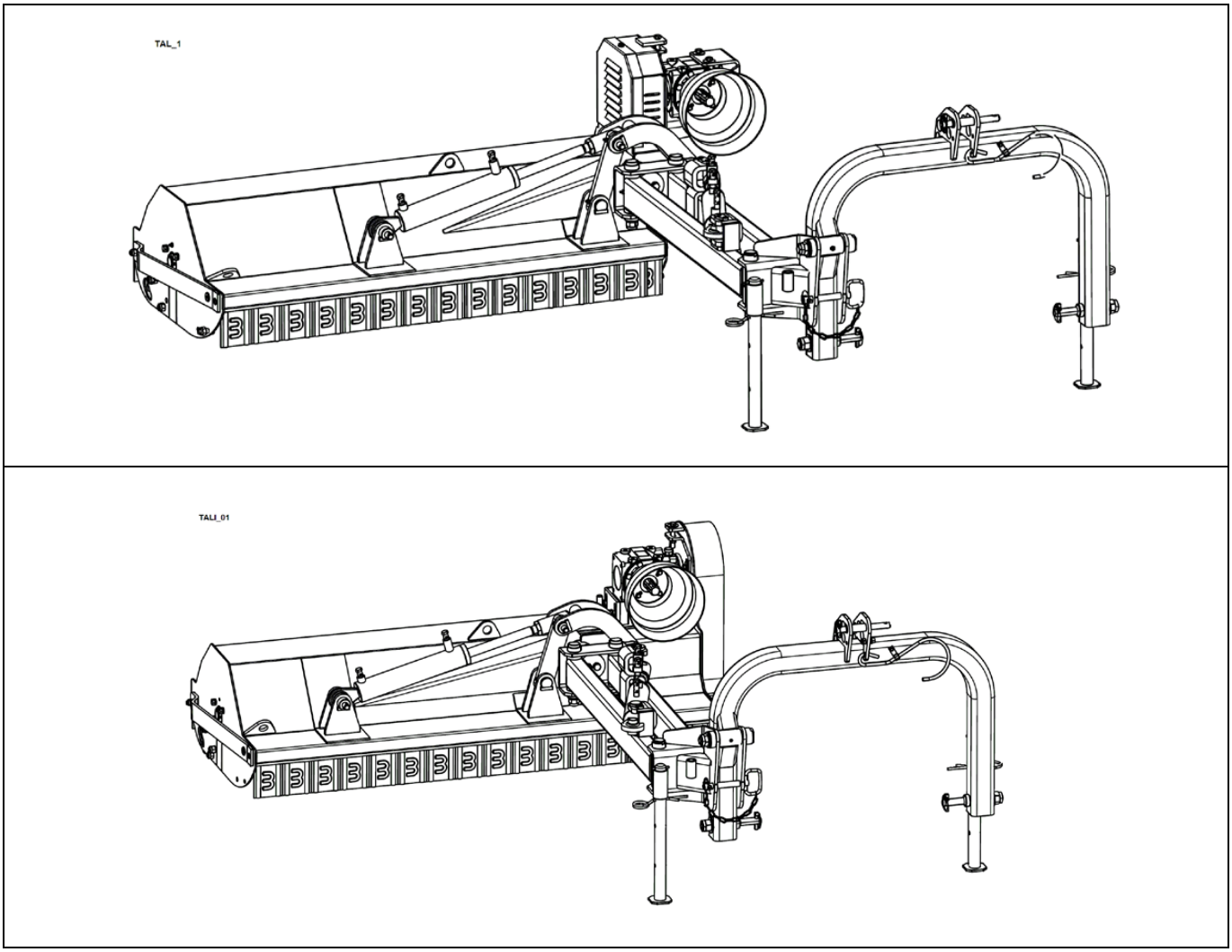
INSTRUCTION MANUAL

MULCHERS

Trademark: BERTI Macchine Agricole
Models: TA/L – TA/LI



🕮 Before using the machine, carefully read this Manual 🕮

ORIGINAL VERSION

INDEX

INTRODUCTION

This instruction manual describes the operating mode and contains all instructions necessary to properly use and maintain the mulcher as well as performing ordinary and periodical maintenance operations 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 damages/injury to persons, property and animals.
The manual must always accompany the machine, even if the latter is sold. 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 doest 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 its 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 DISTRIBUTOR, RESELLER and IMPORTER: the person responsible to deliver the machine to the end user must ensure application to the tractor. Therefore it is their responsibility to read this instruction manual and understand its contents before finally delivering the machine. 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	Mulchers.
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 produces the→Berti Macchine Agricole S.p.A. mulcher
Three-point connection	Connection device that allows connecting the mulcher to the tractor by setting the width of the parallel of the tractor. The adjustment rods of the parallels have notches along the thread of the logs, in which are engraved the categories. The three-point connection may be of category cat. 1, Cat. 2, Cat. 3 o Cat. 4 (if a Cat. mulcher must be connected 3 simply adjust the registers of the parallels of the tractor on Cat. 3, so that the tractor will be perfectly aligned with the measurements of the mulcher).

Machine operating area	The operating area, **fixed at 50 m**, delimits the machine operating area and should be considered **"dangerous zone".** Persons, property and animals must remain outside the machine operating area.
	**DANGER**- This signal indicates and imminent and real dangerous situation, that may cause serious injuries or death if not avoided.
	**WARNING** - This signal indicates a potentially dangerous situation, that may cause serious injuries or death if not avoided. Dangers marked by this signal present lesser degree of risk of serious injury or death than those indicated by the signal DANGER.
	**CAUTION** - This signal 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. INFORMATIONS 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 all three of its versions, informs the user to pay utmost attention to the subject in case.

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

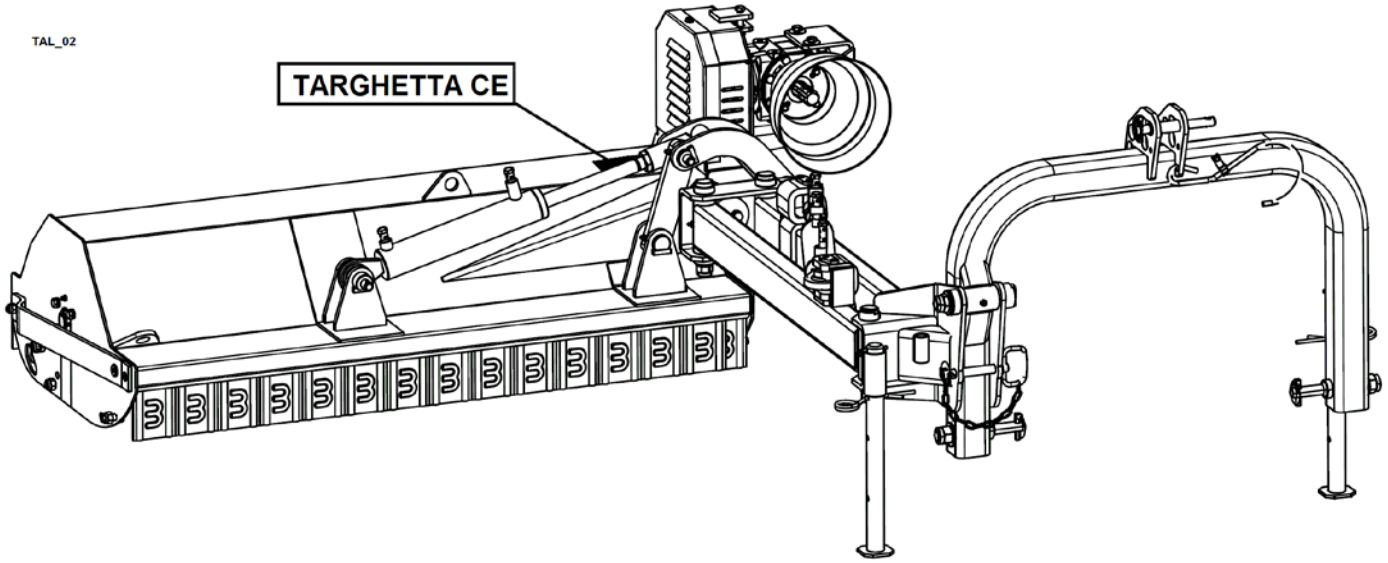
Every machine is equipped with an identification plate, containing the following data:

- CE Marking;
- Country of fabrication;
- Manufacturer's name and address;
- Model and type;
- Serial number and year of manufacture;
- Weight

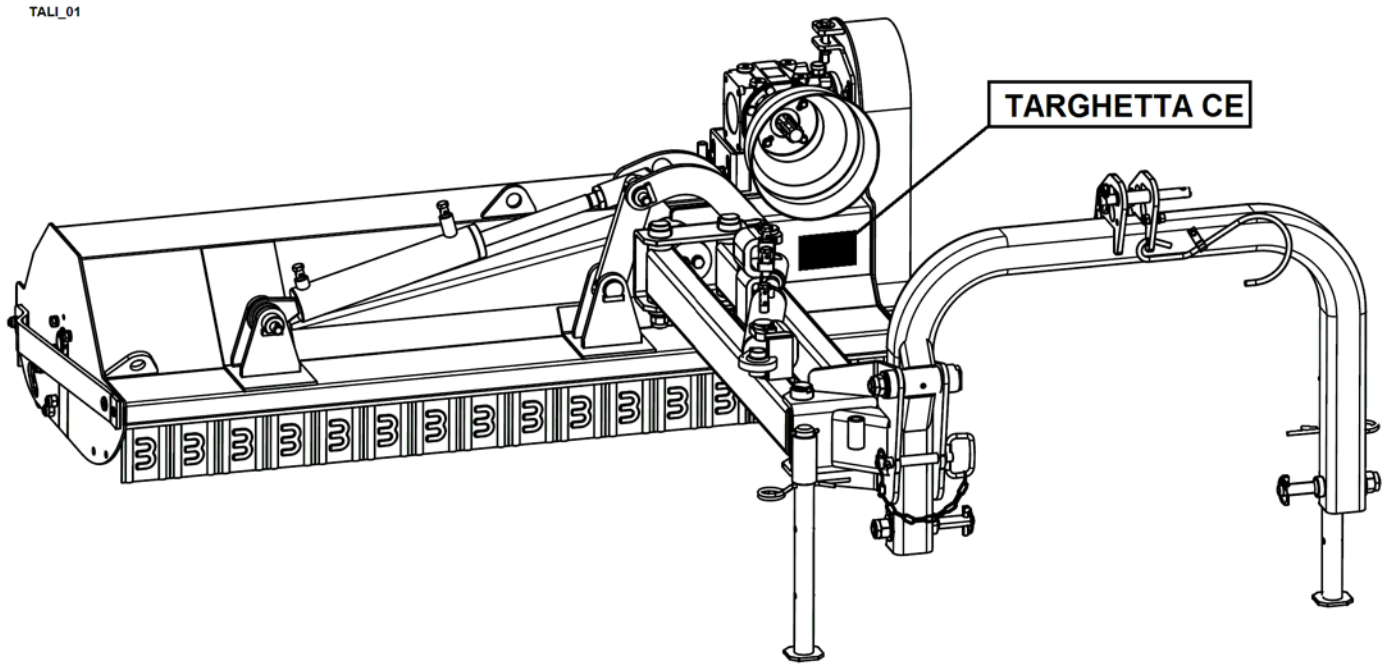
The machine is supplied as standard with:

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

TA/L



TA/LI



1.4. CE CERTIFICATE OF CONFORMITY OF THE MACHINE

BERTI MACCHINE AGRICOLE S.p.A.
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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 **Direttiva 2006/42/CE** . 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 **Directive 2006/42/CE** , 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 **EU-Richtlinie 2006/42/CE** , und mit den Anforderungen der gemeinsamen EU-Richtlinien konform ist:

déclarons sous notre seule responsabilité, comme Fabricante, que le produit faisant l'objet de la déclaration est conforme aux prescriptions fondamentales en matière de sécurité et de santé stipulées dans la **Directive de la 2006/42/CE** . Nos déclarons que les normes harmonisées suivantes ont été appliqué:

UNI EN 13524:2003 - A1:2009
UNI EN ISO 13857:2009
UNI EN ISO 3767-1:2:1998
UNI EN ISO 12100:2010

Nonchè le seguenti specifiche tecniche:
And the following technical specifications:
Und die folgende technische Ausstellungen:
Et les spécifications téchniques suivantes:

ISO 11684:1995

MODELLO -- TYPE XXXXXXXXXX
MATRICOLA -- N° DE SERIE XXXXXXXXXX

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Legal rapresentative and custodial of the technical pamphlet
Gesetzlicher Vertreter und Hüter des technisches Heft
Représentant juridique et dépositaire du doccier technique

BERTI® Macchine Agricole S.p.A.
BERTI MARIO
Amministratore Unico

P.PDCE_MD1r00

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 integrative de l'appareil

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Società soggetta a direzione e coordiamento da parte della società HB Holding Berti S.r.l. R.I. di VR03066950241

1.5. MACHINE INFORMATION

1.5.1. SPECIFIED USE

The mulchers model TA/L and TA/LI have been designed to be used exclusively in the agricultural sector, for mulching grass, residual vegetation, bushes and branches up to a diameter of approximately 3-4 cm., according to the type of tool used.
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 tractor power points via cardan connection.
The machine is not suitable to be used in other sectors than in agriculture.

NEVER USE THE MACHINE FOR DIFFERENT PURPOSES FROM THOSE PROVIDED

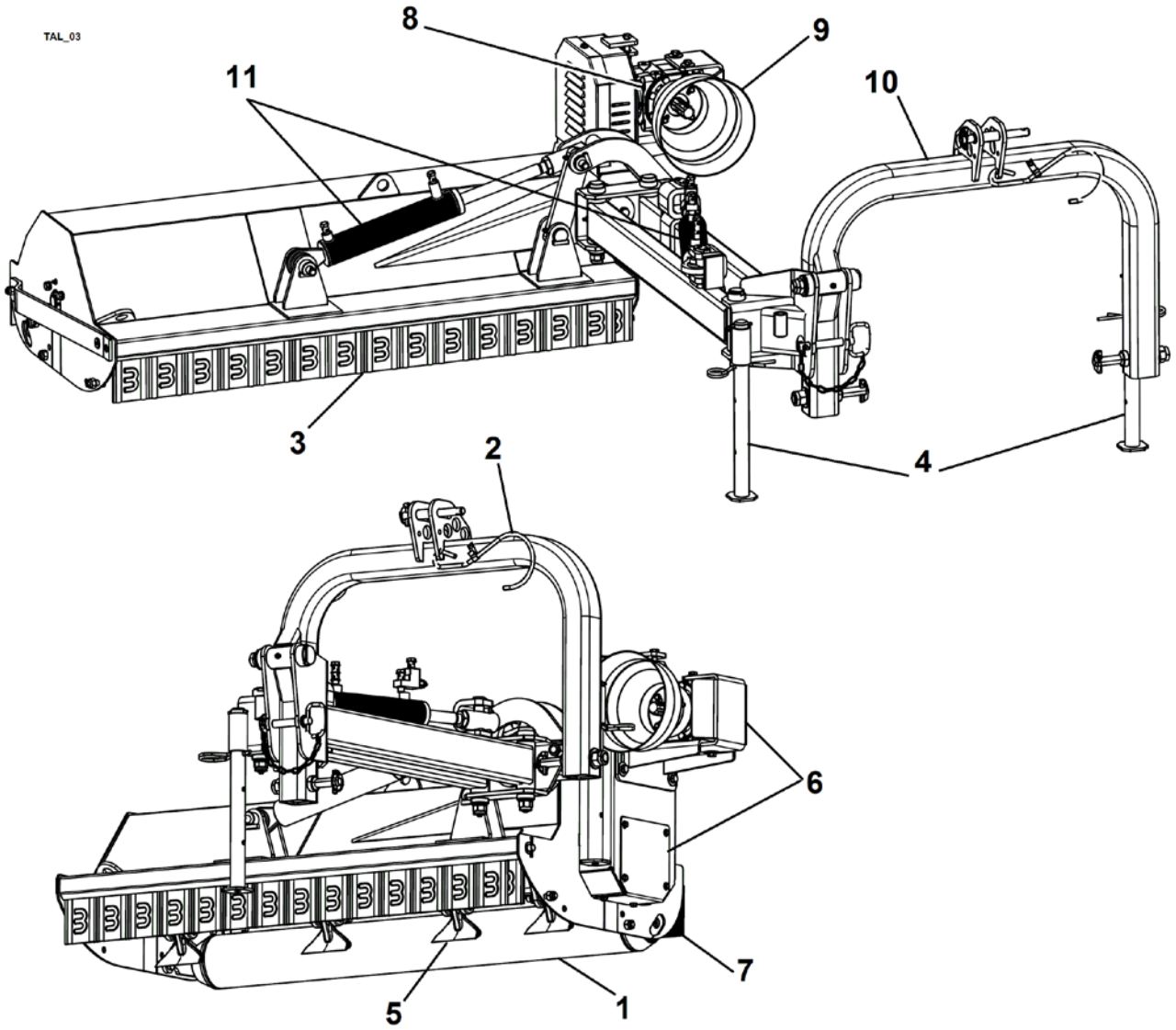
The use of the mulcher is strictly forbidden if connected to a tractor with different features from those listed in paragraph 1.5.3, on soils with stones, scrap metal, wire and any other synthetic materials, to fell trees, to mill logs, on unstable land (such as land with heavy uphill or downhill , steep 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

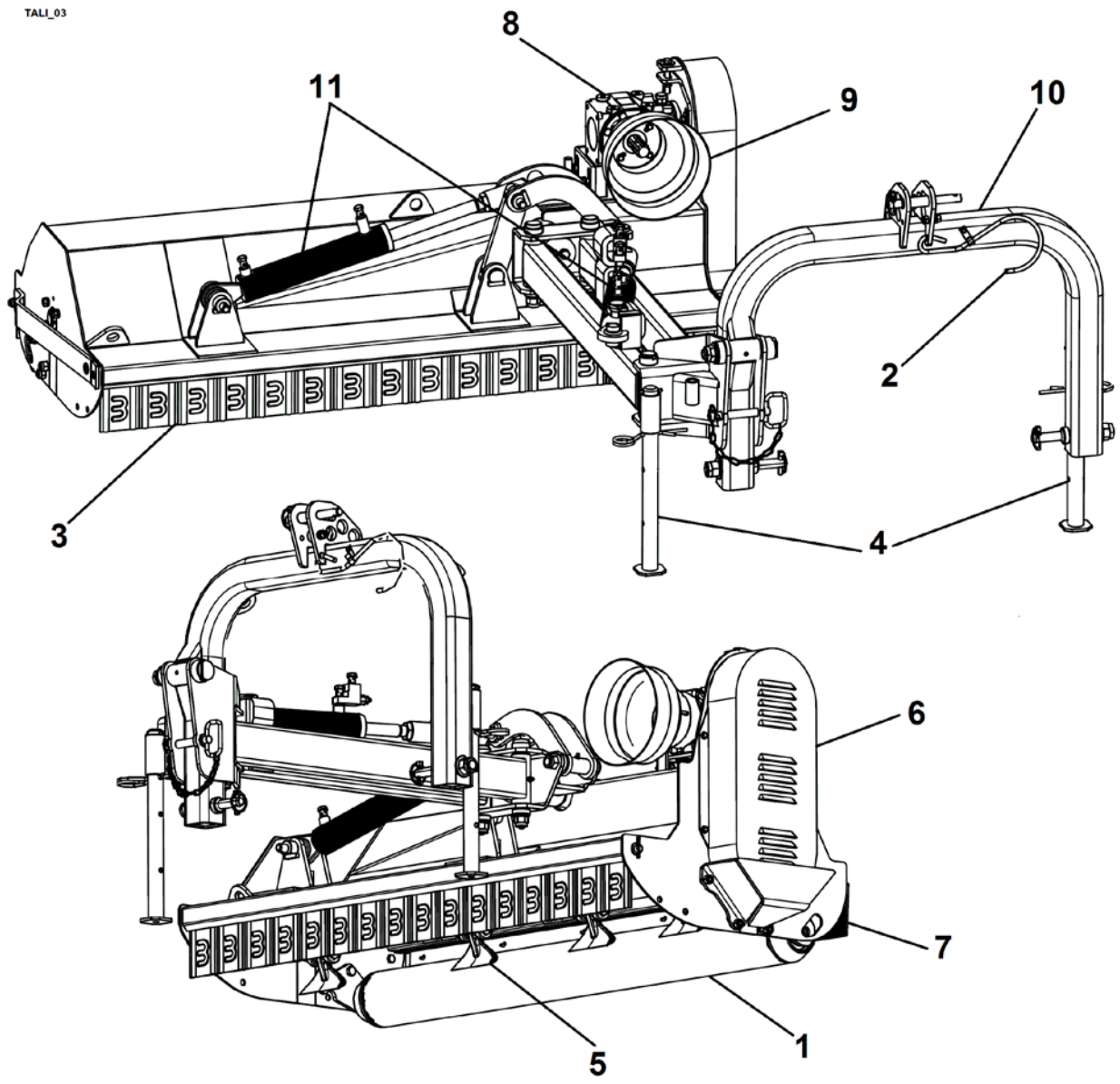
The machine has an operating component consisting of a rotor with horizontal axis, on which the mulcher tools are mounted , that rotates at high speed.
The mulcher is essentially made up of:

- A frame;
- A three-point connection system;
- A drive shaft coupling;
- A gearbox
- A distributor unit (pulleys, locking sets, automatic belt tensioner);
- A rotor;
- A series of mulching tools;
- A supporting device in stand-by position;
- A rear roll;
- CE accident prevention guards.



1 Levelling roll 2 Support cardan shaft in stand-by 3 Front protection devices with straps or chains 4 Support foot 5 Rotor 6 Carter	7 Rear protection rubber 8 Gearbox 9 Counter-cap 10 Tiller 11 Movement jacks

Mulcher Mod. **TA/L**

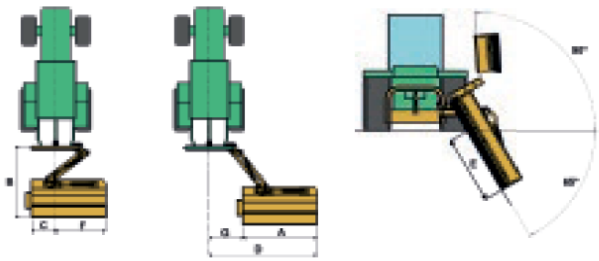


1 Levelling roll 2 Support cardan shaft in stand-by 3 Front protection devices with straps or chains 4 Support foot 5 Rotor 6 Carter	7 Rear protection rubber 8 Gearbox 9 Counter-cap 10 Tiller 11 Movement jacks

Mulcher Mod. **TA/LI**

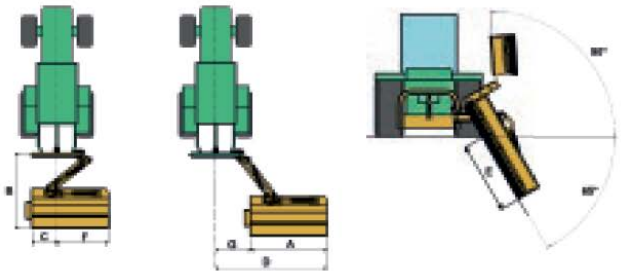
1.5.3. TECHNICAL DATA

The machine is suitable to be applied on tractors with power ranging from 28 to 45 kW (35 - 60 CV).
It can work behind the tractor, on the side, on the banks of ditches tilted upwards or downwards.
The drawing and the tables below indicate the machine operation field.



Mod.	A	B	C	D	E	F	G
	cm	cm	cm	cm	cm	cm	cm
TA/L 115	115	157	26	215	110	89	100
TA/L 135	135	157	26	235	130	109	100
TA/L 145	145	157	26	245	140	119	100

Mod.		HP							
	cm	Min	Max	n°	n°	n°	PTO	min	max
TA/L 115	115	35	60	10	30	3	540	395	485
TA/L 135	135	35	60	12	36	3	540	425	505
TA/L 145	145	35	60	14	42	3	540	450	530



Mod.	A	B	C	D	E	F	G
	cm	cm	cm	cm	cm	cm	cm
TA/LI 135	135	157	61	195	92	74	60
TA/LI 145	145	157	61	205	102	84	60
TA/LI 160	160	157	61	220	117	99	60

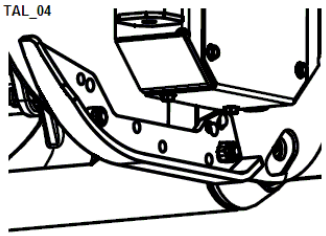
Mod.		HP							
	cm	Min	Max	n°	n°	n°	PTO	min	max
TA/LI 135	135	35	60	12	36	3	540	435	515
TA/LI 145	145	35	60	14	42	3	540	445	525
TA/LI 160	160	35	60	14	42	3	540	460	540

Table 1

1.5.4. ACCESSORIES

The machine can be equipped with several accessories.

For each application, please bear in mind that the weights of the machine may vary; for each application verify the the tractor stability is not compromised (see chapter PROCEDURA DI TRASPORTO DELLA MACCHINA).

Description	Drawing	KG
"Berti" anti-shock safety system	SEE CHAPTER 2.4	12 kg
Pair of anti-wear skids		14 kg (Surcharge)

1.6. MATERIALS THROW

PERICOLO

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 AND VIBRATIONS LEVEL

PERICOLO

dB

Even when operating without load, the machine exceeds 80dB(A) and the operators must use hearing protective e 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.
In time there may be an increase in the level of noise from the tractor - mulcher assembly due to phenomena of wear: it is advisable to regularly carry out assessment of risk from 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 cause damages 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.).

2. ACCIDENT PREVENTION AND SAFETY STANDARDS:

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.

	The machine must not be used in sectors other than agricultural and a use different from 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.
PERICOLO	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. 
	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 tubes 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.

 PERICOLO	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.
	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.
 ATTENZIONE	The signs applied to the machine provide a series of important indications: their compliance will determine your safety.
	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

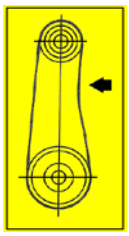
 ATTENZIONE	Keep an extinguisher of proper capacity in the tractor and maintain periodically. The hand extinguisher may only be used by personnel that know how to use it. The user is therefore responsible for providing proper training via particular courses.
	The personnel that use the machine must know 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, tubes, tanks, electric wires, or flammable materials in general.
	In case of welding protect with appropriate screens the flammable parts.

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 by 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:** it indicates the following dangers: do not stand between the equipments 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:** it indicates the following risks: pay attention to hot parts and to the foldable parts of the machine, pay attention to the projection of objects.
3		**ATTENTION**: read carefully the use and maintenance manual, every action on the machine should be executed after switching off the tractor, after 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 PROTECTIVE EQUIPMENT**
7		**LIFTING POINT**

8		OIL LEVEL.
9		GREASING POINTS
10		CARDAN SHAFT ROTATING AT 540 RPM
12		TENSIONED BELTS
13		NOTES ON WARRANTY
14		GENERAL WARNINGS

2.3.2. POSITION OF PICTOGRAMS ON THE MACHINE

The pictograms are inserted as indicated in diagram:

TA/L

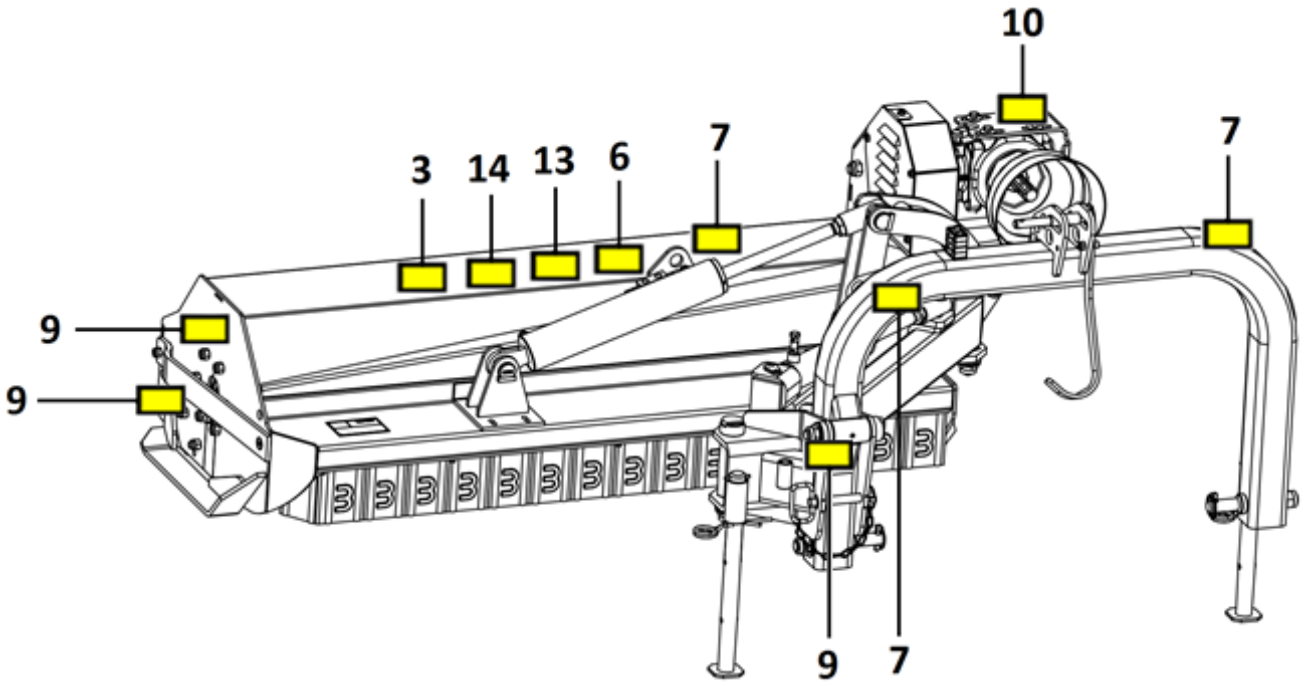


Figure 1

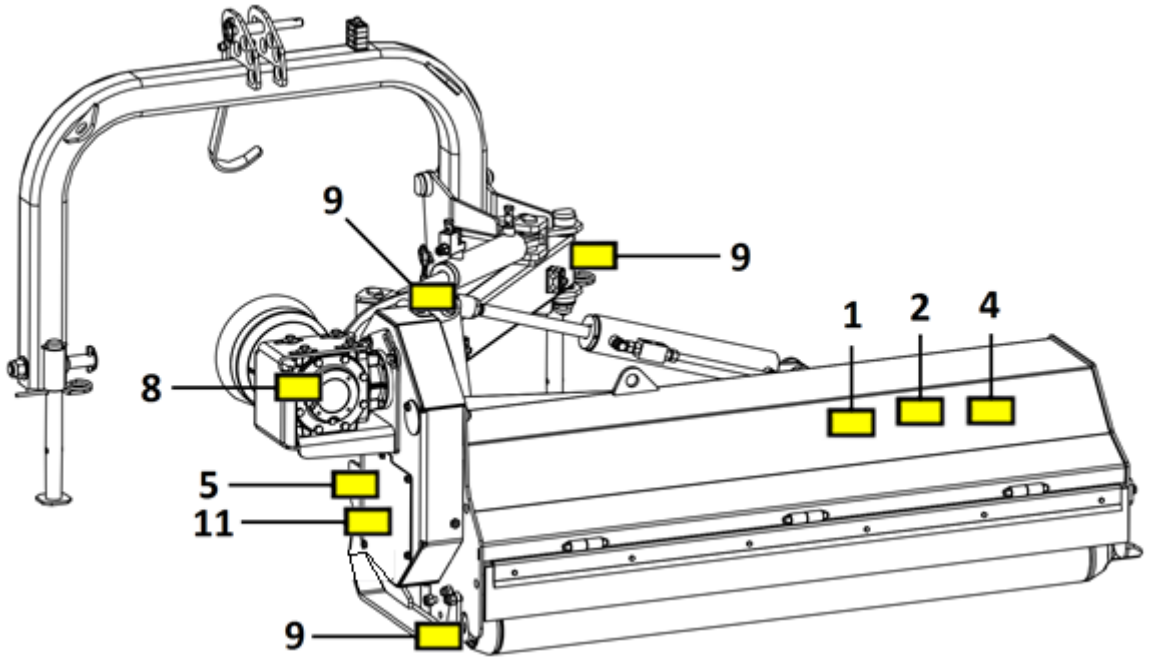


Figure 2

TA/LI

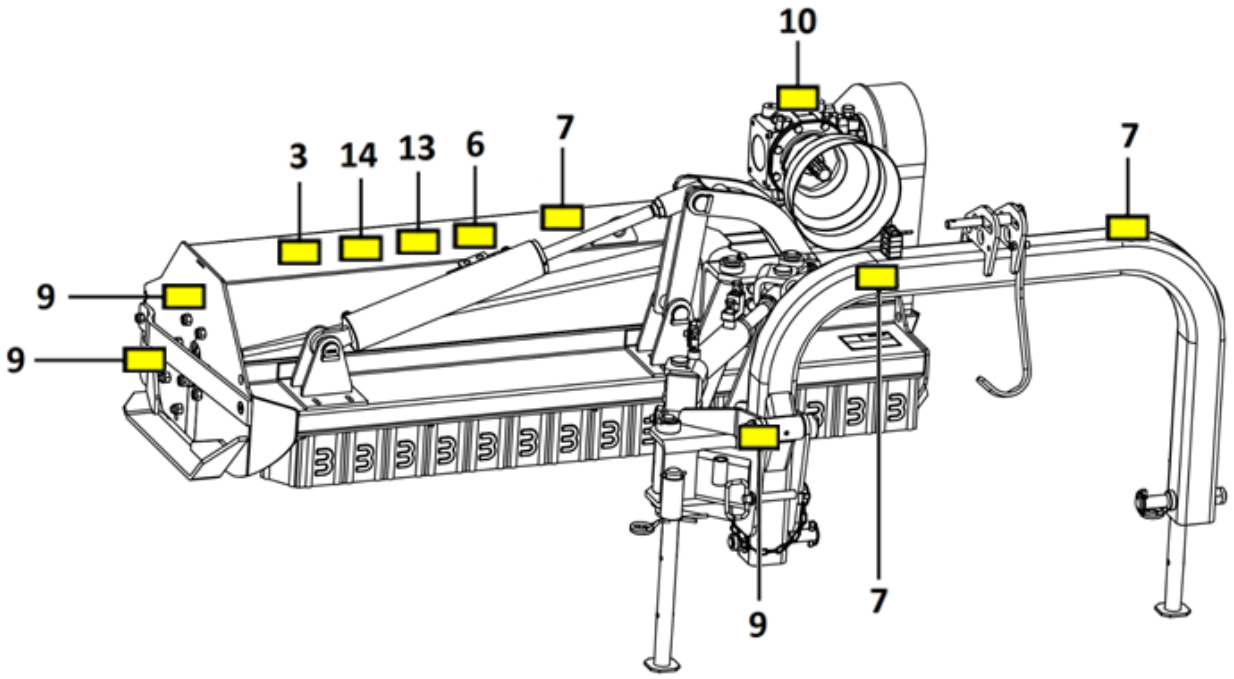


Figure 3

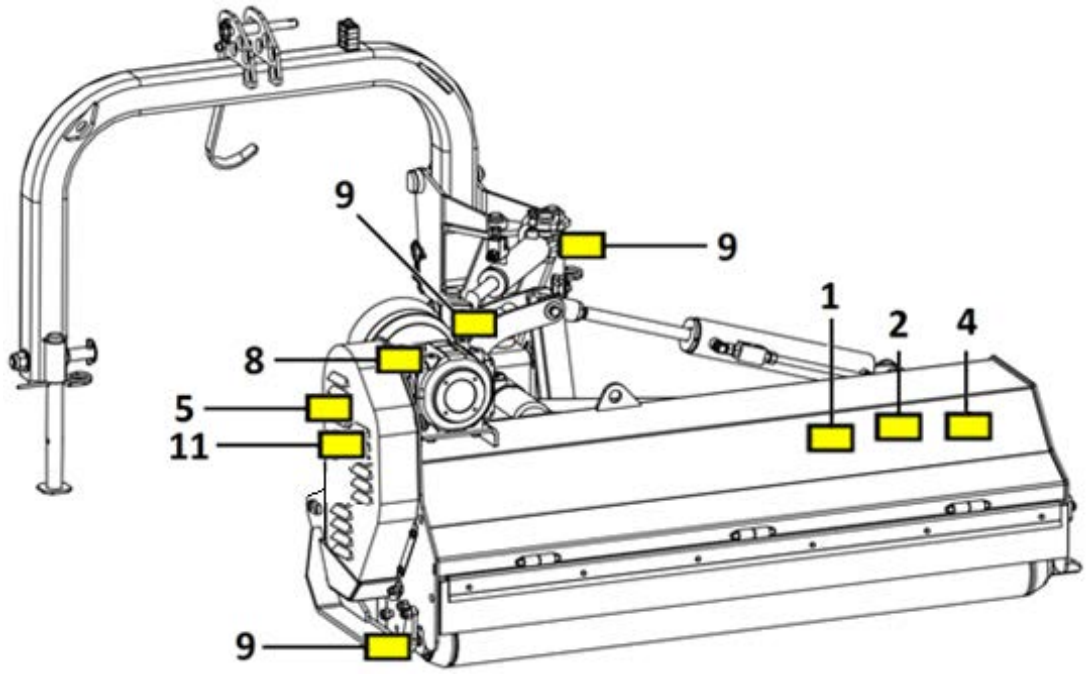


Figure 4

2.4. "BERTI" SAFETY ANTI-SHOCK SYSTEM (OPTIONAL)

This innovative system was designed and built by the company "BERTI Macchine Agricole S.p.A." to increase the safety of the machine and the actual operator when working in the field, when working with the mulcher of the TA series protruding from the tractor. This technology allows the machine to respond immediately to a collision in a resilient manner, with a displacement S opposite to the direction of travel and horizontally to the ground (figure 10), in the event that the machine encounters during work an obstacle fixed to the ground (e.g. plant, pole).
The described reaction of the machine is used to prevent further damage to the same, to avoid damage to the tiller and allows the operator to intervene in time by stopping the work and by moving the machine away from the dangerous obstacle.
The patented anti-shock device is composed of calibrated springs are in a box (figure 14) that allow movement opposite to the direction of work of the machine - parallelogram assembly to then return to the initial position thanks to the springs.

PERICOLO

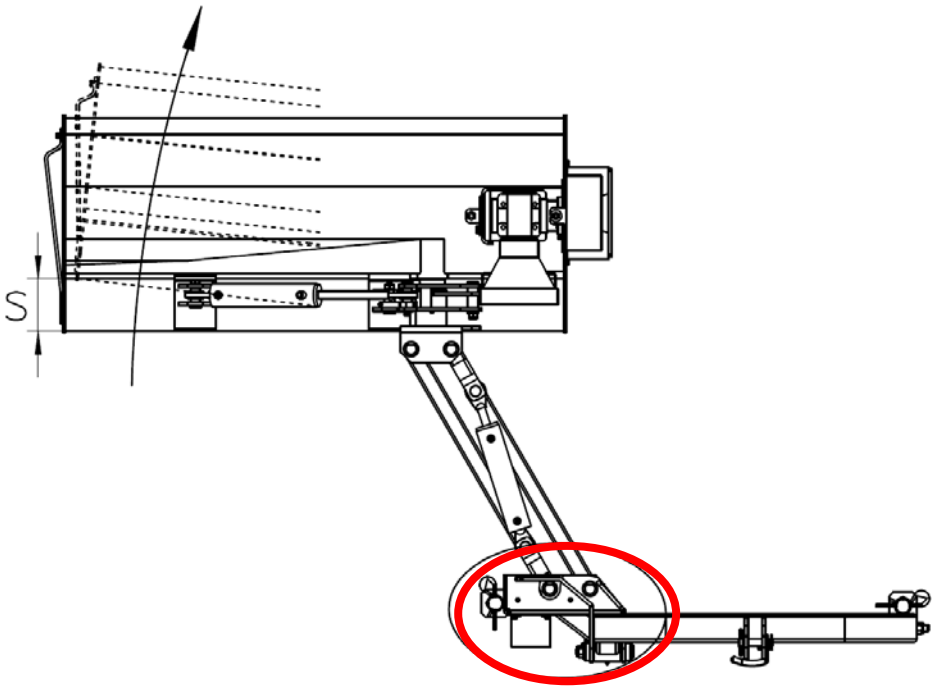


Figure 5

ATTENZIONE

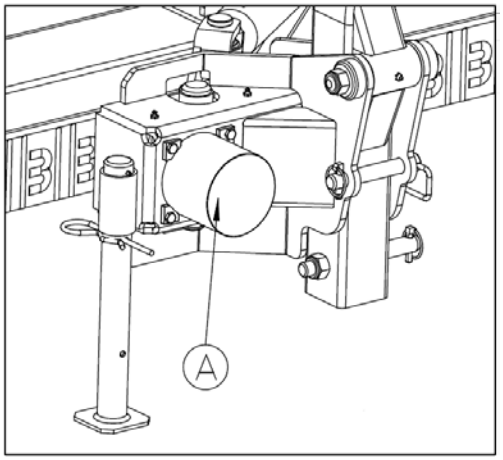
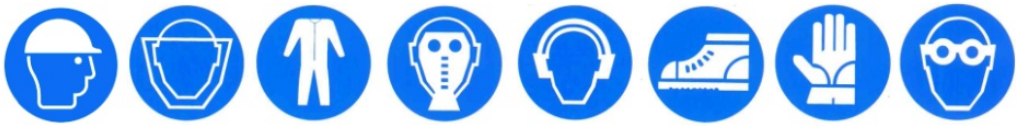


Figure 6

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 maximum attention to safety during loading and unloading operations, which must be performed by qualified staff.
When lifting the machine you must use the appropriate lifting points, indicated in the pictograms in figure 15-16.
Visually check the machine before handling it as to make sure that the unstable parts do not represent a danger.

 CAUTELA	Never lift or handle the machine anchoring it to the rotor!
 ATTENZIONE	The manufacturer declines any responsibility regarding any damages to persons, animals and property 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.**

TA/L

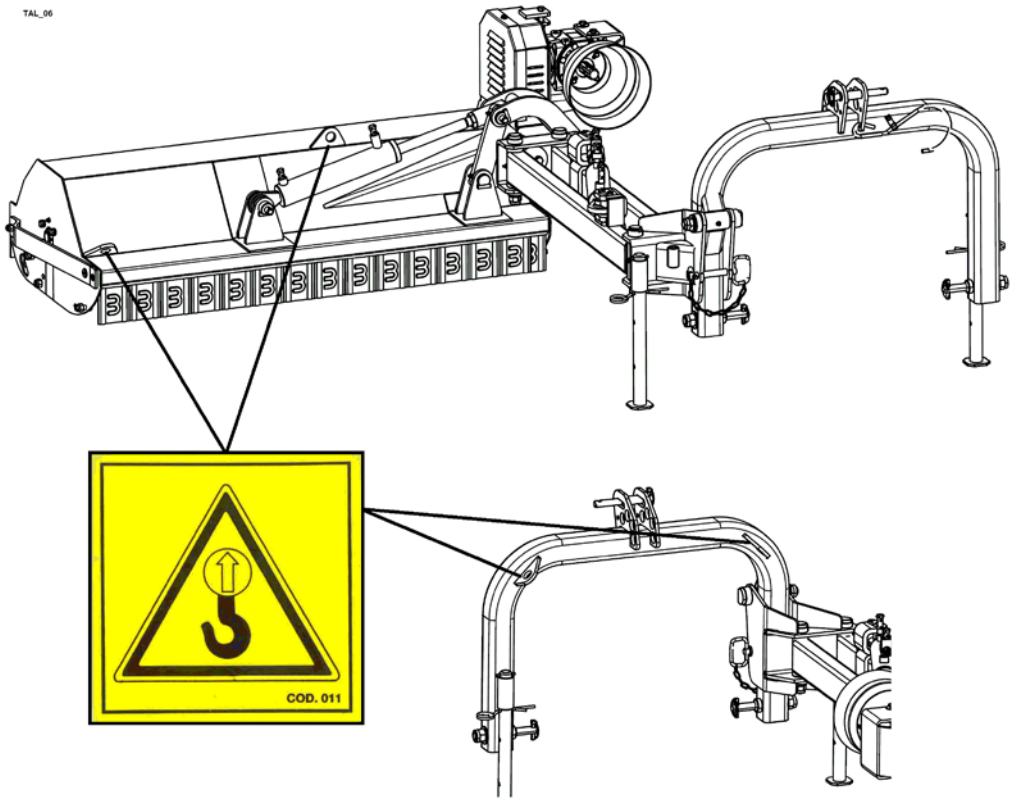


Figure 7

TA/LI

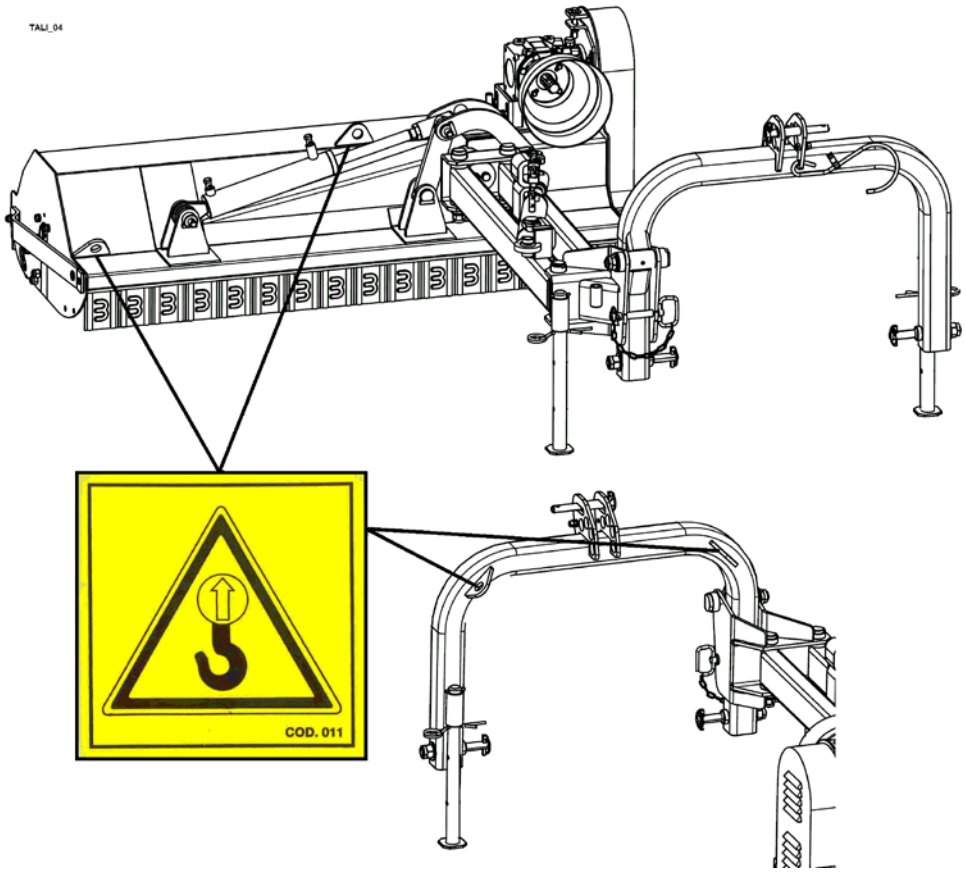
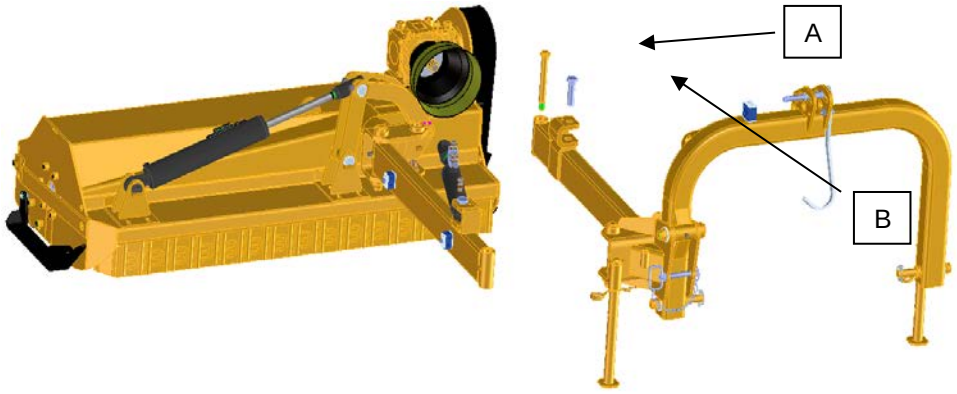


Figure 8

ATTENZIONE	The machine is delivered half-disassembled to limit the dimensions in transportation: it is therefore necessary to reassemble it to make it operational.
	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	1. Place the machine in a stable manner on a flat surface;
	2. Remove the three-point tiller from the packaging and lay it on the ground;
	3. With caution and care move the parallelogram arms until the are re-entered on the related holes, then secure them with the pin (figure 17);
	 **Figure 9**
	4. Move the jack and secure it with the relative pin B (figure 17);
	5. The machine is ready for connection to the tractor (figure 18).
	 **Figure 10**

3.2.1. TRANSPORTATION IN PUBLIC AREAS

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.
	During the transport on the road, the mulcher must be kept in transportation position and the PTO of the tractor must be switched off.

3.2.2. MACHINE TRANSPORT PROCEDURE

ATTENZIONE

Before being transported, all machine parts must be entire and in optimal status.

1. Disengage the P.T.O. and wait for the rotor to stop completely;
2. By acting on the valve that controls the movement jack, close the machine behind the tractor;
3. Lift the machine off the ground far enough to be able to rotate it vertically;
4. By acting on the valve that controls the articulation jack, turn the machine into vertical position;
5. Attach the safety chain C in the appropriate hook S (figure 19);

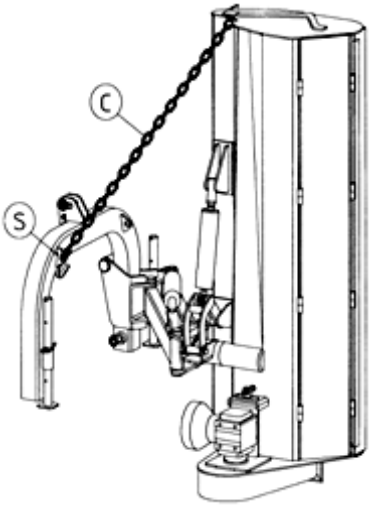


Figure 11

6. If necessary, lift the machine further so that the transmission elements 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 be encumbered by 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.

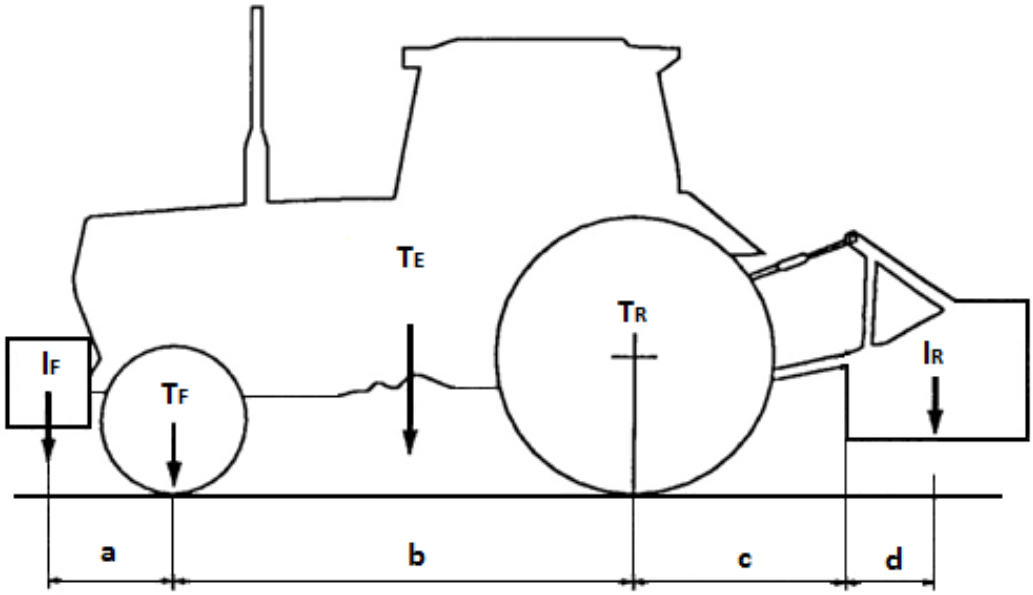


Figure 12

$$I_{F,\,min} = \frac{(I_R \times (c + d)) - (T_F \times b) + (0{,}2 \times T_E \times b)}{a + b}$$

T_E	=	Weight of the tractor (empty)
T_F	=	Front axle load (empty tractor)
T_R	=	Rear axle load (empty tractor)
I_R	=	Rear mulcher weight/rear ballast
I_F	=	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 parallels of the tractor
d	=	Distance from the centre of the ball of the parallels of the tractor to the centre of gravity of the rear mulcher/rear ballast

N.B.: if the machine is mounted on certified agricultural tractors and registered before the 6th May 1997, the following relation should also be checked: **M<0.3XT.**

ATTENZIONE	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.

 ATTENZIONE	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 perfect condition, placed on the ground, levelled and in stable position, that there is a proper amount of lubricant, that all parts subject to ear and/or deterioration are efficient and that the protections are complete and functioning.

 ATTENZIONE	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.
 PERICOLO	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.
 ATTENZIONE	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.
 PERICOLO	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 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 PTO driven at 540 rpm, with suitable weight and power, compliant with the law requirements in the country of use.

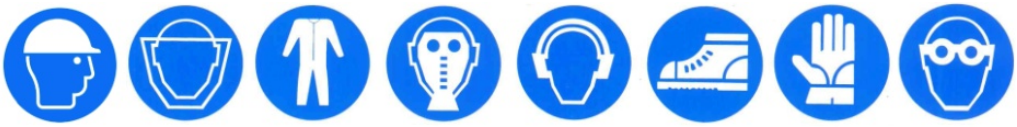
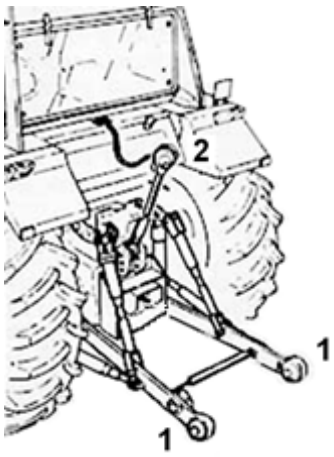
<table>
<tr><td rowspan="2">ATTENZIONE</td><td>The user must use all the safety devices and personal protection equipment (P.P.E.) during machine use, adjustment, repair and handling phases.
  </td></tr>
<tr><td>The following operations are very hazardous.
Avoid standing in front of the machine during the approach of the working vehicle. Avoid the presence of uninvolved persons.
During the installation phases, the PTO of the machine should be disengaged.</td></tr>
<tr><td rowspan="5">PERICOLO</td><td>1. Remove the safety pin and the pins from the connection inlets 1 of the machine (figure 22);</td></tr>
<tr><td>2. With the tractor in reverse and activating the elevator, make the lower arms 1 match to the lower corresponding connection inlets 1 of the muclher (figure 21-22);
 

Figure 13</td></tr>
<tr><td>3. Use the tractor parking brake, turn the engine off, remove the keys from the dashboard and get off the machine;</td></tr>
<tr><td>4. Insert the pins and lock them with the relating safety pins;
5. Connect the third point of the tractor in the same way 2, with the corresponding inlet 2 on the machine;</td></tr>
<tr><td>6. Adjust the third point so as the machine stands horizontally as regards the ground;
7. Lift and fix every supporting foot of the machine;</td></tr>
</table>

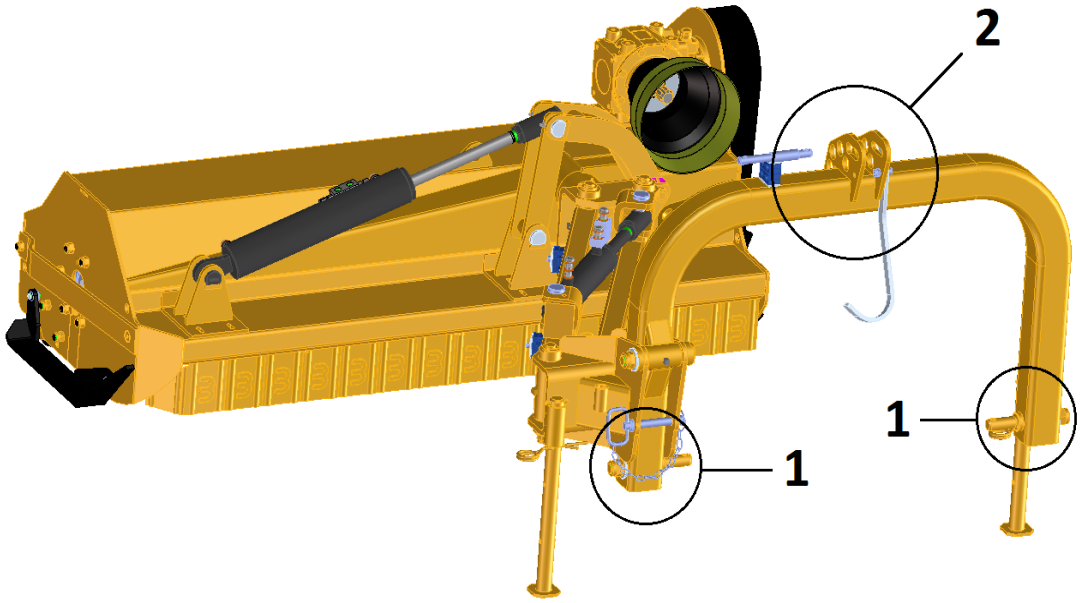


Figure 14

ATTENZIONE

ATTENTION: BE SURE OF HAVING INSERTED THE SAFETY PINS INTO THE PINS OF THE CONNECTION INLETS 1 AND 2.
The following operations are very hazardous.
Avoid standing in front of the m,ulcher 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.

8. Block lifting bars of the tractor to prevent the machine oscillating laterally, compromising the transversal stability of the complex.

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 "clack". If you do not hear the "clack", repeat the procedure;

10. Do not use a cardan shaft without proper protections compliant to the law requirements.

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

The cardan shaft is the transmission component that drives the mulcher; it must be chosen based on specific criteria that define its size and length.
In the table below , the size of the cardan shaft is greater than the power absorbed during operations.
This choice is necessary in order to ensure high resistance of the cardan shaft, in the phase of maximum extension.

The manufacturer ensures that the cardan shaft provided along with the machine is of appropriate size to safely sustain the power absorbed during operations, if the use conditions respected.
If replacing the cardan shaft, another one may be installed in compliance with CE standards, able to transmit the power indicated in table 3 of this paragraph.

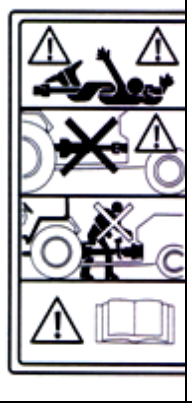
Model	Maximum absorbed power		Power transmitted from the cardan shaft at 540 rpm	
	kw	HP	kw	HP
TA/L115	25-45	35-60	48	65
TA/L 135	29-45	40-60	48	65
TA/L 145	33-45	45-60	48	65

Table 2

Model	Maximum absorbed power		Power transmitted from the cardan shaft at 540 rpm	
	kw	HP	kw	HP
TA/LI 135	25-45	35-60	48	65
TA/LI 145	29-45	40-60	48	65
TA/LI 160	33-45	45-60	48	65

Table 3

Before performing any operation, carefully read the instruction booklet attached to 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;
- 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;
- When not used, place the cardan shaft on appropriate support;
- Wear appropriate clothing (non-resistance, not loose), especially tight clothes (e.g. : overalls with wrist and ankle protection).

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 (figure 23).

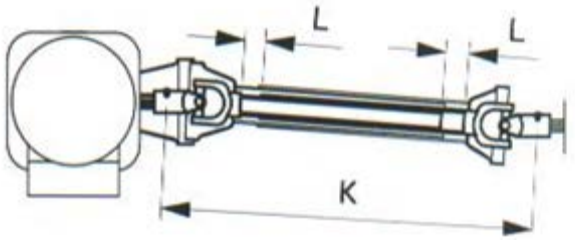


Figure 15

This operation must be performed at the first installation, after each replacement and every time the machine is installed on another tractor.
After installing the cardan shaft, fasten the guard on both sides using appropriate chains.
When the machine is in stand by, place the cardan shaft on the appropriate supporting bar, provided on the three-point tiller to avoid any dirt accumulation, deformation or breakage of the guard.
After installing the cardan shaft perform some opening, closing and articulation movements on the machine to make sure that the tubes of the shaft are free to slide without any obstacles.

ATTENZIONE

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.

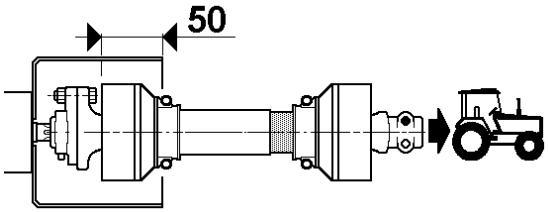


Figure 16

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.

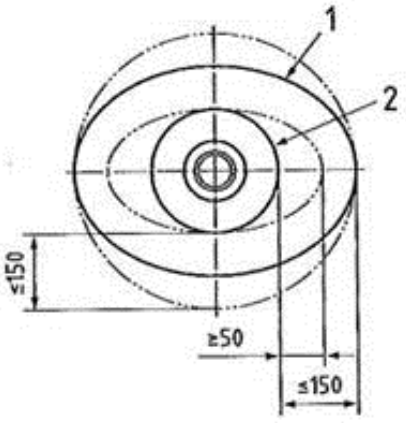
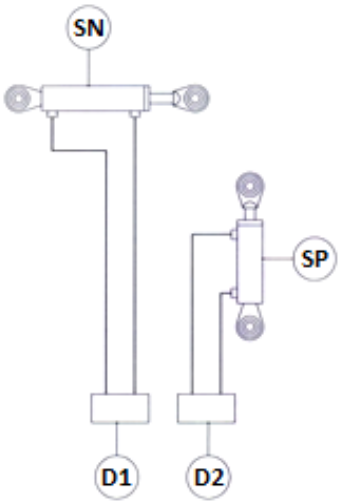


Figure 17

1 - Machine protective cap
2 - cardan shaft protective cap

	Check the rotating direction of the PTO of the cardan, on the tractor, looking from the rear side, it should rotate in clockwise.	 **Figure 18**
	Grease the cardan shaft following the recommendations provided in the instruction manual of the cardan shaft. Do not operate with cardan shafts without guards. Carefully read the instruction booklet attached to the cardan shaft.	
ATTENZIONE	Connect the transmission tubes of the jacks (figure 27); SN: articulation jack SP: movement jack D1: double effect distributor D2: double effect distributor The machine is equipped with a jack that triggers the movement and articulation; the machine is supplied from the tractor hydraulic system via the quick coupling tubes. the tractor must be provided with two double effect distributors with operating pressure of 130 bar.	 **Figure 19**
	The machine is equipped with a jack that triggers the movement; the machine is supplied from the tractor hydraulic system via the quick coupling tubes. the tractor must be provided with a double effect distributor with an operating pressure of 140-160 bar.	
	After connecting the tubes, perform some movement operations to discharge any air bubbles that may form inside the jack.	
	Connect the transmission tubes of the jacks in pairs on the distributors.	
ATTENZIONE	Check that all safety pins are properly inserted and that they are functioning correctly. Make sure the blocking devices have been inserted in the connection pin. Check that the quick couplings are inserted properly.	

The movement jack is equipped with pressure relief valve (figure 28), which allows the machine to retract partially when it encounters an obstacle during lateral movement.
The resistance of the machine against the obstacle can be adjusted by turning the screw that adjusts the calibration of the valve:

- Tightening the screw the resistance on the obstacle increases;
- By loosening the screw the resistance on the obstacle decreases.

ATTENTION: Tighten the locknut after adjustment.

Figure 20

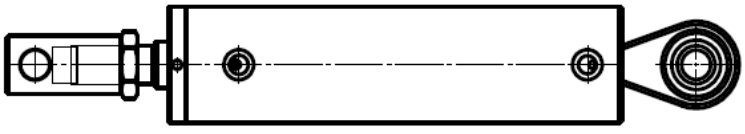
ATTENZIONE

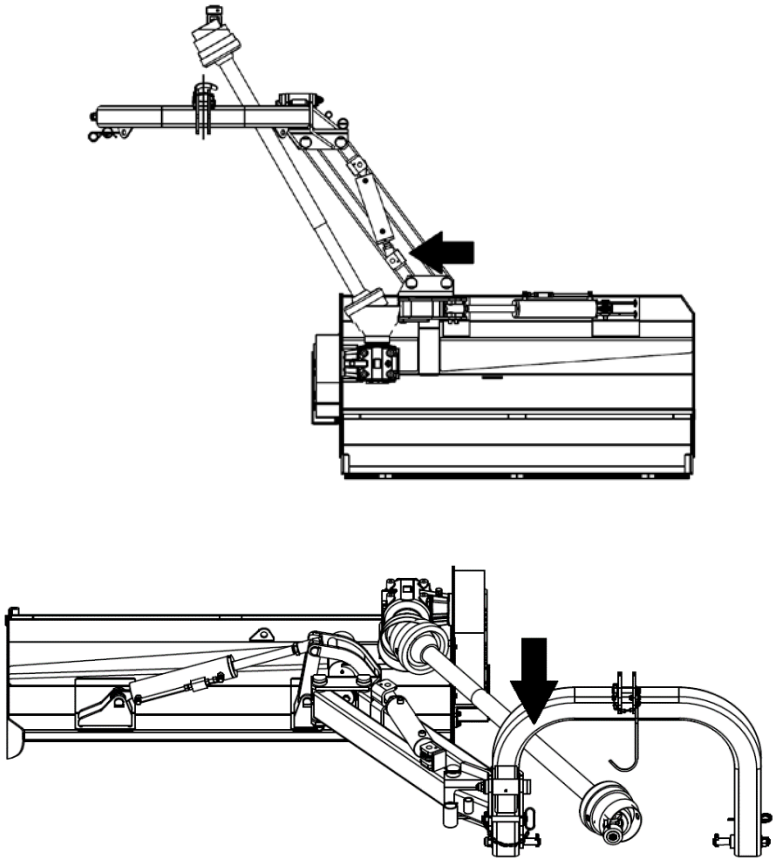
The articulation jack is equipped with a valve with auto lock (parachute) that prevents uncontrolled lowering of the machine in the event of breakage of a line (figure 29).

Figure 21

Check that all safety pins are properly inserted and that they are functioning correctly.
Make sure the blocking devices have been inserted in the connection pin.
Check that the quick couplings are inserted properly.

11. NOTE: When installing the machine for the first time, make sure that the cardan shaft doesn't touch the tiller arch when the machine is open. In case it does, use the appropriate thread on the shifting jack.





12. The machine is ready to be started.

3.5. STARTING THE MACHINE

ATTENZIONE

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 50 m.

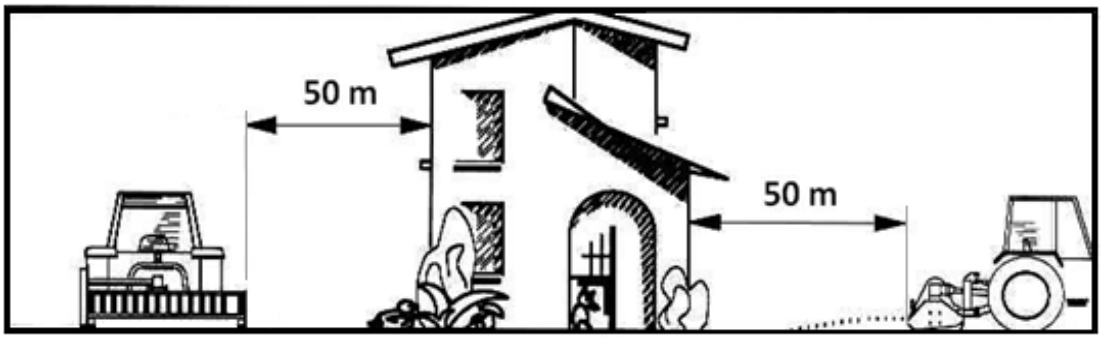
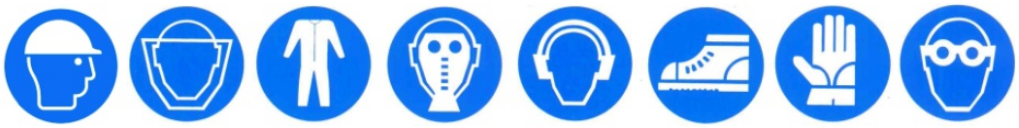


Figure 22

- 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 sate, 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 check the machine verifying the nuts fastening, checking for any damage; if any damage is found, it must be repaired before starting the machine and thus restoring the machine to its original state.
- 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 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 articulation jack, move the machine until it reaches the horizontal position;
2. Using the distributor that controls the movement jack, move the machine until it reaches the operating area;
3. Remove the locking pin of the tiller and reposition it in the appropriate pin holder (figure 31);

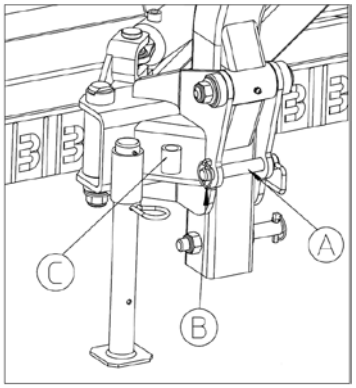


Figure 23

The locking pin of the tiller is composed of:
- A- Pin;
- B- Safety pin
- C- Pin holder.

This pin is used to increase the safety of the machine when it is disconnected and stored or during its transportation so that there is no risk of the floating tiller moving which would otherwise compromise the stability of the same (paragraph 3.2.2).
During the work phase the pin (A) must be removed and placed in the appropriate pin holder (C) such that the tiller through its movement ensures that the forage harvester perfectly follows the trend of the soil, especially in cases where the soil is not flat.

4. By acting on the controls of the elevator, lower the machine until the levelling roll rests on the ground;

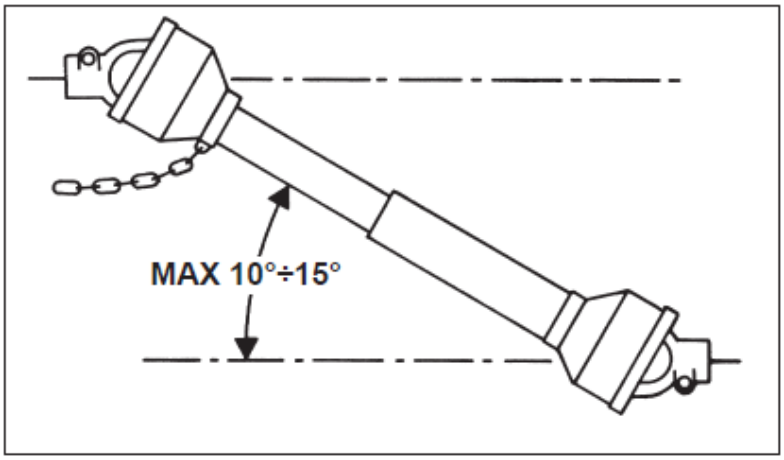
ATTENZIONE

5. Engage the P.T.O. and gradually accelerate the tractor until reaching the operating speed of 540 rpm;

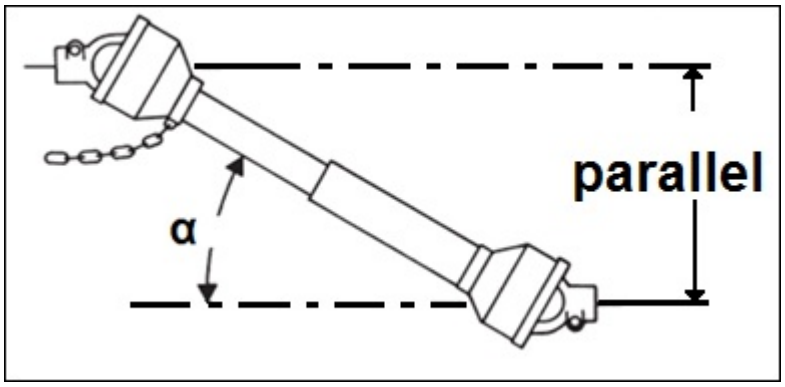
PERICOLO

6. Engage running mode and start the operating process;
7. Go along a short distance with the machine engaged;
8. Decelerate the tractor as much as possible;
9. 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.
10. Get off the tractor and make sure that there are no oil losses at the mulcher hydraulic tubes couplings;
11. Do not use your bear hands to check for any loss of liquids under pressure;
12. Check the quality of the worked 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.

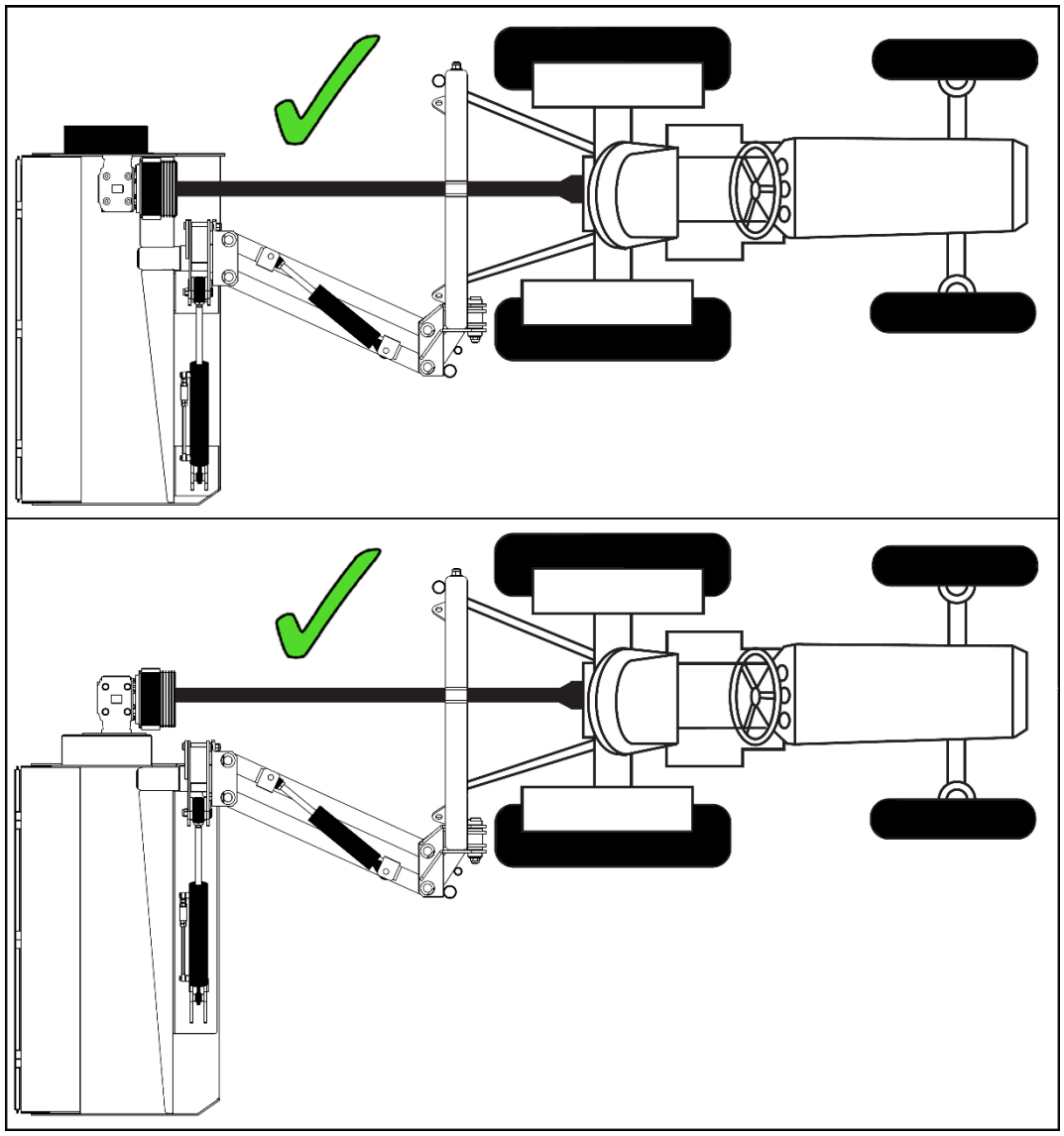
- Before inserting the power take-off, check the pre-set number of revolutions.
- Do not interchange the 540 rpm speed with the 1000 rpm one.
- When transporting by road, with the machine raised, place the control lever of the tractor's hydraulic lift in the lock position.
- When lifting from the ground, the cardan shaft joints are bent more than 40° (PTO stopped). Remove the shaft from the tractor PTO.
- Before inserting the power take-off, make sure that there are no persons or animals in the area ofaction and that the chosen speed corresponds to the one permitted. Never exceed the envisaged maximum. Do not insert the power take-off with the engine off.
- Always switch off the power take-off when the cardan shaft angle is too wide (never more than 10 degrees) and when it is not in use.

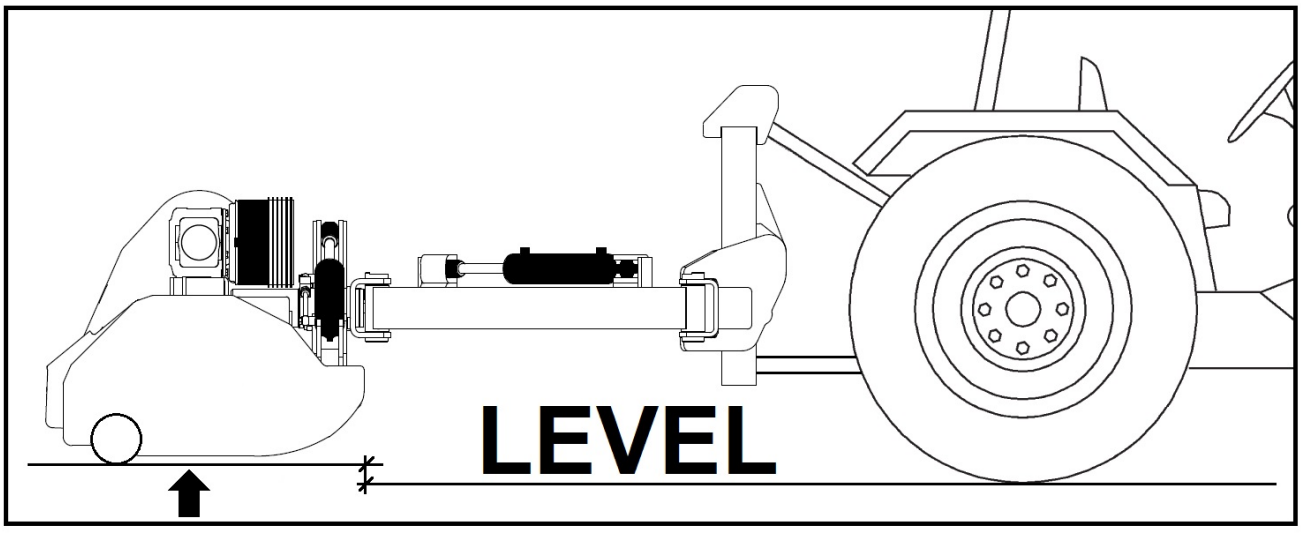


- Clean and grease the cardan shaft only when the power take-off is disengaged, the engine is off, the parking brake is applied and the key is removed.
- When the machine is disconnected, rest the cardan shaft on the support provided.
- Prolonged use of the machine may result in the secondary effect of heating of the gearbox and any elements of the hydraulic circuit. Avoid touching these elements during and immediately after use, because of the risk of burns.
- Engage the cardan shaft and make sure it is perfectly locked on the power take-off.
- Check that the protection rotates freely and secure it with the dedicated chain.
- It is necessary to obtain parallelism between the axis of the machine's power take-off shaft and that of the tractor's power take-off. Operating in these conditions means limiting the stresses on the power take-off itself and extending the life of the cardan shaft and of the machine.



- Insert the P.T.O. and **gradually** accelerate the tractor until reaching the speed of the P.T.O. (540 rpm).
- Always start the machine with the cardan straight, then closed behind the tractor. Operating in these conditions means limiting the stresses on the power take-off itself and extending the life of the cardan shaft and of the machine.
- Always start the machine with the rotor slightly raised off the ground!

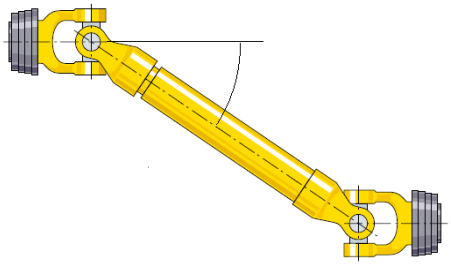
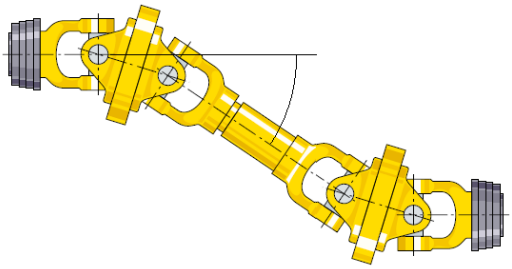



LEVEL

- It is never advisable to exceed the revolutions indicated above as the machine has been sized to operate at those speeds, thus ensuring maximum efficiency.
- Engage running mode and start the operating process.

STANDARD CARDAN:
Never exceed the 10-15° inclination of the forks during work!

DOUBLE HOMOCINETARY CARDAN:
Never exceed the 25-40° inclination of the forks during work!

	NORMAL CARDAN 	WIDE-ANGLE CARDAN 
MAXIMUM OPERATING ANGLE AT FULL POWER	**10°**	**25°**
MAXIMUM CARDAN ANGLE FOR SHORT PERIODS AND WITH LIMITED POWER	**15°**	**40°**
MAXIMUM WORKING ANGLE WITH CARDAN STOPPED	**90°**	**80°**

3.5.1. MACHINE ADJUSTMENTS

3.5.1.1. RECOMMENDED 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.

ATTENZIONE	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.

In the table bellow are indicated the recommended speeds that should be respected in order to obtain maximum performance and in particular:

3.5.1.2.

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										■	■	■	■	■	
Grass that has not been mowed for months						■	■	■	■						
Grass that has not been mowed for years, very dense		■	■	■	■										
General pruning		■	■	■	■										
Bushes		■	■	■	■										

Table 4

3.5.1.3. CUTTING HEIGHT ADJUSTMENT

	Before adjusting the machine cutting height, carefully read and fully understand the instruction manual.
PERICOLO	All adjustment operations must be performed at authorised workshops by specialised personnel.
	The operating height must be adjusted as to make sure that the cutting tools (hammers or blades) do not come into contact with the terrain causing projection (figure 32-33).

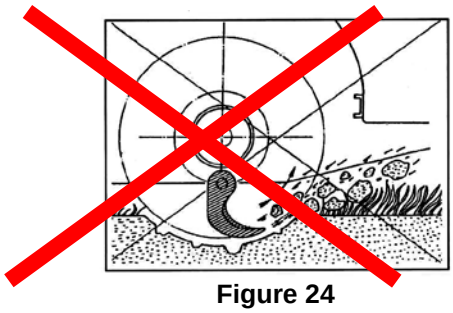


Figure 24

NO

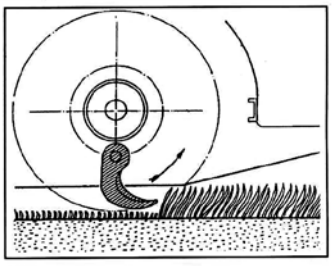


Figure 25

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:

ATTENZIONE	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.

PERICOLO

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.

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. Check for any damage/breakage and proceed to immediate repair of the same using original spare parts.
7. Tighten bolts A and B

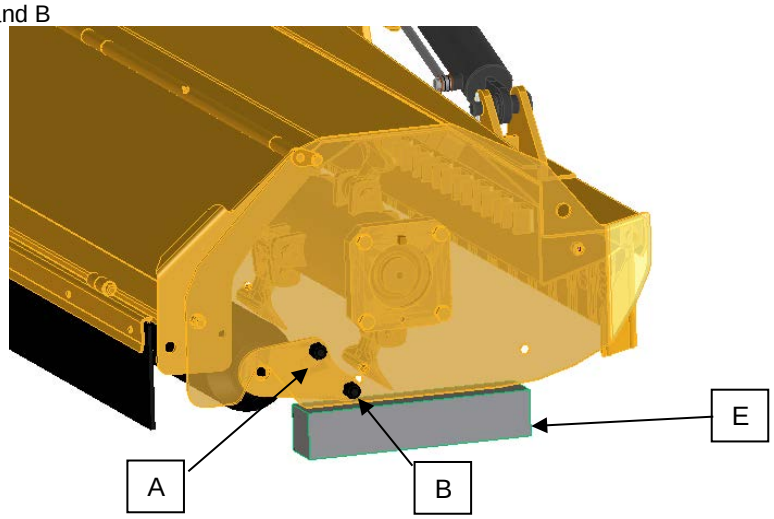


Figure 26

ATTENZIONE

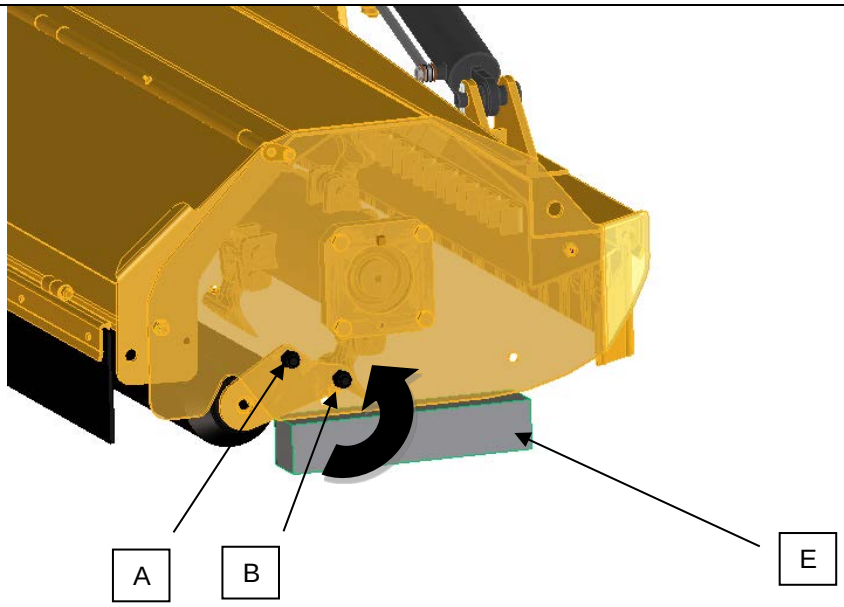


Figure 27

8. Once all the operations have been finished, repeat the procedure of "Connection and Start up of the machine" described in paragraph 3.4. to 3.5.

Adjustment procedures must be performed on both sides of teh machine.

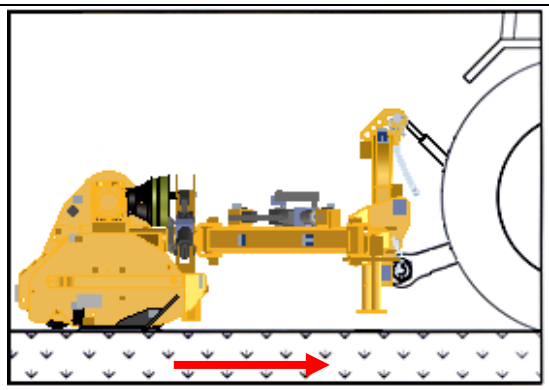
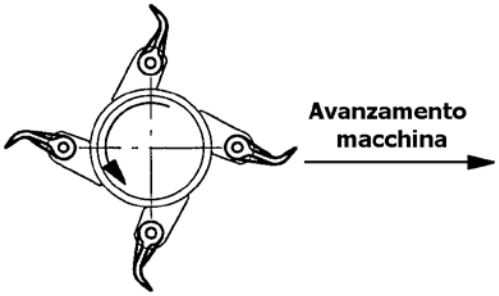
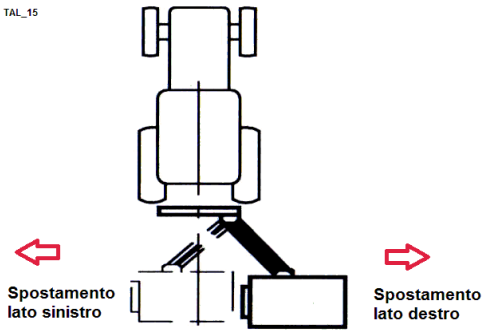
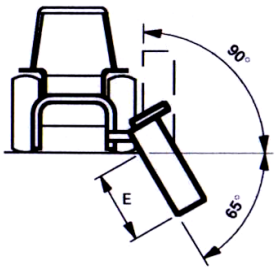
3.6. MACHINE IN WORK STAGE

 PERICOLO	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 the roadside, 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 operate the machine near persons standing or transiting within range 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 it 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.
 ATTENZIONE	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.
 PERICOLO	Make sure that all machine parts function regularly when operating. 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.
 ATTENZIONE	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.
 PERICOLO	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 damage caused due to any incorrect assessment.
 ATTENZIONE	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, 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 relevant authorities and move away, if possible, the tractor-mulcher assembly, taking it to a safe area, follow the procedure in paragraph 3.7. and go to a safe place.
	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 to make sure that the rotor and relative tools completely stop.
 ATTENZIONE	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".

3.6.1. 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 a speed of 540 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.
ATTENZIONE	 Tractor reverse direction **Figure 28**
	 **Figure 29**
	When cutting grass at the side of a road it is possible to move forward with the tractor at a suitable speed (see paragraph 4.2.2 . "Forward speed adjustment") and to let the machine follow the shape of the ground.
	 **Figure 30**
PERICOLO	When working on a tilt with respect to the ground ensure that the machine does not exceed 90° upwards and the 65° downwards (figure 39). Pay attention to the projection of material that could cause damage to persons, animals and property.
	 **Figure 31**
	The mulcher should not be moved to a new operating area if the rotor and the tools haven't stopped yet.

3.7. MACHINE STOPPAGE

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

 PERICOLO	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 intervention on the machine must be performed with the parking brake engaged, the engine stopped, the ignition key removed from the dashboard and kept and only after waiting for about 5 minutes inside the cabin to allow the rotor and related tools to stop completely.

3.8. MACHINE DISCONNECTION

When disconnecting the machine from the tractor you must:

 ATTENZIONE	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 supply cables of the jack;
	12. Get back inside the tractor.
	13. Start the engine and move away carefully.
	The machine must be parked on flat land and within a protected area, so as to prevent unauthorised staff form approaching.

3.9. CLOGGING

	Before removing the machine clogs, carefully read and fully understand the instruction manual.
 ATTENZIONE	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:

 PERICOLO	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. Manually unclog the machine;
	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 resume work 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 about 5 minutes until the rotor and the tools of the machine stop. Descend from the driver position to check the nature of the problem and contact the authorised workshops in order to solve it.

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	The machine must be brought in a properly equipped workshop, authorised to perform all ordinary and extraordinary maintenance operations with specialised personnel. The machine must be stopped and disconnected from the tractor. The maintenance and repair operations must not be performed in open space or in improperly equipped workshops.
	do not carry out repairs of which you have no knowledge. Always follow instructions and contact the manufacturer if they are not available.
ATTENZIONE	The specialised personnel must use all the safety devices and personal protection equipment (P.P.E.) during machine use, adjustment, repair and handling phases. 
	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 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.
	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.

4.1. MACHINE HOT POINTS

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

- Drive sump;
- Gearbox;
- Pulleys,belts and belts adjuster;
- Hydraulic tubes.

4.2. MAINTENANCE INTERVENTIONS

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.)

4.2.1. COUPLING TORQUES TABLES

Table tightening torques for steel screws 8.8

Coarse pitch 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**

Table tightening torques for steel screws 10.9

Coarse pitch 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**

FOR THE FASTENING OF BOLTS OF THE ROTORS, REFER TO THE TABLE BELOW:

Ø screw	Hexagon	Class 10.9
		Fine Pitch 1.5
	mm	Nm
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
Grease the indicated points using an appropriate universal greasing pump that can be found in any workshop.

LUBRICATION OF THE TRANSMISSION UNIT:

ATTENZIONE	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 check the oil level in the gearbox: the oil should reach 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.

MODEL TA/LI

The oil is introduced into the gear box S via the hole closed by the lid R.
The level is given from the hole closed by the cap L.
To access the plug L it is necessary to remove the protective cap C (fig. 40)

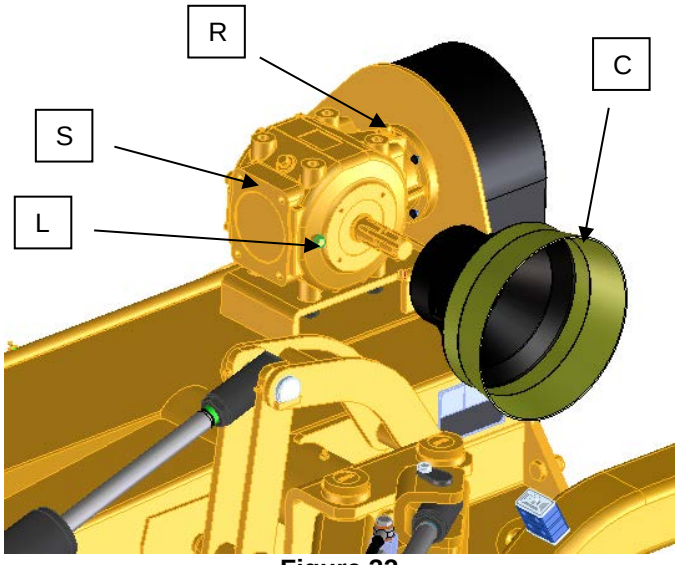


Figure 32

MODEL TA/L

The oil is introduced into the gear box S via the hole closed by the lid R.
The level is given from the hole closed by the cap L (figure 41)..
Guard C must be removed in order to access cap L

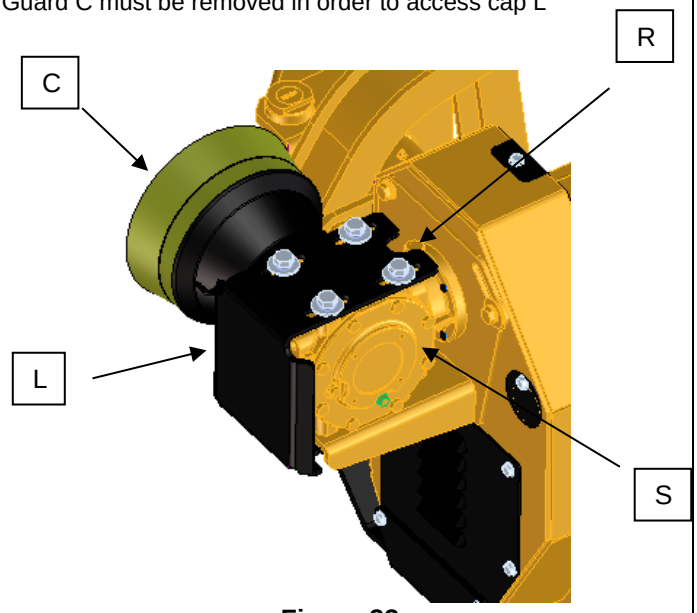


Figure 33

OVERALL GREASING:

ATTENZIONE	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.	Denomination	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	Roll	8 hours	Grease on both sides of the roll, operating 1-2 times the manual pump to avoid the grease escaping.
S	Case articulation	20 hours	Grease using the manual pump 1-2 times on all the grease fittings of the articulation.
P	Parallelogram	20 hours	Grease it using the manual pump 1-2 times on the 4 grease fittings of the parallelogram arms.
ST	Tiller articulation	20 hours	Grease it using the manual pump 1-2 times on all the grease fittings of the tiller articulation.
A	Anti-shock (optional)	20 hours	Grease it operating the manual pump 1-2 times on the 4 grease fittings (A) of the anti-shock safety system (figure 45).

Table 5

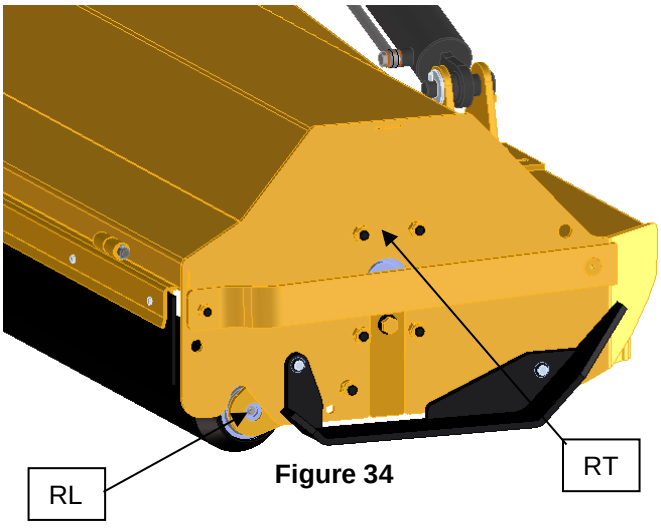


Figure 34

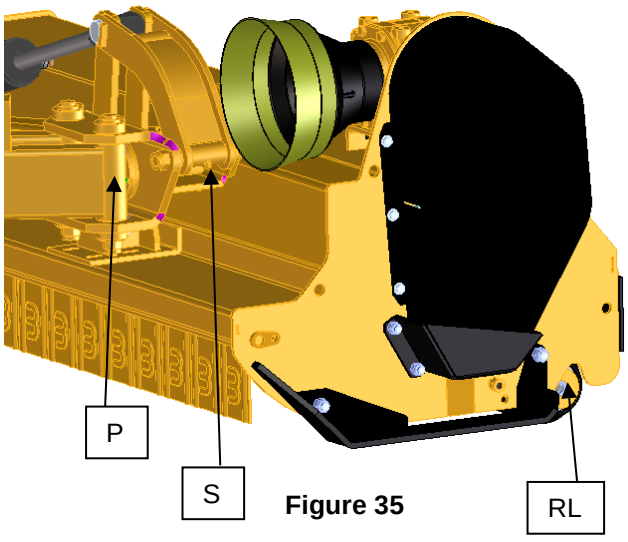


Figure 35

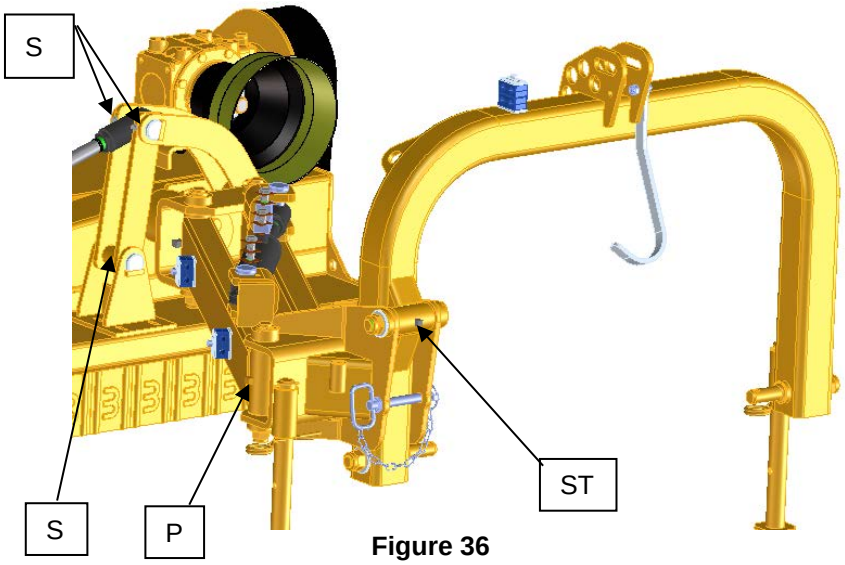


Figure 36

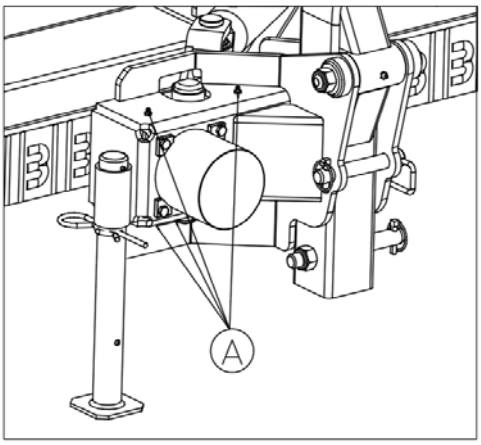


Figure 37

TA/LI

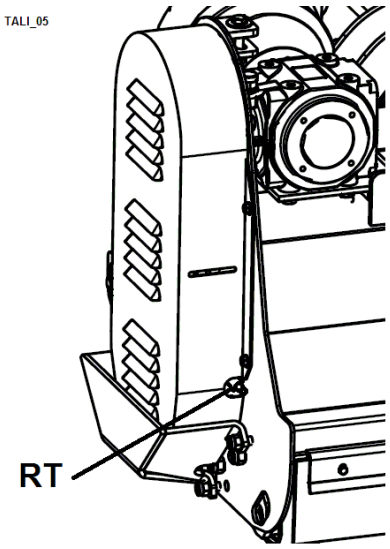


Figure 38

TA/L

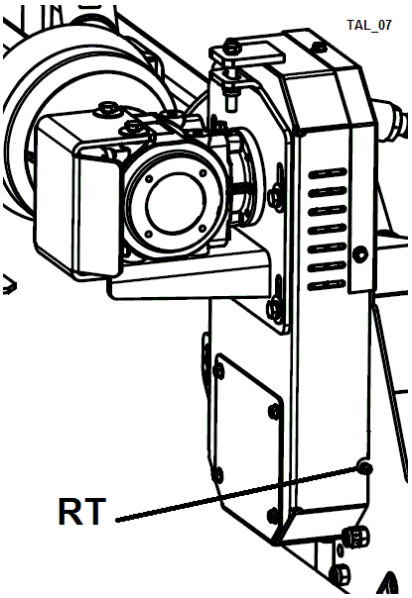


Figure 39

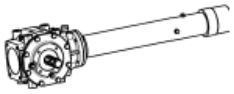
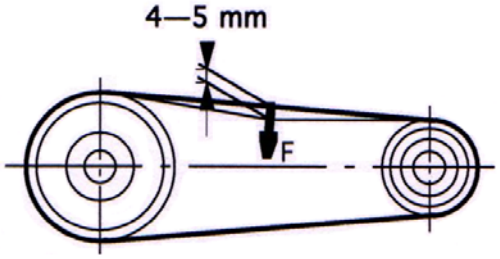
BERTI	LUBRIFICANTI RACCOMANDATI - recommended lubricant empfohlenen Schmiermittel - lubrifiant recommandé						
	PETRONAS	TAMOIL	ENI	IP	ESSOMOBIL	SHELL	TOTAL
	GEAR MEP 460	CARTER EP 460	BLASIA 460	MELLANA 460	MOBILGEAR 600XP 460	OMALA S2 G 460	CARTER EP 460
GREASE	AMBRA GRS PLUS EP2	TAMLITH EXTRA BLU EP2	GREASE MU EP 2	ATHESIA EP GREASE 2	MOBILPLEX EP 2	GADUS S2 V220 2	MULTIS EP 2

Table 6

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.
ATTENZIONE	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.
	The belts are tensioned when, by applying on each belt a power F of 4-5Kg, at the centre between the two pulleys, the measurable breakage is 4-5 mm approximately.  **Figure 40**
	That said is very important. Check the belts tension: if necessary adjust the belts so as the breakage complies with the above mentioned data. This operation should be executed after the first 4 working hours and, afterwards, every 50 hours.

4.2.3.1. BELTS TENSIONING PROCEDURE MODEL TA/L

For the adjustment, proceed in the following way. Refer to figure 50:

1- Tension can be assessed by means of a screwdriver through the side slots F .
2- For a thorough assessment, disassemble carter C of the transmission. You can now access the belts;
3- Unscrew the V1 screws placed on the support plate of the gear box;
4- Through screw V 2 located on the tensioning-belt plate, adjust the belts' tension;
5- Position screws V1 to align the pulleys and then assess the tension;
6- Block screws V1
7- Remount the carter C using the appropriate screws.

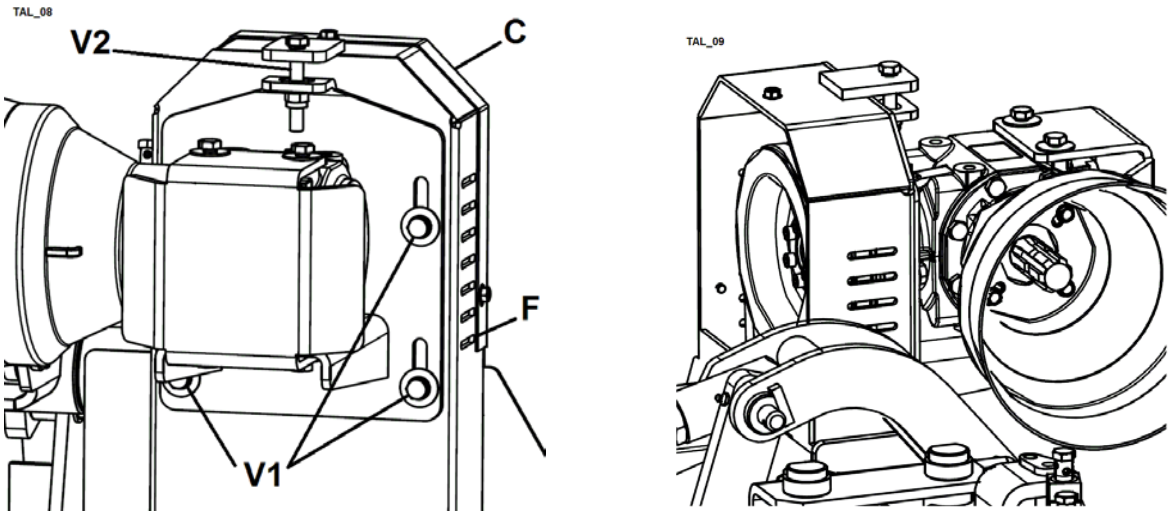


Figure 50

ATTENZIONE	Never work without the belt protection casing.

4.2.3.2. BELTS TENSIONING PROCEDURE MODEL TA/L

For the adjustment, proceed in the following way. Refer to figure 51:
1- Tension can be assessed by means of a screwdriver through the side slots F .
2- For further assessment, disassemble carter C1 and carter C of the transmission, thus you can access the belts;
3- Unscrew the V1 screws placed on the support plate of the gear box;
4- Through screw V 2 located on the tensioning-belt plate, adjust the belts' tension;
5- Position screws V1 to align the pulleys and then assess the tension;
6- Block screws V1
7- Mount the crankcase C and the under crankcase C 1 by fixing them with the appropriate screws V1.

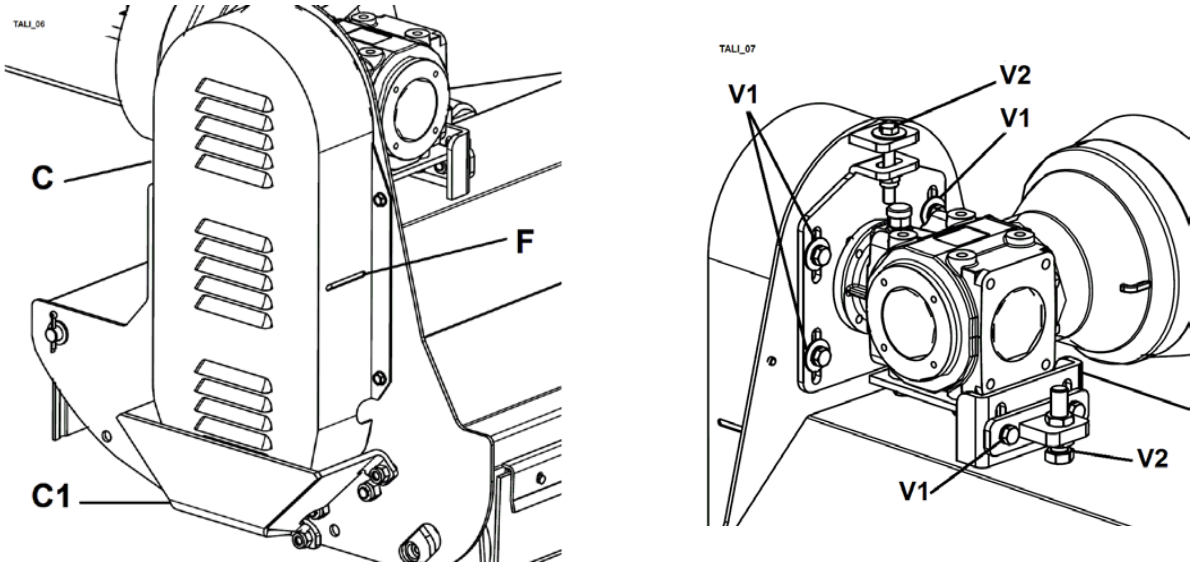


Figure 51

ATTENZIONE	Never work without the belt protection casing.

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.

4.2.4.1. BELTS REPLACEMENT PROCEDURE MODEL TA/L

To replace the belts, proceed in the following way. Refer to figure 52:
1- Remove both carter C and C1.
2- Loosen screws V1 and V2 to free the belts
3- Remove the belts and replace them with the new ones
4- Position the screws V1 and tension the belts with screw V2
5- Verify the alignment of the pulleys with a ruler F
6- Tension the belts as shown in the previous chapter
7- Block screws V1

Remount the carter C using the appropriate screws.

ATTENZIONE	Never work without the belt protection casing.

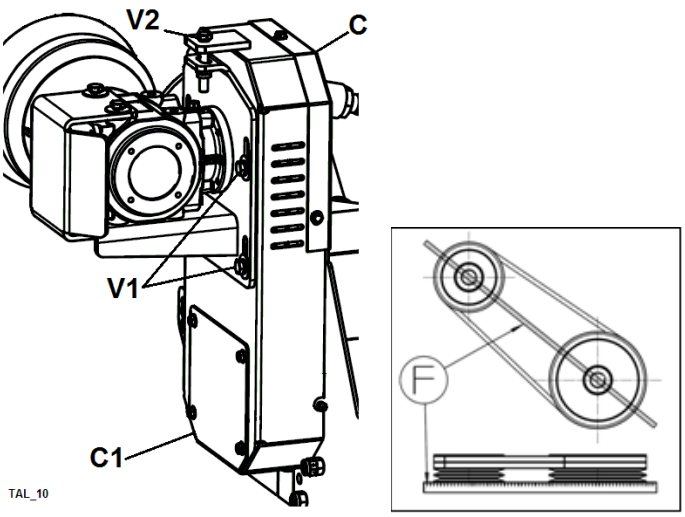


Figure 52

4.2.4.2. BELTS REPLACEMENT MODEL TA/LI

To replace the belts, proceed in the following way. Refer to figure 53:
8- Remove both carter C and C1.
9- Loosen screws V1 and V2 to free the belts
10- Remove the belts and replace them with the new ones
11- Position the screws V1 and tension the belts with screw V2
12- Verify the alignment of the pulleys with a ruler F
13- Tension the belts as shown in the previous chapter
14- Block screws V1
Remount the carter C using the appropriate screws.

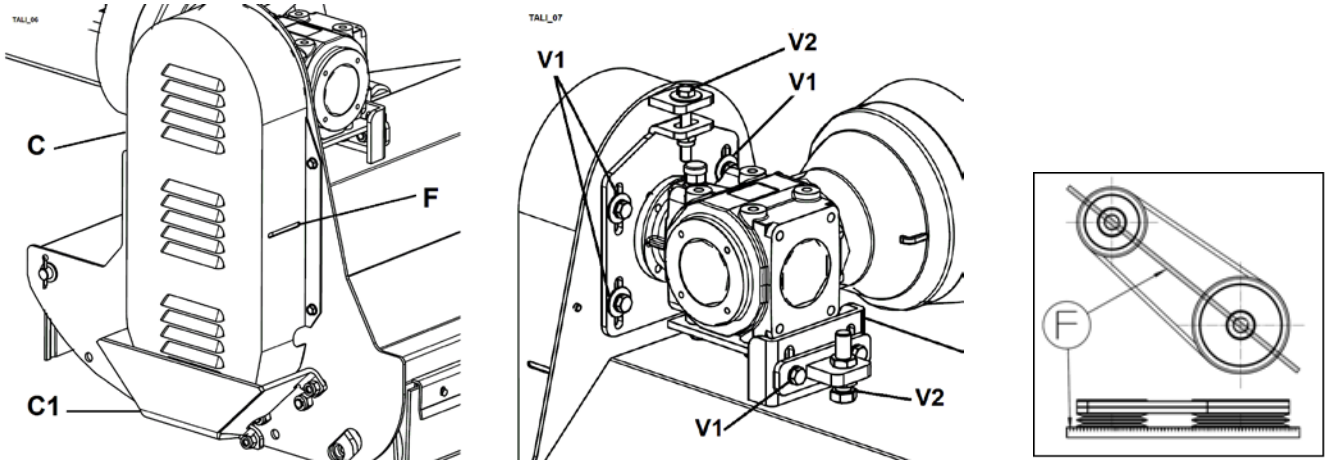


Figure 53

ATTENZIONE	Never work without the belt protection casing.

4.2.5. HYDRAULIC SYSTEM

ATTENZIONE	Visually check the machine, make sure tat there are no loosened couplings, damaged tubes, cuts or any other signs of wear. Tighten the loosened couplings and replace the damaged or worn tubes.

The hydraulic system diagram is indicated in figure 61 and is made of:

1. Parachute valve;
2. Maximum pressure valve;
SN. Articulation jack
SP. Movement jack

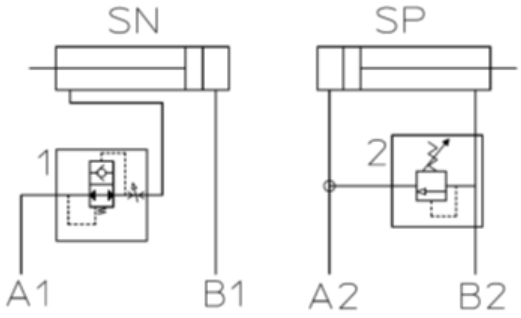


Figure 41

In order to connect the machine consult chapter 3 paragraph 3.4

4.2.5.1. HYDRAULIC TUBING REPLACEMENT PROCEDURE

ATTENZIONE	1. Before removing a hydraulic tube, make sure that any residual pressure was discharged from the system;
	2. Precisely identify the damaged tube and loosen using an appropriate key the two connection points, paying attention to any possible leakages of hydraulic fluid;
	3. Replace the damaged tube using only original spare parts;
	4. Before installing the new tube 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 tubes 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 the weights of the tools are strictly controlled: if they are replaced completely, the rotor might not require a new dynamic balancing (refer to: "TOOLS REPLACEMENT PROCEDURE") 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.

Hammer type "L":

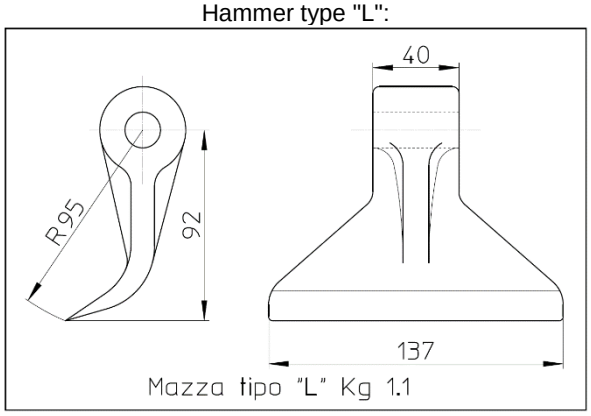


Figure 42

Universal blade "Y":

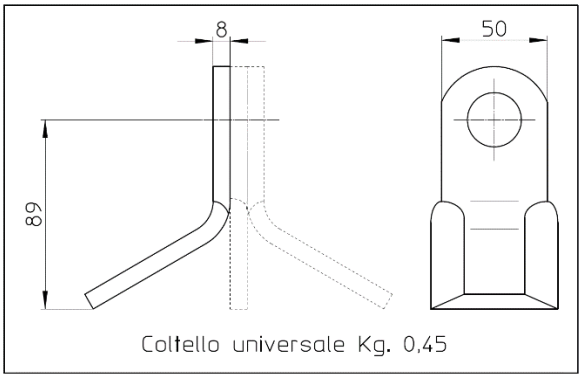


Figure 43

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

Figure 44

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.

ATTENZIONE

IF THE MACHINE ROTOR USES HAMMERS, PROCEED AS FOLLOWS:

Unscrew nut D, pick up hammer P and remove screw V (Figure 65). After removing the hammer, check the wear condition of the supports, paying particular attention to the oval holes, the squared housing of the screw head. If any of the described phenomena are present, contact the manufacturer and request further indications.

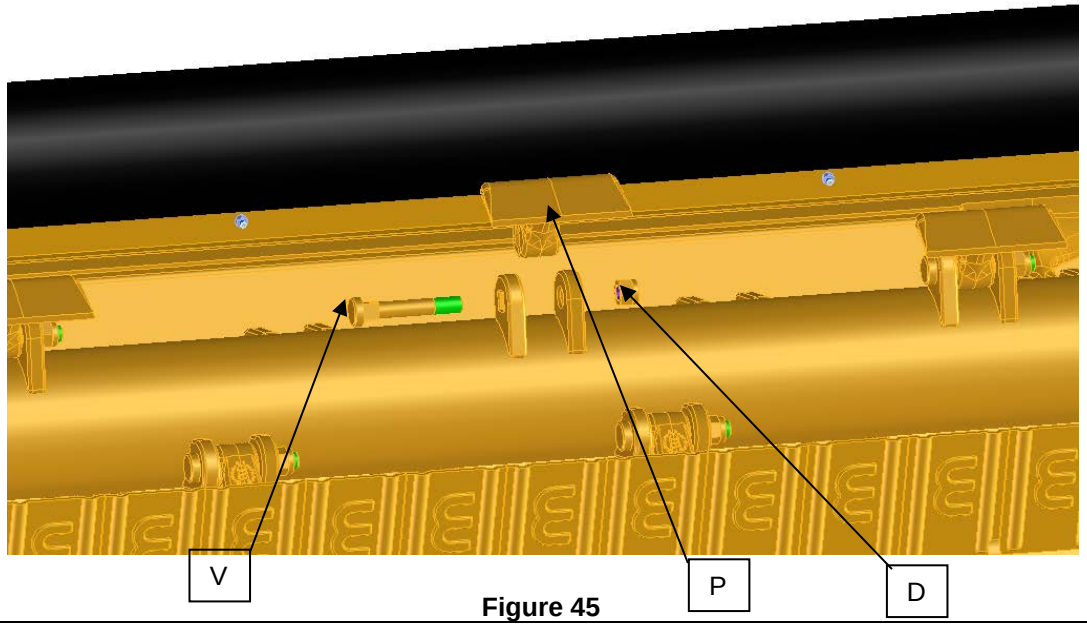


Figure 45

Replace the new hammer P placing it between the rotor supports, insert the new screw paying attention to match the square head of the screw with the square housing on the support.

Mount the new nut and fasten it.

IF THE MACHINE ROTOR USES BLADES, PROCEED AS FOLLOWS:

ATTENZIONE

Unscrew the nut D, pick up the knives C and remove the screw V (Figure 66) taking care that the spacers and the bushing B do not fall to the ground. With the blades removed check the state of wear of the supports, in particular the ovalisation of the holes, of the square seat of the head of the screw and the device wear. If any of the described phenomena are present, contact the manufacturer and request further indications.

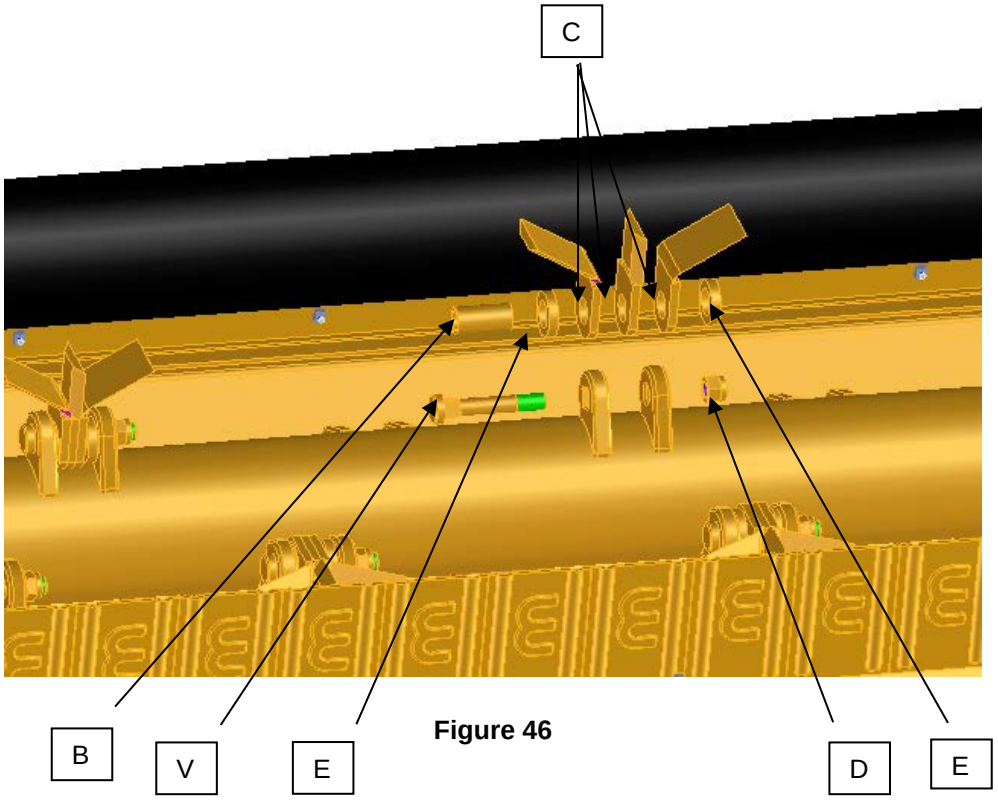


Figure 46

Replace the new blades C placing them between the rotor supports, insert the new screw paying attention to match the square head of the screw with the square housing on the support.

Mount the new nut and fasten it.

After completing 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. 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.

PERICOLO

If after replacing the tools, the vibrations persist, proceed with a new dynamic balancing of the rotor at a specialised workshop.

ATTENZIONE

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 (OPTIONAL)

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

PERICOLO

1. Turn the machine over and place it on appropriate 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 the nuts D and remove the screws V as shown in figure 67;

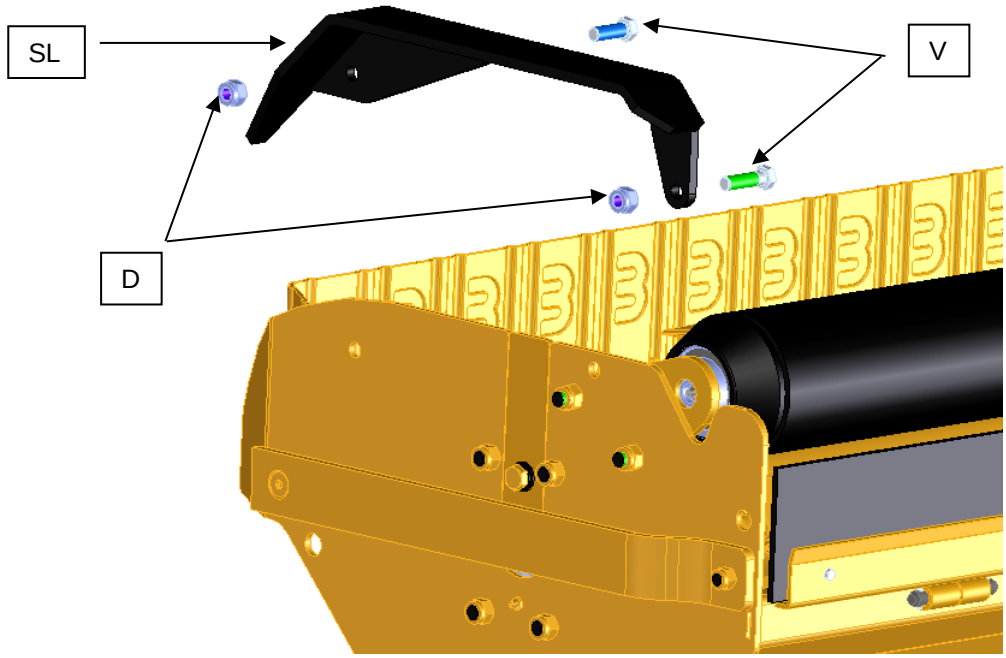


Figure 47

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. After completing 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. and 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

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 crew V (figure 68);

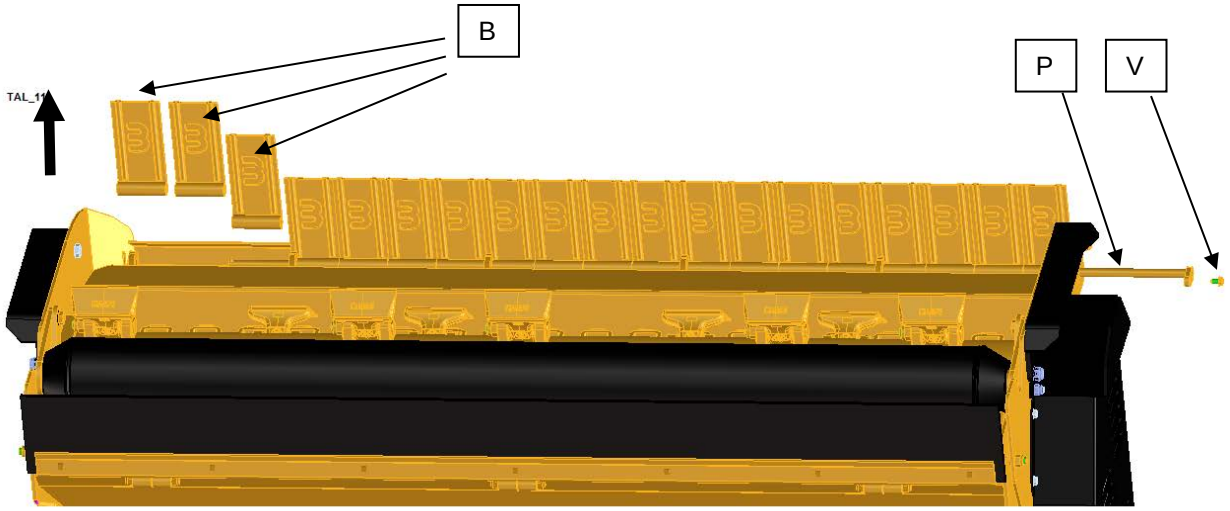


Figure 48

ATTENZIONE

3. Gradually unscrew the front protection pin P, making sure that the panels B do not fall to the ground;

4. Check for any damages; if any, proceed to immediate repair;

5. Replace the panels introducing them into the through-pin P; near the supports of the through-pin thread introduce the notched panels leaving no gap between these panels.

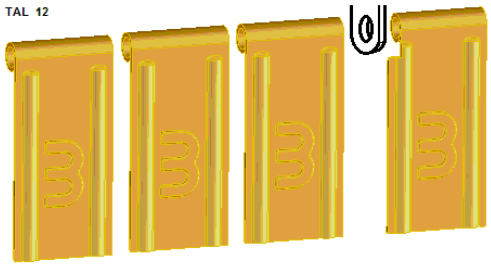


Figure 49

6. Tighten the screw V.

PERICOLO

Reposition the machine on the ground and repeat the "Connection and start-up" procedure described in paragraphs 3.4. and 3.5.

The original spare parts provided by our company ensure complete and correct use of the machine.

FRONT GUARDS - CHAINS

PERICOLO

The panels 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 crew V (figure 70);

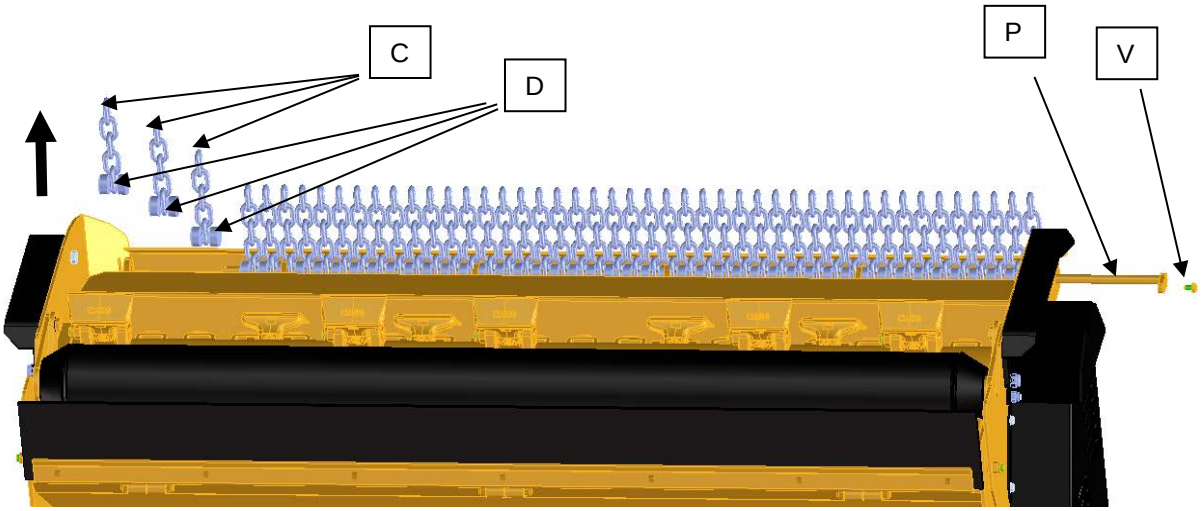


Figure 50

ATTENZIONE

3. Gradually unscrew the front protection pin P, making sure that the chains C and the spacers D do not fall to the ground;

4. Check for any damages; if any, proceed to immediate repair;

5. Replace the chains A and spacers D, inserting the inside the through-axle pin P;
Respect the order of the chains and spacers assembly operations as indicated in figure 71.

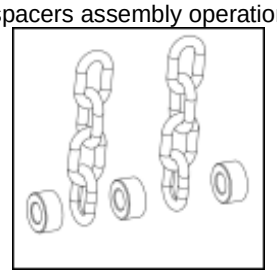


Figure 51

6. Tighten the screw V.

PERICOLO

Reposition the machine on the ground and repeat the connection and start-up procedure described in paragraphs 3.4. and 3.5.

The original spare parts provided by our company ensure complete and correct use of the machine.

4.2.9. REPLACEMENT OF THE REAR GUARD OF THE MACHINE

The machine has a rear guard consisting of a rubber fabric sheet fixed on a suitable support by means of bolts.

PERICOLO

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. Turn the rubber support S by about 90°, then proceed by unscrewing the nuts D and by removing the screws V as in figure 68, taking care that the rubber fabric sheet G and the bolted support F do not fall to the ground;

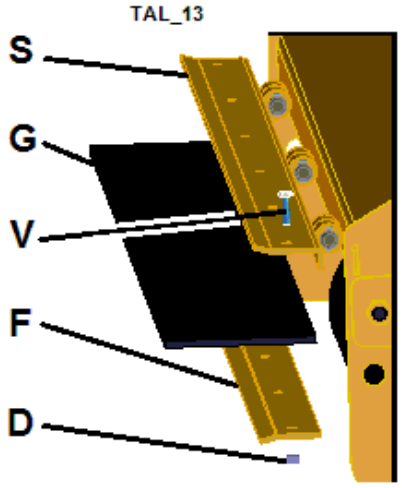


Figure 68

ATTENZIONE

3. Check for any damage to the support S which must be immediately repaired to restore the original state;
4. Replace the rubber fabric sheet G;
5. Support the new rubber fabric sheet G in support F, taking care to position it well in its housing. Pierce the rubber at the holes T (figure 74);

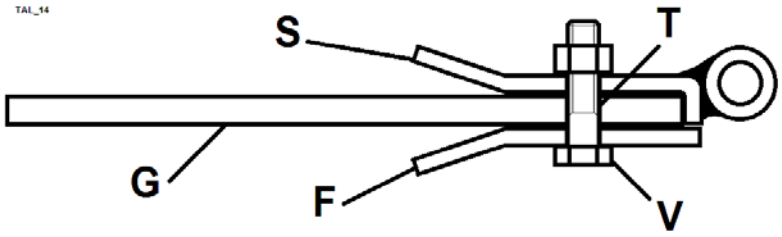


Figure 52

6. Secure the new rubber G to support S by tightening the nuts of the screws V;
7. Reposition the support S with the rubber mounted in the initial position;
8. Once all the operations have been finished, repeat the procedure of "Connection and Start up of the machine" described in paragraph 3.4. to 3.5.

4.2.10. 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 of straws, 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 shredder 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. 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 re-cycled, if collected by appropriate centres.

4.5. SCHEDULED MAINTENANCE TABLE

Description	Checks
GENERAL MACHINE CHECKS	
Rotor greasing	Every 8 working hours
Roll greasing	Every 8 working hours
Articulation greasing	Every 20 working hours
Automatic belt tensioner greasing	Every 80 working hours
Tiller articulation greasing	Every 20 working hours
Parallelogram greasing	Every 20 working hours
Anti-shock greasing	Every 20 working hours
Machine bolts fastening check	After the first 4 h and then every 50 hours
Belt tension check	After the first 4 h and then every 50 hours
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 SYSTEM	
Hydraulic tubes fastening check	At each start-up and each fluid leakage
Check of the hydraulic tubes	Check at every start-up. In case of damage or seepage, replace immediately

4.6. TROUBLESHOOTING TABLE

ANOMALY	CAUSE	SOLUTION
Uneven or poor quality mulching	• Worn or damaged tools • Improperly adjusted machine • Machine clogged • The rotor does not rotate as it should • Rotor roll support • Worn slides • Terrain with excessive ripples	• Replace the tools • Carry out adjustments • Decrease tractor advancement speed • Check belt tension, the oil flow rate and the machine feed pressure • Replace the roll support • Replace the slides • Make more working passages
Premature tool wear	• Stony/sandy land • Tools cutting height too low • The rotor rotates too quickly or too slowly	• Searching • Adjust cutting height • Check the machine adjustment
Machine noise	• Unbalanced rotor • Counter-weights loss • Damaged, worn or missing tools • Worn bearings	• Balancing in specialised workshop • Replace the tools • Replace bearings
Excessive heating of the gearbox	• Mulcher oil level too low • Oil finished • Constrictions on the machine feed lines • Excessive amount of material to be processed; • Mulcher oil cooling system too small	• Add more oil in the mulcher • Replace oil • Remove the quick couplings. • Make more passings or decrease the advancement 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	• The machine frame is folded • No bearings lubrication • The rotor was stressed excessively • Unbalanced/folded rotor	• Replace the machine frame • Grease the bearings following the scheduled maintenance Table • Use the machine in compliance with the allowed working limits • Balancing performed at specialised workshop or rotor replacement
The rotor does not rotate	• Foreign body stuck • Breakage of the bearing • Breakage of the gearbox • Breakage of the transmission • Breakage of the belts • Breakage of the rotor shaft • Disconnected hydraulic tubes • fault at the mulcher supply system	• Consult the "machine clogging" procedure • Seals and bearings replacement • Gearbox replacement • Transmission replacement • Belts replacement • Rotor replacement • Properly connect the hydraulic tubes • Contact the mulcher mechanic

Worn/thorn seal rings	• Excessive lubrication • High rotor rotation speed • Incorrect seals assembly	• Change the seal rings • Check the machine adjustment • Ask the manufacturer for further information
Broken/detached frame	• Sheet steel worn • 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 • Missed greasing • Folded support roll • Wet ground • Material encrusted on the supports	• Supports replacement • Grease • Replace the support roll • Avoid working in unfavourable working conditions • Clean the support 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 ensures 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 tax 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 confirmation of incorrect operation of the operator;
  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 damages to the machine 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 to make any modifications considered necessary to improve its products at any moment and is not obliged to add these modifications to machines that have already been manufactured, delivered or are under construction.
- 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

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.

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.

Wir 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.

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.

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.

Undertecknad bekräftar mottagandet av användar- och underhållsmanualen och har informerats angående hantering av personuppgifter enligt lagdekret 196/03.

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.

Nome / Name / Nom / Nombre / Namn / Naam
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Indirizzo / Address / Anschrift / Adresse / Dirección / Adres / Adres
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Firma dell'acquirente / Purchaser's signature / Unterschrift des Kaufers / Signature de l'acheteur / Firma del comprador / Köparens underskrift / Handtekening van de koper

Data /Date/Datum/Fecha

FAC-SIMILE

5.3. NOTES

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