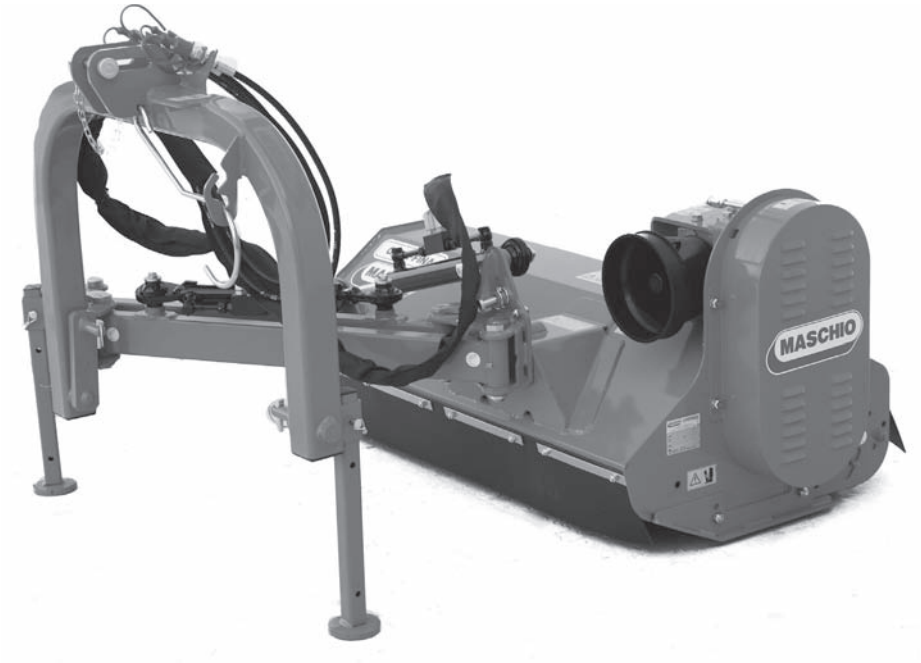
MASCHIO

MASCHIO GASPARDO S.p.A.



GIRAFFINA

IT **USO E MANUTENZIONE**

EN ***USE AND MAINTENANCE***

Original manual written in ITALIAN

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ITALIANO

Dichiarazione di Conformità CE

Dichiariamo sotto la nostra responsabilità che la macchina è conforme ai requisiti di sicurezza e salute previsti dalla Direttiva Europea 2006/42/CE e 2014/30/UE (ove applicabile), come riportato nella “Dichiarazione CE di Conformità” di cui ogni macchina è dotata.

MASCHIO GASPARDO non si assume nessuna responsabilità derivanti dall'utilizzo della macchina, applicata ad altri prodotti che non rispondono alla normative europee.

Qualora la macchina venga da lei rivenduta a terzi, la dichiarazione di conformità deve essere ceduta con essa.

ENGLISH

EC Declaration of Conformity

We hereby declare under our own responsibility that the machine complies with the safety and health requirements established by European Directive 2006/42/EC and 2014/30/UE (where applicable), as shown in the “CE Declaration of Conformity” provided with every machine.

MASCHIO GASPARDO declines all liability arising from use of the machine on products that do not correspond to European standards.

If the machine should be sold to a third party, the declaration of conformity must be handed over together with it.

DEUTSCH

EG-Konformitätserklärung

Hiermit erklären wir unter unserer eigenen Verantwortung, dass die Maschine den Sicherheits- und Gesundheitsschutzanforderungen der Richtlinie 2006/42/EG und 2014/30/UE (wo anwendbar) entspricht. Dies wird in der „EGKonformitätserklärung“ bestätigt, mit der jede Maschine ausgestattet ist.

Die Firma MASCHIO GASPARDO übernimmt keine Haftung für Schäden, die sich aus der Nutzung der Maschine ergeben, wenn diese an andere Produkte angebracht wurde, die nicht den europäischen Standards entsprechen.

Sollte die Maschine von Ihnen an Dritte weiterverkauft werden, so muss die Konformitäts-serklärung diese begleiten.

FRANÇAIS

Déclaration de Conformité CE

Nous déclarons sous notre responsabilité que la machine est conforme aux prescriptions de sécurité et de santé prévues par la Directive Européenne 2006/42/CE et 2014/30/UE (le cas échéant), comme il est indiqué dans la « Déclaration de Conformité CE » dont chaque machine est pourvue.

MASCHIO GASPARDO décline toute responsabilité en cas d'utilisation de la machine appliquée à d'autres produits qui ne répondent pas aux normes européennes.

Si vous revendez la machine à des tiers, la déclaration de conformité doit être cédée avec celle-ci.

DANSK

EU-overnesstemmelseserklæring

Vi erklærer på eget ansvar, at maskinen opfylder kravene vedrørendesikkerhed og arbejdsmiljø, der er fastsat i direktivet 2006/42/EF og 2014/30/UE (hvor det er relevant), som angivet i "EU-overensstemmelseserklæringen", som hver maskine er udstyret med.

MASCHIO GASPARDO påtager sig intet ansvar for brugen af maskinen, hvis denne anvendes på andre produkter, der ikke overholder de europæiske standarder.

IHvis maskinen videresælges til tredjepart, skal overensstemmelseserklæringen videregives med maskinen.

ESPAÑOL

Declaración de Conformidad CE

Declaramos bajo nuestra responsabilidad que la máquina respeta los requisitos de seguridad y salud previstos por la Directiva Europea 2006/42/CE y 2014/30/UE (cuando proceda), como se indica en la “Declaración CE de Conformidad” que lleva cada máquina.

MASCHIO GASPARDO no se asume ninguna responsabilidad en caso de uso de la máquina, aplicando a otros productos que no responden a las normativas europeas.

En caso de que se ceda la máquina a terceros, la declaración de conformidad debe cederse con la misma.

SVENSKA

Försäkran om EU-överensstämmelse

Vi försäkrar på eget ansvar att maskinen är i överensstämmelse medkraven på säkerhet och hälsa enligt direktivet 2006/42/EG och 2014/30/UE (i tillämpliga fall), såsom anges i den "EG-försäkran om överensstämmelse" med vilken varje maskin är försedd.

MASCHIO GASPARDO tar inget ansvar i samband med användning av maskin som har applicerats på andra produkter som inte uppfyller de europeiska standarderna.

Om maskinen vidareförsäljs till tredje part måste försäkran om överensstämmelse åtfölja denna.

PORTUGUÊS

Declaração de Conformidade CE

Declaramos sob a nossa responsabilidade que a máquina está em conformidade com os requisitos de segurança e saúde previstos pela Directiva Europeia 2006/42/CE y 2014/30/UE (onde aplicável), como indicado na “Declaração CE de conformidade” com a qual cada máquina é dotada.

MASCHIO GASPARDO não se responsabiliza pelo uso da máquina aplicada a outros produtos não em conformidade com as normativas europeias.

Se a máquina adquirida for vendida a terceiros, a declaração de conformidade deve ser cedida juntamente com a máquina.

NORSK

EU overensstemmelseserklæring

Vi erklærer under eget ansvar at maskinen er i samsvar med kravenefor sikkerhet og helsevern foreskrevet i direktivet 2006/42/EF og 2014/30/UE (der det er aktuelt), som angitt i “EU-overensstemmelseserklæring” som hver maskin er utstyrt med.

MASCHIO GASPARDO påtar seg intet ansvar som følge av bruk av maskinen, anvendt på andre produkter som ikke overholder europeiske forskrifter.

Hvis maskinen videreselges av deg til en tredjepart, må samsvarserklæringen overleveres med maskinen.

NEDERLANDS

EG Verklaring van Overeenstemming

Wij verklaren onder eigen verantwoordelijkheid dat de machine inovereenstemming is met de veiligheids- en gezondheidsvoorschriftenvolgens de Europese richtlijn 2006/42/EG en 2014/30/UE (waar van toepassing), zoals vermeld wordt in de “CE-Conformiteitsverklaring waarmee iedere machine uitgerust is.

MASCHIO GASPARDO stelt zich o generlei wijze aansprakelijk ingevolge het gebruik van de machine dat toegepast wordt op andere producten die niet aan de Europese normen voldoen.

Mocht u de machine aan anderen doorverkopen, dan moet de conformiteitsverklaring met de machine meegeleverd worden.

SUOMI

Vakuutus EY yhdenmukaisuudesta

Vakuutamme omalla vastuullamme, että kone täyttää direktiivin 2006/42/EY ja 2014/30/UE (tarvittaessa) turvallisuutta ja terveyttä koskevat vaatimukset, kuten ilmoitettu jokaisen koneen mukana tulevassa ”Vakuutus EY yhdenmukaisuudesta”.

MASCHIO GASPARDO ei vastaa millään tavoin koneen käytöstä muiden tuotteiden kohdalla, jotka eivät vastaa EU-määräyksiä.

Jos myyt koneen kolmansille osapuolille, vaatimustenmukaisuusvakuutus on annettava koneen mukana.

ΕΛΛΗΝΙΚΑ

ΔήλωσησυμμόρφωσηςΕΚ

Δηλώνουμε, αναλαμβάνοντας πλήρως την ευθύνη αυτής της δήλωσης, ότι το μηχάνημα πληροί τις απαιτήσεις ασφάλειας και υγιεινής που προβλέπονται από την Ευρωπαϊκή Οδηγία 2006/42/ΕΚ μ 2014/30/UE (Οπου μπορεί να εφαρμοστεί), όπως φαίνεται στη "Δήλωση Συμμόρφωσης ΕΚ" που κάθε μηχάνημα διαθέτει.

Η MASCHIO GASPARDO δεν αναλαμβάνει καμία ευθύνη που προκύπτει από τη χρήση του μηχανήματος, όταν εφαρμόζεται σε άλλα προϊόντα που δεν πληρούν τις ευρωπαϊκές προδιαγραφές.

Αν το μηχάνημα μεταβιβαστεί από εσάς σε τρίτους, η δήλωση συμμόρφωσης πρέπει να μεταβιβαστεί με αυτό.

ČESKY

ES Prohlášení o shodě

Prohlašujeme na vlastní zodpovědnost, že stroj vyhovuje základnímpožadavkům na ochranu bezpečnosti a zdraví předpokládaným vEvropské Směrnici 2006/42/ES a 2014/30/UE (v příslušných případech), jak je uvedeno v „ES Prohlášení o shodě“, kterým je každý stroj vybaven.

Společnost MASCHIO GASPARDO nepřebírá žádnou odpovědnost za používání stroje na jiné výrobky, které neodpovídají evropským normám.

Pokud prodáte stroj třetím stranám, musí být prohlášení o shodě převedeno společně se strojem.

LIETUVIŠKAI

EG-Konformitätserklärung

Prisiimdami atsakomybę, deklaruojame, kad ši mašina atitinkaEuropos Direktyvoje 2006/42/EB ir 2014/30/UE (jei taikoma) numatytus saugumo ir sveikatosreikalavimus, kaip nurodyta „EG-Konformitätserklärung“, kurią turi kiekviena mašina.

„MASCHIO GASPARDO“ neprisiima jokios atsakomybės, jei mašina buvo naudojama prijungta prie kitų gaminių, kurie neatitinka Europos reglamentų.

Jei mašiną parduosite kitam naudotojui, atitikties deklaracija turi būti perduota kartu su ja.

SLOVENŠČINA

ES Izjava o skladnosti

S polno odgovornostjo izjavljamo, da je stroj skladen z zahtevami za varnost in zdravje, ki so predvidene z evropsko direktivo 2006/42/ES in 2014/30/UE (v príslušných prípadoch), kot navedeno v „ES Izjava o skladnosti“, ki je priložena vsakemu stroju.

MASCHIO GASPARDO ne prevzema odgovornosti za uporabo stroja z izdelki, ki ne ustrezajo evropskim predpisom.

IČe bi stroj prodali tretji osebi, morate z njim izročiti tudi izjavo o skladnosti.

EESTI KEEL

EÜ vastavusdeklaratsioon

Kinnitame ja kanname vastutust selle eest, et masin vastab Euroopadirektiiviga 2006/42/EÜ ja 2014/30/UE (vajaduse korral) sätestatud ohutus- ja tervisenõuetele, Vastavalt EÜ vastavusdeklaratsioonile, millega on varustatud kõik masinad, ei võta.

MASCHIO GASPARDO endale mingit masina kasutamisest tulenevat vastutust juhul, kui seda kohaldatakse teistele toodetele, mis ei vasta Euroopa õigusaktidele.

Juhul kui müüte masina edasi kolmandatele isikutele, tuleb masinaga üle anda ka EÜ vastavusdeklaratsioon.

ROMÂNA

Declaraţie de conformitate CE

Declarăm pe propria răspundere că masina este conformă cerinţelorde siguranţă si sănătate prevăzute de Directiva Europeană 2006/42/CE şi 2014/30/UE (unde se aplică), aşa cum se menţionează în “Declaraţia de Conformitate CE” livrată cu fiecare maşină.

MASCHIO GASPARDO nu îşi asumă răspunderea în cazul utilizării maşinii pentru produse neconforme cu standardele europene.

În cazul vânzării maşinii către o terţă parte, declaraţia de conformitate se va preda împreună cu maşina.

LATVISKI

EK Atbilstības deklarācija

Paziņojam, ka uzņemamies atbildību par mašīnas atbilstību EiropasSavienības Direktīvas 2006/42/EK un 2014/30/UE (vajadzības gadījumā) prasībām par drošību un veselību, kā norādīts "EK atbilstības deklarācijā", ar kuru katra iekārta ir aprīkota

MASCHIO GASPARDO neuzņemas atbildību par iekārtas lietošanu, kas izmantota citiem produktiem, kuri neatbilst Eiropas standartiem.

Ja iekārtu tālāk pārdodat trešai pusei, kopā ar to jānodod atbilstības deklarācija.

SLOVENSKY

ES Vyhlásenie o zhode

Vyhlasujeme na vlastnú zodpovednosť, že stroj vyhovuje základnýmpožiadavkám na ochranu bezpečnosti a zdravia predpokládaným vEvropskej Smernici 2006/42/ES a 2014/30/UE (kjer pride to v poštev), ako je uvedené vo “Vyhlásení o zhode CE” priloženom ku každému stroji.

Spoločnosť MASCHIO GASPARDO neprijíma žiadnu zodpovednosť plynúcu z používania stroja spolu s inými výrobkami, ktoré nie sú v súlade s európskymi predpismi.

V prípade predaja stroja tretím stranám je treba priložiť aj vyhlásenie o zhode.

MALTI

Dikjarazzjoni tal-Konformità tal-KE

Niddikjaraw taħt ir-responsabbiltà tagħna li l-magna tikkonforma malħtiäijiettas-saħħa u ssigurtà stabbiliti mid-Direttiva Ewropea 2006/42/KE u 2014/30/UE (fejn applikabbli), kif irrappurtat fid-"Dikjarazzjoni tal-Konformità CE" provduta fuq kull magna.

MASCHIO GASPARDO ma jassumi l-ebda responsabbiltà għall-użu tal-magna, applikat għal prodotti oħra li ma jikkonformawx mal-istandards Ewropej.

Jekk il-magna tinbiegħ mill-ġdid lil partijiet terzi, id-dikjarazzjoni ta' konformità trid tiġi trasferita maħħa.

POLSKI

Deklaracja zgodności WE

Oświadczamy z pełną odpowiedzialnością, że maszyna jest zgodnaz wymaganiami bezpieczeństwa i zdrowia przewidzianymi przezDyrektywę Europejską 2006/42/CE i 2014/30/UE (gdzie ma zastosowanie), jak wskazano w „Deklaracji zgodności CE” wydanej dla maszyny.

MASCHIO GASPARDO nie ponosi żadnej odpowiedzialności za użytkowanie maszyny w zestawieniu z innymi produktami, które nie spełniają norm europejskich.

Jeśli będą Państwo sprzedawali maszynę osobom trzecim, należy przekazać im także deklarację zgodności.

MAGYAR

EK megfelelőségi nyilatkozat

Saját felelősségünk tudatában kijelentjük, hogy a gép megfelel az 2006/42/CE és 2014/30/UE (adott esetben) Európai direktívában rögzített egészségügyi és biztonságikövetelményeknek, ahogyan azt a gépekhez mellékelt „EK-megfelelőségi nyilatkozat“ is tanúsítja.

A MASCHIO GASPARDO nem vonható felelősségre az olyan használatból eredő károkért vagy sérülésekért, amikor a gép olyan más egységekre kerül felszerelésre, amelyek nem felelnek meg az uniós előírásoknak.

Továbbértékesítés esetén a megfelelőségi nyilatkozatot mellékelni kell az új tulajdonosnak.

БЪЛГАРСКИ

ЕС Декларация за съответствие

Декларираме на своя отговорност, че машината отговаряна изискванията за безопасност и здраве, регламентиранив европейска Директива 2006/42/CE и 2014/30/UE (ако е приложимо), както е посочено в “ЕС Декларация за съответствие”, с която е снабдена машината.

Фирма MASCHIO GASPARDO не поема никаква отговорност вследствие на използването на машината за други продукти, които не отговарят на европейската нормативна уредба.

В случай, че препродадете машината на трети лица, декларацията за съответствие трябва да се прехвърли заедно с нея.

ITALIANO

INDICE

1.0 Premessa..... 7
1.1 Generalità..... 7
1.2 Garanzia..... 10
1.2.1 Scadenza garanzia..... 10
1.3 Identificazione dell'attrezzatura..... 10

2.0 Indicazioni generali di sicurezza..... 11
2.1 Segnali di sicurezza e indicazione..... 11
2.1.1 Segnali di avvertenza..... 11
2.1.2 Segnali di pericolo..... 11
2.1.3 Segnali di indicazione..... 11
2.2 Norme di sicurezza e prevenzione infortuni..... 12

3.0 Descrizione della macchina..... 15
3.1 Dati tecnici..... 16
3.2 Disegno complessivo..... 17
3.3 Movimentazione..... 18

4.0 Norme d'uso..... 20
4.1 Applicazione al trattore..... 20
4.1.1 Aggancio al trattore..... 20
4.1.2 Sgancio della macchina dalla trattrice..... 21
4.2 Adattamento albero cardanico..... 21
4.3 Stabilità in trasporto attrezzatura combinata-trattore..... 22
4.4 Trasporto stradale..... 23
4.5 Modalità di trasporto..... 24
4.6 Regolazione dell'altezza di lavoro..... 24
4.7 Regolazione delle slitte e del rullo..... 24
4.8 Posizione di lavoro della macchina..... 24
4.9 Coltelli..... 25
4.10 Sostituzione dei coltelli..... 26
4.11 Sostituzione cinghie..... 27
4.12 Spostamento..... 27
4.13 Spostamento idraulico..... 27
4.14 Rullo..... 28
4.15 In lavoro..... 28
4.16 Come si lavora..... 29
4.17 Parcheggio..... 30
4.18 Consigli utili per il trattorista..... 30

5.0 Manutenzione..... 31
5.1 Piano di manutenzione - tabella riassuntiva..... 32
5.2 Inconvenienti, cause e rimedi..... 33

6.0 Demolizione e smaltimento..... 33

ENGLISH

INDEX

1.0 Introduction..... 35
1.1 General..... 35
1.2 Guarantee..... 38
1.2.1 Expiry of guarantee..... 38
1.3 Identification..... 38

2.0 General safety rules..... 39
2.1 Danger and indicator signals..... 39
2.1.1 Warning signals..... 39
2.1.2 Danger signals..... 39
2.1.3 Indicator signals..... 39
2.2 Safety regulations and accident prevention..... 40

3.0 Description of the machine..... 43
3.1 Technical data..... 44
3.2 Assembly drawing..... 45
3.3 Handling..... 46

4.0 Rules of use..... 48
4.1 Coupling to the tractor..... 48
4.1.1 Hooking the machine to the tractor..... 48
4.1.2 Unhooking the machine from the tractor..... 49
4.2 Adapting the cardan shaft..... 49
4.3 Stability of planting unit and tractor during transport..... 50
4.4 Transport..... 51
4.5 Transport method..... 52
4.6 Adjustment of working height..... 52
4.7 Adjusting the skids and roller..... 52
4.8 Work position of the machine..... 52
4.9 Blades..... 53
4.10 Replacing blades..... 54
4.11 Replacing the belts..... 55
4.12 Shifting..... 55
4.13 Hydraulic shifting..... 55
4.14 Roller..... 56
4.15 In work..... 56
4.16 How to work..... 57
4.17 Parking..... 58
4.18 Useful advice for the tractor driver..... 58

5.0 Maintenance..... 59
5.1 Maintenance plan - summary table..... 60
5.2 Problems, causes and solutions..... 61

6.0 Demolition and disposal..... 61

ENGLISH

1.0 INTRODUCTION

This Instruction Manual for Operation (hereafter called “the Manual”) provides the operator with useful information on how to simplify the machine use by operating it correctly and in safe conditions.
The sections below must not be considered as a long and burdensome list of warnings: they must be regarded as a number of instructions that improve machine performance and prevent damage to persons, objects or animals originating from incorrect machine operation and use.
It is essential that each operator in charge of transporting, installing, commissioning, operating, maintaining, repairing and dismantling the machine consults this manual and read it carefully before carrying out any operation. This will help him avoid incorrect manoeuvres and prevent inconveniences that may jeopardise the machine integrity and eventually result in risks for operators’ safety.
If you are still in doubt or have points to clear on machine operation after reading this manual, do not hesitate to contact the Manufacturer who will be ready to assist you promptly and carefully for better and most efficient machine operation.
Finally, we would like to point out that existing regulations on safety, hygiene at work and environmental protection must always be adhered to during all the phases of machine operation. The operator must therefore check that the machine be operated exclusively in optimised safety conditions for both persons and objects.
This manual is to be considered as an integral part of the product. Therefore, along with the Declaration of Conformity, it must be stored in a safe place where it can be consulted during the entire machine life and passed on to the new owner.
This manual was drawn up according to the regulations existing at the time when it was printed.
The Manufacturer reserves the right to change the machine without having to promptly update this manual. In the event of disputes, the valid version is the Italian text.
Some of the pictures in this manual show details or accessories which may be different from those fitted in your machine. Components or guards may have been removed to make images more useful.

1.1 GENERAL

Conventional symbols:
To identify and make different danger types recognisable, the following symbols are used in the manual:

WARNING! DANGER FOR OPERATORS’ HEALTH AND SAFETY.	WARNING! RISK OF DAMAGE TO MACHINE OR DRILL PRODUCT.

In the text, symbols are accompanied by safety warning messages: these are short sentences to further exemplify the type of risk/danger. Warning texts guarantee the safety of operators and prevent damage to the machine or drill product.
The drawings, pictures and diagrams in this manual are not scaled. They exemplify the information provided in the text and are an addition to it: they are not meant to illustrate the supplied machine in details. For a more comprehensive overview of the machine, drawings, pictures and diagrams represent the machine, or parts of it, without the protections or guards in most cases.
Finally, a few words on annexes. As they are photocopies of catalogues, drawings, etc., they have the original ID and page numbers (when provided with it). If they are not originally provided with a numbering, they are not given one.

Definitions:
Below is a list of definitions of the main terminology used in this Manual. Read these definitions carefully before consulting the Manual.

- **OPERATOR**: ..... The person/s charged with installing, starting up, adjusting, carrying out maintenance, cleaning, repairing or transporting a machine.
- **DANGER ZONE**: ..... any area inside a/o near a machine in which the presence of an exposed person constitutes a risk for the safety and health of that person.
- **DANGER CONDITION**: ..... Any condition in which an operator is exposed to one or several risks.
- **RISK**: ..... A combination of likelihood and seriousness of possible injuries or damage to the operator's health in a danger condition.
- **PROTECTIONS** ..... Safety measures consisting in installation of specific technical systems (guards and safety devices) to protect operators against dangers.
- **GUARD**: ..... An element on the machine which is used in a specific way to protect the operator by means of a physical barrier. Depending on its construction, it can be a shroud, a cover, a shield, a door, a fence, a guard, a segregation unit, etc.
- **EXPOSED PERSON**: ..... Any person who happens to be completely or partially in a danger zone.
- **USER**: ..... The user is the person or the organization or the firm which has purchased or rented the machine and intends to use it for the purposes it was conceived for.
- **QUALIFIED PERSONNEL**: ..... Those persons who have been specially trained and qualified to carry out interventions of maintenance or repair requiring a particular knowledge of the machine, its functioning, safety measures, methods of intervention - and who are in a position to recognize the potential dangers when using the machine and are able to avoid them.
- **TRAINED PERSONNEL**: ..... These are operators that have been informed or trained on the operating tasks and relating risks.
- **AUTHORIZED SERVICE CENTER**: ..... The authorized Service Center is a structure legally authorized by the manufacturer which disposes of personnel specialized and qualified to carry out all the operations of assistance, maintenance and repair - even of a certain complexity - found necessary to keep the machine in perfect working order.

Responsibility
The **Manufacturer declines any direct or indirect responsibility** in the following cases:
- incorrect machine operation for non-intended uses;
- machine operation by unauthorised operators who have not been trained and do not have a driving license;
- non-performance of scheduled maintenance;
- unauthorised changes or work;
- installation of non-genuine and specific spare parts;
- non-observance, either total or partial, of the instructions provided in this manual;
- non-observance, either total or partial, of the instructions provided in this manual;
- failure to apply regulations on safety, hygiene and health at work;
- unscheduled and unpredictable events.

ATTENTION

- Minors, illiterates and persons under altered physical or psychological conditions must not be allowed to operate the machine.
- Operators who do not have a suitable driving license, or who are not properly informed and trained, must not be allowed to operate the machine.
- The operator must check that the machine operates correctly, and must replace and repair parts subject to wear that may cause damage.
- The customer should instruct personnel on accident risks, on the operator safety devices provided, on noise emission risks and on general accident prevention regulations provided for by the international directives and by the law in the country in which the machines are used.
- In any case, the machine should be used exclusively by skilled operators who will be held to follow scrupulously the technical and accident-prevention instructions in this manual.
- The Customer is responsible for finding and selecting the category of suitable PPE (Personal Protection Equipment).
- The machine features pictograms which the operator must keep in perfect readable conditions. When no more readable, they must be replaced as instructed by European regulations.
- It is the user's responsibility to check that the machine is operated only in optimum conditions of safety for people, animals and property.
- Any change made on the machine without authorisation relieves the Manufacturer from any and all responsibility for damage to objects or injuries to operators or third partiesi.

The Manufacturer declines any and all responsibility for possible incorrect information in this manual if it is due to printing, translation or transcription errors. If the Manufacturer deems it necessary to provide the Customer with any additional information to the instruction provided in this instruction manual for operation must be stored with the manual which it is an integral part of.

List of personal protection equipment (PPE) to be used during all the phases of the machine life

Table 1 summarises the PPE (Personal Protection Equipment) to be used during the different phases of machine life (each phase requires mandatory use of and/or availability of PPE.

The Customer is responsible for finding and selecting the type and category of suitable PPE.

Tabella 1

Phase	Protection equipment	Safety footwear	Gloves	Goggles	Ear defenders	Mask	Hardhat or helmet
Trasportation	○	◉	○	○	○	○	○
Handling	●	●	●	○	○	○	●
Removal from packaging	●	●	●	○	○	○	○
Assembly	●	●	●	○	○	○	○
Routine operation	●	●	●	○	●	●	○
Adjustments	●	●	●	○	●	○	○
Cleaning	●	●	●	◉	○	●	◉
Maintenance	●	●	●	◉	○	○	●
Disassembly	●	●	●	○	○	○	◉
Demolition	●	●	●	○	○	○	◉

● PPE required. ◉ PPE available or to be used if required. ○ PPE not required.

The utilised **PPE** must be CE-marked and be compliant with Directive 89/686/EEC.
The machine life phases (ref. to Table 1) are listed in the table below.

- **Transportation**:..... Machine transfer from one location to a new one on a suitable vehicle.
- **Handling** ..... Machine transfer from and on the transportation vehicle and movements inside the plant.
- **Removal from packaging** ..... Removal of all the packaging materials.
- **Assembly** ..... All the assembly operations to initially prepare the machine for setup.
- **Routine operation** ..... The machine intended (or usual) use according to its design, construction and function.
- **Adjustments** ..... Adjustment, setup and calibration of all those devices that need to be adapted to normal machine operation.
- **Cleaning** ..... Removal of dust, oil and work process residues which may jeopardise correct machine operation and use as well as the health/safety of operators.
- **Maintenance** ..... Periodic checking of machine parts which are subject to wear or require replacement.
- **Disassembly** ..... Complete or partial disassembly of the machine for any reason whatsoever.
- **Demolition** ..... Permanent removal of all the machine parts for final machine dismantling in order to enable recycling or differentiated collection of components according to the methods envisaged by the existing regulations.

ATTENTION

Do not wear protective gloves which may get entangled in the machine moving parts.

1.2 GUARANTEE

The guarantee is valid for a year, against all defects of material, from the date of delivery of the equipment.
On delivery, check that the equipment has not been damaged during transport and that the accessories are integral and complete.
POSSIBLE CLAIMS MUST BE PRESENTED IN WRITING WITHIN EIGHT DAYS OF RECEIPT.
The purchaser will enforce his rights on the guarantee only when he has respected the conditions concerning the benefit of the guarantee, set out in the supply contract.

1.2.1 EXPIRY OF GUARANTEE

Besides what has already been set out in the supply contract, the guarantee expires:
- If the limits set out in the technical data table are overshot.
- If the instructions set out in this booklet have not been carefully followed.
- If the equipment is used badly, defective maintenance or other errors by the client.
- If modifications have been carried out without written authorization of the manufacturer and if non original spare parts have been used.

1.3 IDENTIFICATION

Each individual machine has an identification plate (fig.1), indicating the following details:

1) Mark and address of the Manufacturer;
2) Type and model of machine;
3) Unloaded mass, in Kilograms;
4) Mass full load, in Kilograms;
5) Registration of the machine;
6) Year of manufacture;
7) **CE** mark.

You are advised to note down your data on the form below, along with the date of purchase (8) and the dealer's name (9).

8) _____

9) _____

This information must always be quoted whenever assistance or spare parts are needed.

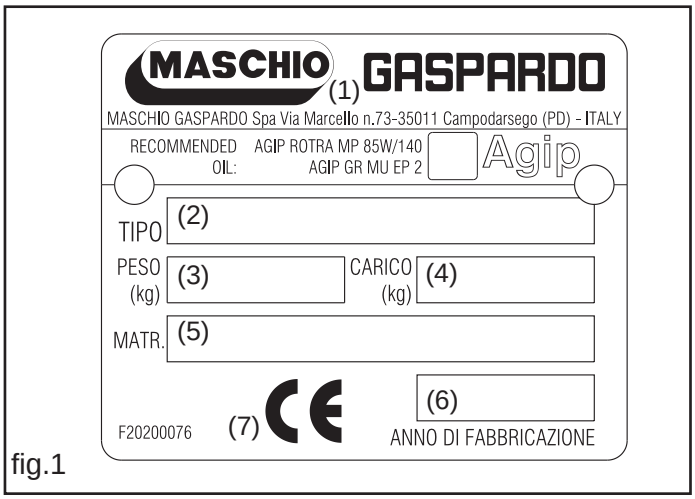


fig.1

ATTENTION

Do not remove, tamper with or make the CE mark affixed on the machine illegible.

Refer to the information provided on the CE mark for the manufacturer's contact details (e.g. for requesting spare parts, etc.).

When the machine is demolished, destroy the CE marking.

2.0 GENERAL SAFETY RULES

2.1 DANGER AND INDICATOR SIGNALS

The signs described are reproduced on the machine (fig.2). Keep them clean and replace them if they should come off or become illegible. Carefully read each description and learn their meanings by heart.

2.1.1 WARNING SIGNALS

1) Before operating machine, carefully read the instruction book.

2) Before any operation of maintenance a/o adjustment, stop, brake the tractor on level ground, lower the machine to the ground and read the instruction book.

2.1.2 DANGER SIGNALS

4) Danger of possible flying blunt objects. Keep a safe distance from the machine.

5) Danger of possible shearing of lower limbs. Keep a safe distance from the machine.

6) Danger of injury to the hands. Never remove the guards while the parts are mowing.

7) Danger of being hooked by the cardan shaft. Do not go near the members of the machine while moving.

8) Danger of falling. Do not get up on the machine while it is moving.

9) Danger of possible shearing of upper limbs. Keep a safe distance from the machine while it is working.

10) Danger of being crushed. Do not get between the tractor and the machine.

11) Danger: the bonnet could drop.Take care when in the vicinity.

12) Danger of being crushed.Do not get rear the machine.

14) Danger of being crushed. Do not get between the tractor and the machine.

16) Danger of burns. Do not touch these parts during or after use.

17) Danger of possible shearing of upper limbs. Keep a safe distance from the machine while it is working.

19) Danger of possible being crushed of lower limbs. Keep a safe distance from the machine.

20) Danger of crushing during the opening phase. Keep at a due distance from the machine.

2.1.3 INDICATION SIGNALS

21) Wear safety clothing.

22) Coupling point for lifting (indicating the maximun capacity).

23) Oil fill plug.

24) Oil drain plug.

25) Oil level plug.

26) Greasing point.

27) Number of revolutions of power takeoff.

A) Identification plate.

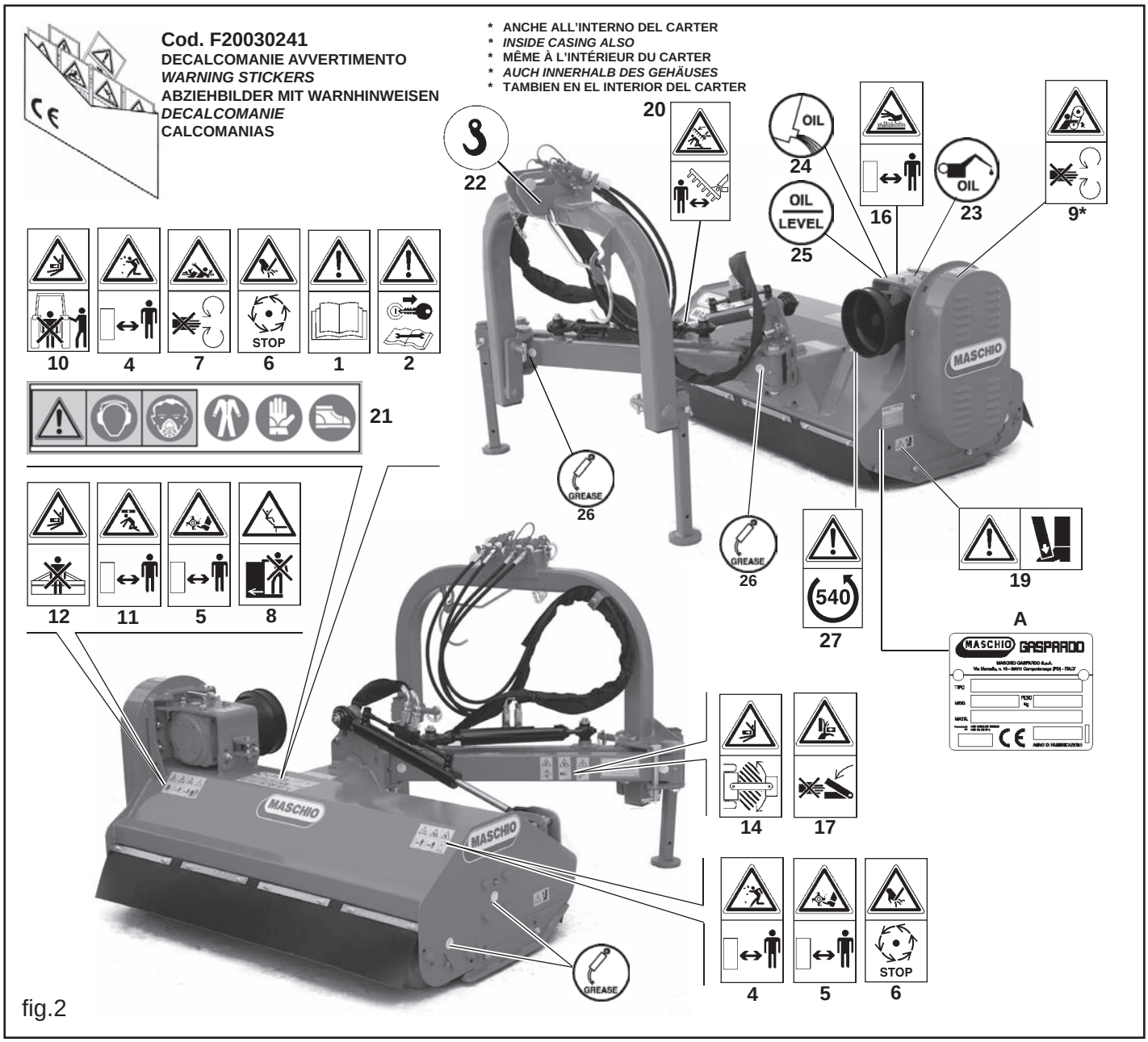


fig.2

The Manufacturer declines any and all responsibility in the event that the safety pictograms supplied with the machine are missing, illegible or moved from their original position.

2.2 SAFETY REGULATIONS AND ACCIDENT PREVENTION

Pay attention to danger signs, where shown, in this booklet.

There are three levels of danger signs:

- **DANGER**: This sign warns that the operations described **cause** serious lesions, death or long term health risks, if they are not carried out correctly.

- **ATTENTION:** This sign warns that the operations described **could cause** serious lesions, death or long term health risks, if they are not carried out correctly.

- **CAUTION:** This sign warns that the operations described **could cause** serious damage to the machine. if they are not carried out correctly.

In order to complete the various levels of danger, the following describe situations and specific definitions that may directly involve the machine or persons.

- **DANGER ZONE**: any area inside a/o near a machine in which the presence of an exposed person constitutes a risk for the safety and health of that person.

- **EXPOSED PERSON**: Any person who happens to be completely or partially in a danger zone.

- **OPERATOR**: The person/s charged with installing, starting up, adjusting, carrying out maintenance, cleaning, repairing or transporting a machine.

- **USER**: The user is the person or the organization or the firm which has purchased or rented the machine and intends to use it for the purposes it was conceived for.

- **SPECIALIZED PERSONNEL**: Those persons who have been specially trained and qualified to carry out interventions of maintenance or repair requiring a particular knowledge of the machine, its functioning, safety measures, methods of intervention - and who are in a position to recognize the potential dangers when using the machine and are able to avoid them.

- **AUTHORIZED SERVICE CENTER**: The authorized Service Center is a structure legally authorized by the manufacturer which disposes of personnel specialized and qualified to carry out all the operations of assistance, maintenance and repair - even of a certain complexity - found necessary to keep the machine in perfect working order.

Carefully read all the instructions before using the machine; if in doubt, contact the technicians of the Manufacturer's dealer. The manufacturer declines all responsibility for the non-observance of the safety and accident prevention regulations described below.

General norms

1) Pay close attention to the danger signs in this manual and on the machine.
2) The labels with the instructions attached to the machine give abbreviated advice for avoiding accidents.
3) Scrupulously observe, with the help of the instructions, the safety and accident prevention regulations.
4) Avoid touching the moving parts in any way whatsoever.
5) Any work on and adjustment to the machine must always be done with the engine switched off and the tractor blocked.
6) People or animals must not, under any circumstances be transported on the equipment.
7) It is strictly prohibited to drive the tractor, or allow it to be driven, with the equipment attached by persons not in possession of a driver's license, inexpert or in poor conditions of health.
8) Before starting the tractor and the equipment, check that all safety devices for transport and use are in perfect working order.
9) Before starting up the equipment, check the area surrounding the machine to ensure that there are no people, especially children or pets, nearby, and ensure that you have excellent visibility.
10) Use suitable clothing. Avoid loose clothing or garments with parts that could in any way get caught in the rotating or moving parts of the machine.
11) Before starting work, familiarize yourself with the control devices and their functions.
12) Only start working with the equipment if all the protective devices are in perfect condition, installed and in the safe position.
13) It is absolutely prohibited to stand within the machine's radius of action where there are moving parts.
14) It is absolutely forbidden to use the equipment without the guards and container covers.
15) Before leaving the tractor,lower the equipment hooked to the lifting unit, stop the engine, pull the hand brake and remove the key from the dashboard, make sure that the chemical substances safely out of reach.
16) The driver's seat must never be left when the tractor engine is running.
17) Before starting the equipment, check that the supporting feet have been removed from under the machine; check that the machine has been correctly assembled and regulated; check that the machine is in perfect working order, and that all the parts subject to wear and tear are in good condition.
18) Before releasing the equipment from the third point attachment, put the hoist command lever into the locked position and lower the support feet.
19) Only operate when visibility is good.
20) All operations must be carried out by expert personnel, equipped with protective gloves, in a clean and dust-free environment.

Tractor hitch

1) Hook the equipment to a suitable, sufficiently-powered tractor by means of the appropriate device (lifter), in conformity with applicable standards.
2) The class of the equipment attachment pins must be the same as that of the lifter attachment.
3) Take care when working within the range of the lifting arms as this is a very dangerous area.
4) Be very careful when hooking and unhooking the equipment.
5) It is absolutely forbidden to stand between the tractor and linkage for manoeuvring the lifting controls from the outside (fig.3)
6) It is absolutely forbidden to stand in the space between the tractor and the equipment (fig.3) with the engine running.
   It is possible to work between the tractor and the equipment only after the parking brake has been applied and a suitably sized blocking wedge or stone has been placed under the wheels.
7) The attaching of additional equipment onto the tractor brings about a different distribution of weight on the axles. Check the compatibility of the tractor performance with the weight that the machine transfers onto the three-point linkage. If in doubt consult the tractor Manufacturer.
8) Comply with the maximum admissible weight for the axle, the total mobile weight, transport regulations and the highway code.

Transport on Road

1) When driving on public roads, be sure to follow the highway code of the country involved.
2) Any transport accessories must be provided with suitable signs and guards.
3) It is very important to remember that road holding capacity as well as direction and braking capacity can be influenced, sometimes con-siderably, by equipment being either carried or towed.
4) When negotiating curves, be aware of the variation in centrifugal force exerted in a position other than that of the center of gravity, with and without the equipment in tow. Also pay greater attention on sloping roads or ground.
5) For transport, adjust and fasten the lateral lifting arm chains of the tractor; lock the hydraulic lifting control lever;
6) For displacements beyond the work area, the equipment must be placed in the transportation position.
7) Upon request the Manufacturer will supply supports and tables for signaling of dimensions.
8) When the dimensions of carried or partially-carried equipment conceal the tractor's signalling and lighting devices, these must also be installed on the equipment itself, in conformity with regulations of the highway code of the country involved. When in operation make sure that the lighting system is in perfect working order.

Cardan shaft

1) The equipment installed can only be controlled by means of the Cardan shaft complete with the necessary overload safety devices and guards fastened with the appropriate chain.
2) Only the Cardan shaft supplied by the Manufacturer must be used.
3) The engine must not be running when installing and removing the Cardan shaft.
4) Care must be taken regarding the safety and correct assembly of the Cardan shaft.
5) Use the chain provided to stop the Cardan shaft from rotating.
6) Always check carefully that the Cardan shaft guard is always in position, both during trans-portation and operation.
7) Frequently and set intervals check the Cardan shaft guard, it must always be in excellent condition.
8) Before engaging the power take-off, check that the set rpm corresponds to that indicated by the sticker on the equipment.
9) Before inserting the power take-off, make sure that there are no people or animals nearby and that the rpm selected corresponds to that permitted. Never exceed the maximum admissible speed.
10) Watch out for the rotating universal joint.
11) Do not insert the power take-off with the engine off or synchronized with the wheels.
12) Always disconnect the power take-off when the Cardan shaft is at too wide an angle (never more than 10° - fig.4) and when it is not being used.
13) Only clean and grease the Cardan shaft when the power take-off is disconnected, the engine is off, the hand brake pulled and the key removed.
14) When not in use, place the Cardan shaft on the support provided for it.

fig.3

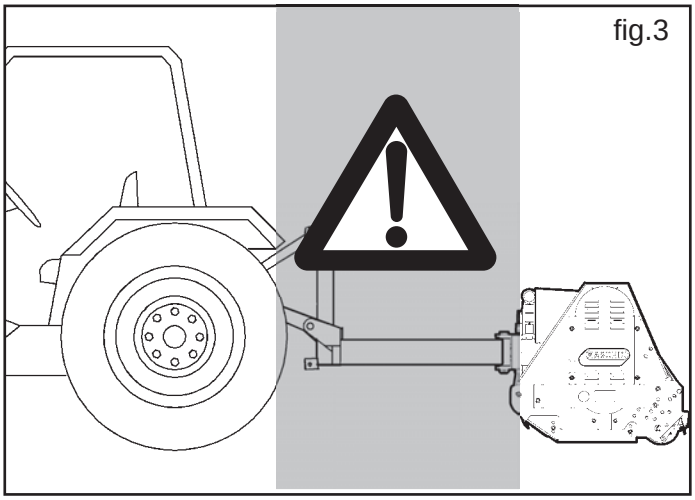
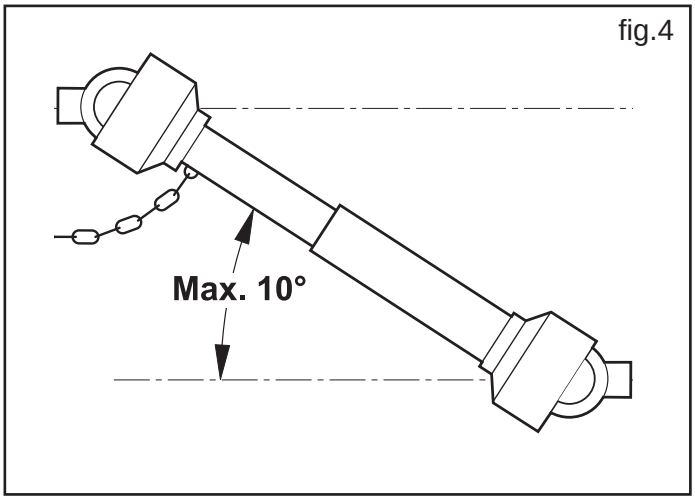


fig.4



Safety measures concerning the hydraulics

1) At the moment of connecting the hydraulic tubes to the hydraulic system of the tractor, make sure that the hydraulic systems of the operating machine and the tractor are not under pressure.
2) For the operative hydraulic connections between tractor and operating machine, the sockets and plugs should be marked with colours to distinguish them, to avoid them being used wrongly. There would be a danger of accident if the connections were to be swapped round.
3) The hydraulic system is under high pressure; because of the accident risk, when searching for leakage points special auxiliary instruments should be used.
4) Not to never carry out the search losses with the fingers or the hands. The liquids that exit from the holes can be nearly not visible.
5) During transport by road the hydraulic connections between tractor and operating machine should be disconnected and secured to the support provided.
6) Do not use vegetable oils under any circumstance. These could cause a risk of damage to the cylinder gaskets.
7) The operating pressures of the hydraulic system should be between 100 bars and 180 bars.
8) Never exceed the indicated hydraulic system pressure levels.
9) Check that the quick hook-ups are coupled correctly; parts of the system could get damaged if they are not.
10) Oil escaping at high pressure can cause skin injury with the risk of serious wounds and infection. Call a doctor immediately if such an incident occurs. If the oil with surgical means is not removed quickly, can take place serious allergies and/or infections. Therefore, the installation of hydraulic components in the tractor driver's cab is strictly forbidden. All the components of the system should be positioned carefully to avoid parts being damage during use of the equipment.
11) In case of participation on the hydraulic system, to unload the hydraulic pressure carrying all the hydraulic commandos in all the positions some times after to have extinguished the motor.

Maintenance in safety

During work and maintenance operations, use suitable personal protection gear:

Overalls Gloves Shoes Goggles Hardhat

1) Do not proceed with maintenance and cleaning if the power take-off has not been disconnected first, the engine power off, the hand brake pulled and the tractor blocked with a wooden block or stone of the right size under the wheels.
2) Periodically check that the bolts and nuts are tight, and if necessary tighten them again. For this it would be advisable to use a torque wrench, respecting the values of 53 Nm for M10 bolts, resistance class 8.8, and 150 Nm for M14 bolts resistance class 8.8 (*Table SV1*).
3) During assembling, main-tenance, cleaning, fitting, etc., with the seeding machine raised, place adequate supports under the equipment as a precaution.
4) The spare parts must correspond to the manufacturer's specifications. **Use only original spares**.

.

Tabella SV1

d x passo (mm)	Sezione resistente Sr (mm²)	4,8		5,8		8,8		10,9		12,9	
		Precarico **F** kN	Momento **M** N-m	Precarico **F** kN	Momento **M** N-m	Precarico **F** kN	Momento **M** N-m	Precarico **F** kN	Momento **M** N-m	Precarico **F** kN	Momento **M** N-m
3 x **0,5**	*5,03*	1,2	*0,9*	1,5	*1,1*	2,3	*1,8*	3,4	*2,6*	4	*3*
4 x **0,7**	*8,78*	2,1	*1,6*	2,7	*2*	4,1	*3,1*	6	*4,5*	7	*5,3*
5 x **0,8**	*14,2*	3,5	*3,2*	4,4	*4*	6,7	*6,1*	9,8	*8,9*	11,5	*10,4*
6 x **1**	*20,1*	4,9	*5,5*	6,1	*6,8*	9,4	*10,4*	13,8	*15,3*	16,1	*17,9*
7 x **1**	*28,9*	7,3	*9,3*	9	*11,5*	13,7	*17,2*	20,2	*25*	23,6	*30*
8 x **1,25**	*36,6*	9,3	*13,6*	11,5	*16,8*	17,2	*25*	25	*37*	30	*44*
8 x **1**	*39,2*	9,9	*14,5*	12,2	*18*	18,9	*27*	28	*40*	32	*47*
10 x **1,5**	*58*	14,5	*26,6*	18	*33*	27	*50*	40	*73*	47	*86*
10 x **1,25**	*61,2*	15,8	*28*	19,5	*35*	30	*53*	43	*78*	51	*91*
12 x **1,75**	*84,3*	21,3	*46*	26	*56*	40	*86*	59	*127*	69	*148*
12 x **1,25**	*92,1*	23,8	*50*	29	*62*	45	*95*	66	*139*	77	*163*
14 x **2**	*115*	29	*73*	36	*90*	55	*137*	80	*201*	94	*235*
14 x **1,5**	*125*	32	*79*	40	*98*	61	*150*	90	*220*	105	*257*
16 x **2**	*157*	40	*113*	50	*141*	76	*214*	111	*314*	130	*368*
16 x **1,5**	*167*	43	*121*	54	*150*	82	*229*	121	*336*	141	*393*
18 x **2,5**	*192*	49	*157*	60	*194*	95	*306*	135	*435*	158	*509*
18 x **1,5**	*216*	57	*178*	70	*220*	110	*345*	157	*491*	184	*575*
20 x **2,5**	*245*	63	*222*	77	*275*	122	*432*	173	*615*	203	*719*
20 x **1,5**	*272*	72	*248*	89	*307*	140	*482*	199	*687*	233	*804*
22 x **2,5**	*303*	78	*305*	97	*376*	152	*529*	216	*843*	253	*987*
22 x **1,5**	*333*	88	*337*	109	*416*	172	*654*	245	*932*	286	*1090*
24 x **3**	*353*	90	*383*	112	*474*	175	*744*	250	*1060*	292	*1240*
24 x **2**	*384*	101	*420*	125	*519*	196	*814*	280	*1160*	327	*1360*

3.0 DESCRIPTION OF THE MACHINE

Side mulcher «GIRAFFINA» is a compact and lightweight machine for tractors with a power range from 15 to 40 HP.
It has been exclusively designed and manufactured to cut grass and small pruned branches (up to 2 cm in diameter).
Recommended for work on green areas, parks and playgrounds.

ATTENTION

The machine is suitable only for the uses indicated. The recommended working speed is 6÷8 km/h.
Any other use different from that described in these instructions could cause damage to the machine and represent a serious hazard for the user.
This machine has been intended for professional use: it must be operated exclusively by preliminarily educated, trained and authorised operators who hold a regular driving license.

Operating instructions

- The machine is intended for professional users: operation must be allowed to skilled operators only.
- The machine must be operated by one operator only.
- The machine is not intended for purposes other than farming applications.

Conforming machine operation also includes:

- compliance with all the instructions provided in this manual;
- performance of inspection and maintenance operations described in this manual;
- exclusive use of genuine MASCHIO GASPARDO spare parts.

The Customer must ensure that Qualified Operators for routine machine operation are suitably trained and prove competent in carrying out the tasks assigned to them, taking care of their safety and that of third parties.
Depending on the qualification level and tasks assigned, qualified operators must be duly instructed on the machine functions so as to operate and manage it correctly and guarantee good machine efficiency.
Regular operation depends on the correct use and adequate maintenance of the equipment. It is advisable therefore to observe scrupulously what is described in order to prevent any inconveniences that could prejudicate proper operation and duration. It is just as important to keep to what is described in this booklet since **the Manufacturer declines all responsibility due to negligence and non-observance of these rules**. At any rate the Manufacturer is available to assure immediate and accurate technical assistance and all that may be necessary for the improved operation and better performance of the equipment.
The machine user shall be liable for damage caused by non-compliance with the instructions hereby.

ATTENTION

The machine must be operated by qualified operators of the Customer. The operator must wear suitable personal protection equipment (safety footwear, overalls and gloves, etc.).

Precautions for use

Below is a list of precautions for use the machine:

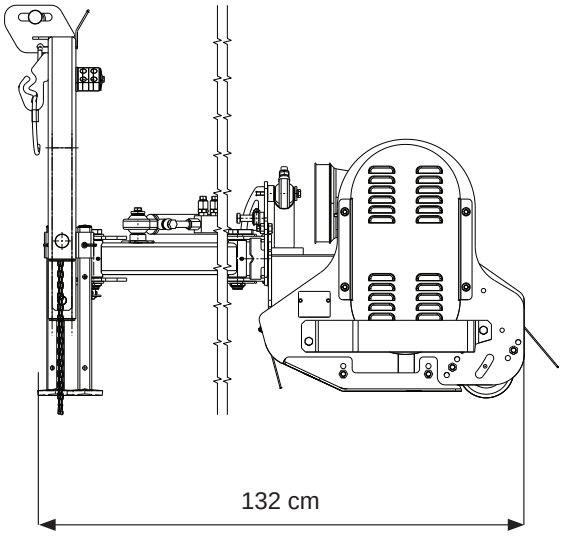
- ensure that there are no remarkably big stones or rocks on the soil;
- ensure that there are no metal elements of any type whatsoever, but especially nets, cables, wire ropes, chains, pipes, etc. on the soil.

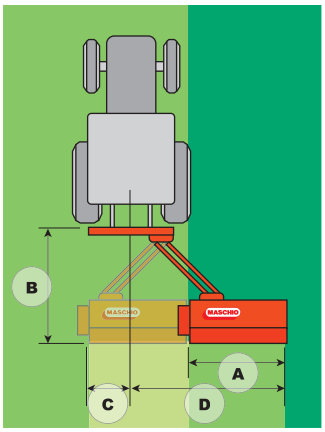
3.1 TECHNICAL DATA

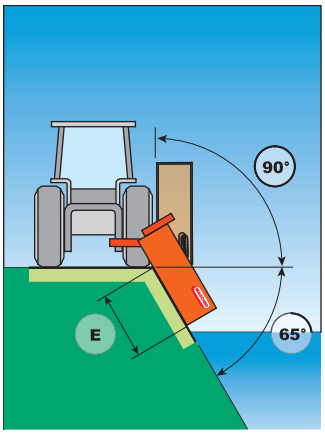
MOD.	lavoro A		ingombro B		A	B	C	D	E			(14)	(15)		
	cm	inch	cm	inch	cm	cm	cm	cm	cm	kW	HP	nr.	nr.	Kg.	rpm
GIRAFFINA 120	115	45	133	52	115	128	55	172	88	11÷29	15÷40	24	48	246	540
GIRAFFINA 140	135	53	153	60	135	128	55	192	108	15÷29	20÷40	28	56	266	540
GIRAFFINA 160	155	61	173	68	155	128	55	212	128	18÷29	25÷40	32	64	286	540

NOISE LEVEL
No-load noise detection (UNI EN ISO 4254-1:2010):
Level of acoustic pressure: LpAm (A) dB.....83,8
Level of acoustic power: LwA (A) dB.....98,9

The technical data and the models provided must be considered as non binding. We reserve the right to change them without notice.







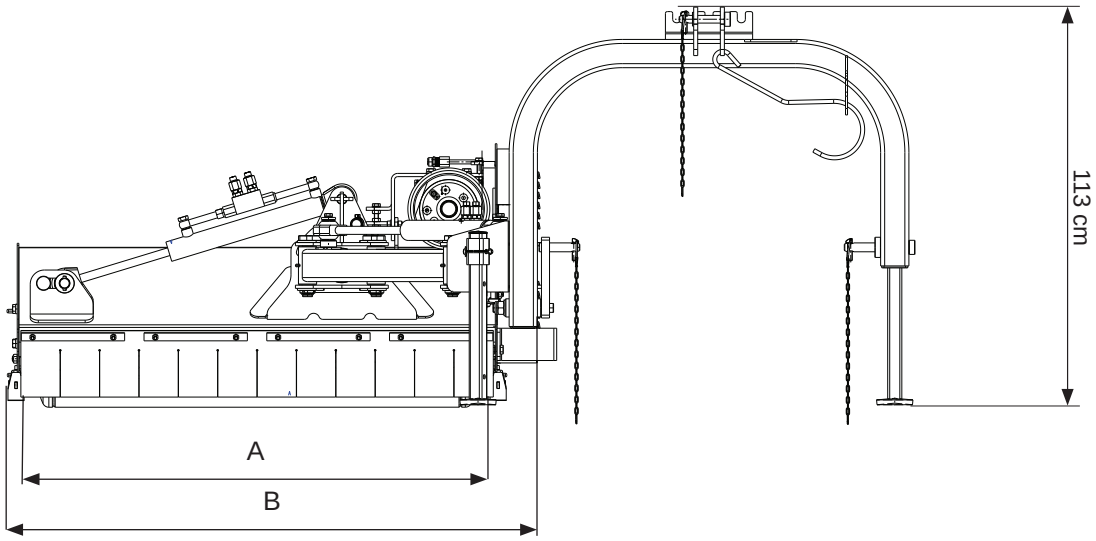


fig.5

3.2 ASSEMBLY DRAWING (fig.6)

1 - Support hook for cardan shaft
2 - 3rd connection, upper point
3 - Three point hitch
4 - Overdrive unit
5 - Identification plate
6 - Hydraulic jack
7 - Side transmission guard
8 - Side skids
9 - PVC Protection
10 - 3rd connections, lower points
11 - Cardan shaft connection
12 - Side shifting arm
13 - Roller
14 - Support feet

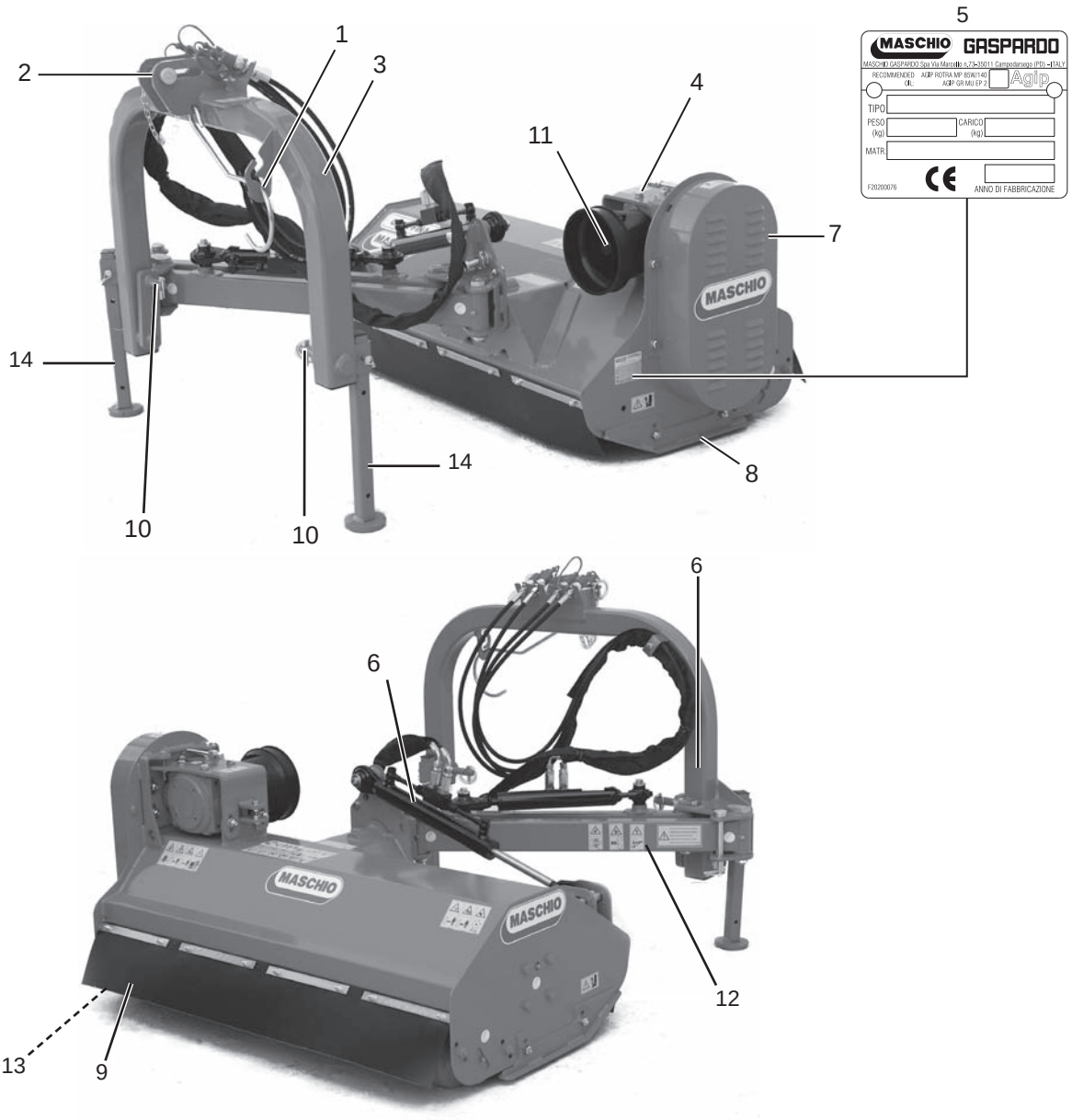


fig.6

3.3 HANDLING

ATTENTION

The Customer must apply the rules envisaged in the European Directives EEC 391/89 and 269/90 and subsequent modifications on the possible risks for loading and unloading operators caused by manual handling of loads.

During handling operations wear suitable personal protection equipment:

Overalls Gloves Shoes Hardhat

If the machine has to be handled, it should be lifted by hooking cloth ropes to the attachment points provided and using a suitable hoist or crane with sufficient capacity (fig.7).
Because of the danger involved, this operation should be carried out by trained and responsible personnel. The mass of the machine is on the identification Plate (fig.1). Stretch the rope to keep the machine level.
The hook points can be detected by finding the “hook” symbol (fig.7). Hook up at points: A.

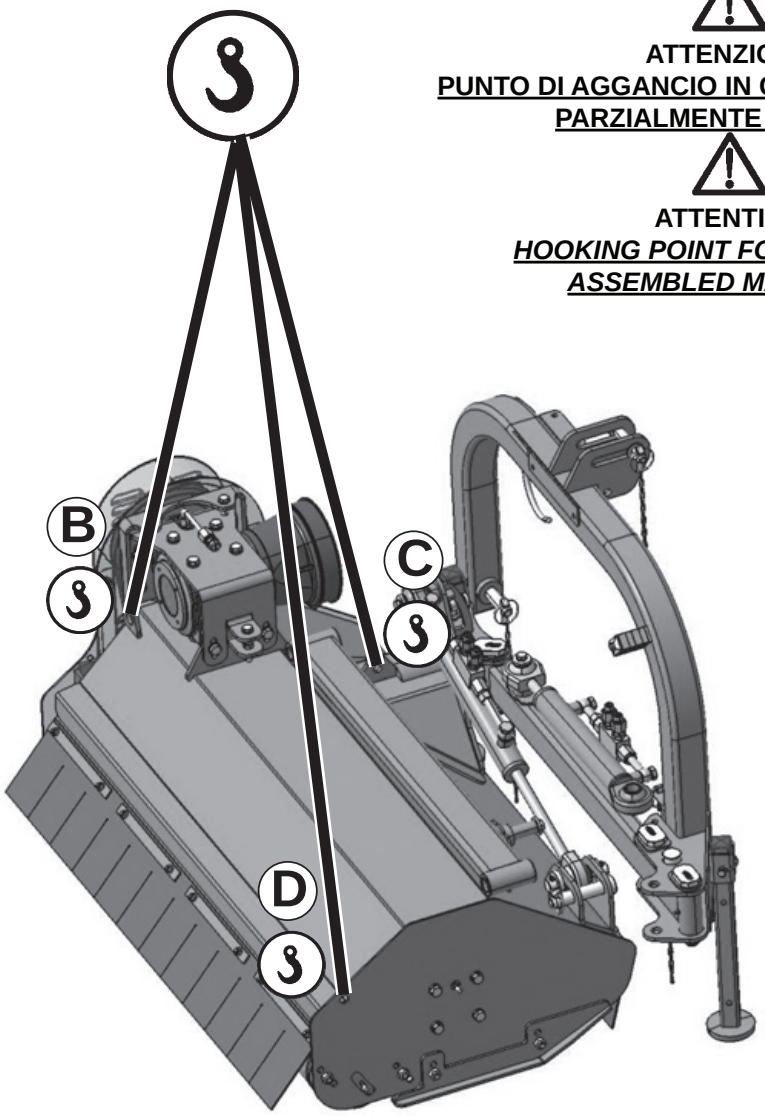
ATTENZIONE
PUNTO DI AGGANCIO IN CASO DI MACCHINA COMPLETAMENTE MONTATA.

ATTENTION
HOOKING POINT FOR COMPLETELY ASSEMBLED MACHINES.

fig.7

ATTENTION

- **Packaging materials (pallets, cartons, etc.) must be disposed of as prescribed by the existing regulations through authorised disposal companies.**
- **Parts making up the machine must not be lifted by hooking them up from moving or weak parts such as guards, electrical runways, pneumatic parts, etc.**
- **Standing under suspended loads is not allowed; unauthorised personnel are not allowed access to the work sites; it is mandatory to wear overalls, safety footwear, gloves and a hardhat.**



ATTENZIONE
PUNTO DI AGGANCIO IN CASO DI MACCHINA PARZIALMENTE MONTATA.

ATTENTION
HOOKING POINT FOR PARTIALLY ASSEMBLED MACHINES.

fig.8

4.0 RULES OF USE

To obtain the best performance from the equipment, carefully follow what is set up below.

ATTENTION

All maintenance work, adjustments and preparation for operation, must be carried out with the power take-off of the tractor disconnected, the machine on the ground on its supporting feet, the tractor not running, the wheels blocked and the key turned off.

4.1 COUPLING TO THE TRACTOR

The machine may be attached to any tractor fitted out with a three-point universal joint.

DANGER

The attachment to the tractor is a very dangerous phase. Be sure to follow the instructions carefully throughout the operation.

4.1.1 HOOKING TO THE TRACTOR

The correct tractor/machine position, is determined by placing the equipment at a distance from the tractor so that the cardan joint remains extended by 5-10 cm from its maximum closing position. At this point, proceed as follows:

1) Hook the lifter bars onto the pins provided (1, fig.9) Block with the snap split pins. Hook the chains to the lifting bars

2) Connect the third upper point (2, fig.9); the pin will be blocked with the appropriate split pin; use the adjusting tie rod (3, fig.10) to keep the machine perpendicular to the ground (fig.10). To use the machine in the correct way, the rod of the tractor's top link must be regulated so that the pin is in the center of the slot when the machine is perfectly horizontal. (4 fig.10)

3) Block the movement of the parallels of the tractor on the horizontal plane using the stabilizers provided, so eliminating the side swaying of the equipment. Check that the tractor hoisting arms are positioned at the same height from the ground.

4) Adjust the height of the tractor lifting arms so that, **in the transporting position, the machine does not, for any reason whatsoever, come into contact with the ground.**

5) Connect the Cardan shaft and make sure that it is perfectly blocked on the power take-off (fig.11). Check that the guard turns freely and fix it with the chain provided.

During the work, regularly check that the equipment is perpendicular.

ATTENTION: Always follow the indications recommended by the Manufacturer for the transport of the machine.

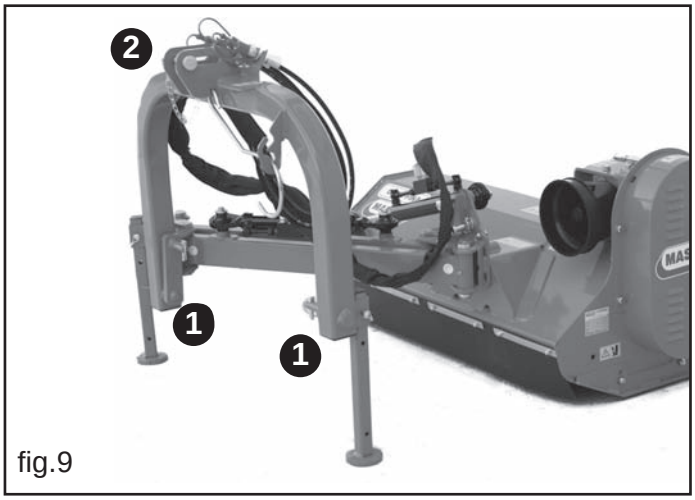


fig.9

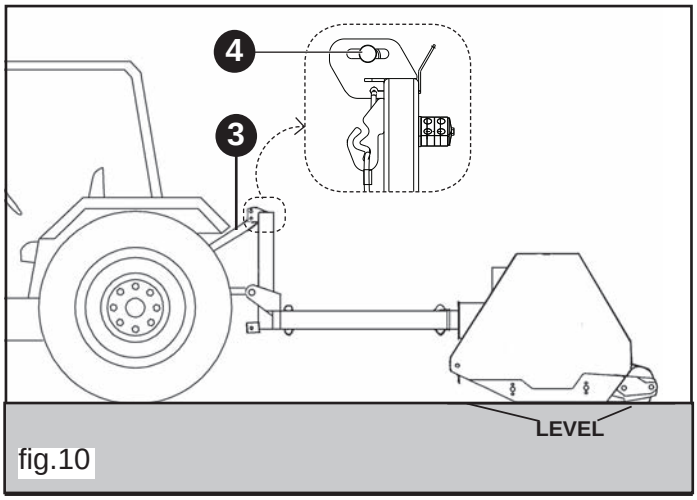


fig.10

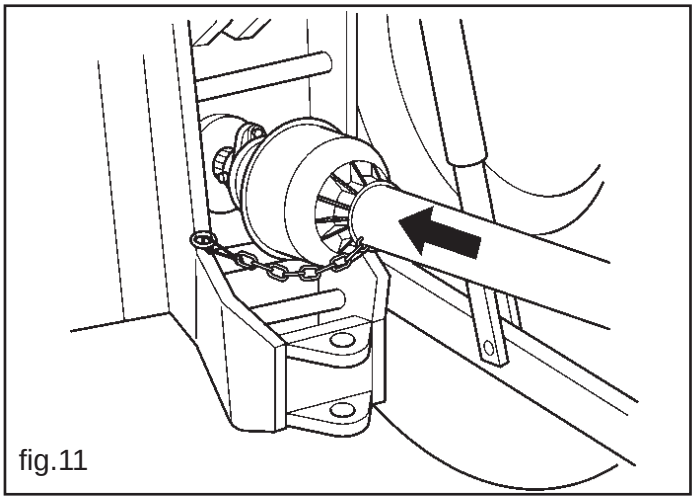


fig.11

4.1.2 UNHOOKING THE MACHINE FROM THE TRACTOR

DANGER

Unhooking the machine from the tractor is a very dangerous operation. Great caution must be used and the whole operation must be carried out following the instructions.

For a correct unhooking operation of the machine it is necessary to proceed on a horizontal level.

1) Lower the supporting base elements
2) Slowly lower the machine until it rests completely on the ground.
3) Disconnect the hydraulic pipes from the tractor distributors and protect the quick couplings with the caps.
4) Disconnect the cardan shaft from the tractor, and put it on the support hook .
5) Loosen and unhook the third point, following the first and second.

4.2 ADAPTING THE CARDAN SHAFT

The Cardan shaft, supplied with the machine, is of standard length. It might, therefore, be necessary to adapt the cardan shaft. Should this be the case, before proceeding, consult the Manufacturer.

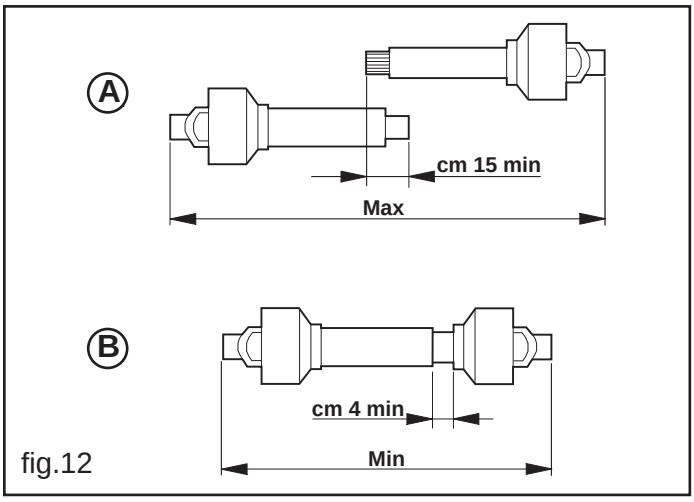


fig.12

CAUTION

- **When the Cardan shaft is with drawn to the end of its stroke, the two pipes should ovelap by at least 15 cm (A fig.12). When it is inserted all the way, the minimum admissible play is 4 cm (B fig.12).**
- **When using the equipment on another tractor, check that conditions are as stated above and check that the guards complete ly cover the rotating parts o**f the Cardan shaft.

ATTENTION

For transportation of the machine, always follow the Manufacturer's instructions.

4.3 STABILITY OF PLANTING UNIT AND TRACTOR DURING TRANSPORT

When a planting unit is coupled to a tractor, so becoming an integral part of it for the purposes of road travel, the stability of the planting unit-tractor complex may change and cause driving or operating difficulties (rearing up or side-slipping of the tractor). The condition of equilibrium can be restored by placing a sufficient number of ballasts on the front or on the rear of the tractor (depending on the front or rear hooking to the tractor of the machine) so that the weights on the two tractor axles are distributed sufficiently evenly.
To work in safety the instructions given in the highway code should be followed; these prescribe that at least 20% of the weight of the tractor alone should be borne by the front axle ; and that the weight on the arms of the hoist should not be more than 30% of the weight of the tractor itself. These factors are summarized in the following formulas:

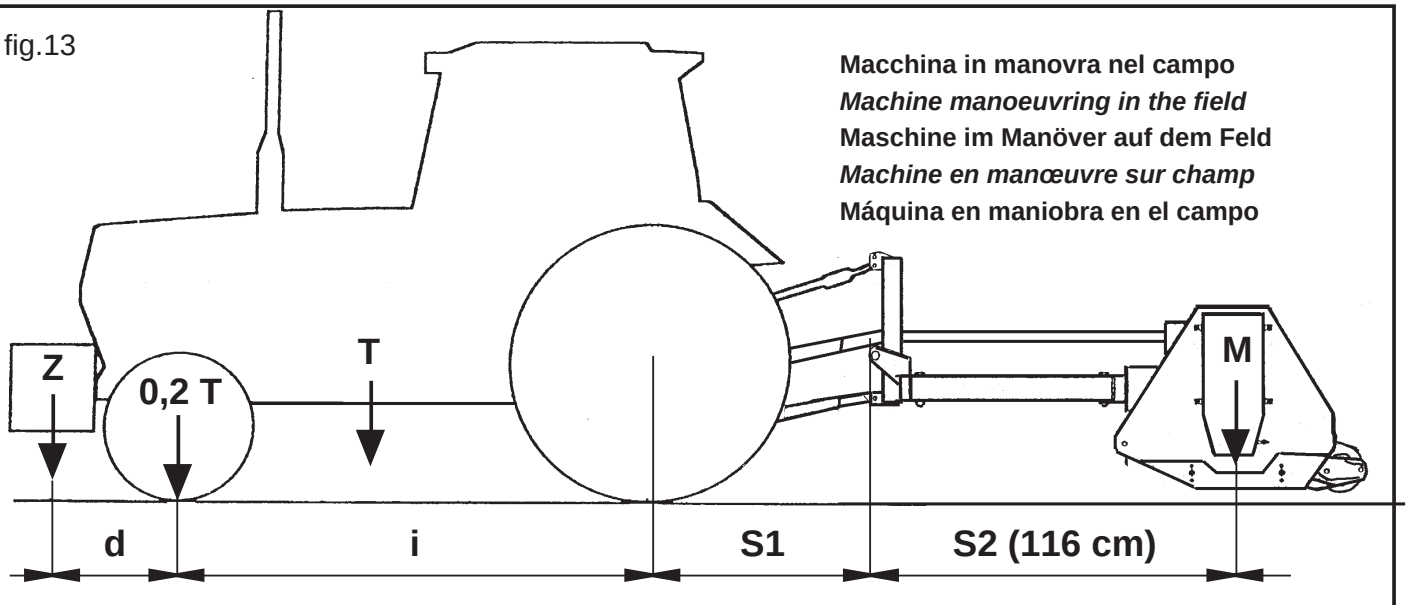
$$Z \geq \frac{[M \times (s1+s2)]-(0.2 \times T \times i)}{(d+i)}$$

The symbols have the following meanings (please see fig.13 for reference):

M (Kg) Mass weighing on arms off hoist with full load (weight + mass, see cap. 1.3 Identification).
T (Kg) Mass of tractor.
Z (Kg) Total mass of ballast.
i (m) Tractor wheelbase, that is, the horizontal distance between the tractor axles.
d (m) Horizontal distance between the centre of gravity of the ballast and the front axle of the tractor.
s1 (m) Horizontal distance between the inferior point of attachment of the equipment and the rear axle of the tractor (equipment supported to the ground).
s2 (m) Horizontal distance between the barycentre of the equipment and the inferior point of attachment of the equipment (equipment supported to the ground).

The amount of ballast that should be applied according to the formula is the minimum required for circulation on the road. If for reasons of tractor performance or to improve the set-up of the planting unit during operation it is thought necessary to raise these values, please refer to the registration document of the tractor to check its limits.
When the formula for calculating the ballast gives a negative result it will not be necessary to add any weight. In any case, as long as the limits of the tractor are respected, a suitable quantity of weights may be applied in order to ensure greater stability during travel. Check that the tractor tyres are suitable for the load.

fig.13



4.4 TRANSPORT

If it becomes necessary to transport the machine for a long distance, it can be loaded onto a railway wagon or a truck. For this purpose, consult «Technical Data» for weight and specific dimensions. The latter are very useful to check the possibility of driving along all types of roads.
The machine is generally supplied in a horizontal position with no packing material.
It is therefore necessary to use a system of hoisting with a crane and cables, or chains of adequate capacity, hooking onto the machine at the hoisting points marked with the «hook» symbol (fig.7).

CAUTION

Before proceeding to the hoisting operations, make sure that any any mobile elements of the machine are blocked. Make sure to use a crane with an adequate hoisting capacity to lift the machine. Hoist the machine with extreme caution and transfer it slowly, without jerks or abrupt movements.

DANGER

The operations of hoisting and transport can be very dangerous if not carried out with the maximum caution; persons not directly involved should be moved away. Clean, evacuate the area and delimit the transfer zone. Check the state, condition and suitability of the means at disposition. Do not touch suspended loads, keeping them at a safe distance.
It most be further ascertained that the operational area is free of obstacles and that there is sufficient «escape space», meaning an area which is free and secure into which one could move rapidly in case a load should fall. The surface on which the machine is to be loaded must be horizontal in order to prevent possible shifting.

Once the machine is positioned on the vehicle, make sure that it remains blocked in its position. Fasten the machine on the platform of the vehicle by means of cables suitable for the mass which must be blocked (see «Technical Data» for the weight).
The cables must be firmly fastened to the machine and pulled taut to the anchorage point on the platform. Once transport has been carried out and before freeing the machine from all its fastenings, make sure that its state and position are such as not to constitute danger. Remove the cables and proceed to unloading with the same means and methods used for loading.

Transit and transporting on the public highways
When driving on the public roads, fit on the rear reflector triangles, side lights and flashing beacon and always make sure that you comply with the Highway Code and any other applicable regulations.

Make sure that the machine dimensions during transfer phases allow for safe transport when travelling in subways, along narrow roads, near electrical lines, etc..

ATTENTION

Before driving on to the public roads with the machine hitched to the tractor, make sure that the devices listed above and/or the slow vehicle signal and/or the projecting load signal operate correctly. These indicators must be affixed to the rear of the implement in a position where they can be clearly seen by any other vehicle that drives up behind.

The tractor used for transporting the equipment must have the powers shown in the ***Technical Data*** table; if necessary, redistribute the total weights with the addition of ballasts to return balance and stability to the whole assembly.

For displacements beyond the work area, the equipment must be placed in the transportation position:

- Where provided for, make all the moving parts come within the transport width, locking them with the safety devices (toolbars, row marker arms, row marker discs, etc.).
- Any transport accessories must be provided with suitable signs and guards.

Upon request the Manufacturer will supply supports and tables for signaling of dimensions.

4.5 TRANSPORT METHOD

During transport and whenever lifting is required, the lifting unit of the tractor should be regulated so that the machine is raised about 35 cm from the ground (fig.13).
Furthermore, also check to make sure that all the locking devices are activated to ensure that the machine is in conditions of maximum safety.
Thus raise the machine until reaching the end of stroke of the cylinder, make the bracket (1 fig.15) match with the safety plate (2 fig.15), and insert the snap pin (3 fig.15) to block the frame. (4 fig.15)
Finally, insert the pin (5 fig.15) that blocks the movement of the parallelogram**.**

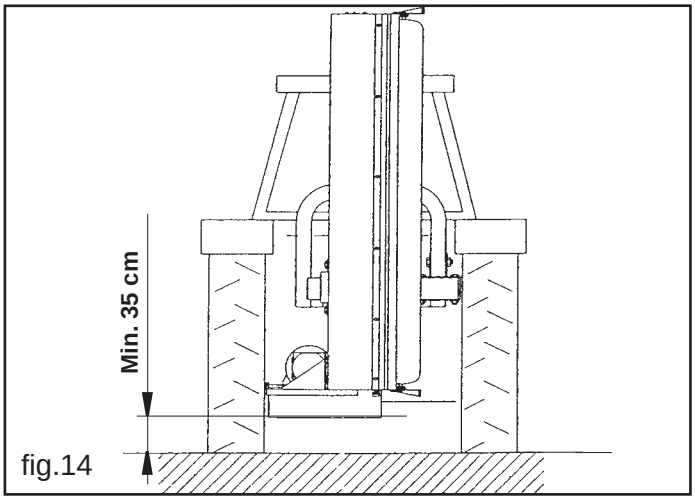


fig.14

4.6 ADJUSTMENT OF WORKING HEIGHT

For a correct regulation of the working height, it is necessary to:

- *Gradually lower the machine completely down to the ground, using the hoister (tractor switched off and parking brake pulled on).*
- *Regulate the working height.*

For a correct adjustment, the blades must be ca. 2 - 3 cm from the surface of the ground.

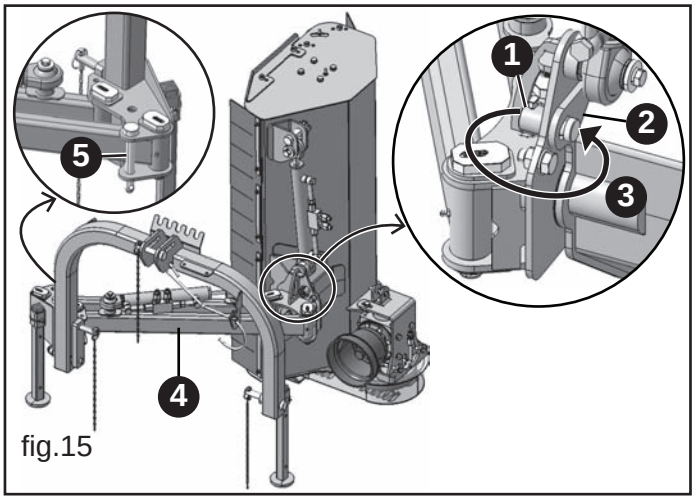


fig.15

4.7 ADJUSTING THE SKIDS AND ROLLER

Adjust the position of the side skids and parking roller until the knives project from the surface formed by the two skids themselves (fig.16).
This will prevent the knives from digging into the soil even on irregular ground.
To ensure that the material is perfectly treated, it is important to check that the machine is perfectly parallel to the ground (fig.17).
Adjustments must be made by means of the tractor's third point (A fig.17).

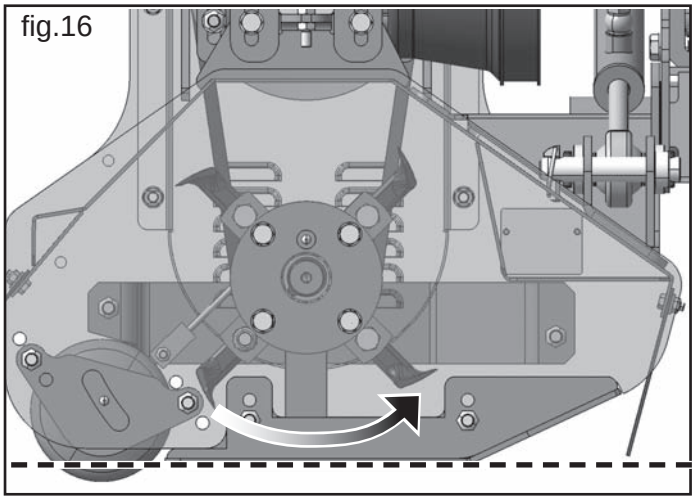


fig.16

4.8 WORK POSITION OF THE MACHINE

Side shift (*fig.18*)

This movement occurs by means of the hydraulic cylinder, connected to the oil valves of the tractor.

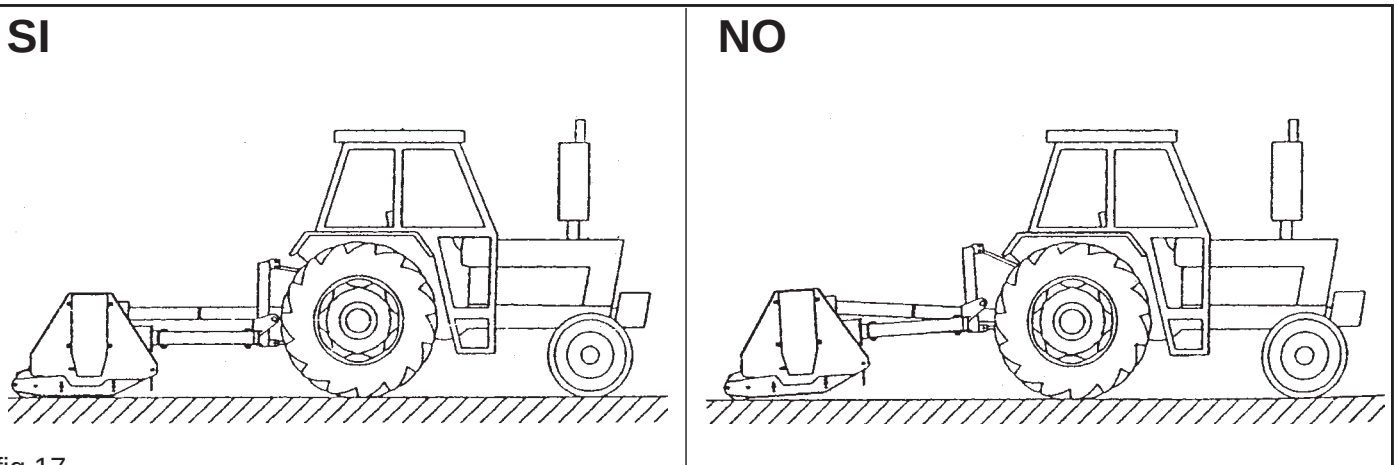


fig.17

Machine position (fig.19)
The machine can be tilted upwards or downwards by means of a hydraulic cylinder controlled by the oil valve of the tractor.

Fixed and floating operating modes
The machine can function in 2 operating modes: the fixed mode (fig.20A) and the floating mode (fig.20B).
The fixed mode is recommended for cutting on even surfaces while the floating mode is recommended for irregular surfaces as it allows the shredder to adapt in a better way to the different ground contours.

Mechanical shock-absorber
If obstructions are encountered, a safety system ensures that the cutter retracts and then returns automatically (fig.21).

fig.18

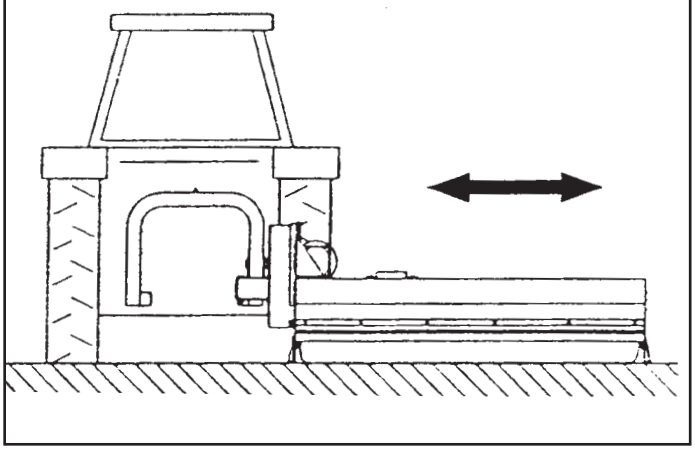
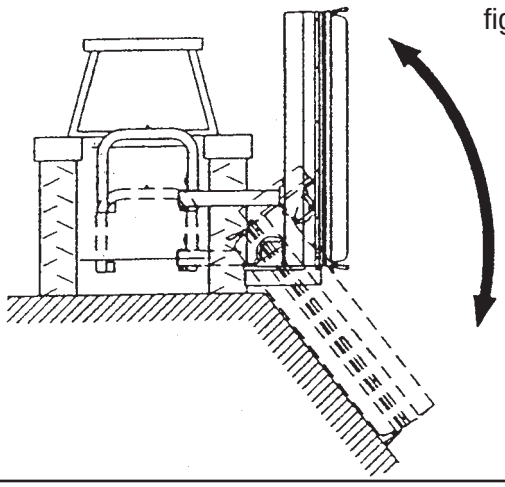


fig.19



4.9 BLADES

Thanks to its versatility, this machine can be equipped with tools of different shapes and sizes.
Hammer type* 21** *can be used for grass, shrubs and pruning remains, or* ***knife type 19 *for universal use, depending on the job in hand.*

DANGER

The knives must always be checked before the machine is used. Moreover, the knives must also be systematically checked whenever they strike against some obstacle during work.

- The quality of the cut products, the reliability of the machine and your safety depend on how carefully these components are checked.
- The knives must be replaced in the following cases:

Damaged knives
Impact could twist or split the blades with the following effects:
- Impaired cutting quality.
- Increased vibrations causing the mechanical parts of the machine to break.
- Partial or total breakage of the knives with the risk of parts of the knives being thrown up.

fig.20

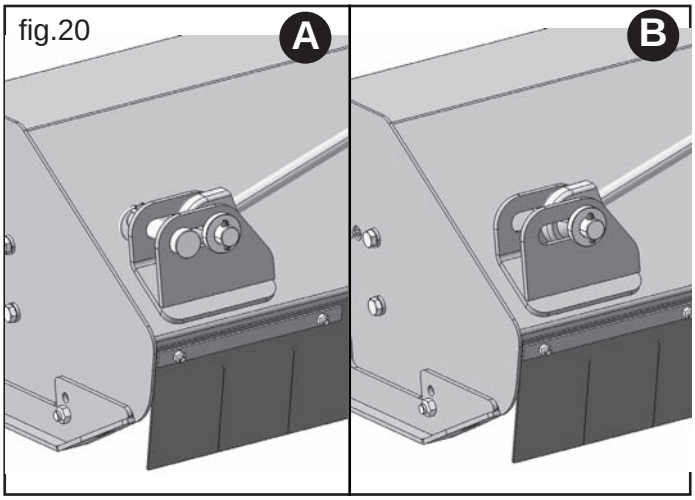


fig.21

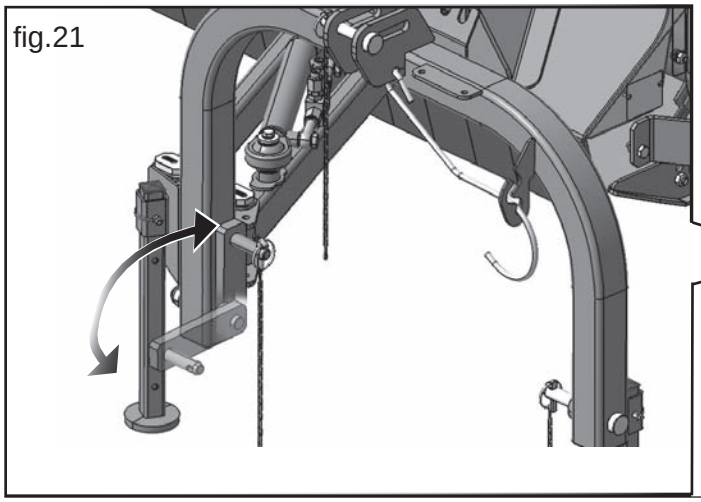
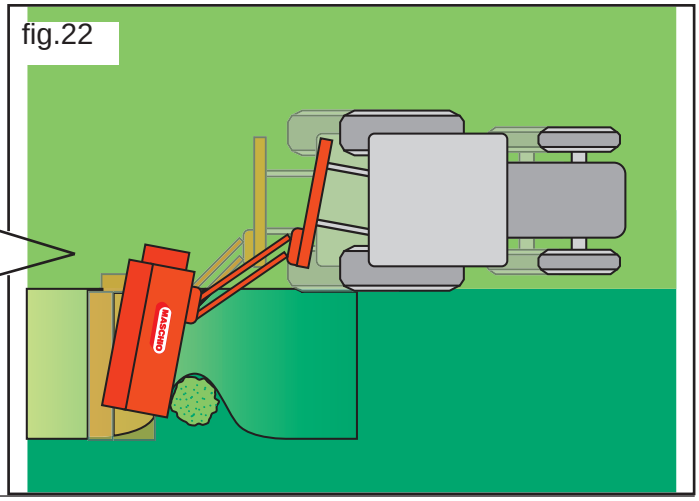


fig.22



Worn knives

- The diameter of fixing hole «F» must not be ovalized more than 2 mm in relation to the original diameter (fig.25).
- Length «L» of the knives must not be allowed to become more than 15 mm shorter than the original length (fig.25).

The pins must be replaced if:

- The thread of fixing screw «S» is damaged.
- Wear «T» on pin exceeds 2 mm (fig.25).

4.10 REPLACING BLADES

Periodically check the knives and their fixing components for wear.

Immediately replace all worn and/or damaged parts with the Manufacturer's genuine spares.

Proceed in the following way to replace worn or broken knives:

- Park the machine and tractor on flat ground.
- Make sure that all turning components have come to a stop.
- Detach the driveline from the machine and tractor.
- Using the tractor's power lift, raise the machine as high as it will go.
- Position bearing stands under the machine, on both sides.
- Carefully lower the machine on to the supports.
- Make sure that the machine is completely stable.
- Stop the tractor, remove the ignition key and apply the parking brake.
- Using appropriate wrenches, proceed in replacing the blades, as following Instructions:
- Disassemble all worn or damaged knives.
- **Couple new knives of the same weight together.**
- **Fix the pairs of knives of the same weight diametrically opposite to each other on the support.**
- **Install the heaviest pairs at the two ends of the rotor and the lighter pairs in the middle (fig.23).**
- Once the knives have been replaced, tighten the M 20 screws to a 150 Nm torque value. There must be a 1 to 2 mm float after fixing.

  Having terminated the operation, start the tractor, remove the machine from the stands, lower it to the ground and turn off the tractor engine.

  Fit the driveline back in position, turn on the tractor engine again, raise the machine sufficiently to prevent the spinning knives from touching the ground and progressively increase the PTO rate until reaching a nominal 540 rpm.

  If the knives have been mounted correctly, the rotor should turn without vibrations.

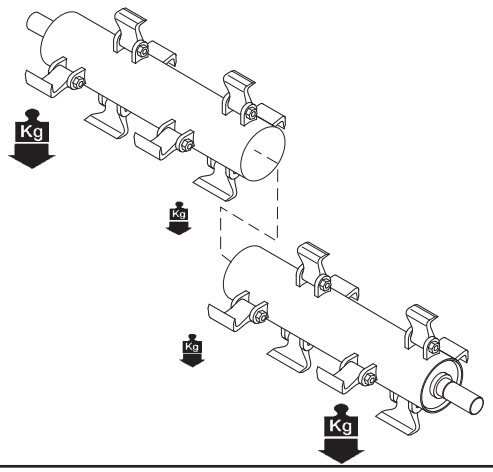


fig.23

SENSO DI ROTAZIONE DEI COLTELLI
BLADE TURNING DIRECTION
SENS DE ROTATION DES COUTEAUX
DREHRICHTUNG DER MESSER
SENTIDO DE ROTACIÓN DE LAS CUCHILLAS

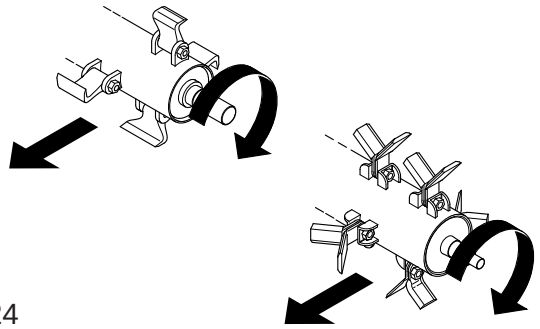


fig.24

Diametro iniziale del foro (F) ***Initial diameter of the hole (F)*** **Diamètre initial du trou (F)** ***Anfangsdurchmesser des Lochs (F)*** **Diámetro inicial del orificio (F)**	**20,5**
Diametro massimo ammissibile (F') ***Maximum tolerated diameter (F')*** **Diamètre maximum admissible (F')** ***Höchstzulässiger Durchmesser (F')*** **Diámetro máximo admisible (F')**	**22,5**
Lunghezza iniziale del coltello (L) ***Initial knife length (L)*** **Longueur initiale du couteau (L)** ***Anfangslänge des Messers (L)*** **Longitud inicial de la cuchilla (L)**	**90**
Lunghezza minima accettabile (L') ***Minimum acceptable length (L')*** **Longueur minimum admissible (L')** ***Kleinstzulässige Länge (L')*** **Longitud mínima aceptable (L')**	**75**
Usura massima «T» del perno «S» ***Maximum wear «T» of pin «S»*** **Usure maximum «T» de l'axe «S»** ***Max. Verschleiß «T» des Bolzens «S»*** **Desgaste máximo «T» del perno «S»**	**2**

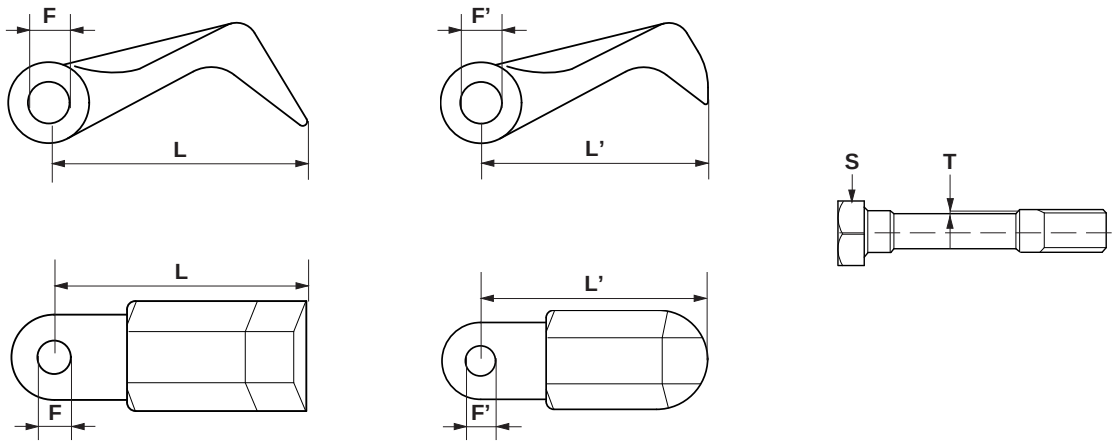


fig.25

4.11 REPLACING THE BELTS

Motive power is transmitted to the rotor by belts whose tension can be regulated.
Periodically, and in case of malfunction or slipping, check the tension of the transmission belts as follows:
- Remove the carter protection (1 fig.26), unscrewing the fixing screws (2 fig.26).
- Remove the nuts fastening the protecting guard (3 fig.26).
- Loosen the screws that fix the upper pulley hub (4 fig.27 N.4) and overdrive unit (5 fig.27).
- Fully lower the overdrive unit, removethe belts one by one and replace them with a new set.
- Work on the screws (6 fig.27) in order to tighten the belts correctly.
- Work on the screw (5 fig.27) to adjust the proper alignment of the pulleys.
- Lock the screw that fixes the beltstretcher (4 fig.27).
- Fit the previously removed casing backin place.

Worn belts become stretched. To correctly distribute the forces, they must therefore always be replaced together

ATTENTION

When regulating the belt tension, pay particular attention to the level state of the pulleys.
Press on the middle part of the belt between the two pulleys with a 5 Kg force. Each belt should give 1 cm (fig.28). In this respect we recommend placing an adequately long metallic ruler on the edges of the two pulleys (see broken line fig.28).
The ruler should touch all four borders of the pulleys.

4.12 SHIFTING

The machine is equipped with hydraulic side shifting of the three-point hitch support (A fig.29) and the machine can be tilted by means of a hydraulic cylinder (B fig.29).
Shifting is utilized in case work is done near ditches or near crops which require lateral shifting of the machine.
To prevent dangerous situations from occurring, it is advisable for one person to work on the machine at a time.
It is also advisable to strictly comply with the following recommendations:
- Never work with this machine unless you are in suitable psycho-physical conditions.
- Before beginning work, make sure that there are no persons or animals in the immediate vicinity.
- Only make adjustments after having disengaged the PTO, turned off the tractor engine, lowered the machine to the ground and made sure that all moving parts have come to a complete stop.

4.13 HYDRAULIC SHIFTING

Once the machine has been hitched to the tractor, connect the supplied hydraulic tubes (C fig.29) to the valves that supply the tractor with oil.
Make sure that the tractor provides sufficient power to ensure the machine operates correctly, then remove the pin (D fig.29) and turn the stands.(n.2)
By operating the special levers located in the driverís position, lateral shifting can be carried out.

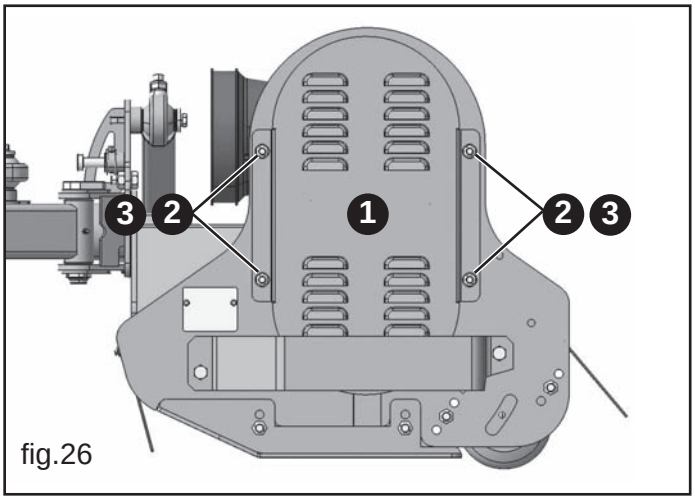


fig.26

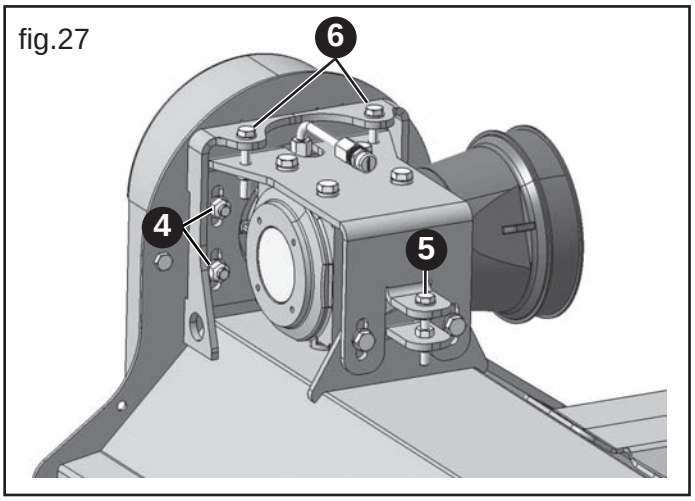


fig.27

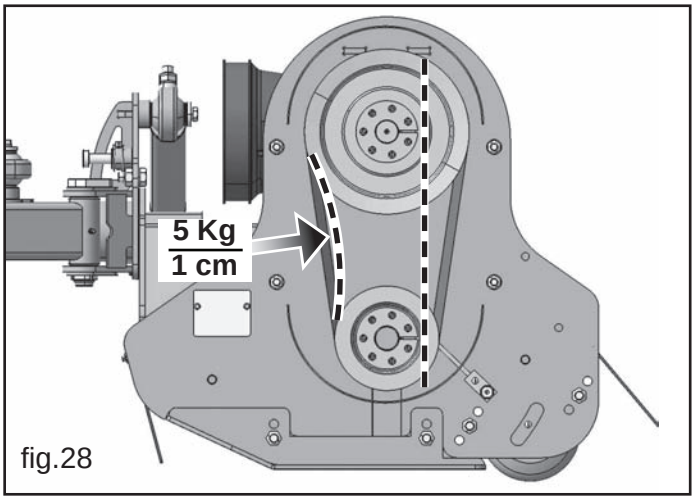


fig.28

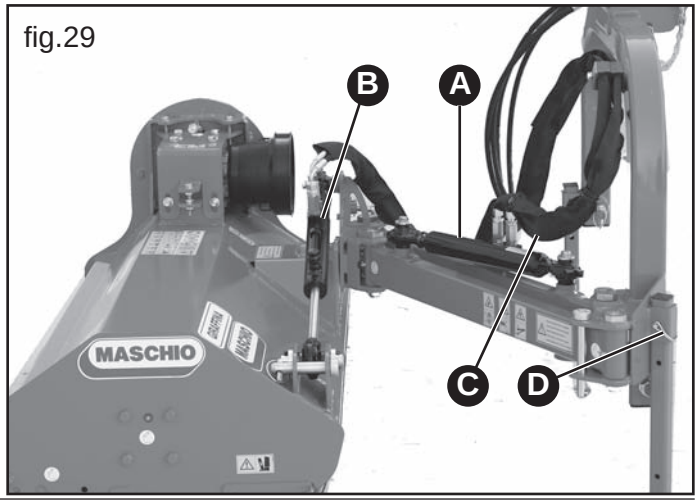


fig.29

4.14 ROLLER

The machine has a rear roller.

Internally this can be adjusted at three different positions (fig.30).

- If it's fixed through the holes «B», the machine is in the lower position.
- If it's fixed through the holes «M» the machine is in the middle position.
- If it's fixed through the holes «A» the machine is in the upper position.

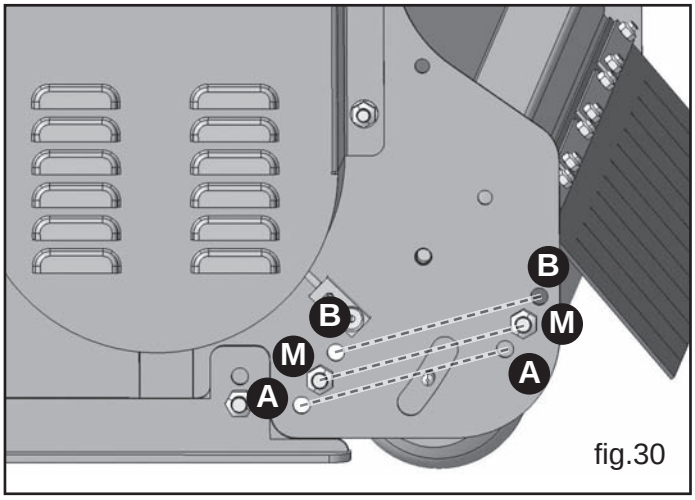


fig.30

4.15 IN WORK

ATTENTION

Before starting to work make sure to remove the frame locking pin (1 fig.31) and the parallelogram locking pin (2 fig.31), repositioning them in the holes of rest (A e B fig.31) and to lift the machine's support feet (3 fig.31).

Instructions for use in the field

This section contains instructions about how to use the machine for work in complete safety.

- *Before actually using the machine, make sure that it operates correctly by allowing the rotor to idle for a few minutes.*
- *Always make sure that there are no bystanders within the operating range of the machine whilst it is running.*
- *Disengage the PTO before lifting the machine. Do not operate it when the machine is raised before getting off the tractor.*
- *Comply with the safety distances when working near built-up areas or roads* (fig.32)*: 5 meters each side, 10 meters at the rear.*

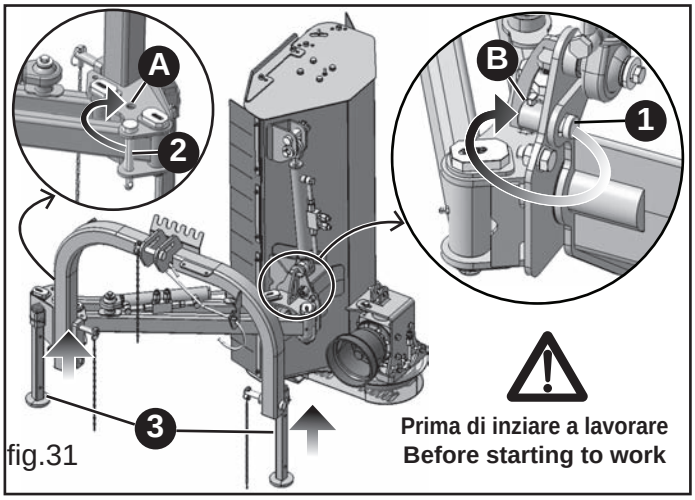
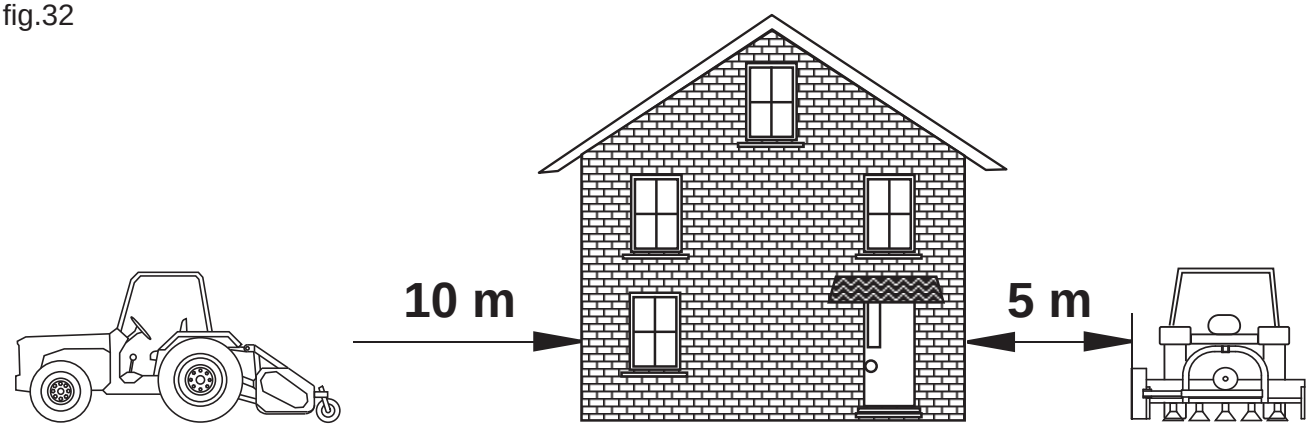


fig.31

VELOCITÀ DI AVANZAMENTO CONSIGLIATE (km/h) *RECOMMENDED GROUND SPEEDS (kph)* VITESSES D'AVANCEMENT CONSEILLÉES (km/h) *EMPFOHLENE FAHRGESCHWINDIGKEIT (km/h)* VELOCIDADES DE AVANCE ACONSEJADAS (km/h)															
TIPO DI MATERIALE ***TYPE OF MATERIAL*** **TYPE DE PRODUIT** ***MATERIALART*** **TIPO DE MATERIAL**	**0,5**	**1**	**1,5**	**2**	**2,5**	**3**	**3,5**	**4**	**4,5**	**5**	**5,5**	**6**	**6,5**	**7**	**8**
Erba rada / Sparse grass / Herbe clairsemée Lichtes Gras / Hierba rala										■	■	■	■	■	■
Erba incolta / Uncultivated grass / Herbe en friches Wild wachsendes Gras / Hierba no cultivada				■	■	■	■	■	■	■					
Sarmenti fino a 2 cm di diametro / Twigs up to 2 cm in diameter / Sarments jusqu'à 2 cm de diamètre Ranken bis zu 2 cm Durchmesser / Sarmientos hasta 2 cm de diámetro			■	■	■	■	■								
Sarmenti fino a 3 cm di diametro / Branches up to 3 cm in diameter / Sarments jusqu'à 3 cm de diamètre / Ranken bis zu 3 cm Durchmesser / Sarmientos hasta 3 cm de diámetro		■	■	■	■										

fig.32



4.16 HOW TO WORK

Use in the field

Hitch the machine to the tractor correctly and proceed in the following way;

- *Using the power lift controls, lower the machine until the rear roller rests on the ground and the tools are near to the ground without touching it.*
- *Engage the PTO and gradually accelerate the tractor engine until the PTO is spinning at the required speed (540 rpm).*
  It is highly inadvisable to exceed this rate as the machine has been sized to provide its utmost efficiency at these speeds.
- *Engage the gear and begin to work.*
- *Adjust the work height with the power lift controls if necessary. Remember that the cutting tools (knives or hammers) must not touch the ground (*fig.33*).*
- *Modify the speed of the tractor if necessary (see table of recommended speeds).*
- *Adjust the position of the roller to raise or lower the cutting height from the ground (min. height 3 cm,* fig.34*).*

ATTENTION

To use the machine in the correct way, the rod of the tractor's top link must be regulated so that the pin is in the center of the slot when the machine is perfectly horizontal, so that the machine can adapt in a better way to the different ground contours.

Ground speed

- *Remember that the tractor's ground speed must be regulated to suit the type and quantity of material being cut as an* ***excessive speed*** *will damage the transmission components and make them quickly wear out.*

This will result in a poor quality cut while coarse material could be thrown up having overcome the envisaged safety limits owing to greater inertia.

CAUTION

***The speed of the tractor with the machine working must not exceed 10 Km/hr in order to avoid breakage or damages* (fig.35).**

DANGER

Stones or other sharp objects may be thrown up by the turning tines during the soil working phase.
Always constantly check that there are no persons, children or domestic animals in the field of action of the machine.
The operator must also pay attention to the above.

CAUTION

Avoid idling the machine when away from the ground. While at work, avoid working in reverse gear or taking

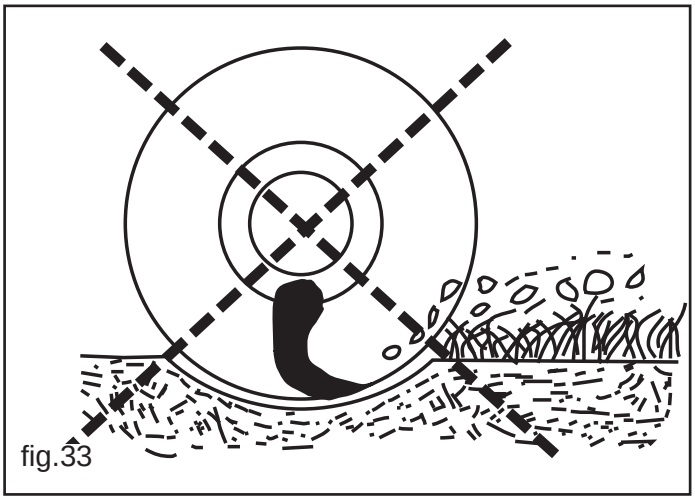


fig.33

fig.34

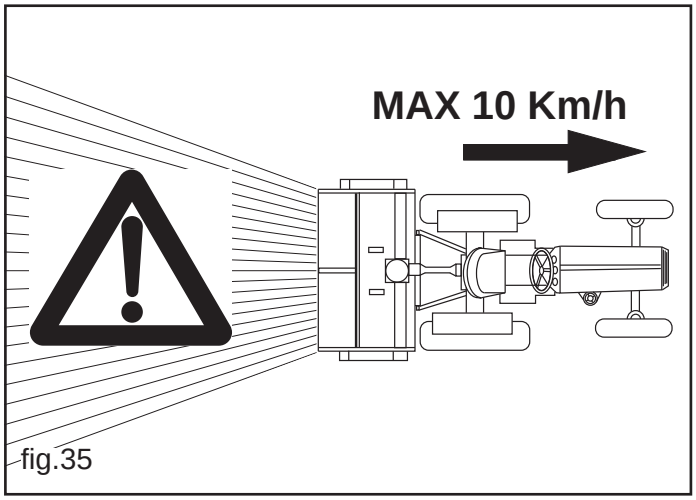


fig.35

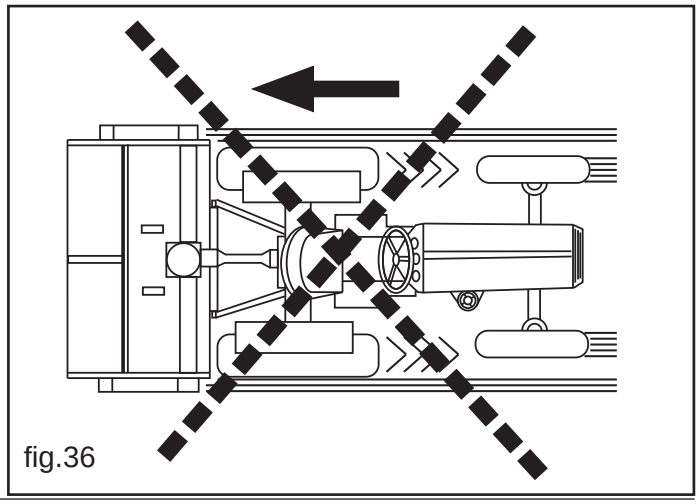


fig.36

***curves with the machine lowered* (fig.36, fig.37).**
Always raise the machine when changing direction or reversing gears.
***During transport, and whenever raising the machine becomes a necessity, the hoisting unit of the tractor should be regulated in order that the shredder is never raised from the ground more than 30-35 cm* (fig.38).**
Do not drive on public highways if the machine is dirtied with soil, grass or anything else that could dirty and/or hamper the road traffic.
Lower the machine slowly.
Do not allow it to drop violently on to the ground. To do this would strongly stress all the machine components and could damage them.

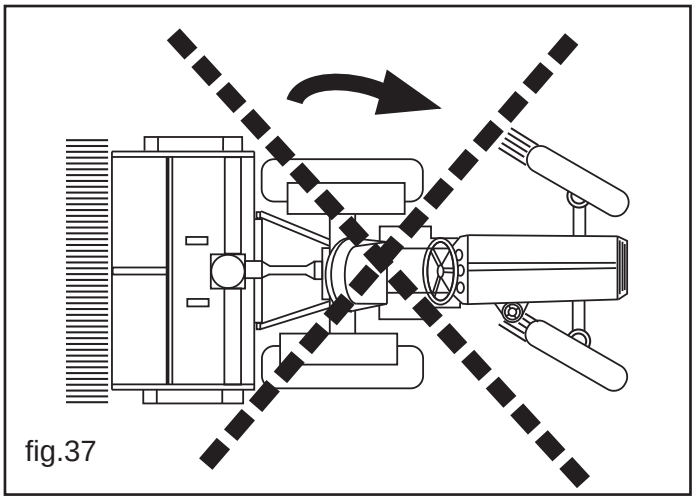


fig.37

4.17 PARKING

WARNING

In order to ensure the stability of the machine, follow these instructions when it is unhooked from the tractor:
1) Raise the rear roller of the machine.
2) Lower the bearing stands and fix it securely in place with the plug and snap-pin.
3) Place the machine on a suitable surface.

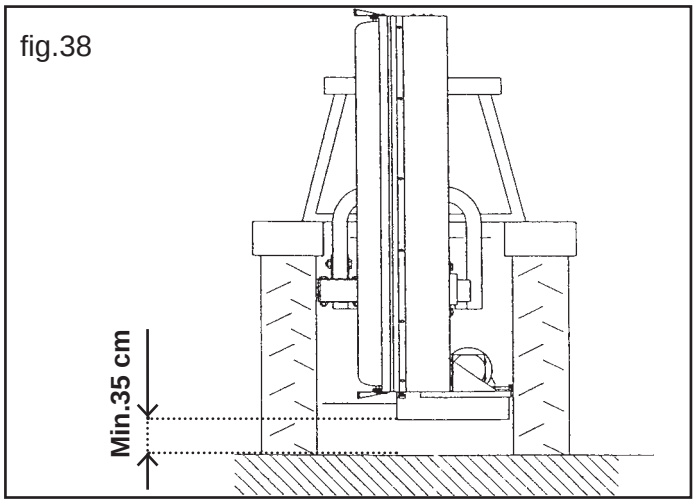


fig.38

4.18 USEFUL ADVICE FOR THE TRACTOR DRIVER

The following are some useful suggestions for problems which might arise during work.

Excessive cutting of the product to be sheared
- *Slightly raise the machine from the ground, adjusting the height with the wheels (the shredder must not touch the ground with the blades).*
- *Increase the forward speed.*

Scant cutting of the product to be sheared
- *Slightly lower the machine to the ground.*
- *Reduce forward speed.*
- *Do not work on ground that is too damp.*

Clogging of the rotor
- *Ground too wet to work.*
- *Raise the machine from the ground.*
- *Reduce forward speed.*
- *Avoid working in presence of very tall grass. Eventually clean away what has collected on sides of rotor in order to prevent excessive overheating.*

Clogging in the rotor compartment
- *Soil too wet. Very tall grass.*
- *Stop the engine.*
- *Make sure that all moving parts are at a standstill.*
- *Thoroughly clean all the accumulated material from the rotor compartment with an adequate tool.*

The machine bounces on the ground, or vibrates
- *Foreign bodies are caught in the blades.*
- *Blades mounted incorrectly, without the helicoidal arrangement, or with the edge penetrating into the ground.*
- *Blades worn or broken.*
- *Deformation of the rotor due to blows received from foreign bodies in the central part, during work.*

Other inconveniences
The machine does not work in the same way along all its width, e.g. it shreds more on the right side.
Shorten the right arm.

Working on hills
When possible, proceed by moving upwards in the direction of the slope.
If it is not possible to avoid working along the sides of the hill, work from top to bottom to reduce the terracing effect.

Practical hints
The worked ground must always be on the right of the driver.
The best system is to work in alternating strips.

5.0 MAINTENANCE

Here follows a list of various maintenance operations to be carried out periodically. Lowered operating costs and a longer lasting seeding machine depend, among others, on the methodical and constant observation of mese rules.
The maintenance periods listed in this booklet are only indicative and are for on normal conditions on use, therefore be varied depending the kind of service, the more or less dusty surroundings, seasonal factors, etc. For more serious conditions of service, maintenance will logically be done more often.

All operations must be carried out by expert personnel, equipped with protective gloves, in a clean and dust-free environment.
All maintenance operations must be carried out with the machine hooked up to the tractor, the parking brake engaged, the engine off, the ignition key removed and the equipment sitting on suitable supports on the ground.

ATTENTION

USING OILS AND GREASES
- **Before injecting grease, the nipples must be cleaned to avoid mud, dustand foreign bodies from mixing with the grease, otherwise they will reduce or even annul the effect of the lubrication.**
- **Always keep oils and grease out of reach of children.**
- **Always read warnings and precautions indicated on the containers carefully.**
- **Avoid skin-contact.**
- **After use wash the equipment thoroughly.**
- **Treat the used oils and polluting liquids in conformity with the laws in force.**

RECOMMENDED LUBRICANTS
- For lubrication in general, we advise: **OIL SAE 80W/90**.
- For all greasing points we advise: **AGIP GR MU EP 2 GREASE** or equivalent (specifications: DIN 51825 (KP2K)).

CLEANING
- **The products used for cleaning must be disposed of according to the laws in force.**
- Clean and maintain the machine after putting any removed guards back in position. Replace them with new ones, if they are damaged.
- **Clean the electrical components only with a dry cloth.**

USING PRESSURISED CLEANING SYSTEMS (Air/Water)
- **Always keep in mind the rules that regulate use of these systems.**
- **Do not pressure clean electrical components.**
- **Do not pressure clean chromium-plated components.**
- **Do not place the nozzle in contact with the parts of the equipment, especially the bearings. Keep it at a min. distance of 30 cm from the surface to be cleaned.**
- Thoroughly lubricate the equipment, especially after cleaning it with pressurised systems.

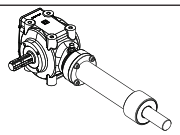
5.1 MAINTENANCE PLAN - Summary table

INTERVAL	TYPE OF WORK
WHEN THE MACHINE IS NEW	- Grease all parts indicated by transfer nr. 17 ('GRASE') of this leaflet. - After the first hours of work check that all the bolts are still tight.
EVERY 8 WORKING HOURS	- Grease the cardan shaft cross journals. - Grease the bearings of the rotor. - Check the tightness of the fastening bolts of the blades. - Open the rear hood and check to make sure that the rotor housing is clean and free from plant residues.
EVERY 50 WORKING HOURS	- Check the oil level in the overdrive box and the transmission shaft, filling it up, if necessary, to the notch on the indicator (fig.40).
EVERY 400 WORKING HOURS	- Carry out a complete oil change of the overdrive, discharging all the oil from the discharge cap located below the overdrive box (fig.40).
REST PERIODS	At the end of the season, or if a long period of rest is foreseen it is advisable to: 1) Wash the equipment thoroughly with water, then dry them. Clean the electrical components **only** with a dry cloth. 2) Carefully check for worn or damaged parts and replace then where required. 3) Check the state of wear of the transmission chains and toothed wheels. Replace damaged or worn out parts, if required. Use solvent to clean the transmission chains, the toothed wheels and the chain stretchers. Lubricate with mineral oil (SAE 80W/90) when dry. 4) Firmly tighten all screws and bolts. 5) Apply protecting oil to all unpainted parts. 6) Protect the equipment with a (nylon) cover. 7) Then position it stably in a dry place out of the reach of unauthorized people

It is in the interests of the user to follow these instructions carefully, as when work recommences, he will find the equipment in perfect condition

LUBRICANTS

- It is advisable to use **AGIP ROTRA MP SAE 85W/140 OIL** or equivalent for the overdrive unit. Correspond to following specifications **API - GL5 / MIL-L-2105C.**
- It is advisable to use **AGIP GR MU EP 2 GREASE** or equivalent for all greasing points.

QUANTITÀ DI OLIO / *OIL QUANTITY*		
OIL 	**MOD**	**Q.ty (lt.)**
	120	0,9
	140	0,9
	160	0,9

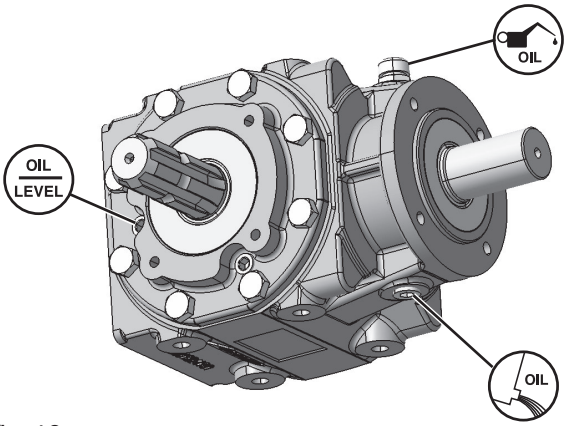


fig.40

5.2 PROBLEMS, CAUSES AND SOLUTIONS

INCONVENIENCE	*CAUSE*	*REMEDY*	
Excessive vibration.	1) *Breakage or excessive wear of blades and hammers.* 2) *Blades or hammers blocked on pin.* 3) *Inadequate balancing of rotor.* 4) *Wear of rotor bearings.*	1) *Replace the worn or cracked pieces.* 2) *Clean and grease the pins.* 3) *Check the weight of the of the blades/hammers block* 4) *Remove and replace bearings and seals.*	
Imperfect cut due to lowering of engine speed.	1) *Belt tension insufficient.* 2) *Belts excessively worn.*	1) *Regulate tension.* 2) *Replace belts.*	
Overheating of belts.	1) *Incorrect tension of belts.* 2) *Transmission axis and rotor axis out of alignment.*	1) *Check tension.* 2) *Check alignment.*	
Overheating of bevel gear pair.	1) *Lack of oil.* 2) *Oil depleted..*	1) *Add oil to proper level.* 2) *Replace*	
Rapid wearing of blades or hammers.	1) *Work position too low, blades touching ground.*	1) *Adjust height of rotor from ground.*	
Loss of oil from transmission, belt side.	1) *Wear and breakage of oil seal..*	1) *Replace seal.*	
Deformation of the supports of the roller or wheels.	1) *The supports of the roller and the wheels have undergone side stress.*	1) *Raise the machine from the ground when in reverse gear.*	
Deformation of protective guards.	1) *In order to assume the work position, the machine - from a raised position (transport) - has been lowered onto the material to be shredded.*	1) *The machine must be in the work position before touching the material to be shredded.*	

6.0 DEMOLITION AND DISPOSAL

This operation is to be carried out by the customer.
Before demolishing the machine, you are advised to carefully check its physical condition and ascertain whether there are any parts of the structure that may be susceptible to structural collapse or breakage during demolition.
The customer should operate in compliance with the environment protection laws in force in his/her country.

CAUTION

The machine demolition operations should be carried out by skilled personnel only, equipped with suitable protective clothing (safety footwear and gloves) and auxiliary tools and equipment. All the disassembly operations for demolition should be carried out with the machine stopped and detached from the tractor.

Before demolishing the machine, you are advised to render harmless all the parts that may be a source of danger and therefore:
- scrap the structure using specialized firms,
- remove any electrical apparatus according to the laws in force,
- collect oils and greases separately, to be disposed of through specialized firms, in accordance with the regulations of the country in which the machine was used.

When the machine is demolished the CE mark should be destroyed together with this manual.

Finally, we remind you that the manufacturer is always available for any and all necessary assistance and spares.

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