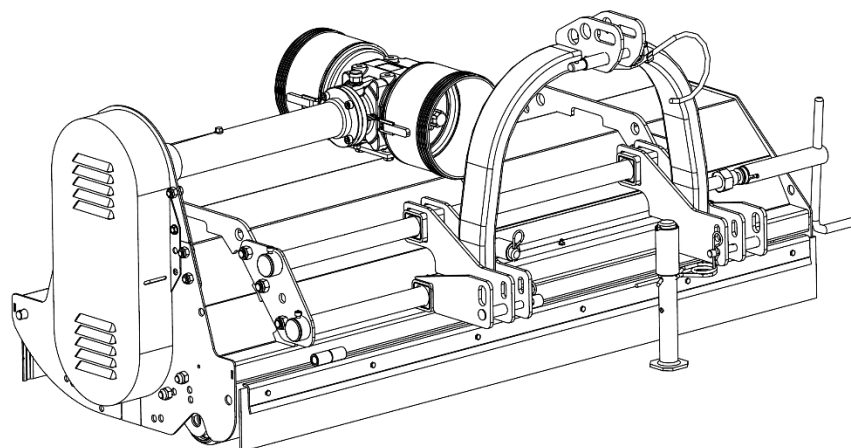
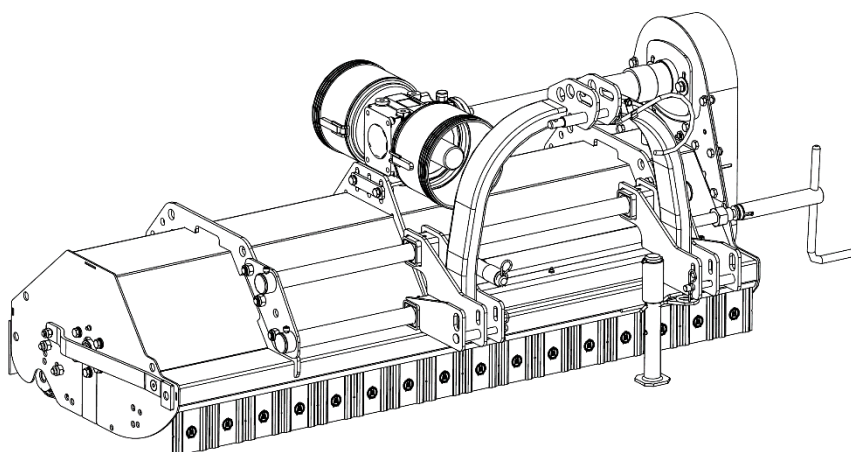


INSTRUCTION MANUAL

MULCHER

Brand: BERTI Machine Agricole
Model: GREEN



📖 Carefully read this manual before operating the machine 📖

TRANSLATION OF THE ORIGINAL VERSION

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INTRODUCTION

This instruction manual describes the operating mode and contains all instructions necessary to properly use and maintain (perform ordinary and periodical maintenance operations) the mulcher that will be referred to from now on as machine.

To facilitate consultation, this instruction manual is divided into clearly identifiable chapters.

The indications contained in this manual are intended for professional users, with specific knowledge regarding the methods of use of the machine, that are authorised, trained and properly educated.

The use of original spare parts and accessories is recommended. The use of unoriginal parts triggers invalidity of the warranty and may cause dangers, reducing the lifetime and performance of the machine as well as serious damage/injury to persons, property and animals.

The manual must always accompany the machine, even if the latter is sold, and must always be delivered together with the machine. If the manual is damaged or lost, a copy should be requested to the Manufacturer of the machine or to the owner. This manual is an integral part of the machine.



For the USER: Before using the machine you must carefully read this instruction manual in which are indicated the actions to be performed for proper use of the machine, paying particular attention to all the safety-related regulations. Abuse of performance and lack of compliance with the use and safety standards render the user responsible for any damages that may occur to persons, things or animals as a result of the use of the equipment.

The manufacturer of the machine does not directly control the field in which it is used, the method used or the method of maintenance and therefore the user is responsible to respect the rules of common sense in the operating areas, especially in the critical ones, paying utmost attention to his own safety, to the safety of other persons, animals and property, always assessing the danger before performing any operation.

If the user delegates the use of the machine to a third party, it is their responsibility to make sure that the other user has properly read and understood this instruction manual.

This instruction manual must always be kept in an accessible place, so that it can be immediately consulted in case of need.

For the SUPPLIER, DEALER and IMPORTER: the person in charge of delivering the machine to the end user must apply it to the tractor. It is therefore their responsibility to read this Instruction Manual and to understand the contents before the machine is definitively handed over. It is also his responsibility to train the final user and make sure that the latter has read and understood the indications in the instruction manual.

GLOSSARY

Machine	Mulcher.
Tractor	Motorised vehicle used to tow other vehicles, especially agricultural machines.
User	The user is considered as the owner and/or staff, the operator/user in charge of operating, cleaning, maintaining and repairing the machine, able to recognise and therefore avoid the dangers arising from the use of the machine.
Specialised personnel	Persons purposely trained and enabled to carry out maintenance or repair interventions requiring a particular knowledge of the machine, of its functioning, of the relative safety devices and their intervention modalities.
Safety Personnel	Personnel in charge of making sure that no persons are inside the machine operating area.
Manufacturer	Company that manufactures the mulcher→Berti Macchine Agricole S.p.A.
	DANGER - This sign indicates an imminent and real dangerous situation, that may cause serious injuries or death if not avoided.
	WARNING - This sign indicates a potentially dangerous situation, that may cause serious injuries or death if not avoided. Dangers marked by this sign present lesser degree of risk of serious injury or death than those indicated by the DANGER sign.
	CAUTION - This sign indicates a potentially dangerous situation, that may cause minor injuries or moderate wounds. The symbol is used to inform that certain actions may cause personal injuries or damage.
	PLEASE NOTE

1. INFORMATION REGARDING THE INSTRUCTION MANUAL

This manual is an integral part of the machine and must accompany the same in case of resale and until its demolition.
If this manual should be lost or damaged, a copy of it must be requested from the manufacturer ("BERTI macchine agricole S.p.A.", via Musi 1/A - 3, Caldiero - Verona., Tel.+39.045.6139711) or from the Retailer.



The presence of this symbol, in its three versions, indicates that maximum attention must be paid to the subject discussed.

Some of the devices described in this manual may not be present on your machine, depending on the chosen set up and on the market of destination.

1.1. MANUAL UPDATE

The information, descriptions and illustrations contained in this manual reflect the state of the art of the machine at the moment it was put on the market.

The Manufacturer reserves the right, at any time, to apply modifications to the machinery for technical or commercial reasons. Such modifications do not oblige the Manufacturer to intervene on machines sold up until that moment, nor to consider this publication inadequate.

Any integration that the Manufacturer will consider opportune to supply later on must be preserved together with the manual and be considered an integral part of the same.

1.2. Copyrights

The copyrights of this manual belong to the Manufacturer. This manual contains texts, drawings and technical designs that may not be shared with third parties, either completely or partially, without written authorisation from the Manufacturer.

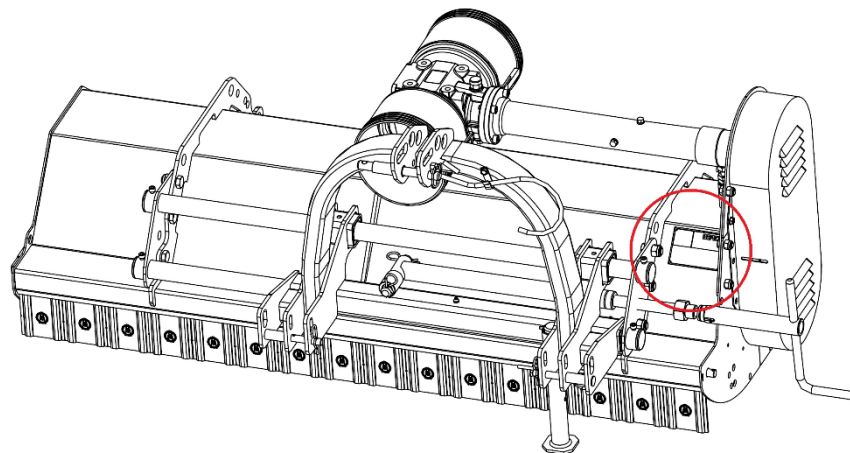
1.3. MACHINE IDENTIFICATION PLATE AND CE MARKING

Every machine is equipped with an identification plate, containing the following data:

- CE Marking;
- Country of fabrication;
- Manufacturer's name and address;
- Model;
- Serial Number;
- Year of manufacture;
- Mass;
- Model version.

The machine is supplied as standard with:

- The machine use and maintenance manual;
- The manufacturer "EC" declaration of conformity.



1.4. DECLARATION OF CONFORMITY OF THE MACHINE

The design also considered
the following harmonised standards:

- UNI EN ISO 4254-1:2015
- UNI EN ISO 4254-12:2012
- UNI EN 15811:2015

Technical specifications:
- ISO 11684:1995

1.5. MACHINE INFORMATION

1.5.1. SPECIFIED USE

The GREEN model mulcher has been designed to be used exclusively in the agricultural sector, for the shredding of grass and branches up to Ø2 cm in green areas, parks and playgrounds.

The machine is towed by the tractor via the three-point hitch and acts on the ground in virtue of its own weight and the rotation of the rotor, activated by the working vehicle power points via cardan connection.

The machine is not suitable to be used in other sectors than in agriculture.

NEVER USE THE MACHINE FOR PURPOSES OTHER THAN THOSE INDICATED

The use of the mulcher is strictly forbidden if connected to a tractor with different features from those listed in paragraph 1.5.3, on soils with stones, scrap metal, wire and any other synthetic materials, to fell trees, to mill logs, on unstable land (such as land with heavy uphill or downhill, steep slopes, near cliffs, on very uneven land etc....) and in any other situations that may cause dangerous conditions and serious consequences for the user, things, persons and animals.



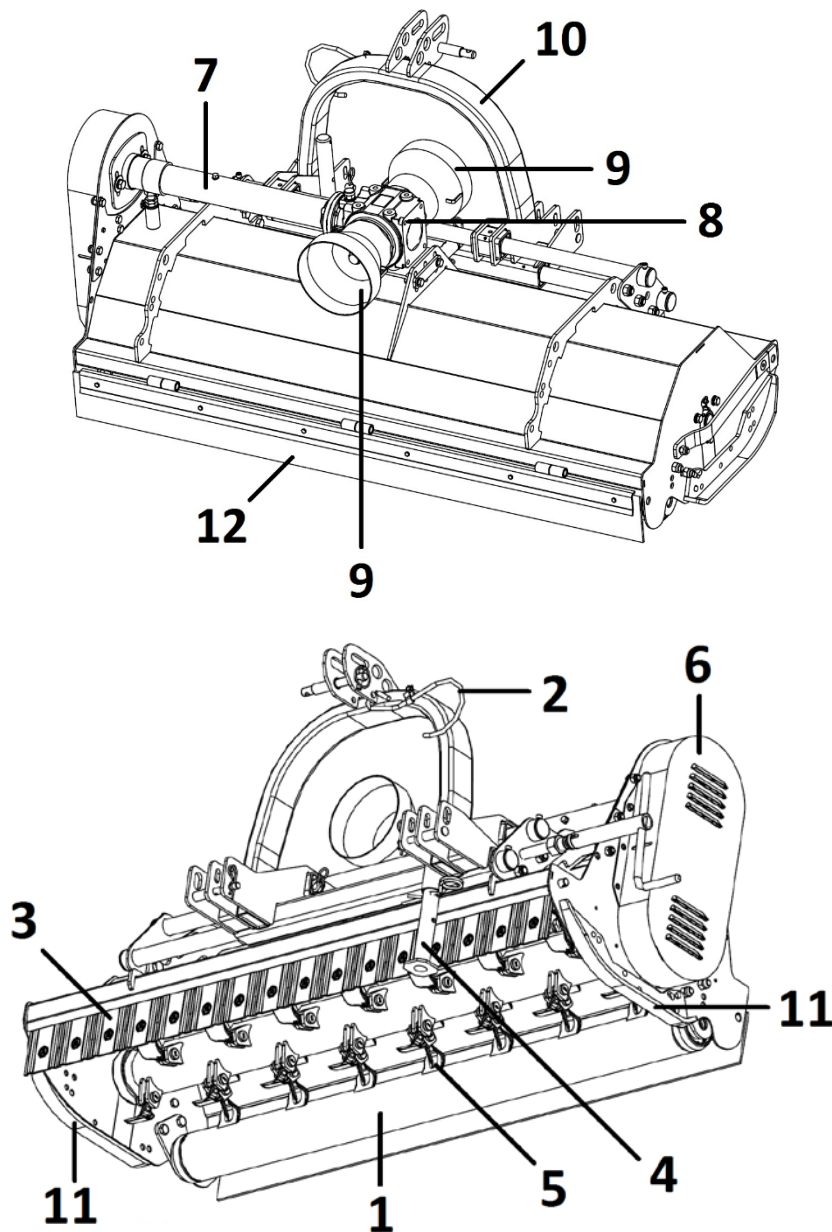
Any other use of the machine (different from the one indicated in the instruction manual) should be considered unauthorised and therefore dangerous.

1.5.2. DESCRIPTION

The machine has an operating component consisting of a rotor with horizontal axis, on which the mulcher tools are mounted, that rotates at high speed.

The mulcher is made of:

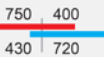
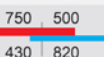
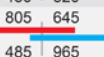
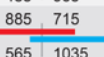
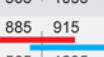
- A frame;
- A moveable three-point coupling system (possible hydraulic or mechanical movement);
- A 0-1 category drawbar;
- A coupling to the cardan shaft;
- A gearbox;
- A transmission (pulleys, locking sets);
- A rotor;
- A series of mulching tools;
- A support device in the parking position;
- CE safety guards.



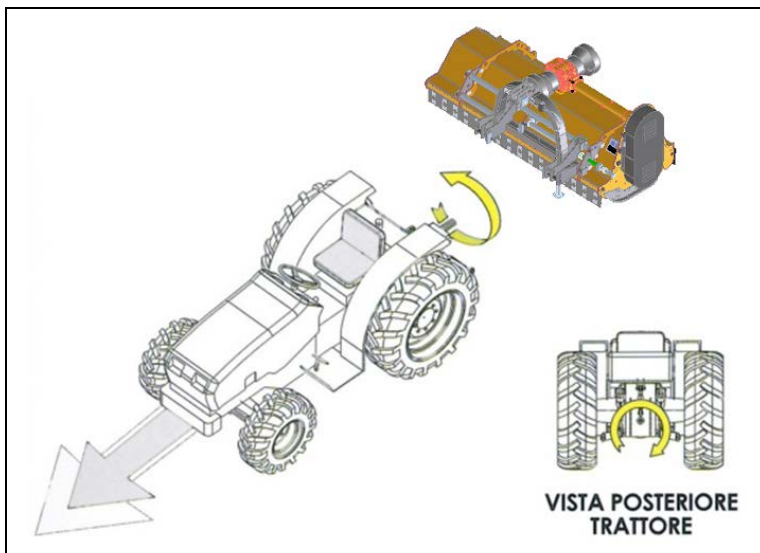
1 Levelling roll	7 Extension
2 Support for cardan shaft in stand-by	8 Gearbox
3 Front protection devices with straps or chains	9 Counter-cap
4 Support feet	10 Helm
5 Rotor	11 Support slides
6 Casing	12 Rear protection rubber

1.5.3. TECHNICAL DATA

The machine operates behind or at the front of the tractor and can be applied on tractors with power between 22 and 40 kW (30 - 55 HP). The table below indicates the machine's field of operation.

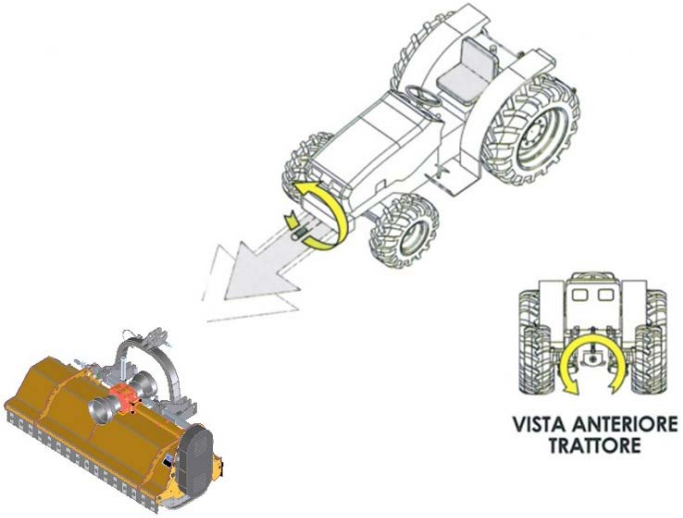
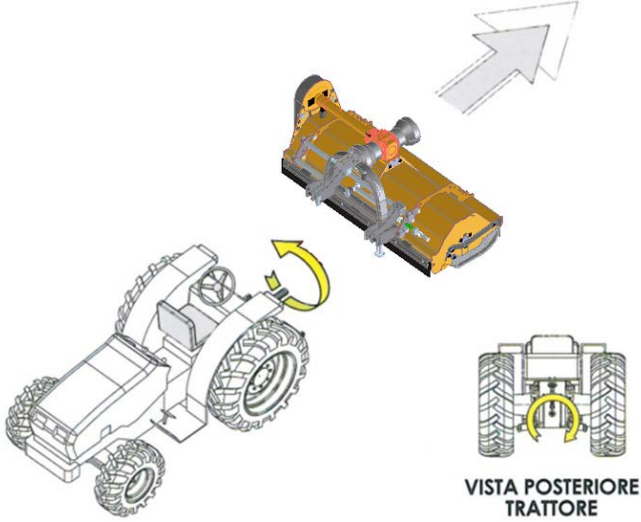
Mod.												
	cm	Min	Max	mm	n°	n°	PTO	A	B	C	min	max
GREEN 115	110	30	55		32	2	540 (1000)	80	130	95	225	275
GREEN 125	120	30	55		34	2	540 (1000)	80	140	95	245	295
GREEN 145	140	30	55		40	2	540 (1000)	80	160	95	285	335
GREEN 160	155	30	55		44	2	540 (1000)	80	175	95	315	365
GREEN 180	175	30	55		50	2	540 (1000)	80	195	95	355	405

SETTINGS:

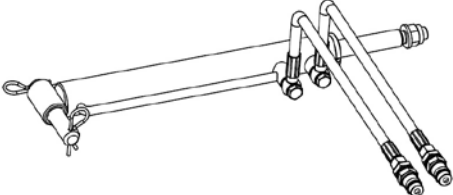


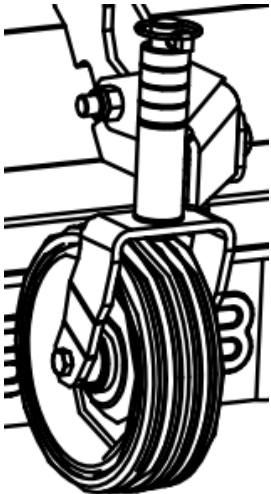
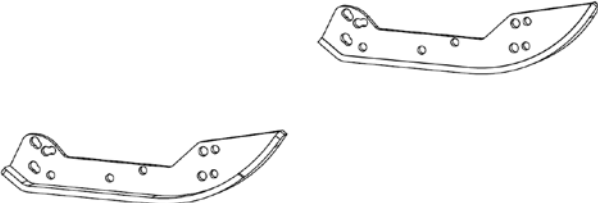
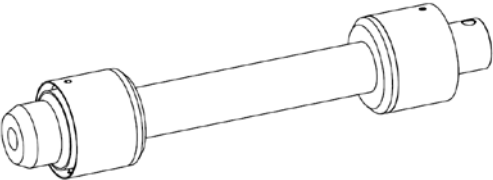
SETTING 1

Mulcher: rear
 Tractor PTO rotation: clockwise (standard)
 Direction: forwards

 VISTA ANTERIORE TRATTORE	<u>SETTING 2</u> Mulcher: front PTO rotating tractor: CCW (standard) Direction: forwards
 VISTA POSTERIORE TRATTORE	<u>SETTING 3</u> Mulcher: rear (rotated) Tractor PTO rotation: clockwise (standard) Advancement direction: rear

1.5.4. ACCESSORIES

Description	Drawing	
Hydraulic movement with quick coupling pipes		5 kg
Front chain protections		-

Description	Drawing	
Height-adjustable stabilising front wheels (for front version)		20 kg
Support slides		10 kg
Cardan Shaft		8 kg

1.6. PROJECTION OF MATERIALS



During some of the operations performed with the machine, you may check the materials projection; in particular, you should pay utmost attention to:

- Make sure that the protections of the operating components and the rear inspection hood are properly placed and effective;
- Periodically maintain and clean the machine;
- Make sure that there are no persons, animals or property in the machine operating area as they may become hurt/damaged.



The use of the machine is strictly forbidden if the tractor to which is connected is not provided with cabin made of anti-break / armoured / shatter-proof glass and fixed guards (e.g. metallic grid). The final user must provide the tractor with guards suitable to resist the impact with the materials/objects thrown at high speed from the machine depending on the current state of the art technologies and must contact the manufacturer to request all necessary information.

1.7. NOISE LEVEL AND VIBRATIONS

 PERICOLO 	Even when operating without load, the machine exceeds 80dB(A) and the operators must use hearing protective equipment against the noise generated during operation: use earphones or earplugs. In compliance with the standards in force, after installing the machine and before starting it, the user must perform the noise emission measurements on the assembly made of tractor - mulcher. The tractor - mulcher assembly may produce an increased level of noise over time, due to wear; it is recommended to periodically evaluate the risk of exposure to noise. The use of P.P.E. is mandatory and must ensure the dejection of the noise level registered in compliance with the standards in force. The vibrations to the tractor - mulcher assembly are included in the vibrations produced by the tractor alone. Excessive vibrations may be caused by a fault in the machine that must be immediately signalled and eliminated to protect the reliability of the machine and/or avoid causing damage to the operator's health. Always work with suitable environmental conditions (e.g. with perfect visibility, terrain able to sustain the weight of the tractor - mulcher assembly, with slopes that allow proper vertical and lateral stability of the tractor - mulcher assembly etc.).
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2. SAFETY REGULATIONS AND PREVENTION OF ACCIDENTS

2.1. GENERAL SAFETY STANDARDS

A proper use of the machine and compliance with the standards indicated in this manual along with thorough appliance of all precautions to avoid any dangerous situations, will help to avoid accidents or damage, extending the machine lifetime and will minimise faults.

The Company "BERTI Macchine Agricole S.p.A." declines any responsibility, objective or subjective, if the indications contained in this instruction manual are not respected.

 PERICOLO  ATTENZIONE	The machine must not be used in sectors other than agricultural and different than those it was designed for; a use different than that specified is considered improper. The machine must only be used by one operator driving the tractor. The user must check the proper connection between tractor and mulcher. The weight that can be lifted by the tractor in the most unfavourable conditions must be greater than the weight of the mulcher. Before getting out of the tractor and before performing any maintenance operations on the mulcher, use the parking brake, turn off the engine, remove the ignition keys from the dashboard, and wait for 5 minutes inside the cabin to ensure that the rotor and relative tools completely stop. It is forbidden to abandon and/or leave the tractor - mulcher assembly while the mulcher is still running. The use of the machine is strictly forbidden if the tractor to which is connected is not provided with cabin made of anti-break / armoured / shatter-proof glass and fixed guards (e.g. metallic grid). The final user must provide the tractor with guards suitable to resist the impact with the materials/objects thrown at high speed from the machine depending on the current state of the art technologies and must contact the manufacturer to request all necessary information. During use, the user must have proper visibility of the working areas that present dangers, therefore the mirrors and the windows of the tractor must be properly cleaned. During the operating phases, the user must always stay inside the cabin, where he is safe. It is strictly forbidden the operation with the doors/windows open. Danger from thrown objects! The machine must be used exclusively by authorised, instructed and trained operators. The operator, besides having read and understood the instructions contained in this manual, must also be sufficiently prepared on the proper use of the machine and must have a driving licence and must be an adult. The operator must contact the manufacturer if in doubt regarding use of the machine or interpretation of this manual. Never use the machine without knowing its features. The manual must always be on hand such that it can be consulted when necessary. If it should be lost or damaged, request a replacement copy from the manufacturer. The user must use all the safety devices and personal protection equipment (P.P.E.) during machine use, adjustment, repair and handling phases. 
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	During use, if operating with dry products (hay, straw, etc.), the machine may generate dust. The filters of the cabin ventilation system should be periodically checked and operators should always wear proper protection devices for the respiratory system, such as anti-dust masks.
	The operator assigned to the machine must not wear clothing that can cause entanglement.
	It is strictly forbidden to use the machine for lifting persons, animals or objects.
	It is strictly forbidden to use the machine for transporting persons, animals or objects.
	It is strictly forbidden to use the flexible pipes as supports; these components are mobile and do not offer proper support.
	The operating area must be thoroughly inspected before using the machine, paying attention to remove any stones, iron residues, steel cables, manholes, strains and all those materials and obstacles without any limitation which may constitute a source of danger, accidents and serious damage to the user, people, animals and things.
 	The operator must make sure that no person or animal stops within the radius of action of the same during machine functioning. The user is responsible of stopping the machine immediately and clearing the machine operating area from people and animals. Never activate the machine near persons and animals standing or transiting within the radius of action of the machine.
	If the machine is used in public areas and on roads, take all necessary precautions for the safety of persons, animals and property, for example, using safety personnel, warning signs, placing them at the ends of the machine operating area, according to the laws in force in the country of use.
	Never work in areas with strong counter slope, on slippery surfaces and in areas / zones that reduce the adhesion of the tractor to the ground. Pay utmost attention to changes of direction.
	Use the machine during the day and under conditions of perfect visibility.
	It is strictly forbidden to operate in adverse environmental conditions, for example during storms, snows, in windy, rainy or cloudy days, etc.
	Avoid working on muddy, sandy or soft terrain.
	Pay attention to the risk of accidental ignition of the electric arc machine with overhead power lines.
	Do not use the machine if you are tired, ill or under the effect of alcohol, medicines or drugs.
	Carefully check the machine each time before starting it.
	Before using the machine, make sure that all safety devices are properly in place and in good conditions. If there are failures or damage to the guards, replace them immediately.
	It is strictly forbidden to remove or tamper with the guards and/or safety devices.
	Make sure that the safety pictograms are in proper conditions, readable and clean. If the pictograms have deteriorated, they must be replaced with other original versions requested from the manufacturer and placed in the position indicated by the use and instruction manual (paragraph 2.3.2). If necessary, clean with a damp cloth.
	The signs on the machine provide important indications: follow them for your safety.
	It is strictly forbidden to perform any modification that may alter the original condition of the machine.
	Any arbitrary modification made on this machine lifts the manufacturer from any responsibility for damage or injuries that could result to operators, third parties or to objects.
	Keep the machine free from foreign materials (debris, tools, other items), which may damage the operation or the operator.
	The following paragraphs list other highly important safety standards. It is mandatory to read the entire instruction manual before using the machine.

2.2. FIRE-FIGHTING MEASURES

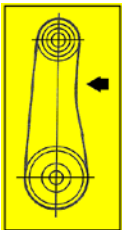
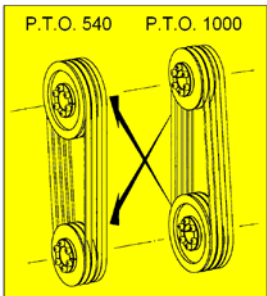
	Keep an extinguisher of proper capacity in the tractor and maintain periodically. The hand extinguisher may only be used by personnel that know how to use it. The user is therefore responsible for providing proper training via particular courses.
	The personnel that use the machine must know the main intervention techniques in case of fire.
	Do not use the machine in areas that present explosion and/or fire hazard.
	Maintenance residues, such as, straps or replaced materials containing flammable residues must be kept away from sources of ignition and disposed of in accordance with applicable laws in the country of use.
	Use appropriate extinguishing means: e.g carbon dioxide, foam, chemical powder.
	Do not perform any welding near containers, pipes, tanks, electric wires, or flammable materials in general.
	In case of welding protect the flammable parts with appropriate screens.

2.3. SAFETY SIGNS

Make sure the safety pictograms are in good conditions. If the pictograms have deteriorated, they must be replaced with other original versions requested to the manufacturer and placed in the position indicated in the use and maintenance manual. Make sure that the safety pictograms are readable. Clean them using a cloth, water and soap.

2.3.1. DESCRIPTION OF THE PICTOGRAMS PLACED ON THE MACHINE

1		ATTENTION: indicates the following hazards: do not stand between the equipment and the tractor, pay attention to the rotating parts, do not stand behind the tractor, risk of shearing, pay attention to the rotating tools for your hands and feet.
2		ATTENTION: indicates the following hazards: pay attention to hot parts and to the foldable parts of the machine, pay attention to the projection of objects.
3		ATTENTION: read the use and maintenance manual carefully, every action on the machine should be performed after switching off the tractor, removing the ignition key and inserting the hand brake, pay attention to the pipes under pressure.
4		WARNING-DANGER minimum safety distance 50 m.
5		WARNING - DANGER of coming into contact with moving elements. Do not place your hands and feet near the transmission belts.
6		PERSONAL PROTECTION EQUIPMENT
7		LIFTING POINT

8		OIL LEVEL
9		GREASING POINTS
10		CARDAN SHAFT ROTATING AT 540 RPM
11		CARDAN SHAFT ROTATING AT 1000 RPM
12		CARDAN SHAFT ROTATING AT 2000 RPM
13		TENSIONED BELTS
14		PULLEYS INVERSION

RESTING FOOT SAFETY LOCK

NOTES ON WARRANTY

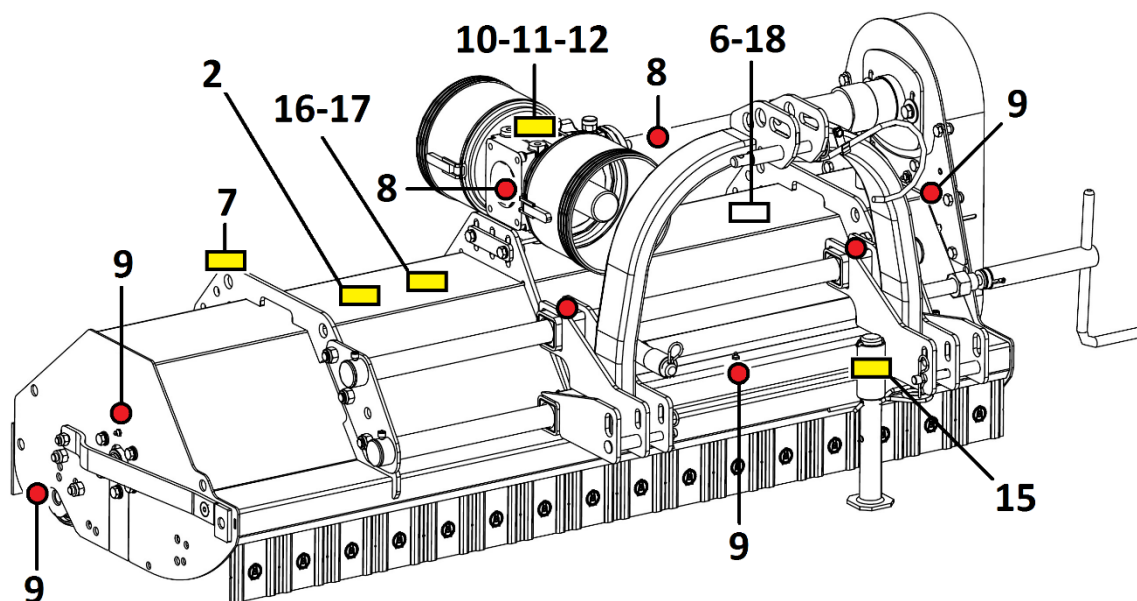
GENERAL WARNINGS

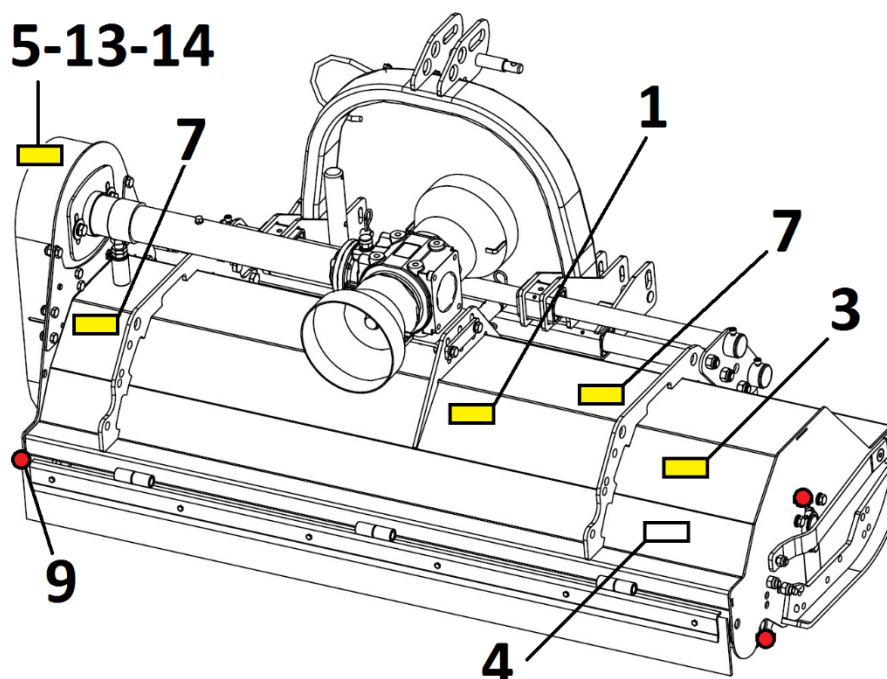
LUBRIFICANTI RACCOMANDATI - recommended lubricant empfohlenen Schmiermittel - lubrifiant recommandé								
	AGIP BLA SIA 460	IP MELLANA OIL 460	ESSO SPARTAN EP 460	SHELL OMALA 460	MOBIL MOBILGEAR S4	BP ENERGOL GRX EP 460	TOTAL CARTER EP 460	
	GREASE MU EP 2	ATHE SIA EP GREASE 2	BEACON EP 2	ALVANIA GR EP 2	MOBILUX EP 2	GREASE LTX EP 2	MULTIS EP 2	

RECOMMENDED LUBRICANTS.

2.3.2. POSITION OF THE PICTOGRAMS ON THE MACHINE

The pictograms are inserted as indicated in diagram:





3. USE

3.1. INTRODUCTION



Before using the machine, carefully read and understand the instruction manual and get familiarised with the machine. The machine may only be used by expert and properly trained users.



ATTENZIONE

Keep all the parts of your body inside the tractor cabin, to reduce to a minimum the exposure to any external dangers such as thrown objects.

Before getting out of the tractor and before performing any maintenance operations on the mulcher, use the parking brake, turn off the engine, remove the ignition keys from the dashboard, and wait for 5 minutes inside the cabin to ensure that the rotor and relative tools completely stop.

The safety of the user and of the people around him depends on his judgement and prudence in the use of the machine. Therefore the functions of the machine and the safety standards must be properly known.

The user must use all the safety devices and personal protection equipment (P.P.E.) during machine use, adjustment, repair and handling phases.

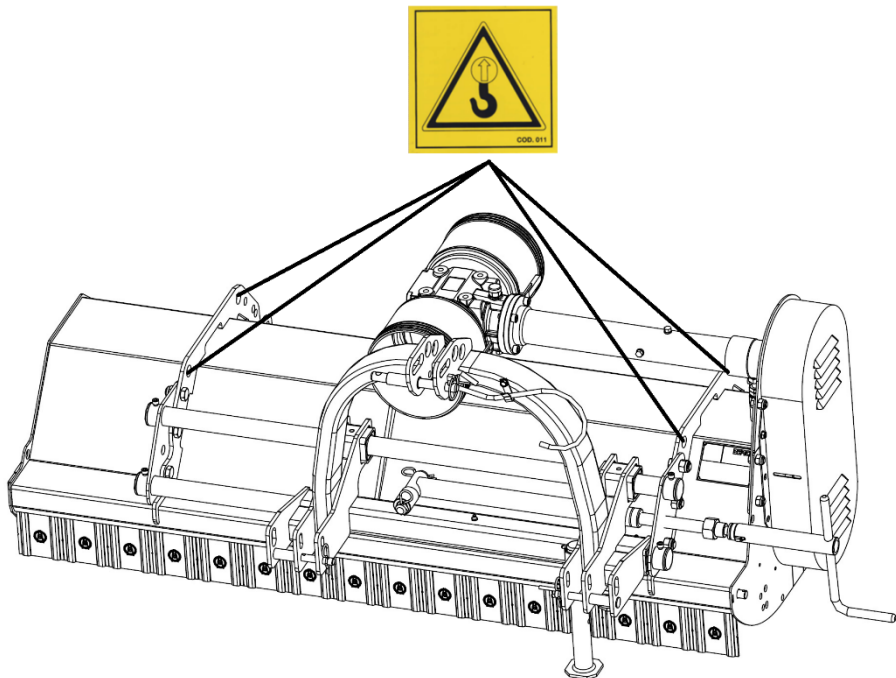


The machine must always be in perfect working condition and must be repaired only with original spare parts.

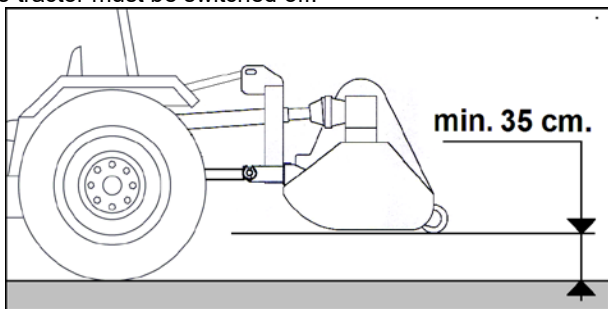
3.2. HANDLING AND TRANSPORTATION

Pay utmost attention to safety during the loading and unloading operations, that must be performed only by specialised personnel. When lifting the machine you must use the appropriate lifting points, indicated in the pictograms.

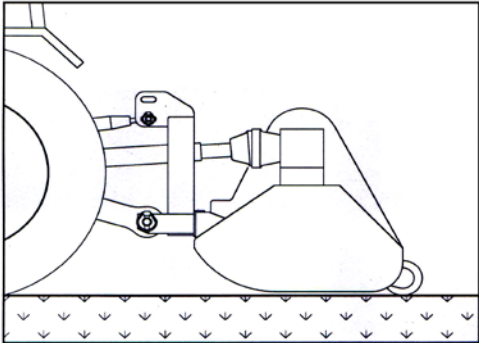
Visually check the machine before handling it as to make sure that the unstable parts do not represent a danger.

 ATTENZIONE	Never lift or handle the machine anchoring it to the rotor! The manufacturer declines any responsibility regarding any damage to people, animals and things due to incorrect handling of the machine using lifting and transportation means of lower capacity than the weight values indicated in the table from paragraph 1.5.3. TECHNICAL DATA.  The machine is delivered fully assembled and in order to use it, you must simply connect it to the tractor.
--	--

3.2.1. TRANSIT ON PUBLIC ROADS

 ATTENZIONE	If the machine must be transported on a public road, the road regulations must be strictly respected, paying utmost attention in choosing the speed. Before starting the transportation on the public road, you must install (if necessary) optional light bars. The means must be provided with orange or yellow blinking light. Before entering on a public road from a non-paved or dirty area, you must thoroughly clean the tires of the tractor from any residual mud.
 ATTENZIONE	During the transport on the road, the mulcher must be kept in transportation position at 35 cm from the ground and the PTO of the tractor must be switched off.  Before transport, check that all machine parts are integral and in good working order.

3.2.2. MACHINE TRANSPORT PROCEDURE

	Before being transported, all machine parts must be intact and in good conditions. 1. Disengage the P.T.O. and wait for the rotor to stop completely; 2. Lift the machine just enough and keep it resting on the levelling roller/wheels, so that the transmission parts do not touch the ground;  The machine weight changes the stability of the tractor - mulcher complex, influencing steering and braking capability. Therefore proceed at a moderate speed.
--	--

In particular, remember that the front axis must always support a weight equal to at least 20% of the total weight of the tractor - mulcher complex.

Check the lifting capability and tractor stability using the following formula and, if necessary, apply ballasts on the front.

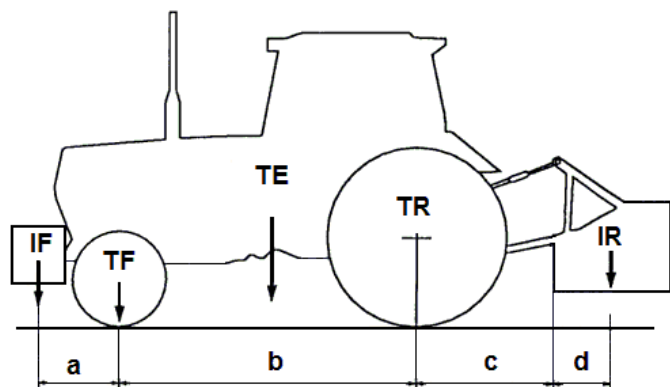


Figure 1

$$I_{F, \min} = \frac{(IR \times (c+d)) - (TF \times b) + (0.2 \times TE \times b)}{a + b}$$

TE = Weight of the tractor (empty)

TF = Front axle load (empty tractor)

TR = Rear axle load (empty tractor)

IR = Rear mulcher weight/rear ballast

IF = Front mulcher weight/front ballast

a. Distance from the centre of gravity of the front mulcher/front ballast to the centre of the front axle

b. Tractor wheelbase

c. Distance from the centre of the rear axle to the centre of the ball of the tractor's parallels

d. Distance from the centre of the tractor's parallels' ball to the centre of gravity of the rear mulcher/rear ballast

N.B.: if the machine is mounted on certified agricultural tractors registered before the 6th May 1997, the following relationship should also be checked: $M < 0.3 \times T$.

	Road transportation must be performed paying maximum attention in order to avoid putting the persons or other vehicles in danger. During the transport, the machine must be properly secured and must stay within the outline of the tractor.
--	---

3.3. VISIBILITY

	The working areas can be controlled using the rear view mirrors of the tractor and the operator's range of view.
	While moving in reverse, dark areas may be created that cannot be seen using the rear view mirrors.

3.4. CONNECTION OF THE MACHINE TO THE TRACTOR

Before installing the machine, make sure that it is in a perfect condition, placed on the ground, levelled and in stable position, that there is the proper amount of lubricant, that all parts subject to wear and/or to deterioration are efficient and that the protections are complete and functioning.

	The user must check the proper connection between tractor and mulcher. The lifting capacity and the stability of the tractor must comply with the parameters described in chapter 3.2.2.
	It is strictly forbidden to stand between the mulcher and the tractor during the connection phases and any unauthorised persons must be requested to leave the machine operating area.
	Before using the machine, the operator must know the commands and the features of the machine.
	Always keep all the parts of your body inside the tractor cabin, to reduce to a minimum the exposure to any external dangers such as thrown objects.
	Before getting out of the tractor and before performing any maintenance operations on the mulcher, use the parking brake, turn off the engine, remove the ignition keys from the dashboard, and wait for a few minutes inside the cabin as to make sure that the rotor and relative tools completely stop.

3.4.1. CONNECTION PROCEDURE

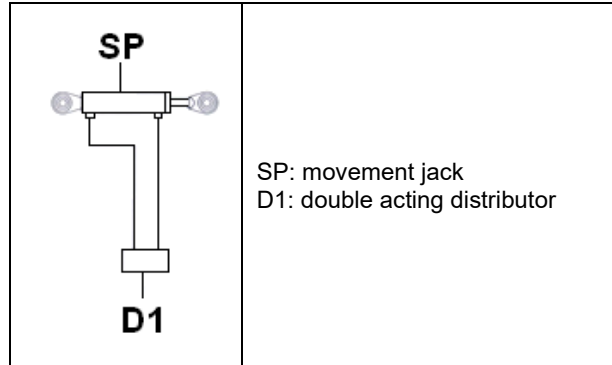
The machine must be connected to the tractor with power take-off operated at 540 rpm. (optional 1000 rpm or 2000 rpm), of adequate weight and power, complying with the legal requirements in force in the country of use.

	The user must use all the safety devices and personal protection equipment (P.P.E.) during machine use, adjustment, repair and handling phases. 
	The following operations are very dangerous. Avoid standing in front of the machine while moving the working vehicle closer. Avoid the presence of uninvolved persons. During the installation phases, the PTO of the machine should be disengaged.
	1. Remove the safety pin and the pins from the connection inlet 1 of the machine; 2. With the tractor in reverse gear and by activating the lifting device, fit the lower arms 1 with the corresponding lower hitch ports 1 of the mulcher; 3. Use the tractor parking brake, turn the engine off, remove the keys from the dashboard and get off the machine; 4. Insert the pins and lock them with the relating safety pins; 5. Connect in the same way the third point of the tractor 2 with the corresponding inlet 2 on the machine; 6. Adjust the third point so as the machine stands horizontally as regards the ground; 7. Lift and secure every supporting foot on the machine; 8. Block lifting bars of the tractor to prevent the machine oscillating laterally, compromising the transversal stability of the complex;



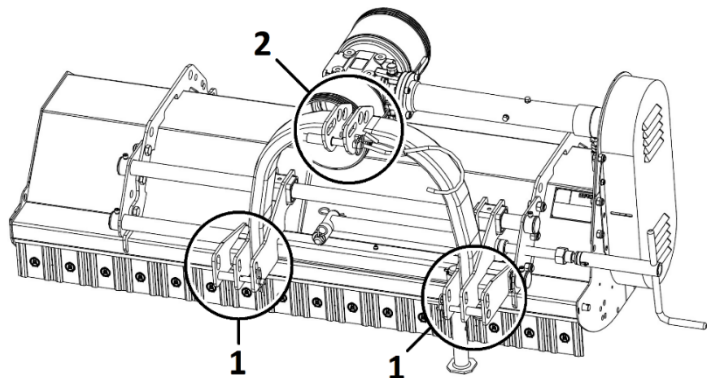
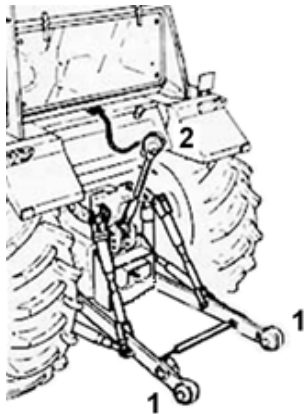
ATTENZIONE

9. Insert the cardan shaft onto the splined shaft of the machine, holding the safety pin pressed. Release the pin and retract with the cardan until the pin itself engages in the relevant seat with an audible "click". If you do not hear the "click", repeat the procedure;
10. Do not use a cardan shaft without proper protection that complies with legal requirements;
11. If the hydraulic jack is present: connect the jack actuation tubes;

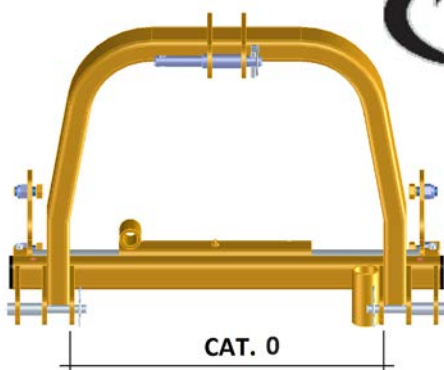


Check that all safety pins are properly inserted and functioning correctly.
Make sure that the retaining devices are inserted into the hitch pins.
Make sure that the quick couplings are properly inserted.

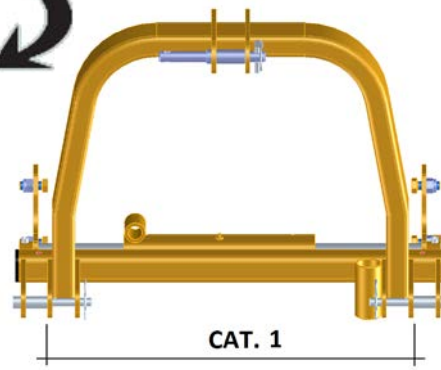
12. The machine is ready to be started.



CATEGORY 0

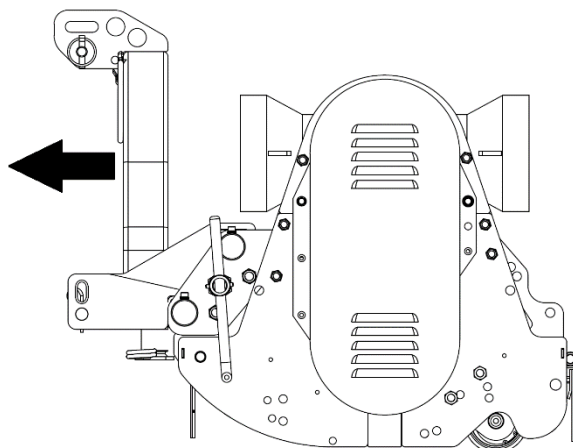


CATEGORY 1

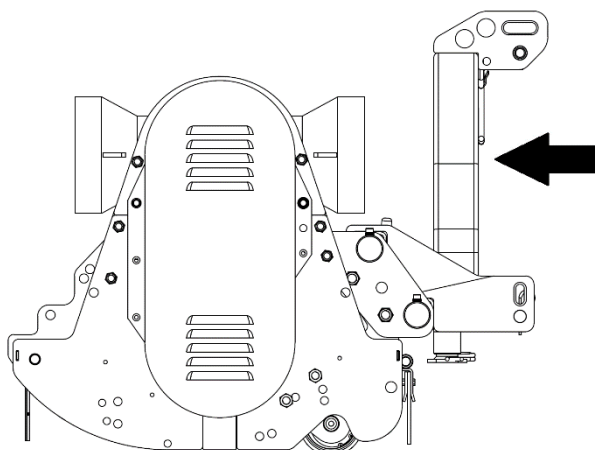


For application to the front lift, perform the same procedure described above.

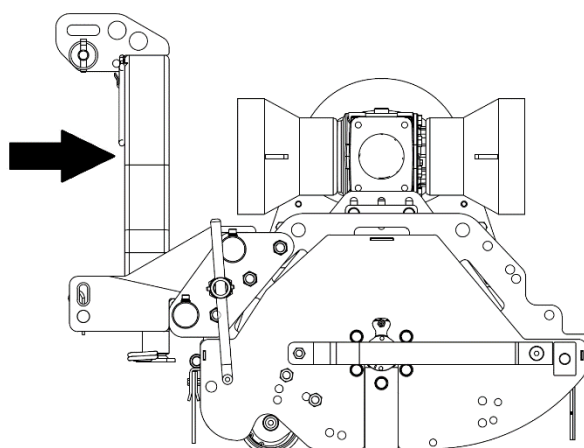
CONFIGURATION 1 (rear lift)



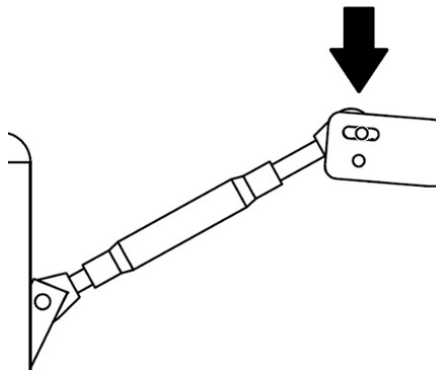
CONFIGURATION 2 (front lift)



CONFIGURATION 3 (rear lift)



When using the machine in **towing** mode (rear of the tractor), use the slot on the third point.
The pin must be approximately in the centre of the slot (floating position).
The lower arms of the tractor's lift must be fixed to the holes in the lower inlets of the mulcher (fixed position).



When using the machine in **push** mode (front of the tractor or reverse drive), use the hole on the third point.
The lower arms of the tractor's lift must be fixed to the slots of the lower coupling inlets of the mulcher (floating position).



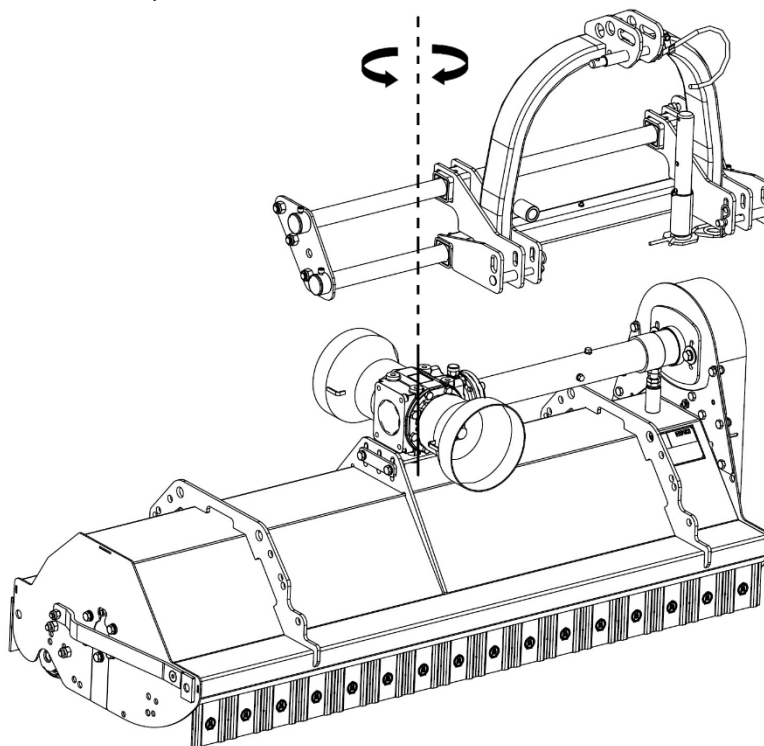
ATTENZIONE

ATTENTION: BE SURE TO HAVE ENGAGED THE SAFETY PINS IN THE COUPLING OPENING PINS 1 AND 2.
The following operations are very hazardous.
Avoid standing in front of the mulcher during the approach of the working vehicle.
Avoid the presence of uninvolved persons.
During the installation phases, the PTO of the mulcher should be disengaged.

MACHINE REVERSIBILITY:

The machine was designed to be used in the traditional manner but also with tractors with reverse drive or with front attachment. To be able to switch from the traditional working mode to working with a tractor with reverse or front drive, or vice-versa, the machine must be adapted to the new system.

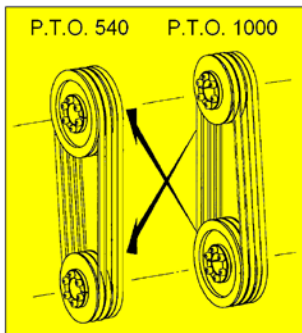
Orient the drawbar with respect to the tractor power take-off:





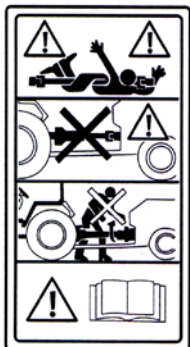
To perform these operations, the machine must be level and released from the tractor (see paragraph MACHINE DISCONNECTION).
 Contact an authorised workshop to perform the operations described above.

TRANSFORMATION PTO 540-1000 RPM OR VICE-VERSA:



The P.T.O. can be transformed from 540 to 1000 rpm or vice-versa for entry to the transmission unit with simple inversion of the pulleys which transmit movement from the gearbox to the mulching rotor using the belts (see belt replacement procedure).

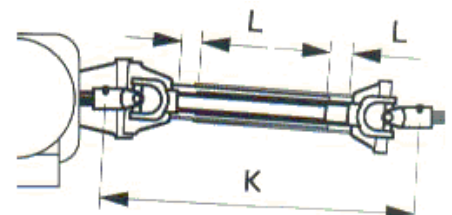
3.5. CONNECTION OF THE CARDAN SHAFT



During operation, the cardan shaft may generate dangerous situations.
 Therefore you should:

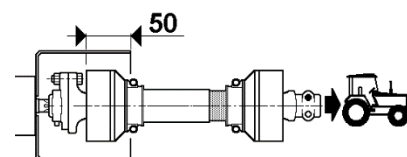
- Read and store the use and maintenance booklet near the cardan shaft;
- Make sure that the cardan shaft is appropriate for transferring the required power;
- Only use the cardan shaft delivered with the machine;
- Make sure that the guards are properly installed, complete and functioning;
- Do not operate with cardan shafts without guards.
- Replace the worn, damaged or missing guards;
- Turn off the engine of the tractor before operating on the cardan shaft or on the machine;
- Do not allow children or unauthorised persons to go near the machine during operation and/or maintenance interventions;
- Wear suitable clothes (not resistance, no loose clothes), especially tight clothes (e.g. work overalls with wrist and ankle protection);
- Grease the cardan shaft following the recommendations provided in the instruction manual of the cardan shaft.

When installing the cardan shaft for the first time, measure the distance K between the grooves of the P.T.O. buttons with the machine placed on the ground, levelled and with the multiplier aligned with the P.T.O. of the tractor; if necessary, adapt the length of the provided cardan shaft, making sure that the telescopic tubes are staked by length as to create at the ends a jog L of 40 - 50 mm. Such operation must be performed during the first installation, during each substitution and each time the machine is installed on a different tractor.



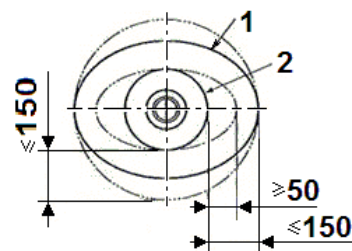
After installing the cardan shaft, fasten the guard on both sides using appropriate chains.
 When the machine is in stand-by mode, after installing the cardan shaft, perform some lifting and lowering manoeuvres of the machine to make sure that the tubes of the shaft are free to slide without any obstacles.

Check that between the guard of the cardan shaft and the guard mounted on the PTO of the machine, a minimum overlap of 50 mm is present, as required from the safety standards.



Check that between the guard of the cardan shaft and the guard mounted on the PTO of the machine a minimum radial space between 50 and 150 mm is present so as to allow a hand to be inserted.

- 1 – machine protective cap
 2 – cardan shaft protective cap

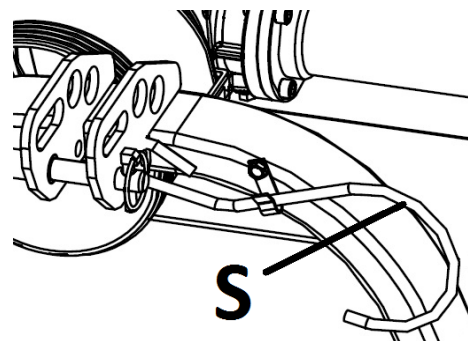


ATTENZIONE

Check the rotating direction of the PTO of the cardan, on the tractor, looking from the rear side, it should rotate in clockwise.



When it is not being used, the cardan shaft must be placed on the suitable support **S** located on the three-point tiller in order to avoid the accumulation of dirt, deformation and breakage on the protection.



PERICOLO

DO NOT CLIMB ON THE CARDAN SHAFT, EVEN IF IT IS STOPPED.

3.6. CARDAN SHAFT SPECIFICATIONS

The cardan shaft is the transmission component that drives the mulcher; it must be chosen based on specific criteria that define its power and length. As far as its length is concerned, see chapter 3.5, for power use the chart shown here that indicates the minimum power that the cardan shaft has to sustain.

Model	kw	HP
GREEN 115	22	30
GREEN 125	22	30
GREEN 145	22	30
GREEN 160	22	30
GREEN 180	22	30

3.7. HYDRAULIC SYSTEM

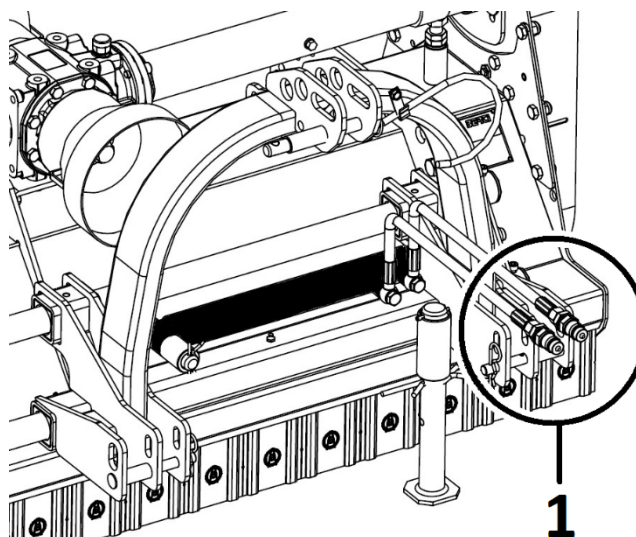
The machine can be provided (upon request) with the hydraulic system to facilitate work under plants.

Verify the level of the hydraulic oil; make sure that the tractor's system provides at least 140/160 bar, that it is provided with a double effect distributor, that the quick couplings 1 are compatible with those of the machine; you can now perform the connection.

Make sure that no-one is near the machine; with the machine adequately lifted from the ground, you can slowly adjust the command distributor lever of the hydraulic cylinder while verifying the change of position.



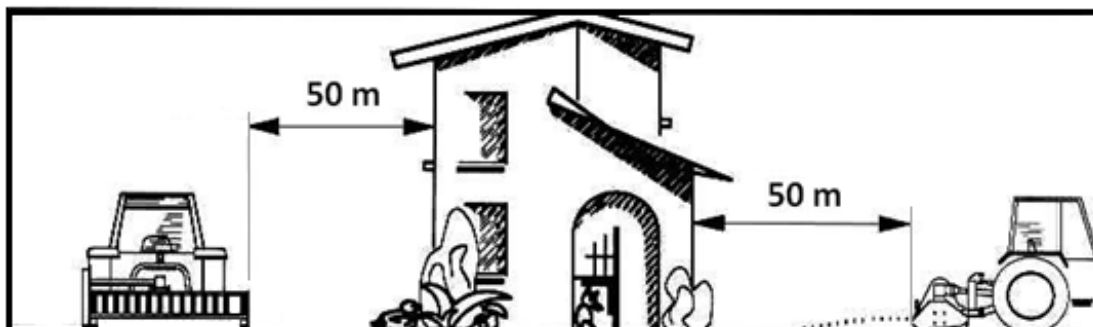
IMPORTANT: connect the 2 pipes 1 as a pair to the tractor distribution system. After connecting the pipes, perform some movement operations to discharge any air bubbles that may form inside the jack.



3.8. STARTING THE MACHINE

Before starting the machine, you must follow the indications below:

- Make sure that there are no persons, animals and things in the machine operating area as there are dangers, such as objects being thrown at high speed, that may cause serious injuries or death. Keep a minimum safety distance equal to the machine operating radius of 50m.



- Do not allow any persons, animals or things to get near and to stand in the machine operating radius.
- Before using the machine, the operator must know the commands and the features of the machine.

The user must use all the safety devices and personal protection equipment (P.P.E.) during machine use, adjustment, repair and handling phases.



- Always keep the guards in perfect state, properly placed and effective.
- The engine of the tractor must be stopped, the parking brake engaged, the PTO disengaged, the ignition key out of the dashboard and placed in a secure place.
- The rotor and relative machine tools must be stopped.
- Always inspect the machine, checking the tightness of all screws and nuts and the presence of damage which must be repaired before start-up, in order to take the machine back to its original state;



ATTENZIONE

	- Supervise the operating area removing any stones, metallic pieces, steel cables or any other dangerous materials. Take all the necessary safety precautions as to keep yourself and other persons safe. Protect the cabin or the control area against falling/objects thrown at high speed using anti-break / armoured / shatter-proof windows and fixed guards (e.g. metallic grid) that can resist to impacts in compliance to the state of the art technologies. Contact the manufacturer to request any further information regarding this case.
	- Check the position and status of the terrain in the operating area; make sure that they do not affect in any way the stability of the assembly tractor - mulcher.
	- Make sure the safety pictograms are in good conditions. If the pictograms are deteriorated, they must be replaced with other original versions requested from the manufacturer and placed in the position indicated by the instruction manual.
	- Make sure that the safety pictograms are readable. Clean them using a wet cloth.

STARTING PROCEDURE

 PERICOLO	1. Using the distributor that controls the movement jack (if present), move the machine until it reaches the operating area;
	2. Using the elevator commands, lower the machine until reaching the desired cutting height;
	3. Engage the P.T.O. and gradually accelerate the tractor to reach the speed of 540 rpm (option 1000 rpm);
	4. Engage running mode and start the operating process;
	5. Proceed a short distance with the machine engaged;
	6. Decelerate the tractor as much as possible;
	7. Stop the tractor engine, engage the parking brake, disengage the PTO, take the ignition key out of the dashboard and place it in a secure place;
	8. Get off the tractor and make sure that there are no oil losses at the mulcher hydraulic tubes couplings (if present);
	9. Do not use your bare hands to check for any loss of liquids under pressure;
	10. Check the quality of the work performed; if the quality is not good enough, adjust the operating height using the elevator, avoiding the contact between the cutting components (hammers or blades) and the terrain; repeat the steps from point 1 and if necessary review the machine adjustment operations indicated in paragraph 3.5.1.

3.8.1. MACHINE ADJUSTMENTS

3.8.1.1. ADVANCEMENT SPEED

Adjust the operating speed, using the size (diameter) and volume of the material to be mulched, as well as the degree of shredding to be obtained. The machine must be used only for the intended purposes.

 PERICOLO	Excessive speed stresses the mobile components of the machine, reducing their lifetime. In this case the amount of shredded material will be poor; it may cause the machine to throw large pieces of material that may put the operator in danger.
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In the table below are indicated the recommended speeds that should be respected in order to obtain maximum performance and in particular:

TYPE OF MATERIAL	RECOMMENDED FORWARD SPEED (km/h)														
	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	8
Sparse grass															
Unkempt grass															

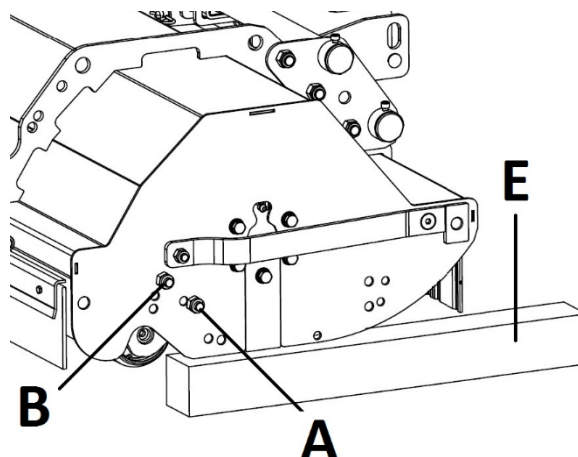
3.8.1.2. ADJUSTMENT OF CUTTING HEIGHT

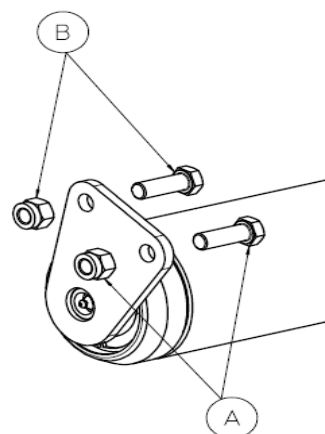
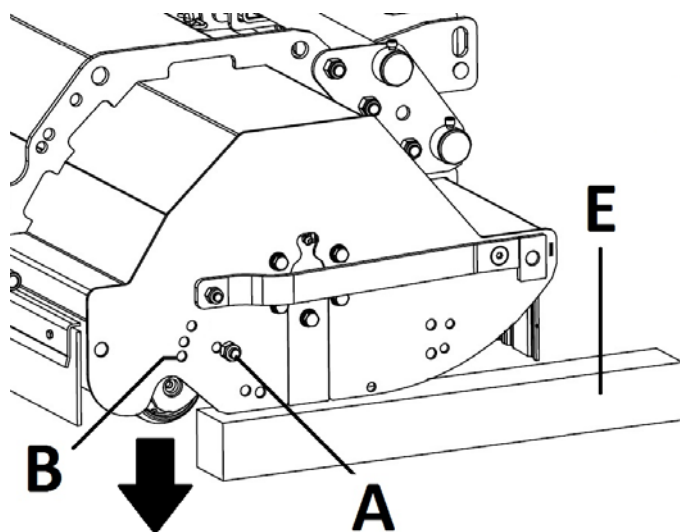
	Before adjusting the machine cutting height, carefully read and fully understand the instruction manual.
	All adjustment operations must be performed at authorised workshops by specialised personnel. The work height must be adjusted in a way to prevent the cutting tools (hammer flails) coming into contact with the ground, thus generating consequent projections.
PERICOLO	NO YES

In order to adjust the cutting and therefore the operating height, act on the position of the levelling roll of the machine as follows:

	In order to perform the operations described below, make sure that the engine of the tractor is off, the parking brake engaged, the PTO disengaged, the ignition key out of the dashboard and properly stored.
	At the workshop, use appropriate equipment to support and move the machine especially regarding the maximum weight that can be lifted and sustained (see table 1.5.3. for data related to the machine) in compliance with the laws in force in the country of use.
ATTENZIONE	PERICOLO

1. Level the machine leaving a thickness E of about 8 cm under the sides;
2. Make sure that the PTO is disengaged, brake and turn off the tractor;
3. Loosen bolt A and remove bolt B;
4. Rotate the plate of the roll, until centring the slot in the desired position of the plate with that of the side;
5. Remount bolt B;
6. Tighten bolts A and B.





The adjustment operations must be performed both on the left and on the right side of the machine.

3.9. MACHINE IN WORK STAGE



PERICOLO



ATTENZIONE

Before starting the operating cycle, make sure that are met all indications in chapter 2 "ACCIDENT PREVENTION SAFETY STANDARDS" and those in chapter 3 paragraphs 3.1, 3.2, 3.3, 3.4 and 3.5.

The operating area must be thoroughly inspected before using the machine, paying attention to remove any stones, iron residues, steel cables, manholes, strains and all those materials and obstacles without any limitation which may constitute a source of danger, accidents and serious damage to the user, people, animals and things.

When operating on road, the operating radius of the tractor must be delimited using appropriate signals, safety personnel and means in compliance with the laws in force in the country of use.

The operator must make sure that no person or animal stops within the radius of action of the same during machine functioning. The user must immediately stop the machine and keep away any unauthorised person. Never activate the machine near to persons standing or transiting within the radius of action of the machine.

It is strictly forbidden the use of the machine away from the terrain to cut down trees or hedges as the risk of pieces being thrown is high.

The use of the mulcher is strictly forbidden if the tractor to which is connected is not provided with cabin made of anti-break / armoured / shatter-proof glass and fixed guards (e.g. metallic grid). The final user must provide the tractor with guards suitable to resist the impact with the materials/objects thrown at high speed from the machine depending on the current state of the art technologies and must contact the manufacturer to request all necessary information.

As at the beginning of the machine lifetime is performed a general settlement of all the mechanical and hydraulic connections, it is essential to carry out the controls of the machine with the utmost accuracy.

Make sure that during operation all machine organs operate properly. The majority of the inconveniences and faults that may arise during the use of the machine are due to the fact that the fastening components loosen over time.

It is strictly forbidden to remove and/or change the guards installed on the machine.

In the operations of change of direction, turn and reverse, slightly raise the head from the ground, after switching off the power to the machine, in order to avoid damage to the structure.

Pay attention to the risk of accidental ignition of the electric arc machine with overhead power lines.

It is strictly forbidden to adopt configurations that prevent the user working on the tractor from seeing the machine.

it is strictly forbidden to adopt configurations that put at risk the stability of the tractor - mulcher assembly. The tractor must always stay on plane terrains that can sustain its weight. The user must periodically assess the risk, depending on the working area, assuming full responsibility for the damages caused due to any incorrect assessment.

It is strictly forbidden to use the machine as sustain point for the tractor. The pressure exerted by the tractor would collapse the frame of the machine with consequent rupture of the same.

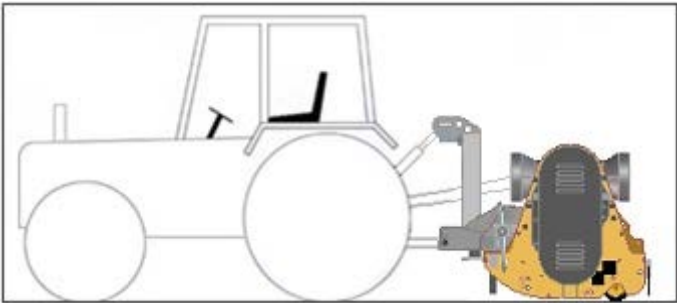
Never lean or press the rotor on logs or rocks because it could bend and then rotate unbalanced. Using the machine while damaged will affect its structural integrity due to unexpected and uncontrollable breakages.

 PERICOLO	Never use the machine on stones, especially if there is very dry grass or bushes. The sparks that result when the tools come into contact with the stones may generate fire. In case of fire, immediately contact the institutions in charge and move away, if possible, the tractor-mulcher assembly, bring it into a safe area, follow the procedure in paragraph 3.7. and go in a safe place.
 ATTENZIONE	At the end of the operating process the machine must be placed on the ground. Before getting out of the tractor, use the parking brake, turn off the engine, remove the ignition keys from the dashboard, and wait for 5 minutes inside the cabin as to make sure that the rotor and relative tools completely stop. If during operation the mulcher remains entangled in the thick vegetation or any metallic scrap, such as, brambles, shrubs, thick bushes, steel cables and any other material that may stop the proper operation of the machine, the operator must engage the tractor brake, turn off the engine, remove the ignition keys from the dashboard, and wait for 5 minutes inside the cabin as to make sure that the rotor and relative tools completely stop. At this point the operator must manually free the machine following all applicable safety standards. Check for any damage/breakage and proceed to immediate repair of the same using original spare parts. If there are no damages, get in the tractor and proceed with the operation following the indications in paragraph 3.5 "Machine start-up" and paragraph 3.6 "Machine running".

MULCHING PROCEDURE

 ATTENZIONE	It is recommended to perform the operations at a constant speed, appropriate for the quantity of material to be mulched. This way the production of shredded material will be optimal and the risk of ejection of large sized pieces will be reduced to a minimum. The tractor must always stay on plane terrains that can sustain its weight.
--	--

Go near the area in which you want to operate and proceed as follows:

	1. With the tractor engine idling, insert the PTO of the same;
	2. Gradually accelerate until reaching the speed of 540 rpm. (upon request 1000 rpm);
	3. Start the operating cycle modulating the movement speed as for the machine to complete the shredding of the material and at the same time download on the ground the mulched product;
	If the vegetation is very thick or high, you may pass one time over it with the mulcher lifted from the ground and the second time with the mulcher on the ground to complete the operation.
 PERICOLO	 
	The mulcher should not be moved to a new operating area if the rotor and the tools haven't stopped yet.

3.10. STOPPING THE MACHINE

In order to stop the machine, the tractor PTO must be disengaged and the rotor and related tools will also stop.

	Make sure that during all operations, the operator stays inside the cabin at all times and there are no persons, animals or things in the machine action radius. Any intervention on the machine must be performed with the parking brake engaged, the engine stopped, the ignition key removed from the dashboard and only after waiting for about 2 minutes inside the cabin to allow the rotor and related tools to stop completely.
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3.11. UNHITCHING THE MACHINE

When disconnecting the machine from the tractor you must:

	1. Make sure that the tractor-mulcher assembly is placed on a stable, levelled terrain;
	2. Lower the machine resting feet;
	3. Disengage the tractor PTO and wait for the rotor and related tools to stop;
	4. Bring the engine of the tractor in idle mode, use the parking break, turn off the tractor, remove the ignition key from the dashboard and store it properly;
	5. Descend from the driver position;
	6. Disconnect the cardan shaft using the appropriate triggers;
	7. Rest the Cardan shaft on the relevant support;
	8. Disconnect the tie rod of the third point;
	9. Fix the third point to the appropriate support on the tractor;
	10. Disconnect the arms of the rear hydraulic elevator of the tractor from the parallel connection points of the mulcher;
	11. Disconnect the jack supply pipes (if present);
	12. Get back inside the tractor;
	13. Start the engine and move away carefully.
The machine must be parked on flat ground and within a protected area to prevent unauthorised personnel from approaching.	

3.12. CLOGGING

	Before removing the machine clogs, carefully read and fully understand the instruction manual. Keep in mind that any change of the field conditions, such as the type and the amount of material to be mulched, may clog the mulcher. If the machine clogs, follow the indications in paragraph 3.8 "MACHINE DISCONNECTION" and bring the machine to an authorised workshop.
--	--

At the workshop:

	1. Hook the machine, turn it over and place it on appropriate supports;
	At the workshop, use appropriate equipment (hoists and beams) to move the machine especially regarding the maximum weight that can be lifted and sustained (see table 1.5.3. for data related to the machine).
	2. Unjam the machine manually;
	3. Check for any damage/breakage and proceed to immediate repair of the same using original spare parts;
	4. After completing all operations, turn the machine over and place it on the ground;
5. Repeat the actions described in paragraphs 3.4 and 3.5 "Machine connection and start-up" and restore the operating cycle following the methods described in paragraph 3.6.	

4. MAINTENANCE

 ATTENZIONE	In case of damage of the machine, the user must perform the machine shut-down procedure, set the tractor engine to idle mode, use the parking break, turn off the engine, disengage the PTO, remove the ignition key and wait inside the cabin for a few minutes until the rotor and the tools of the machine stop. Climb down to check the size of the problem and contact the authorised workshop in order to solve the problem.
--	---

Before starting any maintenance, the following operations must be carried out:

	Before performing any maintenance operation, carefully read and fully understand the instruction manual.
 PERICOLO  ATTENZIONE	The machine must be in an equipped and authorised workshop for all routine and extraordinary maintenance operations, with specialised staff. The machine must be stopped and disconnected from the tractor. It is prohibited to perform maintenance and repairs in the open and in places that are not suitably equipped. The specialised staff must use the safety devices and personal protection equipment (P.P.E.) during use, maintenance, regulation, repairs and handling of the machine.  Any maintenance operation can be performed only after the temperature of the oil and other hot parts of the machine is below 60 °C. Do not perform repairs of which you have no knowledge. Always follow the instructions. If they are missing, contact the manufacturer. Do not use lifting points different from those prescribed. Make sure that the chosen lifting device is suitable to carry out operations in compliance with the safety Standards in force in the country of use. Maintenance residues, e.g. cloths or material replaced containing inflammable substances must be kept away from sources of ignition and disposed of in compliance with the laws in force in the country of use. The gathered oil must be disposed of in compliance with the laws in force in the country of use.

4.1. MACHINE HOT POINTS

Before any maintenance intervention, make sure that the temperature of the hot parts is below 60°C. Pay utmost attention to the:

- Drive casing;
- Gearbox;
- Pulleys and belts;
- Hydraulic pipes (if present).

4.2. MAINTENANCE INTERVENTIONS THAT CAN BE PERFORMED BY THE OPERATOR

Qualified staff must precisely know and follow the indications and must stop and disconnect the machine following the indications in paragraphs 3.7. and 3.8.

The periodic controls and the maintenance operations described in this chapter must be performed in the times and ways established and are the operator's responsibility.

Failure to comply with rules and maintenance schedules undermine the proper operation of the machine and its duration and thus voids the warranty.

Increase the frequency of the maintenances in heavy duty conditions (frequent start-ups and shut-downs, prolonged winter, etc.).4

4.2.1. TABLE OF TIGHTENING TORQUES

Ø screw	Hexagon	Class		8.8		10.9		12.9	
		Pitch		Pitch		Pitch		Pitch	
		Large	Fine	Large	Fine	Large	Fine	Large	Fine
	mm	mm	mm	Nm	Nm	Nm	Nm	Nm	Nm
M8	13.00	1.25	1.00	20	22	29	31	34	37
				25	27	35	38	42	46
M10	17.00	1.50	1.25	40	42	57	59	68	71
				50	53	70	74	84	89
M12	19.00	1.75	1.50	69	72	97	101	116	121
				85	89	119	125	143	150
M14	22.00	2.00	1.50	110	118	154	166	185	199
				135	148	190	208	228	250
M16	24.00	2.00	1.50	128	180	240	253	287	303
				212	226	298	318	357	382
M18	27.00	2.50	2.00	235	248	330	349	397	419
				290	310	402	436	490	523
M20	30.00	2.50	2.00	332	347	467	489	561	586
				413	436	580	614	697	736
M22	34.00	2.50	2.00	454	474	639	666	767	799
				568	597	798	840	958	1,008
M24	36.00	3.00	2.00	574	617	808	868	969	1,041
				714	781	1,004	1,098	1,204	1,317

FOR ROTARY HARDWARE:

Ø screw	Hexagon	Class 10.9
		Fine Pitch 1.5
	mm	Nm
M14	22.00	180
M16	24.00	200
M18	27.00	230
M20	30.00	300

4.2.2. GREASING

Periodical greasing and lubrication of the machine will keep its performances high and increase its lifetime.

Use a special universal greasing pump, supplied to all workshops, to grease the points indicated.

Always perform such operations on stable and flat ground in order to prevent non-authorised people from approaching.



Used oil must be properly recovered and should not be released in the environment, since, according to the prevailing legislation, it is classified as hazardous waste and as such should be given to specialised collection sites. Contact the "Consortium for used oils" for the collection of waste oil.

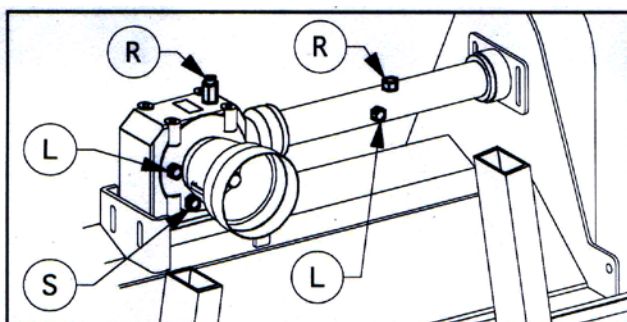
LUBRICATION OF THE TRANSMISSION UNIT:



Before taking any action on the transmission unit, properly clean the areas around the caps, to avoid any dirt intrusion inside the units.

For the transmission units:

- 1- During the first 20 hours of operation, check the oil level in the gearbox; the oil must touch the level hole. If necessary, add some more oil; then check the oil level every 50 hours;
- 2- After the first 40 working hours replace all the oil in the multiplier. Then repeat the operation every 250 working hours.



R: oil fill hole
L: oil level hole
S: oil drain hole

Recommended lubricant: **PETRONAS GEAR MEP 320 REPLACEMENT OIL**

OVERALL GREASING:



Before taking any action on the machine greasing points, properly clean the areas around the caps, to avoid any dirt intrusion inside the points.

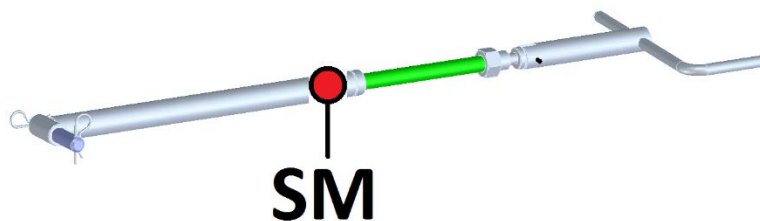
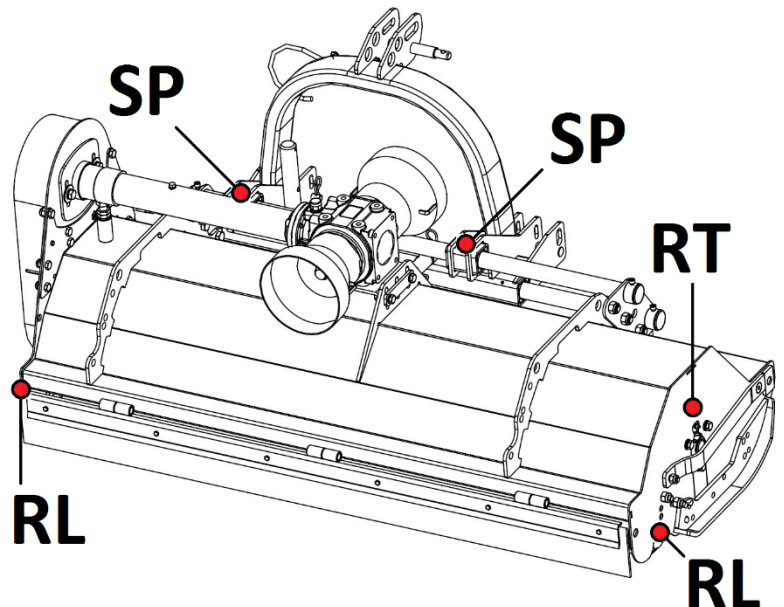
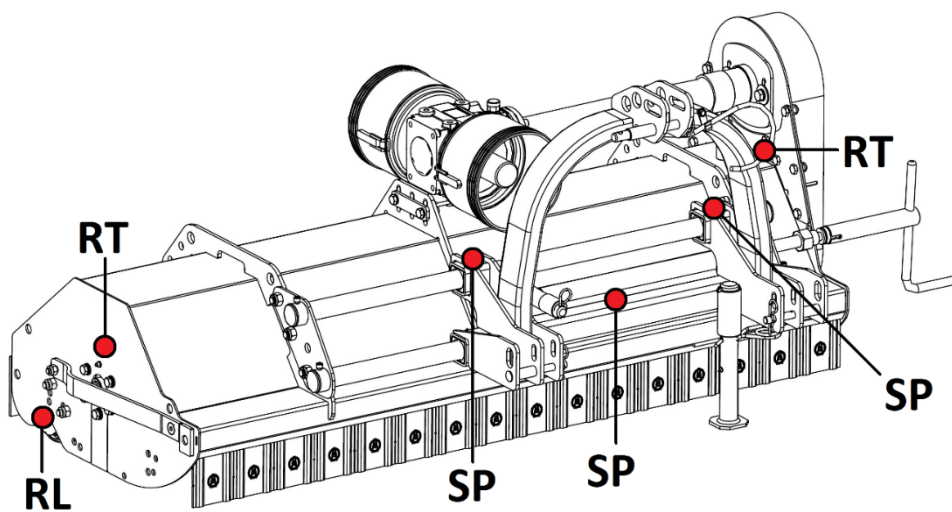


Periodical greasing and lubrication of the machine will keep its performances high and increase its lifetime.

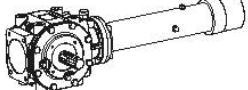


Only use a manual greasing pump, in order to prevent the breaking of bearing seals and grease passage pipes.

Pos.	Name	Lubrication intervals	Notes
RT	Rotor	8 hours	Grease it using the manual pump 1-2 times, to avoid damaging the inner seals of the supports.
RL	Levelling roll	8 hours	Grease it using the manual pump 1-2 times, to avoid damaging the inner seals of the supports.
SP	Movement	8 hours	Grease by operating the manual pump 1-2 times on the movement grease nipple.
SM	Mechanical movement	8 hours	Grease by operating the manual pump 1-2 times on the mechanical movement grease nipple.

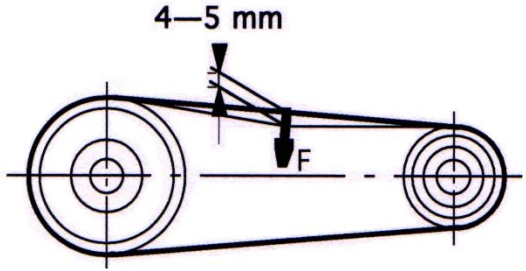


RECOMMENDED LUBRICANTS TABLE:

 LUBRIFICANTI RACCOMANDATI - recommended lubricant empfohlenen Schmiermittel - lubrifiant recommandé							
 GREASE	ENI	GULF EP	MOBIL	PETRONAS	SHELL	TAMOIL	TOTAL
	BLASIA 320	LUBRICANT HD 320	MOBILGEAR 632	GEAR MEP 320	OMALA S2 GX 320	CARTER EP 320	CARTER SP 320
 GREASE	GREASE MU EP 2	ATHESIA EP GREASE 2	BEACON EP 2	ALVANIA GR. EP 2	MOBILUX EP 2	GREASE LTX EP 2	MULTIS EP 2

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4.2.3. ADJUSTMENT OF TRANSMISSION BELT TENSION

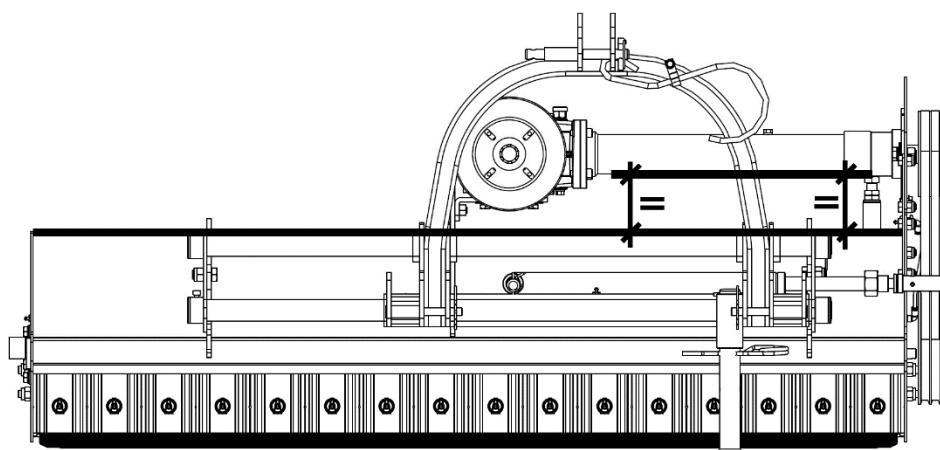
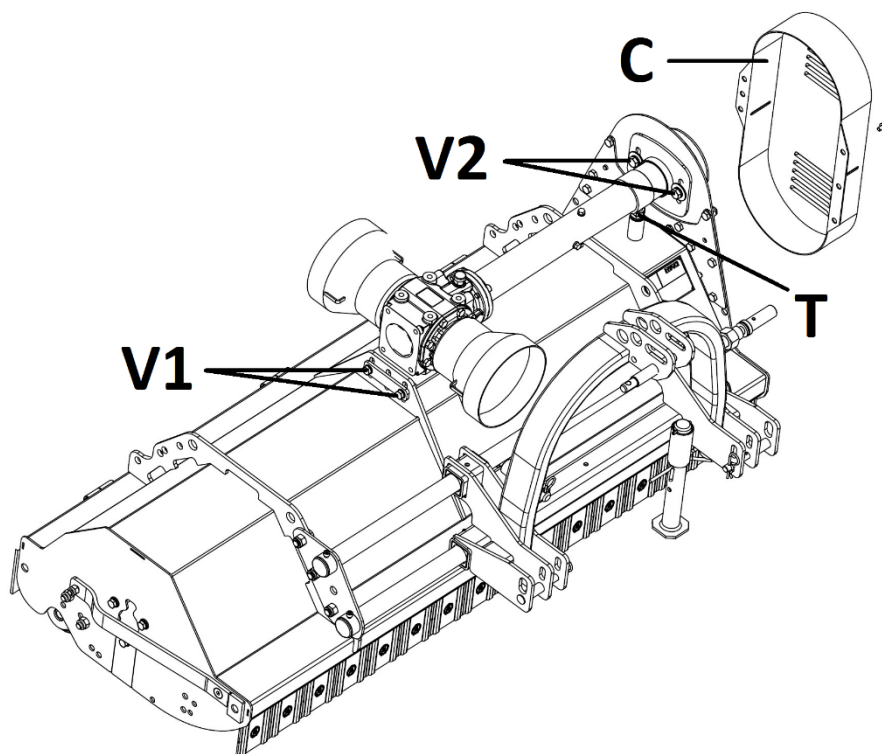
	Before adjusting the tension of the belts, carefully read and make sure you have fully understood the instruction manual.
	All adjustment operations must be performed at authorised workshops by specialised personnel.
	Place the machine on levelled terrain, with the head resting on the ground, the engine stopped, the parking brake engaged, the PTO disengaged, the ignition key out of the dashboard and properly stored.
	 PERICOLO  ATTENZIONE The belts are considered tensioned when, applying a force F of about 4-5 Kg on each of them, at the centre between the two pulleys, the measurable movement is of about 4-5 mm.  This is very important. Check the tension of the belts: if necessary, adjust it until the movement complies with the instructions above. This operation must be performed after the first 4 hours of work and then every 50 hours.

BELT TENSIONING PROCEDURE:

For adjustment, proceed as follows:

- 1- Remove the transmission covering casing C;
- 2- Loosen the screws V1 positioned on the support plate of the gearbox;
- 3- Loosen the screws V2 positioned on the belt tensioning plate;
- 4- By acting on the tension nuts T, tension the belts;
- 5- Lock the nuts T;
- 6- Tighten the screws V1 and V2;
- 7- Remount the casing C using the appropriate screws.

Check correct alignment of the extension with the container.



4.2.4. REPLACING THE TRANSMISSION BELTS

The transmission belts replacement operations must be performed while the mulcher is placed on the ground, the tractor stopped, the PTO disengaged, the ignition key out of the dashboard.



CAUTELA

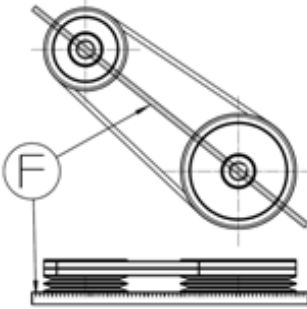
1. Remove the transmission covering casing C;
2. Loosen the screws V1 positioned on the support plate of the gearbox;
3. Loosen the screws V2 positioned on the belt tensioning plate;
4. Loosen the tension nuts T;

5. Now there should be no more pressure on the belts, thus allowing the operator to replace them;

6. Check for any damage; if any, proceed to immediate repair so as to restore the initial state;

The V-belts must be mounted without forcing them, without using screwdrivers, crowbars, etc. that may damage the belt itself. Proper assembly allows money and time saving and increases the belt lifetime.

When you need to check the tensioning or re-tension the belt tensioner, follow the indications in chapter 4.2.3.

 ATTENZIONE	7. After replacement, check that the pulleys are aligned with each other (use a ruler F); 
	8. Tighten the screws V2, the tensioning nuts T and the screws V1; 9. Remount the casing C using the appropriate screws.
	Never work without the belt cover fitted.

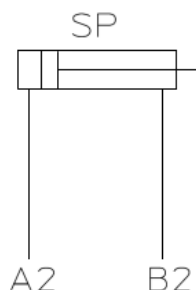
After replacing the belts, adjust them as described in chapter 4.2.3.

4.2.5. HYDRAULIC SYSTEM

 ATTENZIONE	Visually check the machine, make sure that there are no loosened couplings, damaged pipes, cuts or any other signs of wear. Tighten the loosened couplings and replace the damaged or worn pipes.
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The hydraulic system diagram is indicated in the figure and consists of:

SP: Movement jack
A2 – B2: Tractor distributor



In order to connect the machine consult chapter 3 paragraph 3.4

HYDRAULIC TUBING REPLACEMENT PROCEDURE

 ATTENZIONE	1. Before removing a hydraulic pipe, be sure to release any residual pressure in the system;
	2. Precisely identify the damaged pipe and loosen using an appropriate key the two connection points, paying attention to any possible leakages of hydraulic fluid;
	3. Replace the damaged pipe using only original spare parts;
	4. Before installing the new pipe make sure that the connection points are in proper state (threads, seals, etc.);
	5. With the proper tools, screw clockwise the fittings of the hydraulic pipes that present leakage. Do not tighten excessively otherwise you will damage the threads of the fittings.
Any maintenance residues, such as, straps or replaced materials containing flammable residues must be kept away from sources of ignition and disposed of in accordance with applicable laws in the country of use. The gathered oil must be disposed of in compliance with the laws in force in the country of use.	

4.2.6. TOOLS WEAR CHECK

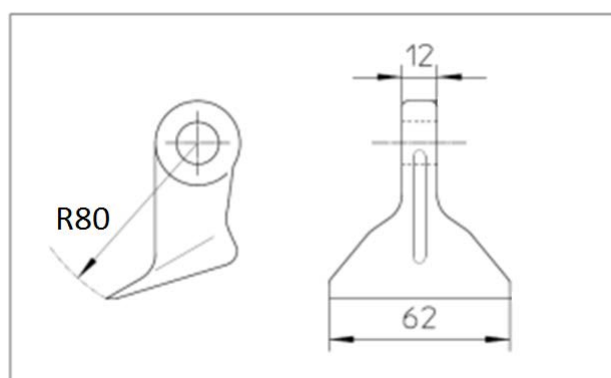
The mulcher tools must be visually checked for any signs of wear. Replace them if the material is not perfectly cut or when observing that a slight increase of the absorbed power generates a significant increase of the oil temperature of the mulcher. If the machine is used with tools that are not sharpened, its performance will decrease.

The dimensions and weights of the tools are strictly controlled: if they are completely replaced, the rotor may not require dynamic balancing again (refer to: "TOOLS REPLACEMENT PROCEDURE")

Damaged or tools that are excessively worn might transmit vibrations to the machine; in this case, the operating cycle should be stopped immediately and it should be restored only after replacing the tools.

 ATTENZIONE	Replace the worn and/or damaged tools with original tools marked with the Berti brand.
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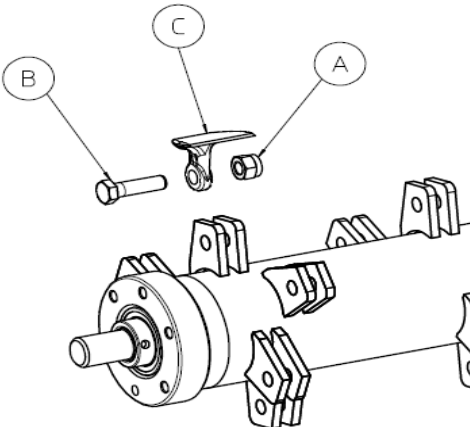
“G1” type hammer:



The lifetime of the tools depends on the type of operation and on the type of terrain being processed. They should be fully replaced after about 200 working hours.

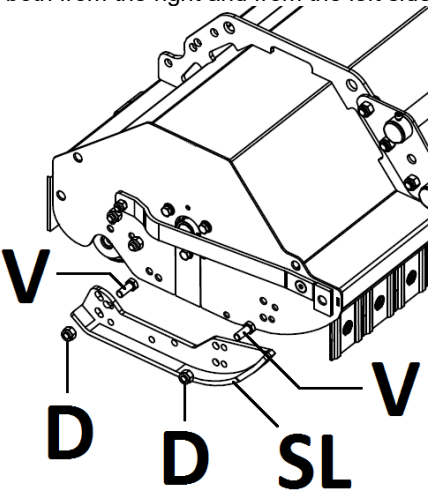
4.2.6.1. TOOLS REPLACEMENT PROCEDURE

 ATTENZIONE	In case only one tool should be replaced, it is recommended to replace the entire series. Using non-original tools can cause anomalous vibrations of the machine. Pay attention to the direction in which you assemble the tools. 
 PERICOLO	Hook the machine, turn it over and place it on appropriate supports; At the workshop, use appropriate equipment (hoists and beams) to move the machine especially regarding the maximum weight that can be lifted and sustained (see table 1.5.3. for data related to the machine) in compliance with the laws in force in the country of use. IF THE MACHINE ROTOR USES HAMMERS, PROCEED AS FOLLOWS: Unscrew the nut A, take hold of hammer C and remove the screw B. With the hammer removed check the state of wear of the supports, in particular the ovalisation of the holes, the squared housing of the screw sub-head and the peripheral wear. If any of the described phenomena are present, contact the manufacturer and request further indications.

 ATTENZIONE	
 PERICOLO	Replace the new hammer C placing it between the rotor supports, insert the new screw paying attention to match the square head of the screw with the housing on the support. Mount the new nut and fasten it. After completing all operations, turn the machine over once again, place it on the ground and repeat the connection and start-up procedure described in paragraphs 3.4. and 3.5. Pay attention to the direction in which you assemble the tools. If mounted in the wrong direction, the machine will not be able to cut. If after replacing the tools, the vibrations persist, proceed with a new dynamic balancing of the rotor at a specialised workshop. Periodically check the hammers screws and nuts fastening; if they are loose, the rotor may get damaged and dangerous ejections may occur.
	The original spare parts provided by our company ensure complete and correct use of the machine.

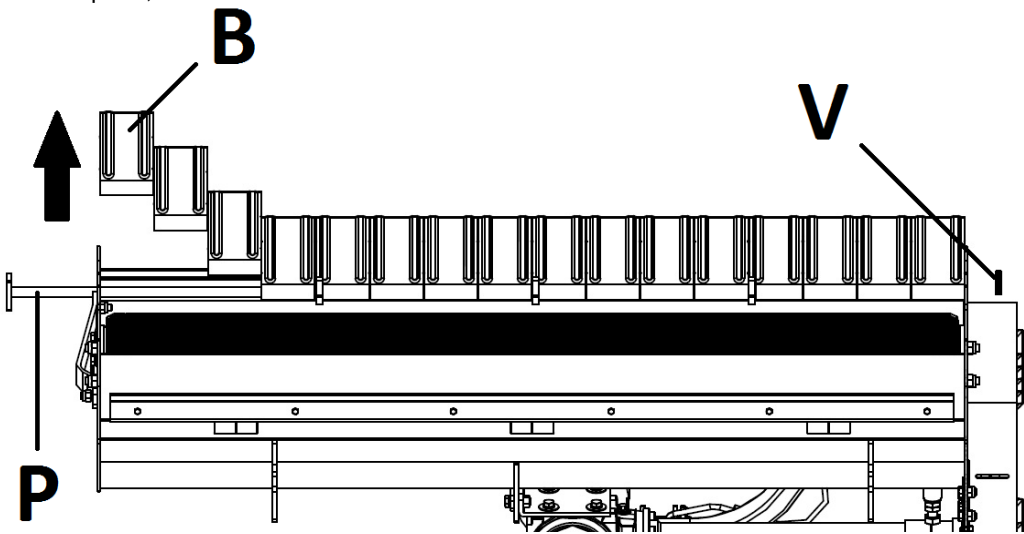
4.2.7. SUPPORT SLIDES REPLACEMENT

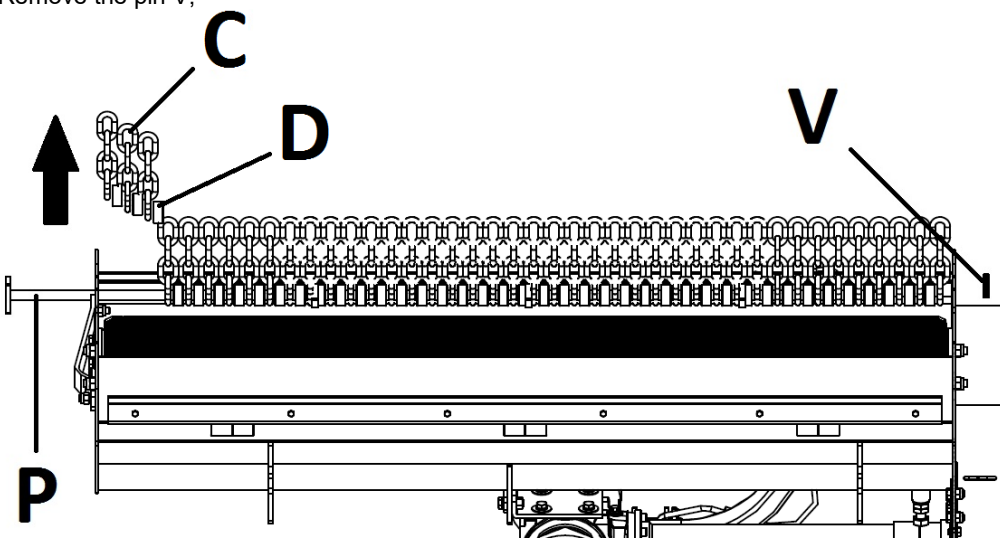
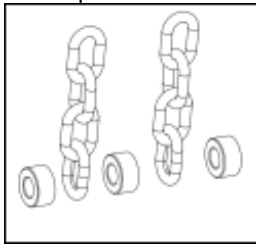
The machine is equipped with anti-wear slides that can be replaced in the following mode:

 PERICOLO	1. Turn the machine over and rest it on suitable supports; At the workshop, use appropriate equipment to support and move the machine especially regarding the maximum weight that can be lifted and sustained (see table 1 paragraph 1.5.3) in compliance with the laws in force in the country of use. 2. Unscrew nuts D and remove screws V; 3. Replace the anti-wear slides SL both from the right and from the left side of the machine; 
	4. Mount the screws V using the appropriate nuts D; 5. Having completed all the operations, turn the machine over once again, place it on the ground and repeat the connection and start-up procedure described in paragraphs 3.4. to 3.5.

4.2.8. REPLACEMENT OF THE FRONT GUARDS OF THE MACHINE

The machine is equipped with frontal guards consisting of panels or chains fastened to the machine crate.

FRONT GUARDS - PANELS	
 PERICOLO  ATTENZIONE	Panels must always be present and they must be in excellent state. Operating without panels means operating without guards, and therefore the use of the machine in such conditions is considered improper. The manufacturer declines any responsibility for serious damages/accidents to persons, property and animals due to improper use of the machine.
	1. Hook the machine, turn it over and place it on appropriate supports;
	At the workshop, use appropriate equipment (hoists and beams) to move the machine especially regarding the maximum weight that can be lifted and sustained (see table 1.5.3. for data related to the machine) in compliance with the laws in force in the country of use.
	2. Remove the pin V; 
	3. Gradually unscrew the front protection pin P, making sure that the panels B do not fall to the ground;
	4. Check for any damage; if any, proceed to immediate repair so as to restore the initial state;
	5. Replace the strips, inserting them into the through-pin P; near the supports of the through-pin thread, introduce the notched panels leaving no gap between them. 
	6. Insert pin V.
	Put the machine back on the ground and repeat the "Connection and Start-up" procedure described in paragraphs 3.4. to 3.5.
The original spare parts provided by our company ensure complete and correct use of the machine.	

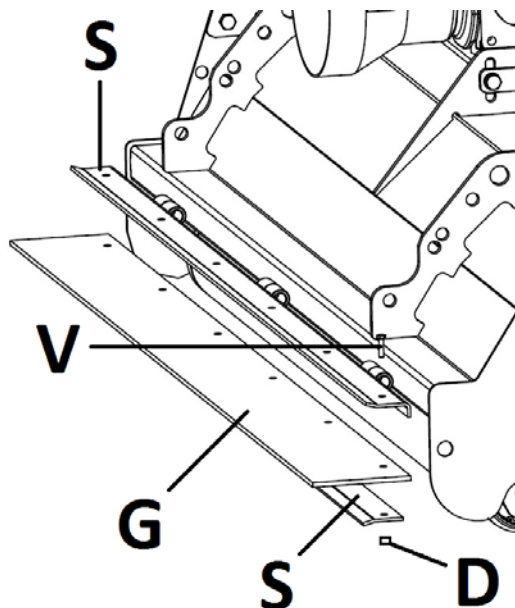
FRONT GUARDS - CHAINS	
 PERICOLO  ATTENZIONE	The chains must always be present and must be properly stored. Operating without chains means operating without guards, and therefore the use of the machine in such conditions is considered improper. The manufacturer declines any responsibility for serious damages/accidents to persons, property and animals due to improper use of the machine.
	1. Hook the machine, turn it over and place it on appropriate supports;
	At the workshop, use appropriate equipment (hoists and beams) to move the machine especially regarding the maximum weight that can be lifted and sustained (see table 1.5.3. for data related to the machine) in compliance with the laws in force in the country of use.
	2. Remove the pin V; 
	3. Unscrew the front protection pin P little by little, making sure that the chains C and the spacers D do not fall to the ground;
	4. Check for any damage; if any, proceed to immediate repair so as to restore the initial state;
	5. Replace the chains A and spacers D, inserting the inside the through-axe pin P; Respect the assembly order of the chains and spacers as shown in the figure below. 
	6. Insert pin V.
	Put the machine back on the ground and repeat the "Connection and Start-up" procedure described in paragraphs 3.4. to 3.5.
The original spare parts provided by our company ensure complete and correct use of the machine.	

4.2.9. REPLACING THE REAR RUBBER

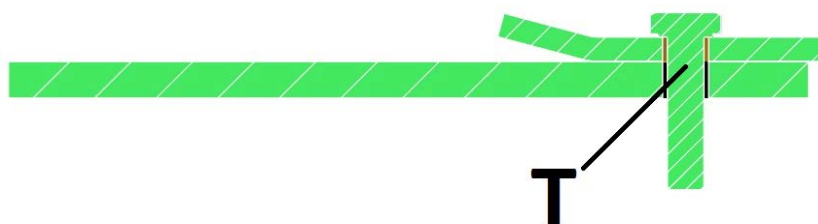
The machine features a rear protection consisting of a rubber plate attached to a suitable support by means of screws.

At the workshop, use appropriate equipment to support and move the machine especially regarding the maximum weight that can be lifted and sustained (see table 1 paragraph 1.5.3) in compliance with the laws in force in the country of use.

1. Disconnect the machine from the tractor;
2. Unscrew nuts D and remove screws V, being careful not to drop the rubber plate G and the support S;



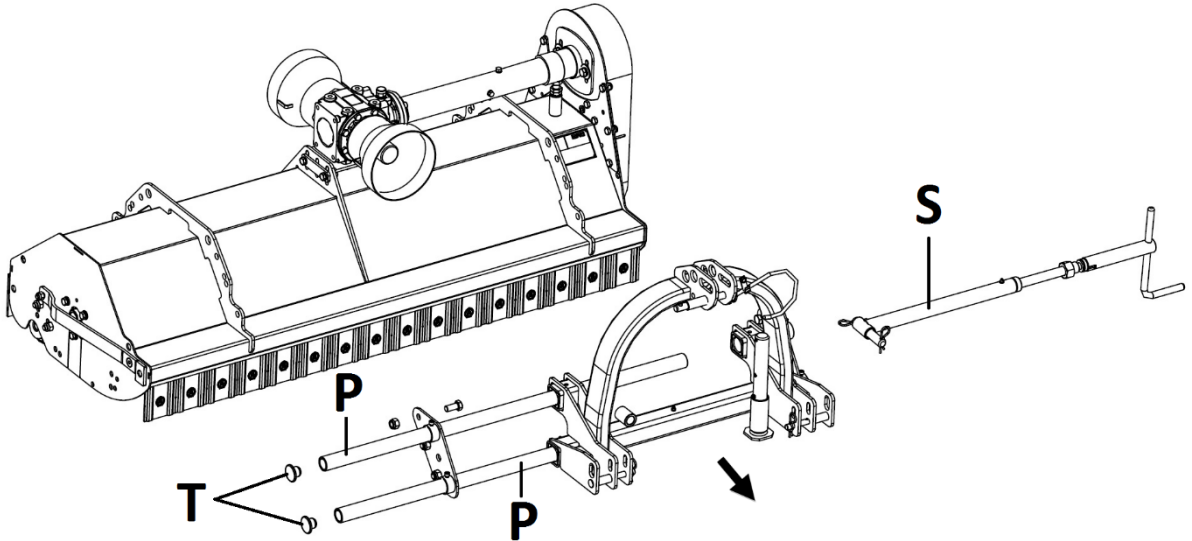
3. Check for any damage on the support S; if any, proceed to immediate repair so as to restore its initial state;
4. Replace the rubber plate G;
5. Place the new rubber plate G in the support S, taking care to fit it into the slot S properly. Drill a hole in the rubber in correspondence with the holes T;



6. Place the rubber plate with its support on the back of the machine;
7. Tighten the screws V;
8. After completing all the operation, repeat the "Machine Connection and Start-up" procedure described from paragraph 3.4 to 3.5.

4.2.10. REPLACING THE DRAWBAR

Only perform drawbar replacement in the event of breakage or extraordinary maintenance.

	1. Remove the mechanical or hydraulic movement S (if present); 2. Remove the caps T; 3. Remove the sliding pins P;
	At the workshop, use appropriate equipment to support and move the machine especially regarding the maximum weight that can be lifted and sustained (see table 1 paragraph 1.5.3) in compliance with the laws in force in the country of use.
	
	4. Check for any damage; if any, proceed to immediate repair so as to restore the initial state;
	5. Once all the operations have been completed, mount the drawbar on the machine and repeat the "Connection and Start-up" procedure described in paragraph 3.4. to 3.5.
	The original spare parts provided by our company ensure complete and correct use of the machine.

4.2.11. CLEANING THE MACHINE

Periodically clean the machine using water under pressure, paying particular attention to any flammable residues. Make sure that the hot parts of the machine are free from straw, hay or flammable residues.

4.3. STORAGE - WINTERING

If the machine is immobilised for long periods, it must be stored in a place sheltered from atmospheric conditions and be protected to avoid damage.

Before every wintering, proceed as follows:

- Free the rotor and the tools from trimmer residues;
- Clean the machine thoroughly;
- Carry out a general visual control of the machine to identify structural damage, to detect deep paint abrasions, to check that all original safety pictograms are in place, and that they are integral and legible;
- Grease all mechanical parts and fastening pins;
- If possible, recover the machine in a covered place, on flat and consistent ground.

	Make sure that the storage temperature is between 0 °C and 50 °C.
	In order to dispose of the oil and of all the other materials used for gathering, cleaning it, etc., follow the standards in force in the country of use.

4.4. FIRST USE OR RETURN TO USE AFTER LONG PERIODS OF INACTIVITY

Before using the machine for the first time, or after a long period of downtime, proceed as follows:

- Verify that the machine is not damaged;
- Check mechanical parts; they must be in good conditions and not rusty;
- Check the wear condition of the tools;
- Accurately grease all mobile parts;
- Ensure that there are no oil leakages coming from the fittings or from the pipes;
- Ensure that all the protections are complete and correctly positioned.

4.5. SCRAPPING

	In the event of scrapping, the machine must be disposed of in suitable waste disposal sites, in compliance with the laws in force in the country of use. Before scrapping, separate the parts in rubber or plastic as well as the electric and electronic equipment (if present). Recover any waste oils and dispose of them at relevant collection centres. The parts made only in plastic, aluminium, steel, can be recycled, if collected by appropriate centres.
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4.6. SCHEDULED MAINTENANCE TABLE

Description	Checks
GENERAL MACHINE CHECKS	
Rotor greasing	Every 8 hours of work
Roll greasing	Every 8 hours of work
Drawbar movement greasing	Every 8 hours of work
Mechanical movement greasing	Every 8 hours of work
Cardan shaft greasing	Grease as indicated in the respective use and maintenance booklet of the cardan shaft provided by the manufacturer
Machine bolts fastening check	After the first 4 h and then every 50 h
Belt tension check	After the first 4 h and then every 50 h
Tools wear and fastening check	Before each work shift
Tools, screws and nuts replacement	Every 200 working hours or when damaged or when worn
Transmission belts replacement	Every 400 hours or when too worn out
Pulleys replacement	Every 400 hours or when too worn out
Rotor balancing	Every partial or total replacement of tools
Support slides replacement	Every 400 hours or when too worn out
Guards integrity check	Every machine start-up. Restore the guards if worn and/or damaged.
Pictograms check	Every machine start-up. Restore if worn and/or damaged.
HYDRAULIC PLANT	
Check tightening of hydraulic pipes	At each start-up and each fluid leakage
Check of the hydraulic pipes	Check at every start-up. In case of damage or seepage, replace immediately

4.7. TROUBLESHOOTING TABLE

PROBLEM	CAUSE	SOLUTION
Uneven or poor quality of mulching	- Tools worn or damaged - Machine not adjusted respecting the instructions - Machine clogged - The rotor does not turn at envisioned speeds - Broken roller support - Worn slides - Excessively uneven land	- Replace the tools - Make the adjustments - Decrease the advancement speed - Check belt tension, the oil flow rate and the machine feed pressure - Replace the roller support - Replace slides - Perform the job a few times
Premature tool wear	- Stony/sandy land - Cutting height of tools too Low - The rotor turns at a rotation speed that is too high or too low	- Scour the ground in advance - Adjust cutting height - Check machine adjustment
Machine noise	- Rotor unbalanced - Loss of counterweights - Tools damaged, worn or missing - Bearings worn	- Balancing in specialised workshop - Replace the tools - Replace the bearings
Excessive heating of the gearbox	- Mulcher oil level too low - Oil finished - Blockages in the power circuit of the machine - Excessive quantity of material to be machined - Mulcher oil cooling system too small	- Add more oil in the mulcher - Replace oil - Remove the quick couplings - Repeat the work passage and/or reduce advance speed - Give more power to the cooling system
Frequent breakage of the gearbox oil seal	- Pressurised machine reservoir - Worn out engine	- Periodically vent the tank and contact the mulcher dealer - Replace the gearbox
Frequent breakage of the bearings	- Machine chassis bent - No bearings lubrication - Rotor excessively stressed - Rotor unbalanced/bent	- Replace the machine chassis - Grease the bearings in agreement with the scheduled maintenance table - Use the machine in compliance with the allowed working limits - Balancing in specialised workshop or replace the rotor
The rotor does not rotate	- Foreign body jammed - Breakage of the bearing - Breakage of the gearbox - Breakage of the transmission - Breakage of the belts - Rotor shaft breakage - Disconnected hydraulic tubes - Fault with the mulcher supply system	- Refer to the "Machine jamming" procedure - Seals and bearings replacement - Gearbox replacement - Transmission replacement - Belts replacement - Rotor replacement - Properly connect the hydraulic pipes - Contact the mulcher mechanic

Worn/torn seal rings	• Excessive lubrication • High rotor rotation speed • Incorrect assembly of the gaskets	• Change the seal rings • Check the machine adjustment • Ask the manufacturer for further information
Broken/detached frame	• Worn blade • Excessively stressed frame and crushed to the ground • Unbalanced rotor	• Change the frame • Change the frame • Balance the rotor
Rear supporting roll locked	• Broken supports • No greasing • Support roller bent • Wet land • Material deposited in the supports	• Replace the supports • Grease • Replace the support roller • Do not work with unfavourable environmental conditions • Clean the support and lubricate
The rotor vibrates	• The rotor is unbalanced • The tools are worn/broken • Folded rotor	• Balancing in specialised workshop • Replace the worn and/ or deteriorated and/or missing tools. • Replace the rotor

5. GENERAL CONDITIONS

5.1. SPARE PARTS

Repairs and replacements must be performed using original spare parts, which must be requested from the Dealer. Remember that the request for spare parts must be correct and accompanied by the following indications:

- Machine type;
- Serial number;
- Spare part code that can be found in the Spare Parts Catalogue.

If it is a component that is part of a major unit (rotor, multiplier unit, guards), you should also specify the model and serial number of the unit.

5.2. WARRANTY

Check on delivery that the machine was not damaged during transportation and that the accessories are complete.

CONDITIONS OF WARRANTY:

- The manufacturer guarantees its products for a period of 12 months from the delivery, stating that the form attached hereto is shipped from the manufacturer and completely filled within 15 days from the delivery date (refer to the delivery invoice document).
- In accordance with the terms mentioned above, the manufacturer is deemed to agree to provide warranty service all parts to be replaced according to his assessment, or in the opinion of its authorized representatives, with respect to defective parts in both the material and the construction. In any case, the transport and labour costs will be borne by the customer.
- The warranty does not include payment for damages due to improper use of the machine or for parts subject to wear and tear such as: hammers, blades, belts, etc.
- The manufacturer is not responsible for accidents to the operator or third parties arising from improper use of the machine.
- This warranty is void if:
 - a) the maintenance and repairs have been performed by unauthorised individuals or companies;
 - b) the machine has been previously repaired or modified with non-original spare parts;
 - c) if there is an incorrect manoeuvre error;
 - d) the machine was not properly maintained/lubricated;
 - e) the permitted power limit is exceeded;
 - f) whenever the instructions given in this manual are not followed;
 - g) any unauthorised modifications were performed.
- Any damage to and faults on the machine that have occurred during or after the period covered by the warranty do not involve any right to suspend payments for already delivered goods. No breakage or fault may be used as a motive to delay the payment.
- The manufacturer reserves the right, at any time, to make any change in order to improve his product, and he is not obliged to add such changes to previously manufactured machines that have already been delivered or that are being built.
- These general warranty conditions replace and cancel any other previous condition, expressed or implied.

CERTIFICATO DI GARANZIA GUARANTEE CERTIFICATE GARANTIESCHEIN CERTIFICAT DE GARANTIE CERTIFICADO DE GARANTÍA GARANTIBEVIS GARANTIECERTIFICAAT			
Nome / Name / Nom / Nombre / Namn / Naam Indirizzo / Address / Anschrift / Adresse / Dirección / Adress / Adres	<i>Si conferma di aver ricevuto il libretto uso e manutenzione e di essere stati informati circa il trattamento dei dati personali in base al Decreto Lgs. 196/03.</i> <i>We confirm to have received the instructions manual and that we have acquired all the information of the Legislative Decree 196/03 about the treatment of personal information.</i> <i>Vir bestätigen, dass wir das Betriebs- und Wartungshandbuch erhalten haben und dass wir alle Informationen über die Verarbeitung unserer persönlicher Daten (Verordnung 196/03) gelesen haben.</i> <i>Nous confirmons d'avoir reçu la notice d'emploi et d'entretien de l'appareil et d'être informés notamment le traitement de nos coordonnées selon le décret législatif 196/2003.</i> <i>Se confirma la recepción del manual de uso y mantenimiento y haber sido informado acerca del tratamiento de los datos personales en base al Decreto legislativo 196/03.</i> <i>Undertecknad bekräftar mottagandet av användar- och underhållsmanualen och har informerats angående hantering av personuppgifter enligt lagdekret 196/03.</i> <i>Ik bevestig de handleiding voor gebruik en onderhoud te hebben ontvangen en dat ik geïnformeerd werd betreffende de behandeling van mijn persoonlijke gegevens, krachtens het Wetsdecreet 196/03.</i> Firma dell'acquirente / Purchaser's signature / Unterschrift des Käufers / Signature de l'acheteur / Firma del comprador / Köparens underskrift / Handtekening van de koper _____ Data /Date/Datum/Fecha _____		

5.3. NOTES



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