



## USER MANUAL

***Turbo 1   Turbo1W   Turbo 2   Turbo 4***

English version translated from original Italian version

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Attached:

- Wiring diagram
- Engine operator's manual

## 1 – IDENTIFICATION DATA

CE mark with the above data consists of an indelible label affixed on the rear right side of the body.  
The serial number of the machine is stamped on the front side of the right frame.  
Please indicate this number when requesting technical assistance or ordering spare parts.

Serial number .....



		 <b>Gianni Ferrari s.r.l.</b>		
				<small>GIANNI FERRARI s.r.l. Via A. Vespucci, 53 - Zona Ind. Ranaro 42046 Reggio (RE) Italy</small>
DES.	MACCHINA MULTIFUNZIONE PORTA ATTREZZI			
MOD.	<input type="text"/>	<input type="text"/>	kg.	<input type="text"/>
S/N.	<input type="text"/>	<input type="text"/>	kW.	<input type="text"/>



## 2 – TO OUR CUSTOMERS

- We are proud to welcome you amongst our customers.
- Before starting work, the operator should become thoroughly familiar with the instructions in this manual in order to use and service the machine in the best possible way.
- The machine has been designed and built in order to offer the best service in the most varied conditions. As always, the quality of the job will depend upon correct routine maintenance of the equipment.
- Contact the dealer for specific information and advice on matters not covered in this handbook. He will be more than happy to offer assistance regarding use and maintenance of the machine.

### 2.1 – USE RESTRICTION

**Turbo 1-1W-2-4 is a self-propelled multifunction tools carrier designed for a professional use.**

**The machine cannot operate or be transferred if it is not fitted out at least with one of the equipment described in this manual. The equipment must be produced by Gianni Ferrari or should be explicitly approved by Gianni Ferrari.**

**Use with other equipment (or without equipment) is to be considered improper and dangerous because it is not covered by our risks analysis.**

**Transport of other people (in addition to the driver), things or animals on the machine is not allowed.**

**The operator is responsible for improper use of the machine and for the use that does not comply with the instructions given in this manual.**



THIS SYMBOL IS USED TO DRAW YOUR ATTENTION TO THE SAFETY PRECAUTIONS WHICH MUST BE TAKEN BY THE OPERATOR TO AVOID ACCIDENT OR INJURY. PAY THE UTMOST ATTENTION WHEN YOU SEE THIS SYMBOL: YOUR SAFETY AND THOSE OF OTHERS WILL BE AT STAKE.



**The use of the protection structure ROPS with safety belts is always mandatory. The use of the protection structure ROPS does not allow to work on slopes higher than the maximum limit slope of 13° (23%).**

## 3 – OPERATOR'S RESPONSIBILITIES

- The operator must carefully read this manual and become familiar with the correct way in which to operate, lubricate and service the machine.
- The operator is responsible for inspecting the machine and must replace or repair those parts subject to continuous wear which could if neglected cause harm to others.
- The operator is responsible for any harm to third parties, to himself or to property resulting from improper use of the machine or by failure to comply with the instructions given in this manual.
- The machine has been designed for professional users and should only be used after an adequate training period. Never allow children or untrained personnel to use the machine. Never carry passengers, things or animals.

**Gianni Ferrari is willing to make specific training courses on the correct use of the machine**

- The operator must not tamper with the machine, or make modifications to it or to any accessories fitted, or fit any parts or equipment which have not been supplied by our company.
- Only use spare parts or accessories which have been designed and supplied by our company for the specific model in your possession. Please contact your retailer for further information. It is absolutely forbidden to make changes or to modify the machine other than in the ways expressly indicated in this manual.



THE OPERATOR MUST COMPLY WITH THE SAFETY INSTRUCTIONS GIVEN IN THIS MANUAL WHEN USING THE MACHINE.

**The user and the operator are responsible for accidents and hazards caused to other people and to their goods.**

## 4 – SAFETY REGULATIONS



### **THE PRUDENT OPERATOR IS THE BEST OPERATOR.**

Many accidents can be prevented by compliance with the instructions given in this manual. The machine must **ONLY** be used by professionally trained operators.

### **GENERAL INSTRUCTIONS**

- 1) Carefully read all parts of this manual.
- 2) Before starting work, always inspect all parts of the machine for any malfunction, loose bolts and screws, worn belts, blades and any other damaged or badly fixed parts. It is absolutely forbidden to use the machine unless it is in a perfect condition. Always carry out the recommended inspections and maintenance operations before use.
- 3) Become familiar with all parts and controls of the machine before starting up.
- 4) Never carry passengers on the machine and never allow children or untrained personnel to use it.
- 5) Ensure that the operating area of the machine clear of persons (other than the operator). Particularly check that there are no children, animals or obstructions nearby.

### **Never allow anyone to stand near the machine while it is working or manoeuvring.**

- 6) Only use genuine parts and accessories supplied by our company and never carry out or permit any modifications or changes to the machine. Contact your Dealer for information.

- 7) Ensure that the work area is clear of any object which could damage the machine or cause injury to any person, such as glass, metal, wood etc.

- 8) Replace all damaged, illegible or missing safety or warning decals and ensure that they are kept clean and legible. Check the list of decals in the relative safety section.

- 9) **Only** engage the PTO when sitting on the seat having checked for nearby persons and objects.

- 10) The operator must ensure that his/her hands, feet, clothing and hair are kept away from all moving parts.



WHEN USING THE MACHINE A WARNING BUZZER WILL SOUND TO INDICATE WHEN THE MACHINE IS REVERSING, COLLECTOR DUMPING, LIFTING AND DURING HOPPER RAISING AND LOWERING OPERATIONS. A SAFETY DEVICE WILL PREVENT THE COLLECTOR FROM BEING DUMPED, RAISED OR LOWERED WHILE THE PTO IS ENGAGED.

IT IS ESSENTIAL TO DISENGAGE THE PTO WHENEVER THE MOWER DECK OR OTHER ATTACHMENT WITH SPINNING BLADES ARE RAISED.

- 11) Never use the machine without first checking that all guards and covers are serviceable and in their correct positions.

- 12) If the machine hits or drags up an object, immediately stop it, put on the parking brake, switch off the engine, remove the key, disengage the PTO, rest the machine on the ground and check all parts. Before restarting check that conditions have been reset for optimum machine operation.

- 13) When the machine is not in use, disengage the PTO, lower the attachment allowing it to rest on the ground, switch off the engine, remove the key and set the parking brake.

- 14) When moving to another location out of the operating area, disengage the PTO and keep the attachment as indicated in the manual relating to the attachment itself. If the machine is homologated for driving on roads, please verify with which attachments the circulation is allowed and remember to comply with the rules pertaining to the Country in which you are operating.

- 15) Never dismount from the machine whilst any part is in motion or when the engine is running.

- 16) Never switch on the engine in a closed place or without adequate ventilation. Exhaust fumes are toxic.

- 17) Never allow work with flames or sparks to be carried out near the fuel tank or the battery. Leave the engine cooling before parking the machine in closed places. If you have to empty the tank from fuel, execute this operation outdoor.

- 18) Never park the machine on a downward slope. If this is necessary for short periods and with the possibility of a visual control, try to park transversally to the slope and check that the parking brake is engaged. However, follow the limits that are specified in the next pages.

- 19) Always use the machine and attachments at a speed compatible with safety requirements.

**20) OPERATING ON SLOPES:**

**ALWAYS TAKE GREAT CARE WHEN USING THE MACHINE ON SLOPES. AVOID AS MUCH AS POSSIBLE WORKING TRANSVERSALLY ON THE SIDE.**

**REDUCE SPEED TO A MINIMUM AND REST THE ATTACHMENTS ON THE GROUND, EVEN WHEN TRANSPORTING THE MACHINE TO ANOTHER LOCATION.**

**THE MAXIMUM SLOPE ON WHICH THE MACHINE MAY BE USED MUST NOT EXCEED 23% (13°).**

**AVOID OBSTRUCTIONS AND IRREGULAR GROUND WHICH COULD AFFECT THE STABILITY OF THE MACHINE.**

**DO NOT STOP OR START THE MACHINE SUDDENLY.**

**AVOID SUDDEN TURNS.**

**NEVER USE THE GRASSCATCHER HIGH DUMP ELEVATOR WHEN WORKING ON SLOPES.**

21) Always wear suitable clothing when using and servicing the machine: goggles, gloves, shoes and other protective garments.

22) Use the machine during daylight only or with good artificial light.

23) Do not modify the setting of the speed and of the rpm of the engine.

24) **In conclusion, pay attention to all hidden dangers not expressly mentioned in this manual in order to ensure both your own safety and that of others.**



THE MACHINE MUST BE REFUELLED IN THE OPEN OR IN A SUFFICIENTLY WELL VENTILATED PLACE. THE ENGINE MUST BE SWITCHED OFF AND THE AREA MUST BE WELL CLEAR OF NAKED FLAMES AND SPARKS.

ENSURE THAT DIESEL FUEL IS USED IF MACHINE IS POWERED BY A DIESEL ENGINE.

**Safety devices**

The machine is equipped with the following safety devices:

***The electric horn sounds:***

1. when the hand brake is on and the unit is advancing
2. when the coolant temperature is too high
3. by manual operation with pushbutton
4. when the hydraulic oil temperature is too high

***The buzzer sounds:***

1. when the unit is going in reverse
2. during grasscatcher dumping
3. during grasscatcher lifting

***The engine does not start when:***

1. the hand brake is not on or when the operator is not seated on the seat
2. the PTO is engaged
3. forward and reverse pedals are not in neutral position

***The engine turns off:***

1. at any time when the operator stands up or takes his/her weight off the seat
2. during grasscatcher dumping or lifting when the PTO is engaged
3. if the body is open

In order to keep the engine running when the unit is stationary and in neutral the PTO must always be disengaged and:

- a. either the hand brake shall be engaged,
- b. or the operator is on the seat.



“The operator can work only if all these devices are operating. He must control their correct operation at least once a week according to the under reported description”.

- Check the above described function of the electric horn and of the buzzer
- Check the non-starting of the engine in each of the 3 described conditions. It is important for safety that the test with operator out of place and with absence of hand brake is executed on a level ground and with the operator standing little up from the seat itself.
- Check the engine switching off in every of the 3 described conditions. It is important for safety that the test with operator out of place is executed on a level ground and with the operator standing little up from the seat itself.

## 5 – TECHNICAL FEATURES

MODEL	Turbo 1 (1W)	Turbo 1T (1WT)	Turbo 2 (2T)	Turbo 4 (4T)
ENGINE	KUBOTA V1105	KUBOTA V1105T	KUBOTA V1505 (V1505T)	KUBOTA V1505 (V1505T)
DISPLACEMENT	1123 cc	1123 cc	1498 cc	1498 cc
KW	20.6	24.5	26.5 (33)	26.5 (33)
N° CYLINDER	3	3	4	4
R.P.M.	3000	3000	3000	3000
TYPE	4 – DIESEL	4 – DIESEL	4 – DIESEL	4 – DIESEL
FUEL TANK CAPACITY	25 lt.	25 lt.	40 lt.	40 lt.
WEIGHT TRACTION UNIT	700 (740)	700 (740)	800 (820)	860 (880)
GROUND CLEARANCE	cm. 17	cm. 17	cm. 17	cm. 17
TWO FRON WHEELS DRIVE	23x10.50-12	23x10.50-12	24x12-12	24x12-12
TWO REAR WHEELS	16x6.50-8(750-8)	16x6.50-8(750-8)	20x10-8	20x10-8
FORWARD SPEED	0-18 KM/H	0-18 KM/H	0-20 KM/H	0-18 KM/H
REVERSE SPEED	0-9 KM/H	0-9 KM/H	0-10 KM/H	0-9 KM/H
CONNECTIONS FOR PROTECTIVE STRUCTURE ROPS	SI	SI	SI	SI
PROTECTIVE STRUTTURE ROPS WITH SAFETY BELTS	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL

A specific manual for use & assembly of the protective structure ROPS complete with safety belts is available.

### Hydrostatic transmission with variable displacement pump

- Front axle with piston hydraulic transmission fixed on the differential gear with final drives in oil bath; differential lock; disc brakes
- Rear axle with piston hydraulic transmission (Turbo 4 only) fixed on the steering differential gear with cascade final drives in oil bath
- Turbo 1W: rear axle with 2 orbital hydro motors

### Steering and controls

- Steering wheel with hydraulic power steering;
- Forward and reverse with separate pedals;
- Service brake by means of hydraulic transmission; parking and emergency disc brake controlled by pedal.

### PTO

- Manual engagement with belt tensioning system;
- Transmission with quick coupling telescopic cardan shaft;
- Automatic safety braking on shaft rotation on disengagement;
- Rotation speed: 2900 rpm.



**Front attachment coupling**

- 2 arms with 2 cylinder hydraulic lifting system.

**Grass collection**

- Central intake by means of a turbine.

**Electrical system**

- 12 V 75 Amp battery.
- Electric starter, hour meter
- Safety microswitches
- Grass distributor control motor
- **Warning buzzer to indicate full load, reverse motion, elevator operation and collector dumping**

**OPTIONS**

- 1.100 litres capacity with 80 kg weight, hydraulically lifted grasscatcher (900 litres with 70 kg weight for Turbo1). Rear automatic opening during grasscatcher dumping. Internal distributor, movable by electrical control. Full load warning buzzer.
- Hydraulic grasscatcher elevator discharging up to 220 cm. 115 Kg weight.
- Lighting set
- Protective structure ROPS with safety belts (100 Kg)
- Roof for rain or sun protection . 40 Kg weight.

**ACCESSORIES**

- **Flail Mower TEG1600** 150 cm working width. 200 kg weight.
- **Flail Mower TEG 1200** 120 cm working width. 170 kg weight.
- **Sweeper TS 150** With two side brushes, hydraulic control and center suction. 150 cm working width. 40 kg weight.
- **Sweeper SMG cm. 150** With two side brushes, hydraulic control and two central counter-rotating brushes, mechanical transmission. 150 cm working width. 115 kg. weight.
- **Water sprayer system for TS 150** With two water tanks holding total 100 litres and 3 sprayers nozzles. 32 kg. weight with empty tanks.
- **130 or 150 cm. mower deck– Central discharge** For grass collection.  
Mechanical gear box in oil bath.  
2 disks with 8 articulated impact-proof blades.  
130 or 150 cm. cutting width.  
Cutting height adjustable from 2 to 8 cm one level.  
Dumping device for cleaning and maintenance operations.  
146 kg or 170 kg weight.
- **130 cm. mower deck– Side discharge** Side discharge grass clippings. Mechanical gear box in oil bath. 120 kg weight.
- **165 cm. mower deck-Rear discharge w/o pick-up** Rear discharge grass clippings, 4 disks with 16 articulated impact-proof blades. Mechanical gear box in oil bath. Cutting height adjustable from 2 to 8 cm one level. Dumping device for cleaning and maintenance operations. Optional kit mulching. 200 kg. weight.
- **150 SM mower deck** Side discharge grass clippings. Three blades' belt transmission. 150 cm cutting width. Cutting height adjustable from 2 to 8 cm one level. Dumping device for cleaning and maintenance operations. Kit mulching included. 149 kg. weight.



- 130 cm. mower deck-Rear discharge w/o pick-up**      With rear discharge grass clippings, 3 disks with 12 articulated impact-proof blades. Mechanical gear box in oil bath. Cutting height adjustable from 2 to 8 cm one level. Dumping device for cleaning and maintenance operations. Optional kit mulching. 160 kg weight.
- Snow blower**      130 cm two stages. Hydraulic orienting chute. 160 kg. weight.
- 150 cm. snow blade**      150 cm. working width with hydraulic positioning. 122 kg. weight.
- 100 cm. aerator**      With bladed rotor. Working width 100 cm. 90 kg weight.
- Anti-dust drum filter**      Composed by two rotating drums. It is self cleaning through a an hydraulic motor at each collector dumping. 75 kg weight.

## 6 - DIMENSIONS

Dimensions expressed in cm in the different configurations:

	TEG 1200	TEG 1600	TS 150	deck 130	deck 150	deck 165	Snow Blade	Aerator	150 SM	SMG 150	TURBINE
<b>Turbo 1</b>											
Lenght	320	-	317	302	313	307	317	291	290	315	350
Width	146	-	140	133	153	165	150	125	170	150	130
*High	169	-	169	169	169	169	169	169	169	169	169
<b>Turbo 2-4</b>											
Lenght	345	345	342	327	338	332	342	316	315	340	375
Width	146	175	140	133	153	165	150	125	195	175	175
*High	172	172	172	172	172	172	172	172	172	172	172

\* High with Rops = cm 200, high with Rops and with flashing light up = cm 223

## 7 - TRANSPORT

The following operation must be executed with engine switched off.

Lifting must be carried out by fixing suitable slings in three positions (2 in the front side of the machine, see picture on the left; 1 on the rear side, see picture on the right).

The machine may be transported either unpackaged or palletized and wrapped in heat-shrunk polyethylene. It must be firmly fixed and fastened to the transporter loading platform.

It is also necessary to ensure that the parking brake is engaged and all wheels are chocked. Tow system: see chapter 9



## 8 – CONTROLS AND INSTRUMENTS

### IN EMERGENCY CONDITION:

To stop every movement turn the counter clockwise

For blades and turbine movements release the PTO lever.

To stop other movements it is enough leaving the driving control that will return to the neutral position.

As it concerns the emergency braking please see chapter 5.

1 Steering wheel

2 Starter key

3 Central control panel (see following pictures)

4 Side control panel (see following pictures)

5A Parking brake pedal

5B Brake pedal (Turbo 2 only – equipped with lighting set)

6 Reverse pedal

7 Forward pedal



8 Differential lock

9 PTO engagement button

10 Throttle lever

11 Hydraulic controls levers.

12 Mirror (supplied only when the lighting set is equipped)

13 Speed selection lever (Turbo2 only)

### Central control panel

- 1 Battery alternator
- 2 Oil pressure
- 3 Coolant max temperature
- 4 Oil filter clogging
- 5 Glow plugs preheating
- 6 Fuel stock
- 7 Air filter clogging (only for Lombardini engine)
- 8 Direction indicator
- 9 Side light (\*)
- 10 Lower beams (\*)
- 11 Start
- 12 Stop
- A Rotoalarm (\*)
- B Emergency flashing (\*)
- C Horn + arrows selector



(\*) Operating only on machines equipped with lighting set

### Side control panel

- 1 Fuel level
- 2 High temperature hydraulic transmission oil warning light
- 3 Slow/fast speed control (Turbo 2 only)
- 4 engine RPM counter with hour-meter
- 5 Engine coolant temperature



### SPEED SELECTOR TURBO 2

The selector provides 2 speeds:

**SLOW** (turtle – lifted lever position) – Speed from 0 to 9 KM/H – this position should be used in working operations, only when cutting grass, when transferring at low speed is advisable or when a high climbing capacity is requested (for ex. machine loading with loading ramps)

**FAST** (hare – lowered lever position) – Speed from 0 to 18 KM/H – this position should be used when moving.

It is possible to shift from SLOW to FAST speed and viceversa even during advancement.

**Note:** if the fast speed has been selected and the pto has been engaged the machine will be put in slow speed automatically. Pto disengagement will put the machine back in high speed automatically.



## 9 – STARTING AND USING THE MACHINE

### Seat adjustment

The comfort seat can be adjusted in the following positions:

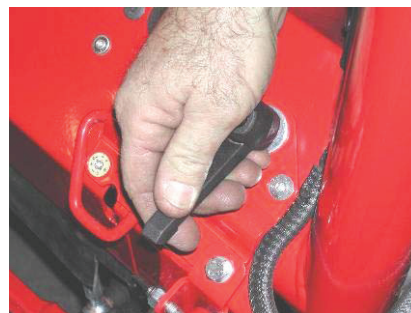
- Adjustment according to the operators weight - knob 2. Weight indicator 3. When using the machine on slopes adjust the weight 10-20 kg. less than the operator's weight. This prevents the engine from stopping due to the seat safety switch actuation.
- Turbo 2-4 only: Vertical adjustment (3 settings). Carry out this operation when the operator is not seated, lifting the seat a little then stop; to lower the seat, first lift it as high as it will go and then release.
- Horizontal adjustment - knob 1
- Seat back inclination adjustment - knob 4

Adjust the seat to the operator's requirements as described above.



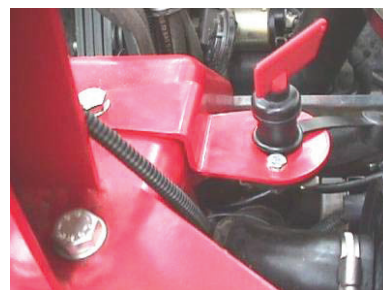
### Steering column adjustment

After having adjusted the seat, adjust the steering column by slackening the knob as shown in the picture. Once the correct position has been found, tighten the knob.



### To start the engine:

- Set the battery-saver cutoff switch (photo on the right) in position ON (turn clockwise). At the end of job it is advisable to put it back in position OFF (turn counterclockwise).
- Take your place on the driving seat
- Check that the PTO and the turbine button (1) is disengaged (fully forward position)
- Check that the forward and reverse pedals 2 and 3 are in the neutral position
- Check that the parking brake 4 is engage



- Bring the accelerator lever 5 to about 1/4 of its travel and start the engine by turning the key 6 to starting position. If outside temperature is less than 10°C, leave the starter switch in "preheating" position for about 7 seconds, then turn it to "start".
- Keep the engine switched on for a some minutes before to moving the machine**
- For a more correct procedure, operators are advised to strictly comply with the instructions given in the engine Operator's Manual.



### To start the machine:

- Disengage the parking brake 4 at the same time applying the brake pedal and the lever located on the left side of the pedal itself (see side picture).
- Set the accelerator lever 1 to about 1/2 of its travel.
- Push the forward pedal 2, marked by a forward arrow, to start the machine at a speed proportional to pedal travel. Use this method to select the required advancement speed, according to the work conditions in question.
- Push the reverse pedal 3, marked by a reverse arrow, to start the machine in reverse motion at a speed proportional to pedal travel.



**WARNING: DRIVE AT LOW SPEED UNTIL YOU HAVE BECOME FAMILIAR WITH THE HANDLING OF THE MACHINE. KEEP OTHER PEOPLE AND ANIMALS AT A SAFETY DISTANCE (5-10 mt).**

- Advancement direction is set by means of the steering wheel. During advancement, the machine turns right by turning the steering wheel clockwise, the machine turns left by turning the steering wheel counter-clockwise, as for most motor vehicles.
- Release the forward or reverse pedal to stop the machine;
- Before leaving the seat, engage the parking brake 4, pushing the pedal until locking lever engagement.

### Use of the front attachment lift

To operate the front attachments lift, the operating lever is the outermost lever located to the right of the drivers seat.



In the fore and aft setting the lever is neutral and is intended to lock the attachment, providing that the position is maintained.

Pull the lever as shown in the above pictures to lift the attachment. Pull it until the operation is completed. **DO NOT OPERATE BLADES WHEN THE ATTACHMENT IS LIFTED.**

Forward lever setting allows the attachment to be floatable, this means it suits to the ground structure.



**IT IS IMPORTANT TO COMPLY WITH THE GENERAL SAFETY RULES DESCRIBED FOR THE USE OF THE MACHINE, THAT ARE:**

- Do not allow anyone to get on the machine.

- Operate a safe distance away from persons.
- Keep hands, feet and clothing far from all moving parts.

#### **To start the PTO and pick-up turbine:**

- Set the throttle lever at  $\frac{1}{4}$  of its travel to engage the PTO.
- Attachment blades and intake turbine move at the same time by engaging PTO button .
- Set the throttle lever from  $\frac{3}{4}$  to  $\frac{4}{4}$  of its travel depending on the working conditions. Do not set it down  $\frac{3}{4}$  of its travel to have a good operation of cutting and intake equipment.

**PTO ENGAGEMENT  
BUTTON**



- Verify that the collected grass distribution system is working. It is possible to verify the operation of the electric motor easily (see paragraph "Main maintenance and operations").
- During operation grass is automatically intaked and accumulated in the rear grasscatcher.
- When the grasscatcher is full a buzzer located on the container and a signal light located on the side control panel are activated (see photo). At this point you need to stop immediately the machine and disengage the PTO to stop the grass flow and avoid the conveyor or chute obstruction, to disengage the PTO press the yellow button as shown in the below picture





### Grass dumping:



Operate the respective lever as shown on side picture in order to dump by means of the grasscatcher hydraulic rams. The lever to be used is either the central one if the distributor is equipped with 3 levers (machine with elevator), or the one nearest to the operator if it is equipped with 2 levers (machine without elevator).

The lever is neutral

when set in vertical position.

To unload the grass, pull the lever until the operation is completed.

To set the grasscatcher in its normal position, push the lever forward until the operation is completed.



- COLLECTOR DUMPING IT IS POSSIBLE ONLY IF THE PTO IS OFF.
- HOWEVER CRUSHING RISKS FOR THE USER AND FOR OTHER PEOPLE NEAR THE MACHINE PERSIST.
- DO NOT ALLOW ANYONE TO GET ON THE MACHINE.
- OPERATE A SAFE DISTANCE AWAY FROM PEOPLE.
- KEEP HANDS, FEET AND CLOTHING FAR FROM ALL MOVING PARTS.

The lever 1, that keeps the door closed, automatically releases allowing the door to open and lock again when the grasscatcher is lowered. Simply press the lever from the rear side to open the grasscatcher door when the machine is stopped and the grasscatcher is lowered.



THE GRASSCATCHER IS EQUIPPED WITH A SAFETY DEVICE FIXING THE DOOR IN OPEN POSITION. TO AVOID INJURY OR DAMAGE TO PERSONS OR OBJECTS DUE TO ACCIDENTAL CLOSING OF THE DOOR IT IS IMPERATIVE THAT THE SAFETY DEVICE IS USED AT ANYTIME THE OPERATOR NEEDS TO KEEP THE DOOR OPENED, FOR EXAMPLE DURING MAINTENANCE AND CLEANING OPERATIONS OR ANY OTHER CASE.

MANUALLY UNLOCK THE SAFETY DEVICE AND LOWER THE DOOR UNTIL IT LOCKS WITH THE LOCKING LEVER TO CLOSE THE DOOR AND RESTORE WORKING POSITION.





### Unloading with elevator

The machine equipped with an elevator (see chapter 13) allows grass unloading by lifting the grasscatcher up to 210 cm in height.

Operation is achieved by using the lever located on the right side of the operators seat to operate the grasscatcher hydraulic lift (elevator): vertical setting is neutral, lift occurs when moving the lever backwards while the grasscatcher is lowered by moving the lever forwards.

When the grasscatcher reaches the desired height, which can be lower than the maximum height available, unload it by pulling the central lever backwards.

Restore working position by proceeding in the opposite way.



OPERATE THE ELEVATOR ONLY WHEN THE MACHINE IS STOPPED AND IN POSITION OF MAXIMUM STABILITY - DO NOT OPERATE THE ELEVATOR ON SLOPES. DURING LIFT AND LOWER OPERATIONS OF THE ELEVATOR ADVISED BY A WARNING BUZZER THERE IS SHEARS RISK OF HAND AND ARMS

Always comply with safety rules described for the use of the machine that are:

- Do not allow anyone to get on the machine.
- Operate a safe distance away from persons.
- Keep hands, feet and clothing far from all moving parts.

### Cut grass direct discharge

The device that keeps the door opened is equipped with an intermediate position as shown in the photo. According to operator's requirement this lock allows the door to remain partially opened during work in order to discharge cut grass from the back.



### Using the differential lock

In case of little friction, when a front wheel skids, it is recommended to insert the front differential lock by pushing the suitable pedal. Keep on pushing the pedal until friction is restored. The lock automatically disengages by releasing the pedal. In case this does not occur lightly turn the steering wheel right and left till unblocking occurs. Turning when the lock is engaged causes the wheels to creep and turf tearing.

### To move the machine when the engine is not working:

The wheels of the machine are connected by gears to the hydraulic transmission units and are therefore locked when the engine is not working.

To move the machine when the engine is not working it is necessary to be on a levelled ground.

Proceed in the following way to move the machine in these conditions:



- engage the parking brake
- **Turbo 1, 1W, 2, 4** (photo on the left ): fully turn in (clockwise) the screw wheel on the left side of the seat, to the end of its travel.
- This operation releases the hydrostatic transmission enabling the machine to be moved, having disengaged the parking brake
- Disengage the parking brake. Pay particular attention if operating on slopes.
- Fasten a suitable draw-rope to the hook fixed on the frame of the mowerdeck

- Tow the machine at a speed not higher than 3-4 KM and if possible only for short distances.
- When the transmission release is no longer necessary, reset normal operation in this way:
- Turbo 1,2,4 by turning the screw wheel back to its original position (fully unscrewed).
- Turbo 1W by screwing first the allen screw then the lock nut till full tightening
- Drawing not according to the previous instruction can seriously damage the hydrostatic transmissions.

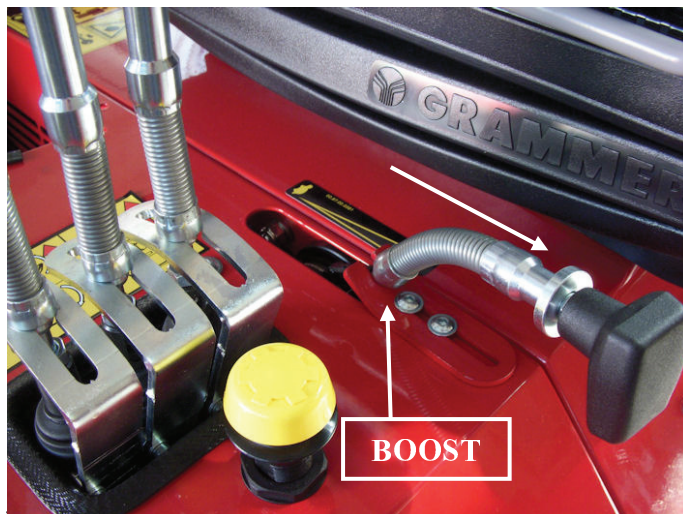


**WARNING! REMEMBER TO RESET THE UNLOCKING SCREW TO ITS ORIGINAL POSITION HAVING COMPLETED THE MANOEUVRE IN ORDER TO KEEP THE MACHINE BRAKED AND THE TRANSMISSION ENGAGED.**

### ECO – DRIVE device

During the normal operation phases the machine should be use in ECO-MODE. This to optimize fuel consumption, noise level and length of the wear parts (blades, belts). In this mode, the turbine, the blades and the belts, run at rotation speed less than maximum R.P.M. to operate in Eco mode push forward the throttle lever until it stops.

In BOOST mode, the blades, the belts and the turbine turn at maximum R.P.M. This mode is recommended in situation of very heavy work. The fuel consumption and the noise level is about 15% more than the Eco mode. To operate in the BOOST mode, move the throttle lever until it stops; lift and push forward the same to complete its run



## 10 – INSPECTION AND MAINTENANCE

**Note:** the bodywork must be opened in order to carry out the majority of the described inspections. Proceed in the following way:

- a) Dump the grasscatcher
- b) Switch off the engine
- c) Set the steering column in the vertical position
- d) Free the bodywork locking hooks
- e) Lift the bodywork

Proceed in the opposite way to close the bodywork



CHECKING OPERATIONS MUST BE EXECUTED BY EXPERT PERSONNEL. THE MACHINE MUST BE PLACED ON A LEVELLED GROUND WITH PTO DISCONNECTED AND PARKING BRAKE INSERTED. THE ENGINE (WHERE IT IS NOT PRECISELY SPECIFIED) MUST BE STOPPED AND THE KEY MUST BE REMOVED.

IF A FAULT IN THE HYDRAULIC SYSTEM OCCURS OR IF IT IS NOT POSSIBLE TO START THE ENGINE:

Bring the lever to lift position (pull it backwards and keep this position by means of a tool as shown in the side picture) while manually lifting the grasscatcher.



### When the elevator is lifted:

proceed in the following way to lift the bodywork when the elevator is lifted:

- 1) Remove the pins that keep the two safety knobs and place them as shown in the picture to prevent accidental descent of the lifting system.
- 2) Set the roll bar from horizontal to vertical position and lock it by means of the respective pins.
- 3) Lift the bodywork.

Opposite procedure is to restore machine original setting:

- 4) Close the bodywork.
- 5) Release the two safety knobs and bring them to their original position fixing them by means of the respective pins.
- 6) Bring the roll-bar to its original position and fix it by means of the respective pins.

### Grasscatcher

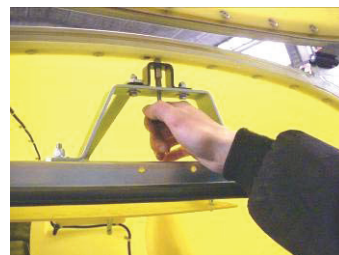
The grasscatcher contains the grass distributor connected with the the relevant acoustic warning signal.

Since only the correct operation of this device is able to guarantee the maximum efficiency of the loading system, it is advisable to carry out prior inspections with the engine at standstill before using the machine.

- Open the rear door of the grasscatcher positioning the safety device
- Engage the PTO lever
- Turn the starter key to its first position.

The device should now start. Just touch the relative central sensor to activate the alarm buzzer. No particular adjustment is required except for thorough cleaning. Remember to disconnect the PTO and to remove the key when the operation is completed.

A net to filter the exhaust air from the grass collection system is inside the grasscatcher. This protection reduces cleaning to a minimum, however always check that the net does not become clogged. Cleaning the net is very easy: simply remove





the net from its supporting brackets as shown in side pictures. First remove the locking hook and then slide out the net.

### Engine

ANY OPERATION WITH THE ENGINE WORKING IS RESERVED TO SPECIFIC PERSONNEL AND IT REQUIRES THE DISCONNECTION OF A SAFETY DEVICE THAT MUST BE ALWAYS RESTORED.

DO NOT MODIFY THE SETTING OF THE SPEED REGULATOR.

ALWAYS REPLACE THE DAMAGED MUFFLERS.

To correctly use and check the engine, operators are strongly advised to thoroughly read the instructions give in the Use and Maintenance Manual for the specific engine in question.

### Cleaning the engine radiator and the radiator guard

To protect it against clogging by grass, scraps and other debris, the radiator of the diesel engine is protected by an easily removable mesh guard.

The radiator and the radiator guard should be thoroughly cleaned at regular intervals with compressed air. These intervals should be more frequent in case of heavy duty conditions.



If coolant temperature is  $> 100^{\circ}$  or the max. temperature acoustic buzzer sounds, immediately stop working, let the engine run at low speed for a few seconds before turning it off and immediately clean the net and the **radiator itself**.



### Cleaning the hydraulic oil radiator guard

To protect it against clogging by grass, scraps and other debris, the hydraulic oil radiator is protected by an easily removable mesh guard.

The protective net should be thoroughly cleaned at regular intervals with compressed air. These intervals should be more frequent in the case of heavy duty conditions.

If the oil max. temperature warning light is on (chapt. 8 – side control panel) and/or the acoustic buzzer sounds, immediately stop working, clean the net and the **radiator itself** and check correct operation of the electric fan. Contact the Service Dept. if the problem still exists.

### Air precleaner maintenance

Air filter is protected by a self-cleaning precleaner located above the same filter. The precleaner shall be cleaned at least once a year. Procedure: remove the fixing screw placed of the cover, remove the cover and check that the fan turns freely.

### Greasing

Parts requiring periodical greasing have been kept to a minimum and ample use has been made of hermetic bearings or sealed boxes with mechanism in oil baths. The machine lubricators, which require maintenance every 50 hours approx., are located in the following points:

- Lifting pin bushing (No. 2)
- PTO control lever (No. 1)
- PTO idler support (No. 1)
- Pedals (No. 3 under the platform)
- Differential lock lever support (No. 1 under the footrest)

It is also advisable periodically to lightly grease the telescopic splined part of the universal coupling of the mower deck.



### Lubricating the mechanical transmission units

The machine is fitted with 2 transmission units: a front one and a rear one (Turbo 4 only).

During normal operating conditions it will not be necessary to check the oil level. If necessary however, this can be inspected (eg. If the machine has remained inactive for a long period of time):

FRONT AXLE (picture on the left)

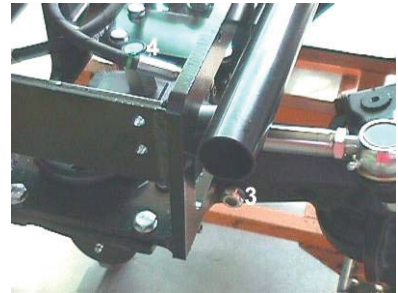
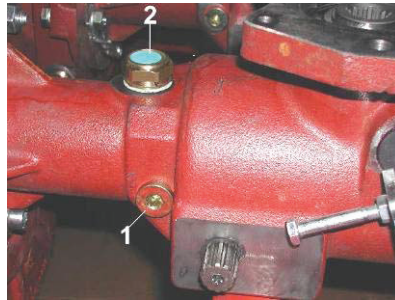
Check through level cap 1.

If required refill through cap 2.

REAR AXLE Turbo 4 only (picture on the right)

Check through level cap 3.

If required refill through cap 4.



It is advisable to periodically check the outer parts of the machine in order to identify any oil leaks. The machine can thus be repaired before more serious damage occurs. Oil quantity and quality: see chapter 17.

### Belts and tensioners

Check the condition of the transmission belts after every 50 work hours. The belts must be immediately replaced if they become cracked or considerably worn.

The transmission belts tensioner has take-up springs which do not require adjustments.

During maintenance or cleaning operations, always take great care to prevent the belts from being wet and dirtied with grease, petrol, or other substances which could damage them and dramatically shorten their life.



TO GUARANTEE MAXIMUM EFFICIENCY IN HEAVYDUTY WORK CONDITIONS, THE BELTS ON THIS MACHINE ARE SPECIAL TYPES.  
ALWAYS USE GENUINE SPARE PARTS IN ORDER TO ENSURE THE SAME OPERATING LIFE AND RELIABILITY.

### Automatic PTO safety lock

The PTO has a safety device that automatically stops it from spinning by inertia when it is disengaged.

Use the rod 1 when adjusting the stops.

Maximum stop time shall be 5 sec.



### Hydrostatic transmissions

It is advisable to check the oil level in the transmission units every day through the transparent window 1 located on the side of the tank.

If oil drains out, immediately repair the unit to avoid damage to the transmission units.



The hydraulic system is equipped with 2 filters :

- a) an **intake filter** (picture on the left). When it becomes clogged the 2 following devices will indicate this situation:
- The respective warning light located on the control panel (chapt. 8 Central control panel - Point 4)
  - Ring shaped indicator on the filter (side picture point 1). Check is possible only when the engine is running. When the ring is green this means that the filter is suitable, when it is red the filter is clogged and has to be replaced.
- b) a **delivery filter** (figure on the right) placed between the oil tank and the pump.

Oil quantity and quality: see chapter 17.



#### **Forward and reverse motion pedal**

When they are not depressed, the forward and reverse motion pedals will be coupled and the machine is at a standstill. If this does not occur, operate by means of a T-spanner d.13 as shown in the picture.



#### **Hoses and unions**

Hoses and unions do not require any maintenance operation. Check the tightness of the unions where oil leaks occur.

#### **Parking brake**

The parking brake is the disc type with mechanical jaw. Periodically check correct brake operation: engage the brake and try to move the machine at about 1/4 of the accelerator travel. Brakes work correctly when the machine stops or advances at a very low speed. Adjust the jaws when the machine advances with ease. Adjust control 1 to adjust brake pads.

This operation must be carried out on both the right-hand and the left-hand brakes.





Replace the disc pads and eventually the discs if worn.

### **Wheels**

Periodically check the pressure of the tyres. The correct pressures are specified on the schedule “maintenance operations” (see chapter 17) and on the proper labels situated near the wheels.

Replacement of wheels:

- go on a flat and steady area
- stop the engine
- insert the parking brake
- unloose the screws of the wheels to be replaced
  
- place a suitable lifting mean (having in mind the weight of the unit) on the points shown in the pictures (left picture for rear wheel, right picture for front wheel)
- remove the screws and replace the wheel
- to reinstall the wheel proceed inversely
- **tighting torque of the front screws (14 x 1,5-10.9): 200 Nm.**
- **tighting torque of the rear screws (12x1,25-10.9): 125 Nm**



### **Intake turbine**

The intake turbine is the most important component of the collecting system. It is assembled on the inner side of the frame and takes the cut material from the front attachment to the grasscatcher by turning according to the engine speed. If the outlet becomes clogged, stop the engine, remove the ignition key and clean the intake and outlet ducts.

Blades are removable; replace them when worn: remove the front attachment and the conveyor, unscrew the two fixing screws cleaning the intake carefully. Operate with a screwdriver and replace the blade. It is advisable to replace all 6 blades and the relative screws to maintain better balancing of the rotor.

### **General cleaning**

It is strongly advisable to use compressed air when generally cleaning the machine. Avoid use of pressurized jets of water, steam, naphtha, petrol, solvent and similar. These products will damage many components, particularly the transmission belts and the electric wiring.

### **At the end of the season**

Check all parts of the machine according to the operations listed in this manual.

Order any required spare parts so as to ensure that the machine is in perfect running order at the start of the next season.



## 11 – HYDRAULIC LIFT FOR FRONT ATTACHMENT

### Technical features

The machine is equipped with a hydraulic front lift. It is composed of an oloedynamic pump assembled in parrallel on the hydrostatic transmission, acting through the distributor on two pistons which are able to lift the front attachment .

### Use

See chapter 9.

### Maintenance

No particular maintenance is required. Just periodically check the oil quantity in the circuit.

This is done by checking the level through the transparent indicator at the side of the tank. The indicator shows the oil level.

Oil quantity and quality: see chapter 17.



## 12 – HYDRAULIC COLLECTOR DUMPING (OPTION)

### Technical features

Hydraulic collector dumping system is formed by two pistons that connected to a system starts the above mentioned operation

### Use

See chapter 9.

### Maintenance

No particular maintenance is required. Just periodically check the oil quantity in the circuit as already described in the previous chapter.

Oil quantity and quality: see chapter 17.

## 13 – HYDRAULIC COLLECTOR ELEVATOR (OPTION)

### Technical features

The hydraulic collector elevator is controlled by the pump which, by acting on a pair of hydraulic pistons hinged to the base of the uprights, allows the collector to be lifted whilst maintaining its original horizontal position.

Another pair of hydraulic pistons dumps the container independently from the elevator positions.

### Use

See chapter 9.

### Maintenance

No particular maintenance is required. Just periodically check the oil quantity in the circuit as already described in chapter 17.

Oil quantity and quality: see chapter 17.

Specific maintenance consists of periodical greasing (after about 50 hours) by means of the grease nipples located

- a) on the lower and upper hinges of the two lifting system rods.
- b) On the two hinges of the grasscatcher supporting frame.
- c) On the hinges of the four pistons.

## 14 – ACOUSTIC LEVEL AND VIBRATIONS

The following figure indicates the values obtained from experimental tests.

	<b>TURBO 1, 1T, 1W, 1WT</b>	<b>TURBO 2 – 2T</b>	<b>TURBO 4 - 4T</b>
(1) LAeq - dB (A)	90	90	90
(2) LWAM- dB (A)	105 (*)	105 (*)	105 (*)
(3) VIBR. Steering wheel – m/s <sup>2</sup>	Axial 4,2 Radial 2,9	Axial 4,2 Radial 2,9	Axial 4,2 Radial 2,9
(3) VIBR. Operators' seat and feet- m/s <sup>2</sup>	<0,5	<0,5	<0,5

(1) Acoustic pressure level to the operator's seat

(2) Acoustic power level

(3) Vibrations (weighted root-mean square value)

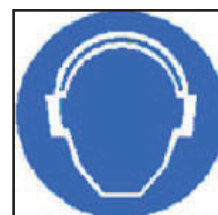
(\*) Multifunction machine with power higher than 20kW (gross value)

Tests performed in open lawn with connected equipment. The quoted figures are the highest ones surveyed on the various equipments.

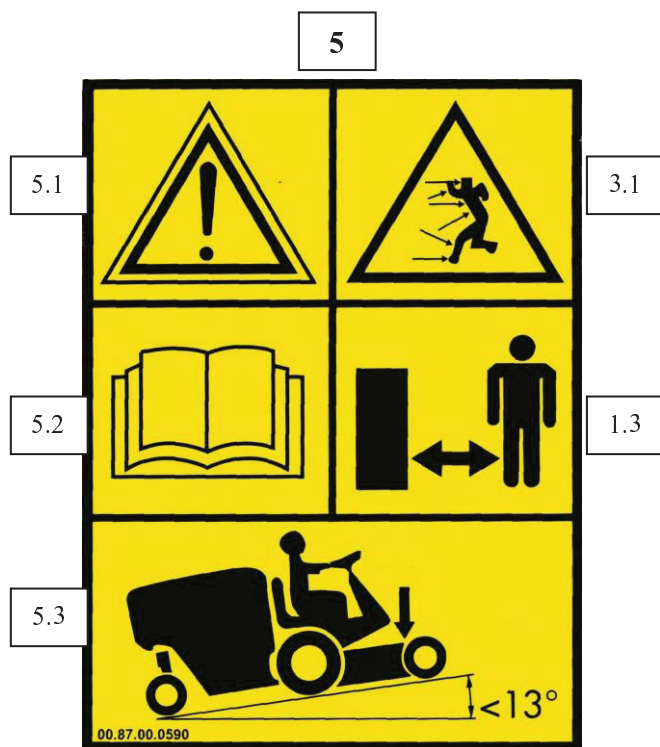
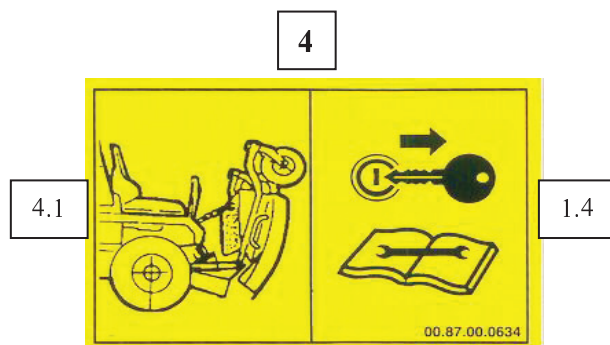
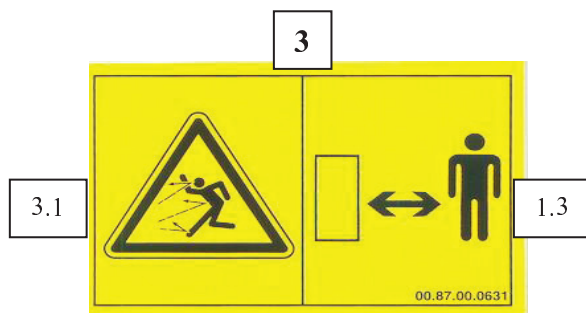
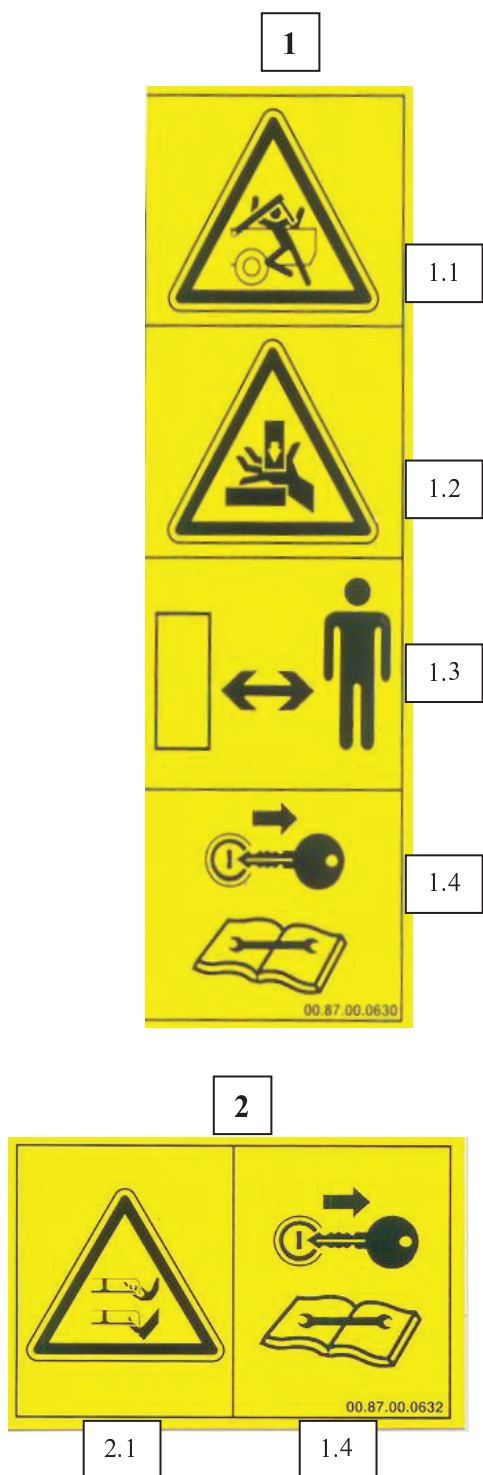
The values are been taken in ECO mode



It is recommended the use of Personal Protective Equipment PPE, ear muffs or plug



**15-SAFETY LABELS**



- 1-
  - 1.1 Shears risk to hands and arms when the high dump elevator and the grass catcher are working.
  - 1.2 Rotating blades: do not approach hands: wounding danger.
  - 1.3 Safety distance: when machine is working keep other people at a MIN distance of 5 meters.
  - 1.4 Read the User Manual
- 2-
  - 2.1 Rotating blades: do not approach hands and foot: wounding danger.
- 3-
  - 3.1 Rotating blades: throwing objects: wounding danger
- 4-
  - 4.1 Deck vertical positioning: only to be carried out with the engine stopped.
- 5-
  - 5.1 General danger warning.
  - 5.2 Read the User Manual
  - 5.3 Do not operate the machine on slopes  $>13^{\circ}$  (23%)



## 16- ENVIRONMENTAL REMARKS

### Care of the unit

Wash the unit with neutral products and low content of surface-active agent, and water.

Detergents can be detrimental to the environment, this is why we advise to effect the washing operation in places provided of plant for water purification and draining.

### “Environmental” use of the unit.

The way of driving and the employment conditions affect directly the fuel consumption and therefore the environment.

### Maintenance and disposal of unit components.

The maintenance operations of our machines provide the use of oils for engine, oils for hydrostatic service, grease, coolant. Such materials can be noxious for the environment. Therefore the greatest attention is required while handling them. In case of casual spilling, stop up immediately by means absorbing materials.

Store the used oils in sealed containers; many use milk containers provided of seal cover.

Do not mix worn-out oils with other substances as coolant or transmission fluids.

Keep away from children and from heat sources.

The worn-up oil, containers of the same, and any material contaminated by oil, must be disposed in accordance with the provisions effective in the country of use (the various kinds of waste materials must be differentiated and committed to an entitled carrier).

When the battery it is not working properly, it must be replaced. The replaced battery can not be abandoned but committed to an appropriate authority.

### Electric and electronic components

Rules for disposal of electric and electronic components.

Do not discharge the product as municipal solid waste but dispose it in suitable collection centres.

Leaving the product in the environment could seriously damage itself.

Electric and electronic components if included in the product must be removed before proceeding to the disposal and disposed separately in different waste bins.



**17 - MAIN MAINTENANCE OPERATIONS**

DESCRIPTION		FREQUENCY - HOURS						
		5	10	50	100	200	400	1000
Water radiator screen cleaning		X*						
Water radiator cleaning			X					
Oil radiator screen cleaning		X*						
Oil radiator cleaning			X					
Grass-catcher screen cleaning			X*					
Cleaning - general	o		X					
Pre-filter cleaning			X					
Air filter cleaning	**				X*			
V-belts check				X				
Mower deck blades sharpening check				X*				
Greasing					X			
Front and rear wheels gear drive axles oil level (control)							X	
Mower deck gear boxes oil level						X		
Hydro gears and hydraulic system oil level					X			
Engine oil level	**		X					
Coolant level	**		X					
Engine oil replacement	**	Y		X***		X		
Engine oil filter cartridge replacement	**	Y		X***		X		
Front and rear wheels gear drive axles oil replacement								X
Hydro gears and hydraulic system oil replacement								X
Hydro gears and hydr. system oil filter cartridge replacement (delivery)	^							X
Hydro gears and hydr. system oil filter replacement (intake)								X
Fuel filter replacement	**	Y				X		
Air filter replacement	**	Y				X		
Coolant replacement	**						X	
Engine maintenance	**							

\* In heavy duty conditions frequency must be lower

\*\* Engine maintenance: see engine U.& M. manual

\*\*\* First replacement

o These cleaning operations should be done with air pressure. Avoid water

^ As indicated by control lights

Y These operation must follow the suggested hours, or at least one time a year

**SUGGESTED OILS**

<b>Mechanical gears:</b>	<b>Eaton hydro gears and hydraulic system:</b>
Oil grade SAE 80W/90 or tractor universal oil such as: AGIP Supertractor Universal ESSO Unifarm 15W/40 SHELL Harvella S Oil MOBIL Mobiland Super Universal	Oil for hydro gears 16-39 C. ST./40° such as: AGIP Arnica 46 ELF Dacnis VS46 SHELL Tellus S 46 MOBIL Hydraulic Medium ESSO Invarol EP 46 IP

**LIQUIDS QUANTITY - LITERS**

	3cyl	4cyl	<b>TIRES PRESSURE</b>	bar
Kubota engine oil	3.5	4.7	Front	1.5
Kubota Turbo engine oil	4.5	6		
Lombardini engine oil	2.5	3.2	Rear 16x6.50-8	2
Coolant	6	6	Rear 16x7.50-8	1.7
Front mechanical gear oil	2.5	2.5	Rear 18x8.50-8	1.9
Rear mechanical gear oil	2.6	2.6	Rear 20x10.00-8	1.5
Hydro gear and hydraulic system oil T2 + T4	13	13	Deck	2
	130SP 130	150 165SP		
Mower deck boxes oil	1.1 0.8	1.50 1.60		

Note: The above summary does not replace the Use and Maintenance Manual of the machine, that must be read in every part.

[illegible]