

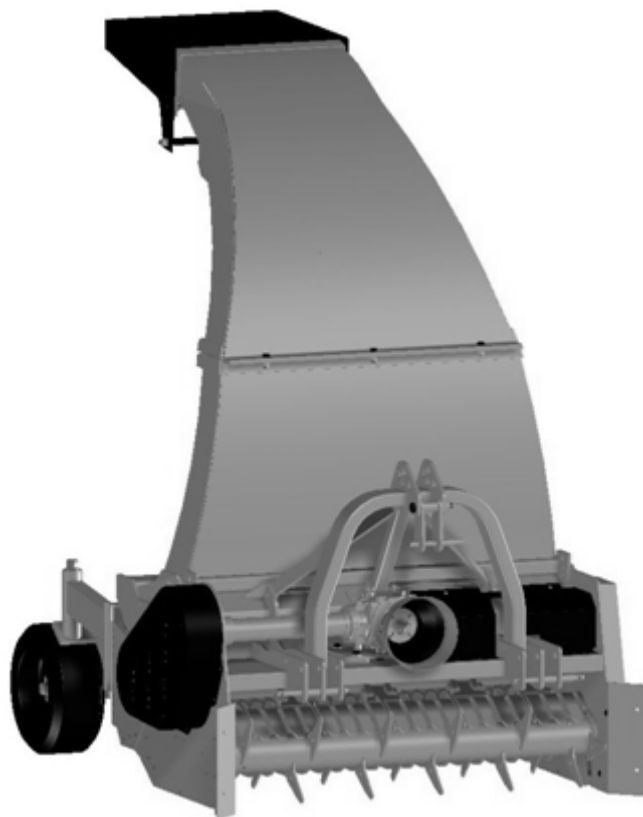
ORIGINAL VERSION



INSTRUCTION MANUAL

MULCHER WITH CHUTE-CONVEYOR

Mark: BERTI Macchine Agricole
Model: PICKER/R



 *Read this manual thoroughly before using the machine* 

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INTRODUCTION

This instruction manual contains the description of operation and the instructions necessary for performing the main operations, routine and periodic maintenance of the hydraulic hedge mower correctly, which will hereon be called machine.

This manual is divided into identifiable chapters, for easy reference.

The indications contained in this manual are intended for a professional user, who must have specific knowledge regarding use of the machine and must be authorised, instructed and appropriately trained.

The use of original spare parts is recommended. As well as invalidating the warranty, use of non-original spare parts could be dangerous, reducing lifespan and duration of the machine and causing serious injury/damage to persons, animal and objects.

In the event of transfer or re-sale, this instruction manual must always accompany the machine. If it is damaged or lost, a copy must be requested from the Manufacturer of the machine or previous owner. The manual is considered an integral part of the machine.

 ATTENZIONE	For the USER: before starting to work with the machine purchased, it is mandatory to read this instruction manual, which states all of the operational technical indications relative to the correct use of the machine, paying particular attention to all provisions concerning safety. The abuse of performance and the failure to comply with the Safety Standards and use make the operator liable for damage/injury caused to the equipment, objects, persons and animals. The machine manufacturer does not have direct control over application, method of use and maintenance and it is therefore the user's responsibility to use common sense in the operating areas, doing everything possible to safeguard his own safety and that of third parties, animals and objects, evaluating the hazard every time before starting to work. Whenever the user delegates use of the machine to another user, he is responsible for having this instruction manual read thoroughly and checking that it has been understood and implemented. This instruction manual must be on hand for immediate consultation, if necessary.
 ATTENZIONE	For the DEALER, the RETAILER and the IMPORTER: the person assigned to delivering the machine to the final user must perform application to the working vehicle. Therefore he must read this instruction manual and understand the content before the machine is assigned definitively. He is also responsible for training the final user and making sure that he has understood everything stated in the instruction manual.

GLOSSARY

Machine	Mulcher with chute-conveyor PICKER/R.
Working vehicle	Vehicle equipped with an engine that is used to tow other vehicles, especially agricultural machines.
User	The user is considered as the owner and/or staff, the operator/user assigned to running the machine, cleaning it, performing maintenance and repairs and that can recognise hazards deriving from use of the machine, and therefore prevent them.
Specialised staff	Those persons especially trained and enabled to perform maintenance interventions or repairs that require particular knowledge of the machine, its operation, safety devices and methods of intervention.
Safety staff	Staff assigned to moving persons away from the working range of the machine.
Manufacturer	Company that produces the → Berti Macchine Agricole S.p.A. machine
Three-point hitch	Hitching device that allows to connect the mulcher to the tractor, setting the width of the parallel elements of the tractor itself. The parallels adjustment tie-rods have notches along the threading of the registers, which have the categories engraved on them. The three-point hitch can be of category 1, cat. 2, cat. 3 or cat. 4 (if a cat. 3 mulcher must be hitched, adjust the registers of the tractor parallels onto cat. 3. In this way the tractor will be perfectly aligned with the measurements of the mulcher).
Machine working range	The working range, fixed at 250 m , delimits the machine working area and must be considered a “ dangerous area ”. Persons, animals and objects must remain outside the machine working range.
	DANGER - This sign indicates an imminent and real hazardous situation which, if not prevented, leads to serious injury and even death.
	ATTENTION - This sign indicates a potential hazardous situation which, if not prevented, could lead to serious injury and even death. Hazards identified by this sign therefore represent a smaller risk of serious injury or death with respect to those indicated by the DANGER sign.
	CAUTION - This sign indicates a potential hazardous situation which, if not prevented, could lead to slight injury or moderate wounds. The symbol is used to warn that determined practices can lead to consequential events that could cause wounds and personal damage.
	NOTA BENE

1. INFORMATION REGARDING THE INSTRUCTION MANUAL

This manual is an integral part of the machine and must accompany the same in the event of re-sale and until its demolition.

If the manual is lost or damaged, request a copy from the manufacturer ("BERTI Macchine Agricole S.p.A.", via Musi 1/A – 3, Caldiero – Vr. Tel. +39.045.6139711) or from the Dealer.



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

Some devices described in the manual may not be present on your machine. This is due to the set-up selected and the market to which the machine is destined.

1.1. MANUAL UPDATES

The information, descriptions and illustrations contained in the manual correspond with the current technology at the time of marketing the machine.

The Manufacturer reserves the right to make modifications to the machine at any time for technical or marketing reasons. These modifications do not oblige the Manufacturer to intervene on machines marketed up to that time and do not invalidate this documentation.

Any subsequent supplements to the manual that the Manufacturer considers appropriate to supply, must be kept together with the manual and considered as an integral part of the same.

1.2. COPYRIGHT

The copyright for this manual belongs to the Manufacturer. This manual contains technical texts, drawings and illustrations, which must not be disclosed or transmitted to third parties in full or partially, without the written authorisation of the Manufacturer.

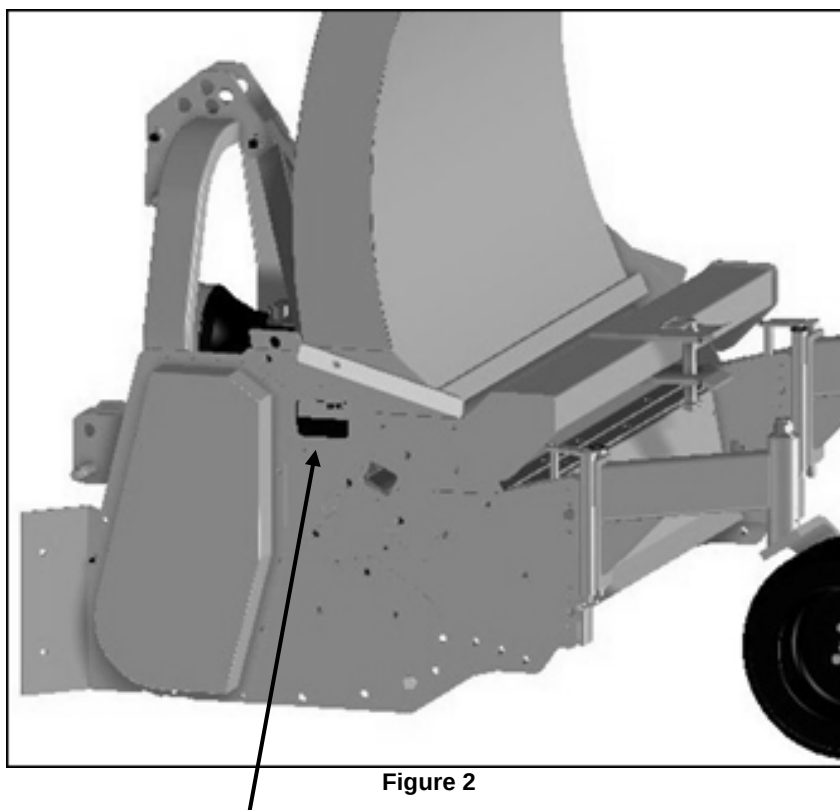
1.3. MACHINE IDENTIFICATION PLATE AND CE MARK

The machine has an identification plate, which states:

- "CE" Mark;
- Country of manufacturer;
- Name and address of the manufacturer;
- Model and type;
- Serial number with year of manufacturer;
- Mass (* without standard or quick interface bracket).

The machine is supplied as per standard with:

- Machine use and maintenance manual;
- Manufacturer's "CE" Declaration of Conformity.



Position of the plate

1.4. MACHINE DECLARATION OF CONFORMITY

 BERTI BERTI MACCHINE AGRICOLE S.p.A. Via Musi 1/a - 3 - 37042 CALDIERO (Verona) - ITALY Tel. +39.045.6139711 - Fax +39.045.6150251 info@bertima.it - www.bertima.it	 				
 Dichiarazione CE di Conformità ai sensi della direttiva 2006/42/CE EC Certificate of Conformity - conforming Directive 2006/42/CE EG Konformitätserklärung entsprechend der EU-Richtlinie 2006/42/CE Déclaration CE de conformité à la directive de la 2006/42/CE					
La Ditta / We / Wir / Nous BERTI Macchine Agricole S.p.A. 37042 CALDIERO - VERONA - ITALY					
dichiara sotto la propria responsabilità nella sua qualità di costruttore, che la macchina a cui si applica questa dichiarazione, è conforme ai requisiti essenziali di sicurezza e di tutela della salute di cui alla <u>Direttiva 2006/42/CE</u>. Per la verifica delle macchine sono state consultate le seguenti norme armonizzate: declare in sole responsibility, in quality of Manufacturer, that the product to which this certificate applies, conforms to the basic safety and health requirements of <u>Directive 2006/42/CE</u>, and according to the European harmonized standards: erklären in alleiniger Verantwortung, als Hersteller, dass das Produkt auf das sich diese Erklärung bezieht, mit den grundlegenden Sicherheits- und Gesundheitsschutzanforderungen der <u>EU-Richtlinie 2006/42/CE</u>, und mit den Anforderungen der gemeinsamen EU-Richtlinien konform ist: déclarons sous notre seule responsabilité, comme Fabricant, que le produit faisant l'objet de la déclaration est conforme aux prescriptions fondamentales en matière de sécurité et de santé stipulées dans la <u>Directive de la 2006/42/CE</u>. Nos déclarations que les normes harmonisées suivantes ont été appliquées: <u>UNI EN 13524:2000/A1:2009</u> <u>UNI EN ISO 13857:2009</u> <u>UNI EN ISO 376:1/2:1998</u> <u>UNI EN ISO 12100:2010</u> Nonché le seguenti specifiche tecniche: And the following technical specifications: Und die folgende technische Ausstattungen: Et les spécifications techniques suivantes: <u>ISO 11684:1995</u>					
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Legale rappresentante e custode del fascicolo tecnico Legal representative and custodian of the technical pamphlet Gesetzlicher Vertreter und Hüter des technischen Heft Représentant juridique et dépositaire du dossier technique  BERTI Macchine Agricole S.p.A. BERTI MARIO Amministratore Unico					
La presente certificazione è parte integrante della macchina This EC certificate is an integral part of the unit Die hier beigelegte Erklärung ist wesentlicher Bestandteil der Maschine Cette déclaration de conformité est partie intégrative de l'appareil					
Cod. Fisc. e Reg. Impr. di VR n° 00068150234 - P.IVA : 00068150234 - R.E.A. VR 84849 - Cap. Soc. € 151.704,00 iv Società soggetta a direzione e coordinamento da parte della società HB Holding Berti S.r.l. R.L. di VR03066950241					

1.5. INFORMATION REGARDING THE MACHINE

1.5.1.DECLARED USE

The PICKER/R mulcher has been designed to be used exclusively in the agricultural sector, for mulching pruning of vineyard, orchard and olive grove, as well as of wooden material up to a diameter of about 8 cm. It is suitable for working on cultivated and/or rocky lands. The mulched material is conveyed and unloaded behind, onto a trailer or similar..

The machine is carried by the tractor using a three-point hitch and operates on the ground in virtue of its own weight and rotation of the rotor, activated by the tractor power take-off via cardanic connection.

The machine must be used exclusively in the agricultural sector.

DO NOT USE THE MACHINE DIFFERENTLY TO THE INDICATIONS SUPPLIED

Use is prohibited if coupled to a working vehicle with features different to those listed in paragraph 1.5.3, if not in compliance with that stated in chapters 1-2-3-4-5 of this instruction manual, on land with stones, scrap iron, iron wire and any other material that is not of vegetable origin on the surface, to fell trees, to grind stumps, on land that causes precarious balance for the working vehicle, (e.g. steep uphill or downhill travel, steep slopes, in the vicinity of a precipice, on very uneven land etc...) and in all those situations, without any exception, that can cause general dangerous conditions and serious consequences for the user, objects, persons and animals.



PERICOLO

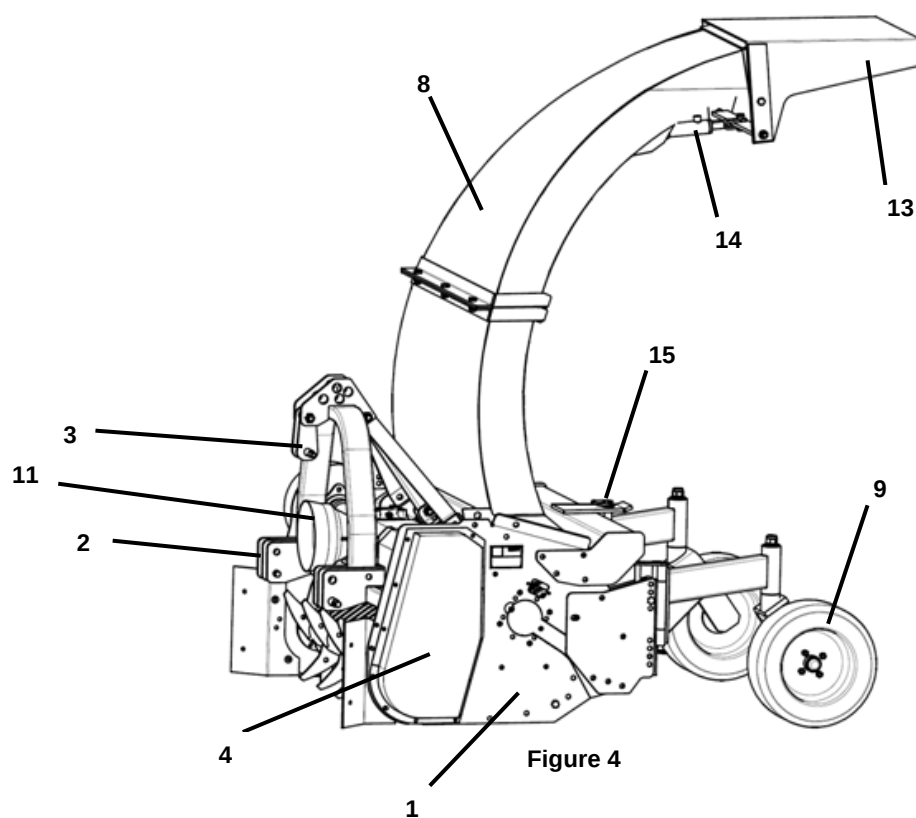
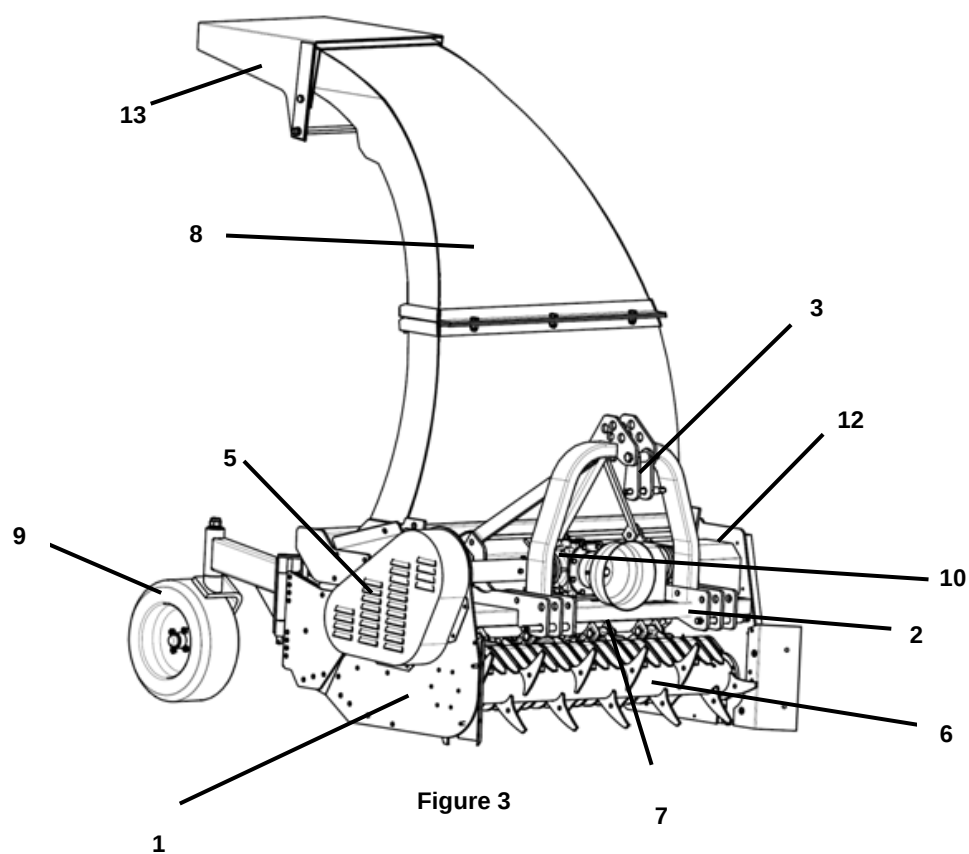
Any use of the machine different to that indicated in the instruction manual is considered unauthorised and dangerous.

1.5.2.DESCRPTION

The machine has a "pick-up" part in front, made up from a toothed rotor, which powers the mulcher.

The machine has a working tool that is made up from a horizontal axle rotor, which mounts the mulching tools, which turn at high speed. The mulching product is channelled via the conveyor, unloaded at the rear and collected on a trailer or similar. The mulcher is substantially composed of:

- a chassis;
- a three-point hitch connection system;
- a cardan shaft coupling;
- an overgear unit;
- a distributor unit;
- a "BERTI" conveyor with rear unload;
- a pick-up rotor;
- a rotor;
- a series of mulching tools;
- rear pivoting wheels.



- 1 Chassis
- 2 Inferiori links
- 3 3° point rod hitch
- 4 PICK-UP Rotor transmission cover
- 5 Lateral transmission guard
- 6 "pick-up" rotor
- 7 Mulching rotor
- 8 Conveyor
- 9 Rear pivoting wheels
- 10 Gearbox
- 11 PTO cone
- 12 Limiter protection guard
- 13 Conveyor strap
- 14 Conveyor bus bar inclination jack
- 15 Hitch to drawbar

Mulcher with conveyor **PICKER/R**

1.5.3.TECHNICAL DATA

The machine can be applied to tractors with power between 44 – 103 kW (60 - 140 HP).

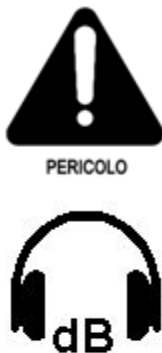
MODEL: PICKER/R		140	160	180
Total width	cm	170	190	210
Working width	cm	140	160	180
Length	cm	235	235	235
Height	cm	260	260	260
Weight *	Kg	1150	1190	1240
Number of hammers	n °	18	22	24
Tractor minimum power	HP	60	70	70
Tractor maximum power	HP	140	140	140
Number of belts	n °	4	4	4
Power take-off speed	rpm	540	540	540

Table 1

1.6. PROJECTION OF MATERIALS

	Materials can be projected by the machine in certain work situations. Pay particular attention: - check that all guards are present, in the correct position and efficient; - perform regular cleaning and maintenance on the machine; - check there are no persons, animals or objects within the working range of the machine, which could be seriously damaged.
	It is prohibited to use the machine if the working vehicle, to which it is coupled, does not have a cab with shatterproof/strengthened/laminated windows and fixed guards (e.g. metal grid). The final user is responsible for supplying the working vehicle with suitable guards that resist the impact of material/objects projected at high speed by the machine according to the state-of-the-art of current technology and to contact the manufacturer to request all clarifications on the subject.

1.7. NOISE LEVEL AND VIBRATIONS

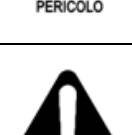
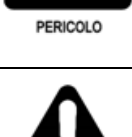
	The machine exceeds 80 dB (A) also in idle running periods and hearing must be protected from the noise generated during work processes: use hearing protection or ear plugs. It is mandatory for the user to measure sound emission from the working vehicle - machine unit following installation and always before commissioning the machine, in compliance with that envisioned by the Laws in force. The noise level of the working vehicle - machine unit may increase through time due to wear: it is recommended to periodically evaluate the risk of exposure to noise. The use of PPD is mandatory and they must guarantee the reduction of the noise level recorded in compliance with the Laws in force. The vibrations at the machine - working vehicle system lie within the context of the vibrations produced by the working vehicle only. Excessive vibration can be caused by a machine fault, which must be signalled immediately and eliminated so as not to jeopardise machine reliability and/or damage the operator's health. Always work in suitable environmental conditions (e.g. with perfect visibility, with ground able to support the weight of the working vehicle - machine unit, with gradients that allow suitable vertical and lateral stability of the working vehicle - machine unit etc.).
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2. SAFETY AND ACCIDENT-PREVENTION STANDARDS

2.4. GENERAL SAFETY STANDARDS

Correct use of the machine, strict observance of the Standards indicated herein and the rigorous application of all precautions aimed at preventing dangerous situations, contribute to averting accidents or injuries, ensure better and longer operation of the machine and reduce faults to a minimum.

"BERTI MACCHINE AGRICOLE S.P.A." declines any objective and subjective liability in cases where the regulations indicated in this manual have not been applied and respected.

	The machine is not designed to be used in sectors other than the agricultural sector and any use different to that specified is considered improper.
	The machine must be used by a single operator driving the tractor.
	It is mandatory for the user to check the correct tractor - mulcher coupling.
	Before getting off the tractor and before any maintenance on the mulcher, engage the parking brake, switch off the engine, remove the keys from the dashboard and keep them safe and wait inside the cab for 5 minutes for the rotor and all relative tools to stop completely.
	It is prohibited to abandon and/or leave the tractor-mulcher unit when the tractor is running.
	It is prohibited to use the machine if the tractor, to which it is coupled, does not have a cab with laminated/shatterproof/strengthened windows and fixed guards (e.g. metal grid). The final user is responsible for supplying the tractor with suitable guards that resist the impact of material/objects projected at high speed by the machine according to the state-of-the-art of current technology and to contact the manufacturer to request all clarifications on the subject.
	During use, the user must have sufficient visibility of the work areas deemed dangerous. Therefore it is good practice to keep the tractor mirrors and windows in an excellent state.
	During the work phases, the user must always remain protected inside the cab. It is prohibited to work with doors/windows open. Projected objects hazard!

 PERICOLO	The machine must only be used by authorised, educated and appropriately trained staff. As well as having read the instructions contained in this manual, the user assigned must have understood and assimilated the same, must have had sufficient preparation regarding the correct use of the machine, must have a driving license and be an adult. The operator must contact the manufacturer if in doubt regarding use of the machine and interpretation of this manual.
 PERICOLO	Never use the machine without knowing its features.
 PERICOLO	The manual must always be readily available so that it can be consulted when necessary. If it is lost or damaged, request a replacement copy from the manufacturer.
 ATTENZIONE	The user must use the safety devices and personal protection devices (PPD) during use, maintenance, regulation, repairs and handling of the machine. 
 PERICOLO	The machine may emit dusts during use with dry products (hay, straw, etc.). It is recommended to periodically check the cab ventilation system filter and to always use suitable protection systems for the respiratory tract, such as dust masks.
 PERICOLO	The operator assigned to the machine must not wear clothing that can cause entanglement.
 PERICOLO	It is prohibited to use the machine to lift persons, animals or objects.
 PERICOLO	It is prohibited to use the machine to transport persons, animals or objects.

	It is prohibited to use the flexible hoses as handholds. These components are mobile and are not a stable support.
	The work area must be inspected before using the machine, removing any stones, scrap iron, steel cables, manholes, stumps and all materials and obstacles without limits, which can constitute a source of danger, accident and serious injury/damage to the user, persons, animals and objects.
	The user must make sure that no person or animal stops within the machine work range during operation of the same. The user is responsible for stopping the machine immediately and clearing persons and animals from the work range. Never activate the machine near to persons or animals within or transiting through the machine working range.
	If the machine is to be used on roads and public areas, all precautions must be taken to protect persons, animals and objects, for example using safety staff, warning signs, positioning them at the limits of the machine working range, in compliance with the Laws in force in the country of use.
	Never work in areas with steep counterslopes, on slippery land and in areas/zones that reduce tractor adherence to the ground. Always pay great attention when changing direction.
	Use the machine during the day and with perfect visibility.
	It is prohibited to work in adverse weather conditions such as storms, snow, high winds, rain, fog etc.
	Do not operate the machine on muddy, sandy or soft ground.

	Pay attention to the risk of unintentional contact of the machine with high voltage overhead lines.
	Do not use the machine when ill, tired or under the influence of medication, drugs or alcohol.
	Carefully check the machine each time before starting it.
	Before using the machine, ensure that all the safety devices are correctly positioned and in good working order. If these are broken or damaged, replace them immediately.
	It is prohibited to remove or tamper with all guards and/or safety devices.
	Make sure that the safety pictograms are in good condition, legible and clean. If the pictograms have deteriorated, they must be replaced with other originals obtained from the manufacturer and placed in the position indicated in the instruction manual (paragraph 2.3.2). If dirty, clean them with a damp cloth.
	The signs applied to the machine provide a series of important instructions: comply with them for your own safety.
	It is prohibited to make any modification that alters the original state of the machine.

	Any arbitrary modification made to this machine relieves the manufacturer from any liability for damage or injury, which can happen to the operators, third parties and objects.
	Keep the machine clean, eliminating foreign materials (debris, tools, various objects), which may damage its functioning or harm the operator.
	The following paragraphs list other very important Safety Standards. It is mandatory to read this instruction manual entirely before using the machine.

2.5. FIRE PREVENTION MEASURES

 ATTENZIONE	Keep an extinguisher with suitable capacity on board the tractor and periodically service the same. The extinguisher must only be used by staff capable of operating it, therefore it is the user's responsibility to supply training courses.
 ATTENZIONE	It is mandatory that staff assigned to operating the machine is informed regarding the principal procedures in the event of fire.
 ATTENZIONE	Do not use the machine in areas with risk of explosions and/or fire.
 ATTENZIONE	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.
 ATTENZIONE	Use suitable extinguishing equipment: e.g. Carbon dioxide, foam, chemical powder.
 ATTENZIONE	Do not weld in the proximity of tanks, pipes, cans, electrical cables or flammable materials in general.
 ATTENZIONE	When welding protect flammable parts with appropriate guards.

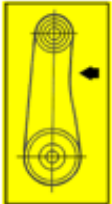
2.6. SAFETY SIGNS

Make sure that the safety pictograms are in good condition. If the pictograms have deteriorated, replace them with originals obtained from the manufacturer and place them in the position indicated in the operating and maintenance manual. Make that all safety pictograms are legible. Clean them using a cloth, water and soap.

2.6.1.DESCRPTION OF PICTOGRAMS POSITIONED ON THE MACHINE

	1- ATTENTION: adjustment and maintenance operations must be performed in fully equipped workshops after the use and maintenance manual has been read. For further information, refer to chapter 3 - 4 of this instruction manual.
	2- ATTENTION – DANGER: Pressurised fluids. Before performing any operation on the machine, read the instruction manual..
	3- ATTENTION: it is prohibited to climb onto or be transported by the machine.
	4- ATTENTION - DANGER of shearing hands.
	5- ATTENTION - DANGER of shearing hands. Keep at a safe distance.
	6- ATTENTION – DANGER of crushing, dangerous area deriving from machine movement.
	7- ATTENTION – DANGER of contact with moving parts. Do not place hands near transmission belts.

	8- ATTENTION - DANGER of entanglement and dragging Do not place hands and feet near to moving parts.
	9- ATTENTION - DANGER of burns. Keep at a safe distance.
	10- ATTENTION – DANGER of contact with moving parts. Wait for moving parts to stop.
	11- ATTENTION – DANGER of contact with rotating tools. Keep at a safe distance.
	12- ATTENTION - DANGER of electrocution. When using the arm, pay maximum attention to overhead electricity lines.
	13- ATTENTION – DANGER of projecting objects. Keep at a safe distance.
	14- ATTENTION – DANGER: this machine must be used by just one operator.
	15- ATTENTION – DANGER falling suspended parts. Apply mechanical blocking systems

	16- ATTENTION: risk of folding machine parts falling.
	17- ATTENTION: not remove the automatic belts adjuster. Read the instructions manual
	18- ATTENTION – DANGER: respect the safety distance of 250 m..
	19- TENSIONED BELTS.
	20- WARRANTY: is valid only if you use original spare parts.
	21- PERSONAL PROTECTION DEVICES
	22- ROTATING CARDAN SHAFT

	23- OIL LEVEL.
	24- GREASING POINTS.
	25- LIFTING POINT.

2.6.2.POSITION OF THE PICTOGRAMS ON THE MACHINE

The pictograms are applied as per layout:

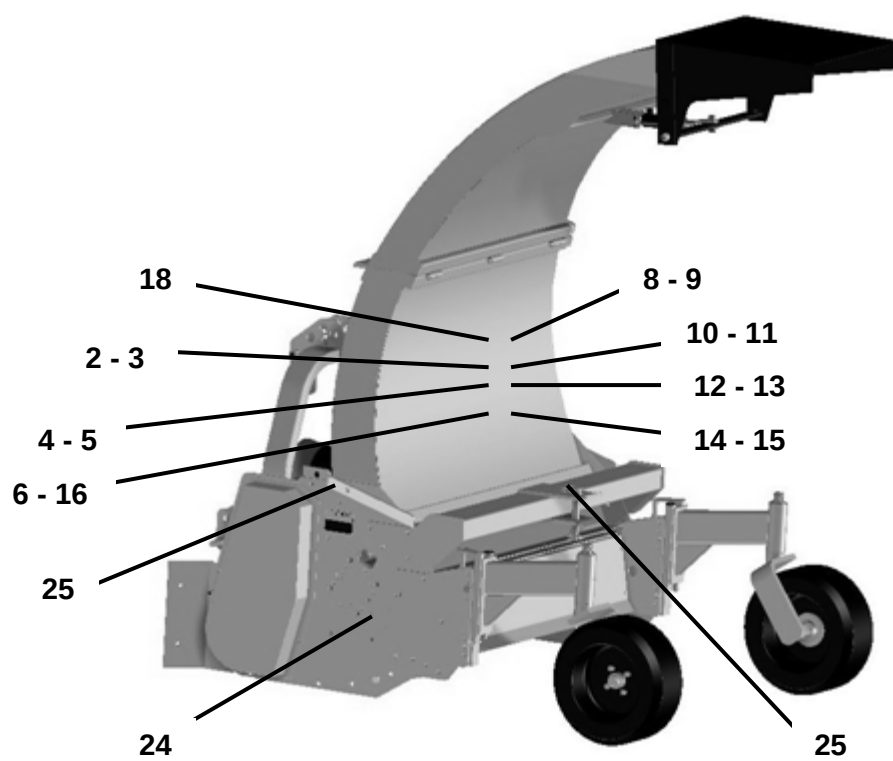


Figure 5

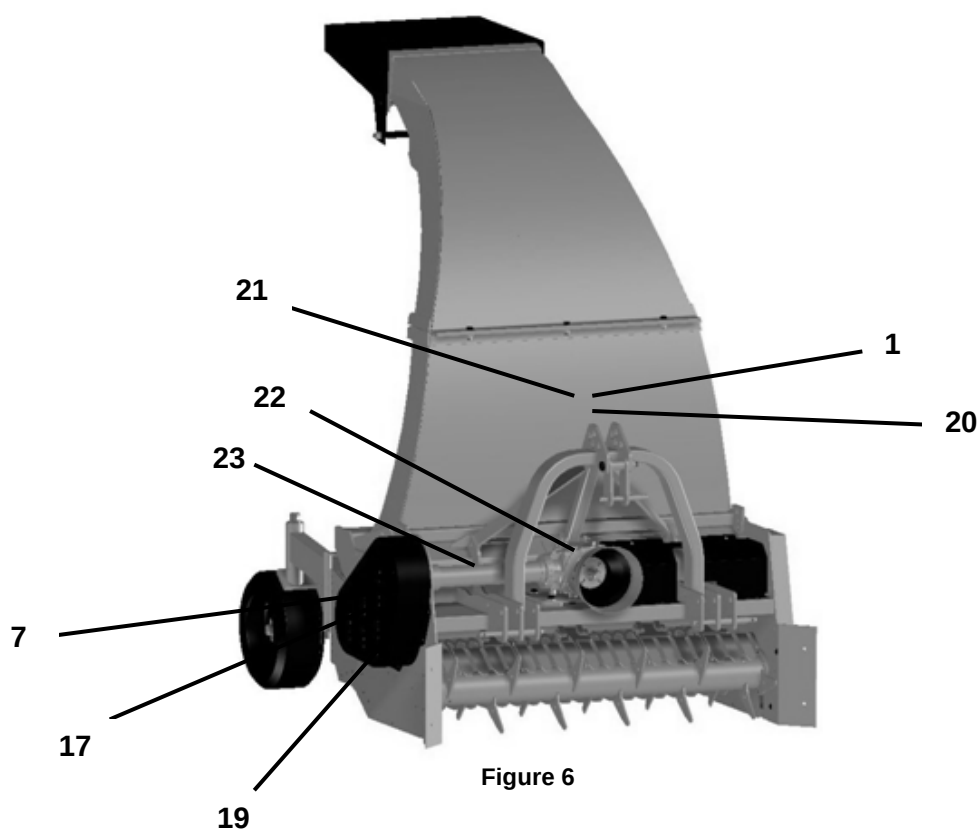


Figure 6

3. USE

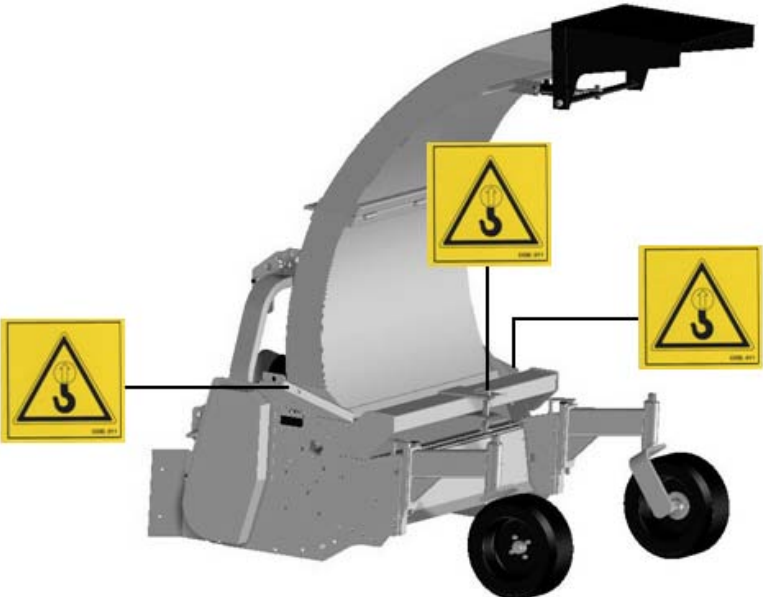
3.1. INTRODUCTION

	Before using the machine, the manual must have been read thoroughly, understood and you must have familiarised with the machine. Use is recommended by skilled and suitable trained persons.
 ATTENZIONE	Always keep all body parts inside the working vehicle cab, to minimise the possibility of exposure to any external dangers, for example the projection of materials.
 PERICOLO	Before climbing down from the working machine, block the working vehicle safety lever, switch the working vehicle engine off, remove the ignition keys from the dashboard and keep them in a safe place and wait inside the cab for 5 minutes for the rotor and relative tools to come to a complete standstill.
 ATTENZIONE	The safety of the user and the persons present in the vicinity depend on his capacity of judgment and caution when using the machine. It is therefore necessary to be fully aware of its functionality and all Safety Standards relative to its use.
 ATTENZIONE	The user must use the safety devices and personal protection devices (PPD) during use, maintenance, regulation, repairs and handling of the machine. 
 ATTENZIONE	The machine must always be in good working order and must only be repaired using original spare parts.

3.2. HANDLING AND TRANSPORT

Pay maximum attention to safety during loading and unloading operations, which must be performed by qualified staff..
If the machine is lifted, it is mandatory to use the appropriate lifting points indicated in the pictograms (figure 7).
Always perform a visual check before moving the machine so as to prevent unstable parts creating dangerous situations.

 PERICOLO	It is prohibited to lift the machine by hitching it to points different to those indicated!
---	--

 CAUTELA	Never lift or handle the machine by fastening it to the rotor!
 ATTENZIONE	The manufacturer declines all liability regarding injury/damage to persons, animals and objects deriving from incorrect machine handling using means of lifting and transport with capacities lower than the mass values stated in the table in the 1.5.3. TECHNICAL DATA paragraph. Once loaded onto the means of transport, the machine must be fastened using appropriate anchorage.
	 Figure 7

3.2.1. TRANSIT ON PUBLIC ROADS

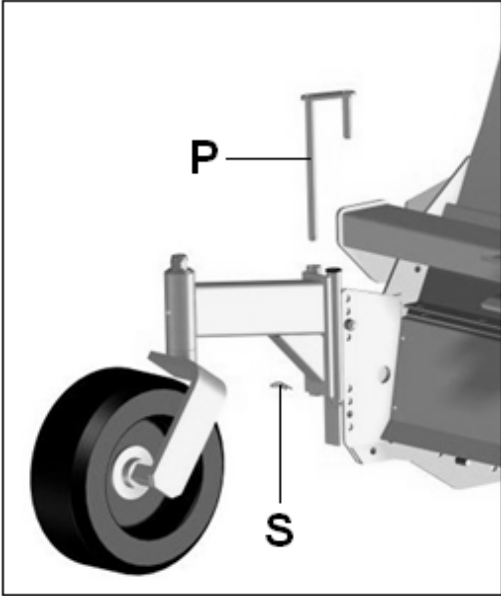
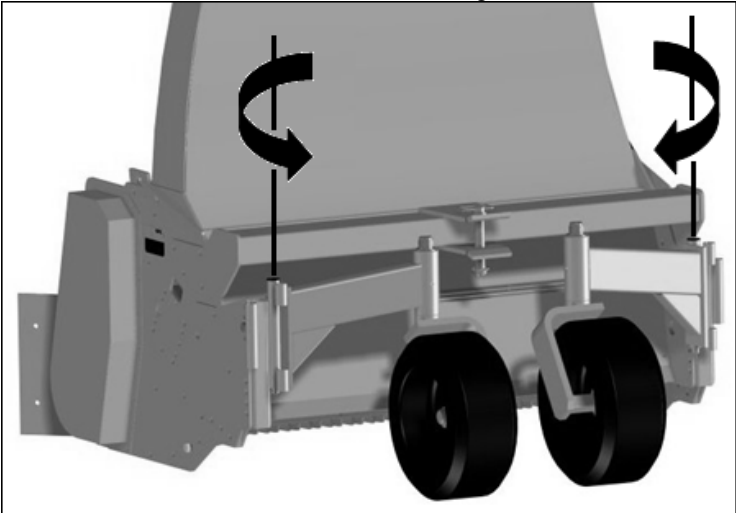
When travelling on public roads, the working vehicle mulcher/hammer flail must be disengaged and the rotor and machine tools must be at a standstill. Before transport, check that all machine parts are integral and in good working order..

 ATTENZIONE	If you have to travel on a public road, you must comply with the Highway Code, paying particular attention to speed.
 ATTENZIONE	Road transport must be performed with great attention in order to prevent dangers to persons and vehicles in transit
 ATTENZIONE	When transiting on a public road, the mulcher must remain in transport position and the tractor PTO must be disconnected

 ATTENZIONE	During transport, the machine must be fastened down well and always remain within the clearance of the tractor.
 ATTENZIONE	Before returning to a public road from an unpaved or dirty area, you must thoroughly clean the tractor tyres from mud residues

MACHINE TRANSPORT PROCEDURE

Before handling the machine, the pivoting wheels must be placed in the transport position, following the operations described below:

	1. Remove the security pin S and the pin P;  Figure 8
	2. Close the wheels inside the machine, making them turn on their own support;  Figure 9

3. Fix the wheels transport position with the pin P and the circlip S.

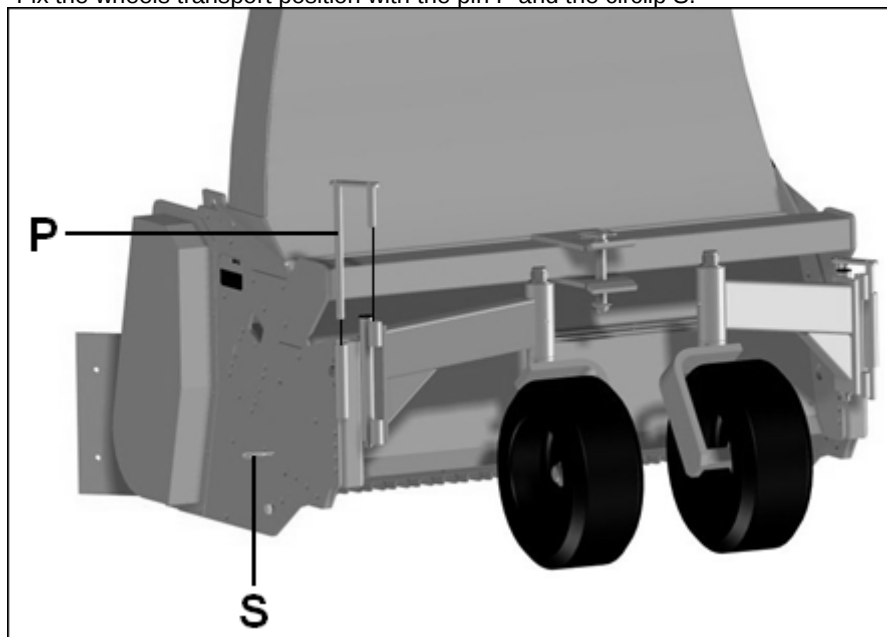


Figure 10

4. The machine is ready for start-up.



On arrival at the place of work, proceed by following the indications given below in reverse order, taking the wheels into the correct work position.

The weight of the machine modifies the stability of the tractor-mulcher unit, affecting the ability to steer and brake, therefore you must travel at moderate speed.

In particular, remember that the front axle must always be burdened with a load equal to at least 20% of the total weight of the tractor - mulcher.

Check the lifting capacity and stability of the tractor via the following formula and, if necessary, apply ballasts to the front.

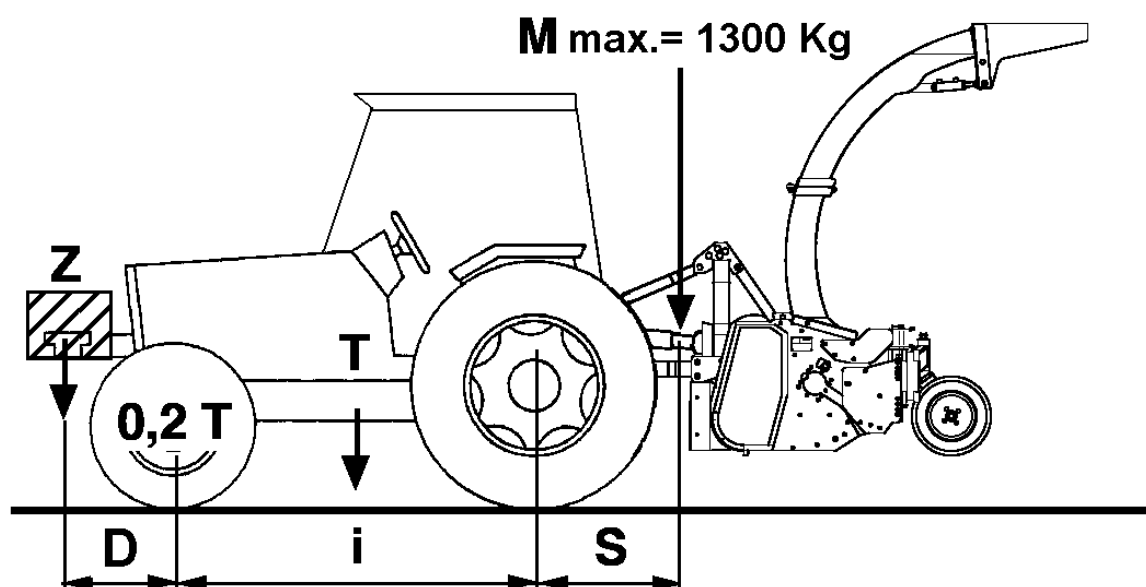


Figure 11

$$M \cdot s \leq 0,2 T \cdot i + Z (d + i)$$

- i** = tractor wheel c/c distance
- d** = distance of the front axle from the ballasts
- s** = distance between the rear axle and the centre of the lowering hitching points
- T** = tractor mass + 75 kg (operator)
- Z** = ballast mass
- M** = machine mass

NOTE: If the machine is assembled onto tractors that were type-approved and registered before 6 May 1997, check that the following formula is respected: **$M < 0.3 \times T$**

3.3. VISIBILITY

The work areas can be controlled with the tractor rear view mirrors and the operator's sight

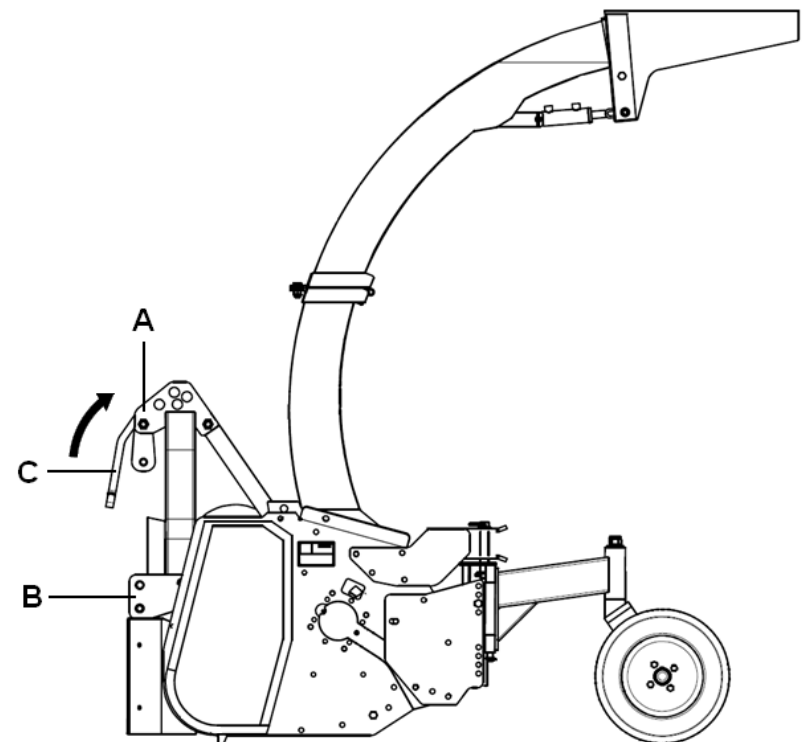
 ATTENZIONE	When reversing dead spots may be created, which are not visible in the rear view mirrors.
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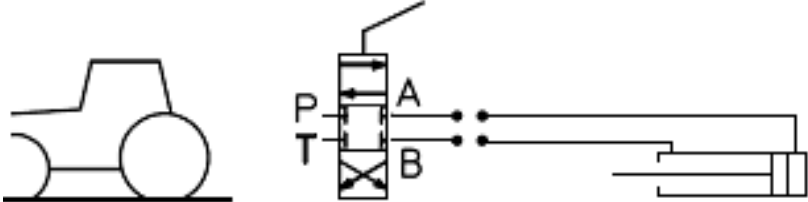
3.4. HITCHING THE MACHINE TO THE TRACTOR

Before installing the machine, check that it is in perfect working order, resting on the ground and in a stable position. Check that the lubricants are at the correct level and that all parts subject to wear and/or deterioration are perfectly efficient and that the guards are integral and functioning and in the correct position.

 PERICOLO	It is mandatory to check the correct tractor - mulcher coupling. The lifting capacity and the stability of the tractor must respect the parameters described in chapter 3.2.1.
 ATTENZIONE	It is prohibited to stop between the mulcher and the tractor during the hitching phase and all unauthorised persons must be moved away from the machine working range.
 ATTENZIONE	Always keep all body parts inside the tractor cab in all circumstances, to minimise the possibility of exposure to any external dangers.
 ATTENZIONE	Before getting off the tractor and before any maintenance on the mulcher, engage the parking brake, switch off the engine, remove the key from the dashboard and keep it safe and wait for the rotor and all mobile parts to stop completely.

3.4.1.HITCHING PROCEDURE

	The machine must be hitched to the tractor with PTO activated at 540 rpm (on request 1000 rpm by inverting the pulleys), with suitable weight and power, in compliance with the legal requirements in force in the country of use.
	The user must use the safety devices and personal protection devices (PPD) during use, maintenance, regulation, repairs and handling of the machine. 
 ATTENZIONE	The operations stated below can have dangerous situations; operate with caution and attention on surfaces that guarantee stability of the machine and tractor. These procedures are very hazardous. avoid standing in front of the machine when it is approached by the tractor. Avoid the presence of extraneous persons. The P.T.O. must be disengaged during these installation procedures.
	The three point linkage is equipped with pins of 1° and/or 2° CAT, so that it is necessary to verify the compatibility with the corresponding linkage of the tractor.
	After making these checks, proceed as follows
	1. Remove the safety pins of the 3rd point A and of the inferior links B;  Figure 12
 PERICOLO	2. Carefully bring the tractor near until you center the inferior holes with those of the linkage;
	3. Engage the parking brake, switch off the engine, remove the key from the dashboard and keep it in a safe place.

	4. Insert the pins on the links B and install the safety pins;
	5. Adjust the arm tie-rods in order to prevent the machine from swinging to the right and left;
	6. Turn back the hook C ;
	7. Install the cardan shaft making sure that the push-buttons are properly inserted in their slots (see paragraph 3.4.2.);
	8. Install the 3rd point A , Insert the pin, the washer and the safety pin supplied with the machine;
	9. Adjust the length of the 3rd point so that the pin stays approximately in the centre of the slot;
	10. Clamp the 3rd point tie rod;
	11. Connect the hydraulic jack hoses, which adjust conveyor bus bar movement, to the tractor distributor;
 Figure 13	
	12. The machine is ready to start

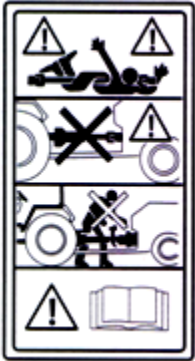
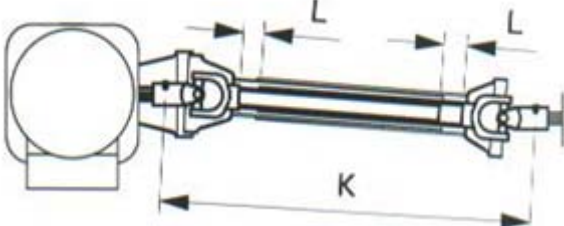
3.4.2. CARDAN SHAFT

The cardan shaft is the drive component that allows to activate the mulcher. It must be selected according to precise criteria that define its dimensions and length..

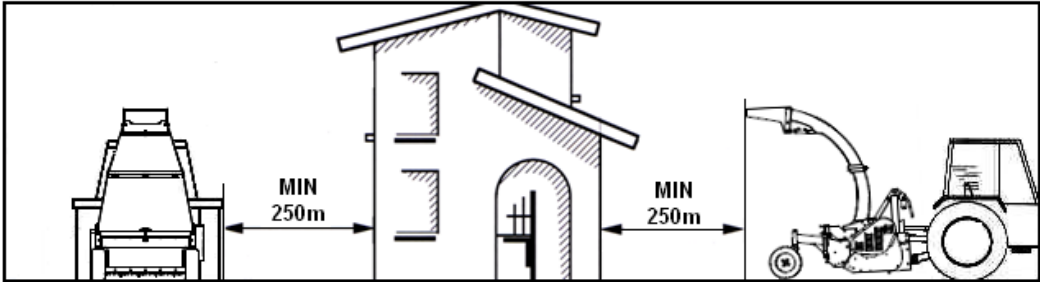
DIMENSION OF THE CARDAN SHAFT

Model	Maximum power absorbed		Power that can be transmitted by the cardan shaft at 540 rpm	
	KW	HP	kW	HP
PICKER/R 140	40 – 48	55 – 65	55	70
PICKER/R 160	44 – 51	60 – 70	55	70
PICKER/R 180	48 – 55	65 - 75	55	70

Table 2

	During operation, the cardan shaft can cause risks and hazardous situations. Therefore: • read and keep the use and maintenance handbook attached to the cardan shaft; • check that the cardan shaft is suitable for transmitting the required power; • only use the cardan shaft supplied with the machine; • check that guards are properly installed, integral and effective; • replace worn, broken or missing guards; • switch the tractor motor off before working on the cardan shaft or on the machine itself; • never allow children or unauthorised persons come near to the machine when it is operating and/or undergoing maintenance; • when not in use, rest the cardan shaft on a relevant support; • wear suitable garments (that cannot be caught by the machine or pulled into it), especially close-fitting garments (e.g. work overalls with safety wrists and ankles).
 ATTENZIONE	On first installation of the cardan shaft, measure the distance K between the P.T.O. buttons grooves with the machine resting on the ground, level and with the overgear axially aligned with the tractor's P.T.O. If necessary, adapt the length of the cardan shaft, making sure that the telescopic tubes overlap for a length that permits between 40 and 50 mm of play L at their ends. This operation must be carried out on commissioning, at every replacement and every time the machine is installed on another tractor.  Figure 14
 ATTENZIONE	After assembly of the cardan shaft, fix the guard using the appropriate chains on both sides. When the machine is put to rest, house the cardan shaft on a relevant support, envisioned on the three-point drawbar in order to prevent the accumulation of dirt, deformation and breakage on the guard. After installation of the cardan shaft, make a few up and down movements of the machine. This is to check that the pipes of the shaft itself are free to run without getting stuck
 ATTENZIONE	Grease the cardan shaft according to the recommendations envisioned in the instruction manual referring to the same. Do not work with cardan shafts that have no protections. Read the instruction handbook attached to the cardan shaft thoroughly.
 ATTENZIONE	Check that the safety pins are well inserted and efficient. Make sure the restraining devices have been inserted inside the connection jack.
 ATTENZIONE	DO NOT CLIMB OVER THE CARDAN SHAFT FOR ANY REASON WHETHER IT BE MOVING OR AT A STANDSTILL

3.5. STARTING THE MACHINE

 ATTENZIONE	Before each start-up, follow that stated below:
	- Make sure that there are no persons, animals and objects within the work range of the machine as there are dangers present, e.g. the projection of objects at high speed, which can cause serious injury and even death. Remain at a minimum safe distance, equal to the machine's work range of 250m.  Figure 15
	- Do not allow persons, animals or objects to approach or stop in the machine's work range.
	- Always keep the guards integral, in position and perfectly efficient..
	- The tractor must have the engine off, the parking brake engaged, the power take-off disengaged, the ignition key removed from the dashboard and kept in a safe place by the user.
	- The rotor and relative machine tools must be at a standstill.
	- Always inspect the machine, controlling 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;
	- Supervise the work area, removing stones, pieces of metal, steel cables and all dangerous material, without any exception. Use all necessary guards for your own protection and that of others. Protect the cab or the driver's position from falling/projection of material at high speed using shatterproof/strengthened/laminated windows and fixed guards (e.g. metal grid) that can resist the impact in compliance with the state-of-the-art of current technology. Contact the manufacturer to request any clarifications on the subject.
	- Check that the position and the conditions of the ground in the work area do not jeopardise the stability of the tractor-mulcher unit in any way.
	- Make sure that the safety pictograms are in good condition. If the pictograms have deteriorated, replace them with originals obtained from the manufacturer and place them in the position indicated in the instruction manual.
	- Make that all safety pictograms are legible. Clean them using a damp cloth.
	- The user must use the safety devices and personal protection devices (PPD) during use, maintenance, regulation, repairs and handling of the machine.. 

STARTING PROCEDURE

	1. Turn the tractor on and lift the machine from the ground;
	2. With the tractor engine ticking over, couple the PTO at 540 rpm;
	3. Accelerate the tractor gradually until normal rotation speed of the PTO is reached (540 rpm). In this phase, pay great attention that the sharp machine tools do not touch the ground;
	4. Engage the gear and start working and travel a brief tract of road with the machine activated;
	5. By operating on the tractor hydraulic distributor, make several movements of the conveyor bus bar in order to discharge any air bubbles that may form inside the hoses and hydraulic jacks;
	6. Engage the parking brake, disconnect the PTO, switch the tractor off, remove the key from the dashboard, keep it in a safe place and wait for 5 minutes until complete standstill of the sharp machine tools;
	7. Climb down from the tractor and check there are no oil leaks;
	Never use the hands to identify pressurised fluid leaks.
	8. Check the quality of the work carried out; if it is not satisfactory, adjust the machine forward speed to adjust product mulching and, if necessary, review the machine adjustment operations given in paragraph 3.5.1.

3.5.1.MACHINE ADJUSTMENTS

3.5.1.1. FORWARD SPEED

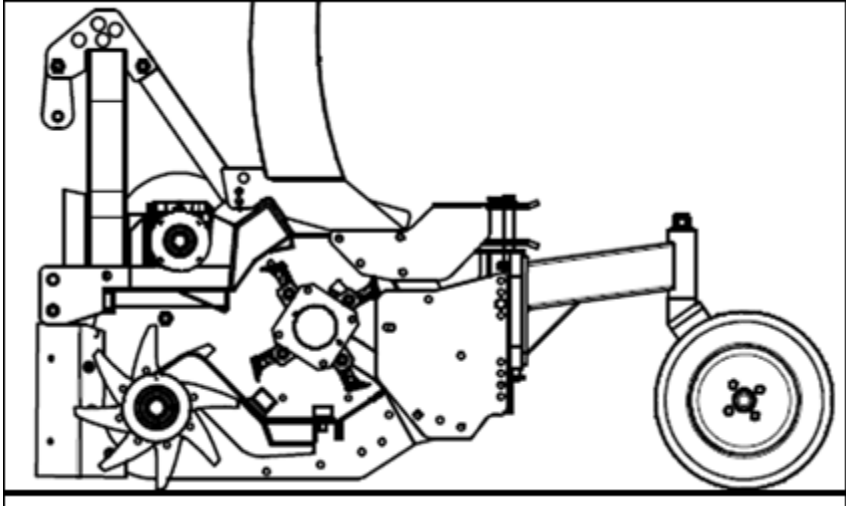
Adjust the working speed, based on the size (diameter) and volume of the material to be mulched, as well as the degree of grinding to be obtained. The machine must work exclusively in compliance with the declared use.

	Excess speed puts excessive stress on mobile machine parts, thus wearing them out ahead of time. This will produce poor-quality shredded material, with possible projection of large pieces of material, thus creating dangerous situations for the operator In direction change operations, turn and reverse, lift the head from the ground slightly and disconnect the rotation of the cardan shaft, in order to prevent damage to the structure.
---	--

RECOMMENDED FORWARD SPEEDS (km/h)															
TYPE OF MATERIAL	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	8
Vineyard pruning															
Apple tree-pear tree pruning															
Olive-peach tree pruning															
Brush - woodland															

Table 3

3.5.1.2. WORKING HEIGHT

 ATTENZIONE	If an optional leveller roll is present, the work height can be adjusted.
 ATTENZIONE	The cutting tools must not come into contact with the ground. In the event of unlevelled land, pay great attention to the projection of objects! The teeth of the "pick-up" rotor must brush against the ground.  Figure 16

To adjust the cut and therefore work height, operate on the position of the machine rear roll.
Normally, the roll is fixed in line with the "pick-up" rotor teeth, which must be adjusted flush with the ground.
Proceed as follows to adjust roll position:

 ATTENZIONE	In order to perform the operations described below, make sure that the tractor engine is off, the parking brake is engaged, the power take-off disconnected, the ignition key removed from the dashboard and kept in a safe place.
 PERICOLO	In the workshop, use suitable equipment to handle and support the machine especially in terms of liftable and sustainable weight (see table 1.5.3 for data relative to the machine), in compliance with the Laws in force in the country of use.
	The operations must be performed on both ends of the roller.

- 1- Using a suitable means of lifting (see weight indicated in paragraph 1.4.3) lift the roll slightly from the ground;
- 2- Remove the bolt A;
- 3- Loosen the bolt B;
- 4- Turn the support plate P into one of the 3 positions available;
- 5- Mount the bolt A;
- 6- Tighten the bolt B.

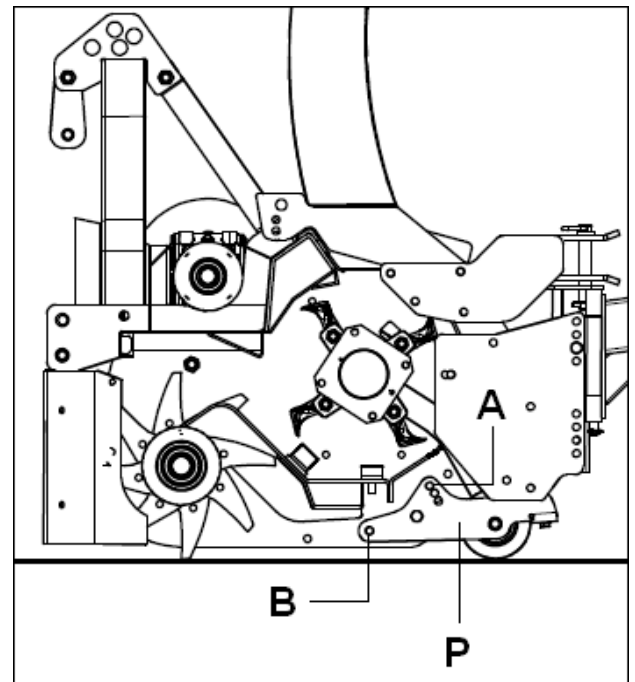


Figure 17

3.6. MACHINE IN WORK STAGE

 PERICOLO	Before starting to work, make sure that everything described in chapter 2 "SAFETY STANDARDS AND ACCIDENT-PREVENTION" and in chapter 3 paragraphs 3.1, 3.2, 3.3, 3.4 and 3.5 are fully satisfied.
 PERICOLO	The work area must be inspected before using the machine, removing any stones, scrap iron, steel cables, manholes, stumps and all materials and obstacles without limits, which can constitute a source of danger, accident and serious injury/damage to the user, persons, animals and objects.
 PERICOLO	When working at the roadside, delimit the working range of the tractor using signs, safety staff and means in compliance with the Laws in force in the country of use.
 PERICOLO	The user must make sure that no person or animal stops within the machine work range during operation. The user must stop the machine immediately and move any unauthorised persons away. Never activate the machine near to persons within or transiting through the machine working range.
 ATTENZIONE	Because all mechanical parts settle down generally in the first phase of the machine's lifespan, it is indispensable that the machine is checked with maximum precision.

 PERICOLO	Make sure that all machine parts function regularly when operating. Remember that most problems and breakdowns that can occur during use of the machine are caused by loosening of the fixing elements.
 PERICOLO	It is prohibited to remove and/or modify the guards on the machine.
 ATTENZIONE	When changing direction, turning and reversing, lift the head from the ground slightly after disengaging the power supply to the machine, in order to prevent damage to the structure.
 PERICOLO	It is prohibited to use work configurations that prevent the user on the tractor from seeing the machine.
 PERICOLO	It is prohibited to use work configurations that put the tractor - mulcher unit stability at risk. The tractor must always be on flat land that can sustain its weight. The user is responsible for risk assessment every time, depending on the work area, assuming full responsibility for the damage caused as a consequence of incorrect evaluation.
 ATTENZIONE	Never rest or press the rotor on stumps or rocks for example because it could bend and turn then unbalanced. Operating the machine damaged in this way in a brief time will compromise structural integrity with sudden and uncontrolled breakage.
 PERICOLO	Never work on stones, especially in the presence of very dry grass or brush. The sparks caused by the contact of the tools with the stones could start a fire. In the event of a fire, call the competent authorities immediately, move the tractor-mulcher unit away to a safe place if possible, carry out the procedure stated in paragraph 3.7 and reach safety.
 PERICOLO	The machine must rest on the ground at the end of the job. Before getting off the tractor, engage the parking brake, switch off the engine, remove the keys from the dashboard and keep them safe and wait inside the cab for 5 minutes for the rotor and all relative tools to stop completely.

	If the mulcher should remain entangled in the dense vegetation or scrap iron e.g. scrub, shrubs, large quantities of bushes, steel cables and all those materials that can obstruct the machine, the tractor parking brake must be engaged, the engine switched off, the ignition key removed from the dashboard and kept safely. It is also mandatory to wait inside the cab for 5 minutes in order to allow the rotor and relative tools to come to a complete standstill. It is then possible to climb down from the tractor. At this point, the operator must release the machine manually, following all Safety Standards regarding this case. Check for any damage/breakage and perform any repairs immediately, using original spare parts only. If this is not the case, climb back onto the tractor and continue with the job, following the methods described in paragraph 3.5 "Starting the machine" and in paragraph 3.6 "Machine in work stage".
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3.7. STOPPING THE MACHINE

To stop the machine, the hydraulic distributors must be disconnected, in a way to exclude the flow of oil to the machine.

	Always remain inside the cab during operations and make sure there are no persons, animals or objects within the work range of the machine. Any operation on the machine must be performed with the parking brake engaged, the tractor engine off, the ignition key removed from the dashboard and kept safe. Wait for about 5 minutes inside the cab to give the rotor and relative tools time to come to a complete standstill.
---	--

3.8. UNHITCHING THE MACHINE

When unhitching the machine from the tractor:

	1. Make sure that the tractor-mulcher unit is on flat, stable ground. The land where the machine is parked must be flat and within a protected area, in a way to prevent unauthorised staff from approaching
	2. Disengage the tractor PTO and wait for the rotor and tools to be at a complete standstill;
	3. Take the tractor engine to minimum and engage the parking brake, switch off the engine, remove the key from the dashboard and keep it in a safe place.
	4. Climb down from the tractor;
	5. Disconnect the 3rd point tie rod (Figure 12);
	6. Turn ahead the hook for cardan shaft C;
	7. Disconnect the cardan shaft and rest it on the hook C;
	8. Disconnect the inferior links B;
	9. Disconnect the hydraulic hoses and rest them in the suitable holes on the 3rd point bracket;
	Pay great attention when removing the hydraulic hoses, due to the ejection of hot oil, which could cause serious injury.
	On disconnection of the hoses, any oil escaping must be contained and collected. The oil and any containment material coming into contact with the same must be disposed of in compliance with the Laws in force in the country of use.

	10. Put the connection pins and safety clip pins back in their housings on the drawbar so that you will be sure to find them when you use the machine again;
	11. Climb onto the tractor, turn the engine on and move away carefully..

3.9. JAMMING

	This instruction manual must have been read and understood thoroughly before unjamming the machine.
 ATTENZIONE	It must be remembered that any variation in the conditions of the field such as type or volume of the material to be mulched, can cause the mulcher to jam.
 ATTENZIONE	If the machine jams, follow that stated in paragraph 3.8 "UNHITCHING THE MACHINE" and take the machine to an authorised workshop .
	The user must use the safety devices and personal protection devices (PPD) during use, maintenance, regulation, repairs and handling of the machine.       

Clearing flooding of the upper conveyor:

 PERICOLO	In the workshop, use suitable equipment (tackle and beams) to handle the machine especially in terms of liftable and sustainable weight (see table 1.5.3 for data relative to the machine).
	1. Unscrew the nuts D and extract the screws V (n.° 3 screws);

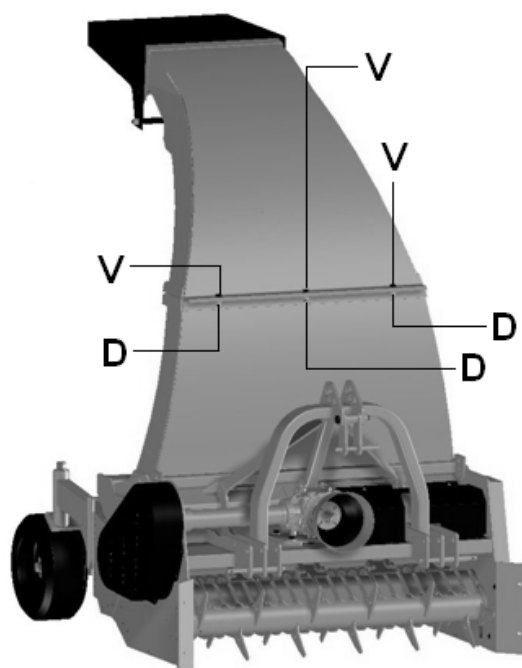


Figure 18

2. Turn the upper part of the conveyor to end run. The bus bar will touch the ground;

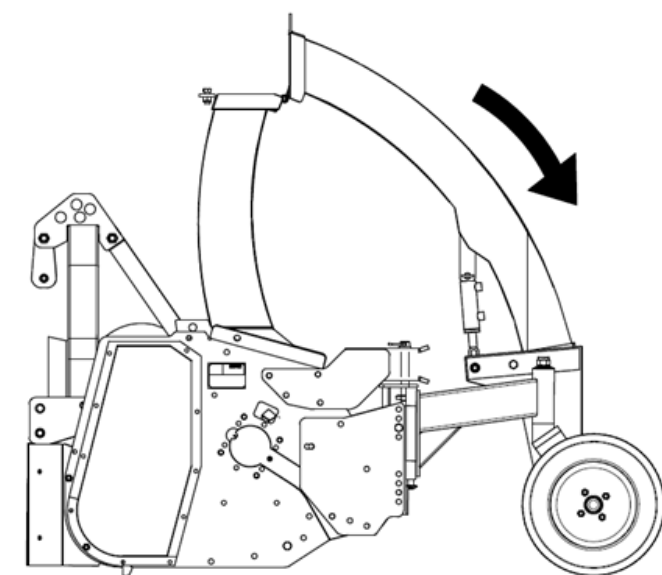
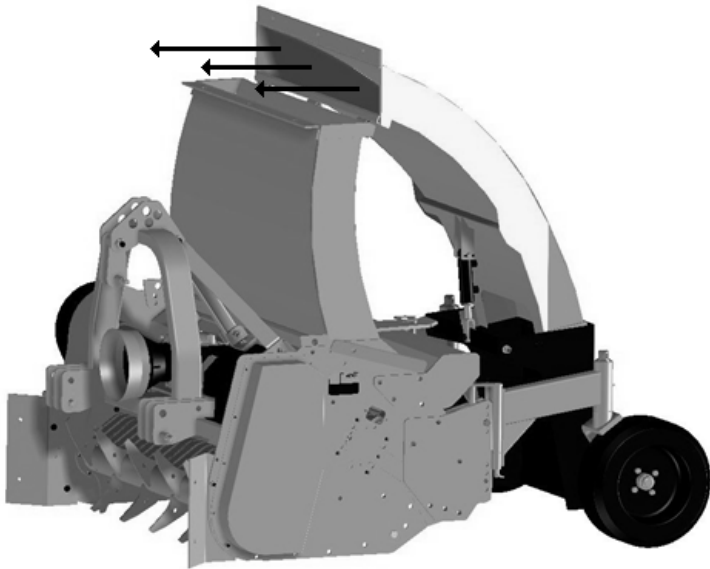
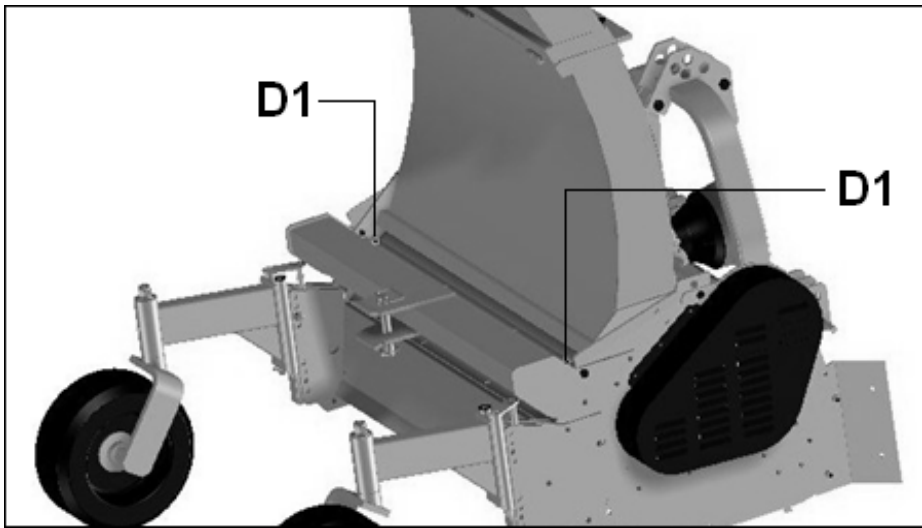


Figure 19

 ATTENZIONE	3. Clear machine flooding manually;  Figure 20
	4. Check for the presence of any damage and/or breakage and repair the same immediately only using original spare parts;
	5. Once all operations have been completed, re-position the upper conveyor in the initial position, turning it and fixing it with the screws V and nuts D;
	6. Repeat the actions stated in paragraphs 3.4 and 3.5 "Hitching Cutting and Starting of the machine" and start to work in the ways described in paragraph 3.6

If the machine is still flooded, the flooding must be cleared from the lower conveyor. Therefore:

 PERICOLO	In the workshop, use suitable tools to handle the machine, especially in terms of liftable and sustainable mass (see table 1.5.3 for data relative to the machine).
	1. Loosen the nuts D1 (n.° 2 nuts) and keep them inserted in their position;  Figure 21

2. Loosen the nuts D2 and extract the screws V2 (n.° 2 screws);

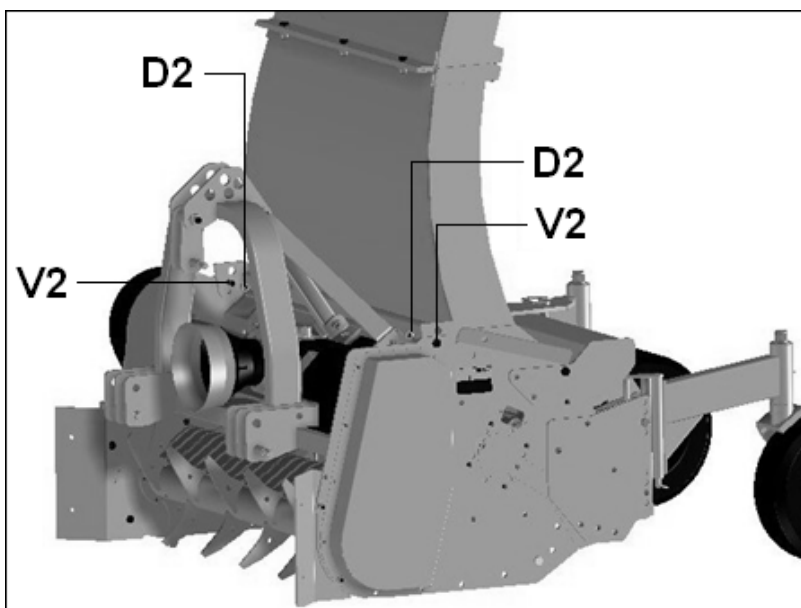


Figure 22

3. Turn the complete conveyor to end run. The bus bar will touch the ground;

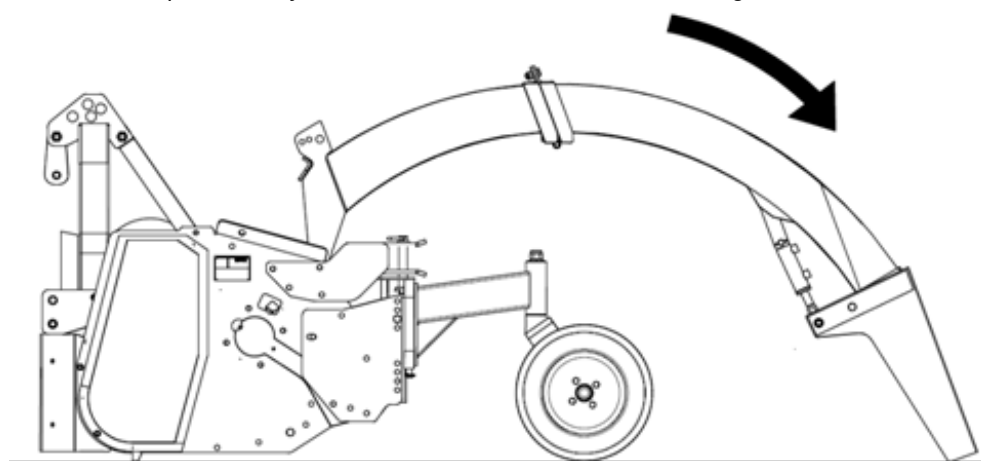


Figure 23

4. Manually clear flooding from the machine;

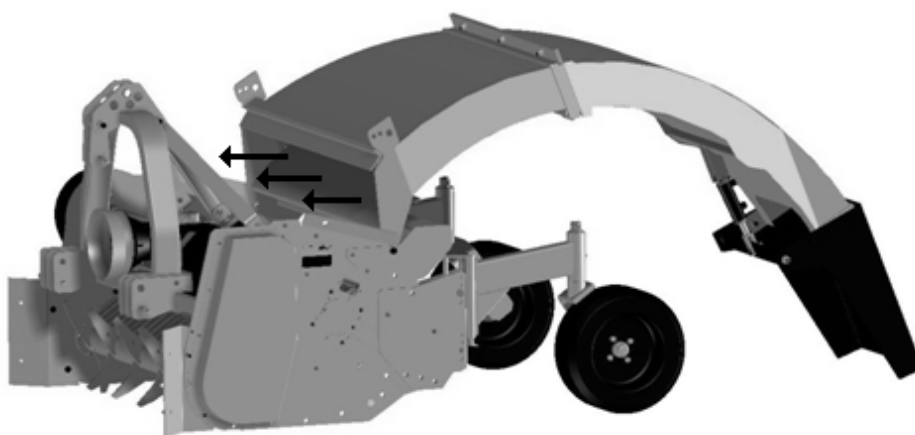


Figure 24

	5. Check for any damage/breakage and perform any repairs immediately, using original spare parts only.
	6. Once all operations have been completed, re-position the conveyor in its original position, turning it and fixing it with the screws V2, and nuts D1 and D2;
	7. Repeat the actions stated in paragraphs 3.4 and 3.5 "Hitching Cutting and Starting of the machine" and start to work in the ways described in paragraph 3.6.

4. MAINTENANCE

 ATTENZIONE	In the event of breakdown, the user must follow the machine stopping procedure, take the tractor engine to minimum, engage the parking brake, switch the engine off, disengage the power take-off, remove the ignition key and wait inside the cab a few minutes for the rotor and the machine tools to come to a complete standstill. Climb down to check the size of the problem and contact the authorised workshop in order to solve the problem.
---	---

The following operations must be carried out before starting any maintenance operation:

	This instruction manual must have been read and understood thoroughly before performing any maintenance on the machine.
 PERICOLO	It is necessary to use always original spare parts.
 PERICOLO	The machine must be in an equipped and authorised workshop for all routine and extraordinary maintenance operations, with specialised staff. The machine must be at a standstill and unhitched from the tractor. It is prohibited to perform maintenance and repairs in the open and in places that are not suitably equipped.
 ATTENZIONE	The specialised staff must use the safety devices and personal protection devices (PPD) during use, maintenance, regulation, repairs and handling of the machine. 
 ATTENZIONE	Only perform any maintenance when the temperature of the oil and the hot parts of the machine has dropped below 60°C.
 PERICOLO	Do not carry out repairs of which you have no knowledge. Always follow instructions and contact the manufacturer if they are not available.

 ATTENZIONE	Do not use lifting points different to those prescribed.
 ATTENZIONE	Make sure that the lifting equipment is suitable to carry out the operations in compliance with Safety Standards in the country of use.
 PERICOLO	Descargar la presión del circuito oleo-dinámico de la máquina antes de efectuar intervenciones.
 ATTENZIONE	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.
 ATTENZIONE	The oil used must be appropriately recovered and must not be disposed of in the environment, as, according to the Laws in force, it is classified as dangerous waste and as such, must be taken to relevant collection centres Contact the nearest Mandatory Consortium for Used Oils. The oil collected must be disposed of in compliance with the country of use.
 ATTENZIONE	Apply all forms of accident prevention envisioned for the type of operation in progress.
 ATTENZIONE	If compressed air is used to clean the machine, wear the relative protective goggles.
 ATTENZIONE	When maintenance operations lead to access to machine parts that cannot be reached from the ground, and in all cases points higher than 1.50 m from the ground, use a ladder or platform in compliance with the Standards in force;
 ATTENZIONE	Replace the hydraulic hoses every time they are damaged.

 ATTENZIONE	Do not keep the tractor engine running in closed places and without an airing system suitable for disposing of exhaust gases.
 PERICOLO	Avoid prolonged and repeated contact of the skin with fuels/lubricants/fluids, as it could cause skin problems or other syndromes. Do not ingest fuels/lubricants/fluids. In the event of accidental contact with the eyes, wash the affected part in water and seek medical advice.
 ATTENZIONE	Pay maximum attention due to the possible high temperatures of the oil/fluid discharged.
 PERICOLO	Do not weld in closed or inadequately ventilated environments. Do not weld on painted surfaces or in the vicinity of the same, in order to prevent the development of toxic vapours. Remove the paint using suitable products; wash the surfaces and leave them to dry.
 ATTENZIONE	Discharge the pressure from the hydraulic circuits before carrying out interventions.
 PERICOLO	Never use the hands to identify pressurised fluid leaks; these can penetrate into the skin and eyes with very serious consequences.

4.1. MACHINE HOT POINTS

Before any maintenance intervention, make sure that the potentially hot parts have dropped to a temperature below 60°C.

Pay extreme attention to:

- Transmission guard;
- "pick-up" chain guard;
- Multiplier unit (gear box);
- Distributor unit (pulleys, belts, automatic tie-rod);
- Hydraulic hosing;
- Rotor supports.

4.2. MAINTENANCE INTERVENTIONS

The qualified staff must know about and precisely follow the indications and must have stopped and unhitched the machine in compliance with paragraphs 3.7 and 3.8.

The periodic checks and maintenance operations must be performed within the times and using the methods established and are the user's responsibility.

Failure to comply with maintenance times and regulations jeopardises the correct operation of the machine and its duration and consequently makes warranty validity null and void.

Intensify the frequency of maintenance in heavy duty operating conditions (frequent stopping and starting, extended winter period, etc.).

4.2.1.GREASING

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

LUBRICATING THE TRANSMISSION SYSTEM:

Carefully clean the parts around plugs before working on transmission units; this prevents dirt from penetrating these units.

Transmission units require:

Check the oil level in the gearbox and pulley during the first 20 working hours: oil must come up to the level hole L. Add oil as required. Perform the next oil level checks at 50 hour intervals;

Replace the oil in the gearbox and pulley totally after the first 40 work hours. Repeat this operation every 250 work hours.

The protective bowling must be removed in order to drain oil from transmission systems.

R: oil refill hole

L: oil level hole

S: oil drain hole

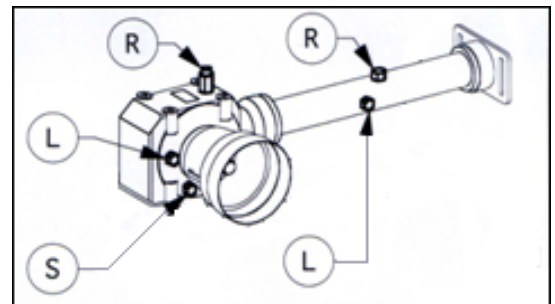


Figure 25

GENERAL GREASING:

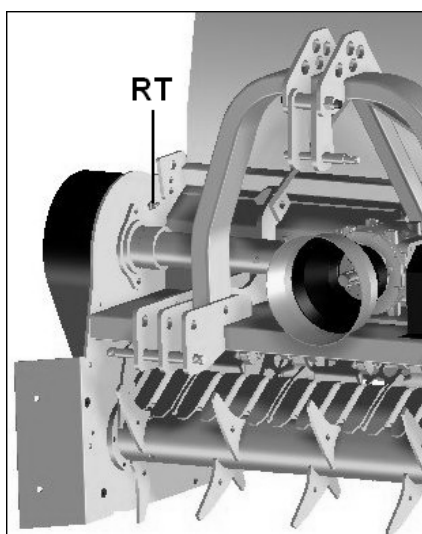


Figure 26

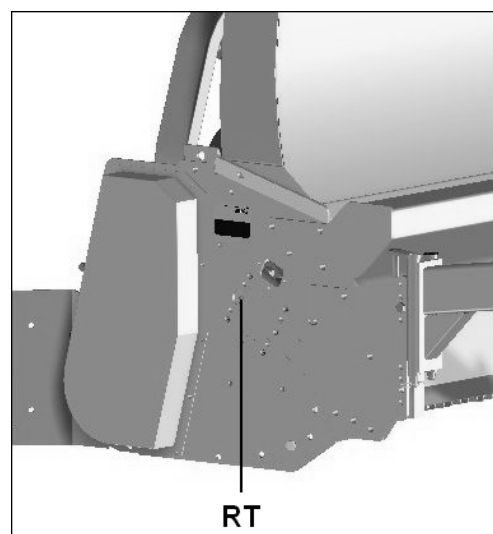


Figure 27

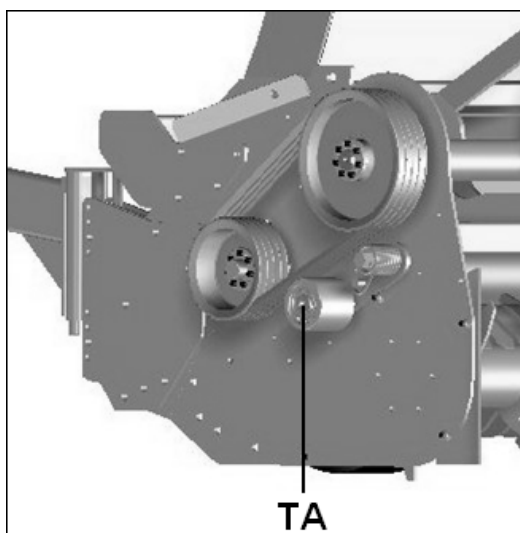


Figure 28

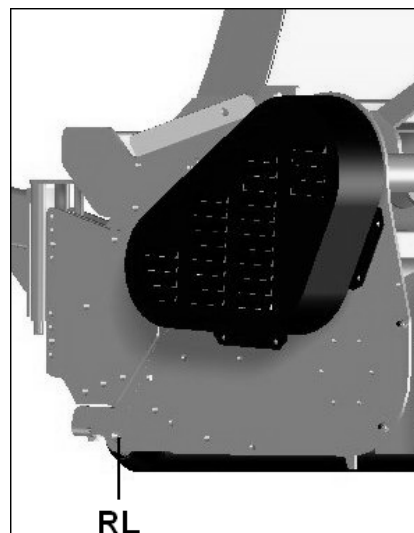


Figure 29

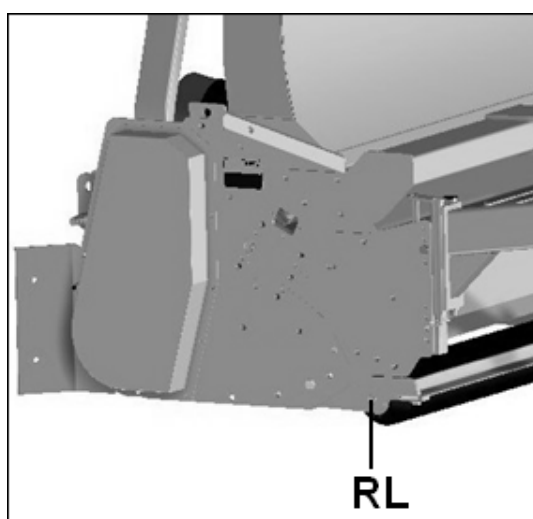


Figure 30

Pos.	Name	Lubrication intervals	Notes
RT	Rotor	8 hours	Grease by activating the manual pump 1-2 times to prevent damage to the internal seals of the supports. The rotor is lubricated from the pulley side via a greaser set-up on the small pipe that escapes from the lateral side of the machine
TA	Automatic belts adjuster	400 hours	Grease by activating the manual pump 1-2 times to prevent damage to the internal seals of the supports.
RL	Roller (if present)	8 hours	Grease by activating the manual pump 1-2 times to prevent damage to the internal seals of the supports.



Periodic and systematic greasing and lubrication of the machine maintain its performance and increase its useful life span.

Only use a manual greasing pump in order to prevent laceration of the bearing seals and the grease passage piping..

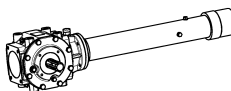
 LUBRIFICANTI RACCOMANDATI - recommended lubricant empfohlenen Schmiermittel - lubrifiant recommandé							
 GREASE	AGIP	IP	ESSO	SHELL	MOBIL	BP	TOTAL
	BLASIA 460	MELLANA OIL 460	SPARTAN EP 460	OMALA 460	MOBILGEAR 634	ENERGOL GR-XP 460	CARTER EP 460
 GREASE	GREASEMU EP 2	ATHESIA EP GREASE 2	BEACON EP 2	ALVANIA GR. EP 2	MOBILUX EP 2	GREASE LTX EP 2	MULTIS EP 2

Table 4

4.2.2. AUTOMATIC BELTS ADJUSTER

The automatic tie-rod is used to control tensioning of the belts and the dynamic movements of the transmission. An automatic tie-rod optimises the tension if the belt depending on the changes in the features of the belt and the motor.

With the automatic tie-rod, no intervention is necessary on belt tension, except in the case of:

- mechanical sag of the automatic tie-rod spring;
- loosening of the nuts that fix the automatic tie-rod (figure 31).

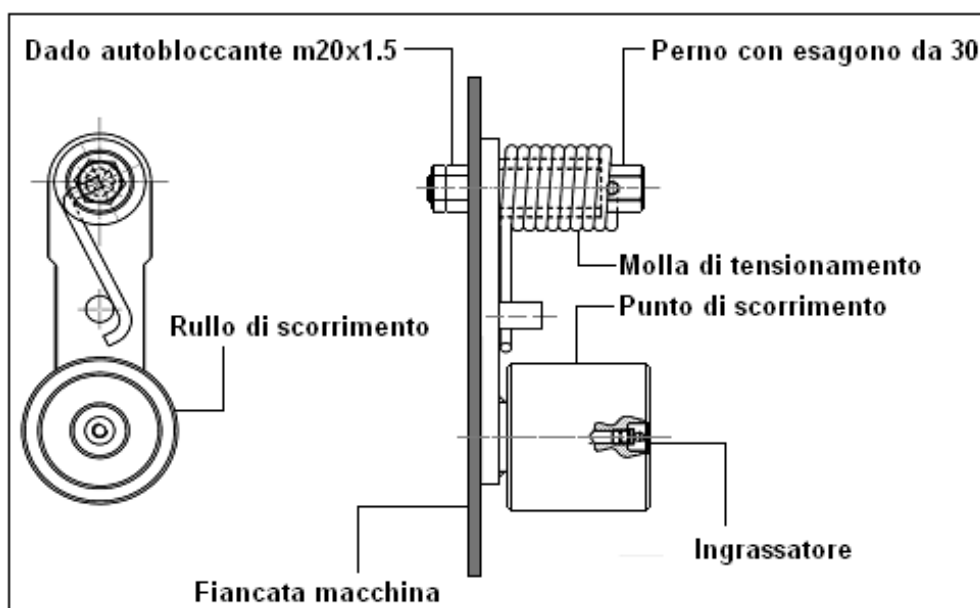
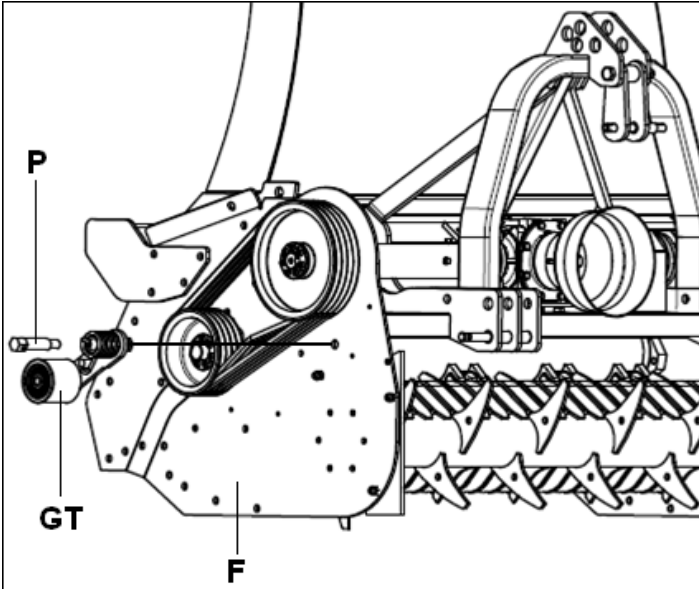
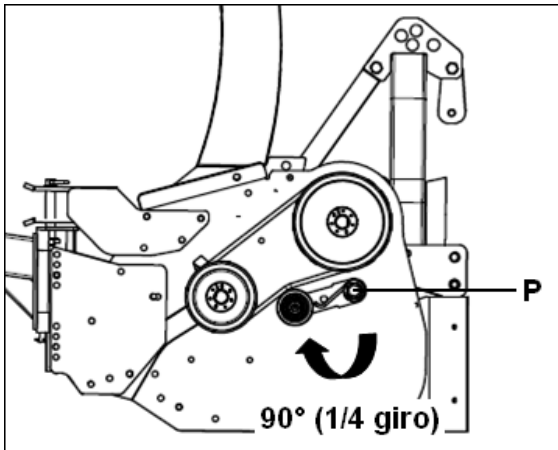
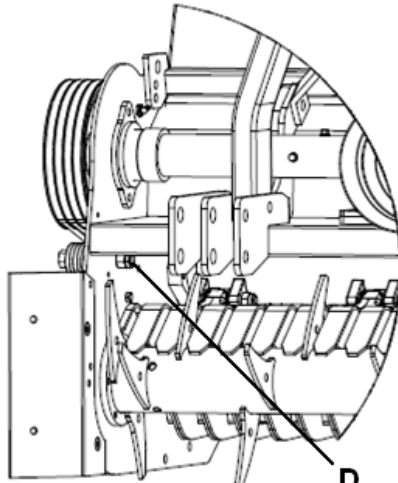


Figure 31

AUTOMATIC TIE-ROD REPLACEMENT PROCEDURE

Operate as follows when the automatic tie-rod must be replaced:

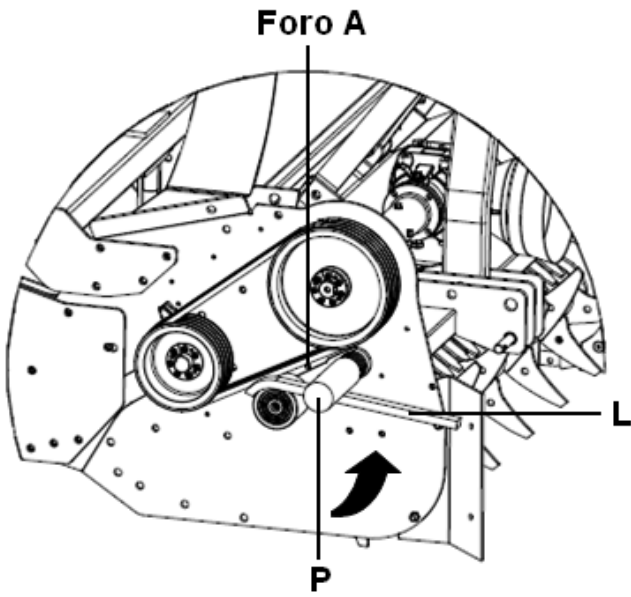
	1. Remove the lateral transmission guard;
	2. Position the tie-rod group GT onto the side F of the machine, fixing it with pin P;
	 Figure 32
	3. Making the tie-rod group turn on the pin P, rest the sliding roll on the belts;
	4. SPRING PRE-LOAD: with roll resting on a 30 wrench, turn the pin P by 90° (1/4 turn and block the positioning by tightening the nut D using another 30 wrench (figure 33-34);
	 Figure 33  Figure 34
	5. At this point, when correct belt tensioning has been obtained, check that the tie-rod is free to turn by applying pressure to the sliding roll and moving the belts away by a few centimetres and releasing: the tie-rod group must slide freely!
	6. Re-mount the lateral transmission guard.

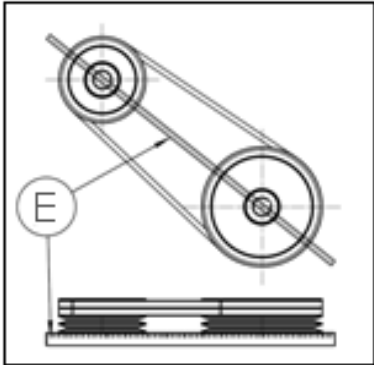
	Do not work without belts protection guard.
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4.2.3.REPLACING THE TRANSMISSION BELTS

When the machine transmission belts must be replaced, remove the lateral transmission cover.

REPLACEMENT PROCEDURE

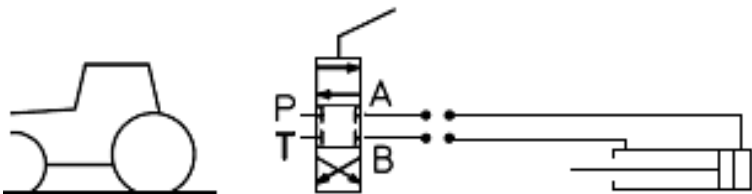
	1. By levering with a crow bar L on the extension of the pipe bax spanner P, turn the tie-rod group until hole A is uncovered (figure 35);  Figure 35
	2. Insert a screw M14 x30÷40 into hole A and allow the tie-rod group rest at the screw itself;
	Attention: tight spring. Make sure that the tie-rod group is fixed! Shearing hazard for the hands.
	3. As there is no more tension on the belts, they can be replaced;
	The trapezoid plates must be mounted without having to be forced. Using screwdrivers, pry bars etc. damage can be caused to the outside and inside of the belt. The belts mounted with force have duration of just a few days. Correct assembly allows to save time and money. If the adjustment space is reduced, insert the pulley with grooves onto the trees with the belts already introduced.

	4. Use a rod E to check parallelism of the two pulleys, otherwise proceed with their alignment;  Figure 36
	5. Use a crow bar on the extension of the box spanner in a way to manage to remove the screw M14 from the hole A;
	6. Slowly approach the sliding roll to the belts and leave them resting. The tensioning spring has maintained the initial pre-load and no other interventions are required;
	7. Re-mount the lateral transmission cover and the hydraulic motor guard.
 PERICOLO	Do not work without belts protection cover and without the hydraulic motor guard.

4.2.4.HYDRAULIC PLANT

 ATTENZIONE	Check the machine visually to make sure that there are no loose fittings, piping with scratches, cuts or other signs of wear. Tighten the loosened fittings and replace the worn or damaged pipes.
---	---

The machine is supplied with a hydraulic jack to be connected to the tractor distributor, which must guarantee the necessary pressure for correct operation maximum pressure of 160/190 bar).
Check the level of hydraulic oil and the compatibility of the machine quick couplings with those of the tractor and then connect the cylinder, respecting the layout.

Connect the conveyor bus bar adjustment cylinder to the outlets A and B of the tractor hydraulic distributor.	 Figure 37
--	--

Refer to chapter 3 paragraph 3.4 for connection of the machine to the tractor.

PROCEDURE FOR REPLACING HYDRAULIC HOSE

 ATTENZIONE	1. Before removing a hydraulic hose, make sure that any residual pressure in the plant has been discharged
	2. Identify the damaged hose precisely and use a relevant wrench to loosen the two relative connection points, paying attention to the possible escape of hydraulic fluid;
 ATTENZIONE	3. Replace the damaged piping only using original spare parts;
	4. Check the perfect condition of the hitch points (threads, gaskets, etc.), before installing the new hose;
	5. Use an appropriate wrench to tighten the hydraulic hose fittings, which have seepage, clockwise. Do not tighten excessively so as not to ruin the threading on the fittings
 ATTENZIONE	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.
 ATTENZIONE	The oil collected must be disposed of in compliance with the Laws in force in the country of use.

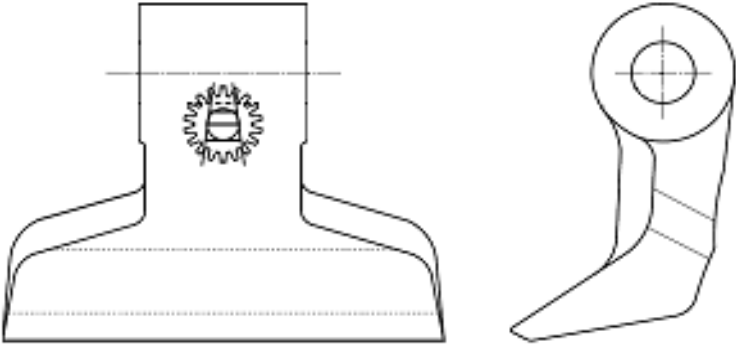
4.2.5.CHECKING WEAR OF TOOLS

The wear of the mulching tools is performed visually. Replace when an imperfect size of material or increases in power absorption are noted. This is possible by a sensitive increase in the temperature of the mulcher oil. Using the machine with blunt tools compromises the quality of the job.

The dimensions and weights of the tools are strictly controlled: if they are replaced completely, the rotor may not have to be dynamically balanced (refer to "TOOLS REPLACEMENT PROCEDURE").

Broken tools or tools that are too worn transmit vibrations to the machine. In this case, stop the job immediately and only start again after the tools have been replaced

 ATTENZIONE	Replace the worn and/or damaged tools with original tools distinguished by the Berti mark..
---	--

	"A" type hammer:  Figure 38 Duration of the tools depends on the type of use and type of land worked. It is recommended to replace them completely every 200 operating hours on average
 ATTENZIONE	The coupling torque of the screws must be controlled before each start-up.

TOOLS REPLACEMENT PROCEDURE

 ATTENZIONE	Before performing the operation on the mulcher, engage the tractor parking brake, switch off the engine, remove the ignition key from the dashboard and keep it in a safe place by the user. Make sure that the mulcher is on flat, stable ground .
 ATTENZIONE	If an individual tool must be replaced, it is recommended to replace the entire range. Not using original spare parts can cause the machine to vibrate anomalously. When mounting the tools, pay attention to the direction.  Figure 39
 PERICOLO	In the workshop, use suitable equipment (tackle and beams) to handle the machine especially in terms of liftable and sustainable weight (see table 1.5.3 for data relative to the machine), in compliance with the Laws in force in the country of use.
	1. Loosen the nuts D1 keeping them inserted in their position (figure 21);
	2. Loosen the nuts D2 and extract the screws V2 (figure 22);
	3. Turn the conveyor Cup to end run. The bus bar will touch the ground;

4. Remove the bolted grid G above the rotor R.
Sufficient space must be created for access to the rotor..

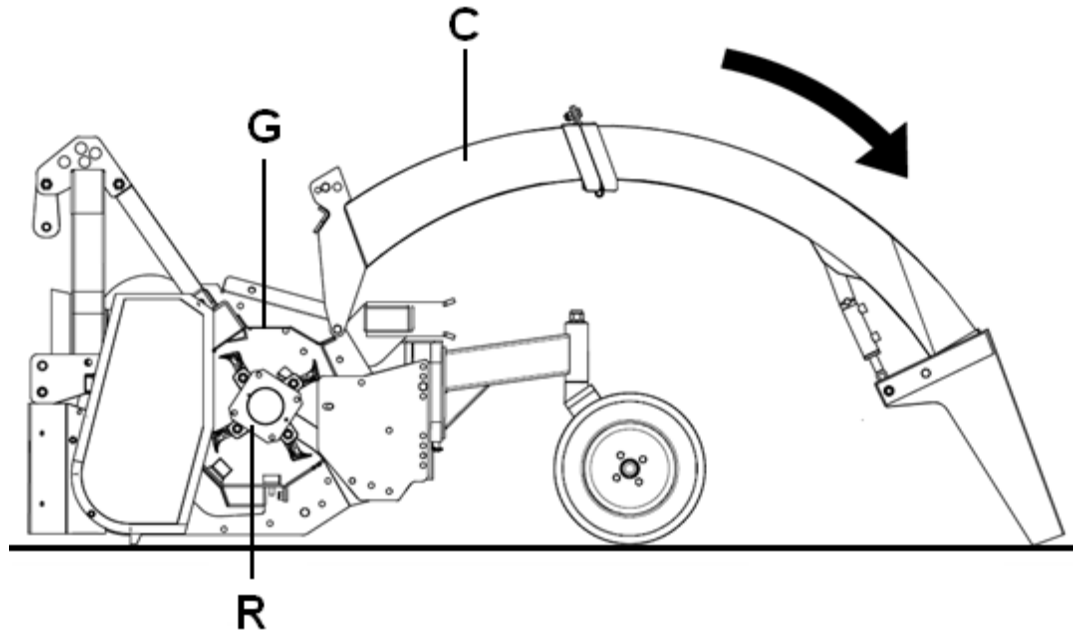


Figure 40

5. Loosen the nut D, hold the hammer M and slide the screw V (Figure 41). When the hammer has been removed check the state of wear of the supports, in particular the ovalisation of the holes, the square seat of the screw head and peripheral wear. If the phenomena describe are present, contact the manufacturer for indications;

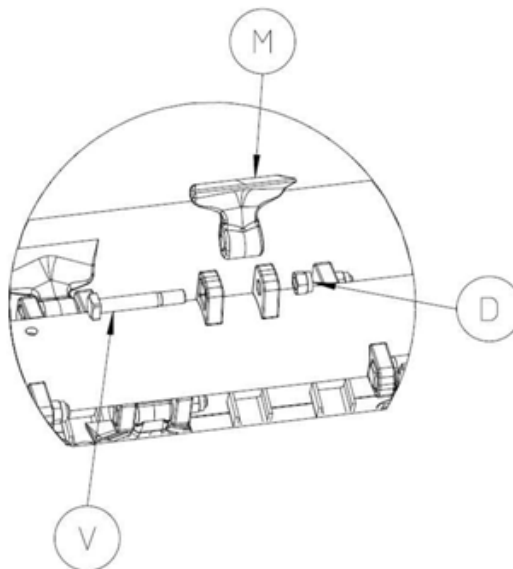


Figure 41

6. Replace the new hammer positioning it between the rotor supports. Insert the new screw, making sure to fit the screw head with the square recessed on the support
7. Mount the new nut and tighten it. Perform the same procedure until the complete replacement of all hammers;
8. Re-position the grid and the conveyor, fixing them using screws V2 and bolts D1 and D2;
9. Repeat the hitching and starting procedure described in paragraph 3.4. a 3.6.

 ATTENZIONE	When mounting the tools, pay attention to the direction. If they are mounted in the wrong direction they cannot cut
 PERICOLO	If there are still vibrations when the tools have been replaced, the rotor must be dynamically balanced again in a specialised workshop
 ATTENZIONE	Periodically check the tightness of the hammer screws and nuts. The loosening of the same may damage the rotor and give rise to dangerous projections
	Our spare parts guarantee complete and correct use of your machine again

4.2.6. ADJUSTING THE ROLLER SCRAPER

If the machine is fitted with optional leveller roller, it can be adjusted and cleaned as follows:

- 1- Loosen the bolts **C** on all the slots;
- 2- Adjust the distance of the scraper **D** always keeping it in parallel position from the roller;
- 3- Tighten the bolts **C**.

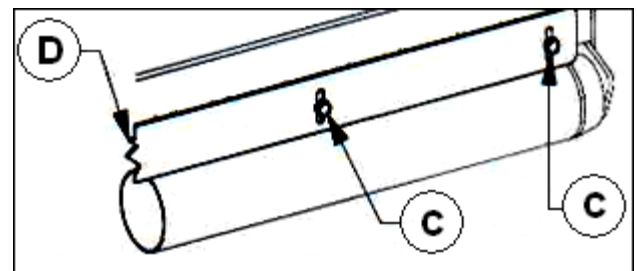


Figure 42

4.2.7. CLEANING THE MACHINE

Clean the machine regularly using pressurised water and paying particular attention to residues of flammable materials. Ensure that the hot parts of the machine are free of straw, hay or residues of flammable materials.

4.3. STORAGE – RE-COMMISSIONING

If the machine is immobilised for long periods, store it in a place sheltered from the elements and protect it from damage. Before re-commissioning, it is advisable to operate as follows:

- release the rotor and the tools from any mulching residues;
- clean the machine thoroughly;;
- plug the hydraulic hoses (if quick couplings are not present), making sure to collect the hydraulic oil it contains
- carry out a general visual check of the machine in order to identify any structural damage, detect any deep scratches in the paintwork, check that original safety pictograms are present in their positions and that they are integral and legible;
- grease all mechanical parts and locking pins;
- if possible, store the machine in a covered place, on a level and smooth surface.;
- Gather the hoses with a strap and fix them to the machine.



Check that the storage temperature is between 0°C and 50°C.



ATTENZIONE

For the disposal of oil and all materials used for collection, cleaning etc. follow the provisions in force in the country of use.

4.4. SCRAPPING



ATTENZIONE

If the machine is scrapped, it must be disposed of in the appropriate waste sites in accordance with the laws in force in the country of use.

Before scrapping, separate the plastic and rubber parts, electrical and electronic parts (if present). Recover any used oil and discard at the appropriate collection centres.

Parts consisting only of plastic, aluminium or steel may be recycled if collected by the appropriate centres.

4.5. SCHEDULED MAINTENANCE TABLE

Description	Controls
GENERAL MACHINE CHECKS	
Rotor greasing	Every 8 operating hours
Belt-tensioner support greasing	Every 8 operating hours
Check machine bolt tightness	After the first 4 hours and then every 50 hours
Check belts tensioning	After the first 4 hours and then every 50 hours
Check wear and fixing of tools	Before every job
Replace tools, screws and nuts	Every 200 operating hours or when damaged or no longer sharp
Replace transmission belts	Every 400 hours or when too worn
Replace pulleys	Every 400 hours or when too worn
Rotor balancing	Every partial or total replacement of the tools
Check guards integrity	Every machine start-up. Restore the guards if worn and/or damaged.
Check pictograms	Every machine start-up. Restore if worn and/or damaged.
HYDRAULIC PLANT	
Check tightness of hydraulic hoses	At every start-up and every seepage of liquid
Check hydraulic hoses	Check at every start-up. Replace immediately in the event of damage, seepage
Gearbox	Check every 200

4.6. COUPLING TORQUE TABLES

Coupling torque table for 8.8 steel screws:

Coarse thread screw	M8	M10	M12	M14	M16	M20	M24
Coupling torque Nm	25	49	86	135	210	410	710
Fine pitch screw	M8x1	M10x1.25	M12x1.25	M14x1.5	M16x1.5	M20x1.5	M24x2
Coupling torque Nm	27	52	95	150	225	460	780

Coupling torque table for 10.9 steel screws:

Coarse thread screw	M8	M10	M12	M14	M16	M20	M24
Coupling torque Nm	35	69	120	190	295	580	1000
Fine pitch screw	M8x1	M10x1.25	M12x1.25	M14x1.5	M16x1.5	M20x1.5	M24x2
Coupling torque Nm	38	73	135	210	315	640	1100

4.7. TROUBLESHOOTING TABLE

ANOMALY	CAUSE	SOLUTION
Mulching not uniform	- Tools worn or damaged - Machine not adjusted in agreement with the instructions - Machine clogged - The rotor does not turn at envisioned speeds - 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 - Perform the job a few times
Premature wear of the tools	- 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 overheating of the gearbox and extension	- Mulcher oil level too low - Spent oil - Excessive amount of material to work; - Under-dimensioned mulcher oil cooling system	- Add oil to the working vehicle - Replace the oil - Use the mulcher/hammer flail system - Perform the job a few times and/or reduce the advancement speed. - Strengthen the cooling system
Frequent breakage of 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
Rotor does not turn	- Foreign body jammed - Bearing breakage - Gearbox breakage - Transmission breakage - Belts breakage - Rotor shaft breakage - Hydraulic hoses disconnected or inverted - Mulcher feed plant failure	- Refer to the "Machine jamming" procedure - Replace bearings and gaskets - Replace gearbox - Replace transmission - Replace belts - Replace rotor - Connect the hydraulic hoses correctly - Contact the mulcher mechanic.
Sealing rings broken/worn	- Excessive lubrication - High rotor rotation speed - Incorrect assembly of the gaskets	- Change the sealing rings - Check machine adjustment - Request information from the manufacturer

Chassis broken/unwelded	• Sheet steel worn • Chassis stressed excessively and crushed to the ground • Rotor unbalanced	• Change the chassis • Change the chassis • Balance the rotor
The rotor vibrates	• The rotor is unbalanced; • Tools worn/broken, • Rotor bent	• Balancing in specialised workshop • Replace the worn and/or broken and/or missing tools. • Replace rotor

5. GENERAL CONDITIONS

5.1. SPARE PARTS

Repairs and replacements must be carried out using original spare parts, which must be requested from the Authorised Dealer. Please note that the presence of spare parts should be properly accompanied by the following indications:

- type of vehicle;
- serial number;
- spare part code that can be obtained from the Spare Parts Catalogue.

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

1.4. WARRANTY

On delivery, check that the machine has not been damaged during transport and that the accessories are complete.

WARRANTY CONDITIONS:

- The manufacturer guarantees its products for a period of 12 months from the date of delivery on the condition that the attached form is filled-in in full and sent to the manufacturer within 15 days of date of delivery (the delivery document acts as evidence).
- In accordance with the aforementioned terms, the manufacturer agrees to supply all components to be replaced under warranty according to its own evaluation or the opinion of its authorised representatives regarding parts that have material or manufacturing defects. Shipping and labour costs shall in any case be charged to the customer.
- The warranty does not include payment for damage caused by improper use of the machine by the operator and for parts normally subject to wear and tear and breakage such as: hammers, blades, belts, etc.
- The manufacturer is not liable for accidents involving the operator or third parties, deriving from improper use of the machine.
- This warranty is not valid in the case in which:
 - 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) in the event of an incorrect manoeuvre;
 - d) due to insufficient maintenance and/or lubrication;
 - e) when permissible power limits have been exceeded;
 - f) whenever the instructions given in this manual are not followed;
 - g) whenever unauthorised modifications have been made.
- Machine breakdowns during or after the warranty period shall not give rise to any right to interrupt payments for the goods that have already been delivered. No breakage or malfunction can be used as a pretext for delaying payment.
- The manufacturer reserves the right, at all times, to make any modifications in order to improve its own product and is not obliged to add these modifications to previously manufactured machines, which have already been delivered or are undergoing manufacture.
- These general warranty terms replace and cancel all previous explicit or implicit terms.
-

5.2. NOTES

