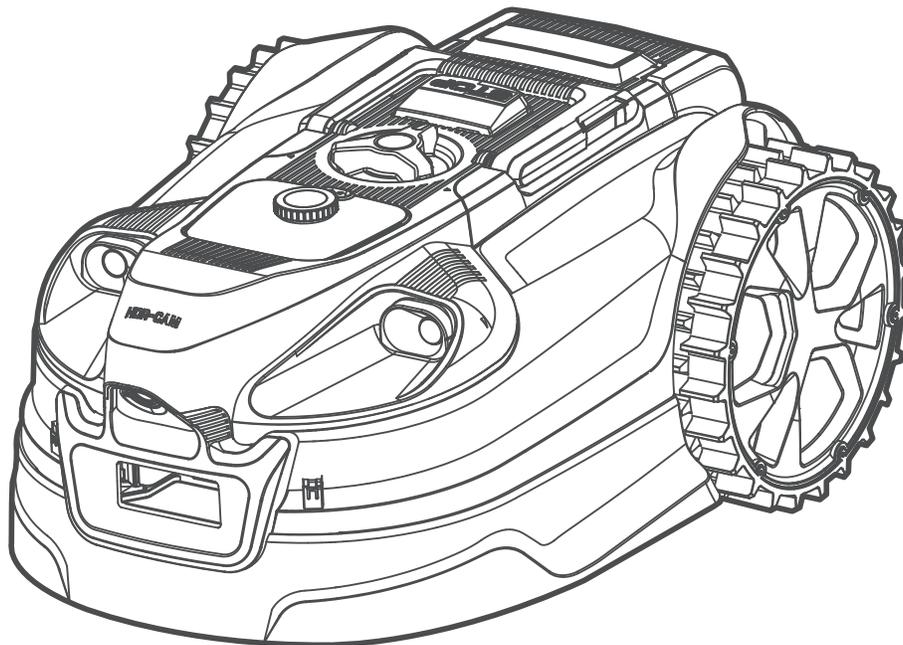


# LawnMaster®

## Instruction Manual

18cm 24V MAX\* Lithium-Ion Cordless Robotic Lawnmower  
VBRM18AMDR (With Battery and Charging Station)  
VBRM18AMDR-BM (Battery and Charger Not Included)



Original Instructions



**WARNING:** Read all safety instructions carefully before assembling and operating this machine. Ensure the machine has been assembled correctly and safely. Keep the instructions safe and pass them on to any subsequent user so that the information is always available.



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## About This Product

Thank you for choosing the LawnMaster® VBRM18AMDR robotic lawnmower. This product independently mows the lawn in a random pattern before returning to the base station to charge the battery. The mower will alternately mow and charge for the working time selected, before returning to the base station to standby until the next scheduled working period. The mower detects grass in order to know where to mow and is also equipped with ultrasonic sensors which detect higher obstacles such as shrubs and fences. For successful operation, the lawn must be defined with flat borders such as paving or raised edges. When the mower does not detect grass or encounters an obstacle, it changes route in a random manner and starts mowing again in a new direction. The mower can be moved around to different lawn areas provided that they are defined as described in this instruction manual.

The mower uses a detachable MX 24V battery which is compatible with all products in the LawnMaster® 24V range. Excessively long or wet grass may impact performance, it is therefore important to maintain a regular mowing schedule to keep on top of growth and develop a neat lawn finish.

## First Operation

The VBRM18AMDR is designed to detect grass and move into areas it identifies as grass. If it cannot see a clear boundary it will continue to move into areas off the lawn and into plants that it may identify as grass. Trimming the lawn edge with a grass trimmer before use will help define a better lawn edge. During first operation on a new lawn it is important to monitor the robot as it detects edges to see where the boundary definition needs to be improved. Please do read the instructions fully, our instructions have been written to help you to get the best results and also provide useful ideas for temporary boundaries as well as examples of how to define a better lawn edge in all seasons.

**FOR YOUR SAFETY: CAREFULLY READ AND UNDERSTAND ALL INSTRUCTIONS.**

# SYMBOLS

The following warning symbols appear throughout this manual and indicate the appropriate safety measures you should take when operating and maintaining the appliance.

SYMBOL	DESIGNATION/EXPLANATION
	WARNING - The robotic lawnmower can be dangerous if used incorrectly.
	Read instruction manual before operating the machine.
	Keep bystanders away.
	Remove the battery before working on or lifting the machine.
	Do not ride on the machine.
	WARNING: Do not touch rotating blade. Disconnect battery before maintenance.
	Wait until all moving parts have stopped completely before touching them. The blade may continue to rotate after the machine is switched off, a rotating blade can cause injury.
	Do not wash or immerse the machine in water.
	WARNING! Beware of electric shocks.
	Protection class II (Double insulation)
	Class III machines.

## SYMBOLS

SYMBOL	DESIGNATION/EXPLANATION
	Electrical appliances must not be disposed of with the domestic waste.
	Batteries contain Lithium-ion. Do not dispose of batteries in household waste.
	Do not dispose of battery packs in rivers or immerse in water.
	Do not dispose of battery packs in fire.
	Do not subject the battery to direct sunlight over long periods and do not leave it on or near a heat source (max. 60°C).
	Recycle electrical waste products in an environmentally safe way where facilities exist.
	Do not subject the battery to direct sunlight over long periods and do not leave it on or near a heat source (max. 60°C).

## **WARNING**

To avoid serious personal injury, do not attempt to use this product until you read thoroughly and understand completely the instruction manual.

If you do not understand the warnings and instructions in the instruction manual, do not use this product.

## SAFETY INFORMATION

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### 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.
- The operator or user is responsible for informing neighbours about the risks. Keep a safe distance from the machine when operating.
- If your lawn is open to the street and/or your neighbours, you must be present during the mower's operation to prevent others from accessing your lawn. Alternatively, you must protect / fence your lawn so that others do not access the mower during operation.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, 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. Children should be supervised to ensure that they do not play with the appliance.



### WARNING

The robotic lawnmower can be dangerous if used incorrectly.

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## SAFETY INFORMATION

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### WARNING

Never use the robotic lawnmower when people, especially children or pets, are in the cutting area.

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#### Preparation

- Ensure that the lawn area is defined as described in the section Prepare the Mowing Area and Define the Mowing Area.
- Periodically inspect the area where the machine is to be used and remove all stones, sticks, wires, pet toys, and other foreign objects.
- Periodically visually inspect to see that the blades, blade bolts and cutting 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

- Do not leave the machine to operate unattended if you know that there are pets, children or people in the vicinity.
- Never operate the machine with defective guards, or without safety devices, for example deflectors in place.
- Do not put hands or feet near or under rotating parts. Do not touch moving hazardous parts before these have come to a complete stop. Keep clear of the discharge opening at all times.
- Never pick up or carry a machine while the motor is running.
- Always switch off the On/Off switch:

## SAFETY INFORMATION

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- Before clearing a blockage;
- Before checking, cleaning or working on the machine.
- It is recommended not to connect a damaged cord to the supply or touch a damaged cord before it is disconnected from the supply as this can lead to contact with live parts.
- Keep extension cords away from moving hazardous parts to avoid damage to the cords which can lead to contact with live parts.
- Recommendations
  - To 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,
  - To avoid using the machine and its peripherals in bad weather conditions especially when there is a risk of lightning;
- Disconnect the machine or its peripherals from the mains, if the cord becomes damaged or entangled during use.
- Do not use the mower for any purpose other than cutting lawn.
- In the event of accident or breakdown whilst the mower is operating, immediately press the STOP button.
- Do not put anything on top of the mower or its base station. Never allow people or animals to sit on the mower.
- Do not use the mower if the On/Off switch does not work.
- Always switch off the mower using the On/Off Switch when the mower is not in use.
- 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 sensors which then can lead to a stoppage.

## SAFETY INFORMATION

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- The robotic lawnmower must never be stored, operated or charged in temperatures below 0 °C or above 50 °C. This might cause damage to the product or battery.
- Mow only in daylight or in good artificial light.
- Avoid operating the machine in very long or wet grass.
- Never use the machine in explosive and/or flammable environments.
- Do not operate the machine when barefoot or wearing open sandals. Always wear substantial footwear and long trousers.
- Always be sure of your footing on slopes.
- Always switch on the motor according to instructions with feet well away from the blade(s).
- Warning signs shall be placed around the working area of the robotic lawnmower if it is used in public areas. The signs shall have the following text:  
Warning! Automatic lawnmower! Keep away from the machine! Supervise children!

### 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 blades of the right type are used.
- In the event of a battery 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.

## SAFETY INFORMATION

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- In case of abnormal vibrations, stop the mower, switch off the On/Off switch and check for any damage to the blade. Replace blades in full sets to preserve balance. If the vibration continues, contact the aftersales helpline.
  - Use heavy gloves when inspecting or servicing blades.
  - Cleaning and maintenance must not be performed by unsupervised children.
  - Do not use the mower when the cutting blade is damaged. Replace the cutting blade.
  - Use only original equipment and accessories. It is not permitted to modify the original design of the mower. All modifications are made at your own risk.
- 

### **WARNING**

Do not lift the mower when it is parked in the base station. It can damage the base station and/or the mower. Press STOP button and pull the mower out of the base station before lifting it.

### **WARNING**

Disconnect all connections to the base station (power supply) if there is a risk of a thunderstorm.

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### **Transportation**

Within the working area:

- Press the STOP button to stop the mower. Use the carry handle to carry the mower. Carry the mower with the blade disc away from the body.

Long distances:

- When transporting your mower over long distances, press
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## SAFETY INFORMATION

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the STOP button and turn the mower off using the power button.

- **IMPORTANT!** It is recommended to keep the original packaging to avoid damage during transportation over long distances.

### Battery Safety Information

- Recharge only with the charger specified by the manufacturer. A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack. Incorrect use may result in electric shock, overheating or leakage of corrosive liquid from the battery.
- Do not place appliances or their batteries near fire or heat sources. Continuous intense sunlight, fire or other heat sources may cause an increased danger of explosion.
- Do not crush, drop or damage the battery pack. Do not use a battery pack or charger that has been dropped or received a sharp blow. A damaged battery is subject to explosion. Properly dispose of a dropped or damaged battery immediately.
- Batteries can explode in the presence of a source of ignition, such as a pilot light.
- To reduce the risk of serious personal injury, never use any cordless product in the presence of an open flame. An exploded battery can propel debris and chemicals. If exposed, flush with water immediately.
- For best results, your battery tool should be charged in a location where the temperature is more than 4°C but less than 40°C.

## SAFETY INFORMATION

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- Under extreme usage or temperature conditions, battery leakage may occur. If liquid comes in contact with your skin, wash immediately with soap and water. If liquid gets into your eyes, flush them with clean water for at least 10 minutes, then seek immediate medical attention.
- When the battery pack is not in use, keep it away from other metal objects like: paper clips, coins, keys, nails, screws, or other small metal objects that can make a connection from one terminal to another. Shorting the battery terminals together may cause sparks, burns, or a fire.
- Do not open up the battery and avoid mechanical damage to the battery. Risk of short circuit and fumes may be emitted. Ensure fresh air and seek medical assistance in the event of discomfort.
- Always remove battery pack before storing the device. When battery becomes fully charged, unplug the charger from the power supply and remove the battery pack from the charger.
- Keep battery pack dry, clean, and free from oil and grease. Always use a dry cloth when cleaning. Never use brake fluids, gasoline, petroleum-based products, or any solvents to clean battery pack.

### Charging Station Safety Information

- Do not use non-rechargeable batteries!
- Do not operate the charging station with a damaged cord or plug, which could cause shorting and electric shock. If damaged, immediately discontinue use. Replace the charging station with the identical unit as listed in the

## SAFETY INFORMATION

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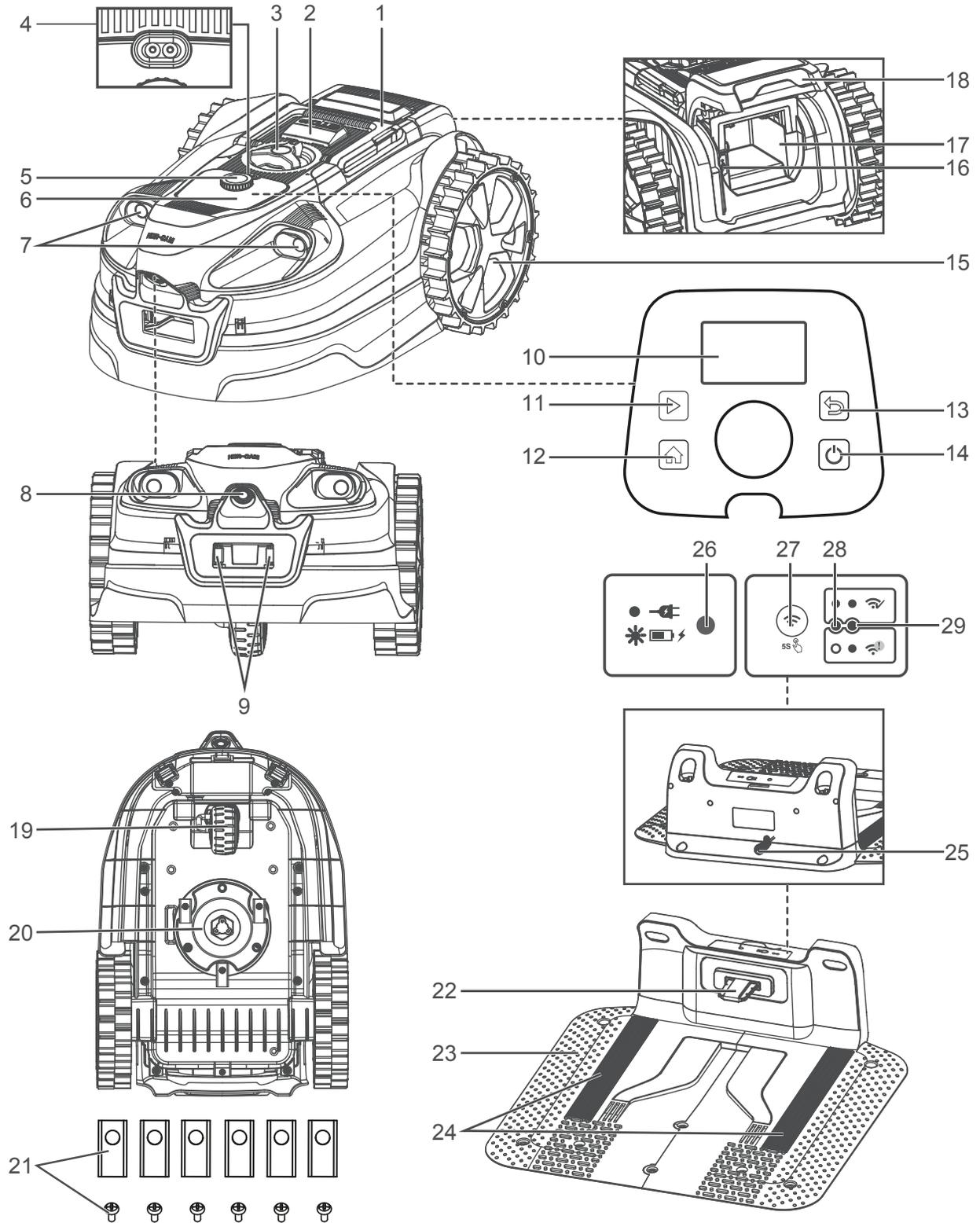
Product Specifications in this manual. If the power cord for this equipment is damaged, it must be replaced by the manufacturer, a customer service agent of the same or a fully qualified person in order to prevent hazards.

- Operate the charging station only with the appropriate original batteries. Charging other batteries may result in injuries and risk of fire.
- The voltage indicated on the charging station rating plate must correspond to the voltage of the power source.
- Never touch the mains plug with wet hands.

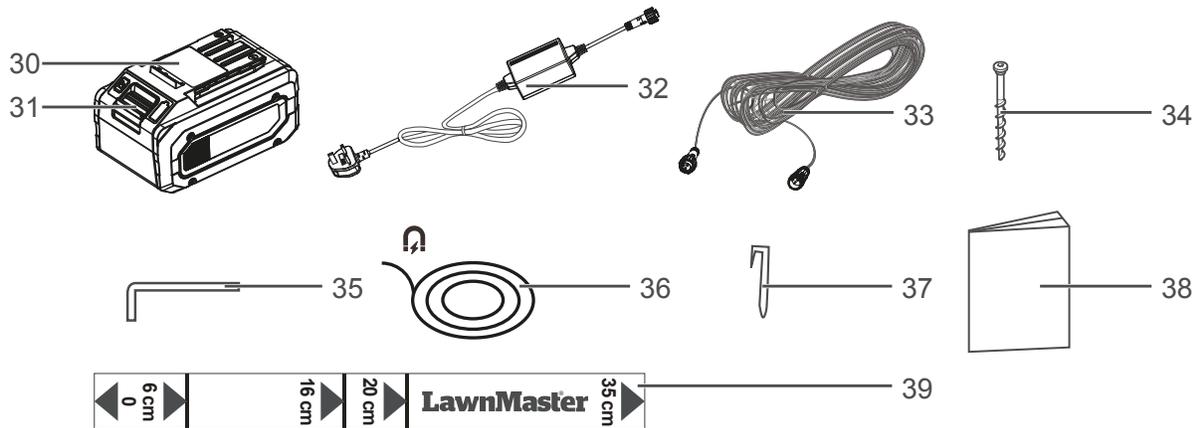
### Product End of Use

- The mower and its accessories should be recycled correctly at the end of their life to prevent waste electrical and electronic equipment from ending up in landfill sites, and to protect and improve the quality of the environment.
- Do not dispose of the mower or any other of its parts (including the Power Supply and Base Station) as unsorted municipal waste - they should be collected separately.
- Ask your local distributor/dealer about return and collection systems availability.
- Do not dispose of the battery pack in a fire, and do not place used batteries in your household waste.
- Dispose of batteries in accordance with the local regulations where they will be recycled in an environmentally friendly manner.

# IN THE BOX



# IN THE BOX



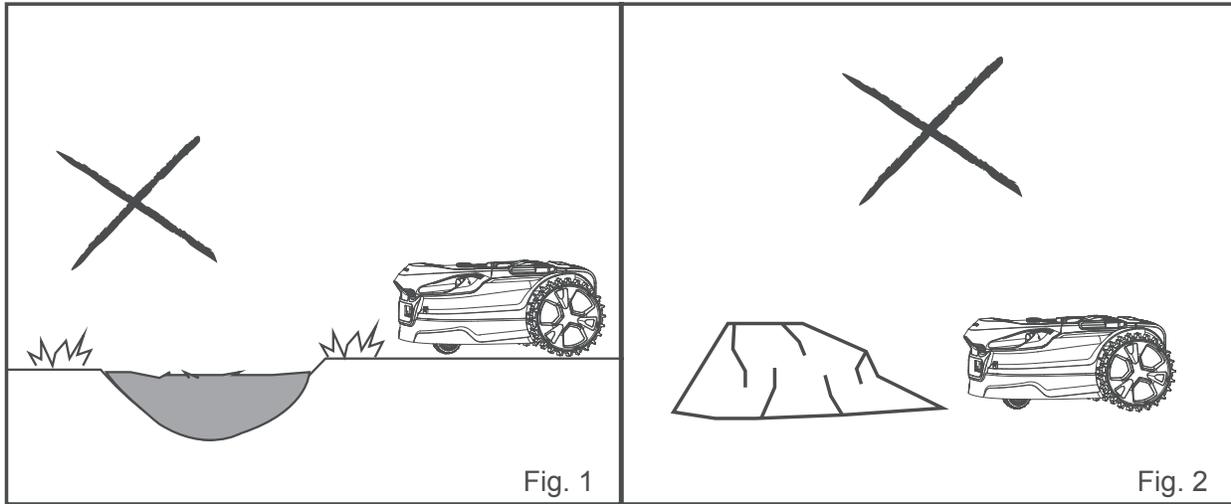
- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>1. Carry Handle</li> <li>2. STOP Button</li> <li>3. Cutting Height Adjustment Knob</li> <li>4. Rain Sensor</li> <li>5. Selection Dial</li> <li>6. Control Panel</li> <li>7. Ultrasonic Object Sensors</li> <li>8. Grass Detection Camera</li> <li>9. Charging Strips</li> <li>10. LCD Panel</li> <li>11. Start Button</li> <li>12. HOME Button</li> <li>13. Back Button</li> <li>14. On/Off Button</li> <li>15. Rear Wheel</li> <li>16. USB Port (Covered by Rubber Cap)</li> <li>17. Battery Compartment</li> <li>18. Battery Compartment Cover</li> </ul> | <ul style="list-style-type: none"> <li>19. Front Wheel</li> <li>20. Blade Disc</li> <li>21. Spare Blades (X6)</li> <li>22. Contact Strip</li> <li>23. Base Station</li> <li>24. Guide Strips on the Base Station</li> <li>25. Base Station's Power Cord</li> <li>26. Charging Indicator on the Base Station</li> <li>27. Battery Pack</li> <li>28. Battery Release Button</li> <li>29. Power Adaptor</li> <li>30. Extension Cable (10m)</li> <li>31. Base Station Fixing Screw (X10)</li> <li>32. Hex Key</li> <li>33. Magnetic Strip (2 x 5m)</li> <li>34. Magnetic Strip Peg (X20)</li> <li>35. Instruction Manual</li> <li>36. Box Lid Measurement Gauge</li> </ul> |
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# SET UP

## Know Your Lawn (See Figs. 1-2)

Understanding your lawn will reduce unnecessary mistakes and make the installation process easier and smoother.

- Bare patches and leaves can interfere with the camera operation. Repair dead patches with grass seed.
- Level all surfaces to prevent the mower becoming stuck (Fig. 1).
- Remove all small loose objects which may damage the blade (Fig. 2).



**NOTE:** This mower is not designed to cut excessively long or overgrown and neglected areas. Cut grass to a height of 60mm before use. Do not allow grass to grow excessively long between uses.

## About Your Robotic Lawnmower

The mower uses a camera and ultrasonic sensors to identify grass and navigate around the lawn. It can:

- Detect grass and well-defined edges such as paving, gravel, and earth.
- Raised edges such as sleepers, fences and walls.
- Find the way home to the charge itself using GNSS positioning and the guide strips on the base station.

It cannot:

- Work at twilight or at night – the camera requires daylight in order to work effectively.
- Work on patchy or dead grass.
- Distinguish between lawn and weedy flower beds.
- Cross boundaries in the lawn such as paths or stepping stones.

The mower can be used in either of two modes :

- Schedule Mode (Refer to page 31-32)
- Drop and Mow Mode (Refer to page 32-33)

## SET UP

The ultrasonic sensors can be turned off when the lawn is clear of obstacles. In this case, hedges, walls, or other similar barriers in the lawn can be used as the border of the working area.

When the robotic mower detects that there is no grass or encounters an obstacle, it changes route in a random manner and starts mowing again in a new direction. To allow the robotic mower to move freely inside the lawn, the lawn must be properly checked and adjusted so that the robotic mower has enough space for recognizing when there is no grass. Carefully follow instructions listed as below for types of borders/protections that can/cannot be used for defining the working area.

### **WARNING**

This robotic mower generates an electromagnetic field during operation. Under certain circumstances, this field can actively or passively interfere with medical implants. To reduce the risk of serious injury or death, we recommend that people with medical implants consult their physician and the manufacturer of the medical implant before using the robotic lawnmower.

### How to Define the Mowing Area (See Figs. 3-13)

Lawn edges must be clearly defined by flat edging or raised barriers in order for this mower to function properly. Use the provided measurement gauge to ensure the proper distance.

- **Visual boundaries:** need to look different from grass; therefore changes in colour and texture are very effective.
- **Physical boundaries:** help stop the mower when a visual boundary is not possible.
- **Temporary physical boundaries:** can be used where needed.

#### Suitable Boundary Types

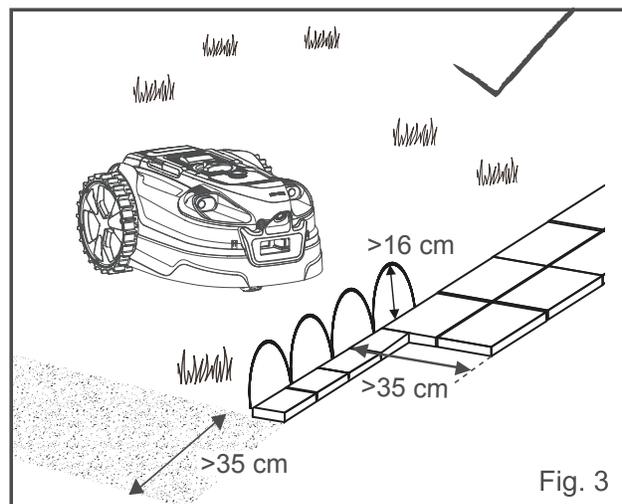
##### ■ Paving

The lawn requires a paved or wooden edge of at least 35 cm wide for it to stop safely and change direction.

Paving or wooden edge less than 35 cm wide must be widened or can be used in conjunction with a barrier. See Raised Barrier section below (Fig. 3).

##### ■ Raised barrier (Using ultrasonic sensors)

With the ultrasonic sensors on, a perimeter barrier at a height above 16 cm can be used to define the border of the working area. The ultrasonic sensors will detect the barrier, and the mower will change direction.

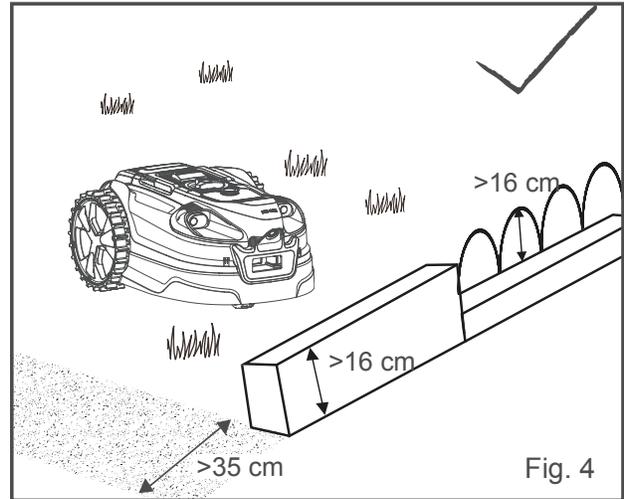


## SET UP

If an existing barrier is shorter than 16 cm, see Raised barrier (Using bump sensor) (Fig. 4).

### ■ Raised barrier (Using bump sensor)

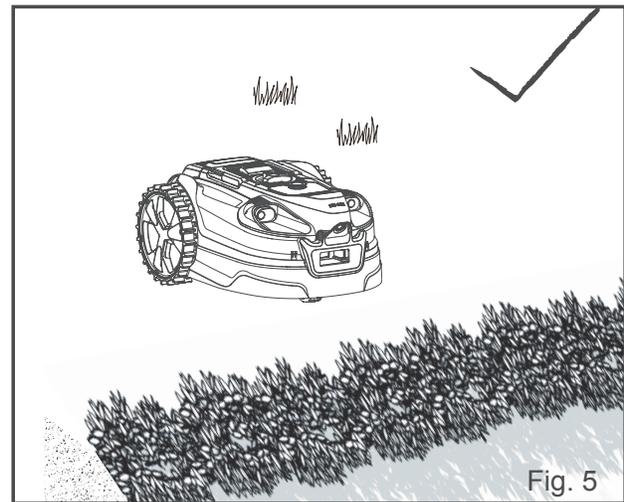
A raised border (min 6 cm) that physically obstructs the movement of the mower can also be used. This boundary could be lower than 16 cm and will be undetectable by the ultrasonic object sensors. When the robot meets this low barrier, it will bump off, reverse and turn. This type of boundary may suit your lawn in some areas.



### ■ Hedging

With the ultrasonic sensors on, hedges can be used to define the working area (Fig. 5).

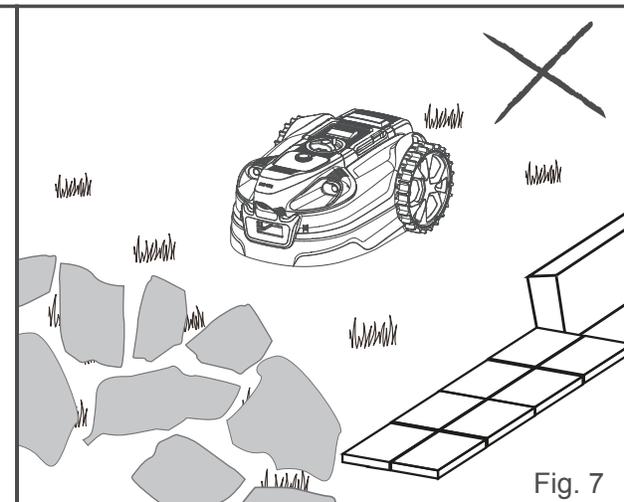
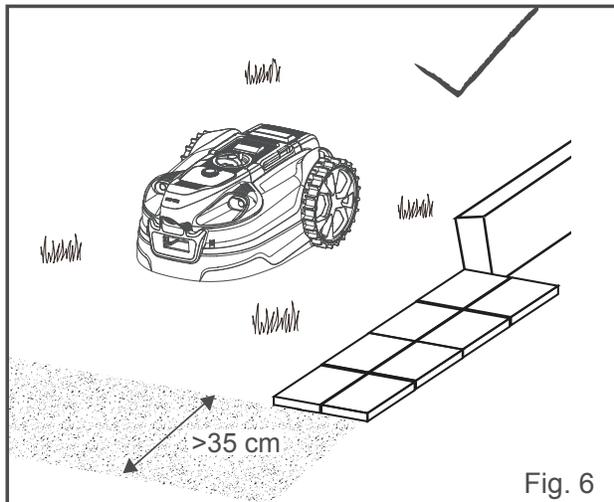
**NOTE:** Foliage is usually recognized as grass by the robotic mower. Therefore, ultrasonic sensors must be always kept on when using hedges as the border of the working area.



### ■ Fine gravel

If fine gravel or small stones are used to border the lawn, make sure the width of the border is more than 35 cm wide and has clear edges (Fig. 6).

**NOTE:** Never use gravel, stones or similar materials with irregular edges for defining the working area (Fig. 7). Failure to provide clear edges will result in the mower leaving the mowing area and blade damage.



## SET UP

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### ■ Temporary raised barriers

During first use, while lawn patches are being seeded or seasonal lawn plants such as spring bulbs are in flower, it may be desirable to use a temporary method to protect or define the lawn area for the robot to cut. In this case, garden canes are particularly effective and can be removed later. In spring, you can protect flower bulbs in the lawn from the mower by sinking short canes vertically into the lawn around the area spaced at 20 cm. Leave at least 6 cm of cane above ground. The mower will be physically prevented from entering any protected areas.

### ■ Magnetic strip

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## WARNING

If you have an ICD or pacemaker, avoid close or prolonged contact with magnets or their magnetic fields. Keep magnets at least six inches away from where your device is implanted.

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The magnetic strip serves as a mobile and temporary boundary for creating areas where the robotic mower is not allowed to mow. It can also be left permanently in place if needed.

The robotic mower is equipped with a magnetic strip sensor for recognizing a magnetic strip lying on the ground. When the robotic mower comes across a magnetic strip, it will stop and begin to mow again in a random direction.

**NOTE:** Magnetic particles are attached to the surface of the magnetic strip, please wear gloves before use.

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## WARNING

Strong magnetic force can create a finger pinch risk. Wear gloves and handle with care.

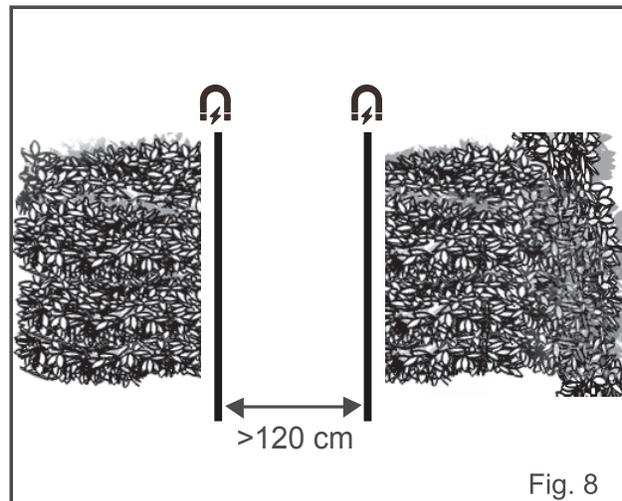
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### Magnetic Strip Installation

- Lay the magnetic strip a few centimeters away from the area or object in question.
- Keep a distance of at least 120 cm between two individual boundary areas made up of magnetic strips, so that the robotic mower can travel through without difficulty (Fig. 8).
- Fasten the magnetic strip to the ground with the supplied magnetic strip pegs spaced 1m apart.

### ■ Obstacles in the mowing area

With the ultrasonic sensors on, objects which do not impede the robotic mower's normal



# SET UP

functioning, such as trees (without raised roots), vertical poles, etc., do not require excluding from the mowing area (Fig. 9).

When objects, such as exposed tree roots, exposed wires, irrigation systems, etc., are present on the surface of the lawn, it is required to protect these objects with paving, walls or magnetic strip to prevent the damage to them and to the robotic mower (Fig. 10).

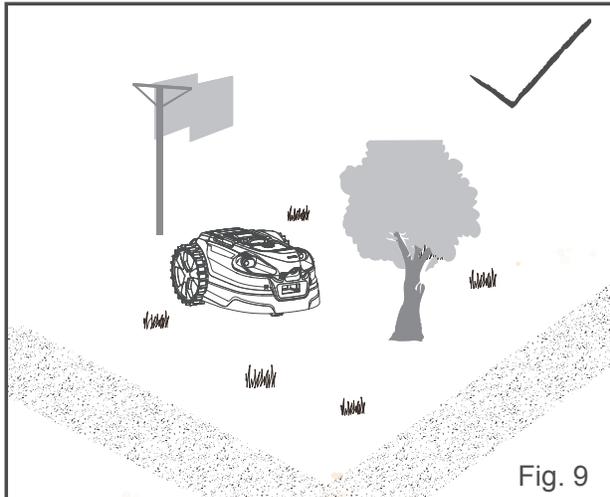


Fig. 9

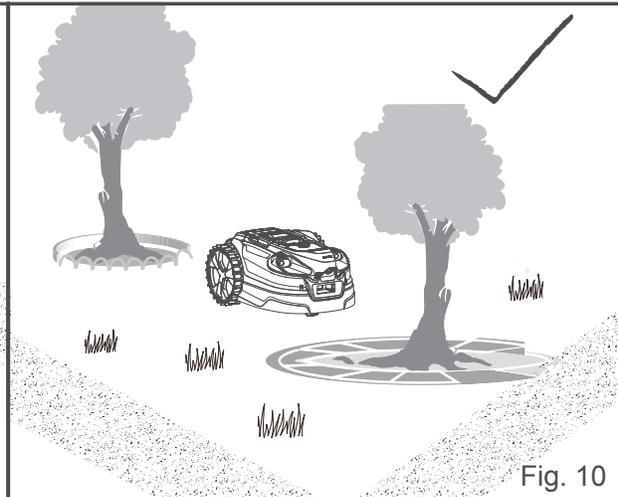


Fig. 10

The working area cannot be defined by holes or ditches. Ensure that there are no objects such as toys, work tools, small stones, branches, or sprinklers, etc., on the lawn or protruding from the ground which could impede the mower or cause damage to the blade (Fig. 11).

**NOTE:** Avoid leaves accumulating on the lawn, as they may not be detected correctly by the robotic mower. Remove leaves at regular intervals.

## ■ Slopes

The robotic mower has the ability to safely climb slopes of 35%, and areas that are steeper than this should be excluded (Fig. 12).

To calculate the slope of your lawn, see Fig. 12. The slope would be calculated as below:

$$\frac{35\text{cm (Elevation)}}{100\text{cm (Length)}} = 35\% \text{ (slope)}$$

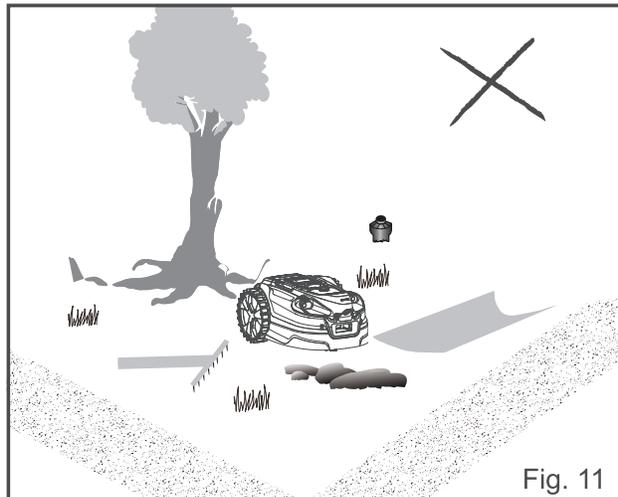


Fig. 11

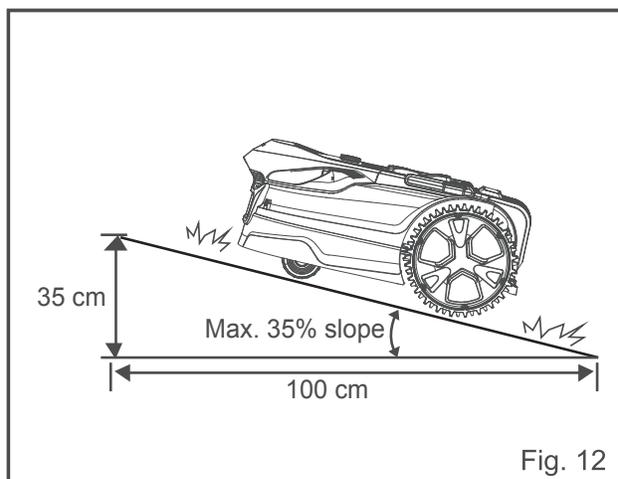


Fig. 12

## SET UP

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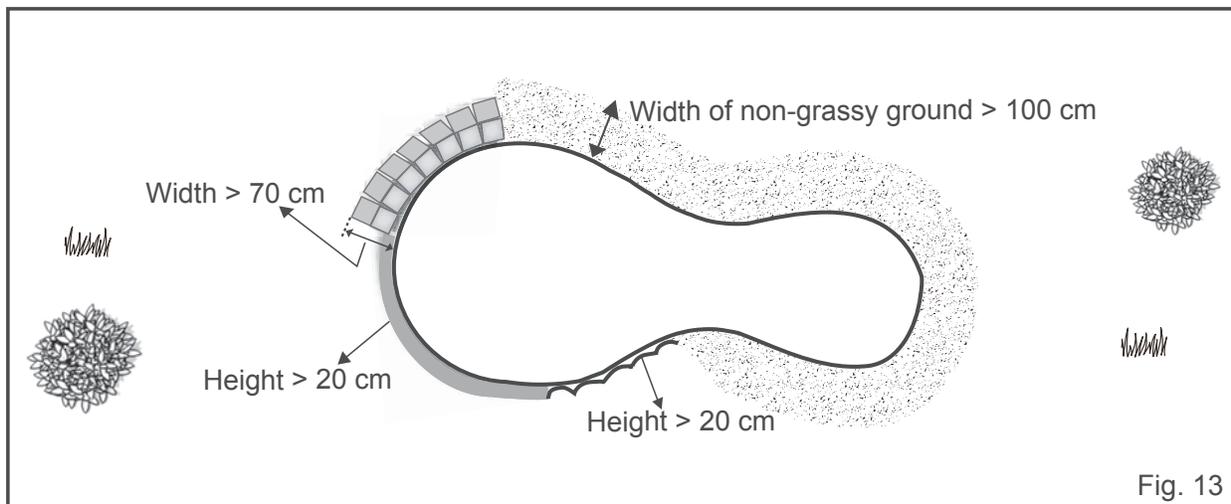
### ■ Pools and ponds

If there is a pool or pond in the mowing area, create appropriate borders to protect it.

- Raised barriers higher than 20 cm.
- Flat edging (paving, gravel or wooden boards wider than 70 cm).
- Magnetic strip placed at least 10cm away from the water edge.

The illustration shows a correctly defined working area for the correct functioning of the mower (Fig. 13).

**It is very important to make visual boundaries around ponds wide and obvious for the mower. Pond plants and algae could be interpreted as grass. Physical boundaries or magnetic strip around ponds are highly recommended and will prevent any accidental water damage to your mower which is not covered by the manufacturers guarantee.**



# ASSEMBLY

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## Preparation

- The lawnmower is supplied fully assembled. For more environmentally-friendly shipping, the charging station is customer assembly.
- Carefully remove all contents from the product packaging. Product blades are sharp. Please remove mower using the carry handle. Handle mower with care.
- Ensure you have all the accessories and tool(s) needed for assembly and operation. This also includes suitable personal protective equipment.
- When installing the base station, you will also need a pair of gloves (not included in the box).



## Select the Base Station Location (See Fig. 14)

It is important to select a proper location for the base station to charge the robotic mower in order to allow correct docking.

The base station should be located in an area that is:

- Within the lawn area with 2m of clearance around the open sides of the charging station
- Level
- Within 10m of an outdoor power socket
- Clear of any sharp objects and obstacles

The mower can be operated in multi-zone lawns. Place the base station in the largest zone if there are additional zones in your lawn.

Regularly clean the base station and keep it free of dust and weeds to ensure the camera can detect the orange guide strips.

**NOTE:** The ground leading up to the base station should be level without corners, slopes or obstacles to ensure proper docking.

### IMPORTANT:

Keep the area around the base station free of long grass to allow easy identification by the camera.

Keep the guide strips clean and tidy for easy identification by the camera.

Covering the base station with metal coverings is prohibited and can interfere with GPS signal reception (Fig. 14).

It is recommended to purchase the official LawnMaster Garage accessory. See Page 53 for parts list.

## Install the Base Station (See Figs. 15-18)

# ASSEMBLY

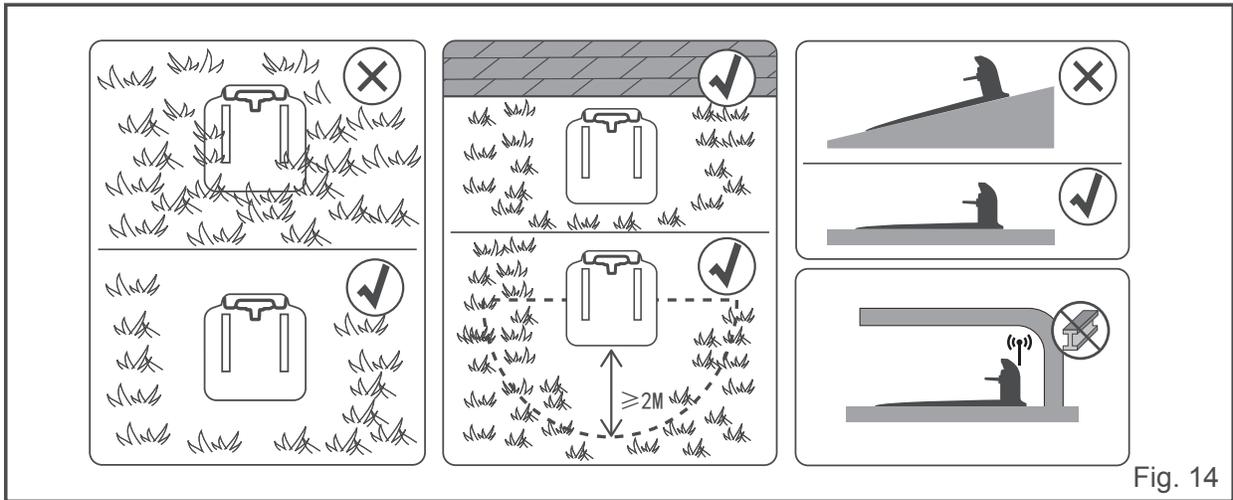


Fig. 14

- Connect the two base parts of the base station as shown. Ensure they click together firmly (Fig. 15).

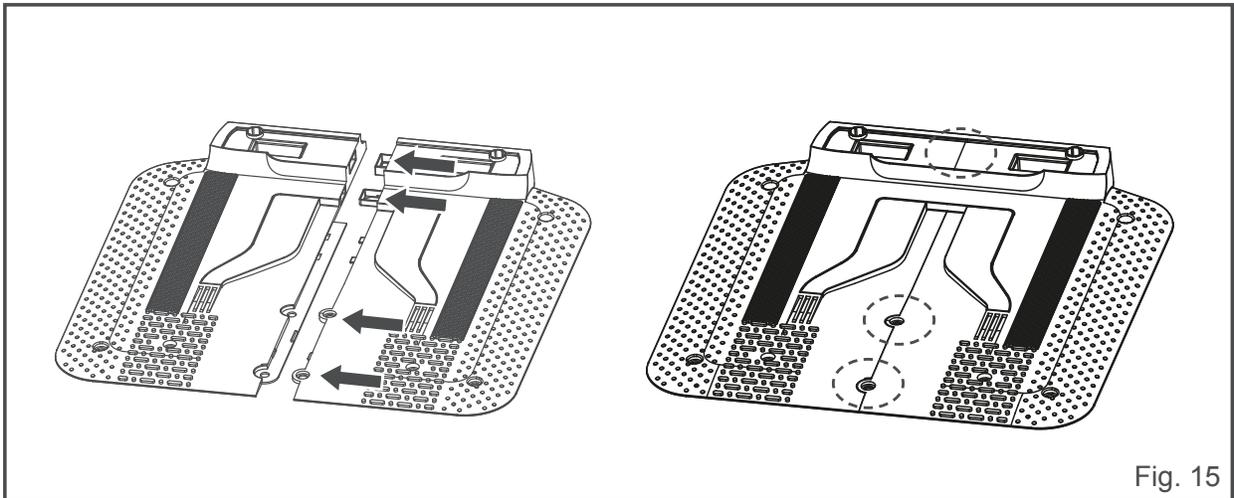


Fig. 15

- Fully insert the upper part of the base station onto the base. Ensure the upper part clicks firmly into place. Ensure the orange strips on the charging station base are facing up and clearly visible (Fig. 16).

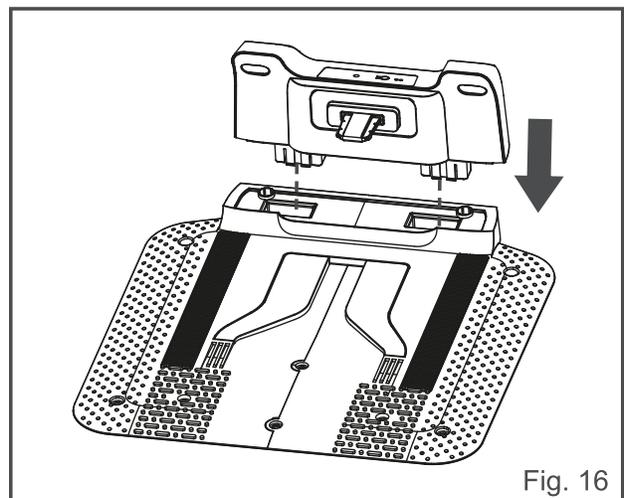


Fig. 16

## ASSEMBLY

- Place the base station on the ground in an appropriate position within the lawn boundary. The back of the charging station should be flush to the boundary to minimize any trimming needed near the power cable. Follow the instructions in section 2 “Select the Base Station Location” on page 21-22.
- Secure the base station to the ground with the supplied screws (Fig. 17).

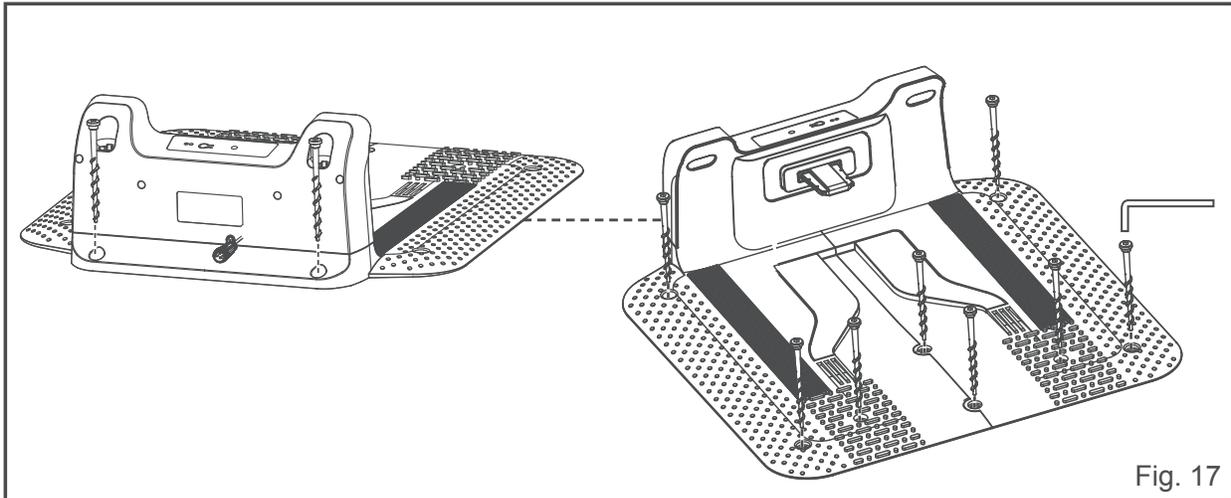


Fig. 17

### **WARNING**

Do not make new holes in the plate of the base station. Only use the existing holes in the base station to secure it to the ground.

### **WARNING**

Do not tread or walk on the plate of the base station (Fig. 18).

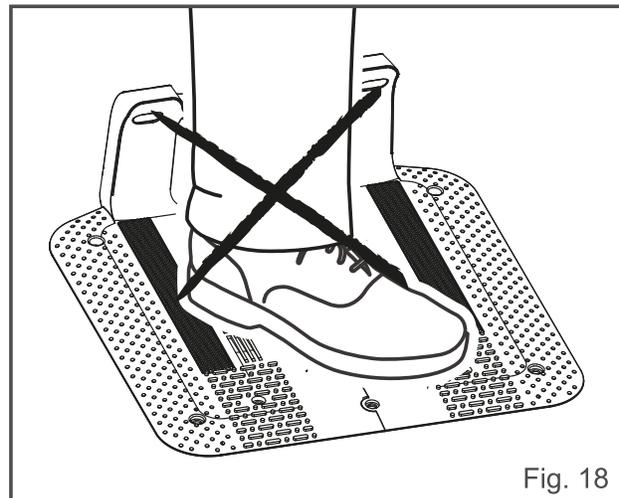
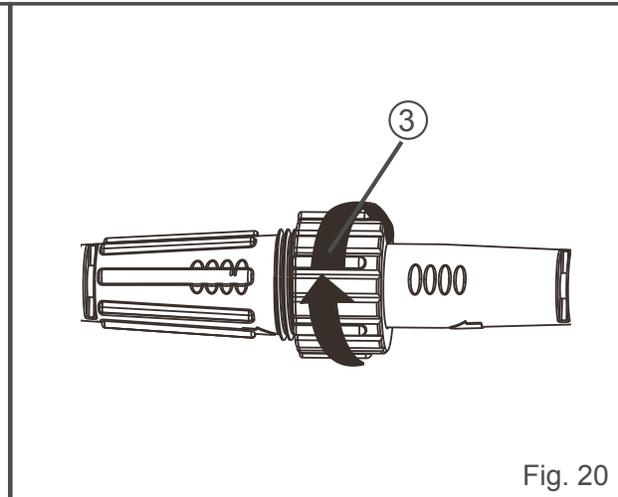
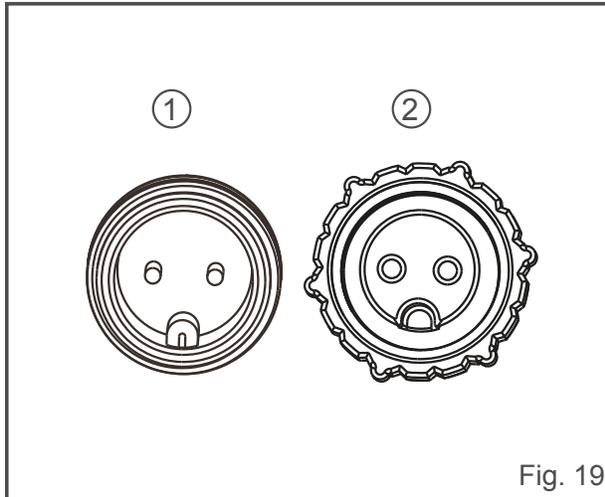


Fig. 18

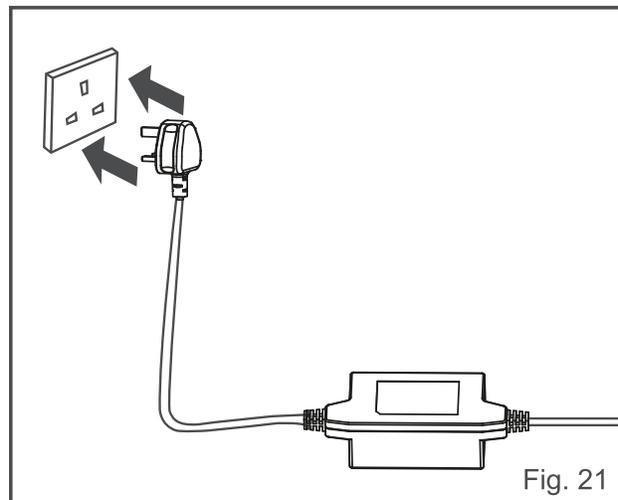
## ASSEMBLY

### Connect the Base Station to the Power Source (See Figs. 19-21)

- First connect the 10m extension cable to the power adapter. Align the notch ( ① ) on the extension cable with the groove ( ② ) on the adaptor and turn the locking sleeve ( ③ ) clockwise to lock into place (Fig. 19 & 20).
- Then connect the base station's power cord to the extension cable. Align the notch ( ① ) on the power cord with the groove ( ② ) on the extension cable and turn the locking sleeve ( ③ ) clockwise to lock into place (Fig. 19 & 20).



- Position the power adaptor on the ground as shown to protect from water. Alternatively, to keep it away from standing water, the power adaptor can be wall mounted by screwing it to the wall through the holes provided (Fig. 21).
- Connect the power adaptor to a 100-240V wall socket. If the power supply is connected to an electrical outlet outdoors, make sure the electrical outlet is always in a dry place and the wattage is compatible with the mower.



## WARNING

Do not put the power cable in the working area, or the mower may cut the power cable.

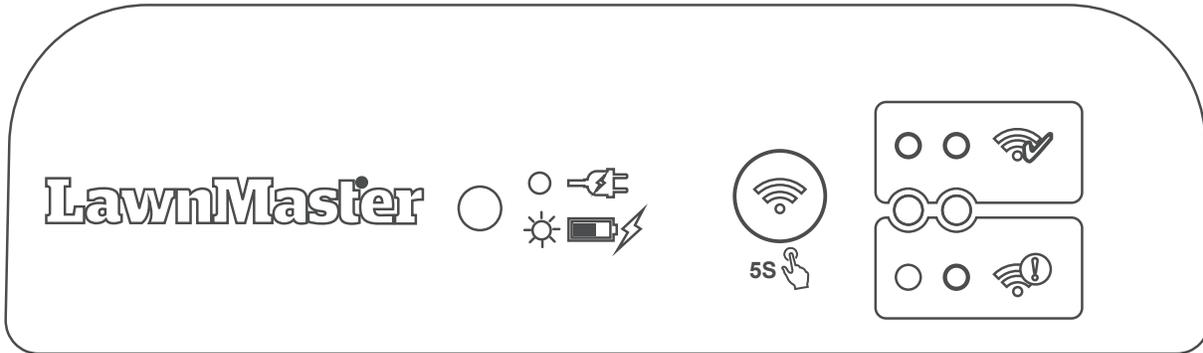
## WARNING

Recharge the mower only with the base station specified by the manufacturer. Incorrect use may result in electric shock, overheating or leakage of corrosive liquid from the battery.

# ASSEMBLY

## Charging Indicators

When the base station is installed successfully and the power adaptor is connected to an electrical outlet, the LED on the base station will be solid green. Check the LED status as below to make sure the connection between the base station and power source is OK.



LED on the Base Station	Status	Action
Solid green	Base station is connected successfully; the robotic mower is fully charged.	/
Flashing green	The robotic mower is charging.	/
Off	No power supply.	Check the power adaptor, cord, breakers, and fuses.

## Install/Remove the Battery Pack (See Figs. 22-23)

### **WARNING**

If any parts are broken or missing, do not attempt to attach the battery pack to the robotic mower or operate the robotic mower until the broken or missing parts are replaced. Failure to do so could result in serious injury.

### **CAUTION**

Please fully charge before first use.

#### To install the battery pack:

- Lift the battery compartment cover.
- Align the support rails located within the battery compartment with the guides in the battery pack, and then insert the battery pack into the compartment (Fig. 22).
- Push the battery pack until it clicks.
- Close the battery compartment cover.

## ASSEMBLY

---

**NOTE:** Make sure that battery pack firmly snaps into place and is secured to the mower before starting operation. If the battery compartment cover is not closed properly, “Close the battery cover” will display on the main screen.

### To remove the battery pack:

- Stop the mower. Lift the battery compartment cover.
- Press the release button on the battery pack, grasp the battery pack firmly and pull out of the battery compartment (Fig. 23).
- Close the battery compartment cover.

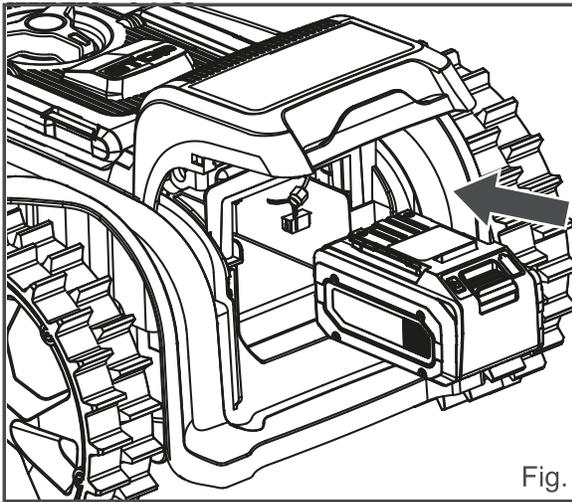


Fig. 22

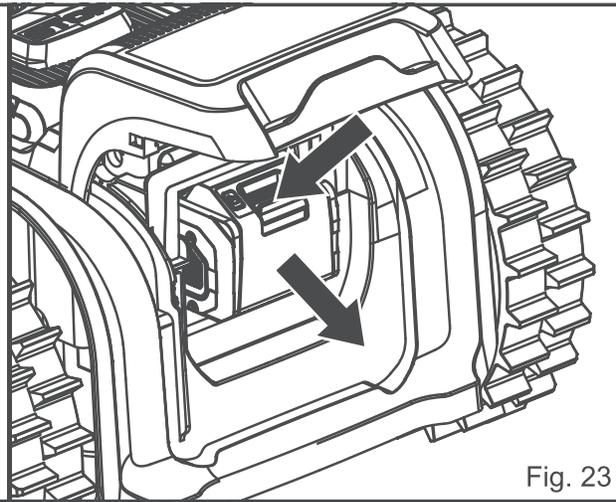


Fig. 23

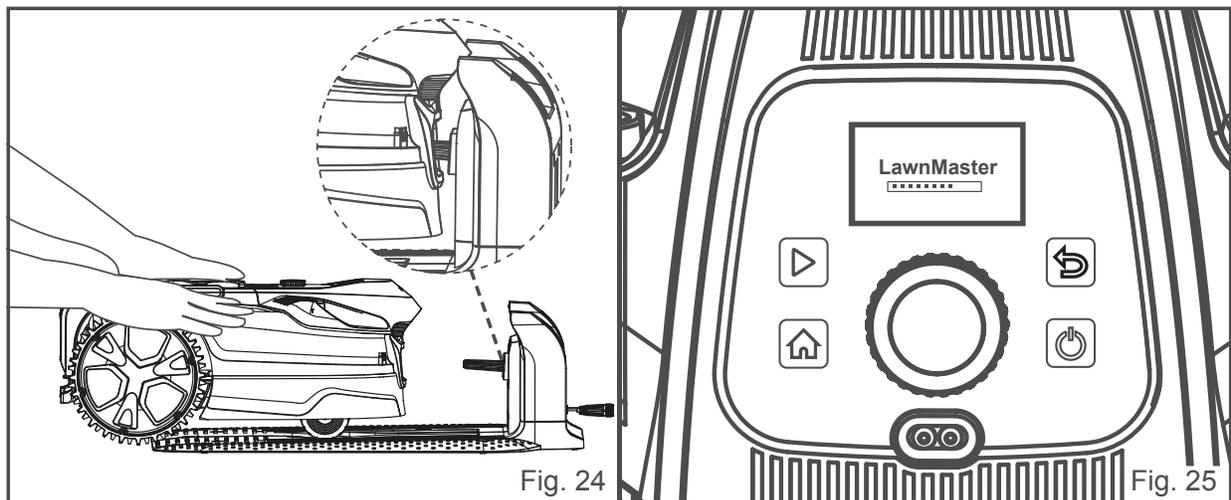
# OPERATION

## Control Panel (Fig. 25)

Button	Name	Function
	On/Off Button	Press to turn on/off the robotic mower.
	HOME Button	Press to send mower to base station.
	Start Button	Press to start mowing.
	Selection Dial	Turn right or left to select the menu settings. Press to confirm.
	Back Button	Press to return to the previous level.

### Power On and First Use (See Figs. 24-25)

- Make sure the battery is secured in place, and the base station is installed correctly and powered on successfully.
- Place the mower on the base station. Make sure the mower's charging strips are fully connected with the contact strip of the base station (Fig. 24). The mower will automatically start initialization (Fig. 25). It will take about 15 seconds to complete this process. The mower will beep twice, and the LCD panel will display the Main Screen (Fig. 26).



- The GPS icon on the main screen will rotate while the mower is being positioned. When the mower is positioned successfully, the GPS icon will be solid (see page 29).

**NOTE:** The robotic mower will recheck the GPS position for up to three minutes every time it returns to the base station. When the GPS signal is good and the positioning is complete, the GPS icon will be solid. When affected by weather or if the base station is covered by a metal covering, the GPS signal will be weak and the GPS icon will flash.

# OPERATION

- The battery is supplied in a partially charged state and will require charging before use. Allow the battery to fully charge before first use.

## Main Screen (See Fig. 26)

This section explains the symbols shown on the Main Screen.

### ① Camera Icon

The camera icon is always on when the robotic mower is on.

Camera Icon	Status
Solid	Communication of the camera is normal.
Flashing	Communication of the camera is abnormal.

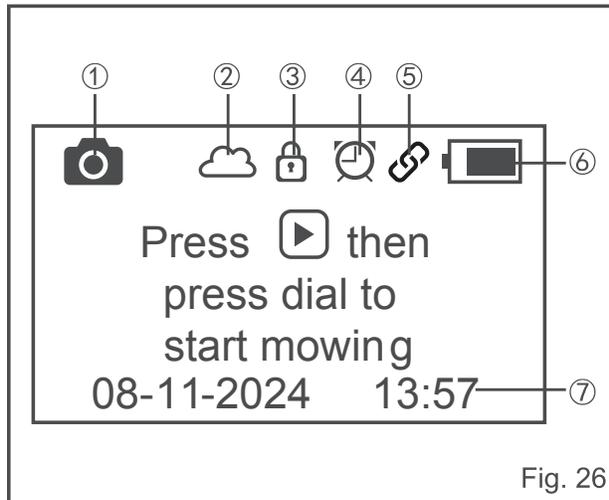


Fig. 26

### ② Rain Sensor Icon

Rain Sensor Icon	Status
	The rain sensor is not activated.
	The rain sensor is activated.
Empty	The rain sensor is off.

### ③ Lock Icon

Only visible when a PIN is set. Refer to page 34-35 for more details.

### ④ Working Mode Icon

Please refer to page 30-33 for a more detailed overview of these two modes.

Working Mode Icon	Status
	Schedule Mode
	Drop & Mow Mode

# OPERATION

## ⑤ GPS Icon

The GPS icon is on when the robotic mower is on.

GPS Icon	Status
 (Solid)	The robotic mower is positioned successfully.
 (Rotating)	The robotic mower is being positioned.
 (Flashing)	Bad signal (Refer to Troubleshooting Section)
	No valid GPS data (Refer to Troubleshooting Section)
	Temporary problem on GPS communication; or the GPS module is damaged. (Refer to Troubleshooting Section)

## ⑥ Battery Indicator

Battery Indicator	Status
	The robotic mower is fully charged.
	Low power.
	Charging
	The robotic mower is in charging station, no battery pack inserted.

## ⑦ Time and Date

The time will be set following GPS information when the mower is powered on first time or after factory reset. The default time setting is Summer Time (i.e. one hour ahead of the standard regional time zone).

Changing the time manually will override this.

# OPERATION

## Settings Menu (See Figs. 27-46)

Press the Selection Dial (referred to afterwards as the “Dial”) to select the settings menu.

Turn the Dial right or left to scroll through the settings menu icons (Fig. 27).

Press the Dial again to enter the submenu for each setting.

Press the back arrow to go back in the menu.

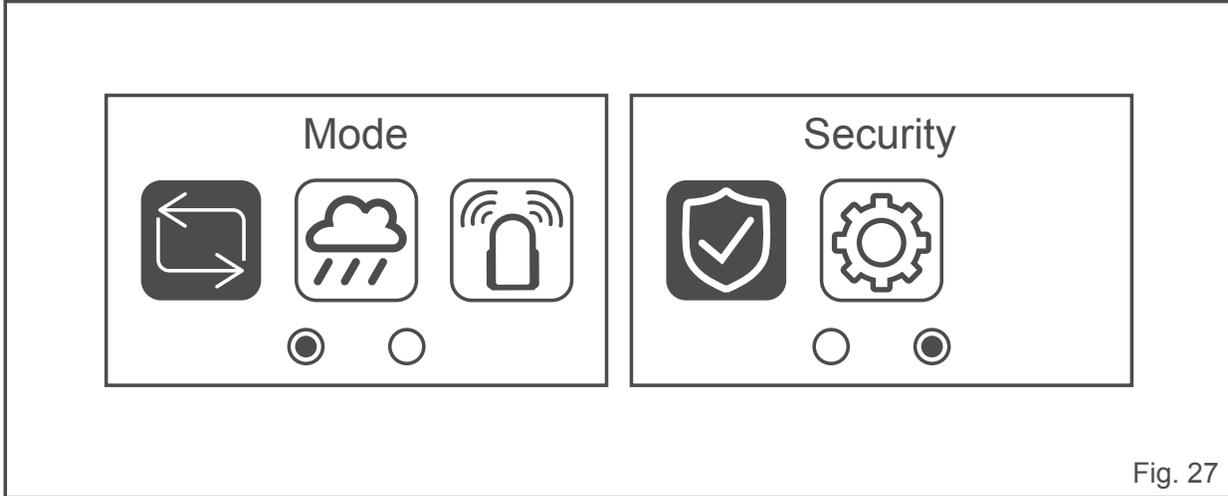


Fig. 27

Icon	Name	Function
	Mode	Select the working mode: Schedule or Drop & Mow (see page 30-33)
	Rain Sensor	Rain sensor setting, to turn the rain sensor function on and off and select the desired time delay.
	Ultrasonic	Turn ultrasonic sensors on and off.
	Security	Adjust security settings, such as PIN code protection.
	Settings	General settings

### Mode Page

Press the Dial and select the Mode page. Turn the Dial to switch between Schedule and Drop & Mow (Fig. 28). Schedule is the default mode setting.

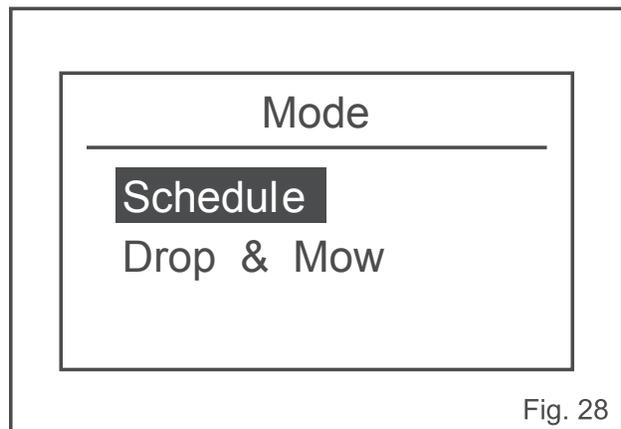


Fig. 28

# OPERATION

## Schedule Mode

The robotic mower mows the lawn within the properly defined borders in daylight hours following the set schedule. It will automatically recharge. It will alternately charge and mow until the end of the set working session. A schedule of 08:00 to 17:00 is set by default.

### Ensure the time and date are set according to the local time zone.

Choose the start and end times:

- Select “Schedule”. Press the Dial to confirm.
- Turn the Dial to select Amend Schedule, and then press the Dial to enter the schedule overview page (Fig. 29).
- On the schedule overview page, the current working sessions are highlighted with a solid bar. The sunrise and sunset times are shown at the top of the screen. NOTE: The mower will not operate outside of these times.
- Turn the dial to toggle through the daily schedules (Fig. 29).
- Turn the dial to the desired day and press to select.
- Adjust each digit of the start time and end time by turning the Dial and pressing to confirm.
- If a wrong digit is entered, press the back button to return to the previous digit.

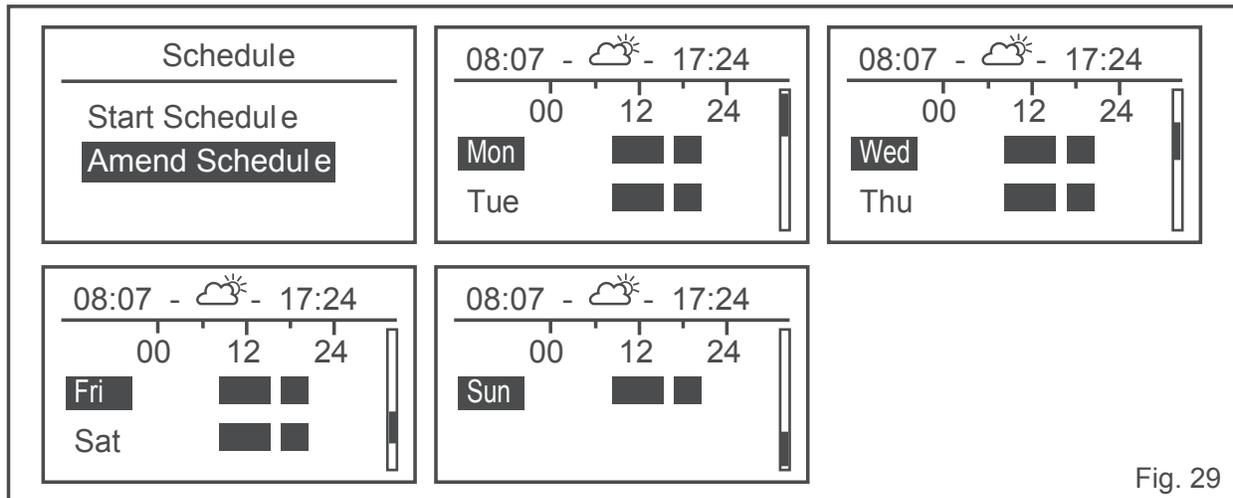


Fig. 29

Two working time periods can be set for each day according to your requirements. The daily working time settings can be copied to other days (Fig. 30).

To clear the time settings, turn the dial to select “Clear” and press to confirm (Fig. 30).

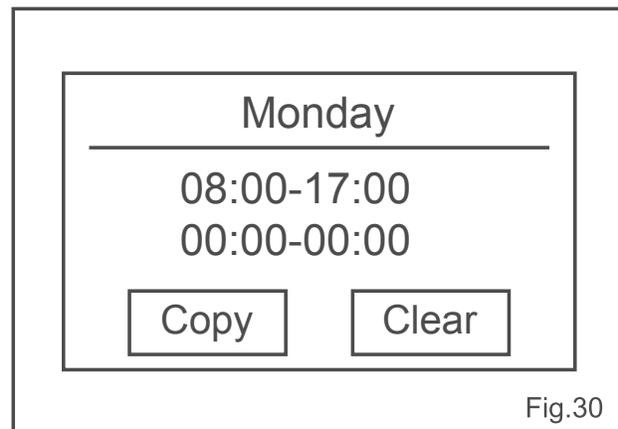


Fig.30

# OPERATION

## To copy daily time settings to other days:

- Turn the Dial to select Copy, and then press the Dial to enter the Copy page (Fig. 31).
- Turn the Dial to select the desired day and press to confirm with a tick.
- To apply the times to all days, select “All”.
- Press the back button, select Yes and press the Dial to confirm changes (Fig. 31).

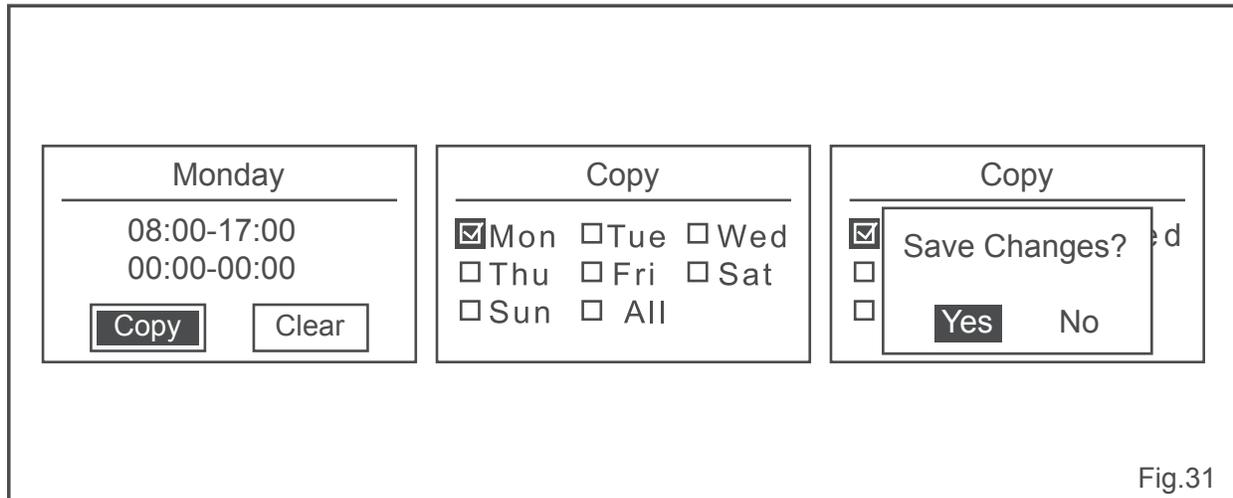


Fig.31

Press the back button to return to the schedule overview page. The newly set start and end times can be seen.

The mower schedule is now set. To start schedule, turn the Dial to select Start Schedule, and then press the Dial to confirm (Fig. 32).

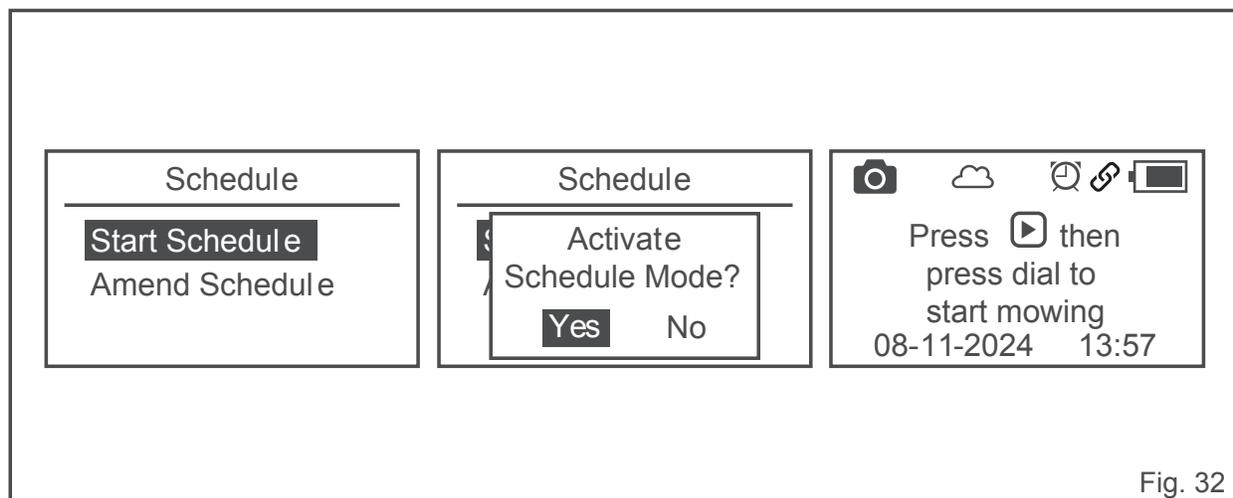


Fig. 32

Refer to page 38-39 Starting and Stopping the Mower to begin the first scheduled mowing session.

## Drop & Mow Mode – the mower is sent out for a one-time mow.

This mode can be used either on “Main Area” (i.e. the lawn that contains the charging station) or “Other Area” (e.g. front lawn or lawn at another property):

# OPERATION

Main area – the mower will mow once and return to the charging station.

Other area – the mower will mow until the battery runs out and wait on the lawn to be collected and placed on the charging station.

- Select “Drop and Mow”. Press the Dial to confirm.
- Select Random Mode or Spiral Mode by turning the Dial. Press the Dial to confirm (Fig. 33).
- Choose the Main Area or Other Area according to your requirement.
- Press the Dial to confirm (Fig. 33).

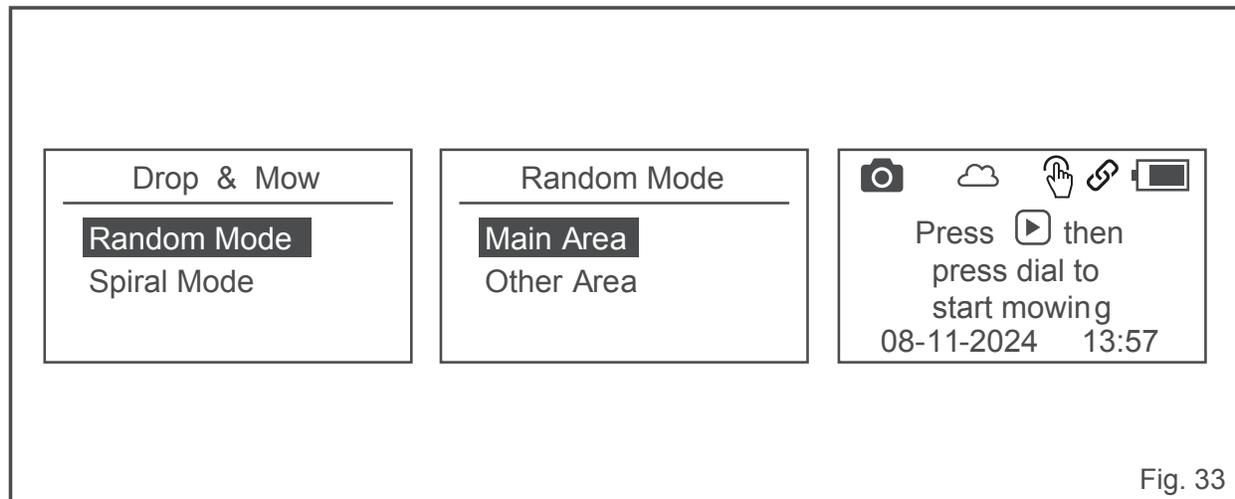


Fig. 33

## - Random Mode:

The robotic mower mows the lawn in a random pattern. It will automatically search for a suitable working area. If the robotic mower does not find grass, it will change direction and start running again in a new direction. The blades will not spin until the mower can detect grass for more than 5 seconds.

## - Spiral Mode:

The robotic mower mows in a spiral outwards from where it is placed on the lawn. This is best used to tidy up any areas that may not have been mowed during a random mowing session. The robotic mower will spiral for up to 3 minutes. After the spot cut is finished, the mower will start to mow in a random pattern automatically.

If the area to be mowed is too narrow for the robotic mower to carry out the spot cut, after searching, the mower will mow in a random pattern automatically.

**NOTE:** The mower will beep when lifted and transported from different areas. This is a normal warning sound.

## Rain Sensor Page

The robotic mower is equipped with a rain sensor (Fig. 34). It is turned on by default.

When it rains, the rain sensor will be activated. The robotic mower will stop mowing and return to

# OPERATION

the base station. The time delay is effective from the time the sensor dries.

- Turn the Dial to the rain sensor menu and press to select.
- Turn the Dial and select on or off.
- Select the required time delay using the Dial. This can be set between 0 and 10 hours.

**NOTE:** The default delay time is 2 hours as shown (Fig. 35). The time delay prevents lawn damage arising from cutting on wet lawn.

To turn the rain sensor off, turn the Dial to select Off and press the Dial to confirm.

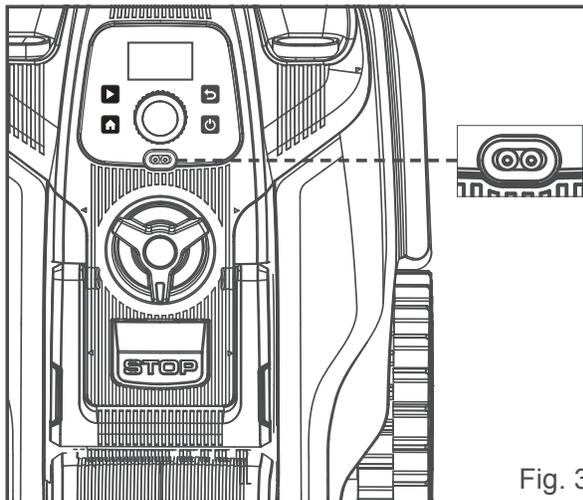


Fig. 34

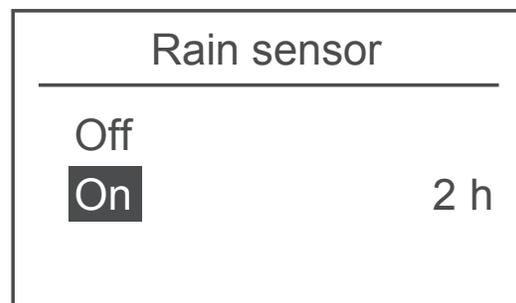


Fig. 35

## Ultrasonic Page

Turn and press the Dial to enter the Ultrasonic settings menu (Fig. 36).

The ultrasonic object sensors are turned on by default. To turn the ultrasonic sensor off, turn the Dial to select Off and press the Dial to confirm Yes.

## Security Page

Turn and press the Dial to enter the Security page (Fig. 37). This page is used to change the PIN, switch the PIN on and off, and view the software version.

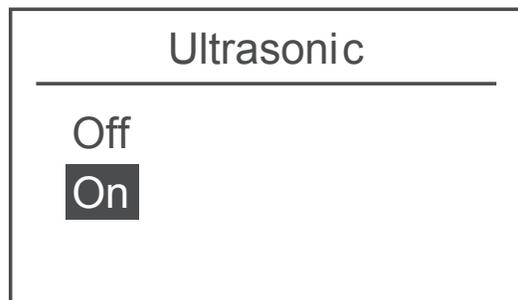


Fig. 36

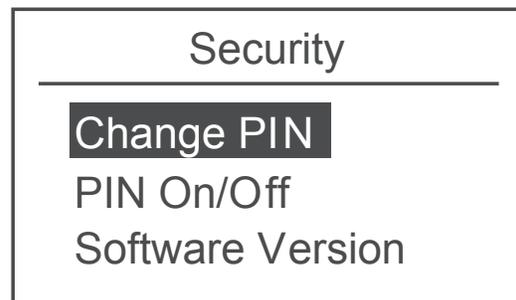


Fig. 37

# OPERATION

## 1) Change the PIN (Fig. 38)

- Use the Dial to select Change PIN and press the Dial to enter the Old PIN code page (on first use, enter the default PIN which is 1234).
- Turn the Dial and press to input the new PIN code. Confirm once again.
- Press the back button to exit.

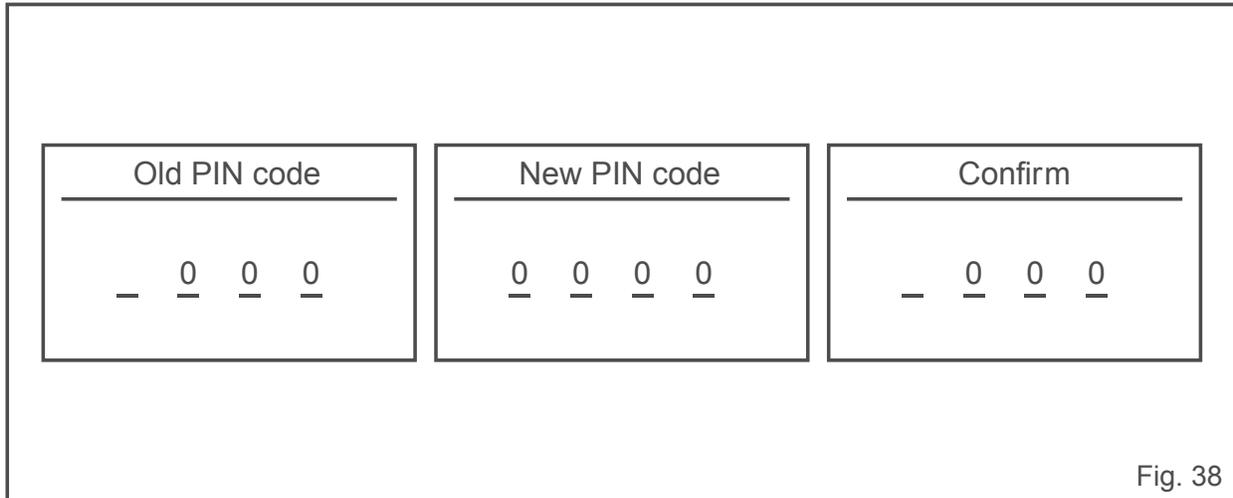


Fig. 38

## 2) PIN On/Off (Fig. 39)

This function is used to turn the PIN on and off. When the PIN function is turned on, you need to enter the PIN code to operate the control panel; when the PIN function is disabled, the control panel can be directly operated.

Use the Dial to select PIN On/Off and press the Dial to enter the PIN Control page.

Turn the Dial to select Disable or Enable, and then press the Dial to confirm Yes.

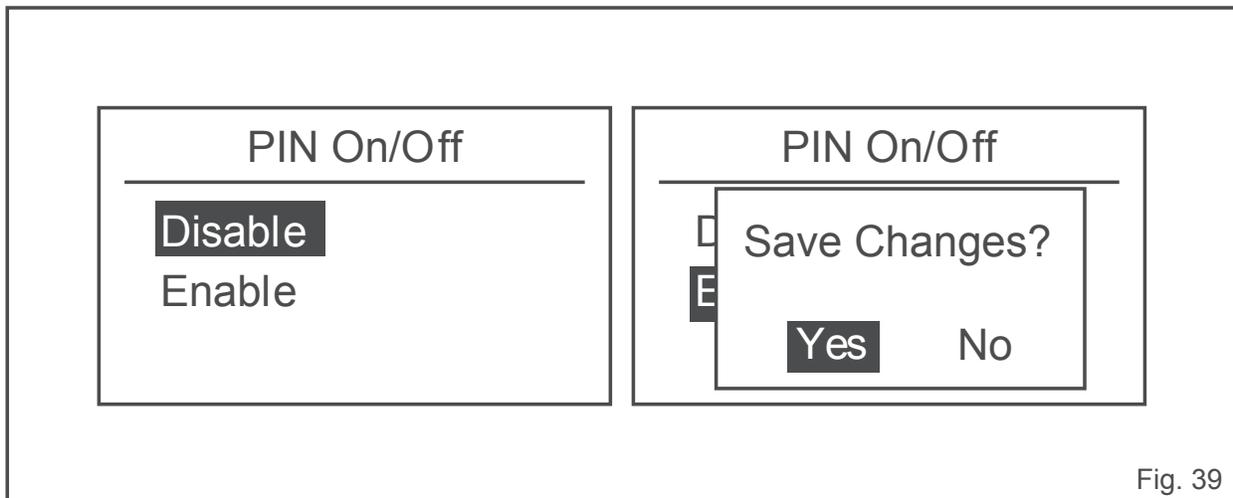


Fig. 39

# OPERATION

### 3) Software Version (Fig. 40)

This displays information about the robotic mower's software version. If necessary, check the software version using this setting.

#### Settings Page

Turn and press the Dial to enter the Settings page (Fig. 41). This page is to view/change general settings, such as date, time and language, etc.

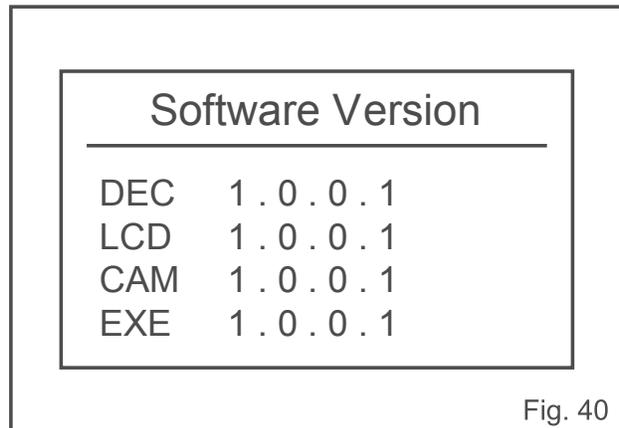


Fig. 40

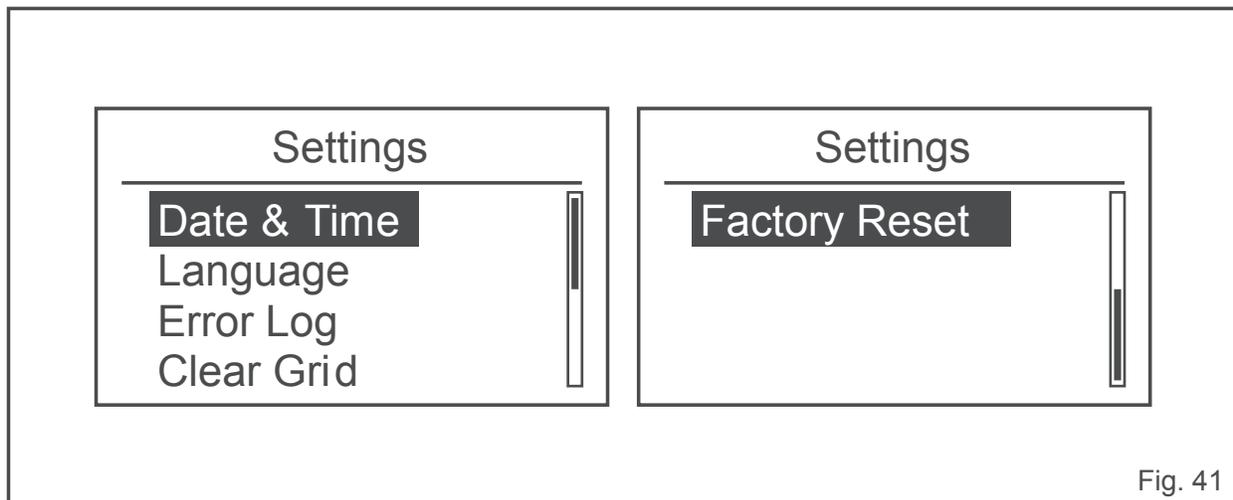


Fig. 41

### 1) Date & Time

Use the Dial to select Date & Time and press the Dial to enter the Date & Time page (Fig. 42). This setting allows you to set current date and time.

Use the Dial to edit the date and time:

- Press the Dial to select each digit.
- Turn the Dial right/left to increase/decrease the time of each digit.
- Press the Dial to confirm each digit.
- Press the Dial to confirm Yes.

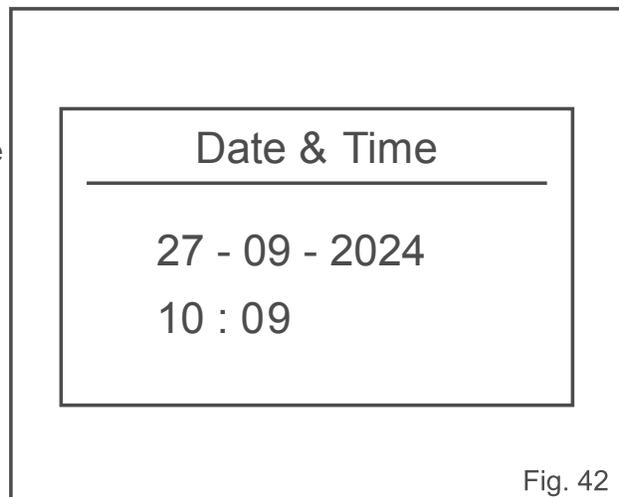


Fig. 42

The set date and time can be seen on the bottom of the Main Page. It is important to set the correct date and time so the mower schedule functions correctly.

# OPERATION

## 2) Language

Use the Dial to select your desired language. Press the Dial to confirm (Fig. 43).

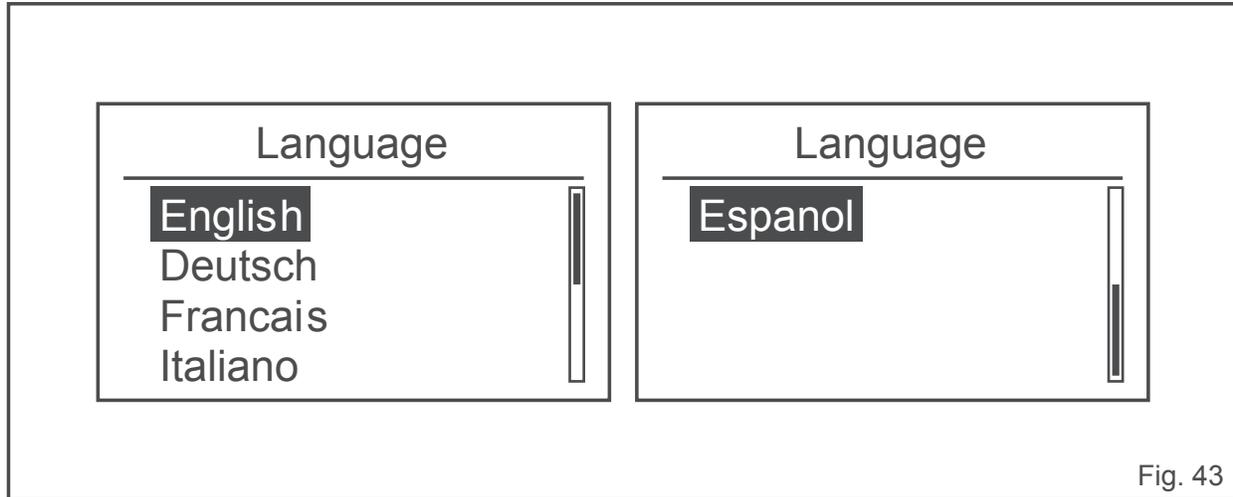


Fig. 43

## 3) Error Log

Use the Dial to select Error Log and press the Dial to enter the Error Log page (Fig. 44). The latest two errors are displayed in this error log. Select and press the Dial to enter the Error log page to view.

## 4) Clear Grid

Reset map of lawn or after changing or repositioning the charging base station. Select and press the Dial to confirm (Fig. 45).

## 5) Factory Reset

This setting allows you to reset the parameters of robotic mower to the factory default settings. Confirm with Yes (Fig. 46).

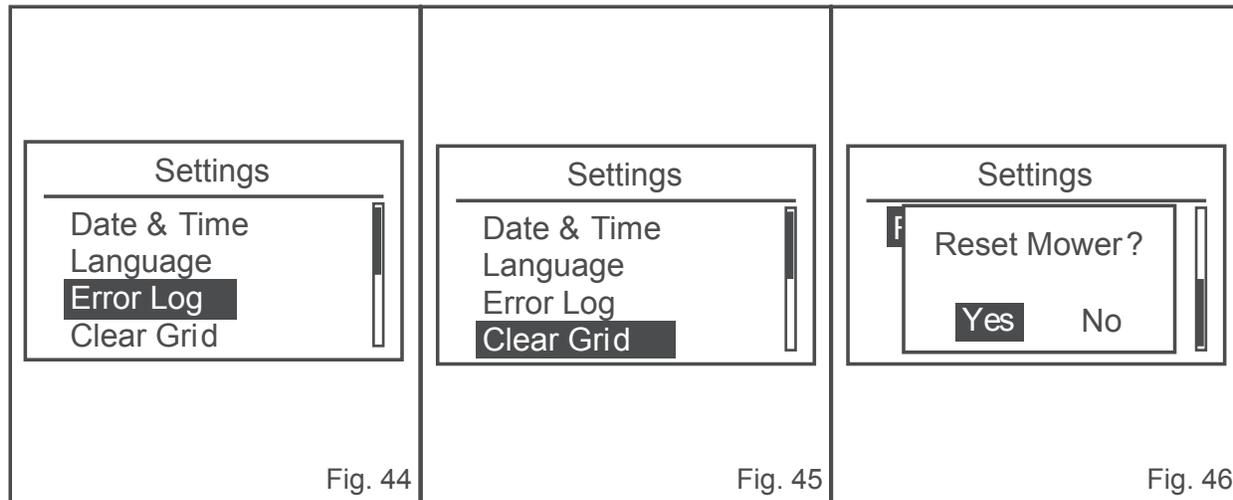


Fig. 44

Fig. 45

Fig. 46

## OPERATION

### Starting/Stopping the Robotic Mower (See Figs. 47-49)

#### **WARNING**

Read the safety instructions carefully before you start your robotic lawnmower.

#### **WARNING**

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

#### **WARNING**

Never use the robotic lawnmower when people, especially children, or pets, are in the cutting area.

- Put the robotic lawnmower in the properly defined working area and near the charging station.
- Make sure the battery is secured in place.
- The mower may already be on if it has recently been on the charging station. If the mower is off, press the On/Off button to turn the mower on. The robotic mower starts initialization. After the process is completed, the mower will beep twice.
- Select the desired mower settings (e.g. Rain Sensor, Ultrasonic Sensor, Time & Date) according to the information in Section 4 “Settings Menu”.
- Choose Schedule Mode or Drop & Mow Mode according to the instructions on page 30-33.
- To start the mower, press the Start button, and then press the Dial to confirm. The robotic mower will start mowing in 5 seconds (Fig. 47).

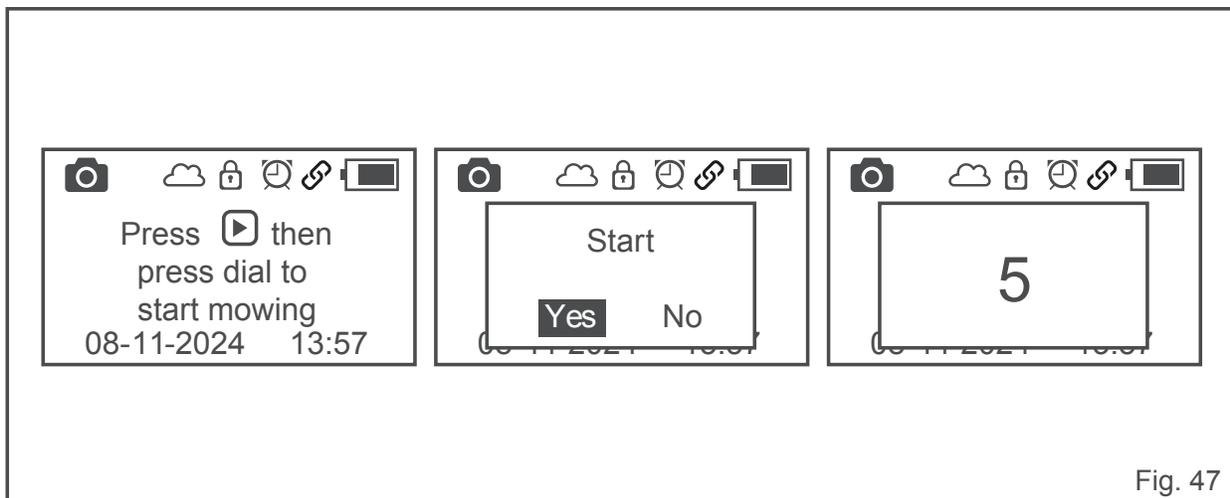
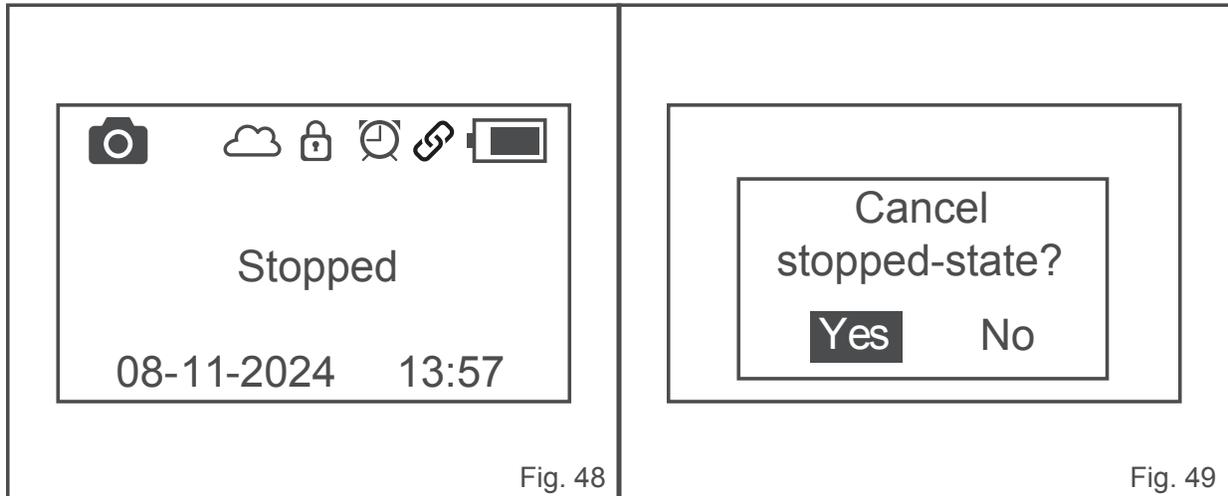


Fig. 47

- In Schedule mode, when charging is required, the robotic lawnmower will automatically return to the base station. It takes around 2 hours and 10 minutes to be fully charged, after this the robotic mower will resume mowing. When the scheduled working time is over, it will return to the base station and remain on standby on the base station for the next working schedule.

## OPERATION

- To stop the mower manually during operation, press the STOP button. The LCD panel will display as below (Fig. 48). To recover the mower from the stopped state, press any button, and then press the Dial to confirm (Fig. 49).



**NOTE:** When the mower is charging on the base station, press the STOP button, the LCD panel will display as per Fig. 48. The mower will not resume working after charging is finished.

- To turn off the mower, press the On/Off button for 2 seconds.

**NOTE:** The mower is always on and cannot be turned off when on the charging station.

**NOTE:** If the mower is not on the charging station and the control panel has not been operated for 25 minutes, the mower will automatically enter sleep mode (the LCD panel will turn off). Press the On/Off button to turn off the mower. Then turn on the mower again.

**NOTE:** If the operating temperature is over 65°C, the LCD panel will display “Battery Over Temperature”. The robotic mower will search automatically to return to the base station. Allow the machine to cool down to reach a normal temperature. Then restart the mower, it will work again.

### Setting the Cutting Height (See Fig. 50)

## **WARNING**

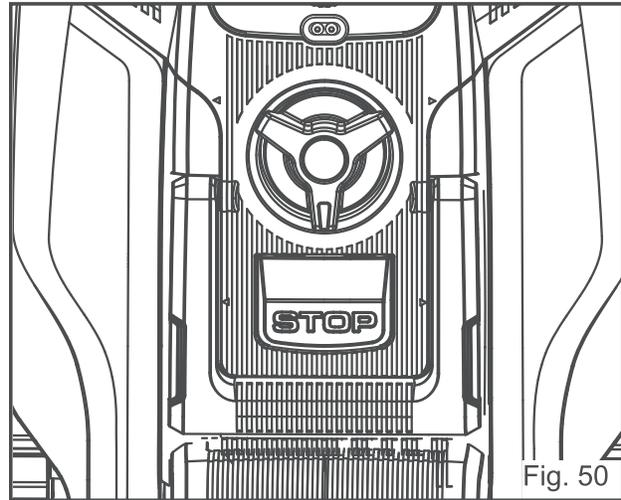
Do not make any adjustment to the robotic mower without first stopping the motor. Keep your feet away from the blade turning disc when adjusting its height.

The cutting height of the robotic mower can be adjusted from MIN (20 mm) to MAX (80 mm) (Fig. 50).

# OPERATION

During the first week of use, select a cutting height of 60 mm. The cutting height can be lowered step by step every week until the desired cutting height has been reached.

- Press the STOP button to stop the robotic lawnmower.
- Turn the cutting height adjustment knob to set the cutting height.
  - Turn clockwise to raise the cutting height.
  - Turn anti-clockwise to lower the cutting height.
- For the first cut each season, a higher cutting setting should be selected. USING A CUTTING HEIGHT THAT IS TOO LOW IN LONGER GRASS WILL USE MORE POWER AND REDUCE BATTERY RUN TIME.



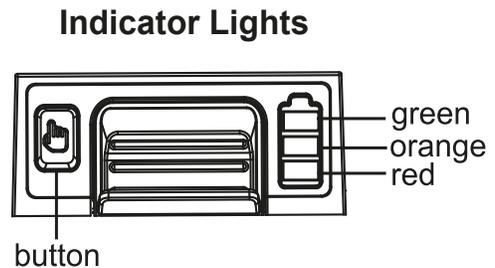
- Before you begin to mow, check to ensure that the blade is not blunt and that none of the fasteners are damaged. To prevent any imbalance, replace blunt and/or damaged blades. To carry out this check, first switch off the mower using the On/Off button.

## Battery LED Indicators

The panel consists of 3 LEDs on the battery. Press and hold the button, then release it, the LEDs will show you the charge levels.

The battery's charge level can be checked either when the battery is attached on the charger/mower or removed from the charger/mower.

LEDs on Battery (Continuous Lighting)	Battery Capacity
3 LEDs (inc 2 green)	Fully charged.
2 LEDs (orange & red)	≥40%
1 LED (red only)	<40% (Recharge required).



# MAINTENANCE

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## **WARNING**

Always switch the product off, remove the battery pack and let the product cool down before performing inspection, maintenance and cleaning work!

## **WARNING**

If a part becomes worn or damaged, use manufacturer's recommended replacement parts. Use of any other parts may create a hazard or cause product damage.

## **WARNING**

Do not use any attachments or accessories not recommended by the manufacturer of this product. The use of attachments or accessories not recommended can result in serious personal injury.

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### General Maintenance

- Keep all safety devices and the motor housing free of dirt and dust. Avoid using solvents when cleaning plastic parts. Most plastics are susceptible to damage from various types of commercial solvents and may be damaged by their use. Use clean, dry cloths to remove dirt, dust, oil, grease, etc.
- Periodically check all nuts and bolts for proper tightness to ensure safe operation of the robotic mower.
- Remove any buildup of grass and leaves on or around the robotic mower and base station. Wipe the mower clean with a dry cloth occasionally.
- Inspect the base station and clean it from mud and debris to allow proper docking.

### Replacing the Mower Blade (See Figs. 51-52)

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## **WARNING**

Always wear protective, heavy gloves and/or wrap the cutting edges of the blade with rags when performing blade maintenance. Failure to heed this warning could result in serious personal injury.

## **WARNING**

Before performing any maintenance, make sure the battery has been removed. Failure to heed this warning could result in serious personal injury.

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Always check to see if the blades are in good condition. If the blades are blunt, damaged or showing signs of imbalance, they must be replaced. Only use recommended replacement blades. Make certain ALL 3 blades and screws are replaced at the same time to keep a balanced cutting

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# MAINTENANCE

system. Visit [www.cleva-europe.com](http://www.cleva-europe.com) for information on where to purchase additional blades. Consumables and Accessory part numbers can be found at the back of this manual.

## To replace the blades

- Press the STOP button and allow the blade to come to a complete stop.
- Press the On/Off button to turn off the mower.
- Lift the battery compartment cover. Remove the battery.
- Slowly turn the mower over. Place it on a soft and clean surface.
- Use a suitable tool (e.g., a screwdriver) to insert into one of three holes in the blade disc to fix it in place (Fig. 51). This ensures the blade disc is not turning when replacing the blades to avoid personal injury.
- Wear protective gloves and use a manual screwdriver or hexagonal socket wrench to remove all three screws and blades (Fig. 52).
- Secure the new blades with new screws.
- Make sure all blades can spin freely.



## WARNING

Use of an electric screwdriver to remove blade bolts could cause the blade disc to turn rapidly, resulting in personal injury. Take care and ensure the blade disc is locked in place with a suitable tool.

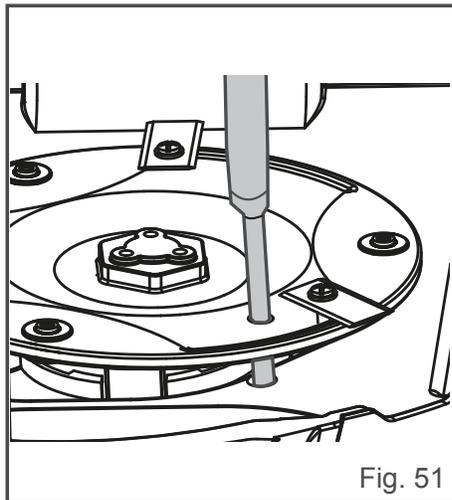


Fig. 51

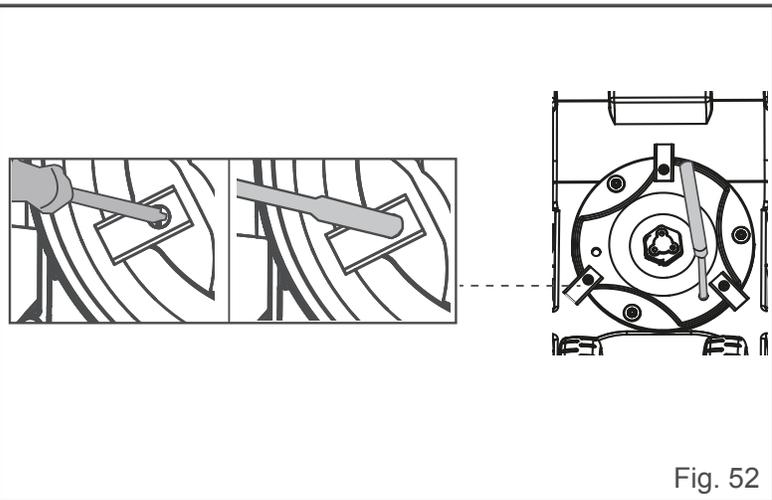


Fig. 52

## Cleaning the Underside

It is recommended to check and clean the underside of the robotic mower regularly.

- Press the STOP button and allow the blade to come to a complete stop.
- Press the On/Off button to turn off the mower.
- Lift the battery compartment cover. Remove the battery.
- Slowly turn the mower over. Place it on a soft and clean surface.

# MAINTENANCE

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- Use a soft brush or damp cloth to remove dirt, dust, oil, grease, etc. from the underside of the mower.

**IMPORTANT:** Do not wash the mower with running water.

- Wear safety gloves to clean the blade disc, the chassis, and the front and rear wheels thoroughly with a soft brush or damp cloth. Remove any lodged debris around them.
- Make sure the blade disc can rotate freely and all blades can spin freely.

## Storing the Mower (See Fig. 53)

It is recommended to store the mower indoors during the winter. Storing the mower or battery in sub-zero temperatures can result in damage.

- To optimise the battery longevity, ensure the battery is charged to orange light before storage during winter.
- Press the On/Off button to turn off the mower. Remove the battery.
- Clean the mower thoroughly.
- Use the carry handle to carry the mower. Carry the mower with the blade disc away from the body (Fig. 53).
- Store the mower indoors in a clean, dry place out of the reach of children.

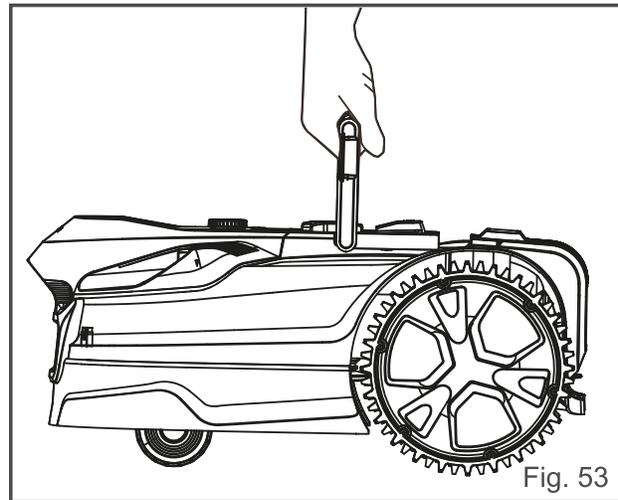


Fig. 53

**IMPORTANT:** Protect the underside of mower from standing water. NEVER store the mower upside down outdoors.

## Battery Maintenance

- Keep the battery clean and clear of debris. Do not allow foreign material into the recessed cavity or on the contacts. Wipe with a dry cloth. Do not use solvents, water, or place in wet conditions.
- Check that the battery contacts have not been shorted by debris or foreign material. Always store away from metal objects which could create a connection with the terminals.
- Always remove the battery when storing the mower and keep in a cool dry place out of direct sunlight.
- Store the battery only within a temperature range between 0°C and 25°C and do not subject or store the battery pack in direct sunlight.
- It is recommended to store the lithium-ion battery pack in a 30%-50% charged condition.
- It is recommended to fully charge the lithium-ion battery pack after every six months of storage.

## Storing the Base Station

- Disconnect the power adaptor from the power outlet.
- The base station can be left outside in the winter.
- It is recommended to place the base station in a dry and sheltered location.

# MAINTENANCE

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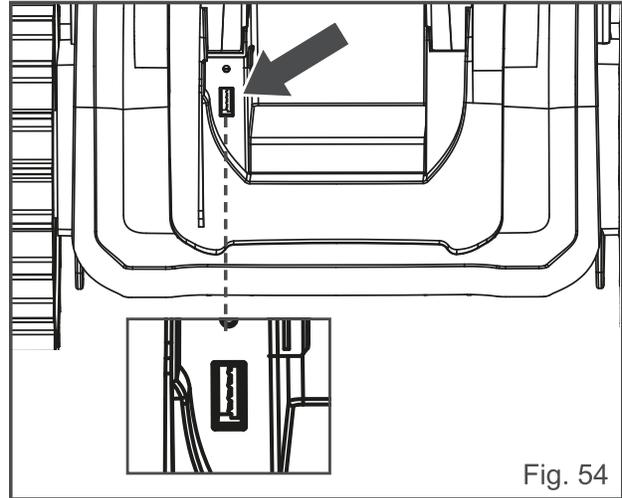
## Updating the Software (See Fig. 54)

The software of the robotic mower can be updated if necessary.

**NOTE:** Make sure the USB flash drive works normally and the robotic mower is switched on by pressing the START/ON button before updating.

**NOTE:** Make sure the mower has sufficient power for updating the software.

- Download the robotic mower's latest software from our support website onto a USB flash drive device.
- Stop the mower and press the On/Off button to turn off the mower.
- Lift the battery compartment cover. Open the USB port rubber cap to reveal the USB port (Fig. 54).
- Insert the USB flash drive into the USB port.
- Press the On/Off button to turn on the robotic mower.
- The LCD displays that the software is updating.
- After finishing the updating of the software, you will hear continuous beeping and the LCD displays "Update successful! Remove USB Stick and restart mower".
- Remove the USB flash drive. Replace the USB port rubber cap.
- To complete the software update, restart the robotic mower.



# TROUBLESHOOTING

## WARNING

Only perform the steps described within these instructions! All further inspection, maintenance and repair work must be performed by a qualified specialist.

Gloves and appropriate protective clothing must be worn when performing these instructions.

Always turn off the mower before making any adjustment. For the latest information on where to purchase parts please visit [www.cleva-europe.com](http://www.cleva-europe.com).

PROBLEM	POSSIBLE CAUSE	SOLUTION
The robotic lawnmower is stuck during mowing.	Grass or other debris is wrapped around the wheels.	Check wheels and remove the grass or objects.
	Grass or other debris is wrapped around the blade disc.	Check the blade disc and remove the grass or objects (always wear gardening gloves).
	The robotic lawnmower has got caught in something.	Free the mower and remove the obstacle.
	The robotic lawnmower is stuck in one area of the garden.	Check if there are any obstacles which make it hard for the robotic lawnmower to move on from this location. Remove the obstacles.
	The mower is stuck in an uneven dip or hollow in the lawn.	Ensure that dips and holes in the lawn are leveled with topsoil and over-seeded with grass seed.
	The lift sensor has been activated as the mower has become trapped.	Free the mower.
The robotic lawnmower fails to start.	The battery is not installed correctly.	Ensure the battery is pushed into the battery slot until it clicks.
	The battery is not fully charged.	Charge the battery.
	Possible clogging.	Remove the battery. Check underneath the mower and clear as necessary (always wear gardening gloves).
	The grass is too long.	Set a higher cutting height.
	The battery is defective.	Replace the battery.
	Defective On/Off Button.	Contact the Aftersales Helpline.

# TROUBLESHOOTING

The robotic lawnmower leaves the lawn.	Incorrect barriers are used for defining the working area.	Adjust borders/barriers correctly for defining the working area. Make improvements or temporary barriers if necessary. Refer to Define the Mowing Area on page 16-20.
	The ultrasonic sensors are turned off.	Turn on the ultrasonic sensors.
	The working area is steeper than 35%.	Restrict the area that is steeper than 35%.
The robotic lawnmower has difficulty docking.	The base station is on a slope.	The mower will have difficulty identifying the guide strips. Place the base station on a surface that is entirely level.
	Poor connection caused by debris on the charging strips.	Clean the contact strip located on the base station and the charging strips on the mower using a cloth.
	The grass around the base station is too high.	Trim the grass around the front of the base station to ensure smooth docking.
	Base station is not located correctly, or is covered by a metal covering.	Check to make sure the base station arrangement is correct. Remove any metal covering away from the base station location. Refer to Select the Base Station Location on page 21-22.
The robotic lawnmower is stuck in the base station.	There is an object in the way of the robotic lawnmower preventing it from leaving the base station.	Remove the object.
	The grass around the base station is too high.	Trim the grass around the front of the base station to ensure smooth docking.
The robotic lawnmower does not mow when expected/ The robotic mower keeps returning to the base station.	Incorrect Schedule settings.	Check the Schedule settings. The mower will begin and end its work based on the set time window. Outside this time window the mower stays in the base station. Ensure the local time and date settings are correct.

# TROUBLESHOOTING

The robotic lawnmower does not mow when expected/ The robotic mower keeps returning to the base station.	The rain sensor is triggered.	Wait until the mower is dry and the delay time is finished.
	The robot mower was sent home manually using the home button.	Start the mower according to instructions on page 38.
	The Stop button was pressed while the mower was on the charging station.	Start the mower according to instructions on page 38.
The robotic lawnmower is upside down.	The robotic lawnmower has tilted too much or is flipped over.	Turn the robotic lawnmower the right way up and rectify the reason for it getting turned over.
Collision sensor problem, front/rear.	Mower body cannot move freely around its chassis.	Check that the mower body can move freely around its chassis. If the problem remains, contact the Aftersales Helpline.
Unknown problem with control or function.	Temporary electronic or software related issue in the mower.	Switch off the mower. Restart the mower. Download and install the latest software update. If the problem remains, contact the Aftersales Helpline.
The robotic lawnmower runs to the base station, but the blade disc does not rotate.	The robotic lawnmower searches for the base station.	This is normal. The mower needs to recharge. The blade disc does not rotate while it is searching for the base station automatically.
The robotic lawnmower vibrates.	Cutting blades are damaged.	Replace the blades. Refer to Replacing the Mower Blade section on page 41-42. Visit <a href="http://www.cleva-europe.com">www.cleva-europe.com</a> for info on where to buy blades. Refer to the consumables and accessories parts list on page 53.
	Too many blades in the same position lead to imbalance in the cutting system.	Check that only one blade is fitted at each screw and that blades are not stuck.
	Different types (thickness) of blades are used.	Check if the blades are of different types (thickness).
	The blade screw is loose.	Tighten the blade screws.
Grass is being cut unevenly.	Working area is too big.	Adjust the boundary to decrease the size of the mowing area or add more working time.

# TROUBLESHOOTING

Grass is being cut unevenly.	Blades are dull.	Replace all the blades and screws. Refer to Replacing the Mower Blade section on page 41-42. Visit <a href="http://www.cleva-europe.com">www.cleva-europe.com</a> for info on where to buy blades.
	Height of cut is too low, or the grass is too high.	Increase the height of cut.
	There is grass wrapped around the blade disc.	Check underneath the mower and clear as necessary (always wear gardening gloves).
The charging time is much longer than 2 hours.	The charging strips and contact strip are obstructed by debris.	Use a cloth to clean the contact strip located on the base station and the charging strips on the mower.
	Charging protector has activated due to high temperature.	Place the base station in a shady area or wait until the temperature has cooled down.
The robotic lawnmower does not charge.	No power.	Make sure the power cord is connected properly to the power adaptor and the power adaptor is connected to a suitable power supply. Check the wall socket connection and whether an earth-fault breaker has tripped.
	The charging strips and contact strip are contaminated.	Use a cloth to clean the contact strip located on the base station and the charging strips on the mower.
	Socket outlet, fuse, mains cable or base station is defective.	Check the mains voltage and fuse, if necessary have the base station checked by qualified person.
	The battery has a fault.	Contact the Aftersales Helpline.
Run time is shorter than expected.	Height of cut is too low, or the grass is too high.	Increase the height of cut.
	The grass is wet or damp.	Wait until the grass is dry.
	The grass is dense.	Increase the height of cut and add more working time.
The cutting blade is not rotating while the mower is switched on.	The cutting blade is obstructed.	Switch off the mower and remove the battery. Clear obstruction (always wear gardening gloves).
	The blade screw is loose.	Tighten the blade screws.

# TROUBLESHOOTING

The cutting blade is not rotating while the mower is switched on.	The mower cannot detect grass	Place the mower in an area with grass. Brown patchy lawn may not be recognized by the camera.
LED on the base station does not turn on.	No power supply.	Check the power adaptor, cord, breakers, and fuses.
The robotic mower fails to recognize the magnetic strip and travels over it and past it.	The magnetic strip is laid too deep in the ground.	Lay the magnetic strip on the ground or at a depth of approx. 5 cm in the ground.
	The outside temperature is too high.	Wait for the temperature to cool. Avoid operating the mower during the hot hours of the day.
The robotic mower stops or travels out of control when it is near the boundary area with magnetic strip.	Magnetic strips are laid too close together.	Keep a distance of at least 120 cm between two boundary areas with magnetic strips.
	Interference arises in the mowing area due to electric cables.	Avoid electric cables which run through the mowing area. Keep away from mowing areas of your neighbors, which are operated with a perimeter wire.
Bad GPS signal/ no valid GPS data.	Environmental factors	Move the mower to areas with open terrain. Keep the mower far from buildings.
	Equipment problems	Regularly check and maintain the mower to ensure that the GPS module is working properly. If the GPS module is damaged, contact the Aftersales Helpline.
	Weather influence	Do not let the mower operate in bad weather.
	Battery level is not sufficient.	Charge the battery. Keep the battery power sufficient.

# TROUBLESHOOTING

## ERROR INFORMATION DISPLAY ON THE LCD PANEL

If sensors of the robotic mower have been activated, the mower will beep 10 times continuously. The error information will display on the LCD panel.

ERROR INFORMATION	POSSIBLE CAUSE	SOLUTION
Wheel slip	Wheel slipping	Free the mower and remove the obstacle.
Control system error	Control system fault	Switch off the mower. Restart the mower. If the problem remains, contact the Aftersales Helpline.
Outside border	Mower has left the lawn and cannot see grass.	Refer to solutions for "The robotic lawnmower leaves the lawn" in Troubleshooting on page 46.
Battery error	Battery fault	Change the battery. If the problem remains, contact the Aftersales Helpline.
Mower lifted	The mower has become lifted.	Free the mower and remove the obstacle.
Motor fault	Motor fault	Switch off the mower. Restart the mower. If the problem remains, contact the Aftersales Helpline.
Rolling over	Mower is upside down or tilted too far.	Free the mower and remove the obstacle.
Battery too hot/cold	Temperature of battery pack is too high or too low.	Allow the battery pack to cool to normal temperature.
Mower tilted	The mower has become tilted.	Free the mower and remove the obstacle.
Stop button error	Stop button error	Switch off the mower. Restart the mower. If the problem remains, contact the Aftersales Helpline.
Rain sensor triggered	Rain sensor has been triggered.	Wait until the mower is dry and the delay time is finished.
Too close to station	The mower is too close to or on the base station when performing a spot cut or the home button is pressed.	Move the mower away from the base station.
Magnetic sensor error	The magnetic sensor has a fault.	Switch off the mower. Restart the mower. If the problem remains, contact the Aftersales Helpline.

# TROUBLESHOOTING

No camera signal	No signal to camera	Switch off the mower. Restart the mower. If the problem remains, contact the Aftersales Helpline.
No GPS data	GPS signal abnormal at startup	Move the mower to an open ground. Switch off the mower. Restart the mower.
Far from home	The robotic lawnmower is 1 kilometre away from charging station.	This is a theft prevention setting. Ensure the mower is operated in Drop and Mow mode when using the mower at a property more than 1km away from home.
Ribbon not visible	Guide strips on the base station are not visible.	Clean the guide strips on the base station. If the problem remains, contact the Aftersales Helpline.
Close battery hatch	Battery compartment cover is open.	Close the battery compartment cover.
Low voltage	The battery voltage is too low.	Charge the battery.
No battery	No battery in the mower	Ensure the battery is correctly installed.
Cutter fault	Mowing motor fault	Switch off the mower. Restart the mower. If the problem remains, contact the Aftersales Helpline.
Cutter blocked	Blade disc is blocked.	Check underneath the mower and clear as necessary (always wear protective gloves).
Docking Failed	Base station is disconnected or not powered on.	Check to make sure that the base station is not blocked, the guide strips on the base station are clear and the base station is powered on.
Too dark	The mower is activated outside the sunrise and sunset range.	Check the Schedule settings. The mower will begin and end its work based on the set time window. Ensure the local time and date settings are correct.

# TECHNICAL DATA

## DIMENSIONS

Length	55 cm
Width	37.8 cm
Height	24.5 cm
Weight (Without 4.0 Ah Battery)	8.25 kg

## ELECTRICAL SYSTEM

Battery Type	24 V Max Lithium-Ion, 4.0 Ah
Power Supply	100-240 V
Charging Station Current	2.0 A
Power Cable Length	10 m
Charging Period (Battery Fully Discharged)	2 hours

## NOISE EMISSIONS MEASURED IN THE ENVIRONMENT AS SOUND

### POWER

Sound Power Level ( $L_{WA}$ ) Measured	65.4 dB(A)
Noise Emissions Uncertainties $K_{WA}$	3 dB(A)
Sound Power Level ( $L_{WA}$ ) Guaranteed	68 dB(A)
Sound Pressure Level ( $L_{PA}$ ) at the Operator's Ear	54.4 dB(A)

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

Noise emissions in the environment measured as sound power (LWA) in conformity with EC directive 2000/14/EC. The guaranteed sound power level includes variation in production as well as variation from the test code with 1-3 dB(A).

Sound pressure noise uncertainties  $K_{pA}$ , 2-4 dB(A).

## BATTERY

Model No.	24LB4005-CN
Voltage of Battery	24V 
Capacity of Battery	4.0 Ah
Battery Type	Lithium-Ion
Weight of Battery	0.7 kg

# TECHNICAL DATA

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## MOWING

Voltage	21.6 V
Cutting System	3 Pivoted Cutting Blades
Blade Motor Speed	3400 rpm
Cutting Width	18 cm
Cutting Height Adjustment	20-80 mm (7 Positions)
Narrowest Possible Passage	≥1 m
Power Consumption during Cutting	43 W±20 %
Maximum Slope for Cutting Area	35%
Working Capacity: Autocharging Mode (Depending on Product Specification)	Up to 800 m <sup>2</sup>
Working Capacity: Drop and Mow (Using a single battery once)	100 m <sup>2</sup>
Working Capacity: Drop and Mow (With repeated uses)	250 m <sup>2</sup>

## IP-CLASSIFICATION

Robotic Lawnmower	IPX4
Base Station	IPX4
Power Adaptor	IPX4

## CONSUMABLE PARTS LIST

Blade	951950
Battery	24LB4005-CN
Magnetic Strip Kit (5m strip + 10 pegs)	952705
Garage	952641

## RECYCLING AND DISPOSAL

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This marking indicates that this product should not be disposed with other household wastes. The machine must be delivered in rigid packaging to avoid damage during transportation. The packaging and the machine itself are manufactured from recyclable materials and should be disposed of accordingly.



This appliance contains Lithium-ion battery. Do not dispose of batteries in household waste, fire or water. Dispose of batteries in accordance with the local regulations where they will be recycled in an environmentally friendly manner.

Li-ion

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