Operator‘s manual

SILENO+
smart SILENO+

GARDENA®

gardena.com

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1 Introduction

1.1 Introduction

Serial number:
PIN code:
Product registration key:

The serial number is on the product rating plate and on the product carton.

- Use the serial number to register your product on www.gardena.com.

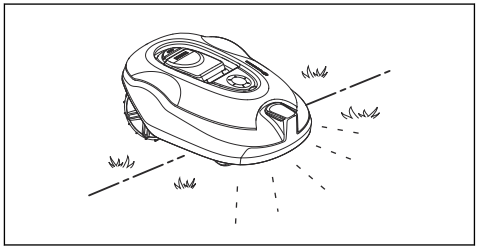
1.1.1 Support

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

1.1.2 Product description

Note: GARDENA regularly updates the appearance and function of the products. Refer to *Support on page 3*.

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 is random, which means that the lawn is mowed evenly and with less wear. The boundary wire and the guide wire controls the movement of the product within the work area. Sensors in the product senses when it is approaching the boundary wire. The front of the product always passes the boundary wire by a specific distance before the product turns around. When the product hits an obstacle or approaches the boundary wire the product selects a new direction.



The operator selects the operation settings with the keys on the keypad. The display shows the selected and possible operation settings, and the operation mode of the product.

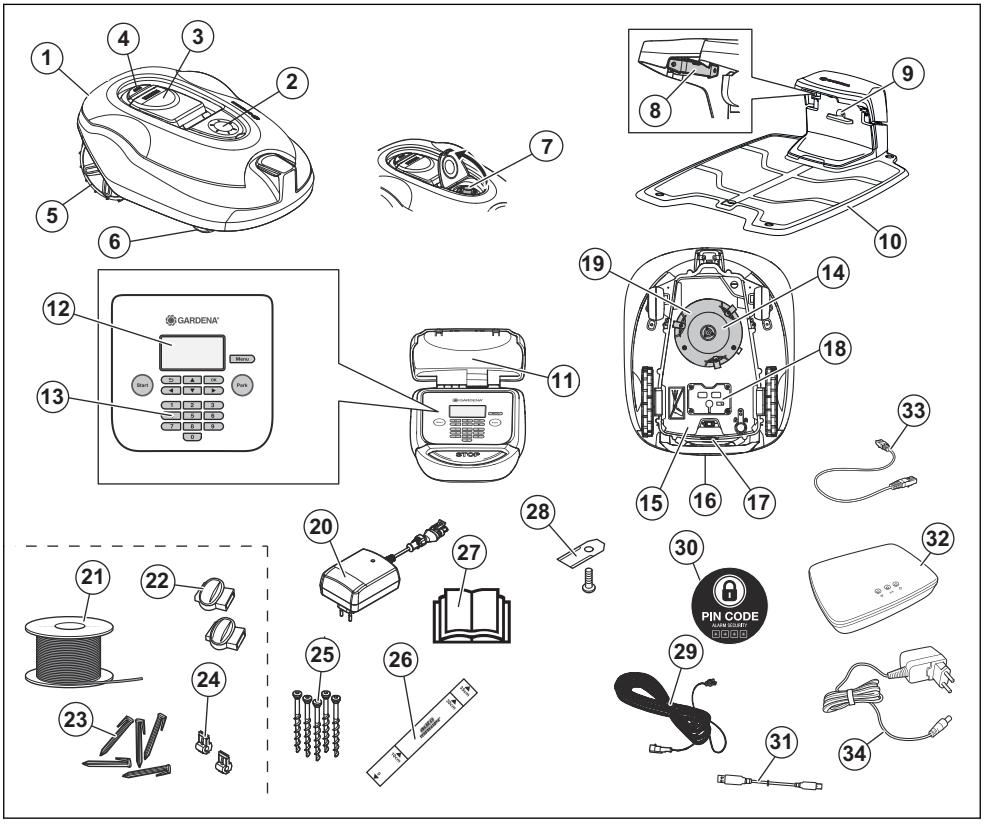
1.1.2.1 Mowing technique

The product is emission free, easy to use and saves energy. The frequent cutting technique improves the grass quality and decreases the use of fertilizers. Collection of grass is not necessary.

1.1.2.2 Find the charging station

The product operates until the battery state of charge is low. Then it follows the guide wire to the charging station. The guide wire is laid from the charging station towards, for instance, a remote part of the work area or through a narrow passage. The guide wire is connected with the boundary wire and makes it much easier and faster for the product to find the charging station.

1.2 Product overview



The numbers in the figure represent:

1. Body
2. Hatch to cutting height adjustment
3. Hatch to display and keypad
4. Stop button
5. Rear wheels
6. Front wheels
7. Cutting height adjustment
8. Contact plates
9. LED for operation check of the charging station and boundary wire
10. Charging station
11. Rating plate
12. Display
13. Keypad
14. Cutting system
15. Chassis box with electronics, battery and motors
16. Handle
17. Main switch
18. Battery cover
19. Blade disc
20. Power supply[1]
21. Loop wire for boundary loop and guide wire
22. Couplers for loop wire
23. Stakes
24. Connector for the loop wire
25. Screws for securing the charging station

[1] The appearance may differ depending on market.

26. Measurement gauge for help when installing the boundary wire[2]
27. Operator's Manual and Quick Guide
28. Extra blades
29. Low voltage cable
30. Alarm decal
31. USB cable for Software-Updates
32. smart Gateway[3]
33. smart Gateway LAN-cable[4]
34. smart Gateway Power Supply[5]

1.3 Symbols on the product

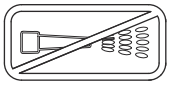
These symbols can be found on the product. Study them carefully.

WARNING: Read the user instructions before operating the product.

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

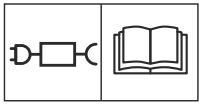
WARNING: Keep a safe distance from the product when operating. Keep your hands and feet away from the rotating blades.

WARNING: Do not ride on the product. Never put your hands or feet close to or under the product.



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

Lock function.



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

This product conforms to the applicable EC Directives.

Noise emission to surroundings. The product's emissions are set out in *Technical data on page 49* and on the rating plate.

It is not permitted to dispose this product as normal household waste. Ensure that the product is recycled in accordance with local legal requirements.

The chassis contains components which are sensitive to electrostatic discharge (ESD). The chassis must also be resealed in a professional manner. For these reasons the chassis shall only be opened by authorized service technicians. A broken seal can result in the entire or parts of the guarantee no longer being valid.

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.

1.4 Symbols on the display

The schedule menu is used to set when the product cuts the lawn.

The security menu lets the operator select between 3 security levels.

[2] The measurement gauge is broken loose from the box.
[3] Only for smart model.
[4] Only for smart model.
[5] Only for smart model.

The SensorControl function automatically adapts the cutting intervals to the grass growth.

The installation menu is used for manual settings for the installation.

The settings menu is used to set the general product settings.

Only available for smart models. The GARDENA smart system enables wireless interaction between your smart product and the GARDENA smart system.

The product will not cut the grass due to the schedule function.

The product overrides the schedule function.

The battery indicator shows the battery state of charge. When the product charges the symbol flashes.

The product is in the charging station but do not charge the battery.

The product is set in ECO-mode.

1.5 Symbols on the battery

Read the user instructions.

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

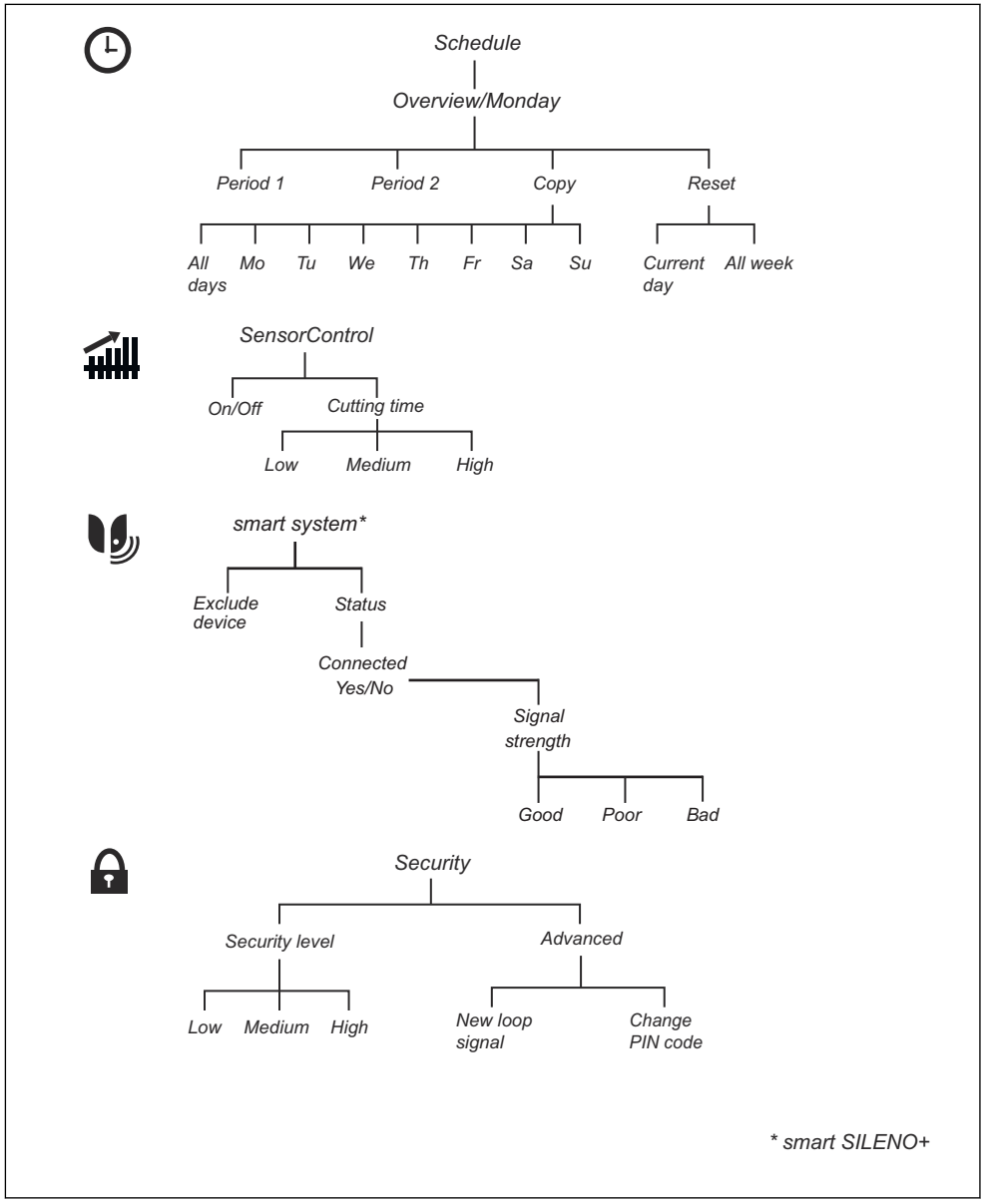
Do not immerse the battery into water.

1.6 General manual instructions

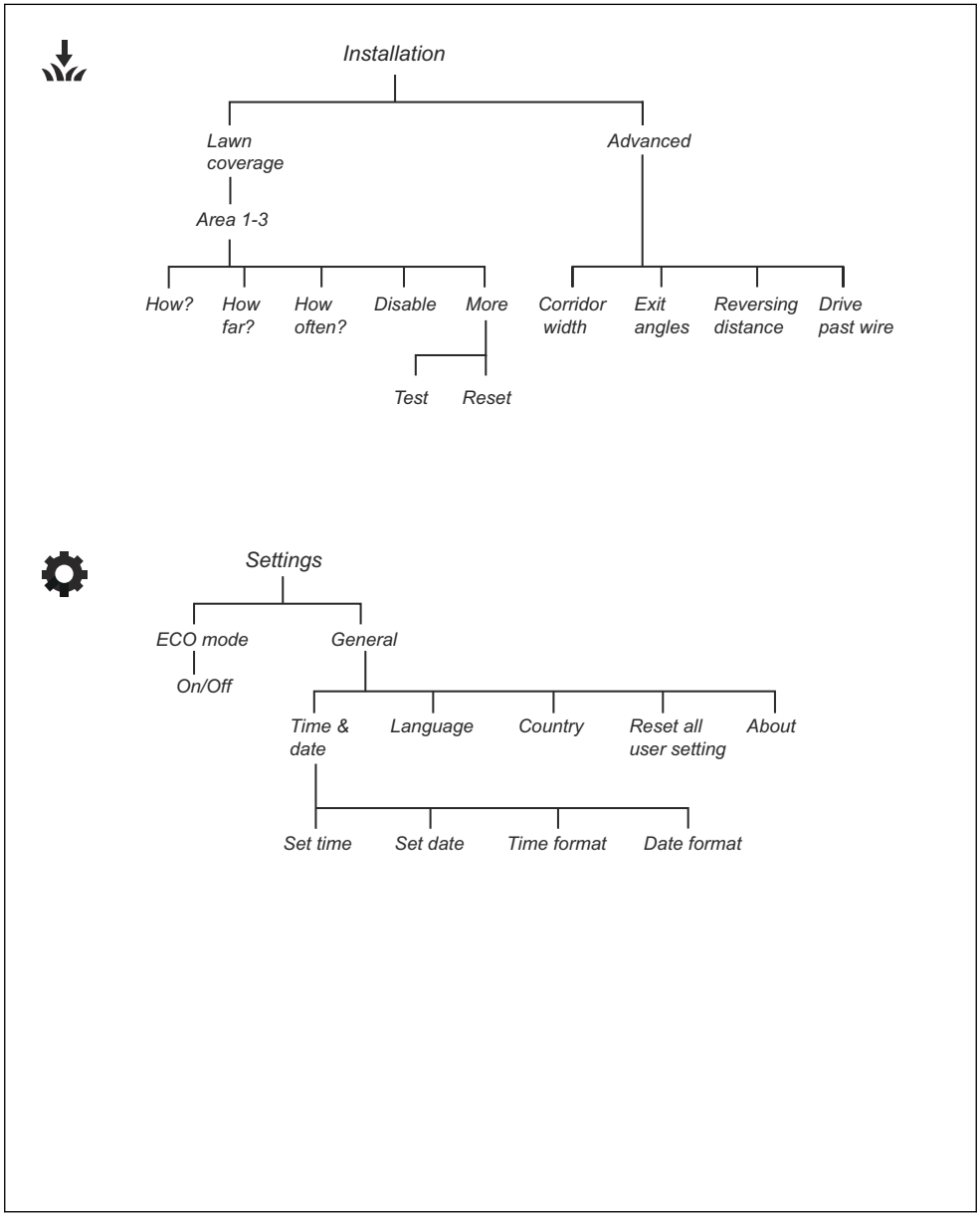
The following system is used in the Operator's Manual to make it easier to use:

- Text written in *italics* is a text that is shown in the display or is a reference to another section in the Operator's Manual.
- Text written in **bold** is one of the buttons on the product.
- Text written in *UPPERCASE* and *italics* refer to the different operating modes available in the product.

1.7 Menu structure overview 1



1.8 Menu structure overview 2



1.9 Display

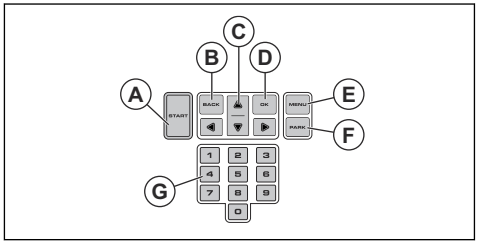
The display on the product shows information and settings of the product.

To access the display, push the **STOP** button.

1.10 Keypad

Use the keypad on the product to navigate in the menu. To access the keypad, push the **STOP** button.

- Use the **START** button (A) to start the operation of the product.
- Use the **BACK** button (B) to move up in the menu lists.
- Use the **arrow** buttons (C) to navigate in the menu.
- Use the **OK** button (D) to confirm the settings you select in the menus.
- Use the **MENU** button (E) to go to the main menu.
- Use the **PARK** button (F) to send the product to the charging station.
- Use the **number** buttons (G) to enter PIN code, time and date.



2.1 Safety information

2.1.1 IMPORTANT. READ CAREFULLY BEFORE USE. KEEP FOR FUTURE REFERENCE

The operator is responsible for accidents or hazards occurring to other people or property.

This appliance is not intended for use by persons (including children) 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.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Local regulations may restrict the age of the operator. Cleaning and maintenance shall not be made by children without supervision.

Never connect the power supply to an outlet if the plug or cord is damaged. Worn or damaged cord increase the risk of electric shock.

Only charge the battery in the included charging station. 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. Seek medical help if it comes in contact with the eyes.

Use only original batteries recommended by the manufacturer. Product safety cannot be guaranteed with other than original batteries. Do not use non-rechargeable batteries.

The appliance must be disconnected from the supply mains when removing the battery.

WARNING: The product can be dangerous if used incorrectly.

WARNING: Do not use the product when persons, especially children, or animals are in the work area.

WARNING: Keep your hands and feet away from the rotating blades. Never put your hands or feet close to or under the product when the motor is running.

WARNING: In the event of an injury or accident seek medical help.

2.2 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.

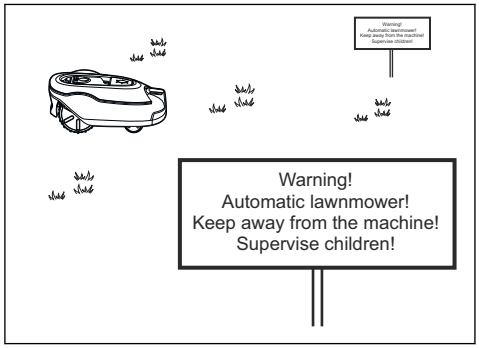
CAUTION: Used if there is a risk of damage to the product, other materials or the adjacent area if the instructions in the manual are not obeyed.

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

2.3 Safety instructions for operation

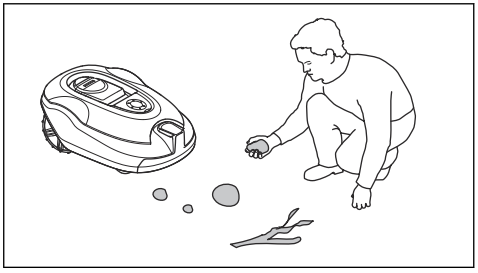
2.3.1 Use

- The product may only be used with the equipment recommended by the manufacturer. All other types of use are incorrect. The manufacturer's instructions with regard to operation/maintenance must be followed precisely.
- Warning signs shall be placed around the work area of the product if it is used in public areas. The signs shall have the following text: **Warning! Automatic lawnmower! Keep away from the machine! Supervise children!**



- Use the park mode, refer to *Operating mode Park on page 32* or switch off the product when persons, especially children, or animals are in the work area. It is recommended to program the product for use during hours when the area is free from activity, e.g. at night. Refer to *Schedule on page 23*. Consider that certain animals, e.g. hedgehogs, are active at night. They can potentially be harmed by the product.

- The product may only be operated, maintained and repaired by persons that are fully conversant with its special characteristics and safety regulations. Please read the Operator's Manual carefully and make sure you understand the instructions before using the product.
- It is not permitted to modify the original design of the product. All modifications are made at your own risk.
- Check that there are no foreign objects such as stones, branches, tools or toys on the lawn. If the blades hit foreign objects the blades can be damaged. Always switch off the product with the **Main switch** before clearing a blockage. Inspect the product for damage before staring the product again.



- If the product starts to vibrate abnormally. Always switch off the product with the **Main switch** or **ON/OFF** button and inspect for damage before staring the product again.
- Start the product according to the instructions. When the product is switched on, make sure to keep your hands and feet away from the rotating blades. Never put your hands and feet under the product.
- Never touch moving hazardous parts, such as the blade disc, before it has come to a complete stop.
- Never lift up the product or carry it around when it is switched on.
- Do not let persons who do not know how the product works and behaves use it.
- The product must never be allowed to collide with persons or other living creatures. If a person or other living creature comes in the product's way it shall be stopped immediately. Refer to *To stop the product on page 32*.
- Do not put anything on top of the product or its charging station.
- Do not allow the product to be used with a defective guard, blade disc or body. Neither should it be used with defective blades, screws, nuts or cables. Never connect a damaged cable, or touch a damaged cable before it is disconnected from the supply.
- Do not use the product if the **Main switch** does not work.
- Always switch off the product using the **Main switch** when the product is not in use. The product can only start when the **Main switch** has been switched on and the correct PIN code has been entered.
- GARDENA 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.
- Metal objects in the ground (for example reinforced concrete or anti-mole nets) can result in a stoppage. The metal objects can cause interference with the loop signal which then can lead to a stoppage.
- Operation and storage temperature is 0-50 °C / 32-122 °F. Temperature range for charging is 0-45 °C / 32-113 °F. Too high temperatures might cause damage to the product.

2.3.2 Battery safety

WARNING: 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.

For more information about the battery, refer to *Battery on page 36*

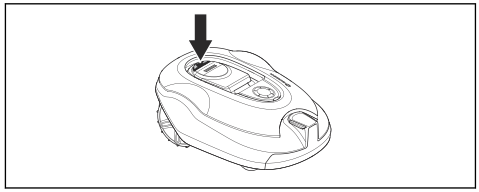
2.3.3 How to lift and move the product

WARNING: The product must be switched off before lifting it. The product is disabled when the **Main switch** is in position *0*.

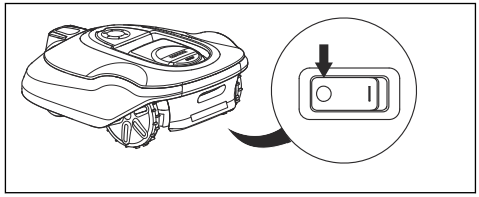
CAUTION: Do not lift the product when it is parked in the charging station. It can damage the charging station and/or the product. Push **STOP** and pull the product out of the charging station before lifting it.

To safely move from or within the work area:

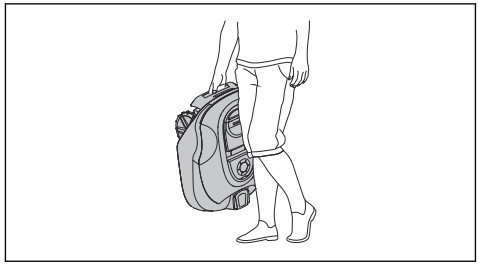
1. Push the **STOP** button to stop the product.



2. Set the main switch in position *0*.

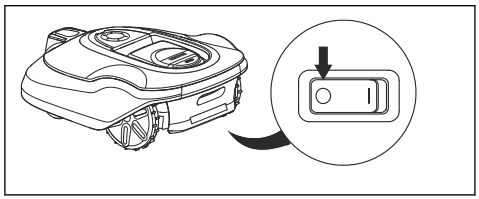


3. Carry the product by the handle with the blade disc away from the body.



2.3.4 Maintenance

WARNING: The product must be switched off before any maintenance is done. Use the plug to disconnect the charging station before any cleaning or maintenance of the charging station or the loop wire.

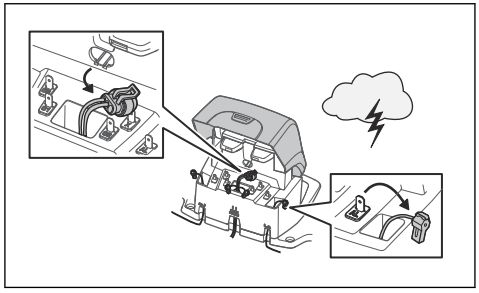


WARNING: Use the plug to disconnect the charging station before any cleaning or maintenance of the charging station or the loop wire.

CAUTION: Never use a high-pressure washer or even running water to clean the product. Never use solvents for cleaning.

Inspect the product weekly and replace any damaged or worn parts. Refer to *Maintenance on page 34*.

2.3.5 In the event of a thunderstorm



To reduce the risk of damage to electrical components in the product and the charging station, we recommend that all connections to the charging station are disconnected (power supply, boundary wire and guide wire) if there is a risk of a thunderstorm.

1. Mark the wires to simplify reconnecting. The charging station's connections are marked AR, AL and G1.
2. Disconnect all connected wires and the power supply.
3. Connect all the wires and the power supply if there is no longer a risk of thunder. It is important that each wire is connected to the right place.

3 Installation

3.1 Introduction - Installation

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

CAUTION: Use original spare parts and installation material.

Note: Refer to www.gardena.com for more information about installation.

3.2 Main components for installation

The installation involves the following components:

- A robotic lawn mower that mows the lawn automatically.
- A charging station, which has 3 functions:
  - To send control signals along the boundary wire.
  - To send control signals along the guide wire so that the product can follow the guide to specific remote areas in the garden and can find its way back to the charging station.
  - To charge the product.
- A power supply, which is connected to the charging station and a 100-240V power outlet.
- Loop wire, which is laid around the work area and around objects and plants that the product must not run into. The loop wire is used both as boundary wire and guide wire.

3.3 General preparations

CAUTION: Holes with water in the lawn can cause damage to the product.

Note: Read through the Installation chapter before beginning the installation. How the installation is done affects how the product performs. It is therefore important to plan the installation carefully.

- Make a blueprint of the work area and include all obstacles. This makes it easier to see the ideal positions for the charging station, the boundary wire and the guide wire.
- Make a mark on the blueprint where to put the charging station, the boundary wire and the guide wire.
- Make a mark on the blueprint where the guide wire connects to the boundary wire. Refer to *To install the guide wire on page 21*.
- Fill in holes in the lawn.
- Cut the grass before you install the product. Make sure that the grass is maximum 10 cm / 3.9 in.

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.

3.4 Before the installation of the wires

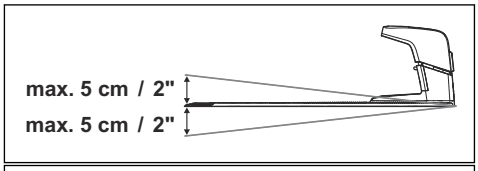
You can select to attach the wires with stakes or bury them. You can use the 2 procedures for the same work area.

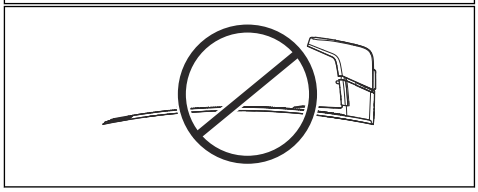
CAUTION: If you use a dethatcher in the work area, bury the boundary wire and the guide wire to prevent them from damage.

3.4.1 To examine where to put the charging station

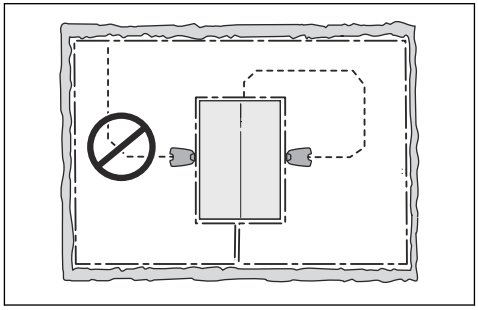
- Keep a minimum 3 m / 5 ft. of free space in front of the charging station. Refer to *To examine where to put the guide wire on page 18*.
- Keep a minimum of 150 cm / 60 in. of free space to the right and left of the center of the charging station.
- Put the charging station near a power outlet.
- Put the charging station on a level surface.

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





- Put the charging station in the lower section of the work area.
- Put the charging station in an area with protection from the sun.
- If the charging station is installed on an island, make sure to connect the guide wire to the island. Refer to *To make an island on page 17*.

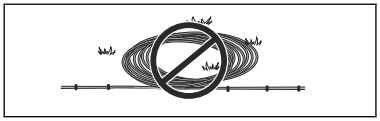


3.4.2 To examine where to put the power supply

WARNING: Do not cut or extend the low-voltage cable. There is a risk of electrical shock.

CAUTION: Make sure that the blades on the product do not cut the low-voltage cable.

CAUTION: Do not put the low-voltage cable in a coil or below the charging station plate. The coil causes interference with the signal from the charging station.



- Put the power supply in an area with a roof and protection from the sun and rain.
- Put the power supply in an area with good airflow.
- Use a residual-current device (RCD) when you connect the power supply to the power outlet.

Low-voltage cables of different lengths are available as accessories.

3.4.3 To examine where to put the boundary wire

CAUTION: There must be an obstacle of minimum 15 cm / 6 in. in height between the boundary wire and water bodies, slopes, precipices or public roads. This will prevent damage to the product.

CAUTION: Do not let the product operate on gravel.

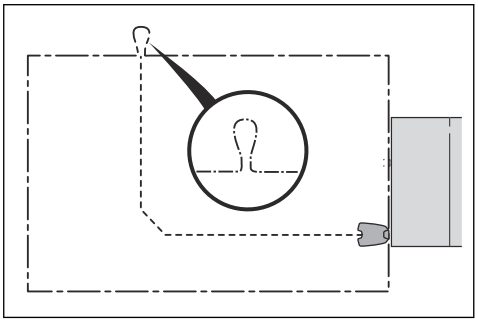
CAUTION: Do not make sharp bends when you install the boundary wire.

CAUTION: For careful operation without noise, isolate all obstacles such as trees, roots and stones.

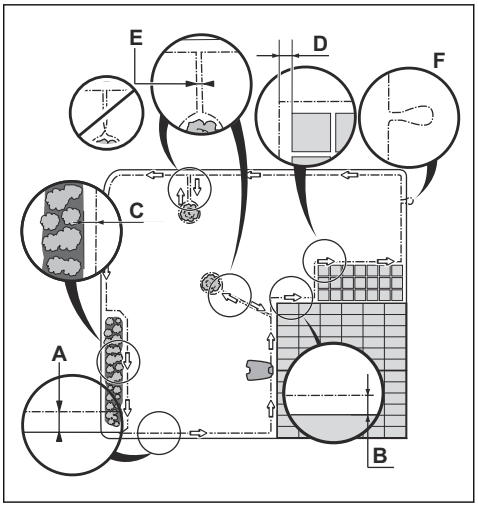
The boundary wire should be put as a loop around the work area. Sensors in the product senses when the product approaches the boundary wire, and the product selects another direction. All parts of the work area must be maximum 35 m / 115 ft. from the boundary wire.

To make the connection easier between the guide wire and the boundary wire, it is recommended to make an eyelet where the guide

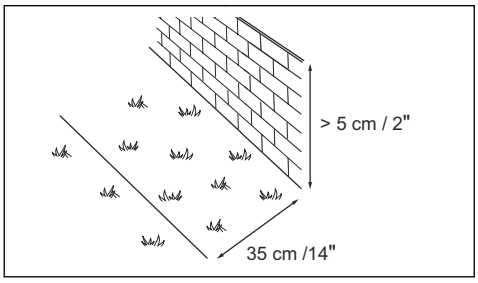
wire will be connected. Make the eyelet with approximately 20 cm / 8 in. of the boundary wire.



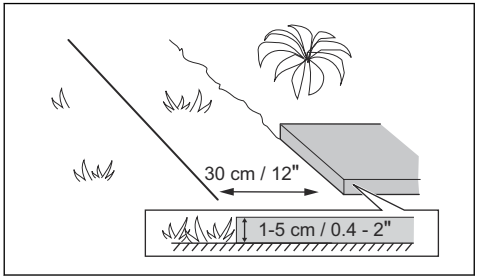
Note: Make a blueprint of the work area before you install the boundary wire and guide wire.



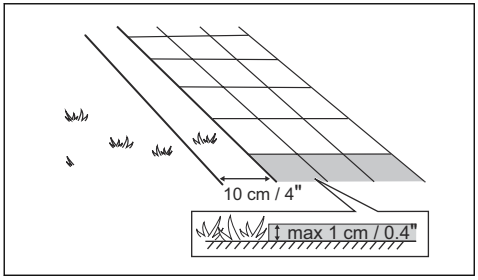
- Put the boundary wire around all of the work area (A). Adapt the distance between the boundary wire and obstacles.
- Put the boundary wire 35 cm / 14 in. (B) from an obstacle that is more than 5 cm / 2 in. high.



- Put the boundary wire 30 cm / 12 in. (C) from an obstacle that is 1-5 cm / 0.4-2 in. high.



- Put the boundary wire 10 cm / 4 in. (D) from an obstacle that is less than 1 cm / 0.4 in. high.



- If you have a paving stone path that is in level with the lawn, put the boundary wire below the paving stone.

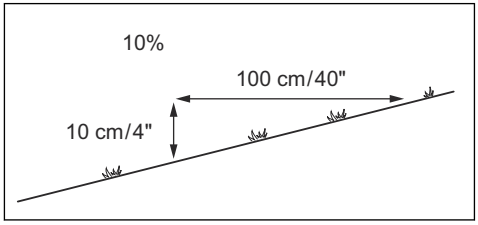
  Note: If the paving stone is minimum 30 cm / 12 in. wide, use the factory setting for the *Drive Past Wire* function to cut all the grass adjacent to the paving stone. Refer to *To set the Drive Past Wire function on page 27*.

- If you make an island, put the boundary wire that runs to and from the island near together (E). Put the wires in the same stake. Refer to *To make an island on page 17*.

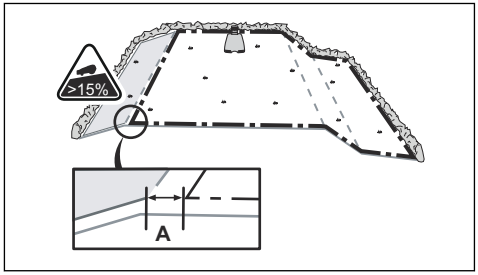
- Make an eyelet (F) where the guide wire is to be connected to the boundary wire.

3.4.3.1 To put the boundary wire in a slope

The product can operate in 35% slopes. Slopes that are too steep must be isolated with the boundary wire. The gradient (%) is calculated as height per m. Example: 10 cm / 100 cm = 10%.



- For slopes steeper than 35% inside the work area, isolate the slope with boundary wire.
- For slopes steeper than 15% along the outer edge of the lawn, put the boundary wire 20 cm / 8 in. (A) from the edge.



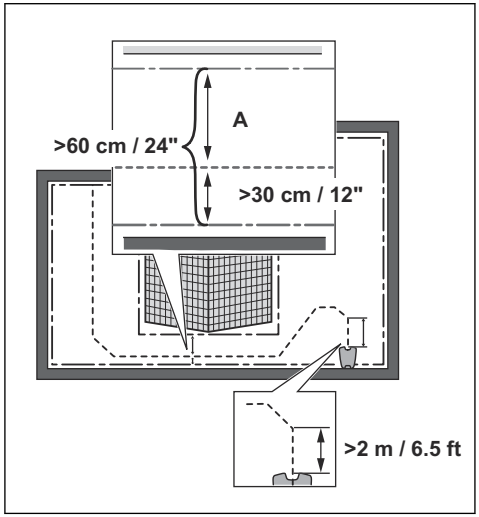
- For slopes adjacent to a public road, put an obstacle of minimum 15 cm / 6 in. along the outer edge of the slope. You can use a wall or a fence as an obstacle.

3.4.3.2 Passages

A passage is a section that has boundary wire on each side and that connects 2 parts of the work area. The distance between the boundary wire on each side in the passage must be a minimum of 60 cm / 24 in.

Note: If a passage is less than 2 m / 6.5 ft. wide, install a guide wire through the passage.

The minimum distance between the guide wire and the boundary wire is 30 cm / 12 in. The product always runs to the left of the guide wire as seen facing the charging station. It is recommended to have as much free area as possible to the left of the guide wire (A).

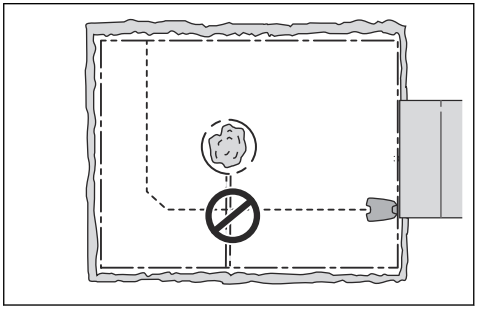


3.4.3.3 To make an island

CAUTION: Do not put a section of boundary wire across the other. The sections of boundary wire must be parallel.

CAUTION: Do not put the guide wire across the boundary wire.

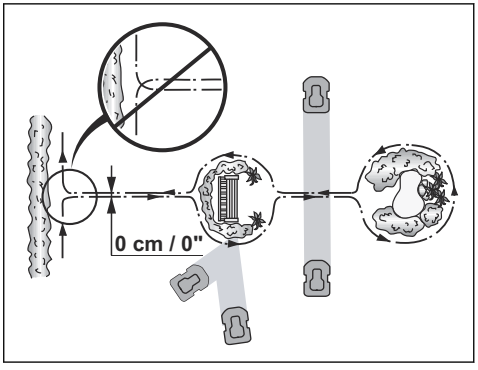
CAUTION: Isolate or remove obstacles that are less than 15 cm / 5.9 in. in height. Isolate or remove obstacles that slope slightly, for example, stones, trees or roots. This will prevent damage to the blades of the product.



To make an island, isolate areas in the work area with the boundary wire. We recommend to isolate all stable objects in the work area.

Some obstacles are resistant to a collision, for example, trees or bushes that are more than 15 cm / 5.9 in. in height. The product will collide with the obstacle and then select a new direction.

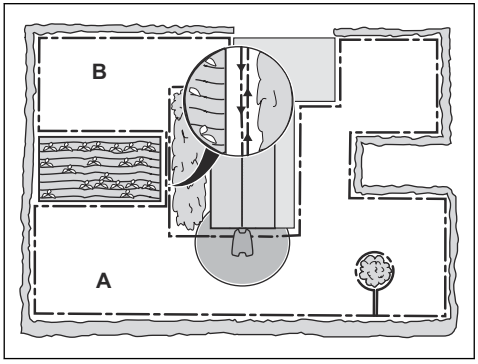
- Put the boundary wire to and around the obstacle to make an island.
- Put the 2 sections of boundary wire to and from the island close together. This will make the product run across the wire.
- Put the 2 sections of boundary wire in the same stake.



3.4.3.4 To make a secondary area

Make a secondary area (B) if the work area has 2 areas that are not connected with a passage. The work area with the charging station is the main area (A).

Note: The product must be manually moved between the main area and the secondary area.



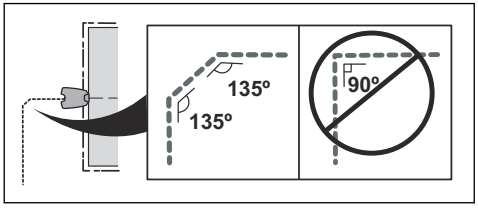
- Put the boundary wire around the secondary area (B) to make an island. Refer to *To make an island on page 17*.

Note: The boundary wire must be put as 1 loop around all of the work area (A + B).

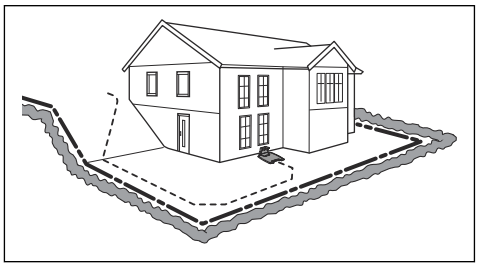
Note: When the product cuts grass in the secondary area, the *Secondary area* mode must be selected. Refer to *Operating mode Start on page 31*.

3.4.4 To examine where to put the guide wire

- Put the guide wire in a line at a minimum of 2 m / 6.5 ft. in front of the charging station.
- Make as much free area as possible to the left of the guide wire when facing the charging station. Refer to *Guide Corridor on page 27*.
- Put the guide wire minimum 30 cm / 12 in. from the boundary wire.
- Do not make sharp bends when you install the guide wire.

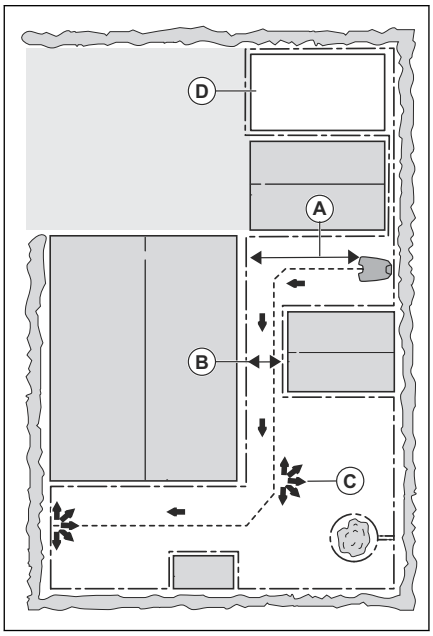


- If the work area has a slope, put the guide wire diagonally across the slope.



3.4.5 Work area examples

- If the charging station is put in a small area (A), make sure that the distance to the boundary wire is at a minimum 3 m / 10 ft. in front of the charging station.
- If the work area has a passage (B) with no guide wire installed, the minimum distance between the boundary wires is 2 m / 6.5 ft. With a guide wire installed through the passage, the minimum distance between the boundary wires is 60 cm / 24 in.
- If the work area has areas which are connected by a narrow passage (B), you can set the product to first follow and then leave the guide wire after a certain distance (C). The settings can be changed in *Lawn Coverage on page 25*.
- If the work area includes a secondary area (D), refer to *To make a secondary area on page 18*. Put the product in the secondary area and select *Secondary area mode*.



3.5 Installation of the product

3.5.1 Installation tools

- Hammer/plastic mallet: To simplify putting the stakes into the ground.
- Edge cutter/straight spade: To bury the boundary wire.
- Combination pliers: For cutting the boundary wire and pressing the connectors together.
- Adjustable plier: For pressing the couplers together.

3.5.2 To install the charging station

WARNING: Obey national regulations about electrical safety.

WARNING: The product is only to be used with the power supply unit supplied by GARDENA.

WARNING: 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.

WARNING: Do not encapsulate the power supply. Condensed water can harm the power supply and increase the risk of electrical shock.

WARNING: Risk of Electric Shock. Install only to an residual-current device (RCD) when connecting the power supply to the power outlet. 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.

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

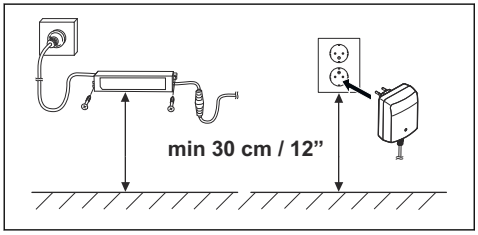
CAUTION: Do not put your feet on the baseplate of the charging station.

WARNING: The power supply cable and extension cable must be outside the work area to avoid damage to the cables.

When connecting the power supply, only use a power outlet that is connected to an residual-current device (RCD).

1. Read and understand the instructions about where to put the charging station. Refer to *To examine where to put the charging station on page 14*.
2. Put the charging station in the selected area.

   Note: Do not attach the charging station with the screws to the ground until the guide wire is installed. Refer to *To install the guide wire on page 21*.
3. Connect the low-voltage cable to the charging station.
4. Put the power supply at a minimum height of 30 cm / 12 in.



5. Connect the power supply cable to a 100-240V power outlet.

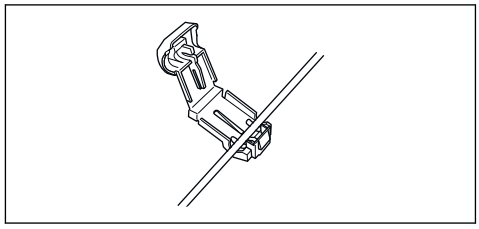
   Note: When the charging station is connected, it is possible to charge the product. Place the product in the charging station while the boundary and guide wires are being laid. Switch on the product. Refer to *Main switch on page 31*. Do not continue with any product settings before the installation is complete.
6. Put the low-voltage cable in the ground with stakes or bury the cable. Refer to *To put the wire into position with stakes on page 22* or *To bury the boundary wire or the guide wire on page 22*.
7. Connect the wires to the charging station after the installation of boundary wire and guide wire is complete. Refer to *To install the boundary wire on page 20* and *To install the guide wire on page 21*.
8. Attach the charging station to the ground with the supplied screws after the guide wire is installed. Refer to *To install the guide wire on page 21*.

3.5.3 To install the boundary wire

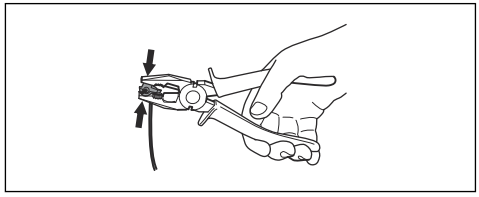
CAUTION: Do not put remaining wire in a coil. The coil causes interference with the product.

1. Put the boundary wire around all of the work area. Start and complete the installation behind the charging station.

2. Open the connector and put the boundary wire in the connector.



3. Close the connector with a pair of pliers.

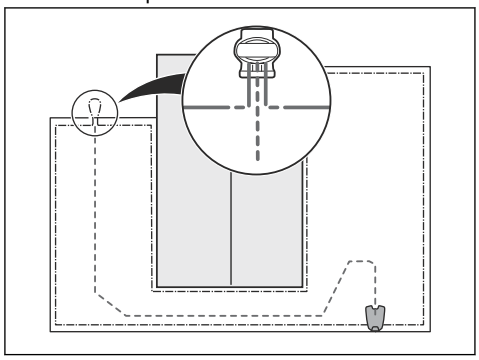


4. Cut the boundary wire 1-2 cm / 0.4-0.8 in. above each connector.
5. Push the right connector onto the metal pin on the charging station with the mark "AR".
6. Push the left connector onto the metal pin on the charging station with the mark "AL".

3.5.4 To install the guide wire

CAUTION: Twinned cables, or a screw terminal block that is insulated with insulation tape are not satisfactory splices. Soil moisture will cause the wire to oxidize and after a time result in a broken circuit.

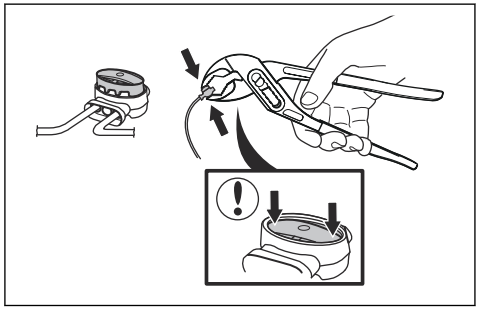
1. Open the connector and put the wire in the connector.
2. Close the connector with a pair of pliers.
3. Cut the guide wire 1-2 cm / 0.4-0.8 in. above each connector.
4. Push the guide wire through the slot in the charging station plate.
5. Push the connector onto the metal pin on the charging station with the mark "Guide".
6. Disconnect the charging station from the power outlet.
7. Put the end of the guide wire at the eyelet on the boundary wire.
8. Cut the boundary wire with a pair of wire cutters.
9. Connect the guide wire to the boundary wire with a coupler.



a) Put the 2 ends of the boundary wire and the end of the guide wire into the coupler.

Note: Make sure that you can see the ends of the wires through the transparent area of the coupler.

b) Push down the cover on the coupler with adjustable pliers to attach the wires in the coupler.



10. Attach the guide wire to the ground with stakes or bury the guide wire in the ground. Refer to *To put the wire into position with stakes on page 22* or *To bury the boundary wire or the guide wire on page 22*.
11. Connect the charging station to the power outlet.

3.6 To put the wire into position with stakes

CAUTION: Make sure that the stakes hold the boundary wire and the guide wire against the ground.

CAUTION: Cutting the grass too low right after installation can damage the wire insulation. Damage to the insulation may not cause disruptions until several weeks or months later.

1. Put the boundary wire and the guide wire on the ground.
2. Put the stakes at a maximum of 75 cm / 30 in. distance from each other.
3. Attach the stakes to the ground with a hammer or a plastic mallet.

Note: The wire is overgrown with grass and not visible after a few weeks.

3.7 To bury the boundary wire or the guide wire

- Cut a groove in the ground with an edge cutter or a straight shovel.
- Put the boundary wire or the guide wire 1-20 cm / 0.4-8 in. into the ground.

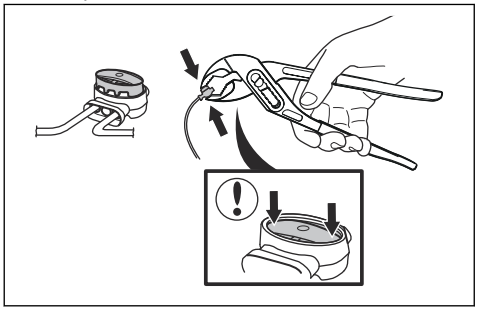
3.8 To extend the boundary wire or the guide wire

Note: Extend the boundary wire or the guide wire if it is too short for the work area. Use original spare parts, for example couplers.

1. Disconnect the charging station from the power outlet.
2. Cut the boundary wire or the guide wire with a pair of wire cutters where it is necessary to install the extension.
3. Add wire where it is necessary to install the extension.
4. Put the boundary wire or the guide wire into position.
5. Put the wire ends into a coupler.

Note: Make sure that you can see the ends of the boundary wire or the guide wire through the transparent area of the coupler.

6. Push down the cover on the coupler with adjustable pliers to attach the wires in the coupler.

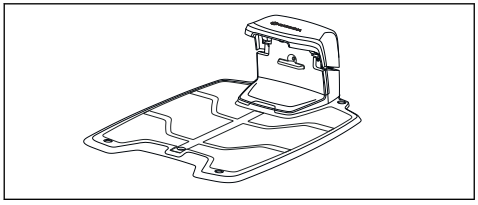


7. Put the boundary wire or the guide wire into position with stakes.
8. Connect the charging station to the power outlet.

3.9 After the installation of the product

3.9.1 To do a visual check of the charging station

1. Make sure that the indicator LED lamp on the charging station has a green light.



2. If the indicator LED lamp does not have a green light, do a check of the installation. Refer to *Indicator lamp in the charging station on page 43* and *To install the charging station on page 19*.

3.9.2 To do the basic settings

Before the product starts to operate for the first time, you must do the basic settings.

1. Put the product in the charging station.
2. Switch on the product.

3. Push the **arrow** buttons and the **OK** button. Select language, country, date, time and set a PIN code.

Note: For some models, a factory PIN code is necessary before you select a personal PIN code. It is not possible to use 0000 as PIN code.

4. Push the **Start** button and close the hatch to initiate a calibration process of the product.

Note: If the battery is too low, the product needs to charge the batteries fully before the calibration starts. Refer to *Calibration on page 23*.

Note: Make a note of the PIN code. Refer to *Introduction on page 3*.

3.9.3 Calibration

The calibration process is automatic. After the basic settings are done, the product moves away from the charging station and stops, while it calibrates some of the product settings. When the calibration is complete, the product starts to mow.

3.10 To do the product settings

Use the control panel to set all settings for the product. The control panel has a display and a keypad, you can access all functions through the menus. The functions have factory settings that is applicable for almost all work areas, but the settings can be adapted to the conditions for each work area.

3.10.1 Menu structure

The main menu contains:

- *Schedule*
- *SensorControl*
- *smart system* (only for smart SILENO+)
- *Settings*
- *Installation*
- *Security*

Refer to *Menu structure overview 1 on page 7* and *Menu structure overview 2 on page 8*.

3.10.2 To get access to the menu

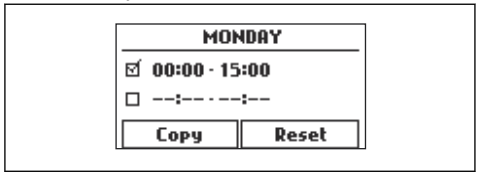
1. Push the **STOP** button.
2. Use the **number** buttons and the **OK** button to enter the PIN code.
3. Push the **MENU** button.

3.10.3 Schedule

Note: The lawn should not be cut too often to obtain the best result. If the product is allowed to operate too much, the lawn may appear flattened. The product is also subjected to unnecessary wear.

3.10.3.1 To set the schedule

1. Do steps 1–3 in *To get access to the menu on page 23*.
2. Use the **arrow** buttons and the **OK** button to move through the menu structure *Schedule > Overview*.
3. Use the **arrow** buttons and the **OK** button to select the day.
4. Use the right **arrow** button to select the period.
5. Push the **OK** button.
6. Calculate the suitable operating hours. Refer to *To calculate the suitable operating hours on page 23*.
7. Enter the time with the **number** buttons. The product can cut the grass 1 or 2 periods each day.



8. If the product must not cut grass on a specified day, unselect the box adjacent to the 2 time periods.

3.10.3.2 To calculate the suitable operating hours

If the work area is less than maximum product capacity, the schedule should be set to minimize wear on the lawn and the product.

1. Calculate the dimension of your lawn in m^2 / ft^2.

2. Divide the m^2 / ft^2 of the lawn with the approximate daily operation capacity. Refer to table below.
3. The result is equal to the number of hours that the product must mow each day. The number of hours includes both mowing, searching and charging time.

Note: The daily operation capacity is approximate and depends on the inbuilt standby period. Refer to *Schedule and Standby on page 32*.

Product work capacity	Approximate daily operation capacity, m^2/h, ft^2/h
2000 m^2 / 21500 ft^2	83 / 890
1600 m^2 / 17200 ft^2	70 / 750

Example: A lawn of 1000 m^2 / 10800 ft^2, cut with a SILENO+ specified for 2000 m^2.

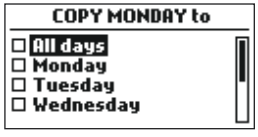
1000 m^2 / 83 ≈ 12 h.

10800 ft^2 / 890 ≈ 12 h.

Days / week	h / day	Suggested schedule setting
7	12	07:00-19:00 / 7 am-7 pm

3.10.3.3 To copy the schedule setting

1. Do steps 1–3 in *To get access to the menu on page 23*.
2. Use the **arrow** buttons and the **OK** button to move through the menu structure *Schedule > Overview > Copy*.
3. Use the **arrow** buttons and the **OK** button to copy the schedule setting. You can copy the schedule settings day to day or for the full week.



3.10.3.4 To reset the schedule setting

You can remove all schedule settings and use the factory setting.

1. Do steps 1–3 in *To get access to the menu on page 23*.
2. Use the **arrow** buttons and the **OK** button to move through the menu structure *Schedule > Overview > Reset*.
   a) Push the **arrow** buttons to select *Current day* to only reset the current day to factory settings.
   b) Push the **arrow** buttons to select *All week* to reset all schedule settings to factory settings.
3. Push the **OK** button.

3.10.4 SensorControl

SensorControl automatically adjust the cutting time to the growth of the grass. The product is not permitted to operate more than the schedule settings.

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.

The first operation of the day is set by the schedule settings. The product always complete 1 mowing cycle, and then *SensorControl* selects if the product will continue to operate or not.

Note: *SensorControl* is reset if the product does not operate for more than 50 hours, or if a *Reset of all user settings* is done. *SensorControl* is not changed if a *Reset of schedule settings* is done.

3.10.4.1 To set the SensorControl

1. Do steps 1–3 in *To get access to the menu on page 23*.
2. Use the **arrow** buttons and the **OK** button to move through the menu structure *SensorControl > Use SensorControl*.
3. Push the **OK** button to select the *SensorControl*.
4. Push the **BACK** button.

3.10.4.2 To set the SensorControl frequency

Set how frequently the product cuts the grass when the *SensorControl* is in use. There are 3 frequency levels: *Low, Mid* and *High*. The higher the frequency, the more sensitive the product is to the grass growth. That is, if the grass growth is high then the product is allowed to work longer.

Note: If the mowing results are not optimal when using *SensorControl*, the schedule settings may need adjusting. Do not restrict the schedule more than necessary. Also, check that the blade disc is clean and that the blades are in good condition.

---

1. Do steps 1–3 in *To get access to the menu on page 23*.
2. Use the **arrow** buttons and the **OK** button to move through the menu structure *SensorControl > Cutting time*.
3. Use the **arrow** buttons to select *Low, Mid* or *High* frequency.
4. Push the **BACK** button.

3.10.5 Security level

There are 3 security levels for SILENO+.

Function	Low	Medium	High
Alarm			X
PIN-code		X	X
Time lock	X	X	X

- *Alarm* - An alarm goes off if the PIN-code is not entered within 10 seconds after the **STOP** button is pushed. The alarm also goes off when the product is lifted. The alarm stops when the PIN-code is entered.
- *PIN-code* - The correct PIN-code must be entered to get access to the Menu structure of the product. If the incorrect PIN-code is entered 5 times, the product is locked for a time. The lock is extended for each new incorrect try.
- *Time lock* - The product locks if the PIN-code has not been entered in 30 days. Enter the PIN-code to get access to the product.

3.10.5.1 To set the security level

Select 1 of the security levels for your product.

1. Do steps 1–3 in *To get access to the menu on page 23*.
2. Use the **arrow** buttons and the **OK** button to move through the menu structure *Settings > Security > Security level*.
3. Use the **arrow** buttons and the **OK** button to select the level of security.
4. Push the **OK** button.

3.10.6 Security - Advanced

3.10.6.1 To create a new loop signal

The loop signal is randomly selected to create a unique link between the product and the charging station. In rare cases, there may be a need to generate a new signal, for instance if two adjacent installations have very similar signals.

1. Put the product in the charging station.
2. Do steps 1–3 in *To get access to the menu on page 23*.
3. Use the **arrow** buttons and the **OK** button to move through the menu structure *Settings > Security > Advanced > New loop signal*.
4. Wait for confirmation that the loop signal has been generated. This usually takes about 10 seconds.

3.10.6.2 To change the PIN-code

1. Do steps 1–3 in *To get access to the menu on page 23*.
2. Use the **arrow** buttons and the **OK** button to move through the menu structure *Settings > Security > Advanced > Change PIN-code*.
3. Enter the new PIN code.
4. Push the **OK** button.
5. Enter the new PIN code again.
6. Push the **OK** button.
7. Make a note of the new PIN code. Refer to *Introduction on page 3*.

3.10.7 Lawn Coverage

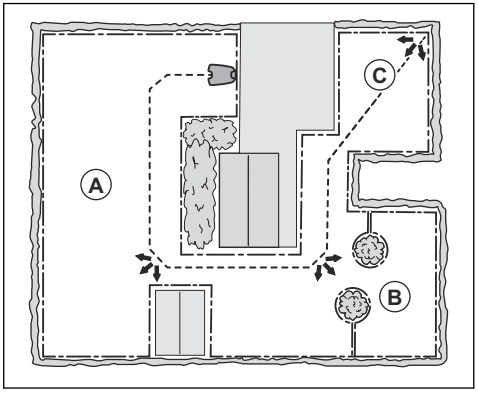
If the work area includes remote parts that are connected with narrow passages, the *Lawn Coverage* function is useful to be able to maintain a well-cut lawn in all parts of the yard. A guide wire must be installed to use the functions. You can set a maximum of 3 remote areas.

With the *Lawn Coverage* function the product first follows and then leaves the guide wire after a certain distance and starts to mow the lawn.

Area A, approximately 50%

Area B, approximately 30%

Area C, approximately 20%



3.10.7.1 To set the Lawn Coverage function

1. Do steps 1–3 in *To get access to the menu on page 23*.
2. Use the **arrow** buttons and the **OK** button to move through the menu structure *Installation > Lawn Coverage > Area 1-3*.
3. Use the **arrow** button to select the area.
4. Push the **OK** button.
5. Measure the distance from the charging station to the start of the area. Measure along the guide wire. Refer to *To measure the distance from the charging station on page 26*.
6. Push the **number** buttons to select the distance.
7. Push the **OK** button.
8. Use the **number** buttons to select the percentage of the cutting time the product must cut the area. The percentage is equal to the area in relation to the complete work area.
   a) Measure the area.
   b) Divide the measured area with the total work area.
   c) Convert the result to percentage.

Note: The sum of Area 1-3 must be 100% or less. If the sum is less than 100%, the product sometimes starts to mow at the charging station. Refer to *To set the exit angles on page 27*.

9. Push the **BACK** button.

3.10.7.2 To do a test of the Lawn Coverage function

1. Put the product in the charging station.
2. Do step 1-3 in *To get access to the menu on page 23*.
3. Use the **arrow** buttons and the **OK** button to move through the menu structure *Installation > Lawn Coverage > Area 1-3 > More > Test*.
4. Push the **OK** button.
5. Push the **START** button.
6. Close the hatch.
7. Make sure the product can find the area.

3.10.7.3 To measure the distance from the charging station

1. Put the product in the charging station.
2. Do steps 1–3 in *To get access to the menu on page 23*.
3. Use the **arrow** buttons and the **OK** button to move through the menu structure *Installation > Lawn Coverage > Area 1-3 > How far?*
4. Use the **number** buttons to set 500 m / 540 yd as a distance.
5. Push the **OK** button.
6. Use the **arrow** buttons and the **OK** button to move through the menu structure *Settings > Lawn Coverage > Area 1-3 > More > Test*.
7. Push the **OK** button.
8. Push the **STOP** button when the product is at the distance you select to measure. The distance shows in the display.

3.10.7.4 To disable or enable the Lawn Coverage function

Disable or enable the *Lawn Coverage* function for each area.

1. Do steps 1–3 in *To get access to the menu on page 23*.
2. Use the **arrow** buttons and the **OK** button to move through the menu structure *Installation > Lawn Coverage > Area 1-3 > Disable*.

3. Push the **OK** button.
4. Push the **BACK** button.

3.10.7.5 To reset the Lawn Coverage settings

You can reset the *Lawn Coverage* settings for each area and use the factory setting.

1. Do steps 1–3 in *To get access to the menu on page 23*.
2. Use the **arrow** buttons and the **OK** button to move through the menu structure *Installation > Lawn Coverage > Area 1-3 > More > Reset*.
3. Push the **OK** button.

3.10.8 Exit angle

If the sum of the *Lawn Coverage* function is less than 100%, the product sometimes starts to mow at the charging station. The product moves away from the charging station with an exit angle between 90°–270°. The exit angles can be set to 1–2 exit sectors.

3.10.8.1 To set the exit angles

1. Do steps 1–3 in *To get access to the menu on page 23*.
2. Use the **arrow** buttons and the **OK** button to move through the menu structure *Installation > Advanced > Exit angles > Sector 1* or *Sector 2*.
3. Use the **number** buttons to set the angles in degrees.
4. Push the down **arrow** button.
5. Use the **number** buttons to select how frequently the product must use each sector. Set in percentage.
6. Push the **BACK** button.

3.10.9 Reversing distance

The reversing distance makes the product move in reverse for a set distance, before the product starts to cut the lawn. The factory setting is 60 cm / 24 ft.

3.10.9.1 To set the reversing distance

1. Do steps 1-3 in *To get access to the menu on page 23*.
2. Use the **arrow** button and the **OK** button to move through the menu structure *Installation > Advanced > Reversing distance*.
3. Use the **number** buttons to set the distance.
4. Push the **BACK** button.

3.10.10 Drive Past Wire

The front of the product always moves past the boundary wire by a specified distance before the product moves back into the work area. The factory setting for the *Drive Past Wire function* function is 32 cm / 12 in. You can select a distance of 25-40 cm / 10-16 in.

Note: With the factory setting the product will cut 11 cm / 4.3 in. past the wire.

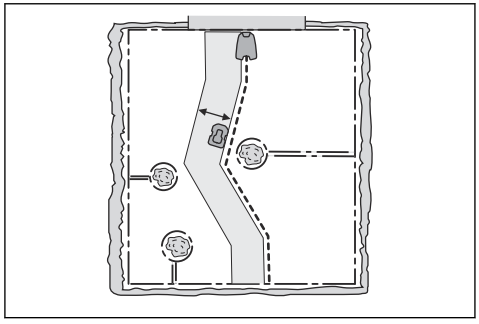
Note: If the *Drive Past Wire* distance is changed, the distance will change along the boundary wire everywhere in the work area.

3.10.10.1 To set the Drive Past Wire function

1. Do steps 1–3 in *To get access to the menu on page 23*.
2. Use the **arrow** button and the **OK** button to move through the menu structure *Installation > Advanced > Drive Past Wire*.
3. Use the **number** buttons to set the distance.
4. Push the **BACK** button.

3.10.11 Guide Corridor

The guide corridor is the area adjacent to the guide wire, which the product uses to find the charging station. When the product moves in the direction of the charging station, it always moves to the left of the guide wire.



Note: The product runs at different distances to the guide wire but stays within the guide corridor.

3.10.11.1 To set the corridor width of the guide wire

1. Do steps 1–3 in *To get access to the menu on page 23*.
2. Use the **arrow** buttons and the **OK** button to move through the menu structure *Installation > Advanced > Corridor width > Guide.*
3. Use the **number** buttons to select a corridor width of 0–9.
4. Push the **BACK** button.

Note: Make the corridor width as wide as possible for a minimum risk of lines in the lawn.

3.10.12 ECO mode

If *ECO mode* is activated, it switches off the signal in the boundary loop, the guide wire and the charging station, when the product is parked or is charging.

Note: Use *ECO mode* to save energy and avoid interference with other equipment, for example hearing loops or garage doors.

Note: To start the product manually in the work area, push the **STOP** button before you remove the product from the charging station. If not, the product can not be started in the work area.

3.10.12.1 To set the ECO mode

1. Do steps 1–3 in *To get access to the menu on page 23*.
2. Use the **arrow** buttons and the **OK** button to move through the menu structure *Settings > ECO mode*.
3. Push the **OK** button to select the *ECO mode*.
4. Push the **BACK** button.

3.10.13 General

In *General* you can change the general settings of the product.

3.10.13.1 To set the time & date

1. Do steps 1–3 in *To get access to the menu on page 23*.
2. Use the **arrow** buttons and the **OK** button to move through the menu structure *Settings > General > Time & Date*.
3. Use the **number** buttons to set the time and then push the **BACK** button.
4. Use the **number** buttons to set the date and then push the **BACK** button.
5. Use the **arrow** buttons to set the time format and then push the **BACK** button.
6. Use the **arrow** buttons to set the date format and then push the **BACK** button.

3.10.13.2 To set the language

1. Do steps 1–3 in *To get access to the menu on page 23*.
2. Use the **arrow** buttons and the **OK** button to move through the menu structure *Settings > General > Language*.
3. Use the **arrow** buttons to select language and then push the **BACK** button.

3.10.13.3 To set the country

1. Do steps 1–3 in *To get access to the menu on page 23*.
2. Use the **arrow** buttons and the **OK** button to move through the menu structure *Settings > General > Country.*
3. Use the **arrow** buttons to select country and then push the **BACK** button.

3.10.13.4 To reset all user settings

1. Do steps 1–3 in *To get access to the menu on page 23*.
2. Use the **arrow** buttons and the **OK** button to move through the menu structure *Settings > General > Reset all user settings*.
3. Use the right **arrow** button to select *Proceed with reset of all user settings?*
4. Push the **OK** button to reset all the user settings.

Note: *Security level, PIN code, Loop signal, Messages, Date & Time, Language* and *Country settings* are not reset.

3.10.13.5 The About menu

The *About* menu displays information about the product, for example serial number and firmware versions.

3.10.14 GARDENA smart system

Only for smart SILENO+.

Note: Make sure that the smart product is fully installed in the work area before you include it into the GARDENA smart system app. Refer to *Installation on page 14*.

The product can connect to mobile devices that have the GARDENA smart system app installed. The GARDENA smart system makes it possible with wireless interaction between your smart product and the GARDENA smart system.

In the smart system menu in the product you can:

- enable your smart product to include with or exclude from the GARDENA smart system app.
- check the status of the wireless connection to the smart system.

When the smart product is part of the smart system, some menus in the product display are disabled. You can still see all of the settings in the product but some can only be changed with the GARDENA smart system app. The following settings are blocked in the menu selection of the smart product:

- Schedule
- Time & Date
- Language
- Country

3.10.14.1 To set the Activate Inclusion Mode

In order to include your smart product into the GARDENA smart system app:

1. Do steps 1–3 in *To get access to the menu on page 23*.
2. Use the **arrow** buttons and the **OK** button to enter the menu *smart system*.
3. Use the right **arrow** button and the **OK** button to select *Yes* to *Activate Inclusion Mode*.
4. Use the **number** buttons to enter the PIN code and push the **OK** button.
5. The inclusion code is shown in the product display.
6. Follow the instructions in the GARDENA smart system app.

The inclusion sequence might take several minutes. Once the inclusion has succeeded you will automatically return to the product start screen. If the inclusion by any reason fails, try again.

3.10.14.2 Inclusion in the App

The inclusion of all GARDENA smart devices takes place over the smart system app.

To download the GARDENA smart system app

1. Download the GARDENA smart system app from App Store or Google Play.
2. Open the app and register as a user.
3. Log in and choose *Include device* from the start page in the app.
4. Follow the instructions in the app.

Note: The smart gateway needs internet connection to be able to include the product to the app.

3.10.14.3 To select Exclude device

If you exclude the device, there will be no communication between the product and the GARDENA smart system.

1. Do steps 1–3 in *To get access to the menu on page 23*.
2. Use the **arrow** buttons and the **OK** button to move through the menu structure *smart system > Exclude device*.
3. Push the **OK** button.

Note: The product must be manually deleted from the list of products in the GARDENA smart system app.

3.10.14.4 To do a check of the status for GARDENA smart system

When the product is connected to smart system gateway, you can do a check of the connection status.

1. Do steps 1–3 in *To get access to the menu on page 23*.

2. Use the **arrow** buttons and the **OK** button to move through the menu structure *smart system > Status*.

Note: The *Status* is either connected *Yes* or not connected *No*. The *Signal strength* is either *Good, Poor* or *Bad*. Put the charging station in a location with *Signal strength - Good*, for the best smart system performance.

---

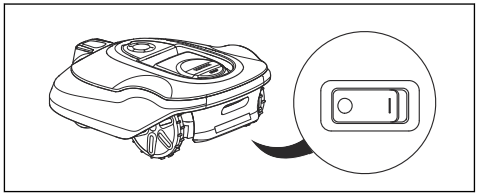
4 Operation

4.1 Main switch

WARNING: Read the safety instructions carefully before you start the product.

WARNING: Keep your hands and feet away from the rotating blades. Do not put your hands or feet near to or below the product when the blade motor is on.

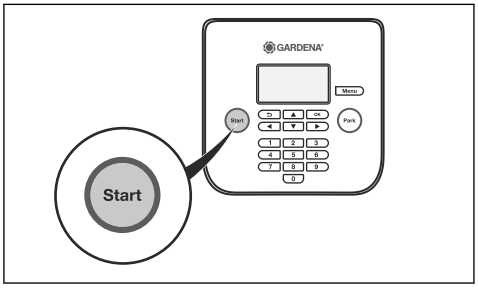
WARNING: Do not use the product when persons, especially children, or animals are in the work area.



- Set the **Main switch** in the *1* position to start the product.
- Set the **Main switch** in the *0* position when the product is not in use or before you do inspection or maintenance on the product.

4.2 To start the product

1. Push the **STOP** button to open the hatch.
2. Set the **Main switch** to position *1*.
3. Enter the PIN code.
4. Push the **START** button.
5. Select the desired operating mode and confirm with the **OK** button. Refer to *Operating mode Start on page 31*.



6. Close the hatch.

Note: If the product is parked in the charging station, the product only leaves the charging station when the battery is fully charged and if the schedule allows the product to operate.

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.

4.3 Operating mode Start

Push the **START** button to select the following operating modes:

- *Main area*
- *Secondary area*
- *Override schedule*
- *Spot cutting*

4.3.1 Main area

Main area is the standard operating mode where the product mows and charges automatically.

4.3.2 Secondary area

To mow secondary areas the operating mode *Secondary area* must be selected. In this mode, the operator must move the product manually between the main area and the secondary area. The product mows for a selected period of time or until the battery is empty. When the battery is empty, the product stops and the message *Needs manual charging* shows in the product display. Put the product in the charging station to charge the battery. When the battery is charged,

the product moves out of the charging station and stops. The product is now prepared to start operation, but needs confirmation from the operator first. In the *Secondary area* mode, the product operates for a selected period of time or until the battery is empty.

Note: If you want to cut the main area after the battery is charged, set the product to *Main area* mode before you put the product in the charging station.

4.3.3 Override schedule

The schedule settings can be temporarily overridden by selecting *Override schedule*. It is possible to override the schedule for 24 h or 3 days. It is not possible to override a standby period.

4.3.4 Spot cutting

The *Spot cutting* function is activated with the **START** button and is useful for quickly mowing an area where the grass has been mown less than in other parts of the yard. You must manually move the product to the chosen area.

Spot cutting means that the product mows in a spiral pattern in order to cut the grass in the area where it was started. When this is done, the product automatically switches back to *Main area* or *Secondary area*.

4.4 Operating mode Park

Push the **PARK** button to select the following operating modes:

- *Park until further notice*
- *Start with schedule*

4.4.1 Park until further notice

The operation mode Park means that the product goes back to the charging station where it stays until a new operation mode is selected and the **START** button is pushed.

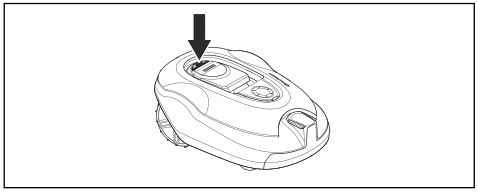
4.4.2 Start again with next schedule

The product stays in the charging station until the next *Schedule* setting permits operation. This operating mode is suitable if you want to cancel an ongoing mowing cycle and allow the product to stay in the charging station until the next day.

4.5 To stop the product

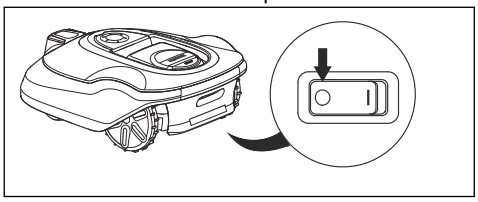
1. Push the **STOP** button on top of the product.

The product stops and the blade motor stops.



4.6 To switch off the product

1. Push the **STOP** button on top of the product.
2. Set the **Main switch** to position *0*.



4.7 Schedule and Standby

The product has an inbuilt standby period according to the Standby time table below. The standby period provides for instance a good opportunity to water or play games on the lawn.

The standby time is depending on how much active time (cutting and searching) the product has each day. The active time is in turn depending on for example battery capacity, slopes and grass growth. When the product has operated the allowed active period in a day, the message *Today's mowing complete* is shown in the display. The product is then in standby mode until next day.

If the schedule setting is divided into 2 work periods, the standby period can be divided into a number of periods. The minimum standby period time must however be according to the Standby time table.

Product work capacity	Standby time, minimum hours per day
2000 m^2 / 21500 ft^2	-
1600 m^2 / 17200 ft^2	1

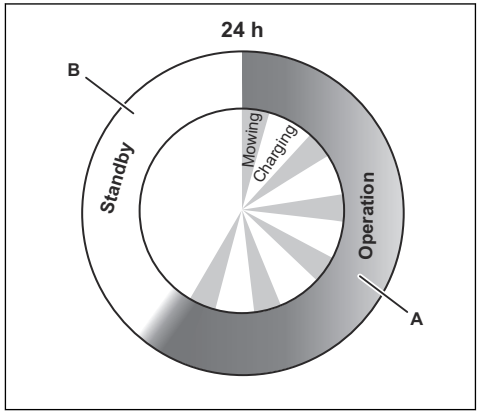
4.7.1 Example 1

This example is applicable to products with a specified work area of 1600 m^2, but the principle is the same for the other models.

Schedule setting, Period 1: 00:00-24:00

Active period (A): 00:00-23:00

The schedule settings ensure that the product begins cutting the lawn at 00:00. At 23:00 the product has reached the maximum available operating hours and is therefore parked in standby mode. The product starts cutting the grass again next day at 00:00.



Example: A specified work area of 1600 m^2	
Operation, A = max. hours	23
Charging/Standby, B = min. hours	1

4.8 To charge the battery

WARNING: Only charge the product using a charging station which is intended for it. Incorrect use may result in electric shock, overheating or leakage of corrosive liquid from the battery.

In the event of leakage of electrolyte flush with water and seek medical help if it comes in contact with the eyes etc.

When the product is new or has been stored for a long period, the battery can be empty and needs to be charged before starting. In the *Main area* mode, the product automatically alternates between mowing and charging.

1. Set the **Main switch** to position *1*.
2. Place the product in the charging station. Slide the product in as far as possible to ensure proper contact between the product and the charging station. Refer to contact and charging plates in *Product overview on page 4*
3. The display shows a message that charging is in progress.

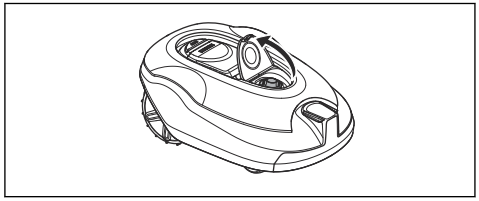
4.9 Adjust the cutting height

CAUTION: During the first weeks after a new installation, the cutting height must be set to MAX to avoid damaging the loop wire. After this, the cutting height can be lowered step by step every week until the desired cutting height has been reached.

The cutting height can be varied from MIN (2 cm / 0.8 in.) to MAX (6 cm / 2.4 in.).

4.9.1 To adjust the cutting height

1. Push the **STOP** button to stop the product.
2. Open the hatch.



3. Turn the knob to the required position.
   - Turn clockwise to increase the cutting height.
   - Turn counter-clockwise to decrease the cutting height.
4. Close the hatch.

5 Maintenance

5.1 Introduction - maintenance

WARNING: The product must be switched off before any maintenance is done.

WARNING: Wear protective gloves.

For better operation and longer service life, make sure to clean the product regularly and replace worn parts. All maintenance and servicing must be done according to GARDENA's instructions. Refer to *Warranty on page 52*.

When the product is first used, the blade disc and blades should be inspected once a week. If the amount of wear during this period has been low, the inspection interval can be increased.

It is important that the blade disc rotates easily. The edges of the blades should not be damaged. The lifetime of the blades varies immensely and depends for instance on:

- Operating time and size of the work area.
- Type of grass and seasonal growth.
- Soil, sand and use of fertilizers.
- The presence of objects such as cones, windfalls, toys, tools, stones, roots and the like.

The normal life is 3 to 6 weeks when used under favorable conditions. Refer to *Replace the blades on page 35* on how to replace the blades.

Note: Working with blunt blades gives a poorer mowing result. The grass is not cut cleanly and more energy is needed resulting in the product not mowing such a large area.

5.2 Clean the product

CAUTION: Never use a high-pressure washer or running water to clean the product. Never use solvents for cleaning.

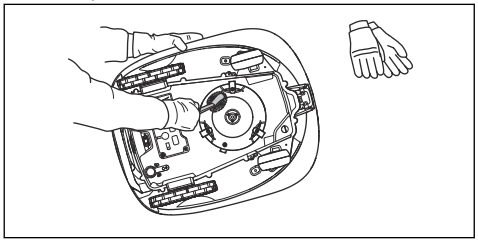
The product does not operate satisfactorily in slopes if the wheels are blocked with grass. Use a soft brush to clean the product.

GARDENA offers a special cleaning and maintenance kit as an accessory. Contact your GARDENA central service.

5.2.1 Chassis and blade disc

Examine the blade disc and blades once a week.

1. Push the **STOP** button.
2. Set the **Main switch** to position *0*.
3. Lift the product onto its side.
4. Clean the blade disc and chassis using a brush. Make sure that the blade disc rotates freely.



5. Make sure that the blades are intact and can pivot freely.

5.2.2 Wheels

Clean around the wheels. Grass on the wheels can impact on how the product performs in slopes.

5.2.3 The body of the product

Use a moist, soft sponge or cloth to clean the body of the product. If the body of the product is dirty, use a mild soap solution to clean it.

5.2.4 Charging station

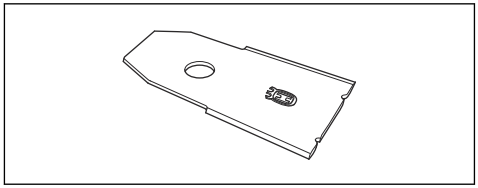
WARNING: Use the plug to disconnect the charging station before any maintenance, or cleaning of charging station or power supply.

Clean the charging station regularly from grass, leaves, twigs and other objects that may impede docking.

5.3 Replace the blades

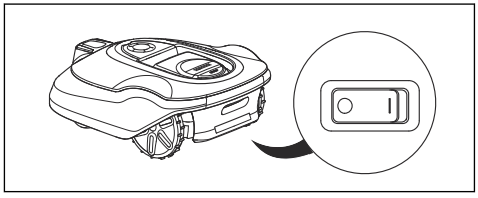
WARNING: Use blades and screws of the right type. GARDENA can only guarantee safety when using original blades. Only replacing the blades and reusing the screw can result in a screw wearing during mowing. The blades can then be propelled from under the body and cause serious injury.

Replace worn or damaged parts for safety reasons. Even if the blades are intact, they should be replaced on a regular basis for the best mowing result and low energy usage. All 3 blades and screws must be replaced at the same time to obtain a balanced cutting system. Use GARDENA original blades embossed with the crowned H-mark logotype, refer to *Warranty on page 52*.

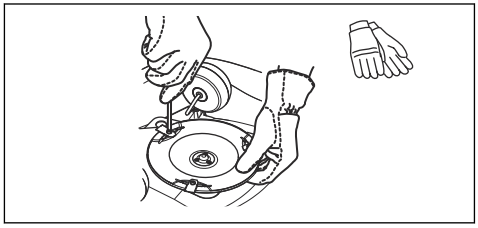


5.3.1 To replace the blades

1. Push the **STOP** button.
2. Set the main switch to position *0*.



3. Turn the product upside down. Put the product on a soft and clean surface to prevent scratching the body and the hatch.
4. Remove the 3 screws with a screwdriver.



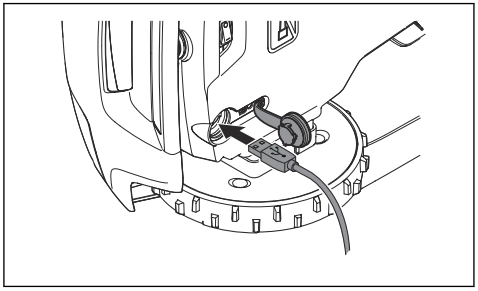
5. Remove the 3 blades.
6. Attach 3 new blades and screws.
7. Make sure that the blades can pivot freely.

5.4 Firmware update

If service is done by GARDENA customer service then available firmware updates are downloaded to the product by the service technician. Owners of GARDENA products can update the firmware if this is initiated by GARDENA. Registered users are in that case notified.

5.4.1 To update the firmware

1. Connect the USB cable to the computer's USB port.
2. Remove the service outlet plug on the bottom of the product. The service outlet is located beside the **Main switch**.
3. Connect the USB cable to the product service outlet.



4. Set the **Main switch** to position *1*.
5. Download the firmware update tool on www.gardena.com and follow the instructions.
6. When the firmware update is completed, disconnect the USB cable and fit the service outlet plug. If the seal on the service outlet plug is visibly damaged, the entire plug must be replaced. Make sure that the plug is locked completely.

5.5 Battery

WARNING: Only charge the product using a charging station which is intended for it. Incorrect use may result in electric shock, overheating or leakage of corrosive liquid from the battery. In the event of leakage of electrolyte flush with water and seek medical help if it comes in contact with the eyes etc.

WARNING: Use only original batteries recommended by the manufacturer. Product safety cannot be guaranteed with other batteries. Do not use non-rechargeable batteries.

CAUTION: The battery must charge a complete cycle before winter storage. If the battery is not fully charged it can be damaged and in certain cases be rendered useless.

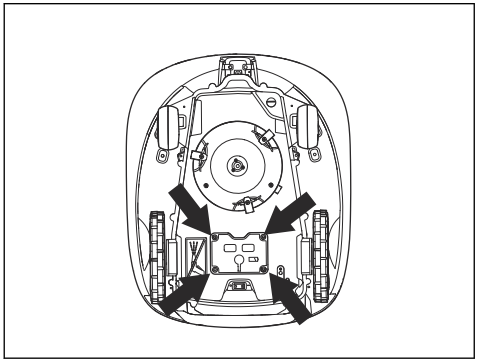
If the operating time for the product is shorter than normal between charges, this indicates that the battery is getting old and eventually needs replacing.

Note: Battery life is dependent on the length of the season and how many hours a day the product is operating. A long season or many hours of use a day means that the battery must be replaced more regularly. The battery is fine as long as the product maintains a well-cut lawn.

5.5.1 To replace the battery

WARNING: The product must be disconnected from the supply mains when removing the battery.

1. Set the **Main switch** to position *0*.
2. Turn the product upside down. Place the product on a soft and clean surface to avoid scratching the body and the display cover.
3. Clean around the battery cover.
4. Unscrew the screws to the battery cover (Torx 20) and remove the battery cover.



5. Release the latch of the connector and pull it upwards.

CAUTION: Do not pull the cables.

6. Place the new battery into place in the product.
7. Connect the cable.
8. Carefully tighten screws for the battery cover (Torx 20).

5.6 Winter service

Take your product to your GARDENA central 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.

6 Troubleshooting

6.1 Introduction - troubleshooting

In this chapter, faults and symptoms are described and can guide you if the product does not operate as expected. More suggestions for steps to take in the event of malfunction or symptoms can be found on www.gardena.com.

6.2 Fault messages

The fault messages in the table below are shown in the display of the product. Speak to your GARDENA customer service if the same message shows frequently.

Message	Cause	Action
Wheel motor blocked, left/right	Grass or other object has wrapped around the drive wheel.	Check the drive wheel and remove the grass or other object.
Cutting system blocked	Grass or other object has wrapped around the blade disc.	Check the blade disc and remove the grass or other object.
	The blade disc lies in a pool of water.	Move the product and prevent the collection of water in the work area.
	The grass is too high.	Cut the grass before you install the product. Make sure that the grass is maximum 10 cm / 3.9 in.
Trapped	The product is stuck in a small area behind a number of obstacles.	Check if there are any obstacles which make it hard for the product to move on from this location. Remove the obstacles or put the boundary wire around the obstacle to create an island. Refer to *To make an island on page 17*.
Outside working area	The boundary wire connections to the charging station are crossed.	Check that the boundary wire is connected correctly.
	The boundary wire is too close to the edge of the work area.	Check that the boundary wire has been laid according to the instructions. Refer to *To install the boundary wire on page 20*.
	The work area slopes too much by the boundary loop.	
	The boundary wire is laid in the wrong direction around an island.	
	Disturbances from metal objects (fences, reinforcement steel) or buried cables close by.	Try moving the boundary wire.
	The product finds it hard to distinguish the signal from another product installation close by.	Put the product in the charging station and generate a new loop signal.

Message	Cause	Action
Empty battery	The product cannot find the charging station.	Change the position of the guide wire. Refer to *To install the guide wire on page 21*.
	The battery is spent.	Replace the battery. Refer to *Battery on page 36*.
	The charging station's antenna is defective.	Check if the indicator lamp in the charging station flashes red. Refer to *Indicator lamp in the charging station on page 43*.
	The charging plates on the product or contact plates on the charging station are corroded.	Clean the charging and contact plates using a fine grade emery cloth. If the problem stays speak to your authorized service technician.
Wrong PIN code	Wrong PIN code has been entered. Five attempts are permitted, and the keypad is then blocked for a period of time.	Enter the correct PIN code. Contact GARDENA customer service if you forget the PIN code.
No drive	The product has got caught in something and has been slipping.	Free the product and rectify the reason for the lack of drive. If it is due to wet grass, wait until the lawn has dried before using the product.
	The work area includes a steep slope.	Steep slopes should be isolated. Refer to *To examine where to put the boundary wire on page 15*.
	The guide wire is not laid diagonally in the slope.	Make sure that the guide wire is installed diagonally across the slope. Refer to *To examine where to put the guide wire on page 18*.
Wheel motor overloaded, left/right	Grass or other object is wrapped around the drive wheel.	Check the drive wheel and remove grass or object.
Collision sensor problem, front/rear	The product body can not move freely around its chassis.	Check that the product body can move freely around its chassis. If the problem stays speak to your authorized service technician.
Alarm! Mower switched off	The alarm is activated because the product had been switched off.	Adjust the security level in the *Security* menu. Refer to *Security - Advanced on page 25*.
Alarm! Mower stopped	The alarm is activated because the product has been stopped.	
Alarm! Mower lifted	The alarm is activated because the product has been lifted.	
Alarm! Mower tilted	The alarm is activated because the product has been tilted.	

Message	Cause	Action
Charging station blocked	The contact between the charging plates on the product on the and contact plates on the charging station may be poor and the product has made a number of attempts to charge.	Put the product in the charging station and check that the charging plates and contact plates make good contact.
	An object is in the way of the product that prevents it to enter the charging station.	Remove the object.
	The charging station is tilted or bent.	Put the baseplate on level ground.
	The guide wire is not installed correctly.	Check if the guide wire is installed according to the instructions. Refer to *To install the guide wire on page 21*.
Stuck in charging station	There is an object in the way of the product preventing it from leaving the charging station.	Remove the object.
Upside down	The product is leaning too much or has turned over.	Turn the product the right way up.
Needs manual charging	The product is set to the *Secondary area* operating mode.	Put the product in the charging station.
Next start hh:mm	The schedule setting prevents the product from operating.	Change the schedule settings. Refer to *Schedule on page 23*.
	The rest period is in progress. The product has an inbuilt standby period according to the Standby time table.	This behavior is normal and no action is required.
	The clock or date in the product is not correct.	Set the time. Refer to *To set the time & date on page 28*.
Today's mowing completed	The product has an inbuilt standby period according to the Standby time table.	This behavior is normal and no action is required. Refer to *Schedule and Standby on page 32*.
Lifted	The lift sensor has been activated as the product has been lifted.	Check 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 authorized service technician.
Wheel drive problem, right/left	Grass or other object is wrapped around the drive wheel.	Clean the wheels and around the wheels.

Message	Cause	Action
Electronic problem	Temporary electronic or firmware related issue in the product.	Restart the product. If the problem stays speak to your authorized service technician.
Loop sensor problem, front/rear		
Tilt sensor problem		
Temporary problem		
Invalid sub-device combination		
Temporary battery problem		
Charging system problem	Incorrect type of battery.	Use original batteries recommended by the manufacturer.
Battery problem	Temporary battery or firmware related issue in the product.	Restart the product. If the problem stays speak to your authorized service technician.
	Incorrect type of battery.	Use original batteries recommended by the manufacturer.
Battery temperature outside limits	The temperature in the battery is too high or too low to start operation.	No action. The product will start to operate when the temperature is in limits.
Charging current too high	Wrong or faulty power supply unit.	Restart the product. If the problem stays speak to your authorized service technician.
Connectivity problem	Potential problem on the connectivity circuit board in the product.	Restart the product. If the problem stays speak to your authorized service technician.
Connectivity settings restored	The connectivity settings was restored due to a fault.	Check and change the settings if needed.
Poor signal quality	The connectivity circuit board in the product is assembled upside down, or the product itself is tilted or upside down.	Make sure that the product is not upside down or tilted. If the problem stays speak to your authorized service technician.

Message	Cause	Action
No loop signal	The power supply or low-voltage cable is 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 is damaged or not connected.	Replace the power supply or low-voltage cable.
	The boundary wire is not connected to the charging station.	Check that the boundary wire connectors are fitted properly to the charging station. Replace connectors if damaged. Refer to *To install the boundary wire on page 20*.
	The boundary is wire broken.	Do a check of the LED status indicator on the charging station. If it shows break in the boundary wire, replace the damaged section with a new loop wire and splice using an original coupler.
	ECO mode is activated and the product has attempted to start outside the charging station.	Put the product in the charging station, start the product and close the hatch.
	The boundary wire is crossed on its way to and from an island.	Check that the boundary wire is laid according to instructions, e.g. in the right direction around the island. Refer to *To install the boundary wire on page 20*.
	The pairing between the product and the charging station is lost.	Put the product in the charging station and generate a new loop signal. Refer to *To create a new loop signal on page 25*.
	Disturbances from metal objects (fences, reinforcement steel) or buried cables close by.	Try to move the boundary wire and/or make islands in the work area to increase the signal strength.
	The product is too far from the boundary wire.	Redo the installation of the boundary wire so that all parts of the work area is maximum 35 m / 115 ft. from the boundary wire.
Mower tilted	The product is tilted more than the maximum angle.	Move the product to a flat area.
Connection NOT changed	Failed to change loop signal.	Try to create a *New loop signal* several times. Refer to *To create a new loop signal on page 25*. If the problem stays speak to your authorized service technician.

Message	Cause	Action
Cutting system imbalance	Too few or too many blades.	Do a check of the blades on the blade disc.

6.3 Information messages

The information messages in the table below are shown in the display of the product. Speak to your GARDENA representative if the same message shows frequently.

Message	Cause	Action
Low battery	The product cannot find the charging station.	Change the position of the guide wire. Refer to *To install the guide wire on page 21*.
	The battery is spent.	Replace the battery. Refer to *Battery on page 36*.
	The charging station's antenna is defective.	Check if the indicator lamp in the charging station flashes red. Refer to *Indicator lamp in the charging station on page 43*.
	The charging plates on the product or contact plates on the charging station are corroded.	Clean the charging and contact plates using a fine grade emery cloth. If the problem stays speak to your approved servicing dealer.
Settings restored	Confirmation that *Reset all user settings* has been carried out.	No action.
Guide not found	The guide wire is not connected to the charging station.	Check that the guide wire connector is tightly connected to the charging station. Refer to *To install the guide wire on page 21*.
	Break in the guide wire.	Find out where the break is and rectify it.
	The guide wire is not connected to the boundary loop.	Check that the guide wire is connected correctly to the boundary loop. Refer to *To install the guide wire on page 21*.
Guide calibration failed	The product has failed to calibrate the guide wire.	Check that the guide wire is installed according to the instructions. Refer to *To install the guide wire on page 21*.
Guide calibration done	The product has succeeded to calibrate the guide wire.	No action.
Connection changed	New loop signal successfully changed.	No action.

6.4 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. If not, follow the instructions in the troubleshooting guide below.

You can also find information on www.gardena.com. Speak to your GARDENA customer service for more information.

Light	Cause	Action
Green solid light	Good signals	No action required
Green flashing light	The signals are good and *ECO mode* is activated.	No action required. For more information on *ECO mode*. Refer to *ECO mode on page 28*.
Blue flashing light	The boundary loop is not connected to the charging station.	Check that the boundary wire connectors are fitted properly to the charging station. Refer to *To install the boundary wire on page 20*.
	Break in the boundary loop.	Find out where the break is. Replace the damaged section of the loop with a new loop wire and splice using an original coupler.
Red flashing light	Interruption in the charging station's antenna.	Contact GARDENA customer service.
Red solid light	Fault in the circuit board or incorrect power supply in the charging station. The fault should be rectified by an authorized service technician.	Contact GARDENA customer service.

6.5 Symptoms

If your product does not work as expected, follow the symptoms guide below.

There is a FAQ (Frequently Asked Questions) on www.gardena.com which provides more detailed answers to a number of standard questions. Contact GARDENA customer service if you still cannot find the reason for the fault.

Symptoms	Cause	Action
The product has difficulty docking.	The guide wire is not laid in a long straight line that is far enough out from the charging station.	Check that the charging station has been installed according to the instructions in *To examine where to put the guide wire on page 18*
	The guide wire is not inserted in the slot under the charging station.	Make sure that the guide wire is in the correct position below the charging station. Refer to *To install the guide wire on page 21*.
	The charging station is not on a level surface.	Place the charging station on a surface that is entirely level. Refer to *To examine where to put the charging station on page 14*.
The product runs at the wrong time	The clock or the date in the product is not correct.	Set the clock or date. Refer to *To set the time & date on page 28*.
	The start and stop times for mowing are incorrect.	Change the *Schedule* settings. Refer to *To set the schedule on page 23*.
The product vibrates.	Damaged blades lead to imbalance in the cutting system.	Inspect the blades and screws and replace them if necessary. Refer to *Replace the blades on page 35*.
	Too many blades in the same position lead to imbalance in the cutting system.	Check that only one blade is fitted at each screw.
	Different versions (thickness) of blades are used.	Check if the blades are of different versions.
The product runs, but the blade disc does not rotate.	The product searches for the charging station, or is reversing out of the charging station.	No action. The blade disc does not rotate when the product is searching for the charging station.
The product mows for shorter periods than usual between charges.	Grass or other foreign object blocks the blade disc.	Remove and clean the blade disc. Refer to *Chassis and blade disc on page 34*.
	The battery is spent.	Replace the battery. Refer to *To replace the battery on page 36*.
	Dull blades. More energy is needed when cutting the grass.	Replace the blades. Refer to *To replace the blades on page 35*.

Symptoms	Cause	Action
Both the mowing and charging times are shorter than usual.	The battery is spent.	Replace the battery. Refer to *To replace the battery on page 36*.
The product is parked for hours in the charging station.	The product has an inbuilt standby period according to the Standby time table. Refer to *Schedule and Standby on page 32*.	No action.
	The hatch is closed but the **START** button is not pushed.	Push the **STOP** button to open the hatch. Enter the PIN code and confirm with the **OK** button. Push the **START** button and then close the hatch.
	Parking mode is activated.	Change the operating mode. Refer to *Operating mode Start on page 31*.
	The product is not allowed to operate if the battery temperature is too high or too low.	Check that the charging station is placed in an area with protection from the sun.
Uneven mowing results.	The product works too few hours per day.	Increase the mowing time. Refer to *Schedule on page 23*.
	The shape of the work area requires the use of *Lawn coverage* function for the product to find its way to all remote areas.	Steer the product to a remote area. Refer to *Lawn Coverage on page 25*.
	The *How often?* setting is incorrect in relation to the layout of the work area.	Check that the correct *How often?* value is selected.
	The work area is too large.	Try limiting the work area or extending the schedule. Refer to *Schedule on page 23*.
	Dull blades.	Replace all the blades. Refer to *Replace the blades on page 35*.
	Long grass in relation to the set cutting height.	Increase the cutting height and then successively lower it.
	Accumulation of grass by the blade disc or around the motor shaft.	Check that the blade disc rotates freely and easily. If not, screw off the blade disc and remove grass and foreign objects. Refer to *Chassis and blade disc on page 34*.

6.6 Find breaks in the loop wire

Breaks in the loop wire are usually the result of unintentional physical damage to the wire such as when gardening with a shovel. In countries with ground frost, also sharp stones that move in the ground can damage the wire. Breaks can also occur due to the wire being stretched excessively during installation.

Mowing the grass too low right after the installation can damage wire insulation. Damage to the insulation may not cause disruptions until several weeks or months later. To avoid this,

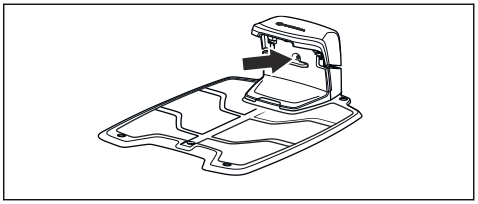
always select the maximum cutting height the first weeks after installation and then lower the height one step at a time every second week until the desired cutting height has been reached.

A defective splicing of the loop wire can also lead to disruptions several weeks after the splice was done. A faulty splice can, for example, be the result of the coupler not being pressed together hard enough with a pair of pliers, or that a coupler of lower quality than the original coupler has been used. Please first check all known splices before further troubleshooting is done.

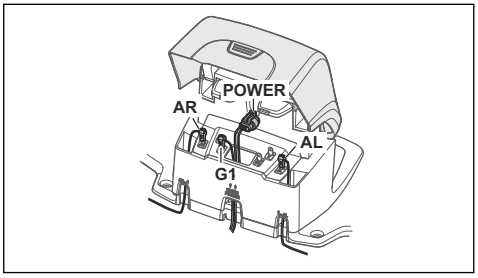
A wire break can be located by gradually halving the distance of the loop where the break may have occurred until there is only a very short section of the wire left.

The following method does not work if *ECO mode* is activated. Make sure first that *ECO mode* is switched off. Refer to *ECO mode on page 28*.

1. Check that the indicator lamp in the charging station flashes blue, which indicates a break in the boundary loop. Refer to *Indicator lamp in the charging station on page 43*.



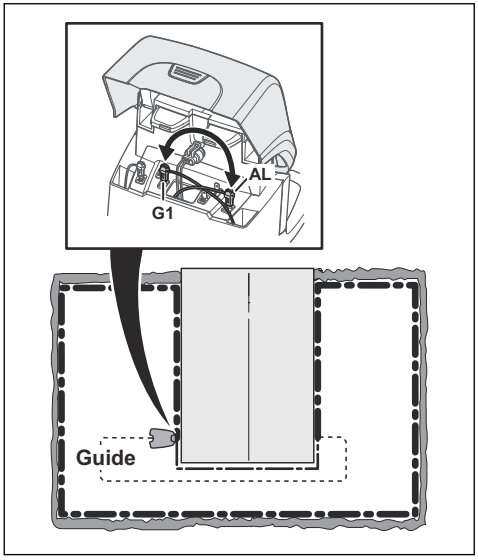
2. Check that the boundary wire connections to the charging station are properly connected and not damaged. Check that the indicator lamp in the charging station is still flashing blue.



3. Switch the connections between the guide wire and the boundary wire in the charging station.

   Start by switching connection AL and GUIDE.

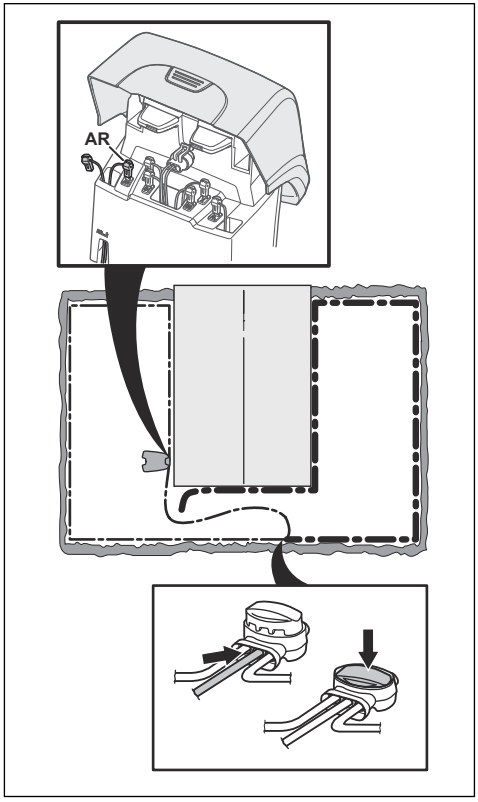
   If the indicator lamp has a solid green light, then the break is somewhere on the boundary wire between AL and the point where the guide wire is connected to the boundary wire (thick black line in the illustration).



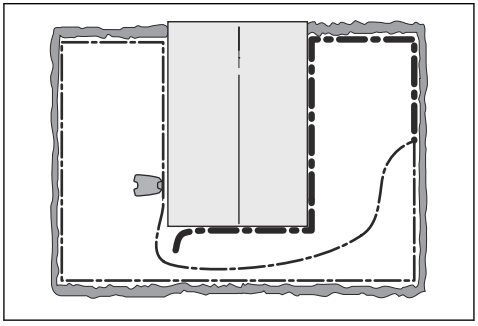
   To rectify the fault you will need boundary wire, connector(s) and coupler(s):

   a) If the suspected boundary wire is short then it is easiest to exchange all of the boundary wire between AL and the point where the guide wire is connected to the boundary wire (thick black line).

   b) If the suspected boundary wire is long (thick black line) then do as follows: Put AL and GUIDE back to their original positions. Then disconnect AR. Connect a new loop wire to AR. Connect the other end of this new loop wire at the middle of the suspected wire section.

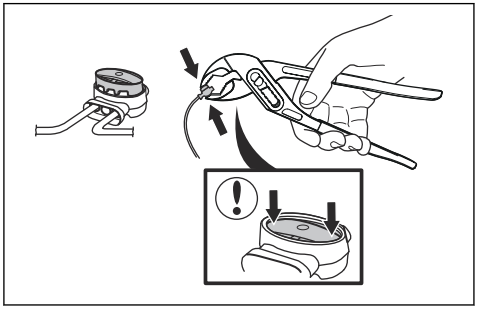


If the indicator lamp now is green, then the break is somewhere in the wire between the disconnected end to the point where the new wire is connected (thick black line below). In that case, move the connection for the new wire closer to the disconnected end (roughly at the middle of the suspected wire section) and check again if the indicator lamp is green.



Continue until only a very short section of the wire remains which is the difference between a solid green light and a flashing blue light. Then follow instruction in step 5 below.

4. If indicator lamp still flashes blue in step 3 above: Put AL and GUIDE back in their original positions. Then switch AR and GUIDE. If indicator lamp now is lit with a solid green light then disconnect AL and connect a new boundary wire to AL. Connect the other end of this new wire at the middle of the suspected wire section. Follow the same approach as in 3a) and 3b) above.
5. When the break is found, the damaged section must be replaced with a new wire. Always use original couplers.



7 Transportation, storage and disposal

7.1 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.

7.2 Storage

- Fully charge the product. Refer to *To charge the battery on page 33*.
- Switch off the product. Refer to *To switch off the product on page 32*.
- Clean the product. Refer to *Clean the product on page 34*.
- Keep the product in a dry, frost free space.
- Keep the product with all wheels on level ground during storage, or use a wall hanger.
- If you keep the charging station indoors, disconnect and remove the power supply and all the connectors from the charging station. Put the end of each connector wire in a connector protection box.

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

- Contact GARDENA sales representative about what accessories are available for your product.

7.3 Disposal

- Obey the local recycling requirements and applicable regulations.
- For questions about how to remove the battery, refer to *To replace the battery on page 36*.

8.1 Technical data

Data	SILENO+: R160Li, R160LiC, R200Li, R200LiC
Dimensions	
Length, cm / in.	63 / 24.8
Width, cm / in.	51 / 20.1
Height, cm / in.	25 / 9.8
Weight, kg / lb	9.8 / 21.6

Electrical system	SILENO+: R160Li, R160LiC, R200Li, R200LiC
Battery, Lithium-Ion 18 V/2.1 Ah Art.No	584 85 28-02
Battery, Lithium-Ion 18 V/2.0 Ah Art.No	584 85 28-03
Battery, Lithium-Ion 18.25 V/2.0 Ah Art.No	584 85 28-04
Power supply (28V DC), V AC	100-240
Low voltage cable length, m / ft.	10 / 33
Mean energy consumption at maximum use	10 kWh/month in a 2000 m^2 work area
Charge current, A DC	1.3
Type of Power Supply Unit	FW7312, ADP-40BR
Average mowing time, min	65
Average charging time, min	60

Boundary wire antenna	SILENO+: R160Li, R160LiC, R200Li, R200LiC
Operating Frequency Band, Hz	300-80000
Maximum Radio-frequency power[6], mW @60m	<25

[6] Maximum active output power to antennas in the frequency band in which the radio equipment operates.

Noise emissions measured in the environment as sound power[7]	SILENO+: R160Li, R160LiC, R200Li, R200LiC
Measured sound power noise level, dB (A)	58
Guaranteed sound power noise level, dB (A)	60
Sound pressure noise level at the operator's ear[8], dB (A)	47

The noise emission declarations conforms to EN 50636-2-107:2015

Mowing	SILENO+: R160Li, R160LiC, R200Li, R200LiC
Cutting system	3 pivoted cutting blades
Blade motor speed, rpm	2300
Power consumption during cutting, W +/- 20 %	25
Cutting height, cm / in.	2-6 / 0.8-2.4
Cutting width, cm / in.	22 / 8.7
Narrowest possible passage, cm / in.	60 / 24
Maximum slope for cutting area, %	35
Maximum slope for boundary wire, %	15
Maximum length boundary wire, m / ft.	800 / 2600
Maximum length guide loop[9], m / ft.	400 / 1300

IP-classification	SILENO+: R160Li, R160LiC, R200Li, R200LiC
Product	IPX4
Charging station	IPX1
Power supply	IPX4

Internal SRD (short range device)	R160Li, R200Li	R160LiC, R200LiC
Operating frequency band, MHz	-	863-870
Maximum transmitted power, dBm	-	25
Free field radio range, approx. m	-	100

[7] Noise emissions in the environment measured as sound power (L_{WA}) in conformity with EC directive 2000/14/EC and New South Wales legislation (Protection of the Environment Operations Regulation 2017, Noise Control). The guaranteed sound power level includes variation in production as well as variation from the test code with 1-3 dB(A). Noise emission data can be found on the rating label and in the Technical data chapter.

[8] Sound pressure noise uncertainties K_{pA}, 2-4 dB (A)

[9] A guide loop is the connection between the guide wire, boundary wire and the connection on the right connector on the charging station.

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 *Product overview on page 4*.

9 Warranty

9.1 Warranty terms

GARDENA warranty covers this product's functionality for a period of 2 years from date of purchase. The warranty covers serious faults relating to materials or manufacturing faults. Within the warranty period, we will replace the product or repair it at no charge if the following terms are met:

- The product and the charging station may only be used in compliance with the instructions in this Operator’s Manual. This manufacturer's warranty does not affect warranty entitlements against the dealer/ retailer.
- End-users or non-authorized third parties must not attempt to repair the product.

Examples of faults which are not included in the warranty:

- Damage caused by water seepage from using a high-pressure washer, or from being submerged under water, for example when heavy rain forms pools of water.
- Damage caused by lightning.
- Damage caused by improper battery storage or battery handling.
- Damage caused by using a battery that is not a GARDENA original battery.
- Damage caused by not using GARDENA original spare parts and accessories, such as blades and installation material.
- Damage to the loop wire.
- Damage caused by non-authorized changing or tampering with the product or its power supply.

The blades and wheels are seen as disposable and are not covered by the warranty.

If an error occurs with your GARDENA product, please contact GARDENA customer service for further instructions. Please have the receipt and the product’s serial number at hand when contacting GARDENA customer service.

10 EC Declaration of Conformity

10.1 EC Declaration of Conformity

Husqvarna AB, SE-561 82 Huskvarna, Sweden, tel: +46-36-146500, declares that the robotic lawn mowers **GARDENA SILENO+**: **R160Li**, **R160LiC**, **R200Li** and **R200LiC** with serial numbers dating 2019 week 45 and onwards (the year and week is clearly stated on the rating plate, followed by the serial number), comply with the requirements of the COUNCIL'S DIRECTIVE:

- Directive "relating to machinery" **2006/42/EC**.
  - Particular requirements for robotic battery powered electrical lawnmowers **EN 50636-2-107: 2015**
  - Electromagnetic fields **EN 62233: 2008**.
- Directive on "restriction of use of certain hazardous substances" **2011/65/EU**.
  - The following standard is applied: **EN 50581:2012**
- Directive "relating to noise emissions from outdoor equipment" **2000/14/EC**. Refer to *Technical data on page 49* for information regarding noise emissions and the cutting width.

The notified body 0404, RISE SMP Svensk Maskinprovning AB, Box 7035, SE-750 07 Uppsala, Sweden, has issued a report regarding the assessment of conformity according to annex VI to the Council's Directive of May 8, 2000 "relating to noise emissions into the environment" 2000/14/EC. The certificate is numbered: 01/901/266 for R160Li, R160LiC, R200Li and R200LiC.

- Directive "relating to radio equipment" **2014/53/EU**. The following standards have been applied:
  - **ETSI EN 303 447** Draft V1.1.1
- Electromagnetic compatibility:
  - **ETSI EN 301 489-1** v2.2.0
- For smart SILENO+: R160LiC and R200LiC equipped with smart system device also:
  - **ETSI EN 301 489-3** v2.1.1
  - **ETSI EN 300 220-1** v3.1.1
  - **ETSI EN 300 220-2** v3.1.1

Huskvarna, 2019-11-01

Lars Roos

Global R&D Director, Electric category

(Authorized representative for Husqvarna AB and responsible for technical documentation.)

ORIGINAL INSTRUCTIONS
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