



# **Operator's Manual Victa Robot Mower RM100**



**WARNING!** Read this manual before operating your Victa Autonomous Mower.



# IMPORTANT NOTES



**Read this manual carefully prior to assembling and operating the Autonomous Mower. It is dangerous to operate this product without being familiar with these instructions. Keep this manual in a safe place and have it ready for future reference.**

## Safety Marking and Symbols

### General notes on safety

This appliance can cause serious injury if it is not properly used. Please read these operating instructions carefully and familiarise yourself with all the control elements before operating this appliance. Keep these operating instructions in a readily accessible place so that this information is always at your disposal.

Please note that despite all precautions to integrate safety precautions into the construction, the safety appliances and supplemental safety mechanisms, a residual risk remains when using this appliance.



**Warning!**



**Warning! Electric shock.**



**Read the directions and remove plug from the mains before carrying out any maintenance work.**



**Always stop the appliance and wait for the cutting blades to stop before carrying out any inspection and/or maintenance.**



**Read the directions for use before operating the appliance.**



**Never place hands under or near the appliance when it is operating**



**Never place feet under or near the appliance when it is operating**



**Be careful of objects being thrown out!**



**Keep bystanders well away from the appliance.**



**Do not ride on the appliance. Do not stand or sit on the appliance or load objects onto it or the charging station.**



**Cleaning with water systems can cause damage**



**The robot is protected by an access PIN code and an anti-theft system.**

# IMPORTANT NOTES



Guaranteed sound power level value is 67dB.



Double insulation



Pole orientation



SMPS(Switch mode power supply unit)



SMPS (Switch mode power supply unit) incorporating a short-circuit-proof safety isolating switching power supply



The Power Supply is for indoor use only.



Li-ion

Batteries contain Li-Ion and should not be disposed with general household waste. Contact your local authority for disposal advice.



Return any discarded batteries to your local dealer, collector or recycle point. It is not permitted to dispose of this product with normal household waste. Please recycle where facilities exist. Check with your local authority or retailer for recycling advice.

## Warning Symbols on the battery pack



Li-ion

Take batteries to an old battery collection point where they will be recycled in an environmentally friendly manner.



Do not throw into water.



Do not throw on the fire



Do not subject the battery to strong sunlight over long periods and do not leave it in high temperatures.(max.45°C).



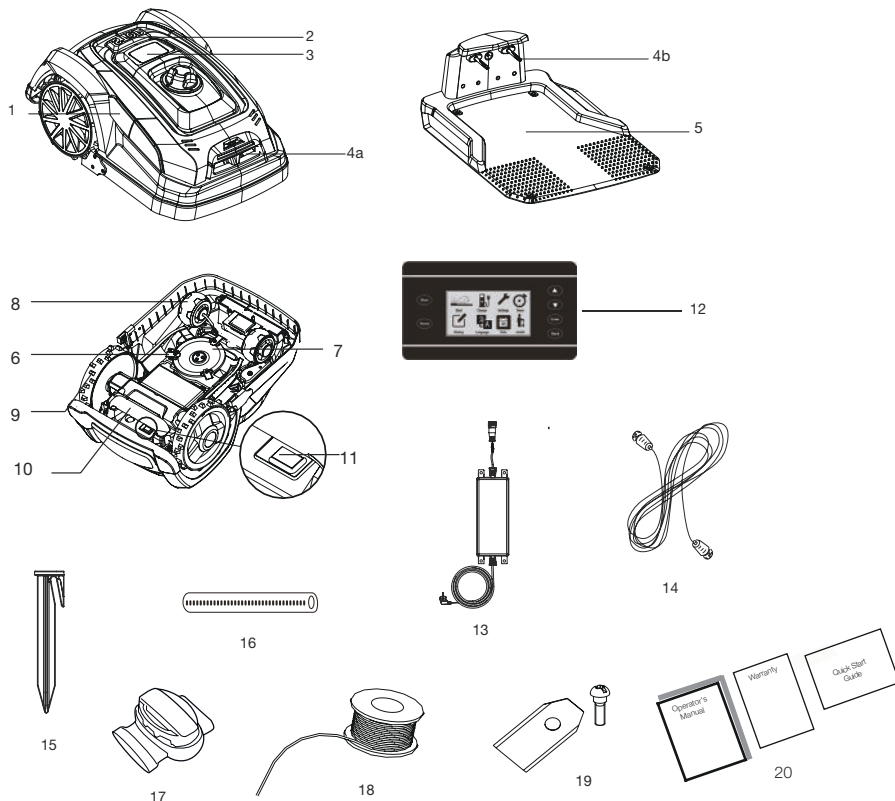
# CONTENTS & SYMBOLS

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## Features



1. Autonomous Mower x 1	5. Docking station x 1	9. Rear wheel	13. Switching power supply x 1	17. Boundary wire connector x 3
2. STOP button	6. Blade x 3	10. Carrying handle	14. Extension cord x 1	18. Boundary wire x 1 (120m)
3. Display and keypad	7. Blade disc	11. Main power switch	15. Fixing peg x 150	19. Spare blade & Bolt x 3
4a. Charging contacts (Autonomous Mower)	8. Front wheel	12. Control panel	16. Measurement ruler (on the color box) x 2	20. Documents: Operator's Manual Warranty Card Quick Start Guide
4b. Charging contacts (Docking station)				










## FEATURES & DEFINITIONS

### Functional description

This Autonomous Mower is an autonomous robot used to cut lawn grass. It will remain within an area designated by a boundary wire, start work following a programmed schedule and return to its charging station as needed. The three sharp blades ensure clean cuts with minimal damage to the plant, leaving behind tiny snippets as natural fertilizer.

### Technical Data

Model		2691783
Model Name		Victa Robot Mower RM100
Max cutting area		600 m <sup>2</sup>
Battery		80086647-INR18650-20R Lithium-Ion battery, 28V/2.0Ah, 56Wh
Switching power supply		80086689 Input 100-240V AC, 50/60 Hz Output 32 V DC, 1.5A
Typical mow time on one charge		60 min
Rated voltage		28 V DC
Rated power		50 W
No load cutting speed		3500 min <sup>-1</sup>
Cutting width		18 cm
Blade model / part number		80086674
Cutting height adjustment		Stepless
Cutting height, min-max		20 mm-60 mm
Number of blades		Three (Pivoting)
Charging time		60 min
<b>Recommended time per day</b>		
300 m <sup>2</sup>		4 hours
600 m <sup>2</sup>		6 hours
<b>Degree of protection:</b>		
Autonomous Mower		IPX4
Docking Station		IPX4
Autonomous Mower weight		8.5 Kg
Charging Station weight		2 Kg
Autonomous Mower size, L x W x H		570 X 390 X 260 mm
Package size, L x B x H		720 X 470 X 330 mm
Gross weight		16.5 kg
<b>Measured sound power level</b>		
Measured sound pressure		66.4 dB(A) , K=3.0 dB(A)
Guaranteed sound power level		L = 67 dB(A)



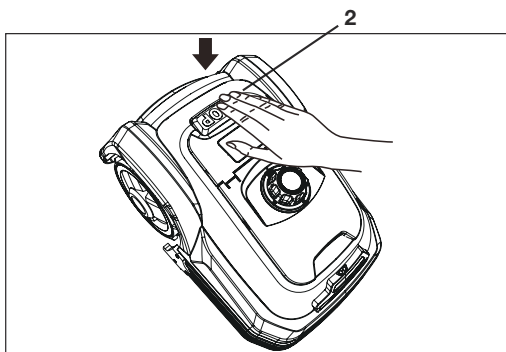
## Safety Instructions

### Safety instructions for Autonomous Mowers

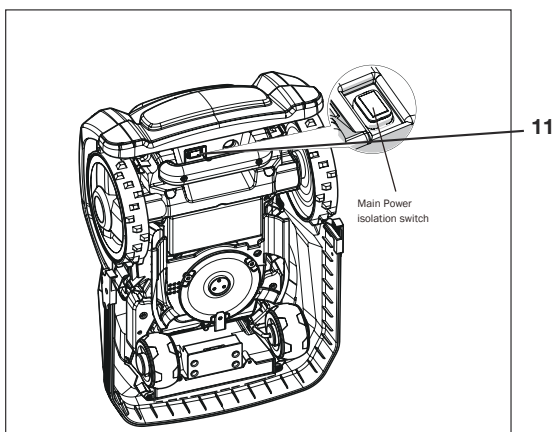
Do not store anything heavy on the top of the Autonomous Mower or charging station both during storage and when use.

Never use the appliance if the main power switch (11) is damaged or does not work properly. Never modify the main power switch. Set the main power switch to OFF for storage or when the appliance is not in use. Use the original packaging when transporting the Autonomous Mower, especially for long distances.

If you need to carry the Autonomous Mower from or within the working area, first press the STOP button (2) to stop the appliance.



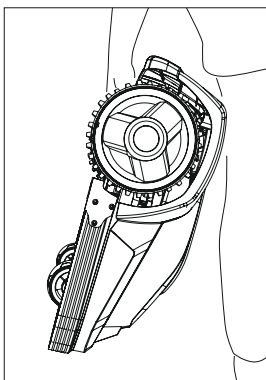
Ensure that the main power switch (11) is switched OFF before you lift up your Autonomous Mower.





## SAFETY & HANDLING

Close the top cover and carry the Autonomous Mower by the carrying handle (10) at the rear under the mower, keeping the blade disc away from your body as shown.

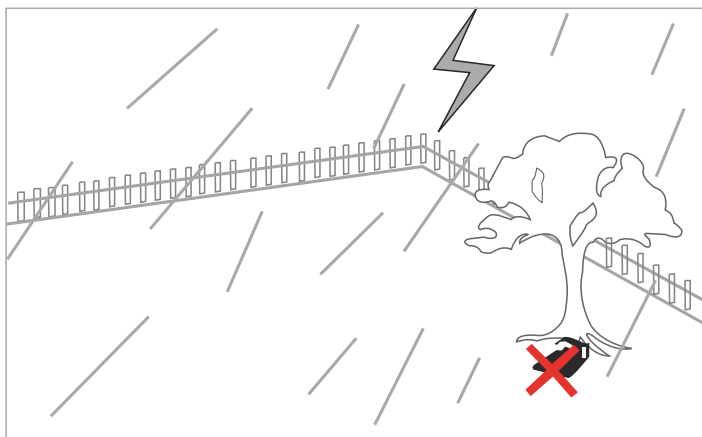


Note: The carrying handle (10) includes two safety switches. Lifting the appliance by the carrying handle will trigger the switches, deactivating the Autonomous Mower.

### Lightning Protection

In order to prevent lightning damage to the appliance, do not place the charging station under tall trees.

Do not use the Autonomous Mower during lightning or thunder storms. In case of damage to the electronic circuitry, unplug the charging station and - if possible - disconnect the boundary wire.







## Operating the appliance:



**WARNING! This appliance can cause serious injuries. Follow instructions below to reduce risk of accident and injury.**

## **IMPORTANT! READ CAREFULLY BEFORE USE. KEEP FOR FUTURE REFERENCE.**

### Preparation:

- Read the instructions carefully and make sure you understand them fully. Be familiar with the controls and the proper use of the appliance.
- Never allow children, persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge or people unfamiliar with these instructions use the appliance.
- Local regulations may restrict the age of the operator. Children should be supervised to ensure that they do not play with the appliance.
- The operator or user is responsible for accidents or hazards occurring to other people or their property.
- Ensure the correct installation of the perimeter boundary system as instructed.
- Periodically inspect the area where the appliance is to be used and remove all stones, sticks, wires, and other debris which could cause damage to the appliance or be unsafe.
- Periodically visually inspect to see 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.
- Never leave the appliance to operate unattended, especially while other people such as children and pets are in the area.
- Never use the appliance to level out uneven patches.
- If the blades no longer cut correctly or if the motor is overloaded, check all the parts of your equipment and replace the worn parts. If a more extensive repair is required, contact the customer service centre.

### Use:

- Never operate the appliance with defective guards or without safety appliances, for example deflectors in place.
- Do not put hands or feet near or under rotating parts.
- Never pick up or carry the appliance while the motor is running.
- Press STOP button
- Turn OFF / Power OFF the appliance
  - before clearing any blockages.
  - before checking, cleaning or maintaining the appliance.
- Start Autonomous Mower according to the instructions. When the main power switch (11) is in the ON position, make sure you keep your hands and feet away from the rotating blades.
- Never lift the Autonomous Mower or carry it around when the main switch is in the ON position.
- Do not let persons use the mower who do not know how it works or behaves.
- Do not put anything on top of the Autonomous Mower or its charging station.
- Do not use the Autonomous Mower with defective blade discs, body, defective blades, screws, nuts etc.
- Avoid operating the appliance in wet grass. Doing so can cause additional wear and tear and will increase the amount of cleaning required.



# SAFETY & HANDLING

## Work interruptions:

- After the appliance has been turned off, the cutting cylinder will continue to rotate for a few seconds. Keep hands and feet well away.
- Only remove blockages when the appliance is standing completely still.
- Switch off the power when the appliance is transported, lifted or tilted.
- Never leave the appliance unattended. Children should be supervised to ensure that they do not play with the appliance.

## CAUTION!



**The following below outlines measures to avoid damage and harm to both the Autonomous Mower and people using it.**

## Taking care of your appliance:

- Switch off the power when the appliance is to be carried across uneven surfaces, for example steps.
- Inspect the appliance before each use. Never operate the appliance if safety appliances (e.g. impact protector, parts of the cutting facility or bolts) are missing, worn out or damaged. Check the power cable. To avoid imbalance, all tools and bolts must be changed as complete sets.
- Only use spare parts and accessories that have been supplied or recommended by the manufacturer. The use of alien parts results in the immediate loss of all guarantee claims.
- Ensure that all nuts, bolts and screws are firmly tightened and that the appliance is in a safe working condition.
- Never try to repair the appliance yourself, unless you have been trained accordingly. All work that has not been listed in these instructions must only be carried out by authorised servicing agencies.
- Treat the appliance with the greatest care. Always keep the tool clean. Follow the maintenance instructions.
- Never overload the appliance. Always work within the specified capacity range. Do not use low-power appliances for heavy-duty work. Do not operate the appliance for purposes for which it is not intended.

## Electrical safety:

## CAUTION!



**The following states how to avoid accidents and injuries due to electric shock:**

- Before each use, carry out a visual inspection of the power and extension cord for any signs of damage or ageing. Damaged mains power cables increase the risk of electric shock.
- Connect the appliance to a power socket with a residual-current circuit breaker that has a rated current of no more than 30 mA.



- Always keep the extension cable well away from the cutting tools. Once the power cable become damaged during work, instantly disconnect the power cable from the mains. **DO NOT TOUCH THE POWER CABLE BEFORE IT HAS BEEN DISCONNECTED FROM THE MAINS!** Risk of electric shock.
- The supply cord cannot be replaced. If the cord is damaged the appliance should be scrapped.
- Keep extension cable away from blades and other moving parts. They may damage the cable and result in contact with live parts.
- Check that the mains voltage is the same as indicated on the rating plate.

## Maintenance and storage

- Keep all nuts, bolts and screws tight to be sure the appliance is in a safe working condition.
- Replace worn or damaged parts for safety.
- Ensure that only the recommended replacement cutting blades are fitted.
- Ensure that batteries are charged using the charger supplied or recommended by the manufacturer. Incorrect use may result in electric shock, overheating or leakage of corrosive liquid from the battery.
- Servicing of the appliance should be carried out according to manufacturer's instructions.
- In the event of leakage of electrolyte, flush with water / neutralising agent, seek medical help if it comes into contact with the eyes.
- Store the appliance with battery pack fully charged at room temperature (around 20°C).
- Every deep discharge cycle decreases the capacity of battery pack. To prolong battery life, it is recommended to charge the battery every 6 months over extended periods of time without use.

## Transport

The original packaging should be used when transporting the Autonomous Mower over long distances. To safely move from or within the working areas:

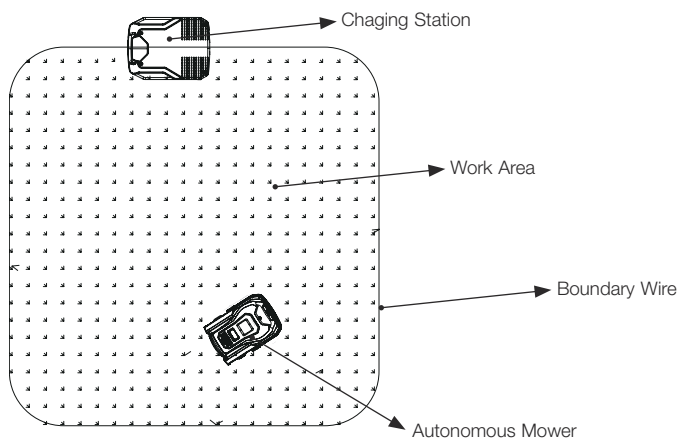
- Press the STOP button to stop the mower.
- Move the main switch button to the OFF position if you intended to carry the mower.
- Carry the Autonomous Mower using the handle below at the rear. Carry the mower with the blade disc away from the body.



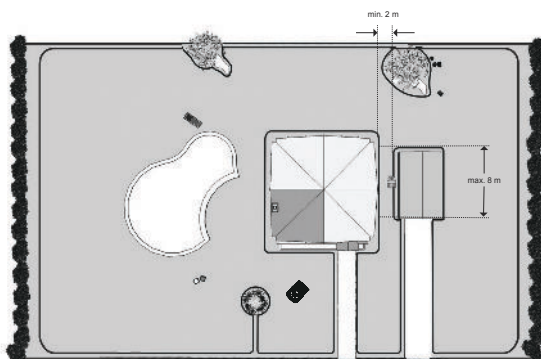
# OPERATION PRINCIPLES

## Autonomous Mower Basic operating principles

The Autonomous Mower chooses its working direction randomly. It will mow your garden completely without leaving behind any uncut part within the area restricted by the chosen boundary.



- You define the work area by installing the supplied boundary wire. Once the Autonomous Mower detects the boundary wire, it will stop, move backwards and continue mowing in a different direction. It is important to ensure that the boundary is complete. Any objects you wish to protect within the boundary, such as a garden pond, trees, garden furniture or flower beds can also be protected by the boundary wire. The boundary wire must form one complete loop. If the Autonomous Mower encounters an obstacle, such as a person, tree, pet or other general garden obstacles, it will stop, move backwards and continue mowing in a different direction.
- If you need a narrow corridor to connect two patches of lawn within the boundary, the corridor should be at least 2 metres wide and max. 8 m long.

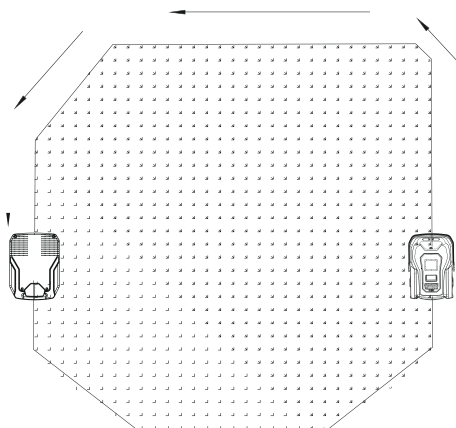




**Note:** If your Autonomous Mower loses ground contact while hitting an obstacle, the blade disc will stop immediately to avoid any potential damage.

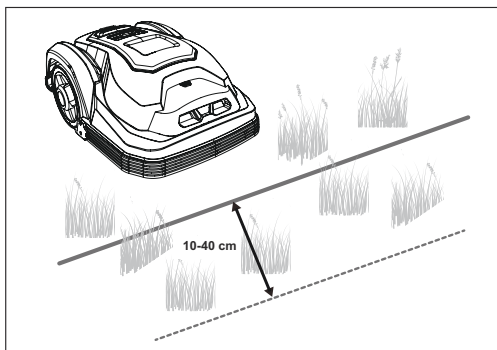
## Locating the charging station

- When the battery is running low, the Autonomous Mower will automatically return to the charging station. It will approach the closest boundary wire and follow it anticlockwise (without cutting) back to the charging station. When fully charged, the Autonomous Mower will automatically resume the interrupted working cycle. The launch direction from the charging station - clockwise - is hard-wired into the design and is impossible to change.



## Recognising the boundary wire

- Note that before stopping and changing the direction, the Autonomous Mower will overrun the boundary wire by 10 to 40 cm. Please keep this in mind when planning the boundary wire installation.





## OPERATION PRINCIPLES

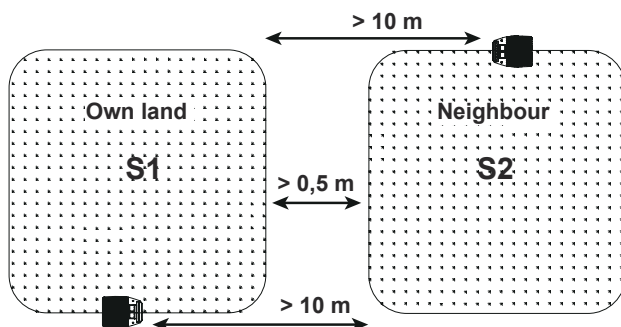
### Starting and stopping while mowing

- If you want to stop the Autonomous Mower at any time during cutting, please press the STOP button (2). Pressing the STOP button will also open the top cover, providing access to the control interface. After pressing the START button, The Autonomous Mower will not start working again until you have closed the top cover.



### Autonomous Mower mowing limitations

- The Autonomous Mower is set to work 7 days a week. You can adjust the daily working time to match your garden.
- In case a neighbour is using the same Autonomous Mower, you need to keep a 0.5 m distance between your and your neighbour's boundary wires. Otherwise, the two appliances might interfere with each other. Additionally, keep your charging station more than 10 m away from your neighbour's boundary wires. Last but not least, ensure that the adjacent boundary wires use different signals. Please refer to section "Signal setting" in order to select signal S1 or S2 for your installation.





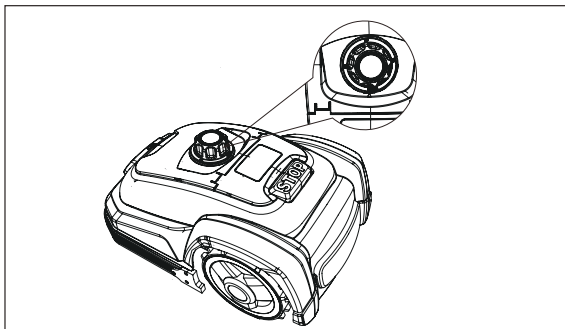
Below is a table showing the signal distance for your Autonomous Mower. Use this information as your guide when designing the boundary layout.

Model	Max field	Max. distance to wire
Victa Robot Mower RM100	600m <sup>2</sup>	12.5m

## Autonomous Mower cutting information

- The Autonomous Mower has a cutting height setting between 20 mm to 60 mm. If the grass height exceeds 60 mm, cut it to 60 mm or below before using the Autonomous Mower. Otherwise the load on the unit will be too large and the cutting efficiency will suffer, we recommend using an ordinary lawn mower or trimmer. Once the installation is complete, adjust the cutting height to the desired setting. Always start in a high cutting position and work your way down to the cutting height you want. Before adjusting the cutting height, always press the STOP button (2) to interrupt the cutting. Then turn the large dial to adjust the cutting height.

**Note:** Only adjust the cutting height while the Autonomous Mower is switched off.



The Autonomous Mower cutting efficiency relies on sharp blades, so please keep them in good condition.



# INSTALLATION PROCEDURES

## Installation Guide

This chapter explains how to install the Autonomous Mower. Please read this completely before you start the installation.

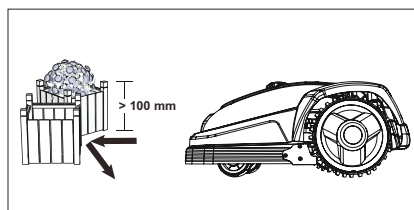
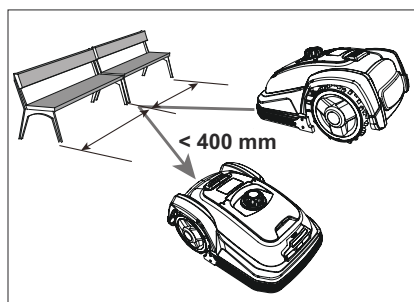
### Introduction

We recommend creating a draft of your lawn, including all obstacles and how these should be protected. This makes it easier to find a good position for the charging station and how to correctly place the boundary wire around your garden perimeter protecting bushes, flower beds etc. You will also need some tools, like a hammer and wire cutters, pliers or scissors.

### Cutting limitations

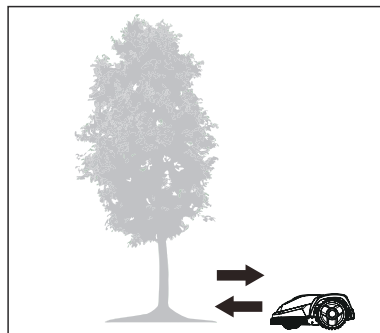
The Autonomous Mower is equipped with collision sensors. These will detect any rigid and fixed obstacles higher than 100mm, such as walls, fences and garden furniture.

When triggered, the Autonomous Mower will stop, reverse backwards and then continue mowing in a different direction. Still, protecting the obstacles running the boundary wire accordingly is the recommended long-term solution.



### Trees

The Autonomous Mower treats trees as common obstacles, but if some roots of the tree are exposed in your garden and lower than 100mm, this area should be protected in order to prevent tree root, cutting blades or rear wheels profile damage.





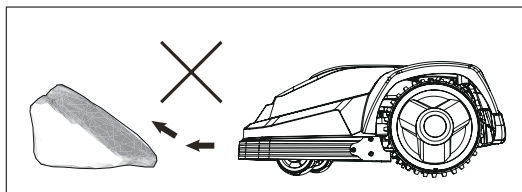
# INSTALLATION PROCEDURES



## Stones

We recommend clearing the lawn of small (less than 100 mm high) rocks and stones and any stones with a round or sloped edge. The Autonomous Mower might try and climb such rocks instead of recognising them as a barrier.

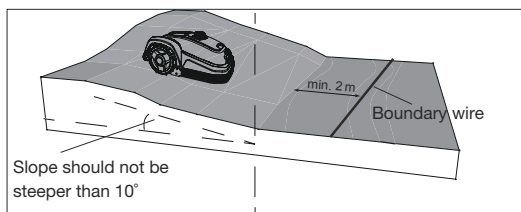
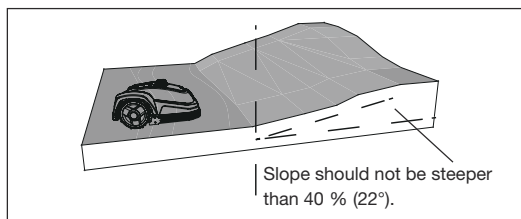
An Autonomous Mower getting stuck on such a stone requires user intervention to restart mowing. Contact with stones can result in damage to the blades.



## Slopes

The Autonomous Mower can navigate slopes up to a maximum of 40% incline or decline.

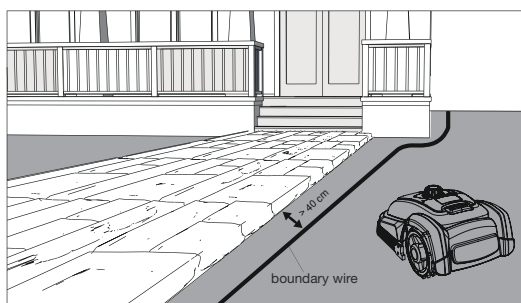
The boundary wire should never run perpendicular to a gradient of more than 10°. Likewise, please allow a corridor of at least 2m between a 10° or steeper slope and the boundary wire. Otherwise, the faster downhill speed may cause the Autonomous Mower to overshoot the boundary wire, especially on wet and slippery ground.



## Paths, Driveways and Roads

If an elevated driveway crosses your lawn, better keep it outside the boundary wire.

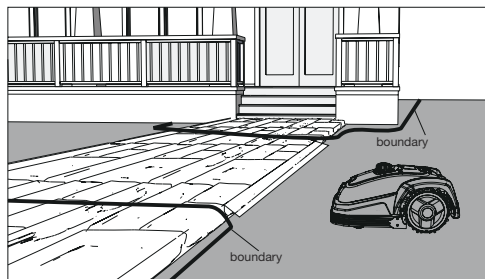
Please allow a safety distance of 40 cm between driveway and boundary wire.





## INSTALLATION PROCEDURES

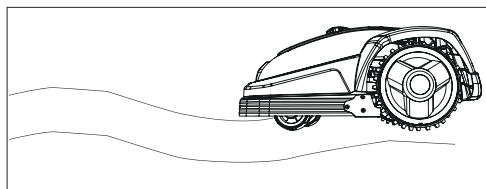
If the driveway and lawn are at the same level, feel free to use the boundary wire to create a corridor. This allows your Autonomous Mower to cross the driveway and reach the opposite lawn.



### Uneven lawn surfaces

Uneven lawn areas may cause the blades to touch the ground, and/or allow Autonomous Mower to get stuck.

We recommend leveling the lawn before using your Autonomous Mower or excluding uneven areas with the boundary wire.

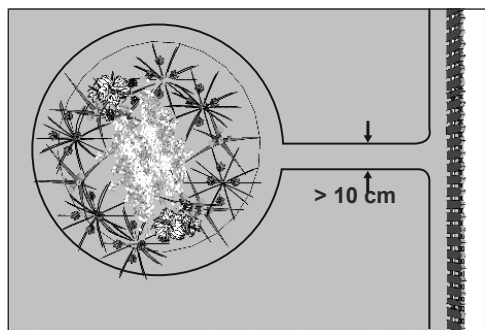


### Flowerbeds

Use the boundary wire to exclude any flowerbeds from the cutting area.

There are two options for the two lengths of boundary wire running between the flowerbed and the outer boundary:

1) Keep the distance between the parallel wires above 10 cm. This way, the Autonomous Mower will recognise the boundary wire as an ordinary obstacle. When cutting, it will "bounce" off it as usual. When following the boundary wire back to the charging station, it will take the detour around the flower bed.



# INSTALLATION PROCEDURES

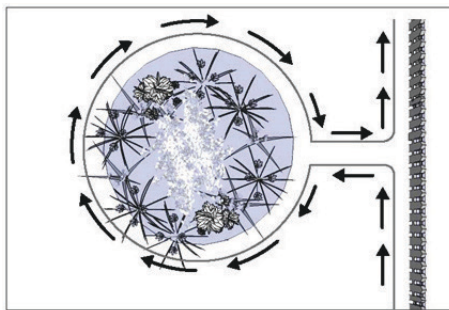
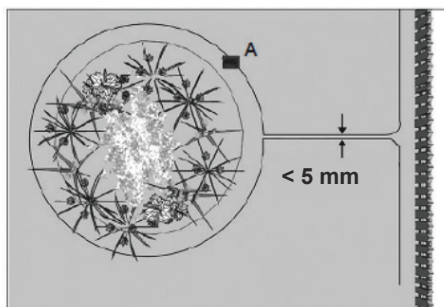


2) Alternatively, keep the distance between the two parallel wires below 5 mm. Do not cross the wires - see below.

This way, the Autonomous Mower will not recognise the wires and travel across them unhindered. This option requires placing an obstacle on the boundary wire around the flowerbed. Place the obstacle, e.g. a large rock or pole, near position A indicated on the below illustration.

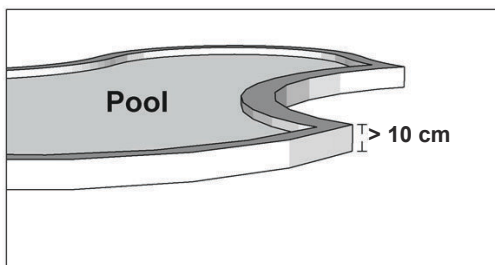
The obstacle must be surrounded by a flat area of about 1 m x 1 m, without any slopes. This obstacle will allow the appliance to exit the circle.

Keep in mind that flowers, bushes and surrounding shrubbery will change in size over a season. please keep sufficient space between boundary wire and other plants to avoid interference year-round.



## General Dos and Don'ts

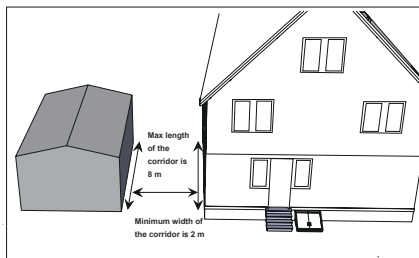
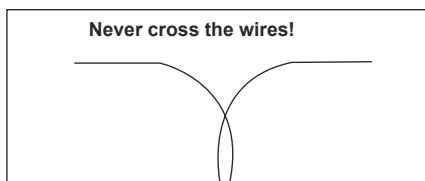
While the Autonomous Mower is protected against rain and spray water, being submerged is likely to cause severe damage to the electronic parts. Therefore, it is imperative to exclude any pools from the cutting area. For added safety, we recommend placing a fence around the pool with a height greater than 10cm.





## INSTALLATION PROCEDURES

If you have created a boundary corridor inside your working area, the corridor should be at least 2 m wide and a max length of 8 m. If a corridor is too narrow or too long, the Autonomous Mower might not be able to navigate it from one end to the other.



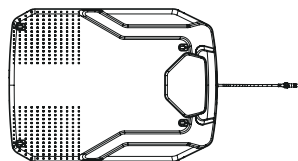
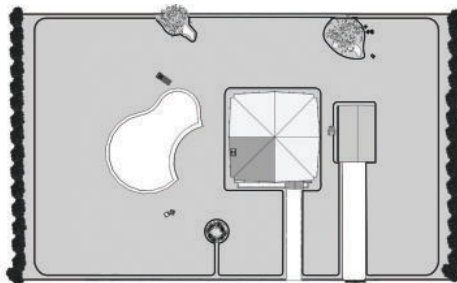
### Marking out the Autonomous Mower's working area

You have now understood the basic principles of how the Autonomous Mower works. The next step is to mark out the working area with boundary wire by referring to your garden plan.

Starting from the charging station, the boundary wire must be one continuous loop without any breaks or crossings. Connecting the end to the charging station's second connector will complete the circuit.

Where appropriate, use the included ruler to check the 40 cm required distance.

Firstly, locate the best position for your charging station. Be aware that it needs a permanent connection to the mains, so take into account the location of the nearest power outlet. The included supply cord has a length of 9m. The charging station (5) must be placed on a flat surface, at ground level.



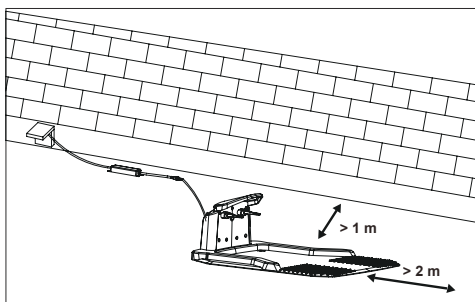
# INSTALLATION PROCEDURES



To ensure the Autonomous Mower can return to the charging station smoothly, leave 2m of straight wire to the front of the charging station and 1m to the side facing the cutting area. Use a shaded location for the charging station, as a lower temperature while charging is beneficial to the battery.

**IMPORTANT: Place the charging station on an even, flat surface away from ponds, pools or stairs.**

We recommend suitable protection from the elements, for example a robot port or garage.

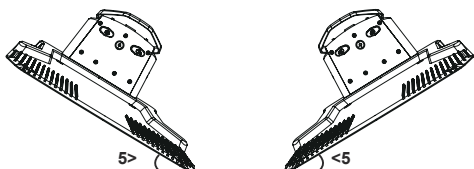
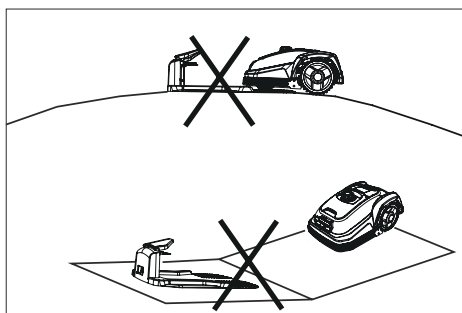


**Pay attention to protect cable!**

Do not place the charging station too close to a slope, such as at the top of a hill or the bottom of a furrow. Avoid left and right inclination in excess of 5 degrees.

If your lawn has a soft or uneven surface, we recommend fortifying the area around the charging station with a grass protection mesh. Otherwise, the repeated stress of the rear wheels can damage the turf.

Once the position of the charging station is confirmed and mains electrical connection is laid out, please do not connect to main power yet. Finish all boundary layout work before connecting the charging station to the power supply.



## Pegging out the boundary wire

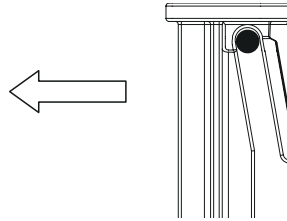
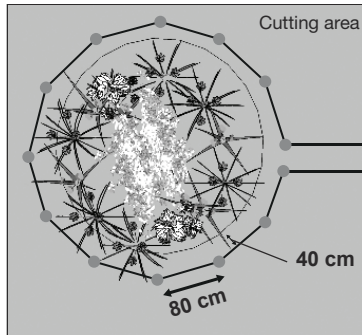
We strongly recommend mowing the lawn to 60 mm or less before laying out the boundary wire. Burying the boundary wire is entirely optional. Still, the closer to the ground you lay out the boundary wire, the lower the chance of tripping over it or damaging it when mowing the lawn.

In a very short time, the wire will be covered by grass. As the voltage is only 32 V, there is no risk of electric shock. Unpack the boundary wire (18) and locate the free end. Mark the desired path of the boundary wire with the fixing pegs (15).



## INSTALLATION PROCEDURES

Use the included ruler (16) to ensure the required 40 cm distance between wire and obstacles. The recommended distance between two pegs is about 80 cm in straight lines, and less in tight curves. Note that the pegs' hook and wire slit always faces the outside of the boundary. When first planting the pegs, do not drive them fully into the ground. Use a light hammer to drive them in a little bit. Also locate the fixing pegs and lay each one on the lawn at approximately the correct distance from lawn edges (40cm) and obstacles. There is a gauge supplied for this.



The pegs should be knocked into lawn with wire location to boundary outside like shown.

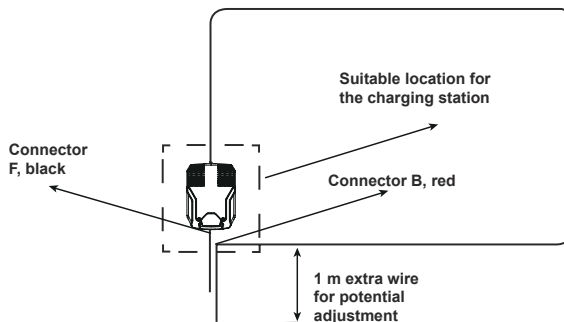
Once all pegs are in position, lay out the boundary wire. Start from the charging station. Run the wire through the peg's hook and wire slit one-by-one. Do not tighten the boundary wire too much to prevent wire damage. Carefully prevent any kinks, knots, etc. When cutting the wire, we recommend leaving at least 1 m spare wire to allow for adjustments.



Note: The pegs are not suitable for fixing the boundary wire on hard surfaces, e.g. when running the boundary wire across a driveway. Instead, use appropriate screws and plugs. Be sure to use insulation washers to protect the wire insulation.

Only use the included waterproof boundary wire connectors (17) to join together two pieces of boundary wire.

See below for some further sketches giving more guidelines.

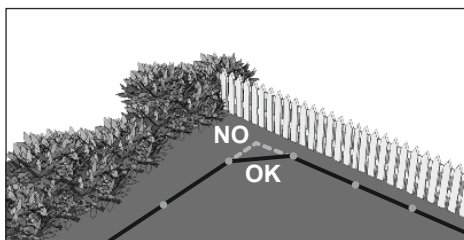


# INSTALLATION PROCEDURES



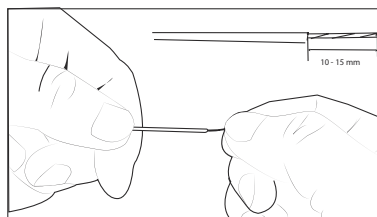
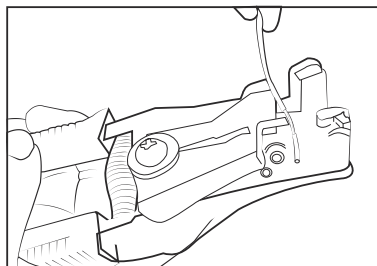
Avoid right angles when running the boundary wire around a corner. Instead, separate into two 45° angles.

In case the included boundary wire is too short for your garden, more is available from our service provider. The wire's total length must not exceed 300 m.



## Prepare the boundary wire for the charging station

Use a wire stripper to remove 10-15 mm insulation from each end. Twist the threads tight.

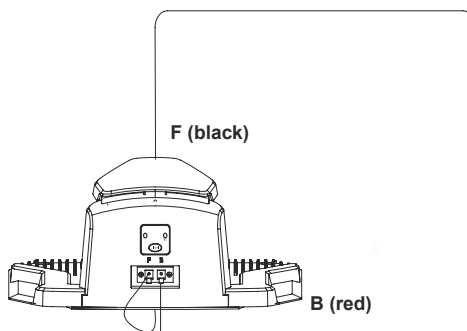


## Connect the charging station to the boundary wire

Place the charging station on the end of the boundary wire so that the wire runs lengthwise below the middle of the charging station. Connect that end to the left (black) connector marked "F" (front). Connect the other end to the right (red) connector marked "B" (back).

### IMPORTANT INFORMATION

Double check that the charging station connections are as shown on image. Even if there is a blue light, if the connectors are wrongly connected the appliance will not work.





## INSTALLATION PROCEDURES

After connecting the "F" and "B" connectors to the charging station, the charging station can be fixed down with the boundary pgs.

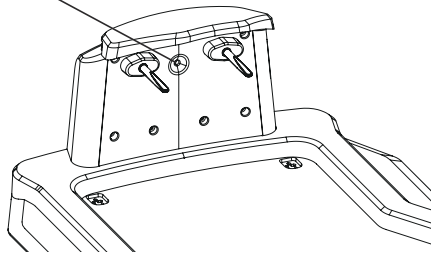
Before fixing the charging station, please check again that the above mentioned conditions are met:

- Even surface within range of power supply
- 2 m straight boundary in front
- Inclination less than 5°
- Surplus boundary wire tucked under the charging station for protection, outside the boundary.

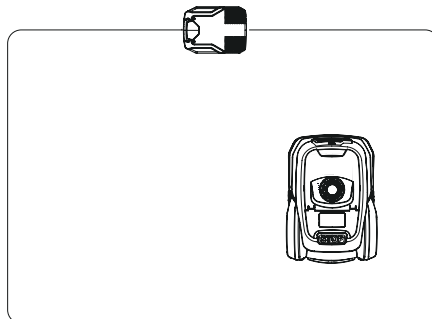
Once the charging station is fixed, connect the charger extension cable (14) to charging base. Now, connect the power supply to the mains outlet. After a brief self-test, one blue LED on the charging station should light up. If all LEDs stay dark, double-check the mains outlet and the power supply. If other than a single blue LED lights up, please refer to the chapter on troubleshooting.

### Turn on and test the installation

LED



Once the blue LED confirms all is OK, test the Autonomous Mower's function. Check the LED regularly to ensure fixing the boundary wire has not affected the connection. Then place the Autonomous Mower in the working area, a few metres beside the charging station. Set the main power switch (11) to "ON". The Autonomous Mower will power-up and start a self-test, but not start working at this time.





# INSTALLATION PROCEDURES



Press down on the large STOP button (2) to open the top cover and access the controls. Activate the button marked "Home" (situated on the left part of the display) and press down the top cover to close it.

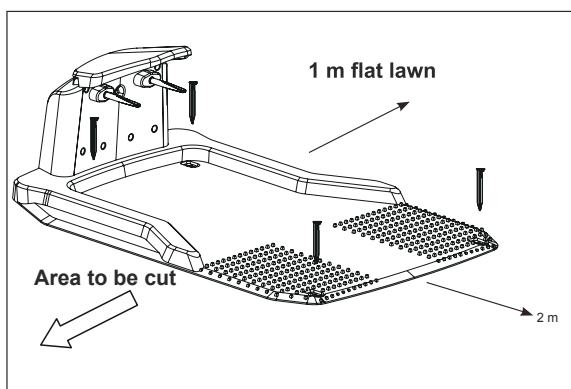


Once closed, the Autonomous Mower will automatically return to the charging station by locating and following the boundary wire in anti-clockwise direction. If the Autonomous Mower fails to dock correctly, move the charging station to a more suitable position.

Once the appliance has docked, the  symbol will start flashing. This indicates that the battery is charging correctly.

After initial installation, the Autonomous Mower will remain in the charging station until the battery is fully charged.

Successful docking and charging indicates that you have found a suitable position for the charging station. It is now time to fix it in position by fully driving the pegs into the ground. Take care not to damage or kink the surplus wire stored under the charging station.





# OPERATING INSTRUCTIONS

## Setting the mowing height

The mower's mowing height can be set between 20 and 60 mm with 5 cutting heights. If the grass is higher than 60 mm, it will be necessary to mow the grass using a standard lawnmower. Otherwise, the grass will cause too great a load for the mower's blades and thus lead to unsatisfactory mowing. Do not adjust the cutting height during mowing.

1. Press the STOP button.
2. Rotate the mowing height selector to adjust the mowing height.
  - It is recommended to begin with mowing by setting the mowing height to 60 mm (by setting the selector to MIN) and then gradually lowering the mowing height until you get the desired grass height.
3. Close the top cover after the adjustment.

**Note: The mower can cut on wet grass. However this will lead to clumps of grass forming under the mower which means more frequent cleaning of the mower is necessary.**

## Starting and stopping the mower

### Starting the mower

1. Make sure the mower is sufficiently charged.
2. Press the main isolation switch to turn on the mower.
3. Press the STOP button to open the control panel cover.
4. If a PIN is set, enter the PIN with the number keys on the display.
5. Press the START button in the control menu.
6. Close the control panel cover. The mower will start mowing.

**Note: The mower can be programmed to automatically start mowing at specific times and on specific days in a week. See the section: Programming the mower.**

### Stopping the mower

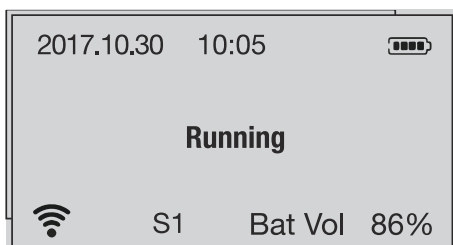
- Press the STOP button (2) to immediately stop the mower.

**Note: Once the STOP button is activated, the control panel cover will open and the mower will wait for further commands. The mower will not start to work until the control panel cover is closed.**



## Messages on the display during operation

While mowing, the display will show the operating status of the mower.



Information includes the current date and time, battery level, boundary cable signal (S1 or S2) and operation status message (see below).

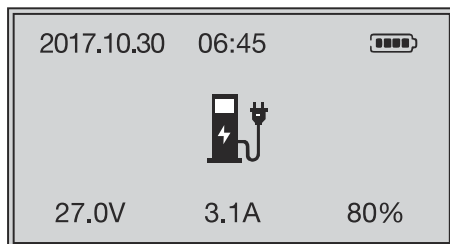
Message	Description
Running	The mower is working. When the blade disc starts to rotate, the blade disc icon (🌀) will show and flash on the display.
Home	The mower is in the process of returning to the charging station.
Low voltage	The battery power is low and the mower will return to the charging station.
Charging	The mower is being charged.
No signal	There is no boundary cable signal.
Outside	The mower has moved outside the mowing zone.
Trapped	The obstacle sensor gives continuous alert for more than 10 seconds. The mower has stopped for safety reasons.
Pit	The obstacle sensor has triggered more than 10 times in one minute. The mower has stopped for safety reasons.
Slope	The mower has encountered a steep slope which it cannot overcome.
Lifted	The mower has either been lifted up or risen up over an obstacle.
Error	Incorrect PIN passcode is entered.



# OPERATING INSTRUCTIONS

## Returning to the charging station

After approximately 60 minutes of mowing and when the mower's battery power is low, the mower will automatically return to the charging station by locating the closest boundary cable and following it anticlockwise (without mowing) back to the charging station for a full recharge. The display of the mower will show a charging symbol during charging.



When charging is complete, the mower will continue with the next mowing cycle. The mower will also return to the charging station if you press the HOME button on the control panel and then manually close the control panel cover. It also stays at the charging station during spare time (no work assigned). If for some reasons the mower cannot successfully return to the charging station, it will attempt five times before staying on the lawn and turning itself off to save battery power. In this case, check if the charging station is correctly installed.

In addition, if the ambient temperature is higher than 40° C, the mower will stop charging to protect the battery. Charging will resume when the temperature drops to a suitable ambient temperature.

## Programming the mower

The mower can be programmed through the control menu which can be accessed from the control panel(10) of the mower.

**IMPORTANT:** Set the data and time first as this is the base for the rest of the programming

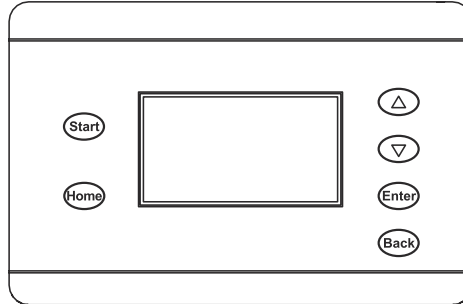
**Note:** The control panel can only be accessed by pressing the STOP button on the top of the mower to unlock the control panel cover and ensure that the mower stops working when you are programming it. After programming, the control panel cover must be manually closed to resume the mower working and start carrying out the programmed activities.



## Control Panel

The control panel consists of the touch-sensitive display and physical buttons.

The physical buttons serve as a backup when there is any difficulty to use the touch sensitive display (e.g. low temperature).



Functions of the physical buttons:

Button	Description
(up)	Each press of the button will move the selection cursor upwards/ leftwards, or toggle among the available options in a setting.
(down)	Each press of the button will move the selection cursor downwards/ rightwards, or toggle among the available options in a setting.
Enter	Press the button to confirm a selection in the control menu station.
Home	Press the button to return the mower to the charging station for charging.
Start	Press the button to start a mowing cycle.
Back	Press the button to return to the previous screen in the control menu.



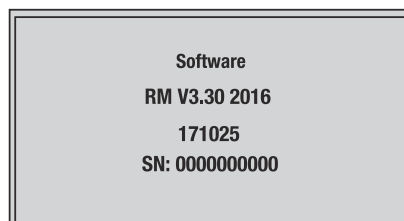
# OPERATING INSTRUCTIONS

## Display

The display of the control panel is touch-sensitive.

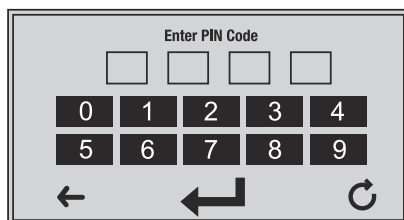
### Software version and serial number

When you turn on the mower, the software version and serial number will show briefly on the display.



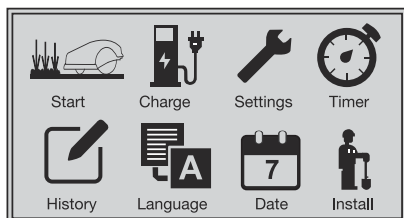
### Security PIN

For security reason, a PIN is required to access the control menu. The default passcode is "0000". To change the passcode, see the section: Using the control menu > Settings > PIN.



### Control menu

After the PIN passcode is correctly entered, the home screen of the control menu will show for programming the mower. See the following sections for details.





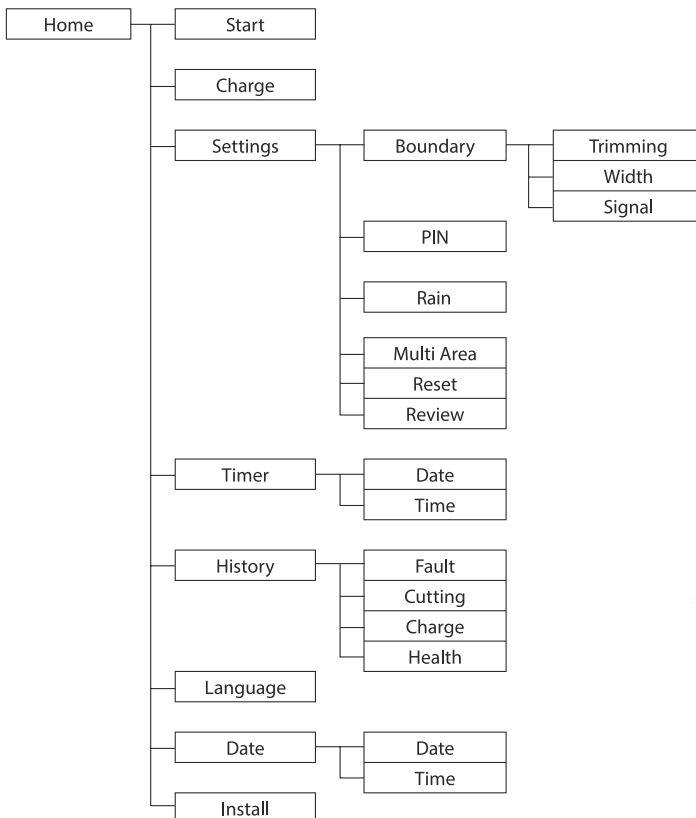
## Navigating in the control menu

- Directly press on an icon or button on the display for input or selection.
- Press on the icons below for more navigation controls.

Icon	Description
	This is the same as the backspace key on a keyboard to cancel the last input
	This is the same as the enter key on a keyboard to confirm a selection
	This is the same as the escape key on a keyboard to return to the previous menu.

- Alternatively, use the physical buttons on the control panel to navigate in the control menu.

## Overview of the control menu

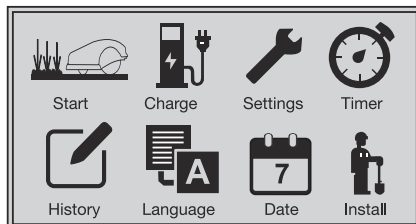




# OPERATING INSTRUCTIONS

## Using the control menu

There are eight options in the control menu. Refer to the relevant sections below for details.

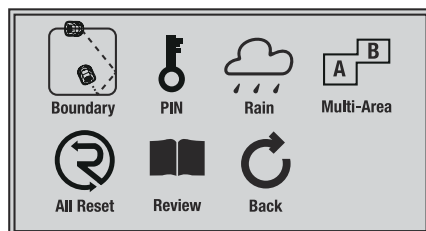


- **Start**

Select this option to start a mowing cycle. This option has the same function as the START button on the control panel.

- **Charge**

Select this option to return the mower to the charging station for charging. This option has the same function as the HOME button on the control panel.

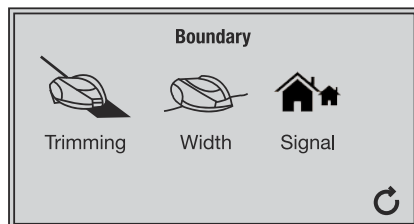


- **Settings**

There are six further options in "Settings".

- **Boundary**

There are three further options in "Boundary".







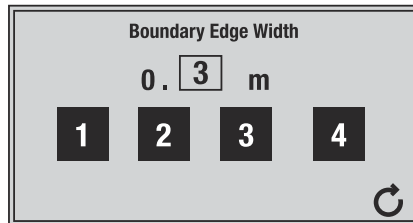
- **Trimming**

This option determines if the mower will carry out boundary trimming during a mowing cycle. Select the option "Yes" to carry out boundary trimming. To determine the width of the boundary edge, see the section: Width.

Note: The boundary cable must be carefully checked before confirming this option. The mower may cut the boundary cable when the cable is not properly fixed to the ground.

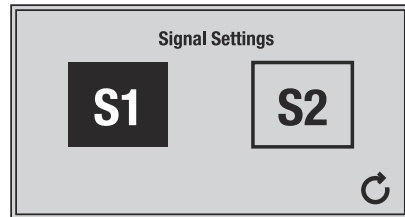
- **Width**

This option determines the distance (0.1-0.4 m) the mower will run past the boundary cable when performing boundary trimming.



- **Signal**

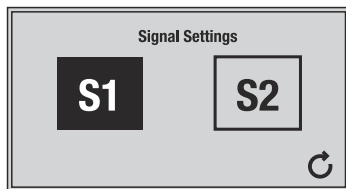
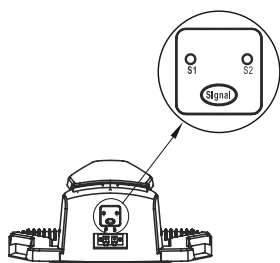
This option determines which signal (S1 or S2) is using for the boundary cable.



If both you and your neighbour have the same Autonomous Mower and the boundary cables between the two mowers is less than 10 m apart from each other, set the signal (S1 or S2) of your boundary cable to a different one from your neighbour. For example, if your neighbour's mower is already connected through signal S1, connect your mower to the charging station through signal S2. On the charging station, you must also carry out the corresponding change. To set the signal to S2 on the charging station: Press the button again to change the signal of the charging station back to S1.



# OPERATING INSTRUCTIONS



## • PIN

This option sets the passcode of the mower to prevent theft or unauthorised change of the menu settings. The existing (old) passcode is required to change to a new passcode. If you have forgotten the passcode, contact your local dealer or after sales service.

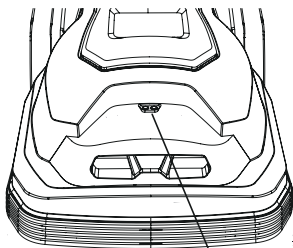
The default passcode of the mower is "0000".

## • Rain

Mowing in the rain is not recommended.

This appliance has a rain sensor which may stop the robot from mowing in the rain. When the rain sensor is triggered, the robot will go back to the charging station first, where it will be fully charged. Once charged the mower will remain in the charging station until the rain has stopped before starting to mow again.

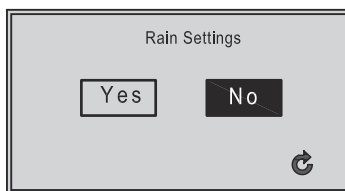
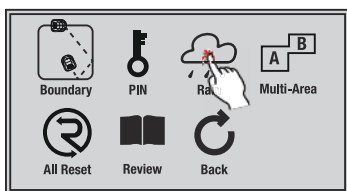
**Note: Be careful not to short circuit the sensors on the appliance with any metal objects. This will cause the mower to work abnormally.**



Rain sensor

Users can activate or deactivate the rain sensor as shown below:

Deactivating rain sensor:

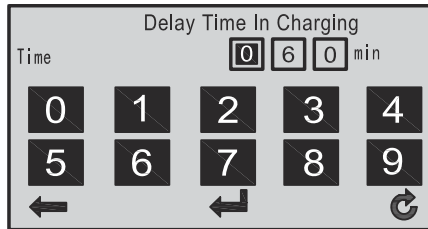


# OPERATING INSTRUCTIONS



Activating rain sensor:

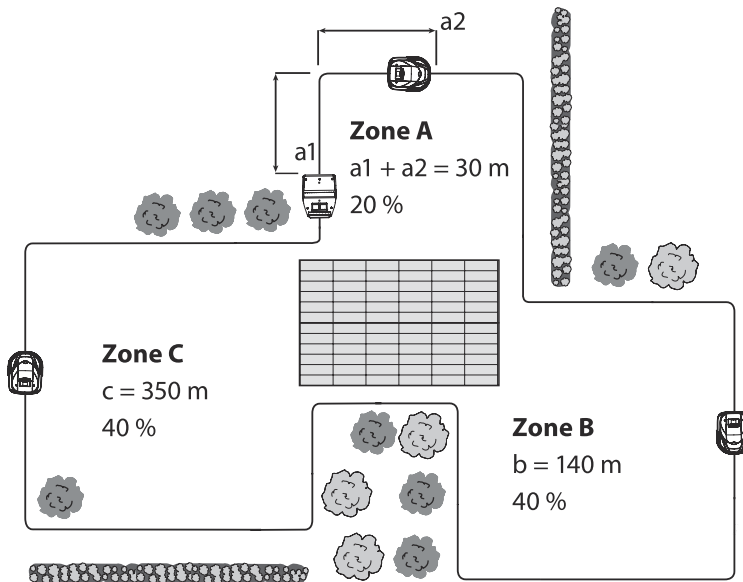
Select "Yes" and set the extra time.



## • Multiple areas

Your lawn may consist of a number of isolated mowing areas (see example below). You may set up a maximum 4 mowing zones and assign a mowing frequency to each of them.

Measure and estimate the distance from each zone to the charging station along the boundary cable. The mower will identify each zone by the distance to the charging station. Each mowing zone will also be defined by a percentage, reflecting the size of the mowing zone in relation to the total mowing area.



By inputting the distance (m) and area percentage (%) in each mowing zone, the mower will automatically calculate the mowing frequency in each zone. The higher it is marked with percentage value, the more frequently the mower will cut it.



# OPERATING INSTRUCTIONS

The feature is also useful when there are blind areas that the mower seldom visits. You may find the nearest point along the boundary cable and set it as a mowing zone to improve the mowing frequency.

- **Reset**

This option sets all settings to the factory default values. The PIN passcode is required to carry out the reset.

- **Review**

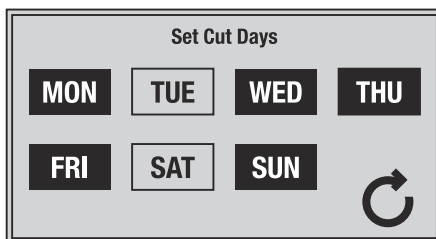
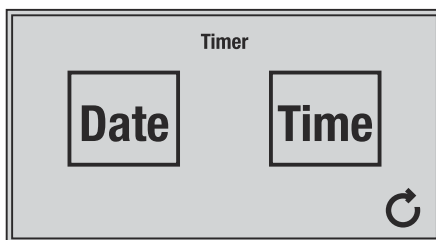
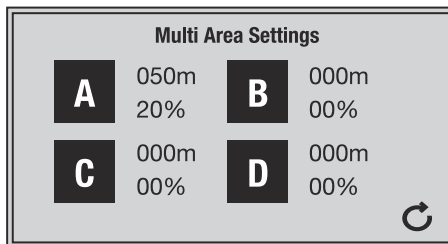
This option shows the current settings, including the cut days, cut times, boundary trimming setting, boundary edge width, area and number of users.

- **Timer**

This option sets the day and time the mower will carry out a mowing cycle. Select the option “Date” to set the cut days and the option “Time” to set the cut times.

- **Set cut days**

This option determines on which days in a week the mower will work. By default, all days are selected with highlights in black. To stop the mower from working on a specific day, press the corresponding option on the display

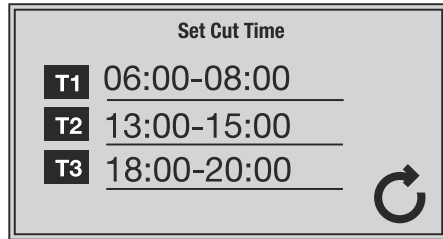




## • Set cut time

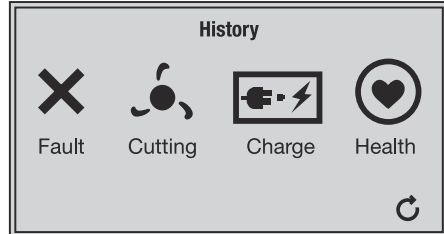
This option determines the working periods of the mower in a day. A maximum of three working periods (T1 to T3) can be set. Select a working period and then use the number keys on the display for inputting the start and end times for each working period.

If the mower runs out of battery power within a working period, it will automatically return to the charging station for charging and then work again until the working period ends. It is best to first leave the working periods as factory defaults and then modify if required after you know the time the mower takes to completely cut the lawn. Remember that the mower may take longer time to cut the same lawn in different seasons or under different weather conditions.



## • History

There are four further options in "History".



## • Fault

This option shows the last 4 fault records. Error information includes:

Message	Description
Low Battery	The battery power is too low to get back to the charging station.
No signal	There is no boundary cable signal.
Outside	The mower has moved outside the mowing zone.
Trapped	The obstacle sensor gives continuous alert for more than 10 seconds. The mower has stopped for safety reasons.
Pit	The obstacle sensor has triggered more than 10 times in one minute. The mower has stopped for safety reasons.
Slope	The mower has encountered a steep slope which it cannot overcome.
Lifted	The mower has either been lifted up or risen up over an obstacle.
Error(XX)	See the section: Error codes.



# OPERATING INSTRUCTIONS

- **Cutting**

This option shows the start and end times of the last two mowing cycles.

- **Charge**

This option shows the end times and voltages of the last two charging cycles.

- **Health**

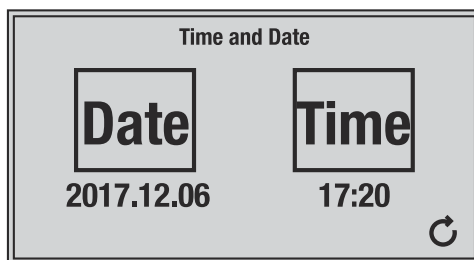
This option shows an overview of the total working time and number of charging cycles.

- **Language**

This option determines the language used in the control menu. The languages available for selection are: English, Swedish, German, Danish, Spanish, Finnish, French, Italian, Dutch and Norwegian.

- **Date**

This option sets the date and time for the control menu. Select the option “Date” to set the current date and the option “Time” to set the current time. Use the number keys on the display for inputs.



**Note: All programmed activities and records in the mower will be based on the date and time set in this option.**

- **Install**

This option starts the test running mode.

In this mode, the mower will mow for three minutes and then return to the charging station. After three minutes of charging, the mower will start mowing again. This mode is used mainly for setup checking.



## Storage

### Preparing for spring

After winter storage, please clean the charging contacts on both the Autonomous Mower and the charging station.

Use a fine abrasion paper or a brass brush; this will help to achieve the best charging efficiency and avoid any charging interference.

### Short-time storage

- Store the appliance in a dry place well out of reach of children.
- Do not wrap nylon sacks around the appliance, as this could result in the formation of moisture.

### Winter Storage

During winter, keep your mower, charging station and power supply in a dry place. We recommend a shed, garage or preferably store it indoors. Prepare your appliance for winter storage as follows:

1. Fully recharge the battery.
2. Set the main power switch to "OFF".
3. Thoroughly clean your Robomower.
4. Unplug the power supply from the mains outlet.
5. Disconnect the power supply from the charging station.
6. Disconnect the boundary wire from the charging station. Lift up the charging station, and clean it. The boundary wire can remain outside. However, it is imperative to protect the wire against corrosion. We recommend a water-free grease or suitable sealing tape.

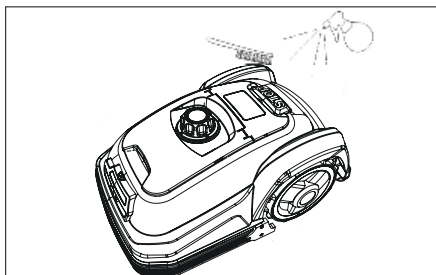
If available, repack the product in the original packaging.

## Cleaning and Maintenance

It's important to keep your Autonomous Mower clean. The mower will deal with slopes easier when the wheels are clean. Sharp cutting blades need less power and create cleaner cuts. Remember to turn off the main power switch (11) before any maintenance. Use protective gloves when handling the blades! Never use a high pressure washer, garden hose or running water when cleaning the appliance.

### Cleaning the mower body

As your Autonomous Mower is battery powered you need take care when cleaning. Remove rough dirt with a soft brush. Use a manual water spray with mild household detergent for intensive cleaning. Wipe off any residue after cleaning with a moist rag.

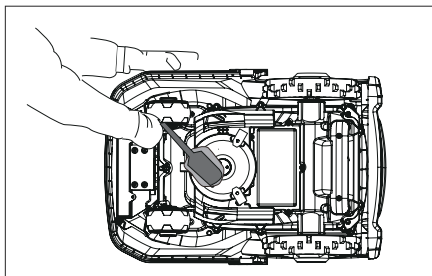




# MAINTENANCE & CARE

## Cleaning the underside

Ensure the main power switch (11) is in OFF position. Wear protective gloves. Turn the Autonomous Mower onto its side to expose its underside. Clean the blade disc and frame using a soft brush or damp cloth. Rotate the blade disc to make sure that it moves freely, and check that the blades can turn on their pivots and no grass is obstructing them.



## Clean the contact pins and the charging strips

Using wire wool, metal cleaner or very fine grade emery paper, clean the contact pins and the charging strips on your mower and charging station. Remove any debris, leaves or grass clippings around the contact pins and charging strips to ensure efficient charging.

## Reversing or replacing the blades



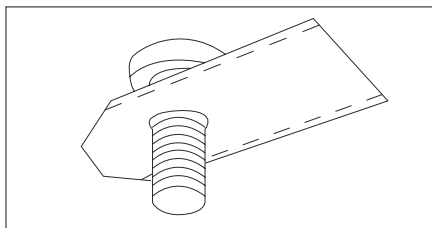
### WARNING!

Ensure the Autonomous Mower is completely shut off before cleaning, adjusting or replacing the blades. Always wear protective gloves.



### WARNING!

To ensure maximum cutting efficiency and safety, always use recommended replacement blades and blade mounting parts when replacing.



Your Autonomous Mower has three blades fixed to the blade disk. Unless damaged by hard obstacles, these blades can last for up to five months with everyday use.

Weekly inspection of the blades and the fixing screws is required. Note that the blades are double-edged. Once the first side is blunt, loosen the fixing screw. Turn the blade upside down and fix it again with the fixing screw. After tightening the fixing screw, verify that the blade can rotate freely around the screw.

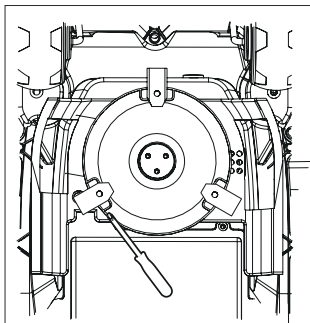
A set of spare blades is included with the Autonomous Mower. More are available from customer support. The blade's spare part number is 846210. Only use original spare parts. For best performance and avoiding imbalance, always turn or replace all three blades at the same time.



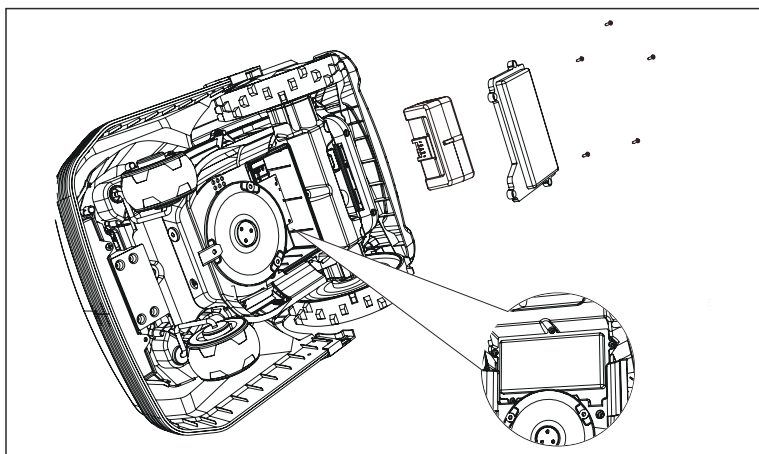


## Replacing the battery

While the actual battery life will depend on usage and environmental factors, the typical service life is several years. Spare batteries are available from customer support. To replace the battery, please follow the instructions below.



- 1) Ensure the main power switch (11) is turned OFF. Clean the underside as instructed.
- 2) Set the Autonomous Mower to the lowest cutting height.
- 3) Turn the mower upside-down. Remove the 5 screws fixing the battery compartment's lid. Note one screw is partially covered by the blade protector and is only accessible through a service hole.
- 4) Pull out the battery and disconnect it from the Autonomous Mower.
- 5) Carefully clean the lid and the edge of the battery compartment. Debris may allow excessive water to enter the battery compartment, causing major damage to the appliance.
- 6) Connect and insert the replacement battery, close the compartment and fix the lid with 5 screws. Do not turn on the Autonomous Mower before placing it back on its wheels. Beware of sharp blades!





# TROUBLESHOOTING

## Charging station

Nr	LED indicator light	Description
1	Blue	Good connections
2	Blue ( flashing )	Interruption at the charging station. Internal wire.
3	Red ( flashing )	When the mower is docked at the charging station, it means the mower is charging (normal). When the mower is working, there is interruption at the cable loop.
4	Red and Blue flashing	Interruption at both the charging station and cable loop.

## Display messages and common problems

Display message	Description	Action
(None)	Blank screen	Ensure the main isolation switch is turned on.
		The battery may be empty. Carry the mower to the charging station, turn on the main isolation switch and start charging.
		If the mower is working, press any key on the control panel. If the screen is still blank, carry it to the charging station for charging. Once the mower is charged, check the fault history and rectify any problems.
(None)	The mower cannot return to the charging station.	Check if the boundary cable under and in front of the charging station is a straight line.
		Check if the charging station is correctly installed.
(None)	The mower turns around in circle when returning to the charging station along the boundary cable.	Check if there is high power cable close to or underneath the boundary cable. If this is the case, avoid the area by changing the position of the boundary cable.
(None)	The mower runs into the mowing area of your neighbour who is using the same mower.	Change to a boundary cable signal (S1 or S2) that is different from your neighbour.
(None)	The mower is vibrating.	Check if the blade disc or blades are damaged and replace the damaged parts.
CHARGING	Charging is in progress.	—

# TROUBLESHOOTING



Display message	Description	Action
ERROR	Wrong passcode has been entered.	Enter the correct PIN passcode.
HOME	The mower is returning to the charging station.	–
LOW BATTERY	Battery power is low.	If the mower fails to automatically return to the charging station, carry it to the charging station for charging.
LIFTED	The mower has been lifted upward.	Check if the grass is too tall (> 60 mm) and cut the grass with a normal mower before you start using the mower again.
		Check if the mower is free from obstructions.
NO SIGNAL	The mower cannot receive signals from the boundary cable.	Check if the LED indicator light is blue (no interruptions). Refer to the table "Charging station" at the beginning of this section for error messages.
		Check if the charging station is properly connected to a power outlet.
		Check if the signal of the boundary cable (S1 or S2) of the mower is the same as the charging station.
		If you are using the mower for the first time bring it close to the boundary cable.
OBSTACLE	A problem occurs at the obstacle sensors.	Check that the mower is not stuck in the middle of an obstacle.
		Contact after sales service if the problem cannot be resolved.
OUTSIDE	The mower is outside of the boundary cable.	If the mower is still inside the mowing area, check if the boundary cable is installed properly.
		Bring the mower back inside the mowing area and restart the mower.
		If the mower runs outside of the boundary cable at a corner, adjust and enlarge the angle to exceed 90°.
		If the mower constantly runs outside of the boundary cable at one place, check if there is a high power cable close to or underneath the boundary cable. If this is the case, avoid the area by changing the position of the boundary cable.



## TROUBLESHOOTING

Display message	Description	Action
TRAPPED	The mower is trapped.	Remove the mower from the obstacle. This warning occurs when the collision sensor has been triggered more than 10 times within a minute.
RUNNING	The mower is working.	–
SPARE TIME	No work is assigned to the mower.	If the mower should be working, restart the mower.
		Program the working periods if necessary.
CRITICAL SLOPE	The mower has been tilted.	Check if the slope is too slippery to climb and make corrections to the mowing area if necessary.
TURNOVER	The mower is overturned.	Turn over the mower, bring it to a flat area and restart it.
WAITING	The mower is just about to enter the sleep mode because the battery power is low.	Press any buttons on the control panel.



## Error codes

Code	Type of message	Description	Action
ERROR 1	Fault	Error at micro-controller core self-checking.	Power off and restart the mower. If the fault persists, contact after sales service.
ERROR 20M	Fault	Error at middle boundary signal self-checking.	
ERROR 20L	Fault	Error at left boundary signal self-checking.	
ERROR 21	Fault	Error at micro-controller self-checking ADC0.	
ERROR 22	Fault	Error at micro-controller self-checking ADC1.	
ERROR 23	Fault	The cutting motor cannot run when the mower is turned on.	
ERROR 24	Fault	The cutting motor cannot run when the mower is turned on.	
ERROR 3	Fault	The cutting motor stops during use, cannot stop when turned off, or is overloaded.	
ERROR 4	Fault	The drive motor cannot stop when the mower is turned off.	Refer to Error 4 and Error 23.
M1_brake	Warning	The drive motor may be locked.	
M2_brake	Warning	The cutting motor may be locked.	Refer to Error 3 and Error 24.
I2C	Warning	Internal communication error	The mower will automatically resume communication.

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