

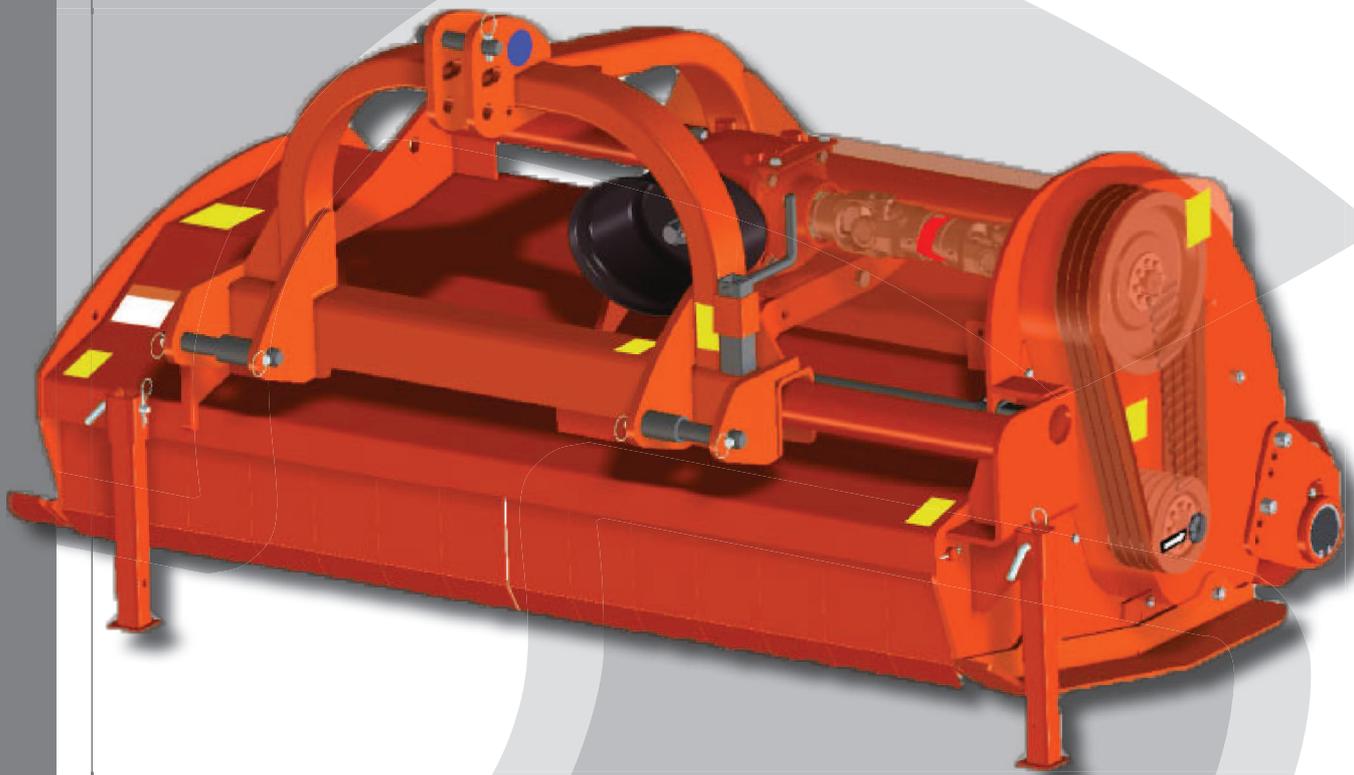


English

Shredder

TUF 155•180•200•220•280

USE AND MAINTENANCE MANUAL



SICMA

® 903621002~00



ORIGINAL INSTRUCTIONS



MADE IN ITALY

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Congratulations on your purchase of the

TUF shredder

The TUF shredder is built by SICMA S.p.A., which has been manufacturing agricultural machinery for over 40 years.

The TUF Shredder meets all the safety and quality requirements you expect from this type of equipment.

Remember that to get the best performance and to maximize the productivity features, you must thoroughly know the instructions and information contained in this manual and follow them.

1. INTRODUCTION

1.1 SOME NOTES ON THE USE MANUAL

Remember that the USER MANUAL is not an accessory of the shredder but is an INTEGRAL part and a SAFETY MEASURE (EN 12100-1).

For this reason, you must:

- store and keep it in good condition;
- store it in the vicinity of the equipment itself
- deliver it to any new operator, use, maintainer, handler or owner (in case of change of ownership).

In this way, the shredder can be used in the best way for all functions for which it has been manufactured and in maximum safety.

The manual must not be damaged, it must remain integral (do not tear off pages) kept away from humidity and heat. Do not apply grease on it while consulting, avoiding deteriorating legibility.

In case of loss or damage of this manual, request for a copy from the manufacturer or the dealer nearest to you.

To facilitate consultation, the manual has been divided into parts so that every phase is well described.

With these measures, SICMA intends to draw unequivocally the operator's attention on the dangerous situations that may arise.



1.2 DECLARATION OF CONFORMITY

The machine is delivered accompanied by the following Declaration of Conformity.

EC DECLARATION OF CONFORMITY

The company

Sicma s.p.a. - C.da Cerreto, 39 - 66010 Miglianico (Ch) - Italy
Tel.: +39 0871 95841 - Fax: +39 0871 950295
e-mail: info@sicma.it - http://www.sicma.it

hereby declares that:

product: SHREDDER
model: TUF
serial number:

complies with the essential requirements for safety and health of Directive 2006/42/CE.

To fulfil the above mentioned Directive have been applied the following harmonised standards:
- UNI EN 745:2010, UNI EN ISO 4254-1:2010, UNI EN ISO 12100-1:2009, UNI EN ISO 12100-2:2009

and the technical standards and specifications
- ISO 11684:1995, ISO 13852:1996, UNI 9456:1989.

The person authorised to compile the technical file is Mr. Lorenzo Aurora (amministratore unico)



Miglianico, 10-01-2014

Lorenzo Aurora
AMMINISTRATORE UNICO



1.3 LIST OF RESIDUAL RISKS

Although SICMA has done everything possible to make sure that the machine is in line with the state of art on safety and complies with all directives, laws and regulations, it still exist the possibility, albeit reduced, for some residual risks:



- CUT/CRUSHING HAZARD DUE TO CONTACT WITH TOOLS (rotor)
- RISK OF ENTANGLEMENT/Dragging (rotor and drive shaft)
- RISK OF TIPPING/CRUSHING (shredder)
- RISK OF BURNING (multiplication box)
- RISK OF CUTTING/SHEARING

Therefore, those who use the machine or maintain it must be educated persons and aware of the fact that the machine still poses residual risks that, despite all the safety guards used to try to minimize them, it was not possible to eliminate them entirely.

The staff assigned to these operations must always have this available at hand this use and maintenance manual.

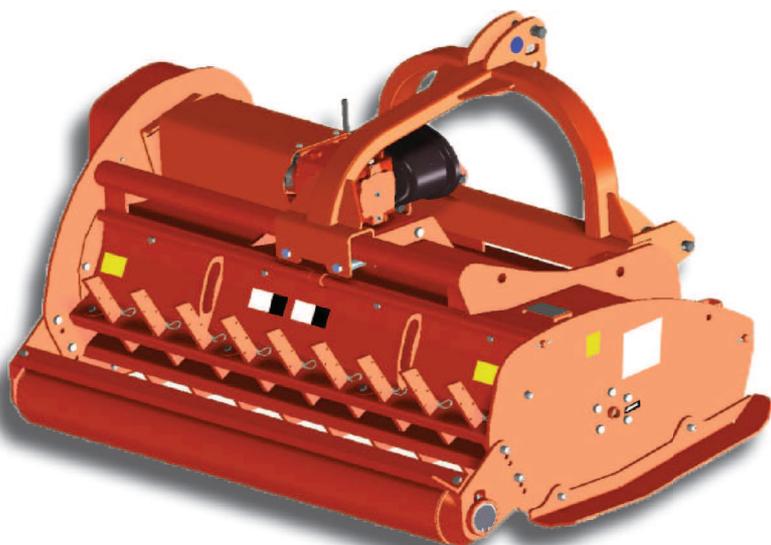
The use and maintenance manual reports all the information required by section 1.7.4 (Instructions for Use) of Annex 1 of the Machinery Directive, and its consultation is specifically requested, so as to avoid accidents that may cause personal injury.

1.4 GENERAL DELIVERY NOTES

The shredder has been manufactured in accordance with Directive 2006/42/EC and was designed observing the guidelines of technical standards for shredders.

Therefore, the machine does not present hazards to the operator when used according to the instructions in this manual and provided that the safety devices are kept in working order.

SICMA INFORMS THAT ANY CHANGES TO, OR ALTERATION TO THE SHREDDER, OR ANY TRANSACTION ACCOMPLISHED AND NOT STRICTLY REPORTED IN THIS MANUAL, ESPECIALLY THE NON-COMPLIANCE WITH SAFETY INSTRUCTIONS, NOT ONLY VOID THE WARRANTY, BUT ALSO RELIEVES SICMA FROM ANY RESPONSIBILITY FOR DAMAGE AND PEOPLE.



It is possible that some devices described in this manual are not present on your machine, depending on the setting chosen and the market to which the machine is intended for.

It must be remembered that all technical values refer to the standard shredder (see Chap. 4 “Technical Features”) and the drawings and any other document delivered along with the shredder are the property of SICMA, which reserves all rights and reminds that they cannot be made available to third parties without its written approval.

It is therefore strictly forbidden any reproduction, even partial, of the text and images.

The information, descriptions and images contained in this manual reflect the state of the art at the time of marketing of the machine.

The Manufacturer reserves the right to make, at any time, any changes to the machines for technical or commercial reasons. These changes do not require the Manufacturer to act on vehicles sold so far, nor to consider the present publication inadequate.

Any additions that the Manufacturer deems appropriate to provide later, will need to be kept with the manual and considered to be part of it.

The shredder, its parts and/or accessories, it is normally delivered by truck or container.

Upon receipt of the machine, check that:

- - The supply corresponds to all order specifications (see packing-list).
- - There is no damage to the shredder or accessories
- In the event of damage or missing pieces, immediately and in a detailed way and/or with images immediately inform SICMA or its area dealers, the carrier or the warranty.
- parts or equipment supplied, at times, can be separated into specific containers.



1.5 SHREDDER IDENTIFICATION AND MANUAL CODE

For any further assistance or information regarding the shredder contact SICMA or its service centres, always detailing the model and serial number on the nameplate of the machine,

The identification code of this manual is written on the cover. Write down the number and store it in a safe place so that in case of loss or damage of this manual you may ask for a copy to SICMA or the nearest Dealer, also citing the serial number visible on the nameplate



		
<small>SICMA SPA - C.da Cerreto, 39 - 66100 Miglianico (Ch) - Italy Tel.: +39 0871 95841 Fax: +39 0871 950295 - info@sicma.it - www.sicma.it</small>		
Type	Shredder	
Model	TUF 155	
Serial No	00218	
Year	2015	
Mass	670 Kg	
Input	540 rpm	
MADE IN ITALY		



1.6 DECLARED USE

The TUF shredder has been designed to be used exclusively in the agricultural sector, for mowing grass, maize stalks, maize and branches up to a diameter of about 8 cm. according to the type of tool used.

The machine is driven by a tractor using a three-point coupling. It acts on the material to be cut by means of the rotation of the tool-holder, which rotates at high speed driven by the PTO of the tractor through cardan connection. The machine is not intended to be used in sectors other than agriculture.

USE ENVIRONMENT

The shredder works:

- in open fields, on land not crumbly, not too rocky, with a maximum slope of 3°
- in environments with a temperature from 0° ÷ 50° C.

IMPROPER USE

Any use other than that described in the manual is to be considered improper.

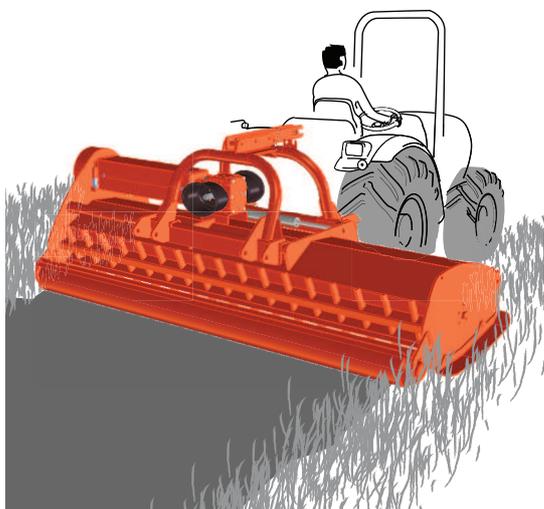
Sometimes the operator uses the shredder incorrectly, the following table lists some examples of actions that YOU SHOULD NOT CARRY OUT.

The operator should not :

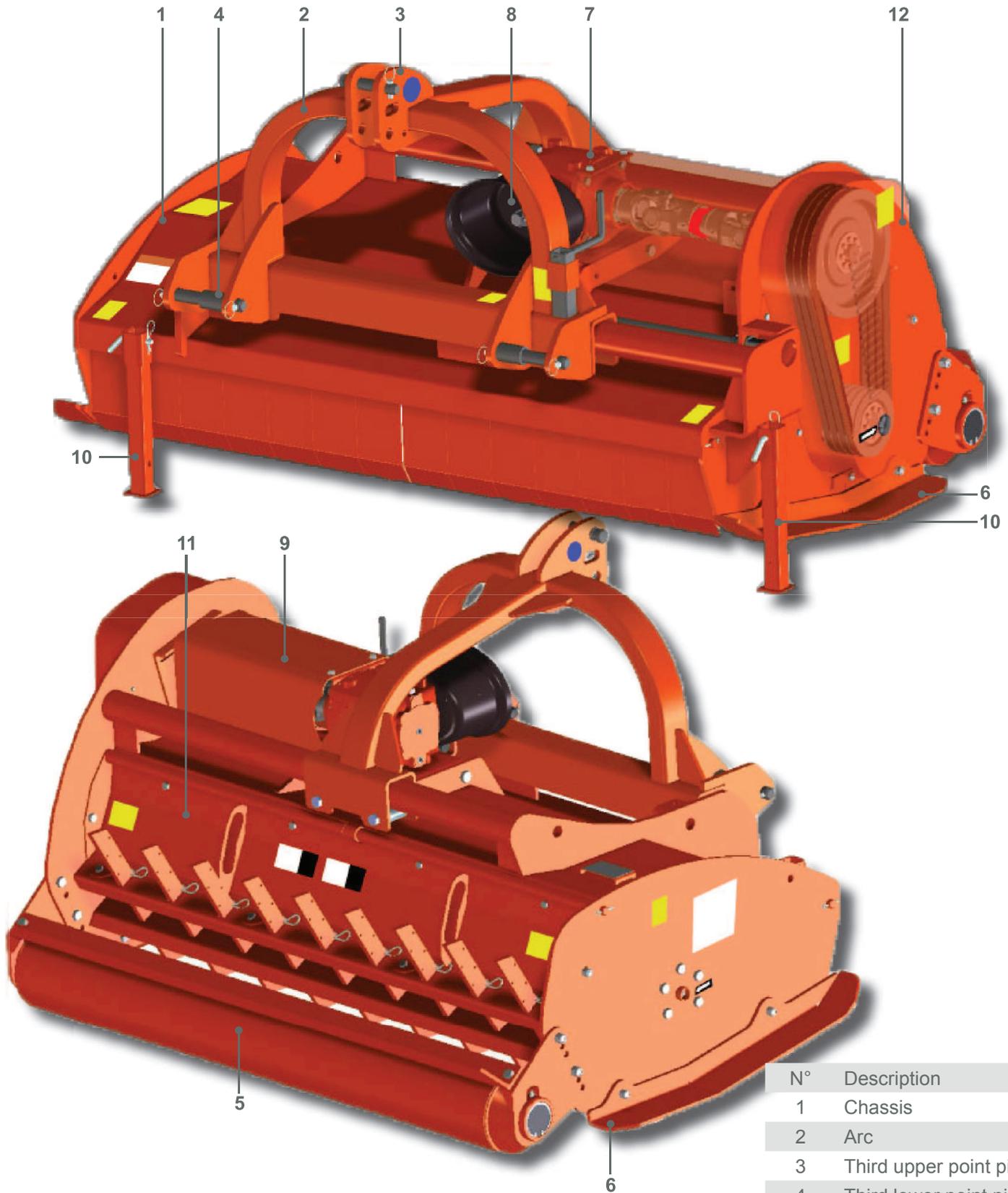
- couple the shredder to a cardan shaft with a higher or lower transmission capacity
- work in reverse.
- match the shredder to means having inadequate weight or power.
- assemble the shredder without securing the rebound tie rods of the three-point hitch of the tractor's elevator
- lift the equipment when the PTO is rotating.
- make curves or reverse with the shredder lowered.

It is reiterated that the shredder must be used strictly for the intended purpose it was created for.

Any other use is considered improper.



1.7 SHREDDER SETTING



N°	Description
1	Chassis
2	Arc
3	Third upper point pin
4	Third lower point pin
5	Stabilizing roller
6	Side slides
7	Multiplier gearbox
8	Cardan joint protection
9	Cardan transmission guard
10	Outrigger
11	Rear hood
12	Belt drive casing

2. SAFETY

While consulting this use and maintenance manual, and on the equipment itself you'll find some symbols whose meaning is shown below.

2.1 DEFINITIONS

DANGER

A potential cause for injury or damage to the health of people.

DANGEROUS AREA

Any area within and/or near a machine in which the presence of a person represents a risk for both the person and the machine itself.

The danger zone is the area around the machine (coupled to the tractor) up to a meter away.

EXPOSED PERSON

Any person that is totally or partially inside a dangerous area.

CRITICAL AREA

The critical area is the one between the tractor and the equipment (cardan shaft area).

ZERO ENERGY STATUS

The state in which the machine must be brought before performing any cleaning, lubrication and maintenance operation.

The shredder is at ZERO ENERGY STATE when it is placed on a flat land, disconnected from the cardan shaft and resting on its outriggers.

2.2 CONVENTIONAL SYMBOLS



ATTENTION GENERAL HAZARD

Informs the staff assigned that the operation described has the risk of physical injury if not performed with respect to the Safety Standards.



NOTE

It informs the staff assigned on information whose content is of relevant consideration or importance.



WARNING

It informs the staff assigned of information whose content, if not respected, can cause slight injury to persons or damage to the machine.



MACHINE OPERATOR OR DRIVER

Identifies the qualified staff, i.e. with specific skills, as the the operations are completely manual. Therefore, the preparation and sensitivity of the machine operator are referred to in order to obtain the best qualitative results. It is therefore strictly forbidden to the operator to perform tasks that pertain to the maintenance technicians.



MECHANICAL MAINTENANCE STAFF

Qualified technician who works on mechanical components to carry out all the adjustments, maintenance operations and repairs necessary.



UNSCHEDULED OPERATIONS

Any maintenance interventions highlighted by the symbol on the side must be requested to the Manufacturer or directly to authorized service centres.

PERSONAL PROTECTION EQUIPMENT (PPE)

The presence of one of the symbols on the side requires the use of appropriate personal protective equipment by the operator, being implicit the risk of injury.



RECOMMENDATION

Reference is made to a work method experimented in the factory, knowing well that every operator will develop his own way of working.



2.3 SAFETY REQUIREMENTS

Despite SICMA has applied all the safety devices and warning signs on the equipment, it must be recalled that, if not used correctly, it can still be hazardous to your health. It is therefore recommended to carefully read and observe the safety instructions listed below.

Any operator, before using the equipment, categorically **MUST** have read and understood the safety instructions and the entire manual.

- The machine is not intended to be used in sectors other than agriculture.
- A use other than that specified is to be considered improper.
- The manual must be always at hand, so that for easy future reference. If it were lost or damaged, you must apply to SICMA for a replacement copy.
- For no reason climb, seat or lean on the equipment being it ON or OFF or at zero energy system.

2.4 OPERATOR REQUIREMENTS

- The machine must be used by a single operator driving the tractor.
- The machine must only be used by authorized personnel, educated and properly trained. The operator, in addition to having read and understood the instructions contained in this manual, must have gained a sufficient preparation on the proper use of the machine and must be in possession of a driving license. We remind the operator to contact the retailer or the manufacturer if you are unsure about the use of the machine and the interpretation of this manual.
- The operator must ensure that during operation of the machine no person stand within its range of action.. Never operate the machine near people standing or passing within the operating range of the machine.
- Do not use the machine if you are tired, ill or under the influence of alcohol, medication or drugs.
- The correct working position, the operator must have, is at the driving station of the tractor. From that position he must also check that there are no exposed persons in the danger zone during operation.



2.5 CLOTHING AND PPE

- Staff must use the safety supplies and PPE during use and maintenance of the vehicle.

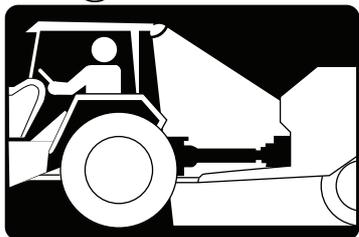
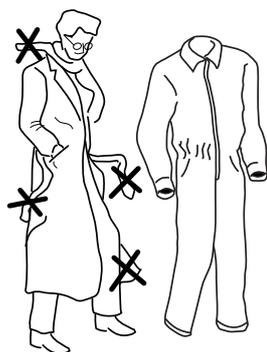
The proper clothing to wear during maintenance operations and during use of the shredder is:

- gloves
- safety shoes or safety boots with iron toe
- goggles
- overalls with elastic wrists, ankles and waist



Moreover:

- given that the machine can generate emissions of dust during working, if the tractor does not have a closed cab, the operator must wear an anti-dust mask (especially on dry and dusty land)
- when the tractor is not equipped with sound-proof booth, the operator should wear hearing protection for noise control (especially on stony ground).
- the operator assigned to the machine must not wear items of clothing that can cause entanglement (scarves, belts, wide sleeves, etc.).



2.6 MACHINE USE

- The machine is usually used during the day. If night-time use is exceptionally requested or use in conditions of reduced visibility, a tractor lighting system or an auxiliary lighting system must be used.
- Any unauthorized modification to this machine raises SICMA from any liability for damage or injury that may result to operators, third parties and properties.
- Carefully check the machine before each use.
- Daily check the tightness of all the screws (see the tightness table on section 13.1) If necessary, tighten them and also check the metal structures and repair if necessary.
- Make sure that the hooks of the chains retaining the PTO shaft guard are hooked to the appropriate slot, so that the plastic guard remains fixed and does not rotate with the cardan shaft itself.
- Before leaving the tractor, and before any maintenance operation, operate the parking brake, stop the engine, remove the ignition key from the dashboard and keep it safe.
- The tools rotate rapidly when the machine is functioning: stay at a safe distance to prevent accidental contact with moving tools or with thrown objects.



2.7 SAFETY DEVICES

- Before using the machine, make sure that all safety devices are properly placed in their place and are in good condition; in case of breakdowns or damage to guards, replace them immediately.
- Do not tamper with or bypass for any reason the safety devices. Remember that all safety devices must be restored and/or protection guards must be re-mounted after every cleaning and maintenance intervention. Also verify that there are no tools, rags or other materials inside the transmission compartments.
- The signs applied to the machine supply a series of important indications: compliance with the same is for your safety.
- Ensure the good condition of safety pictograms. If pictograms are damaged, they must be replaced with other original ones requested to the manufacturer and placed in the position indicated by the use and maintenance manual.

2.8 REASONABLY PREDICTABLE IMPROPER USE

The operator should not :

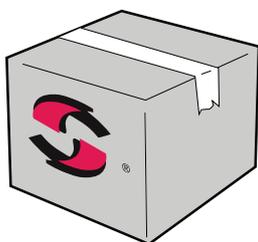
- couple the shredder to a cardan shaft with a higher or lower transmission capacity
- work in reverse.
- make changes to equipment that could compromise safety.
- make not well made repairs just to have the machine running

In addition, it is prohibited:

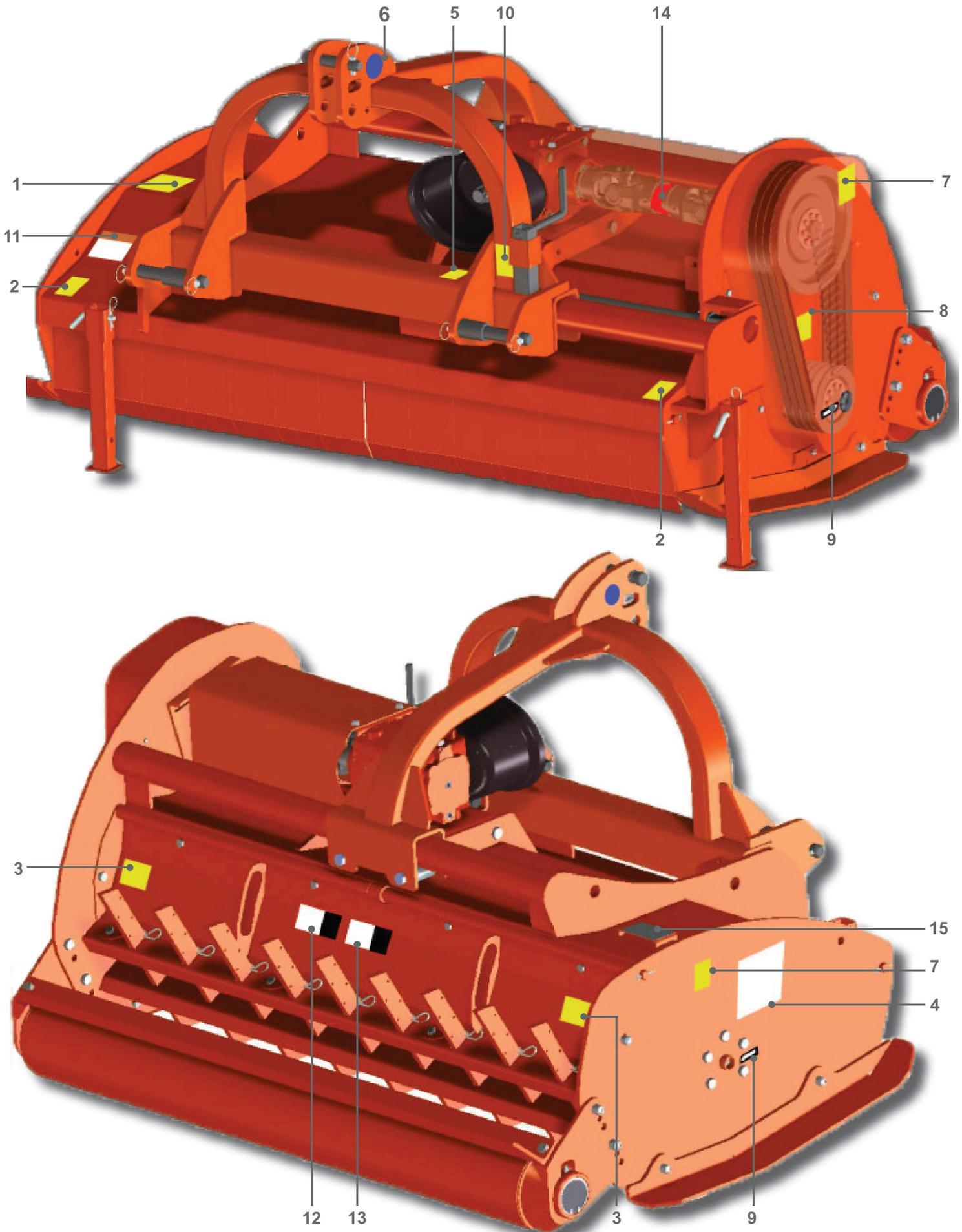
- combine the shredder to inadequate power means or weight.
- assemble the machine without securing the rebound tie rods of the three-point hitch of the tractor's elevator
- lift the equipment with the PTO rotating.
- use the machine to carry and / or lift people, animals or objects.
- work on slopes greater than 3°.

Sicma declines any liability for accidents deriving from the failure to comply with the prescriptions indicated below.

Given the particular stress to which the equipment is subjected and for safety reasons, if pieces are replaced, only use original spare parts.



2.9 LOCATION OF THE PICTOGRAPHS ON THE MACHINE



SAFETY PICTOGRAMS

<p>1</p> 	<p>4781029 ATTENTION Carefully read the instructions and safety precautions before using the machine. Turn off the engine and remove the key before proceeding with any maintenance or repair.</p>	<p>8</p>  <p>5782708 ENTANGLEMENT HAZARD Keep safety guards in place during operation</p>
<p>2</p> 	<p>4781011 RISK OF INJURY TO TOE Rotating tools: keep a safety distance from the machine.</p>	<p>9</p>  <p>4781009 GREASE Indication of lubricant grease injecting point</p>
<p>3</p> 	<p>4781019 LAUNCH OF ITEMS ON THE WHOLE BODY Keep a safe distance from the machine. Hand injury hazard: do not open or remove safety guards while the machine is operating.</p>	<p>10</p>  <p>4781013 RISK OF INJURY TO THE HANDS Rotating parts: keep a safety distance from the machine.</p>
<p>4</p> 	<p>4781016 LOGO SICMA</p>	<p>11</p>  <p>4781802 ATTENTION Danger of tipping of the machine.</p>
<p>5a</p> 	<p>4781010 INPUT 540 RPM Using the PTO at 540 rpm</p>	<p>12</p>  <p>5786201 MACHINE INFO</p>
<p>5b</p> 	<p>4781030 INPUT 1000 RPM Using the PTO at 1000 rpm</p>	<p>13</p>  <p>000-155; 000-180; 000-200; 000-220; 000-250; ABOUT LENGTH</p>
<p>6</p> 	<p>4781031 HOOKING POINT To lift the machine</p>	<p>14</p>  <p>1140003 RISK OF DEATH Re-position the guards in original position and remain at a distance from the rotating part</p>
<p>7</p> 	<p>4781012 RISK OF INJURY TO TOE Keep a safe distance from the machine.</p>	<p>15</p>  <p>4780001 CE MARKING PLATE</p>

3. SHREDDER UNLOADING AND UNPACKING



ATTENTION CRUSHING DANGER



ATTENTION GENERAL DANGER HAZARD



RISK OF CRUSHING AND ENTRAPMENT



CAUTION RISK OF SWIVELLING AND CRUSHING



ATTENTION

The unload of the the shredder from the truck and moving the equipment in the workplace should be performed only by qualified personnel who have read and carefully understood the safety requirements.

A person in charge of operations must always be present during loading and unloading. In all cases, make sure that there are no persons, animals or objects in the unload area and behave as described in this manual.

The shredder is normally transported on a lorry, sometimes without packaging, sometimes protected by heat shrinkable film and other times in wooden cases.

ATTENTION

Read and fully understand "Safety prescriptions" (par. 2.3) before transporting and unpacking the shredder.

3.1 SHREDDER PROTECTED BY HEAT-SHRINKING FILM.

NOTE

Before starting to unload the equipment from the truck, read this entire sequence, so to be timely prepared when required.

Remove from the shredder any fixing devices used to better fasten it to the truck,

ATTENTION

Shredder unloading operations must be performed very slowly and the operator must make sure that there are no persons, animals and objects exposed in the unloading area.

ATTENTION

Before you start lifting

- ensure the good condition of the ropes or chains used to lift the machine
- use ropes / chains of adequate loading capacity. Keep in mind that every single rope / chain must be able to lift the weight of the shredder (see "Specifications" in section 4)
- make sure that the shackles are tight
- in the case of chains with shorteners, make sure that they are securely connected too

After securing the shredder with ropes and / or chains, lift a few inches the equipment to verify the correct harness.

ATTENTION

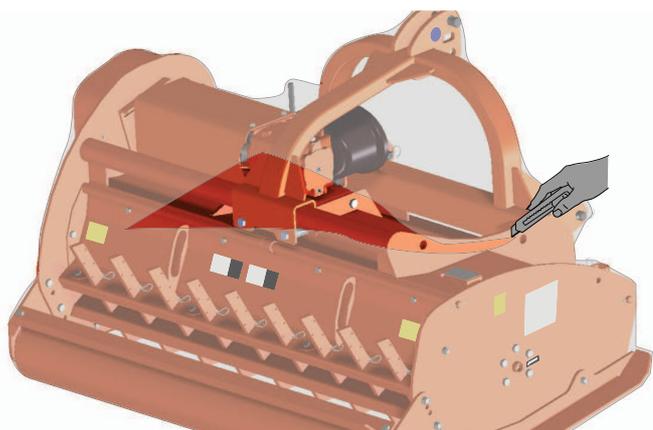
Lift the shredder from the floor of the transport mean to a maximum height of 30 cm, unless obstacles, so it does not tilt. Place the shredder on the ground in the vicinity of the tractor.

Remove chains or ropes.

Once on land, unpack the equipment as described below.



ATTENTION DANGER OF CUTTING



ATTENTION CUTTING HAZARD

If the shredder comes wrapped in protective film, remove it using a cutter, being extremely careful not to injure yourself or damage the equipment.

To do this safely, the operator must:

- wear cut-resistant gloves
 - have a cutter
 - cut the protection material being careful not to injure yourself and do not damage the shredder.

ATTENTION DANGER OF POLLUTION

After unpacking do not disperse in the environment the waste, but refer to authorized centres for disposal. Check with the transport document or with the packing list and in case of need behave as described in the "General notes on delivery" (section. 1).

3.2 SHREDDER IN THE WOODEN CRATE

NOTE

Before proceeding with the unloading of the truck read this entire sequence, so as to be prepared in time for the unexpected.

If the shredder is contained inside wooden packaging, use a fork-lift truck with suitable capacity to unload it (consult technical features table to see shredder weight) or use the lorry's lifting arm.

ATTENTION

The unloading of the shredder must be made very slowly, and the operator must ensure that there are no people, animals and objects in the unloading area.

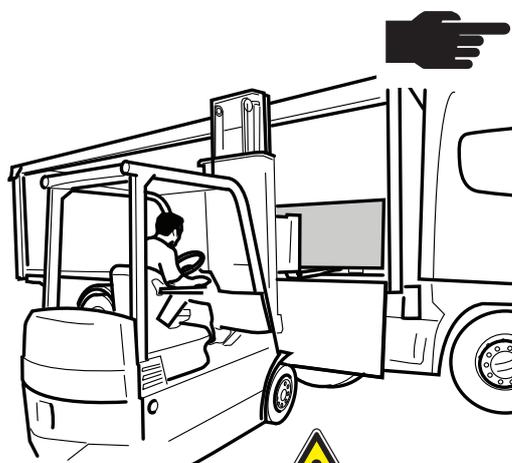
Insert the forks of the forklift as shown in the figure. Raise the wooden crate from the floor for a maximum height of 30 cm, unless obstacles.

Place the crate on the ground in the vicinity of the tractor.

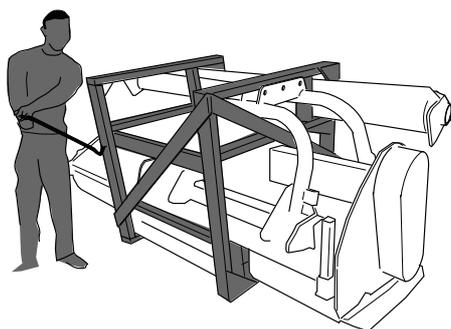
Wear gloves and use a suitable tool to disassemble to wooden packaging. Use a forklift of suitable capacity (see section 4 "Technical features"). After securing the shredder with ropes and / or chains, lift a few inches the equipment to verify the correct harness.

Use ropes / chains of adequate capacity to lift the shredder.

Lift up to 30 cm the shredder from the crate and place it close to the tractor.



RISK OF CRUSHING AND ENTRAPMENT



CAUTION RISK OF SWIVELLING AND CRUSHING



ATTENTION POLLUTION HAZARD

After unpacking the cutter do not disperse the packing materials, but refer to the specialized agencies for disposal, or save it for other transports. Check the supply with the transport document or the packing list and in case of need to behave as described in the "General notes on delivery" (section 1.4).



**ATTENTION TIPPING
DANGER**

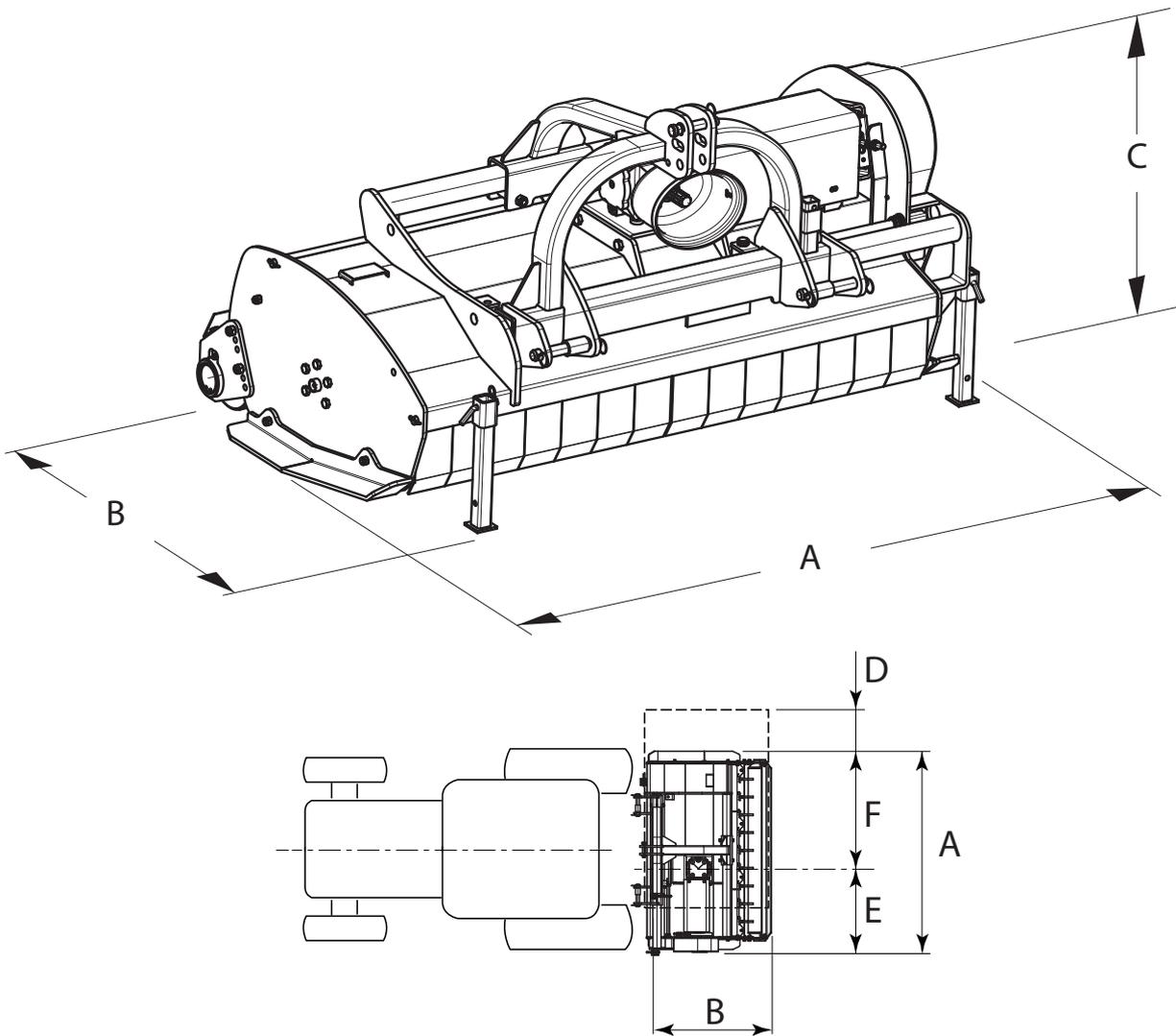
ATTENTION

Remember that as far as the equipment is stable during subsequent transport, it should ALWAYS:

- be well fastened to the truck
- be positioned in the centre of the truck, not on the edges in order to avoid the dangers of tipping in turns or rough roads.

4. TECHNICAL DETAILS

The technical characteristics of the TUF shredder are shown in the table below.



TECHNICAL DETAILS

		TUF				
Ref.	Description	155	180	200	220	250
	Working width (cm)	1550	1800	2000	2200	2500
A	Overall length (mm)	1830	2045	2285	2530	2750
B	Overall length (mm)	1155	1155	1155	1155	1155
C	Height (mm)	1040	1040	1040	1040	1040
	Mass – Weight (Kg)	600	660	710	760	790
	Number of revolutions (rpm)	540-1000	540-1000	540-1000	540-1000	540-1000
	Power required (HP)	60 - 90	60 - 90	60 - 90	60 - 90	60 - 90
	Installed power (Kw)	45 - 67	45 - 67	45 - 67	45 - 67	45 - 67
D	Displacement (mm)	370	370	450	450	450
E		775	857	907	907	907
F		1055	1187	1377	1621	1845
	Standard Y Knives	36	42	48	54	60
	Standard Hammer	12	14	16	18	20

5. COMMISSIONING



ATTENTION

Only qualified operators having read and understood the safety instructions can perform the operations described below. They must also ensure that there are no people, animals and objects standing in the area where connection to the tractor is made.

The operator and any helpers must be provided with PPE (Personal Protective Equipment) and wear them according to need.

The shredder can be moved only if it is connected to the tractor; to be able to connect it, strictly follow the instructions and the order given below:

- THREE-POINT CONNECTION TO THE TRACTOR
- CONNECTION OF THE CARDAN SHAFT

5.1 3-POINT CONNECTION

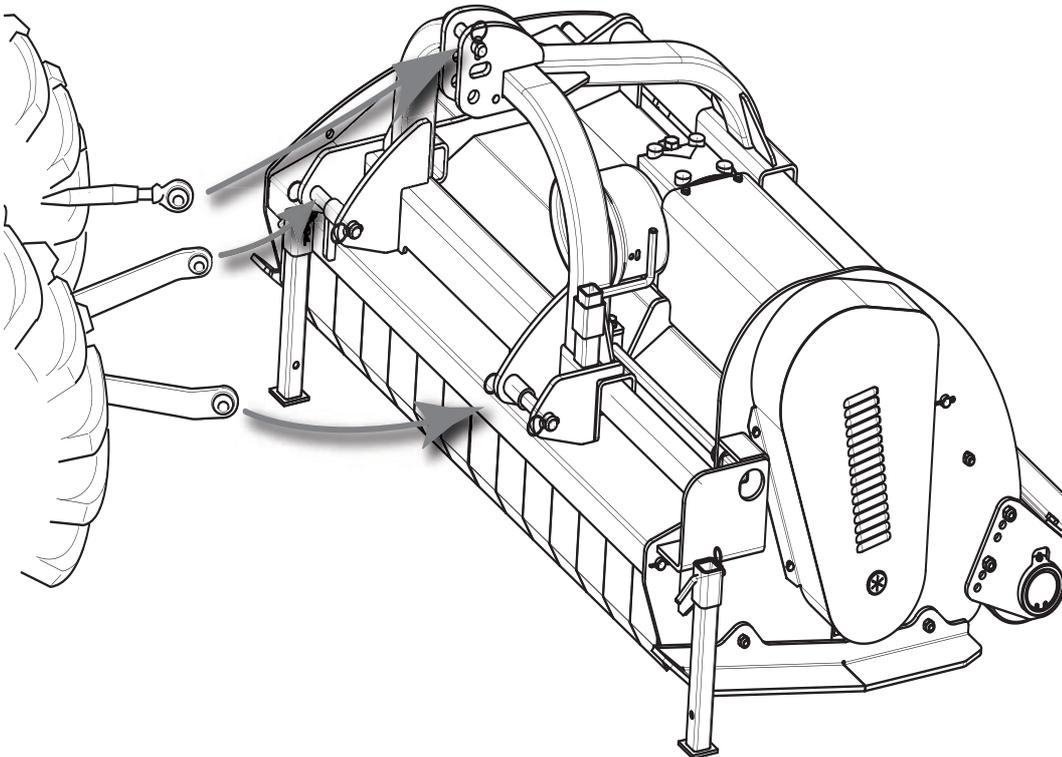
The machine must be hitched to tractors with suitable weight and power and with 2nd category standard hitch.

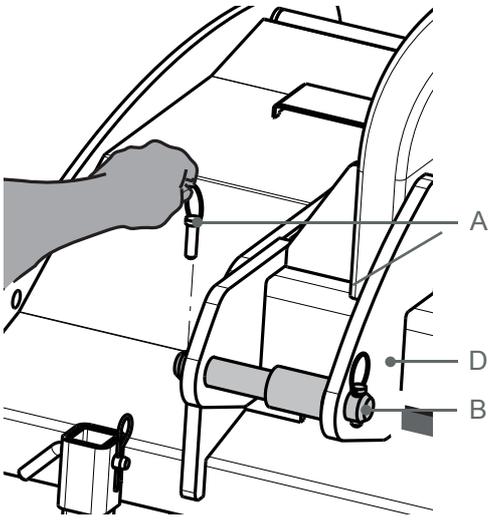
To connect the PTO shaft, the operator must:

Slowly move the tractor to the shredder and position so that the lifting arms of the tractor are aligned to the two side pins of the shredder.

Once in position pull the handbrake, turn off the engine, remove the ignition key and keep it, then get off the tractor.

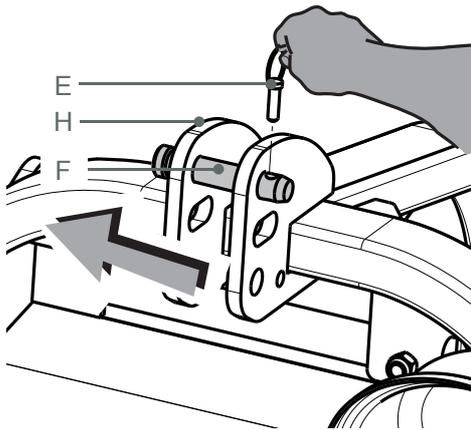
Check that the PTO shaft guard is intact, otherwise provide in this regard consulting the relevant user manual.





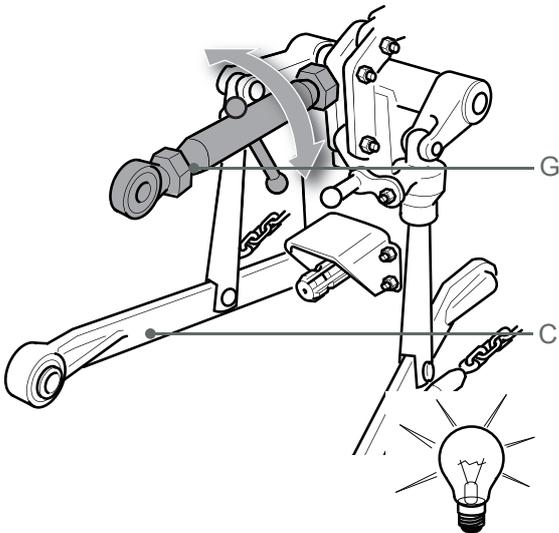
Proceed as follows to hitch the machine to the tractor:

- remove the split pin A of pin B on both sides
- slide the pins B out
- get on the tractor and start the engine
- disengage the brake and reverse slowly until the tractor lifting device arm joint C combines with the lower third point of the shredder D
- turn off the engine, put the hand brake, remove the key and store it, then get off the tractor.
- insert the pin B into the hole of the lower third point D of the shredder and into the hole of the tractor arm joint C.
- re-insert the split pin A
- proceed doing the same with the other lower connection.
- lock the anti-shock tie rods of the lifting arm of the tractor to prevent the machine from oscillating laterally, compromising the transverse stability of the complex.



To make the connection of the upper third point, the operator must:

- remove the split pin E of the pin F of the upper third point of the shredder.
- slide pin F out
- release the tie-rod G of the tractor upper third point and insert it into the upper third point H of the shredder
- re-insert the pin F and the split pin E into the shredder upper third point and into the tractor tie-rod joint
- if you use the third top floating point make sure that it enables the machine to tilt forward and backward and that the output shaft is parallel to the ground
- if you do not use the third top floating point, adjust the length of the rod so that the PTO is parallel to the ground



It is always good practice to make sure that the shredder PTO axis is parallel to the ground thus reducing the stress to a minimum on the power take-off and extending the working life of the shredder.



5.2 CARDAN SHAFT CONECTION

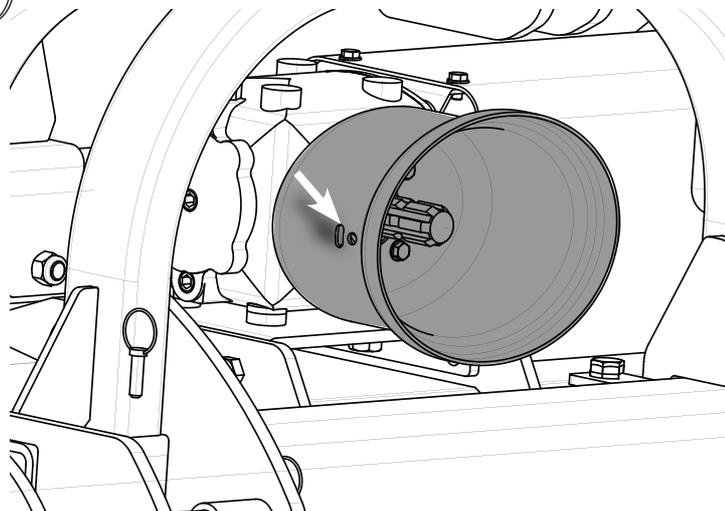
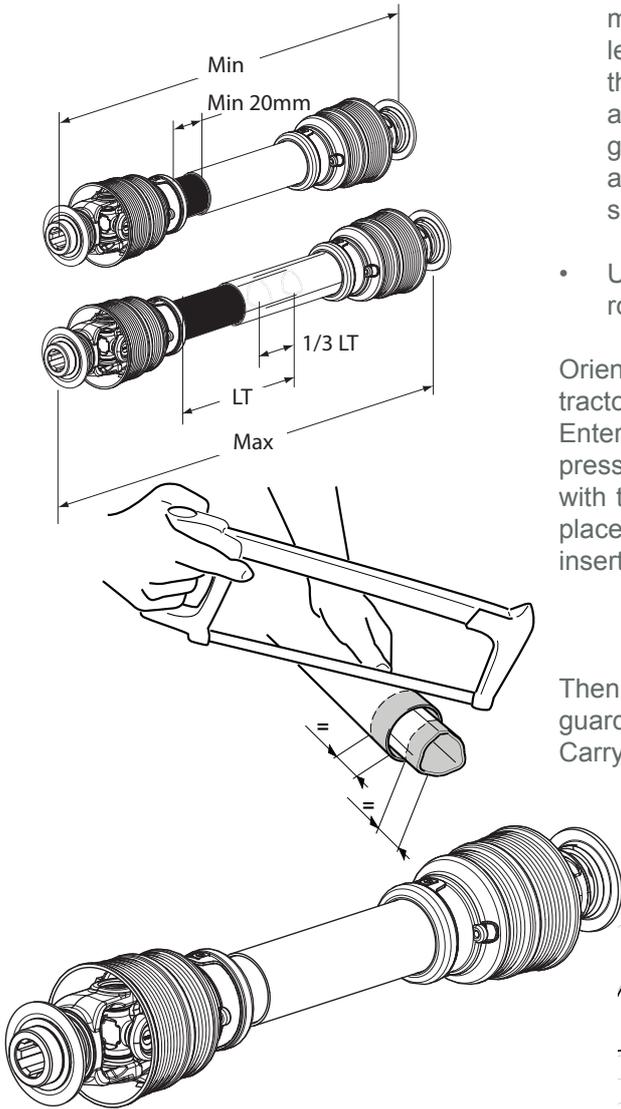
Before assembling the Cardan shaft, the operator must:

- Read the Cardan shaft and tractor manual.
- Make sure that the number of revolutions of the PTO of the tractor match those of the shredder (the choice of the number of revolutions of the shredder must be made at time of purchase). Otherwise, please consult the technical department
- Check that the Cardan shaft minimum and maximum lengths are those required by shredder-tractor coupling. It should be remembered that the maximum extension tubes must overlap by at least one third of the length of the inner tube. Moreover, in the maximum closure position of the pipes, the minimum play allowed of the plastic protections must be at least 2 cm. in order to prevent damage to the protections and the gear transmission. In the case it requires to be cut adequately, cut accordingly; consult the use and maintenance manual of the cardan shaft or turn to an authorized dealer who will know how to proceed.
- Use cardan shafts with power/torque transmission capacity and rotational speed suitable than recommended.

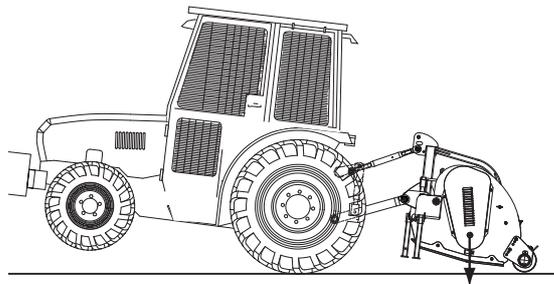
Orient the cardan shaft in the right direction, referring to the figure of the tractor stamped on the outer protective tube.

Enter the first hub of the cardan shaft on the PTO of the shredder, holding pressed the safety plug or collar of the fork; release it and move backwards with the cardan shaft until it does not engage with an audible "clack" in place. Repeat the operation successively with the hub opposite the shaft, inserting it into the tractor PTO.

Then hook the hook of the retaining chains of the PTO shaft in the adequately guard retaining cap in its seat on the Security PTO shredder shown. Carry out the same operation on the tractor PTO.



5.3 CHECK THE STABILITY OF THE TRACTOR-SHREDDER COMPLEX



The weight of the shredder change the stability of the tractor-shredder unit, influencing the ability of steering and braking, so we need to proceed at a moderate speed. In particular, it should be noted that the front axle must always be carrying a load of at least 20% of the weight of the tractor-shredder unit.

Check the lifting capacity and stability of the tractor using the following formula and, if necessary, before applying the front weights.

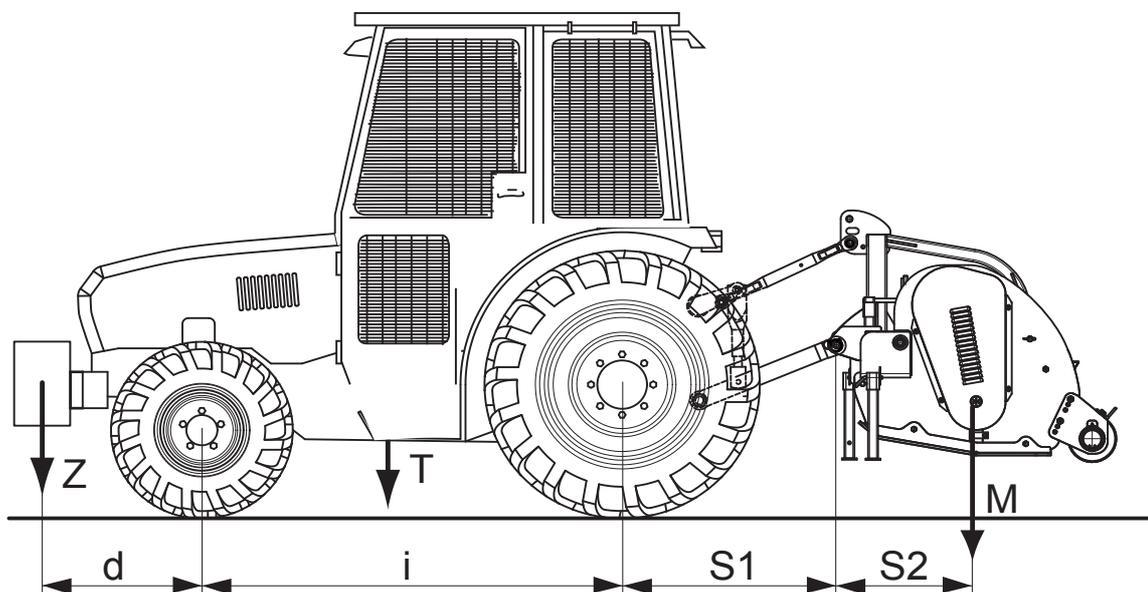
$$M \times (S1+S2) \leq 0.2 T \times i + Z \times (d+i)$$

$$M \leq 0.3T$$



ATTENTION TIPPING HAZARD

- i** = wheel base
- d** = distance from the front axis of the ballasts
- S1** = distance between the centre of the rear axle and the centre of the lower coupling
- S2** = distance between the centre of lower coupling points and centre of gravity of the shredder
- T** = mass of the tractor + 75Kg (operator)
- Z** = mass of the ballast
- M** = mass of the machine;



5.4 TRANSPORT BY ROAD

Before transporting on public roads, it is indispensable to consult the Highway Code, in particular art. 61 and art. 104. For other countries, refer to the Highway Code in force.

5.5 PREVENTIVE MAINTENANCE

Before using the machine for the first time or after a long period of inactivity, you must do the following:

- check that the machine is not damaged
- check that the mechanical parts are in good condition and not rusted
- Check the wear and tear condition of the tools
- Carefully grease all moving parts
- verify that there are no oil leaks from the transmission unit
- verify that all guards are fully assembled.
- visually inspect the machine before each use; in the case of loose bolts tighten them according to the table of tightening torques stated in section 13.1
- check the oil level in the gear box of the multiplier, and if necessary, top up to restore the level (see Sec. 8, "Routine Maintenance")
- grease the supports of the rotor and of the rear roller (see par. 8.2)

For greasing use the following lubricants:

- Oil **ENI-AGIP BLASIA 150**
- grease **AGIP GREASE MU EP 2**

5.6 MACHINING

Once all checks and adjustments are carried out, with the tractor connected to the shredder (for half to three-point coupling, but with the cardan shaft disconnected) turn on the tractor and move to the working area, remembering to keep the shredder raised so that the tools do not touch the ground (at least 20 cm).

To operate the shredder, the operator must refer to the manual of the tractor because the controls are placed inside the cab of the tractor itself.

WARNING

Before starting work, make sure that there are no people or animals within the operating range of the machine.

Make sure that all guards are in place and efficient.

The machine must be used by a single operator located inside the passenger driving cab of the tractor.

Make sure that there are no ties to prevent movement. If there are, free the machine from any bond.



NOTE

Prior to working with the equipment read this entire sequence, so as to be prepared in time for the unexpected.

It is a good idea to start the equipment at reduced speed, especially in cold environments, to allow a running system, and prevent malfunction of the equipment.

Once arrived at work the operator must:

- insert the handbrake
- Switch the engine off
- remove the ignition key and keep it
- get off the tractor
- check that there are no people, animals and things in the area exposed
- connect the cardan shaft to the PTO of the tractor as described in par. 5.2.

Once the cardan shaft is connected, the operator must:

- turn off the engine of the tractor;
- release the handbrake
- work at a maximum speed of 6 km/h reducing it to about 2 km/h in the





Danger of cutting and shearing hands and feet



Danger of throwing objects



presence of woody material that is difficult to work (hard, large, etc.).

Keep the tractor engine to an idle speed that ensures the machine with the power required in relation to the work that is taking place.

Walk a short distance with the shredder operated and check the quality of the work performed; if it were not satisfactory, repeat and revise the adjustment of the machine.

Do not approach the tool-holder rotor with the hands or feet when it is rotating.

During functioning, the machine can project material from the rear part: make sure that animals and persons are at least 50 metres from the machine. In the operations of change of direction, turn and reversal, disengage the PTO and slightly lift the shredder off the ground to avoid damage to the structure.

After the work, the operator must:

- insert the handbrake
- Switch the engine off
- remove the ignition key and keep it
- get off the tractor
- disconnect the cardan shaft of the tractor PTO and rest it on the suitable support hook
- get on the tractor and release the handbrake
- Switch on the tractor
- bring the shredder in the warehouse, taking care when handling that there are no persons, animals or things exposed

Once at the store, the operator must:

- insert the handbrake
- Switch the engine off
- remove the ignition key and keep it
- clean the shredder (see chap.9 "CLEANING")
- check that there are no oil leaks, stop any leaks present (ground pollution hazard)
- check and if necessary, replace any worn parts (see chap. 8 "Routine maintenance").

NOTE

If the equipment stops during working, consult par.13.2 "Troubleshooting".



Danger of hands cutting
and shearing

6. STOPS

ATTENTION GENERAL HAZARD

Only qualified operators and which have read and understood the safety prescriptions (Chap. 2) can carry out the operations described below. They must also ensure that there are no people, animals and objects exposed within the danger zone.

The equipment can be stopped in the following ways:

- Temporary stop
- Stop at the end of the day
- Stop for long periods
- Emergency stop

Here following describes how to behave in each case.

TEMPORARY STOP

To make the momentary stop of the shredder simply turn off the rotation of the PTO of the tractor, by operating the corresponding control panel of the tractor

In case the operator have the need to get off the tractor, ne must:

- insert the handbrake
- Switch the engine off
- remove the ignition key and keep it
- get off the tractor

DAILY ENDING HOUR

- insert the handbrake
- Switch the engine off
- remove the ignition key and keep it
- get off the tractor
- disconnect the cardan shaft from the PTO of the machine;
- clean the shredder (see chap.9 "Cleaning")
- check that there are no oil leaks, in case provide repairing (risk of soil pollution)
- check and if necessary, replace any worn parts (see chap. 8 "Routine maintenance").



STOP FOR LONG PERIODS

When you park the machine for long periods, you must:

- operate the parking brake of the tractor
- lower the outriggers of the machine
- place the shredder on the ground
- turn off the motor of the tractor
- remove the ignition key from the control panel and keep it
- get down from the driver's seat
- Disconnect the PTO shaft
- rest the PTO shaft on the support
- remove the cotter and the pin and remove the tie rod (third top point)
- secure the tie rod to the proper mounting on the tractor
- pull the cotter and the connection pins and then remove the arms of the rear hydraulic lifter of the tractor from the coupling points of the shredder
- climb on the tractor again
- start the tractor and get away with caution
- clean the shredder (see chap.9 "Cleaning")
- lubricate all parts of the shredder that are not painted with a rust inhibitor

It is required that the ground on which the shredder rests is level and inside a protected area, in order to prevent unauthorized personnel from approaching.

EMERGENCY STOP





Danger of hands cutting and shearing

To stop the shredder in emergency conditions, just deactivate the rotation of the tractor PTO by activating the relevant control in the tractor control panel. At this point, pull the handbrake, turn off the engine, remove the ignition key and keep it safe.

Find out the cause which induced the emergency stop, if necessary, consult section 13.2 "Troubleshooting".

Decision making:

- if required bring the equipment to zero energy state
- if required call for technical assistance
- if you can repair the equipment

After remedying the cause that prompted the emergency stop then restart the equipment.

7. ADJUSTMENTS

7.1 ADJUSTING THE WORKING HEIGHT

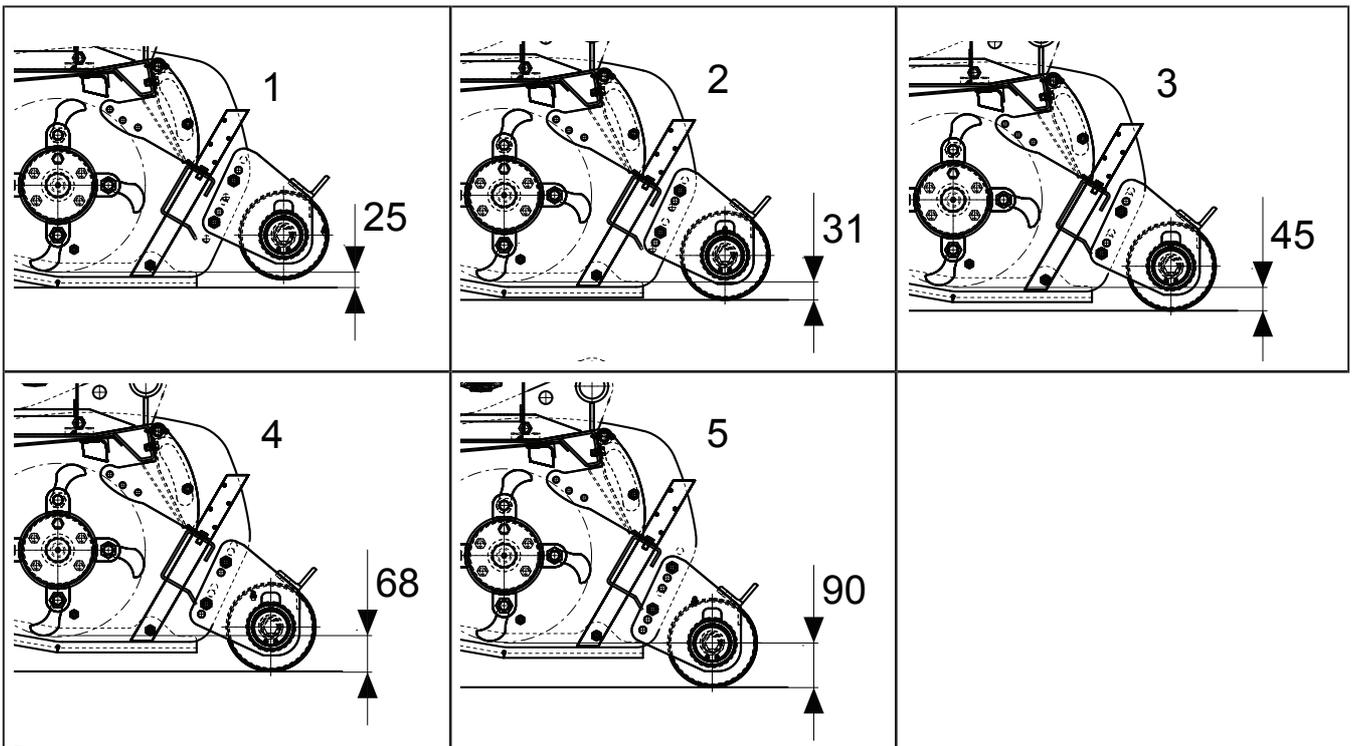
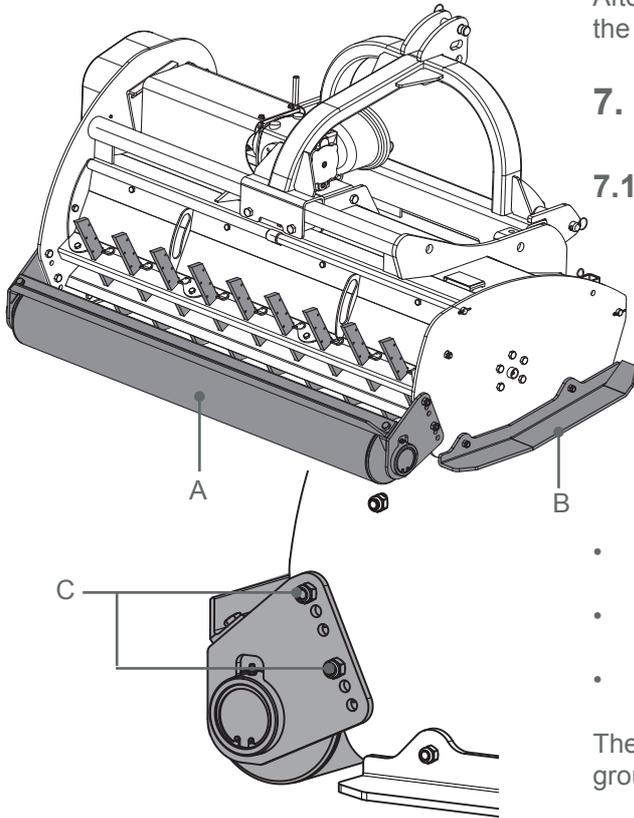
The machine working height is determined by the vertical position of the rear roller A or the rear pneumatic wheels.

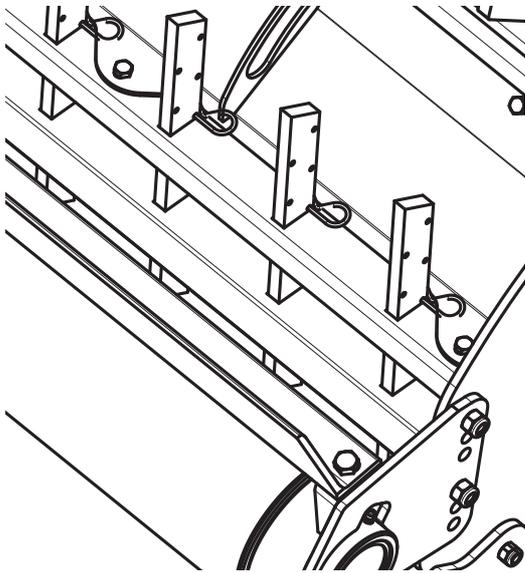
By lifting the roll/wheels, the tools move closer to the ground and, vice versa, lowering them the tools move away from the ground. Make sure that the tools do not touch the ground after a working height adjustment: direct contact would cause rapid wear.

To adjust the height of the roll:

- loosen and extract the bolts B, which fix the roll on both sides, holding the lower bolt nut inside the body with a second wrench
- Lift and lower the roll and reposition it as needed and according to the layout given below
- re-insert and tighten the bolts C

The skids B prevent direct contact between the lateral plates and the ground, facilitating shredder running and preventing possible damage.





7.2 ADJUSTING THE HOOKS

After adjusting the working height, for perfect shredding it is indispensable to also adjust the position of the hooks unless otherwise needed. They must almost touch the ground but never penetrate it so proceed as follows:

- pull the cotter of one of the side hooks
- push downward on the hook until it touches the ground
- pull out the hook until you uncover the first pin hole of the cotter
- insert the cotter into the uncovered hole
- check which hole is used for the cotter, by counting the holes from the top
- proceed with adjusting all the hooks inserting the cotters in the same hole of the previously adjusted hook

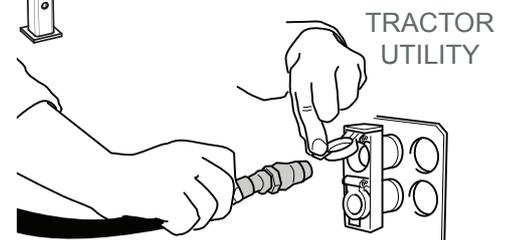
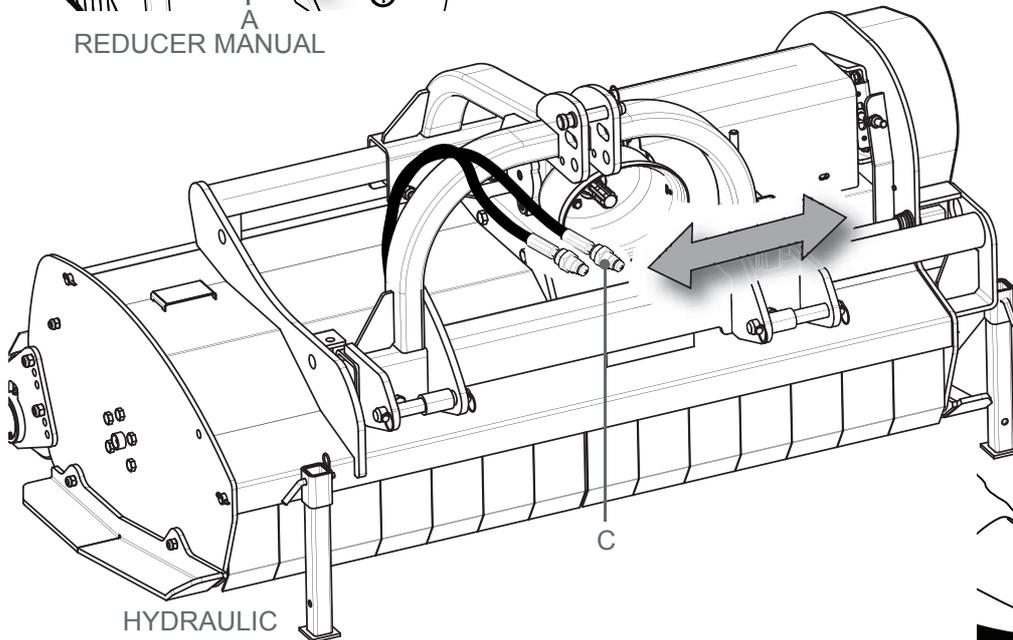
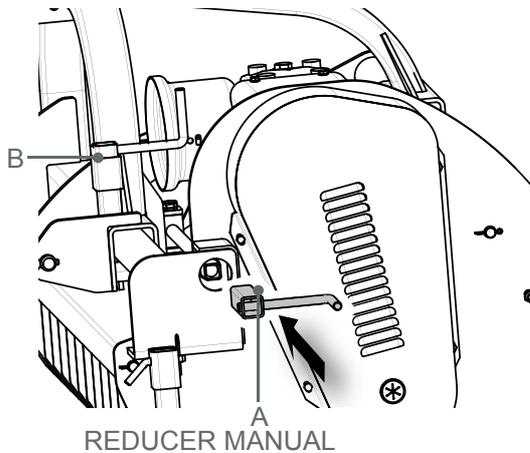
7.3 LATERAL SHIFT ADJUSTMENT

The TUR shredder can be configured in the moveable version with manual or hydraulic screw shift.

To adjust the lateral position of the machine with screw jack, operate as described:

- insert the crank A onto the pipe that projects from the transmission side plate
- turn the handcrank in one direction or the other to move the machine from one side to the other
- put the crank back in its housing B at the base of the mobile arch when adjustment has been performed

If the arch has a hydraulic cylinder, its position can be modified at will, after having connected the quick couplings C to the tractor utilities, using the commands of the tractor itself.



Lateral shift adjustments must only be performed exclusively on the work ground with the engine off, PTO disconnected and hand brake engaged. If necessary, lift the machine from the ground, but make sure it rests on supports in order to ensure the safety of all persons and prevent any falls.

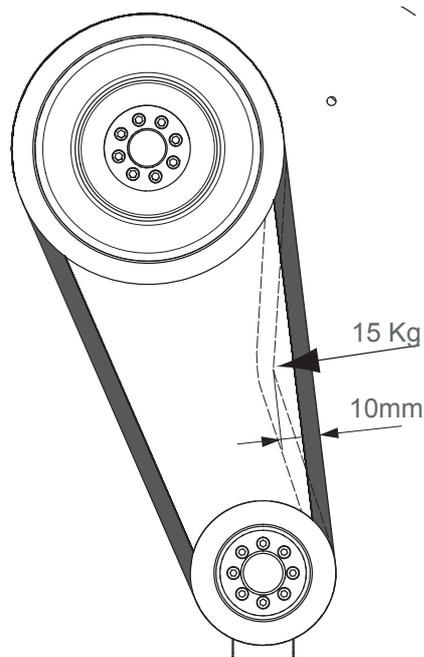
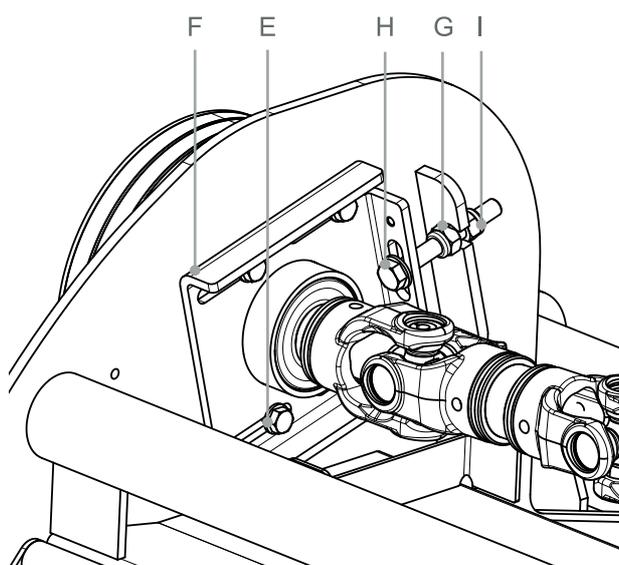
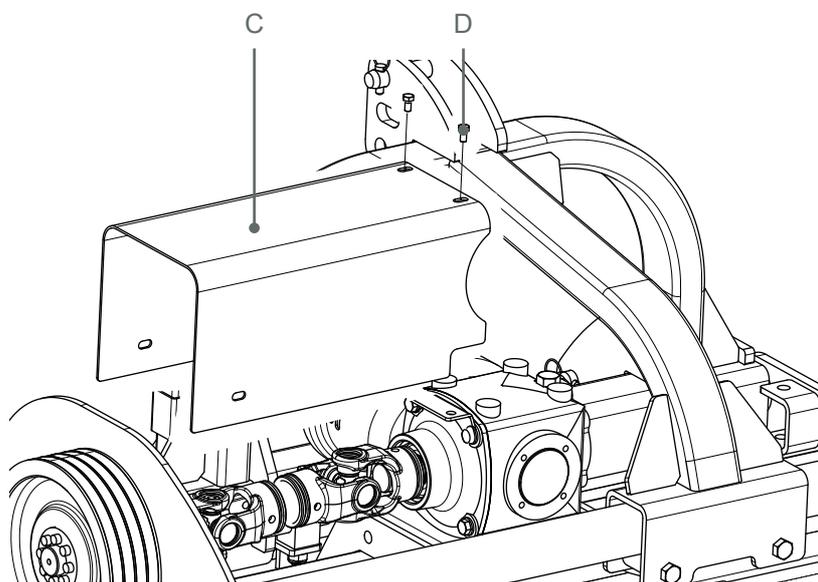
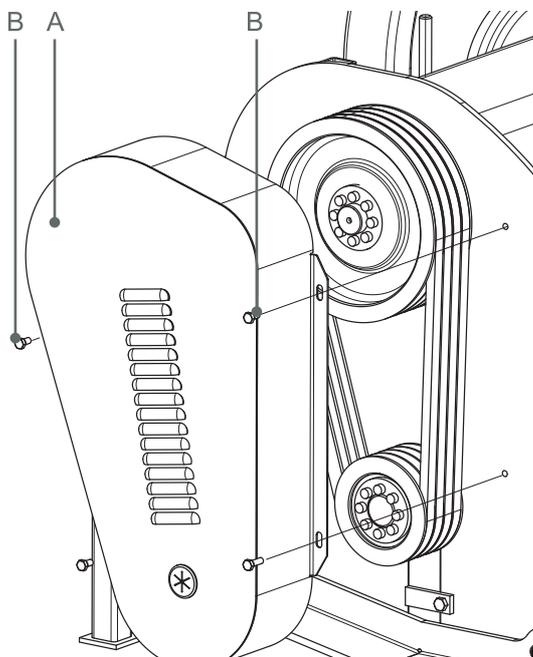
7.4 ADJUSTING THE TENSION OF BELTS

The tool holder rotor is rotated by a fixed belt tensioner, manually adjustable.

Proceed as follows to adjust belt tension:

- remove the belt protection guard A by loosening the 4 screws B, which fix it
- remove the cardan drive protection guard C by loosening the 4 screws D
- loosen the 4 nuts E which block the support plate F
- loosen the counter nut G holding the adjusting screw H
- tighten the tightening nuts if the belts are loose, loosen them if they are too tight, holding screw H
- tighten the counter-nut G while holding screw H once sure of the correct tensioning
- tighten the 4 nuts E
- finally, re-mount the protection guards C and A

The belts are correctly taught if, when applying a force of about 15 kg on the centre of the belts set, these bend by about 10 mm.





ATTENTION GENERAL HAZARD

8. ROUTINE MAINTENANCE

ATTENTION

Only qualified operators and which have read and understood the safety prescriptions (Chap. 2) can carry out the operations described below. They must also ensure that there are no people, animals and objects exposed within the danger zone.

The operator must know and follow the directions exactly and must have completed the decommissioning of the machine.

Periodic inspections and maintenance operations described in this chapter must be performed within the time and in the manner prescribed and shall be borne by the operator.

Failure to comply with standards and maintenance time affects the proper functioning of the machine and its duration, consequently invalidating the warranty.



For any other maintenance refer to sec. 13.2 “Troubleshooting” or contact the Manufacturer or his after-sales centres.

Given the complexity of the equipment, repairs, modifications, special maintenance other than those listed below should NOT take place without consulting the Manufacturer or its service centre. Depending on the case, the latter will give authorisation to proceed with all written instructions necessary or will recommend the intervention to one of his own technician. These precautions are due to the fact that, incorrect or untimely operations can lead to anomalous operating conditions, damage to the display unit and risks for staff.



CAUTION RISK OF TIPPING, CRUSHING

ATTENTION

Before performing maintenance read this entire part so as to be prepared in time for the unexpected.

ATTENTION

Make sure the actual stability of the equipment (tractor and shredder) before performing any maintenance (the limit of maximum tilt of the soil should be 3°).

Before performing any maintenance operation, the operator must bring the shredder to the state energy zero (see sec. 2.1)



ATTENTION GENERAL HAZARD

The maintainer and any helpers must be provided with PPE (Personal Protective Equipment) and wear them according to need.

Do not perform repairs of which you have no knowledge. Always follow the instructions and, in the absence of these, contact your dealer or experienced staff.

Do not use lifting devices other than those listed.

Make sure that the lifting device chosen is suitable to perform the operations in accordance with the safety regulations.



CAUTION RISK OF POLLUTION OF SOIL AND GROUNDWATER

Do not hold the tractor engine running in closed areas without a suitable ventilation system to dispose of harmful exhaust gases that are concentrated in the air.

Avoid prolonged or repeated skin contact with lubricants because they could create skin disorders or other syndromes.

Do not swallow fuel / lubricants / fluids. In the event of accidental contact the eyes, wash them well with water.

Do not weld in an enclosed or poorly ventilated areas.

Do not weld on coated surfaces, to prevent the development of toxic vapours. Remove the paint with suitable products, then wash the surfaces and allow to dry.



SICMA INFORMS THAT ANY CHANGES TO, OR ALTERATION TO THE SHREDDER, OR ANY TRANSACTION ACCOMPLISHED AND NOT STRICTLY REPORTED IN THIS MANUAL, ESPECIALLY THE NON-COMPLIANCE WITH SAFETY INSTRUCTIONS, NOT ONLY VOID THE WARRANTY, BUT ALSO RELIEVES SICMA FROM ANY RESPONSIBILITY FOR DAMAGE AND PEOPLE.



**ATTENTION BURN
DANGER**

8.1 CHECKING AND CHANGING THE OIL IN THE BOX OF THE MULTIPLIER UNIT

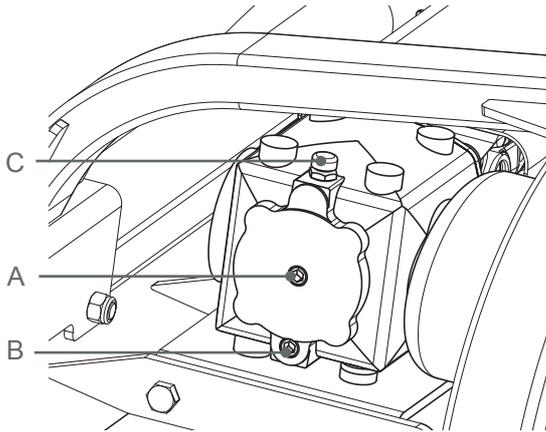
ATTENTION

Before touching the box of the multiplier wait until it has cooled sufficiently.

ATTENTION

The operator must pay attention to oil leaks and perform relative maintenance immediately. Moreover, oil must not be poured onto the ground when topping-up or replacing the oil.

The oil level of the gear transmission box must be checked visually by loosening cap A using the proper Allen wrench.



If top-up is necessary, proceed as follows:

- with a wrench unscrew the oil filler cap C
- top-up with AGIP-ENI BLASIA 150 using a funnel until the oil level is visible from the hole of cap A
- re-insert the load cap C and the level cap A, tightening them well.



The oil on the gear transmission box unit must be replaced as follows:

- After the first 50 working hours
- Every 500 working hours

To replace the oil proceed as follows:

- place a container under the oil drain plug B (bottom of the casing)
- unscrew the oil drain plug B and drain the oil completely
- dispose of the drained oil into a suitable container for used oil
- screw the previously unscrewed oil drain cap B
- loosen the oil load cap C and the level cap A
- use a small funnel to top-up with AGIP-ENI BLASIA 150 oil until the level is reached
- top-up and tighten the caps A and C.



CAUTION RISK OF POLLUTION OF SOIL AND GROUNDWATER

Recover used oil and dispose of them properly in appropriate collection centres because, according to the current laws, it should not be released into the environment because it is classified as hazardous waste. It is therefore necessary to turn to the "Waste Oil Mandatory Consortium" (www.coou.it, Green Number **800-863048**).

For other Countries refer to their anti-pollution laws.

8.2 GREASING

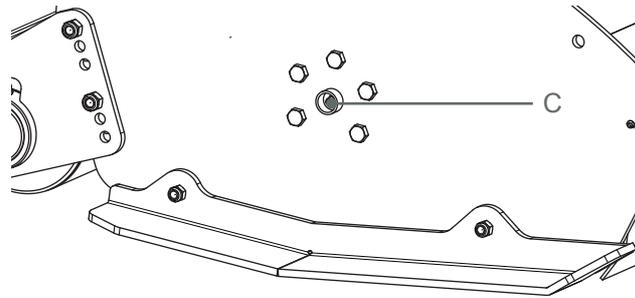
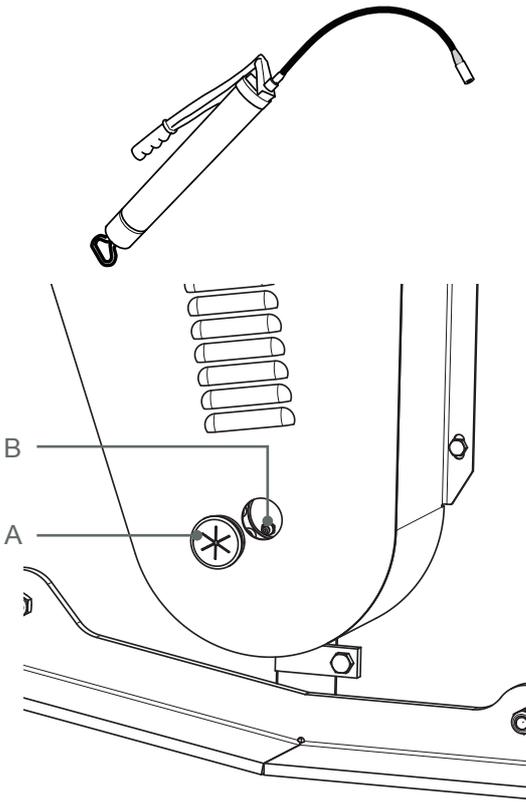
Greasing is performed using a manual greasing pump (as example in the figure) using **AGIP GREASE MU EP 2** after having cleaned the greasing nipples thoroughly.

SHAFT SUPPORT GREASING

(Every 8 working hours)

To grease supports proceed as follows:

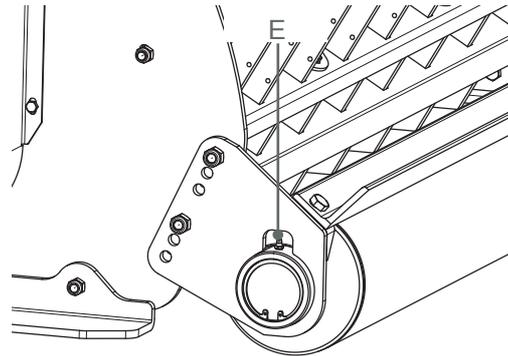
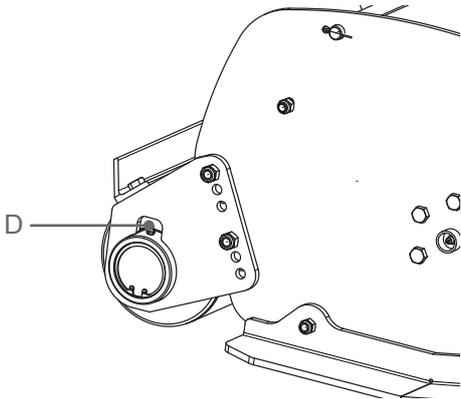
- remove plastic cap A on the transmission casing and inject the recommended grease in greaser B
- inject grease into the greaser C, situated on the opposite side of the shredder



REAR ROLLER SUPPORTS GREASING

(Every 8 working hours)

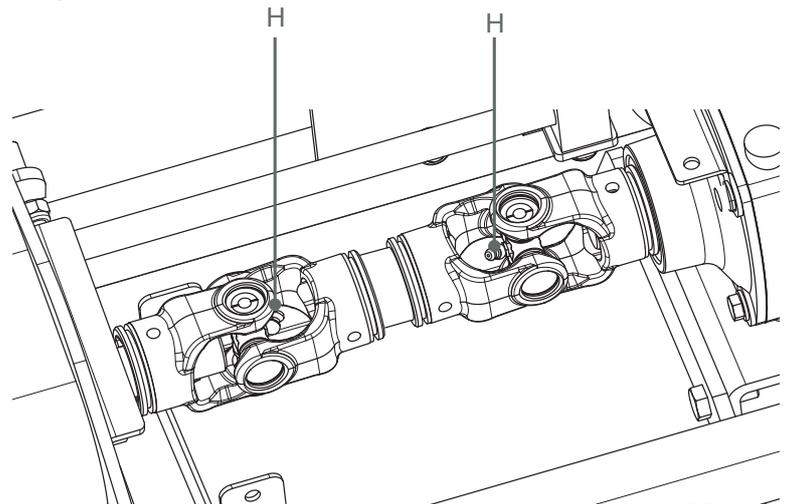
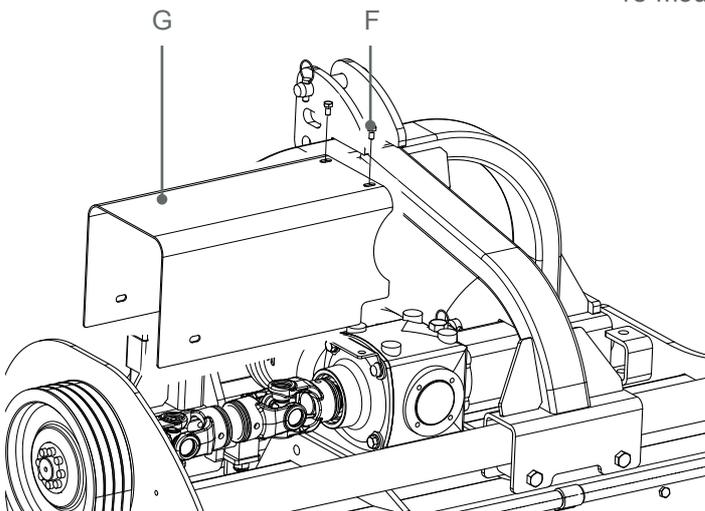
inject the grease into the greasers D and E situated on the upper outer part of the rear roll supports



GREASING LATERAL TRANSMISSION JOINT

(Every 20 working hours)

- unscrew the 4 screws F with the proper size wrench and remove the protection from the upper cardan G
- inject grease into the greasers H positioned on the trunnion bodies of the cardan end forks
- re-mount the protection cover F

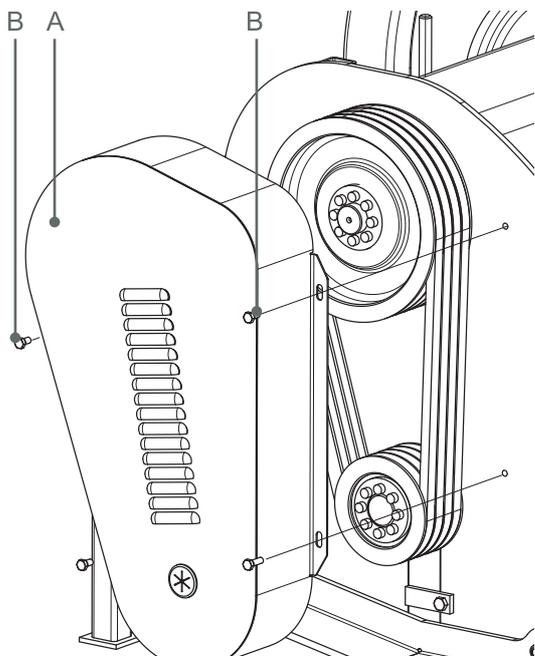


8.3 REPLACEMENT OF TRANSMISSION CHAINS

Frequently check the state of wear of the belts and replace the entire set if one or more result deteriorated.

To replace the transmission belts, proceed as follows:

- remove the belt protection guard A by loosening the 4 screws B, which fix it
- remove the cardan drive protection guard C by loosening screws D, which fix it
- loosen the 4 nuts E which block the support plate F using a 24 mm wrench
- loosen the counter-nut G using 24 mm wrench and loosen the drawing nut H until the belts set is loosened completely
- extract the belts by sliding the most external one out first followed by the others in succession
- replace all the belts with a new set by running the installation in the reverse direction from the previous point
- perform the tensioning procedure as described in section 7.4



8.4 REPLACING KNIVES/HAMMERS

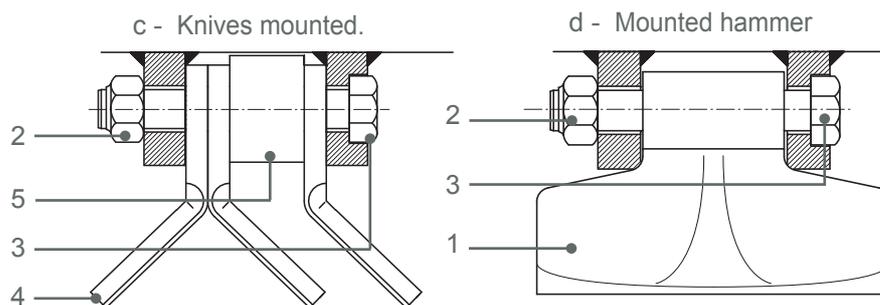
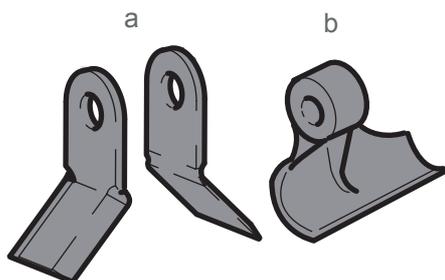
The TUF can be equipped with knives or hammers depending on the work to be carried out:

- (a) Universal knives: for grass, straw (assembly in fig. c)
- (b) Smooth hammer: for grass, maize, cereals (assembly in fig. d)

In order to obtain perfect machine operation, it must be frequently checked (at least every 50 working hours) that the shredding hammers or knives are in good working order and perfectly fixed to the bolts; replace them with new pieces whenever they are worn or broken.



ATTENTION DANGER OF CUTTING



Ref.	Descr.	Code	TOOLS LIST				
			TUF155	TUF180	TUF200	TUF220	TUF250
1	Smooth hammer	5716270	12	14	16	18	20
2	Nut M20 UNI 7473	3464101020	12	14	16	18	20
3	Screw M20x146 UNI 5737	3011020120	12	14	16	18	20
4	Knife	5816274	36	42	48	54	60
5	Knife spacers	5536275	12	14	16	18	20



When the tools are worn out you have to replace the entire set of tools. Replacing only some tools, causes the drive shaft to be unbalanced.

To replace the knives or hammers, contact the nearest SICMA after-sales centre or have this operation performed by skilled staff following the assembly layouts 5 and 6. Remember to assemble the tools with the sharp part facing in the direction of rotor rotation. It is also advisable to avoid any errors in assembly, reassemble the knives with the corresponding spacer in the same way for all groups of knives.



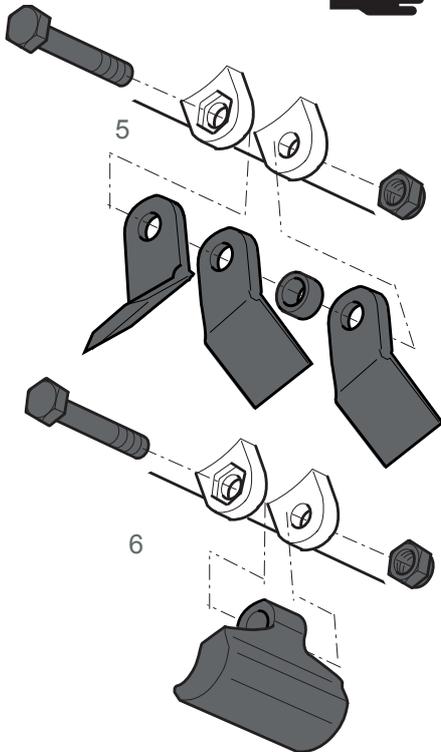
Do not mount the original tools may result in abnormal vibrations of the machine.

Always use original spare parts supplied by Sicma in order to guarantee small tolerance on the weight of the tools

Sicma does not recommend modification of the type of tools originally mounted on the drive shaft, e.g. replacing smooth hammers with notched hammers or knives and vice versa: whenever the user wants to perform this operation, the drive shaft must be re-balanced by a SICMA authorised centre (after having assembled the new tools) in order to prevent vibrations.

Sicma declines all liability for any damage deriving from this action.

If re-balancing must be performed, it is recommended to remove the weights added for original balancing.



9. CARDAN SHAFT

For lubrication and for maintenance interventions, behave as described in the use and maintenance manual by the manufacturer of the Cardan shaft installed.

10. CLEANING

ATTENTION GENERAL HAZARD

Only qualified operators and which have read and understood the safety prescriptions (Chap. 2) can carry out the operations described below. They must also ensure that there are no people, animals and objects exposed within the danger zone.



**ATTENTION
DANGER OF
CUTTING**

ATTENTION

When cleaning use safety gloves and safety shoes.

The operator must clean the shredder on solid, flat ground and must take the shredder to the zero energy state.

If you use compressed air to clean the machine, you need to protect yourself with safety goggles.

It is good practice to wash the equipment externally with a jet of water after every job.

Clean the shredder with a jet of water (high-pressure water jet machine) especially the following parts:

- plane of the frame
- hammers / knives
- 3-point coupling
- Rotor
- Rotor compartment

After washing, protect the unpainted metal parts with brush lubricating oil

11. STORAGE AND GARAGING

If the machine is prepared for long downtime periods, it is necessary to store it in a place protected from weathering so as to prevent damage. Before storage it is recommended to thoroughly clean the entire machine and properly lubricate all mechanical parts to protect them from rust.

Before putting the machine in long downtime periods, it is advisable to proceed as follows:

- free the rotor and tools from any remaining shred
- Clean the machine thoroughly.
- carry out a general visual check of the machine in order to identify any structural damage, deep scratches in the paint, the presence, integrity and legibility of the original safety pictograms and that these are in their original position
- grease all the mechanical organs including the locking pins
- if possible, recover the machine in a covered place, on flat and consistent ground.

12. SCRAPPING

In case of scrapping, the machine must be disposed of in landfills appropriate, in accordance with current legislation.

In Italy, prior to the destruction, it is necessary to separate the parts of plastic or rubber from metal ones. Parts consisting solely of plastic, aluminium, steel, they can be recycled, if collected by the testing centres.

Recover any waste oil and dispose of in the appropriate collection centres. The waste oil must be collected appropriately and must not be dispersed in the environment because, according to the legal Standards in force, it is classified as dangerous waste and as such must be brought to the appropriate collection centres. For the collection of waste oils, it is mandatory to connect the "Consorzio Obbligatorio Oli Usati" (Mandatory Consortium for Used Oils) (www.coou.it; free phone 800-863048).

For other Countries refer to their anti-pollution laws.

13. QUICK REFERENCE TABLE

The following paragraphs show, in tabular form, the information necessary to speed up the actions described here in both maintenance and for the resolution of unforeseen anomalies.

13.1 TIGHTENING TORQUE TABLE

Check tightness of all bolts and nuts daily. In case of need replace repositioning (screws, washers, nuts) respecting the sequence of disassembly.

COUPLING 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



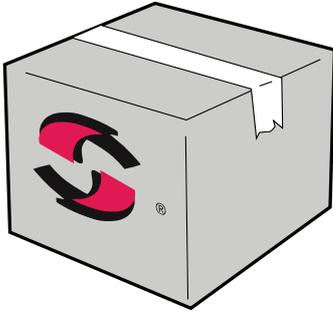
13.2 FAILURE AND REMEDY TABLE



NOTE

Before applying the suggested remedies, check with another attempt if the problem persists. In this case, start with the most basic remedies. If, despite the measures taken the fault persists, contact the service centre.

FAULT	CAUSE	REMEDY
Oil leakage from the box multiplier	<ul style="list-style-type: none"> • Too much oil in the box • Breather plug with faulty valve • Caps loading / unloading / slow levels • Damaged gaskets 	<ul style="list-style-type: none"> • Restore the proper oil level • Replace the breathing cap • Tighten the caps of loading / unloading / level • Replace the gaskets
Uneven shredding	<ul style="list-style-type: none"> • Tools worn or damaged • Roller / wheels are not properly adjusted • Machine clogged 	<ul style="list-style-type: none"> • Replace the tools • Carry out adjustments • Decrease the forward speed of the tractor • Clean the shredding chamber
Overheating of the conical couple unit	<ul style="list-style-type: none"> • Insufficient oil • Finished oil • Material hard to shred 	<ul style="list-style-type: none"> • Top-up the oil • Reset the oil level • Reduce the forward speed
Premature wear of the tools	<ul style="list-style-type: none"> • Stony ground • Height of cutting tools too low 	<ul style="list-style-type: none"> • Supervise the ground in advance • Adjust the cutting height
Noise or vibration of the machine	<ul style="list-style-type: none"> • Unbalanced rotor • Worn bearings. • Tools damaged, worn or missing 	<ul style="list-style-type: none"> • Perform balancing in a specialist workshop • Replace the bearings. • Replace the tools



14. SPARE PARTS

Repairs and replacements must be performed using original spare parts, which must be requested from the Dealer. Remember that the request for spare parts must be correct and accompanied by the following indications:

- machine type;
- serial number;
- code and description of the replacement part request detectable by the Exploded diagram of Spare Parts.
- Quantity requested;

Given the particular stress to which the equipment is subjected and for safety reasons, in case of replacement of parts, only request for original spare parts

15. WARRANTY

To take advantage of the contractual guarantee provided by the manufacturer, the operator must strictly observe the precautions listed in the Use and Maintenance Manual, and in particular:

- respect the limits of use envisioned by the Manufacturer
- do not make modifications or variations to the machine without the written approval of the Manufacturer
- always perform all maintenance interventions prescribed
- always use original spare parts
- make sure that the staff assigned to using the vehicle has the necessary skill requisites and training.

The warranty shall not apply if the above conditions are not complied with, even if only partially.

The use of spare parts not approved by the manufacturer will void any warranty and exempts the Manufacturer or the Retailer from liability for malfunctions or accidents.

The removal or the modification of guards and protections relieves the Manufacturer from all liability due to damage/injury caused to objects and/or persons.





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