



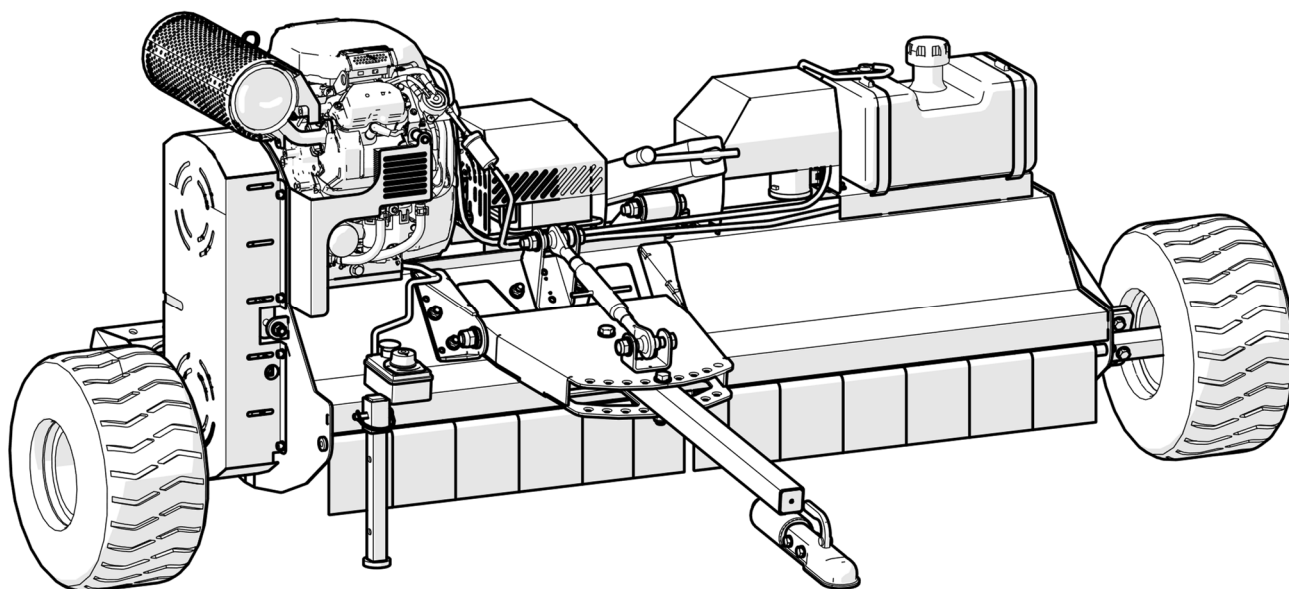
*Farm & Garden Equipment*

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## USE AND MAINTENANCE MANUAL

# FLAIL MOWER TYPE CENTURION ATV 158



**This manual is an integral part of the machine.**

It must always accompany the machine and be kept within reach of the operator.  
The enclosures mentioned are an integral part of this manual.

**The purpose of this manual.**

This manual gives information for the correct and safe use of the machine.  
The owner must read this manual carefully before work with the machine.

**Responsibility of the owner**

The owner is responsible for accidents or damages caused to people or things due to negligence in following the instructions in this manual.

**Assistance in using this manual**

Explanations: contact the dealer.

Request for additional copies of the manual: in case of loss or wear and tear, or in case one wants the manual in a different language, the customer should ask the dealer or manufacturer.

**Pay attention to the warning signals**



**<Danger>**: indicates a situation that is potentially dangerous which, if not avoided, will cause death or serious damage.



**<Warning>**: indicates a situation that is potentially dangerous which, if not avoided, will cause death or serious damage.



**<Caution>**: indicates a situation that is potentially dangerous which, if not avoided, can cause minor to moderate damage, or it indicates to be careful about an unsafe procedure.

**<Important>** : indicates instructions that must be followed precisely in order to avoid damage to the product, process or environment.

**<Note>**: indicates supplementary information.

## TECHNICAL SPECIFICATIONS

### CHARACTERISTICS PER MODEL

Model	Type	Version	Working width		Weight		N° Flails	Rotor Rpm	Tank capacity gallons
			cm	inch	kg	lb			
<b>CENTURION ATV</b>	<b>158</b>	<b>M</b>	<b>158</b>	<b>62</b>	<b>395</b>	<b>870</b>	<b>24</b>	<b>2390</b>	<b>3</b>
		<b>C</b>	<b>158</b>	<b>62</b>	<b>395</b>	<b>870</b>	<b>48</b>	<b>2390</b>	<b>3</b>

**Version:**

**M = Hammer**  
**C = Blade**

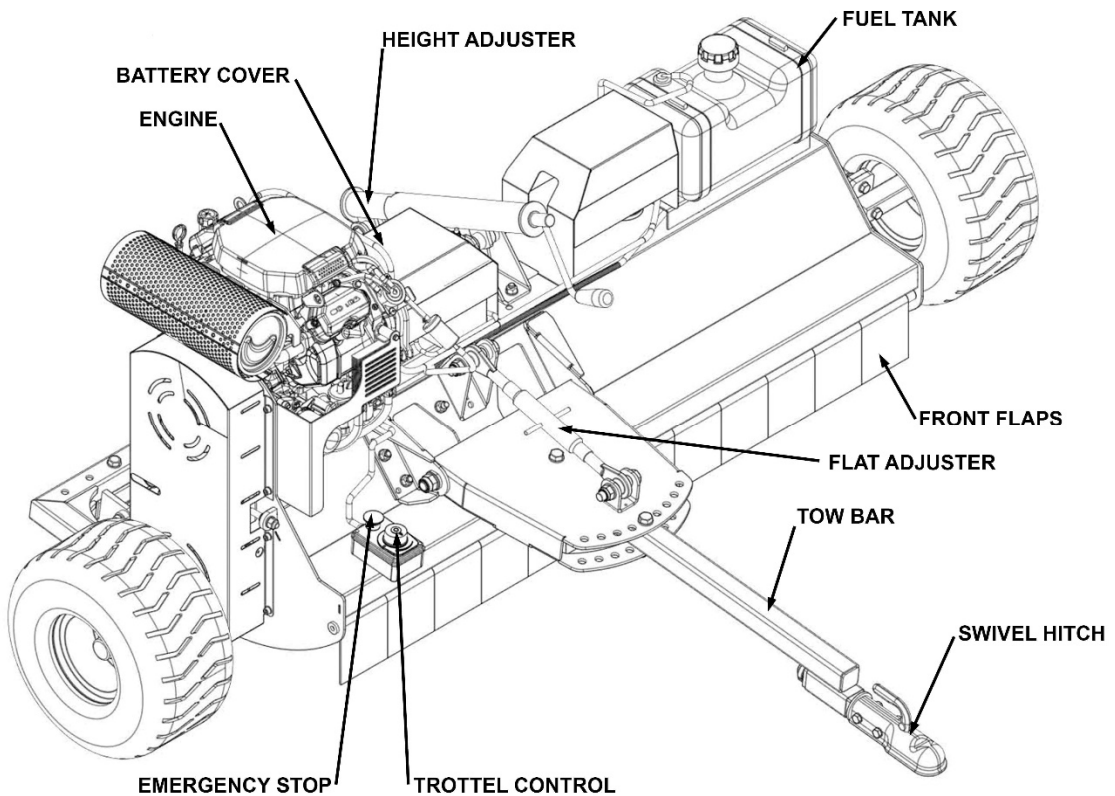
**Note:**

**Use only unleaded gasoline 86 octane rating or higher.**  
**Autonomy with full tank: 1.6 hours.**

**VERY IMPORTANT:**

**The HONDA engine meets the U.S. EPA and CARB.**  
**The fuel system meets the EPA CARB rules.**

**COMPONENT IDENTIFICATION**



## SAFETY INFORMATION

### REMEMBER -GET PROPERLY TRAINED AND ALWAYS WEAR HEAD PROTECTION

#### *Protective clothing*

More than half of all ATV riders have been thrown off at some time. As these machines are not fitted with either a cab or roll bar, your only protection is what you wear.

**Head protection is vital.** Most ATV fatalities have been caused by head injuries. Nobody who died from head injuries was wearing a helmet. Helmets would certainly have prevented most, if not all, the deaths. **You should always wear a helmet when riding an ATV.** All helmets should have a chinstrap and be capable of being used with suitable eye protection. The type of helmet chosen should be based on an assessment of the circumstances in which the ATV will be used, eg the types of surface travelled over and anticipated speeds. The harder the surface and higher the speed the greater the degree of protection needed. **NB: Forestry helmets and industrial hard hats are not acceptable for any ATV operations.**

- Wear clothing that is strong and covers your arms and legs. Gloves are useful for protection and to keep hands warm in cold weather for good control of the ATV. Wear sturdy, ankle covering footwear, eg boots that are strong, supportive and have good wet grip.
- Protect your eyes from insects and branches with either a visor or goggles.

#### *Trailed equipment and loads*

Ensure all riders know the manufacturers recommended towing capacity and drawbar loading limit. Always operate within these requirements.

Remember that your ability to control the ATV by your body movements will be considerably reduced when carrying a load or towing a trailer.

- Check the weight ratio between your ATV and its trailed load. This needs to be assessed for each operation. As a general guide, on level ground, braked trailed equipment can be a maximum of four times the unladen weight of the ATV. For unbraked trailed equipment the maximum should be twice the unladen weight. These loads should be reduced when working on slopes, uneven ground or poor surface conditions. Follow the manufacturers advice for your particular machine.
- Weight transfer is also important. Stability and resistance to jack-knifing is improved if some load is transferred onto the ATV's drawbar. Approximately 10% of the gross weight of the loaded trailer is recommended, but this should not exceed the manufacturers drawbar loading limit. Remember that weight transfer can change dramatically when you start going up or down hill.
- When selecting mounted equipment, make sure it is within the manufacturers approved weight limit, with a low center of gravity, and controls which are easy to operate but do not create a hazard. Where equipment is added to one end of the machine, add ballast at the other end to maintain stability.
- Loads carried on racks must be well secured, e.g. with ratchet straps, and be evenly balanced between the front and rear, except where they are deliberately altered to aid stability when going up or down a slope.
- Only tow a load from the hitch point. Loads towed from other points such as the rear rack have caused sudden rear overturning even on slight slopes or with slight acceleration. Ropes or chains should not be used to drag a load where they can become caught on a wheel. This may lead to entanglement with the brake cable, causing unexpected braking.

## IMPORTANT SAFETY INFORMATION

Always read this manual before fitting or operating the machine – whenever any doubt exists contact your dealer for advice and assistance.

### DEFINITIONS

The following definitions apply throughout this manual:

**WARNING** -An operating procedure, technique etc., which can result in personal injury or loss of life if not observed carefully.

**CAUTION** -An operating procedure, technique etc., which can result in damage to either machine or equipment if not observed carefully.

**NOTE** -An operating procedure, technique etc, which is considered essential to emphasis.

**LEFT & RIGHT HAND** -This term is applicable to the machine when attached to the towing vehicle and is viewed from the rear – this also applies to tractor references.

### SAFETY INFORMATION

- Do not operate this equipment unless you have studied this manual in full.
- Only use this machine for its designated task -improper use is both highly dangerous and damaging to machine components.
- Both operators & maintenance fitters should be familiar with the machine and fully aware of dangers surrounding improper use or incorrect repairs
- Before starting, carry out a visual check on both machine & towing vehicle as regards functionality, road safety & accident prevention rules
- Even when using the machine correctly, foreign objects such as stones may be thrown a considerable distance. It is imperative that nobody stand within the danger area. If working near roads, buildings children or animals provision must be made for containment of ejected material and sufficient warning signs / notices placed around the working area
- The condition of flails and of machine guards must be checked before beginning the day's work. Worn or damaged flails must be replaced before you use the machine. Flails must be replaced in pairs to ensure rotor balance is maintained.
- During checks or repairs, ensure the machine cannot be started by other persons by mistake.
- Never wear loose clothing which could get caught in rotating equipment.
- Never carry passengers on the towing vehicle.
- Never approach the machine until the rotor has stopped rotating.
- Do not stand near the machine when operating.
- Damaged or missing safety decals must be replaced immediately.
- Before leaving the machine unattended, remove the starting key (if applicable)
- **ENSURE emergency stop switch is SECURELY attached to the towing vehicle and within reach of the operator at all times.**

## TRANSPORTATION SAFETY

- When transporting, especially over rough ground, reduce speed to prevent damage to machine.
- Ensure ignition keys is removed.
- This machine is not road legal. DO NOT tow on public highways.
- Never transport the machine with the rotor running, even for small distances.

## OPERATING SAFETY

- If wires, ropes, or chains should become entangled in the rotor stop immediately to prevent damage or dangerous situations; stop the rotor and the towing machine, take out the starting key or safety cut-out. Put working gloves on; clear the rotor with the aid of pliers or shears. Do not try to disentangle.
- Pay special attention when working with the machine not to touch fixed objects such as road-drain, walls, shafts, curbs, guard rails, tracks etc. This could cause breakage of the flails, which could be thrown out of the machine at very high speed.
- Do not use the machine when excessive vibration is experienced, as this may cause breakage and serious damage -find the cause of the vibration and eliminate it before using the machine again.

## DESCRIPTION

The flail mower CENTURION ATV 158 is designed as self-powered unit to be towed behind a suitable, ATV, UTV, 4X4, compact tractor or lawn tractor towing vehicles. Designed for vegetation management of paddocks, fields and parkland, the FM series can handle material up to small saplings and brush.

The CENTURION ATV 158 has a 1.58m cut and comes with a Honda GX800IRH-BX-F5-OH 25hp V-Twin, FSI, electric start gasoline engine.

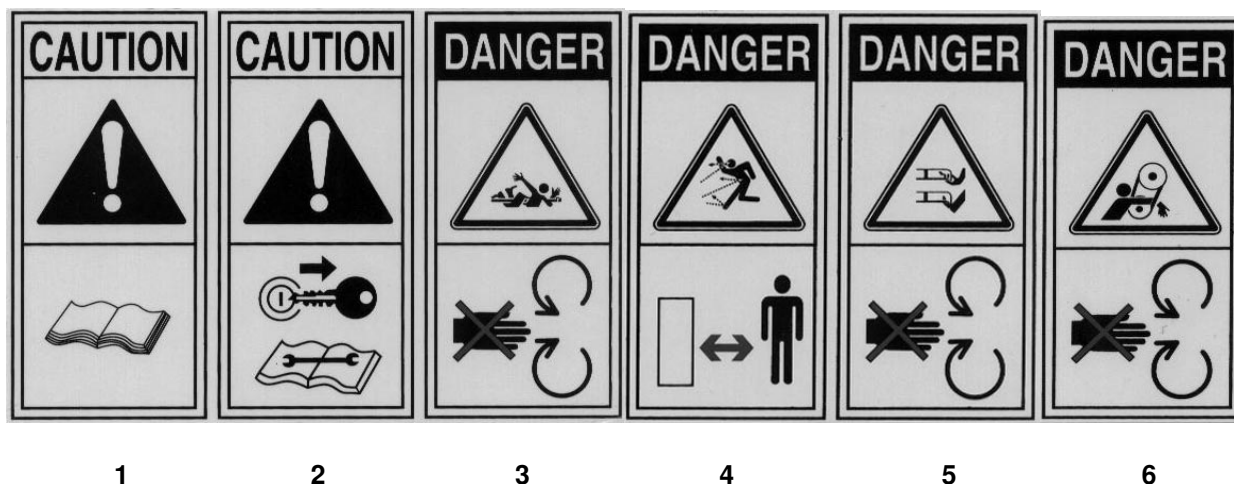
These machines should however only be used to perform tasks for which they were designed, use of the machine for any other function may be both dangerous to persons, and potentially damaging to components. Use of the machine beyond the stated usage may invalidate any applicable warranty, as well as being potential in breach of applicable safety regulations.

## NOISE LEVEL

The sound of this machine, as measured at the typical operator location under normal operating conditions, is 92db. If being towed by an open-cab vehicle, it is **essential** that ear muffs or a suitable helmet is worn at all times. If being towed behind a closed-cab UTV, 4x4 or similar, then the cab should remain closed to reduce noise.

## SAFETY SIGNS ON THE MACHINE

In this section, the safety signs on the machine are reproduced and explained.



1. Read the operator manual.
2. Disconnect the tractor key before maintenance and repair operations.
3. Stay at safety distance from blades when machine is moving.
4. Danger of flying objects. Stay at safety distance.
5. Stay at safety distance from blades when machine is moving.
6. Stay at safety distance from blades when machine is moving.

**The safety signs on the machine must always be legible.**

In case of damage, the labels of the signs must be substituted.

In the case of the substitution of machine parts that have safety signs, the signs must be replaced.

### **Supplying of new safety labels and the application procedure**

Contact your dealer to receive new safety labels with instructions for application.

Each machine is fitted with a serial plate (shown below) which details the following:

1. Model
2. Year of Manufacture
3. Serial Number
4. Weight

When inquiring regarding spares or additional equipment, insure you have this information to hand.



## INSTRUCTIONS FOR USE

### 1. BEFORE STARTING TO WORK

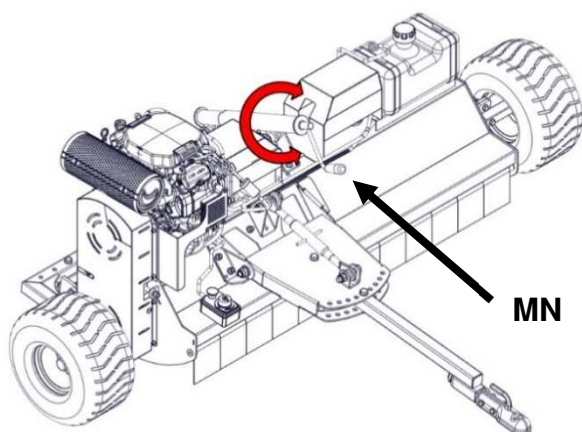
Before attaching the machine check the following:

- All safety guards & decals are in good working order and correctly fitted.
- Lubrication points have been lubricated as per scheduled maintenance period.
- The engine oil level is correct, the engine has been maintained as per HONDA handbook.
- The tires are free of damage and inflated to the correct pressure (24 PSI max).
- Fill unleaded gasoline 86 octane rating or higher inside tank, maximum three gallons.

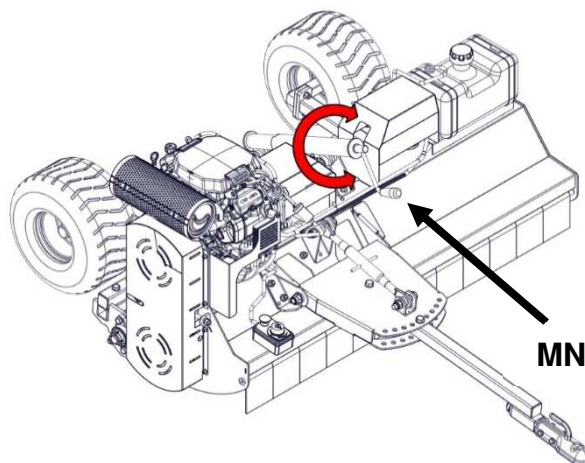
Attaching the machine as following:

NOTE: the machine is designed to attach to the towing vehicle through a 50 mm diameter ball hitch.

- Attach the machine onto the towing vehicle's coupling using the auto lock coupling. Ensure the hitch is securely attached to the towing vehicle.
- Attach the emergency stop and throttle control box to the towing vehicle in a secure location within easy reach by the driver.
- Adjust the working height to a suitable level as following:



**A – SIDE WHEELS**

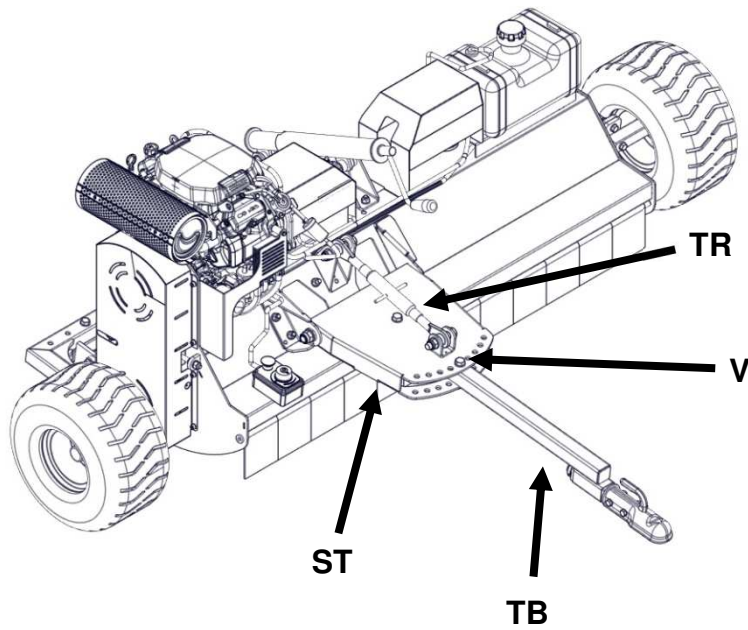


**B – REAR WHEELS**

In case “A-SIDE WHEELS” turn the height adjuster “MN” clockwise to decrease or counterclockwise to increase the cutting height.

In case “B-REAR WHEELS” turn the height adjuster “MN” clockwise to increase or counterclockwise to decrease the cutting height.

- Level the machine by twisting the link connector “TR” clockwise or counterclockwise. When level the top surface of the machine (where the engine is mounted) should be approximately parallel to the ground.
- Adjust offset of the machine respect to the towing machine as follows:  
Unscrew and take out the bolt “V”, choose the desired position of the tow bar “TB” matching one of the holes at the side of the tow bar support “ST” with the hole on the tow bar then insert again and lock the bolt “V”.



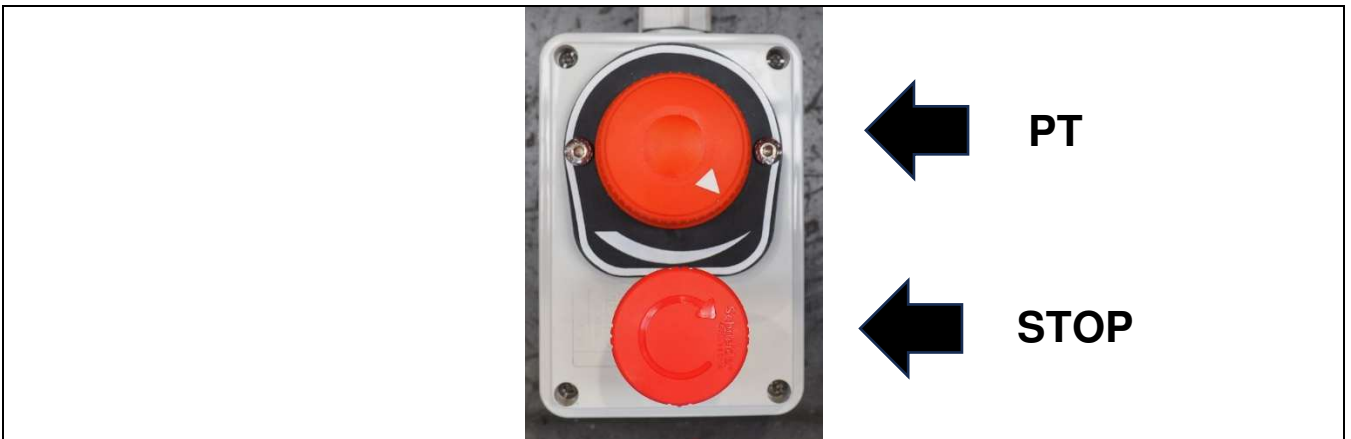
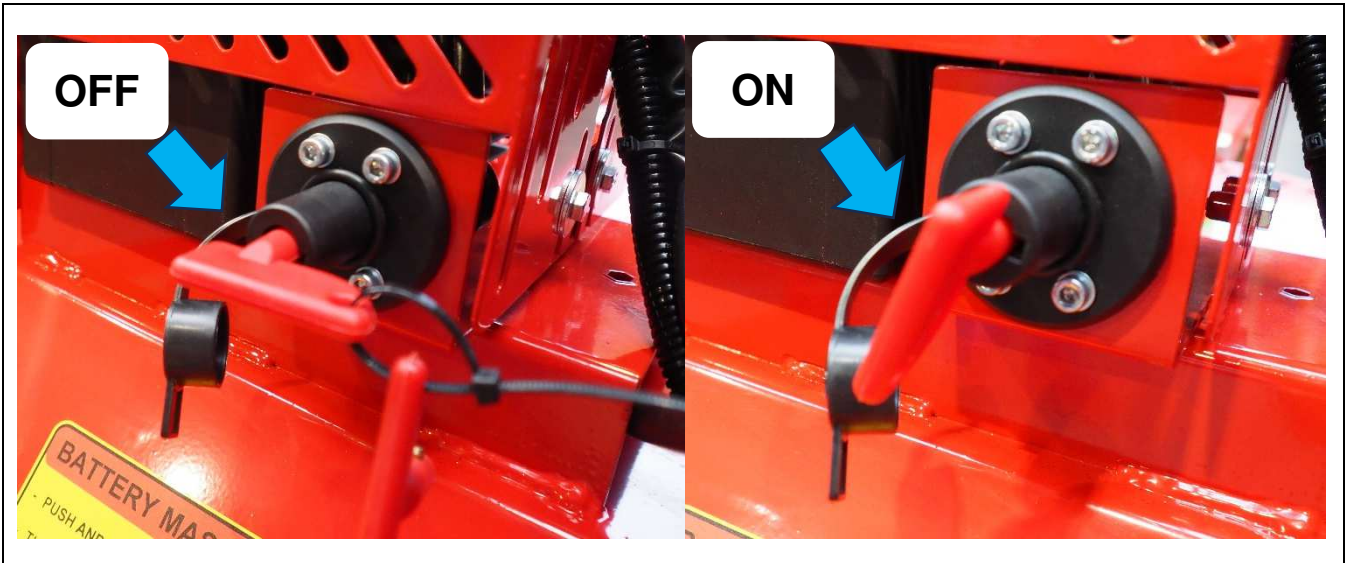
## 2. TO START WORK

Insert the red key inside the master battery switch then push and turn it 90° clockwise to switch ON.

Check that the emergency stop button "STOP" should be disengaged and that throttle control "PT" should be set at minimum as shown in the picture.

Turn the ignition key of the engine clockwise to "ON" position, then turn it to START position and hold it there until the engine starts. When the engine starts release the ignition key allowing it to return to the ON position.

Go to the drive seat on towing vehicle, turn the throttle control "PT" clockwise, wait that the engine reaches the maximum rpm then start to work.



### 3. AT THE END OF CUTTING OPERATION

Turn the throttle control “PT” full counterclockwise, wait that the engine reaches the minimum rpm and that the rotor of the machine has stopped completely then leave the drive seat of the towing vehicle and turn OFF the ignition key of the engine.

If the machine will remain unused more then one week, to prevent that battery running down turn the master battery switch OFF.

<b>MAINTENANCE INSTRUCTIONS</b>
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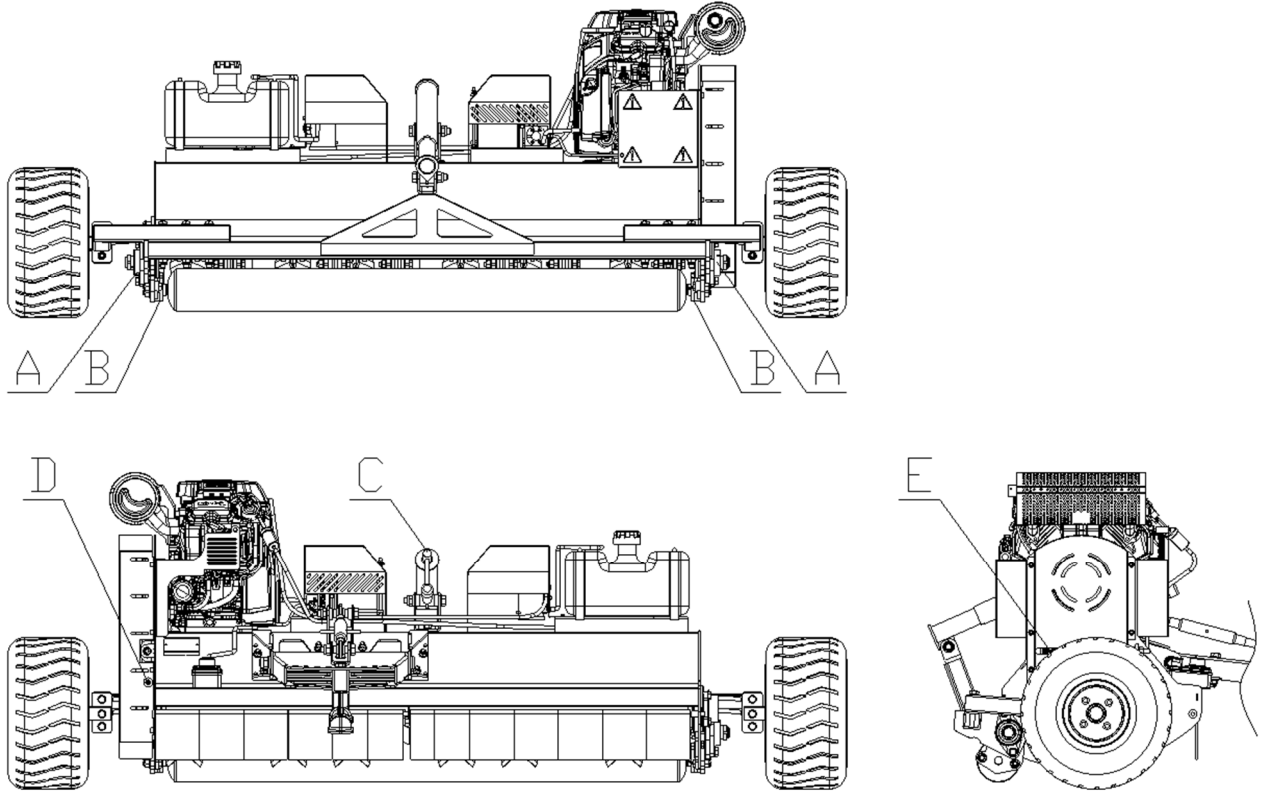
On diagram "A" the maintenances are indicated with their terms to effect on the machine.  
 Not follow the scheduled terms can compromise the functionality of the machine and in this case the warranty is not applicable.

**DIAGRAM "A" SCHEDULED MAINTENANCE**

	FIRST START	AFTER 10 H.	EACH 30 H.	EACH 500 H.	END SEASON	START WORK	END WORK
<b>MACHINE</b>	Greasing		Greasing		Cleaning Greasing		Cleaning
<b>ENGINE</b>	Refer to Use and Maintenance engine manual						
<b>SCREWS</b>		Check	Check				
<b>FLAILS</b>			Check		Check	Check	Check
<b>BELTS</b>		Check		Replace			

## 1. GREASING

Grease all points "A", "B", "C", "D" and "E" as scheduled in sheet "A".  
Greasing points are equipped with greaser HYDRAULIC TYPE FORMAT "A" UNI 7663.  
Use only LITHIUM-BASED MULTIFUNCTIONAL GREASE Type NLGI 2 for greasing.



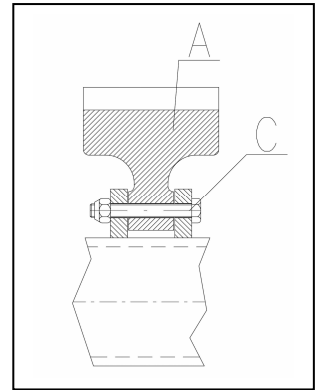
## 2. ENGINE OIL CHECK – ENGINE OIL REPLACEMENT

Refer to Engine U&M manual.

### 3. FLAILS REPLACEMENT

a) To change flails, operate as follow:

1. Unscrew the nut then take out the screw "C".
2. Take out flails "A" with bush and spacers.
3. If flail is a hammer there are no bushes or spacers.
4. Insert the new tool.
5. Insert the screw "C" then tighten the nut.
6. **ATTENTION: all flails must be of the same type.**
7. **ATTENTION: changing type of flails you must balance the rotor.**



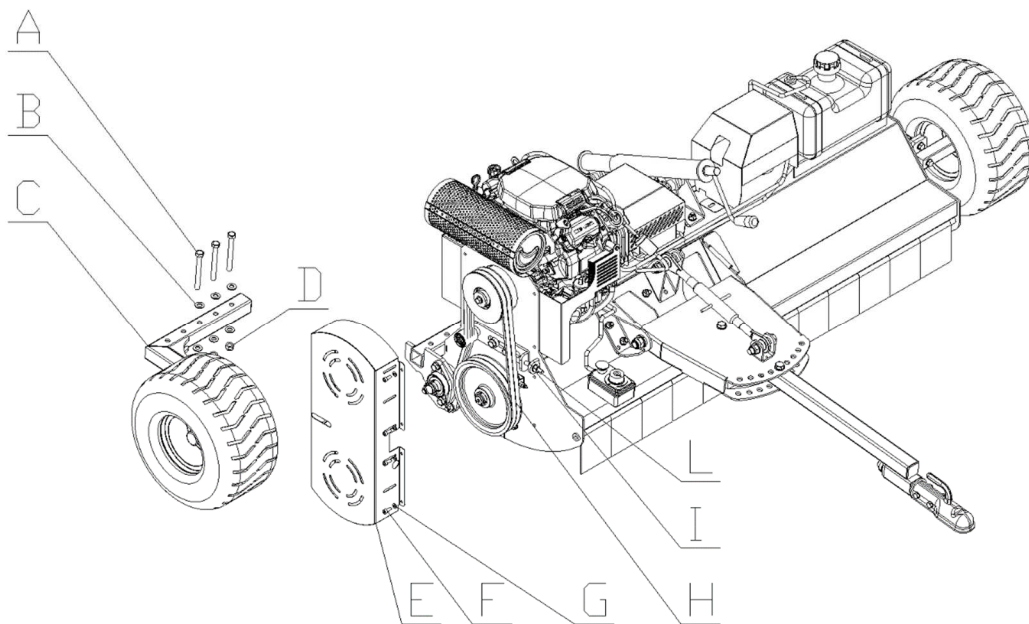
### 4. BELTS ADJUSTING AND REPLACEMENT

a) To adjust the tension of the transmission belts, operate as follow:

1. Remove the rear wheel "C" unscrewing the three screws "A".
2. Remove safety protection "E" unscrewing the eight screws "F".
3. Unscrew the lock nut "I", turn clockwise the nut "L" to increase or counterclockwise to decrease the tension. The belt tension is correct when the belts flex about 1/8" - 1/4" when pushing them on the side opposite of the belt tensioner.
4. After operation tighten the lock nut "I"
5. Install the safety protection "E" and the wheel "C".

b) To change the transmission belts, operate as follow:

1. Remove the rear wheel "C" unscrewing the three screws "A".
2. Remove safety protection "E" unscrewing the eight screws "F".
3. Unscrew the lock nut "I" then remove the nut "L."
4. Remove the old belts "H". To prevent adjusting problems, you must replace both. Install the new one (the characteristics are in the SPARE PART LIST).
5. Turn clockwise the nut "L" until the tension is correct then tight the lock nut "I".
6. Install the safety protection "E" and the rear wheel "C".
7. After one hour of operation check the tension.



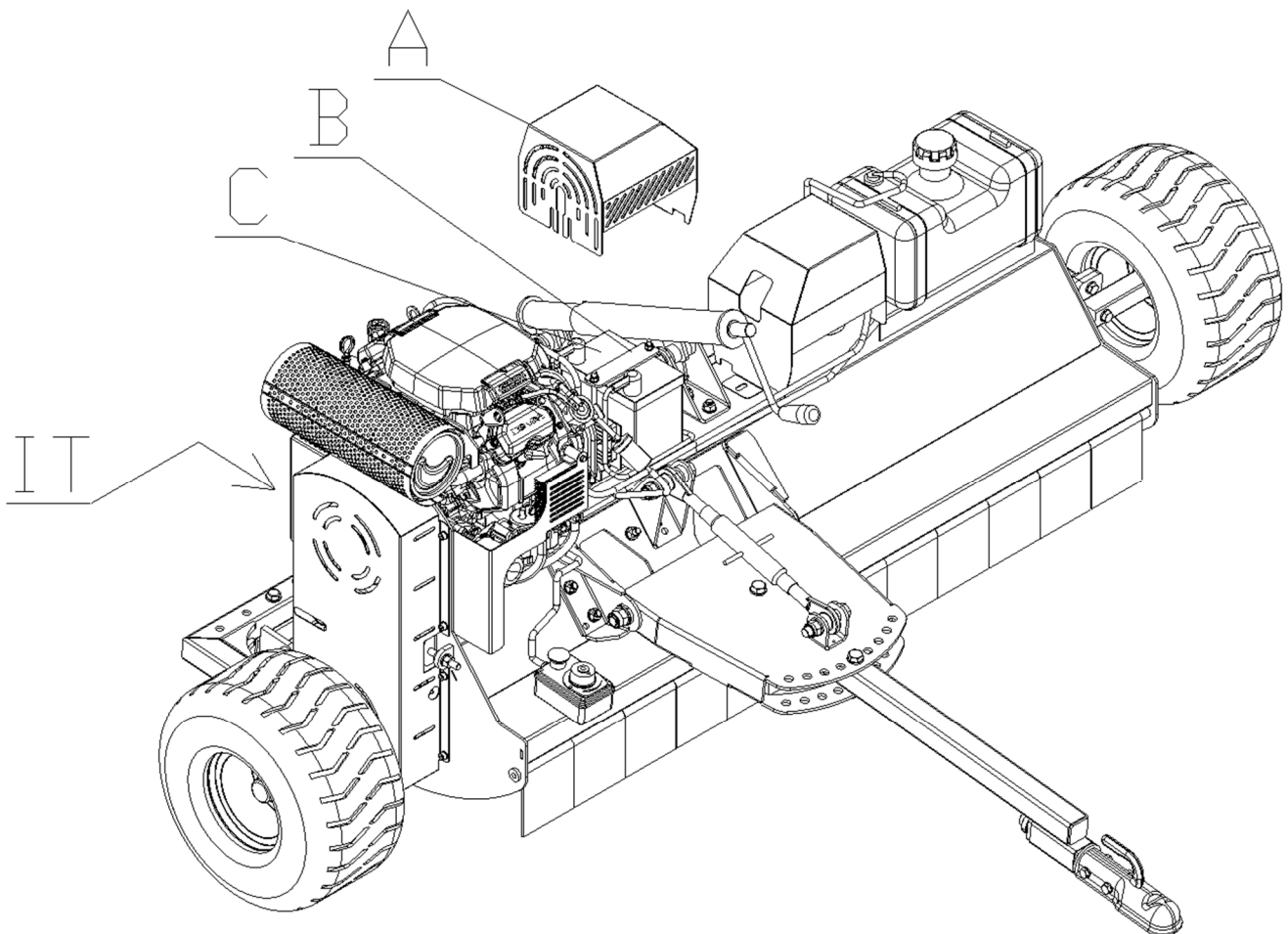
## 5. BATTERY REPLACEMENT/CHARGING

a) To replace the battery, proceed as follows:

1. Disconnect the battery by turning the master battery switch "IT" to the "OFF" position.
2. Remove the housing "A".
3. Remove the bracket "B".
4. Remove battery "C".
5. Insert a new battery paying attention to the polarity and electrical specifications of voltage and amperage
6. Assemble again the bracket "B" and the casing "A".

b) To recharge the battery, proceed as follows:

1. Disconnect the battery by turning the master battery switch "IT" to the "OFF" position.
2. Remove the casing "A"
3. Charge the battery, paying attention to the polarity and electrical specifications of voltage and amperage.
4. At the end of charging operation install the housing "A".



**PROBLEM SOLVING**

<b>SINTOMS</b>	<b>CAUSE AND SOLUTIONS</b>
<b>Abnormal vibrations</b>	-Unbalanced rotor – Contact a dealer. -Loss of one or more flails – Replace. -Damaged bearings – Replace.
<b>Uneven or unsatisfactory cut</b>	-Damaged flails – Replace. -Flails type not correct – Change to another type.

## TRANSPORT

Except when working, moving the machine takes place when the machine is standing still, and the transmission is disconnected.

**<Important>**: keep speed low avoiding holes and ground roughness.

**<Important>**: Before begin the movements always make sure that the safety hooks be in position.

**<Note when** on the road, obey existing traffic laws. Exhibit the signal signs on the rear ends. Respect any local laws there may be.

## STORAGE

Store the machine in a dry place that isn't dusty.

Disconnect the battery turning OFF the Battery master switch.

## INFORMATION ON DEMOLITION



At the end of its working life, the machine must be sent to be demolished and that can only be done by an authorized authority, in accordance with the national laws in force for the environment. Therefore, it is necessary to get information from the qualified local authorities on the procedure to follow. The machine is mainly composed of iron materials and paints.

## WARRANTY

The machine is covered by the manufacturer warranty for a period of 24 months.

The warranty is not applicable when:

- a) The maintenance work has not been done correctly.
- b) The machine has been used out of its own service.
- c) The machine has been transformed or modified without the manufacturer's written authorization.

The engine is covered by HONDA warranty.



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