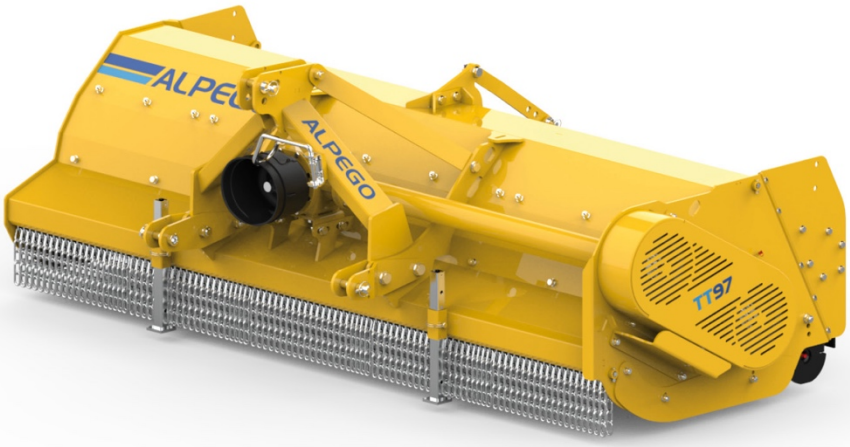
# SHREDDER MODELS:
# TRISTOC TT93
# TRISTOC TT97

ALPEGO
Your Partner In The Field


TT93

TT97




**Code : D14646/6**

**Use and maintenance manual**

**Translation of original instructions**

**Read these instructions carefully before first use.**

ALPEGO
Your Partner In The Field
MEMBER
ALPEGO S.p.a. con Socio Unico
Società soggetta a direzione e coordinamento di Torrico S.r.l.
Via Giovanni e Giuseppe Cenzato, 9
36045 Lonigo (VI) – Italy
Tel +39 0444 64.61.00
e-mail: info@alpego.com
website: www.alpego.com
Capitale Sociale € 2.000.000 i.v.
Cod. Fisc. / Part. IVA EORI IT02009840246
REX ITREXIT02009840246
R.E.A. 199795/VI/1996
Reg. Imp. VI N° 22374/VI/1996
N. Mecc. VI 011754

## ITALIANO

**Dichiarazione di conformità' CE**
**Trinciatrice**

Ai sensi della Direttiva Europea **2006/42 CE** la ditta dichiara sotto la propria responsabilità che la macchina agricola sotto indicata è conforme ai requisiti essenziali di sicurezza e di tutela della salute previsti dalla Direttiva Europea. Per l'adeguamento della macchina sono state adottate le norme: **EN ISO 4254-1:2015 -EN ISO 4254-12:2012 - EN ISO 4254-12:2012/A1:2017 EN 15811:2014**
La persona autorizzata a costituire il fascicolo tecnico è il Direttore Tecnico di Alpego presso la sede aziendale.

## FRANCAIS

**Déclaration de conformité CE**
**Broyeurs**

conforme à la Directive Européenne de la **2006/42CE** Nous déclarons sous notre seule responsabilite' que le machine agricole faisant l'objet de la déclaration est conforme aux prescriptions fondamentales en matière de sècurité et de santè stipulées dans la Directive Européenne. Pour l'adaptation d'elle en éponge ont été adoptés les normes : **EN ISO 4254-1:2015 - EN ISO 4254-12:2012 EN ISO 4254-12:2012/A1:2017 EN 15811:2014**
La personne autorisée à constituer le dossier technique est le Directeur Technique d'Alpego au siège de la société

## ENGLISH

**EC Certificate of conformity**
**Flailmowers**

conforming to European Directive **2006/42 EC** We declare in sole esponsability,that the agricultural machine to which this applies, conforms to the basic safety and health requirements of European Directive. For the adaptation of it blots some have been adopted the norms: **EN ISO 4254-1:2015 EN ISO 4254-12:2012 - EN ISO 4254-12:2012/A1:2017 EN 15811:2014**
The person authorized to drawn up the technical dossier is the Technical Director of Alpego at the company headquarters.

## DEUTSCH

**EG Konformitatserklarung**
**Mulchgerate**

entsprechend der Europäische Richtlinie **2006/42 EG** Wir erklaren in alleineger Verantwortung, da das landmaschine auf das sich diese Erklarung bezeith, den einschlagigen grundlegenden Sicherheits und Gesundheitsan-forderungen der Europäische Richtlinie. Für die Anpassung von ihr befleckt einiges sind angenommen worden den Normen: **EN ISO 4254-1:2015 - EN ISO 4254-12:2012 EN ISO 4254-12:2012/A1:2017 EN 15811:2014**
Die zur Erstellung der Technischen Dokumentation befugte person ist der technische Direktor von Alpego am Firmensitz.

## ESPANOL

**Declaraciòn de conformidad CE**
**Trituradoras**

Conforme a la Directiva Europea **2006/42 CE** la empresa declara bajo su propia responsabilidad que la maquinaria agrícola modelo: está conforme a los requisitos esenciales de seguridad y de defensa de la Directiva Europea. Para la equiparaciòn de las màquinas han sido adoptadas las normas :
**EN ISO 4254-1:2015 - EN ISO 4254-12:2012 - EN ISO 4254-12:2012/A1:2017 EN 15811:2014**
La persona autorizada para preparar el expediente técnico es el DirectorTécnico de Alpego en la sede de la empresa.

## Ελληνικά

**Δήλωση συμμόρφωσης ΕΚ**
**Μηχανή κοπής**

Σύμφωνα με την Ευρωπαϊκή Οδηγία **2006/42 ΕΚ**, η εταιρεία δηλώνει υπεύθυνα ότι το γεωργικό μηχάνημα που αναφέρεται παρακάτω συμμορφώνεται με τις βασικές απαιτήσεις υγείας και ασφάλειας της Ευρωπαϊκής Οδηγίας. Για την προσαρμογή του μηχανήματος έχουν υιοθετηθεί τα εξής πρότυπα: **EN ISO 4254-1:2015 EN ISO 4254-12:2012 - EN ISO 4254-12:2012/A1:2017 EN 15811:2014**
Το πρόσωπο που έχει εξουσιοδοτηθεί για την κατάρτιση του τεχνικού φακέλου είναι ο Τεχνικός Διευθυντής της Alpego, στην έδρα της εταιρείας.

## PORTUGUES

**Declaração de conformidade CE**
**Trituradores**

Nos termos da Diretiva Europeia **2006/42 CE**, a empresa declara sob a própria responsabilidade que a máquina agrícola indicada abaixo está em conformidade com os requisitos essenciais de segurança e de tutela da saúde previstos pela Diretiva Europeia. Para a adequação da máquina, foram adotadas as seguintes normas: **EN ISO 4254-1:2015 - EN ISO 4254-12:2012 EN ISO 4254-12:2012/A1:2017 EN 15811:2014**
A pessoa autorizada para a realização do arquivo técnico é o Diretor Técnico d e Alpego junto à sede da empresa.

## NEDERLANDS

**EG-Conformiteitsverklaring**
**Hakselaars**

In de zin van Europese Richtlijn **2006/42 EG** verklaart het bedrijf op eigen verantwoording dat de hieronder vermelde landbouwmachine in overeenstemming is met de essentiële veiligheids- en gezondheidseisen die door de Europese Richtlijn beoogd worden. Voor de aanpassing van de machine zijn de volgende normen gebruikt: **EN ISO 4254-1:2015 - EN ISO 4254-12:2012 EN ISO 4254-12:2012/A1:2017 EN 15811:2014**
De persoon die bevoegd is om het technisch dossier samen te stellen is de Technisch Directeur van Alpego bij de vestiging van de onderneming.

## MAGYAR

**EK megfelelőségi nyilatkozat**
**Aprítógépek**

Az Európai Unió **2006/42/EK** irányelve értelmében a vállalat saját felelőssége alatt kijelenti, hogy az alábbi mezőgazdasági gép megfelel az Európai Irányelv által előírt lényeges biztonsági és egészségvédelmi követelményeknek. A gép megfeleltetéséhez az alábbi szabványok kerültek alkalmazásra:
**EN ISO 4254-1:2015 - EN ISO 4254-12:2012 - EN ISO 4254-12:2012/A1:2017 EN 15811:2014**
A műszaki dokumentáció összeállítására jogosult személy a vállalati székhelyen az Alpego Műszaki Igazgatója.

## ROMÂNĂ

**Declarație de conformitate CE**
**Tocătoare**

În conformitate cu Directiva Europeană **2006/42 CE** societatea declară pe proprie răspundere că mașina agricolă indicată mai jos este conformă cerințelor esențiale în materie de siguranță și de protejare a sănătății prevăzute de Directiva Europeană. Pentru adaptarea mașinii au fost adoptate următoarele standarde:
**EN ISO 4254-1:2015 - EN ISO 4254-12:2012 - EN ISO 4254-12:2012/A1:2017 EN 15811:2014**
Persoana autorizată să întocmească documentația tehnică este Directorul Tehnic al Alpego de la sediul societății.

## POLSKI

**Deklaracja zgodności WE**
**Sieczkarek**

Zgodnie z treścią dyrektywy Unii Europejskiej **2006/42 WE**, firma oświadcza na własną odpowiedzialność, że wymieniona poniżej maszyna rolnicza jest zgodna z podstawowymi wymaganiami dotyczącymi bezpieczeństwa i ochrony zdrowia określonymi w Dyrektywie Europejskiej. W celu dostosowania maszyny zastosowano następujące normy: **EN ISO 4254-1:2015 - EN ISO 4254-12:2012 EN ISO 4254-12:2012/A1:2017 EN 15811:2014**
Osobą upoważnioną do opracowania dokumentacji technicznej jest Dyrektor Techniczny Alpego w siedzibie firmy.

## SUOMI

**EU-vaatimustenmukaisuusvakuutus**
**Silppurit**

EU-direktiivin **2006/42 EY** mukaisesti yritys vakuuttaa omalla vastuullaan, että alla mainittu maatalouskone täyttää EU-direktiivin mukaiset olennaiset turvallisuus- ja terveysvaatimukset. Koneen mukauttamista varten on otettu käyttöön seuraavat standardit: **EN ISO 4254-1:2015 EN ISO 4254-12:2012 EN ISO 4254-12:2012/A1:2017 EN 15811:2014**
Teknisen tiedotteen kokoamiseen valtuutettu henkilö on Alpegon tekninen johtaja yrityksen pääkonttorissa.

**Codice / Code : ArticoloHY**

**Serial:Matricola**

**Lonigo: gg/mm/aa**

**ALPEGO S.p.a. con Socio Unico**
**PEGORARO LUCA**
Chief Technology Officer

ALPEGO S.p.a. con Socio Unico
Società soggetta a direzione e coordinamento di Torrico S.r.l.
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Reg. Imp. VI N° 22374/VI/1996
N. Mecc. VI 011754

## UK Declaration of Conformity

We as the manufacturers:

**ALPEGO S.p.a con Socio Unico**
VIA Giovanni e Giuseppe Cenzato, 9
36045 Lonigo (VI) ITALIA

conforming to:
The Supply of Machinery (Safety) Regulations 2008 - S.I. 2008/1597

declare under our sole responsability, that the agricultural machine (Flailmowers):

| Codice / Code : ArticoloHY | **Serial:Matricola** |
|---|---|

fulfils all the relevant provisions of **The Supply of Machinery (Safety) Regulations 2008**, and also fulfils all the relevant provisions of the following UK Regulations:

- Electomagnetic Compatibility Regulations 2016.

The machine referenced above is manufactured in accordance with the following designated standards:

**EN ISO 4254-1:2015**
**EN ISO 4254-12:2012**
**EN ISO 4254-12:2012/A1:2017**
**EN 15811:2014**

The person authorized to draw up the technical file is the Technical Director of Alpego at the company headquarters

**Lonigo: gg/mm/aaaa**

**ALPEGO S.p.a. con Socio Unico**
**PEGORARO LUCA**
Chief Technology Officer

**Carefully read this manual, before using the machine; The knowledge of its contents is essential for the safe use of the implement and it must be kept throughout the lifespan of the machine.**

We thank you for purchasing our machine, you have chosen a high-quality product, guaranteed by an experience of dozens of years.
Before leaving the factory, each implement is accurately checked to guarantee it is free of any defect.
If, in spite of this, any problem due to defective materials should arise, please contact immediately your local dealer.
With the purpose of constantly improving the product and of maintaining it at the highest quality level, we remain at your complete disposal to give you any information or explanation.

| | |
|---|---|
| ⚠ | **PAY ATTENTION TO THE TRIANGLE, IT MEANS DANGER** |

THE TERM “MACHINE” REPLACES THE COMMERCIAL DESCRIPTION OF THE ITEM DESCRIBED IN THIS MANUAL.

⚠ **The illustrations shown in this Owner’s Manual are meant to be purely indicative. They may, therefore, present slight differences which are of no consequence as far as the directions given in the manual are concerned**

ALPEGO
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**Code: D14646 Rev. 06_11/2022**

# FOREWORD

**The machine is meant for professional operators. Only specialized operators are allowed to use it.**

**Use of the machine is forbidden to minors, illiterate people or to people with physical or mental handicaps.**

**The use of this machine is forbidden to people who are not in possession of a valid and adequate driver's license or are not sufficiently informed or trained. The operator is responsible for checking the performance of the machine, for the replacement and the repair of the parts which are subject to wear-and-tear, which could cause damages.**

**This farm implement can only be operated by means of a universal joint connected with the PTO of a farm tractor complete with a lifting device and with a universal 3-point hitch.**

**The regular performance of the implement depends on its correct use and on an adequate maintenance.**

**It is, therefore, advisable to strictly follow the advice given herein, in order to avoid any trouble which may impair the good performance and the lifespan of the implement.**

**It is also advisable to follow the advice given in this manual, since the Manufacturing Company will refuse any and all liability for problems arising from negligence or the non-observance of these rules.**

**The Manufacturer, however, is absolutely willing to insure an immediate and accurate technical assistance and to do everything possible to guarantee the best performance and the maximum yield of the implement.**

ALPEGO
Your Partner In The Field

ALPEGO

## TABLE OF CONTENTS

# 1 - GENERAL INFORMATION

## 1.1 PURPOSE OF THE MANUAL

This manual has been written by the Manufacturer of the machine and is an integral part of the documents accompanying the machine.

The manual defines the purposes for which the machine has been produced, specifying its correct use and the limits of the same.

The punctual application of the indications contained in the present manual guarantees the safety of the persons using the machine, the economy of operation and a longer lifespan of the machine.

The present manual has been divided into different paragraphs in order to make the search for the various items and the consultation of the initial table of contents easier.

The pictures included in this manual are supplied by way of information only. Even if they greatly differ from your machine, the safety rules and the information are always guaranteed to be applicable and pertinent.

## 1.2 DOCUMENTS SUPPLIED WITH THE MACHINE

The following documents must be supplied together with the machine
- Owner's Manual
- Certificate of Compliance to CE Rules
- Owner's Manual of the Universal Joint

## 1.3 WARRANTY

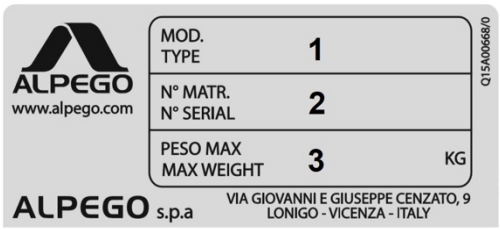
At the time of delivery, check whether the machine has been damaged in transit and if all its options are present. Possible claims must be made in writing to the Dealer within 8 days after receiving the machine.

CONDITIONS OF WARRANTY
The warranty will become immediately void :
-if damage is caused by an incorrect operation
-if the maximum power limit allowed is exceeded (see Chart 2.3)
-in case the instructions given in this manual have not been strictly followed
-if non-original spare parts have been used
-if modifications have been made to the machine without the consent of the Manufacturer.

The warranty only covers design, assembly and painting defects and exclusively in the case of use of the product in accordance with the instructions provided in this instruction manual;
The Seller is not liable for components supplied by third parties and installed on its machines.
For what is not expressly foreseen therein, please refer to the general sales conditions.

## 1.4 IDENTIFICATION OF THE MACHINE

At the 3 points of connection to the tractor is placed the identification plate of the machine bearing the following data:





1. Model of the machine
2. Serial number
3. Maximum weight of the machine
4. Costruction year [es: 1305 = 13 (2013) + 05 (may)]

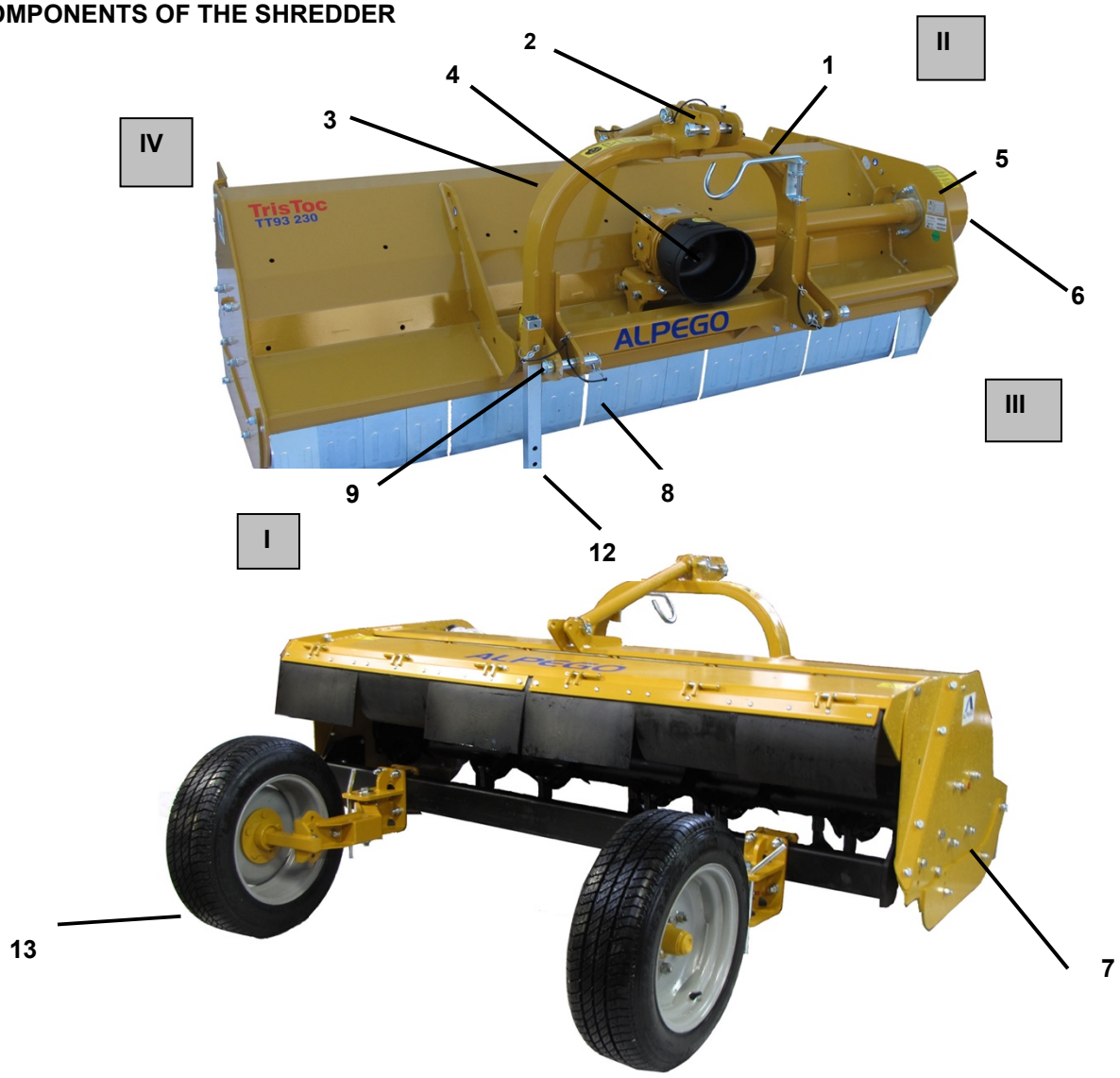
**The specified weight refers to the machine provided with the accessories.**

## 2 - TECHNICASL SPECIFICATIONS

### 2.1 DESCRIPTION OF THE MACHINE

Shredders are machines having a rotor which is driven by the tractor PTO through a universal joint and through the gear box and the lateral belt transmission . They are used for the maintenance of green areas or the direct shredding on the soil where they chop up organic residues of what is left of the crops (grassy residues). The quality of the shredding depends on the high speed of the turning rotor, which is opposite to the driving direction of the tractor.

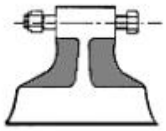
### 2.2 COMPONENTS OF THE SHREDDER

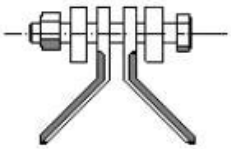



1 - SUPPORT OF THE UNIVERSAL JOINT
2 - UPPER ARM OF 3-POINT HITCH
3 - 3-POINT HITCH
4 - GEAR BOX
5 - IDENTIFICATION TAG
6 - COVER OF LATERAL TRANSMISSION
7 - SIDE SKIDS
8 - PROTECTION PLATES OR CHAINS
9 - LOWER ARMS OF 3-POINT HITCH
10 – TAIL-GATE
11 – REAR ROLLER (not shown in the picture)
12 – SUPPORTING STAND
13 - WHEELS

| | |
|---|---|
| **I** | FRONT |
| **II** | REAR |
| **III** | LEFT-HAND SIDE |
| **IV** | RIGHT-HAND SIDE |

## 2.3 CHART OF TECHNICAL DATA
## MOD. TT93



MAZZA

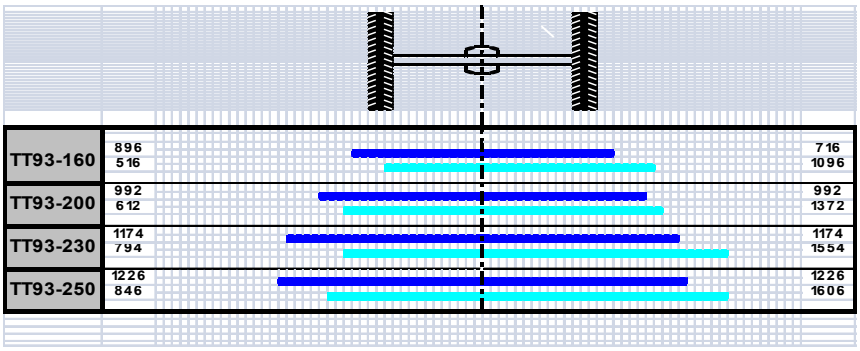

COLTELLO Y

TECHNICAL DESCRIPTION

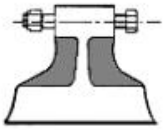
| Model | | TT93 - 160 - | TT93 - 200 - | TT93 - 230 - | TT93 - 250 - |
|---|---|---|---|---|---|
| Working width | | 160 | 200 | 230 | 250 |
| Power required | (HP) | 40/100 | 50/100 | 60/100 | 70/100 |
| Blades | (n°) | 32 | 40 | 48 | 52 |
| Power of gearbox with free wheel | (HP) | 100 | | | |
| Transmission belts | (n°) | 4 | | | |
| Overall width | (cm) | 200 | 220 | 250 | 270 |
| Overall depth | (cm) | 135 | | | |
| Overall height | (cm) | 104 | | | |
| Weight | (Kg) | 560* | 630* | 780* | 840* |
| 3-Point Hitch (category) | | II | | | |
| PTO r.p.m. | (r.p.m.) | 540 | | | |
| Surface speed | (m/s) | 62 | | | |
| Rotor r.p.m. | (r.p.m.) | 1910 | | | |
| Transport position | | MOUNTED TRANSVERALLY ON LIFTING DEVICE | | | |
| Primary Transmission | | UNIVERSAL JOINT OF THE TRACTOR | | | |
| Secondary Transmission | | THROUGH SPB SECT. BELT | | | |
| Adjstment of shredding height | | MECHANICAL - MANUAL: SKIDS / WHEELS / ROLLER | | | |
| Adjustment of side-shift | | MECHANICAL / HYDRAULIC | | | |
| Gearbox ratio | | 1/3 | | | |
| Diameter of rotor pulley | (mm) | 250 | | | |
| Diameter of gearbox pulley | (mm) | 212 | | | |
| Rotor diameter | (mm) | 620 | | | |
| Tube diameter | (mm) | 193X10 | | | |

*Weight including universal joint without rear roller

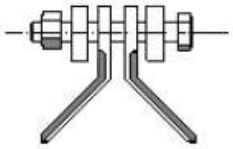
Chart of side shift




## 2.4 CHART OF TECHNICAL DATA
## MOD. TT97

MAZZA



COLTELLO Y

TECHNICAL DESCRIPTION

| Model | | TT97 -280- | TT97 -300- | TT97 -320- |
|---|---|---|---|---|
| Working width | | 280 | 300 | 320 |
| Required power | (HP) | 90/160 | 90/160 | 90/160 |
| Blades | (No.) | 60 | 64 | 68 |
| Power of gearbox with free wheel | (HP) | 160 | | |
| Transmission belts | (No.) | 5 | | |
| Overall width | (cm) | 300 | 320 | 340 |
| Overall depth | (cm) | 144 | | |
| Overall height | (cm) | 105 | | |
| Weight | (Kg) | - | 1050 | - |
| 3-Point hitch (category) | | II | | |
| P.T.O. r.p.m. | (RPM) | 1000 | | |
| Rotor surface speed | (m/s) | 55 | | |
| Rotor r.p.m. | (RPM) | 1628 | | |
| Transport position | | MOUNTED TRANSVERALLY ON LIFTING DEVICE OF THE TRACTOR | | |
| Primary transmission | | UNIVERSAL JOINT | | |

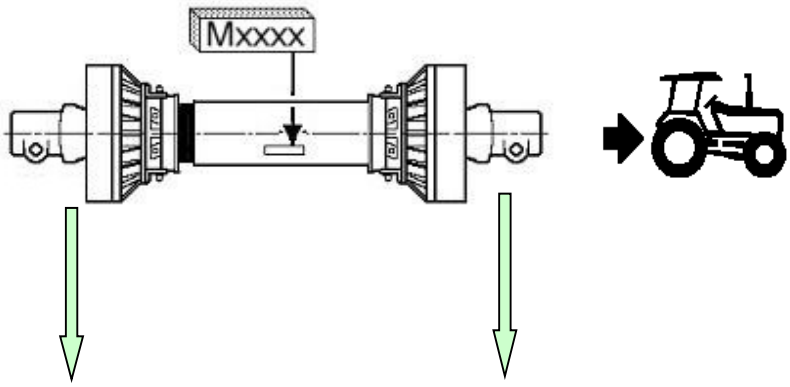
| | | |
|---|---|---|
| **Secondary Transmission** | | THROUGH SPB SECT. BELT |
| **Adjustment of shredding height** | | MECHANICAL - MANUAL: SKIDS/WHEELS/ROLLER |
| **Adjustment of side-shift** | | MECHANICAL/HYDRAULIC |
| **Gear ratio** | | 1/1,92 |
| **Diameter of rotor pulley** | **(mm)** | 212 |
| **Diameter of gearbox pulley** | **(mm)** | 250 |
| **Rotor diameter** | **(mm)** | 645 |
| **Tube diameter** | **(mm)** | 219X12.5 |

*Weight including universal joint without rear roller

### 2.5 IDENTIFICATION OF THE UNIVERSAL JOINT

The universal joint should work at a minimum angle of inclination (no more than 10 – 15 degrees) in order to increase the lifespan of both the universal joint and the machine.

.
It is forbidden to replace it with other universal joints differing from the original.
**Carefully read the directions given in the manual attached to the universal joint.**




## TE CHNICAL DATA OF THE UNIVERSAL JOINTS:

| Machine | Type | | Code | |
|---|---|---|---|---|
| **TT93-160** | **A6900-1”3/8 z = 6** | **1”3/8 z = 6** | **MO6951** | |
| **TT93-200** | **A6900-1”3/8 z = 6** | **1”3/8 z = 6** | **MO6951** | |
| **TT93-230** | **A6900-1”3/8 z = 6** | **1”3/8 z = 6** | **MO6951** | |
| **TT93-250** | **A6900-1”3/8 z = 6** | **1”3/8 z = 6** | **MO6951** | |
| **TT97-280** | **A81100-1”3/4 z = 6** | **1”3/8 z = 6** | **MO6953** | |
| **TT97-300** | **A81100-1”3/4 z = 6** | **1”3/8 z = 6** | **MO6953** | |
| **TT97-320** | **A81100-1”3/4 z = 6** | **1”3/8 z = 6** | **MO6953** | |

# 3 SAFETY RULES

## 3.1 SAFE USE OF THE MACHINE

Read the owner's manual carefully before starting-up, before using the machine and before carrying out maintenance operations on the equipment.

The manufacturer cannot be held responsible for injuries caused to people and animals, or damage caused because the safety regulations have not been observed by the user.

It is absolutely forbidden to use the machine for purposes differing from the ones indicated in this Manual

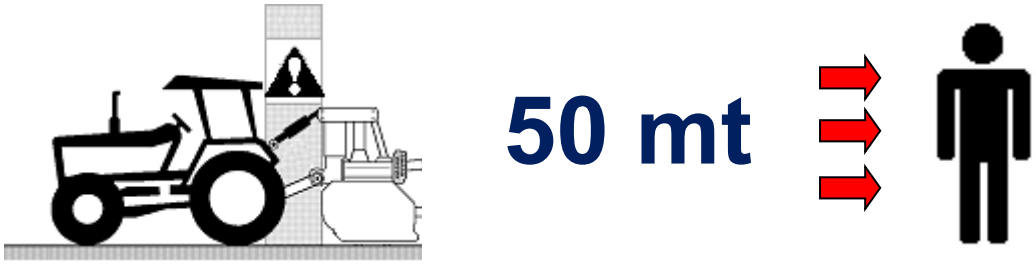
Absolutely avoid touching moving parts.

When the machine and its options are transported on public roads, they must be complete with the appropriate signals and safety guards.

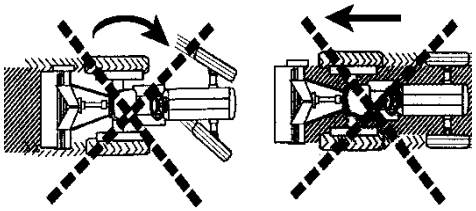
It is forbidden for people to drive the tractor if they do not have an adequate driving licence, if they do not have the necessary experience, or if they are not in good health.

Carefully check the stickers applied on the machine and follow the directions contained therein. The stickers concerning safety rules must always be perfectly visible: they must be kept clean and must be replaced if they become hard to read (they can eventually be obtained from your dealer).

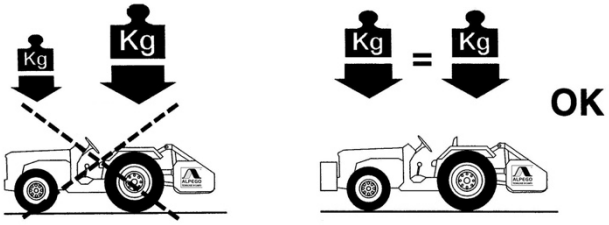
**The safety distance from the working machine or from the machine with a turning rotor is 80 meters.**
**While working never allow people, animals or objects to enter the radius of action of the machine, which may sling clods, rocks or various residues.**
**It is absolutely forbidden to enter the area between the tractor and the machine to activate the external controls of the hydraulic lifting device.**



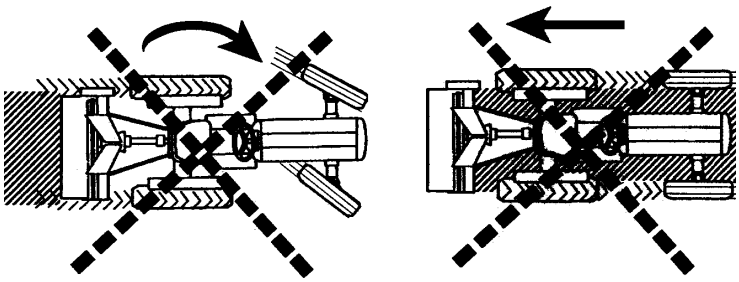

Always remain seated in the tractor driver's seat. Only leave the driver's seat when the tractor power-take-off has been disengaged and the handbrake has been pulled.
During working breaks switch off the engine, lower the implement to the ground, disengage the tractor power take-off and pull the tractor handbrake.
Make sure never to operate the machine if any safety guards have been removed from it.
Do not work in terrains or places which may compromise the stability of the implement.
Familiarize yourself with the area where you are going to work. Never operate in areas presenting obstacles such as stones, poles or roots, which would endanger the integrity of the implement.



When transporting it on public roads always turn on the flashing light.
When circulating on public roads, you must follow the traffic rules of your country. Always remember that road holding, the ability to brake and changing directions can be influenced by the weight of the machine applied to the lifting device of the tractor. When taking turns, take into consideration the action of the centrifugal force that shifts the machine centre of gravity.




Do not let the implement run when raised (off the ground). While working do not turn bends while the machine is set in the ground. Never work in reverse gear. Always lift it off the ground when you change directions or drive in reverse gear.

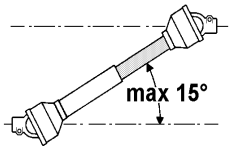


During transportation, or whenever the machine has to be lifted, the tractor lift should be regulated so that the machine is kept at a maximum distance of not more than **30 cm**. off the ground. Do not circulate on roads if the machine is dirty with earth, grass or other materials which may soil the roads and/or cause traffic problems . Do not lower the machine to the ground abruptly , but rather do so slowly .
Unless you follow this rule, strong stressing forces will be exerted on all the components of the machine and they may compromise its integrity
While driving on the road with the machine lifted off the ground, put the lever controlling the hydraulic lifting mechanism of the tractor in its locked position.

Never use the machine within closed buildings, if their ventilation system is not adequate.
Before you start the universal joint, make sure that the chosen number of revolutions is correct. Do not mistake 540 rpm for 1000 rpm
Use only the universal joint provided by the Manufacturer, complete with safety devices against overloads.

The safety guards of the universal joint must always be in good working order and have to be checked at regular intervals and secured by means of chains in order to prevent them from revolving.

Always disconnect the power takeoff when the universal joint forms an angle exceeding 15°, see picture.




Always check the integrity of the universal joint, both in its working and in its transport position.

The mounting and/or the removal of the universal joint must always be undertaken with the engine switched off

Always pay a lot of attention to the correct connection and to the safety of the universal joint (and to both the PTO of the machine and the PTO of the tractor).

Before engaging the PTO make sure there are no people or animals in its area of action and that the chosen rpm are the correct ones. Never exceed the maximum rpm allowed.

In order to avoid burnings, never touch the gearbox and the components of the hydraulic system (if any) after a lengthy use of the machine.

The side skids also act as safety guards by preventing an easy access to the rotor. If the machine has no skids, it will be complete with side safety plates.

The machine is not to be used at night or, at any rate, whenever visibility is insufficient.

Before you start working, familiarize yourself with the control devices and their function.

Mount the machine as prescribed on a tractor having adequate power and configuration by using the appropriate device (lifting device) complying with the relevant rules

Be extremely careful while hitching  and unhitching the implement..

Never leave your driver's seat while the engine is running..

Before getting off the tractor, lower to the ground the machine hanging on the lifting device, turn off the engine, pull the hand-brake  and remove the ignition key from the dashing board..

The category of the pins for mounting the machine must be the same as the category of the tractor lifting device. During transportation block  with the suitable chains and tie-rods the lower arms of the lifting device.

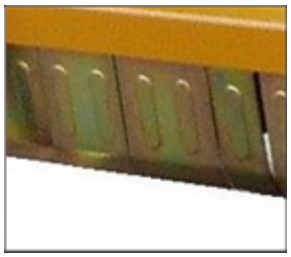
**If the tractor being used does not have a sound-proof and pressurized cab, the operator must use individual protecting gear:**
**Earmuffs , if the sound exceeds the levels allowed**
**Dust-protecting mask, if, because of the material being treated or of a very dusty soil, or because the machine is open, a large amount of dust is raised.**

### 3.2 CARRYING OUT MAINTENANCE SAFELY

DO NOT allow unauthorised people to carry out maintenance operations or to tamper with the machine in any way.

**The use of the machine without protection plates or chains is strictly forbidden.**

**Plates**

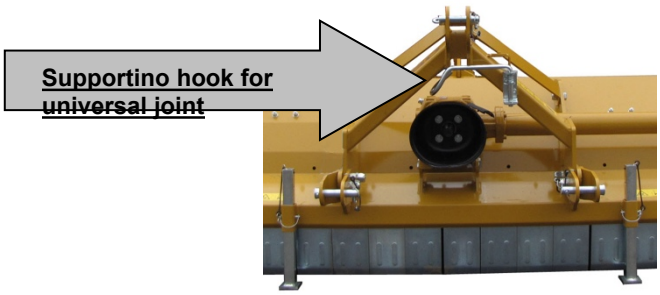


**Chains**

Maintenance and repairs must be carried out in a suitable and well equipped workshop.
Before undertaking any maintenance operation disconnect the hydraulic hoses from the tractor oil plugs.

Always use original options and spare parts as instructed by the Manufacturer.  If you fail to do this, the guarantee will be rendered null and void, and you could risk operational irregularities that could prejudice the safety of the machine.
Make sure that the oils used have the recommended characteristics.

Before carrying out any operation on the machine, disengage the tractor power takeoff, pull  the handbrake, remove the ignition key and make sure that other people do not get into the tractor.
Before cleaning and lubricating the universal joint, stop the PTO, turn off the engine, pull the hand-brake and remove the ignition key.
Before replacing the gears in the gearbox stop the PTO, pull the hand-brake and remove the ignition key. Then put the lid of the gearbox back in place, before you start the machine again.
When the universal joint is not being used, prop  it on the appropriate supporting hook (see picture)




Periodically check the tightness and the hold of all the nuts and bolts and tighten them, if necessary.
When maintaining and replacing the blades while the machine is lifted off the ground, prop up the machine on suitable supporting stands.
Before working on the cutting tools, stop the PTO, turn off the engine, pull the hand-brake and make sure that the cutting tools are completely still.
The spare parts must fulfill the requirements set forth by the Manufacturer. Only use original spare parts.
The Owner's Manual must be kept for the entire lifespan of the machine.

### 3.3 CLOTHING

Always put on clothes protecting the body with no hanging parts that could get entangled in moving components. Remove watches, rings, necklaces, etc. that could cause injury in dangerous situations. Tie up long hair into a ponytail.

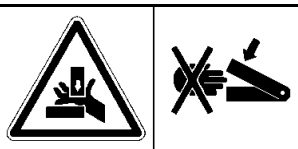
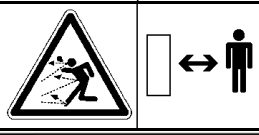
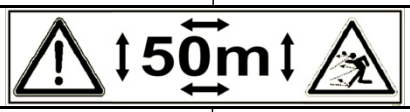
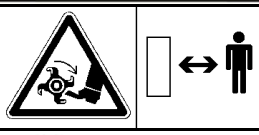
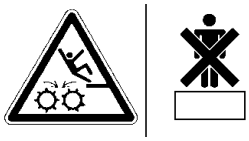
When required by the Law, the machine driver may have to wear suitable safety equipment (glasses, gloves, mask, helmet, shoes, etc.). Check and follow the safety rules in your country.

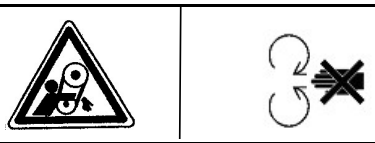
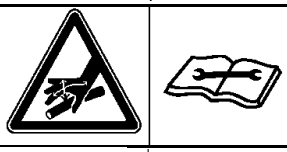
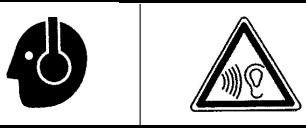
### 3.4 ENVIRONMENT

Always comply with the Laws of your country concerning the use and disposal of the products used for the lubrication, the maintenance and the clearing of the machine; carefully follow the directions given on the packaging of the products.
Comply also with the current rules when scrapping the implement.

## 3.5 SAFETY SIGNALS

A good number of labels on the machine point out the sources of danger. Observe them carefully and follow the instructions for safe machine use. These stickers should be kept clean and legible. If damaged, they must be replaced.

| figura | codice | indicazioni |
|---|---|---|
|   | **D02612** | You MUST read the user and maintenance manual and the safety instructions before using the equipment. The manual and the instructions must be followed during use. |
|  | **D02627** | Indicates the hooking point for machine transportation |
|  | **D02613** | Indicates the danger of shearing while the machine is working |
|  | **D02618** | Indicates the danger of flying rocks while the machine is working. |
|   | **D15389** | Indicates the danger of stones being ejected while working. Keep safety distance |
|  | **D02619** | Warns against the danger caused by the turning rotor and recommends keeping a safe distance |
|  | **D02608** | Indicates the danger of entanglement while working on the universal joint shaft. Do not approach the shaft while it is rotating. |
|  | **D02615** | Indicates the need to switch off the tractor and remove the ignition key during maintenance operations |
|  | **D02609** | Indicates that it is forbidden to climb on top of the machine while it is working. |

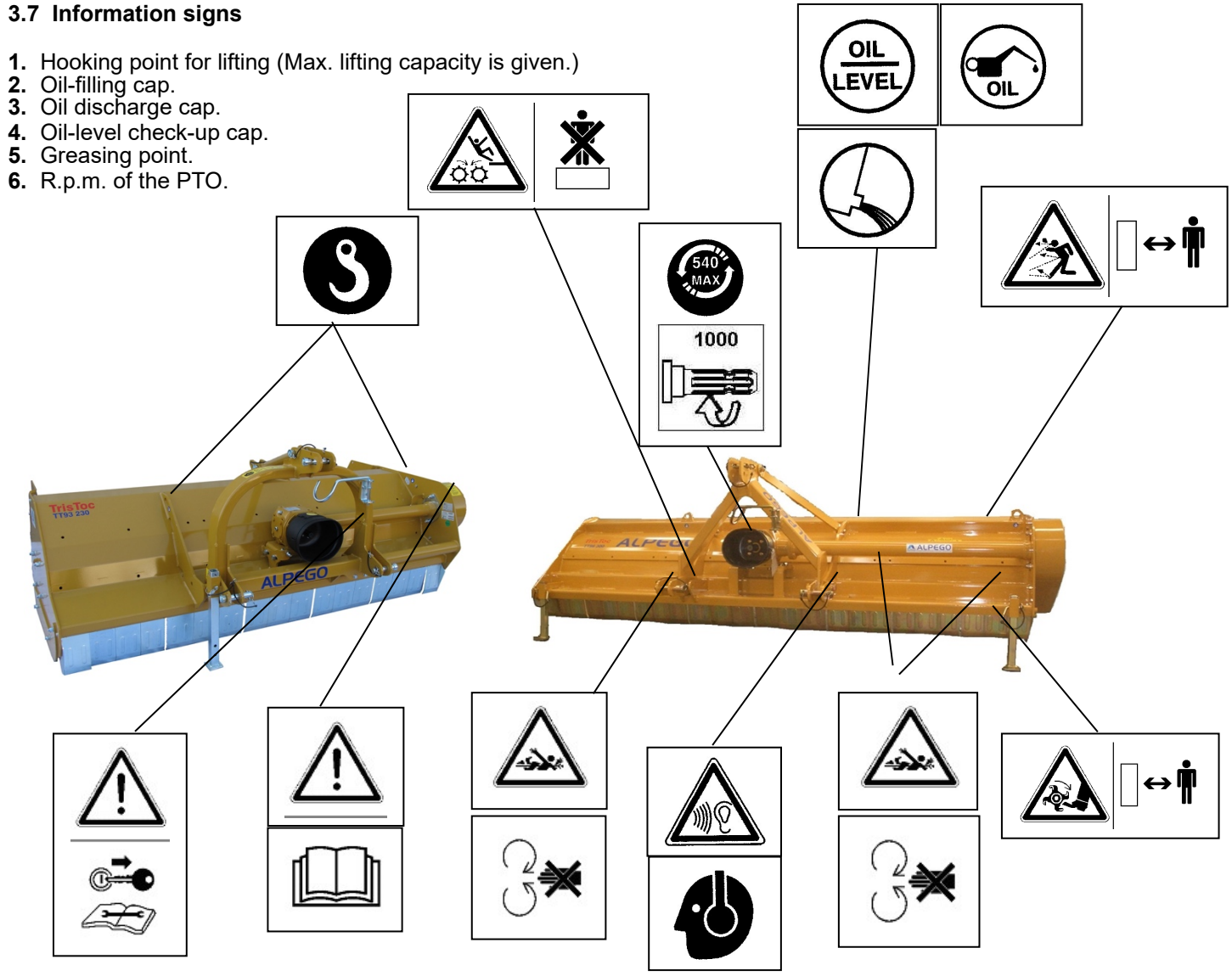
| | | |
|---|---|---|
|  | **D02614** | Indicates the danger of being crushed by turning belts and pulleys |
|  | **D02624** | Indicates the danger caused by pressurised oil if the hydraulic pipes break. Consult the instruction manual before repairing the hydraulic system. |
|  | **D08155** | Indicates the danger caused by excessive noise during while working |

## 3.6 SOUND LEVEL

If the tractor has a cab, the sound level depends on the type of insulation of the cab.
If the tractor has no cab or if its windows are open, the sound level of the working machine, at a distance of 200 mm. from the rear window exceeds 85 dBa. Therefore, we recommend the use of soundproof earmuffs as prescribed by the laws of different Countries.

## 3.7 Information signs

1. Hooking point for lifting (Max. lifting capacity is given.)
2. Oil-filling cap.
3. Oil discharge cap.
4. Oil-level check-up cap.
5. Greasing point.
6. R.p.m. of the PTO.

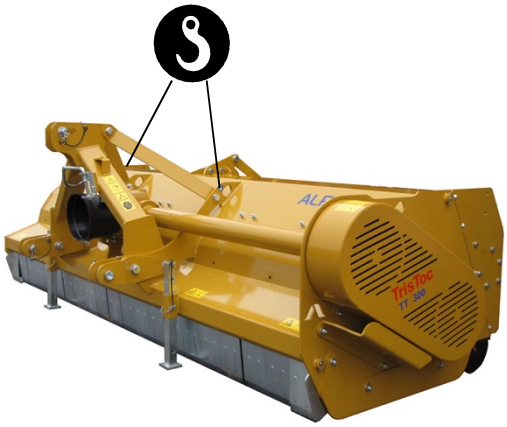



**If the protection guards have been supplied separately because of transport reasons, mount them before you start the machine for the first time.**

# 4 ASSEMBLY

## 4.1 LIFTING THE MACHINE

The lifting and transport operations must be performed with means suited to the weight of the machine.
Hook the machine as shown in the picture and then transport it. During the latter operation the machine should not be lifted more than 200 mm off the ground.



## 4.2 MACHINES SUPPLIED PARTLY DISASSEMBLED

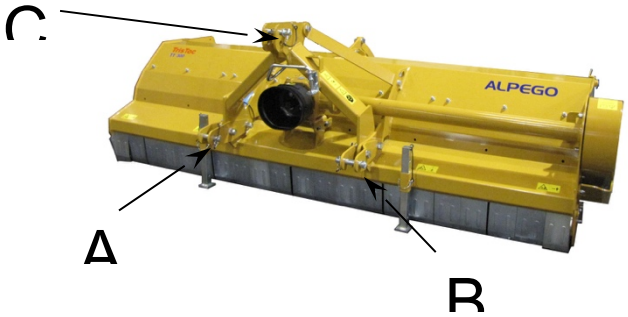
Sometimes machines may be delivered with some components or options not assembled because of dimension reasons (They are, however, always included in the same package)
Undertake the assembly of these parts very carefully, also taking into consideration the charts in the spare part catalogue and, more specifically, comply with the values given concerning the torque wrench settings of the bolts supplied with the parts.

## 4.3 CONNECTING THE MACHINE TO THE TRACTOR AND TO THE 3-POINT HITCH

**The mounting of the machine on the tractor is a very dangerous operation. Pay the utmost attention and follow all directions closely while performing the entire operation. The Manufacturer will not be held responsible for breakings or damages to property or people caused by the non-observance of the directions contained herein.**

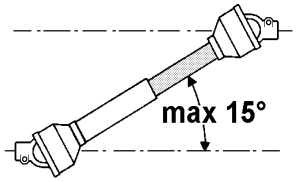
The correct position of the tractor and the machine is determined in that the tractor should be driven to such a distance from the machine, that the universal joint remains extended by 10-15 cm. from its maximum retracted position.

1. Bring the lower arms of the lifting device of the tractor to rest inside the plates (A-B-C Pict..), insert the pin into the corresponding holes and lock with the spring pins.
2. Block the lower arms of the lifting device with the proper chains and parallel tie rods of the tractor. This procedure is to be carried out to prevent any shifting of the machine in the transversal direction
3. Connect the upper arm (C Pict..) and adjust correctly through the tie rod, making sure that the top of the machine is parallel to the ground.
   This adjustment is very important in order to obtain a parallel setting between the axis of the shaft of the PTO of the machine and the axis of the shaft of the PTO of the tractor. Working with the machine thus adjusted implies keeping the vibrations of the PTO at a bare minimum, which in turn helps to lengthen the lifespan of the PTO, of the universal joint and of the machine itself.
4. Connect the universal joint and make sure it is perfectly latched on the PTO. Make sure that the protecting guard turns freely, then secure it with the proper chain. Remove the support from the universal joint.
5. Move the supporting stands from the parking to the working position




### 4.4 OF THE UNIVERSAL JOINT

The angle of inclination of the working universal joint must be as small as possible (no more than 10 ÷ 15 degrees). This will improve the lifespan of both the universal joint and of the machine (see picture).




Since the universal joint is an organ which rotates at a rather high speed, during its calibration it undergoes a balancing adjustment: any modification following this operation may impair the performance of the machine, as well as the performance of the universal joint itself.
When the universal joint is in its most stretched position, whatever the working conditions, the telescopic tubes must overlap by at least 1/3 of their length..
When it is in its most retracted position the minimum play should amount to 4 cm..
If this is not possible, please call the Technical Dept. of the Manufacturing Co..
Before you begin working, make sure that the proper chains are present on the safety guards, in order to prevent the guards from rotating together with the universal joint and make also sure that these guards are in perfect working order.

**Carefully read the Owner's Manual supplied with the universal joint supplied by the Manufacturer of the same.**

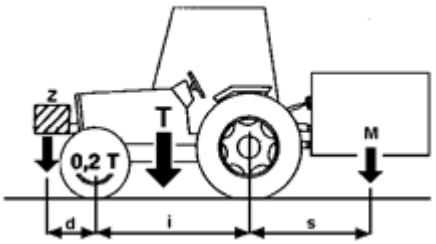
**If the universal joint is worn out or broken, replace it with one bearing the CE sign .**

**The Manufacturer of the universal joint warns against any modification of the universal joint. It is, therefore, forbidden to perform any modification or variation of the universal joint.**

### 4.5 CHECKING THE LIFTING CAPACITY AND THE STABILITY OF THE TRACTOR

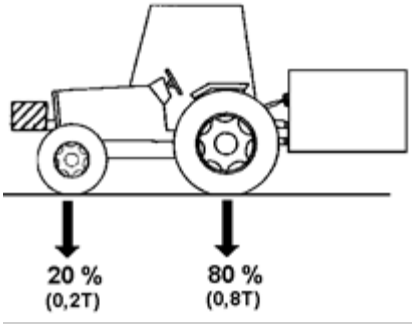
**When an implement is mounted on a tractor, it becomes an integral part of the same, as far as travelling on public roads is concerned, and it can alter its stability and cause some driving and working difficulties.**

When you mount a machine on the tractor, you will change the weight distribution over the axes. It is, therefore, advisable to add suitable ballast to the front of the tractor in order to have a good weight distribution over the axes.
Calculate the ballast to be used with the following formula:




$$M \times s < 0{,}2\ T \times i + Z\ (d + i)$$

$$Z > \frac{(M \times s) - (0{,}2\ T \times i)}{(d + i)}$$



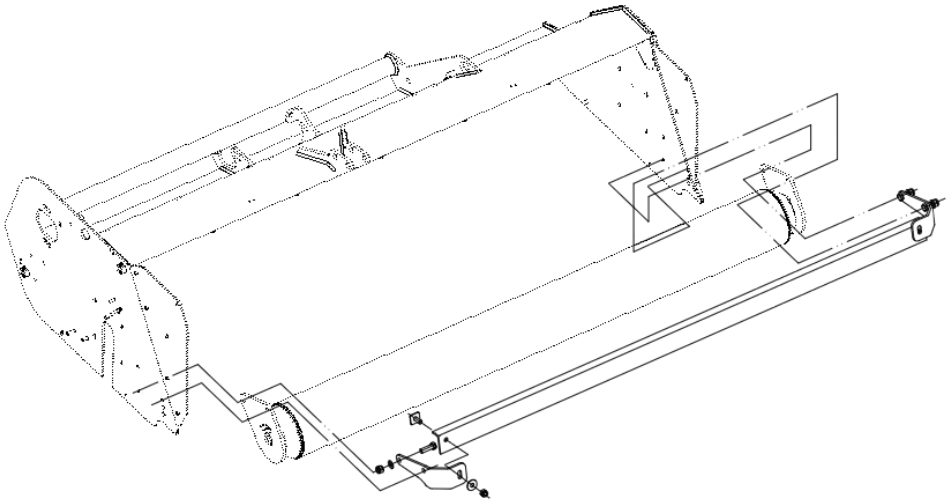

where:
**i =** tractor wheel inter-axis (m)
**d =** distance between the front axis and the front ballast (m)
**s** = projection of the piece of equipment from the rear axis (m)
**T** = tractor mass (kg)
**Z** = ballast + hopper with seeds mass (Kg)
**M** = equipment mass (Kg)

At least **20%** of the total tractor/implement mass should bear on the front bridge of the tractor. It should be remembered, however, that stability can be improved with the right choice of tractor/implement coupling and with the application of ballast at the front, within the limits and methods indicated by the tractor manufacturer. Moreover, when the tractor is stopped, the machine should be lowered onto the ground. This also improves stability.

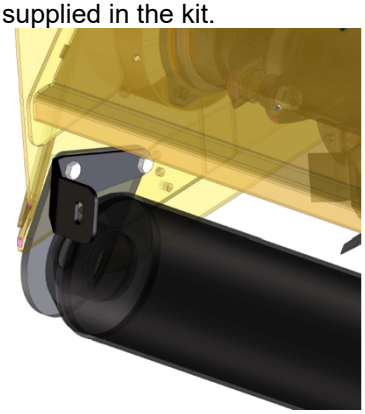
| | |
|---|---|
| **Tractor wheel inter-axis** | **i =**..... |
| **Distance between the front axis and the front ballast** | **d =**..... |
| **Projection of the piece of equipment from the rear axis** | **s =**..... |
| **Tractor mass** | **T =**..... |
| **Ballast mass** | **Z =**..... |
| **Implement mass** | **M =**..... |

## 4.6 ASSEMBLY OF ROLLER SCRAPER

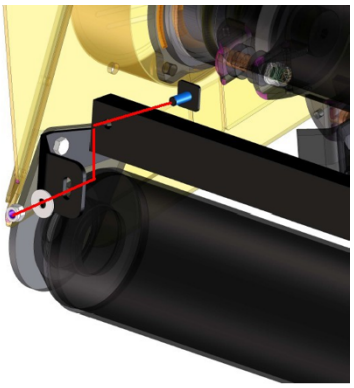
The kit for scraping the mud from the rear roller is meant to keep the rear roller clean whenever it is working under particularly severe conditions or in hostile environments. For this reason it is supplied standard but not assembled on the shredder. The operator will decide whether to mount it on the machine depending on the working conditions.



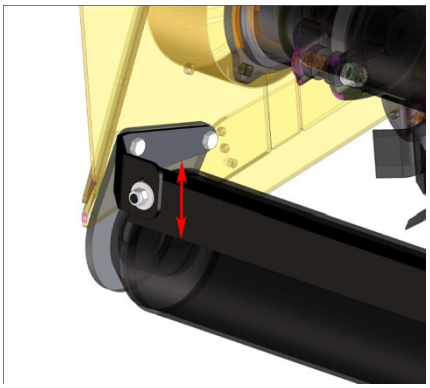
The assembly is done inside the roller-supporting flanges using the same holes to secure it. It is necessary to use the bolts supplied in the kit.



Secure both supports



Insert the special bolt



Adjust the height of the L-bar

**When adjusting the L-bar make sure the roller can turn without any hindrance.**
**Any kind of contact can irreparably ruin or damage the machine**

## 5.1 ADJUSTMENT OF THE WORKING DEPTH

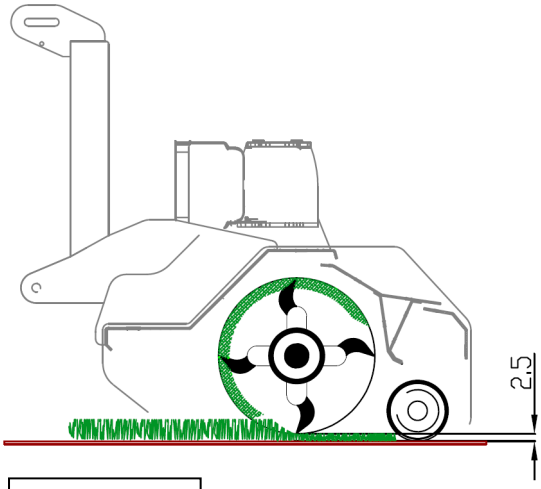
**Lift the implement off the ground and adjust the working height.**
**Adjust the position of the machine with the lifting device, making sure that the machine is horizontal or only slightly higher at the front, in order to make the intake of the material to be shredded easier.**

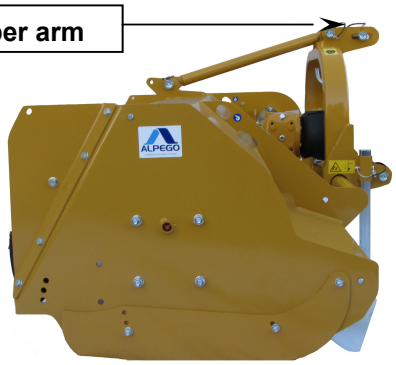
In order for the machine to work properly it is necessary for the blades to work at a minimum height of 2,50 cm. from the ground. It is possible to adjust the shredding height by acting on the skids, on the rear roller or on the tie-rod of the upper arm of the tractor. The higher the blades are from the ground, the smaller is their wear and the lower the power absorbed.

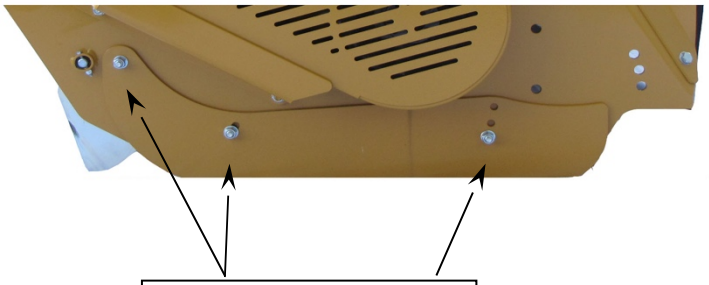
a) Adjustment of the skids:
unscrew the bolts holding the skids at the sides of the shredder, position the skids at the desired height and tighten the bolts again;

b) Adjustment of the rear roller
unscrew the bolts holding the rear roller, position the skids at the desired height and tighten the bolts again;
;

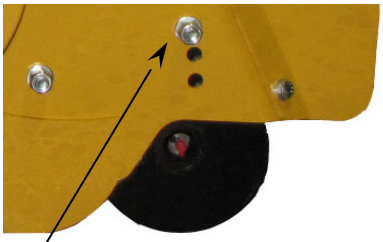
c) Adjustment of the tie-rod of the upper arm:
Lengthen or shorten the tie-rod of the upper arm of the tractor in order to adjust the working height and place the machine parallel to the ground



Adjustment of the skids



Adjustment of the rear rolller

## 5.2 SIDE SHIFT

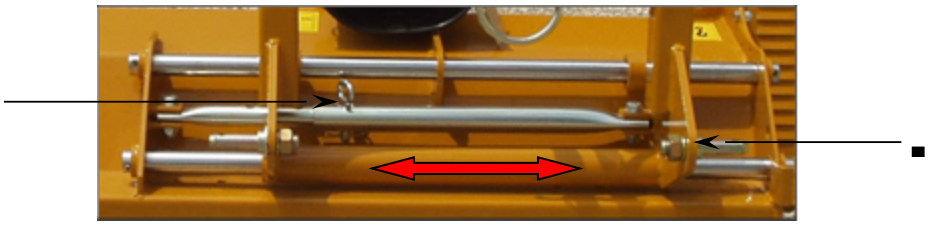
The shredder may be complete with a manual or hydraulic side-shift of the frame of the 3-point hitch. This side-shift is used when working close to ditches or in crops requiring the machine to be displaced laterally.

* MECHANICAL SIDE-SHIFT (with a telescopic tube)

The mechanical (or manual) side shift is to be set when the machine is standing still and not mounted on the tractor

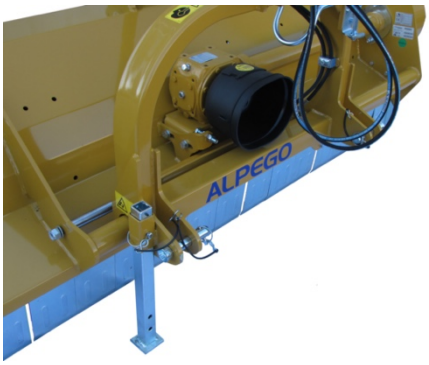
In order to obtain the side-shift proceed as follows:

- Remove the retaining pin from the bar (**a**)
- Shift the frame of the 3-point hitch (**b**) to the position suited to the job one needs to do
- Insert the retaining pin into the nearest hole
- Hitch the machine to the tractor



* HYDRAULIC SIDE-SHIFT

It can comfortably be activated with the machine mounted on the tractor: Plug the standard hydraulic hoses into the corresponding plugs of the hydraulic circuit of the tractor, while keeping the machine a few centimeters off the ground. Activate the controls from the driver's seat and determine the extent of the side shift of the implement (see picture).

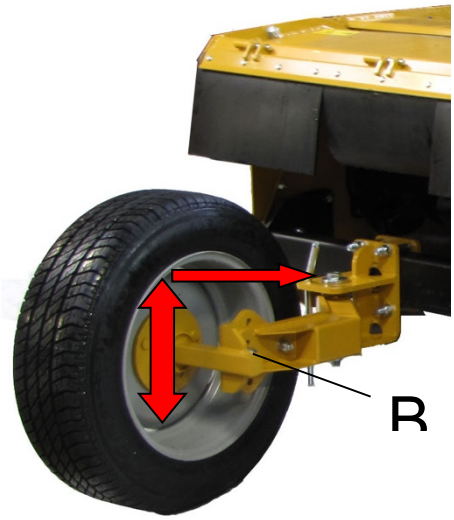



**Take into account the fact that the shifting of the implement entails a variation of the working inclination of the universal joint. Make sure that this remains within the safety limits.**

### 5.3 REAR WHEELS (option)

The machine may be supplied (or equipped later) with a pair of rear wheels which are used to adjust the working height. If these are mounted on the machine, it is necessary to remove the rear roller, since the wheels would not fulfill their task if this were left on.
In order to adjust them it is necessary:

- With the engine of the tractor off and the hand brake pulled to gradually lower the machine to the ground with the help of the lifting device of the tractor
- Adjust the working height by acting on the wheels: by unscrewing the retaining bolt B, lift the wheel to the desired height, then insert again the bolt into the desired hole.




### 5.4 BLADES

The rotor blades are suited to work on soils having a normal conformation.
Check daily the amount of wear-and-tear or their integrity. Should any of them either break or become deformed while working, they must be immediately replaced. When doing that, be careful to mount the new blades in the very same position. It is always advisable to remove and replace one blade at the time so as to avoid position mistakes.
The normal wear-and-tear (particularly quick in sandy soils or when working with the machine too low on the ground) and hitting against obstacles can cause cracks or deformations of the blades which in turn can cause:

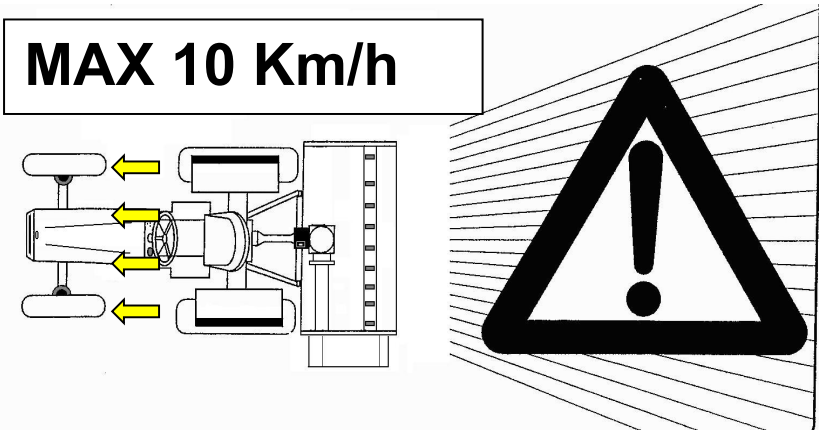
- An increase of vibrations entailing mechanical damages to the machine
- A worsening of the work quality
- The total or partial breaking of the blades with the ensuing projection of fragments at very high speed

**The partial replacement of the blades must always be done in pairs, one blade and its opposite one.**

## 5.5 USE

After all the operations previously described have been performed, start the tractor engine while keeping the machine slightly off the ground and engage the PTO with the engine turning at a slow rate.
As the tractor begins to move forward, gradually lower the machine to the ground and increase the engine rpm.

**The driving speed of the tractor while working with the shredder should not exceed 10 Km/h, so as to avoid breakings and damages (see picture).**




## 5.6 USEFUL SUGGESTIONS

While the machine is working it is possible that the rotating blades lift rocks and other blunt objects.

Therefore, constantly make sure that there are no people, children or pets within the radius of actions of the machine. The driver must also pay attention to what has been described.

Do not let the machine run idle (off the ground). When working, avoid to turn bends with the machine lowered to the ground, and never work in reverse gear.

Whenever changing directions or driving in reverse gear always lift the machine off the ground. When transporting the machine and whenever it becomes necessary to lift the machine, it is advisable to adjust the lifting system of the tractor so that the machine is not lifted by more than 30÷35 cm. off the ground.

Avoid driving on public roads with the machine dirty with earth, grass or other materials which may soil the road or impair road traffic.

Never drop the machine to the ground suddenly but lower it slowly. In the opposite case strong stresses would be caused on all the machine components, which might compromise its integrity.

## 5.7 UNHITCHING

In order to unhitch the machine from the tractor, proceed as follows:
- disengage the tractor PTO;;
- lower the implement to the ground, turn off the engine and pull the hand-brake.
- disconnect the universal joint from the tractor PTO and rest it on the its supporting hook.
- engage the supporting stands before you unhitch the machine .
- Unhitch the 3-point hitch by performing the operations described in paragraph 4.3 in inverted order.

## 5.8 STORAGE

When the machine is to remain idle for a long period of time, in order to keep it sound in all of its components, it is necessary to perform the following operations:

a) Carefully wash the machine, especially wash off fertilizers and chemical products etc. then dry it..
b) Make sure that the machine is in perfect working conditions..
**It will be to your advantage to find it ready for use the next time you need it.**
c) Protect all unvarnished metal parts with lubricants, then cover it or store it in a dry place.

## 5.9 PROBLEMS AND PROBLEM SHOOTING

- If, while working, you notice strange sounds coming from the machine, stop and make sure you have restored the correct working conditions
- To work with a machine which does not perform correctly causes dangerous situations for the user.

Working on a hillside
Whenever possible work “uphill” following the incline. If it is not possible to avoid working on the sides of the hill, drive from the top to the bottom in order to reduce the “terrace” effect..

Practical remarks:
The worked area should always be at the right-hand side of the driver. The best way is to work on alternate strips..

| **PROBLEMS AND THEIR CAUSES** | | | |
|---|---|---|---|
| ***Problem*** | | ***Cause*** | ***Solution*** |
| **Excessive vibrations** | 1 | Blades or hammers broken or too worn out | Replace the worn-out or broken parts |
| | 2 | Blades or hammers stuck on their pins | Clean and grease the pins |
| | 3 | Insufficient balancing of the rotor | Have the rotor checked for balance by a specialist |
| | 4 | Rotor bearings worn out | Take down and replace the bearings |
| **Insufficiently even cut because of a decrease of the rotor speed** | 1 | Insufficient tension of the belts | Adjust the tension |
| | 2 | Belts too worn out | Replace the belts |
| **Belts overheat** | 1 | Wrong tension of the belts | Check the tension |
| | 2 | Working position too low on the ground | Adjust working height |
| | 3 | The axis of the transmission and the axis of the rotor are not alligned | Adjust alignment of the pulleys |
| **Bevel gear pair overheats** | 1 | Lack of oil | Top up oil |
| | 2 | Oil is exhausted | Change oil |
| **The blades or hammers wear out too quickly** | 1 | Working position is too low | Increase the height of the rotor from the ground |
| **Oil leaks from the transmission on the belt side** | 1 | Oil seal is either broken or worn out | Replace oil seal |
| **The supports of the rear roller or the wheels are deformed** | 1 | The supports of the roller or of the wheels have undergone excessive lateral stress | Lift the machine off the ground when driving in reverse gear |

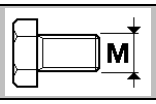
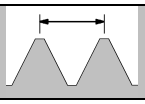
| | | | |
|---|---|---|---|
| **Side protection plates are bent out of shape** | 1 | The machine has been lowered on the material to be shredded from a position off the ground (transport position) | The machine must be in its working position before it meets the material to be shredded |
| **Belts wear out too much** | 1<br>2 | Wrong tension of the belts<br>The transmission pulleys are not alligned | Adjust the tension<br>Adjust the alignment of the pulleys |
| **Transmission organs broken** | 1 | The machine has been started or stopped too suddenly | Replace damaged parts |

### 5.10 FURTHER ADVISE TO THE TRACTOR DRIVER

| ***Problem*** | | ***Cure*** |
|---|---|---|
| **The material to be shredded is minced too small** | 1<br><br><br><br>2 | Lift the machine slightly off the ground by adjusting the height through the wheels (the blades of the shredder should never touch the ground)<br><br><br><br>Increase the driving speed |
| **The material to be shredded is left too coarse** | 1<br><br>2<br>3 | Slightly lower the machine to the ground<br><br>Reduce driving speed<br>Do not work if the soil is too wet |
| **The rotor gets clogged** | 1<br>2<br>3<br>4<br><br>5 | The soil is too wet for work<br>Lift the machine higher from the ground<br>Reduce driving speed<br>Avoid working if the grass is too high<br><br>Eventually free the ends of the rotor from material which has got tangled around the supports, in order to prevent overheating |
| **The machine bounces on the ground or it vibrates** | 1<br><br>2<br><br><br>3<br>4 | There are foreign bodies between the blades<br><br>The blades are mounted incorrectly without the necessary helical arrangement or their edges dig into the ground<br><br><br>Replace worn-out or broken blades<br>The rotor has become deformed, due to blows received in its central area while working |
| **The machine does not work at an even height along its entire width** | 1 | If it minces too much on its right-hand side, for instance, shorten the right-hand lower arm |

## 6.1 CHECK-UPS AND CONTROLS

During the first 8 hours of work it is advisable to check the tightness of all the nuts and bolts, since the stress generated while the machine is working creates a settling of its structure. If necessary tighten according to the chart and repeat this check-up every 50 working hours

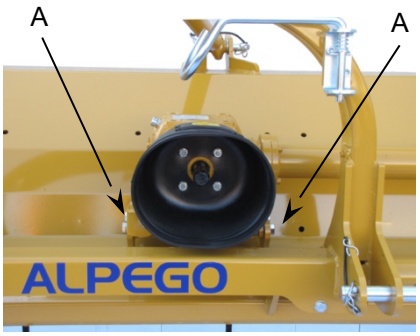
|  |  |  | 8.8 [ Nm ] | 10.9 [ Nm ] | 12.9 [ Nm ] |
|---|---|---|---|---|---|
| 13 | M 8 | 1.25 | 25 | 37 | 44 |
| | | 1.00 | 27 | 40 | 47 |
| 17 | M 10 | 1.50 | 50 | 73 | 86 |
| | | 1.25 | 53 | 78 | 91 |
| 19 | M 12 | 1.75 | 86 | 127 | 148 |
| | | 1.25 | 95 | 139 | 163 |
| 22 | M 14 | 2.00 | 137 | 201 | 235 |
| | | 1.50 | 150 | 220 | 257 |
| 24 | M 16 | 2.00 | 214 | 314 | 369 |
| | | 1.50 | 229 | 336 | 393 |
| 27 | M 18 | 2.50 | 306 | 435 | 509 |
| | | 1.50 | 345 | 491 | 575 |
| 30 | M 20 | 2.50 | 432 | 615 | 719 |
| | | 1.50 | 482 | 687 | 804 |
| 32 | M 22 | 2.50 | 502 | 843 | 987 |
| | | 1.50 | 654 | 932 | 1090 |
| 36 | M 24 | 3.00 | 744 | 1080 | 1240 |
| | | 2.00 | 814 | 1160 | 1360 |

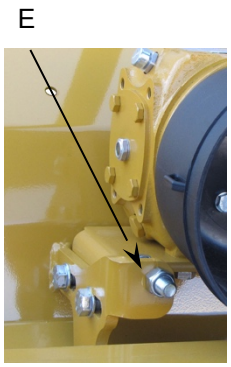
## 6.2 LATERAL TRANSMISSION

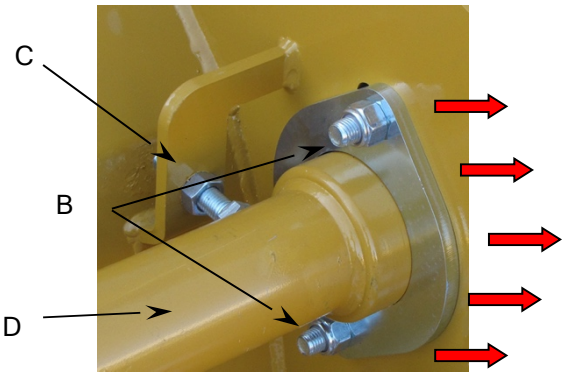
The transmission of the driving motion to the rotor occurs through belts with adjustable pulleys.
In order to prevent the belts from slipping or from malfunctioning, check the tension of the transmission belts.

**Tensioning the transmission belts**
In order to do this, make sure that the engine is switched off:
- Remove the screws holding the protecting cover in place and remove it by pulling it ;
- In order to check the tension, press on the belt in its central area between the two pulleys with a force of 6 Kg. so as to create a 1 cm. depression on each single belt
- Unscrew the screws holding the gearbox to the frame of the machine;
- Act on the two adjustment screws until the belts have reached the correct tension;
- When the belts have been tensioned correctly check the alignment of the pulleys;
- Tighten all the screws which have been loosened;
- Replace the cover of the belt housing .

The belts must be checked regularly after the first 2 hours of work and, after that, every 8 working hours, in order to prevent the belts from slipping too much. If they do, the fact becomes noticeable because of the smoke coming out of the belt housing. In this case it is necessary to replace all of the belts, so as to guarantee the correct tension and a uniform distribution of the forces, even if a single belt is damaged.

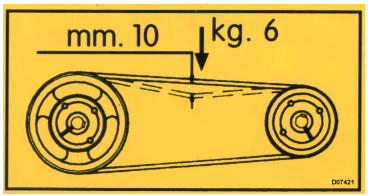



Loosen the screws A and B (see picture) increase or decrease the tension of the belts by acting on the screws C and E.
Try and keep shaft D always in a horizontal position.
While tensioning the belts pay the utmost attention to the planarity of the pulleys.
Press on the belt in the middle between the two pulleys with a force of 6 Kg., in order to produce a deformation of 1 cm. on each single belt.

It is advisable to use a metal ruler of adequate length which, when resting on the edges of the two pulleys touches the 4 edges.

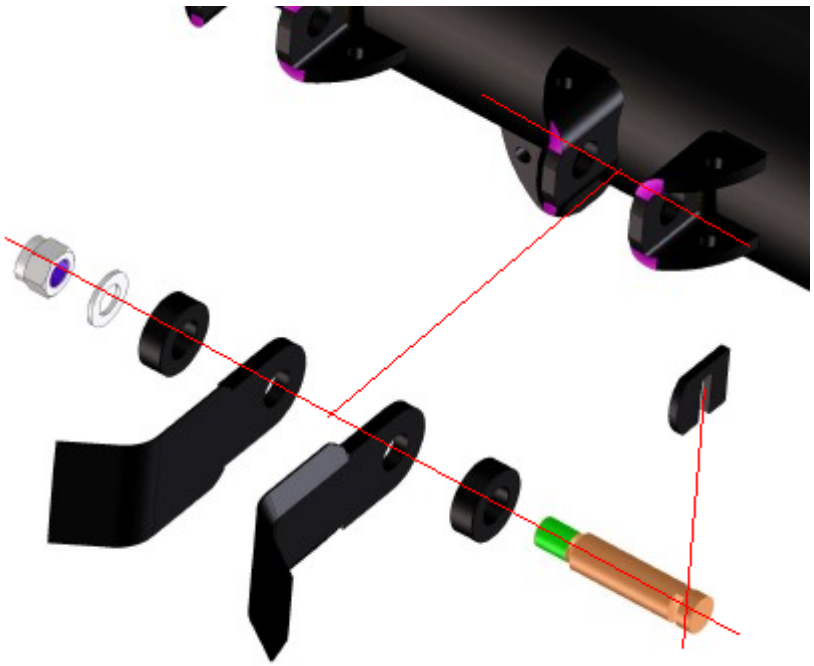



## 6.3 REPLACING THE BLADES OR THE HAMMERS

In order to replace the hammers it is necessary:

- To place the machine mounted on the tractor on a flat surface
- With the lifting system of the tractor lift the machine as high as possible from the ground
- Place adequate props under both ends of the machine
- Turn off tractor engine and pull hand-brake
- Replace blades and tighten forcefully the bolts with the nuts that hold them (tightening torque **50Nm**)

The locking of the pins holding the blades can be achieved with cotter pins or nuts, depending on the model of the machine



Limit the tightening torque to **50Nm** to tighten the nuts on the pins

## 6.4 LUBRICATION

**Always read carefully the directions given on the containers of the products. Always keep oils and grease out of the reach of children. Avoid any contact with your skin. After using the products always wash carefully and thoroughly. Dispose of spent oils following the environment protection rules in force.**

**The scheduled operations listed in this Manual are given by way of information only and they refer to normal conditions of use of the implement. Therefore, it may be necessary to modify them depending on the type of work performed, the more or less dusty environment, season factors etc. If the working conditions are particularly severe, it obviously becomes necessary to increase the number of maintenance operations.**

- **Before you inject the lubricating grease through the grease nipples, it is necessary to carefully clean the nipples, in order to prevent mud, dust or other foreign bodies from mixing with the grease, which would decrease and, in some cases, even completely nullify the effect of the lubrication**
- **When topping up or changing the oil, it is necessary to use the same type of oil which has been used the previous time.**

Before starting up the machine for the first time, check the level of the lubricants as described. Before checking the levels, topping up or changing the lubricants, carefully clean the parts or the areas involved.
Before you start working with the machine, always check the oil level in the gearbox through the level indicator or by means of the dip stick. Top up, if necessary, by pouring oil through the oil-filling cap.

Undertake the first oil change after 30 working hours and, after that, after 400 hours or, at least, once a year. This operation must be performed in a workshop equipped with lifting means able to take the weight of the machine, which should then be propped up with adequate supports. Discharge the oil by removing the discharge cap.

**Every 8 hours :**

- Grease the yokes of the universal joint
- Grease the rotor bearings
- Check the tightness of the bolts
- Check the tension of the belts

**Every 50 hours :**

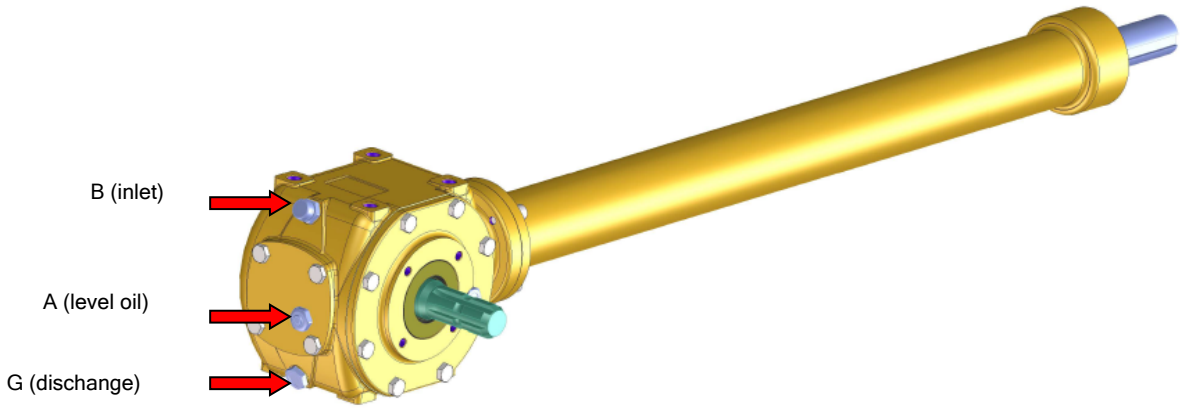
- Check the oil level in the gearbox

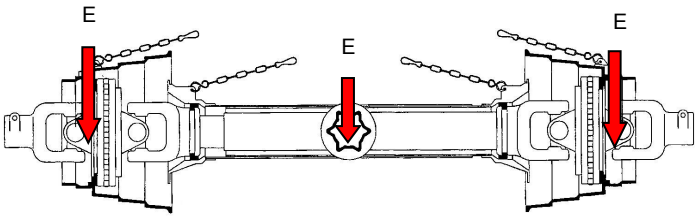
**Every 400 hours :**

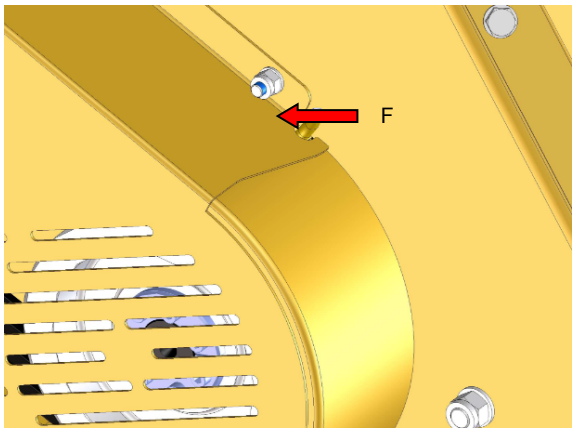
- Change the oil in the gearbox completely , by discharging all the oil through the discharge cap placed under the gearbox

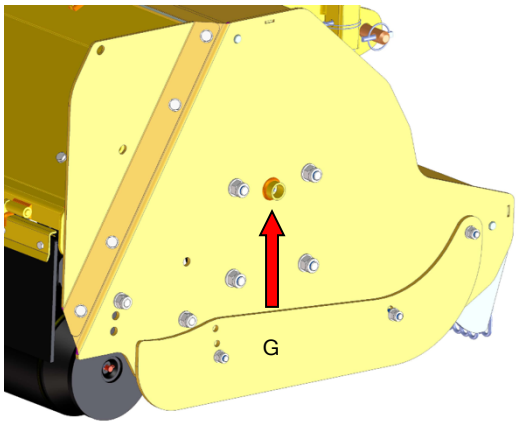
### 6.4 LUBRICATION SCHEDULE

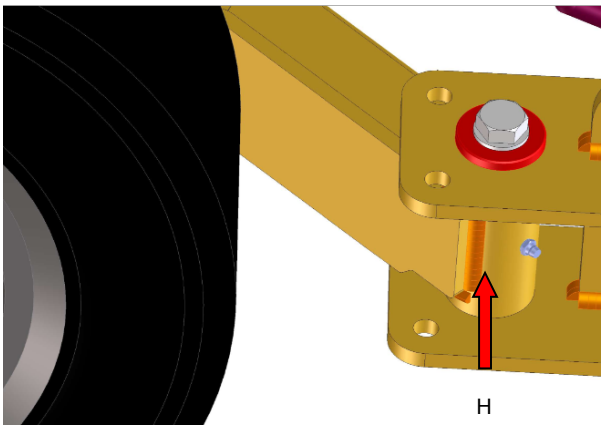
| FREQUENCY h=hours | OPERATION | POINT TO BE LUBRICATED |
|---|---|---|
| Every **8/10h** of work | -GREASE THROUGH THE APPROPRIATE GREASE NIPPLES<br>-GREASE THE TUBES AND YOKES OF THE UNIV. JOINT<br>-CHECK OIL LEVEL, TOP UP IF INSUFFICIENT | **A – B – G**<br>**F – H – L – M** |
| After the first **30h of work** | **CHANGE** THE OIL IN THE GEARBOX | **A – B – G** |
| every **400/450h** of work | -**CHANGE** COMPLETELY THE OIL IN THE GEARBOX AND CLEAN THE DISCHARGE CAPS IF MAGNETIC | **A – B – G** |

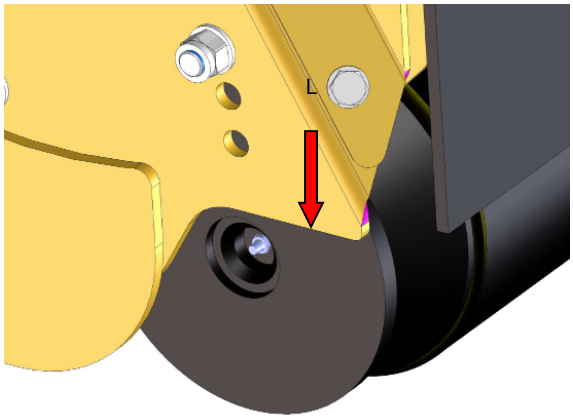





### 6.6 CHART OF THE LUBRICANTS TO BE USED ( L.= liters )

## OIL:

| Spot to be lubricated | Model (Quantity) | Reference Product (first filling by Alpego) | Viscosity of alternative product | International specs of alternative product |
|---|---|---|---|---|
| **B** | TT93-160 (L.1,9) | Pakelo GEAR OIL EP/E GL-5 SAE 85W/90 | SAE 85W/90 (secondo SAE J306) | API GL-5 MIL-L-2105D |
| | TT93-200 (L.1,9) | | | |
| | TT93-230 (L.2,0) | | | |
| | TT93-250 (L.2,0) | | | |
| | TT97-280 (L.4,0) | | | |
| | TT93-300 (L.4,0) | | | |
| | TT93-320 (L.4,0) | | | |

## GREASE:

| Spot to be lubricated | Reference Product (first filling by Alpego) | Thckness of alternative product | Remarks |
|---|---|---|---|
| **E – F – H – L – M** | Pakelo EP GREASE NLGI 2 | NLGI 2 | 0,01 Kg per grease nipple |

# 7 - OPTIONS

**The machine can be equipped with different options: please, keep in mind that each option added modifies the weight of the machine. Therefore, make sure that the stability of the tractor is not compromised**

**NOTES:**

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**Alpego S.p.a con Socio Unico**
Via Giovanni e Giuseppe Cenzato, 9
36045 - Lonigo (VI) Italy
Tel: 0444 646100
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