

POWERPLUS POWDPG6010 Robot Mower App



# POWERPLUS POWDPG6010 Robot Mower App Instruction Manual

[Home](#) » [POWERPLUS](#) » POWERPLUS POWDPG6010 Robot Mower App Instruction Manual 

## Contents

- [1 POWERPLUS POWDPG6010 Robot Mower App](#)
- [2 Product Information](#)
- [3 Product Usage Instructions](#)
- [4 INTENDED USE](#)
- [5 DESCRIPTION \(FIG. A, B & C\)](#)
- [6 PACKAGE CONTENT LIST](#)
- [7 EXPLANATION OF USED SYMBOLS](#)
- [8 SAFETY INSTRUCTIONS](#)
- [9 Preparation](#)
- [10 Operation](#)
- [11 Maintenance and storage](#)
- [12 SPECIAL SAFETY REGULATIONS FOR ROBOT MOWER](#)
- [13 STARTING UP](#)
- [14 OPERATION](#)
- [15 TECHNICAL DATA](#)
- [16 Cleaning](#)
- [17 Maintenance](#)
- [18 STORAGE](#)
- [19 TRANSPORT](#)
- [20 WARRANTY](#)
- [21 Documents / Resources](#)
  - [21.1 References](#)
- [22 Related Posts](#)

# POWERPLUS

**POWERPLUS POWDPG6010 Robot Mower App**



## Product Information

### Specifications

- Model: POWDPG6010
- Language: NL
- Product Type: Robot Lawn Mower

### Product Usage Instructions

#### 1. Proper Use

Ensure the product is used according to the guidelines provided in the manual.

#### 2. Description

Refer to Figures A, B & C for a visual description of the product components.

#### 3. Package Contents

Check that all items listed in the manual are present in the packaging.

#### 4. Symbol Explanation

Understand the symbols used in the manual for better comprehension.

### Safety Instructions

- **Training:** Ensure proper training before operating the machine.
- **Preparation:** Follow preparation steps before use.
- **General Use:** Guidelines for general operation.
- **Automatic Operation:** Additional steps for automatic mode.
- **Maintenance and Storage:** Tips for maintenance and storage.
- **Recommendations:** Additional recommendations for safe use.

## **Special Safety Instructions for the Robot Mower:**

Specific safety warnings related to the robot mower.

### **Getting Started**

- **Lawn Condition:** Assess the state of your lawn.
- **Operation:**
  - **Random Mowing:** Description of random mowing.
  - **Spiral and Spot Mowing:** Instructions for Bluetooth-connected mowing modes.
  - **Multi-zone Management:** Guidance on managing multiple zones.
- **Sensors:**
  - **Lift Sensor**
  - **Tilt Sensor**
  - **Obstacle Sensor**
  - **Rain Sensor**
- **Preparations:** Steps to take before starting the mower.

### **Frequently Asked Questions (FAQ)**

#### **Q: How do I reset the robot mower?**

A: To reset the robot mower, follow these steps:

1. Turn off the mower and remove any obstructions.
2. Press and hold the reset button for 10 seconds.
3. Release the button when you see the lights flashing.
4. Your robot mower is now reset and ready for use.

#### **Q: Can the robot mower be used in the rain?**

A: It is not recommended to use the robot mower in rainy conditions as it may affect its performance and safety features. Always operate the mower in suitable weather conditions.

## **POWDPG6010**

ROBOT MOWER BRUSHLESS 20V – EXCL. BATTERY

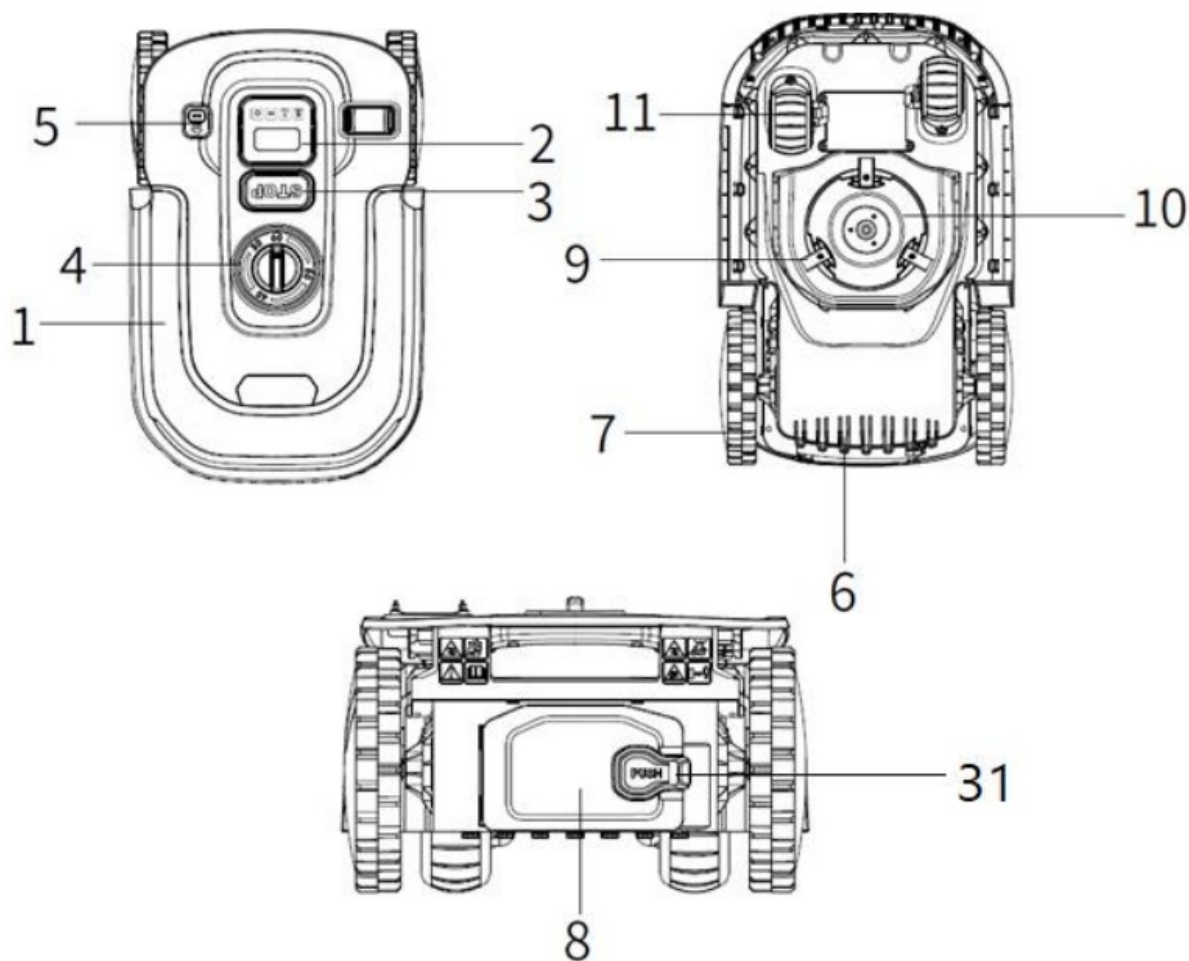
POWDPG6010

### **INTENDED USE**

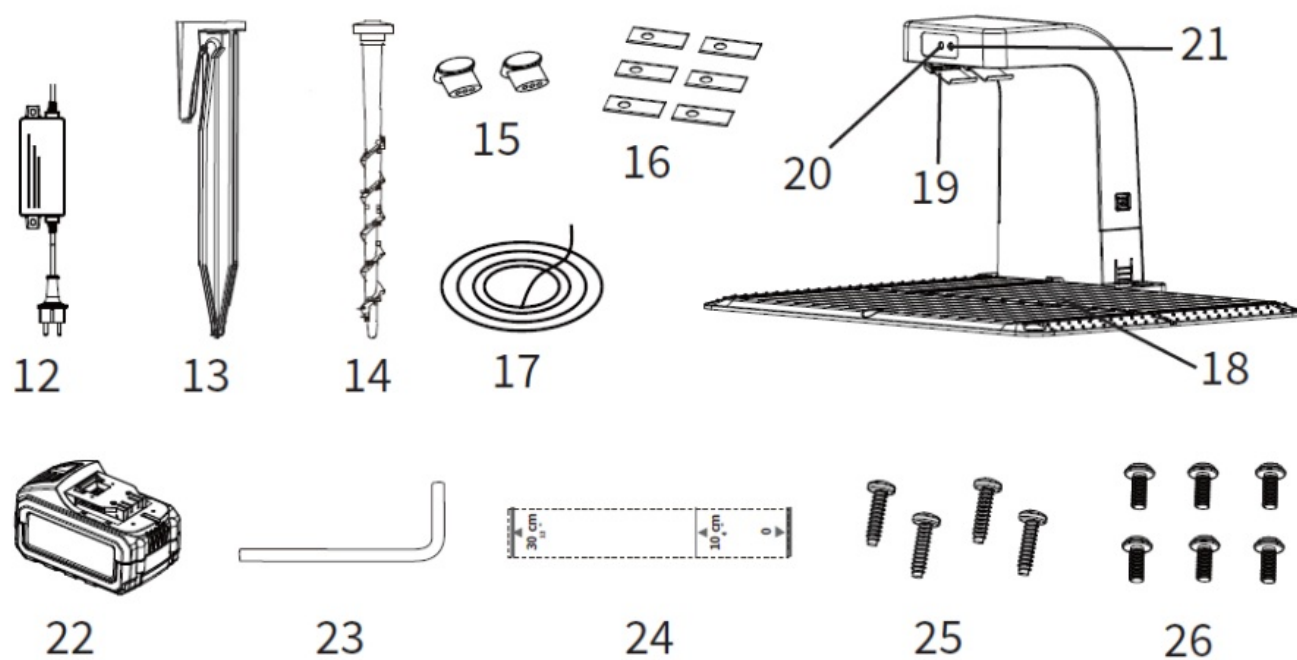
The robot mower is intended for private use, i.e. for use in home and garden environments and only for mowing lawns. The equipment is allowed to be used only for its prescribed purpose. Any other use is deemed to be a case of misuse. The user/operator and not the manufacturer will be liable for any damage or injuries of any kind resulting from such misuse. Not suitable for professional use.

**WARNING!** For your own safety, read this manual and the general safety instructions carefully before using the appliance. Your power tool should only be given to other users together with these instructions.

### **DESCRIPTION (FIG. A, B & C)**



**Fig. 1**



**Fig. 2**

1. Robot mower
2. LED display + control panel
3. STOP button

4. Mowing height adjustment dial
5. Rain sensor
6. Carrying handle
7. Rear wheel
8. Battery slot cover
9. Blade
10. Blade disc
11. Front wheel
12. Power supply
13. fixing peg for boundary wire
14. fixing peg for charging station
15. Wire connector
16. Spare blades + screw (26)
17. boundary wire
18. Charging station
  1. 18a. Wire groove
  2. 18b. Charging station bottom plate 18c. Wire exit
  3. 18d. Charging station tower
19. Contact plate
20. LED indicator (power and battery charging status)
21. LED indicator – boundary wire status
22. Battery (NOT INCLUDED)
23. Hex key
24. paper ruler
25. self tapping screw – charging station)
26. Screw
27. POWER button
28. OK button
29. START button
30. HOME button
31. Unlock button
32. Wire input
33. Wire input cover

## **PACKAGE CONTENT LIST**

- Remove all packing materials.
- Remove remaining packaging and transit supports (if existing).
- Check the completeness of the packing content.
- Check the appliance, the power cord, the power plug and all accessories for transportation damages.
- Keep the packaging materials as long as possible till the end of the warranty period. Dispose it into your local waste disposal system afterwards.









**WARNING:** Packing materials are no toys! Children must not play with plastic bags! Danger of suffocation!

## POWDPG6010

- 1x robot mower
- 1x charging station
- 1x power supply
- 6x blade
- 3x blade (mounted) + screws
- 6x fixing peg for charging station
- 4x self tapping screw
- 200x fixing peg for boundary wire 1x boundary wire (160m-18AWG)
- 2x wire connector
- 1x hex key
- 1x manual
- 2x paper ruler

When parts are missing or damaged, please contact your dealer.

## EXPLANATION OF USED SYMBOLS

	Read manual before use.		Always keep a safe distance from the machine when operating. Never use the machine when persons, children or pets are in the cutting area.
	Always remove the disabling device (On/Off switch) before working on or lifting the machine.		Do not sit or ride on the machine.
	The product complies with the applicable European directives and an evaluation method of conformity for these directives was done.		At the end of its lifecycle, the device must not be disposed of with normal household waste. Ensure that the device is disposed of in accordance with local regulations.
	Wear gloves		Guaranteed sound power level.

## SAFETY INSTRUCTIONS

**IMPORTANT:** READ CAREFULLY BEFORE USE! KEEP FOR FUTURE REFERENCE!

## **Training**

- Read the instructions carefully. Be familiar with the controls and the proper use of the machine.
- Never allow people unfamiliar with these instructions or children to use the machine. Local regulations may restrict the age of the operator.
- The operator or user is responsible for accidents or hazards occurring to other people or their property.
- Never allow children, persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge or people unfamiliar with these instructions to use the machine, local regulations may restrict the age of the operator.

## **Preparation**

- First mow the grass as short as possible and check the lawn for bumps, and equalize it as much as possible. The robot mower will not be able to get past large bumps.
- Ensure the correct installation of the charging station and boundary wire as instructed.
- Periodically inspect the area where the machine is to be used and remove all stones, sticks, wires, bones, and other foreign objects. Failure to do so can lead to the mower getting stuck / damaged!
- Periodically visually inspect to see that the blades, blade bolts and cutter assembly are not worn or damaged. Replace worn or damaged blades and bolts in sets to preserve balance.
- On multi-spindle machines, take care as rotating one blade can cause other blades to rotate.

## **Operation**

### **General**

- Never operate the machine with defective guards, or without safety devices.
- Do not put hands or feet near or under rotating parts.
- Never pick up or carry an machine while the motor is running.
- Remove (or Operate) the on/off switch from the machine
  - before clearing a blockage;
  - before checking, cleaning or working on the machine;
  - after striking a foreign object to inspect the machine for damage;
  - if the machine starts to vibrate abnormally, and to check for damage before restarting.

### **Additionally when the machine is operating automatically**

Do not leave the machine to operate unattended if you know that there are pets, children or people in the vicinity.

## **Maintenance and storage**

- Keep all nuts, bolts, and screws tight to be sure the machine is in safe working condition.
- Replace worn or damaged parts for safety.
- Ensure that only replacement cutting means of the right type are used.
- Ensure that batteries are charged using the correct charger recommended by the manufacturer. 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/neutralizing agent, seek medical help if it comes into

contact with the eyes, etc.

- Servicing of the machine should be according to manufacturers' instructions.

## **Recommendations**

- Connect the machine and/or its peripherals only to a supply circuit protected by a residual current device (RCD) with a tripping current of not more than 30 mA.
- Avoid using the machine and its peripherals in bad weather conditions especially when there is a risk of lightning.
- Read all safety warnings and all instructions. Failure to follow all warnings and instructions may result in electric shock, fire and/or serious injury. Save all instructions for future reference. The term "power tool" in the warnings refers to your mains operated (corded) power tool or battery operated (cordless) power tool.

## **SPECIAL SAFETY REGULATIONS FOR ROBOT MOWER**

### **Robot mower safety warning**

- Never allow people unfamiliar with these instructions or children to use the machine.
- The use of the appliance by persons (including children) who have limited physical, sensory or mental abilities or lack the necessary experience and knowledge is prohibited unless they have been supervised at work by a person responsible for their safety and have received prior training in the use of the appliance. Do not allow children to play with the appliance. The appliance is not a toy.
- Wear long pants and sturdy shoes when nearby or inside the work area while the lawn mower is operating.
- Do not ride on the lawn mower, push the lawn mower, or use it for anything other than its intended purpose, otherwise you or someone else may be injured.
- Do not use automatic lawn watering systems while the lawn mower is operating, because the watering equipment may become damaged and the likelihood of water penetrating into the lawn mower is greatly increased. Adjust the work time of the lawn mower so that the watering systems and the lawn mower do not operate at the same time.
- Ensure the correct installation of the charging station and boundary wire as instructed in this manual.
- Periodically inspect the area where the machine is to be used and remove all stones, sticks, wires, branches and other foreign objects.

**WARNING:** The machine can be dangerous if used improperly.

**WARNING:** When carrying the lawn mower, make sure to carry it by the designed areas. If you carrying the lawn mower in any other way, you risk injury from the blades or charging socket of the lawn mower.

## **STARTING UP**

Read the operating instructions fully before you start work on the installation of the robot mower. The quality of the installation work affects how effectively the robot mower works later on.

### **Lawn conditions**

To guarantee optimal operation of your robot mower, you must always ensure that all areas up to at least 20 cm on the outside of the boundary cable and the charging station are free of grass and obstacles.

Muddy/soggy lawns can cause slipping of rear traction wheels who might damage the lawn, allow the lawn to dry



sufficiently, possibly adjust the mowing schedule during longer periods of rain.

## How it works

### Random mowing

The robot mower chooses its direction on a random basis. The robot mower works its way over every area which is enclosed within the boundary wire (17), so that the entire garden gets mowed. Whenever the robot mower detects a correctly installed boundary wire (17), the robot mower turns and drives in a different direction within the area.

All zones that you wish to protect within the lawn area – e.g. garden ponds, trees, furniture or lower beds – must be cordoned off by the boundary wire (17). The boundary wire (17) must form a closed circuit.

If the robot mower bumps into an obstacle within the mowing area, it reverses and then continues mowing in a different direction.

- **Spiral and spot cut (Only if connected with Bluetooth)**

Spot mowing mode can be used when you have an area of tall grass to mow. Manually place the robot mower in the center of the area and activate the spot mowing mode, after which the mower will cut the grass in a systematic spiral model.

- **Multi-zone management**

With the ability to start mowing from the charging station at no more than 5 different remote locations along the boundary line, it is ensured that each zone can be cut by the mower to adapt to multiple zone scenarios. Set-up and further instructions can be done via the APP.

## Sensors

The robot mower is equipped with a number of safety sensors.

1. **Lift sensor:**

If the robot mower is lifted both fully from the ground and when it is lifted from only a single point causing it to be tilted, the rotation of the blades (9) are stopped.

2. **Tilt sensor:**

If the robot mower tilts severely in any direction, the robot mower and the rotation of the blades (9) are stopped immediately.

3. **Obstruction sensor:**

The robot mower is able to detect obstacles in its path. If the robot mower collides with an obstacle, the robot mower will be stopped immediately and the mower will reverse away from the obstacle.

4. **Rain sensor:**

The robot mower is equipped with a rain sensor (5) to prevent the robot mower from operating in the rain. The robot mower returns to the charging station (18) when it detects rain and is completely recharged there.

In the factory state, this sensor is deactivated and can be activated via the APP including delay times.

**Warning!** Do not short-circuit the rain sensor with metal or any other conductive material.

This will impede the correct operation of the robot mower.

## Preparations

First, draw a sketch of your lawn. Include obstacles in your sketch and draw up a plan for how you intend to protect them. This will make it easier to find a good position for the charging station (18) and to lay the boundary wire (17) around bushes, lower beds, etc. If the grass is taller than 60 mm, it has to be shortened first to avoid exposing the

robot mower to excessive load and adversely affecting its operating efficiency. We recommend to cut the grass to a height of 40 mm with a conventional lawnmower. Remove all loose objects from the lawn which could get damaged by the robot mower or damage the robot mower itself.

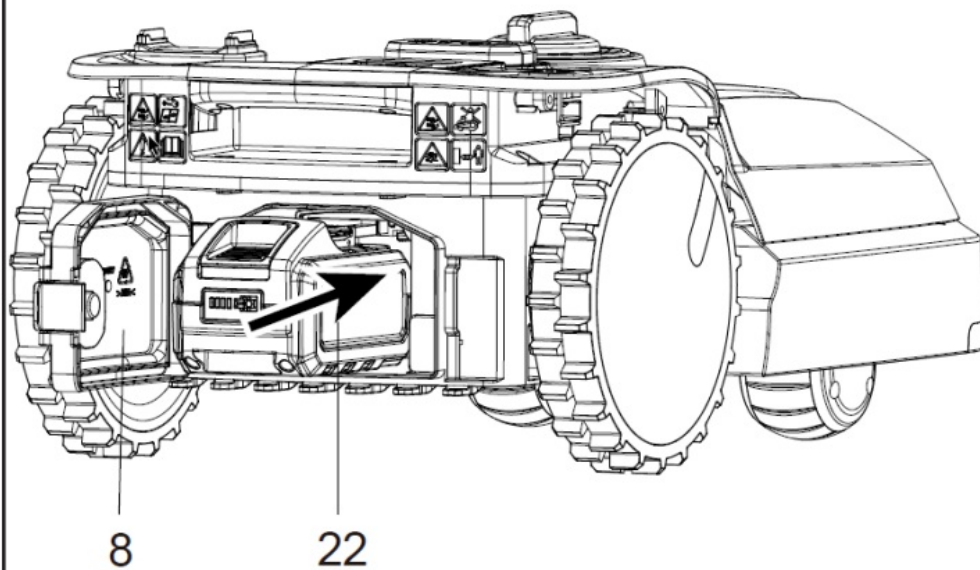
Have the following tools ready: A hammer, tongs, a wire stripper and a spirit level (optional).

### Fitting the battery

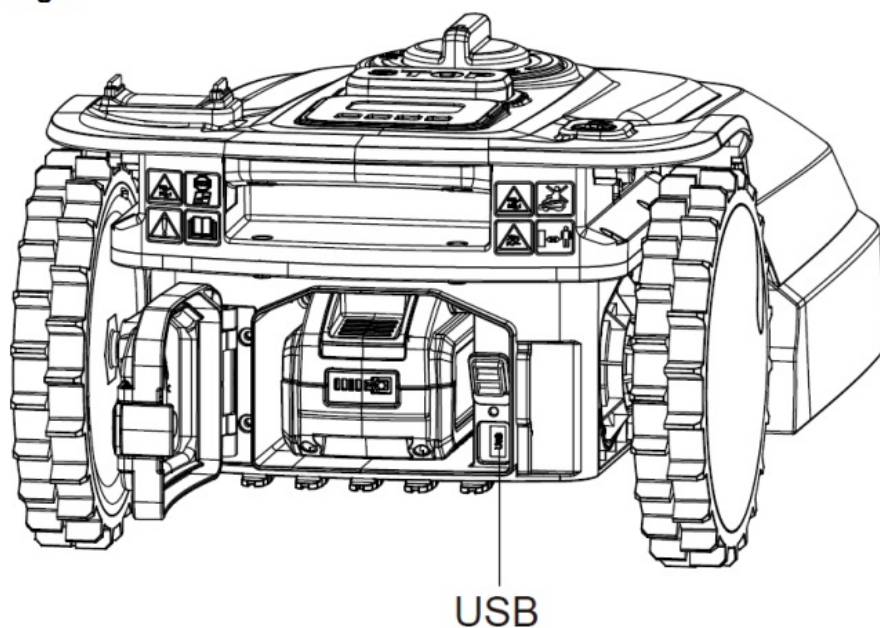
Open the Battery slot cover (8) by pulling the Unlock button (31). Press the battery pack release button and push the rechargeable battery (22) into the mount provided. Close the Battery slot cover (8) and make sure that it latches in place correctly

(Fig. 8 & Fig. 9).

**Fig. 8**



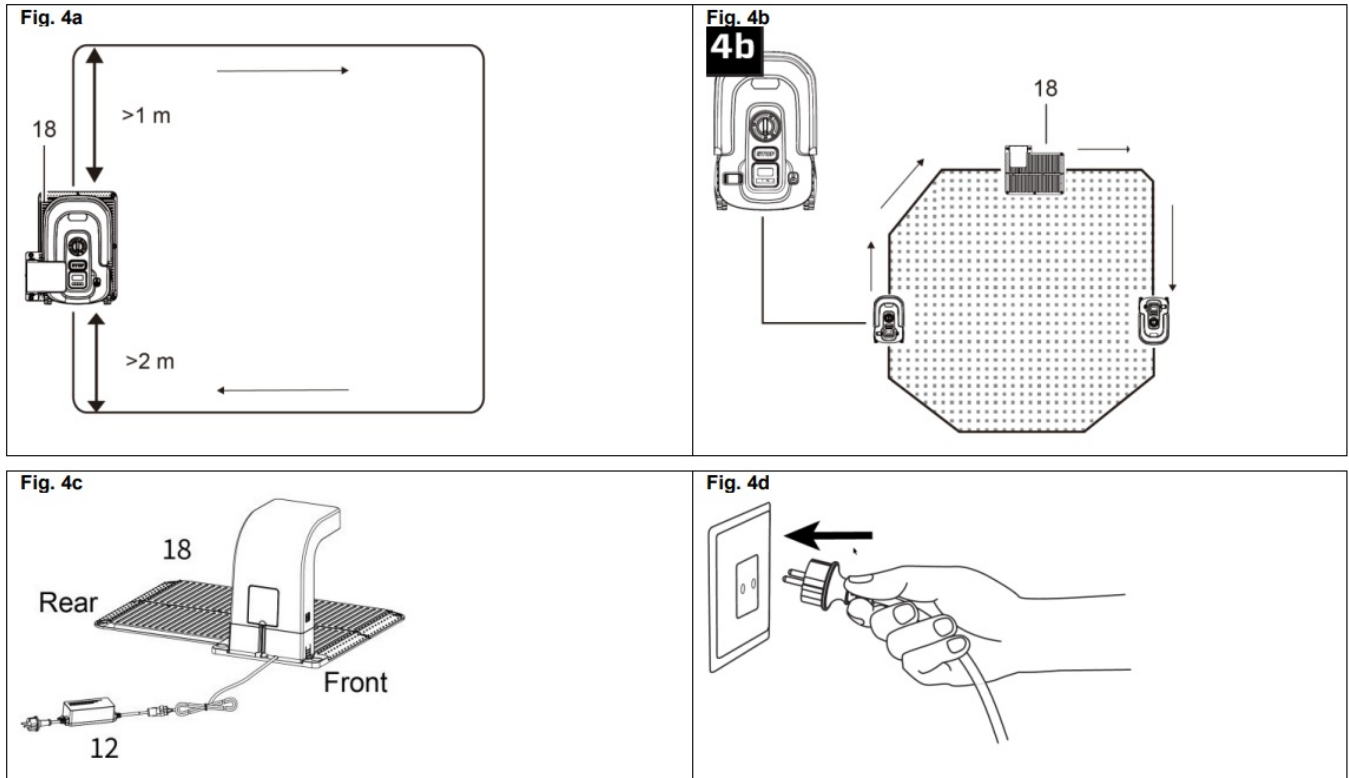
**Fig. 9**



### Charging station

### Position of the charging station

Determine the best position for the charging station (18) first. An outdoor socket outlet is required, which supplies a permanent supply of electricity so that the robot mower works at all times. The charging station (18) must be placed on a flat area at the level of the turf. Make sure that the area is flat and dry. Select if possible a position which is in the shade, because it is best if the rechargeable battery (22) is charged in a cool area. Also note that the boundary wire has to be laid in a straight line for at least 2m in front of the charging station (18) (Fig. 4a).



**Remark:** The total length of the power cable of power supply (12) is approximately 10.2m.

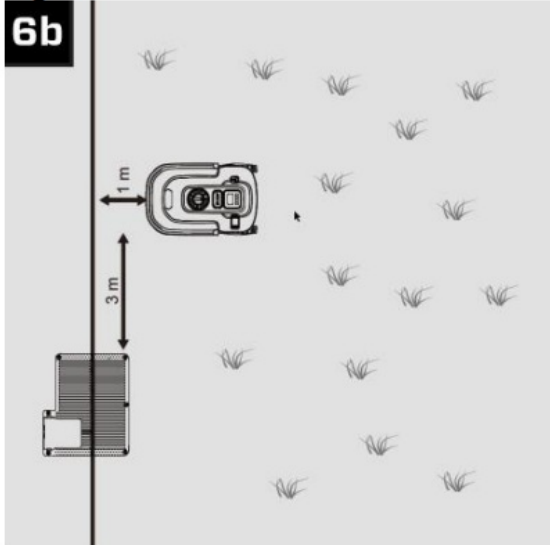
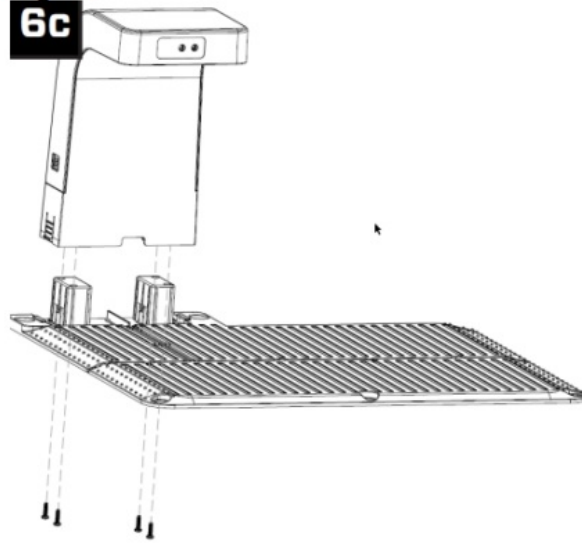
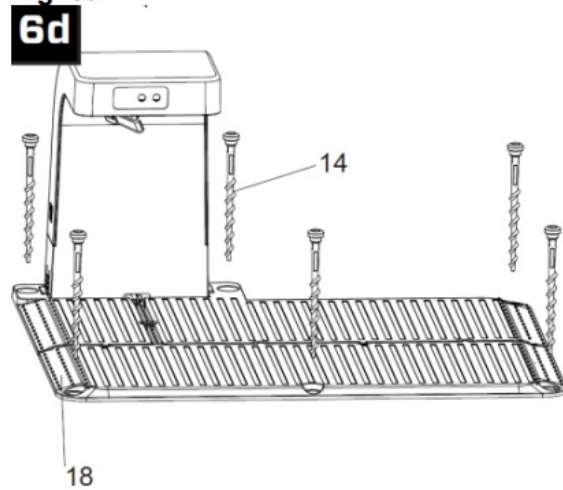
### Localization of the charging station

When the rechargeable battery (22) is almost empty, the robot mower returns to the charging station (18) by following the boundary wire (17) in a clockwise direction until it reaches the charging station (18). Make sure, therefore, that the charging station (18) faces in the right direction when you position it (Fig. 4b).

### Assembly the charging station

Connect the charging station's tower (18d) to the bottom plate (18b) by using four self-tapping screws (25) with a screwdriver (Fig. 6c).

Once the robot mower is working properly and a suitable position for the charging station (18) has been found, the charging station (18) must be fixed in place using the fixing pegs (14). Use the hex key (23) to secure the fixing peg (14) fully in the ground (Fig. 6d).

**Fig. 6b****6b****Fig. 6c****6c****Fig. 6d****6d**

### Information about charging

The robot mower returns to the charging station (18) in each of the following situations:

- You send the robot mower back manually (via the control panel or APP).
- The battery charge level drops below 36%.
- The end of the work time has been reached.
- The rain sensor has tripped .
- The robot mower has become overheated or is under low temperature.

In these cases the robot mower automatically runs along the boundary wire (17) until it reaches the charging station (18).

When the robot mower wants to return to the charging station (18), it will first look for the boundary wire (17) and then move along the boundary wire (17) in clockwise direction, till it docked in the charging station and start charging.

Once the battery (22) has been fully charged, the robot mower resumes operation or remains in the charging station (18) until the next work time window. Operation resumes in accordance with the settings once the temperature has dropped again. If the rechargeable battery (22) becomes empty before the robot mower has returned to the charging station (18), it will not be possible for the robot mower to start up again. Bring the robot mower back to the charging station (18). The robot mower will be charged up automatically.

## Boundary wire

**IMPORTANT!** Severed boundary wires and consequential damages are not covered by the warranty!

### Laying the boundary wire

The boundary wire (17) can be laid both on the ground and in the ground. The fixing pegs (13) can break and might damage the boundary wire cable when hammered in if the ground is hard or dry. Water the lawn before installing the boundary wire if the ground is very dry.

### Installation on the ground

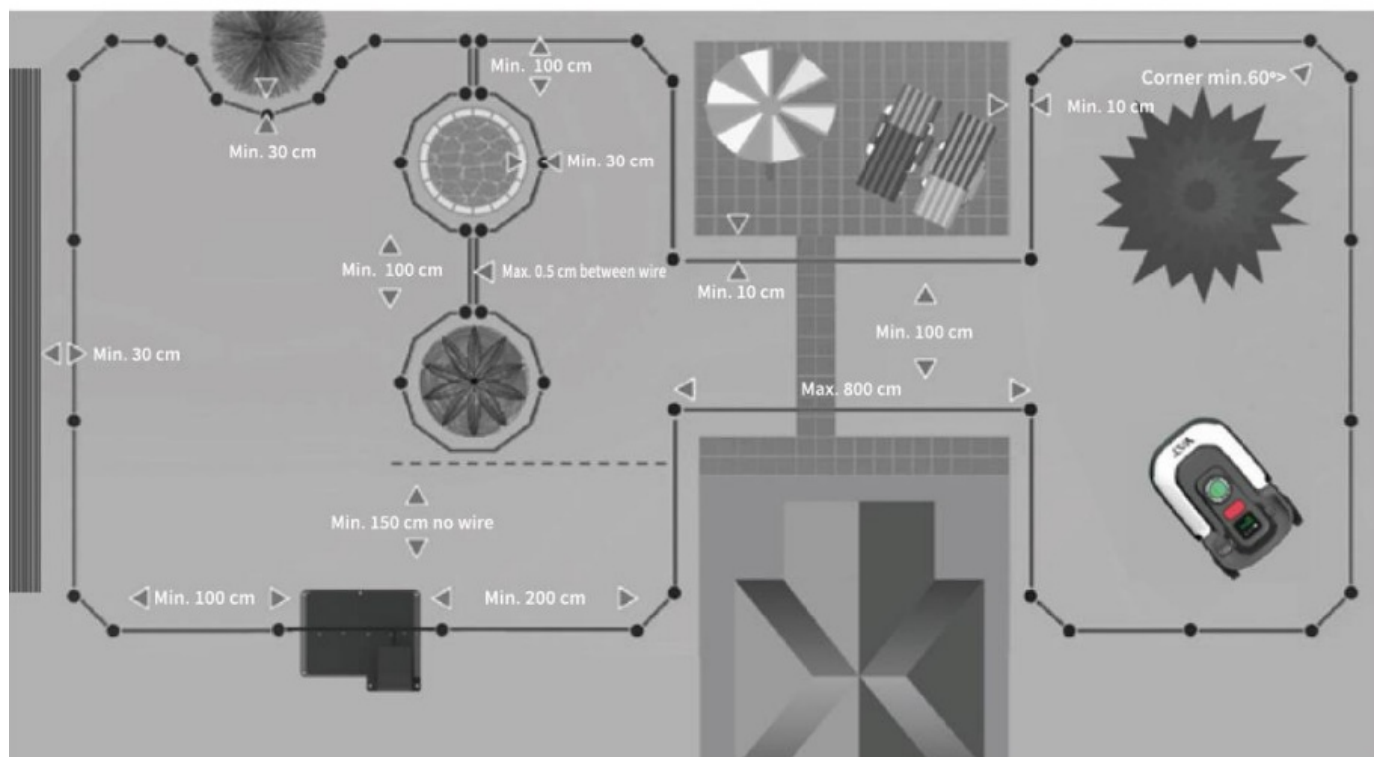
Lay the boundary wire (17) securely on the ground and fasten it with the supplied fixing pegs (13) if you do not intend to scarify or aerate the lawn any time later. You can still adjust the position of the boundary wire again during the first few weeks of using the robot mower. After a certain time, however, the boundary wire will become overgrown with grass and no longer visible. Install the boundary wire with a maximum distance of 1 m between fixing pegs (13). Reduce the distance between the fixing pegs on uneven areas of the lawn. Avoid situations in which the wire is not actually on the ground. Make sure that the boundary wire cannot be severed by the robot mower.

### Installation in the ground

Bury the boundary wire in the ground at a depth of up to 5 cm. This will prevent the boundary wire (17) getting damaged during scarifying or aeration, for example.

### Narrow corridor

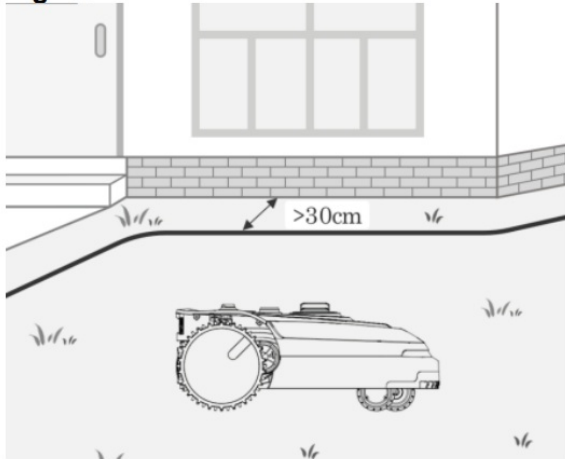
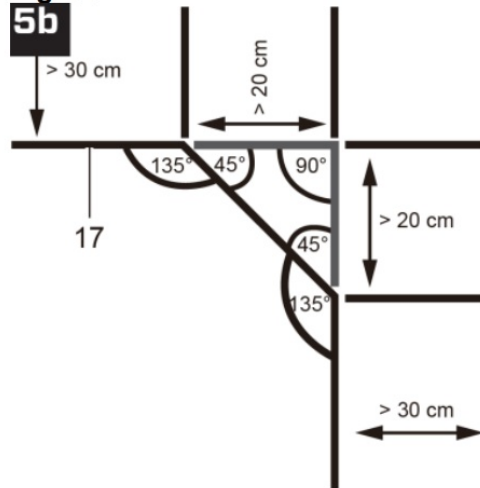
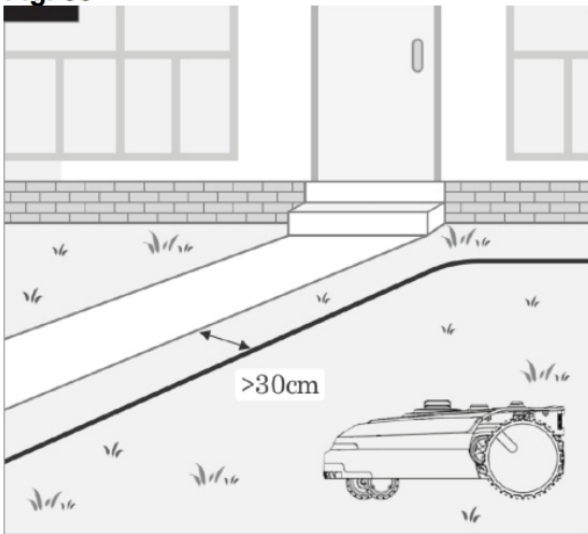
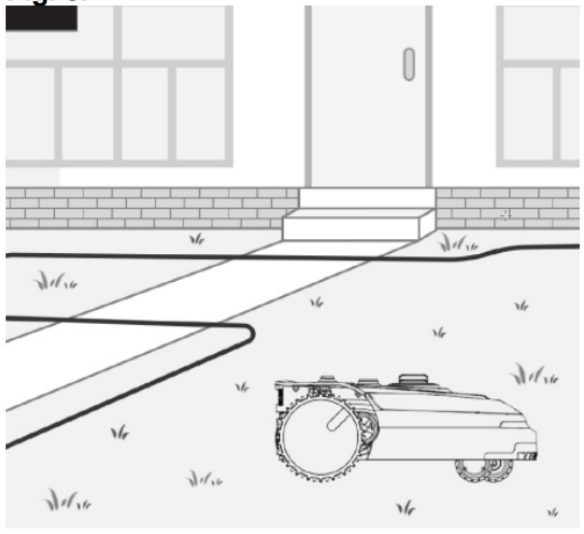
If the narrowed passage is in front of an uneven surface (e.g. gravel, tree bark etc) or steps, your robot mower can operate there as long as the passage has a minimum width of 1.6 m (100 cm between boundary wires). If the narrowed passage is at the same level (e.g. path, terrace, etc.), the passage must have a minimum width of 1.2 m (100 cm between boundary wires) and a maximum length of 8 m (Fig. 3).



**Fig. 3**

### Distance to the garden boundary

When the robot mower approaches a boundary wire (17), the boundary wire is detected by the sensors in the front of the robot mower. Before the robot mower turns about, however, it runs over the boundary wire (17) by up to 30 cm. Please bear this in mind when planning your mowing area (Fig. 5a).

**Fig. 5a****Fig. 5b****Fig. 5e****Fig. 5f****Laying the wire in corners**

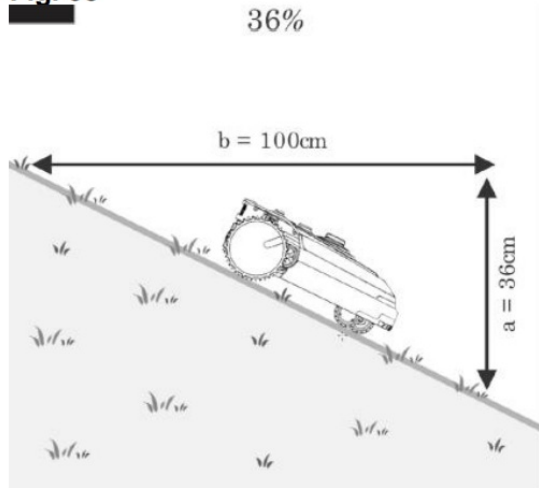
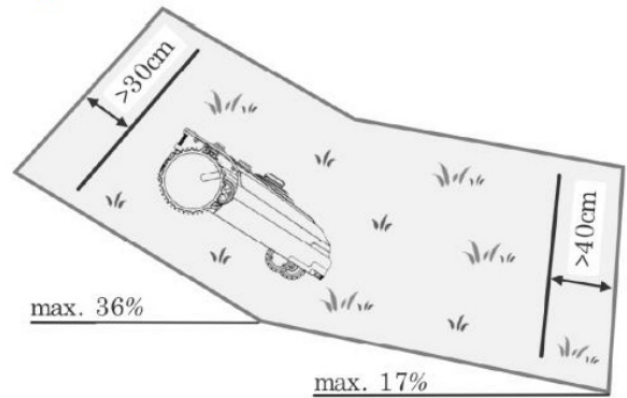
Avoid laying the boundary wire (17) at a right angle (90°) in corners. To make sure that the robot mower does not run too far beyond the boundary wire (17), lay the boundary wire (17) as shown in (Fig. 5b).

**Calculating the gradient of the lawn**

The robot mower can cope with gradients of up to 36%. You therefore need to avoid steeper gradients. The gradient can be determined on the basis of the height divided by the distance (Fig. 5c).

Example:  $a/b = 36 \text{ cm}/100 \text{ cm} = 36\%$



**Fig. 5c****Fig. 5d**

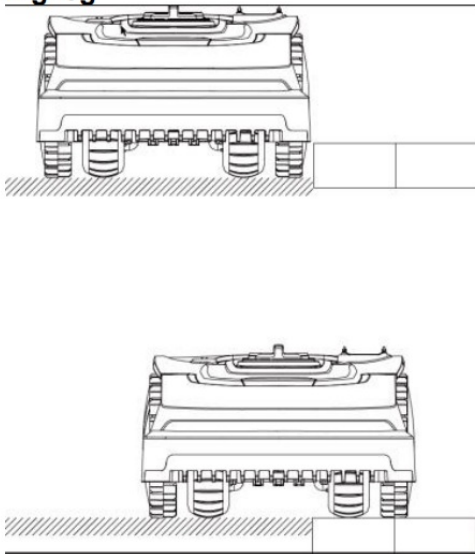
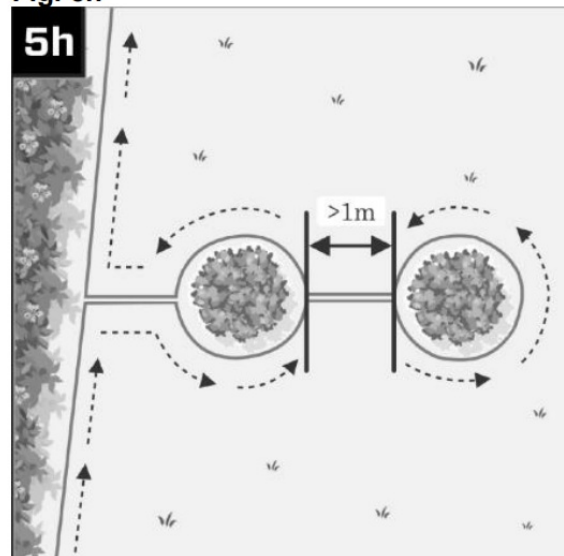
### Installation of the boundary wire on gradients

The robot mower can slip on gradients, especially if the grass is wet, and run over the boundary wire (17) as a result. It is therefore recommendable to pay attention to the following points (Fig. 5d):

- In the area at the top of a slope, the boundary wire (17) should not be installed on gradients over 36%. Make sure that a distance of 30 cm from obstacles and the edges of the lawn is maintained.
- In the area at the bottom of a slope, the boundary wire (17) should not be installed on gradients over 17%. Make sure that a distance of 40 cm from obstacles and the edges of the lawn is maintained.

### Driveways and paved paths

- Cordon off raised pathways, areas surfaced with gravel or containing bark mulch, lower lying beds or other similar areas. Lay the boundary wire (17) at a distance of at least 30 cm away (Fig. 5e & Fig. 5f).
- Paths which are flush with the turf do not need to be cordoned off, because the robot mower can simply run over them. You can also lay the boundary wire (17) over paths (Fig. 5f & Fig. 5g).

**Fig. 5g****Fig. 5h**

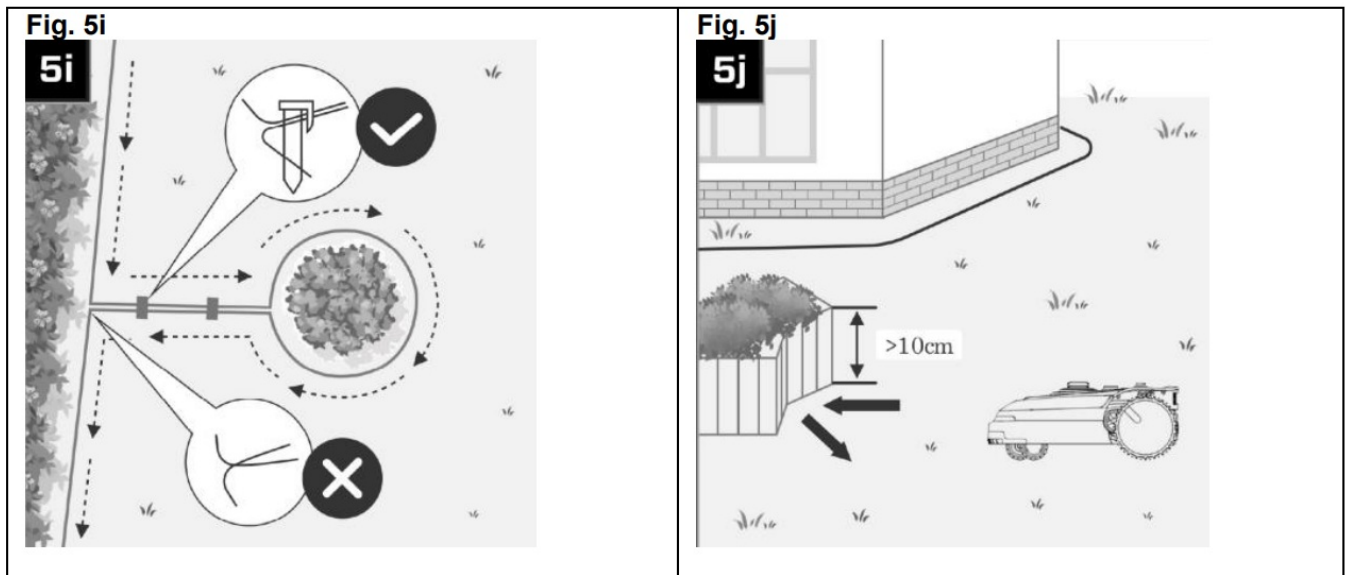
### Perimeter islands

To protect obstacles in the mowing area, create perimeter islands. This will avoid the collisions with delicate objects, garden ponds, trees, furniture, lower beds, etc (Fig. 5h & Fig. 5i).

- Roll out the boundary wire (17) from the edges to the objects you want to protect.
- Secure the boundary wire (17) with fixing pegs (13) in a clockwise direction around the object you want to protect.
- Completely enclose the perimeter islands and then run the boundary wire (17) back to the point at which you left the edge of the lawn.
- Perimeter islands need to be at least 1m apart. Alternatively, combine the objects to make them into a joint perimeter island (Fig. 5h).
- The boundary wires (17) to and from the perimeter island should be laid parallel and very close to one another.

**Caution!** Boundary wires (17) must not cross over!

You should therefore fasten both the parallel boundary wires(17) to the ground together using the same fixing peg (13) (Fig. 5i).



## POWDPG6010

The robot mower will run over the two parallel boundary wires (17) in the mowing area, but the robot mower will stop where single boundary wires (17) are laid.

## Obstacles

### Obstacles with a height over 10 cm (Fig. 5j)

Solid obstacles which are over 10 cm in height, e.g. trees, walls, fences, garden furniture, etc., are detected by the collision sensors. If the robot mower collides with an obstacle, it will stop, reverse and turn so that it can continue mowing in the other direction. However sometimes it might be advisable to protect them by a boundary wire island (this can be done also later after some mowing's). Soft, unstable and valuable obstacles need to be protected by a boundary wire island.

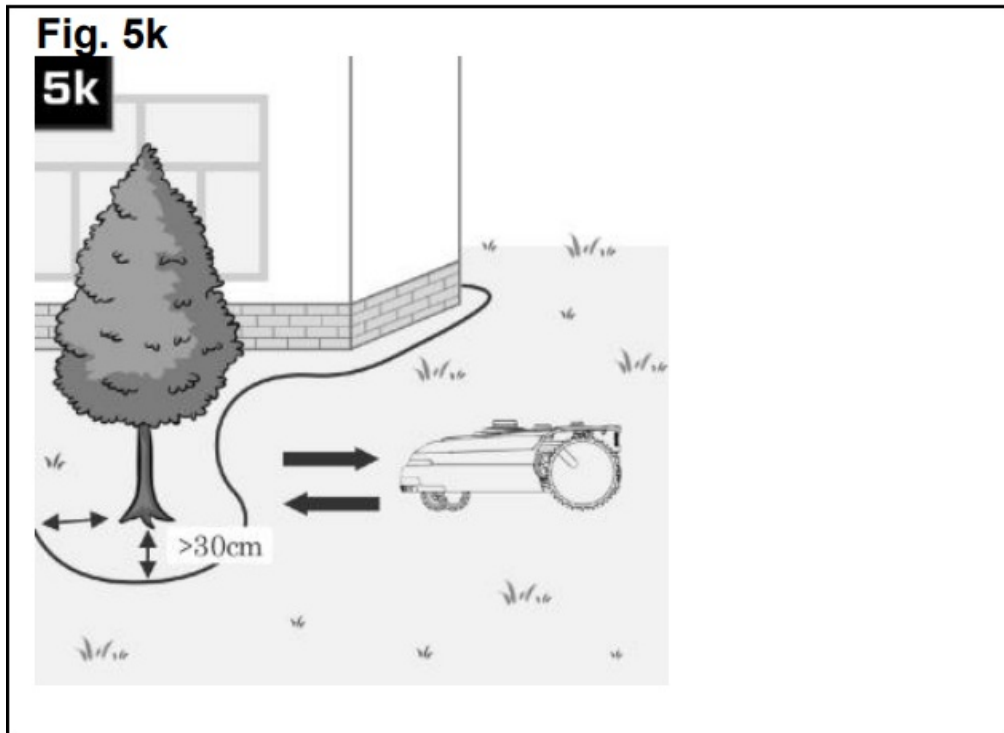
### Stones and low obstacles

Stones, rocks and low obstacles of less than 10 cm in the mowing area need to be protected by a boundary wire island, because otherwise the robot mower could run over them. If not, this could result in the robot mower getting damaged or blocked.

### Trees (Fig. 5k)

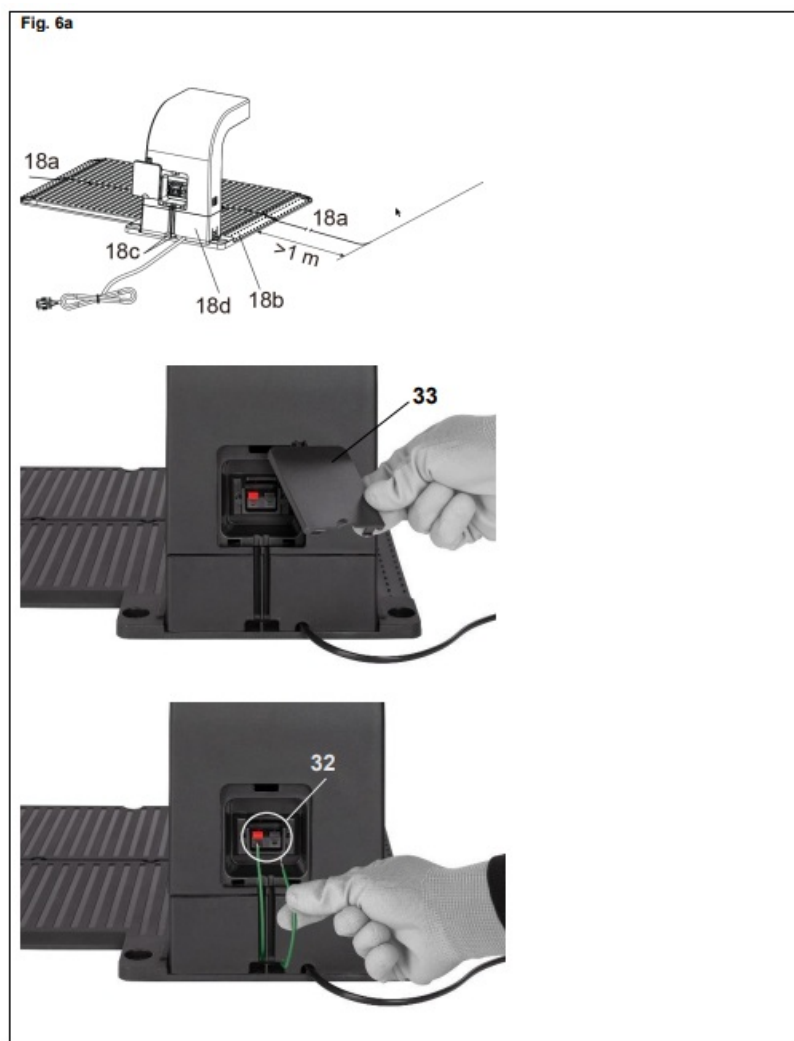


The robot mower treats trees as obstacles. However, where any tree roots project above the ground to a height of less than 10 cm, the area in which they are located needs to be protected. This will prevent damage to the roots and to the robot mower. Make sure that the minimum distance between the boundary wire (17) and the obstacle is 30 cm.



### Connecting the charging station

- Finish laying the complete boundary wire (17) before you connect it to the charging station. Keep an extra length of 1 m of boundary wire (17) at each end so that you can make further adjustments at a later time.
- Using a wire stripper, remove a length of 15 to 20 mm of the insulation at the ends of the boundary wire (17) for connecting to the charging station (18).
- Put the boundary line (17) into the wire groove (18a) on the charging station's bottom plate (18b), and pass the 2 wire ends through the 2 wire exits (18c) in the bottom of the charging station's tower (18d) so that the wire ends reach the back of the tower.
- Guide the wire to the Wire input (red & black) (32) behind the wire input cover (33) on the back of the charging tower (18d). In the direction where the user faces the terminal, connect the left end of the wire to the left red terminal, and the right end of the wire to the right black Wire input. (Fig. 6a).



**Then connect the power supply.**

- Do not use the power supply (12) if it is damaged. In the event of any damage to the power supply (12), contact an authorized professional immediately for replacement.
- Do not charge the robot mower at the temperature above 50° or below 0°.
- Keep the robot mower and the power supply (12) away from water, sources of heat and chemicals. Keep the cable of the power supply (12) away from sharp edges in order to prevent damage.

**Note!** The robot mower can only be removed manually from the charging station via the front of the charging station to prevent damage to the contact slats of the charging station.

The LED indicator (20 – Red) on the charging station (18) should light up red and stay on permanently, the LED indicator (21 – Green) on the charging station (18) should light up green and stay on permanently. If the LED indicators does not light up, check the connections first. If the LED indicator (21) is blinking, the boundary wire is not properly connected. Please read the “Indicators on the charging station and troubleshooting” table at the end of these operating instructions.

### **Switching on and checking the installation**

As soon as the green LED indicator (21) on the charging station (18) lights up green permanently, the mowing area is ready for the robot mower. Please check first that all the fixing pegs (13) on the boundary wire (17) have been fully tapped in. Place the robot mower about 3 m to the front of the charging station (18) in front of the boundary wire (17) at a distance of max.1m.

The robot mower needs to be facing the boundary wire (17) at an angle of 90° (Fig. 6b). Press the “POWER” (27) button on the control panel (2) for three seconds. Unlock the robot mower using the PIN and confirm the entry with

the “OK” (28) button (see chapter “Locking mechanism / PIN”).

Press the “HOME” (30) button and then press the “OK” (28) button again. The robot mower starts to run toward the boundary wire, than will now follow the boundary wire (17) in a clockwise direction. Observe the robot mower during the complete trip along the boundary wire (17) until it is back in the charging station (18). If the robot mower has any problems at any points, correct the boundary wire (17) if necessary and repeat the operation. If any problems occur with docking, you may need to reposition the charging station (18) sideways until docking works without any problems.

To stop the robot mower at any time, press the red “STOP” button (3). When you press the “STOP” button (3), the robot mower will come to a stop and wait for further instructions.

## OPERATION

### Control panel

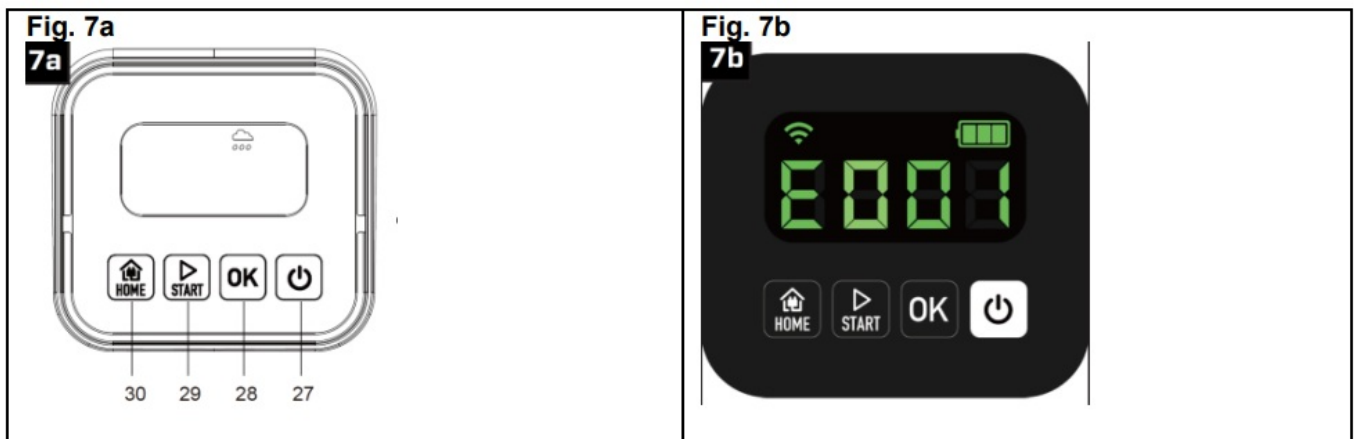
The robot mower has already been programmed at the factory and default settings have been made for it. However, these can be changed if required. Even though the factory settings will be suitable for most gardens, you should still familiarize yourself with the available options nevertheless.

### Explanation of the Buttons on the control panel (Fig. 7a)

- “POWER” button (27): Switch the robot mower on and off by pressing the Power button for over 3 seconds.
- “OK” button (28): The button is used to confirm your operations via the control panel.
- “START” button (29): Press “START” button then press “OK” button to manually start the mower to work; or press “▷” button to move the characters on the LED display.
- “HOME” button (30): Press “Home” button then press “OK” button to manually let the mower go back to charging station.

### Explanation of the characters on the LED display (Fig. 7b)

- Please refer to “Error codes on the LED display and troubleshooting” and “Operation codes on the LED display”. at the end of these operating instructions.
- See Explanation of the Figures on the control panel (Fig. 7c)
- When WIFI connects to the router but not the server flashes every 2 seconds.
- WIFI connected to the server, always bright.



**Fig. 7c**



### **Cutting height adjustment facility**

**Important!** Adjust the cutting height only when the robot mower has been switched off.

Do this by pressing the STOP button (3). The mowing height adjustment dial (4) allows the cutting height of the robot mower to be set to finitely adjustable settings between 30 and 60 mm, which can be viewed on the scale. If the grass is taller than 60 mm, it has to be mowed to a maximum of 60 mm first to avoid exposing the robot mower to excessive load and adversely affecting its operating efficiency. Use a conventional lawnmower to do this. After installation has been completed, the cutting height can be adjusted using the mowing height adjustment dial (4). Always start with a higher cutting height and reduce it in small steps until you reach the desired height.

### **Locking mechanism / PIN**

The locking mechanism prevents the unauthorized use of the robot mower without a valid code. You have to enter a personal four-digit security code for this.

#### **Display unlock**

Before you start using the robot mower, you have to enter the correct PIN (standard PIN: "0-0-0-0"). When you input the PIN, press the "HOME" button (30) to switch the number from 0 to 9 and press the "START" button (29) to move the characters on the LED display. Enter the PIN in sequence and confirm the entry with the "OK" button (28). The control functions will be unlocked and the LED display will display time, for example, display 23:45. (For the meaning of the codes, please refer to "12.Operation codes on the LED display".)

### **Control of the robot mower**

#### **TIP:** Test boundary procedure

To ensure that the boundary wire cable is installed correctly and that the mower can move free over the boundary wire and finally stops in the charging station please follow instructions: place the mower +/- 50cm behind the charging station over the boundary wire cable. Unlock the display and press "Home" and then "Start" button. Check if the mower moves free over the complete length of the boundary wire cable. At the end the mower should stop in the charging station. If everything is Ok please proceed following steps below.

### **Starting procedure**

1. If the Display locked, Unlock the control panel (2).
2. Press the "START" button (29) first.
3. To confirm the starting procedure, press the "OK" button (28).

If the calendar has been set up via the APP, the robot mower will start at the same time and work on the same area every day.

The battery charge level is monitored during the work time and displayed via the battery LED. Whenever the battery capacity drops to 36%, the robot mower automatically returns to the charging station (18).

### **Stopping mowing**

1. To bring the robot mower to an immediate stop, press the "STOP" button (3).
2. If the Display locked, Unlock the control panel (2).

3. Press the “HOME” button (30) followed by the “OK” button (28) to send the robot mower along the boundary wire (17) and back to the charging station (18).

### Control of the robot mower using the app

To control the robot mower by using the app, first download the Powerplus app for robot mowers to your smart phone. The Powerplus app is available via below QR code (Fig. 11). Please refer to the operation manual of the APP for the specific operations.



## TECHNICAL DATA

Type	POWDPG6010
Battery technology	Li-Ion
Battery voltage	20V
Electric motor type	Brushless
Cutting width	180mm
Max slope	36%
Boundary wire (max.)	160m –
Charging current	3.0A
IP rating	IPX5
Cutting height	30-60mm

## NOISE

The declared vibration total value has been measured in accordance with a standard test method and may be used for comparing one tool with another.

The declared vibration total value may also be used in a preliminary assessment of exposure.

The vibration emission during actual use of power tool can differ from the declared total value depending on the ways in which the tool is used.

The safety measures to protect the operator are identified based on an estimation of exposure in the actual conditions of use.

A-weighted emission sound pressure level at the operator position as determined according to the relevant standard, where this level does not exceed 70 dB(A):

Acoustic pressure level LpA	48 dB(A)
Acoustic power level LwA	59 dB(A)

If there is any abnormal vibration please inspect your mower for any abnormal blockage. If necessary clean the mower and/or replace the blades.

## POWDPG6010

### 11 CLEANING, MAINTENANCE AND ORDERING SPARE PARTS

**Hazard!** The equipment must be disconnected from the power supply (pull out the power plug and remove the battery (22) from the robot mower prior to performing any cleaning and maintenance work.)

Caution! Wear work gloves!

## Cleaning

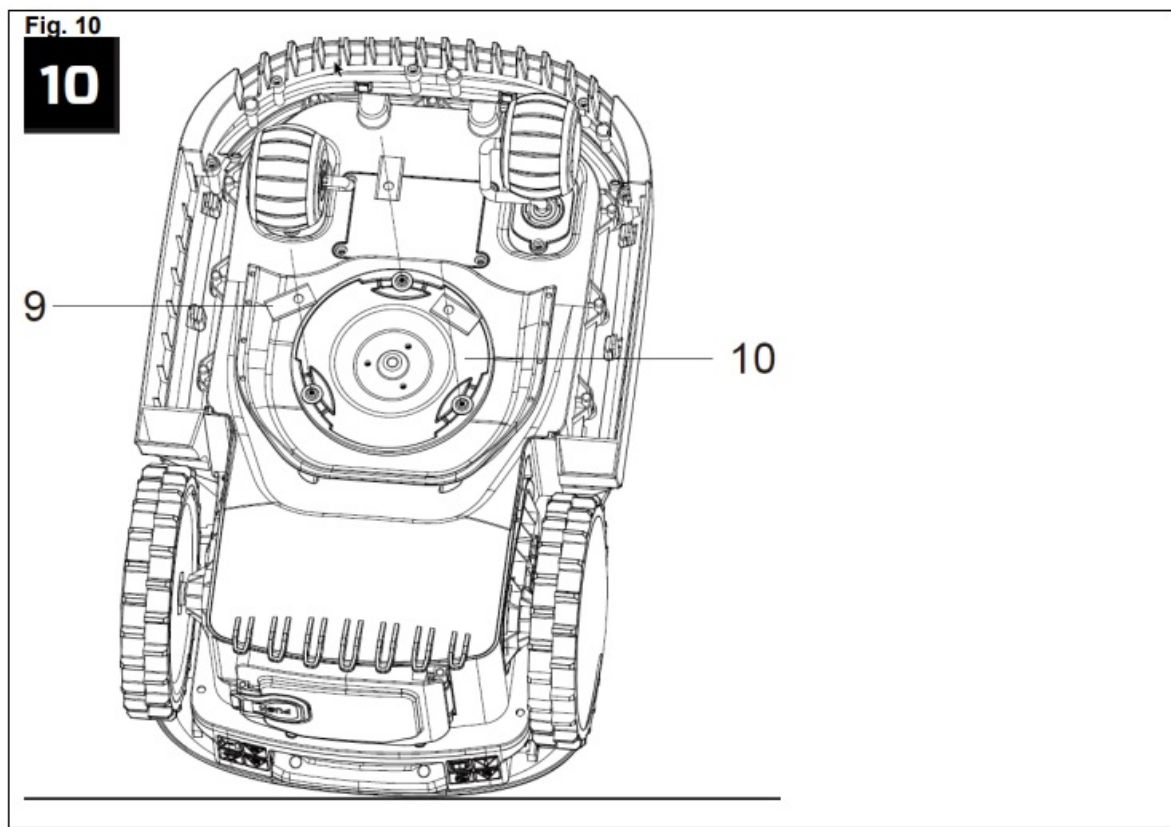
- Wipe the equipment with a clean cloth or blow it down with compressed air at low pressure.
- Wash the robot mower with domestic tap water; don't wash the robot mower with high-pressure water, however garden hose connected to water tap can be used. Ensure that no water can get into the interior of the equipment.
- To clean the lower side of the mower, put the mower upward and clean lower side with garden hose.
- Clean the equipment regularly with a damp cloth and some soft soap. Do not use cleaning agents or solvents; these may be aggressive to the plastic parts in the equipment.
- Check the freedom of movement of the blades (9) and the blade disc (10). Use hand gloves to protect yourself.
- Use cleaning product for metal or very fine abrasive paper to clean the charging contacts on the robot mower (1) and the charging station (18). Clean them in order ensure efficient charging.

## Maintenance

- Worn or damaged blades (9) and their fastening screws must always be replaced as a set.
- Replace excessively worn or damaged parts immediately.
- In order to ensure that you enjoy the equipment for many years to come, all screwed parts, as well as the wheels and axles, should be cleaned and lubricated.
- Keeping your robot mower in good condition not only ensures a long lifespan and high performance, but also enables the equipment to thoroughly cut your grass with minimal effort.

- The blades (9) are subject to more wear and tear than any other component. Therefore, routinely check the condition of the blades(9) and make sure that they are tightly fastened. An excessively vibrating robot mower can indicate that the blades (9) are damaged or have become deformed from striking an object. If the blades (9) are worn or damaged, they must be replaced immediately.
- Check the appearance of the cut lawn at regular intervals. The grass will not be cleanly cut if the blades are not sharp. This can result in the surface of the lawn drying out easily and turning brown. It is important therefore to change the blades regularly in order to obtain a clean and straight cut.
- Check the bottom of the robot mower for dirt at regular intervals. Clean your robot mower regularly. Remove heavy soiling immediately.
- Heavy soiling of the robot mower is possible in the first weeks of using it for the first time after a conventional lawnmower had previously been used. In these first few weeks you should check the bottom of your robot mower more often.
- Shorten the lawn only in small steps in order to prevent heavy soiling.
- Regularly check that the front wheels can rotate freely.
- Regularly remove any mud residue from the rear wheels with a brush (not with sharp objects).
- There are no other parts inside the equipment which require maintenance.

#### Replacing the blades (Fig. 10)



**ATTENTION!** When fitting new blades, make sure you replace ALL the blades. Always use new screws when fitting blades. This is important to ensure blade retention. Failure to use screws could cause serious injury.

**ATTENTION!** Wear gloves when handling the blade. Only use original replacement parts specified for this mower. Powerplus spare blades and screws item reference number: POWACG9102.

It's recommended that replace the blades within 2-3 months.

There are 3 blades on the robot mower, which are screwed into the blade disc. All 3 blades and screws must be replaced at the same time to obtain a balanced cutting system.

- Set the on/off switch of the mower to “OFF”.
- Turn the robot mower upside down. Place the robot mower on a soft and clean surface to avoid scratching the body and the cover.
- Rotate the blade disc so that its holes align with the hole in the machine frame and insert screw driver to block the blade disc.
- Remove the 3 screws with a screwdriver.
- Remove each blade and screw.
- Fasten new blades and screws.
- Check that the blades can pivot freely.

### **Software update**

The USB connection (Fig. 9) is for the after sale service only.

The software can be update through the APP. Please refer to the operation manual of the APP.

### **Repairing the boundary wire**

If the boundary wire (17) gets severed at any point, use the supplied cable connectors (15) to repair it. To do so, insert both ends of the severed boundary wire (17) into the cable connector (15) and squeeze it together with the help of a pair of pliers. Connect the power plug to the socket out-let. (The boundary cable must not be dismantled when inserted in the cable connector! ) Then check whether it is working properly by checking the LED indicator (21) on the charging station (18).

Green led flashing: there is still a defect in the boundary wire Green LED is permanently lit: the boundary wire is OK.

### **STORAGE**

Fully charge up the rechargeable battery (22) before putting it into storage over winter and take the rechargeable battery (22) out

of the equipment. Disconnect the adapter(12) from the socket outlet and the charging station (18). The boundary wire can be left outdoors during winter. Disconnect the boundary wire (17) from the charging station and make sure that the connections are protected against corrosion. It is recommended to cover or protect the charging station.

Store the equipment and accessories out of children's reach in a dark and dry place at above freezing temperature. The ideal storage temperature is between 0 and 50°C. Store the equipment in its original packaging.


### **TRANSPORT**

- Switch off the equipment or take the rechargeable battery (22) out of the equipment.
- Fit the shipping protectors, if any.
- Protect the machine from damage and the strong vibrations that can occur particularly when transporting in vehicles.
- Secure the machine against slipping and tipping over.
- Carry the robot mower by the carrying handle (6) with the blade disc (10) facing away from your body.

### **14 INDICATORS ON THE CHARGING STATION AND TROUBLESHOOTING**



LED indicator (Red)	LED indicator (Green)	Description	Solution
Off	Off	<ul style="list-style-type: none"> <li>No power supply</li> </ul>	Check the power supply
Lit up red	Lit up green	<ul style="list-style-type: none"> <li>Ready for mowing</li> <li>Boundary wire (17) is correctly installed</li> </ul>	
Lit up red	Flashing green	Boundary wire (17) is not properly connected	<ul style="list-style-type: none"> <li>Inspect the boundary wire (17) to make sure it is firmly connected to the charging station</li> <li>Check the two connections on the charging station (18)</li> </ul>
Flashing red	Flashing green	<ul style="list-style-type: none"> <li>Robot mower docked on the station</li> <li>Boundary wire (17) is not properly connected</li> </ul>	<ul style="list-style-type: none"> <li>Inspect the boundary wire (17) to make sure it is firmly connected to the charging station</li> <li>Check the two connections on the charging station (18)</li> </ul>
Flashing red	Off	<ul style="list-style-type: none"> <li>Robot mower docked on the station</li> <li>Boundary wire (17) is correctly installed</li> </ul>	<ul style="list-style-type: none"> <li>Wait until the rechargeable battery (22) is fully charged.</li> </ul>

LED code of OPP Robot mower			
Category	station/actions	LED Code	Notes
	Self-checking		Flashing, and all the icons flashing. No keys can be operated except Emergency
			STOP;
			1. After self-checking succeed, LED display show the time in robot mower.
	Stand-by	----	2. Press any key to input pin code, LED display “_____” and keep flashing, means
			you can start inputting the pin code;
			For example pin code is “1118”:
			Press “HOME” twice, the first number will change from “_” to “0” and to “1”... in
			turn;
Robot mower states	Inputting pin code	1000	<ul style="list-style-type: none"> <li>Press “START” to switch to the second number, press “HOME” twice, the second number will change from “_” to “0” and to “1”;</li> <li>Press “START” to switch to next number, press “HOME” twice, the third number will change from “_” to “0” and to “1”;</li> <li>Press “START” to switch to last number, press “HOME” 9 times , the fourth number</li> </ul>
		1100	
		1110	
		1118	
			will change from “_” to “8”;
			Press “OK” to submit the pin code, when the verification is passed , the robot
			mower will go to Stand-by (Unlocked) state;
	Stand-by	23:45	LED displays the local time;
	Returning to charge station	9001	Press “HOME” and “OK” in turn in 3 seconds, robot mower will start to return to charge station;

	Returning to charge station-Paused	9001	If end user press "Pause" button in APP when the robot mower is returning to charge station, the LED displays "9001", keep flashing
	Mowing preparation	9002	1. Press "START" and "OK" in turn in 3 seconds, robot mower will start to work; 2. In this state, only Emergency stop is available, other keys will be unavailable;
	Mowing	9002	1. Press "START" and "OK" in turn in 3 seconds, robot mower will start to work; 2. In this state, only Emergency stop is available, other keys will be unavailable;
	Mowing paused	9002	1. If end user press "Pause" button in APP when the robot mower is working, the LED displays "9002", keep slowly flashing per 2S.
	Charging	9003	When the Robot mower is in the charge station and charging, the LED displays "9003";
	Charging	9004	When the Robot mower is in the charge station and charging, if fully charged display "9004", keep lighting;
	Firmware upgrading	9999	

## 16 ERROR CODES ON THE LED DISPLAY AND TROUBLESHOOTING

Fault code	Emergency STOP	E001	
	Lifting	E002	Check if all wheels touching soil
	Tilting	E003	Check if all wheels touching soil
	Upside down	E004	Place the mower in normal position
	Mowing motor blocked	E005	Check if blade disc (10) can be turned around by hand. If not, please take the mower to a service point.
	Left drive motor blocked	E006	Restart or power off to restart the machine. If this doesn't work, please take the mower to a service point.
	Wheels slipping	E007	Remove the mower manually from the area where it is prone to slipping. Set up an obstacle island by using the boundary wire.
	Out of boundary	E008	Place the mower inside the boundary wire area and restart the mower
	Trapped by obstacles	E009	Remove obstacles, check free movement of wheels
	Left drive motor fault	E010	Mower needs to be repaired, please take the mower to a service point
	Right drive motor fault	E011	Mower needs to be repaired, please take the mower to a service point
	Mowing motor fault	E012	Mower needs to be repaired, please take the mower to a service point
	Boundary wire sensor fault	E013	Check any interruption and connection of the boundary wire.
	Low battery level	E014	Robot mower will turn off in 10 seconds, recharge or replace battery.
	Right drive motor blocked	E015	Restart or power off to restart the machine. If this doesn't work, please take the mower to a service point.

	Battery protection	E016	Robot mower will turn off immediately, recharge or replace battery.
	LED display abnormal	E017	Communication is disconnected between LED display and main system, mower needs to be repaired. Please take the mower to a service point
	IMU data abnormal	E018	Mower needs to be repaired/updated for the Internal Measurement  Unit is defective please take mower to service point.
	Odometer data abnormal	E019	Mower needs to be repaired/updated, please take the mower to a service point.
	The battery cover is not closed	E020	The battery cover is not closed. Close the battery cover firmly and restart the mower.
	Vibration abnormal	E021	Vibration abnormal, please check for missing blades.
Warning code	Raining	E101	Depending on the settings, the mower will restart mowing the next scheduled time/ or after the selected delay time in the APP
	Unable to charge for high temperature	E102	Wait until the temperature has dropped enough to restart the mower
	Unable to work for high temperature	E103	Wait until the temperature has dropped enough to restart the mower
	Unable to charge for low temperature	E104	Wait until the temperature has risen enough to restart the mower
	Unable to work for low temperature	E105	Wait until the temperature has risen enough to restart the mower
	Recharge for low battery	E106	Recharge or place new battery
		E107	

## WARRANTY

- This product is warranted for a 36-month period effective from the date of purchase by the first user.
- This warranty covers all material or production flaws excluding : batteries, chargers, defective parts subject to normal wear & tear such as bearings, brushes, cables, and plugs, or accessories such as drills, drill bits, saw blades, etc. ; damage or defects resulting from maltreatment, accidents or alterations; nor the cost of transportation.
- Damage and/or defects resulting from inappropriate use also do not fall under the warranty provisions.
- We also disclaim all liability for any bodily injury resulting from inappropriate use of the tool.
- Repairs may only be carried out by an authorized customer service centre for Powerplus tools.
- You can always obtain more information at the number 00 32 3 292 92 90.
- Any transportation costs shall always be borne by the customer, unless agreed otherwise in writing.

- At the same time, no claim can be made on the warranty if the damage of the device is the result of negligent maintenance or overload.
- Definitely excluded from the warranty is damage resulting from fluid permeation, excessive dust penetration, intentional damage (on purpose or by gross carelessness), inappropriate usage (use for purposes for which the device is not suitable), incompetent usage (e.g. not following the instructions given in the manual), inexperienced assembly, lightning strike, erroneous net voltage. This list is not exhaustive.
- Acceptance of claims under warranty can never lead to the prolongation of the warranty period nor commencement of a new warranty period in case of a device replacement.
- Devices or parts which are replaced under the warranty therefore remain the property of Varo NV.
- We reserve the right to reject a claim whenever the purchase cannot be verified or when it is clear that the product has not been properly maintained. (Clean ventilation slots, carbon brushes serviced regularly, etc.).
- Your purchase receipt must be kept as proof of date of purchase.
- Your appliance must be returned undismantled to your dealer in an acceptably clean state, (in its original blow-molded case if applicable to the unit), accompanied by proof of purchase.
- Your tool must be charged at least 1x per month to ensure optimal operation of this tool.

## ENVIRONMENT

Should your appliance need replacement after extended use, do not discard it with the household rubbish but dispose of it in an environmentally safe way. Waste produced by electrical machine items should not be handled like normal household rubbish. Please recycle where recycle facilities exist. Check with your Local Authority or retailer for recycling advice.



## DECLARATION OF CONFORMITY



VARO – Vic. Van Rompuy N.V. – Joseph Van Instraat 9 – BE2500 Lier – BELGIUM, solely declares that,

- Product: Robot mower 18 V
- trade mark: PowerPlus
- model: POWDPG6010

is in conformity with the essential requirements and other relevant provisions of the applicable European Directives/Regulations, based on the application of European harmonized standards. Any unauthorized modification of the apparatus voids this declaration.

European Directives/Regulations (including, if applicable, their amendments up to the date of signature):

- 2011/65/EU
- 2006/42/EC

- 2014/30/EU
- 2000/14/EC Annex VI LwA
- Measured 59 dB(A)
- Guaranteed 62 dB(A)
- Notified Body ISET – Italy

European harmonized standards (including, if applicable, their amendments up to the date of signature):

- EN60335-1 : 2012
- EN50636-2-107 : 2015
- EN IEC55014-1 : 2021
- EN IEC55014-2 : 2021

Keeper of the Technical Documentation: Philippe Vankerkhove, VARO – Vic. Van Rompuy N.V.  
The undersigned acts on behalf of the company CEO,




Philippe Vankerkhove  
Regulatory Affairs – Compliance Manager  
10/11/2023, Lier - Belgium

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[WWW.VARO.COM](http://WWW.VARO.COM)

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VARO – VIC. VAN ROMPUY nv  
JOSEPH VAN INSTRAT 9-2500 LIER- BELGIUM

## Documents / Resources

	<p><a href="#">POWERPLUS POWDPG6010 Robot Mower App</a> [pdf] Instruction Manual POWDPG6010 Robot Mower App, POWDPG6010, Robot Mower App, Mower App</p>
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## References

- [Home - Varo](#)
- [User Manual](#)

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