Translation of the original instructions
starting from serial number:
8900202 (TR 600 hydro)
9000488 (TR 800 hydro)
9800133 (TR 900 hydro)

04/2025

MECCANICA BENASSI s.r.l.

Flail mowers **TR 600 / 800 / 900 hydro**

User and Maintenance Manual

TR 600 / 800 hydro

TR 900 hydro

1a - *GENERAL DESCRIPTION OF THE MACHINE AND ITS PURPOSE*

The **TR 600 hydro**/**TR 800 hydro** / **TR 900 hydro** mower is a professional machine designed and built for mowing grass and small shrubs. It is designed for professional and trained operators, who have the knowledge and experience necessary to understand how to work minimising risks and hazards.

1b – *USER'S MANUAL*

When present, the danger symbol indicates a situation that can cause death or serious injuries to the operator or to the people exposed.

A careful reading and understanding of this manual is a **MANDATORY** and **FUNDAMENTAL** condition to properly use the machine, to prevent damage, injury or death. The manual must be kept carefully. Any possible operator other than the machine buyer must read and understand the manual as well. In case of sale, rental, loan, contract works etc., this manual must be always supplied with the machine. **In case of loss, ask for a copy** from the trusted dealer or the manufacturer himself. It is also advisable to download a PDF copy from *www.benassi.it* to be able to consult it also from your smartphone or in case of (temporary) loss of the paper copy. In the event the user does not observe the instructions contained in this manual, (s)he will be responsible for any damage to people, objects, animals or property. It is **MANDATORY** and **ESSENTIAL** to also read and understand the engine manufacturer's user manual, supplied with the machine.

CONTENTS

1c – *INTENDED USE*

The only intended use is mowing on land with grass, shoots and uncultivated greenery. The machine is designed for use by a single operator who guides it using the handlebar controls, walking behind it. In compliance with ALL the requirements indicated in this manual and in that of the engine manufacturer.

1d – *UNFORESEEN, FORBIDDEN AND DANGEROUS USE*

It is forbidden to use the machine:

Like a toy. As a means of towing, towing or pushing. For the transport of things, people, animals. As a generic shredder. For mowing on roofs or dangerous surfaces, artificial, raised. For transfers on public roads. In any other condition not mentioned in paragraph 1c above "*INTENDED USE*"

Any damage resulting from unforeseen, prohibited or dangerous use invalidates any warranty claim relating to the machine, engine and hydrostatic transmissions.

2a – *PICTOGRAMS: explanation of the meaning*

WARNING SIGNS:

Read and understand this manual before using the machine. Object projection hazard. Keep a safety distance from other people, objects and animals. Be careful not to come into contact with the rotating mechanical parts, even if they are protected. Before any maintenance operation, remove the ignition key and spark plug cap. Noise-proof headphones and visor must be worn.

Pay attention to the moving parts, in particular in the area of the rotor casing.

Burn hazard due to hot metal covers in the area around engine and muffler.

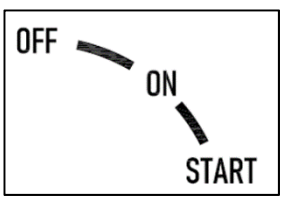
All the prescriptions and procedures summarized by the pictograms are explained later in this manual.

CONTROL SIGNALS:

ROTOR COUPLING

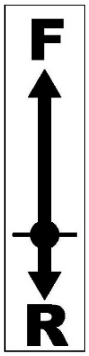
WHEEL DRIVE COUPLING

WHEEL DRIVE DISENGAGEMENT



IGNITION KEY POSITIONS

THROTTLE:
always keep the motor at maximum rpm when working



DIRECTION OF TRAVEL:

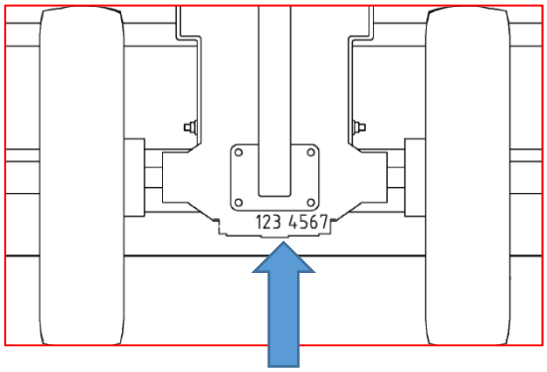
F = forward
R = reverse

2b – *CE MARKING*

The plate with CE marking is placed on one of the motor supports. Content:

- Manufacturer name and address
- Machine type
- Machine model
- Serial number
- Motor power
- Machine dry mass
- Year of construction

The serial number of the machine (7 digits) is shown both on the CE plate and on the transmission box, punched on the aluminium in the position shown in the figure on the side.



For any warranty claims or spare parts, <u>always</u> mention the serial number of the machine concerned.

3a – *GENERAL SAFETY INSTRUCTIONS*

– <u>**BEFORE**</u> using the machine, IT IS ESSENTIAL to read and understand this manual and the attached engine manufacturer manual. It is important to ask for explanations even in case of apparently trivial doubts. Your local retailer or the manufacturer will be available to provide the needed answers.

– Have the main control elements and the specific operations of the machine explained by the qualified personnel of the ***Meccanica Benassi*** sales network.

– **It is strictly forbidden** to tamper in any way with the control elements or other technical characteristics of this machine.

– **It is absolutely forbidden** to intervene or modify in any way the characteristics of the engine, in particular the maximum number of revolutions (this can cause irreversible damage).

– **With the motor running, any action other than the shredding work carried out by the operator behind the handlebar is prohibited.**

– With the engine running, any adjustment, maintenance, or action by third parties is prohibited.

– It is absolutely forbidden to load things, people, animals.

– It is strictly forbidden to transport, tow and push objects, people or animals.

– **Before starting to work, it is recommended to get acquainted with the machine in a wide, clear space.**

– It is important to understand the meaning and purpose of all labels affixed to the machine. In case of doubts on the meaning of one or more symbols, contact your usual retailer.

– During work, the operator must always wear suitable *Personal Protective Equipment*, such as gloves, safety shoes, tight work clothes and anti-noise earmuffs.

- It is of fundamental importance to check the correct operation of the on/off key before each use. **If the key is turned off and the engine is NOT SWITCHED OFF, it is forbidden to use the machine and it is necessary to contact an authorised workshop as soon as possible.**
- Before turning the machine on or during work operations, check that there are no people or animals within the machine danger zone (15-metre radius around the machine).
- Before turning the machine on, check that there are no objects on the ground that can be projected.
- Before starting to work, it is recommended to check the ground where the mowing operations will be carried out: the presence of foreign bodies, in case of impact, can damage the machine. In case of debris projection, this might lead to damage to objects, people or property. The most exposed area is the front.
- Always check that there are no people or obstacles before reversing.
- In case of impact between rotor and a foreign body, immediately stop the machine and check the state of the rotor and of the rest of the machine. It is necessary to immediately turn off the engine, remove the key and inspect the flail rotor. In case of serious damage, missing blades, or vibrations, stop the operation and fix the issue as soon as possible.
- Mowing operations must always be carried out with the engine at its maximum RPMs and with a forward speed and cutting height proportional to the grass and shrubs height.
- Every time the operator has to move away from the machine, it is mandatory to disengage the cut, turn off the engine, remove the ignition key.
- If the ground is uneven or has holes (especially on slopes), decrease the speed and bring it to the minimum when changing direction. Tip-over hazard!
- Keep away from verges and cliffs, pay attention to any danger hidden by the vegetation to be mowed, such as holes, bumps, stones, and roots.
- When moving the machine or performing mowing operations, it is advisable to always proceed in the gradient direction (upstream or downstream) and not transversely to the slope.
- minimise uphill reversals!
- reduce the speed on slope, keep it constant, avoid sudden acceleration and braking, hold the handlebar firmly.
- Damaged blades must be replaced, and not repaired nor sharpened. A rotor having one or more broken blades will be unbalanced and transfer unexpected vibrations to the rest of the structure and operator. Wear gloves during inspection and maintenance operations.
- In case of pain in the hands or arms, stop the work and take a break until complete recovery of sensitivity. The use of work gloves helps prevent loss of sensation.
- It is advisable to take more frequent breaks even in case of fatigue if you work for a long time on uneven terrain.
- The electrical circuit generates an electromagnetic field generally not harmful for the human body. **Carriers of pacemakers or similar devices must ask their doctor for authorisation to use the machine**.
- Movements from one work area to another must be made with the rotor placed in the highest position and with the tools not inserted.

3b – *USE RESTRICTIONS*

- The use of the machine is forbidden to children and, in general, to people who do not know how it works or have not read or understood this manual.
- Minors are not allowed to use the machine. To establish the minimum legal age of the operator, refer to the local regulations in force.

– The machine is not equipped with an artificial lighting system. Operations in conditions of poor natural visibility (full visibility for at least 100 metres) are forbidden.
– It is forbidden to use the machine under the influence of alcohol, drugs, medications, or in case of fatigue, illness or mental disorders.
– It is forbidden to use the machine near verges, slope sides, trenches and, in general, on unstable grounds: **tip-over hazard!**
– It is forbidden to use the machine on gravel terrains: the rotor might lift the stones, projecting them beyond the danger zone.
– It is forbidden to use the machine if the air filter is clogged, when it is missing or in case of damaged or missing muffler.
– Check the machine before each work shift: the mandatory inspections to be carried out are described later in this manual.
– It is forbidden to use the machine on public roads.
– When children are present, keep the ignition keys where they cannot reach them.
– Even with all the appropriate protections, the risk of injury to the lower or upper limbs due to the rotation of the shredder tool and other moving parts such as belt drives remains. **Never put hands or feet under the rotor casing, nor inside any other panel or protection.**
– The machine rotating parts can cut or trap hands, feet, hair, clothes or accessories. **Danger of amputation or serious lacerations**!
– Always use the machine with the protective casings in place. It is forbidden to use the machine without the protective guards in place or with the strips missing, broken or worn.
– Keep hands and feet away from the rotating parts.
– Tie the hair and remove jewellery.
– Do not wear loose clothes, long laces or other items that can get stuck. Always work wearing tight work clothes.
– **Do not force the engine**, especially if smoke comes out of the exhaust pipe, if its number of RPMs drops or it turns off frequently. If a specific work is not feasible, decrease the speed, raise the cutting height, carry out the operation in separate steps. It is important to know the limits of this machine and when another equipment is necessary.
– **Do not expose the machine to heavy rain**: the electrical contacts could fail and the tightness of the tires on slope decreases exponentially.

3c – *HAZARDS and REQUIREMENTS ON THE USE OF FUEL, RISKS ASSOCIATED WITH THE OPERATION OF THE ENGINE*

– the fuel used for the operation of these engines (**unleaded petrol**) is toxic and flammable. Pay attention to fire and toxic vapour inhalation hazards.
– The fuel must always be handled wearing gloves, so to avoid direct contact with the skin.
– Use a funnel to fill the tank and, in case of spillage, immediately wipe dry using a cloth.
– While refuelling, use a very fine filter: the fuel must reach the engine as clean as possible.
– **refuel only outdoors and with the engine off and cold**.
– Do not spill petrol on the ground, in the environment or on the rest of the machine.
– **do not smoke during refueling operations or during work**: there is always a fire risk.
– **store the fuel in closed, cool places, protected from sunlight, in approved containers** and absolutely away from people and animals.

- Petrol vapours have high ignition potential: do not park the machine in closed spaces while it is still hot. **Wait for it to cool before storing indoors**. Wait at least 15 minutes before removing the cap from the petrol tank.
- If leaks are detected, the petrol tank must be immediately replaced.
- In case of breakage or leaks, filler neck, petrol cap and supply hose must also be replaced.
- In case of excessive exposure to fuel (inhalation, ingestion, contact with the eyes), call immediately the emergency number.
- Fill the fuel tank outdoors and in a well-ventilated area.
- Do not pour an excessive amount of fuel in the tank and do not fill over the internal bottleneck. The fuel must be allowed to expand.
- Keep the fuel away from sparks, open flames, pilot lights and other ignition sources.
- **frequently check the utilities connected to the fuel for leaks**: tank, cap and accessories. If needed, replace them.
- if the fuel spills, wait for it to evaporate, then dry the dirty surfaces and only after moving the machine start the engine.

<u>When starting up the engine</u>

- make sure that the spark plug, muffler, fuel cap and air filter are in place and securely fastened.
- make sure that the air filter is clean, otherwise proceed as described in *CHAPTER 7.*
- do not run the motor without a spark plug.

<u>When using the machine</u>

- limit use to continuous maximum slopes of 25° to avoid fuel spills, exhaust fumes, groupings.
- Never start or operate the engine when the air filter is absent or clogged.

<u>When the machine is tilted for maintenance</u>

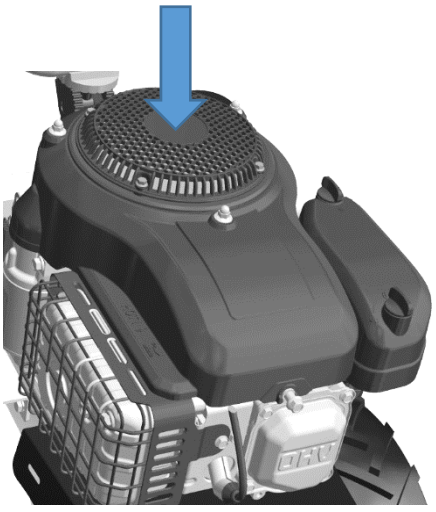
- The fuel tank must be empty; otherwise, a fuel spillage might occur, causing fire or explosion hazards.

<u>When transporting the machine</u>

- **transport with the fuel tank at idle speed and refill only after unloading** and in an open and ventilated place.

<u>Storage only for short periods of the machine with the fuel in the tank</u>

- always keep away from furnaces, stoves, water heaters or other appliances that have pilot flame or other ignition sources, because they could ignite fuel vapors.



A spark is produced when the engine is started. Sparks can ignite nearby flammable gases. The consequences could be explosion or fire.

- Do not use pressurised starting fluids, as their vapours are flammable.
- When the engine is cold, ALWAYS remove the debris building up in the silencer and engine area. **Pay special attention to the debris building up on the flywheel cover** (see Fig. on the side). Keep in mind that the debris collected on the engine, muffler and battery might catch fire!

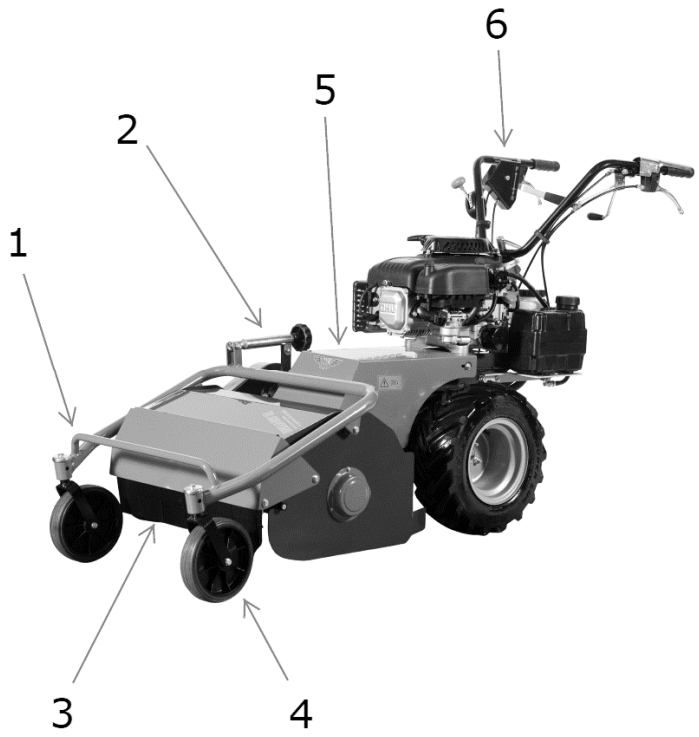
Check and cleaning operations involving this area must be carried out even more than once in the same work session, if the environmental conditions (i.e. a lot of dust) require so.

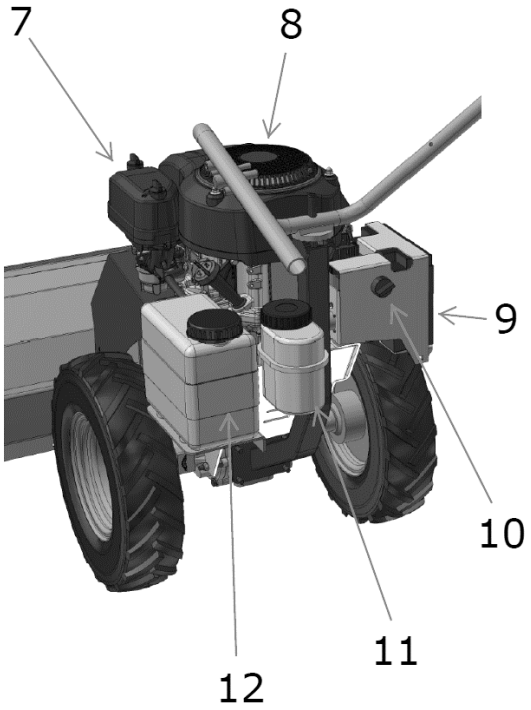
The engine exhaust contains carbon monoxide, a poisonous gas that can kill in minutes. It cannot be seen, it does not have any taste nor smell. Even if the exhaust fumes are not inhaled, it is always possible to be exposed to carbon monoxide. **If you feel sick, unwell or weak while using the machine, stop the engine IMMEDIATELY and seek medical attention**. This might be due to carbon monoxide poisoning.

- Use this machine ONLY outdoors, away from windows, doors or fans, in order to reduce the risk that the carbon monoxide builds up and reaches spaces occupied by other people or animals.
- DO NOT use the machine inside the house, in garages, basements, cavity walls, sheds or other partially closed spaces, even if there are fans or the doors/windows are open. Carbon monoxide builds up fast in these spaces, and it can stagnate for several hours even after the machine has been turned off.
- Try as much as possible to use the machine upwind, so to inhale as little gas as possible.

When turned on, engines generate significant heat. In case of contact with hands, there is the risk of serious burns. Use the machine wearing work gloves and keep away from these surfaces.
Before touching any part of the engine or its utilities, allow the silencer, cylinder, head, fins to cool down.

4a – *DESCRIPTION OF THE MACHINE MAIN PARTS*





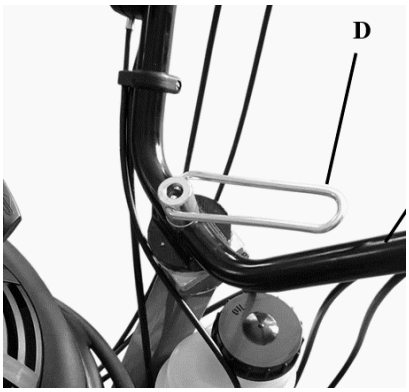
1) Front castor and bumper
support 2) Cutting height adjustment knob
3) Front movable protection with strips
4) Front wheels
5) Belt cover casing
6) Handlebar
7) Air filter
8) Engine
9) Battery 12V-18Ah
10) Starter key
11) Hydrostatic oil tank
12) Petrol tank (4L)

4b – *PACKAGING, TRANSPORT, SAFE MOVEMENT*

The TR flail mower is delivered on a pallet, protected by a cardboard box.

! IMPORTANT!

Check the integrity of the packaging when the shipment arrives!



If the packaging was damaged during transport, report it IMMEDIATELY, accept the delivery with reserve and document everything taking pictures. **The manufacturer is not responsible for damage resulting from transport**.

To unpack the machine, remove the box upwards. The handlebar is temporarily rotated and rested on the motor for packaging needs. To make the machine operational and manoeuvrable, unscrew the handle D (figure on the side), rotate the handlebar 180° without tearing or pulling the cables, find a position suitable for your height and then tighten the handlebar again.

The machine is supplied with:
- this machine manual with the **EC declaration of conformity** on the last page
- the Zonsen XP380E ***engine manual***
- Ignition key

The machine is delivered:
- with oil in the transmission to the wheels
- with oil in the transmission to the rotor
- with oil in the hydrostatic transmission and in its external tank
- with 12V battery charged but to be connected (first pole + then pole -)

but

- **WITHOUT PETROL** => fill with unleaded petrol, using a funnel
- **WITHOUT ENGINE OIL** => top up as described in the engine manual using the dipstick located on the side of the engine itself.

THE MANUFACTURER DECLINES ALL RESPONSIBILITY FOR ENGINES RUNNING WITHOUT LUBRICANT!

The machine can be moved both when it is on and off, more specifically:

- **When the ENGINE IS OFF** , it is possible to:
  - move it by thrust, flat (for a few meters) as long as the transmission to the wheels is idle as indicated on page 13
  - in case of failure, the machine can be towed with ropes suitable for its weight (therefore for masses of at least 250 kg) by attaching them around the tubes of the front bumper. In any case, the drive to the wheels must be idled in the manner described on page 13.

IT IS FORBIDDEN TO TOW THE MACHINE FOR LONG STRETCHES AND ON PUBLIC ROADS

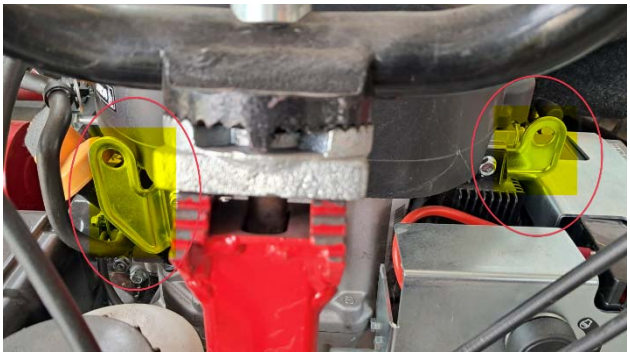
- With the ENGINE ON, it is possible to move it thanks **to its traction as long as it complies with all the rules and requirements mentioned in this manual.**

In the event the machine is loaded on vans or small trucks using ramps, the procedure is the following:

- Use loading ramps able to support at least 120kg each, with non-slip surfaces and broad enough to support the tyres.
- the loading ramps must form a maximum angle of 15° with the ground.
- Keep the rotor in the highest position during the loading/unloading operations.
- on the means of transport, secure the machine with bands or ropes by attaching to the bumper tube.

IT IS FORBIDDEN TO LIFT THE MACHINE WITH ROPES

It is FORBIDDEN to use the hooks on the motor to lift the machine!



5 – *PRELIMINARY CHECKS*

After releasing the machine from its packaging, **before starting it** proceed to read this manual COMPLETELY and carry **out the following checks BEFORE EACH USE.**

MACHINE SAFETY

- maintained-action wheel drive lever
- rotor coupling lever with safety coupling and with maintained action
- front and rear protection strips
- on/off key
- transmission with normally braked wheels
- pictograms and markings on the machine

All these commands (and pictograms) must always be present and if not working or missing they must be restored before using the machine.

In addition:

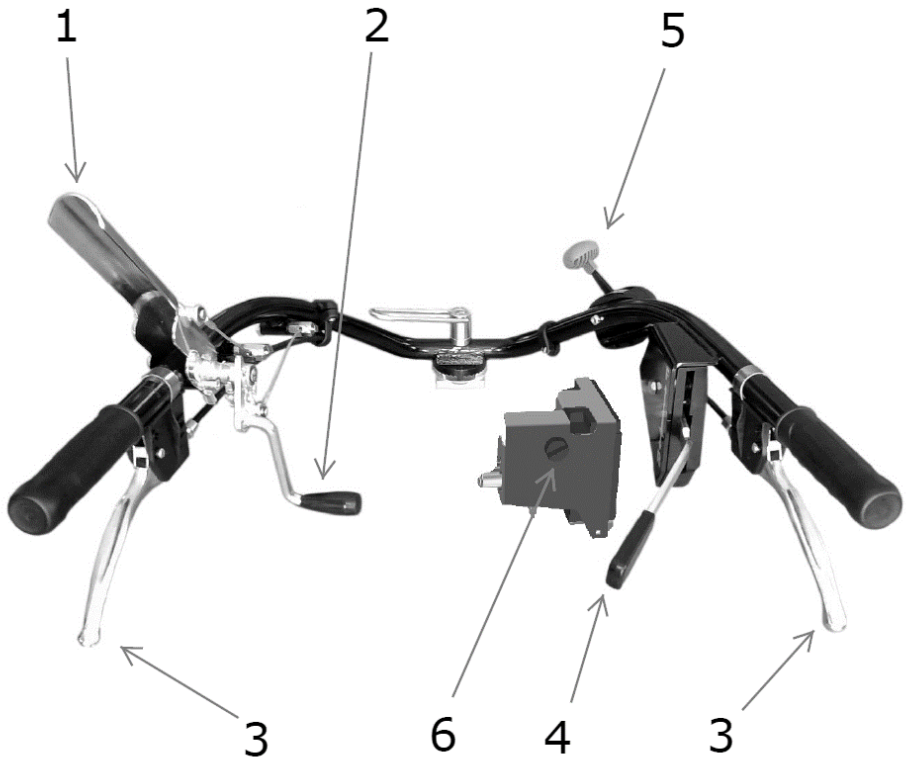
- **Handlebar control**: check that it has been correctly tightened on its toothed adjustment support.
- Check that **there is no debris on and around the engine**.
- Check that **there is no debris on and around the wheels**.
- Check that there is no debris inside the belt cover casing and that the hydrostatic drive cooling fan is free to turn. If it is damaged, replace it. DO NOT OPERATE THE MACHINE IF THE FAN IS DAMAGED!
- **Visual rotor** check: are there knives to be replaced? Are the fixing screws correctly tightened? Is the rotor free to rotate? Are the knives free to rotate? See further explanations in ***Chapter 7c.***
- **Visual protection** check: make sure that all the front and rear bands of the rotor casing are present and intact. **If some of them are broken, replace them immediately.**
- **Tyre pressure check: 2 bar** is the maximum recommended value. Check also the tyre tread wear state: worn tyres lead to traction loss and are more likely to get punctured.
- Check that all the **screws fixing the wheels to the relative hubs** are tightened well before each use.
- **Check the battery voltage**: it must be higher than 12V. The battery is charged and sealed. No acid is needed, and it must be charged only when necessary. If the battery struggles to get charged, get a new one, which must be original and having the same characteristics.
- **Check the operation of all manual controls** (see chapter 6a), in particular:
    - wheel lock: with the differential release levers pulled to the end, is the corresponding wheel braked? If not, contact a workshop for adjustment.
    - direction of travel: when the travel direction lever is resting at the horizontal mark between F-R, the machine must be stopped, even with the engine on and the wheel drive lever on. If it is difficult to find the idle position, contact an authorised workshop.
    - Rotor braking: when the rotor is disengaged, the flail rotor must stop completely within 7 seconds. If this does not happen, contact an authorised workshop to adjust the brake.
    - wheel drive: when the wheel drive lever is released, the machine must stop
- **Check for leaks** in details such as: petrol tank, hydraulic oil tank and their pipes, engine base, carburetor. If leaks are detected, do not start the machine and contact the service centre.
- **Control of the** straps in particular: in oil pipes and gasoline pipes. If any component is loose, fasten everything before turning the machine on.
- **Check the following levels:**
    - Engine oil at the right level, clean air filter, flywheel cover free from debris
    - Tank with enough petrol inside
    - oil for hydrostatic transmissions at the right level in its tank

    See details in Chap. 7 “Maintenance”.

Before each use, check that all safety warnings are present on the machine. It is forbidden to use it before restoring missing or unreadable pictograms and markings.

If something is missing, broken, out of its place or faulty ► immediately contact your retailer and DO NOT USE the machine for any reason.

6a – *CONTROL ELEMENTS / ADJUSTMENT*



CONTENTS OF CONTROLS

1) Wheel drive lever
2) Rotor coupling levers
3) Differential release levers
4) Drive direction lever
5) Throttle control
6) Key lock

EXPLANATION OF COMMANDS

1) WHEEL DRIVE LEVER

Fig. 1 –> lever 1 disengaged; machine stopped
Fig. 2 –> lever 1 engaged; machine in motion (*if the DIRECTION OF TRAVEL LEVER is in the forward "F" or backward "R" position*)

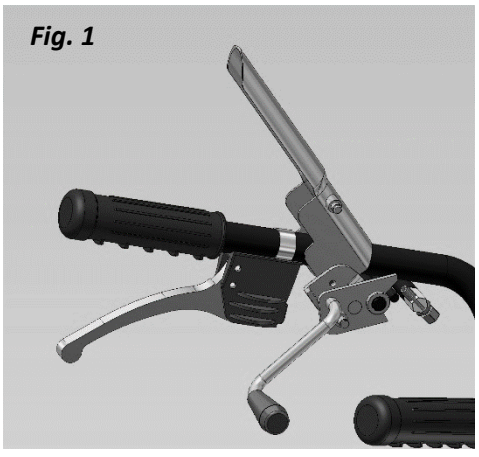


Fig. 1

2) ROTOR COUPLING LEVER

Fig. 2 –> lever 2 disengaged; rotor stopped
Fig. 3 –> lever 2 engaged; rotor in motion

It is necessary to engage the wheel drive lever (1) first and only after the rotor engagement lever (2)

SAFETY LOCK AND QUICK RELEASE

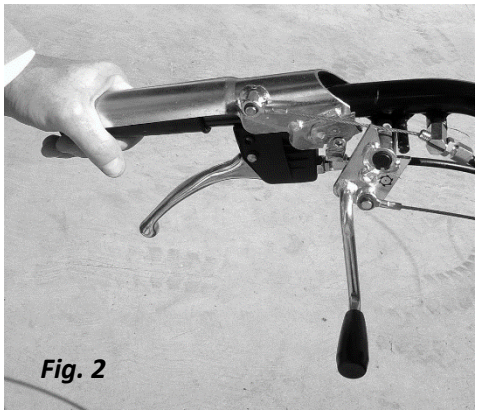


Fig. 2

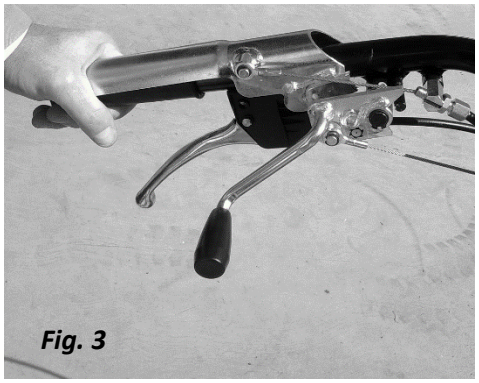


Fig. 3

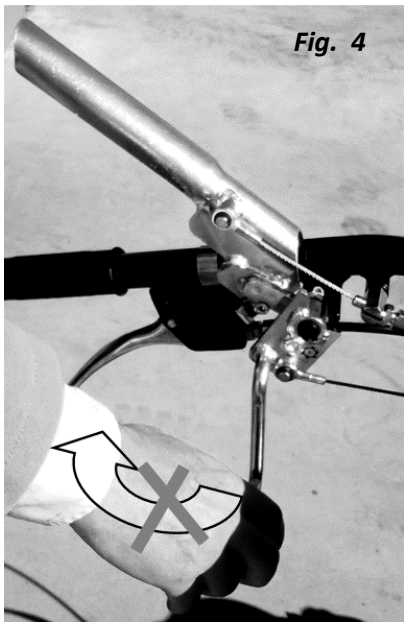


Fig. 4

The **TR hydro** flail mower is equipped with a MECHANICAL SAFETY LOCK that prevents the operation of the ROTOR ENGAGEMENT LEVER if the TRACTION LEVER has not previously been engaged with the WHEELS. The exclusive actuation of the ROTOR ENGAGEMENT LEVER as attempted in ***Fig. 4***, it is not possible.

The rotor engagement lever once actuated remains in position as shown in ***Fig. 3*** allowing you to free your right hand to grip the handlebar correctly.

A second safety is guaranteed by the QUICK RELEASE that interrupts the transmission to the rotor when the operator leaves the handles. When both **levers 1 and 2** are engaged (as in ***Fig. 3***), when the lever 1 is released, the lever 2 automatically clicks into the disengaged position. In this way there will be a simultaneous stop of both the traction to the wheels and the transmission to the rotor.

3) DIFFERENTIAL RELEASE LEVERS

The wheels of the **TR hydro** mower are normally in traction, i.e. with a locked differential. Right wheel and left wheel turn at the same speed.

To steer the machine it is necessary to intervene on one of the two **levers (3)** depending on the desired direction: operate until the end of the stroke the RIGHT lever to steer to the RIGHT, the LEFT one to steer to the LEFT. In fact, each lever, if pulled completely, locks the corresponding wheel allowing the machine to turn. At the end of the steering, completely leave the lever to allow the wheel to return to traction.

For push transfers with the engine off, a wheel can be idled by pulling the corresponding lever (3) halfway, as shown in the figure above.

4) DIRECTION OF TRAVEL LEVER

Using the direction of travel lever **(4)** in Fig. on the side, it is possible to adjust the speed of the wheels gradually and continuously, from zero to maximum, forward and backward. In particular, bringing the lever upwards will lead to gradual advancement. Bringing it downwards, the machine will proceed in reverse. The idle position is in correspondence with the horizontal mark indicated on the side.

In reverse, proceed with the utmost care! DANGER OF CRUSHING!

5) THROTTLE CONTROL

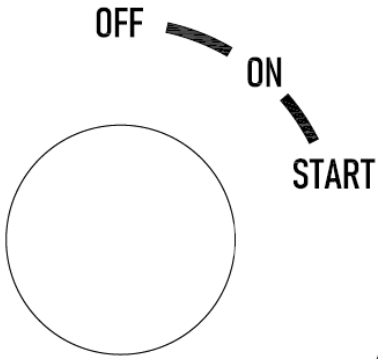
Bring the control forward, towards the symbol  to accelerate the motor.

Bring the command back, towards the symbol  to lower the engine speed.

NB: during cold start operations the control must be brought to the maximum of its forward excursion to close the air passage (*choke*), as described in the next chapter.

6) ON / OFF KEY

The ZONSEN XP380E motor is equipped with electric starter.
Bring the key provided:
- on START, for start-up
- on ON: during work
- on off: to turn off the engine



6b – *TURNING THE MACHINE ON/OFF*

During start-up operations, it is necessary to take in consideration the risk of injuring people or animals possibly within the machine operation area.
- Machine start-up must be carried out outdoors, in a well-ventilated space. In closed environments, the operator is subject to the danger of inhaling exhaust gases.

THE ENGINE MUST BE STARTED:
- with all the controls disconnected, in particular the wheel drive lever and the rotor coupling lever
- with the travel direction lever in neutral (idle) position
- (for cold starts) with the throttle control in the CHOKE position, i.e. all the way forward

- with charged and connected battery
- with engine oil present and at the right level
- with petrol in its tank
- with hydrostatic oil present in its tank
- with the starting circuit intact and working

It is forbidden to use the machine if the motor starts without satisfying all these controls!

START PROCEDURE

close the air by bringing the throttle control forward and all the way (*CHOKE*); turn the start key to START and release it when the engine is started. When the engine is hot, return the throttle control downwards for regular operation.

SHUTDOWN: Before switching off the machine, disengage the rotor, put the traction on the wheels in neutral and turn the starter key to the off position. Take the key with you.

NEVER LEAVE THE MACHINE UNATTENDED WITH THE KEY INSERTED!

DON'T FORGET THE KEY ON "ON": BATTERY DISCHARGES!

6c – *MOWING*

Introduction:

- While transferring the machine to the work area, keep the rotor in its highest position with the tools disengaged and maintain a speed suitable to the terrain conditions.
- start the work with A hot motor and DURING CUTTING ALWAYS USE IT AT THE MAXIMUM OF THE rpm.

ROTOR ENGAGEMENT:

It is advisable to engage the cut with the engine hot at maximum rpm, the direction of travel lever in neutral and the rotor free to turn. The cutting element must be engaged BEFORE entering the work area, and not in the middle of the vegetation. To operate the cut, pull up the rotor coupling lever (#2 in ch. 6a) until it comes into fixed support on the wheel drive lever (#1 in ch. 6a). In this way you can use your right hand to adjust the direction of travel on the other side of the handlebar.

ROTOR DISENGAGEMENT:
To disengage the rotor it is sufficient to leave the wheel drive lever since this movement causes the disengagement of the rotor engagement lever at the same time.

NB: the rotor is equipped with a brake: it must be completely stopped within 7 seconds of its disengagement. If not, contact a service centre for the required inspection and adjustment.

INSTRUCTIONS FOR A CORRECT AND SAFE CUT:
The flail rotation is made possible by a belt drive. Avoid as much as possible the continuous rotor engagement/disengagement and putting the lever in intermediate positions. The rotor must be completely engaged or completely disengaged at any time.

Before each use, check the rotor conditions. **It is of fundamental importance to always cut with all the knives present, intact and well sharpened**. In case of unusual vibrations, it is FORBIDDEN to use the machine. Check the rotor and/or contact a specialised workshop. An unbalanced rotor generates vibrations which are harmful both for the operator and the machine.

The cutting height must consider the work surface: if bumps or holes are present, adjust the height so to avoid that the blades reach the bottom of the terrain.
In all cases where cutting operations are not foreseen (e.g. transfers), the rotor **must be kept** in its highest position to avoid the risk of impact with the ground or foreign bodies.

6d – *MACHINE OPERATION*

Safety warnings:
- It is always necessary that the operator stays focused in any travel or work condition. Even during simple transfers, there is always the risk of injuring people or animals, or damaging objects/property.
- Pay attention to obstacles while moving forward, and especially when moving in reverse or steering.
- the transport of people, things, animals is prohibited.
- Pay attention to direction changes: in case of any problem, it is advisable to deactivate all control elements and stop.
- Use on slopes: the most dangerous situations require even greater attention if the machine is on steep slopes. The most critical stage in terms of tip-over hazard is the direction change and steering movement while on a slope. Pay the utmost attention! For further information on the use on slopes, see *Chap 3.*
- handlebar vibrations, even if small in the long run, can cause pain and loss of sensation in the upper limbs. In such cases, it is advisable to stop work for the time necessary to recover physically. **LACK OF SENSITIVITY IS A SOURCE OF DANGER!**

- **DIRECTION OF TRAVEL**: the direction of travel lever [#4 in **Chapter 6a**] is responsible for the direction and speed of travel as long as the wheel drive lever [#1 in **Chapter 6a**] is pressed.
Bring it upwards (F) to go from a standstill at maximum forward speed or downwards (R) to go in reverse (as indicated by the symbols). The central position is where the wheels are stationary.

Pay the utmost attention especially in reverse operations. DANGER OF CRUSHING! Limit the speed, check in advance for any obstacles behind the machine, act slowly on both the levers and the handlebars.

- **BRAKE**: to brake the machine, simply leave the wheel drive lever. If this is not enough, help yourself with the differential release levers by pulling them all the way.
- **PARKING/PARKING**: the wheels of the TR hydro are always normally braked when the machine is switched off.

Before parking and leaving the vehicle, it is good practice to:
- Disengage the rotor.
- return the travel direction lever to the NEUTRAL/IDLE position.
- Bring the throttle to the minimum.
- Turn the machine off urning the key to OFF.
- take the key with you to prevent unauthorised start-ups.

Only at this point can you leave the vehicle.

To RESTART from parking:
repeat the operations described above in reverse order and follow the start-up procedure described in **Chapter 6b**.

7a – *MAINTENANCE AND CLEANING*

It is useful to remember, as it has been done several times in this manual, that an incorrect maintenance or performed by unauthorised workshops can expose the user to serious injury risks or technical faults not covered by the warranty.

Safety warnings:
All maintenance operations must be carried out with the engine off, the ignition key disconnected and the machine parked on the bottom that adequately supports it.

- Moreover, check if there are people nearby.
- Make sure that the machine cannot drift for any reason.
- Keep always in mind the risks connected to the use of fuel (fire and vapour inhalation) and pay attention to the presence of sharp tools.
- In cases where the machine must be lifted to one side or raised, attach the straps directly to the front bumper tube or the base of the handlebar.
- Allow the machine to cool completely before intervening in any of its parts.

- It is essential to carry out the correct disposal of petrol, oil and other special waste (such as the battery), observing the regulations in force in the territories where the machine is used and maintained. Do not dispose of them in the environment and do not treat them as regular waste.

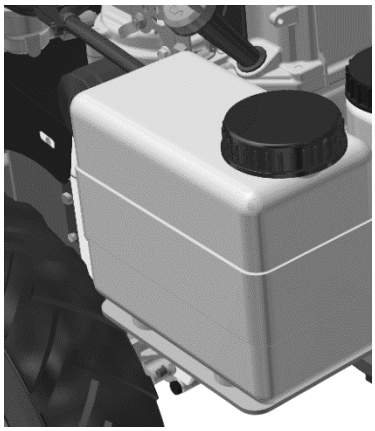
7b – *FUEL, HYDROSTATIC OIL, ENGINE OIL*

FUEL

The machine is delivered WITHOUT fuel! **To use it, it is necessary to fill up with gasoline (about 4 L).** Note: the machine is not equipped with a reserve tap nor with indicator lights for fuel level. Keep this in mind and act accordingly.

► The only type of allowed fuel is the one having the characteristics described below. Any other type of fuel might damage the engine and makes any engine-related warranty claim immediately void. The fuel must be stored in cool and dry places, away from light and ignition sources, in approved containers suitable for the purpose.

Petrol Tank



The cap is located on top of the tank highlighted on the side and unscrewed by hand, without a key. Use a funnel during refuelling, immediately dry any spills, and comply with all the fuel provisions specified in this manual (*Chapters 3c* and *7b*) and in that of the engine manufacturer.

Petrol must comply with these requirements:

- Clean, new, unleaded gasoline.
- Minimum 87 octanes/87 AKI (91 RON).
- Acceptable petrol with an ethanol content (petrol-alcohol mixture) up to a maximum of 10%.

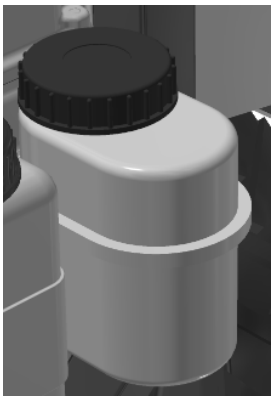
N.B.: it is forbidden to use unapproved petrol, such as E15 and E85. Do not add oil to the petrol and do not modify the engine so it can work with alternative fuel types. The use of unapproved fuel types leads to damage not covered by the warranty.

At altitudes above 1,500 metres, petrol with a minimum octane number of 85/85 AKI (89 RON) is allowed.

PETROL TANK REFILLING:

Use a funnel and follow all the instructions in *Chapter 3c* each time fuel is used.

HYDROSTATIC OIL



The TR hydro flail mower uses a hydrostatic transmission for self-moving. The machine is supplied with transmission, pipes and external tank (shown on the side) already filled with the right amount of oil. It is still a good idea to check the level inside the tank before each use and in general inspect the areas below the machine for any leaks.

The oil tank is white and transparent, mounted to the left of the handlebar column. Not to be confused with the adjacent petrol tank, which is black and much more spacious.

The hydrostatic transmissions, the pipes and the oil tank are equipped from the factory with:

SAE 30 ENGINE OIL (or equivalent)

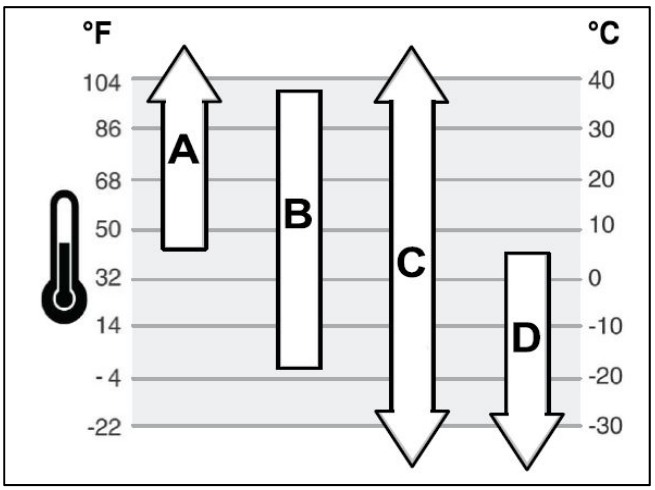
The use of any other type of oil on these utilities is forbidden; otherwise, the manufacturer warranty on hydrostatic transmissions will become void.

CHECKING THE HYDROSTATIC OIL LEVEL: to be done with a horizontal machine and cold oil (therefore BEFORE a work session). The level must be between the maximum and minimum marks written on the tank.
PLEASE NOTE: **always leave some space for the expansion of the hot oil. Never fill the tank completely. It is FORBIDDEN to work with insufficient quantities of hydrostatic oil!**

If the level is low, top up accordingly, with the same type used in the first equipment.
For complete oil change operations and consequent purging, it is advisable to contact a service centre.

ENGINE OIL

More information is available in the engine manufacturer's manual provided with this machine manual. It is essential to read and understand such document in its entirety as well.



ENGINE OIL TYPE: The correct engine oil viscosity is determined by the external temperature. Use the references below to choose the most suitable type of oil according to the work temperature.

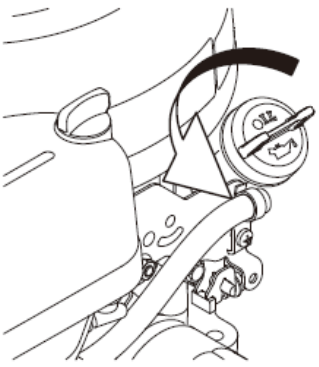
A ► SAE 30: Below 4°C (40°F), using SAE 30 will cause a difficult start-up.

B ► 10W-30: Above 27°C (80°F), using 10W-30 can cause higher oil consumption. Check the oil level more frequently.

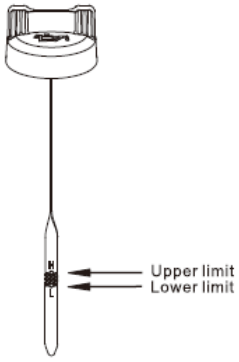
C ► 5W-30 *synthetic:* covers all fields of application

D ► 5W-30: winter uses only

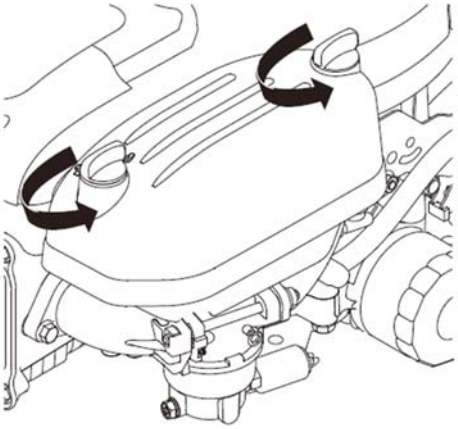
Before topping up or checking the engine oil level:
- Make sure that the machine is on a flat surface.
- Remove all debris from the oil filling area. Carry out the following operations only with the engine off and cold, with its ignition key removed.



Check and top-up if necessary:
1) Remove the dipstick in the figure on the side and clean it with a cloth.
2) Install and tighten the dipstick again.
3) Extract the dipstick and check the oil level. The correct level corresponds to the upper edge indicated on the rod.
4) If the oil level is low, top it up slowly Do not overfill. Please wait a minute and check again.
5) Reinstall and tighten the dipstick.



7c – CHECKS AND MAINTENANCE OPERATIONS TO BE CARRIED OUT ***BEFORE EACH USE***



1) CHECKING AND CLEANING THE AIR FILTER

Cleaning the air filter is of fundamental importance in these machines, especially when operating in a dusty environment.

Every 250 hours the filter must be REPLACED with a new one.

Before each use, check and, if necessary, clean the filter element. To access it, simply unscrew the two hooks shown in the photo by hand to disassemble the cover.

To remove the debris, gently tap the filter on a hard surface. If the filter is too dirty, replace it with a new one. **DO NOT BLOW WITH COMPRESSED AIR! DO NOT USE SOLVENTS!**

2) CHECK THE PRESENCE AT the RIGHT LEVEL OF THE ENGINE OIL, AS described IN the previous paragraph.

3) CHECKING THE FUNCTIONALITY OF ALL CONTROLS

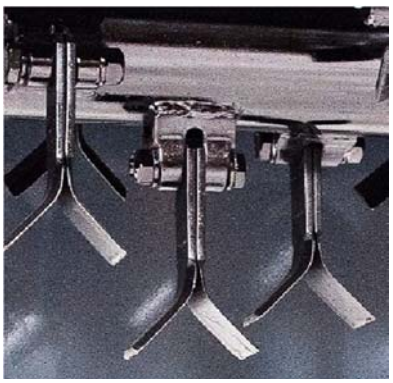
First visual and then manual, with the machine off. Check that they are all well fixed, that they do not have strange play, that they are clean and ready for use during work. All the controls are explained in *Chapter 6a*. Check the functioning of the control elements also with the engine on, in a test area, before transferring the machine and starting to work.

4) WASHING THE ROTOR

The inside of the rotor casing can be cleaned with a water jet as long as you do not point it directly at the support bearings. It is important for the quality of the cut to have a casing free of deposits and obstructions.

5) KNIFE INSPECTIONS and POSSIBLE REPLACEMENT (use work gloves!). Keep in mind that:

- A single knife should be replaced with a new one when it is broken, missing, bent, worn.
- All knives must be replaced (with the relative fixing bolts) every 50 hours as specified in Chapter 7d.



IN THE EVENT OF ABNORMAL VIBRATIONS, COMPLETE REPLACEMENT OF ALL KNIVES AND RELATED BOLTS

6) PETROL TANK: Does it contain the right type of petrol? See Chap. 7b for all specifications. Also, is the tank cap well tightened? Is there any leak on the supply hose?

7) ENGINE FLYWHEEL COVER: Remove all debris from the area surrounding the engine and, more importantly, from the area above the flywheel cover on the side.

8) ROTOR BRAKE: before starting work, from the operator position and with the motor on, engage the rotor, disengage it shortly after, check that the rotor stops completely within 7 seconds.

9) INTEGRITY of sheets and guards. Before each use, perform an inspection round on the machine. Report immediately the presence of cracks and DO NOT USE THE MACHINE. Then check the integrity of all the protective strips placed in front of and behind the rotor casing. It is forbidden to use the machine in the absence of protections.

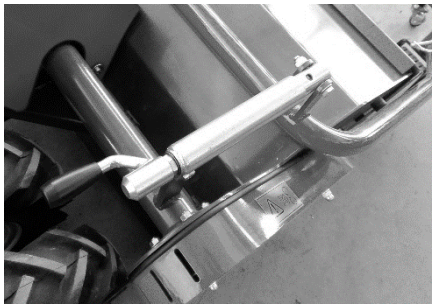
10) PICTOGRAMS CHECK: replace the labels mentioned in Chap. 2a if they are faded, missing or illegible. Ask for replacement copies to your usual retailer and attach them again in their position.

11) HYDROSTATIC FAN INSPECTION: check that the entire surface of the hydrostatic transmission is free of dust and debris. Check that the fan is intact and free to rotate, so to cool down the transmission below it. **In very dusty environments, repeat the debris blowing/cleaning operations several times a day.**
12) CHECK THE LEVEL OF THE HYDROSTATIC OIL: inside the external tank, as described in Chap. 7b.
13) BATTERY: In case of difficult start-up, check that the battery has a voltage of at least 12V.

7d – *ADJUSTMENTS and PERIODIC MAINTENANCE*

CUTTING HEIGHT ADJUSTMENT

The adjustment of the cutting height can be carried out by using the knob in the figure on the side.
By rotating clockwise the cut is lowered, counterclockwise it is raised.



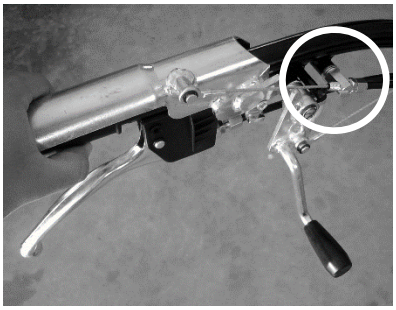
HANDLEBAR ADJUSTMENT

The handlebar is adjustable both in height and laterally.
To change the position, unscrew the tightening nut with the handle shown in the figure on the side.
Rotate or raise the handlebar until you find a position suitable for the work to be carried out and your ergonomics.
Make sure that the base of the handlebar is well embedded in the underlying toothed support. Only to this lock the handlebar in place using the handle in the attached figure.

FRONT WHEELS LOCKING

When the flail mower must work transversely with respect to a slope, it is good to insert the fixing pins in the front wheels, as shown on the side. This allows a better directionality of the machine because the wheels remain fixed and do not oscillate. The plugs shown are supplied with the machine, one for each wheel.

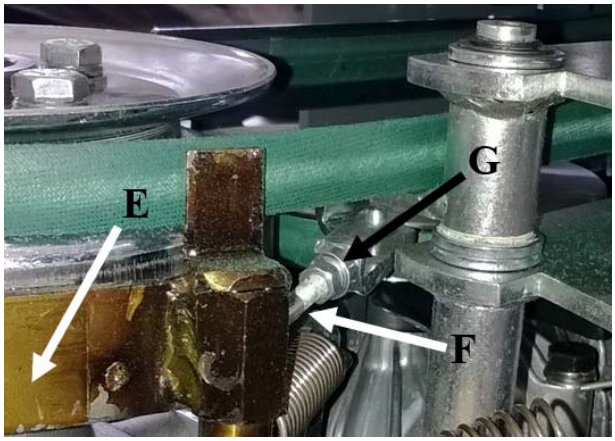
BELTS TENSION ADJUSTMENT



After a certain period/use it is normal for the belt drives of the machine to stretch slightly. To compensate for small slippages or delays in the coupling, it is possible to intervene on the cable registers, **unscrewing them**.

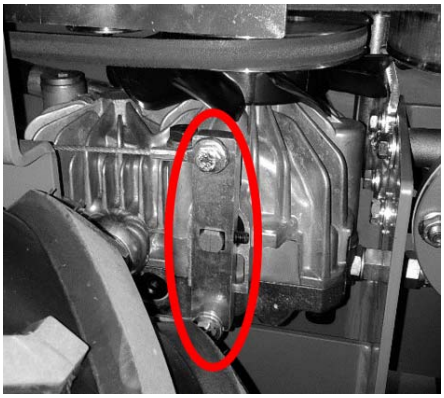
The cable register for wheel drive is shown on the left in Fig. The cable register for the rotor coupling is shown in Fig. on the right. For more specific interventions, contact an authorised workshop.

ROTOR BRAKE ADJUSTMENT

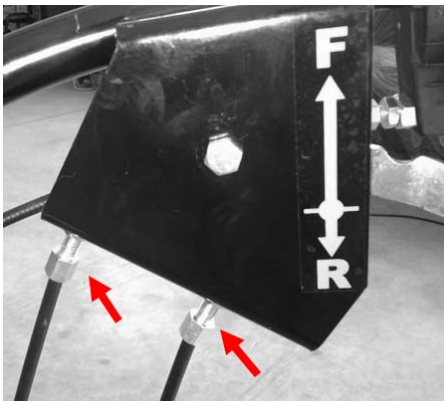


To access the brake adjustment **E** in fig. on the side, first remove the belt cover hood.
Then loosen the lock nut **G** placed on the threaded tie rod **F**.
Screw or unscrew the tie rod **F** so that:
- when the rotor coupling lever is released (**#2** in **cap 6a**), the brake pad is in contact with the drum on which it must act.
- when the rotor engagement lever is actuated, the brake **E** moves away from the drum immediately.
After adjusting, lock the lock nut **G.**

ADJUSTING THE DIRECTION OF TRAVEL LEVER



The direction of travel lever acts on the hydrostatic transmission through a pair of cables whose voltage can be recorded as needed through the registers indicated in the figure on the side (right).
In particular, when the lever is in neutral, i.e. resting on the horizontal section of the handlebar grid, the connecting rod that controls the hydrostatic transmission (figure on the left) must be in an upright position.



In this position, the cable sheaths must not have any play and the machine must also be STOPPED with the wheel drive lever pressed.

ADJUSTMENT OF DIFFERENTIAL RELEASE LEVERS

It is possible to adjust the voltage of the responsible cables by acting on the register indicated in the figure:
- if the wheel lock struggles to fit despite having pulled the lever up against the knob: unscrew the register
- if the wheel struggles to return to traction from an idle position: screw the register.

LUBRICANTS

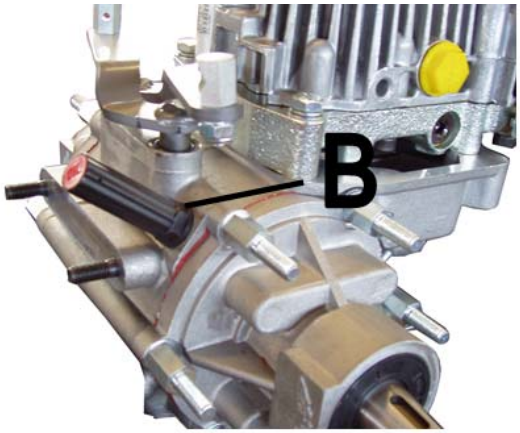
For the lubrication of the wheel drive box, use:

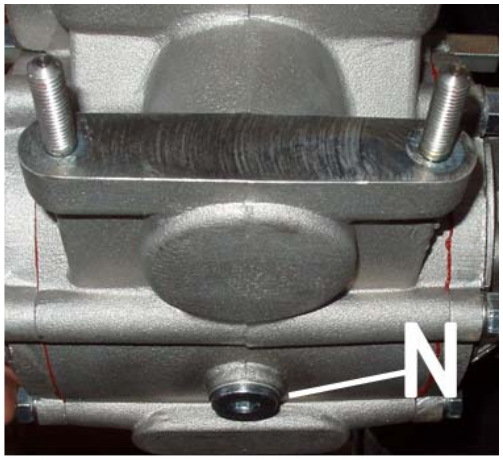
gear oil 80W-90 (or equivalent)

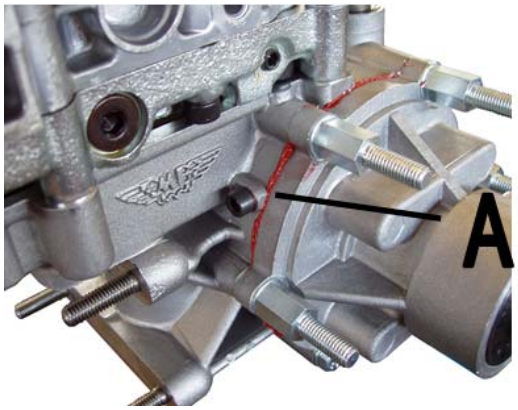
- check the level using screw **A**
- top up if necessary from the hole of the vent plug **B**

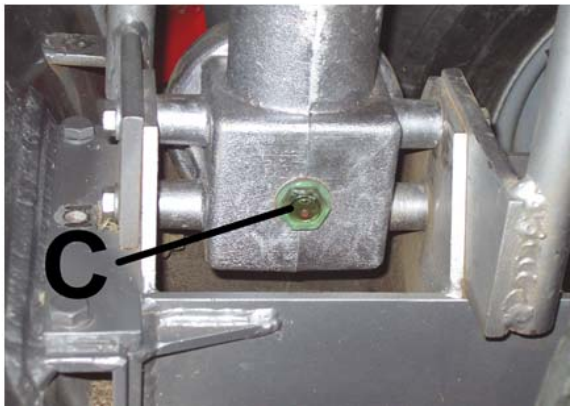
In the case of a complete oil change:
- drain the old oil from the **N** cap placed under the box
- fill the new oil from the hole in cap **B**

Then check the transmission oil level to the rotor. This is done visually via the **C** light on the cone pair box. Refill if necessary from that same hole, always with 80W-90 oil or equivalent.
For proper operation, especially on slope, do not fill beyond the levels indicated. Periodically check for leaks.









KNIFE REPLACEMENT

Wear gloves! To disassemble the knives, simply unscrew the relative screws and fixing nuts. For reassembly, clean carefully and tighten the screws and nuts again. Knives must be able to move freely. Since the blade fixing nuts are self-locking, after disassembly they must be replaced with new self-locking nuts.

Every 50 hours

- complete engine oil change
- complete replacement of the set of knives and related bolts
- control and registration of belts
- control and registration of the rotor brake if the stopping times have lengthened beyond 7 seconds from the release of the lever
- Check and possible tightening of all the machine bolts.

Every 200 hours

- replace the rotor support bearings
- replacing the engine oil filter
- petrol filter control

Every 250 hours

- replace the air filter

Every 300 hours

-complete oil change in the wheel transmission and in the bevel torque of the return to the rotor
- COMPLETE hydrostatic oil change

NB: if the noise of the transmissions should increase and/or the slope performance should decrease, consider a complete oil change even earlier.

Once a year

- replace the spark plug

When needed

- Replacement of tyres or complete wheels: in both cases it is ESSENTIAL to put them of identical size and type
- Battery replacement:

► During maintenance, keep metal objects away from the poles.
► Use original batteries only. They are sealed, dry-charged and designed for use on slopes, as they have no acid leaks.
► Follow the instructions described in the battery manufacturer's manual supplied with this machine

manual.
When the battery is disconnected (in order to install another one of the same type):

- disconnect the **black** negative **(–)**
- Disconnect the positive **red** pole **(+)**
- Remove the flat battery and install the new one
- Connect the positive **red** pole **(+)**
- connect the **black** negative **(–)**

Follow this operation order also when the standard battery is removed to charge it during winter storage.
To remove the battery (after disconnecting the poles as indicated), simply disassemble the sheet metal retainer that holds it in place.
PLEASE NOTE: the manufacturer WILL NOT BE LIABLE for damage resulting from a short circuit due to incorrect pole connection, the same applies to failures resulting from the use of non-original batteries!

To be sure that the machine promptly starts at any moment, it is also advisable to periodically check the electrical wiring conditions, as well its connections and terminals. Clean the oxidised contacts and check that covers and sheaths are in good conditions. To protect the electrical components, it is essential to keep the machine away from running water, rain, and humidity.
Moreover, washing the machine with a high-pressure water jet cleaner is STRONGLY DISCOURAGED.

7e – *TROUBLESHOOTING GUIDE*

This general guide cannot entirely replace the expertise of an Authorised Workshop, which perfectly knows the product. If the following suggestions are not useful enough to fix a specific issue, it is recommended to contact a service centre.
In case of shock, drift, tip-over or generic damage, even if the machine seems to be intact, it must be inspected as soon as possible by an authorised workshop. It is necessary to check the total absence of damage to the functional and structural parts (frame, engine, hydrostatic transmission) and make sure there is no spillage of fluids. NOTE: even if at first sight no damage is found, the in-depth inspection must be carried out anyway: some faults can be overlooked by an unexperienced user!

■) The STARTER does not turn

-) battery does not supply enough current / is low / is defective => check that the cables are well fixed to the terminals / charge / replace with a new one.

NB: in emergency situations where the motor does not start with electric start it is possible to do a manual start using the self-winding rope. The ignition key must in any case be in the ON position and the solenoid on the carburetor must be moved manually to allow the passage of fuel even in the absence of current. The engine will always be switched off by turning the key to off. Contact a workshop to have the procedure described.

■) The STARTER turns, but the engine does not start

-) Empty petrol tank => Refill.
-) swamped engine => contact authorised workshop
-) Spark plug cap removed => Put it back in position.
-) air filter clogged / to be changed => clean or replace with a new one.
-) spark plug smeared or incorrect distance between the electrodes => see motor manual.
-) Dirty petrol and clogged supply hose => Empty the tank, clean the hose, fill with fresh petrol compliant with the specifications contained in CHAP. 7b.

■) ENGINE at the right temperature but still working irregularly

-) Air filter clogged/to be replaced => Clean as described in CHAP. 7c/replace with a new one.

-) Dirty spark plugs or wrong distance between electrodes => See the engine manual.

-) Dirty petrol and partially clogged supply hose => Empty the tank, clean the hose, fill with fresh petrol compliant with the specifications contained in CHAP. 7b.

■) The ENGINE starts and works properly, but the machine does not move

-) check the tension of the wheel drive belt

-) Hydrostatic transmission overheated by intense, prolonged use, on slopes and at high ambient temperatures => allow the machine to cool down completely before resuming work.

■) The ENGINE turns accidentally off during work

-) Too much effort: forward speed is too high/cutting height not proportional to the terrain/throttle not at its maximum RPMs => decrease the forward speed/raise the cutting height/bring the throttle to the maximum.

-) Petrol has run out => Fill the tank.

-) Petrol picking issues due to the use on slopes and tank almost empty => fill up.

-) gasoline draining problems in the flat and with a full tank => inspect the gasoline pipe exiting the tank.

-) Extreme overheating => Let engine and machine cool down and avoid working in such conditions. Wait for better conditions or take more frequent breaks.

-) motor electrical problem => contact the workshop

■) The ROTOR does not engage

-) check the tension of the rotor belt, both the one under the motor and the one on the side of the crankcase => adjust or replace.

■) The machine VIBRATES more than expected

-) knives missing, broken, bent => REPLACE

-) Loosened fixing bolts => Tighten immediately and consider a total replacement of the fixing nuts, if they have lost their locking ability (M10 self-locking nuts, cone-lock type).

-) Blades and bolts are in good conditions, rotor bent due to the hits received => total rotor replacement carried out by an authorised workshop.

■) The engine produces anomalous SMOKE (it burns oil)

-) the engine burns oil because you work too long downhill => reduce the exposure of the engine head downstream and alternate more often the uphill cutting with downhill cutting with flat "recovery" times.

-) The engine oil level is too high => proceed as described in CHAP. 7b, do not fill over the indicated MAX limit.

■) The ENGINE gets too hot

-) Presence of debris all around the engine and especially in the upper part, close to the flywheel cover => Free all engine surfaces from debris build-ups, especially the upper part.

-) insufficient amount of oil => top up immediately as described in CHAPTER 7b and in the engine manufacturer's manual.

■) CUTTING RESULTS are uneven

-) Blades partially broken, worn or missing => Proceed as described in CHAP. 7c 4)

-) the mower casing is clogged => you have to start every job with the internal volume of the casing clean! **The quality of the cut depends a lot on the free volume around the rotor**!

-) The engine (and, therefore, the rotor) is not turning at its maximum RPMs => Bring the throttle to the maximum during cutting operations, so to have an ideal impact speed.

-) The forward speed and/or cutting height are not proportional to the type of terrain and density of the vegetation to be cut => decrease the speed and raise mowing deck until an ideal cut is achieved. If necessary, pass on the vegetation cut once more.

-) If the vegetation cut is asymmetrical and the mowing deck did not receive hits => check the tyres pressure, looking for possible differences between left and right wheels.

-) If on an exclusively grassy terrain the vegetation cut is too coarse => INCREASE the travel speed lowering the rotor height, so to clog the casing more and increase the grinding before the vegetation is discharged on the ground. On the other hand, IF THE TERRAIN HAS BRANCHES OR SHRUBS, these precautions are counterproductive.

■) Rotor CASING clogged

-) The terrain is too wet => Clean the casing internal part more frequently, raise the cutting height, consider if more than one attempt is needed, or work when the weather is drier.

-) Worn blades => Replace them, as a poor grinding due to a worn-out cutting element leads to further build-ups.

■) THE MACHINE DOES NOT STEER

-) act on the registers of the differential release levers.

■) THE ENGINE DOES NOT TURN OFF moving the key to OFF

-) force shutdown under stress (with engine idling) or wait to run out of fuel. In any case, the electrical system is defective => have it inspected by a service centre before any subsequent use.

■) TYRES are subject to frequent punctures

-) If this is due to the type of terrain and vegetation to be cut (and not to faults on rims or valves) => consider the use of an anti-puncture gel.

■) The BATTERY does not charge

-) charging circuit not working properly => have it inspected

-) Faulty battery => replace it.

■) THE MACHINE DOES NOT STOP WITH THE GEAR DIRECTION LEVER IN THE IDLE POSITION

-) register the cables

8 – *STORAGE AND DISPOSAL*

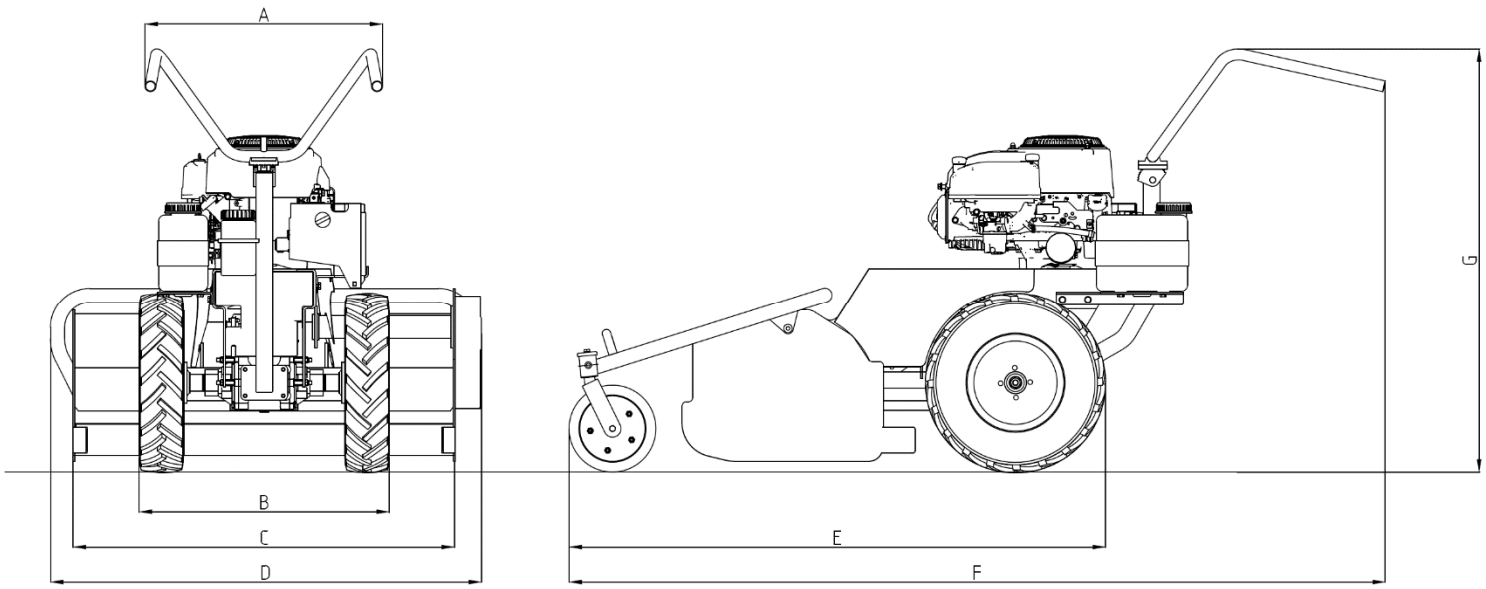
- ***Short-term storage*** (< 1 month): park the machine in a closed, dry area after having allowed it to cool down completely. Cover the machine with a sheet. Periodically check that the battery charge does not go under 12V.

- ***Long-term storage*** (> 1 month): in addition to the precautions mentioned above, it is good to empty the petrol tank to prevent the formation of deposits. The fuel must be stored in cool and dry places, away from light and ignition sources, in approved containers suitable for the purpose.

During long stops, keep the battery under charge!

- ***Disposal of the machine at the end of its life***: the flail mower is composed of various parts whose disposal can follow different logics from country to country. It is essential to take care of a correct disposal, especially in the case of lubricating oil, petrol, battery, and tyres, which are considered special waste in most of the countries where this machine might be used. The rest of the machine is mostly composed of iron plates. Contact the organisations entrusted with this task and NEVER dispose of the waste in the environment.

9a– *TECHNICAL DATA*



A = 580 mm

B = 600 mm (**TR 600**) | 682 mm (**TR 800**) | 900 mm (**TR 900** has twin wheels)

C = 600 mm (**TR 600**) | 750 mm (**TR 800**) | 900 mm (**TR 900**)

D = 725 mm (**TR 600**) | 875 mm (**TR 800**) | 1025 mm (**TR 900**)

E = 1270 mm

F = 1920 mm

G = 980 mm

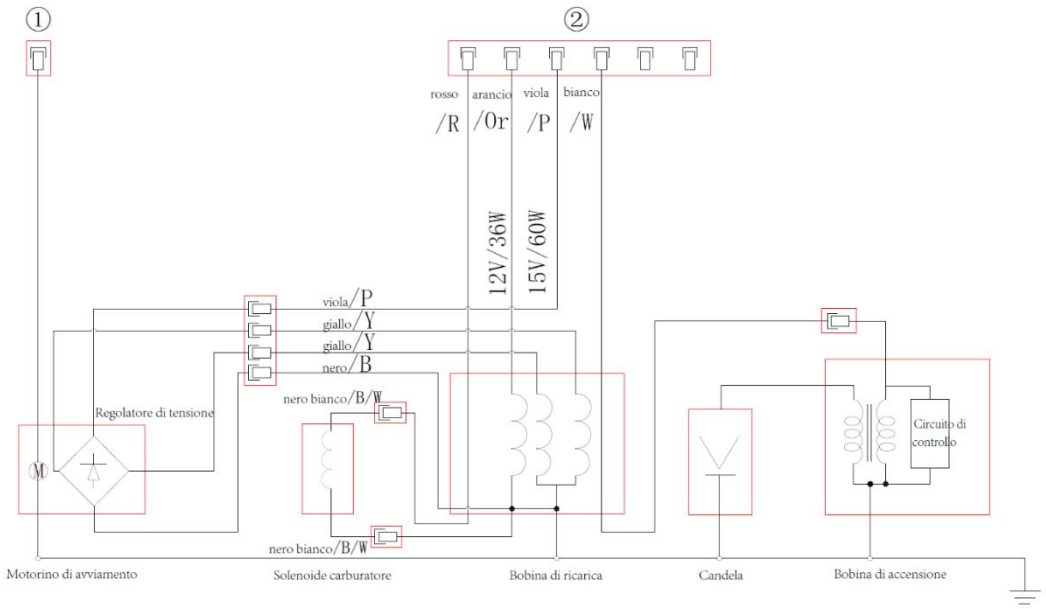
	TR 600 hydro	***TR 800 hydro***	***TR 900 hydro***
Dry weight	163.5kg	177kg	206.5kg
Engine	Zonsen XP 380 E	Zonsen XP 380 E	Zonsen XP 380 E
Displacement	382 cc	382 cc	382 cc
Power @ 3600 rpm	8.5 kW (11.5 hp)	8.5 kW (11.5 hp)	8.5 kW (11.5 hp)
Start-up	Electrical	Electrical	Electrical
Hydrostatic transmission	Hydro-Gear BDU	Hydro-Gear BDU	Hydro-Gear BDU
Cutting element type	Blade flail rotor	Blade flail rotor	Blade flail rotor
Cutting height range	40 - 70mm	40 – 70 mm	40 - 70mm
Actual cutting width	600mm	750mm	900mm
No. of blades	28 (14 Y pairs)	36 (18 Y pairs)	44 (22 Y pairs)
Rotor Speed and Direction	2800 rpm backwards	2800 rpm backwards	2800 rpm backwards
Rotor drive	Belt	Belt	Belt
Track (external)	600mm	682mm	900mm
Tractor Wheel Measurements	16x6.50-8	16x6.50-8	4.00-8 (twins)
Tyre pressure	2 bar	2 bar	2 bar
Petrol tank capacity	4 L	4 L	4 L
Hydrost Oil Tank Capacity.	0.7 L	0.7 L	0.7 L
Cutting capacity at 3 km/h	1800 m^2/h	2250 m^2/h	2700 m^2/h
Max. Transfer Speed	6 km/h	6 km/h	6.5 km/h
Battery	12V-18Ah	12V-18Ah	12V-18Ah

Acoustic Power (EN 12733:2018) Lwa = 102.6 dBA ± 0.7 dBA

Sound Pressure (EN 12733:2018) Lpa = 91.6 dBA ± 2.5 dBA

Hand-Arm Vibrations (EN 12733:2018) a = 1.51 m/s^2 ± 0.02 m/s^2

9b – *ELECTRICAL SYSTEM DIAGRAM*



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DECLARATION OF CONFORMITY
Annex IIA - 2006/42/EC

The company ***Meccanica Benassi Srl*** with registered office in Dosso, via Statale 325, 44047 Terre di Reno (FE) - Italy, as manufacturer and holder of the technical documentation, declares that the machine:

Type: Flagellation mower

Models: ***TR 600 hydro, TR 800 hydro, TR 900 hydro***

Serial number:
from **8900202** to **8999999** (TR 600 hydro)
from **9000488** to **9099999**(TR 800 hydro)
from **9800133** to **9899999** (TR 900 hydro)

Power @ 3600 rpm:
8.5 kW (***ZONSEN XP380E***)

Mass (dry):
163.5 kg (***TR 600 hydro***)
177 kg (***TR 800 hydro***)
206.5 kg (***TR 900 hydro***)

is compliant with the following directives/regulations:

2006/42/EC (EN ISO 12100:2010; EN 12733:2018)
2014/30/EU
2011/65/EU and subsequent amendments

Dosso, January 2026

Mattia Mantovani