



[gardena.com](http://gardena.com)

## Operator's manual smart SILENO sense

Read the operator's manual carefully and make sure that you understand the instructions before you use the product.



EN, English

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# 1 Safety

## 1.1 Safety definitions

Warnings, cautions and notes are used to point out specially important parts of the manual.



**WARNING:** Used if there is a risk of injury or death for the operator or bystanders if the instructions in the manual are not obeyed.



**CAUTION:** Used if there is a risk of damage to the product, other materials or the adjacent area if the instructions in the manual are not obeyed.

**Note:** Used to give more information that is necessary in a given situation.

## 1.2 General safety instructions



**WARNING:** Read the warning instructions that follow before you use the product.

- Read the Operator's manual carefully and make sure you understand the instructions before you use the product. Keep for future reference.
- This appliance is not intended for use by children or persons with reduced physical, sensory or mental capabilities (that could affect a safe handling of the product), or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- The product must only be used with the equipment recommended by GARDENA. All other types of use are incorrect.
- The product is not a toy. The blades of the product can cause injury to persons and animals. Do not let children less than 8 years of age be in the mowing area during operation. Children and animals must be supervised at all times during operation.
- All persons must be a minimum of 3 m/10 ft away from the product when it is in operation. Do not for example sleep or sunbathe in the mowing area when the product is in operation.
- Warning signs must be put around the mowing area of the product if it operates in public areas. The signs must have the text that follows: Warning! Automatic lawn mower! Keep away from the machine! Supervise children!

- Do not run when you operate the product manually with Remote Control. Make sure that you have a safe and stable position at all times. Make sure that there are no persons near the product when it operates in steep slopes. Always wear substantial footwear and long pants when you operate the product with Remote Control.
- To set the product to OFF, go behind the product and push the STOP button. You can use the app to pause the product if it is applicable for your product. When the product is set to OFF, wait minimum 3 seconds before you move the product.
- Do not touch moving hazardous parts, such as the blade disc, before it has come to a complete stop.
- Set the product to OFF before you clear a blockage, do maintenance or examine the product, and if the product starts to vibrate abnormally. Examine the product for damage before you start the product again. Do not use the product if it is damaged.
- If an injury or accident occurs, get medical aid.
- Do not put power supply cable and extension cable in the mowing area. This can cause damage to the cables.
- Do not connect a damaged cable or plug, or touch a damaged cable, before it is disconnected from the power outlet. Disconnect the plug from the power outlet if the cable becomes damaged while in operation. A worn or damaged cable increases the risk of electrical shock. A damaged cable must be replaced by service personnel.
- When you connect the power supply to the power outlet, use a residual-current device (RCD) with a tripping current of maximum 30 mA.
- Only charge the product in the included charging station. For safe disposal of the battery, refer to *Disposal on page 35*. Incorrect use may result in electric shock, overheating or leaking of corrosive liquid from the battery. In the event of leakage of electrolyte, flush with water/neutralizing agent. Get medical aid if corrosive liquid comes in your eyes.
- Use only original batteries recommended by GARDENA. Product safety cannot be guaranteed with other than original batteries. Do not use non-rechargeable batteries.
- Follow the installation instructions that includes to specify the mowing area, refer to *Installation on page 13*.
- Follow the instructions about to start and operate the product, refer to *Operation on page 20*.
- If there is a risk of thunderstorm, GARDENA recommends that the power supply is disconnected from the charging station to decrease the risk of damage to electrical components. Connect the power supply again if there is no longer a risk of thunderstorm.

- Follow the maintenance instructions and use GARDENA original spare parts, refer to *Maintenance on page 24*.
- For technical data such as weight, dimensions and noise emission values, refer to *Technical data on page 36*.
- The operator is responsible for accidents or dangers that occurs to other persons or property.
- The product must only be operated, maintained and repaired by persons that are fully conversant with its special characteristics and safety regulations.
- It is not permitted to change the initial design of the product.
- Obey national regulations about electrical safety.
- GARDENA does not guarantee full compatibility between the product and other types of wireless systems such as remote controls, radio transmitters or equivalent.
- Operation and storage temperature range is 0-50 °C / 32-122 °F. Temperature range for charging is 0-45 °C / 32-113 °F. Too high temperatures can cause damage to the product.

## 1.3 Safety instructions for installation



**WARNING:** Read the warning instructions that follow before you use the product.

- Do not install the charging station in an area where there is a risk that persons trip on it.
- Do not install the charging station, including any accessory, at a location that is below, or within 60 cm / 24 in. from, any combustible material. In case of malfunction, heating of the charging station and the power supply may occur and create a potential risk of fire.
- Do not put the power supply at a height where there is a risk it can be put in water. Do not put the power supply on the ground.
- Do not encapsulate the power supply. Condensed water can harm the power supply and increase the risk of electrical shock.
- Do not install the charging station where there are pests, for example ants.
- Applicable to USA/Canada. If power supply is installed outdoors: Risk of Electric Shock. Install only to a covered Class A GFCI receptacle (RCD) that has an enclosure that is weatherproof with the attachment plug cap inserted or removed.
- Do not install the charging station where there is a risk of standing water.

## 1.4 Safety instructions for operation



**WARNING:** Read the warning instructions that follow before you use the product.

- Keep your hands and feet away from the rotating blades. Do not put your hands or feet near or below the product when it is set to ON.
- Use the park mode or set the product to OFF when persons, especially children or animals are in the mowing area. Refer to *To set the product to OFF on page 22*. GARDENA recommends to set the product to operate when the area has no activity. The product can cause injury to animals at night in mowing area, for example hedgehogs. Refer to *To do the Schedule settings on page 18*.
- Make sure that there are no objects such as stones, branches, tools or toys on the lawn. The blades can be damaged if they hit an object.
- Do not lift the product or move it when it is set to ON.
- Do not to let the product collide with persons or animals. If a person or animal comes in the way of the product, stop the product immediately. Refer to *To stop the product on page 21*.
- Do not put objects on top of the product or its charging station.
- Do not use the product if the **STOP** button does not work.
- Always set the product to OFF when it is not in operation. The product can only start when you enter the correct PIN code.
- Do not use the product at the same time as a pop-up sprinkler. Use the *Schedule* function so the product and pop-up sprinkler do not operate at the same time. Refer to *To do the Schedule settings on page 18*.
- Do not let the product operate when there is standing water. For example when heavy rain forms pools of water.

## 1.5 Safety instructions for maintenance



**WARNING:** Read the warning instructions that follow before you do maintenance on the product.

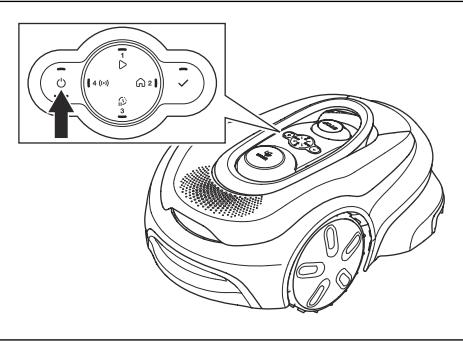
- Set the product to **OFF** when you do maintenance on the product.
- Do not use a high-pressure washer to clean the product. Do not use solvents to clean the product.
- Disconnect the plug to the charging station before you clean or do maintenance of the charging station.

## 1.6 Battery safety



**WARNING:** Read the warning instructions that follow before you use the product.

- Lithium-ion batteries can explode or cause fire if disassembled, short-circuited, exposed to water, fire, or high temperatures. Handle carefully, do not dismantle, open the battery or use any type of electrical/mechanical abuse. Avoid storage in direct sunlight.
- Do not use a damaged battery. Dispose the battery if it is damaged. Refer to *Disposal on page 35*.



3. Make sure that the product is disabled. The indicator on the **ON/OFF** button goes off when the product is disabled. Refer to *To use the keypad on page 9*.

4. Lift the product by the handle with the blade disc away from your body.



## 1.7 To lift and move the product



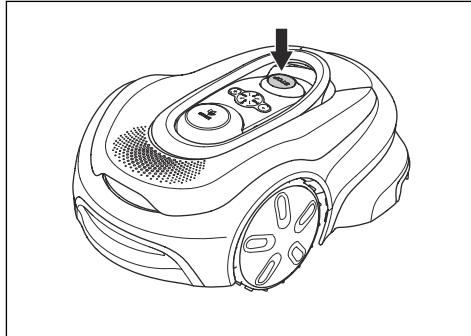
**WARNING:** The product must be set to OFF before you lift the product. The product is disabled when the indicator on the **ON/OFF** button goes off.



**CAUTION:** Do not lift the product when it is parked in the charging station. It can cause damage to the charging station and/or the product. Push the **STOP** button and pull the product out of the charging station before you lift it.

To safely move the product:

1. Push the **STOP** button to stop the product.



2. Push the **ON/OFF** button for 3 seconds to set the product to OFF.

## 1.8 Cyber security

Security recommendations:

- Do not set up or operate the product on untrusted or public networks.
- At regular time intervals, do a check if there are firmware updates available to install to keep the system secure.

### 1.8.1 Bluetooth® interface

The Bluetooth® interface is enabled by default to help with set up, mobile device connection, local device control and configuration of the product with a mobile device. The Bluetooth® connection uses a PIN code or password that is different for each product through the app. All device connection are made safe with a standard BLE encryption. Use a strong, unique PIN to increase security.

### 1.8.2 Wi-Fi interface

The Wi-Fi interface on the product enables connection to your private Wi-Fi network for remote control through the companion app and for firmware updates, and

location-based services. The Wi-Fi connections are protected with WPA2/WPA3 encryption protocols. Use a strong, unique password for your private Wi-Fi network and make sure that the product connects only to trusted networks.

### **1.8.3 Cellular interface**

The cellular interface enables remote access through the companion app, supports firmware updates, and provides location services. The product uses industry-standard protocols to make cellular connections secure.

### **1.8.4 Location service**

The location service uses GPS to show the product location. This is to enable the geofencing function (theft protection) and to let operators see the product location through the companion app.

### **1.8.5 External services**

These services are available through the network interfaces:

- **Backend Services:** Enables secure management and configuration of the product through authenticated access with the companion app or web-based portal, as well as telemetry data exchange.
- **Firmware update service:** This service sends new firmware over the air (FOTA) to the product. These updates keep the product security and product functions up to date.
- **Location service:** This service shows the position of the product with GPS. You must enable this service in the app before you can use it.

## 2 Introduction

### 2.1 Introduction

**Serial number:**

**PIN code:**

**Product registration key:**

The serial number is on the product carton and on the product rating plate. Refer to *Product overview on page 8*.

- Use the serial number to register your product on [www.gardena.com](http://www.gardena.com).

#### 2.1.1 Support

For support about the GARDENA product, speak to your GARDENA customer service.

#### 2.1.2 Product description

**Note:** GARDENA regularly updates the appearance and function of the products.

The product is a robotic lawn mower. The product has a battery power source and cuts the grass automatically. It continuously alternates between mowing and charging. The movement pattern can be set to irregular or systematic. The product uses vision technology to detect objects and edges of the lawn.

A virtual boundary is installed around the mowing area. It defines where the product can operate. The product cuts grass only in the mowing areas. The No-go zones are areas where the product cannot enter.

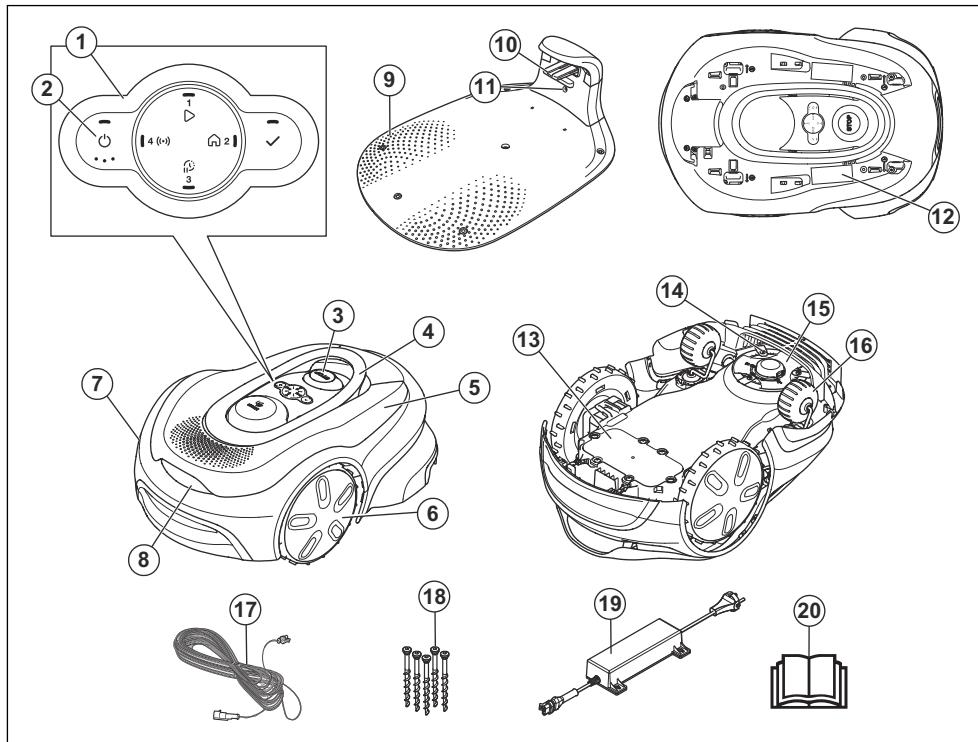
##### 2.1.2.1 Mowing technique

The frequent cutting technique improves the grass quality and decreases the use of fertilizers. Collection of grass is not necessary. The *Trim-to-Edge* function and the edge cutting disc make it possible for the product to cut near the edges of the lawn.

##### 2.1.2.2 Connectivity

The GARDENA smart system App is used to install and operate the product. Refer to *To download and pair with the GARDENA smart system App on page 15*.

## 2.2 Product overview



1. Keypad
2. ON/OFF button
3. STOP button
4. Handle
5. Top cover
6. Front wheels
7. Body
8. Vision module
9. Charging station
10. Contact plates
11. LED for operation check of the charging station
12. Rating plate<sup>1</sup>
13. Chassis box with electronics, battery and motors
14. Blade disc
15. Cutting system
16. Rear wheels
17. Low-voltage cable
18. Screws to attach the charging station

19. Power supply
20. Operator's manual and Quick guide

## 2.3 System description

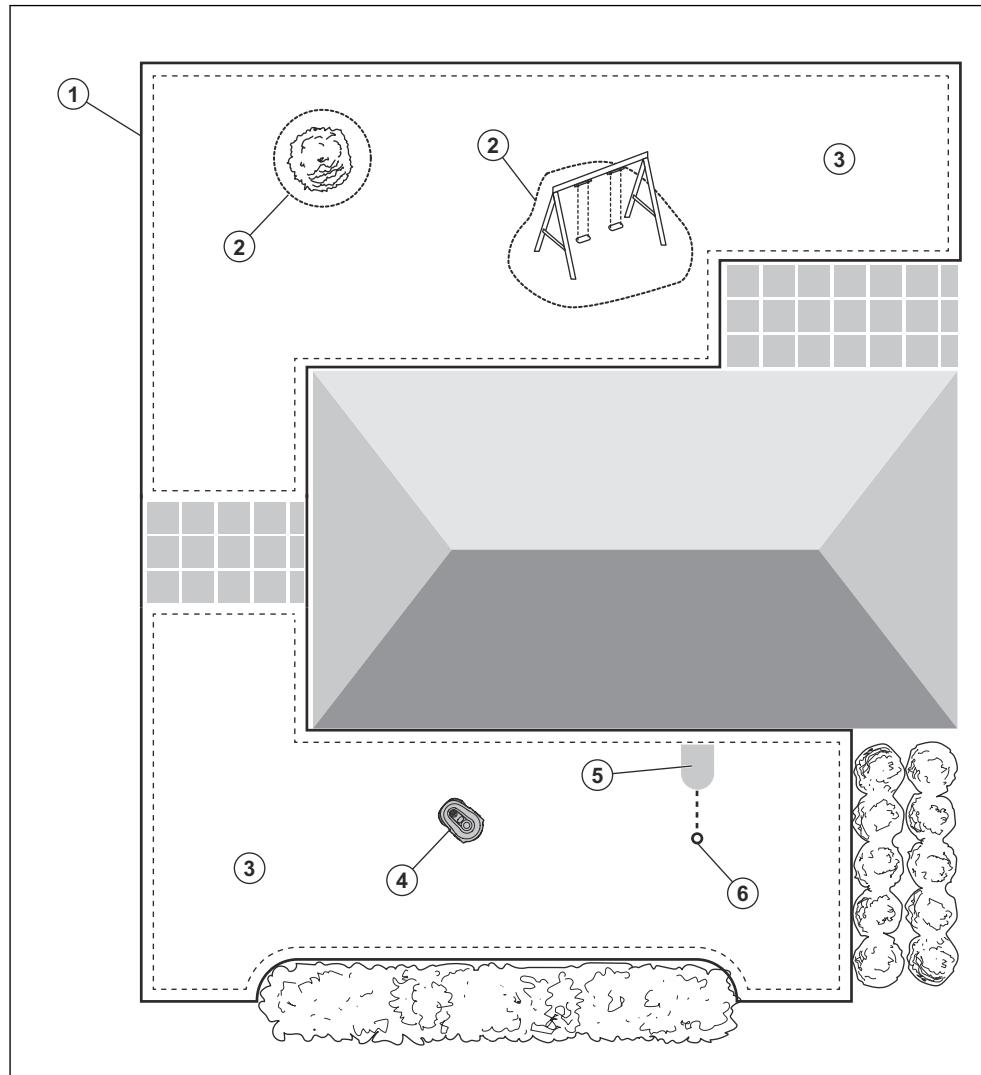
The product uses satellite signals and correction data to navigate. Satellite signals can be inaccurate because of atmospheric interference. Correction data compensates for this interference and it helps the product to operate with high position control. Correction data is available via the cellular network or Wi-Fi.

The virtual boundary shows the limit of the area where the product can operate. Inside the virtual boundary, you can install mowing areas. In these areas, the product cuts grass.

You can also install No-go zones. In these zones, the product must not operate. One installation can have 1 virtual boundary, but it can have many mowing areas and No-go zones.

<sup>1</sup> Found below the top cover. The top cover must be removed to access it.

## 2.4 Installation overview

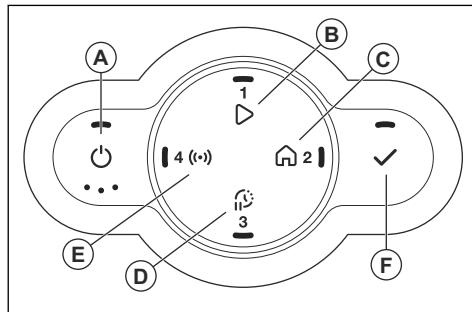


1. Virtual boundary
2. No-go zones
3. Mowing areas
4. Robotic lawn mower
5. Charging station
6. Docking point

## 2.5 To use the keypad

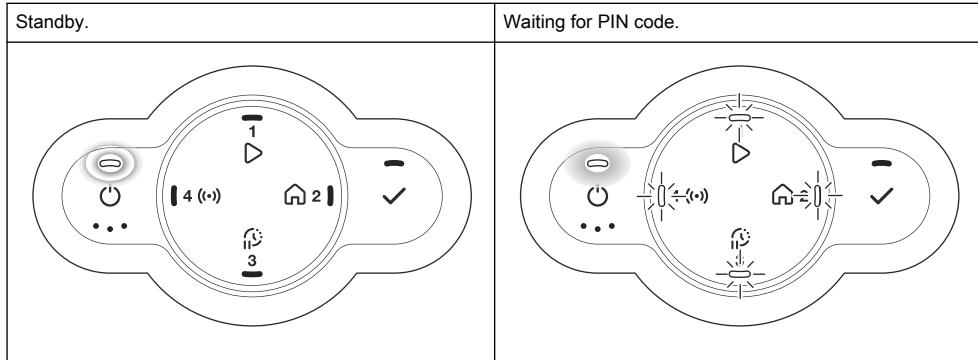
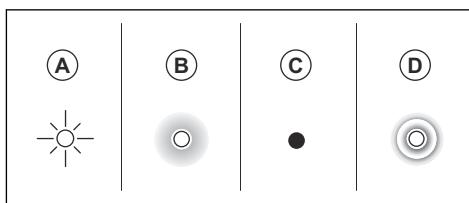
Use the keypad on the product to operate the product. Push the button for 1 second or 3 seconds to set an operating mode, refer to *Operating modes on page 20*. When you push the button for 3 seconds, the LED on the button flashes 3 times when an operating mode is selected. You must enter the PIN code for the product before you can select an operating mode.

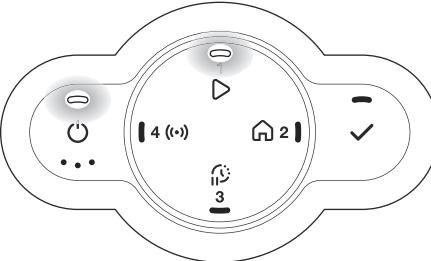
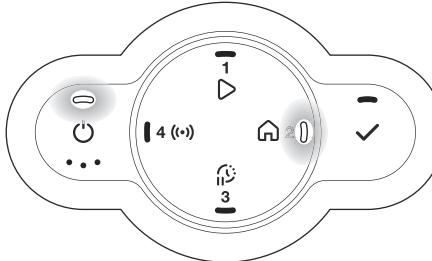
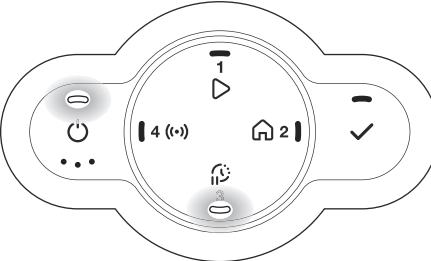
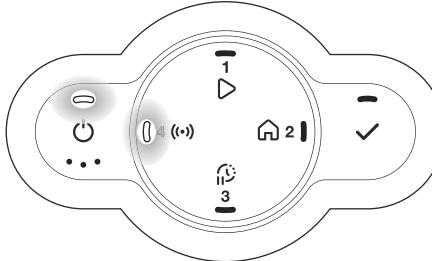
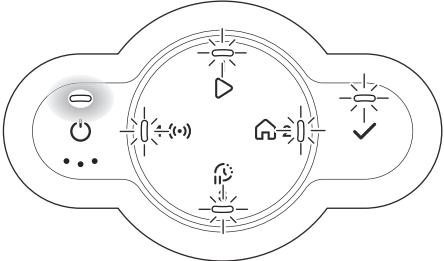
- Use the **ON/OFF** button (A) to set the product to ON or OFF.
- Use the **Start** button (B) to start the operation of the product according to schedule.
- Use the **Park** button (C) to park the product in the charging station until next schedule or until further notice.
- Use the **Park duration** button (D) to park the product in the charging station for 12 hours.
- Use the **Connectivity** button (E) to enable the pairing operation for the GARDENA smart system App.
- Use the **OK** button (F) to confirm the selections.



### 2.5.1 LED status indicator on the keypad

The LED status indicator on the keypad shows the status of the product. There are 4 light modes on the LED indicator: the light flashes quickly (A), the light is solid (B), the light is out (C), and the light flashes slowly (D).



Mowing according to the set <i>Schedule</i> or in operating mode <i>Override schedule</i> .	Parked until the next schedule or Parked until further notice.
	
Park for a certain duration.	Pairing or connected to the app with Bluetooth® wireless technology.
	
Error. If the ON/OFF LED is solid white, the system tries to correct the error automatically. If the ON/OFF LED flashes red, you must correct the error. Refer to the app for more information about the error.	
	

## 2.6 Symbols on the product

These symbols can be found on the product. Study them carefully.



**WARNING:** Read the user instructions before operating the product.



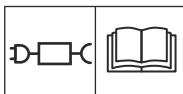
**WARNING:** Disable the product before working on or lifting the product.



**WARNING:** Keep a safe distance from the product when operating. Keep your hands and feet away from the rotating blades.



**WARNING:** Do not ride on the product. Do not put your hands or feet close to or under the product.



Use a detachable power supply as defined on the rating plate next to the symbol.



**WARNING:** Do not touch the hot surface.



This product complies with the applicable EU Directives.



The product is not domestic waste. Recycle it at an approved disposal location for electrical and electronic equipment.



The low-voltage cable must not be shortened, extended or spliced.

Do not use a trimmer nearby the low-voltage cable. Be careful when trimming edges where the cables are placed.

## 2.7 Symbols on the battery



**WARNING:** Lithium-ion batteries can explode or cause fire if disassembled, short-circuited or handled roughly. Do not expose to water, fire or high temperature.



Read the user instructions.



Do not discard the battery into fire and do not expose the battery to a heat source.



Do not immerse the battery into water.

## 2.8 Product damage

We are not responsible for damages to our product if:

- the product is incorrectly repaired.
- the product is repaired with parts that are not from the manufacturer or not approved by the manufacturer.
- the product has an accessory that is not from the manufacturer or not approved by the manufacturer.
- the product is not repaired at an approved service center or by an approved authority.

## 3 Installation

### 3.1 Introduction - Installation

Refer to [www.gardena.com](http://www.gardena.com) for more information about installation and instruction videos.

We recommend you to update the firmware before you install the product to make sure that the product has the latest firmware. Refer to *Firmware update on page 26*.



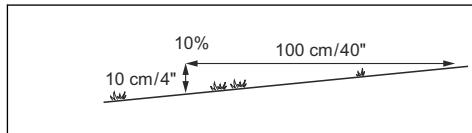
**WARNING:** Read and understand the safety chapter before you install the product.



**CAUTION:** Use original spare parts and installation material.

### 3.2 To plan the installation

- Read the installation chapter before you start the installation.
- Make a blueprint of the mowing area. Include all obstacles and mark on the blueprint where to put the virtual boundary, the charging station, the mowing areas and No-go zones.
- The product can operate in 25% slopes in the mowing area. At the virtual boundaries the maximum slope is 15%. The slope (%) is calculated as height for each m. Example: 10 cm / 100 cm = 10%.



### 3.3 To prepare the mowing area

- Fill in holes in the lawn to make it level.
- Cut the grass before you install the product. Make sure that the grass is maximum 4 cm / 1.6 in.
- Make sure the product have cellular coverage in the full area to receive correction data. GARDENA recommends that you also connect the product to your home Wi-Fi. This gives another method to receive correction data.
- Make sure the passage has a minimum width of 1 m / 3.3 ft. to get a good cutting result.
- If the installation is near water, slopes, precipices, or a public road, install a protective barrier. The barrier must have a height of minimum 15 cm / 6 in.



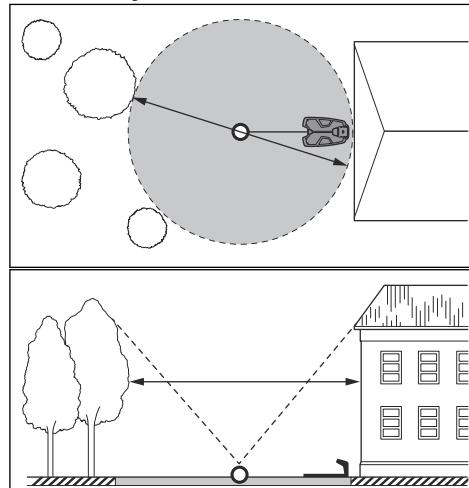
**CAUTION:** The protective barrier stops the product from falling into

water, going down slopes, or entering public roads.

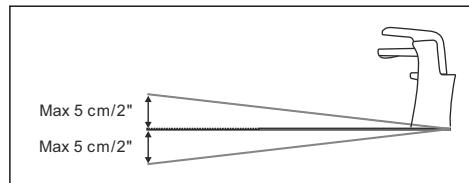
### 3.4 To prepare for the charging station installation

Before you install the charging station, make sure that these conditions are in the area where you do the installation:

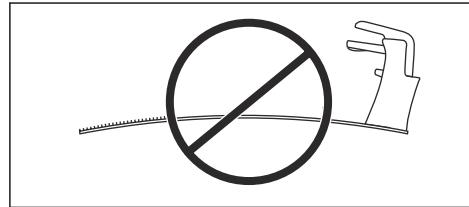
- An open area with more than 6 m / 20 ft. in front of the charging station. Make sure that the area does not have high objects, for example, hedges or buildings.



- A level surface.



- A flat surface. The baseplate of the charging station must not be bent.



- The docking point is inside the area set by the virtual boundary. The charging station can be put inside or outside the area set by the virtual boundary.
- There is access to a power outlet with a Class A ground fault circuit interrupter (GFCI) or a residual-current device (RCD) of maximum 30 mA.
- The power supply unit for the charging station can be installed in an area with protection from the sun and rain and with good airflow.
- If the mowing area has slopes, GARDENA recommends to put the charging station in the lower part of the area.
- The area has no metal objects in the ground.

**Note:** Metal objects can cause interference to the signal that the product uses to find and move into the charging station.

### 3.4.1 To install the charging station



**CAUTION:** Do not make new holes in the charging station plate.

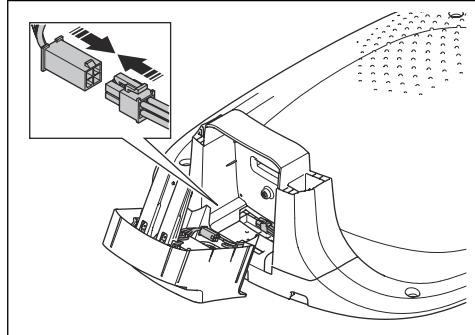


**CAUTION:** Do not put your feet on the baseplate of the charging station.

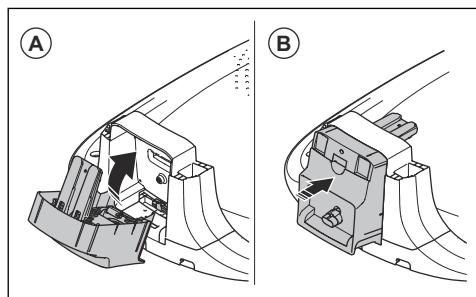


**WARNING:** Make sure that the plugs of the low-voltage cable and the power supply unit are clean and dry before you connect them.

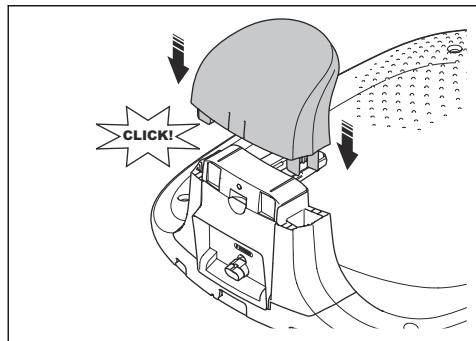
1. Connect the cable of the charging module to the cable of the charging station.



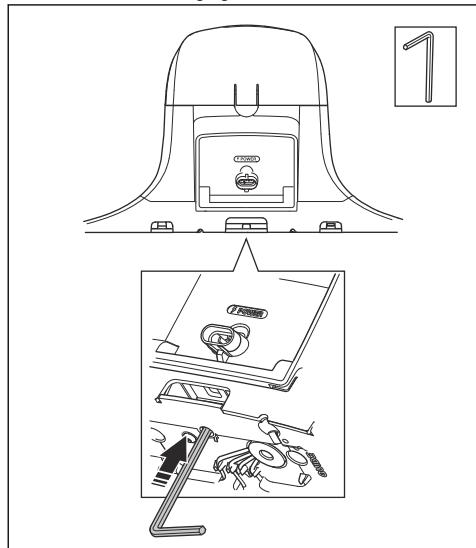
2. Tilt the charging module (A) and push it into position into the charging station (B).



3. Install the charging station top to the charging station.

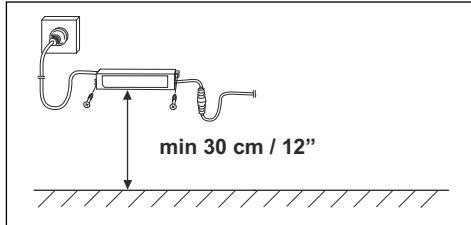


4. If it is necessary to remove the charging module, push the clips from below with the hex key. Remove the charging module.



5. Put the charging station in the selected area.

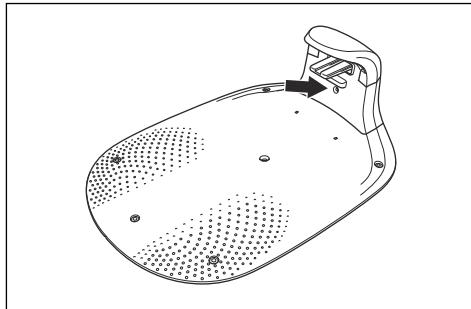
6. Connect the low-voltage cable to the charging station and the power supply unit.
7. Put the power supply at a minimum height of 30 cm / 12 in.



8. Connect the power supply cable to a 100-240V power outlet.
9. Put the low-voltage cable in the ground with stakes or bury the cable.
10. Attach the charging station to the ground with the supplied screws.

### 3.4.2 To do a visual check of the charging station

1. Make sure that the LED indicator on the charging station is on.



### 3.4.3 To charge the product

1. Put the product in the charging station.

**Note:** The product starts to charge automatically when the product is in the charging station.

### 3.4.4 To download and pair with the GARDENA smart system App

1. Download the GARDENA smart system App on your mobile device.
2. Register as a user and log on to the app.
3. Select *Include product* in the app.
4. Select your product model.
5. Enable Bluetooth® wireless technology on your mobile device.

6. Follow the instructions in the app.

### 3.4.5 Installation of the map

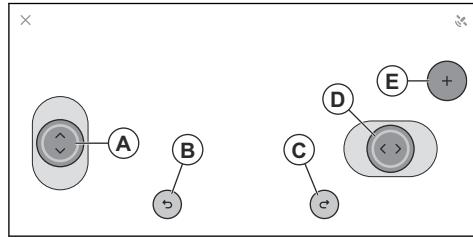
The installation of the map objects is made in the GARDENA smart system App.

#### 3.4.5.1 Remote control

To install objects on the map, you operate the product with the Remote control and add waypoints on the map.

#### To operate the product with Remote control

- Open the GARDENA smart system App.
- Push the **Remote control** button on the product. Refer to *To use the keypad on page 9*.
- Use the **up/down** button (A) to move the product forward or rearward.
- Use the **left/right** button (D) to rotate the product to the left or right.
- Use the **+** button (E) to add a waypoint in the map.
- Use the **undo** button (B) to remove the latest waypoint.
- Use the **redo** button (C) to restore the latest removed waypoint.



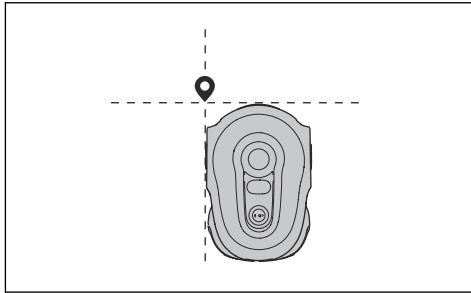
**Note:** Walk 2-3 m / 6.5-9.8 ft. behind the product when you operate the product with Remote control. Use Remote control to operate the product when you install map objects, do not manually lift and move the product between waypoints.

#### 3.4.5.2 Waypoints

The waypoints (A) are positions that make the virtual boundaries and paths (B). GARDENA recommends that you use a small number of waypoints. The lines between the waypoints are straight. To make a smooth curve, use more waypoints. GARDENA recommends a minimum distance of 30 cm / 1 ft. between the waypoints.

The product has an edge detection function that helps it find the edge of the grass area. It is not necessary to set the waypoints with high precision. The product will adjust its position and cut the grass near the edge. You can move the waypoints outside the grass area to help the product cut all the grass near the edge. After you install the product, you can use the app to add, remove, or change the waypoints.

**Note:** The position of the waypoint when you install a mowing area or a No-go zone is in the front left corner of the product.



#### 3.4.5.3 Docking point

In front of the charging station there is a docking point. It is used for the product to navigate to and from the charging station. The docking point must be inside the virtual boundary and must have a clear view of the sky.

The docking point can be set 70–250 cm / 28–98 in. from the charging station.

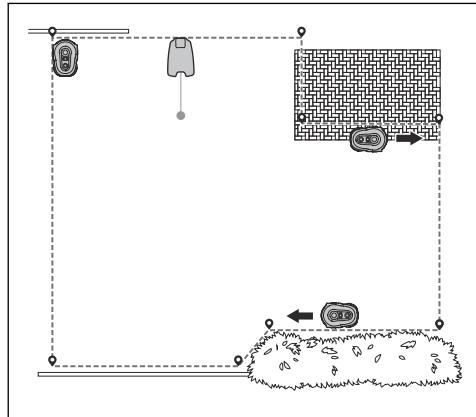
**Note:** Short distance to the charging station decreases the risk of track marks. A long distance can be necessary to have good satellite signals at the docking point.

#### 3.4.5.4 Virtual boundary

The virtual boundary sets the outer borders of the area where the product is permitted to operate. Inside the virtual boundary you can install mowing areas and No-go zones.

##### To install the virtual boundary

1. Open the GARDENA smart system App and select *Start setup*.
2. Operate the product clockwise around the outer border of the installation to set the waypoints for the virtual boundary.



#### 3.4.5.5 Mowing area

A mowing area is made with virtual boundaries. It is the area where the product operates and cuts grass. The mowing area can only be inside the virtual boundary. The mowing area adapts to the virtual boundary.

##### To install a mowing area

1. Open the GARDENA smart system App and go to the map.
2. Select the pen tool > *Mowing area*.
3. Use the app to set and adjust waypoints to specify the mowing areas where the product will cut grass.

**Note:** It is not necessary to use the Remote control to install mowing areas.

#### 3.4.5.6 No-go zone

A No-go zone is an area where the product must not go. When you install a No-go zone the product is operated with appDrive counterclockwise around the boundary of the No-go zone and waypoints are set along the way.

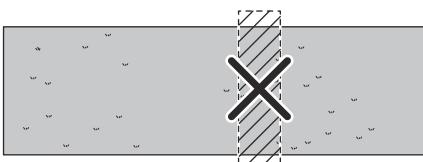
No-go zones are recommended:

- Around all obstacles, for example trees, roots, and stones.
- To not include slopes in the work area that are more than 25%.

A No-go zone must have a minimum size of 30 × 30 cm / 1 × 1 ft.

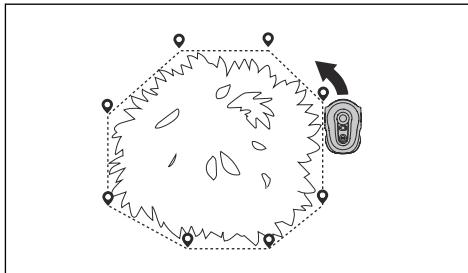
**Note:** The product has an object avoidance function, but GARDERA recommends to use No-go zones around permanent objects. The No-go zones helps the product to navigate in the mowing area with increased efficiency.

**Note:** Do not make a No-go zone across the work area to stop the product from going to other parts of the work area.



#### To install a No-go zone

1. Open the GARDENA smart system App and go to the map. Select the pen and then select No-go zone.
2. Operate the product counterclockwise around the selected area and set the waypoints for the No-go zones.



## 4 Settings

Use the GARDENA smart system App for product settings.

### 4.1 To do the Schedule settings

You set the operating time of the product in the schedule. The operating time includes cutting, searching and charging. Set the schedule so the product operates during the day.

**Note:** The vision camera requires daylight for navigation. The product will be restricted and not operate when there is not sufficient light for navigation.

The product has a maximum cutting time each day. The operating time can be different because of many reasons, for example the layout of the mowing area, the grass growth and age of the battery.

You can set the schedule in 2 different procedures:

- Use the GARDENA assisted scheduling. Enter the dimension of your mowing area for the scheduling wizard to show an applicable schedule.
- Use the manual scheduling to set or adjust the schedule manually.



**CAUTION:** Do not cut the lawn more than it is necessary to prevent wear on the product and the lawn.

### 4.2 SensorControl



*SensorControl* automatically adjusts the cutting time to the growth of the grass. This function is only applicable to mowing areas with irregular mowing pattern. The product is not permitted to operate more than the schedule settings. The product stops cutting and goes back to the charging station if it senses that the grass is cut. The first operation of the day is set by the schedule settings. The product completes 1 mowing cycle, and then *SensorControl* selects if the product continues to operate.

There are 3 levels that you can select for the *SensorControl*: *Low*, *Mid* and *High*. On level *Low* the product operates for a longer period of time. On level *High* the product operates for a less period of time.

**Note:** When using *SensorControl*, it is recommended to make as much operating time as possible available for *SensorControl*. Do not restrict the schedule more

than necessary. Also, check that the blade disc is clean and that the blades are in good condition.

### 4.3 Trim-to-Edge

The *Trim-to-Edge* function makes it possible for the product to cut near the edges of the lawn. There are 2 settings that you can select for the product:

- *Along mowing area edge*: The product operates in *Trim-to-Edge* cutting pattern when it moves along the virtual boundary of the mowing area. This function makes the product cut grass at the edge.
- *On collision*: The product changes to *Trim-to-Edge* cutting pattern after it hits an object, for example, a tree. This function makes the product cut grass at the edge near the object.

### 4.4 Frost sensor

The grass is extra sensitive to wear if the yard is covered with frost. If the *Frost sensor* is activated, the product is not allowed to start to cut the grass if the temperature is below 5° C / 41° F. In the factory setting this function is disabled.

**Note:** The frost sensor is located inside the chassis and there can be a delay compared to the ambient temperature.

### 4.5 Mowing pattern

The settings for the pattern is set for each mowing area. GARDENA recommends to use systematic pattern on large and open mowing areas. Make No-go zones around obstacles for the best possible cutting result.

GARDENA recommends to use irregular pattern if the mowing area is complex and has many obstacles.

### 4.6 PIN code

When you use the product for the first time you must enter the factory PIN code 1234. You can change the PIN code in the app. The PIN code must have 4 digits. You can use the numbers 1-4 to set a new PIN code. Refer to *To use the keypad on page 9*.

### 4.7 Factory reset

Use this function to reset all user settings. You can also select to remove the product from the GARDENA smart system App.

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**Note:** *PIN code* and *Messages* are not reset when you select *Factory reset*. You can also select to remove the product from the GARDENA smart system App.

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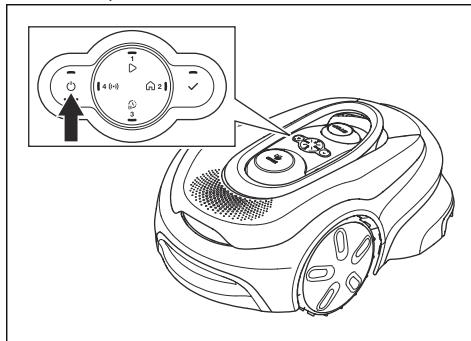
## 5 Operation

### 5.1 To use the ON/OFF button



**WARNING:** Read and understand the safety chapter before you use the product.

- Push the **ON/OFF** button for 3 seconds to set the product to ON. Make sure that the LED indicator comes on.
- The product is ON and in power save mode if the LED indicator flashes. To get out of power save mode, push the **ON/OFF** button for 3 seconds.



- Push the **ON/OFF** button for 3 seconds to set the product to OFF. Make sure that the LED indicator goes off.

#### 5.1.1 The indicator lamp

The indicator lamps on the keypad show the operating modes of the product, refer to *LED status indicator on the keypad on page 10*.

### 5.2 To start the product

- Push the **ON/OFF** button for 3 seconds.
- Use the buttons on the keypad to enter the PIN code and then push the **OK** button. Refer to *PIN code on page 18*.
- Select an operating mode. Refer to *Operating modes on page 20*.

**Note:** The first weeks after installation the perceived sound level when cutting the grass may be higher than expected. When the product has cut the grass for some time, the perceived sound level is much lower.

### 5.3 Operating modes

The following operating modes are available:

- Mowing according to schedule*

- Override schedule*
- Park / Schedule*
- Park*
- Park duration*

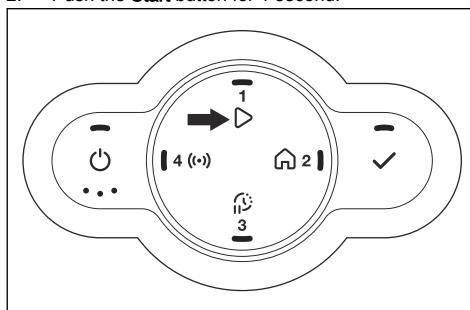
#### 5.3.1 Mowing according to schedule

*Mowing according to schedule* is the standard operating mode where the product mows and charges automatically.

##### 5.3.1.1 To set the product to mow according to schedule

This can be set in the dashboard in the app or with the keypad on the product:

- Push the **STOP** button.
- Push the **Start** button for 1 second.



- Push the **OK** button.

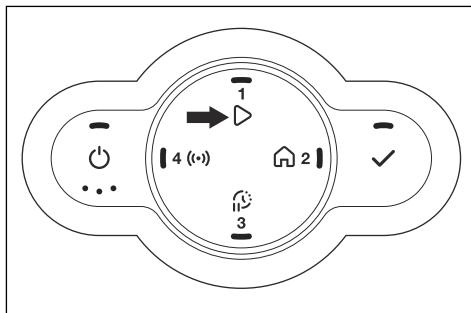
#### 5.3.2 Override schedule

Select *Override schedule* to temporarily override the schedule settings. You can select to override the schedule settings for 3 hours. The product cannot be set to cut more than the maximum cutting time for each day.

##### 5.3.2.1 To override the schedule

This can be set in the dashboard in the app or with the keypad on the product:

- Push the **STOP** button.
- Push the **Start** button for 3 seconds.



3. Push the **OK** button.

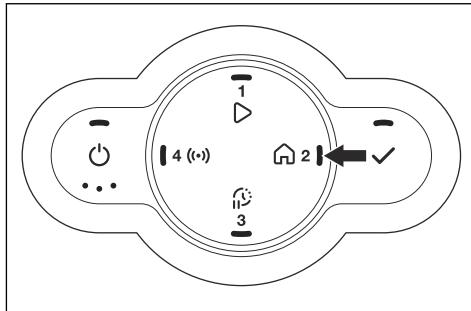
### 5.3.3 Park / Schedule

Operating mode *Park / Schedule* means that the product goes back to the charging station where it stays until the next schedule. If the product has operated the maximum cutting time for the day, it will start to operate again the next day. Refer to *To do the Schedule settings on page 18*.

#### 5.3.3.1 To park the product and start again with the next schedule

This can be set in the dashboard in the app or with the keypad on the product:

1. Push the **STOP** button.
2. Push the **Park** button for 1 second.



3. Push the **OK** button.

**Note:** To change the operating mode of the product, push the **STOP** button and the product will be in idle mode where you can set an operating mode.

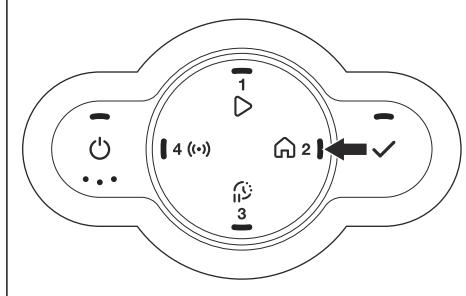
### 5.3.4 Park

Operating mode *Park* means that the product returns to the charging station where it remains until a different operating mode is selected.

#### 5.3.4.1 To park the product

This can be set in the dashboard in the app or with the keypad on the product:

1. Push the **STOP** button.
2. Push the **Park** button for 3 seconds.



3. Push the **OK** button.

**Note:** To change the operating mode of the product, push the **STOP** button then select an operating mode.

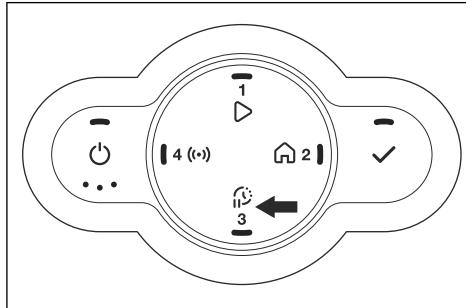
### 5.3.5 Park duration

Operating mode *Park duration* means that you can park the product in the charging station for a set time. The standard time is 12 hours.

#### 5.3.5.1 To park the product for a set time

This can be set with the keypad on the product:

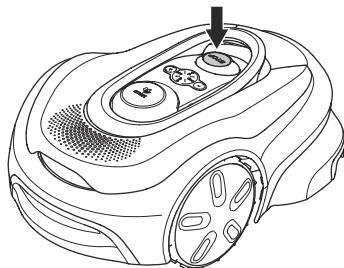
1. Push the **STOP** button.
2. Push the **Park duration** button for 3 seconds.



3. Push the **OK** button.

### 5.4 To stop the product

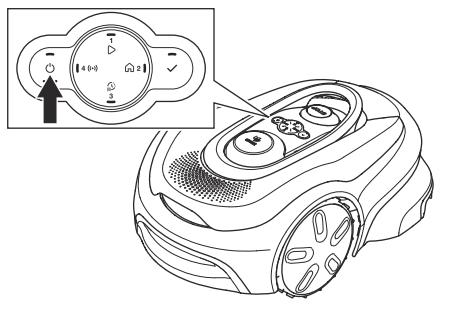
1. Push the **STOP** button on top of the product.



**Note:** When the **STOP** button is pushed the product will be idle. The product stops and the cutting motor stops.

## 5.5 To set the product to OFF

1. Push the **STOP** button.
2. Push the **ON/OFF** button for 3 seconds to set the product to OFF. Make sure that the LED indicator goes off.



## 5.6 To charge the battery

When the product is new or after long-term storage, the battery can be empty. If the battery is empty, you must charge the product. You can use the product after the battery is charged.

**Note:** The charging time is approximately 24 hours if the battery is fully discharged.

1. Put the product into the charging station until the charging plates touch the contact plates.
2. Make sure that the product charges in the GARDENA smart system App or on the keypad.

## 5.7 Cutting height adjustment

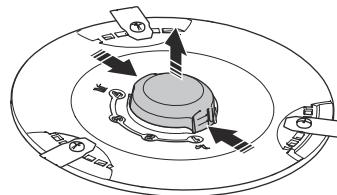
You can select between 4 different cutting height steps. The blade disc has marks for each step. Step 1 is the lowest height and step 4 is the highest height. The factory setting is set to 4.

### 5.7.1 To adjust the cutting height

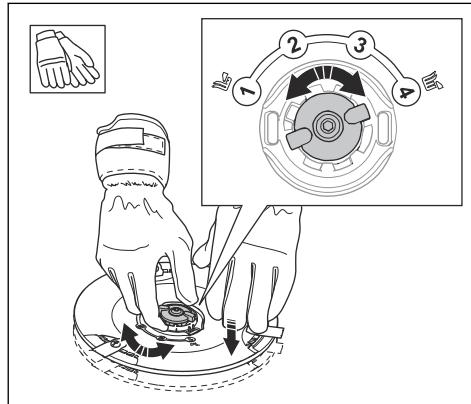


**WARNING:** Use protective gloves.

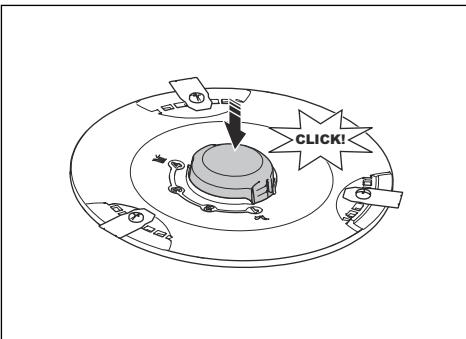
1. Push the **STOP** button.
2. Push the **ON/OFF** button for 3 seconds to set the product to OFF. Make sure that the LED indicator goes out.
3. Put the product with the blade disc up on a soft and clean surface.
4. Remove the cover of the cutting height adjustment knob.



5. Push the cutting disc down and rotate the cutting height adjustment knob to select a cutting height.



6. Release the cutting disc.
7. Attach the cover of the cutting height adjustment knob.



## 6 Maintenance

### 6.1 Introduction - maintenance



**WARNING:** Set the product to OFF before you do maintenance on the product.



**WARNING:** Use protective gloves.

For better operation and lifetime of the product, make sure to clean the product regularly and replace worn parts.

When the product is new, examine the blade discs and blades each week. If the wear is low, you can increase the interval for the next time you examine the blade discs and blades. Examine the blade discs and the blades more regularly if there is much wear.

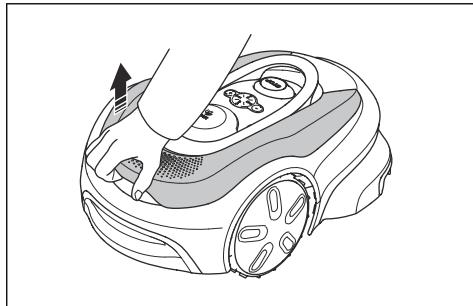
It is important that the blade disc rotates easily and that the edges of the blades are not damaged. The usual lifetime of the blades are 4 to 7 weeks. The conditions that follow can increase or decrease the lifetime of the blades:

- Operation time and dimension of the mowing area.
- Length and thickness of the grass.
- Soil, sand and use of fertilizers.
- Objects such as cones, tools, stones and roots in the mowing area.

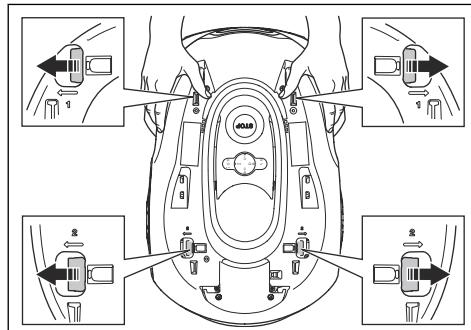
**Note:** The cutting result can be unsatisfactory if the blades are blunt. Refer to *Replacement of the blades on page 25* on how to replace the blades.

### 6.2 To remove the body of the product

1. Remove the top cover.

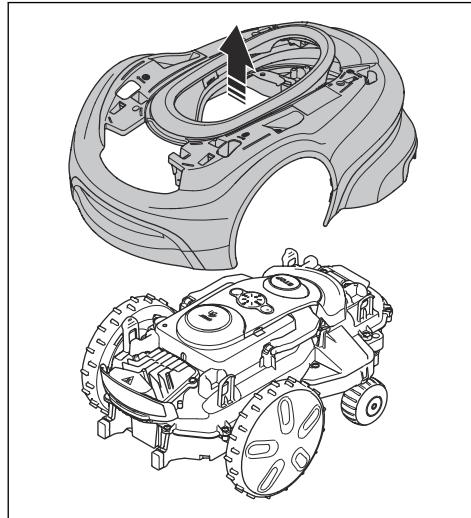


2. Push the clips that are on the rear side of the body of the product.



3. Push the clips that are on the front side of the body of the product.

4. Remove the body of the product from the chassis.



### 6.3 Clean the product



**CAUTION:** Do not use a high-pressure washer to clean the product. Do not use solvents for cleaning.



**WARNING:** Use protective gloves.

GARDENA recommends to use a special cleaning and maintenance kit. Speak to your GARDENA service for more information.

### 6.3.1 To clean the product

1. Remove the body of the product. Refer to *To remove the body of the product on page 24*.



**CAUTION:** Do not remove other parts from the product to clean it.

2. Clean the body of the product and the chassis with a brush and running water.
3. Install the body of the product and the top cover.

### 6.3.2 To clean the chassis and blade disc



**WARNING:** Use protective gloves.

Examine the blade discs and blades weekly.

1. Push the **STOP** button.
2. Push the **ON/OFF** button for 3 seconds to set the product to OFF. Make sure that the LED indicator on the keypad goes out.
3. Lift the product onto its side on a clean and soft surface.
4. Make sure that the blades are not damaged and that the blades and blade discs can rotate freely.
5. Clean the blade discs and chassis with a brush and running water.

### 6.3.3 To clean the vision window



**CAUTION:** Do not use paper towels, scouring pads, brushes, steel wool, acids, alkalis, glass cleaners, or solvents. They can cause damage to the vision window.

1. Remove dust from the vision window. Use water or compressed air.
2. Clean the vision window with a soft cloth or sponge. Apply light pressure. Use lukewarm water with a small quantity of weak, pH-neutral dish soap.
3. Flush the vision window with water.
4. Dry the vision window with a soft cloth or compressed air.

### 6.3.4 To clean the wheels

The product does not operate satisfactorily in slopes if the wheels are blocked with grass.

- Use a soft brush to clean the wheels.

### 6.3.5 To clean the body of the product

- Use a moist cloth and a weak soap solution to clean the body of the product.

### 6.3.6 To clean the charging plates and contact plates

1. Use a fine grade emery cloth to clean the charging plates and the contact plates.
2. Lubricate the charging plates and contact plates with grease.

### 6.3.7 To clean the charging station



**WARNING:** Disconnect the power supply from the power outlet before maintenance, or when you clean the charging station or power supply.



**CAUTION:** Do not use a high-pressure washer or running water to clean the charging station.

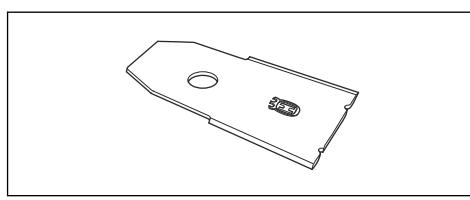
**Note:** The product cannot enter the charging station if there are objects in the charging station. Clean the charging station regularly.

- Remove grass, twigs and other objects from the charging station.

### 6.4 Replacement of the blades



**WARNING:** GARDENA can only guarantee safety if you use GARDENA original blades with the embossed crowned H-mark logotype.



**WARNING:** You must replace the screws when you replace the blades. The used screws can wear quickly and make the blade come loose, this can cause serious injury.



**WARNING:** Use protective gloves.

Replace worn or damaged blades for a safe operation. Replace the blades regularly for a satisfactory cut result

and a low energy use. All 3 blades and screws must be replaced at the same time to get a balanced cutting system.

#### 6.4.1 To replace the blades

1. Push the **STOP** button.
2. Push the **ON/OFF** button for 3 seconds to set the product to OFF. Make sure that the LED indicator on the keypad goes out.
3. Put the product with the blade disc up on a soft and clean surface.
4. Remove the 3 screws and blades for each cutting disc.
5. Attach new blades and screws.
6. Make sure that the blades can pivot freely.

#### 6.5 Firmware update

GARDENA regularly updates the firmware and the GARDENA smart system App for the product.

##### 6.5.1 Firmware update with the GARDENA smart system App

When a new firmware is available, a notification shows in the app where you can select to install the new firmware.

##### 6.5.2 Update of the GARDENA smart system App

The GARDENA smart system App is regularly updated. Update the app on App Store or on Google Play to make sure that you have the latest version.

#### 6.6 Battery



**CAUTION:** Charge the battery fully before you put the product into storage. If the battery is not fully charged it can cause damage to the battery.

If the operating time of the product is shorter than usual between charges, this means that the battery is at the end of its life cycle. Replace the battery to extend the operating time.

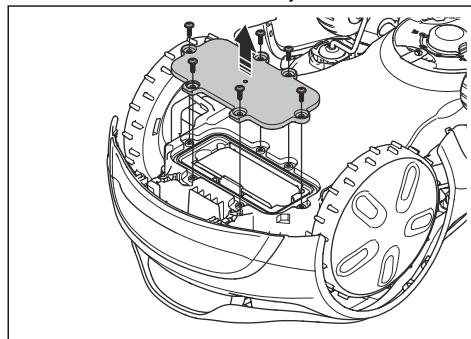
**Note:** The battery life is related to the length of the season and how many hours a day the product operates. A long season or many hours of operation a day means that the battery must be replaced more frequently.

##### 6.6.1 To remove and install the battery

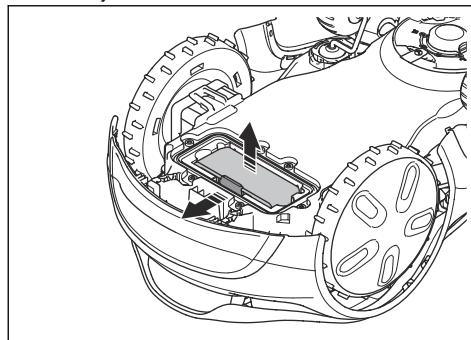


**CAUTION:** If the battery housing is damaged, do not install or use the battery. Refer to *Disposal* on page 35.

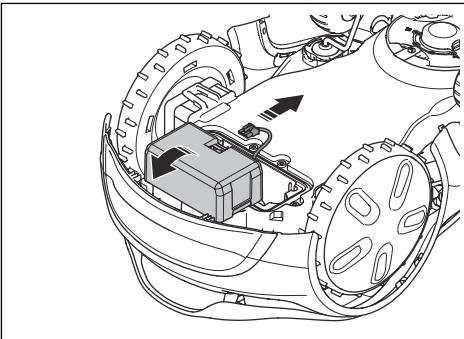
1. Push the **ON/OFF** button for 3 seconds to set the product to OFF. Make sure that the LED indicator goes out.
2. Put the product with the blade disc up on a soft and clean surface.
3. Remove the 6 screws on the battery cover with a Torx 20 to remove the battery cover.



4. Push the clips that holds the battery and lift up the battery.



5. Disconnect the 2 cables from the battery.



6. Remove the battery.
7. Install the battery in the opposite sequence. Install the screws with a tightening torque of 1.8 Nm.

## 6.7 Winter service

Take your product to your GARDENA service for service prior to winter storage. Regular winter service will maintain the product in good condition and create the best conditions for a new season without any disruptions.

Service usually includes the following:

- Thorough cleaning of the body, the chassis, the blade disc and all other moving parts.
- Testing of the product's function and components.
- Checking and, if required, replacing wear items such as blades and bearings.
- Testing the product's battery capacity as well as a recommendation to replace battery if necessary.
- If new firmware is available, the product is updated.

## 7 Troubleshooting

### 7.1 Messages

The messages in the table below are shown in the app. Speak to your GARDENA service center if the same message shows frequently.

Message	Cause	Action
<i>Wheel motor blocked, left/right</i>	Grass or other object around the drive wheel.	Remove grass or other object.
<i>Cutting system blocked</i>	Grass or other object around the blade disc.	Remove grass or other object.
	The blade disc is in water.	Move the product and prevent the collection of water in the mowing area.
	The grass is too high.	Cut the grass before you install the product. Make sure that the grass is maximum 4 cm / 1.2 in.
<i>Trapped</i>	The product is behind a number of obstacles in a small area.	Examine the area and remove the obstacles that prevent the product to move away from this location.
<i>Outside mowing area</i>	The mowing area slopes too much by the virtual boundary.	Make sure that the mowing area is installed correctly. Refer to <i>To install a mowing area on page 16</i> .
	Interference from metal objects such as fences, reinforced steel or buried cables near the charging station.	Change the position of the charging station.
<i>Empty battery</i>	The product cannot find the charging station.	The product has no accurate position. Examine why the satellite coverage is not good in this area. Refer to <i>Installation of the map on page 15</i> .
		There is an obstacle that prevents the product to find the charging station.
	The battery is at the end of its life cycle.	Replace the battery. Refer to <i>Battery on page 26</i> .
	The antenna of the charging station is damaged.	If the LED indicator on the charging station flashed red, the antenna of the charging station is damaged. Speak to your approved servicing dealer.
<i>Slipped</i>	The product has got caught in something and has been slipping.	Free the product and correct the cause of problem. If it is because of wet grass, wait until the lawn is dry before you use the product.
	The installation includes a steep slope.	Steep slopes must be isolated. Refer to <i>Installation of the map on page 15</i> .
<i>Wheel motor overloaded, left/right</i>	Grass or other object around the drive wheel.	Remove grass or object from the drive wheel.

Message	Cause	Action
<i>Collision/Collision sensor problem</i>	The front wheels on the product are blocked.	Free the product and correct the cause of problem. If the problem stays speak to your GARDENA service.
<i>Charging station blocked</i>	The contact between the charging plates on the product and the contact plates on the charging station is not good. The product has made a number of tries to charge.	Use a fine grade emery cloth to clean the charging plates and the contact plates. Lubricate the charging plates and contact plates with grease. Put the product in the charging station and make sure that the charging plates and contact plates are connected.
	An object prevents the product to enter the charging station.	Remove the object.
	The charging station is tilted or bent.	Put the baseplate on level ground.
<i>Stuck in charging station</i>	An object prevents the product to move out from the charging station.	Remove the object.
<i>Upside down</i>	The product is in an incorrect position, the product is tilting too much or is upside down.	Put the product in the correct position.
<i>Lifted</i>	The lift sensor has been enabled because the product has been lifted.	Make sure that the product body can move freely around its chassis. Remove or create an island around objects that can cause the chassis to be lifted. If the problem stays speak to your GARDENA service.
<i>Wheel drive problem, right/left</i>	Grass or other object around the drive wheel.	Clean the wheels and around the wheels.
<i>Electronic problem</i>	Temporary electronic or firmware related problem in the product.	Restart the product. If the problem stays speak to your GARDENA service.
<i>Loop sensor problem, front/rear</i>		
<i>Tilt sensor problem</i>		
<i>Temporary problem</i>		
<i>Invalid sub-device combination</i>		
<i>Temporary battery problem</i>		
<i>Safety function faulty</i>		
<i>STOP button problem</i>		
<i>Invalid system configuration</i>		
<i>Lift sensor problem</i>		
<i>Vision system problem</i>		

Message	Cause	Action
<i>Charging system problem</i>	There is corrosion or dirt on the charging plates and contact plates.	Restart the product. Clean the charging plates on the product and the contact plates on the charging station. Lubricate the charging plates and contact plates with grease.
	Temporary electronic or firmware problem in the product.	Restart the product. If the problem stays, speak to your approved servicing dealer.
<i>Battery problem</i>	Temporary battery or firmware related problem in the product.	Restart the product. If the problem stays speak to your GARDENA service.
	Incorrect type of battery.	Use original batteries recommended by the manufacturer.
<i>Battery temperature outside limits</i>	The temperature in the battery is too high or too low to start operation.	The temperature in the battery is not in its operating limits and charging/mowing has stopped. Charging/mowing will start when the temperature is restored to its limits.
<i>Charging current too high</i>	Incorrect or damaged power supply unit.	Restart the product. If the problem stays speak to your GARDENA service.

Message	Cause	Action
<i>No loop signal</i>	The power supply or low-voltage cable are not connected.	If the LED status indicator on the charging station is not lit, it shows that there is no power. Examine the power outlet connection and the residual-current device. Make sure that the low-voltage cable is connected to the charging station.
	The power supply or low-voltage cable are damaged.	Replace the power supply or low-voltage cable.
	Problem with the pairing between the product and the charging station.	Redo the installation of the charging station.
	Interference from metal objects such as fences, reinforcement steel or buried cables near the charging station.	Change the position of the charging station.
<i>Mower tilted</i>	The product is tilted more than the maximum angle.	Move the product to a level area.
<i>Slope too steep</i>	The product stopped because the slope is too steep.	Change the installation to exclude the steep part.
<i>Cutting system imbalance</i>	The product has senses vibrations in the blade disc.	Examine that the blades and screws are not damaged or worn. Make sure that all blades are correctly installed and that there is only one blade attached in each position on the blade disc.
<i>No power in charging station</i>	The power supply unit is incorrect or damaged.	Examine the power supply unit. Replace the power supply unit if it is necessary.
	Power failure.	Find and correct the cause of the power failure.
	The product cannot charge because there is no contact between the contact plates and the charging plates.	Make sure that the charging plates and the contact plates are in contact. Clean the charging plates and the contact plates. Lubricate the charging plates and contact plates with grease.
<i>Destination not reachable</i>	The way back to the charging station is blocked by an obstacle.	Remove the obstacle.
	The product cannot reach the destination because there is a No-go zone blocking the way to the mowing area.	Edit or remove the No-go zone or make a new installation of the mowing area.
<i>Destination blocked</i>	The way of the destination is blocked by an obstacle.	Remove the obstacle that blocks the way to the destination.
	The way of the destination is blocked by a No-go zone.	Edit or remove the No-go zone or make a new installation of the mowing area.
<i>Battery needs replacement</i>	The battery state of health is low.	Replace the battery. Speak to your authorized service technician.
<i>Battery near end of life</i>	The battery state of health is critically low.	Replace the battery. Speak to your authorized service technician.

Message	Cause	Action
<i>Invalid firmware configuration</i>	The firmware in the product is invalid.	Put the product in the charging station and update the firmware via FOTA. If the problem remains, speak to your authorized service technician.
<i>Edge cutting disc blocked</i>	The edge cutting system is blocked by grass or other objects.	Examine the edge cutting system and remove the grass or other objects.
<i>Imbalanced edge cutting disc</i>	The product senses vibrations in the edge blade disc.	Examine that the blades and screws are not damaged or worn. Make sure that all blades are correctly installed and that there is only one blade attached in each position on the blade disc.
<i>Position too inaccurate</i>	Weak satellite signal to the product.	<p>The satellite signal is temporarily weak. The product will start to operate when the satellite signals are good.</p> <p>Examine if there is an object between the product and the sky that causes interference with the satellite signal. Remove the object or do a new installation to exclude these parts from the installation. Refer to <i>Installation of the map on page 15</i>.</p>
<i>Map invalid</i>	The map object file is incorrect.	Do a check of the map in the app. Adjust the map and save it.
		Delete the map and do a new installation.
<i>Mowing area tampered</i>	The charging station was moved.	Do a new installation of the charging station in the app.
<i>No correction data available</i>	Technical problems with the service for correction data.	Restart the product. If the problem remains, the message requires action by authorized service technician.
	The product does not have Wi-Fi connection and cannot receive correction data.	Make sure that the Wi-Fi network works correctly and has coverage in all parts of the area where the product operates.
<i>No object detection available</i>	Objects cannot be detected by the vision system.	Clean the glass in front of the camera.
<i>Poor object detection</i>	Objects are poorly detected by the vision system.	Clean the glass in front of the camera.

## 7.2 Indicator lamp in the charging station

The indicator lamp in the charging station must show a solid or flashing green light for a correct installation. Speak to your GARDENA service for more information.

Light	Cause	Action
Green solid light	Good signals.	Normal operation. No action is necessary.
Green flashing light	There is a problem with the baseplate of the charging station.	Make sure that the cables between the charging station tower and the baseplate are connected. If the problem stays, speak to a GARDENA service center.

## 7.3 Symptoms

If the product does not operate as usual, follow the symptoms table below. Speak to your GARDENA service if you cannot find the cause for the fault.

Symptoms	Cause	Action
The product is at the docking point for several minutes.	The product stays at the docking point until it receives satellite signals for an accurate position before it starts to operate.	Usual operation for the product.
The product has difficulty docking.	The charging station is not on a level surface.	Put the charging station on a level surface. Refer to <i>To install the charging station on page 14</i> .
The product operates at the wrong time.	The start and stop times for operating are incorrect.	Change the schedule settings. Refer to <i>To do the Schedule settings on page 18</i> .
The product vibrates.	The cutting system is not in balance because of damaged blades.	Examine the blades and screws and replace them if necessary. Refer to <i>Replacement of the blades on page 25</i> .
	The cutting system is not in balance because of too many blades in the same position.	Do a check that only one blade is attached to each screw.
	Different thickness of blades are installed on the product.	Do a check if the blades are of different thickness and replace if necessary.
The product operates, but the blade disc does not rotate.	The product searches for the charging station, or is moving to the starting point.	Usual operation for the product. The blade disc does not rotate when the product is searching for the charging station.
The product operates for shorter periods than usual between charges.	Grass or other object causes a blockage to the blade disc.	Remove and clean the blade disc. Refer to <i>To clean the chassis and blade disc on page 25</i> .
	The battery is at the end of its life cycle.	Replace the battery. Refer to <i>Battery on page 26</i> .
	Blunt blades. More energy is necessary when cutting the grass.	Replace the blades. Refer to <i>Replacement of the blades on page 25</i> .
	The grass is thick and long. This can increase power use.	Use the override schedule. Or, add more time to the schedule.
Mowing and charging times are shorter than usual.	The battery is at the end of its life cycle.	Replace the battery. Refer to <i>Battery on page 26</i> .
The product is parked for hours in the charging station.	The product has operated the maximum cutting time for the day.	Usual operation for the product. Refer to <i>Battery safety on page 5</i> .
	The <b>STOP</b> button has been pushed.	Enter the PIN code and push the <b>OK</b> button. Push the <b>Start</b> button.
	Parking mode is enabled.	Change the operating mode. Refer to <i>Operating modes on page 20</i> .
	The product does not operate if the battery temperature is too high or too low.	Make sure that the charging station is put in an area with protection from the sun.

Symptoms	Cause	Action
Uneven mowing results.	The product operates for a small number of hours per day.	Increase the cutting time. Refer to <i>To do the Schedule settings on page 18</i> .
	The mowing area is too large.	Decrease the size of the mowing area or extend the schedule. Refer to <i>To do the Schedule settings on page 18</i> .
	Blunt blades.	Replace all the blades. Refer to <i>Replacement of the blades on page 25</i> .
	Long grass in relation to the set cutting height.	Increase the cutting height and then lower it when the grass is shorter.
	Collection of grass by the blade disc or around the motor shaft.	Remove the collection of grass and clean the product. Refer to <i>Clean the product on page 24</i> .

## 8 Transportation, storage and disposal

### 8.1 Transportation

The supplied Li-ion batteries obey the Dangerous Goods Legislation requirements.

- Obey all applicable national regulations.
- Obey the special requirement on package and labels for commercial transportations, including by third parties and forwarding agents.

### 8.2 Storage

- Fully charge the product. Refer to *To charge the battery on page 22*.
- Set the product to OFF. Refer to *To set the product to OFF on page 22*.
- Clean the product. Refer to *Clean the product on page 24*.
- Keep the product in a dry, frost free space.
- Keep the product with all wheels on level ground.
- If you keep the charging station indoors, disconnect and remove the power supply.

**Note:** If you keep the charging station outdoors, do not disconnect the power supply.

- Speak to your GARDENA service for information about available storage accessories for your product.

### 8.3 Disposal

The symbol means that the product is not domestic waste. Recycle it through your local collection system for electrical and electronic equipment. This contributes to proper end of life waste management. Contact local authorities, domestic waste services, your dealer or retailer for information. Incorrect disposal may have potential negative effects on the environment and human health, due to the potential presence of hazardous substances.



**Note:** The symbol shows on the product or package of the product.

## 9 Technical data

### 9.1 Technical data

Dimensions	smart SILENO sense
Length, cm	60
Width, cm	41
Height, cm	26
Weight, kg	9.4

Electrical system	smart SILENO sense
Battery, Lithium-Ion 18.0 V/4.0 Ah Art.No	593 11 41-07, 593 11 41-08
Power supply (28V DC), V AC	100-240
Low-voltage cable length, m	20
Mean energy consumption at maximum use	8 kWh/month in a 600 m <sup>2</sup> mowing area
Charge current, A DC	2.2
Type of Power Supply Unit <sup>2</sup>	ADP-60PR XX
Average mowing time, min	90
Average charging time, min	80

Mowing	smart SILENO sense
Cutting system	1 disc with 3 pivoting blades
Cutting motor speed, rpm	2670
Power consumption during cutting, W +/- 20 %	30
Cutting height, cm	2.5-4.5
Cutting width, cm	16
Narrowest possible passage, cm	100
Maximum slope for the installation %	25
Maximum slope at mowing area edge %	15

<sup>2</sup> XX, YY can be any alphanumeric characters or blank for marketing purpose only, no technical differences. The "XX" specifies the country version, such as JP, and the "Y" specifies the product revision, such as V.

<b>Sound data</b> <sup>3</sup>		<b>smart SILENO sense</b>
Sound level, perceived, dB (A)		56
Measured sound power noise level, dB (A)		55
Noise emissions uncertainties $K_{WA}$ , dB (A)		1
Sound pressure noise level at the operator's ear <sup>4</sup> , dB (A)		47
<b>IP-code</b>		<b>smart SILENO sense</b>
Product		IPX5
Charging station		IPX5
Power supply		IP44
<b>Boundary wire antenna</b>		<b>smart SILENO sense</b>
Operating Frequency Band, Hz		100–80000
Maximum magnetic field <sup>5</sup> , dBuA/m		82
Maximum Radio-frequency power <sup>6</sup> , mW @60m		<25
<b>Bluetooth®</b>		<b>smart SILENO sense</b>
Operating frequency band, MHz		2400–2484
Maximum transmitted power, dBm		8
<b>Wi-Fi</b>		<b>smart SILENO sense</b>
Frequency band support	Channel 1–11 (2412–2462 MHz)	
	Channel 12–13 (2467–2484 MHz)	
	Channel 14	
Operating frequency band, MHz		2402–2480
Maximum transmitted power, dBm		20
<b>Cellular connectivity 2G</b>		
Operating frequency band, MHz		GSM 850 MHz, E-GSM 900 MHz, DCS 1800 MHz, PCS 1900 MHz
Power class, dBm	Power Class 4 (GSM/E–GSM)	
	Power Class 1 (DCS/PCS)	
	Power Class E2 (GSM/E–GSM)	
	Power Class E2 (DCS/PCS)	

<sup>3</sup> Determined according to Directive 2006/42/EC and standard EN 50636-2-107. Except Sound level, perceived that is measured according to ISO 11094:1991.

<sup>4</sup> Sound pressure noise uncertainties  $K_{pA}$ , 2–4 dB (A)

<sup>5</sup> Measured according to EN 303 447.

<sup>6</sup> Maximum active output power to antennas in the frequency band in which the radio equipment operates.

Cellular connectivity 4G	
Operating frequency band, MHz	Band 1 (2100 MHz), Band 2 (1900 MHz), Band 3 (1800 MHz), Band 4 (1700 MHz), Band 5 (850 MHz), Band 8 (900 MHz), Band 12 (700 MHz), Band 13 (700 MHz), Band 17 (700 MHz), Band 18 (850 MHz), Band 19 (850 MHz), Band 20 (800 MHz), Band 25 (1900 MHz), Band 26 (850 MHz), Band 28 (700 MHz), Band 39 (1900 MHz), Band 66 (1700 MHz), Band 85 (700 MHz)
Power class, dBm	60–64 MHz

Husqvarna AB does not guarantee full compatibility between the product and other types of wireless systems such as remote controls, radio transmitters, hearing loops, underground electric animal fencing or similar.

The products are made in England or the Czech Republic. See information on the rating plate. Refer to *Introduction on page 7*.

## 9.2 Registered trademarks

The *Bluetooth®* word mark and logos are registered trademarks owned by *Bluetooth SIG, inc.* and any use of such marks by GARDENA is under license.

App Store is a trademark of Apple Inc.

Google Play is a trademark of Google LLC.

The Wi-Fi CERTIFIED™ logo is a registered trademark of Wi-Fi Alliance®. This product is Wi-Fi Alliance® certified.



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## 10 Free and Open Source Software

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This product contains software components that are licensed by the copyright holders as Free Software or Open Source software under the GNU General Public License version 2, and/or GNU Lesser General Public License version 2.1, and/or Mozilla Public License version 2.0. Anyone can obtain the source code for these software components from us on a data carrier (CD-ROM, DVD or USB memory stick). This offer is valid within three years after the most recent conveyance of the object code by us, and valid for as long as we offer spare parts or customer support for the respective product. Please send your request to the following email address [smart.open.source@husqvarnagroup.com](mailto:smart.open.source@husqvarnagroup.com) or via regular mail to the following address:

GARDENA Manufacturing GmbH  
Aftersales  
Hans-Lorenser-Str. 40  
89079 Ulm / Germany.

Please specify the address to which you wish us to send the source code. Additional product information (e.g. explicit product name, serial number etc.) will help us to identify the corresponding source code for you. The source code will be sent to the given address after reimbursement of the expenses actually incurred for providing the data carrier and shipping.

## 11 Declaration of Conformity

### 11.1 Original EU Declaration of Conformity

#### EU Declaration of Conformity

EU Declaration of Conformity ROB-P40-25-1E

We, Husqvarna AB, SE 561 82 Huskvarna, SWEDEN, Tel. +46 36 146500 declare on our sole responsibility that the product:

Description	Battery powered robotic lawn mower
Brand	GARDENA
Type / Model	smart SILENO sense
Identification	Serial numbers dating from 2025 week 45

is in conformity with the following EU directives and regulations as amended:

	Description
2006/42/EC	"relating to machinery"
2014/53/EU	"relating to radio equipment"
2011/65/EU	"relating to restriction of hazardous substances"

and that the following standards and/or technical specifications are applied:

IEC 60335-1:2010+A1:2013+A2:2016 (EN 60335-1:2012+AC:2014+A11:2014+A13:2017+A15:2021)  
IEC 60335-2-107:2017+A1:2020+A2:2021 (EN 50636-2-107:2015+A1:2018+A2:2020+A3:2021)

EN ISO 12100:2010

EN IEC 63000:2018

EN 55014-1:2017+A11:2020 and EN IEC 55014-1:2021

EN 55014-2:1997+A1:2001+A2:2008+AC:1997 and EN IEC 55014-2:2021

ETSI EN 300 328 V2.2.2

ETSI EN 301 489-1 V1.9.2 and ETSI EN 301 489-1 V2.2.3

ETSI EN 301 489-17 V3.3.1

ETSI EN 301 489-19 V2.2.1

ETSI EN 301 489-52 v1.2.1

ETSI EN 303 413 V1.2.1

ETSI EN 301 511 V12.5.1

ETSI EN 301 908-1 v13.1.1 and ETSI EN 301 908-1 v15.1.1

ETSI EN 301 908-2 v13.1.1

ETSI EN 303 447 V1.3.1

CEN EN 18031-1:2024

CEN EN 18031-2:2024

  
Lars Roos (Oct 3, 2025 14:19:56 GMT+2)

Lars Roos  
Huskvarna

R&D Director, Robotics & Smart Business Unit  
Husqvarna AB, Gardena Division  
Responsible for technical documentation



## 11.2 EU Declaration of Conformity

We, Husqvarna AB, SE 561 82 Huskvarna, SWEDEN,  
Tel. +46 36 146500 declare on our sole responsibility  
that the product:

<b>Description</b>	<b>Battery powered robotic lawn mower</b>
<b>Brand</b>	GARDENA
<b>Type/Model</b>	GARDENA smart SILENO sense
<b>Identification</b>	Serial numbers dating from 2025 week 45

is in conformity with the following EU directives and regulations as amended:

<b>Directive/Regulation</b>	<b>Description</b>
2006/42/EC	"Relating to machinery"
2014/53/EU	"Relating to radio equipment"
2011/65/EU	"Restriction of use of certain hazardous substances"

and that the following standards and/or technical specifications are applied;

- IEC 60335-1:2010+A1:2013+A2:2016 (EN 60335-1:2012+AC:2014+A11:2014+A13:2017+A1 5:2021)
- IEC 60335-2-107:2017+A1:2020+A2:2021 (EN 50636-2-107:2015+A1:2018+A2:2020+A3:2021)
- EN ISO 12100:2010
- EN IEC 63000:2018
- EN 55014-1:2017+A11:2020 and EN IEC 55014-1:2021
- EN 55014-2:1997+A1:2001+A2:2008+AC:1997 and EN IEC 55014-2:2021
- ETSI EN 300 328 V2.2.2
- ETSI EN 301 489-1 V1.9.2 and ETSI EN 301 489-1 V2.2.3
- ETSI EN 301 489-17 V3.3.1
- ETSI EN 301 489-19 V2.2.1
- ETSI EN 301 489-52 v1.2.1
- ETSI EN 303 413 V1.2.1
- ETSI EN 301 511 v12.5.1
- ETSI EN 301 908-1 v13.1.1 and ETSI EN 301 908-1 v15.1.1
- ETSI EN 301 908-2 v13.1.1
- ETSI EN 303 447 V1.3.1
- CEN EN 18031-1:2024
- CEN EN 18031-2:2024

R&D Director, Robotics & Smart Business Unit.  
Husqvarna AB, Gardena Division. Responsible for technical documentation.



Lars Roos  
Husqvarna

## 12 Applicable to UK market

### 12.1 Statement of compliance

#### Statement of compliance

UK PSTI Statements of Compliance PSTI-ROB-SILENO Sense-25-1U

We, Husqvarna AB, SE 561 82 Huskvarna, SWEDEN, Tel. +46 36 146500 declare on our sole responsibility that the product:

Description	Battery Powered Robotic Lawnmower
Brand	GARDENA
Type / Model	smart SILENO sense
Identification	Serial numbers dating from 2025 week 48
Support period	Three years after manufacturing date

complies fully with the following UK directives and regulations as amended:

Description
The Product Security and Telecommunications Infrastructure (Security Requirements for Relevant Connectable Products) Regulations 2023, Schedule 2.
ETSI EN 303 645 V2.1.1 (2020-06)

UK Importer:  
Husqvarna UK Ltd  
Preston Road, Co. Durham  
DL5 6UP

  
Lars Roos (Oct 3 2025 14:18:34 GMT+2)

Lars Roos  
Director R&D Robotics & Smart Business Unit  
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Responsible for technical documentation





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Original instructions



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