





## A perfect cut in automatic mode /

From now on, the size of the area to be mown, the quality of the result you require, and the features of the terrain will not add to your workload.

### Echorobotics has created the highest performance and most innovative range of robotic lawn mowers ever

And because Echorobotics knows the requirements of professionals and those who like beautiful lawns, **its robotic solutions get the job done in a considerably shorter time, ensuring unrivalled turf quality, and are designed with durability in mind**. Less expensive to buy, energy-saving, double the service life, saving time and effort, so they give you an overall saving of 50%.

Be demanding and simplify your life. Echorobotics robots are already used by thousands of professionals, sports clubs, and landowners, and are even working in complex public and private facilities.

Don't wait to find out about our connected range. Robots that provide even more quality, are even quieter and even simpler to use.

"A perfect cut without any human intervention. That is our promise to you."

# Your four main exclusive benefits /





### 50% more savings than conventional mowing

Quality conventional mowing requires a considerable amount of labour, regular maintenance of the equipment and energy costs. With Echorobotics robots, none of that is necessary.

They work independently and tirelessly, are made of robust materials and only need electricity to recharge them.

What more can you ask for?



### Labour optimised to the maximum

Day and night, Echorobotics robotic mowers run their program at any time to maintain the perfect result.

You will benefit from a solution that is very economical, available 24/7, and performs top-quality work.

This allows both you and your team to concentrate on other tasks, with our automowers to support you.



### A perfect lawn, uniform grass

Nothing is more pleasant than to be able to show healthy, impeccably mown grass to your visitors and players.

Echorobotics automatic lawn mowers are fitted with floating heads and stainless steel blades that cope perfectly with any unevenness of the ground.

It is an unrivalled technology that maintains your lawn, and therefore also your reputation. Visitors will admire and talk about your grounds.



### 90% reduction in CO<sub>2</sub> emissions, to ensure sustainability

You can say goodbye to excessive chemical fertilisers, waste management for grass cuttings, and lawns that are not weather-resistant. The result of mowing carried out by Echorobotics smart lawn mowers is 100% natural, because they are fitted with blades that ensure perfect mulching, which means fertilising your grounds and unprecedented hardiness.

This is a technology that ties in with Echorobotics' responsible, global approach to the long term.

And if the future were simply green?



# Uncompromising operation and technology /

#### **Guide wire and autonomous mowing**

A well-designed installation is the key to the performance of Echorobotics smart lawn mowers. A detailed diagram of the grounds allows the working areas to be defined properly. A buried perimeter wire will delimit the mowing zone and will allow the robot mower to avoid obstacles.

This means the mowing strategy is never interrupted and is performed completely autonomously.

A history of operation and productivity will allow you to refine the mowing program.

#### Safe charging station

Echorobotics robots are programmed to charge their batteries at the appropriate time.

This is a process that can be carried out flawlessly thanks to a charging arm positioned at 45° and a completely safe low-voltage power supply. Robot mowers connect to the charging station in automatic mode.

#### **Guidance and navigation without detours**

The on-board technology of Echorobotics smart lawn mowers was designed from the start to be able to operate on very large areas.

The quality of the guidance signal is such that stray signals will not disrupt the work of the robot mowers, even in an extreme or industrial environment.

Faced with an unexpected obstacle or to return to the charging station, the smart lawn mower makes use of Decawave and GPS technologies. This saves a considerable amount of time and improves reliability.

#### Multiple safety systems

Echorobotics robotic mowers are fitted with sonars and sensors allowing them to detect obstacles and to adapt their route accordingly.

Your equipment and your visitors will remain safe.

The cutting blades are equipped with protective deflectors. And if the robot mower is lifted, the rotation of the blades stops immediately. As you can see, we have thought of everything.

### Anti-theft system and warning in case of malfunction

If the robot lawn mower is lifted or overturned, it immediately stops working.

And if it is tampered with, you are warned by the Echorobotics app and we can track the thief using the exclusive 'Track & Trace' system built into our robots.

A protection PIN can also be activated.

And if there is a malfunction, you will also be warned by the app at the same time as the Echorobotics technical centre.

### Clean cutting and 100% natural fertilisation

Grass can grow at up to 4 - 8 cm a week.

Echorobotics robotic mowers are programmed to obtain constant and effective mulching. Depending on the program chosen, the total area of your field will be mown at least 3 to 5 times a week.

The vegetable matter from mulching will fertilise the soil in a 100% natural way.

The turf will be in top condition and you can say goodbye to weeds.

#### Slopes of up to 45%

Echorobotics robots are fitted with anti-slip wheels controlled by a powerful motor.

This guarantees efficient operation even on damp ground or on a 30% slope, or 45% if the slope upgrade kit is provided.

#### **Silent operation**

Echorobotics robots provide acoustic comfort. They are almost inaudible from tens of metres away (maximum 52 dB A), so mowing can be done overnight and on Sundays.

### For any time

Echorobotics automowers never stop. Appropriate programming and durable materials allow continuous outdoor operation in any atmospheric conditions.

Forget about the rain and put your robot mower to the test. In case of frost, the robot mower automatically returns to its station.





## Unique robot mowers all like you

Our response to your requirements for cutting quality?

World exclusives.



#### Five safe floating cutting heads

Echorobotics robotic mowers are fitted with three to five floating cutting heads, depending on the model, that can adapt immediately to the ground elevation. Each cutting head is fitted with 3 stainless steel blades, providing perfect, constant mulching.

This exclusive technology not only monitors safety of operation, but also a regular cut of the grass.

A self-cleaning system by centrifugal expulsion drastically reduces the need to maintain the robot mower.

A safe, uniform cut.

#### **Unique steering technology**

Echorobotics charging stations emit an exclusive signal to create an individual electromagnetic field.

The automatic lawn mowers are equipped so as not to be affected by other electromagnetic signals. Moving one or more Echorobotics robotic mowers over very large mowing zones can be done without an interference.

For your convenience, you can control the performance of your smart lawn mowers using your smartphone.

Stopping, steering or restarting a robot mower is done at your fingertips.

In case of malfunction, the machine will inform you via the Echorobotics app. Everything to simplify your life.





#### Robust materials and long-term return on investment

Echorobotics equipment is not developed just for domestic use. The robotic mowers are designed to perform professional work for several years.

The materials and each of the parts are selected and tested under the most stringent conditions corresponding to the ground conditions, and even beyond that.

Your robot will withstand any atmospheric and other conditions without any risk.

### The LiFePO4 fitted in Echorobotics robots are the world's most powerful batteries in their category.

Just a short charging time can give them a long operating time. Possibly the best ever.

#### **Multiple robot operation**

Echorobotics technology allows you to manage a fleet of robots operating on one or more fields at the same time.

The robot mowers work as a team and may have identical or different operating programs.

### **Connected line**

### An innovative range





### Our innovations, your real-time benefits

#### **Advanced mechatronics**

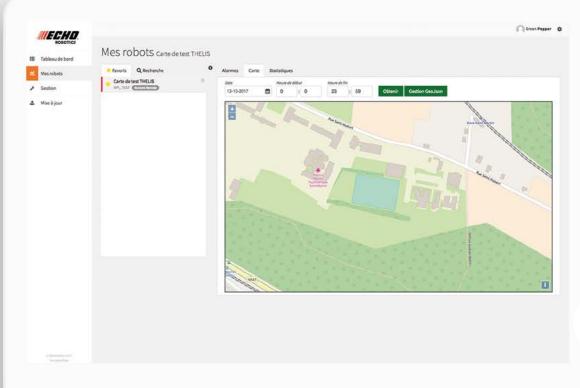
- Extremely robust robots.
   Protected from dust and moisture.
- The most reliable materials.
  From the chassis to the wheels and up to the connectors.
- A reassuring user experience. Every square centimetre will be mown.
- Even quieter mowing.

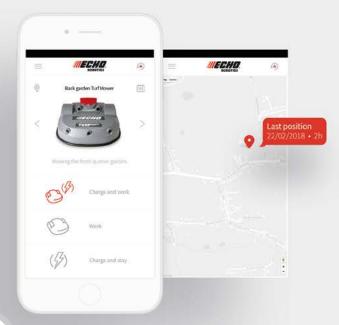
  Due to high performance sound insulation.
- Simplified maintenance. And remote software updates.

#### Simplified user interface

- Exceptional user-friendliness. In private or professional mode.
- Innovative functionality.

  Particularly with a virtual assistant.
- Unrivalled navigation.
  Straight passes and returns to the station without detours.







### Connectivity and user-friendliness

- A web-based server. Your fleet hub.
- An app for tablet and smartphone. At your fingertips
- An anti-theft solution. GPS location and geofencing alert
- A maintenance history. Proactivity guaranteed





You will be able to manage your fleet of robots entirely from the web portal and the Echorobotics app on your smartphone.

## The connected athletes of Echorobotics

# TM-2000 The undisputed all-terrain champion





It is capable of maintaining up to 24,000 m<sup>2</sup> of lawn, which means it has ambition.

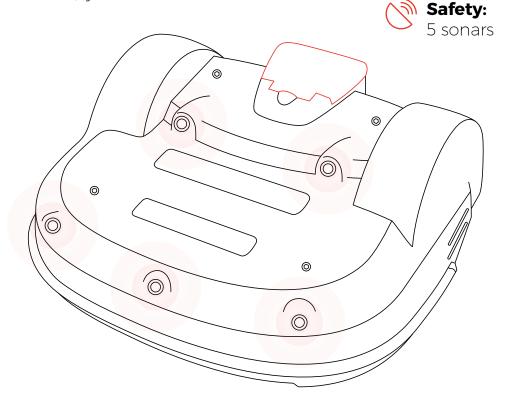
The TM-2000 is recommended for sports pitches, driving ranges, public spaces or private estates. It is up to the challenge.



### **Uncompromising cutting method**

The TM-2000 is fitted with five floating cutting heads that adapt instantly to the ground elevation. A total of 15 stainless steel blades provide perfect, constant mulching. Fitted with five sonars, the automower will instantly deactivate its cutting system if it encounters an unexpected obstacle. A cutting width of 103 cm for uniform, safe working.

### ( **Electricity costs:** € 150 / year



### Cutting method: 5 independent

floating heads

Mowing capacity: up to 24,000 m<sup>2</sup>

### **Smart Mowing**

The TM-2000 works completely autonomously in all the zones delimited by the perimeter wire.

Its activity remains quiet (max. 52 dB A), and it is logged on so its productivity can be controlled and adjusted if necessary. The charging process at a low voltage station is entirely automated and safe.

A durable mow with average annual energy consumption of barely 830 kWh.

### The 10 extras that make the difference

- 1.  $24.000 \text{ m}^2$  in a few hours
- 2. Replaces several small robot mower
- Much cheaper than a garden tracto
- 4. 10 x lower CO<sub>2</sub> emissions
- 8 x lower energy costs
- 6. No noise pollution
- 100% ecologica
- 8. Impeccable turf in better condition
- Warning in case of theft or malfunction
- 10. GPS guidance system

# TM-1000 Endurance in green spaces



# The TM-1000 is the automatic lawn Robot best suited to individuals and public bodies and businesses that manage green spaces up to 12,000 m<sup>2</sup>

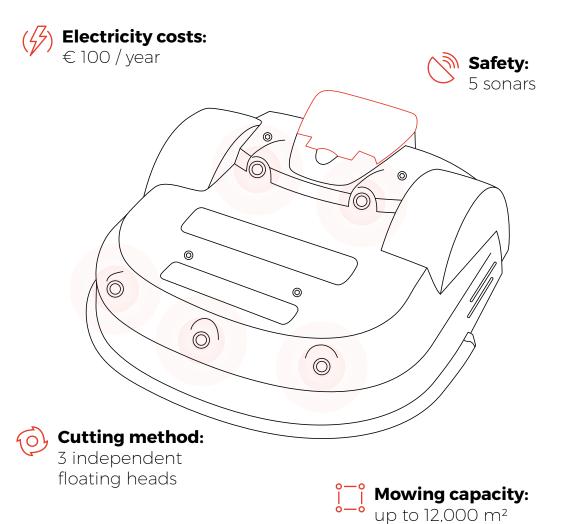
The TM-1000 takes care of maintaining your grounds completely autonomously.

Prepare to save more time and money than ever before. The time has come for you to delegate.



### **Both day and night**

The TM-1000 is fitted with three floating cutting heads that adapt instantly to the ground elevation. All in all, it is these 9 stainless steel blades that ensure impeccable constant mulching. The TM-1000 is also fitted with sonars to detect any unexpected obstacle and stop operating instantly. Permanent quality mowing, without disruptive noise.



### Mow to the schedule of your estate

The TM-1000 automatically monitors the maintenance of your green spaces, without the need for human intervention.

Its quiet-running and ecological action is combined with reduced usage costs. The charging process at a low voltage station is automated and safe.

A durable mow with average annual energy consumption of barely 580 kWh.

### The 10 extras that make the difference

- 1 8 x lower CO2 emissions\*
- 5.5 x lower energy costs\*
- 3 100% ecologica
- 4. No noise pollution
- Less chemical fertiliser and various treatment
- 6. Less watering
- 7. Warning in case of theft or malfunction
- Multiple safety features
- GPS guidance system
- 10. Accident prevention

# RANGEPICKER For automated golf ball collection



### The Rangepicker is an automated driving range ball picker

A worldwide patented exclusive golf ball picker used by many clubs that keep an eye on their expenditure.

Its coverage capacity of 30,000 m<sup>2</sup> allows it to collect more than 250 balls per cycle, that is 12,000 balls every 24 hours. The Rangepicker works completely autonomously, and keeps the driving range accessible at all times.

The chore of collecting is now a thing of the past.



### **Technological marvel**

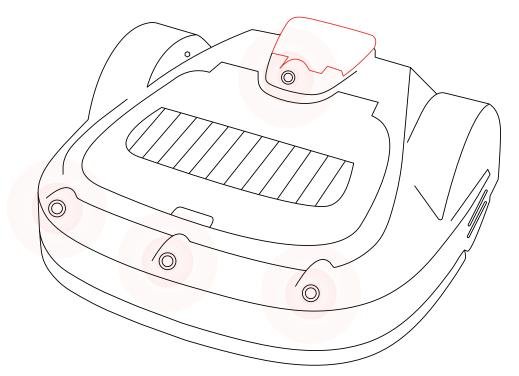
The Rangepicker is fitted with a roller with five sets of four polythene discs providing quiet and systematic collection.

The built-in sonar sensors guarantee total safety on the driving range. Your stock of balls is continually replenished by the robot, working day and night. A GPS system allows it to go straight back to its base, where it will empty its load of balls and charge its batteries if needed.

In short: the Rangepicker collects without disturbing the golfers.

### ( **Electricity costs:** € 180 / year





Efficiency: 20 collecting discs



### **Applied working method**

The Rangepicker is fitted with a ball tank with a capacity of 300. When it has collected about 250 balls, it returns to its base to empty its balls into a drop pit and top up its batteries.

The balls are automatically routed to a ball cleaner and dispenser. The Rangepicker is even more efficient when there is a high concentration of balls.

It can be programmed with multiple zones and be managed by commands sent by SMS, to go and collect balls, for example, in areas where they have accumulated.

Then, the other zones will be dealt with overnight or during a quieter day. Pure efficiency.

### The 10 extras that make the difference

- Ball tank for 300 balls
- CO<sub>2</sub> emissions 40 times lower than a therma machine doing equivalent work
- No noise pollution affecting golfers or local resident
- 4. No ball is pushed into the ground
- Warning in case of theft or malfunction
- Multiple safety features
- GPS guidance system
- SMS programming system
- Continuous access to the driving range for golfers
- 10. Prevention of any accidents

## **Charging** stations

### **Charging station**An adapted solution

#### **Station**

Discreet and autonomous, it works in all seasons without needing your attention.

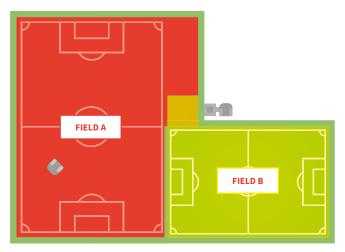
Available in several configurations according to your requirements and the number of zones.

The stations of the Connected Line range incorporate

Decawave technology able to withstand difficult weather conditions and guarantee reliability of operation and return to station.

"Multiple-field": Echorobotics robots can be programmed to mow several areas delimited by various perimeter wires.





Example of multiple-field configuration

### **Intelligent delimiting**

Thanks to a custom station return system, Echorobotics robots allow for the specific requirements of each field.

This technology allows the robot to perform perfectly, even in narrow corridors where access is difficult. Ideal for fields made up of multiple sections.









#### Your club will save up to 50%

This is not merely an opinion; it's based on the experience of football ground managers.

A real saving made due to the massive reduction, or even elimination, of certain operating costs. Thanks to the TM-2000, you will save between €500 and €1000 per pitch per year in energy costs alone.

- Lower energy consumption
- No waste grass cuttings, only constant mulching
- No labour or logistics costs
- Lower maintenance costs for the machine & pitch

### Save time and simplify the task for groundskeepers

As a stadium manager, isn't your time all the more precious? Automatic mowing is essential when the aim is to reduce manual tasks drastically.

### Even when you are not there, the TM-2000 robotic mower keeps working relentlessly.

- Reduced labour or devoted to other activities
- Intelligent mowing: autonomous working and automatic charging
- Endurance: 24/7 in all seasons

#### Adapted to every type of club

Is your turf that of a prestigious club? Or do you have a multi-sport facility? The TM-2000 will manage all your pitches according to the growth of the grass, their layout, and the number of adjacent zones.

### Take pride in being a sustainable football club

The image of your club is also based on your sustainable nature and how you respect the environment. **The TM-2000 reduces your environmental footprint compared with a conventional combustion engine mower.** 

- Releases 10 times less CO<sub>2</sub> emissions\*
- Reduces energy costs by a factor of 8\*
- Eco-friendly: less chemical fertiliser, no deterioration of the edges
- No noise disruption: maximum 52 dB A

#### **Completely safe sport**

The TM-2000 automower cuts without accumulating waste grass cuttings. Say goodbye to slippery and dangerous areas.

The lightweight nature of the smart mower enables it to respect to the condition of the ground and avoid any deformation. Its sonars detect obstacles that it encounters on the route. If leaves the ground, the blades are immediately immobilised and retract under the machine. You will also have an anti-theft and malfunction alert system. The safety premium.





"We installed our first robot mower in 2015 and found we had a better cut than with our ride-on mowers. Since then, we have started using them on 4 additional pitches in 2016 and 5 pitches in 2017. We are very satisfied with our fleet of robots."

**Elisabeth Bonde -** President of Green Spaces of the Local Authority of Arup (Denmark)

"Once a new TM-2000 is incorporated into the fleet, I can immediately see structural improvements in the following weeks: density, vivacity and natural gradual regrowth, even in front of the goals."

**Susanne Walter -** *Groundskeeper in Bielefeld (Germany)* 

### **Boost the playing sensation**

Thanks to the TM-2000's unique mulching method, the playing surface remains impeccable, your grass is more durable and your players benefit from a flexible and durable pitch.

Better ball trajectory, precise shots at the goal and a professional experience at any time.









### The dream team for greenkeepers

A nurtured driving range commands the respect of players and enhances the image of the club. It is therefore necessary to organise a regular golf course mowing system combined with efficient ball collection.

This is the role of the robots: while the TM-2000 maintains the grass, the Rangepicker takes care of collecting the balls.

So, the robots free up your staff to perform various other tasks. Furthermore, the players will be able to continue their course unhindered in a quality, innovative club.

### Simplify your life by delegating

- Reduced labour or devoted to other activities.
- Continuous ball collection working autonomously with automatic charging
- Endurance: 24/7 in all season
- An ideal combination with the TM-200 and other Rangepickers



Full tank (up to 300 balls)



Tank emptied

#### The Rangepicker method

If you like world exclusives, you are going to love the Rangepicker.

When its routes are programmed, it will not stop running over the driving range outfield. All the more, it will demonstrate its capacity in areas where there is a high density of balls. As soon as its ball tank is full (>250), it goes back to its base to unload them.

In a few seconds, the balls will be in the drop pit, then they are forwarded to the individual ball cleaner and dispenser.

They are then available again. The Rangepicker periodically connects to its docking station by GPS guidance, so as not to waste any time. We have thought of everything.

#### **Performance and connectivity**

The Rangepicker is a technological marvel. It manages areas of 20,000 or even 30,000 m<sup>2</sup> thanks to its collection width of 95 cm.

For each cycle, it can absorb an average of 250 balls on golf courses that have a slope of up to 30%, and detecting obstacles by sonars.

A complete charging of its LiFePO4 type batteries takes barely 75 minutes.

For the sake of connectivity, the Rangepicker can be integrated into your fleet that you can remotely control.

- Management via an app for tablet and smartphone.
- Anti-theft solution for geofencing alert.
- Maintenance history for guaranteed proactivity.

#### **Quiet running and ball protection**

What would you say to owning quiet-running equipment to obtain a more effective result?

The "Golf" TM-2000 can mow golf driving ranges without damaging balls due to patented protection discs which keep the balls away from the cutting blades. This is a world exclusive.

The Rangepicker is virtually inaudible from a few metres away (max. 52 dB) and does not cause any disturbance. Thanks to its limited weight (70 kg), it never pushes balls into the ground.

You will therefore benefit from an exclusive and patented collection system that recovers all the balls and then takes care of them.

- Works quietly and with a cruising speed of 3.6 km/h
- Saves thousands of balls that are always recovered
- Robust equipment and patented collection system

### Respect the environment and take a sustainable approach

Golf and nature are, of course, inextricably linked. Echorobotics robots have low electrical consumption (540 kWh/year on average) and have 10 times lower CO<sub>2</sub> emissions than equivalent combustion engine machines.

With the combination of TM-2000 and Rangepicker, the spreading of chemical fertilisers can be significantly reduced and balls can be collected efficiently with practically no human intervention.

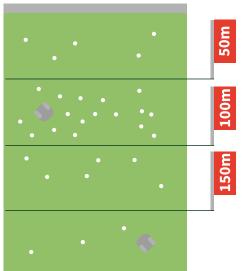
- Releases 10 times less CO<sub>2</sub> emissions\*
- No noise disruption: maximum 52 dB A
- Sustainability policy for the club

#### Working at night and in multiple zones

By day, the Rangepicker works at full capacity according to the density of balls to be collected. At night, it can carry on collecting, to catch up for any accumulation that occurred during busy periods.

Even stronger: the multiple zone program. In peak periods, it concentrates exclusively on zones where the density of balls is the greatest.

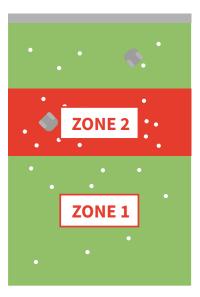
In a second phase, the robot will proceed with collecting balls in the other zones. The decision is yours.



Example of multiple-zone

configuration





30

"My human resources can tackle other tasks, there is a higher mowing frequency, and silent ball collection 24 hours a day is very much appreciated.

The players are never disturbed as they go through the golf course."

"Here we are a 100% eco-friendly golf course.

We apply methods that respect the environment.

We are virtually organic on the green."

**Frédéric Cahay** *Naxhelet Golf Club* 



Up to 12,000 balls collected per day





### You can leave them to work on grounds of any size

You know that mowing your lawns takes time and costs money. You see it as a less and less bearable chore.

But there is no way that you want to compromise between saving money and quality of work. That's normal.

Let the TM-2000 and the TM-1000 take care of your grounds completely autonomously. These robot mowers are designed on the basis of many years of experience of all kinds of grounds and can manage areas of up to 12,000 and 24,000 m<sup>2</sup>.

- Reduced labour or devoted to other activities.
- Well-managed mowing: autonomous working and automatic charging

#### **Performance and discretion**

How do you define performance? By savings made or by productivity? And why not both?

Echorobotics automatic lawn mowers provide cutting quality, power and longevity. They are also autonomous and discreet. Add to that the savings you make by using them which is appreciable in a budget.



### **Tailored lawn in complete safety**

Do you prefer a 20 or 100 mm cut?

The robot lawn mowers are fitted with several floating cutting heads with cutting height adjustable as desired.

The equipment adapts instantaneously to the ground elevation. The stainless steel blades provide impeccable mowing of your lawns, with constant mulching. And as your lawns are made to be walked on, the sonars detect any unexpected obstacle and immobilise the automower instantaneously. Constant quality mowing, without disruptive noise.

#### Respect the environment and air quality

Does cutting a tonne of CO₂ emissions per year interest you?

That is the quantity that an oak, for example, will absorb in about a hundred years.

So buying a TM-1000 or TM-2000 is like planting trees, but benefiting from an annual fuel saving of almost €400.

Finally, no more waste grass cuttings thanks to mulching, which gives your lawn a 100% natural fertilising material.

"The lawn is mown in a completely homogeneous way and the mulching gives it a unrivalled dynamism."

Amaury Le Grelle - La Ferme De Bilande

#### **Remote control**

Naturally, the TM-1000 also has the benefits of the Connected Line: a smartphone and tablet app, also on the webserver.

You are able to control the smart lawn mower (or a fleet) remotely, manage the mowing parameters, know the working statistics and the maintenance history, carry out the necessary software updates and activate GPS location in case of theft.

Welcome to the connected garden.

#### Your user experience

The performance of automatic lawn mowers it not our only concern. Their manageability is essential for your convenience as a user. It is designed with safety in mind and the interface is intuitive.

Features that make the robot even more user-friendly: installation, maintenance and software update wizards.

"There is no way I would want to go back to my tractor.

I devote my time to other things and calm reigns
throughout the day.

The return on investment is indisputable."

Damien Wigny - Owner





### **Cut your costs, increase your profits**

The sale price of an automatic Echorobotics mower is less than that of a professional ride-on mower, not to mention the cost of a long-term maintenance contract.

You can say goodbye to waste disposal costs thanks to the continuous mulching technique.

Also note that there is a lesser need for labour. It is easy to calculate this. To the list of savings, you can also add energy costs that are three times lower than equivalent combustion engine equipment and less need for watering.

- Lower labour costs
- · Working autonomously with automatic charging
- Endurance: 24/7 in all seasons

#### **Environmental priority**

Echorobotics robotic mowers perform impeccable mowing work, are less costly to use, and respect the environment.

They significantly reduce the need for repairs, thus alleviating the overall cost of groundskeeping. Constant mulching fertilises the grass naturally and reduces the need for chemical fertilisers.

- Eco-friendly: less chemical fertiliser
- No deterioration at the edges of the field

#### **Connectivity and safety**

The new Echorobotics range is aimed at connectivity and ease of use.

With an intuitive interface, anti-theft and malfunction warning, multiple on-board safety systems, GPS guidance system and accident prevention.

Start your app and take control of your new smart lawn robot wherever you may be.

- An even more intuitive and reassuring user experience
- Simplified maintenance and remote software update
- Unrivalled and tailored navigation
- An app for tablet and smartphone, and anti-theft solution

### Thank you



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