

USE and MAINTENANCE MANUAL

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1.2. Series : **SUPER ALCE / FOLDING SHREDDER**

1.3. Model:

1.4. Series number:

CAREFULLY NOTE:

- THIS MANUAL MUST ACCOMPANY EACH EXAMPLE OF THE ABOVE MENTIONED SERIES.
- IN ORDER TO ENSURE A COMPLETE UNDERSTANDING OF THE MACHINE'S CORRECT FUNCTIONING THE USER MUST FULLY READ EACH SECTION OF THE MANUAL.
- PARTICULARLY IMPORTANT NOTES REGARDING SAFETY ARE WRITTEN IN BOLD PRINT.
- ANY USERS WHO MUST CARRY OUT PARTICULAR OPERATIONS ON THE MACHINE FOR WHICH NO SPECIFIC INSTRUCTIONS HAVE BEEN SUPPLIED MUST DIRECTLY ASK OUR SALES OR TECHNICAL OFFICE.

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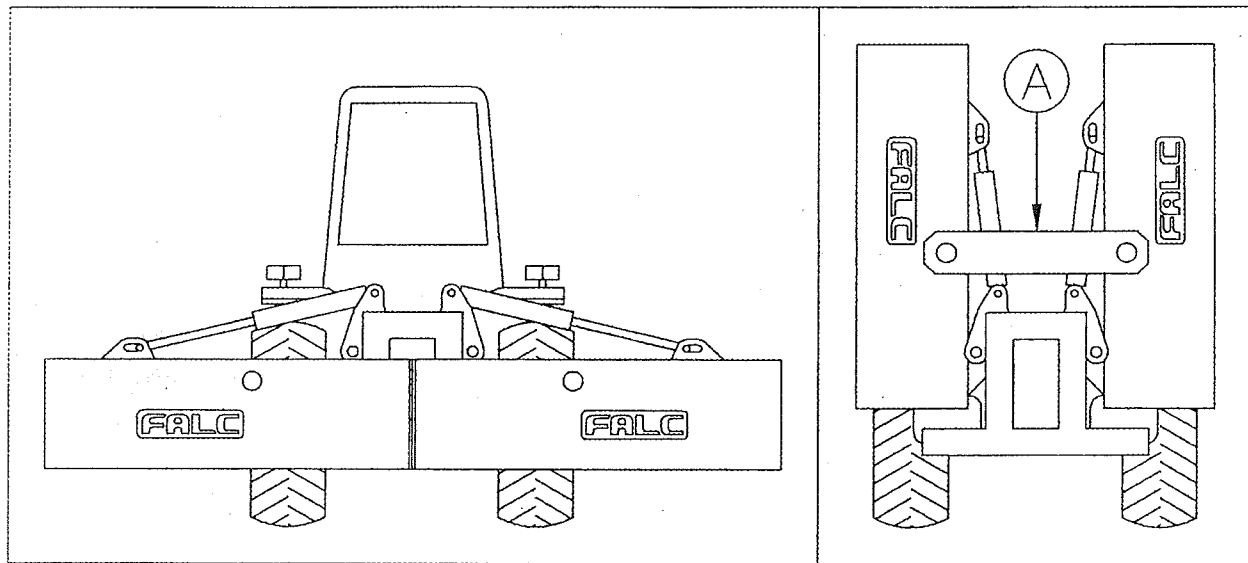
2. CONDITIONS OF USE

FALC shredders are built to be coupled to an ideal tractor provided with a 3-point hitch and a Cardan shaft transmission.

The Super Alce shredder series, is used to shred the remains after maize, wheat, Soya bean, cotton, sunflower, artichokes, tobacco harvests, etc., to allow a better formation of the humus necessary for the soil fertility, for the elimination of parasites and to achieve the optimal condition that restores the land for further cultivation. It is also used to shred grasses and pruning remains in fruit orchards and vineyards.

Any other use of the shredder is to be considered illegal and prohibited by the manufacturer.

- The Super Alce / Folding shredder model is equipped with:
- 2 pistons for closing the machine during transport
 - 1 piston for automatically blocking and unblocking the safety hooks
 - 1 manual safety bar (A) to be used during transport



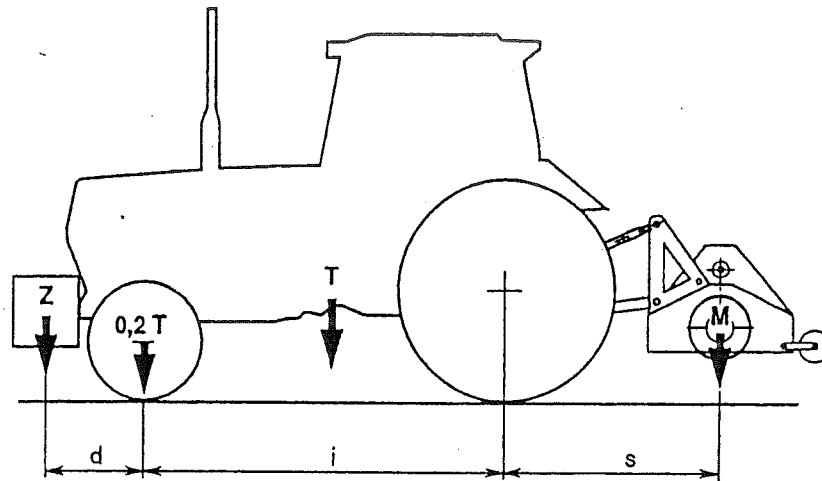
Model	Hp Tractor	Kw Tractor	Weight	Transport size	Total size
Super Alce 5000 / Folding shredder	90-160	66-118	Kg 2442	mm 2480	mm 5400

To achieve the lifting capacity and tractor stability it is necessary to respect the following conditions:

$$M \times s \leq 0,2 T \times i + Z (d + i)$$

$$M \leq 0,3 T$$

i = tractor wheels wheelbase	T = Tractor mass
d = distance of front axis from ballast	Z = ballast mass
s = protrusion of shredder rear axis	M = shredder mass



IT IS ABSOLUTELY FORBIDDEN TO ALLOW PERSONS, ANIMALS OR THINGS TO CLIMB OR BE TRANSPORTED ON THE SUPER ALCE/P SERIES SHREDDERS

3. CONDITIONS FOR THE OPERATOR

- a) During the use of the shredder, the operator must remain on the tractor in the driver's position. **The operator must not leave the driver's position on the tractor if he has not disengaged the power take-off from the tractor itself and has not waited until the moving parts of the shredder (rotor, etc.) are completely stationary. The stop time of the moving parts of the shredder is roughly 3 minutes.**
- b) Under normal conditions, that is, with the rear lid closed, the operator must ensure that starting up the shredder and during its operation, there are no persons within a radius of 20 m around the machine. **The operator must immediately stop both the tractor as well as the shredder if one or more persons enter within the 20 m radius around the machine.**
- c) The operator must not activate the hydraulic lift of the tractor without having first disengaged the tractor's power take-off. **Before lifting the shredding machine from the ground using the tractor's hydraulic lift, the operator must ensure that the power take-off is disengaged.**

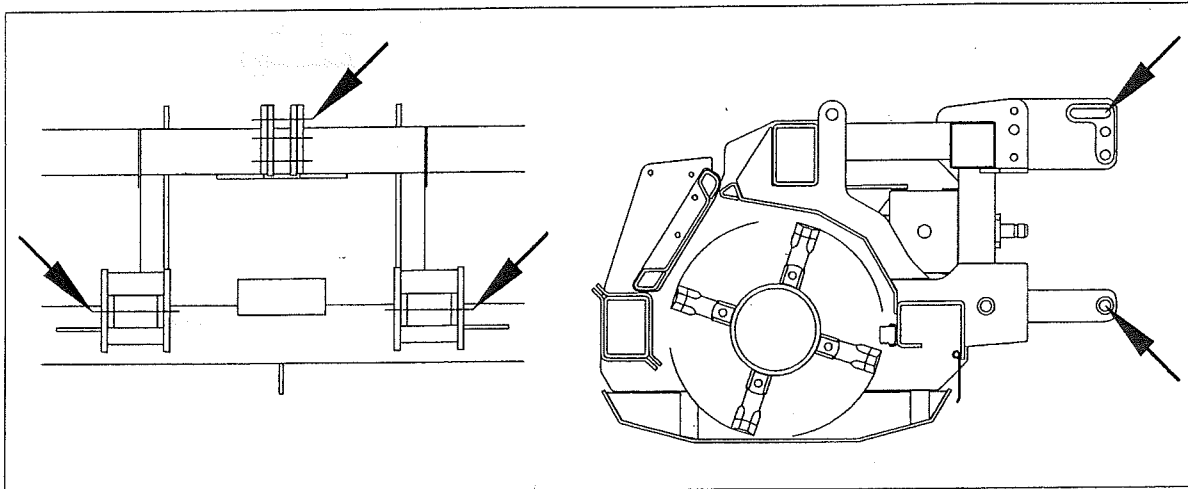
4.1. CONNECTION OF THE SHREDDER TO THE TRACTOR

To connect the shredder to the tractor arms the shredder must be in the working position with the mobile parts in a horizontal position. It is strictly prohibited to connect the shredder to the tractor arms if it is in the transport position with the mobile parts in a vertical position.

- a) All Falc shredders can be mounted onto any type of tractor provided it is supplied with a 3-point universal hitch
- b) The shredder must be positioned on level ground on supporting legs.
- c) The tractor must approach the shredder in reverse until its arms are in correspondence with those of the shredders 3 point. Any operator on the ground must maintain a distance of at least 5 m from the machine.
- d) Position the lower 3 point pin and block with the split pins provided.
- e) Connect the upper arm of the tractor to the upper dowel of the 3-point, adjusting so that the machine assumes a horizontal position with respect to the ground.
- f) Position the cardan shaft and ensure that its ends are well connected to the power take-off of the tractor and the multiplier. Fix the anti-rotation chains on the cardan to both the tractor and

shredder side. **The tractor engine must be off during this phase so that the power take-off is not activated by any wrong manouevre.**

- g) Connect the hydraulic system tubes to the tractor's distributor.
- h) After the completion of this operation the tractor's hydraulic lift may be activated just enough to free the support legs which must then be completely raised and blocked with the pins provided.
- i) For the series machines: Tractor power take-off (PTO) 1000 revolutions/minute



4.2. USING THE SHREDDER

After having correctly connected the shredder to the tractor, the operator can start to work, always respecting the conditions mentioned in point 3 (point 4.3) if working with the lid open).

If the shredder is to be used immediately following the machine being transported in a vertical position, the operator must manually remove the rear safety bar and rest it on the appropriate pins carefully blocking with the pegs provided prior to operating the pistons to open the machine and placing it in the working position.

WARNING: The operator must always ensure that there are **NO PERSONS** present within a range of 5m of the machine whenever it is either opened or closed when being placed in the working position from the transport position or vice versa.

This is particularly important when passing from the vertical transport position to the horizontal work position and the operator must furthermore ensure that the space available is sufficient for the total size of the machine (approx. 6 m).

If the operator is using the Super Alce / Foldable shredder for the first time it is highly advisable to practise with the movement of the 2 mobile parts prior to starting work.

The tractor's advancement speed is independent of the shredder; it is up to the operator to judge and determine the best machine output depending on some factors, namely the tractor's power, height of the remains to be shredded, adjustment of the working height, etc.

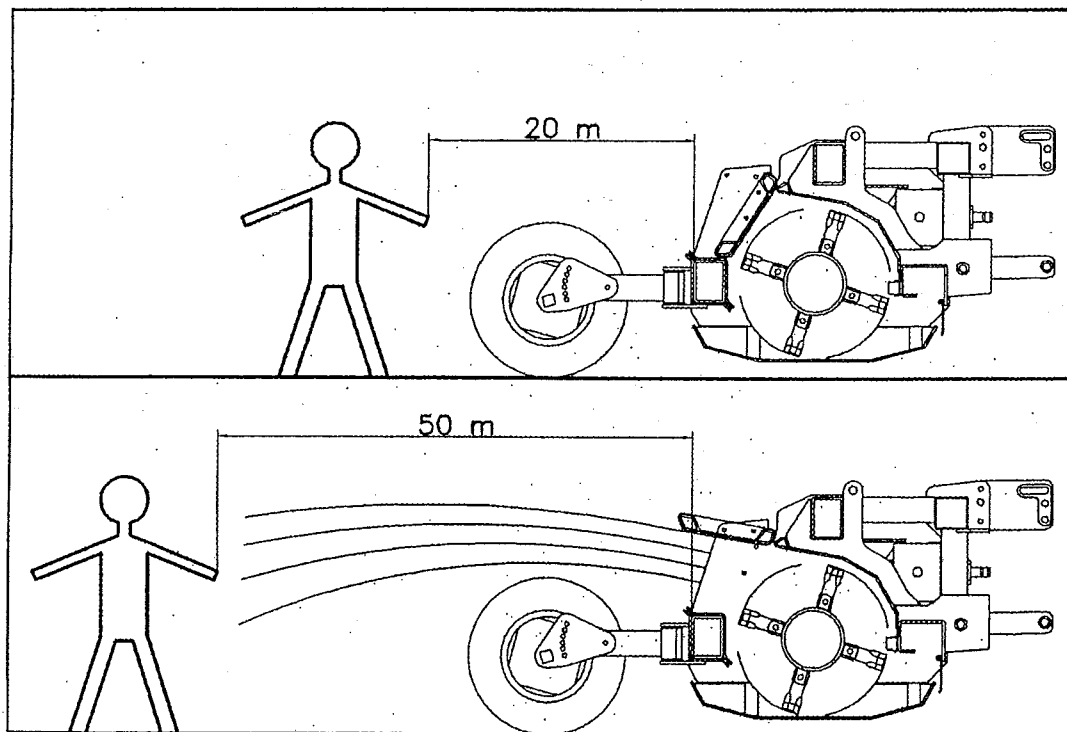
For reasons of space it is sometimes necessary to disassemble the machine's lateral protections whilst it is in transport. If this is the case, the protections will be placed in a very prominent position on the machine on which they are to be reassembled and it is the responsibility of the consignee to ensure that this operation is carried out. For the correct positioning of the lateral protections, please refer to the spare parts table of the shredder concerned. The protections are provided with the screws and nuts necessary for blocking.

4.3. USE THE SHREDDER WITH THE REAR LID OPEN.

The Super Alce shredder provides for the removal of the rear lid in accordance with the particular needs of the user, thus obtaining a distribution of the shredded material up to about 20 m from the shredder itself.

To remove the rear lid the operator must act as follows:

- a) (If the machine is operating) Completely stop the shredder and switch the tractor off. Wait for approximately 3 minutes, until the rotor is completely still.
- b) Unscrew the relative rear lid fixing bolts with the appropriate keys.
- c) remove the lid.
- d) **Carefully check against the possibility that propelling material might be cast towards persons, animals or objects where this could cause damage (e.g. trees of a nearby farm, agricultural sheds, various parked vehicles, etc.). The minimum distance required between the shredder in operation and the nearest persons, animals or things, must be at least 50 m.**
- e) After having carried out these operations, the operator may climb onto the tractor and start the machine.
- f) **During operation with the rear lid open, the operator must ensure that the conditions mentioned in point (d) are constantly adhered to. The operator must further ensure that the minimum distance between the shredder and any place of passage, namely a street, a trail, etc., is at least 50 m.**
- g) **Even if only one of the above mentioned conditions is not adhered to, the operator is obliged to stop the shredder and switch the tractor off.**
- h) **The operator is further prohibited from leaving the tractor's driver's position without having previously stopped the shredder and waited until the rotating parts of the same have come to a complete standstill (about 3 minutes).**



4.4. DISCONNECTION OF THE SHREDDER FROM THE TRACTOR

The shredder must be in the working position when disconnected from the tractor that is with the moving parts in a horizontal position. It is strictly prohibited to disconnect the shredder from the tractor arms if the shredder is in the transport position i.e. with the mobile parts in a vertical position.

The following are necessary precautions for a correct disconnection of the shredder from the tractor:

- a) Stop the tractor on level ground, activate the handbrake, turn the engine off and disconnect the power take-off.
- b) Place the shredder on the ground ensuring that its position is both stable and horizontal
- c) Stop the tractor motor and wait for about 3 minutes until all the moving parts of the shredder stop.
- d) Position the resting feet.
- e) Disconnect the cardan joint from the tractor's power take-off and place it in the appropriate shredder support.
- f) Disconnect the tubes of the tractor's distributor hydraulic system
- g) Disconnect the shredder from the 3-point hitch of the tractor first by sliding out the split pins that block the dowels and then by removing the pins themselves.
- h) Climb onto the tractor again and move it forward to completely free the tractor's arms from the 3rd point of the shredder.

4.5. TRANSPORT

During operation, the shredder rests on the wheels at the rear, on the roller as well as on the lateral slits. In the front, it is kept lifted by the tractor's hydraulic hitches' arms.

During transport, the shredder is completely supported by the tractor (see point 2).

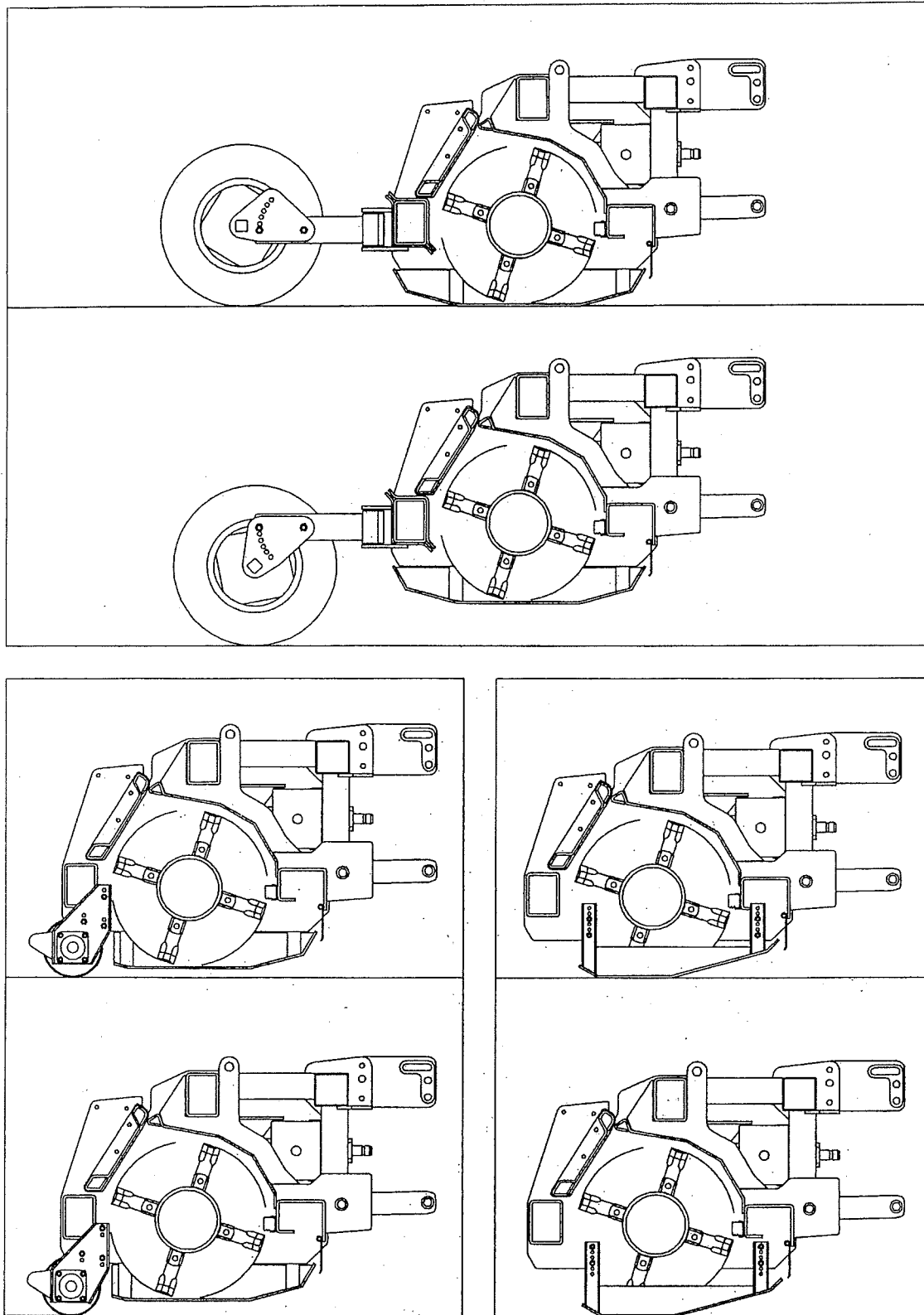
During transport, the shredder must be kept in a vertical position and it is furthermore obligatory that the operator block the shredder with the appropriate safety bar. There is a pictogram on the shredder that indicates the point at which to apply the safety bar.

Due to the handling that is necessary during the loading, unloading and storage ensure that only the appropriate equipment that can support the weight of the machine itself is used and use the pegs that are purposely positioned on the machine.

4.6. ADJUSTING THE WORKING HEIGHT

Before using the shredder, it is necessary to take particular care in adjusting the working height.

- a) The working height adjustment is carried out by moving the connection flanges of the wheels, of the slides and of the roller by one or more holes.
- b) The working height adjustment is correct when the cutters or the hammers skim the ground without actually touching it. If the rotating movements touch the ground due to an incorrect adjustment, the result will be a greater power consumption by the tractor and a faster wear rate of the same rotating movements.
- c) The machine must always be in a horizontal position with respect to the ground.



4.7. MAINTENANCE AND REPAIRS

Before approaching the machine to carry out any maintenance or repairs, it is compulsory to take some precautions:

- a) **Stop the tractor on level ground**
- b) **Place the shredder on the ground**

- c) **Activate the handbrake**
 - d) **Disengage the p.t.o**
 - e) **Turn the engine off**
 - f) **Wait for about 3 minutes until all moving parts of the shredder have stopped.**
- In case of specific maintenance or repair work where it is necessary that the machine is lifted from the ground or turned around, it is indispensable to use the suitable equipment built for such purposes. It is always recommended that the area sales assistance or ideally equipped mechanical workshops be consulted. The machine weight is in point 2 of this manual. For intervention on parts of the machine that may reach elevated temperatures such as the multiplier, the bearings, the belts etc., wait until they have cooled. The cooling time for these parts may vary depending on the work carried out before stoppage as well as external atmospheric conditions.**

4.7.1. Maintenance

Even though all the shredders are delivered well-greased and lubricated, hereafter is a list of rules that must strictly be adhered to, to obtain better results.

a) **After the first hour of operation**

- Check that all bolts and screws are correctly tightened.

b) **Daily**

- Check the oil level in the transmission box.
- Lubricate the Cardan joint (see the specific Instruction manual relative to the Cardan joint)
WARNING: the Cardan joint is in general supplied by FALC and is suitable for the effective power required for the tractor-shredder link-up. In case of replacement always use a Cardan joint with characteristics not inferior to those of the original Cardan shaft.

c) **Every 8 hours of work**

- Lubricate all of the points indicated on the machine with grease. Grease the rotor supports using the appropriate grease nipples indicated on the machine. Grease in moderation applying a little grease at a time
- Grease all of the points indicated on the machine.

d) **Every 8 working hours**

- Check the belts' tension so as to prevent premature wear of the belts themselves and the pulleys. The correct tension of the belts is achieved when, by pushing on the central point between the pulleys, the belt yields a maximum of 10 mm.

e) **Every 300 working hours**

- Change the oil in the transmission box.
- Check that the breather plug of the multiplier is free of dust and earth internally. If in doubt replace the breather plug.

On delivery the transmission box is lubricated with Mobil Gear 634/SAE 140 oil.

WARNING: Do not disperse the used oil but use the appropriate means provided for its disposal.

f) **If vibrations should be noted during work IMMEDIATELY STOP THE SHREDDER AND DISCONNECT THE P.T.O.** Check for breakage or excessive wear of the cutters or of the hammers. If necessary immediately provide for a partial or total replacement of these, taking the utmost care to maintain the balance of the rotor, that is, by replacing the broken cutters

(hammers) and those diametrically opposite the broken ones

g) **Further check if there is residue or encrustation on the knives, hammers or on the rotor. If this is so clean immediately.**

- h) Prior to a period of inactivity, it is recommended that the machine is accurately cleaned of any remains accumulated during operation. During the period of inactivity, it is recommended that the machine is protected from atmospheric agents.

4.7.2. Possible causes of inconveniences and relative interventions.

If the shredder vibrates in an evident manner

CAUSE :

Breakage of one or more cutters (hammers) which causes the rotor to lose its balance.
The bearings of the rotor's supports are worn.
Remains and encrustations are visible on the cutters (hammers) and/or the rotor.

INTERVENTION :

Replacement of the broken cutters (hammers) and of those diametrically opposite the broken ones.
Replacement of the supports.

If the rotor rotates at a speed lower than specified

CAUSE :

The belts have become loose.
Excessive wear of the belts and pulleys.

INTERVENTION :

Reset the correct tension of the belts.
Replace any worn parts.

An excessive wear of the cutters (hammers) is noted

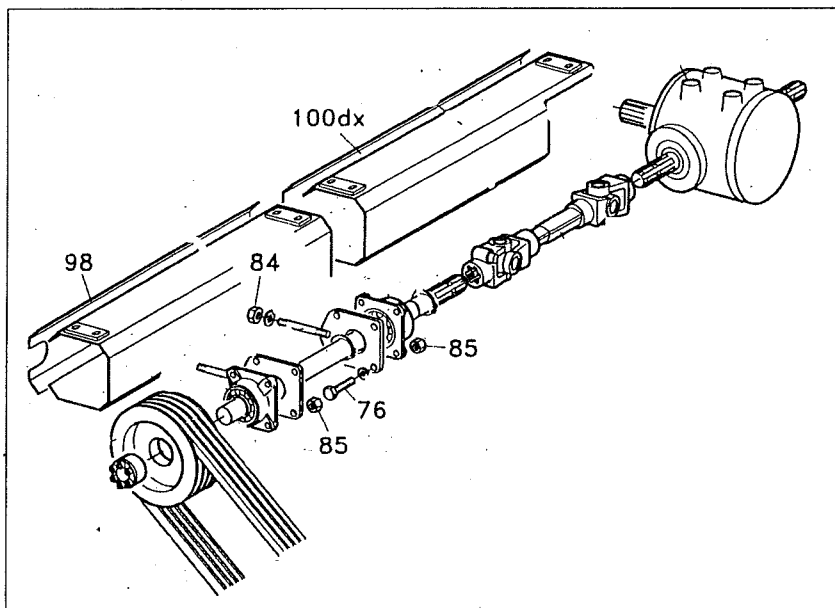
CAUSE :

The cutters (hammers) touch the ground during operation.

INTERVENTION :

Reset the machine's correct height from the ground.

4.7.3. Replacement of the belts



Carry out the following operations to replace the belts:

- Disassemble the belt safety guard and the upper transmission shaft protection pos 98-99 left – 100right.
- Loosen the screws and bolts pos.76-85 which block the 2 upper transmission shaft supports.
- Loosen the adjustment nuts pos.84. The pulley can now be moved and, consequently, the tension of the belts is reduced.

- d) Slide the belts from their respective pulley's races and replace them with new ones. Carefully check that the new belts are the same as the old ones, both as regards the length as well as the type. FALC s.r.l. installs toothed belts type SPB on standard series machines.
- e) To place the belts in tension again, reset the adjustment bolts previously loosened
The screws must be adjusted in such a way that the upper pulley remains parallel and on the same plane as the lower pulley. If the upper pulley is in an incorrect position with respect to the lower one, the belts do not transmit the right power and will hence have a shorter life.
- f) Check the tension of the belts
- g) Tighten the fixing screws previously loosened
- h) Remount the belts' safety guard and the upper transmission shaft protection.

4.7.4. Assembling and dismantling the pulleys

The pulleys are fixed on the relative shafts by means of a coupling similar to that shown in the diagram.

- a) To dismantle the pulleys adhere to the following steps:
Loosen the bolts (A) with the relative key
Remove "x" no. of bolts (A) and insert them into the threaded holes (B) tightening in a uniform manner.
After a few turns of the bolts the pulley can easily be slipped out from the shaft
- b) To assemble the pulleys adhere to the following steps:
Insert the coupling in the pulley's hole
Connect it all to the shaft ensuring that the pulley is in the right position
Tighten in a uniform manner the bolts (A) with the relative key
ATTENTION : Tightening moment = 40 N/m (4,1 kg/m)

