

**Stella**  
engineered

# Operation Manual



URS  
100 



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RADIO CONTROLLED FLAIL MOWER  
WITH TRACKED UNDERCARRIAGE

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**Operation Manual**

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 **Important**

URS 100 is designed to work on steep slopes. Nevertheless, it is essential to check the conditions of the terrain in which the work is to be carried out before use.

Ecotech Italia explains that the machine standing on a surface has a maximum lateral tilt angle of 65 ° (static lateral tilt angle).

Therefore, the operator who wants to work on a steep slope must take this limit into account and proceed with extreme caution.

In addition, when working on floors with a slope greater than 20 °, the operator must make sure to reverse the direction of travel by turning 180 ° at least every 5 minutes to ensure optimal lubrication of the motor.

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## PURPOSES OF THE MANUAL

- This manual is an integral part of the machine and is intended to provide all information that:
  - (a) necessary for the correct sensitization of the operating personnel with regard to safety issues;
  - b) necessary for the safe handling of the packed and unpacked machine;
  - c) necessary for the correct installation of the machine are required;
  - d) are necessary for a full understanding of its operation and limitations; and;
  - e) necessary for its correct use under safety conditions;
  - f) necessary for the correct and safe performance of maintenance operations; and
  - g) are necessary for the disassembly of the machine under safe conditions and in accordance with the regulations in force for the protection of the health of workers and the environment
- The persons in charge of the operational departments that acquire this machine are obliged, in accordance with the applicable standards the contents of this manual carefully and to make the relevant operating and maintenance personnel aware of the parts of this manual and to bring to the attention of the for which they are responsible.
- The time spent on this is compensated by the correct functioning of the machine and its safe use will be amply compensated for.
- This document assumes the machine safety regulations are observed at the place of use of the machine.
- The information contained in the original manual has been written by the manufacturer in his own language (ITALIAN) and in accordance with the standards in force.
- The translations of the manuals are made without changes from the text of the ORIGINAL MANUAL.
- This obligation also applies to translations realized by the representative or the person who carries out the implementation in the language area concerned.
- In case of discrepancies in the translations in other languages, reference must always be made to the manual in Italian.
- The manual must be kept in a safe place and must accompany the machine at all changes of ownership during its operational life.
- When storing the manual, take care to handle it carefully and with clean hands and do not place it on dirty surfaces. No parts may be removed, torn out or arbitrarily altered.

- The manual must be kept in a place protected from moisture and heat and, if possible, close to the machine to which it refers. If possible, in the vicinity of the machine to which it refers.
- In the event of damage to the copy of the manual the copy of the manual in your possession you can request a copy from:
  - Ecotech Italia S.r.l.  
Via Copernico 85  
47122 Forlì (FC) - Italy  
Tel. +39 (0)543 774314  
Fax. +39 (0)543 778658  
E-mail: info@ecotechitalia.com or Stella Engineering GmbH.
- Please indicate the type of machine, the year of manufacture and the serial number.
- Some information might not fully correspond to the actual configuration supplied.
- The manufacturer reserves the right make changes to the information without prior notice, provided that this does not affect safety.
- Any advice given by the recipients can be an important contribution to the improvement of customer service that the manufacturer to offer to its customers.
- In order to emphasize certain passages in the text or to point out certain important information, a series of symbols have been used, the meaning of which is described.

### **Danger – Caution**

The symbol indicates serious situations which, if not avoided, could seriously endanger the health and safety of persons if not observed.

### **Caution – Warning**

The symbol indicates that appropriate action must be taken to avoid endangering the health and safety of persons and to prevent damage to the machine.

### **Important**

The symbol indicates technical and operational information of special importance, which must not be neglected.

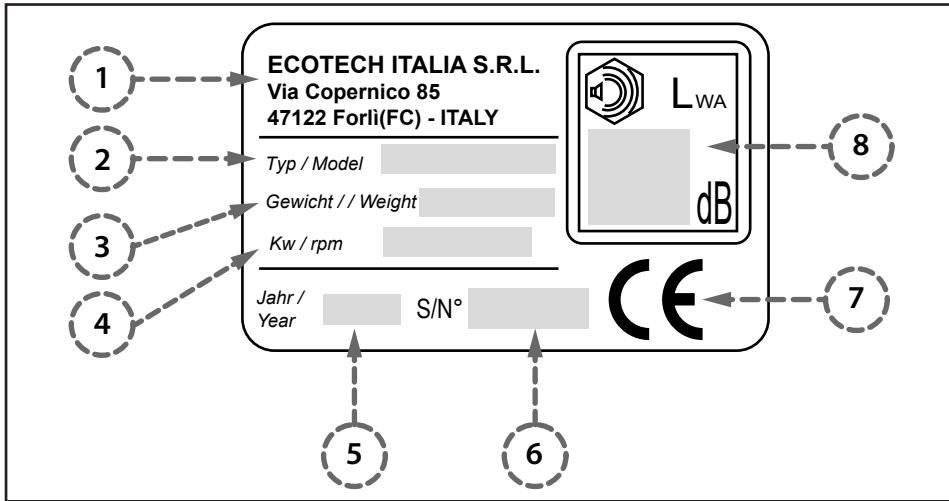
### **NOTE**

The symbol is used to refer to additional information.

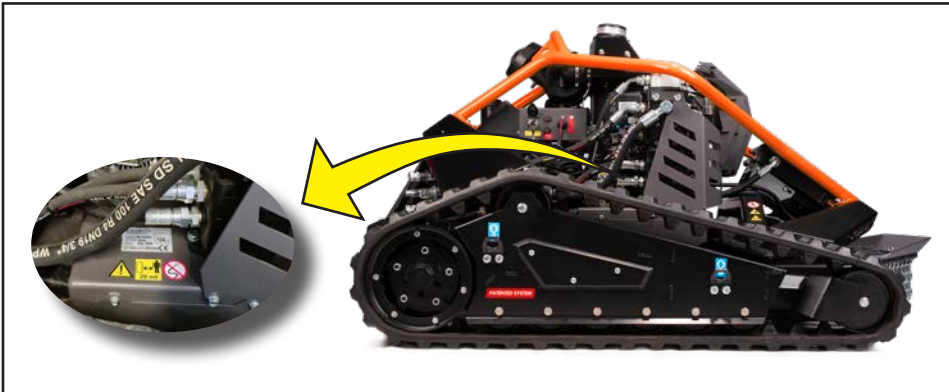
**IDENTIFICATION MANUFACTURER AND MACHINE**

The nameplate shown is attached directly to the machine (in the position shown in the following photo).

- In addition to the manufacturer's identification notes, all information required for commissioning is indicated.



- 1) Manufacturer's marking
- 2) Model
- 3) Weight
- 4) Power
- 5) Year of manufacture
- 6) serial number
- 7) CE marking
- 8) Noise level



**NOTES ON THE CUSTOMER SERVICE REQUEST**

For any request and / or order of spare parts, contact the technical customer service should be contacted.

- The nearest customer service center can be found on our website: [www.stella-engineering.de](http://www.stella-engineering.de)
- For each customer service request the data on the type plate, the operating hours of operation and the type of defect detected.

or via the seller/dealer of the machine

**GLOSSARY OF TERMS USED**

- **In the introduction, some of the terms used in processing the information are listed with their explanation to facilitate understanding.**
- **Maintenance technician:** technician selected to and authorized to perform operations that cannot be assigned to the operator.
- **Training:** training process to provide the knowledge, skills and behaviours necessary to work independently, expediently, correctly and without risk.
- The training of the operator is to become familiar with the basic functions of the radio control and to acquire appropriate experience in the field of application.
- **Emergency stop:** Intentional activation of the control command intended to stop, in case of imminent danger, the device of any organ whose operation could pose a hazard.
- **Stop in alarm condition:** condition in which the device is switched off when the control system detects a malfunction.
- **General stop:** condition that, in addition to the normal stop, includes the interruption of all sources of supply.
- **Ordinary maintenance:** All the work to be carried out on the machine, which is necessary for the continuous safety requirements and a longer service life.
- Proper maintenance ensures long-term performance, a longer service life and a consistent level of safety requirements.
- Proper maintenance is usually programmed by the manufacturer, who will determine the intervention times and methods.
- **Extraordinary maintenance:** interventions due to unforeseeable events and not programmed by the manufacturer, which must be performed by the maintenance technician.

- The interventions serve the unchanged restoration of the original operation and safety conditions.
- **Operator:** person trained to perform the operating functions (starting, stopping, filling, etc.) and carrying out proper maintenance.
- The operator must be performed, in addition to appropriate training and instruction in the use of the machine.
- **Danger:** Possible source of injury or damage to health.
- **Risk:** Combination of the probability that harm to health will occur and the severity of the harm itself when a person is in a hazardous situation.
- **Residual risks:** All risks that may occur despite the fact that all safety solutions have been applied and integrated during the design phase.
- Persons responsible for transport and handling: Authorized persons with recognized expertise in the safe handling of transport equipment and lifting equipment.
- **Incorrect use:** Reasonably foreseeable misuse that is not specified in the operating manual and which may result from human behavior.

## ATTACHED DOCUMENTATION

The list lists the documents attached to the machine.

- EC Declaration of Conformity (the document is included in the Operation and Maintenance Manual).
- Operation and Maintenance Manual
- wiring diagrams
- Hydraulic diagrams
- Specific manuals for installed purchased parts or subassemblies

## GENERAL SAFETY INSTRUCTIONS

- The machine has been designed and built with all precautions in order to minimize the risks during its intended service life.
- Manipulation and bypassing of the safety devices may cause hazards (even serious ones) to the operator.
- The machine may ONLY be used by appropriately trained and instructed operators in order to operate it independently, correctly and safely.
- The operating instructions must be read in particular when the machine is used for the first time, and it must be ensured that the contents have been fully understood.
- Observe the SAFETY INSTRUCTIONS, do not use the equipment inappropriately and assess any possible. ASSESS RESTRICTIONS.
- When handling the machine DO NOT wear clothing and/or accessories that that could get caught in the machine or parts.
- Before use and/or maintenance read the information in the reference documents and follow the procedures described precisely and accurately.
- Perform the operations ONLY according to the manufacturer's "Operating Instructions" to perform the work.
- Keep the safety and instruction signs and follow the instructions given on them.
- The information signs can be of various shapes and colours to indicate dangers, commands and prohibitions and to give instructions.
- Signs that are no longer legible shall be replaced and re-installed in the original location

## SAFETY INSTRUCTIONS FOR HANDLING AND TRANSPORTATION

- The manufacturer has taken special with special care in order to avoid minimize the risks associated with shipping, handling and transport.
- The personnel authorized for handling (loading and unloading) must have recognized technical knowledge and professional skills.
- For loading, transportation and unloading, means and devices with sufficient carrying capacity must be used.
- DO NOT attempt to modify the lifting, moving and handling procedures in any way.
- DO NOT pile up the packages so as not to damage them.
- In the case of prolonged storage, check periodically if the packages have not changed.
- All components of the packaging must be disposed of in accordance with the laws in force in the country of installation.

## SAFETY INSTRUCTIONS FOR USE AND OPERATION

- The machine must ONLY be used by ONE operator who is trained, have a sufficient skill for the work and be physically and mentally fit
- The operating instructions must be read in particular be read when the machine is used for the first time, and it must be ensured that the contents have been fully understood.
- Determine the position and function of the controls and simulate some driving manoeuvres (especially starting and stopping) to become familiar with them.
- Use the machine ONLY for the applications and methods intended by the manufacturer.
- Observe the SAFETY INSTRUCTIONS, do not use inappropriately and evaluate the RISKS that may exist.
- Verify that all safety devices are fully installed and effective.
- Use the machine ONLY with the original safety devices installed by the manufacturer.
- Depending on the type of operation to be carried out, the safety measures indicated in the “Instruction Manual” must be and the personal protective equipment provided for in the labor laws.
- The protective equipment must be worn.
- The surfaces surrounding the work area must be marked and adequately secured to prevent access by third parties.

## SAFETY INSTRUCTIONS FOR ADJUSTMENTS AND MAINTENANCE

- Keep the machine in maximum performance condition and perform scheduled maintenance according to the frequency and methods specified by the manufacturer.
  - **Proper maintenance will ensure long-term performance, extended service life and a consistent level of safety requirement.**
  - Personnel authorized to perform ordinary maintenance must have recognized expertise and special skills in the corresponding area of intervention.
  - Mark the adjacent areas and take appropriate safety precautions to prevent third parties from entering the intervention area.
  - Depending on the type of intervention to be performed.
  - Perform all operations ONLY after all power sources have been properly disconnected in order to work in safe conditions.
  - Carry out the operations in accordance with the indicated in the “Operating Instructions” and wear the personal protective equipment provided for by the labor laws.
- Carry out the work in accordance with the manufacturer’s instructions contained in the “Operating Instructions“.
- All operations must be carried out ONLY with suitable and in good condition to avoid damage to components and parts of the machine.
  - The SAFETY DEVICES must be replaced only with original spare parts in order not to compromise the intended level of safety.
  - The use of similar but non-original spare parts may lead to improper repairs, al-

tered performance and financial damage.

- Use lubricants (oils and greases) recommended by the manufacturer or lubricants with the same chemical and physical properties.
- After the completion of the intervention, restore all the safety conditions for the prevention and minimization of risks during the man-machine interaction.
- At the end of an operation, check that no

tools or other material have been left near the moving parts or in the danger zones.

- For all operations not described in the “Operating Instructions”, contact the manufacturer’s service department.
- EXTRAORDINARY MAINTENANCE operations must be performed only by technicians with recognized experience in this field of operation.

## WARNINGS ABOUT THE CONDITIONS IN THE WORK AREA

- The operator must use the machine properly and ALWAYS proceed with caution, especially on rough terrain and steep slopes.
- A comprehensive list of all conditions related to behavioural and environmental factors that may cause risks is hardly feasible.
- Following the listed warnings may reduce the risks, but will NOT completely eliminate them.
- ALWAYS adapt the feed rate of the machine to the soil conditions and always proceed with extreme caution.
- When working on sloping ground always be aware of the risk of tipping over.
- The risk of tipping over increases when driving at excessive speed, the risk of overturning suddenly and uncontrollably.
- All obstacles, especially in steep terrain (ditches, holes, yielding areas, etc.), that affect the stability of the machine and the risk of tipping over, must be avoided.
- Take care when working on non-compacted soils (even on level ground), also due to adverse weather conditions (heavy rain, flooded soils, etc.).
- When working near ditches, embankments, canals or areas, where the soil is loose and prone to landslides, use extreme caution.
- Maintain control of the machine, move to a safe area, and in the event of danger, avoid instinctive and unreasonable control commands.
- When working on rough, steeply sloping terrain DO NOT suddenly or at excessive speed.



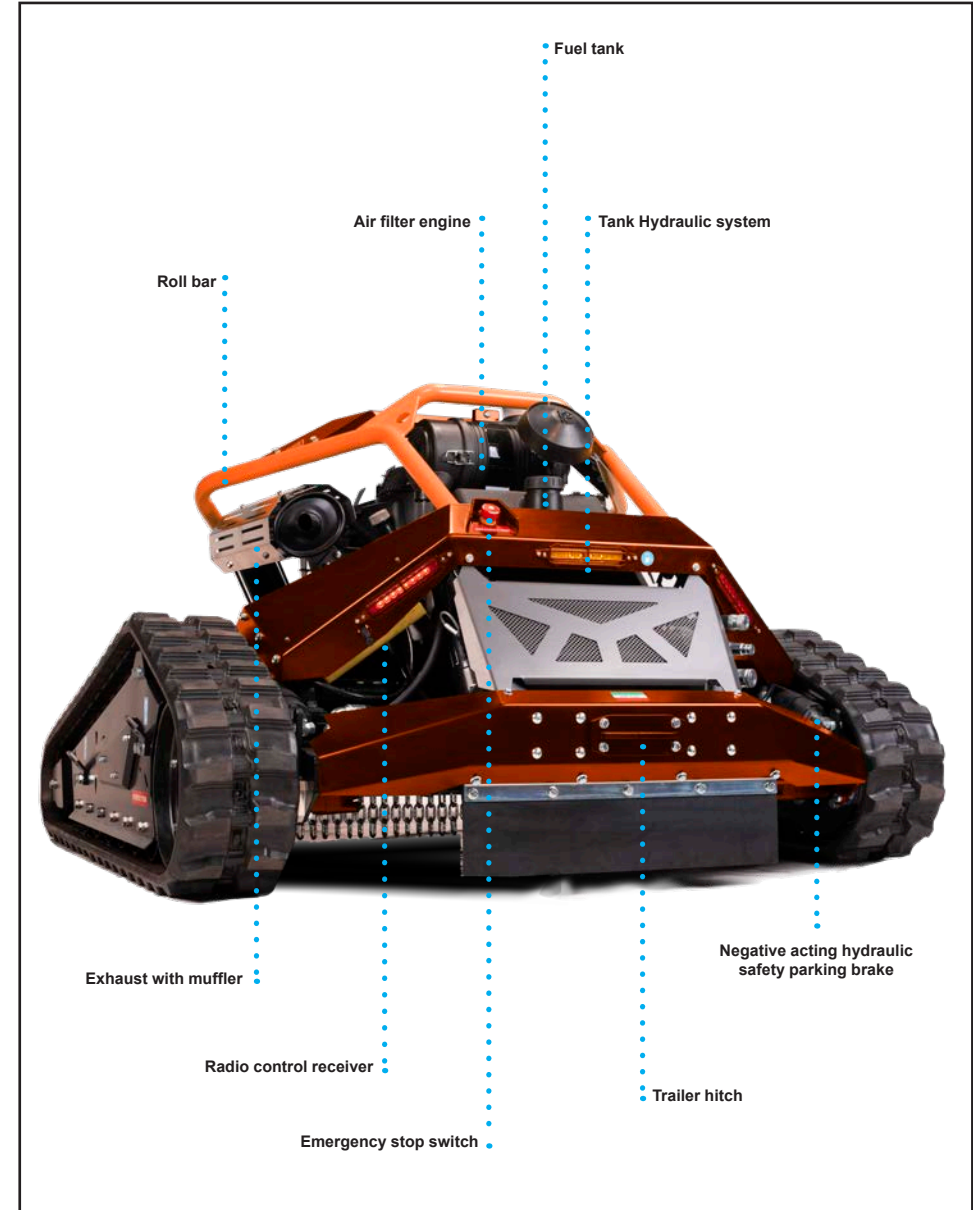
## SAFETY INSTRUCTIONS FOR ENVIRONMENTAL POLLUTION

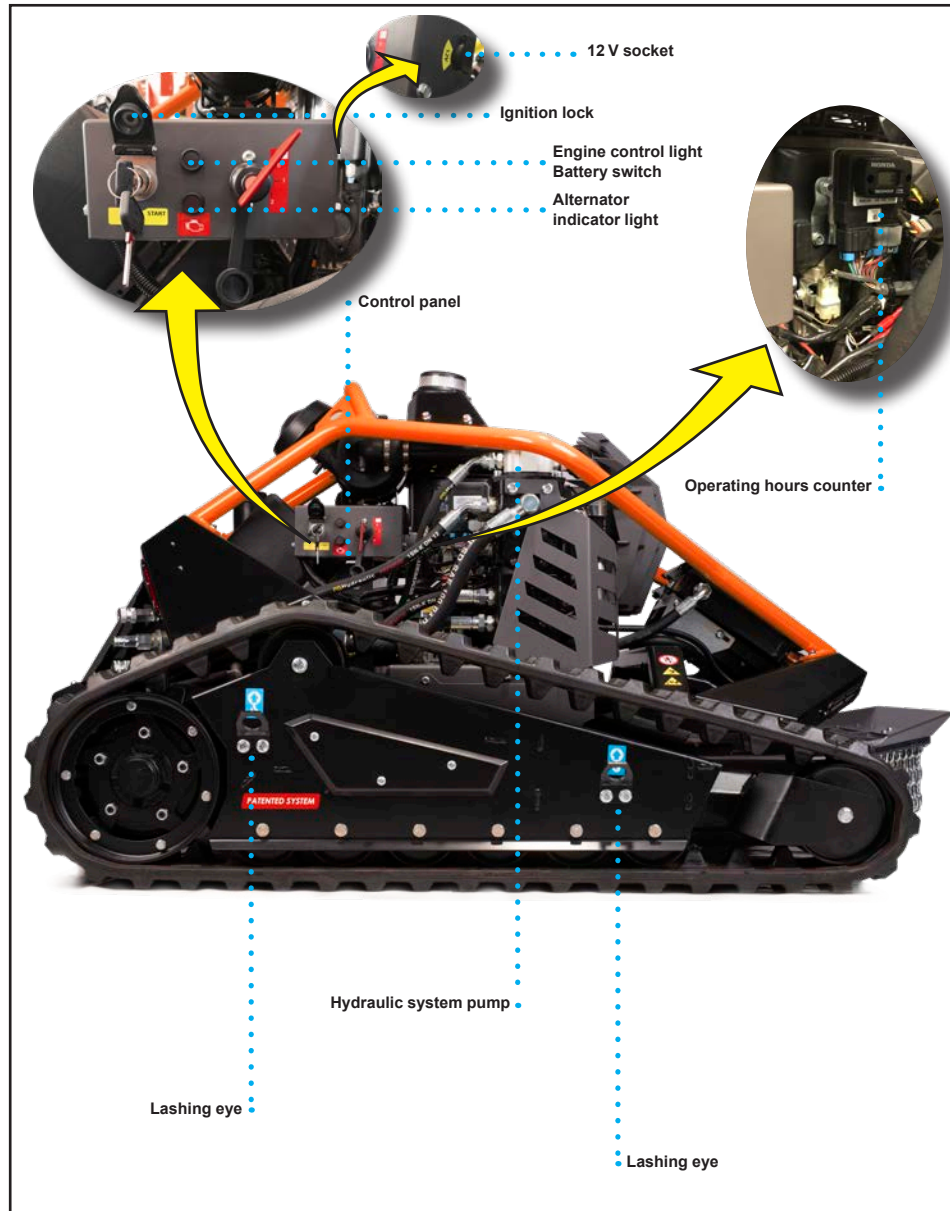
- Every company is obliged to assess the environmental impact of its activities (products, services, etc.)
- The procedures for determining significant environmental impacts shall consider the following factors:
  - a) emissions to the atmosphere
  - b) discharges of liquids
  - c) waste disposal
  - d) contamination of soil
  - e) Use of raw materials and natural resources
  - f) Local problems related to with the environmental impact
- In order to minimize the environmental impact, the manufacturer provides some notes below.
- The instructions must be followed by all persons who, for whatever reason, have to with the machine.
- All packaging components must dispose of in accordance.
- When the motor is running in closed rooms, it must be checked whether the air exchange is sufficient and the noise emissions are within the permissible values.
- Do not allow contaminating material to environment. Disposal must be carried out in accordance with the applicable laws.
- Waste electrical and electronic equipment (WEEE) contain harmful substances that have a negative impact on the human health and the environment.
- When disposing of the product all components must be selected according to their chemical properties and disposed of separately.
- All components that must be separated and disposed of in a specific way are marked with a special symbol.
- The unlawful disposal of Waste Electrical and Electronic Equipment (WEEE) is punishable by penalties, which are according to the laws in force in the area in which the violation is detected.

## GENERAL DESCRIPTION OF THE MACHINE

- **"URS 100"** is a particularly versatile radio-controlled machine for professional use.
- The machine is suitable for mowing, mulching and clearing both on flat ground and on steep slopes.
- This type of machine enables the maintenance of green areas on slopes and embankments.
- In addition to mowing grass, the machine can also cut brushwood and tree trunks (up to a diameter of approx. 7 cm).
- The machine can also work in inaccessible areas where access is difficult for other equipment.
- The machine can mow in both directions mowing (forward and backward).
- During use, the operator must remain the area specified in the "OUTDOOR AREAS" section while using the machine to be able to drive the machine from appropriate safety distance.
- The distance between the machine and the operator reduces the risks from ejected materials, noise, inhalation of exhaust fumes, etc.
- The radio control offers the operator with its modern design appropriate ergonomic conditions.
- The mower is equipped with a blade with two floating ends that shred the material.
- The use of the machine is possible in daylight and/or in any case with sufficient visibility conditions.
- In case of artificial lighting, which ensures a visibility of at least 100 m, the machine may also be operated at night.
- This type of machine is built with innovative technologies and selected materials to ensure high performance and quality.
- The internal combustion engine powers the hydraulic pump that supplies the hydrostatic motors that drive the caterpillar tracks. The cutting blade is driven by a V-belt.
- Each caterpillar track, left and right, is driven by its own hydrostatic motor to enable fast travel movements.
- With the aid of radio control, the machine can be maneuvered in tight spaces and even rotate 360° around itself.
- The hydraulic system is equipped with a heat exchanger and an electric fan to maintain the temperature of the hydraulic oil that feeds the pump at a constant temperature.
- To ensure the cooling capacity the heat exchanger fan automatically reverses the direction of rotation so that accumulated residues are expelled.
- The manufacturer provides some accessories to increase performance and operating versatility

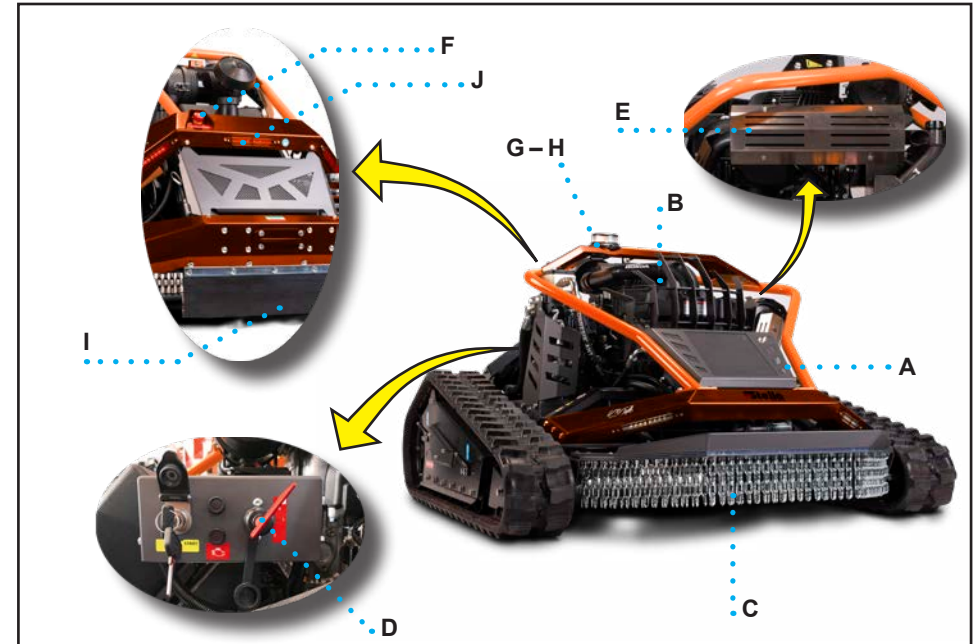
DESCRIPTION OF MAIN COMPONENTS





## DESCRIPTION OF THE SAFETY DEVICES

The machine is equipped with safety devices in order to minimize the risks during the operation between man and machine.



- A) Roll bar: safety device that protects the machine in case of a overturning.
- B) Fixed separating guard: safety device that protects the engine during the working phases.
- C) Fixed separating guard: safety device (made of chains) to protect the operator from ejected material.
- D) Battery switch: Used to disconnect the battery from the electrical system of the machine.
- E) Fixed Disconnecting safety Device: safety device to prevent direct contact with areas where there is a risk of burns.
- F) Emergency stop switch: safety control to stop, in case of imminent danger stop the equipment, the operation of which could constitute a hazard.
- G) Signal light (flashing orange light): safety device to indicate the operation of the machine.
- H) Audible signal: safety device to indicate the connection between the machine and the radio control. The operator can use it as a horn by pressing a special button on the radio control.

Fixed separating guard: Safety device (made of rubber) to protect the operator from protect the operator from ejected material.

Signal light (yellow light): When on, it indicates that the fuel is almost exhausted.

### Important

When the warning light comes on, refuel as soon as possible to prevent the machine from running out into rough terrain.

## REMAINING RISKS

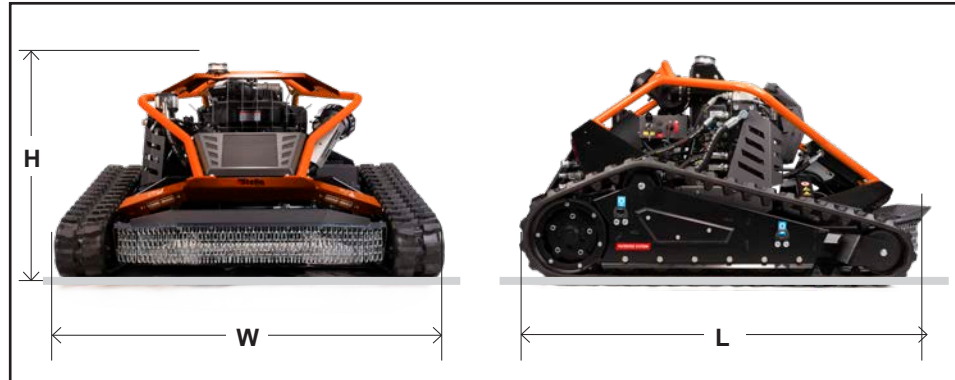
- The residual risks are: "All risks that despite the fact that during the design phase, all the safety solutions have been applied and integrated, have been applied and integrated, remain."
- Each residual risk is highlighted by a corresponding sign. Some of these are placed near the area where the risk is persists, others in a highly visible location.
- **Ejecting objects:** The operator must stay within the area described in the section "EXTERIOR AREAS" and at a safe distance to avoid the risk of being hit.
- Stop operation of the machine immediately if unauthorized persons enter the danger area and send them away.
- **Blocking the cutting blade:** When working with existing obstructions such as wires, cords, ropes etc., the blade may jam.
- To avoid serious damage, stop the operation of the machine immediately with the emergency stop switch.
- The elements that caused the blocking of the knife must be removed before resuming removed before resuming the work.
- **Overturning of the machine:** When working on terrain or slopes prone to landslides or slopes.
- ALWAYS match the travel speed of the machine to the slope and compaction of the ground. Operate the machine at low speed on sloping and avoid sudden changes in direction.

## IMPROPER USE

**Misuse:** Reasonably foreseeable misuse that is not specified in the manual and which may result from human behavior.

- DO NOT allow the machine to be used by operators who are not properly trained, informed, and authorized.
- DO NOT use the machine if the safety devices are not properly installed and effective.
- DO NOT modify the design and functional characteristics of the machine.
- DO NOT use the machine for purposes and/or in a manner not intended by the manufacturer.
- DO NOT attempt to chop branches or tree trunks larger than about 7 cm in diameter.
- DO NOT work on surfaces where sharp objects, stones, wires, etc, as these may damage the machine parts.
- On steeply sloping terrain, where it is not possible to work across the direction, do NOT mow downhill (only uphill).
- DO NOT use the machine when the scheduled maintenance has not been performed regularly.
- DO NOT use the machine in environments fire and/or explosion hazards.
- DO NOT use the machine as a means of transport, for objects or persons.
- DO NOT use the trailer hitch for towing other machines or for any other non-relevant activities.
- DO NOT drive on public roads.
- NEVER perform any operations on the machine while the machine is running, but ONLY after it has been stopped in safe conditions.
- DO NOT leave the machine unattended at the end of the work without having secured it first.
- DO NOT park the machine in a place where it is in the way or a danger to outsiders. Park it in a level area and on a stable surface.
- DO NOT park the machine for long periods of time without changing direction on steep slopes.

**TECHNICAL DATA**

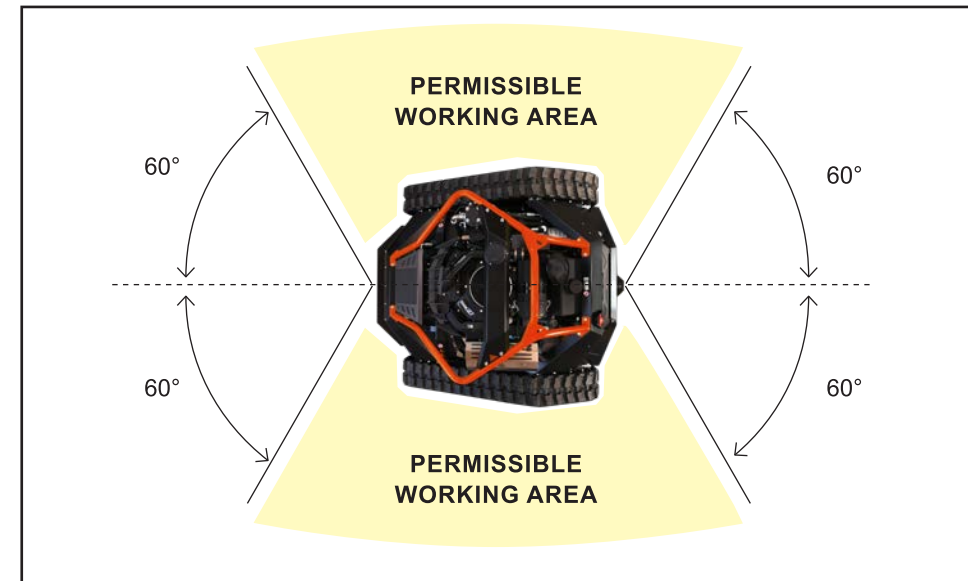


**Table 1:** Technical data of the machine

Description	Dimension unit	Value
<b>Machine dimensions</b>		
Length (L)	mm	1720
Width (W)	mm	1430
Height (H)	mm	900
Mower height	mm	20 – 120
Mower width	mm	1000
Total empty weight	kg	640
Fuel tank capacity	l	18
Hydraulic oil tank capacity	l	14
Battery	–	12V 16Ah rechargeable lithium battery
Dimensions of the battery	mm	180 x 75 x 170
<b>Operating characteristics</b>		
Driving speed	km/h	0 – 7
Max. lateral working inclination	–	45°
Max. Longitudinal working inclination	–	20°(downhill) – 50°(uphill)
<b>Environmental conditions</b>		
Maximum operating altitude (above sea level)	m	2000
Relative humidity (measured at a temperature between 20 °C and 40 °C)	–	30% – 80%
Ambient temperature during operation °C	°C	-10° / +40°
Ambient brightness	LUX	150
Sound power level (LwA)	dB (A)	104
Sound pressure level (LpA)	dB (A)	88

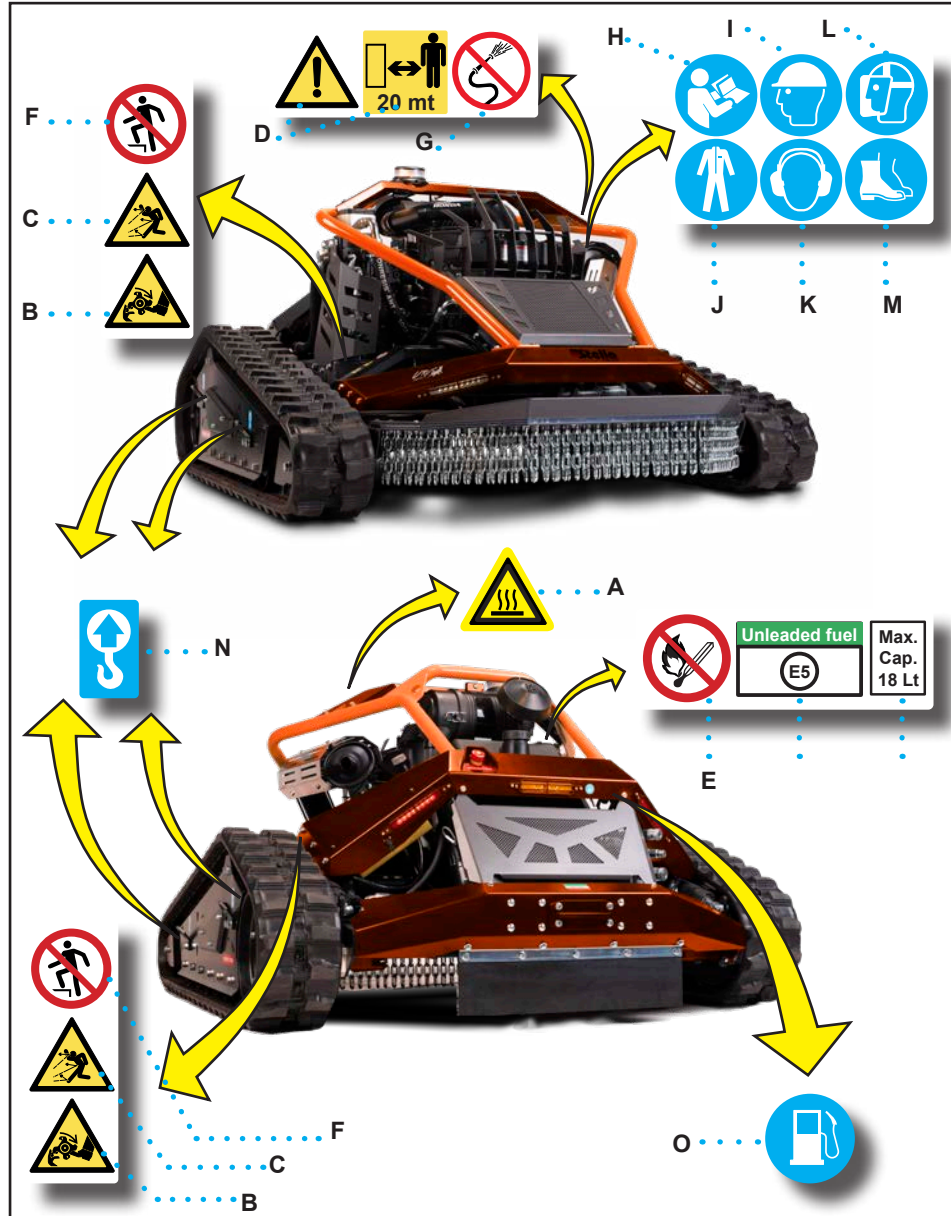
**OUTSIDE AREAS**

- The figure shows the hazardous areas during normal machine operation.
- The areas surrounding the work area must be marked and adequately secured to prevent access by third parties.
- Stop machine operation immediately if unauthorized persons enter the danger area and send them away.
- When working on a sloping surface with a slope of more than 25 the operator must always position himself above the machine.
- The operator must position himself in the areas indicated in the illustration to avoid being in the machine's path of travel or being struck by objects that may be ejected, except when working on an inclined surface with a slope greater than 25°, for which the regulations of the previous point apply.



**SAFETY AND INSTRUCTION SIGNS**

The figure shows the used signals and the list gives a description of the residual risk represented.



■ **Danger signs**

- A) Sign advising not to touch hot surfaces with upper limbs or other parts of the body.
- B) Sign indicating not to bring the lower limbs near moving parts.
- C) Sign advising of danger of being struck by ejected material.
- D) Sign indicating not to be within the machine's radius of action of the machine.

■ **Prohibition signs**

- E) Sign stating that during NOT allowed to smoke during refueling.
- F) Sign indicating NOT to climb on the mower deck.
- G) Sign indicating NOT to wash the machine with a jet of water.

■ **Mandatory signs**

- H) Sign for reading the operation and maintenance manual.
- I) Sign for wearing a protective helmet (PPE) during normal operation of the machine.
- J) Sign for wearing clothing that complies with occupational health and safety laws.
- K) Sign for wearing ear muffs (PPE) during normal operation of the machine.
- L) Sign for wearing a protective mask (PPE) during normal operation of the machine.
- M) Sign for wearing safety footwear (PPE).

■ **Information signs**

- N) Sign for marking the attachment points for hooking the lifting hooks.
- O) Signal for marking the LED of the Fuel reserve.

Keep the safety and information signs legible and follow the instructions given on them.

Signals that are no longer legible must be replaced and reattached in their original place.

## INSTRUCTIONS FOR TRANSPORT AND HANDLING

- The personnel authorized for handling (loading and unloading) must have recognized technical knowledge and professional skills.
- For loading, transport and unloading, means and devices with sufficient carrying capacity must be used.
- Do NOT stack the packages in order not to damage them.
- In the case of prolonged storage, check at regular intervals that the storage conditions of the packages have not changed.

## PACKAGING METHODS (FOR SHIPMENT TO THE DEALER)

The figures show the most commonly used packaging solutions.

### Packing on pallet with protective film



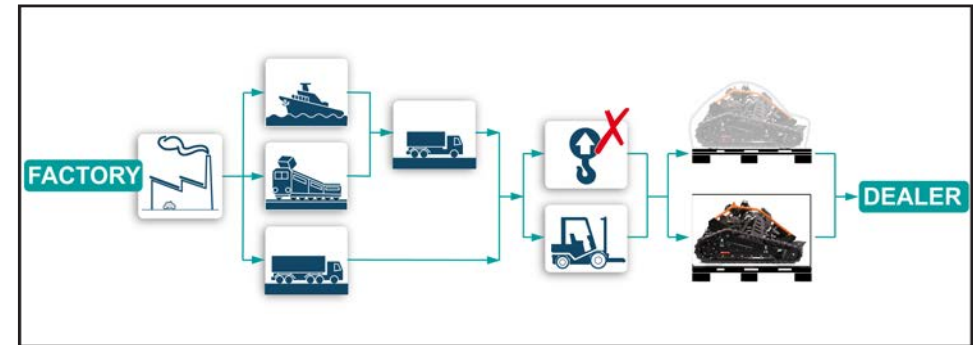
- The packaging is also realized depending on the chosen mode of transport, limiting the overall dimensions.
- The packaging for sea transport is designed as "overseas packaging" to ensure the integrity of the packaged goods.
- On the packaging all the information necessary for loading and unloading.
- Each shipment is accompanied by a document ("Packing List") in which the packages are listed and described.
- The machine is secured to the pallet in accordance with on the pallet in order to avoid sudden displacements.
- Some components (radio control, battery charger, etc.) are placed in a box and placed in the packaging.



### Packing in box

## LOADING, TRANSPORT AND UNLOADING (WITH PALLET)

- Transport can be carried out by different means, depending on the destination.
- Carry out the transport with suitable means which have sufficient load-bearing capacity.
- Unloading can be done with a device (fork or hook) with the appropriate load-bearing capacity.
- Do not stack packages to avoid damage and the risk of sudden and dangerous sudden and dangerous movement.
- The diagram shows the most common solutions.



## UNPACKING

- Upon delivery, check that the goods received correspond to those specified in the accompanying document.
- Make sure that the packaging is completely intact and, in the case of a shipment without packaging, check that each package is in perfect condition.
- Unpack each package in the most appropriate manner and check the integrity of the components.
- In case of damage or missing parts, contact the vendor to agree on the further procedure.
- Ensure that all fasteners (brackets, special supports, etc.) designed to prevent sudden displacement have been removed.
- The packaging material must be disposed of in accordance with the laws in force.

**DELIVERY OF THE MACHINE AND START-UP TIME**

Depending on the agreement with the dealer, the machine can be delivered or directly picked up by the buyer.

- The machine will be tested by the manufacturer and delivered WITHOUT fuel, WITHOUT engine oil and with the uncharged radio control battery to the dealer.
- Before switching on, the dealer must refuel the machine, fill the engine oil and charge the radio control battery.
- Place the package on a flat surface and store it in a covered and well-ventilated place.
- Fasten the belt for driving the machine, complete with radio control, correctly.
- Start the machine, raise the mower and drive it off the pallet.

**! Important**

The operation must be performed by trained personnel ONLY, to avoid risks due to incorrect driving manoeuvres.

- Stop the machine in a suitable area.
- Check the perfect condition of the machine and the components.
- The machine is delivered with a run-in time of a few minutes. Nevertheless, during the first period of use, certain indications must be observed (for details, see "Table of Scheduled maintenance intervals").

**! Important**

Do not fill with oil beyond the specified maximum level to avoid malfunction.

New batteries must be fully charged when used for the first time.

**! Caution – Warning**

The machine is supplied with a LITHIUM battery is included. ONLY use equipment suitable for this type of charging. DO NOT use the batteries with any device other than the one other than the intended device.

**OPERATOR TRAINING**

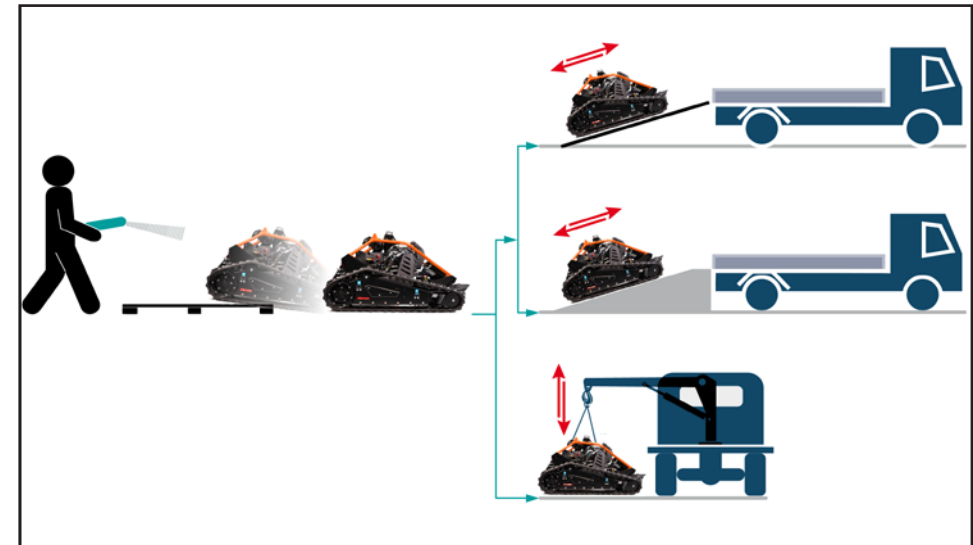
- The dealer must train the operator
- That he is able to handle the machine independently, safely and in accordance with its intended use.
- The operator must be informed about the CORRECT USE of the machine and about the remaining RESTRICTIONS
- The operator must prove that he has skills and understand the "Operating Instructions" so that he can safely perform the activity.
- The operator must be able to recognize the safety signals and prove, that he is able to perform the tasks assigned to him.
- The dealer must issue the training/information material to the employees and document the training carried out in order to be able to present it in the event of a legal dispute.

**LOADING, TRANSPORT AND UNLOADING (WITHOUT PALLET)**

- Transport the machine with the help of ramps with sufficient load capacity and suitable inclination from the transport vehicle.
- As an alternative to ramps, it is also possible to use earth mounds may be used as ramps, provided that they ensure a safe procedure.
- The machine is provided with markings where it can be lifted with a hook device of suitable load capacity.
- Attach the lifting equipment correctly to the points provided for this purpose.
- Make all movements slowly and carefully to avoid dangerous situations.
- Work must be carried out on a stable, level surface and with the means of transport at a safe standstill.
- Carry out the transport with suitable means that have sufficient load-bearing capacity.
- The picture shows the solutions that must be used to load the machine onto a means of transport.

**! Important**

Always use loading/lifting equipment with sufficient load capacity.



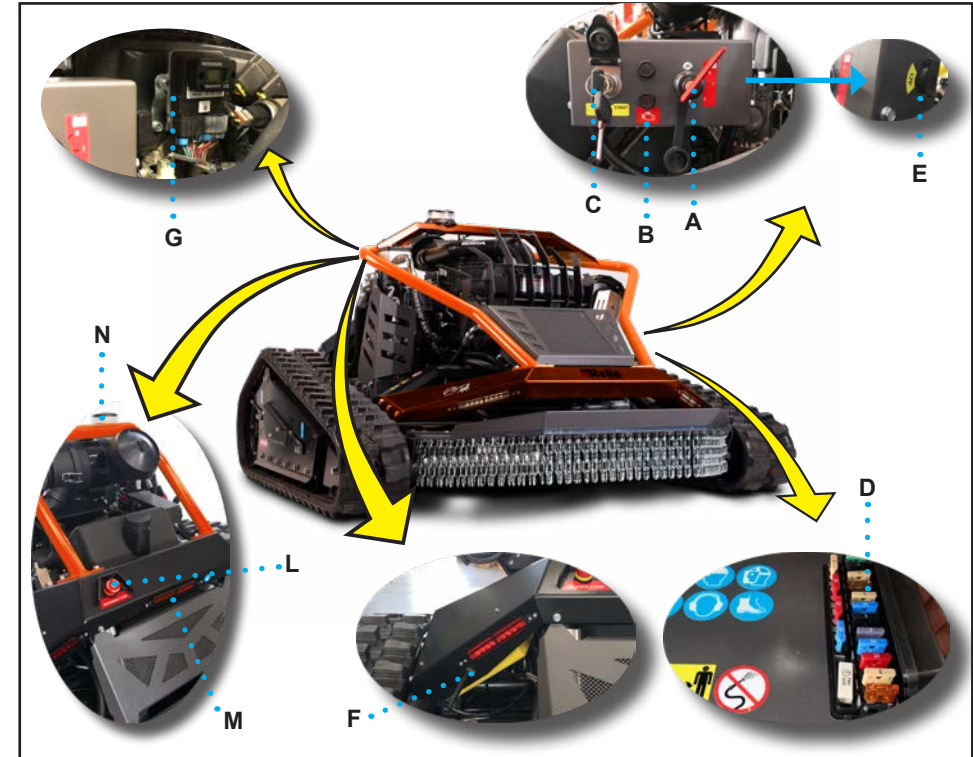


## RECOMMENDATIONS FOR USE AND OPERATION

- The machine must ONLY be used by ONE operator who has been trained, has sufficient skills for the work and must be physically and mentally fit.
- The operating instructions must be read in particular when the machine is used for the first time, whereby it must be ensured that the contents have been fully understood.
- Use the machine ONLY for the applications and methods intended by the manufacturer.
- Use the machine ONLY with the original safety devices installed by the manufacturer.
- Depending on the type of operation to be performed, the safety precautions indicated in the "Operating Instructions" and the personal protective equipment provided for by the labor laws.

## DESCRIPTION OF THE MACHINE CONTROLS

The figure shows the main controls and the list shows their description and function.



**A) Battery switch:** control element for disconnecting the the battery from the electrical system of the machine.

- Position "0": Battery disconnected and key can be removed.
- Position "1": Battery disconnected and key can NOT be removed.
- Position "2": Battery connected and key can NOT be removed.

**B) Indicator light (red light):** When on, it indicates that the alternator is not alternating or is not charging the battery.

**C) Starter key:** Control element for activation of the electrical connection.

- Position "0": Electrical connection deactivated and key can be removed.
- Position "1": Electrical connection activated and key can NOT be removed.

- D) Fuse box:** Contains the fuses to protect the electrical system.
- E) Socket (12 V – 15 A):** Socket for auxiliary additional devices and accessories.
- F) Push button:** Control element for programming the radio receiver.

**⚠ Caution – Warning**

**The use of the control element is authorized by the manufacturer.**

- G) Display**
  - Engine off: Displays the total number of hours of operation.
  - Motor on: Displays half the actual speed value of the motor.
- L) Emergency stop switch:** Safety control to stop, in the event of imminent danger, any stop any device whose operation could be danger.

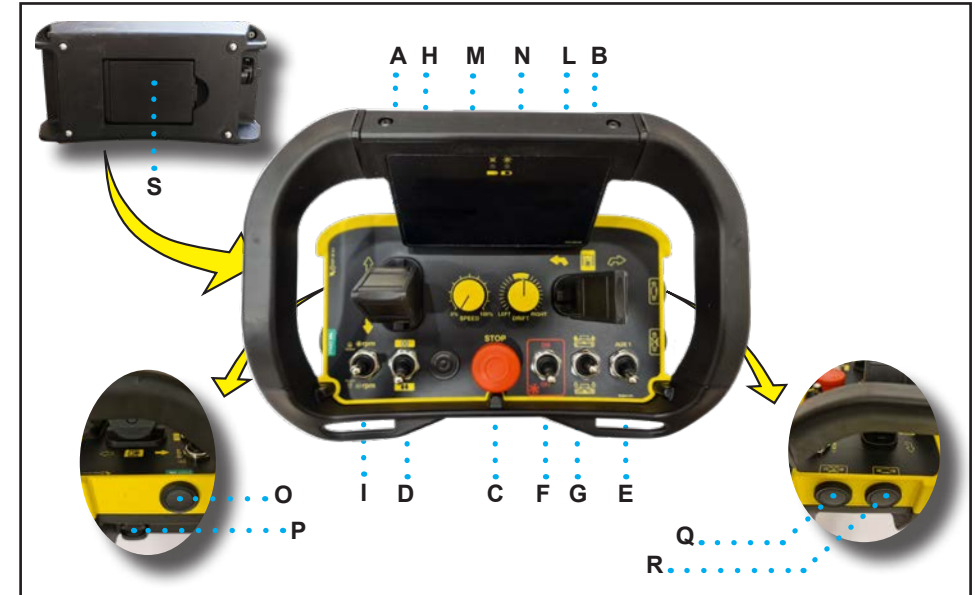
- The control must remain "blocked" until normal operating conditions are restored.
- After operating conditions have returned to normal, the button must be unlocked by an intentional action to allow a restart.

**M) Signal light (yellow light):** when switched on, it indicates that the fuel is almost exhausted

**N) Signal light (flashing orange light):** Safety device to indicate the operation of the machine.

**DESCRIPTION OF RADIO CONTROL**

The figure shows the main controls and the list shows their description and function.



**A) Joystick lever:** Proportional control ("with automatic reset"), to move the machine forward or backward.

**B) Joystick lever:** proportional control ("with automatic reset"), to move the machine to the right or left.

**⚠ Important**  
**Proportional control: The further the lever A-B is pressed/pulled, the greater the speed at which the machine moves.**

**C) "STOPP"-SWITCH:** Control element to deactivate the radio control.

**D) Switch:** direction reversal joystick B (right/left).

**E) "AUX"-SWITCH:** activation of the optional accessories.

**⚠ Important**  
**The AUX switch must always be in the OFF position if there are no optional accessories on the machine.**

**F) Switch:** control for activating and deactivating the cutting blades.  
– ON-position: function activated. By activation of this switch, the engine speed increase to the maximum value.  
– OFF-position: function deactivated.

**G) Switch:** control element ("with automatic reset") for adjusting the height of the mower.

H) **Potentiometer:** Control element for setting the maximum driving speed of the machine.

**NOTE**

**When the speed is set to "0", the machine does not move even when the joysticks A-B move.**

I) **Switch:** control element ("with automatic reset") for setting the engine speed.

L) **Potentiometer:** Control element for the speed compensation of the machine tracks (right or left).

**NOTE**

**In order to prevent lateral slipping when working on slopes, the speed of the downhill crawler must be slightly increased.**

M) **Led (green)**

- Rapid flashing: Indicates that the battery is charged and the radio control is working correctly.
- Slow flashing: Indicates that the radio control is connected to the machine.

N) **Led (red):** Indicates, when on, that the machine is defective or that the batteries of the radio control are empty and must be replaced. The acoustic signal generator sounds at regular intervals to indicate that the battery of the radio must be replaced.

O) **Pushbutton:** command to connect the radio control to the machine control element of the acoustic signal generator.

P) **Ignition key**

- Position "0": Radio control disabled (key can be removed).
- Position "1": Radio control activated (key cannot be removed).

Q) **"MOTOR STOPP" button:** Control element for switching off the engine

R) **"MOTOR START" button:** control element for switching on the engine

S) **Battery (removable):** power supply for the radio control.

**! Important**

**The functions of the radio control can be used only if the electrical supply of the machine has been activated.**

**! Important**

**When the control element C "EMERGENCY STOP" or the control element F "Switch on knife" or the control element E "AUX" are in the ON position, the radio control does not switch on.**

**STARTING THE MACHINE**

The illustration shows the points of intervention and gives a description of the procedures.

1. Insert the key **A** and turn it clockwise to position "2".
2. Insert the key **B** and turn it clockwise to position "1".
  - The indicator light **C** turns on.
  - The blinker light **H** switches on.
  - The front headlights and the Rear lights **I** switch on.
3. Insert the key **D** and turn it clockwise to position "1".
4. Make sure that the control element **E** is in the unlocked position.
5. Check that the Aux **J** control is in the "OFF" position.



- 6. Set the control element **F** to "OFF" to switch off the knives.
- 7. Press the **G START** control on the radio control.
- 8. The control lamp **L** starts to flash quickly.
- 9. Press the **G START** operating element on the radio control.
- 10. The acoustic signal generator is activated.
- 11. The **L** control lamp starts to flash slowly. The signals indicate that the radio control is connected to the machine.
- 12. Press and hold the control **N** and release it again when the engine is switched on.
  - The control light **C** turns off.
  - Press the control element **P** to set the maximum travel speed of the machine.
- Actuate control element **Q** to increase the engine speed to the maximum value.
- 13. Operate the joystick controls **R-S** to bring the machine close to the working area.
- 14. Actuate the **T** control to raise the mower to the desired height.
- 15. Set the control **F** to "ON".
  - The cutting blades are activated.
  - The engine revolutions are increased to the maximum value.
- 16. Operate the joystick controls **R-S** to perform the work.

**STOP AT THE END OF THE WORK**

The figure represents the intervention points and gives a description of the procedures.



1. Set the control element **F** to "OFF".
  - The cutting blades are deactivated.
2. Set the mower to the maximum speed by operating the **T** control element to the maximum height.
3. Operate the joystick controls **R-S** to move the machine to the parking position.
4. Actuate the **Q** control in order to reduce the engine speed to the minimum.
5. Press and hold down the **U** control and release it when the engine is switched off.
  - The control lamp **C** switches on.
  - Press the control element **E**.
  - The radio control switches off.

6. Turn the key **D** to "0".

**! Important**

The key **D** must **ONLY** be removed if necessary.

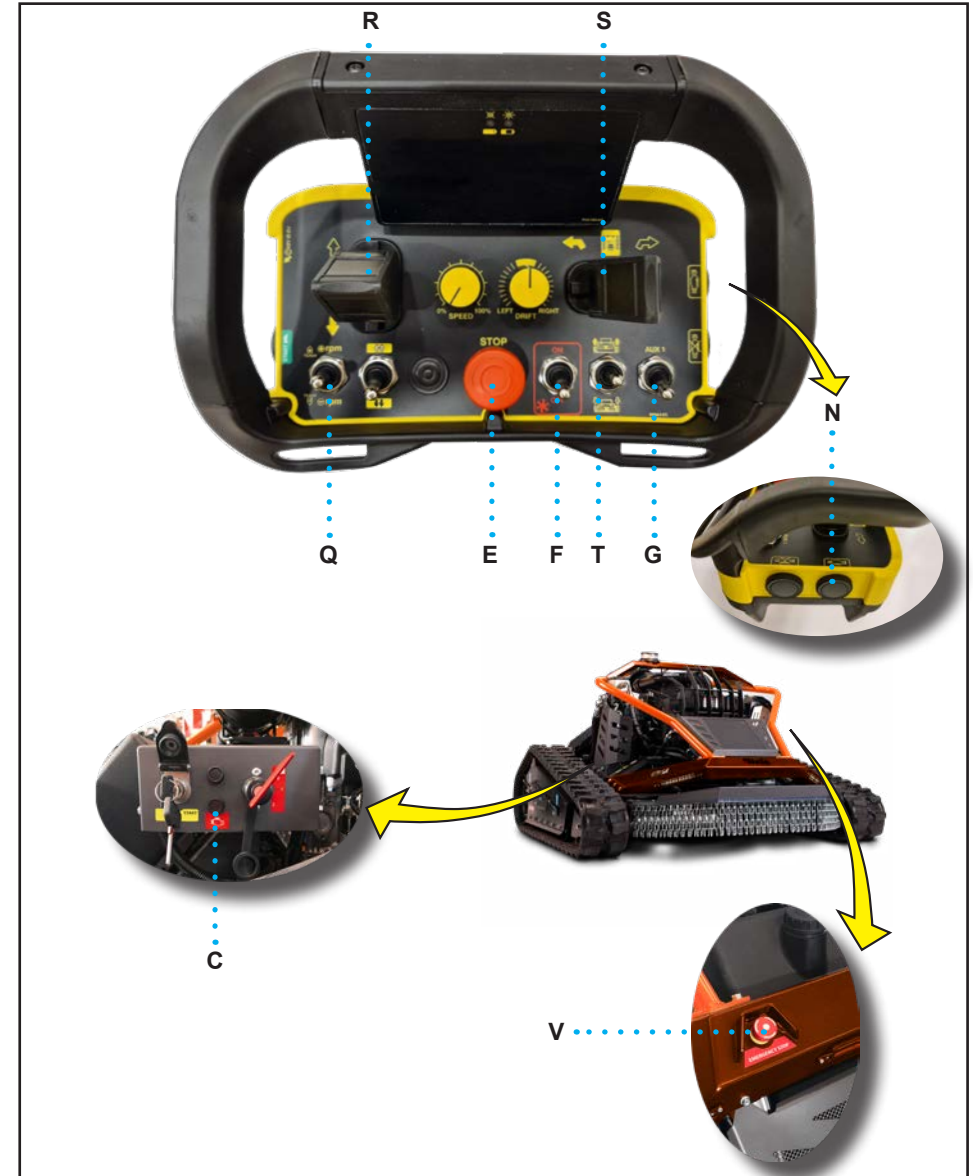
7. Turn the key **B** to "0", remove it and apply the protection.

– The indicator light **C** turns off.

8. Turn the key **A** to "0" and remove it.

**EMERGENCY STOP AND RESTART**

The figure shows the points of intervention and gives a description of the procedures.



1. In case of imminent danger, press the emergency stop switch **V**.
    - All moving parts stop immediately and the stop and the combustion engine switch off.
    - The control lamp **C** switches on.
  2. Determine the causes that led to the stop.
  3. Restore the normal operating conditions.
- ! Important**
- Repair work that is not within the responsibility of the operator must be carried out by authorized personnel with recognized skills.
4. Unlock the emergency stop switch **V** with a deliberate operation.
  5. Set the controls **F** and **G** to "OFF".
  6. Press and hold down the control **N** and release it when the engine is switched on.
    - The control lamp **C** switches off.
  7. Press control element **Q** to increase the engine speed.
  8. Set the control element **F** to "ON".
    - The cutting knives are activated.
    - The motor revolutions are increased to the maximum value.
  9. Operate the joystick controls **R-S** to resume work.

## RESTART AFTER STOP DUE TO ENGINE SHUTDOWN

The machine stops automatically in the event of an excessive load on the motor (e.g., if the blades hit an unexpected obstacle).



1. Set the control elements **F** and **G** to "OFF".
  - The indicator light **C** switches off.
2. Press and hold down control element **N** and release it again when the motor is switched on.
3. Operate the joystick controls **R-S** to position the machine in an area free of obstacles.

## FUEL REFUELING

- Always refuel off the machine and in a well-ventilated area.
- All fuels are flammable. Fuel spilled or falling on open flames or electrical components can cause fire and/or explosion.
- When refueling, make sure that no fuel gets into the environment.

### **Caution – Warning**

**When working on the machine and especially when refueling with fuel DO NOT smoke.**

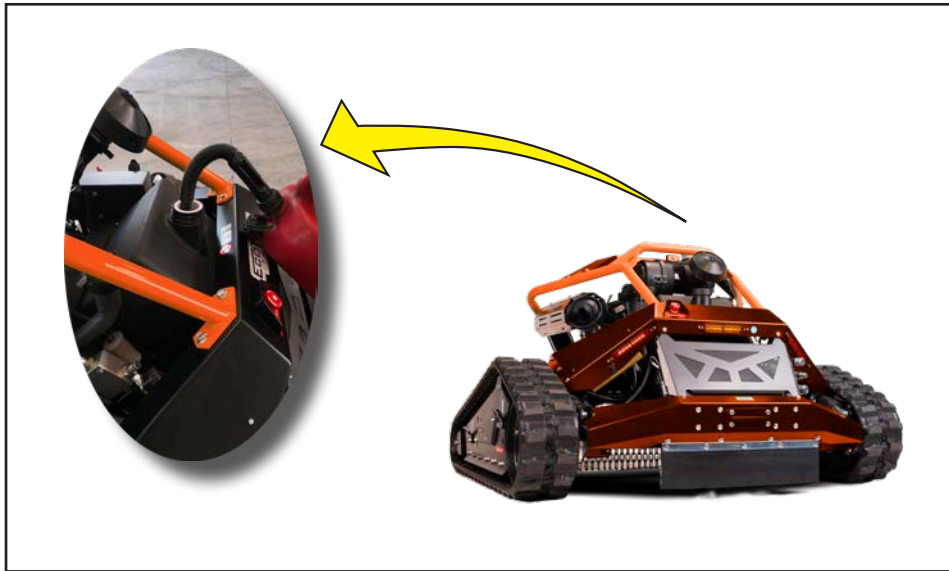
- The figure shows the intervention points and gives a description of the procedures.

1. Remove the cap and fill the tank without filling it completely (max. 18 liters).

#### **NOTE**

**The fuel must be for vehicles and meet the standards specified by the engine manufacturer.**

- Fill with E5 unleaded gasoline.
  - Use a funnel or hose to easily reach the filler cap.
2. Screw the cap back on when the process is complete.



## INSTRUCTIONS FOR USE

**The following are the instructions for use that must be followed for normal operation of the machine.**

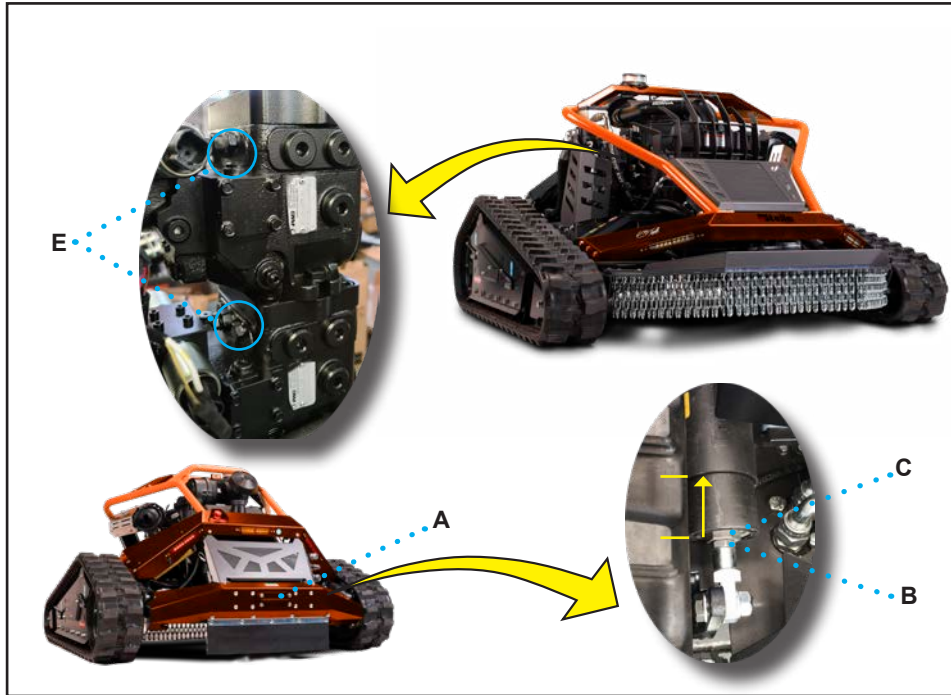
- Make sure that the working area is free of obstacles that could damage the blades (concrete edges, wood debris, various types of waste, etc.).
- Make sure that there are no obstacles in the working area that could be thrown away and/or damage parts of the machine (stones, wires, etc.)
- Make sure that there are no slopes, terrain prone to landslides or areas with a risk of tipping over in the vicinity of the working area.
- In the presence of slopes, ditches or solid obstacles, adequately mark the boundaries that must not be crossed in order to avoid Hazards.
- Care must be taken not to accidentally drive into the marked danger areas.
- DO NOT operate the machine in the vicinity of fires or open flames (e.g. burning bushes).
- Stop operation of the machine immediately if unauthorized persons enter the danger area and send them away.
- The travel speed of the machine ALWAYS match the slope and compaction of the ground.
- On slopes, drive at low speed avoid sudden changes of direction and drive across the slope.
- Mowing in the transverse direction must be done from the lowest to the highest point.
- This procedure reduces the risk of the machine tipping over when changing direction.
- Mow uphill in steep terrain, if it is not possible to work in the transverse possible.
- When changing from one working area to another, a steep slope must be in reverse.
- This reduces the risk of engine oil overflowing.
- Stop operating the machine when environmental conditions limit visibility (at night, in the rain, etc.).
- Check that the radiator fins and grilles are free of dust or dirt that could obstruct the cooling system.
- Do not leave the machine outdoors unused for long periods of time. A cover to protect it from the sun, the weather, dirt and dust.
- Park the machine after use, secure it and take appropriate measures to prevent unauthorized persons from using the radio.
- Clean the machine and remove cutting residues with the aid of compressed air.
- Disconnect the batteries with the aid of the battery switch and store the key in a place accessible only to personnel.
- Before starting any work always carry out a thorough inspection and make sure that there are no stones, rocks, cement, wood or other obstacles that could damage the machine during cutting.
- At the beginning of work at a new location site, the machine is parked with the mower at the highest height above the ground to reduce the risk of the blades accidentally hitting unexpected obstacles.
- In the event of an unexpected impact of the blades hit an obstacle, the machine must be reset immediately and the ma-

chine and radio control must be switched off. Check and eliminate the cause of the impact. Check the integrity of the cutting equipment and replace damaged parts before resuming work.

- Before each use, make sure both visually and acoustically that the machine is in optimal condition and does not exhibit any unusual vibrations: If this is the case, stop work immediately.

## TOWING THE DEFECTIVE MACHINE

The figure illustrates the intervention points and gives a description of the procedures.



1. Attach the rod to the recovery hook **A** of the machine and to that of the towing vehicle.

### ! Important

**Before attaching it to the towing vehicle it must be ensured that the the towing vehicle has sufficient power and size.**

2. Ensure that the mounting bolts are correctly inserted and locked with the appropriate safety pins to prevent accidental loosening.
3. Slightly loosen the lock nut **B**.
4. Completely tighten sleeve **C** (see photo).
5. Repeat the operations on the brake of the other crawler.
6. Loosen the screws **E** (red) by 1.5 turns.
  - Now the machine can be towed.

### ! Important

**Towing may only be carried out over short distances at a speed of maximum 1 km/h.**

ALWAYS restore the initial conditions after towing as indicated.

1. Tighten screws **E**.
2. Screw on the sleeve **C** completely.
3. Tighten the lock nut **B**.
4. Repeat the operations on the brake of the other crawler.

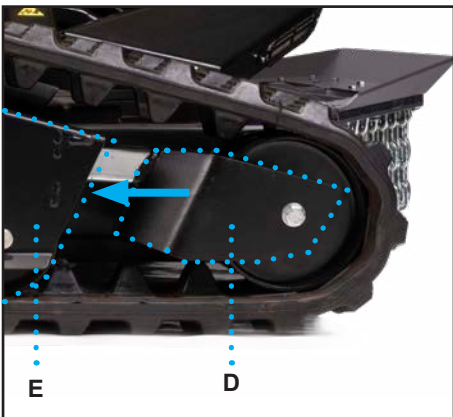
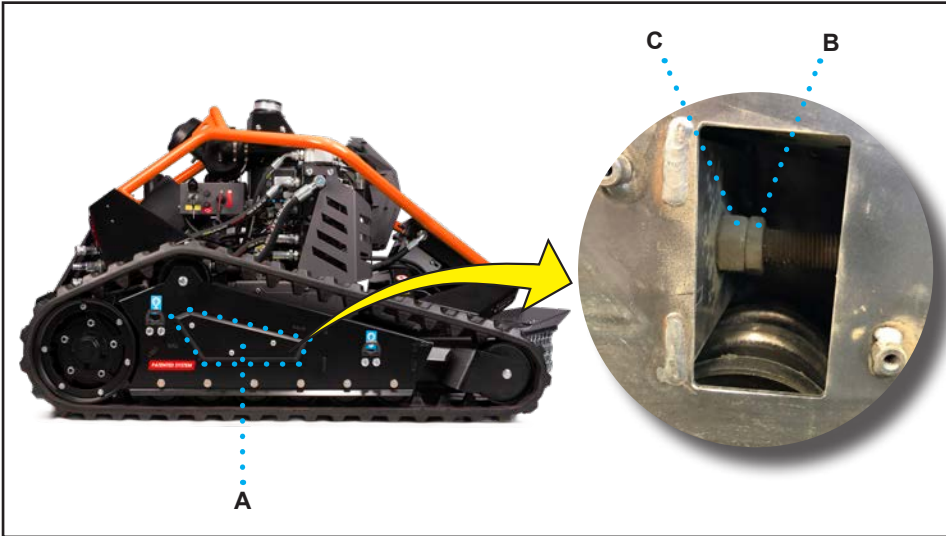
### ! Important

**In the event of a stop in an area to which the recovery vehicle cannot approach, towing must be performed with a rope or chain. Ensure that the towing elements (rope or chain) are sufficiently dimensioned so that they do not come loose suddenly.**



**DISASSEMBLY / ASSEMBLY OF THE CATERPILLAR TRACKS**

The figure represents the intervention points and gives a description of the procedures.

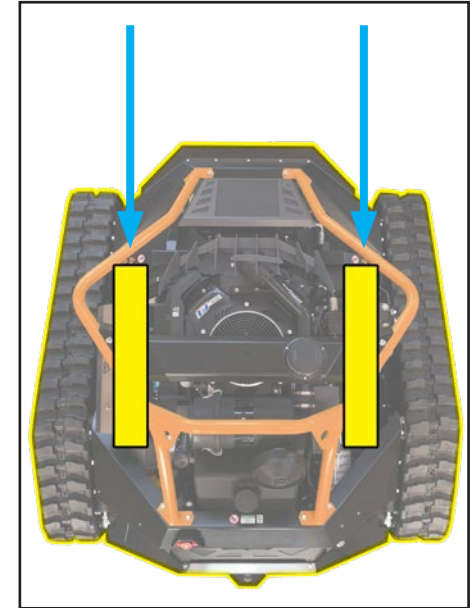
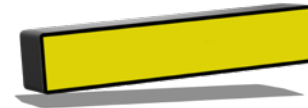


**DISASSEMBLY OF THE CATERPILLAR TRACKS**

1. Remove the cover **A** by loosening the 3 screws with the supplied using the wrench provided.
2. Loosen the lock nut **B** and the nut **C** until the fork **D** rests against the chassis frame **E**.
3. Insert the supplied yellow pad (see photo) in one of the two positions shown in the illustration under mower deck of the machine.
4. Lower the mower until the track disengages from the ground. Caterpillar track disengages from the ground.
5. Remove the caterpillar track.

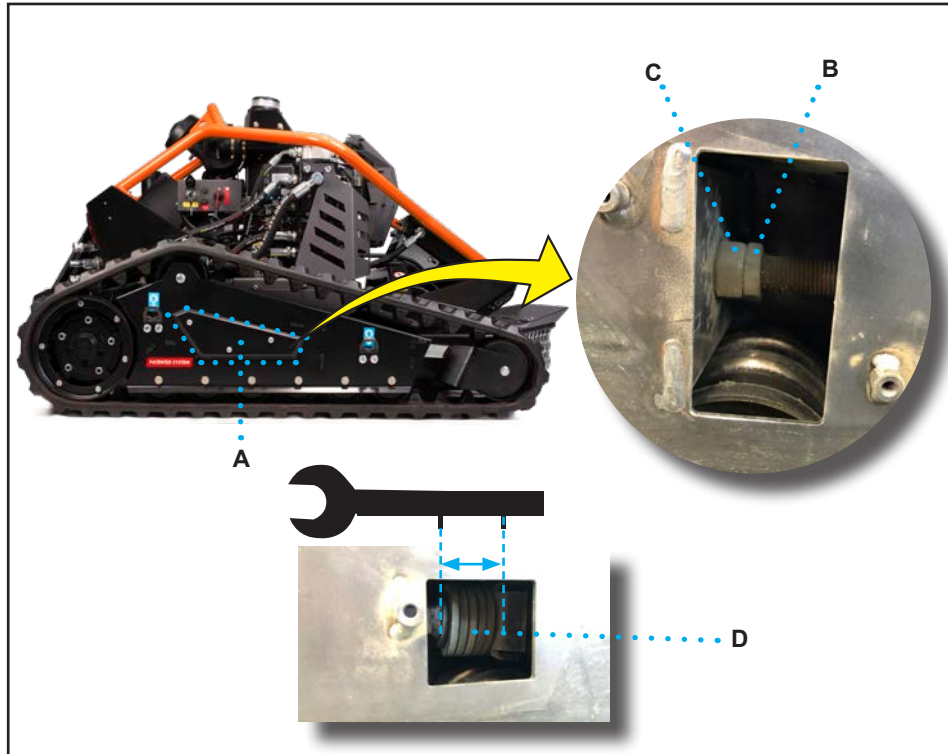
**ASSEMBLY OF THE CATERPILLAR TRACKS**

1. With the machine lifted, as described in points 3 and 4 of the previous section.
2. Tighten the nut **C** until the caterpillar track is optimally tensioned (see "Tensioning the caterpillar tracks").
3. Screw the lock nut **B** until it is tight.
4. Replace the cover **A** with the corresponding key.



## TENSIONING THE CRAWLER CHAINS

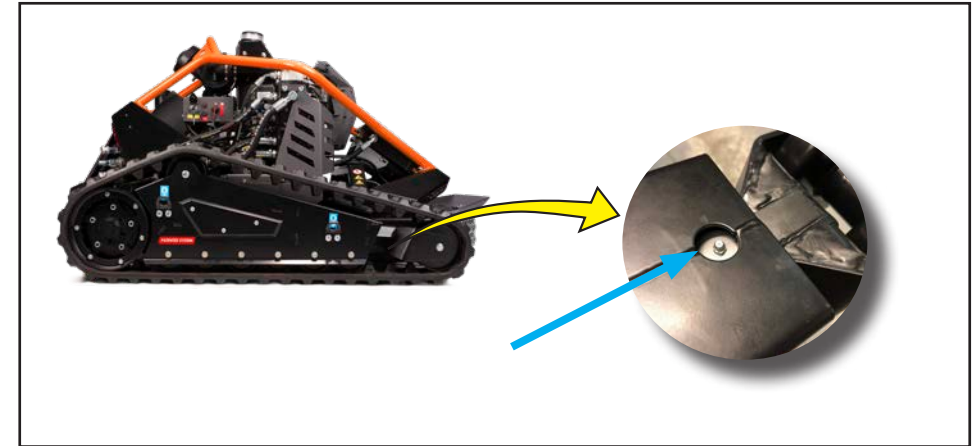
The figure represents the points of intervention and gives a description of the procedures.



1. Remove the cover **A** by loosening the 3 screws with the supplied.
2. Loosen the lock nut **B**.
3. Tighten the nut **C** by 1 turn with the wrench and check that the size of the spring pack **D** matches the size indicated on the wrench. If not, repeat the procedure.
4. When the desired value has been reached tighten the lock nut **B** again.
5. Replace cover **A**.

## LUBRICATION OF THE CHAIN TENSIONER

The figure shows the lubrication points and how to proceed.



1. Follow the procedure for "Disassembling of the caterpillar tracks".
2. Lubricate at the specified point with a lubrication device at the specified point (see appendix for lubricating grease).
3. Follow the procedure for "Mounting the crawler chains".

## LONGER STANDSTILL OF THE MACHINE

If the machine will not be used for an extended period of time, perform the listed operations.

- Carry out general cleaning.
- Clean the air filter.
- Disconnect the batteries by means of the battery switch and store the key in a place accessible only to personnel.
- Check all machine parts and replace them if necessary.
- Check the tightness of the fixing screws of the main parts.
- Allow the engine to cool down and empty the fuel tank before storing the machine.

 **Caution – Warning**

**Do NOT smoke during the operation, do not produce sparks or use open flames to avoid risk of explosion or fire.**

- Store the machine in a protected place, accessible only to the personnel.
- Remove the battery from the radio control and store it in a suitable.

- To prevent the surfaces from rusting, the areas where the paint has come off or where there are or which show signs of wear must be painted.

## RESTARTING THE MACHINE

**Before restarting the machine after a long period of inactivity, the work listed must be carried out.**

- Charge the lithium battery with a suitable charger.
- Reactivate the connection to the batteries via the battery switch.
- Check all levels (oil, fuel).
- Check the tightening of the main fixing screws.
- Check that the hydraulic system supply lines are intact and that there are no oil leaks.
- Carry out the necessary maintenance work.
- Recharge the radio control battery.
- Start the engine and let it idle for the time required to warm it up.
- Check the performance of all safety devices.
- Perform general cleaning.

## NOTES ON MAINTENANCE WORK

- Keep the machine in maximum performance condition and perform scheduled maintenance according to the frequency and methods specified by the manufacturer.
- Personnel authorized to perform ordinary maintenance must have recognized technical knowledge and special skills in the corresponding field of intervention.
- Carry out the work in accordance with the manufacturer's instructions contained in the "Operating Instructions".
- All operations must be carried out ONLY with suitable tools and in good condition to avoid damage to components and parts of the machine.
- The SAFETY DEVICES must be replaced only by original spare parts in order not to compromise the intended safety level.
- The lubricants recommended by the manufacturer lubricants (oils and greases) or lubricants with the same chemical-physical properties must be used.
- After completion of the interventions, comply with all the foreseen safety conditions in order to avoid and minimize the risks during man-machine interaction.
- After completing the work, make sure that no tools or other materials have been left near the moving parts or in the danger zones.

## TABLE OF SCHEDULED MAINTENANCE INTERVALS

**Keep the machine in maximum performance condition and perform scheduled according to the frequency and methods specified by the manufacturer.**

- In case of prolonged non-use, perform some maintenance operations must be carried out in order to maintain the functionality and prevent any impairment of the function.
- After a longer period of non-use, carefully check whether the operating functions have remained unchanged.
- Proper maintenance ensures long-term performance, a longer service life and a consistent level of safety requirements.

**Table 2:** Maintenance intervals

Every working day		
Component	Intervention to be performed	Reference
Entire machine	Clean from working residues	
	Tightening of screws and bolts	
	Check for oil or fuel leaks	
	Check correct function of emergency stop switches	
	Check the wear of the equipment and associated protective devices	
	Functional check of the acoustic / visual	
	Check signaling devices	
	Check the safety instructions	
	Checking the Caterpillar track tension	
	Radio control	Checking the correct operation Checking the battery status
Upper air intake grille of the engine	Check that there are no cuttings are present	
Combustion engine	Check oil level	see "Checking the Engine oil level"
	Check air filter	see "Checking and cleaning of the air filter"
Fuel tank	Check fuel level	see "Checking the hydraulic oil level"
Hydraulic system	Check oil level	
Heat exchanger and electric fan	Clean from working residues	

After the first 8 hours of running-in time		
Component	Intervention to be performed	Reference
Internal combustion engine	Change oil	see "Change engine oil"
Entire machine	Condition of the blades, their holders and the tightening of the safety screws	

Every 50 operating hours		
Component	Intervention to be performed	Reference
Fuses	Check fuses integrity	
Alternator	Check alternator cable	
Engine starter	Check cable	
	Check connector tightening	
Lithium battery	Check charge (with voltmeter voltmeter min 12,4 V)	
	Check terminal connection	If there are signs of oxidation remove battery and check whether the ground contact (BLACK) does not interrupt the current contact (RED) is not interrupting.
Wiring electrical	Check wear condition	If there are signs of damage, wear of the insulation or unusual heating, contact customer service.
Chain tensioner	Lubrication of the Chain tensioner	Follow procedure "Lubrication of the Chain tensioner lubrication"

Every 100 operating hours		
Component	Intervention to be performed	Reference
Internal combustion engine	Change oil	See "Change engine oil filter"
	Replace fuel filter	

Every 200 hours		
Component	Intervention to be performed	Reference
Internal combustion engine	Replace oil filter	See "Change engine oil filter"

Every 250 operating hours		
Component	Intervention to be performed	Reference
Internal combustion engine	Replace air filter	
Hydraulic system	Replace oil filter	See "Change Hydraulic oil filter"

Every 500 operating hours		
Component	Intervention to be performed	Reference
Hydraulic system	Change oil	See "Change hydraulic oil"

**Every 4000 operating hours or every 2 years**

Component	Intervention to be performed	Reference
Entire machine	Replace fuel hoses	

**Every 4000 hours or every 4 years**

Component	Intervention to be performed	Reference
Entire machine	Replace hydraulic hoses	

**TABLE OF LUBRICANTS AND HYDRAULIC OILS**

The table shows the specifications of the manufacturers recommended. Lubricants according to the components and/or ranges.

**Table 3:** Characteristics of lubricants

Type of Lubricant	Brand	Abbreviation	Component
Hydraulic oil	PAKELO	Hydraulic EP ISO46	Hydraulic oil tank
Engine oil	–	SAE 10W-30 / 10W-40	Engine oil tank

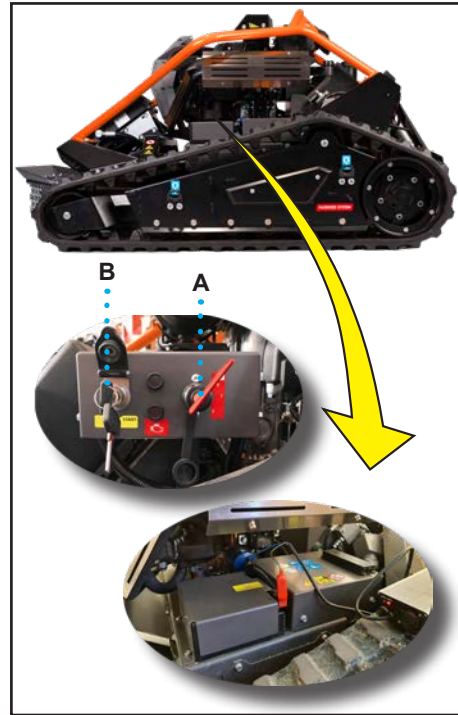
**! Important**

The lubricants recommended by the manufacturer (oils and greases) or lubricants with the same chemical and physical properties.

For the lubrication of the installed purchased parts, the manufacturer's instructions must be observed.

**CHARGING THE LITHIUM BATTERY (12 V)**

The figure represents the points of intervention and gives a description of the procedures.



1. Place the machine on a stable and flat surface.
2. Stop the machine
3. Check if the battery switch **A** is in position position "1" (deactivated) and the ignition key **B** is in position "0".
4. Connect the charger to the battery terminals as shown in the illustration.
5. Fully charge the battery.
6. Disconnect the cables after charging.

**! Important**

Use a charger suitable for the battery type.

**CLEANING THE MACHINE**

Proceed as described:

- Place the machine on a stable and level surface.
- Stop the machine.
- Allow the engine to cool down adequately.
- Use all specified personal equipment for the protection of the respiratory tract (respirator masks) and eyes (safety goggles).
- Remove all cutting residues with a compressed air jet.
- Remove the cutting residues from the mower.

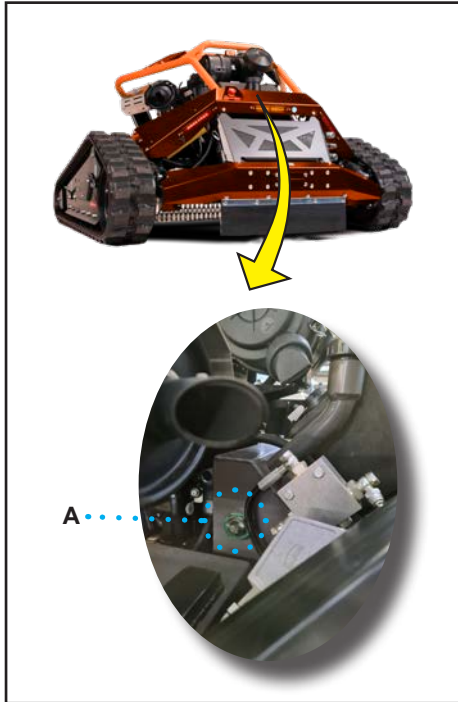
**! Caution – Warning**

Do not use pressurized water jet.

- Clean all metal surfaces with suitable products.
- **NEVER use corrosive and flammable cleaning agents and/or products that may contain or release harmful substances.**

## CHECKING THE HYDRAULIC OIL LEVEL

The figure illustrates the points of intervention and gives a description of the procedures.



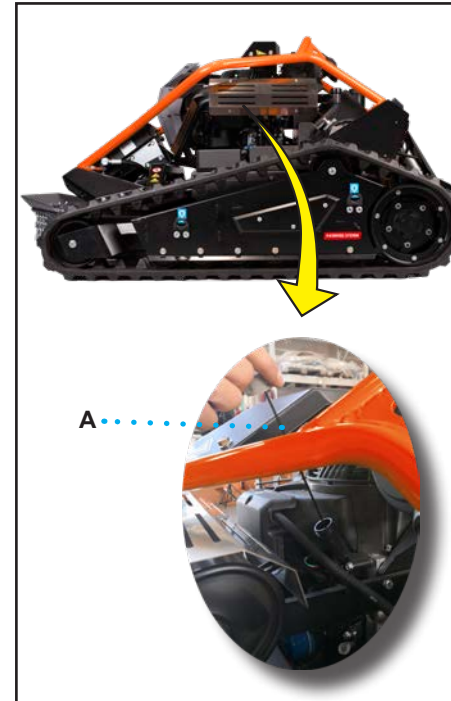
1. Place the machine on a stable and flat surface.
2. Stop the machine.
3. Allow the engine to cool down properly.
4. Check the oil level through the sight glass A. In the middle of the sight glass the level is optimal.
5. Top up if the level is not correct.

**! Important**

Use the oils recommended by the manufacturer. Do not mix oils of different brands or properties.

## CHECKING THE ENGINE OIL LEVEL

The figure illustrates the points of intervention and gives a description of the procedures.



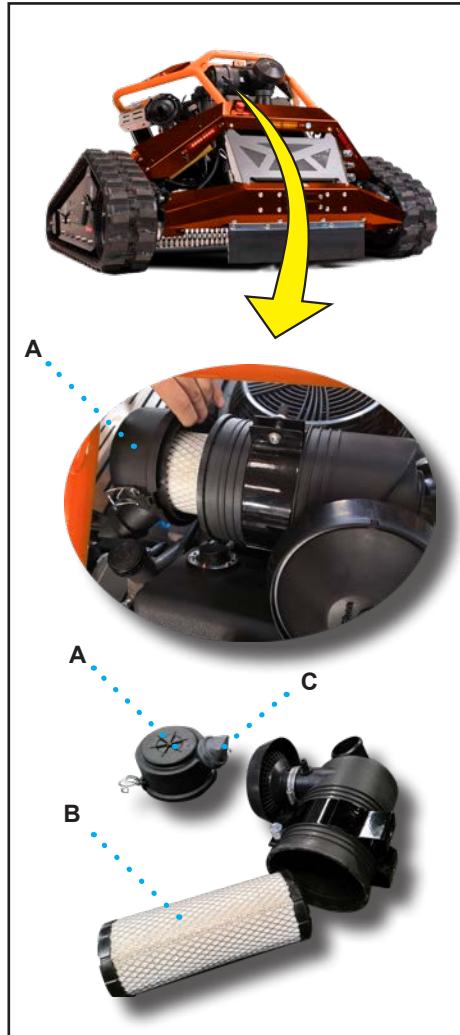
6. Place the machine on a stable and level surface.
7. Stop the machine.
8. Allow the engine to cool down properly.
9. Pull out the oil dipstick A.
10. Check the correct oil level and top up if necessary.
11. The oil level must be between the minimum and maximum marks.

**! Important**

Use the oils recommended by the manufacturer. Do not mix oils of different brands or properties. Refer to the engine manual for further details.

## INSPECTION AND CLEANING OF THE ENGINE AIR FILTER

The figure illustrates the points of intervention and gives a description of the procedures.



1. Place the machine on a stable and flat surface.
2. Stop the machine.
3. Let the engine cool down properly.

**⚠ Caution – Warning**

**Use all specified personal equipment for the protection of the respiratory tract (respirators) and eyes (safety goggles).**

4. Lower the mower completely.
5. Remove the cover **A**.
6. Pull out cartridge **B**.
7. Clean cartridge **B** with an air jet directed outwards.
8. Clean the drain valve **C**.
9. Wipe the inside of the filter container with a cloth.

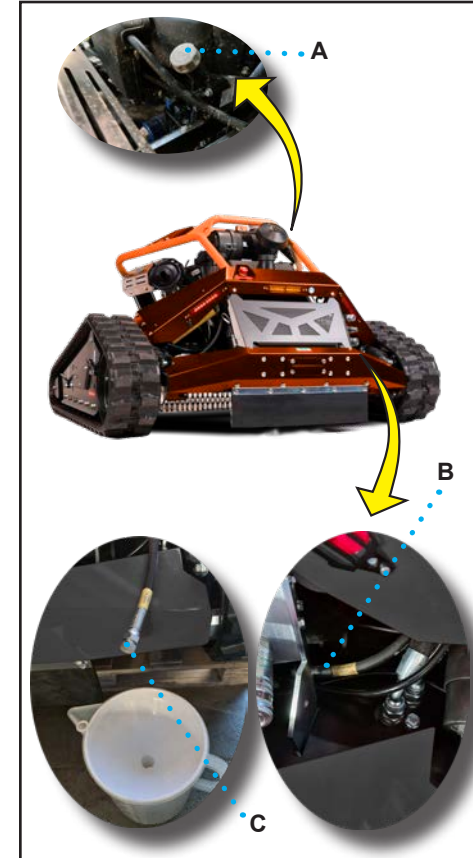
**⚠ Important**

**Use ONLY soft, dry, lint-free cloths. Replace the cartridge **B** and the cover **A**.**

10. Reinstall cartridge **B** and cover **A**.

## CHANGE ENGINE OIL

The illustration shows the points of intervention and gives a description of the procedures.



**⚠ Caution – Warning**

**Use all prescribed personal protective equipment for the protection of the respiratory tract (respirator masks) and eyes (safety goggles).**

4. Open cover **A**.
5. Pull out hose **B** (with yellow label) and guide it into a container large enough to collect the waste oil.
6. Remove the drain plug **C**.
7. Drain all the engine oil.
8. Close the drain plug **C** again.
9. Fill up to the indicated level with oil.

**⚠ Important**

**Use the oils recommended by the manufacturer. Do not mix oils of different brands or properties. For further details, refer to the "Lubricants and hydraulic oils table" section.**

10. Reattach hose **B**.
11. Screw cover **A** back on.
12. Start the engine, run it for about 5 minutes and then stop it again.
13. Check the oil level again with the dipstick and top up if necessary.

**⚠ Caution – Warning**

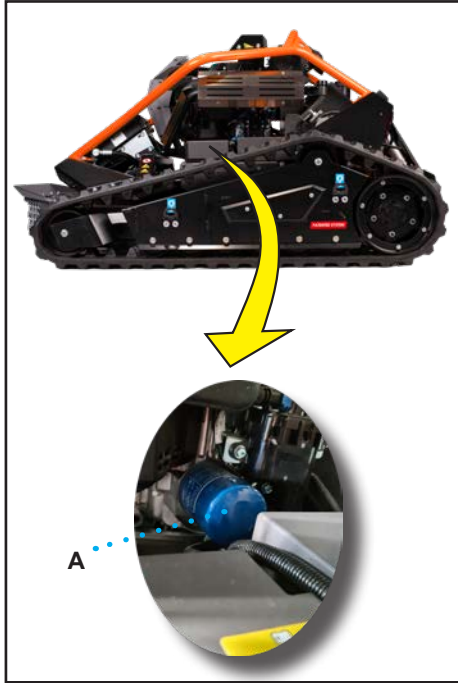
**Do not allow oil and / or residues to environment, but dispose of them in accordance with the laws in force applicable laws in the country of use.**

1. Place the machine on a stable and level surface.
2. Stop the machine.
3. Allow the engine to cool down properly.

**Start the engine when the machine is cold for approx. 5 minutes to warm up the oil and then turn it off again.**

## CHANGE ENGINE OIL FILTER

The illustration shows the points of intervention and gives a description of the procedures.



1. Place the machine on a stable and flat surface.
2. Stop the machine.
3. Let the engine cool down properly.

### **Caution – Warning**

Use all specified personal equipment for the protection of the respiratory tract (respirators), eyes (safety goggles) and hands (protective gloves).

4. Remove the oil from the engine according to the "Change engine oil" procedure.
5. Remove the filter cartridge **A** with the corresponding key.
6. Apply a small quantity of clean oil to the gaskets and threads of the new cartridge.
7. Thoroughly clean the filter seat and replace the new cartridge. Insert the new cartridge and tight it with the wrench.
8. Fill the oil level with new engine oil and follow the procedure "Checking the engine oil level".
9. Thoroughly clean the oil leaks caused by the replacement.
10. Start the engine.
11. Check the tightness of the system.
12. Check the engine oil level again.

### **Caution – Warning**

Do not allow oil and / or residues to enter the environment, but dispose of them in accordance with the laws in force in the country of use.

## MAINTENANCE OF THE HYDRAULIC SYSTEM

### **Caution – Warning**

Protect hands and body from high pressure fluids immediately after the end of the work, the oil inside the machine is very hot; the pressure in the circuit is high, even when the machine is at a standstill.

Use an appropriate support, to locate the leaks.

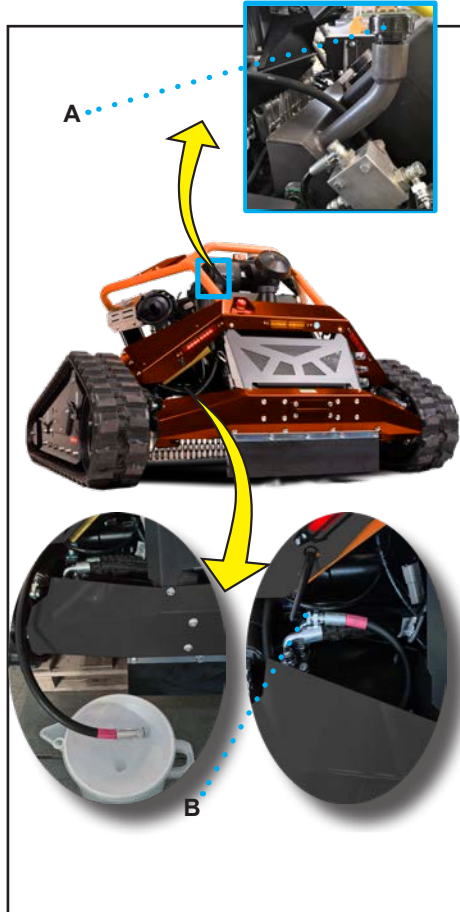
The maintenance operations are as listed:

- Daily check of the oil level in the tank.
- Regular change of the oil filter.
- Regular oil change.
- Regular replacement of the hoses. During maintenance work, check the seals and O-rings. If they are damaged, they must be replaced.



## CHANGE HYDRAULIC OIL

To ensure proper lubrication and viscosity in the hydraulic pumps, the hydraulic oil must be changed at regular intervals.



### **Caution – Warning**

Protect hands and body from high pressure fluids. After finishing the work the oil inside the machine is very hot; the pressure in the circuit is high, even when the machine is at a standstill.

The figure shows the intervention points and gives a description of the procedures.

1. Place the machine on a stable and flat surface.
2. Stop the machine.
3. Allow the engine to cool down properly.
4. Clean all parts thoroughly before opening the tank covers.
5. Open cover **A**.
6. Remove the drain plug **B** of the hose marked with the red label and collect the used oil in a sufficiently large container.
7. Screw the plug **B** back on.
8. Fill in new hydraulic oil through the tank cover **A** and check the level.

### **Important**

Use the oils recommended by the manufacturer. Do not mix oils of different brands or properties.

For more details, refer to the "Lubricants and hydraulic oils table" section.

9. Screw the cover **A** back on.
10. Start the engine, run it for about 5 minutes and then stop it again.

### **Caution – Warning**

The oil level must **ALWAYS** be checked with the machine switched off.

11. Check the oil level again (see "Checking the hydraulic oil level") and top up if necessary.

### **Caution – Warning**

Do not allow oil and/or residues to enter the environment, but dispose of them in accordance with the laws in force in the country of use.

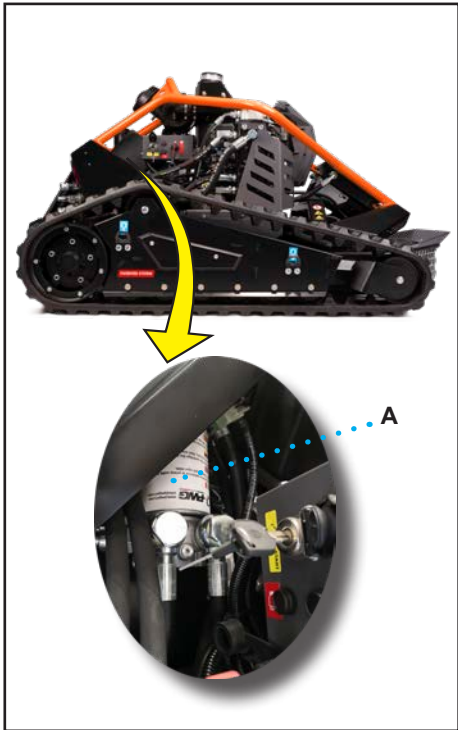
## CHANGE HYDRAULIC OIL FILTER

The filter may only be replaced with original components and before it is completely contaminated.

### **Caution – Warning**

Protect hands and body from high pressure fluids. After finishing the work, the oil inside the machine is very hot; the pressure in the circuit is high, even when the machine is at a standstill.

The figure shows the intervention points and gives a description of the procedures.



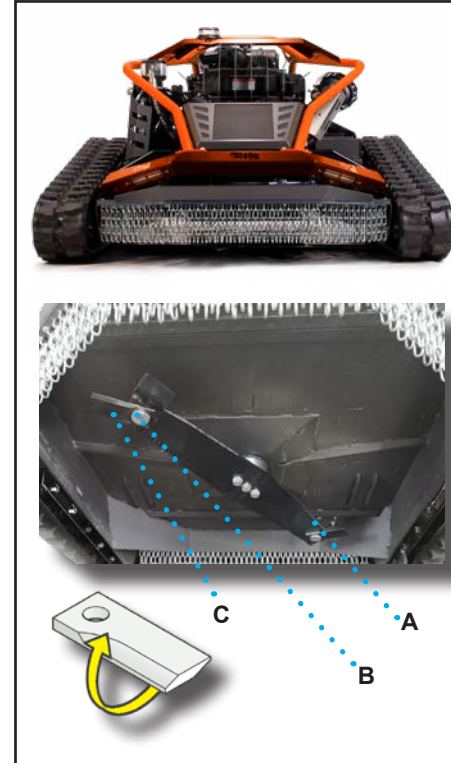
1. Place the machine on a stable and flat surface.
2. Stop the machine.
3. Allow the engine to cool down properly.
4. Drain the oil from the system according to the procedure "Changing the hydraulic oil".
5. Remove the filter cartridge **A** with the appropriate wrench.
6. Apply a small amount of clean oil to the seals and threads of the new cartridge.
7. Thoroughly clean the filter seat and replace the new cartridge and tight it with the wrench.
8. Thoroughly clean the oil leaks caused by the replacement.
9. Fill the tank with new hydraulic oil and check the level.

### **Caution – Warning**

Do not allow oil and / or residues to enter the environment, but dispose of in accordance with the laws in force in the country of use.

## REPLACEMENT OR REVERSAL OF THE CUTTING BLADES

The figure illustrates the points of intervention and gives a description of the procedures.



### ■ Replacing / reversing the knives

1. Unscrew the nut **A** with the supplied wrench.
2. Remove the knife pin **B** and the knife **C**.
3. Replace the possibly damaged knife or turn it by 180° (see adjacent figure).
4. Replace the pin **B** in its place.
5. Tight the nut **A** with the wrench provided.

### **NOTE**

After a certain number of operating hours, the knives can be reversed to use both sides of their cutting edge.

- Place the machine on a stable and level surface.
- Stop the machine.

### **Caution – Warning**

Perform the work with the machine switched off.

**INSPECTION OF THE ELECTRICAL SYSTEM**

This is a **SURVEILLANCE** that must be carried out with the utmost care to avoid damage to the equipment that could affect the correct operation of the machine.

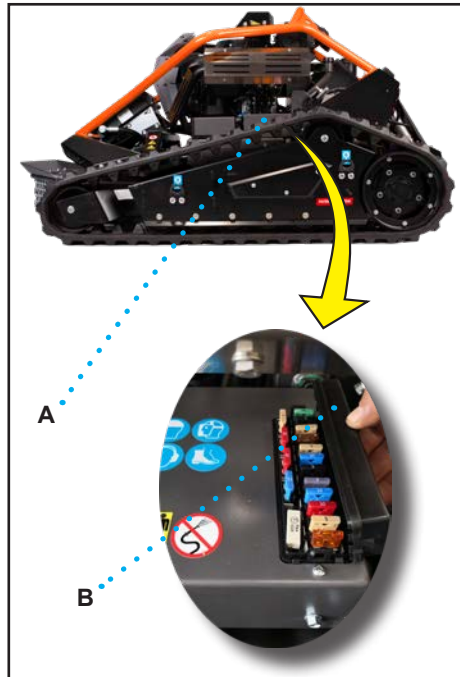
- Check the components listed.
- 1. Oxidation or corrosion of the fuses: replace if necessary (see "Replacing fuses").
- 2. Battery status: check voltage and condition of terminal connections. If oxidation occurs, remove and cover with suitable grease.
- 3. Engine starter cable.
- 4. Alternator cable.
- 5. Tightening of the connectors.

**Caution – Warning**

**If the wiring shows signs of damage, wear of the insulation or abnormal heating, contact the contact customer service.**

**REPLACING FUSES**

The illustration shows the points of intervention and gives a description of the procedures.



1. Place the machine on a stable and level surface.
2. Stop the machine.
3. Remove the protective housing **A** and remove the cover **B**.
4. Replace the damaged fuse with the same characteristics.
5. Reattach the cover **B** and the protective housing **A**.

**Important**

**When replacing the fuse, use only fuses with the characteristics given in the table.**

**Table 4:** Description of the fuses

Pos.	Description	Unit	Value
1	General electrical system	A	40A
2	Hydraulic negative brake	A	5A
3	Insert Knife	A	10A
4	START	A	10A
5	Ignition release	A	10A
6	Horn	A	1A
7	Mower deck height adjustment	A	15A
8	Alternator indicator light	A	5A
9	+ radio receiver	A	5A
10	Rear emergency stop switch	A	5A
11	Fuel reserve control light	A	1A
12	AUX accessories	A	10A
13	(empty)	-	-
14	LED + flashing light	A	10A
15	Heat exchanger hydraulic oil	A	15A
16	12V socket	A	15A

## MALFUNCTION INFORMATION

**NOTE**

Since most of the malfunctions are caused by improper use of the machine, the following table lists some possible malfunctions / malfunctions and the measures to be taken to correct them. Before contact the authorized after-sales service carrying out any intervention, specify the serial number of the machine and the hours of operation.

**Table 5:** Operating faults

<i>Malfunction</i>	<i>Cause</i>	<i>Remedy</i>
Red LED-Radio control flashes at switching on blade insert button	STOP button on the radio control pressed	Switch off the STOP button
	Switch on knife insert button	Switch off knife insert button
	Switch on AUX key	Switch off AUX key
Red LED-Radio control flashes when using the machine + acoustic signal sounds in irregular intervals	Battery of radio control empty	Replace or Charge battery
Red indicator light alternator switched on with engine in operation	Alternator is not charging the battery and / or wiring faulty	Contact customer service
	Alternator belt broken	Replace alternator belt
Red indicator light of the alternator off with engine and ignition key in position "1"	Associated fuse defective	Replace fuse
	Control lamp defective	Contact customer service
	Wiring defective	Contact customer service

<i>Malfunction</i>	<i>Cause</i>	<i>Remedy</i>
Engine control light	Continuous switched on	Oil alarm Check oil level and top up if necessary. If the problem persists, contact Honda customer service.
	Flashing 1 time	Problem with Battery voltage Contact Honda Customer Service
	Flashing 2 times	Problem with the throttle lever Contact Honda Customer Service
	Flashing 3 times	Error of the sensor for the throttle opening 1 Contact Honda Customer Service
	Flashing 4 times	Error of the sensor for the throttle opening 2 Contact Honda Customer Service
	Flashing 5 times	Error throttle opening sensor Contact Honda Customer Service
	Flashing 6 times	Error in detection of the outside temperature sensor Contact Honda Customer Service
	Flashing 7 times	Fault Engine temperature sensor Contact Honda Customer Service
	Flashing 8 times	Air pressure / fault of pressure sensor of the intake manifold Contact Honda Customer Service
Flashing 9 times	Error control unit Contact Honda Customer Service	
Audible Beeper sounds at irregular intervals	Battery charge level of the radio control less than 10 %.	Charge or replace radio control battery
The motor of the machine does not switch on	Press emergency stop switch	Switch off emergency stop
	Associated fuse defective	Replace fuse
	Fuel missing	Refuel
	Battery of machine empty	Charge battery or replace
	Fuel filter clogged	Replace filter
Starter motor does not turn	Engine air filter	Clogged Clean filter
	Wiring defective	Contact Honda Customer
	Battery of machine empty	Charge battery or replace
	Associated fuse defective	Replace fuse

<i>Malfunction</i>	<i>Cause</i>	<i>Remedy</i>
Rear yellow "fuel reserve" indicator light switched on	Fuel level less than 1/4	refuel
The engine suddenly stops	There is no fuel	refuel
	The knives hit a sudden obstacle	Carry out a restart process, see "Restart after stop due to motor switching off"
The pumps / hydraulic motors are making unusual noises	Pumps / hydraulic motors defective	Contact customer service
	No hydraulic oil in the tank / in the plant	Restore the oil level
Knives don't turn	Knife belt too loose	Contact customer service
	Knife belt defective	Contact customer service
	The knife is blocked by a foreign object	Remove foreign bodies
	Electromagnetic clutch defective	Contact customer service
The tracks do not turn when the control is switched on	Wiring defective	Contact customer service
	Defective hydraulic system	Contact customer service
	The belt for moving the hydraulic pump is defective	Contact customer service
The mower does not go up / down	Electrical system defective	Contact customer service
	Electrical actuator defective	Contact customer service
	Wiring defective	Contact customer service
	Associated fuse defective	Replace fuse
The radio connection breaks down during work	Lifting system blocked by a foreign object	Remove foreign object
	Too great a distance between radio control and machine	Reduce the distance
	Radio control / machine battery empty	Charge or replace the battery
	Signal interference	Switch radio control / machine off and on again

<i>Malfunction</i>	<i>Cause</i>	<i>Remedy</i>
Excessive vibrations	Fastening screws lose	Check tightening of screws
	Knife damaged	Replace knife
	Foreign body in the achine	Remove foreign body
Exit of the caterpillar chain	Tension not correct	Carry out the procedure for perform caterpillar chain. See "Assembly / disassembly of the caterpillar chain"
	Foreign body in the caterpillar chain	Remove foreign body. Carry out the procedure for performing the caterpillar track. See "Assembly / disassembly of the caterpillar chain."

**EC DECLARATION OF CONFORMITY**

**DECLARATION OF CONFORMITY / CONFORMITY DECLARATION  
(Anh. II-A Directive 2006/42/EC)**

Manufacturer:  
**ECOTECH ITALIA SRL via Copernico, 85 47122 Forlì FC – ITALY,**

declares under its sole responsibility that the machine:

**Radio controlled flail mower**

Model: **URS 100**

Seriennummer: **XXXXX**

Motor: **Honda iGXV800**

Typ: **H27 Panther**

Year of manufacture: **2020 - 2021**

Measured sound power level: **LwA 104 dB**

Cutting width max: **1000 mm**

is compliant with the following regulations:

- Machinery Directive 2006/42/EC and the national implementing regulations and the corresponding technical documentation have been prepared in accordance with Annex VII B of the same directive;
- "PED" Directive (2014/68/EU) and subsequent amendments and implementing regulations.
- "RAEE" Directive (2012/19/EU) and subsequent amendments and implementing provisions.

The person in charge of the preparation of the Technical Documentation is Mr. Roberto Romboli at ECOTECH ITALIA S.r.l. via Copernico, 85 47122 Forlì FC – ITALIA.

The Technical Documentation required by the Machinery Directive 2006/42/EC is kept at the company headquarters.

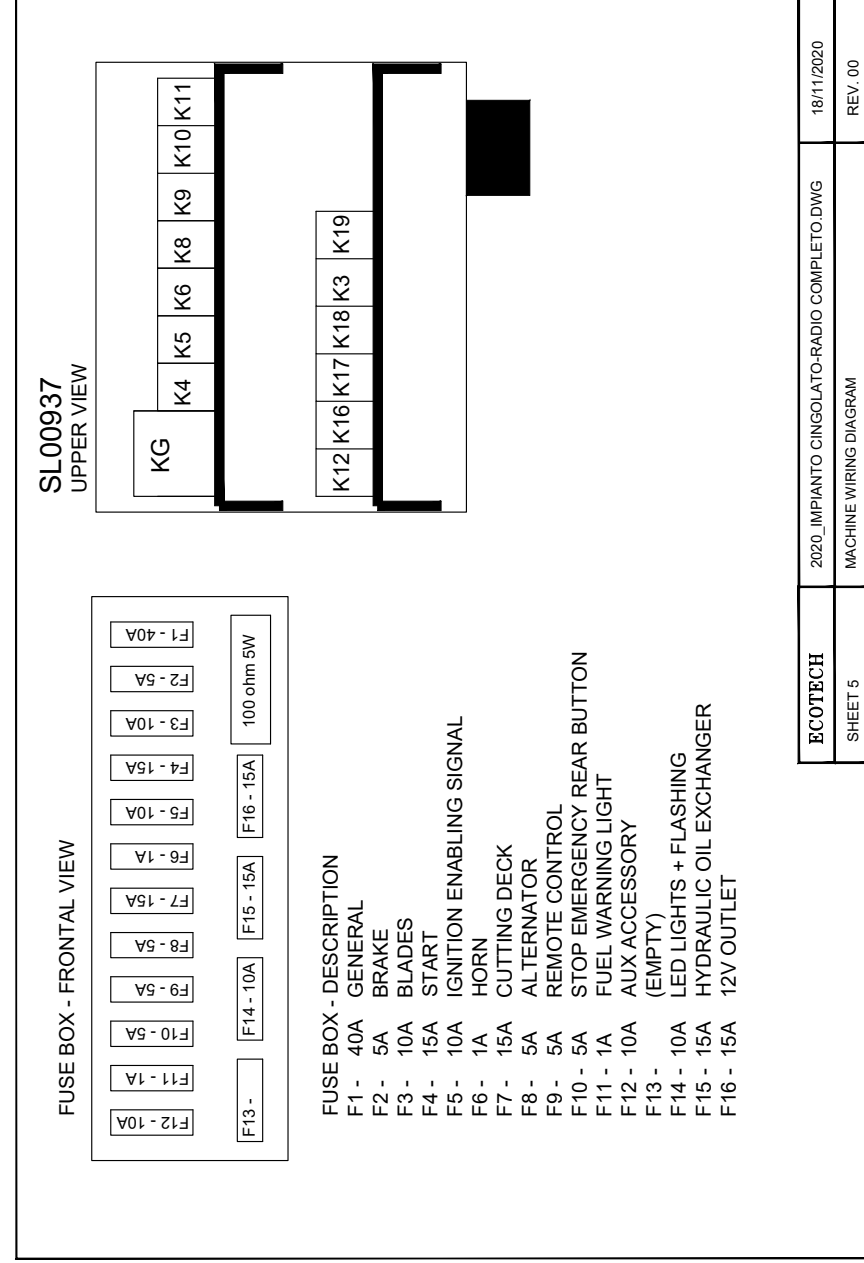
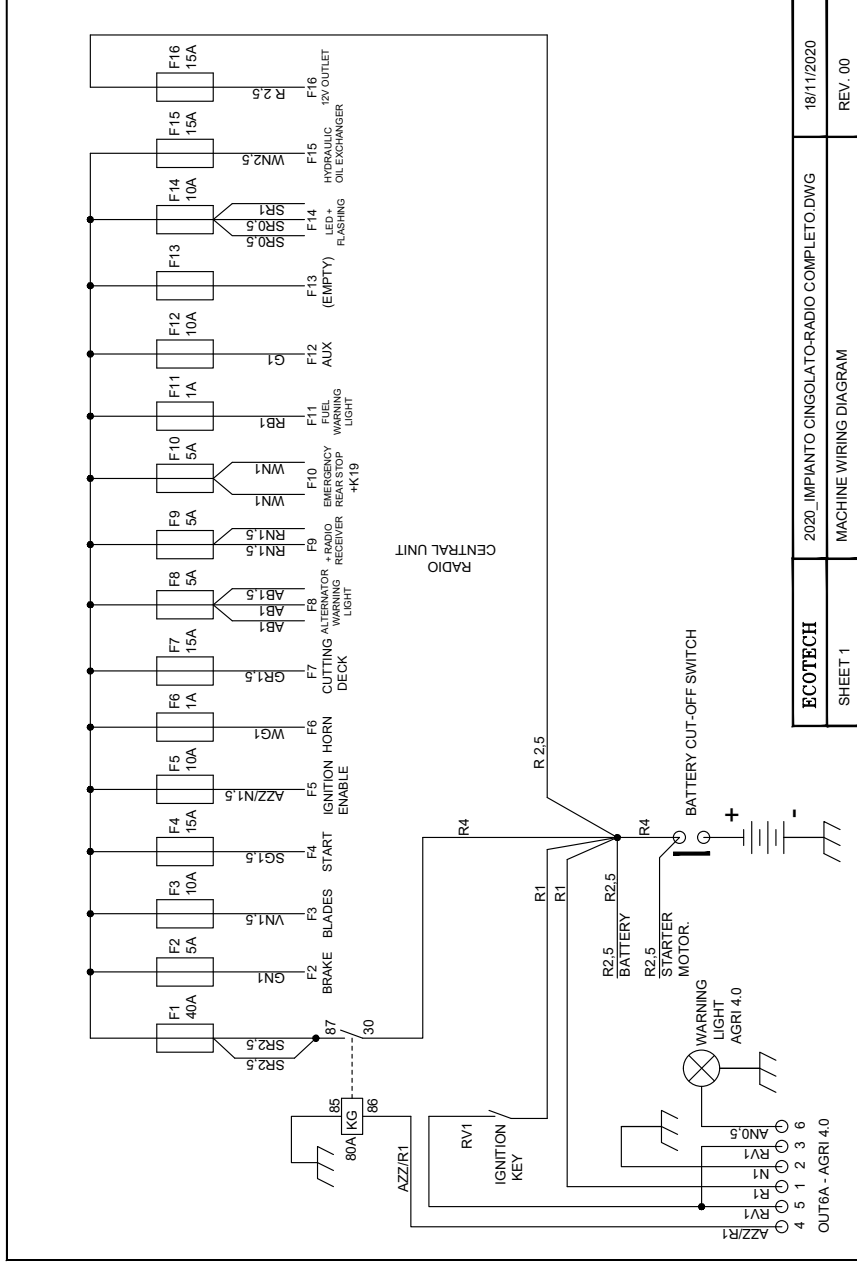
During use, all the instructions contained in the and all safety and accident prevention regulations in force in the country of use must be observed; the product bears the CE mark.

Date: 09.12.2020

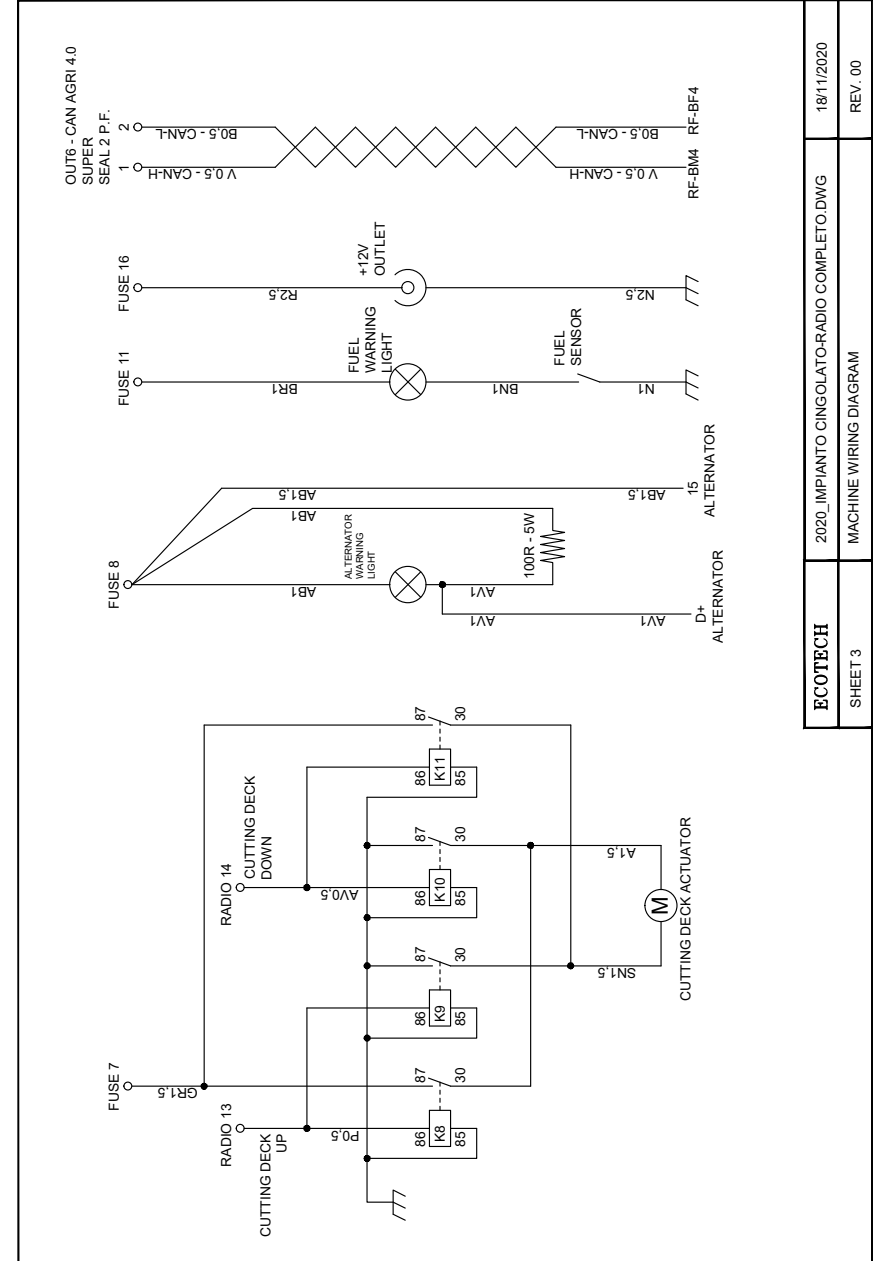
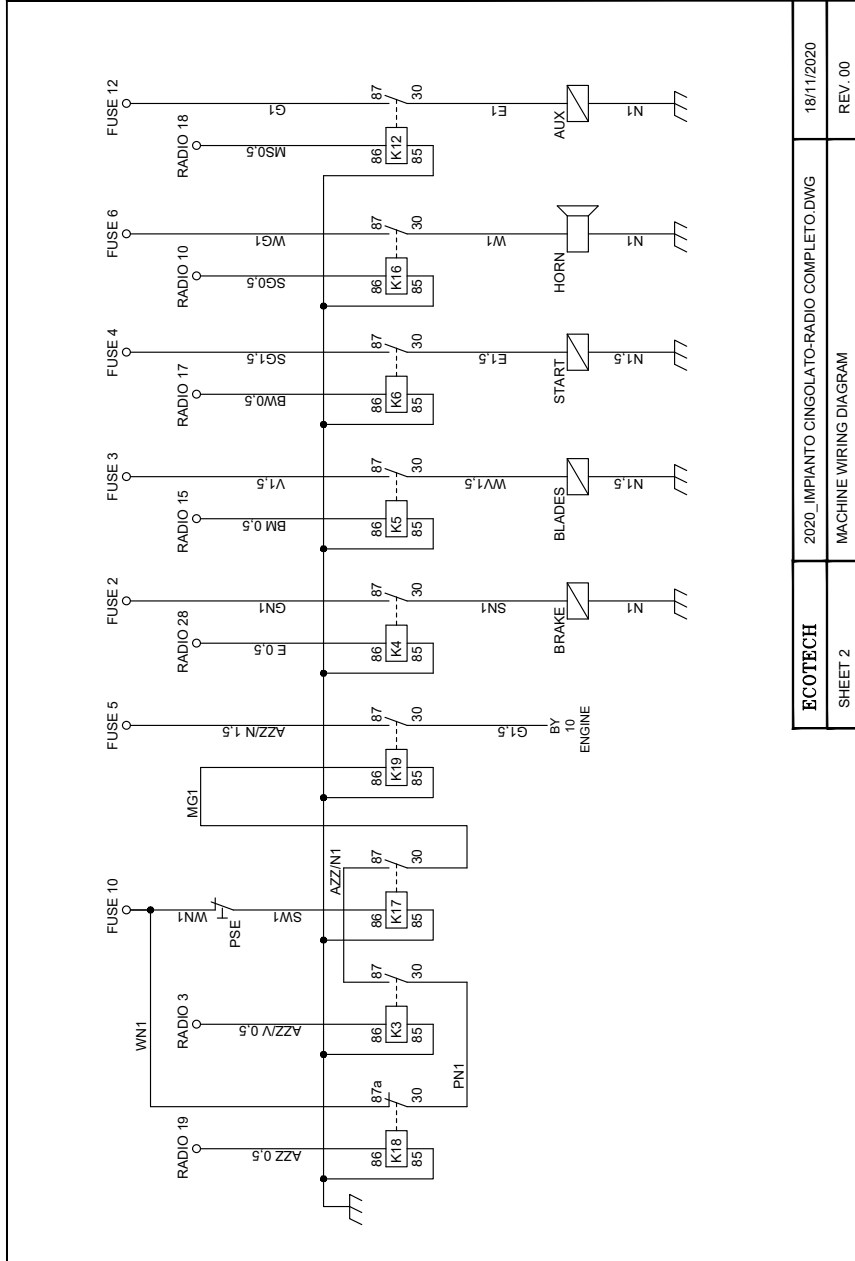
The legal representative  
Roberto Romboli

  
ECOTECH ITALIA S.r.l.  
Via Copernico 85 - 47122 FORLÌ FC  
Tel. 0543 774314 / Fax 0543 778658  
C.F. / P. IVA 03994770406

**WIRING DIAGRAM FUSES**

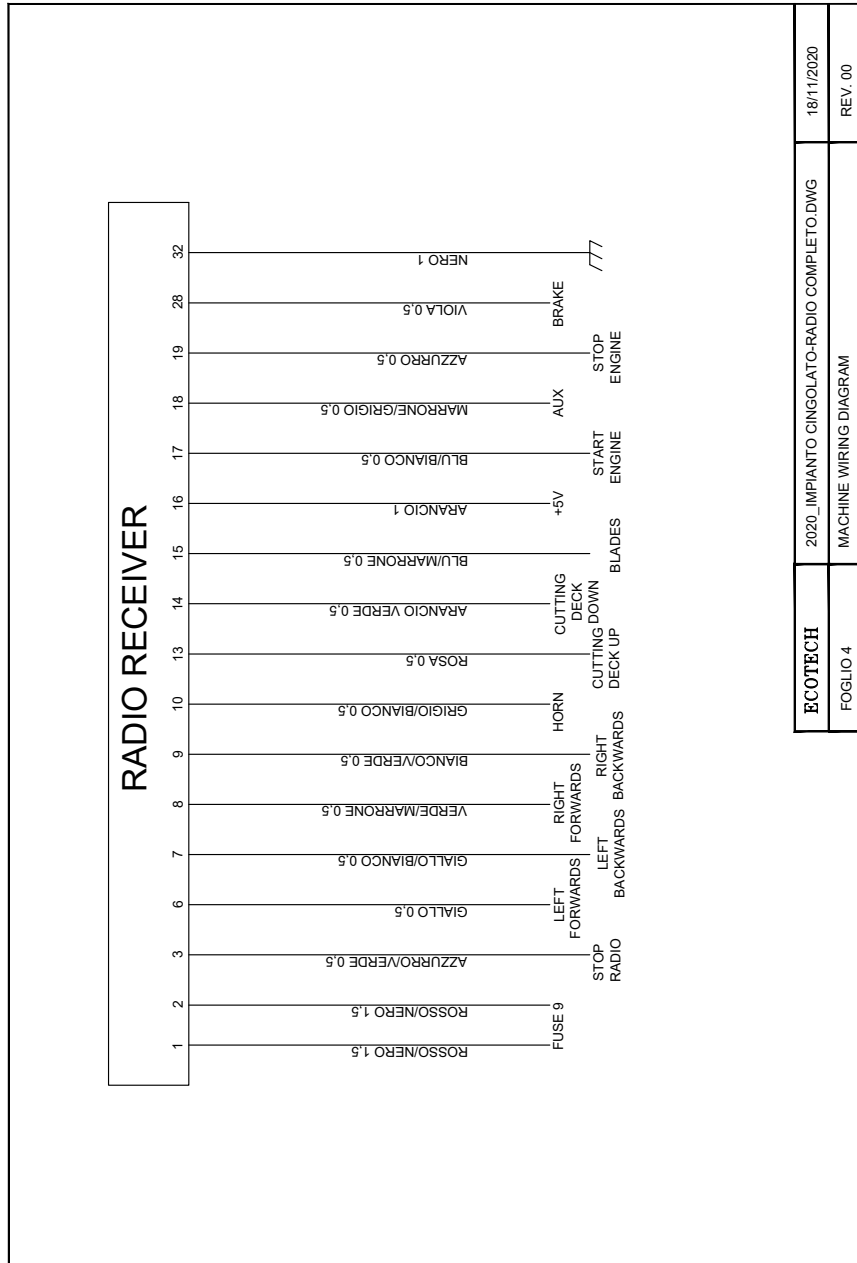


**WIRING DIAGRAM MACHINE**





**WIRING DIAGRAM RADIO CONTROL**



### KEY WIRE COLOURS

A = ORANGE  
 B = BLUE  
 E = PURPLE  
 G = YELLOW  
 M = BROWN  
 N = BLACK  
 P = PINK  
 R = RED  
 S = GREY  
 V = GREEN  
 W = WHITE  
 AZZ = LIGHT BLUE

GB = YELLOW-BLUE  
 AR = ORANGE-RED  
 VM = GREEN-BROWN  
 SB = GREY-BLUE  
 WR = WHITE-RED  
 PV = PINK-GREEN  
 GN = YELLOW-BLACK  
 VAZZ = GREEN-RED  
 RN = RED-BLACK

THE NUMBER AFTER THE COLOUR IS THE WIRE SECTION:  
 0,5  
 1  
 1,5  
 2,5  
 4  
 6  
 10  
 25

		04/06/2019
PAGE 1/1	KET WIRE COLOURS	REV. 00



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