

# INSTRUCTION MANUAL



## GRASSLAND MOWER RABBIT RMK151



**Read this instruction manual carefully before any use of the machine, keep it as a reference. For any question about this manual, please report to your OREC dealer or to the distributor of your country.**

**OREC CO LTD**

**548-22 HIYOSHI HIROKAWA-MACHI YAME-GUN JAPON**

**<http://www.orec-jp.com>**

Update : October 2020

“only the English version of this manual can be used as a reference.”

## INTRODUCTION

### Forward to the user

Read this manual before any use of your mower, only the herein instructions shall help you to achieve an efficient and safe work.

A safe use will only result from the manner you will use the machine in accordance with the restrictions described in this manual. Thus, you must know and follow all the safety measures in this manual and those relating to the use of your tractor.

The mower that you have just bought has been designed and manufactured for your entire satisfaction. As any other mechanical machine, it requires a proper maintenance and must be kept clean. Grease the machine like indicated. Follow the rules and safety indications as described in this manual and as showed on the preventive instruction stickers.

About maintenance, always mind that your OREC dealer has the skills, the genuine parts and the necessary tools to solve the possible problems.

Use only the OREC original parts : “ non genuine ” parts will not assure you of a correct and safe working and are likely to make the guarantee null and void. Write the name and the serial number of your machine hereunder :

MODEL : .....  
SERIAL NUMBER (refer to the pictures herein) :.....

Always mention these informations to your dealer in order to obtain the right parts.

Concerned about constant progress, OREC keeps the right to modify the machines without being compelled to modify those already sold.

The illustrations and characteristics in this manual might lightly differ from your machine because of the constant improvements made by our production department.

In this manual, the left and the right hand or the rear and the front position are determined according to the tractor seat.



All along this manual the word **IMPORTANT** is used to indicate that a fault might cause damage to the machine. The words **WARNING**, **CAUTION** and **DANGER** are used with the “ safety/warning ” pictogram (triangle with an exclamation mark) in order to indicate a hazard for your safety.



This symbol indicates that you must be very attentive because your safety is at stake. It reminds that you must follow the safety instructions and pay attention to hazardous operations that might cause injuries.



Reminds the safety rules that might cause injury if they are not respected



Remembers to pay attention to a real danger that is likely to cause injury or even death if no proper precaution is taken.



Indicates a major hazard that is most likely to cause irremediable injury or death if the right precautions are not taken.

## CONTENTS

INTRODUCTION .....	2
CONTENTS .....	3
SPECIFICATIONS .....	3
CHECK LIST .....	3
SAFETY RULES .....	4
MACHINE DESCRIPTION .....	6
SAFETY INSTRUCTION STICKERS .....	7
CONTROLS .....	9
OPERATION .....	14
MAINTENANCE OPERATIONS TO BE CARRIED OUT BY THE USER .....	17
BREAKDOWNS AND SOLUTIONS .....	24
TIGHTENING TORQUES (Nm) .....	24
EC CONFORMITY DECLARATION .....	25
MEASUREMENT OF VIBRATIONS .....	25
LIMITED WARRANTY .....	26
NOTES .....	26

## SPECIFICATIONS

Model	RMK151
Engine	KAWASAKI FS651V
Transmission	Hydrostatic
Forward speed	0 - 10 km/h
Reverse speed	0 - 7 km/h
Cutting width	135 - 150 cm
Height of cut	50 - 90 cm
Weight	331 kg
Fuel Tank	12 liters
Blade transmission	belt
Steering	Rack and pinion
Blade engagement	Belt tension
Width mm	1650

## CHECK LIST

### INSTRUCTIONS TO THE DEALER

The assembly, the installation and the first application of the machine is under the OREC dealer's responsibility.

Read the instruction manual as well as the safety measures. Check that all the before delivery and at delivery check points specified in the following lists have been verified and possibly modified before delivering the machine to its owner.

### **CHECKS BEFORE DELIVERY**

- Check that all the shields, grids and safety guards are in place and in a good condition.
- Check that the hydraulic hoses are in place and in a good condition. Replace them if necessary.
- Check that there is no oil leak, repair if necessary.
- Check that the safety instruction stickers are in place and in a good condition. Replace them if necessary.
- Check that all the bolts and screws are properly tightened with the correct torque (refer to chart).
- Protect the grease nipples by coating them with grease and lubricate the machine.

- Check that the machine can work properly : check blade engagement and disengagement, check that the safety switches work properly.

## CHECKS ON DELIVERY

- Show the user how to use the machine and perform the adjustments.
- Explain to the user the importance of the lubrication and show him the different greasing points on the machine.
- Show him the safety devices, shields, guards and the optional equipments.
- Give the instruction manual to the customer, ask him to read it carefully.
- Explain to the customer that drive on the public roads is forbidden.
- Explain to the customer how to use each control and how works the blade engagement. Explain to never use the machine if the blade doesn't disengage properly.

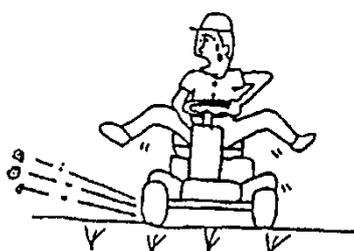
## SAFETY RULES



### CAUTION

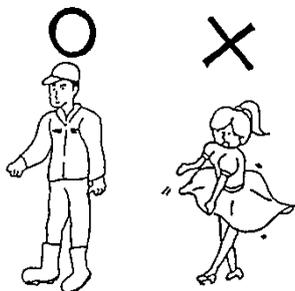
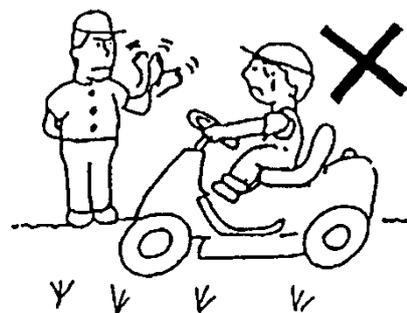
Some of the illustrations show the machine with no guard, no shield. Never use the machine without these devices.

- Learn to stop the machine in case of emergency.
- Read, understand and respect all the safety instructions of this manual.
- Do not let anybody use the machine before having read and understood this manual.
- Do not use the machine near bystanders : they can be hit by thrown objects
- Do not let children use the machine.



- Do not wear loose clothes. They might be grasped by moving parts.
- Always wear protection equipments when using the machine.
- Only work during daylight or with a good artificial light.
- Check that the safety instruction stickers are in place and in a good state.
- Keep the machine free from debris or mud.
- Check that the machine can work properly before any use.

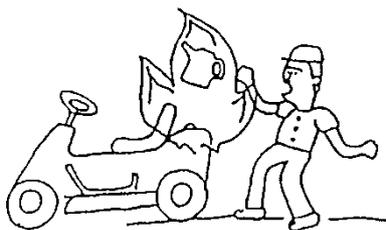
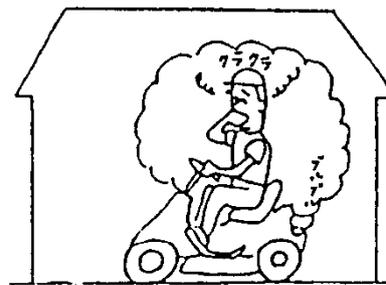
- Check that all the shields, grids and safety guards are in place and in a good condition.
- It is strictly forbidden to carry persons or animals onto the machine during the work or during the transportation.
- Check that nobody stands behind the machine before moving back.
- Never stop or start roughly when working on a slope. Never use the machine to work on a stepping terrain.



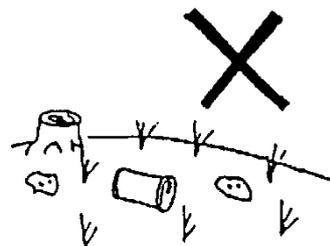
- Do not use machine on a slope more than 10°.
- Reduce the ground speed when running on a slope and when turning straight in order to prevent from any risk of losing control.
- Be very careful when bordering ditches.
- Stop the engine, apply the handbrake and remove the ignition key before any intervention on the machine.
- Never work under the machine or its parts when lifted, unless they are blocked and maintained into position with sufficient security.

- When running on a slope, always work going up or down but never across the slope.

- Steer clear of unsteady embankments, holes or rocks. They might be dangerous during manoeuvres or transport.
- Be careful when working on slopes.
- Keep away from high-tension lines and obstacles. A contact with a high-tension line cause electrocution and death.
- Stop the machine progressively when travelling up and down slopes.
- When stopping the work, stop the engine and put on the handbrake before leaving the mower.
- Engage all the safety equipments.
- Move the controls only when the operator is correctly seat down in the operator seat
- Visually check hydraulic leaks and if some parts are faulty or missing. Repair before use.
- A hydraulic oil jet due to a leak can penetrate under the skin causing serious injuries. In this case you must immediately consult a doctor.
- Never change the adjusment of the safety valve, it is set in the factory. Unsetting this valve would cause failures.



- Ensure that the user of machine has already read and understood this manual and he is aware of all the safety instructions before any use.
- Always use a chuck and bronze hammer when replacing or intervening on the pins and bolts at the end of rams, rod ... etc in order to avoid the projection of metal fragments.



the  
that

# MACHINE DESCRIPTION

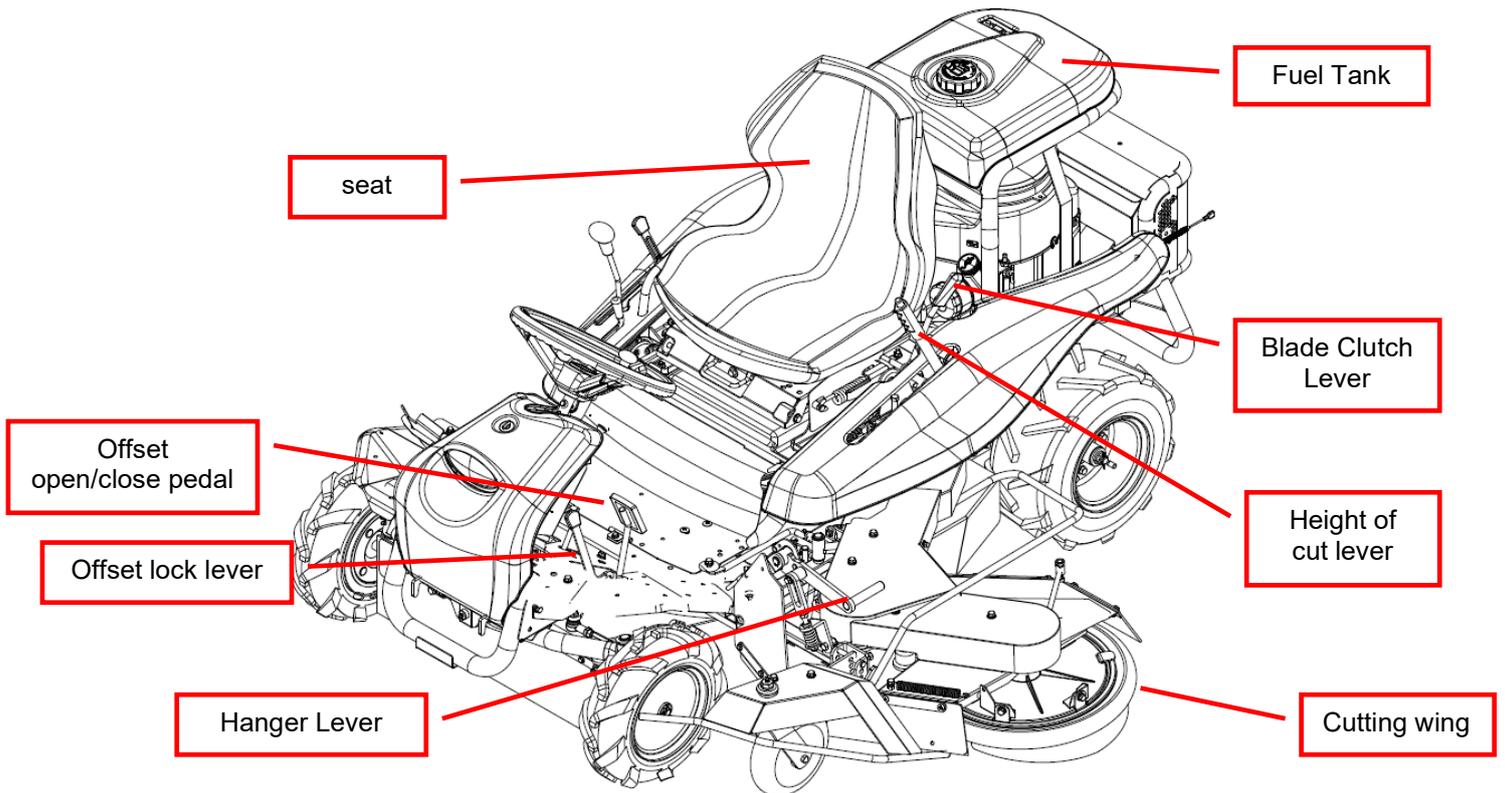


Figure 1

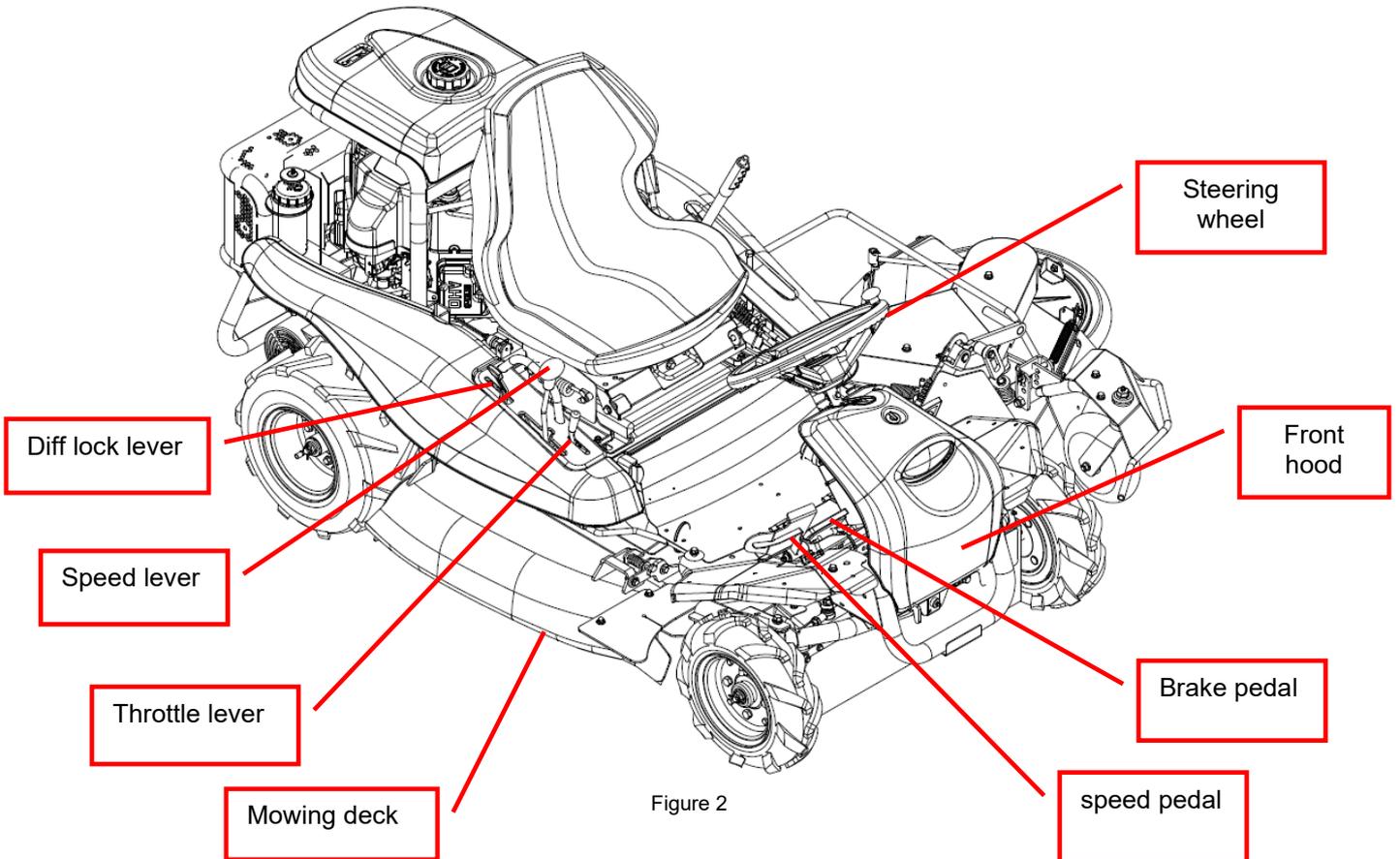


Figure 2

# SAFETY INSTRUCTION STICKERS

Note their location and replace them immediately if they are damaged or missing



Do not exceed 15° slope



Read owner's manual



Beware of thrown objects



Remove the spark plug wire before maintenance

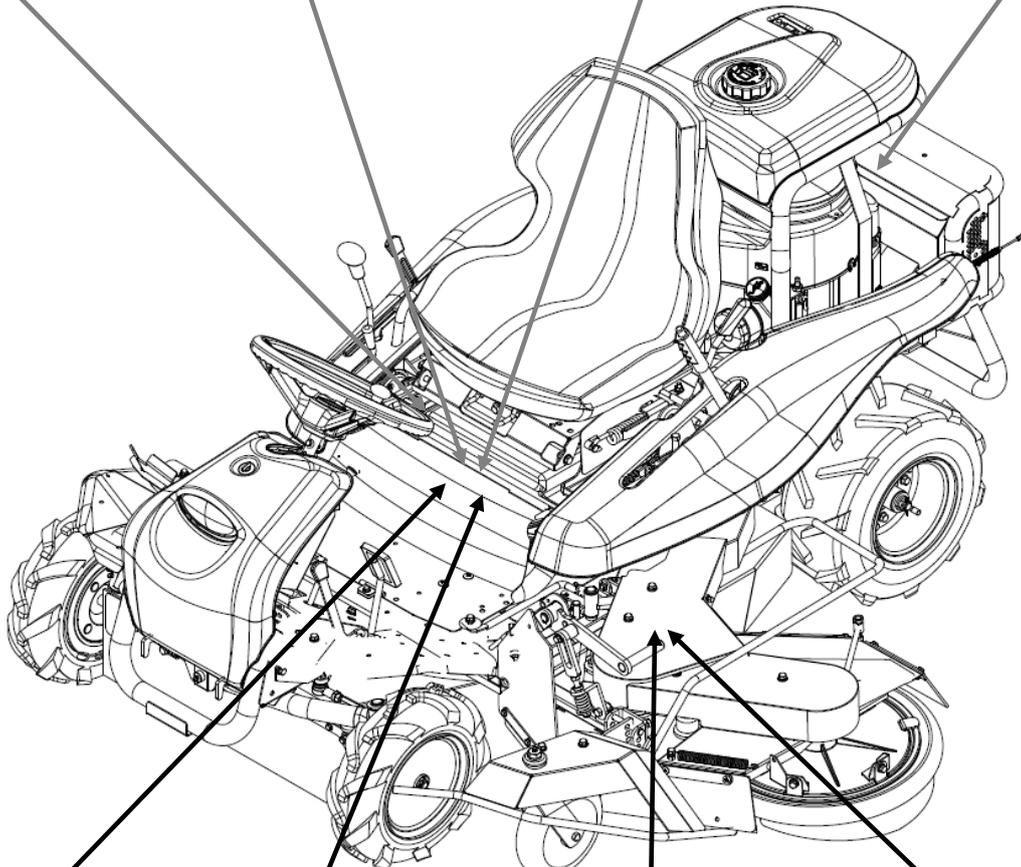


Figure 3



Always wear protective equipment against noise, dust



Beware of rotating parts under the shields



Stay away from the machine



Keep hands and feet away from rotating blades



Beware of hot surfaces near engine



Beware of the flammable fuel



Beware of the toxic exhaust gasses

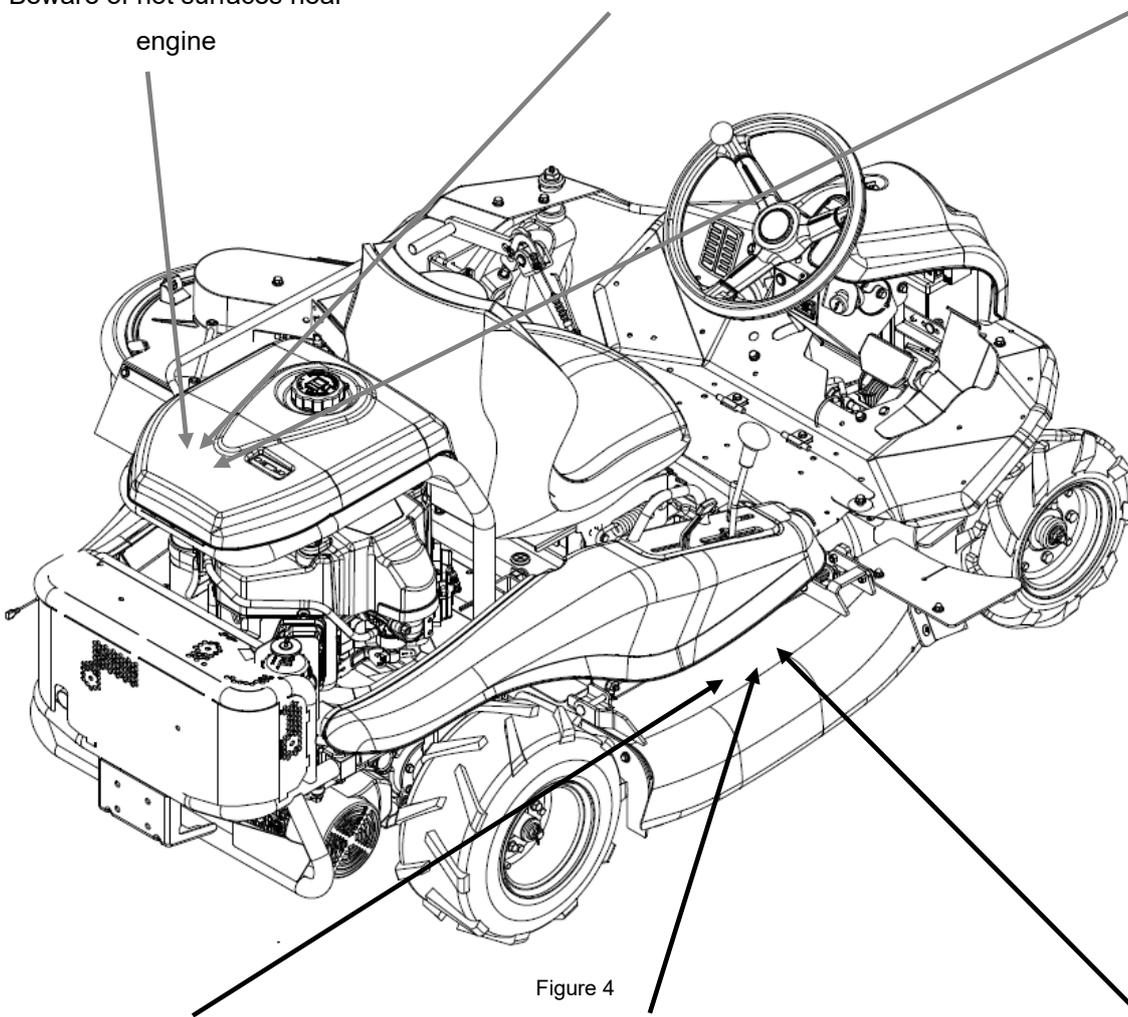


Figure 4



Beware of rotating parts under the shields



Keep away from the machine



Keep away hands and feet from rotating blades

## CONTROLS

### SPEED CONTROL LEVER (HST)

This lever is used to go forward, reverse and stop the machine (1, Figure 5). When the lever is moved rearward to « R » the machine is going on reverse. When lever is moved from « N » to « F » the machine is going forward. When lever is located in « N » position the machine is stopped.

Travel speed is increased by push the lever from « N » to « F » or « R ». Travel speed is decreased by push the lever from « F » or « R » to « N ».

Push or release lever gradually (except on an emergency) in order to avoid sudden stop and go.

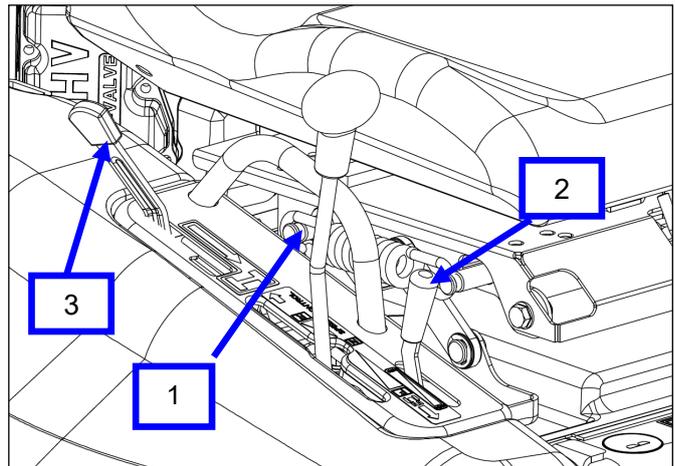


Figure 5



### **DANGER**

**When you release the speed lever to stop, it brake the machine. Release the lever to « N » gently, except in case of emergency to avoid sudden stops.**

### THROTTLE LEVER

Push the throttle lever(2, Figure 5) forward to increase engine speed, pull the throttle lever rearward to decrease engine speed to idle rpm. Always operate mower at full engine speed.

### DIFFERENTIAL LOCKING LEVER

This lever(3, Figure 5) allows the rear wheels to be driven together in slipping areas. (Figure 5). Apply the diff lock lever when one wheel is slipping in straight line. Release the lever as soon as the machine leaves the slipping area.



**The diff lock should be used in straight line only : never use the diff lock lever when turning. The damage to the transmission will not be covered by the warranty**

### HEIGHT OF CUT CONTROL LEVER

The highest position of the lever (1, Figure 6) match to the transport position.

You can adjust the cutting height freely by pressing the push button (2) and the lever (1). When the lever position is high, the height of cut is high, when lever position is low, the height of cut is low.

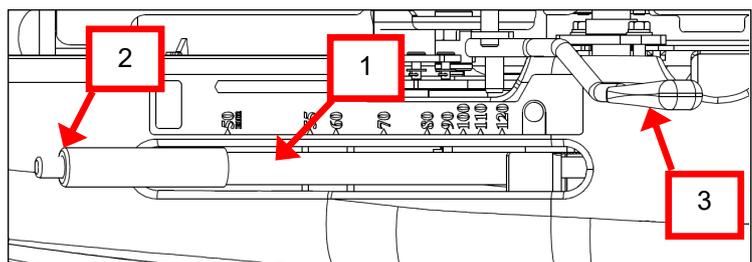


Figure 6



### **WARNING**

**When cutting height is in low position, the machine needs stronger power, and spread more thrown objects. Cutting low can cause damage to the machine and injury.**

### BLADE CLUTCH LEVER

The cutting blade Clutch lever make the engine drive the blade to mow. (3, Figure 6). Push the lever forward make the blade turning. Pull the lever on reverse to stop the blade.

When using blade clutch lever, check that height of cut lever is in mowing position.

**! DANGER**

Check that the blade clutch lever operate properly. The blades must never be permanently engaged. Never operate the machine if the blades are permanently engaged. Have the machine checked by the dealer if the blade lever does not engage or disengage properly.

**! WARNING**

When leaving the machine be sure parking brake is locked, cutting blades are in off position and ignition key is removed.

**STEERING WHEEL**

The steering wheel(1, Figure 7) is used to allow the direction of the machine. Turn the steering wheel to the right (clock wise) to go right and to the left to go to the left (anti-clockwise) Adjust the steering wheel height (3 positions) by removing the pin (1, Figure 7). Adjust the steering wheel, and secure the pin(2, Figure 7).

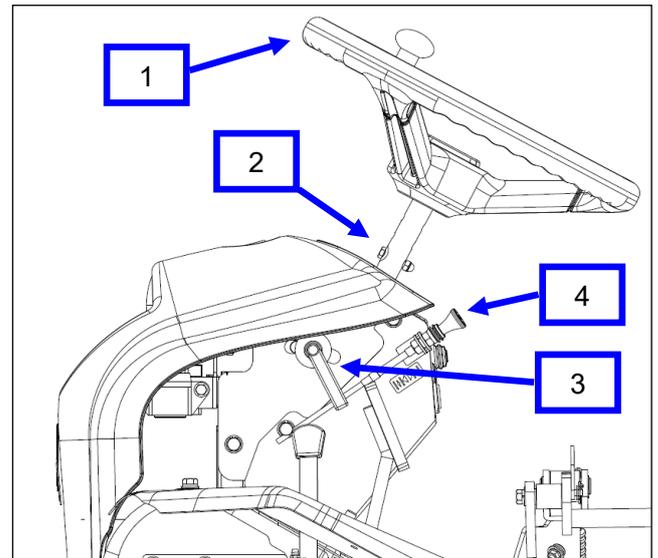


Figure 7

**TILT LEVER**

Handle position can be adjusted freely in front/rear by tilt lever (3, Figure 7). Turn the tilt lever anti-clockwise to loosen the handle position. After selecting the handle position, turn the tilt lever closewise to fix the position.

**! WARNING**

Do not operate tilt lever while driving.

**CHOKE LEVER**

Pull the choke lever(4, Figure 7) to start cold engine, and release it gradually when engine become hot.

**IGNITION KEY**

The ignition key(1, Figure 8) is used to start and stop the engine.

- When the key is in "stop" position, the engine is stopped and the key can be removed. Turn the key in this position when you want to stop the engine.
- When the key is in "operation", position the engine can run, the key cannot be removed in this position
- When the key is in "start", position the electric starting motor is engaged. When the engine has started, release the key which return in "operation", position.

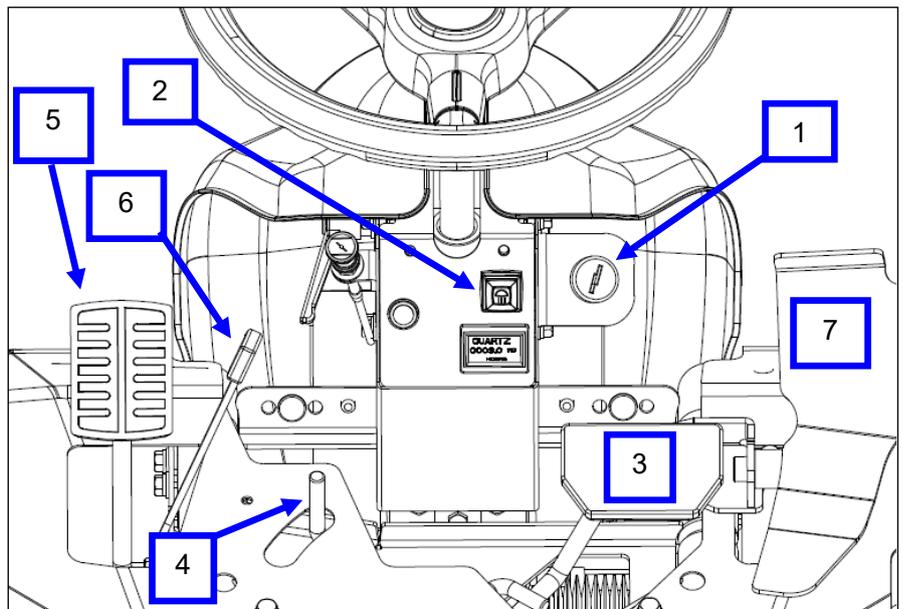


Figure 8

**LIGHT SWITCH**

Push the light switch(2, Figure 8) to turn on the light. Push again to turn off the light.

**CAUTION**

Always remove the key when machine is not used. When the engine is stopped, check that the key is on "stop" position. Do not engage the electric starting motor more than 10 seconds. If the engine has not start after 10 seconds, wait for 30 seconds before engage the electric starting motor again.

**BRAKE PEDAL**

The brake pedal(3, Figure 8) is used in case of emergency or when the parking brake is locked. When brake pedal is pressed, travel speed lever is automatically moved to neutral position « N ». To lock parking brake, press the brake pedal, then turn the locking lever(4, Figure 8) to the right. Press and release the pedal to unlock the parking brake.

**WARNING**

Use the brake pedal in case of emergency only or to lock parking brake. If brake pedal is used at high speed, the machine will stop suddenly.

**WARNING**

Do not let the machine in the slopes, do not move the travel lever when the parking brake is locked, this will damage the transmission. When leaving the machine be sure that the parking brake is locked, cutting blades are in off position and ignition key is removed.

**OFFSET OPEN/CLOSE PEDAL**

Press this pedal(5, Figure 8) to close the offset deck, and release the pedal to open the offset deck. Use the lock lever(6, Figure 8) to fix the offset deck in closed position. Push the pedal(5, Figure 8) to release the lock lever.

**CHANGE PEDAL**

Push the change pedal (7, Figure 8) forward to drive forward, and push it rearward to drive rearward. Depending on the angle of pedal, speed is controlled. When this pedal is not pressed, speed comes back to neutral position. The change pedal is linked with speed control lever (1, Figure 5).

**SEAT**

Pull up the adjust lever(1, Fig 9) and slide the seat to change the seat position. Release the lever, then seat position is locked.

It is possible to adjust the strength of the spring according to the weight of the user. If the suspension adjusting bolt(2, Figure 9 & 10) is turned clockwise, the spring is tensioned. If the suspension adjusting bolt is turned unclockwise, the spring is loosened.

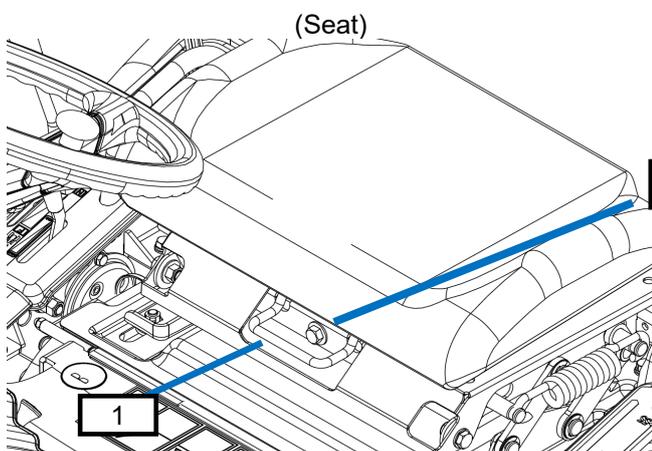


Figure 9

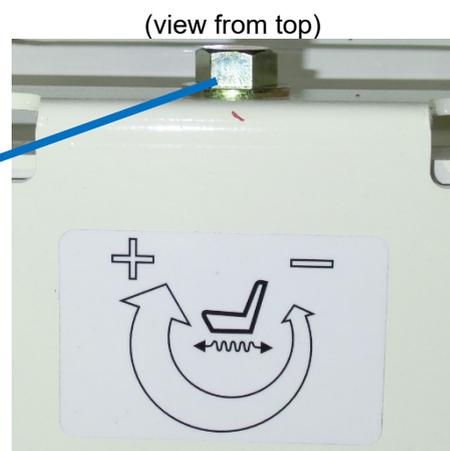


Figure 10

### **MOWING DECK SIDE SHIELDS**

The mowing deck side shields should be unlocked to allow the machine to be loaded on a truck or a trailer. This shields should be locked for mowing.



**DANGER**

**The mowing deck side shields should be locked by bolt and nuts when mowing with the machine. Check if the guards and shields are locked by bolt and nuts before mowing. If they are not locked, thrown object will cause injury and damage.**

### **ENGINE**

The mower is delivered with the engine owner's manual. Read the engine manual before using the machine.

### **HOW TO LIFT UP AND DOWN THE OFFSET DECK**

#### **HOW TO LIFT UP THE OFFSET DECK.**

- Shift the height of cut lever to transport position.
- Then grip front tire BK on the offset deck and lift it up and the hanger lever shift it in.



Figure 11



Figure 12



**CAUTION**

**Make sure that machine is on flat place and get out of the machine before to lift up the hanger lever. It might cause operator's back problem or tipping over if lifting up the hanger lever from seating position.**



**WARNING**

**Never engage the blade when the hanger lever is lifted up while driving. It is very dangerous because the blade might be rotating with the offset deck open. And never engage the blade when lifting up offset deck because it cause belt dropping or belt cutting. Never mow only using the center blade the offset hanger lever is lifted up.**

#### **HOW TO SHIFT DOWN THE OFFSET DECK**

- Make sure that height of cut lever is in transport position.
- Then grip the hanger lever and the front tire BK.
- Shift the hanger lever out, then the lock is released and the offset deck will reach the ground.
- To avoid falling the offset deck suddenly, shift it out slowly gripping the front tire BK.

### **SAFETY SWITCHES**

The OREC mower is equipped with safety switches :

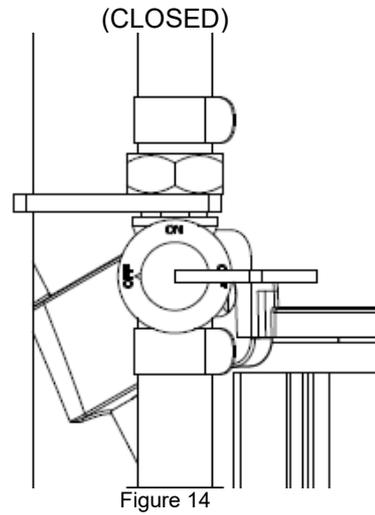
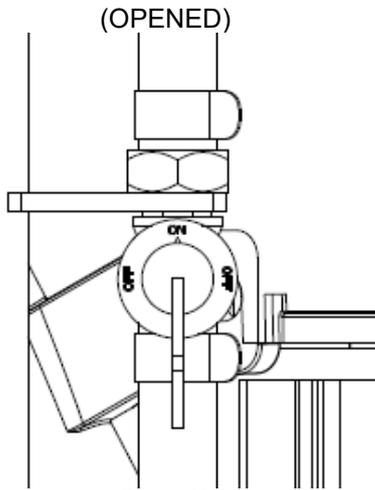
- To start engine when cutting blade lever is disengage, if you do not press the brake pedal, you cannot start engine.
- When the engine is running, the operator leave the seat, the engine is cut off.

 **WARNING**

**Never start the engine when operator is not seated in his place. Do not dismantle, cut off, unplug or shunt the safety switches. If the engine is cut off by a safety switch put the ignition key in "stop" position to avoid unloading of the battery**

**FUEL COCK**

The machine is equipped with a fuel cock. This one is open when the lever is in the same direction as the fuel hose. The fuel cock is closed when it is turned across the fuel line. Turn off the fuel cock when the machine is not used.



## OPERATION



**CAUTION**

**Check the tightening of bolts before use the machine, referring to the tightening torque charts**

The safety is one of our main worry when designing and manufacturing this machine. Therefore, negligence in the use of the machine should reduce our efforts to nothing. The prevention strictly depends on the care and on the skill of the user when applying and maintaining the machine. The best safety method remains a careful and skilled user ; we wish you to be this kind of user.

The user of this machine is responsible for its safe use. He must be a skilled user specially trained for the use of this machine. Read the safety instructions. This machine has been designed to mow grass. It is not designed for any other operation. It is no designed to transport other tools or materials that might damage it and cause injuries to the user. It must not be used to carry persons.



**Never use the machine without having priorly carried out all the maintenance operations as described in the daily maintenance chapter.**



**CAUTION**

**Never let children or unskilled persons use the machine. Check that nobody or no object stands near the machine when at work. They could be hit by the moving parts. Nobody must stand on the machine except the driver. Never put your hands under moving parts.**

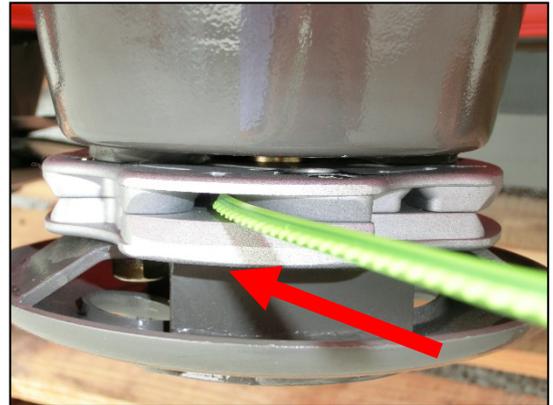


Figure 15

### HOW TO SET NYLON CORD



**DANGER**

**Before to set/replace the nylon cord, always make sure that engine is switched off, the blade clutch is disengaged and the ignition keys removed.**

Insert the nylon cord (4 pieces) into the bracket as shown in Figure 15. Adjust the length of nylon cord as shown in Figure 16. It is possible to insert the nylon cord only in one direction. If the nylon cord length is not correct, remove the nylon cord from the bracket and insert it again. Always position the jaggy surface (1, Figure 17) in horizontal level.



**DANGER**

**If the jaggy surface is not in horizontal level, the nylon cord can come out during the mowing operation, and it will cause serious injury for people around the machine.**

### HOW TO REPLACE NYLON CORD

When mowing performance goes down, it is time to replace nylon cord. Stop the engine to disengage the blade clutch. Then pull the nylon cord to inner direction to remove it. Then set the new nylon cord.



**WARNING**

**Do not pull the nylon cord to outer direction. It can damage the holder spring. In case of using nylon cord in bundle, cut the nylon cord in length of 255mm.**

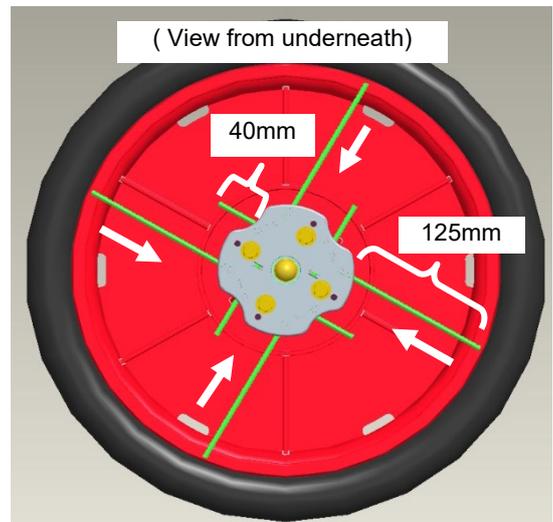


Figure 16

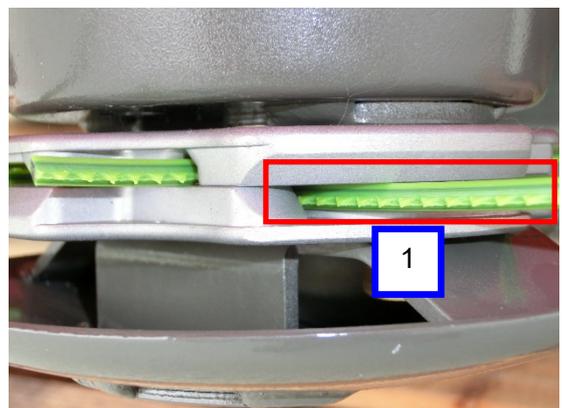


Figure 17

### STARTING OF THE ENGINE

- Turn the fuel cock "ON" and seat down at operator's place.
- Check that cutting blade is disengaged, height of cut lever in transport position and travel lever in neutral position « N ».
- Pull choke lever if engine is cold or push throttle lever half if engine is hot. Press the brake pedal and turn the key clockwise in start position. When the engine has started, release the key and push back the choke lever.



**CAUTION**

**It is very dangerous to work in slope. Never work in slopes more than 10°.**

### MOWING

- Adjust the height of cut control lever as needed.



**WARNING**

**Do not forget that it is better to mow grass in several times. Cutting result is clear and efficient. Remember that the machine is deteriorated rapidly in hot and dry weather. When the cutting height is low, the blade may hit the ground and it causes damage to the blade. The user and bystanders are likely to be injured by the thrown object, The thrown object cause damage to their properties.**

- Push the throttle lever to have the engine running in the fastest speed. Then, slowly engage the blade clutch lever in mowing position and go forward in the grass to mow.

The best cutting speed depends of quantity and the density of the grass. Usually it is asked to mow in less than 2km/h.

The target point for trunk or pole is roughly 10cm from the left end of the off set tire set, or roughly 10cm from the end of the foot guard.

Be careful not to hit the obstacle on the part of except for the off set tire set or not to hit the obstacle with fast speed (more than approximately 2.5km/h). It may cause the damage or breakage of this machine.

When the offset tire hits the obstacle, it closes depending on the hit. With this function, it is easy to cut grass along the trees. However, go slow in less than 2km/h in order to avoid scratching the tree. Be careful not to cut the young tree.

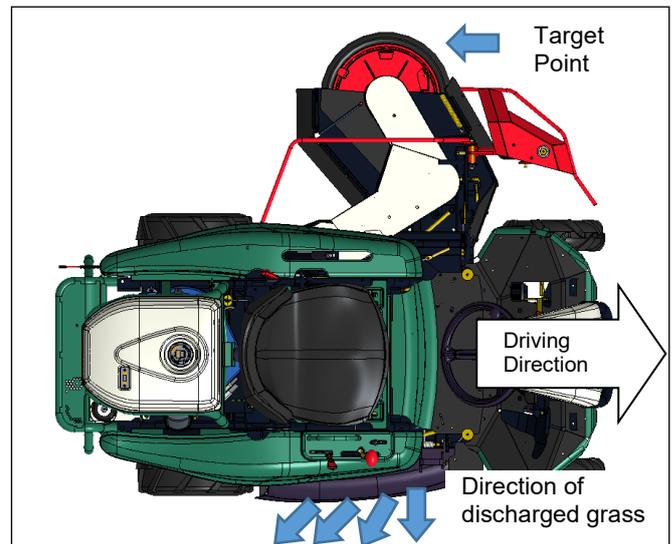


Figure 18



**WARNING**

**Check that there is nobody stay in the mowing path and especially in the thrown object zone (Figure 19). Stop the machine immediatly when hitting something. Let the machine get cold, clean the machine from dust and debris. Check the machine or ask your dealer to check if the machine is not damage.**

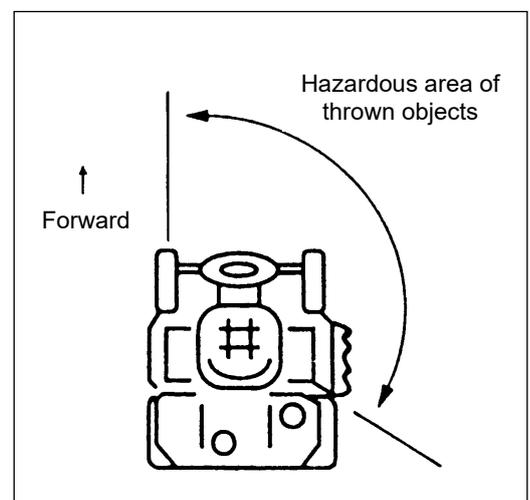


Figure 19

### **HOW TO ADJUST HEIGHT OF OFFSET DECK**

The Height of offset deck can be adjusted by changing the pin position at offset front wheel.

Standard position of the pin is in center hole (2, Figure 20).

In case of cutting in low position, change pin position to top (1, Figure 20).

In case of many stones in the fields, change pin position to lowest (3, Figure 20)

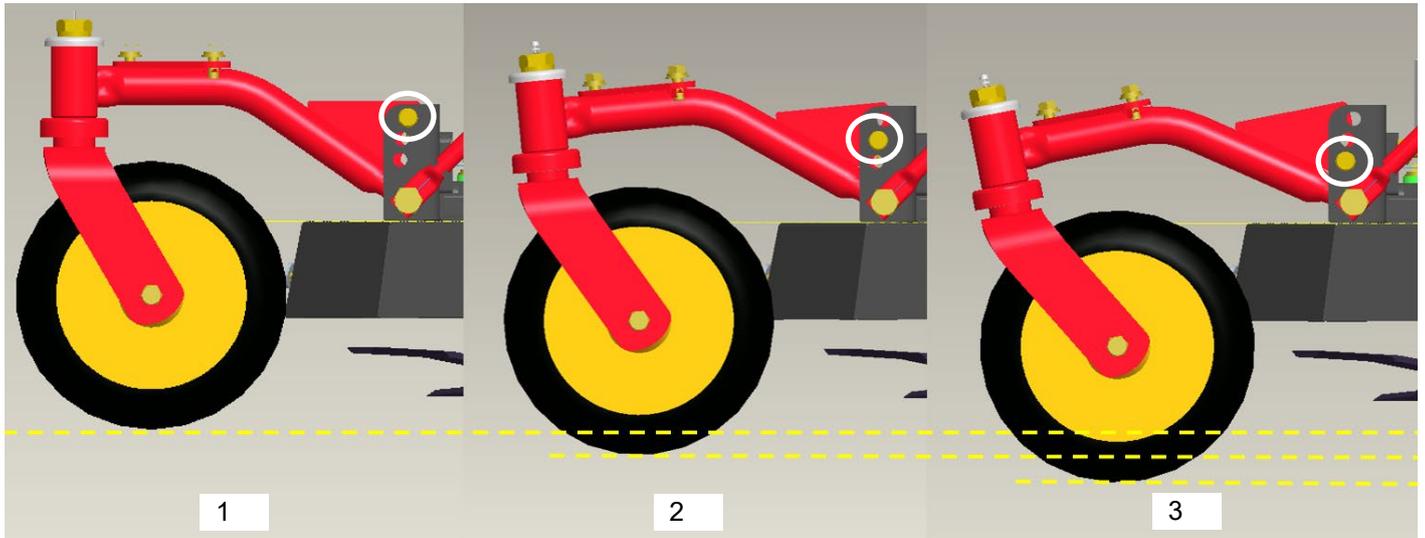


Figure 20

### **HOW TO STOP THE MACHINE**

- Pull cutting blade lever to the top in disengage position, pull cutting height control lever to the top on travel position.
- Hold down the lever to neutral position « N ».
- Turn off ignition key to stop position remove it.
- Lock the parking brake, and close the fuel cock.



#### **WARNING**

**Avoid parking the machine in slopes, park the machine in a flat hard and level area.**

### **HOW TO CARRY THE MACHINE**

Use a trailer or a truck able to carry the load of the machine. When loading the machine, use ramps able to resist to 500 kg, 30 cm wide and equipped with unslipping surface. Check the slope is not more than 16°(Figure 21).

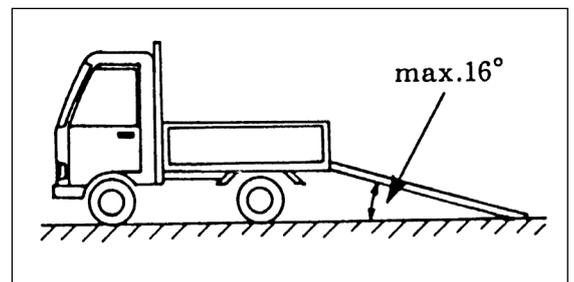


Figure 21

### **LOADING :**

- Check cutting deck is disengage and in travel position. Lock the differential locking.
- Approach the machine of the parralel ramp adjusted to the track and locked to the truck.
- Load the machine with engine at full rpm, slowly and with care.
- When the machine is loaded, Turn off ignition key to stop position remove it. Lock the parking brake, and close fuel cock. Trim the machine with straps designed according to the weight of the machine.

### **STORING THE MACHINE**

- Thoroughly clean the machine. Use touch up paint to prevent rust.
- Check for worn and damage parts, install new parts as required
- Preform the normal maintenance of the machine according to maintenance chart.
- Store the machine in a dry protected area
- Remove ignition key.

## MAINTENANCE OPERATIONS TO BE CARRIED OUT BY THE USER



**Before perform any maintenance operation on the machine, disengage the cutting blade, stop the engine, lock the parking brake and remove the ignition key. Do not let anybody approach the driving place**

If maintenance operation are not made, damages can occur to the machine and personal injuries to the user and/or spectators. These damages and injuries will not be covered by the warranty.

- Daily maintenance will be performed by the user.
- Maintenance operations for first 20 hours, 100 hours and 300 hours should be realized by the dealer.
- Ask your dealer to check the machine if you meet some problems.
- Ask your distributor the name of your dealer.

### DAILY MAINTENANCE

#### TRANSMISSION (GEAR) OIL LEVEL (FIGURE 22)

Check level with the machine cold on a flat surface. Oil level should be lowest of the window C (Figure 22). If needed, add oil by this window. Drain oil from plug A (Figure 22). Use only "SAE 90" or "API GL-5". Oil quantity : 1.00L.

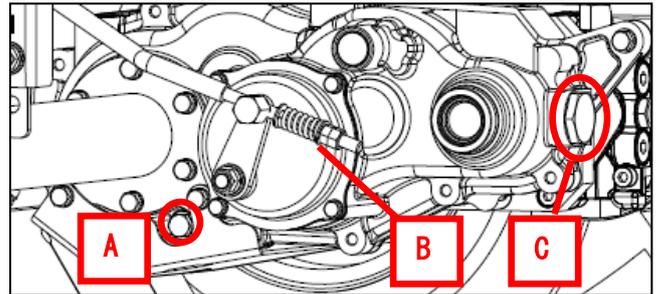


Figure 22

Transmission oil replacement frequency

First replacement : After 20 hours	Later replacement: Each 100 hours or Every year whichever comes first.
---------------------------------------	---

#### HST OIL LEVEL (FIGURE 23)

Check HST oil level regularly with the machine on a flat surface. Be sure correct oil level is maintained. Oil level should reach the level between "UP" and "LOW". If needed, add oil "VG46" or "SAE10W30". Oil quantity : 0.50L. Refill the same type of oil. Never mix different type of oil. Check for oil leak.

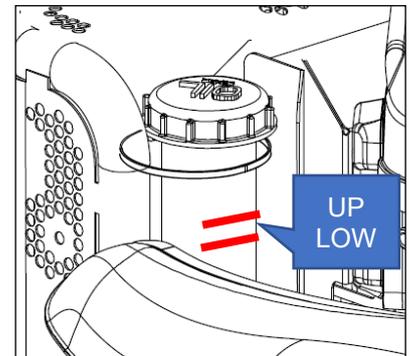


Figure 23

#### HST OIL REPLACEMENT

HST oil is clean when the unit is delivered. But when the unit is used for a long time, the inside of HST unit will be dirty because there are some sludge and the oil is degraded. And dirty oil might disturb the smooth working. Replace HST oil frequently for your safety and smooth working. Also replace oil filter when HST oil is replaced.

Drain the used oil

1. Place the suitable container below the HST unit to catch the oil, then remove the oil drain plug (A, Figure 24).
2. Allow the used oil to drain completely, then reinstall the oil drain plug, and tighten the oil drain plug securely.
3. With the HST unit on a flat surface, refill to the upper limit mark with the recommended oil. (Refill same oil if possible.)
4. When oil is added, please pay high attention not to mix dust with oil. Tighten the cap securely to prevent leakage.



Never loosen the bolt (B Figure 24). Otherwise, it might influence for machine driving. To do so is considered misuse, and damage caused by misuse is not covered by Warranty.

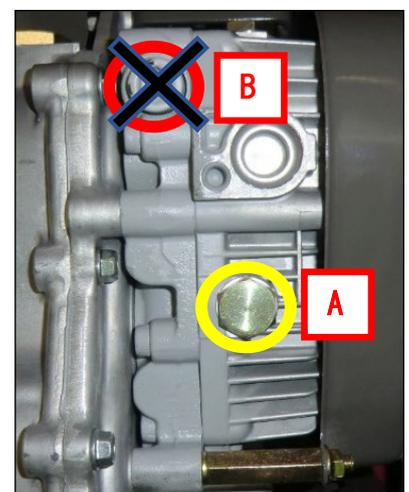


Figure 24

**BLEEDING THE HYDROSTATIC TRANSMISSION SYSTEM**

- After replacing the HST oil, some air can go in the hydrostatic system. If there is air in the transmission system, the driving is not perfect. Please do as following.
- Tilt the speed lever by half to FORWARD and BACKWARD for 10 seconds and then, return the change lever to neutral position.
- Please do above 2 works 5 times.
- When tilting the speed lever, throttle must be kept idling. (Figure 25)
- And then, make sure if there is no bubbles in the HST oil tank.
- After working, make sure if the oil level reaches "UP" mark in oil tank.
- If not, add oil to reach "UP" mark in oil tank(Figure 23).

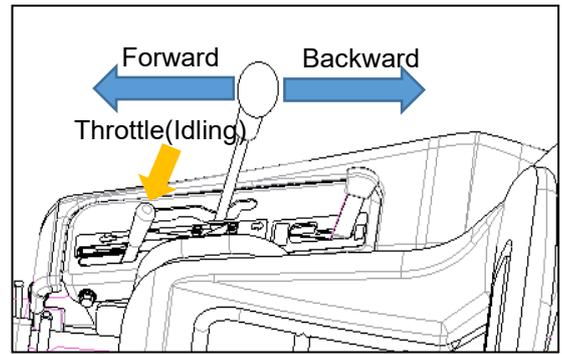


Figure 25

- HST oil replacement frequency

First replacement : After 20 hours of operation	Later replacement: Each 200 hours or Every year whichever comes first.
--	---

References: (The color of HST oil)

Color	Smell	Status	To do
Clean and no changing color.	Good	No foreign object	Use as usual
Clean, but there are some black points.	Good	Some foreign object	Use after filtering
Milky white	Good	Some water.	Change the oil
Black	Bad	Oxidated and degrade.	Change the oil



**CAUTION**

**Take extremely care to not add dust or foreign object in the transmission oil. This will damage the transmission and this will not be covered by the warranty.**

**FUEL**

Check that the fuel tank level is full(1, Figure 26). Fuel level is full when the needle of the gauge indicated « F ». Fuel level is empty when needle of gauge indicate « E ». If fuel is empty, need to load the fuel. Check that tank cap(2, Figure 26) is fully closed, and check for leaks. Use only a good quality gasoline(12.00L).

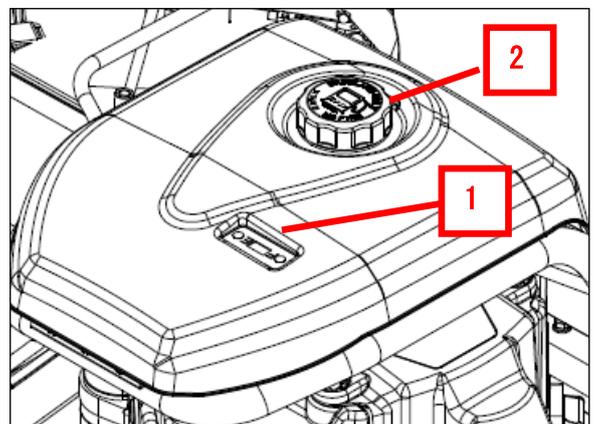


Figure 26



**DANGER**

**Check that fuel tank cap is closed, wipe leaky fuel before to start the machine. Check that there is no fire, electric sparks, cigarettes near the machine when refuelling. When the machine is used on slopes, work with the fuel tank half full to avoid fuel leaking.**

**REMOVE FLAMMABLE MATERIALS :**

Remove flammable materials because it might cause fire, especially near hot parts like muffler or engine.

**TIRES (FIGURE 27)**

- Check that tires are not cut, cracked or worn.
- Check tires pressure : 1,2 bar front and 1,4 bar rear.

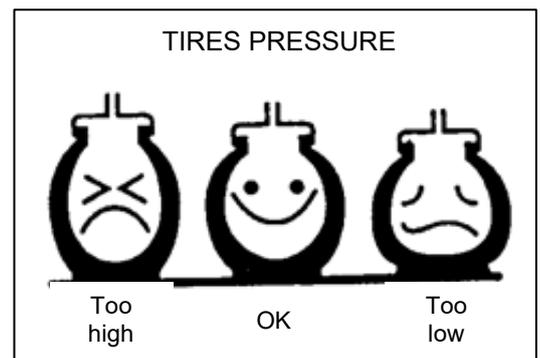


Figure 27

**SAFETY STICKERS**

Check if safety stickers are sticked at their location. Replace them if they are worn and damage.

### SIDE GUARDS AND SHIELDS

Check lateral guards and shields are bolted.

### ELECTROLYTE BATTERY LEVEL (FIGURE 28)

Check electrolyte level is between the upper and lower level. Add distilled water as required.



### **DANGER**

Be careful when maintaining the battery. Avoid flames, and sparks. Always wear gloves and glasses. Wash with water if you are hit by electrolyte.

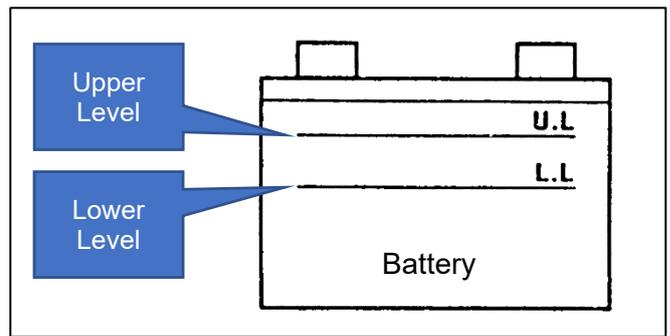


Figure 28

### FRONT LIGHT (FIGURE 29)

Switch on the front light on the dash board.

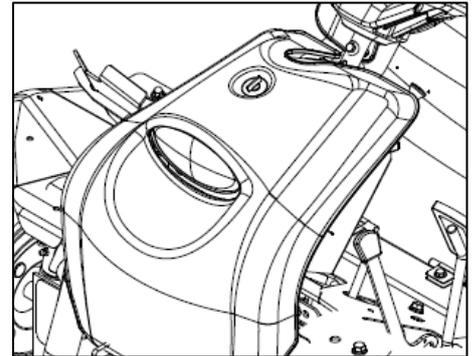


Figure 29

### BLADE AND BLADE HOLDER CONDITION

Check that rotary blades are in good condition, change worn or damaged parts.

How to replace blade :

1 – Remove the blade by loosening the hard lock nut. Remove the upper nut, and then remove the lower nut.

2 - After changing to new Blade(or to reversed blade)

It also should be changed to new Blade Bolt, Hard Lock Nut and Nut Guard as shown in Figure 30.



### **CAUTION**

The cutting blade can cut user's hand. You can be cut and injured by cutting blade. Always wear gloves when holding blades.



### **CAUTION**

Use only the OREC original parts : “ non genuine ” parts will not assure you of a correct and safe working and are likely to make the warranty null and void.

- Check also the Knife Stay for wear. Even if you do not see any bend or any abrasion on Knife Stay, you should replace it at every 100 hours or every 2 years of use.
- Please check Blade frequently because it abrades early when you work at a place including dry soil or sand.
- We recommend that you purchase spare Blade and spare Blade Set Bolt in advance and keep them at your hand.
- When the Blade Set Bolt is worn on its head(1, Figure 31), it can cause serious accident with the blade thrown away. Replace the Blade Set Bolt immediately when the dent disappeared. Also, Replace(or reverse) the blade when it is worn up to 30% (Figure 31).

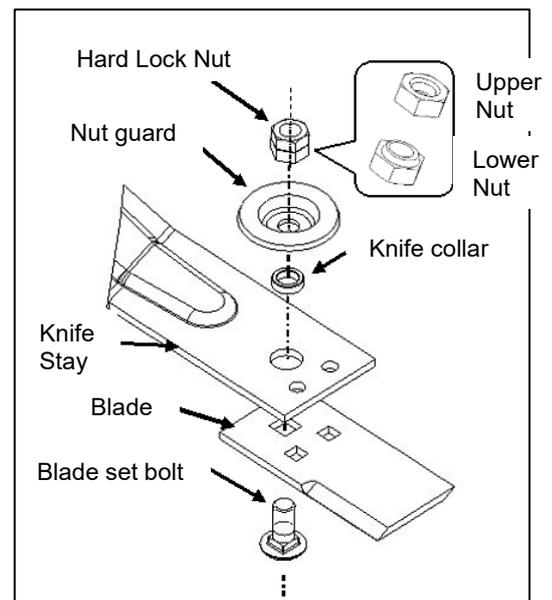


Figure 30

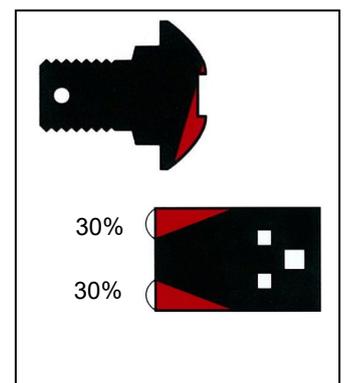


Figure 31

**OFFSET BLADE (FIGURE 32 & 33)**

When the knife edge is worn up to 80% (Figure 33), reverse or replace it.

If the cutting height of the offset part is adjusted properly, it is possible to reduce the wear of offset blade, rotary plate, and thrown objects.

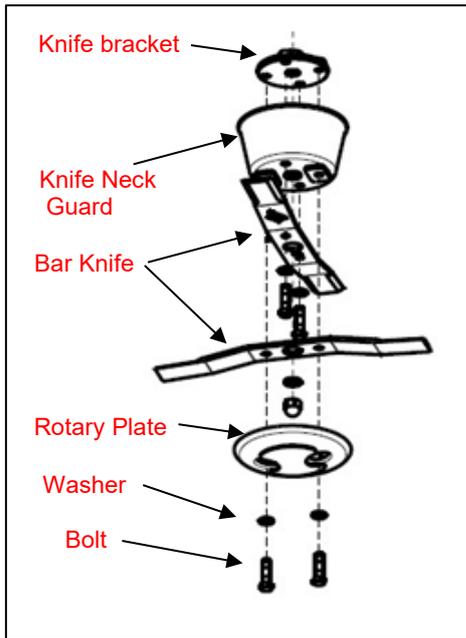


Figure 32

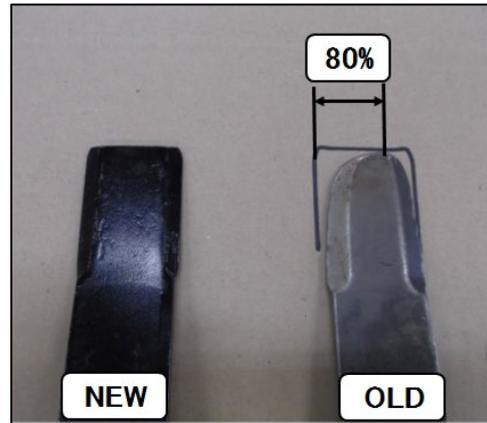


Figure 33

**LUBRICATION :**

Do not forget to paint grease around the parts(Figure 34), especially when working in a sandy place. Clean the grease nipples and lubricate the machine properly (use a grease pump). Only use NLGI N°2 molybdenum bisulphide grease. Lubricate the tippers. Use only grease NLGI n°0.

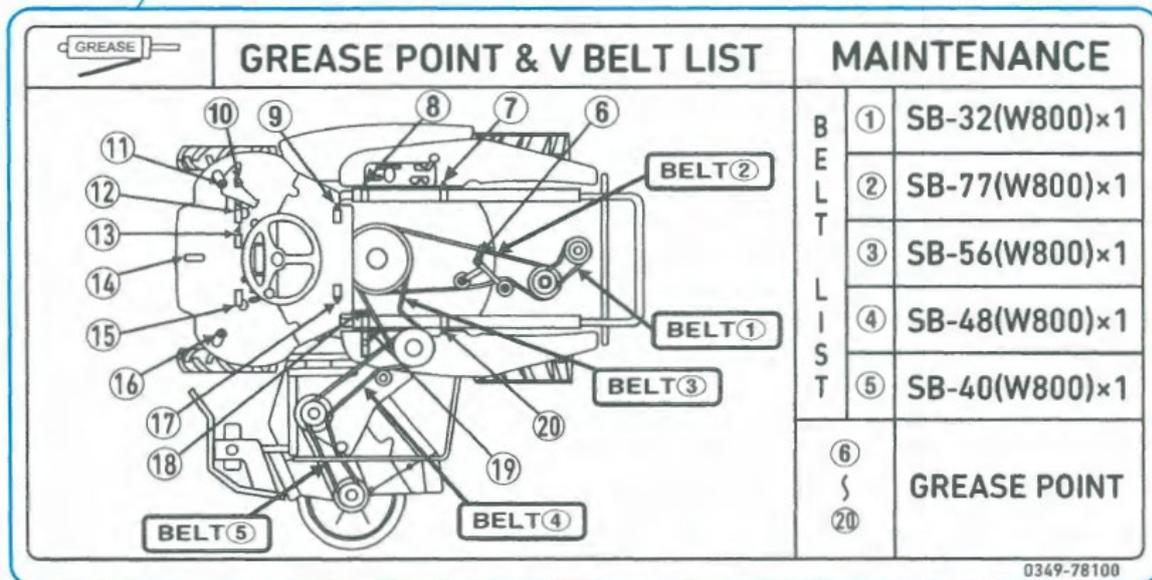


Figure 34

**AIR FILTER**

Remove the air filter cover. Unscrew the two screws ("A" Figure 35) and remove the cover. Unscrew the collar (A Figure 36), blow the cartridge with low air pressure from the inside to the outside opposite to the normal air flow. Change the cartridge if it is too dusty or after some cleaning. Clean the foam with water and soap, dry it and oil with engine oil. Press it to remove the oil in excess without squeezing it.

**IMPORTANT**

**Do not blow at high pressure, and maintain a safe distance between the air nozzle and the cartridge to avoid damage on it.**

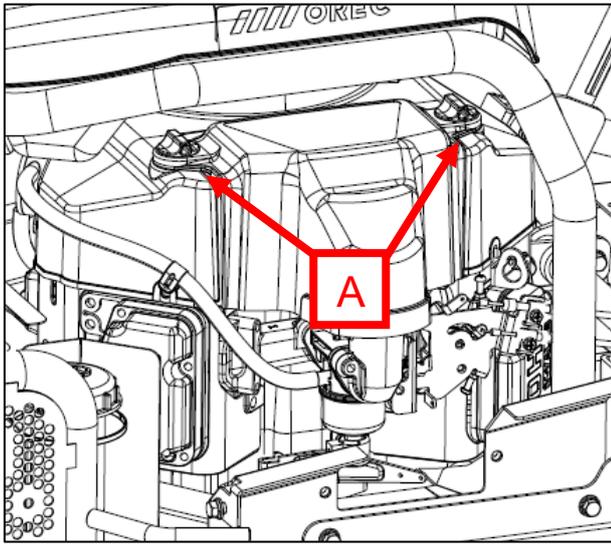


Figure 35

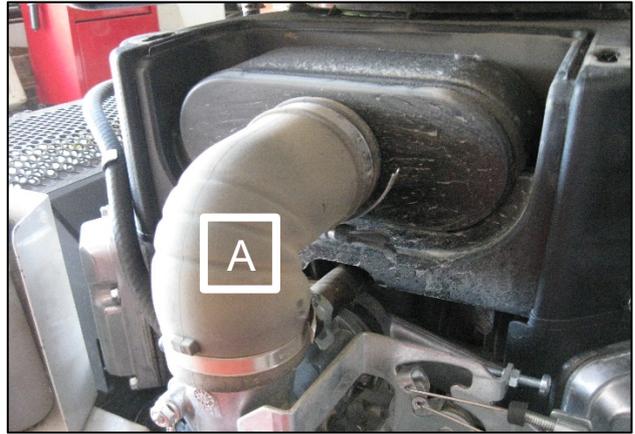


Figure 36

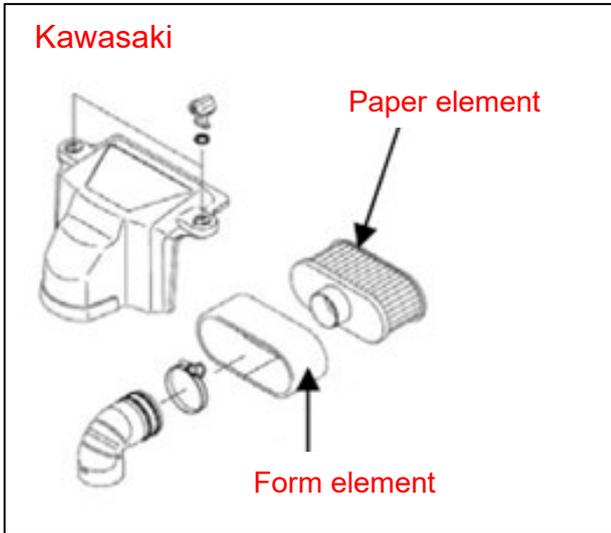


Figure 37

**ENGINE :**

Refer to engine manual delivered with the machine.

Oil level : check that the oil level and engine is not hot. Unscrew the gauge(1, Figure 38). The oil must be between the two marks on the stick.

Drain the oil by the plug(Figure 39) after the first 8 hours and after every 100 hours of use or every year whichever comes first. If needed, add "SAE10W30" or "API SL class". Oil quantity : 2.10L.

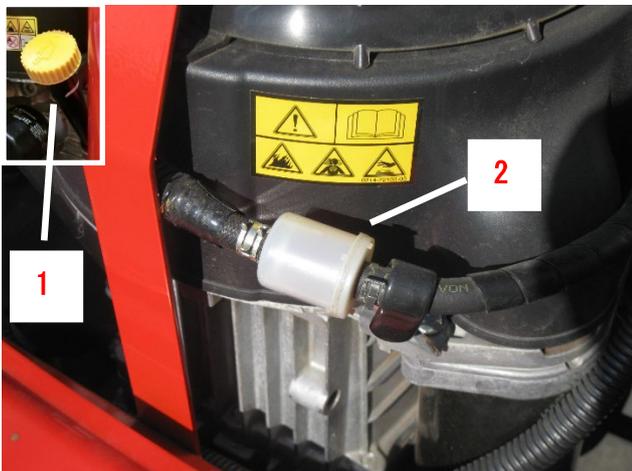


Figure 38

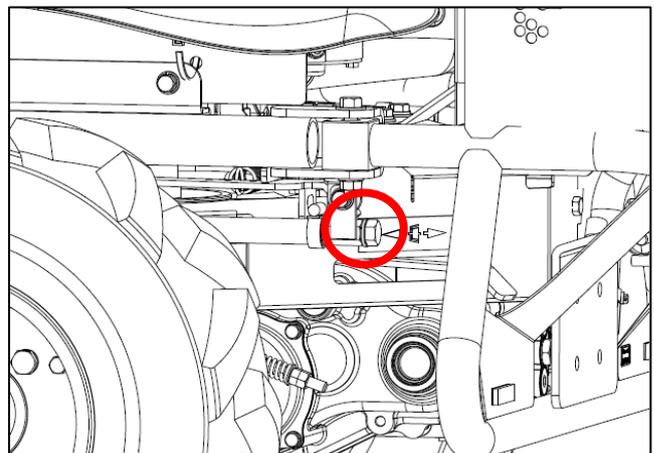


Figure 39

**FUEL FILTER :**

Check through the filter(2, Figure 38) if there is dirt or water. Clean or change the filter if necessary.

**BELT TENSION :**

Check belt condition. If it is worn or damaged, replace to new one.

- If the belt is slipping, tighten the wire with the adusting nut (B, Figure 40) until the wire spring start to be tightened.
- If blade belt does not stop in 5 second, tighten the wire with the adusting nut (A, Figure 40).

**IMPORTANT**

**A bad tension belt makes sleeping and wearing out quickly. High tension of belt will damage the bearings.**

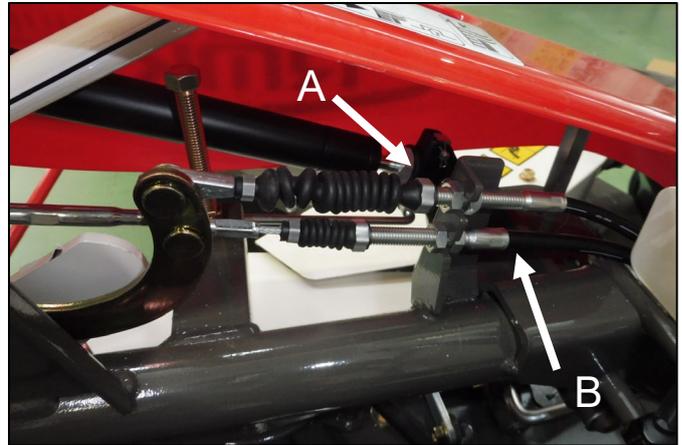


Figure 40

**BRAKE :**

If brake is not working efficiently, tighten it with the nut (B, Figure 41).

**TIGHTENING OF BOLTS :**

Check that the bolts, nuts...are properly tightened. The vibrations tend to loosen the bolts.

**ADJUST SAFETY SWITCHES**

Ajust the screws pushing the safety switches so they push switches from 3 to 5 mm.

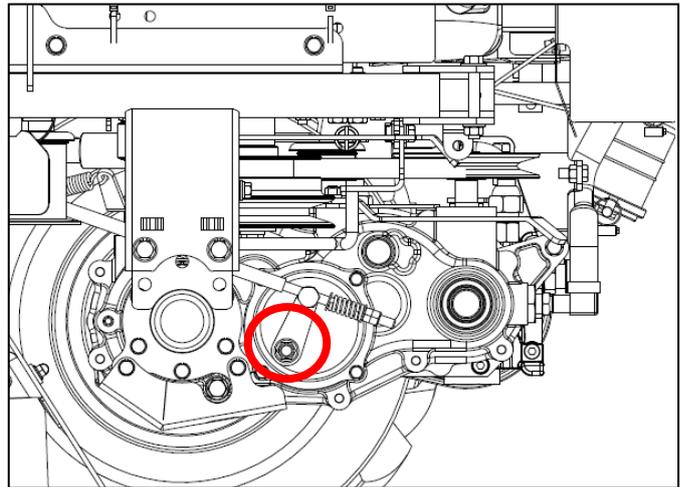


Figure 41

**TRAVEL LEVER ADJUSTMENT :**

Adjust the control link (A, Figure 42) in order to have the machine motionless when the speed control lever is in neutral.

**DIFF LOCK LEVER ADJUSTMENT :**

Ajust the control wire (B, Figure 42) until the lever has a free play of 1 to 3 mm before activate the diff lock.

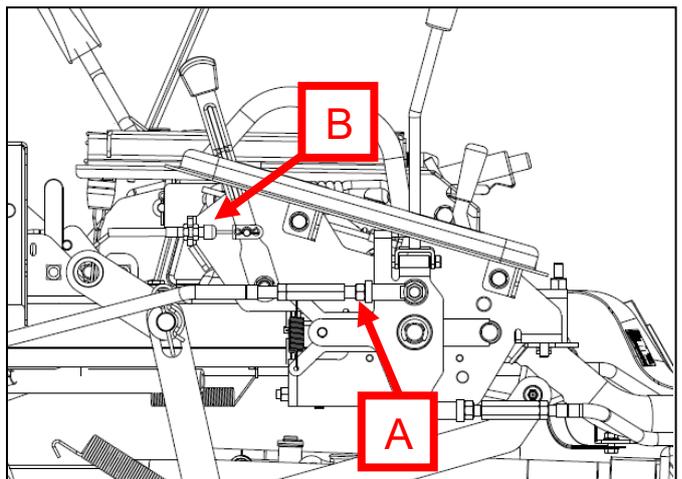


Figure 42

## **MAINTENANCE CHART**

□ Ask your dealer to realize this operation needing special tools and knowledge.

⊕ Inspection to realize by the owners before starting the engine

⊗ Inspection to realize by the owners after starting the engine

<b>Part to inspect</b>	<b>Inspection</b>	<b>Every use</b>	<b>first 20 hours</b>	<b>Every les 100 hours</b>	<b>Every 300 hours every year</b>
Blade belt	Check belt tension		□	□	
	Check wear		□	□	
HST Transmission	Oil level	⊕		⊕	
	Oil leak	⊕		⊗	
	Oil pollution		□	□	
Fuel	refuelling	⊕			
	Fuel cock	⊕			
Flammables materials	Clean the machine from flammables materials	⊕			
Steering wheel	Horizontal, loosness	⊕			
	Lateral loosness	⊕			
Travel lever	check machine do not move when lever is on "N"	⊗			
	Check travel lever goes on "N" when applying brake	⊗			
Tires	Check tires pressure	⊕			
	Check tires wear	⊕			
Brake	Check efficiency of the brake	⊗			
	Check travel lever goes on "N" when applying brake	⊗			
Chassis	Check for rust, and cracks				
Safety stickers	Check they are in place and in good condition	⊕			
Safety switches	Check for efficiency	⊗			
Guards & shields	Check they are bolted in their place and in good condition	⊕			
Ignition key	Check for efficiency	⊗			
Tank and fuel hoses	Check for leaks and good condition Replace if needed	⊕			
Battery	Check level	⊕			
Throttle lever	Check for efficiency	⊗			
Blades	Check they are bolted in their place and in good condition	⊕			
Blade clutch control lever	Check the adjustment of the wire	⊕	□	□	
Blade brake	Check the adjustment	⊕	□	□	
Blade belt	Check they tensionned and in good condition		□	□	
Engine	Refer to engine manual				

## BREAKDOWNS AND SOLUTIONS

PROBLEME	CAUSE	SOLUTIONS
Engine does not start	No fuel	Refuel the tank
	Battery is empty	Load or replace the battery
	Safety switches are working	Check brakes, blade clutch and seat and travel lever
The machine does not travel	Parking brake is locked	unlock parking brake
The machine does not stop	Travel lever is not on « N »	Move the travel lever to « N »
The blade does not rotate	Blade clutch lever is not engage	engage Blade clutch lever
	Safety switches are working	Check brakes, blade clutch and seat and travel lever

## TIGHTENING TORQUES (Nm)

Diameter of the screw(mm)	Marks on the screw head				
	4 or without mark	7	8	9	11
3	0,3 to 0,5	---	---	---	---
4	0,8 to 1,0	---	---	---	---
5	2,5 to 3,4	5,4 to 6,4	6,4 to 7,4	6,4 to 7,4	8,8 to 9,8
6	4,9 to 6,9	9,8 to 11,8	11,8 to 13,7	11,8 to 13,7	14,7 to 16,7
8	11,8 to 16,7	24,5 to 29,4	29,4 to 34,3	34,3 to 36,2	36,3 to 41,2
10	20,6 to 29,4	39,2 to 44,1	49 to 53,9	49 to 53,9	72,6 to 82,4
12	44,1 to 53,9	83,4 to 93,2	93,2 to 107,9	93,2 to 107,9	122,6 to 137,3
14	63,7 to 78,5	117,7 to 132,4	132,4 to 147,1	147,1 to 166,7	205,9 to 225,6
16	88,3 to 107,9	152 to 171,6	176,5 to 196,1	215,8 to 245,2	313,8 to 343,2
18	117,7 to 137,3	205,9 to 235,4	245,2 to 274,6	313,8 to 343,2	441,3 to 470,7
20	147,1 to 166,71	235,4 to 274,6	313,8 to 353	441,3 to 480,5	617,8 to 657,1
22	176,5 to 205,9	421,7 to 451,1	539,4 to 578,6	608 to 647,2	843,4 to 882,6
24	235,4 to 264,8	539,4 to 568,8	706,1 to 745,3	784,5 to 823,8	1098,4 to 1137,6

## **EC CONFORMITY DECLARATION**

Business name and full address of the manufacturer:

OREC CO LTD  
548-22 HIYOSHI HIROKAWA-MACHI  
YAME-GUN FUKUOKA JAPAN  
S.A.T. sarl - Force 7 – ZA –  
38110 ROCHETOIRIN France  
owner of the technical documents

Designation : Ride-on brush cutter  
Mark : OREC  
Type : RMK151  
Serial Identification :  
Engine :  
- Manufacturer : Kawasaki  
- type : FS651V  
- Power : 16,4 kW  
Width of cut : 1500 mm  
Conforms to directives: 2000/14/EC, 2006/42/EC, 2014/30/UE  
Conformity assesment : 2006/42/EC Annex VIII  
Measured acoustic power level : 102,6 dB(A)  
Granted acoustic power level : 103 dB(A)  
Conformity assesment : 2000/14/EC Annex VIII  
Notified body n°0088: Lloyd's Register Quality Assurance  
71 Fenchurch street London EC3S 4BS UK  
Acoustic pressure level at operator's ears : 92,6 dB(A)  
Harmonized standards used : EN 12733:2018, EN ISO 14982-2009,  
EN ISO 3744-2010, EN ISO 3746-2010,  
EN1032-2003+A1-2008, EN ISO 20643:2008+A1:2012

made at : Fukuoka, 24 August 2020

Signed : Haruhiko Imamura  
Function : Managing director



## **MEASUREMENT OF VIBRATIONS**

Mark : OREC  
Engine : FS651V

Type : RMK151

Pick up location	Awp
Right side 60° from the axle of the steering wheel	3,12 m/s <sup>2</sup>
Left 60° from the axle of the steering wheel	3,40 m/s <sup>2</sup>
On the operator's seat	4,14 m/s <sup>2</sup>

