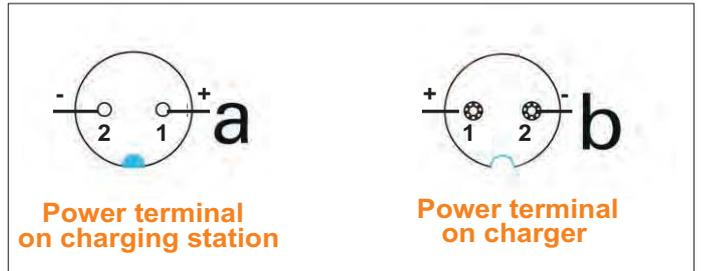
2. Connect the cut two ends of virtual wire to virtual wire terminal located on charging station. Pls take care of positive and negative terminal.



3. The virtual wire light turns colorless while virtual wire connected well with charging station. A failed connecting between virtual wire and charging station cause a blinking red light and send out a beeping from charging station.

3.7 Power connection.

1. Connect charger terminal **b** with charging station power terminal **a**.
Connect 1 from plug a to 1 from plug b and screw it it tightly.



2. Connect the charger with power supply.
3. Charging light on station in green: Non-recharging. charging light on station in red: recharging.

3.8 Recharge.

1. When the mower senses a low battery situation, it will shut off the cutting motor and search for the virtual wire. Once found it will follow the virtual wire to the charging station for recharge automatically. Once charging is complete, the mower will back up a few centimeters and stand by.
2. The mower will go back to the charging station automatically when it's raining. Rain sensors can be selected ON/OFF from APP. Turn on: the mower will go back home if it is raining. Turn off: the mower will go on mowing when it is raining.

IMPORTANT INFORMATION

All the buttons (except the emergency switch and power button) are locked which can not be used during the robot is in recharging.

3. The mower reverses several centimeters and stop there with entering standby mode after fully recharged.



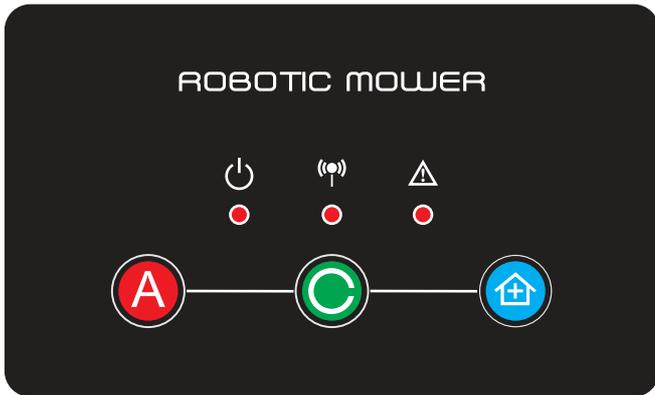
WARNING

Redundant virtual wire at back of charging station must be cut off.

4. CONTROL PANEL

4. CONTROL PANEL

4.1 Control Panel view



-  Auto mode
-  Confirm button(to confirm your selection)
-  Home button
-  Power light(lighted when power is on)
-  Signal light
(lighted when mower detect signal from charging station)
-  Alarm light(flickering when mower alarms)

4.2 AUTO MODE

Turn on the emergency switch, when the signal light^{((O))} flickers to bright, press auto button , indicator light  start flickering, press confirm button  indicator light  off, mower enter into the auto mode.

4.3 HOME MODE

Turn on the emergency switch, when the signal light^{((O))} flickers to bright, press home button , indicator light  starts flickering, press confirm button , indicator light  off, mower enter into home mode.

Note: If the signal light keeps flickering all the time, need to rematch the address between mower and charging station.

4.4 Mower alarming

When the mower stops with alarm, the alarm indicator light will keeps flickering, cancel alarm by press confirm button , alarm indicator light  will be off.

Note: If the mower stopped frequently, please check alarm messages which showed on the APP.

4.5 Match mower with charging station:

Take mower close to charging station, turn on the emergency switch, press auto button  and home button  simultaneously, the signal light ^{((O))} starts flickering, press the home button on the charging station, the signal light ^{((O))} turns bright, press confirm button  on the mower panel until the signal light^{((O))} is off, the matching complete, turn off the mower and started again.

Note: Mower was matched with charging station before leave the factory.

5. Use

5. USE

IMPORTANT INFORMATION

- Do not leave the mower to operate unattended if you know that there are pets, children or people in the vicinity
- Mow only in daylight or in good artificial light.
- Avoid operating the mower in wet grass.
- Do not operate the mower when barefoot or wearing open sandals.
- Always wear substantial footwear and long trousers.
- Always be sure of your footing on slopes.
- Use extreme caution when reversing the mower towards you.
- Always switch on the mower according to instructions with feet well away from the blade.



WARNING

Read the safety instructions before you start your mower.



WARNING

Keep your hands and feet away from the rotating blade. Never put your hands or feet close to or under the body when the motors are running.

5.1 Preparation

- Ensure the correct installation of the virtual wire.
- Periodically inspect the area where the mower is to be used and remove all stones, sticks, wires, bones, and other foreign objects especially the height of objects is less than 6cm.
- Periodically visually inspect that the blades, blade bolts and cutter assembly are not worn or damaged. Replace worn or damaged blades and bolts in sets to preserve balance.
- Connect the two ends of virtual wire to the terminal on charging station, and ensure virtual wire is in good connecting. (Light on charging station is in colorless).
- Insert charger into charging station and secure it with threaded cap. And then connect charger to power supply. Ensure the charging station has a good connection and the light on charging station is Green.
- Periodically inspect the lawn is without any small hole or mound.

IMPORTANT INFORMATION

User can not start the mower if virtual wire or charging station is not in good connection.

5.2 Starting the mower

There are two locations of start the mower.

1. Take the mower clockwise onto virtual wire, make sure that the mower is not connected with two charging sheets on charging station. Otherwise, the mower is in recharging Mode, it can not be started.
2. Take the robot to start point.

If set **Edge mowing** off, the robot begins cutting inside lawn directly.

If set **Edge mowing** on, the robot will follow the virtual wire cutting for one circle, and back to station first.

To start the robot.

1. Turn on the Power button under the mower.
2. Press the Emergency button to turn on the robot.
3. Select AUTO  mode, the mower starts working.

Note: If the mower lost contact with station, AUTO or HOME mode is not able to start. The signal light  is always flickering, then need rematch the mower with charging station, pls refer to **4.5 Match mower with charging station**.

5.3 Stopping mower /Turning off mower

1. Press stop button from APP. Mower stops and enters standby mode.
2. The mower can be turned off by pressing the Emergency button directly.
3. Press power button under the mower to turn off.

5.4 Emergency Switch

Press Emergency button at any time the mower power off at once. User has to restart it.

6.APP USER MANUAL

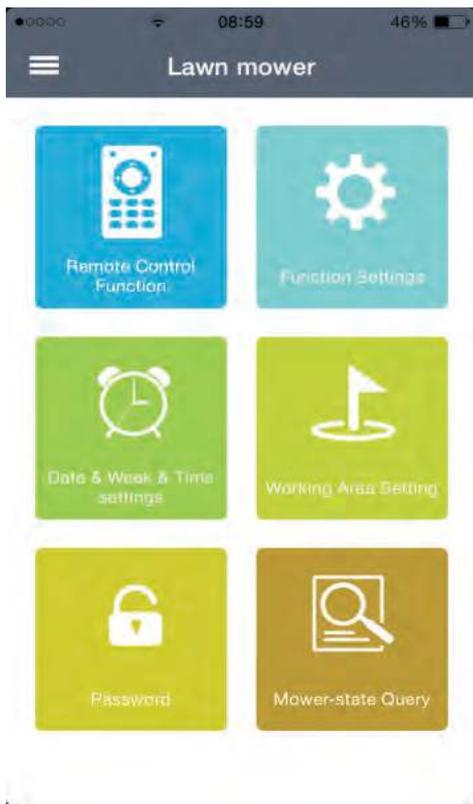
The APP is available for IOS and Andriod phone.

Download and Install:

- ◆ The Android user pls search “EGROBOT” in Google Play to download.
- ◆ The IOS user pls search “EGROBOT” in the Apple Store to download.
- ◆ For the first time please connect the charging station and virtual wire and turn on the mower according to the user manual. Then enter the smart phone setting interface--WI-FI to connect the device. Pls note for first time it takes about 3-5minutes to connect device, and the device can only connect with one phone at the same time.

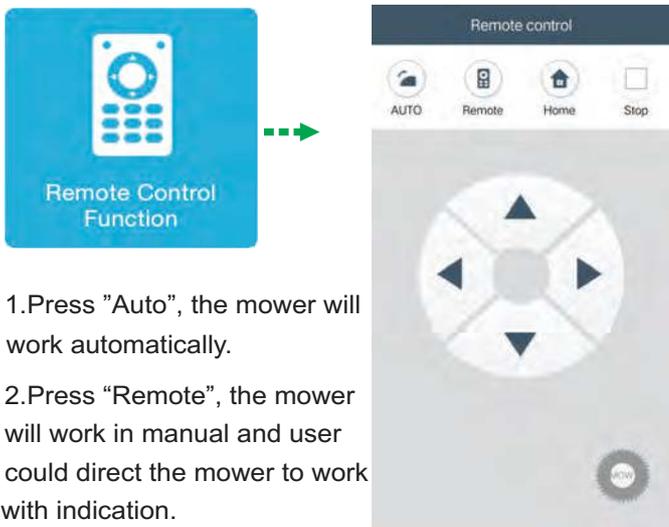
The using of the App:

- ◆ Click the APP you installed and enter it.



6.APP USER MANUAL

6.1 Remote control function



1. Press "Auto", the mower will work automatically.
2. Press "Remote", the mower will work in manual and user could direct the mower to work with indication.

Pls note in Remote mode, robot does not recognize the wire and station.

3. Press "Home", the robot will go back to station automatically.

4. Press "Stop" can stop the robot and stand by.

Pls note this does not work when mower is charging.

5. The blades could be turned on or off by press "MOW".

3. For the functions like rain sensor, touch sensor, audio alarm are optional.

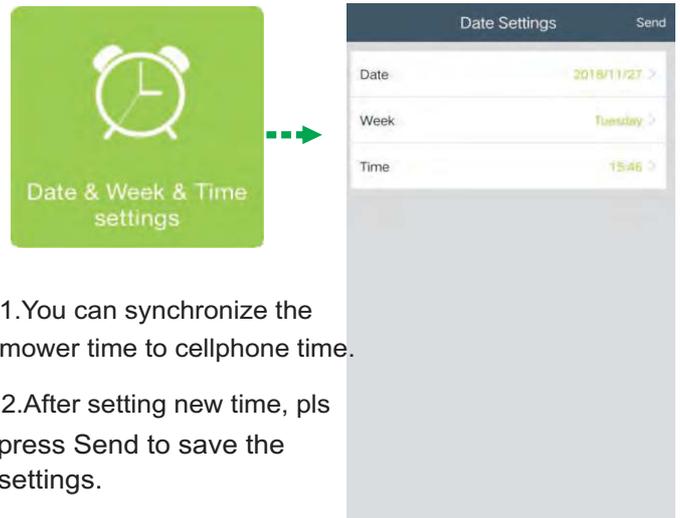
Rain sensor:

ON: mower goes back to charging station when it is raining.

OFF: mower goes on working when it is raining.

After finish setting function, pls press Send to save the settings.

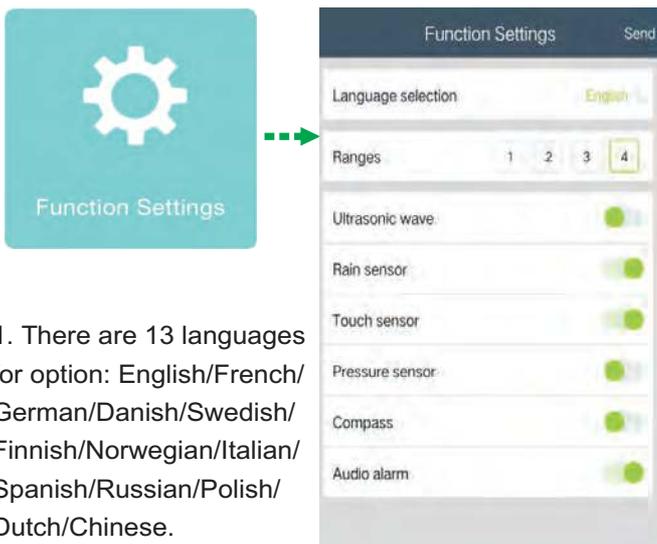
6.3 Date & Week & Time settings



1. You can synchronize the mower time to cellphone time.

2. After setting new time, pls press Send to save the settings.

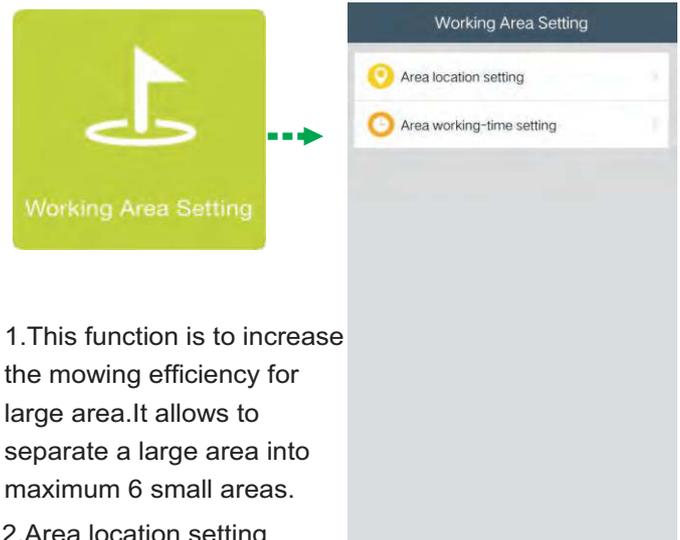
6.2 Function settings



1. There are 13 languages for option: English/French/German/Danish/Swedish/Finnish/Norwegian/Italian/Spanish/Russian/Polish/Dutch/Chinese.

2. Range function: there are four range options, user can choose the distance when mower hit virtual wire according the condition of different lawns.

6.4 Working Area Setting



1. This function is to increase the mowing efficiency for large area. It allows to separate a large area into maximum 6 small areas.

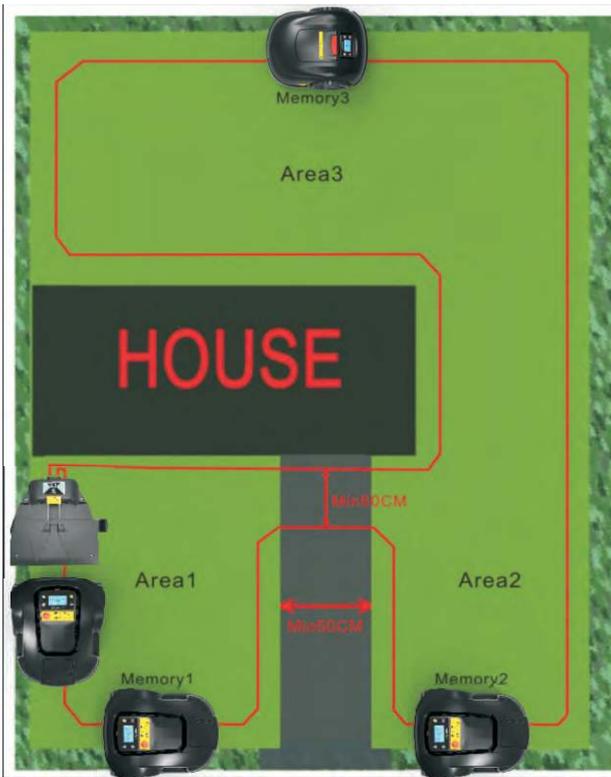
2. Area location setting

2.1 before entering into this interface, pls separate the garden into several areas as per your own demand.

Take separate 3 areas for example below:



6.APP USER MANUAL



-Route the wire around the passage to separate the the area.The virtual wire to and from the edge of passage is 1meter at least.pls refer to below picture.
-A minimum distance between the virtual wire which is to make passage is 50cm.

2.2 choose the areas that you set accordingly:

2-1Area 1 is non-optional,selects by default.

2-2After select Area, the symbol * will be in red color.

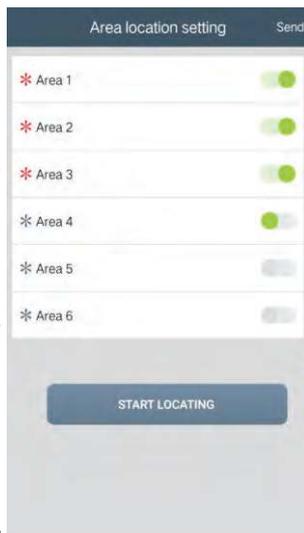
2-3 Start locating to set memory point.

A memory point is to program the where to leave virtual wire and go inner lawn.Each area needs a memory point.

Pls make sure the mower voltage more than 27V before setting the memory points,and pls put the mower at charging station before locating.

-It is best to set the memory point in the middle of two corners.

--A better position of memory point is 3meter distance from the beginning or the end of an area.



3.Area working-time setting

3.1.The Area working-time setting should be used together with Area location setting.

3.2.Choose the mower working day per week.

3.3Set the start time, then set the working time for each area and Send.

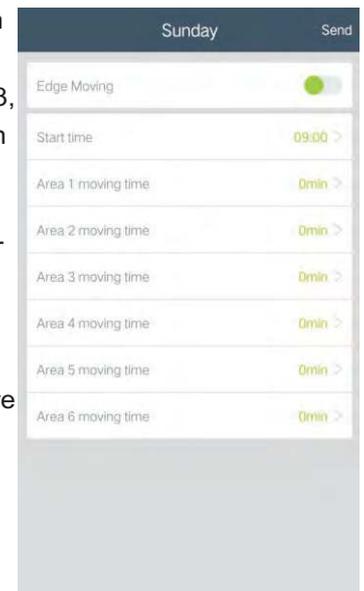
-Pls note if the working areas are for example 3areas,do not set the time for other unselected areas.

-If set Area 1 with 0min, it means Non-cutting in Area 1.

-If unselect working in Area 2,even has set working time in Area 3, mower will not work in Area 3.

3.4.Edge mowing:

ON:every time mower will cross to the back of station to mow the edge grass on virtual wire and follow the wire back to station first.



4.Put the mower back to station and wait for working.

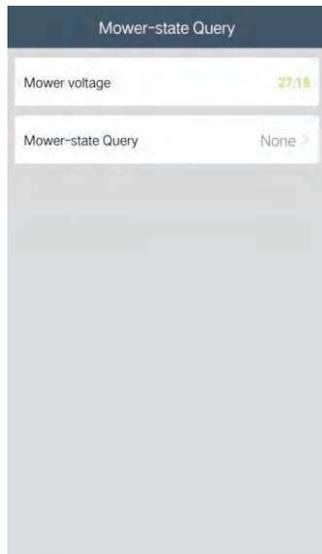
6.5 Password



1.This is for setting the mower password.
2. and you can set 4-digit password.
Initial password:1234.
Input old password,then
Input new password and
Send.

3.Password function is optional.

6.6 Mower-state Query



1.You can get the mower voltage info.
2.Click “Mower-state Query”
to view alarm info.

6. MAINTENANCE AND STORAGE

6. MAINTENANCE AND STORAGE

- During maintenance operations, use the individual protections indicated by the Manufacturer, especially when intervening on the blade.
- Before performing maintenance operations, make sure that the robot has stopped in safety conditions.

PROGRAMMED MAINTENANCE INTERVALS CHART

Frequency	Component	Type of operation	Reference
Every week	Blade	Clean and check the efficiency of the blade	See "Robot cleaning"
		If the blade is bent due to an impact or if it is worn-out, replace it.	See "Blade replacement"
Every month	Robot	Carry out cleaning	See "Robot cleaning"
Every 3 months	Robot	Carry out for recharge	See "Battery"

6.1 Robot cleaning

1. Stop the robot in safety conditions.
2. Wear protective gloves.
3. Clean all the outside surfaces of the robot with a sponge soaked in warm water.
4. Do not use solvents or benzene so not to damage the varnished surfaces and the plastic components.
5. Do not wash the inside parts of the robot and do not use water jets in pressure so not to damage the electric and the electronic components.



WARNING

Never use a high-pressure washer or even running water to clean the robot.

6. Check the lower part of the robot (cutting blade area and wheels) and remove the deposits and/or residues that might obstruct the correct functioning of the robot.
7. To remove the deposits and/or other residues from the blade, use a suitable brush.
8. Clean the outside of the charging station from any accumulated residues.
9. Keep all nuts, bolts and screws tight to be sure the appliance is in safe working condition.
10. Replace worn or damaged parts for safety.
11. Ensure that only replacement cutting means of the right type are used.
12. Ensure that batteries are charged by using the correct charger recommended by the manufacturer.
13. Incorrect use may result in electric shock, overheating or leakage of corrosive liquid from the battery.
14. In the event leakage of electrolyte flush with water/neutralising agent, seek medical help if it comes into contact with the eyes etc.

15. Servicing of the mower should be according to manufacturers instructions. This product (include battery pack) must be disposed of at a designated collection point for electrical and electronic waste. For more information, contact your local city office or the shop where you purchased the product.

6.2 Robot Storage

Packed the mower and all spareparts with the original package, and storage the carton off the ground in a cool, dry place. Temperature should not be colder than 14F° (-10°C)

6.3 Blade replacement

Blade replace steps:

1. Stop the robot in safe conditions.
2. Wear protective gloves.
3. Turn the Robot upside down.
4. Unscrew the blade and remove it.
5. Replace a new blade and screw it tightly.



6.4 Front wheel cleaning

When front wheels are not easy to rotate, please turn robot upside down, check it and dismantle the screw cap to take the front wheel out of robot, dismantle end caps and remove the residues, like mud, grass etc from end cap, then reinstall it on the robot.

6.5 Battery

The battery is maintenance-free, but has a limited life span of 1-3years. Battery life is dependent on the length of the using season and how many hours per week the robot is used. A long season or many hours of use per week, means that the battery must be replaced more regularly.

- Attention of lithium batteries

Please charge the lithium batteries in accordance with standard time and procedures.

When the power is too low. It should be started charging as soon as possible.

Storage, we suggest the optimum storage of lithium battery is with 80% power and keep in the shade.

Don't connect the anode and cathode of battery.

Don't take apart, repair or modify the battery privately.

- Disused battery processing

Please contact the nearest waste treatment center and consultation with recycling and proper disposal of views.

IMPORTANT INFORMATION

Charge the battery fully at the end of the season before winter storage. And recharge it every 3 months.

7.TROUBLE SHOOTING

7. TROUBLE SHOOTING

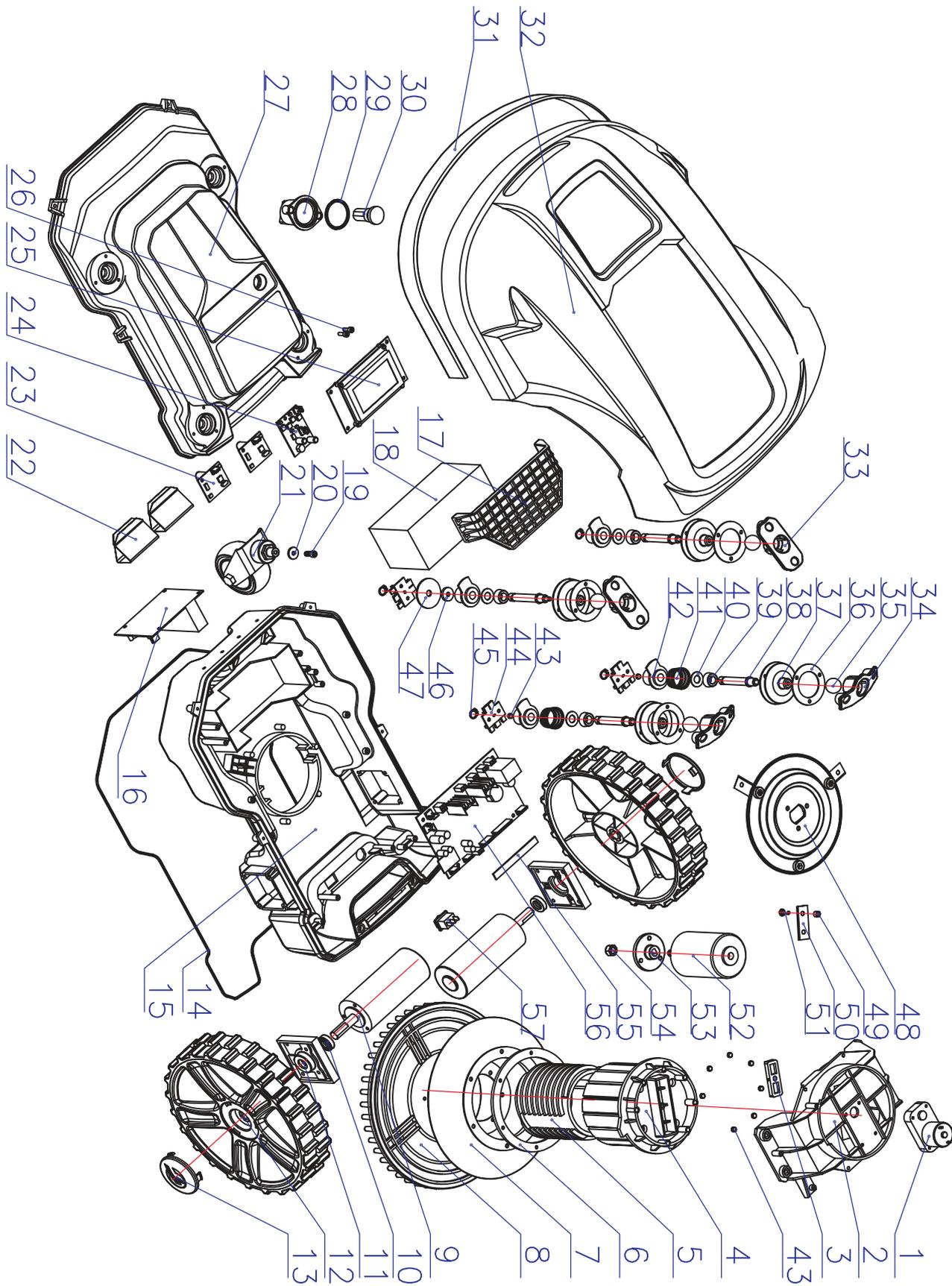
Problem	Alert info	Possible reasons	Solutions
Auto mode is not able to start,charging station is beeping. Signal light is off.	Virtual wire was cut off.	1.The virtual wire fails to send signals. 2.The virtual wire was cut off.	1.Check the virtual wire light on charging station. Be sure the virtual wire is connected to the charging station well (light in colorless). 2. Connect the virtual wire with wire connectors.
Auto mode is not able to start,charging station is beeping. Signal light is off.	Charging station is out of power.	1.main power is shut off. Bad communication between charging station and mower.	1. Check the power and make sure the charger is connecting well with power supply and charging station.
Mower stops working and beeps.	Lift sensor or pressure sensor activated.	1. Mower is lifted from ground. 2. Someone or object ride or sit on the mower.	1. Take the mower to level ground and restart it. 2. Take the object away from mower and restart it.
Mower stops working and beeps.	Current of right running motor is too large,check it. Current of left running motor is too large,check it.	1. Running wheel strike hard objects. 2. The mower is trapped in lawn.	1. Clean the lawn and make sure it is free from hard objects. 2. Clean the lawn where mower is trapped or restart the mower in another place.
Mower stops working and beeps.	Current of cutting motor is too large,check it.	1. Cutting height is too low. 2. Blade strikes hard objects. 3. Mower is trapped in lawn	1. Adjust the cutting height to suitable height. 2. Clean the lawn and make sure it is free from hard objects. 3. Clean the lawn where mower is trapped or restart the mower in another place.

7.TROUBLE SHOOTING

Problem	Display	Possible reasons	Solutions
Mower stops working and beeps.	Robot is over tilted.	Mower is tilted over than 30 degrees from the ground.	Turn off the mower and take the mower to level ground. Then restart the mower.
The batteries can not recharge		1.Charger is not powered on. 2.Battery lifetime decreases.	1. Check whether charger is well connected. 2. Send the mower to service station and replace the battery.
Mower gets stuck, does not move.		1. Grass is extremely overgrown or very wet, 2. Terrain needs landscaping repairs.	1. Cut the grass appropriate height. 2. Fill in all holes, cover or exclude all exposed roots in order to smooth the terrain.
Mower does not complete the edge.		Obstacle along the path.	Watch the full operation of follow virtual wire walking and confirm no obstacle is present.
Mower does not detect the charging station contacts.		The ground before the charging station isn't flat.	Reset the charging station in a flat place.
Mower reaches charging station when its contacts are above the charging sheets.		Height difference between the charging station and lawn surface at the entrance to charging station.	Confirm the ground before the charging station is leveled with the station if necessary fill area with dirt and level off.
The mower behaves in an anomalous around flower beds.		Virtual wire incorrectly placed	Relocate the virtual wire.
The mower is very noisy.		1. Damaged cutting blade. 2. Cutting blade flooded by residues(tapes, ropes, plastic fragments, etc) 3.The start of mower occurred with obstacles being too closed (less than 1m away) or in presence of unexpected obstacles (fallen branches, forgotten objects, etc.) 4. Damaged running motor or cutting motor. 5. Grass too high.	1. Replace a new blade. 2. Stop the mower in safety, use protection gloves to avoid the risk of cuts on hands, remove the fold cause from blade. 3. Start the robot in new place. 4. Get the motor repair or replace by service station. 5. Increase the cutting height or use a normal lawn mower.

8. EXPLODED VIEW

Robot Exploded View

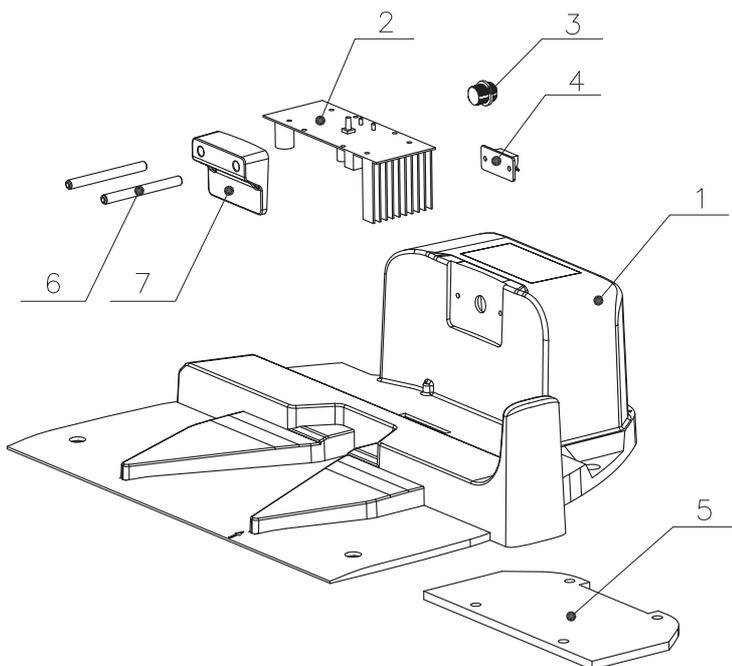


8. EXPLODED VIEW

Robot spareparts list:

No.	Sparepart Name	No.	Spareparts Name	No.	Spareparts Name
1	Cutting height adjusting motor	24	Adjusting motor PCB	47	Flat washer-3
2	Cutting motor fixed mount	25	Display PCB	48	Blade shield
3	Shaft sleeve	26	Rain sensor	49	Blade M4 screw nut
4	Cutting motor fixed seat	27	Middle cover	50	Blade
5	Cutting motor base	28	Emergency base	51	Blade M4 screw
6	Rubber ring gasket	29	Emergency seal ring	52	Cutting motor
7	Rubber ring	30	Emergency switch	53	Blade head
8	Protective shield	31	Bump rubber	54	M8 screw nut
9	Running motor	32	Top cover	55	Touch sensor PCB
10	Oil seal	33	Globe joint-front	56	Main PCB
11	Running motor end cap	34	Globe joint-rear	57	Power button
12	Rear wheel	35	Ball head		
13	Wheel shell	36	Pressure ring for rubber		
14	Seal strip	37	Rocking bar rubber		
15	Bottom base	38	Rocking bar axle		
16	Brushless motor PCB	39	Support ring		
17	Battery cover	40	Flat washer-2		
18	Battery	41	Reposition spring		
19	M5 screw	42	Centering block		
20	Flat washer-1	43	Magnet-1		
21	Front wheel	44	Hall PCB		
22	Recharging sheet	45	Snap ring		
23	Virtual wire sensor PCB	46	Magnet-2		

Charging Station Exploded View



1. Station cover
2. PCB
3. Power terminal
4. Virtual wire terminal
5. Short plate
6. Charging head
7. Charging head permanent seat

Robot lawn mower

USER MANUAL