

CE



# Shredder

**MA - ML - MP**

**INSTRUCTION AND MAINTENANCE MANUAL**



ORIGINAL INSTRUCTIONS



MADE IN ITALY



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**ATTENTION !  
IT IS PROHIBITED TO USE THE SHREDDER WITH-  
OUT CONSULTING THE INSTRUCTION AND MAIN-  
TENANCE MANUAL**

Read this manual carefully; in case of difficulty in understanding do not use the machine and if clarification is required request information from your authorised retailer or from the manufacturer.



# 1. INTRODUCTION

This manual is an integral part of the product and must be kept in an appropriate manner, allowing easy consultation by the operator at any time. It is advisable to make a copy of this manual.

This manual is accompanied by the "DECLARATION OF CONFORMITY" that certifies compliance with the regulations in force and that must be presented to parties that expressly request it.

In addition, this declaration shows the "SERIAL NUMBER" of the machine. Upon delivery check correspondence of the serial number of the machine. Where there correspondence of the numbers is incorrect, immediately contact the retailer to check the details.

"Sicma" thanks you for having chosen this excellent product.

During operation you will have the opportunity to appreciate the quality of use and durability of your machine.

In order to maximise the qualities of this machine, it is advisable to spend a little of your valuable time reading this manual. Superior knowledge of the machine will pay dividends in terms of duration, safety and quality in the productive use.

In case of uncertainty, please contact the authorised retailer that will advise you, offering the appropriate support in the shortest time possible.

Your "SHREDDER" was designed exclusively for agriculture use. Any other use of the machine is to be considered abusive and is wholly at the risk of the user. In such case the legal warranty ceases.

Appropriate use also involves compliance with the instructions of service and maintenance prescribed by the manufacturer.

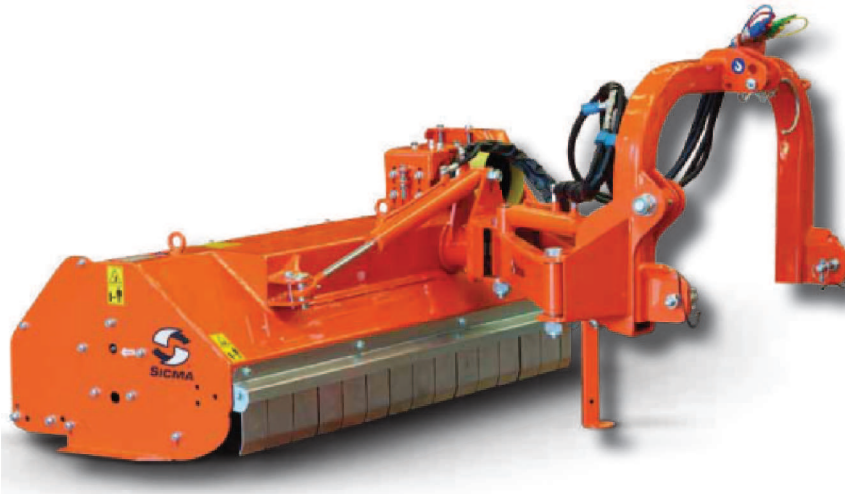
Only authorised persons that are informed about the possible risks must use, repair and maintain the machine.

The relevant instructions for the prevention of accidents must be observed as well as all the other general technical provisions, the Highway Code and regulations relating to health and safety.

Never make any changes to the machine under your own initiative. Where this is the case, no liability can be held for any damage caused to persons or property. In this case the legal

warranty also ceases with immediate effect .

"Sicma" reserves the right to suspend at any time the production of certain models, to vary the characteristics and the design without being committed in any shape or form to provide notice thereof and is not obliged to apply these changes to models that have already been produced.



## 2. GENERAL DESCRIPTION OF THE MACHINE

### ATTENTION!

Where the shredder is delivered packaged, the elements of the packaging must not be left discarded as potential sources of risk. Remove the above to the appropriate collection places if they are contaminants and/or biodegradable.

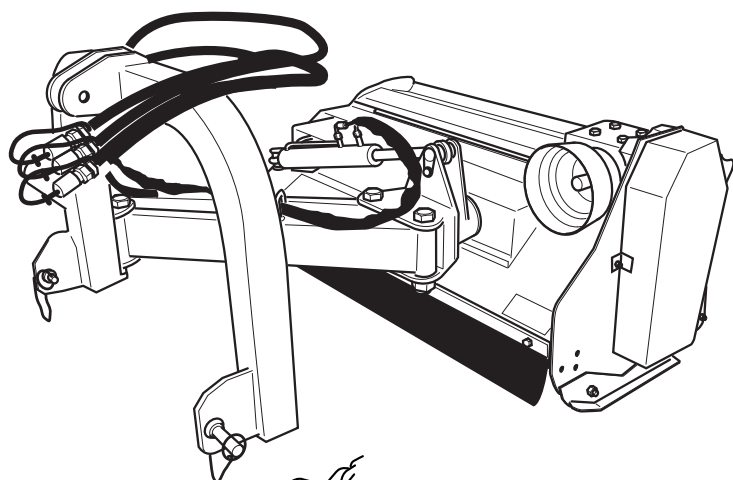


Fig. 1  
Shredder MA

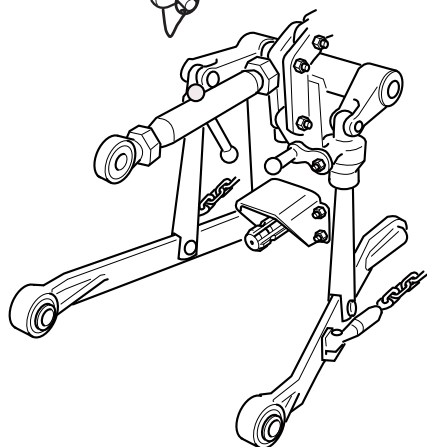


Fig. 2  
Lifting unit  
- 3 arms

The shredder series MA, ML, MP consist of a body of steel that supports all the parts of the machine; it is designed in such a way as to ensure perfect working of the product without the need for high powers, in compliance with the applicable safety standards.

The articulation is secured to the main frame that allows the machine to be tilted; two arms are connected to the joint for lateral movement, and the three-point connection is attached to the arms.

The machine is able to perform rotations with respect to the ground of 65° and 90° by means of a hydraulic control, operated exclusively on board the tractor; in addition the shredder, via the hydraulic control arms can perform lateral movements.

Within the body is housed the rotor supported by high strength bearings and driven by transmission belts that take motion from the side transfer of the box to the gears or revolution multiplier. The rotor is dynamically balanced for homogeneous rotation without vibration.

The number of knives or hammers with which the rotor is equipped guarantee perfect shredding of the material and adequate ventilation.

At the time of purchase the shredder is as shown in Fig. 1, and is designed to be installed on the rear of the tractor that will need to be fitted with a "universal" rear hydraulic 3-point lift unit, second category, for the models MA, ML and third category for the mod. MP suitable to withstand the weight and absorption characteristics of the shredder.

The hitch is shown in Fig. 2



**ATTENTION!**

Before performing any operation carefully read the safety requirements shown here.

**2.1 Shredder composition**

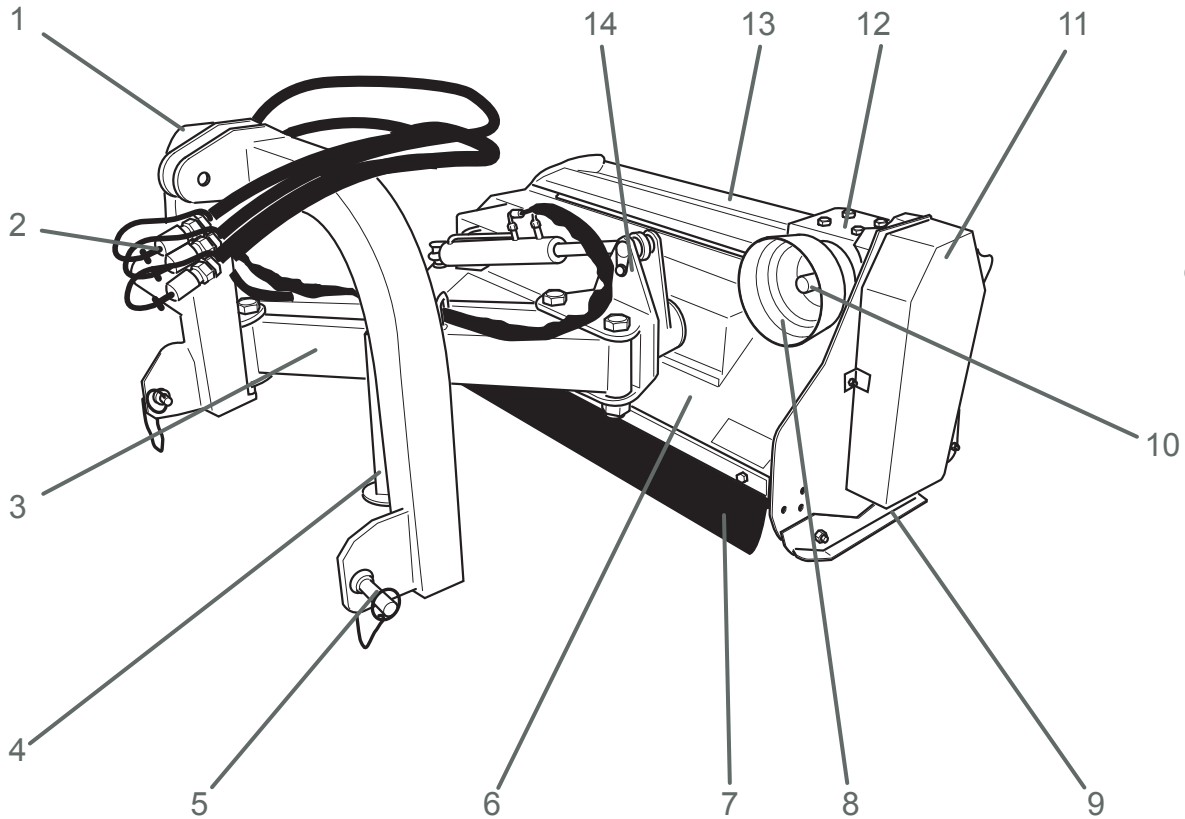


Fig. 3  
Main  
elements

No.	Description
1	Three-point connection
2	Quick coupling hydraulic connections
3	Support arm and movement
4	Foot support
5	3° point plug
6	Main frame
7	"EC" rubber protection
8	Protection cardan joint
9	Slide rail
10	Power take-off (PTO 540 RPM)
11	Transmission belt housing
12	Gear box
13	Openable hatch for maintenance
14	Machine tilt articulation



### 3. GENERAL SAFETY INSTRUCTIONS

It is recommended to carefully read these annotations in order to avoid situations of danger.

- 1) In addition to the information in this manual it is also similarly important to respect the general provisions relating to safety, provided for the users of agricultural machines by current legislation of each country.
- 2) Observe the decals on the machine, especially those that relate to safety.
- 3) Only start the shredder in the resting position on the ground and horizontal to the ground.
- 4) Never exceed the speed of the prescribed PTO (540 rpm).
- 5) Secure the protector tube of the cardan shaft against the rotation by connecting the chains in order to prevent rotation of the protective elements of the cardan shaft.
- 6) Lower the machine to the level of the ground before putting it in the work position. Ensure there are no persons in the range of action of the machine.
- 7) Ensure that the security devices are perfectly fitted and efficient before starting work.
- 8) Pay special attention on stony ground, ensuring that there are no persons in the immediate vicinity.
- 9) Before any interventions on the shredder, ensure that all the rotary members are stationary and switch off the tractor by removing the start key.
- 10) During transfer onto public roads, observe the Highway Code.
- 11) Use particular caution during the operations of coupling and uncoupling of the tool from the tractor.
- 12) Before leaving the tractor, secure the tool and lower it until resting on the ground. Switch off the tractor and remove the start key.
- 13) Before engagement and release of the machine at the three-point hitch, lock the hydraulic lifting controls of the tractor in order to avoid, even inadvertently, the hydraulic lift being activated resulting in movement of the shredder.
- 14) Ensure that the maximum loads permitted for the three-point hitch are respected.
- 15) Perform assembly and disassembly of the cardan shaft only with the PTO disabled and the engine of the tractor off with the ignition key removed.
- 16) Before engaging the PTO, ensure that the speed and direction of rotation of the power take-off of the tractor are compatible with the shredder.
- 17) Never engage the PTO with the engine running.
- 18) Before engaging the PTO, ensure there are no persons in the work area.
- 19) Do not allow anyone to stand near the PTO when this is engaged.
- 20) Before accessing the tool ensure that this is completely stopped and that the engine of the tractor is stopped and the PTO is off.





21) Periodically check the tightness of screws and nuts. Where necessary tighten with reference to the tightening table in paragraph 9.3.

22) During maintenance work performed with the tool raised, ensure that it is securely in the elevated position safely through the use of appropriate supports.

In the case of repairs please contact specialist workshops.

23) Dispose of oil and grease by observing the relevant rules in force.



#### IMPORTANT !

The shredder models MA, ML, MP were designed and manufactured for agricultural use and designed to operate, in accordance with the manufacturer's instructions, within the limits shown in this manual. No liability is assumed for any damage to property or persons caused by improper use of the machine.

## 4. IDENTIFICATION OF THE MACHINE

### 4.1 Identification plate



Fig. 4  
Identification plate

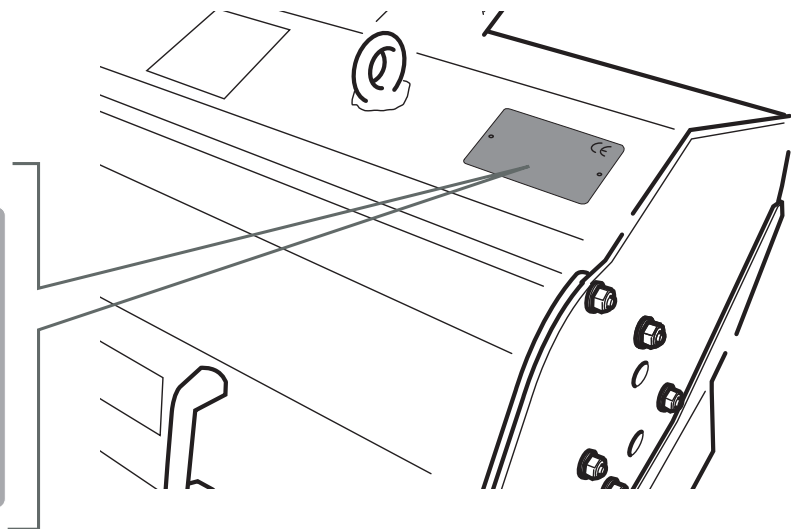


Fig. 5  
Plate position

## 4.2 Identification markings

The shredders of the company Sicma models "MA, MLI, MLE, MPI, MPE" are available in the following work widths and models :

Internal transmission unit		External transmission unit	
Model	Work width mm	Model	Work width mm
MA 120	1150		
MA 140	1350		
MLI 140	1330	MLE 140	1330
MLI 160	1530	MLE 160	1530
MPI 180	1800	MPE 180	1800
MPI 200	1960	MPE 200	1960



Fig. 6  
Instruction and maintenance manual

## 4.3 Inspection of machine upon delivery

At the time of delivery of the shredder check the entire supply, ensuring in particular the presence of the instruction and maintenance manual that is an integral part of the machine.

The following items must be delivered together with the shredder:

- no. 1 shredder operation and maintenance manual Fig.6
- no. 1 operation and maintenance manual for cardan shaft Fig.7
- no. 1 declaration of conformity Fig.8



Fig. 7  
Instruction and maintenance manual



Fig. 8  
Declaration of conformity

#### 4.4 Technical data

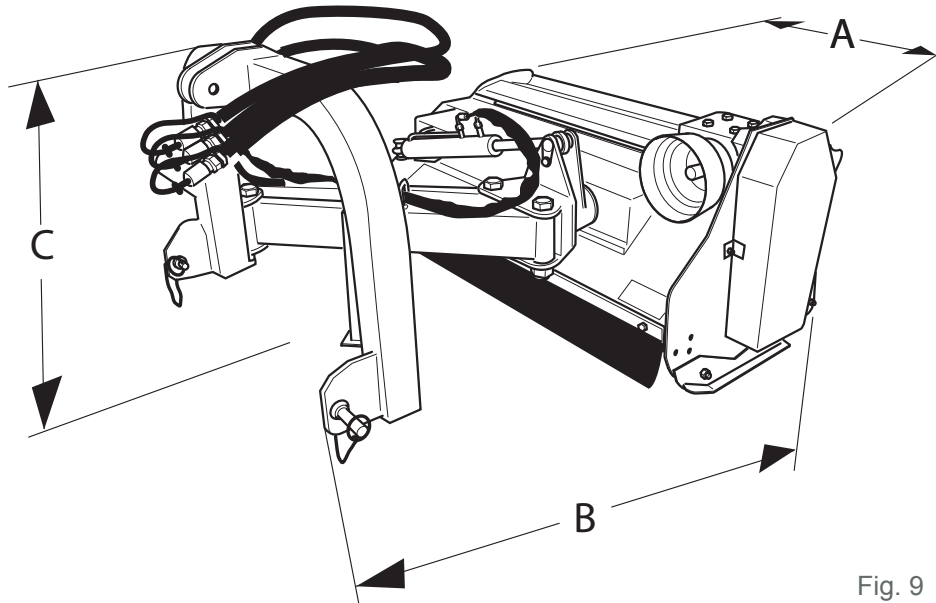
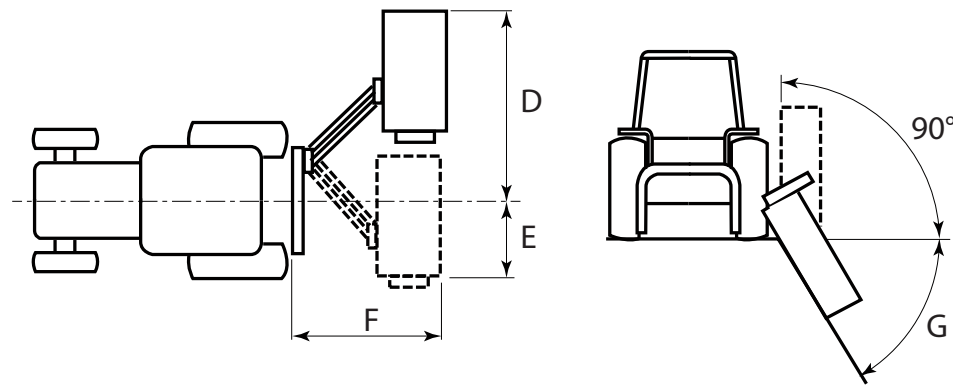


Fig. 9  
Overall dimensions



#### TECHNICAL SPECIFICATIONS

		MA		MLI		MLE		MPI		MPE	
Ref.	Model	120	140	140	160	140	160	180	200	180	200
	Work width (mm)	1200	1400	1330	1530	1330	1530	1800	1960	1800	1960
A	Total width (mm)	1316	1516	1470	1670	1540	1740	2005	2185	2005	2185
B	Total length (mm)	1200	1200	1600	1600	1600	1600	1750	1750	1850	1850
C	Height (mm)	700	700	968	968	968	968	1050	1050	1050	1050
	Mass - Weight (Kg)	127	147	399	429	399	429	590	630	605	645
	Number of revolutions (rpm)	540	540	540	540	540	540	540	540	540	540
	Required power (HP)	12	20	30-50	40-60	30-50	40-60	60-70	70-80	70-80	70-80
	Required power (Kw)	9	15	22-37	29-44	22-37	29-44	44-51	51-59	51-59	51-59
D	Movement (cm)	183	203	195	215	215	235	235	250	280	295
E	Movement (cm)	-	-	-	-	-	-	105	105	115	115
F	Maximum dist. (cm)	145	145	154	154	154.5	154.5	175	175	180	180
G	Tilt	65°	65°	66°	66°	66°	66°	70°	70°	70°	70°
	Standard Y Knives	40	48	40	44	40	44	48	48	48	48
	Standard Hammer	20	24	20	22	20	22	24	24	24	24



## 5. SAFETY REGULATIONS: ADHESIVES AND WARNINGS

THE ADHESIVE LABELS ON THE MACHINE ARE AN INTEGRAL PART OF THE SAME!

Where these may be damaged, or otherwise not legible, an immediate replacement must be requested from SICMA.

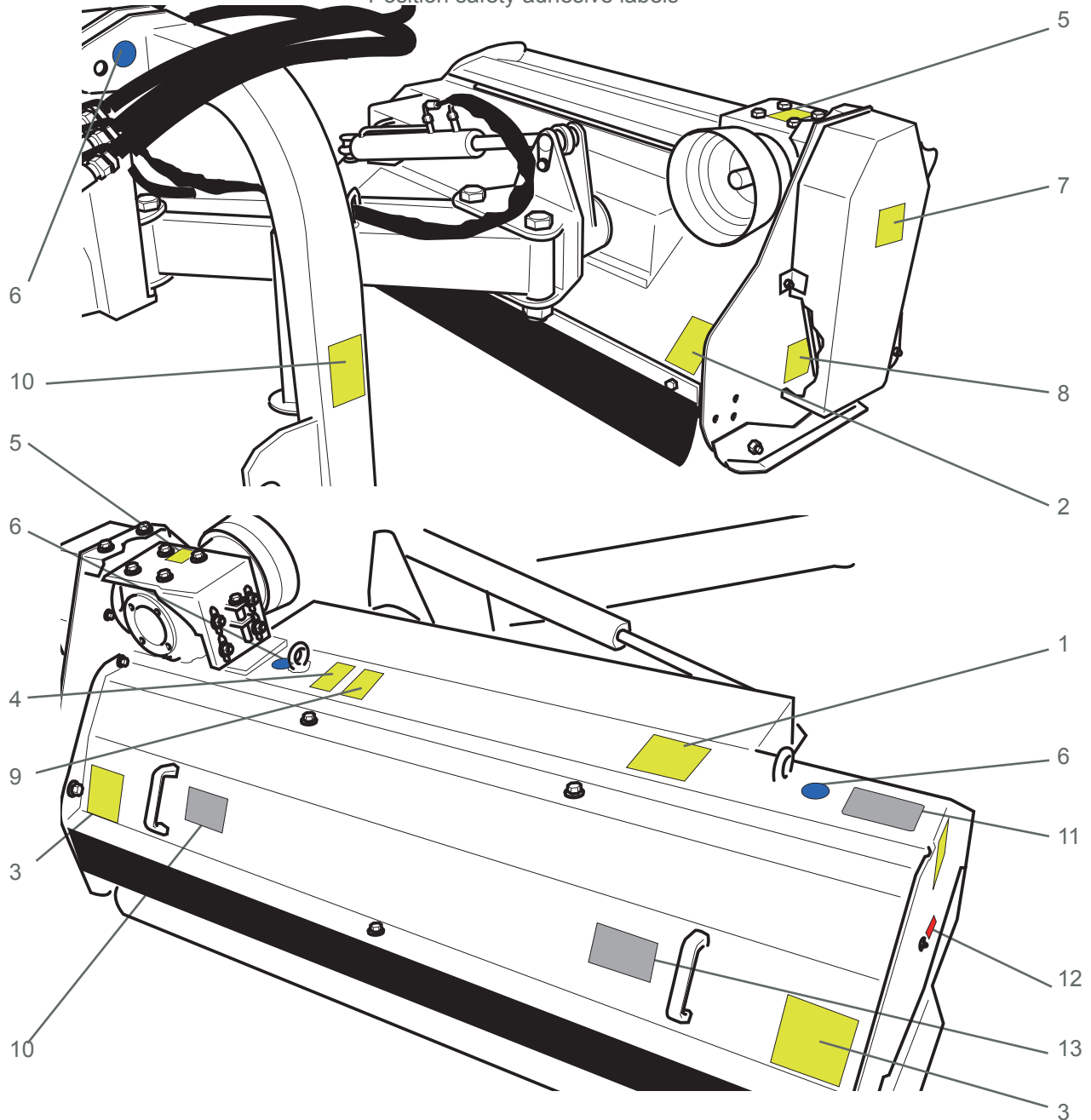
**SICMA disclaims all liability for any failure to comply with the rules of safety and prevention detailed in this manual.**



### ATTENTION !

The adhesive labels and the plates showing warnings and alerts are an integral part of the machine.

Fig. 10  
Position safety adhesive labels



### ATTENTION VERY IMPORTANT

The position of the safety adhesive labels are the same for all the embankment Shredder models.

## 5.1 Adhesive labels description



### ATTENTION !!!

Carefully read the explanation of all the adhesive labels.



1

Attention: read carefully the instructions and safety rules before using the machine. Switch off the engine and remove the key before carrying out maintenance or repairs.



8

Risk of injury to the hands: keep the safety guards in place during operation.



2

Risk of injury to feet: rotating tools maintain a safe distance from the machine.



9

Danger of falling materials or tools that have been raised. Respect the safety distance.



3

Launch of objects against the entire body: maintain a safe distance from the machine. Risk of injury to the hands: do not open or remove the safety guards while the machine is in motion.



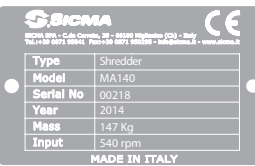
10

Launch of objects against the entire body: maintain a safe distance from the machine. Risk of injury to the hands: do not open or remove the safety guards while the machine is in motion.



4

Danger of crushing, dangerous area due to machine movement.



11

EC identification plate (p.9)



5

Use the PTO at 540 revolutions per minute.



12

Greasing points



6

Machine lifting attachment point



13

Plate size shredder



7

Risk of injury to the feet, maintain a safe distance from the machine.

## 6. UNLOADING AND UNPACKING

Unloading of the shredder must be performed with the utmost attention by the operators in order to avoid damage to the machine and damage to the operators themselves.



### ATTENTION!

Ensure that during the loading and unloading operations and during movement of the machine, there are no unauthorised persons in the area of operations.

Unloading from the means of transport must be performed by means of suitable lift trucks or cranes suitable for the purpose. It is mandatory to use lifting straps or chains that are suitable and "EC" approved



### ATTENTION!

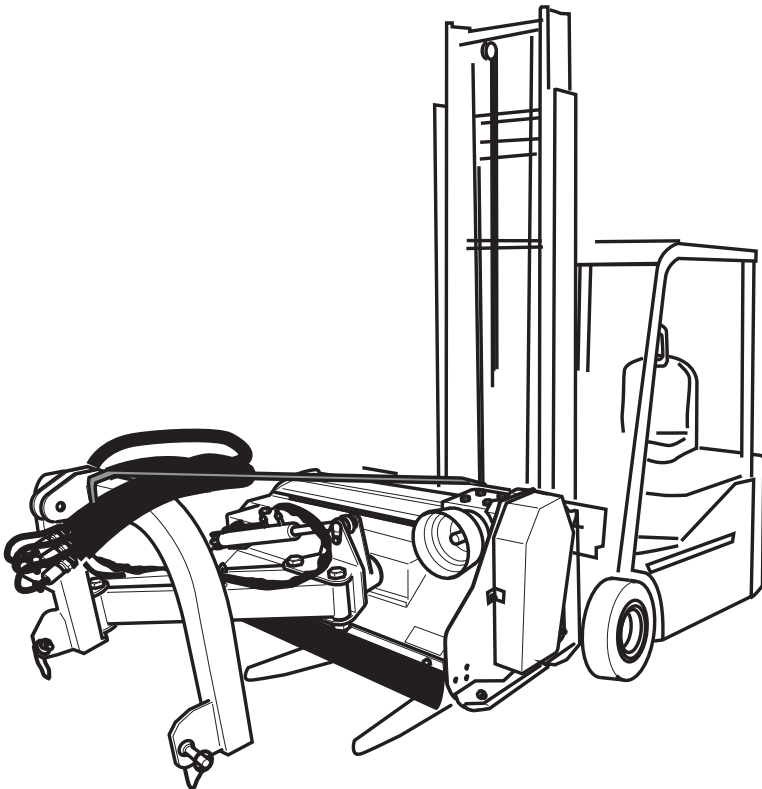
Check that the load capacity of these means is adequate for the weight of the machine to be lifted. The weight is shown on the machine identification label (Cap. 4.1).



### ATTENTION!

The means of transport must allow perfect positioning of the machines, which should rest with the base on the loading platform of the means and should also not be overlapping. This could cause deformation of the structure of the machine.

LIFTING MEANS.  
Fig. 11 Lifting means



LIFTING METHOD  
Fig.12 Connection or lifting points

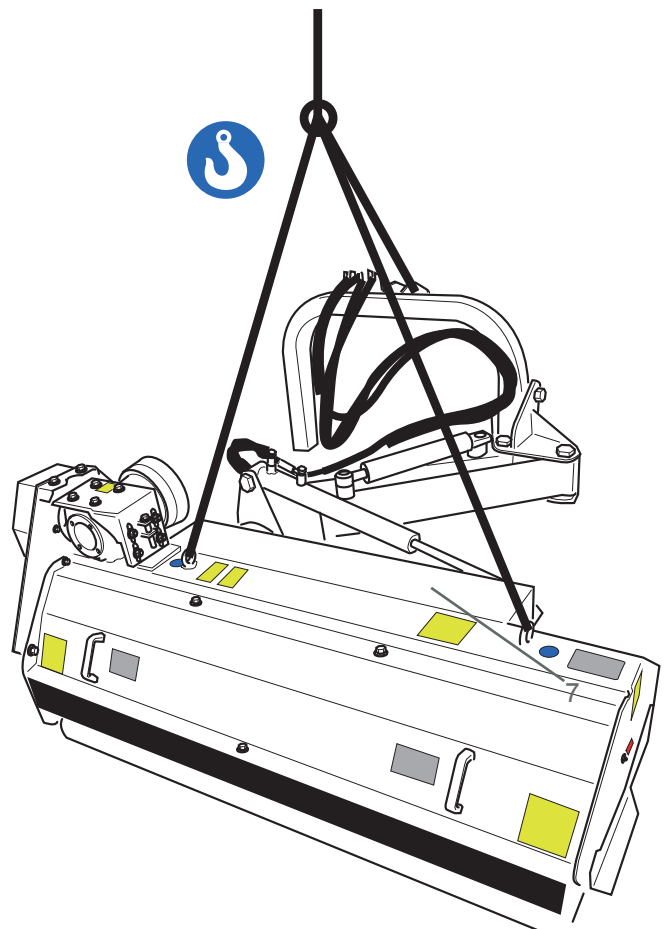


Fig. 13  
Adjustable third point

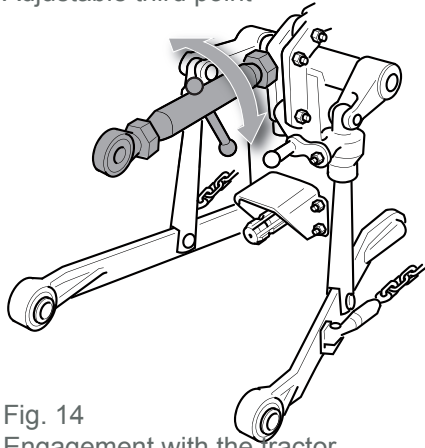


Fig. 14  
Engagement with the tractor

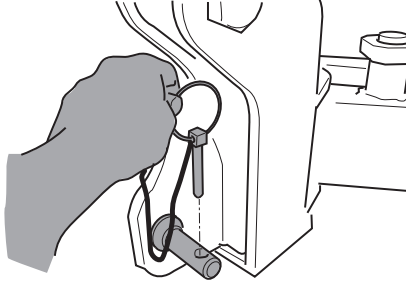


Fig. 15  
Engagement with tractor

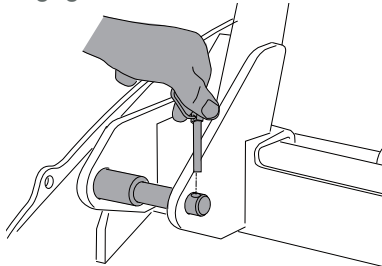
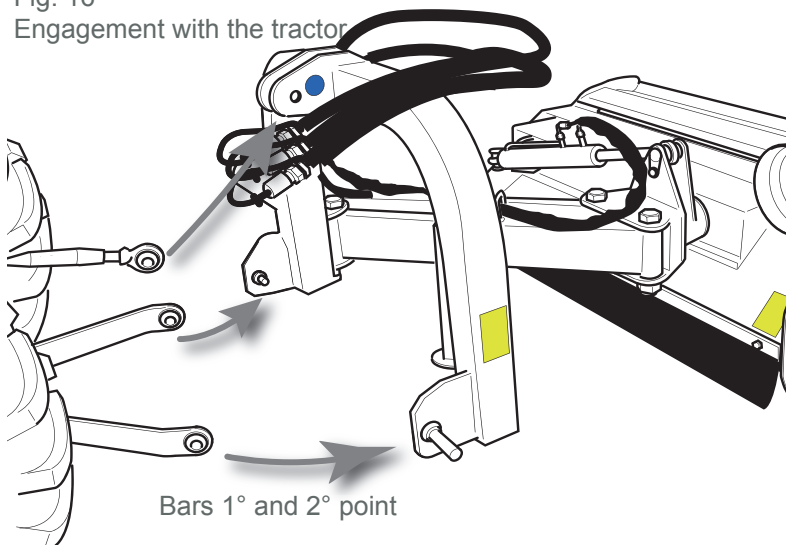


Fig. 16  
Engagement with the tractor



## 7. INSTALLATION OF THE MACHINE

### 7.1 Application to the tractor

As the lift bars of each tractor have their own length, it is necessary to determine for each machine the suitable position for the cutter, lengthening or shortening the bar of the upper attachment of the tractor (Fig. 13), and if necessary shorten the cardan shaft according to the instructions in chapter 7.4.

The connection of the tractor to the shredder must be performed as in figure 14-15 -16-17.

The shredder models MA and ML are applicable to tractors equipped with universal three-point attachment (Fig. 2) of 1° and 2° category, while the MP is applicable to tractors with 2° and 3° category attachments.

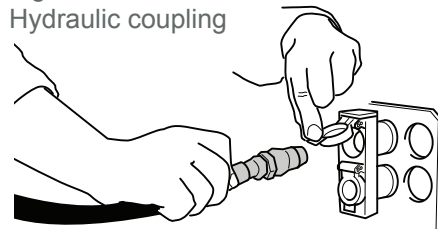
#### ATTENTION!

**Do not stand between the tractor and the shredder during the operations of engagement.**

PERFORM CONNECTION AS FOLLOWS:

- 1) Draw in the bars of the hitch, positioning them within the attachment points of the shredder.
- 2) Insert the lift rods into the pins of the shredder and lock them with the appropriate snap pins (Fig. 14-15).
- 3) Insert the cardan shaft ensuring that it is perfectly locked.
- 4) Lock the bars on the hitch with the relevant chains and parallel tensioners.

Fig. 17  
Hydraulic coupling



5) Connect the third point of the lifting unit, ensuring that the machine is perfectly flat in relation to the ground, as indicated in paragraph 8.1.

6) Engage the hydraulic attachments to the oil distributors of the tractor (Fig. 17). Work with the tractor off.

## 7.2 Transporting the Shredder

During transportation and whenever it is necessary to lift, it is appropriate that the lifting unit of the tractor is adjusted so that the shredder is raised above the ground by approximately 35 cm (Fig. 18).



### ATTENTION!

In the vicinity of the three point hitch there may be dangers of accident by crushing and cutting.



### ATTENTION!

Before lifting the shredder wait for shutdown of the parts of the transmission and shredding rotor.



### ATTENTION!

During transportation of the shredder detach the shaft.

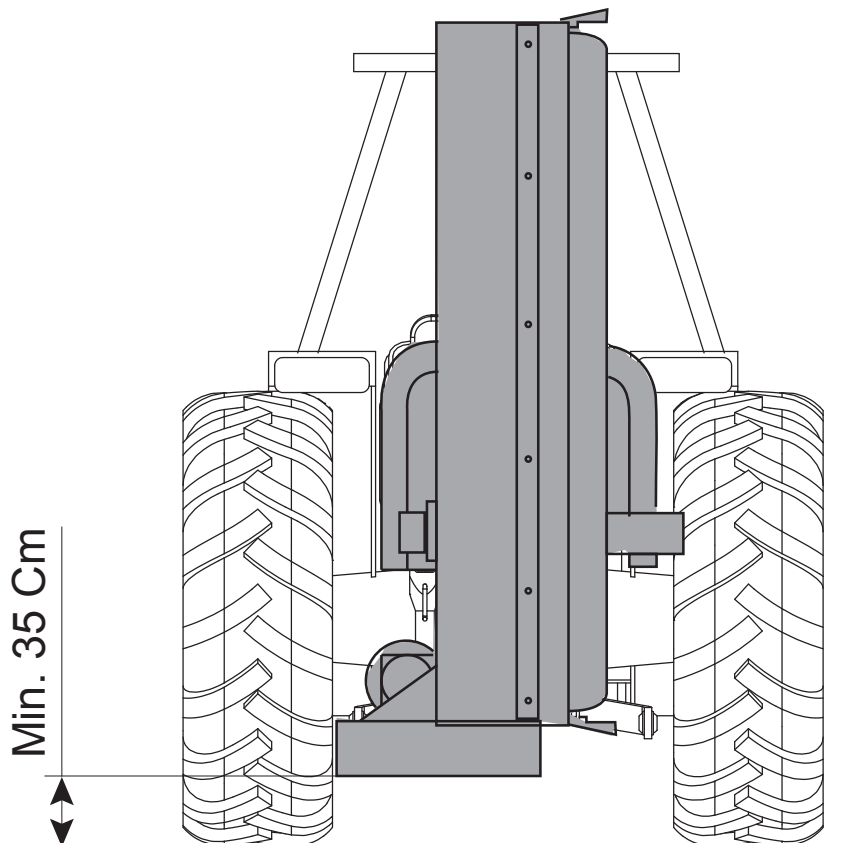


Fig. 18  
Height of transportation of the shredder



### 7.3 Special protections on the tractor



**ATTENTION!**

It is essential to protect with walls made of Plexiglass or thick wire fine-mesh, all the parts or areas that could be affected by the spraying of objects or stones.

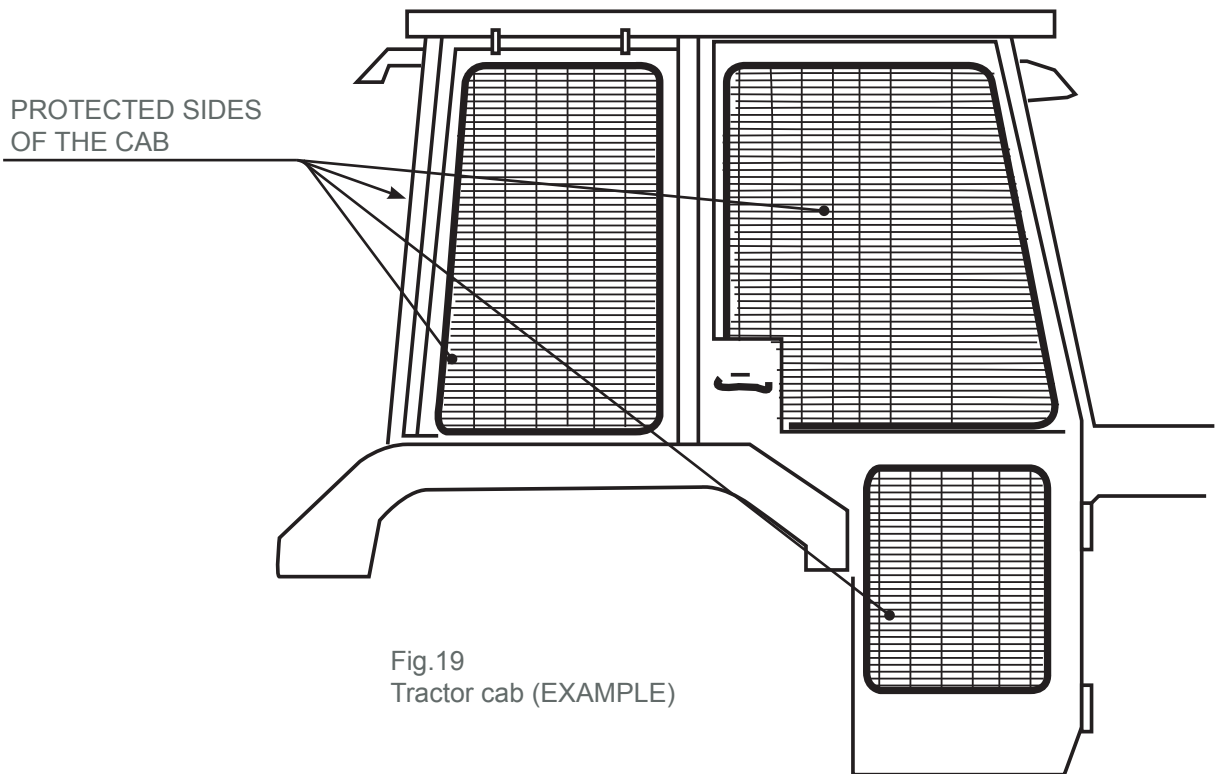


**ATTENTION!**

Below is an example of an agricultural tractor cab with wire mesh guards.



**ATTENTION!** Adequate protection will prevent damage to the agricultural tractor and to yourself.



**VERY IMPORTANT:**

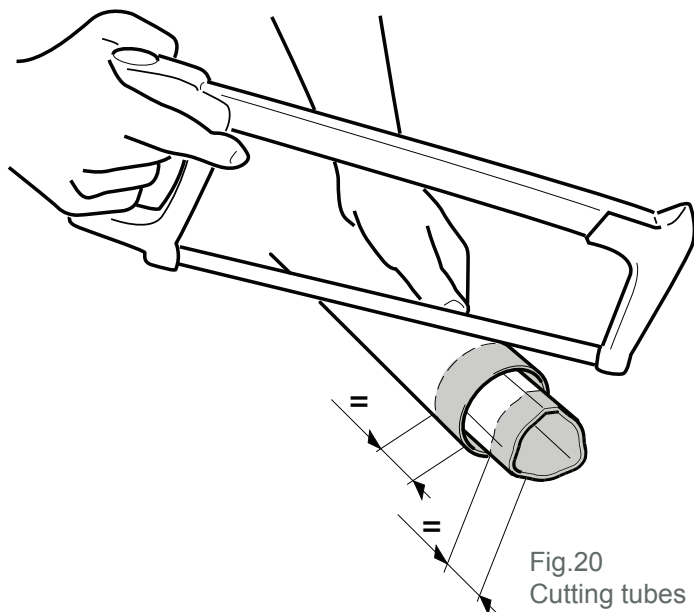
ALWAYS USE TRACTORS WITH "EC" CAB

## 7.4 Adaptation of the cardan shaft

The cardan shaft supplied with the shredder is of standard length; it is therefore necessary to adapt it to the tractor that will be used. For this contact an authorised workshop.

1) Remove the shaft in two halves, applying one part to the PTO in the tractor and the other to the PTO in the shredder. Raise and lower the hydraulic lift to find the minimum length of sliding and indicate it on the shaft.

2) Cut the outer plastic tube of length exceeding more than 30 mm, and the inner tube with the same size (Fig.20); then refit with care ensuring that the articulation forks are coplanar.

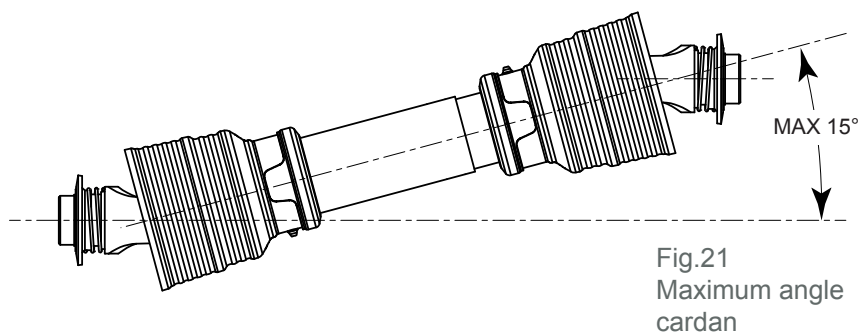


3) Activate the hitch, and check that sliding of the cardan takes place happen without contrasts and that a minimum part of overlap of the tubes remains that is not less than 100mm.

4) ATTENTION! Check the length of the cardan joint at each change of the tractor.

5) The end of the cardan provided with torque limiter and possible free wheel will be mounted on the PTO of the shredder.

6) The maximum angle of the cardan permitted is 15° (Fig. 21).



7) Attach chains supplied to the cardan at the fixed points in order to avoid rotation of the guards.

8) Lubricate the cardan following the manufacturer's instructions (see instruction and maintenance manual cardan shaft).

## 8. RULES FOR USE OF THE SHREDDER

The application of additional apparatus to the tractor involves an imbalance of the weights on the axles. It is advisable to balance, as far as possible, the weights by adding ballast, on the front of the tractor.

The ballast required can be calculated using the formula below (Fig. 22).

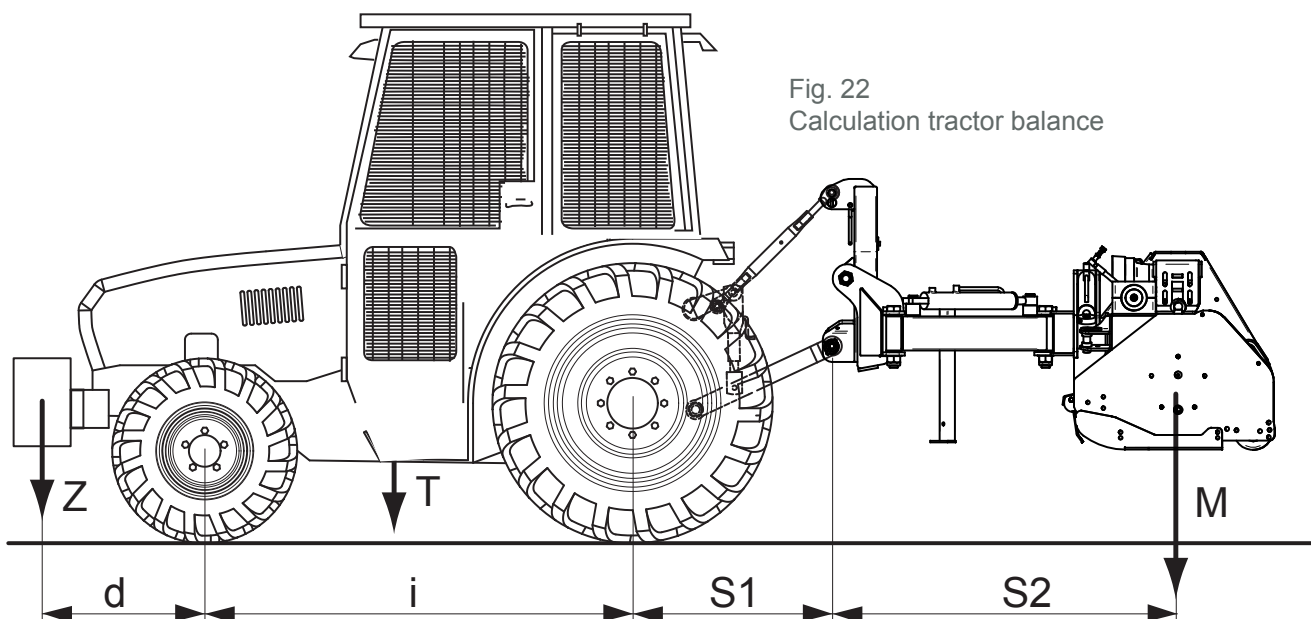


Fig. 22  
Calculation tractor balance

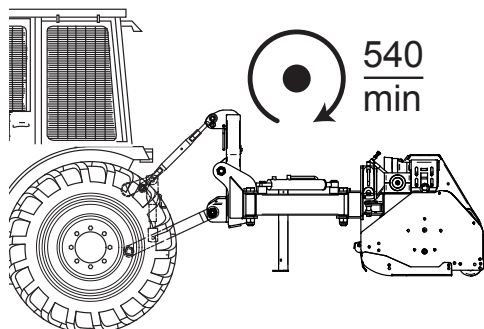


Fig. 23  
Max revolution limit

- i** = wheelbase
- d** = distance between the front axis and the ballasts
- S1** Distance between centre of the rear axle and centre of the lower connection points
- S2** Distance between the centre of the lower connection points and barycentre of the arm of the milling machine
- T** = weight of the tractor + 75Kg (operator)
- Z** = weight of the ballast
- M** = weight of the machine

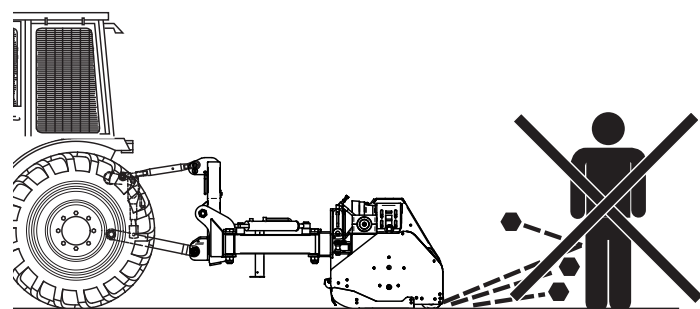


Fig. 24  
Maintain a safe distance.

**Before starting the work of shredding check the following points:**

- a) verify engagement of the safety chain of the cardan shaft;
- b) ensure that the machine is parallel to the ground and is also resting on the ground (Fig. 26);
- c) Check all the safety devices of the shredder.
- e) ensure that no other person is in the vicinity of the working area of the shredder (Fig.24);
- e) engage the PTO slowly and accelerate the tractor, avoiding exceeding the maximum limit of rotation of the PTO of 540 rpm/min (Fig. 23).



### ATTENTION!

The equipment applied can be operated exclusively through the cardan shaft complete with the necessary safety guards against overloads and equipped with its fixed protection with appropriate chain.

## 8.1 Position of the machine in relation to the ground

Before starting the work check the position of the knives with respect to the ground.

Where it is discovered that these are touching the ground, intervene with adjustment of the levelling and roller and support, and with the lateral slide rails.



### ATTENTION!

Before starting any inspection on the shredder, shut off the tractor, remove the ignition key and lock the vehicle with the appropriate parking brake.

#### 8.1.1 Adjustment of the levelling roller and of the Scraper

For the adjustment of the levelling roller and support proceed as described:

- 1) loosen the mounting screws "A", located at the ends of the levelling roller;
- 2) remove the mounting screws "A1";
- 3) loosen the screws "B" of the scraper;
- 4) Adjust the height of the roller, ensuring it is perfectly parallel to the machine.
- 5) obtain the desired position and reinsert the screws "A1" and secure them;
- 6) adjust the position of a scraper so that it is approximately 2 mm from the roller and lock the screws "B".

Fig. 25  
Adjustment roller and scraper

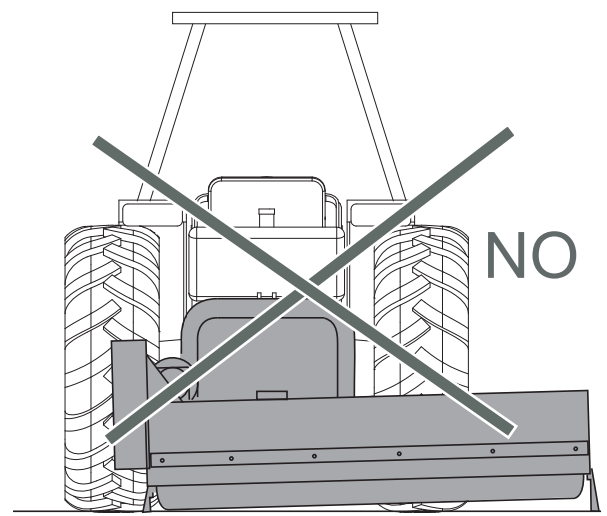
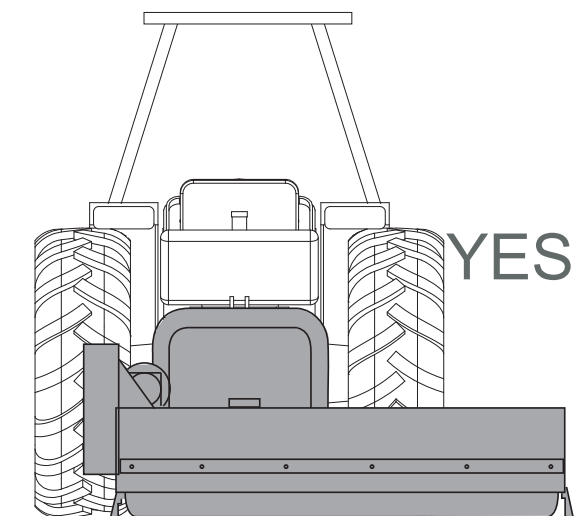
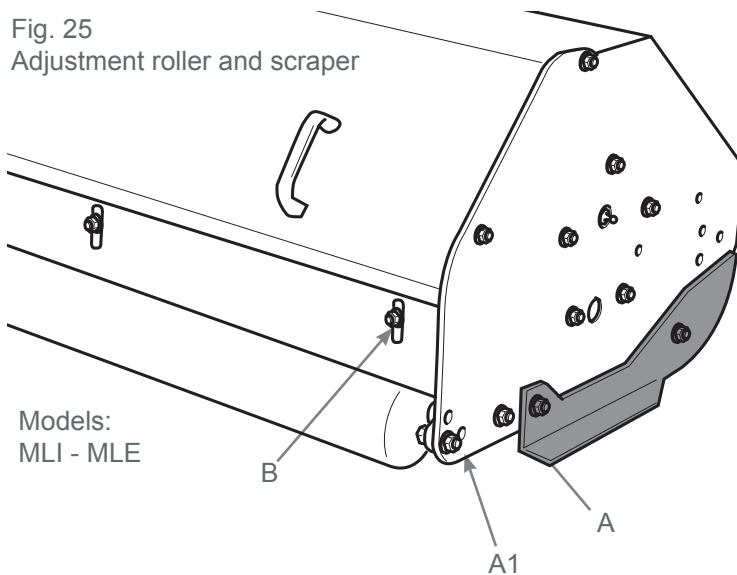


Fig. 26  
Correct roller position

### 8.1.2 Adjustment slide rails

Adjust the position of the slide rails so that the knives or hammers do not touch the ground (Fig. 28). Correct adjustment avoids the tools touching the ground even when it is uneven. Ignoring these guidelines means rapid wearing of the knives causing imbalance of the tool shaft, thus causing abnormal and early deterioration of the transmission belts.

- 1) Remove the fixing screws "A" of the slide rails (Fig. 27).
- 2) Adjust the height of the slide rails in such a way that they are lower than the lower point of the knives or hammers.
- 3) Having reached the optimum position lock the fixing screws "A".
- 4) Check that the slide rails are at the same height with respect to the frame of the shredder.

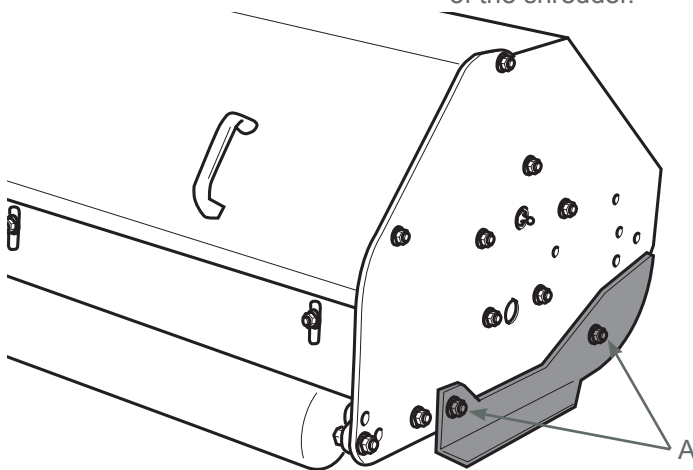


Fig. 27  
Adjustment of slide rails

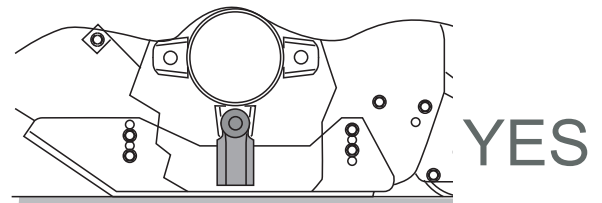
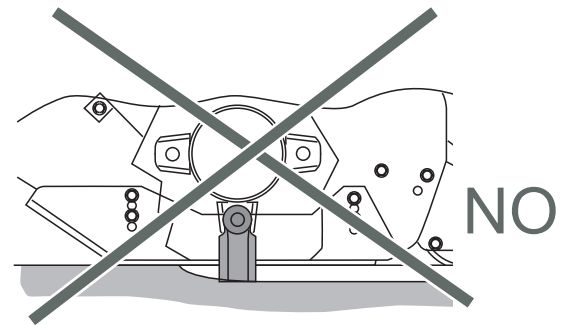


Fig. 28  
Correct slide rail position

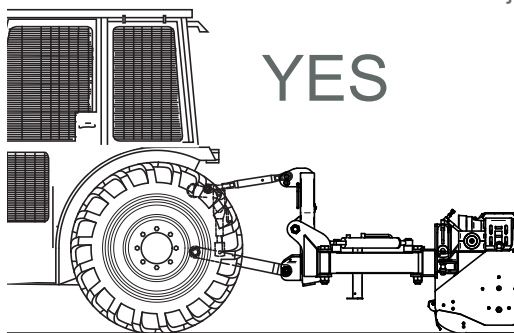


Fig. 29  
Regular position



#### ATTENTION!

It is not permitted to work with the knives or hammers in contact with the ground

### 8.1.3 Adjustment third arm

The machine must be perfectly parallel to the ground in order to obtain perfect working (Fig. 30).

Adjustment is performed by acting on the third point of the tractor (Fig. 31).

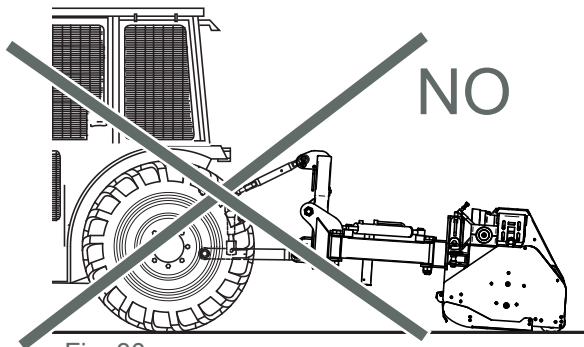


Fig. 30  
Incorrect position

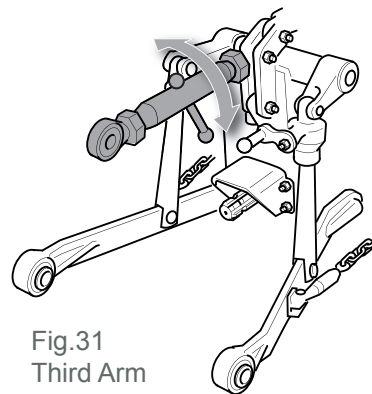


Fig. 31  
Third Arm  
Adjustable

### 8.1.4 Work positions of the machine



## movement and tilt

Having reached the place of work, the shredders MA, ML, MP, are provided with hydraulic control mobile connections for lateral movement relative to the tractor (Fig. 32), and a joint for tilt with respect to the ground (Fig. 33) the speed of which is adjustable by means of a manual operation choke (Fig. 35).

The commands of the lateral movement and tilt are both performed by hydraulic cylinders (Fig. 34), connected to the hydraulic distributors of the tractor, with mechanical control.

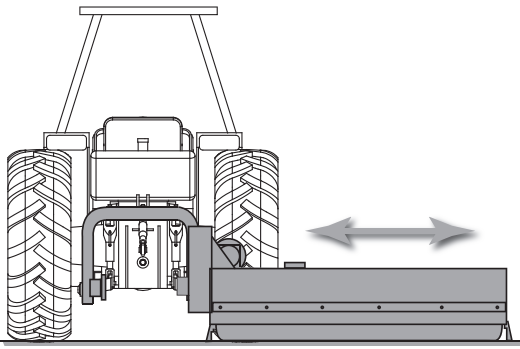


Fig.32  
Lateral movement

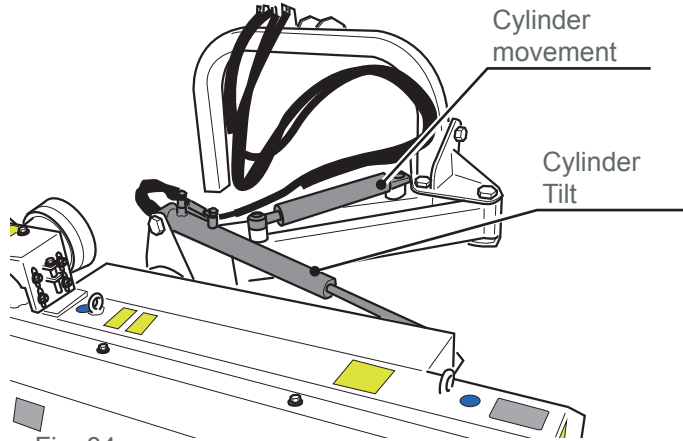


Fig. 34  
Movement cylinders

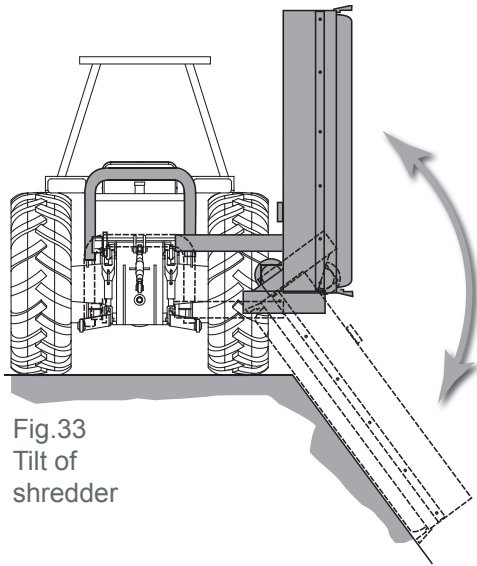


Fig.33  
Tilt of  
shredder

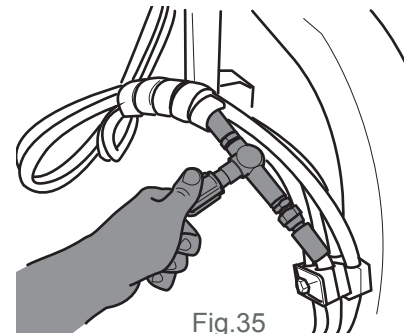


Fig.35  
Shredder tilt speed  
regulator

### 8.1.5 Start of work on the soil

#### ATTENTION!

The machine can be dangerous in certain work situations. To avoid dangerous situations it is advisable to follow the following recommendations:

#### ATTENTION!

During the work of shredding do not exceed a speed of 10 Km/h.

#### ATTENTION!

The shredders models MA, ML, MP were designed to work exclusively in the direction of travel (Fig. 36).

- 1) To avoid dangerous situations, do not work with this machine when you are tired; reflexes decrease as does the attention required by the operator.
- 2) Before starting work, ensure that there are no persons or animals in the immediate vicinity.
- 3) Prior to performing the operations of adjustment, disengage the PTO, stop the tractor engine and wait until the shredder has completely stopped and is resting on the ground.
- 4) It is obligatory to read all the safety requirements and the instructions on how to use the machine.
- 5) In the event of uncertainty regarding use of the shredder, contact the manufacturer of the machine.

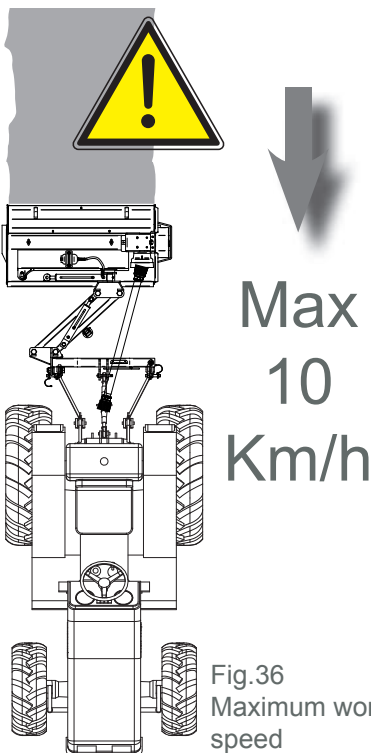


Fig.36  
Maximum work  
speed



## 9. ORDINARY MAINTENANCE

PERIODIC MAINTENANCE TASKS ARE ESSENTIAL FOR THE EFFICIENCY AND THE CORRECT OPERATION OF THE MACHINE.



### ATTENTION!

When carrying out maintenance, proceed as follows:

- Switch off the power take-off and switch off the tractor engine
- Rest the tool on the ground

Do not stand for any reason behind the shredder when the tractor is in motion.

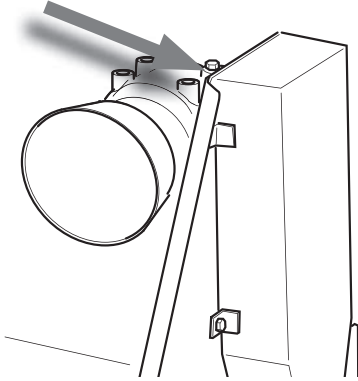


Fig. 37 Inspection and Oil top-up MPI

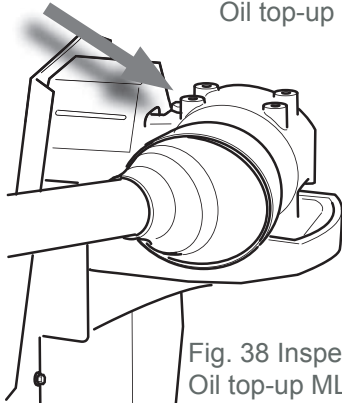


Fig. 38 Inspection and Oil top-up MLE MPE

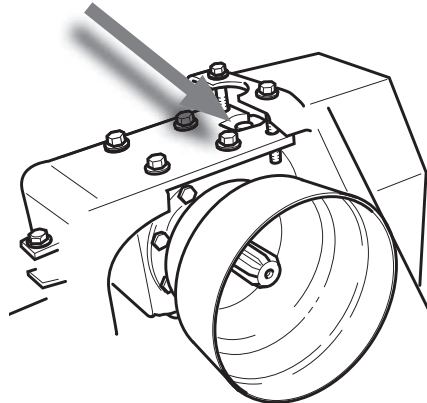


Fig. 39 Inspection and Oil top-up MLI

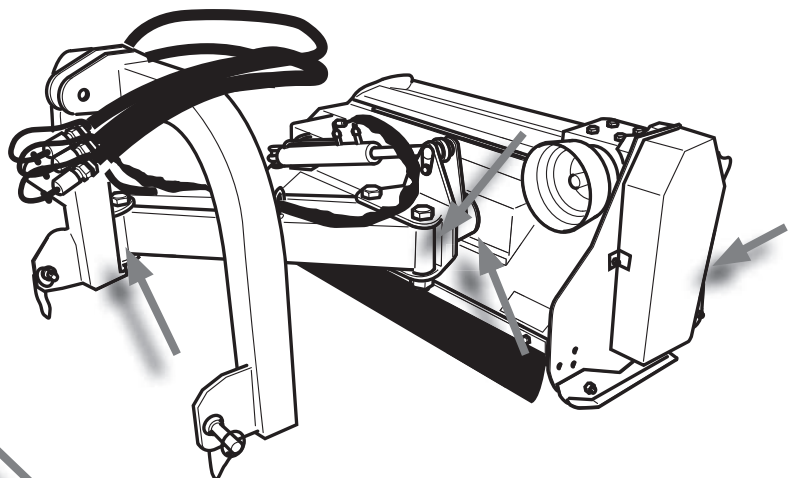
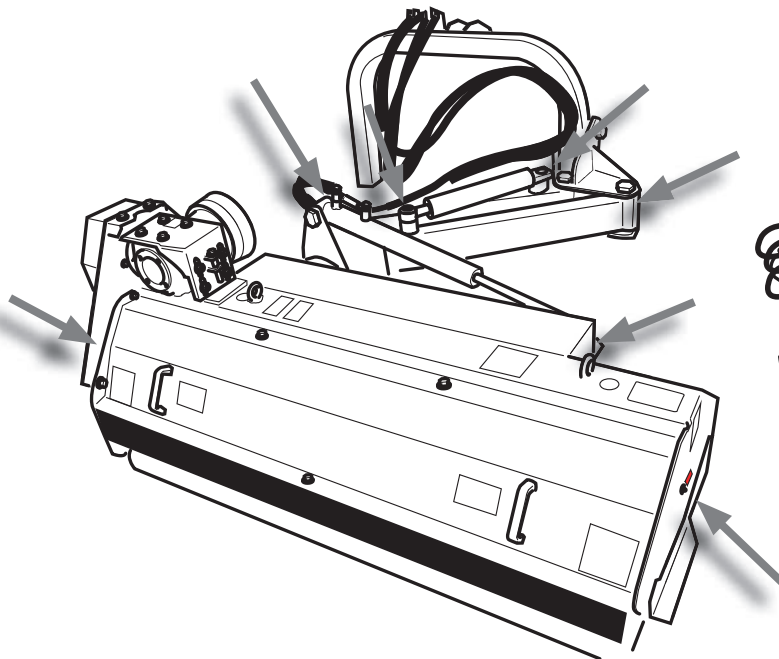


Fig. 40 Lubrication points

REFER TO THE TABLE FOR USE OF OILS.

## 9.1 Adjustment of the belts and replacement

The belts should be checked and adjusted after the first 5 hours of work: thereafter, check the tension every 50 hours of work. Avoid replacing one belt only in order not to compromise the uniform tensioning of the belts.



### ATTENTION!

All the operations of checking and replacing the belts must be performed with the tractor engine stopped, the PTO switched off, the parking brake engaged and the ignition switched off.

It is mandatory to follow these instructions, for your safety and for the safety of others.

Operations of belt replacement:

- 1) Remove the cover protection and the belt guard cover by unscrewing the screws Z (Fig. 41).
- 2) Loosen the mounting bolts H of the multiplier support (Fig. 41).
- 3) To replace the belts move the transmission unit into the lower position by loosening the lock nuts K of the tensioning screw J and loosen the tensioning screws J. Remove the belts one by one and replace with a new series.
- 4) Check the tension of the belts in the centre; by pressing on the centre with a force of approximately 9 Kg there should be a deviation of approximately 8 mm (Fig. 42).
- 5) Secure the fixing screws of the transmission unit while keeping the axis parallel to the machine. A transmission not parallel to the machine will result in abnormal wear of the belts.
- 6) Install the cover or belt housing guards correctly.

Fig. 41  
INSPECTION AND REPLACEMENT  
OF BELTS

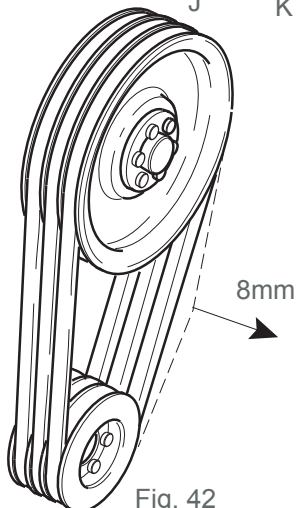
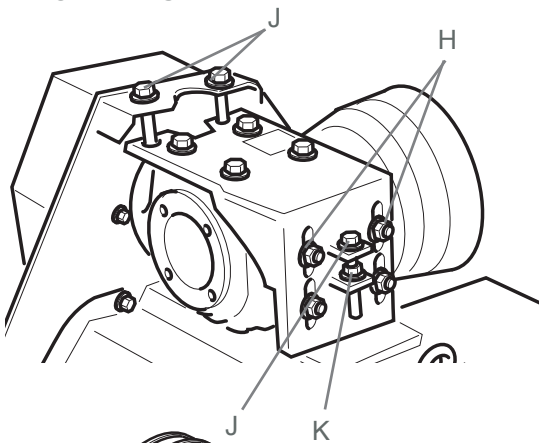


Fig. 42  
BELT TENSION



## 9.2 Replacement of knives or hammers

Every 100 hours of work ascertain the good condition of the knives or hammers. If any of the knives or hammers are missing or broken or demonstrate excessive wear, replace the whole set of knives. If only replacing one part of the latter, the remaining worn ones may cause during operation an imbalance of the rotor with consequent engagement of high vibrations that will damage the machine and the same rotor.

IT IS VERY IMPORTANT TO CHECK THE STATUS OF WEAR OF THE SCREWS; WHERE THE SCREWS ARE WORN, THEY MUST BE REPLACED WITH THOSE OF THE ORIGINAL MANUFACTURER.



### ATTENTION!

Not replace the knives with the shredder raised from the tractor. It is extremely dangerous for your safety and for the safety of others.

### IT IS MANDATORY TO USE ORIGINAL Sicma KNIVES OR HAMMERS AND SCREWS

To replace the knives or hammers carefully follow the instructions below:

- 1) With the tractor engine off disconnect the cardan shaft from the two PTOs.
- 2) For models without opening hood, restart the tractor, raise and support the shredder on robust and stable stands, high enough to facilitate the operation of replacement of the tools (Fig. 43). Otherwise access the rotor compartment by opening the hood.
- 3) Switch off the tractor leaving it in first gear and engage the emergency brakes.
- 3) Replace the knives or hammers as depicted in figures 44 and 45. Carefully secure the screws on ensuring their tightness.
- 4) After replacing the knives or hammers, proceed in the reverse order to the above described operations paying close attention to the danger of being crushed.
- 5) For this operation it is recommended to contact your authorised Sicma centres that will also perform testing of the machine, to verify that the new knives or hammers do not cause abnormal vibrations.

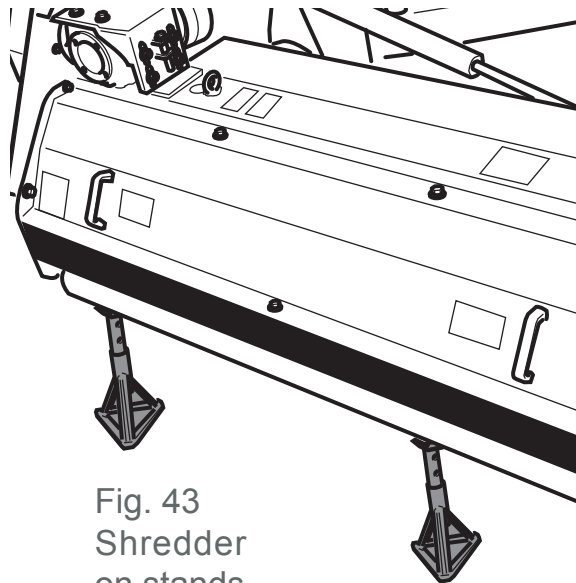


Fig. 43  
Shredder  
on stands

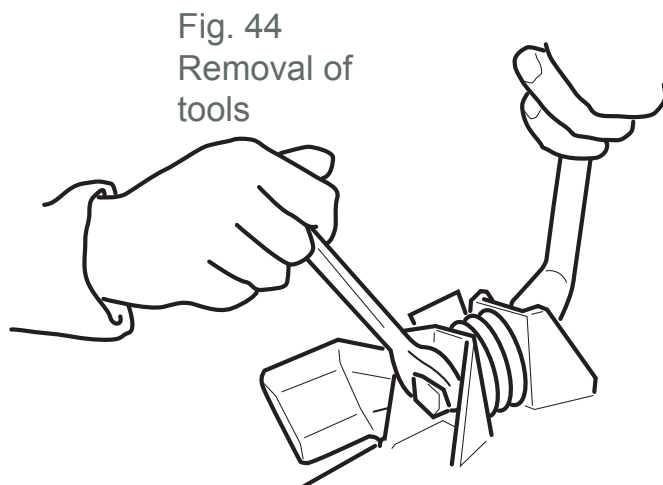


Fig. 44  
Removal of  
tools

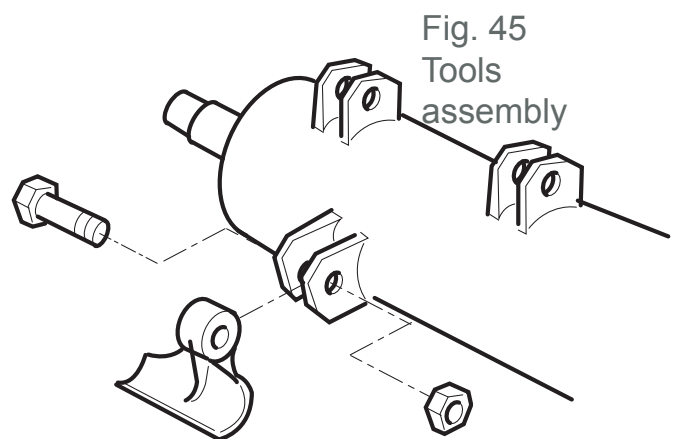


Fig. 45  
Tools  
assembly

### 9.3 Table of tightening torques

Check on a daily basis the efficiency of all the screws and bolts. Where necessary, replace them immediately, requesting them from the manufacturer and repositioning (screws, washer, nut) in the same sequence in which they were removed.

TIGHTENING TORQUE				
Class of bolt				
Threading	8.8		10.9	
	Nm	Lb-ft	Nm	Lb-ft
M6	11	8.5	17	12
M8	28	20	40	30
M10	55	40	80	60
M12	95	70	140	105
M14	150	110	225	165
M16	240	175	305	225
M18	330	250	475	350

### 9.4 Special accessories: OPENING HOOD



#### ATTENTION! DANGER

IT IS FORBIDDEN TO USE THE SHREDDER WITH THE HOOD OPEN

The shredders models MA, ML, have a special retractable hood for ease of maintenance.



#### ATTENTION!

IT IS FORBIDDEN TO START THE TRACTOR WITH THE HOOD OPEN!  
Before opening the hood for maintenance, it is mandatory to switch off the tractor, remove the key from the dashboard and disconnect the cardan shaft.

To open the hood, unscrew the locking screws, open the hood and lock it by reinserting and tightening the bolts in the relevant holes. To close perform the operations in the reverse order.

NB: the hatches will vary depending on the model of shredder.

Upon completion of the maintenance operations reposition the hood in the initial configuration.

**BEFORE RESTARTING THE TRACTOR CHECK CAREFULLY CLOSING OF THE HOOD AND TIGHTENING OF THE BOLTS.**

The company, Sicma declines any liability for any damage to property or injury caused by the shredder where the user has not complied with these safety requirements.

## 9.5 Table of lubricants

TABLE USE OF OIL AND LUBRICATING GREASE						
INTERVENTION	ROLOIL	MOBIL	CASTROL	ESSO	AGIP	SPRIG OIL
TRANSFER BOX	EP 1000	MOBILGEAR 636	ALPHA SP 680	SPARTAN EP 680	BLASIA P1000	
REDUCER	VARIAX 80W90	MOBILAND HP 80W-90	HIPOY B80W-90EP	GEAR CZ80W-90	ROTRA MP 80W-90	GEAR 150 EPLITEX EP2
GENERICICO	LITEX EP2	MOBILUX 2	SPHEEROL APT 2	BEACON 2	GR MU 2	
SPECIAL FOR BEARINGS	ISOMOV 2	MOBILGEAR SPECIAL	SPHEEROL LMM	MULTI-PURPOSE MOLY	GR SM	
HYDRAULIC SYST.	LI46	PTE25	HYSPIN AWS 46	NUTO 46	OSO 46	

## 10. PROBLEMS AND SOLUTIONS

PROBLEMS	AND SOLUTIONS
Excessive vibration	<p>Excessive wear of the knives or hammers</p> <ul style="list-style-type: none"> <li>knives or hammers too worn.</li> <li>Knives or hammers missing or broken.</li> <li>foreign bodies wrapped around the rotor.</li> <li>loose screws or nuts; check tightness.</li> <li>PTO of the tractor does not correspond, check the PTO revolutions number</li> <li>damage to the shredder rotor; contact a specialist service centre.</li> </ul>
Belt sliding	<p>The knives or hammers are touching the ground. Regularly adjust the rear roller or slide rails.</p> <ul style="list-style-type: none"> <li>check tension of the belts after the first 10 hours of work; if the belts have stretched</li> <li>restore the correct tension and thereafter check every 50 hours of work.</li> <li>worn belts; replace them.</li> </ul>
Uneven cutting of shredded product and non-uniform distribution	<p>Excessive residues that have accumulated under the frame. Clean the shredder.</p> <ul style="list-style-type: none"> <li>worn knives or hammers; replace them.</li> <li>worn counterknife; take to a specialist service centre.</li> <li>PTO too slow ; ideal PTO speed 450/540 rpm.</li> <li>forward speed is too high; reduce speed.</li> </ul>
Roller locked	<p>The scraper is compressed on the roller; adjust the height.</p> <ul style="list-style-type: none"> <li>position the scraper at a distance of approximately 2 mm from the roller</li> <li>bearings locked; replace them.</li> </ul>
Oil leak from the cylinder or from the tubes	<ul style="list-style-type: none"> <li>Replace the seals.</li> </ul>



## 11. TEMPORARY SHUTDOWN OF THE SHREDDER

At the end of the season or where a long period of disuse is envisaged, it is advisable to:

- wash the machine thoroughly and dry it.
- carefully check the entire shredder and where necessary replace any damaged or worn parts.
- Check the tightness of the screws and nuts and where necessary tighten in particular the screws of the knives or hammers.
- Remove the belts.
- Lubricate the unpainted parts.
- Perform precise greasing and finally protect all the equipment with a synthetic cloth and place it in a dry environment.

If these operations are performed with care, this will be advantageous to the user as upon resumption of work, the user will find the tool in perfect condition.

## 12. DISMANTLING

When the owner of the machine decides to not longer use it, it is recommended to render the parts of the machine harmless to avoid possible danger or environmental pollution, for example:

- Remove all the lubricant oil present in the machine and take it to the collection centres authorised by the laws and regulations.
- Scrap all the metal parts and dispose of them at the authorized collection centres.

## 13. TECHNICAL ASSISTANCE

The user is not authorised for any reason to intervene on the machine with the exception of maintenance operations as provided by the instruction and maintenance manual.

For any repairs the user must only contact an authorised service centre.

## 14. WARRANTY

The warranty has a duration of 1 year from the date of delivery. Check upon delivery that the equipment was not damaged during transportation and that the accessories are complete.

Check carefully that the guards are complete and are not damaged.

If these parts have been damaged or for some reason are missing do not operate the machine.

Any complaints must be submitted in writing within 8 days to the retailer.

The purchaser will only be able to assert their rights under warranty if the conditions relating to presentation of the warranty have been fulfilled.



### ATTENTION!

The company Sicma s.r.l. will replace any defective spare parts within the warranty period; it will not reimburse the costs of transportation or labour for the replacement of parts.

## 14.1 Expiry of the warranty

The warranty is not recognised in the following cases:

- Error of manoeuvre of the operator
- Insufficient maintenance (for example, the absence of lubrication of the cardan shaft).
- The machine is used for purposes not provided for its function.
- Where, due to repairs not performed by Sicma s.r.l. or by the authorised retailer, or due to the fitting of non original parts, the machine should undergo changes that cause damage to normal operation.
- If operations not related to the instruction and maintenance manual have not been performed.









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