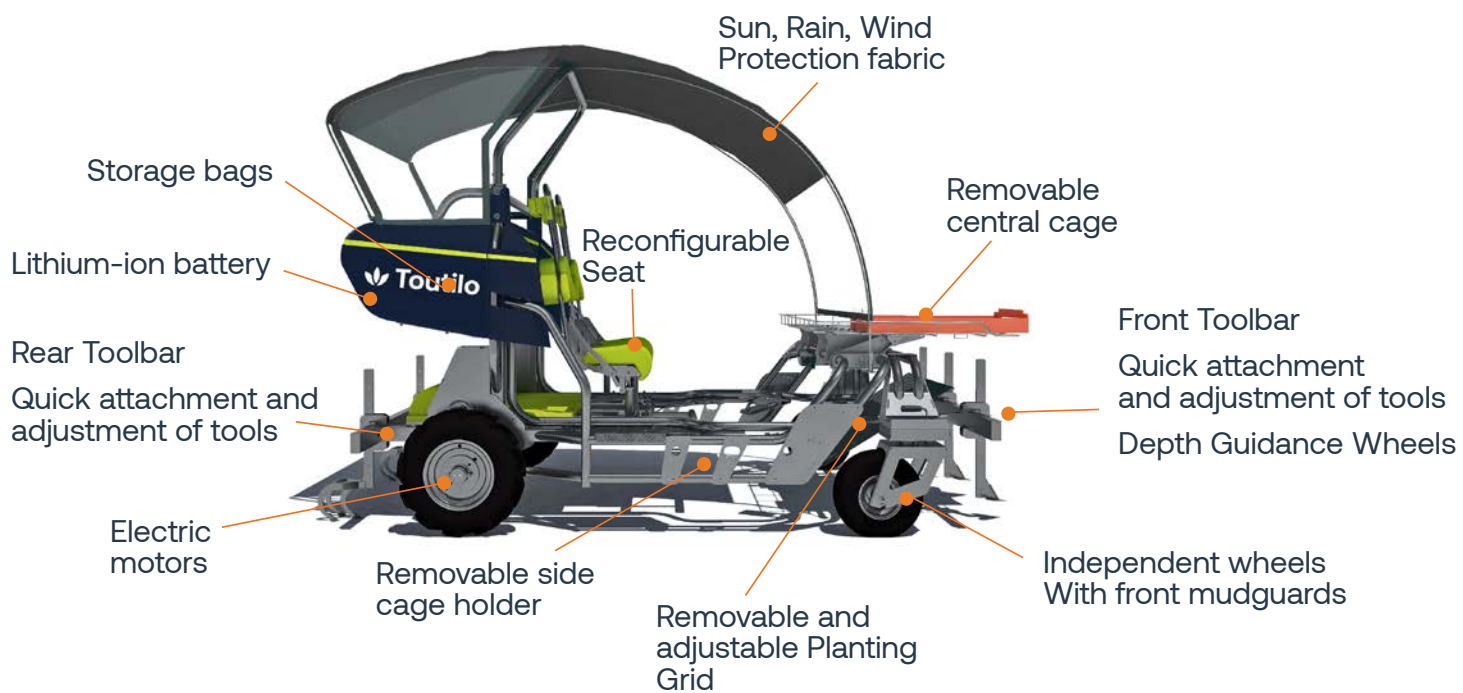




The versatile and ergonomic straddle Cobot (collaboration with agricultural robotics) for Precision and Quality Farming, combining respect for the environment with your team's well-being.





While respecting the natural environment and the soil, the Toutilo :

- Adapts to different sizes of plant crops,
- Increases productivity for quality crops,
- Preserves the health and working comfort of farmers.

The Toutilo Cobot has been developed with experienced farmers in market gardening, horticulture and aromatic plants, since 2011.

The contribution of each of our customers helps build the evolution of tomorrow's Toutilo.

The Toutilo Cobot combines a person-carrier with a tool-carrier.

It is electrically powered. It can be used in a greenhouse or in open fields, in any season. It is the ideal tool for crop monitoring, from preparing for planting to transporting the harvest.

PLANTING WEEDING HARVESTING TRANSPORTING

Versatile cobot



The Versatile Cobot

Stay focused on your work and do multiple tasks in one pass !

The Toutilo is versatile and allows you to keep up an intense work rhythm by synchronising tasks. Productivity is clearly improved.

Weeding, for example, with the Toutilo Cobot becomes effective by synchronising mechanical hoeing (in inter-row) and manual intervention during the same pass on the row of crops.

With intelligent piloting, you just have to define your working speed, which quickly becomes more rapid. The Cobot allows you to save 25% to 50% of labour time depending on the operations carried out. The investment thus pays for itself in less than 3 years.

The Toutilo's drive is programmed to advance at very low speeds. It is possible to work from 50 m/hour up to 2 km/hour.

Cobot for planting

Avoid standing up and bending down all the time !

In a single pass over your working area Toutilo allows you to :

- create one or more furrows with the spacing you want
- transport several trays of plants
- allow planting at the right pace with the plants close to hand
- close the furrow.

Precise and regular planting then makes it easier to weed.

It is also possible to configure the speeds of the Toutilo beyond 2km/h as required.

U-turn on a sixpence !

Even a fully loaded Toutilo allows you to navigate through your plots with great flexibility. It can even turn around on the spot at the end of the rows.

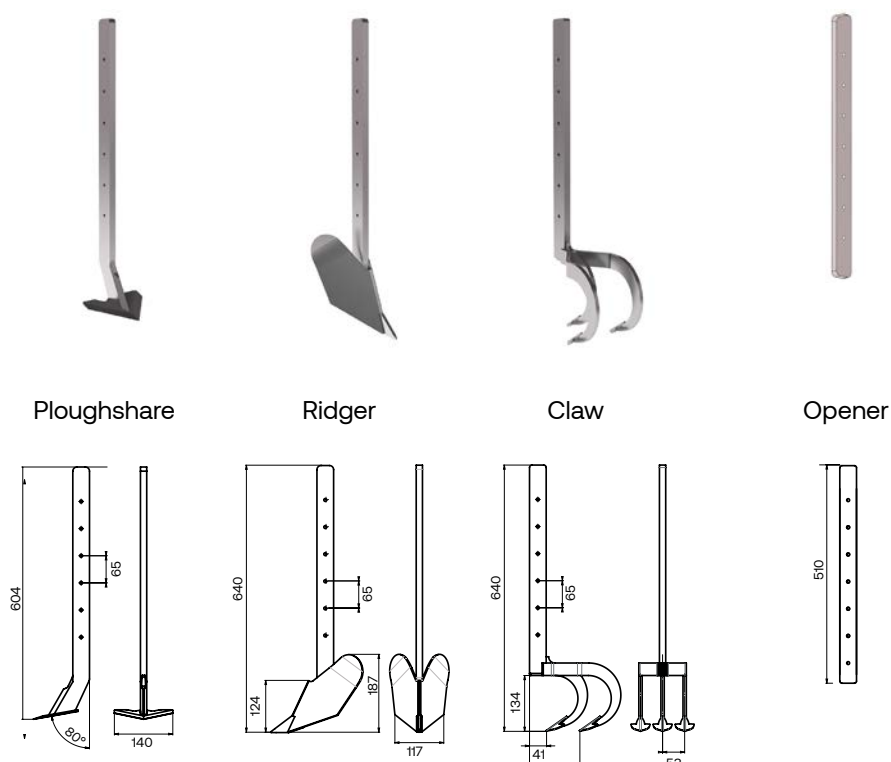


Removable and adjustable planting grid. Rigid and light, it allows you to handle the crates of plants easily.

Cobot for weeding

The Toutilo Cobot offers the possibility of manual precision work on the row, with mechanized tillage between rows at the same time. To do this, the tools simply slide onto the front and rear bars and are very easy to adjust.

On the toolbars you can install several tools for working the soil, such as coulters, claws, ridgers or weeder harrows. They are mounted on the front and rear of the Toutilo by a sliding «C» system. Tool attachment and height adjustment on this «C» is simple and fast using the fitted fixing pins.



Ground wheels can also be added. They are adjustable in height and are attached to the front toolbar. They allow better control of tools in the ground and more precision in work depth.



Cobot for harvesting

For more profitability, the harvest becomes less tiring and more efficient with storage crates close to hand. These are placed at the front and/or on the sides of the Toutilo. You can thus fill them as you harvest and transport them to the storage location.





Cobot for transporting heavy loads

Save time and energy !

It is important to be able to protect your back, shoulders and knees throughout your working life. The Toutilo Cobot is here to help you take care of yourself by carrying heavy loads for you at your workplace.

Full or empty crates can be placed on the Toutilo in the different areas provided for this purpose. You save time by avoiding carrying things back and forth across your plots. This way you have everything at your fingertips.

At the front of the machine, the central crate holder can store up to 12 trays of vegetables. On the sides, the left- and right-side crate carriers can be put on or taken off as required. The assembly and disassembly is simply carried out by sliding the tubes into the lateral supports secured by pins.

The Ergonomic Cobot



santé
famille
retraite
services

Touti Terre has relied on the expertise of the french MSA health prevention services and an ergonomics organisation in order to be able to offer ergonomic and professional solutions adapted to the different sectors of the agricultural profession

Keep up the pace and work with good posture !

The Toutilo “seat” is ergonomic and reduces the arduousness of physical activities. It is adjustable according to the morphology of each user, using fine adjustments, and thus adapts to a wide range in the size of its users.

Its purpose is to prevent the onset of Musculoskeletal Disorders (MSD).

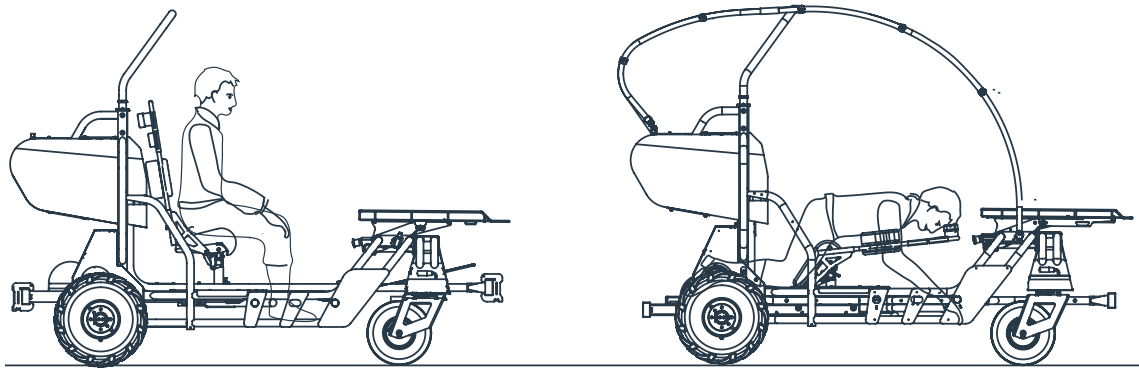
With good posture, it is possible to reach down to the ground to the rows of crops for precision work, whilst working comfortably, avoiding continually standing up and bending down !

Simply change position with the reconfigurable “seat” !

The “seat” of the Toutilo is reconfigurable. It can be set either in a seated position or in a semi-lying position to allow you to work with your hands at ground level with the best possible visibility for dexterity in your manual work.

Thanks to a removable remote control, the steering controls are also always close to hand. It is also possible to do manoeuvres remotely with the Toutilo while standing near to the machine.

Being able to change postures comfortably is the key in physical work. Gentle movement keeps the body dynamic and avoids physical weariness and heaviness.



The Toutilo accommodates 1 to 4 people

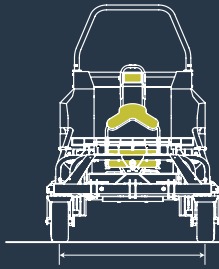
The Toutilo is suitable for straddling working widths ranging from 80cm up to 1m40 wide, on slopes or on the flat. It is also possible to work with several people at the same time to increase efficiency and profitability.

The Cobot is equipped with one “seat” or two, depending on its width. It is also possible to install two side “seats” on the sides of the Toutilo.

The “seats” are fixed on a mobile structure, which can be raised and lowered electrically. The “seat” allows you to be very close to the ground, or to go over the top of your plants (up to 50cm high), depending on your needs. Thus you can work at your own pace and in accordance with the height of your crops

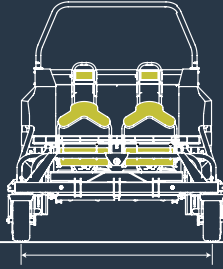


T80



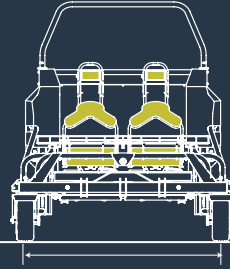
Wheel center
distance
1 m 20

T110



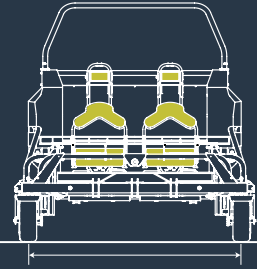
Wheel center
distance
1 m 50

T120

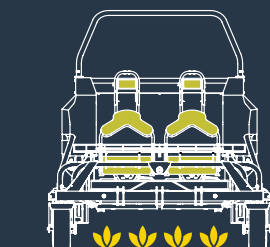


Wheel center
distance
1 m 60

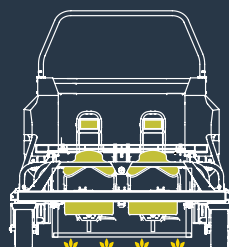
T140



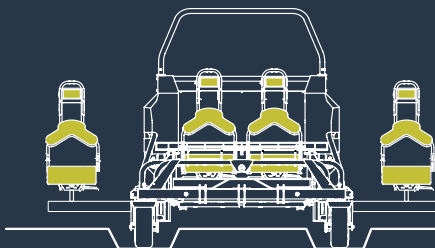
Wheel center
distance
1 m 80



50 cm



10 cm



PLANTING WEEDING HARVESTING TRANSPORTING

Work more comfortably in all weathers and have everything to hand !

The Toutilo is also equipped with a gray canvas to protect you against the hot rays of the sun in summer, the cold winds of winter, and rainfall in any season, thus allowing you to work in the best possible conditions.

This canvas cover is fixed to the chassis with a rigid tubular structure. Shade blinds and translucent textile “windows” can be rolled up at the front and rear.

Windproof and shade-providing side “doors” can be added when needed to create a perfectly protected cockpit.



Side bags are also available to carry hand tools or any useful objects to and from the greenhouse or the fields.

Bottle racks are provided close to hand for hydration.

Working hours can now be organised differently with night lights !

If time is of the essence, rows of LEDs can be installed on the chassis, creating the possibility of dusk or night work.





The Electric Cobot

100% silent

The electric motors make it possible to work in silence. The engines do not emit polluting emissions and have the necessary torque for working any type of soil.

Appreciate up to 20 hours of autonomy and little maintenance !

The Cobot is equipped with 2 independent electric motors, which greatly reduces the maintenance of the machine.

Recharging the Toutilo's removable Lithium-ion battery and remote control only takes 4 hours. These 2 elements will allow you to work non-stop for up to 20 hours. Depending on the demands placed on the Cobot and the type of use, this autonomy may extend to up to 30 hours.

Lightweight

For even more autonomy, the weight of the empty Cobot is only 400kg. Its 15 cm wide tyres allow you not to crush the ground and to move around in the rows/aisles very easily.

The remote control is removable for more freedom of movement !

The remote control is the dashboard of the Cobot. As it is wireless, it can be placed near one or another of the users, or used at a distance from the Toutilo, without risk of tangling any connecting wires with other elements. Ergonomic and easy to use, you can configure different control modes.

The Cobot's intelligent piloting

100% of the Toutilo's "intelligence" is embedded from the start: systems for removable electronic tools, and connectivity for the collection of spatial and temporal data. The Toutilo stays connected and simply evolves according to your needs.

Its intelligent control allows for down-to-the-centimetre precision for giving more efficiency and maintaining a sustained work pace. You can stay focused on your task and move forward at an increased speed.

Different driving modes are possible:

3 control modes give more flexibility !

The DEVERS mode allows a trajectory correction for deviations due to the slope or the configuration of the ground, or for the tools bedded in the ground.

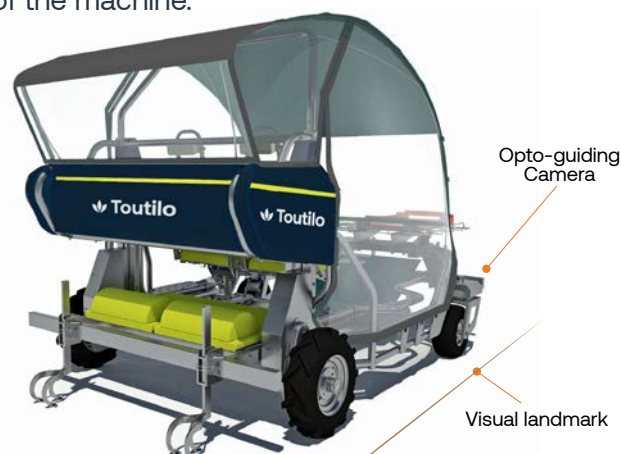
The INTERMEDIATE SPEEDS mode allows dynamic adjustment of the forward movement. It is thus possible to fine-tune its speed very precisely and very simply during the cruising of the Toutilo in real time.

The STOP and GO mode allows you to advance intermittently, regardless of your speed. This mode allows you to programme a distance after which the device stops for a defined time, before automatically restarting.

Be assisted and stay focused !

The OPTOGUIDAGE system allows you to control the direction of the Cobot by camera whatever your speed of forward movement in complete autonomy.

The Cobot can follow an element positioned on the ground, such as the border of a plastic mulching film or a coloured string stretched on the ground. It is thus possible to work faster than usual by staying more focused on the work at hand, without worrying about the direction of the machine.





GPS RTK autonomous cruise mode

The Toutilo Cobot also accommodates a RTK GPS module to make it completely autonomous in its piloting, and to precisely retrack past lines of passage with the Toutilo or even with a tractor. It is thereby possible to configure precise routes to follow throughout the farm and to work on the crop rows with down-to-the-centimetre precision.

The RTK GPS module consists of a fixed base, positioned anywhere on the farm, combined with a specific module which is installed on the Toutilo. The Cobot is then connected to a database called ToutiDATA.

A sonar security system is also installed on the Toutilo to prevent hitting obstacles on defined routes. However, the Cobot always remains under the control of its user.

The connected Cobot

Have the best growth leverage for economic progress !

The ToutiDATA platform, which is connected to the Cobot, aims to bring you a maximum number of elements that can help you take a step back from your activity and optimise all possible economic levers for better profitability.

ToutiDATA was developed to manage the traceability of the Toutilo's use in particular. For example, it allows data feedback on the tasks carried out and on the durations of the Cobot's use in real time.

It is also a preventive maintenance tool, allowing the feedback of statistical data on the behaviour of the machine with regard to its usage.

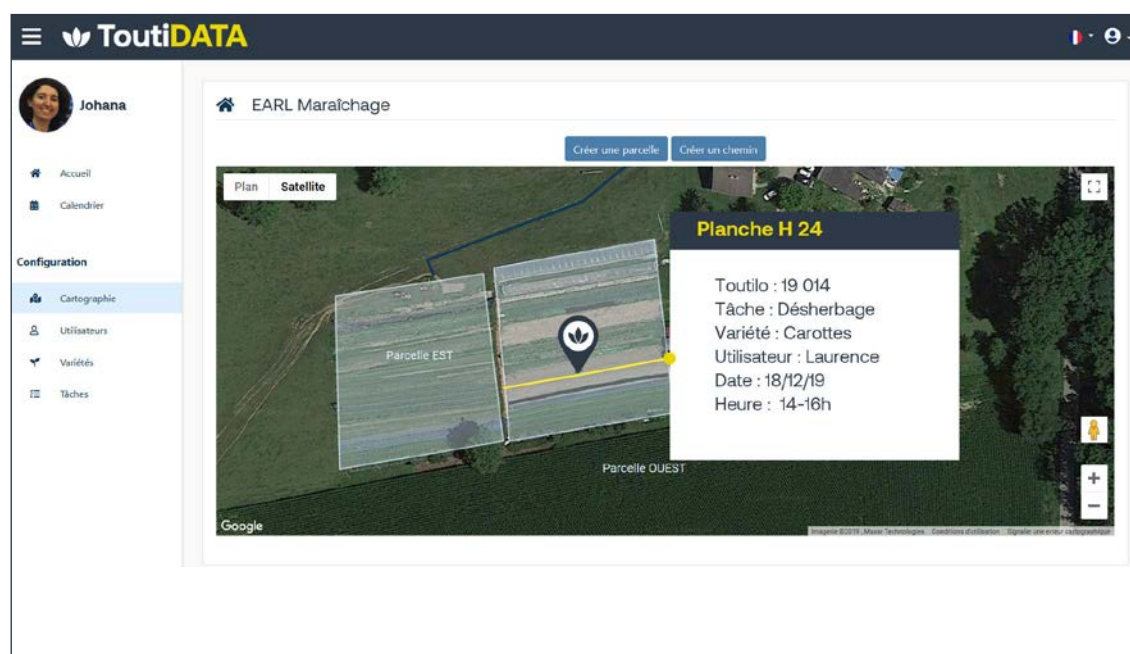
Manage simply scheduled tasks to be performed in real time

ToutiDATA is also used for crop planning. This application allows you to precisely implement a crop calendar, as well as defining the different plots and crop boundaries of the farm.

All of this data makes it possible to manage its operating schedule with reactivity depending upon unforeseen events (weather etc...).

On the other hand, its usage data is also stored, so as to constitute a history of all activity - and consequently to analyse an entire growing season.

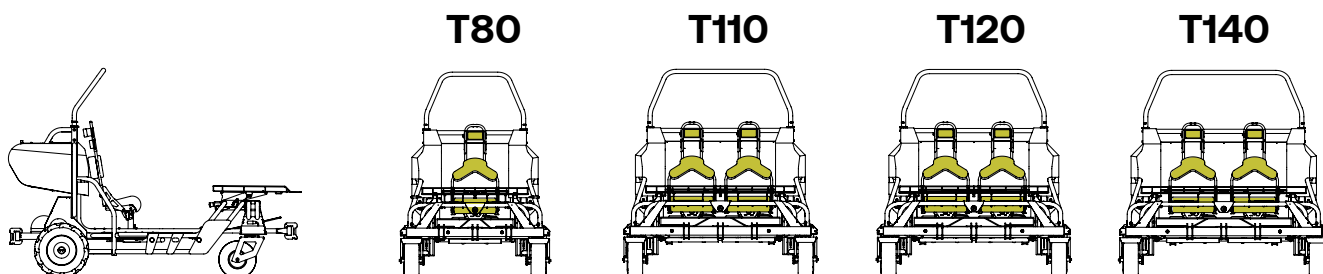
Therefore it is a complete information panel saved for you and your team.



The Cobot transport system

The PORTOUTI platform trailer is hooked up to the rear of a tractor with the 3-point system, that makes it easy to transport the Toutilo if required.





CHARACTERISTICS

Dimensions and weight :

| | | | | |
|--|-------------|-------------|-------------|-------------|
| Total height in cm | 196 | 196 | 196 | 196 |
| Height without arch in cm | 142 | 142 | 142 | 142 |
| Maximum step height in cm | 50 | 50 | 50 | 50 |
| Minimum crossing height in cm | 10 | 10 | 10 | 10 |
| Total length in cm | 274 | 274 | 274 | 274 |
| Length between axles in cm (wheel forward) | 165 | 165 | 165 | 165 |
| Straddle width in cm | 80 | 110 | 120 | 140 |
| Inner width between wheels in cm | 106 | 136 | 146 | 166 |
| Wheel centre width in cm | 120 | 150 | 160 | 180 |
| Overall width in cm | 144 | 174 | 184 | 204 |
| Curb weight in kg | 350 | 380 | 380 | 400 |
| Turning radius in m | 2,69 | 2,72 | 2,74 | 2,77 |
| Payload in kg | 350 | 320 | 320 | 300 |

Mobility speed :

| | | | | |
|-----------------------|-------------------|-------------------|-------------------|-------------------|
| Forward / Backward | 50m/h to 2km/h | 50m/h to 2km/h | 50m/h to 2km/h | 50m/h to 2km/h |
| With STOP AND GO mode | 0,1 m/h to 2 km/h | 0,1 m/h to 2 km/h | 0,1 m/h to 2 km/h | 0,1 m/h to 2 km/h |

Motorisation :

| | | | | |
|--------------------------------------|-----|-----|-----|-----|
| 2 rear drive wheels in W / wheel | 500 | 500 | 500 | 500 |
| Steering by motor L / R differential | Yes | Yes | Yes | Yes |

Removable battery :

| | | | | |
|----------------------------|------|------|------|------|
| Main lithium/ Lithium Wh | 1890 | 1890 | 1890 | 1890 |
| Average autonomy in hours | 20 | 20 | 20 | 20 |
| Transportable weight in kg | 8 | 8 | 8 | 8 |

Removable remote control :

| | | | | |
|--------------------------------------|-----|-----|-----|-----|
| Wireless rechargeable remote control | Yes | Yes | Yes | Yes |
| Average autonomy in hours | 10 | 10 | 10 | 10 |
| Work Mode | Yes | Yes | Yes | Yes |
| Operation mode | Yes | Yes | Yes | Yes |
| Tilt Mode | Yes | Yes | Yes | Yes |
| STOP AND GO mode | Yes | Yes | Yes | Yes |
| Intermediate speed mode | Yes | Yes | Yes | Yes |

Seat :

| | | | | |
|-----------------------------|-----------------|-----------------|-----------------|-----------------|
| Ergonomic seat | 1 | 1 or 2 | 1 or 2 | 1 or 2 |
| Optimal size settings in cm | from 160 to 195 | from 160 to 195 | from 160 to 195 | from 160 to 195 |
| Sitting | Yes | Yes | Yes | Yes |
| Ventral kneeling position | Yes | Yes | Yes | Yes |
| Seat rotation | Yes | Yes | Yes | Yes |



www.toutilo.com

Land line :+ 33 (0) 9 72 52 86 67

Email : contact@toutilo.com

Innovation through use and proximity

Located in Haute Savoie, Touti Terre designs, assembles and markets innovative mechatronic solutions for working the land in market gardening, aromatic plants, horticulture and baby leafs.

Its headquarters have been located in a market garden since its origin.

The Touti Terre team thus benefits from privileged conditions for the development and testing of cutting-edge solutions in collaboration with customers.

Wanting to favour listening to - and proximity to - producers/customers, the company has created its first industrial and commercial subsidiary based near to Nantes, in West France.



Head Office Address : Gevrier 74150 Rumilly France

Production Address : ZA La Noblière 49450 Villedieu France