GB

OPERATING MANUAL

AMAZONE

SWEEPING AND SCARIFYING MACHINE

KMLS 150, 180, 210

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SUMMARY

PREFACE

The AMAZONE KMLS sweeping and scarifying machine provides all the functions necessary to obtain a beautiful grass in a very simple and economic way. Perfectly maintained grass and this on any surface: sports grounds, municipal parks, golfs or paddocks, etc.

In order to make full use of your newly purchased "The AMAZONE KMLS sweeping and scarifying machine", please carefully read this operating manual before starting your machine.

Before bringing the machine into service, read carefully the operating manual and observe the security instructions as well as the stickers fixed on the machine. It is also your duty to make sure that any other user of your machine reads the instructions before working with it.

Your AMAZONE KMLS sweeping and scarifying machine complies only with the regulations of the agricultural health and safety authorities when in case of repair original spare parts of AMAZONE are used for replacement.

This instruction manual is valid for the AMAZONE KMLS sweeping and scarifying machine.

1. Details about the machine

1.1 Range of operation

The AMAZONE-SWEEPER KMLS has been designed for mowing and scarifying lawns, sportfields, parks etc. In Autumn it sweeps, collects and chops fallen leaves.

1.2 Manufacturer

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1.3 Conformity declaration

The KMLS sweeping and scarifying machine fulfils the requirements of the EU Guide Line machines 89/392/EC and the corresponding additional guide lines.

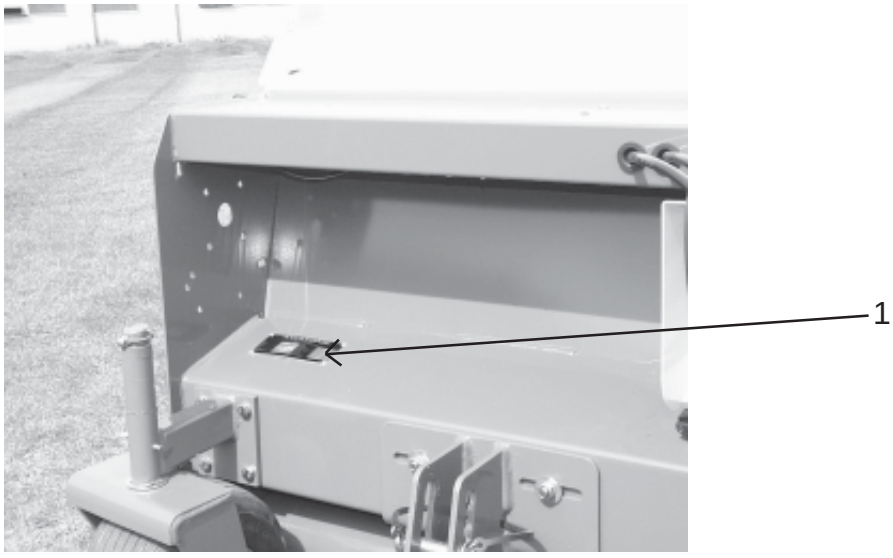
1.4 Details when making enquiries and ordering

When ordering options or spare parts, please always state the serial number of your KMLS sweeping and scarifying machine.

The safety requirements are only fulfilled when, in the event of repair, original AMAZONE spare parts are used. Using other parts may rule out the liability for resulting damage.
The use of any other spare part but AMAZONE parts can result in the voidness of the manufacturer's guarantee in regard of the damage which could result from it.

1.5 Identification of the machine

Identification plate on the machine (ill.1/1)



ill. 1

The entire identification is of documentary value and may not be changed or disguised!

1.6 Technical data.

Type KMLS	150	180	210
Working width	1,50 m	1,80 m	2,10 m
Total width	1,90 m	2,20 m	2,50 m
Weight	847 kg	913 kg	985 kg
Tyre equipment (front)	270 x 185	270 x 185	270 x 185
Tyre equipment (rear)	4x(16x6,5-8)	4x(16x6,5-8)	4x(16x6,5-8)
Air pressure (front)	2 bar	2 bar	2 bar
Air pressure (rear)	2 bar	2 bar	2 bar
Total height	1,65 m	1,65 m	1,65 m
Hopper capacity	2500 l	3000 l	3500 l

1.6.1 Noise levels

The operator seat related emission value (sound pressure level) is: LpA = 98 dB(A). Measured when operating at the ear of the operator. Value of the maximum noise level: LwA = 115 dBA).

1.7 Inappropriate use of the machine

The AMAZONE KMLS sweeping and scarifying machine has been designed for use exclusively on turf's. It has been designed for mowing, scarifying and collecting the mown grass and leaves in Autumn.

Any use beyond those stipulated above is not considered designed use and the manufacturer does not accept any liability or responsibility for damage arising from this; therefore the operator carries the full risk.

The concept of "designed use" requires the operator to adhere to the recommended maintenance and repair programmes and to ensure that any spare parts used are **genuine AMAZONE spare parts**.

The AMAZONE KMLS sweeping and scarifying machine should only be operated, maintained and repaired by persons, who are familiar with the machine and aware of the relevant dangers posed.

Observe all advice regarding accident prevention and adhere to the general regulations pertaining to health- and safety and traffic in your country. Strictly follow the warning- and advice signs on the machine, its components and options.

Modifications made to the AMAZONE KMLS sweeping and scarifying machine by the owner/user may result in damage and therefore the manufacturer does not accept liability for damage to modified machines.

2. Safety advice

This operators manual contains basic advice that should be observed when mounting, operating and maintaining the machine. Therefore, this operators manual must be read by the operator prior to use and must be made available to him.
All the safety advice given in this manual should be carefully observed and adhered to.
it is you duty to respect all the instructions and safety recommandations contained in this operating manual.

2.1 The risks of not adhering to the safety advice

Consequences of the disregard of the security instructions:

- Endanger of the people and also of the environment and the machine

- Loss of any compensatory rights.

The disregard of these rules can generate following risks for example:

- Breakdown of essential functions of the machine.
- Inefficiency of maintenance and repair methods.
- Mechanical or chemical wounds caused to people.
- Pollution of the environment caused by hydraulic oil leakage.

2.2 Qualification of the operator

The AMAZONE KMLS sweeping and scarifying machine may only be operated, maintained and repaired by persons, who are familiar with it and have been informed of the relevant danger.

2.3 Specification of “hints” in the operation manual

2.3.1 General danger symbol

Safety advice considered necessary to avoid the risk of personal injury is identified with the general danger symbol (according to DIN 4844-W9).

2.3.2 Attention symbol

Advice to avoid damage to the machine or working environment is identified with the Attention symbol.

2.3.3 Hint symbol

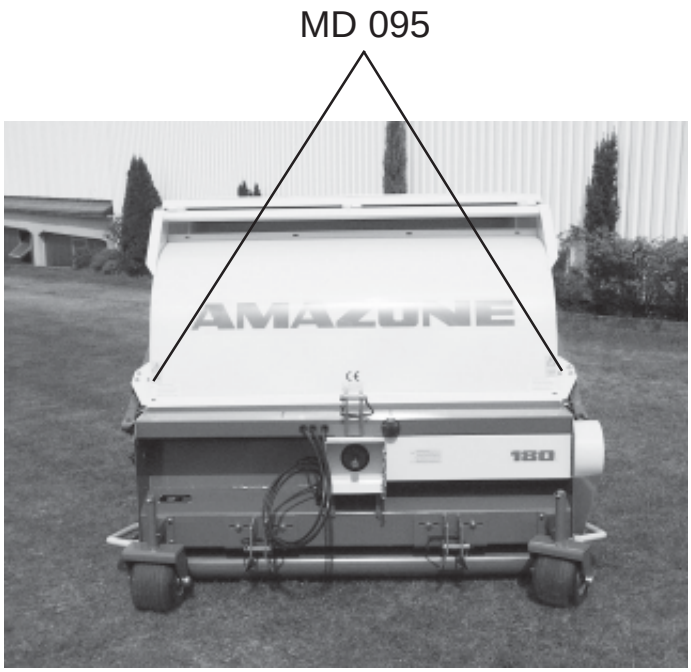
Advice regarding the machine’s specific operating functions which should be followed for a faultless performance are identified with the Hint symbol.

2.3.4 Warning pictographs and hint symbols on the machine

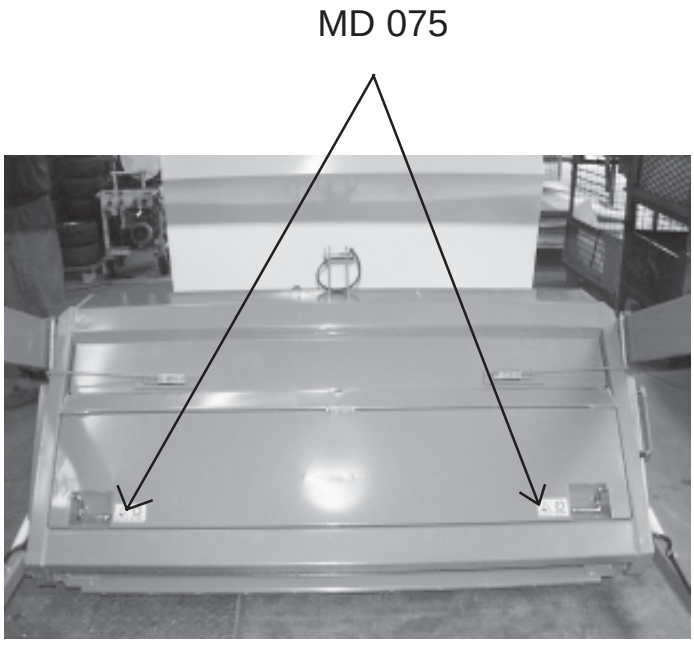
- The warning pictographs indicate dangerous points on the machine. These pictographs should always be observed for safe operation of the machine. Warning pictographs always appear with safety/warning symbols.
- The hint symbols indicate specific points that have to be observed to ensure maximum performance.
- Strictly observe all warning pictographs and hint symbols!
- Please pass on all safety advice to other users!

- Always keep all warning pictographs and hint signs clean and legible. Please replace damaged symbols. These can be ordered from your dealer (picture-number = Order-number).

- The illustrations 2, 3, 4 and 5 show the display points for warning pictographs and hint signs. Please refer to the following pages for relevant explanations.



ill. 2



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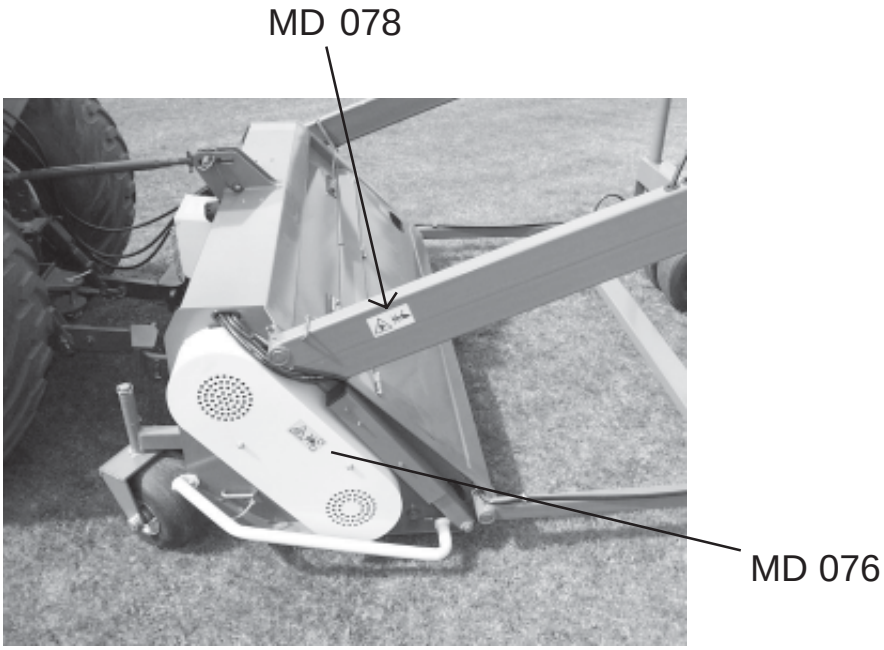
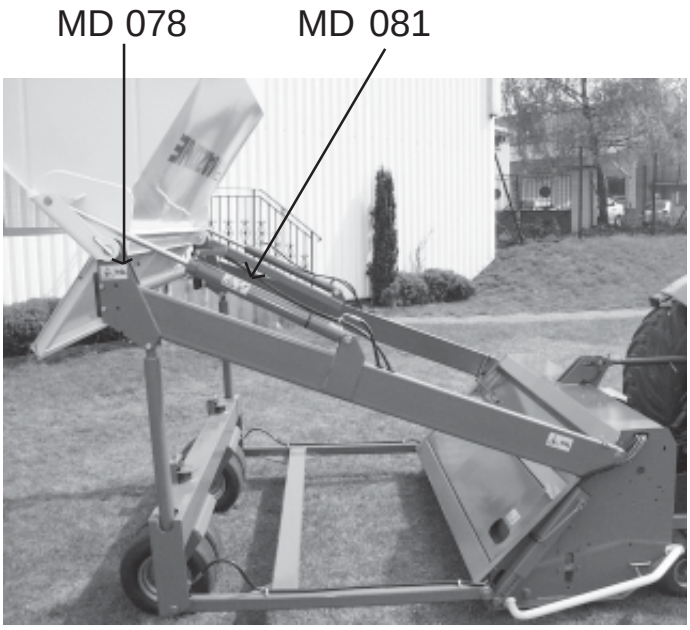
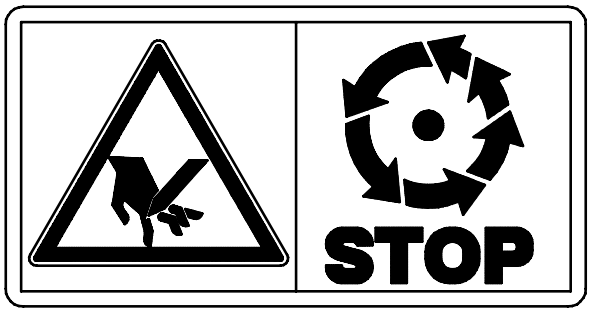


ill. 4



ill. 5

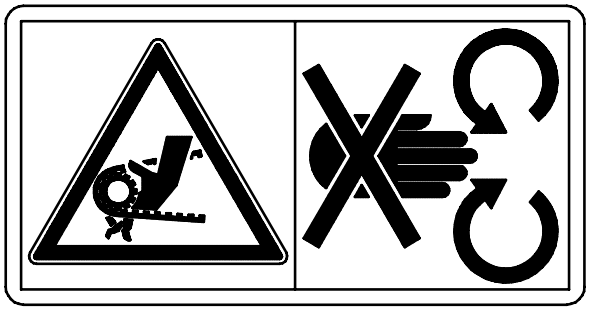


MD075

Fig. No : MD075

Explanation :

Do not stay within the zone of spinning mowing units!
Do not touch moving implement parts!
Await their absolute standstill!
Wait until all machine components have completely stopped before touching them!

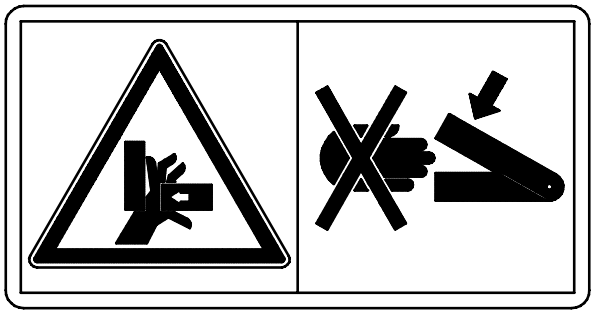


MD076

Fig. No : MD076

Explanation :

Only start to operate your machine with all guards fitted!
Do not open or remove safety shields while engine is running!
Before removing the guard, stop the engine and remove the ignition key.

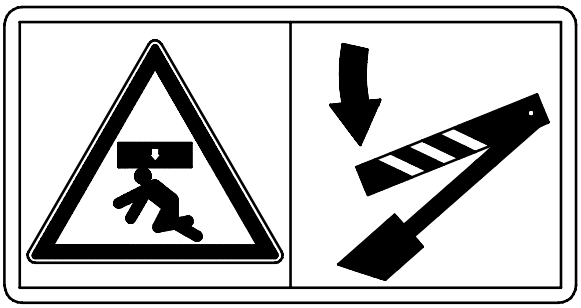


MD078

Fig. No : MD078

Explanation :

Advise people to leave the danger zone!
Never reach into the crushing area as long as parts may move!



MD081

Fig. No : MD081

Explanation :

Risk to swing forward !

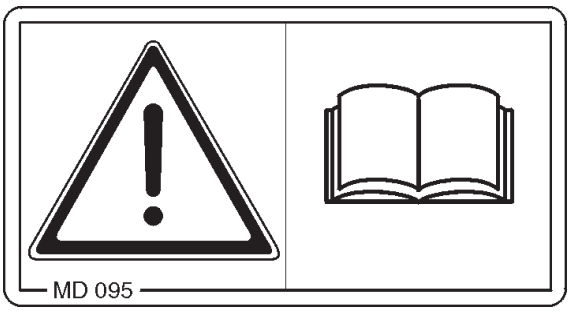


Fig. No : MD095

Explanation:

Carefully read operator's manual before handling the machine. Observe instructions and safety rules when operating !

2.4 Safety conscious operation

Besides the safety advice in this operators manual, the national and generally accepted operational safety and accident prevention regulations of the authorized trade association are binding.

The safety advice indicated on the machine stickers must be observed.

2.5 Safety advice for the operator

2.5.1 General safety and accident prevention advice

Basic principle!
Always check traffic and operational safety before putting the machine into operation!

1. Besides the remarks made in these operating instructions observe the generally applicable safety regulations and rules for the prevention of accidents.

2. The warning symbols and signs attached provide important instructions for a safe operation; follow them for your personal safety.

3. Observe the respective regulations when using public roads.

4. Make yourself familiar with all facilities and operating elements as well as their functions before you start to work. Afterwards, when the machine is already in operation, it will be too late to do so.

5. The user’s clothes shall fit tightly. Avoid loosely worn clothes.

6. Check the immediate surroundings before starting and before commissioning. (Children!) Ensure sufficient visibility.

7. Passengers are not allowed on the unit at any time.

8. Couple the units correctly and to the appropriate type and size of power unit.

9. Special care is necessary when coupling and uncoupling units to or from the tractor.

10. Place the supports in the corresponding position when mounting or dismounting. (Stability!)

11. Comply with the axle weight limits of the tractor (refer to the motor vehicle registration book).

12. Watch for outside transport dimensions according to the motor vehicle construction and use regulation!

13. Check and install transport equipment such as lighting, warning devices and protecting devices, if any.

14. Release ropes for quick hitches must hang loosely and must not be able to be release automatically when being used in a low position.

15. Road behaviour, steering and braking action are influenced by mounted or coupled units and by the loading weight. Therefore take care that the steering and braking action is sufficient.

16. When the Sweeper is lifted the front axle of the tractor is relieved differently depending on the respective size. Watch for compliance with the required front axle weight (20 % of the tractor weight).

17. In cornering, the wide radial range and/or the centrifugal mass of the unit have to be taken into account. To prevent the unit from swinging back and forth, brace the lower link arms of the three-point hydraulic system.

18. Only put the unit into operation if all protecting devices have been fixed in their protective positions.

19. Keep off the working area.

20. Do not stay in the turning and swivelling zone of the unit.

21. Hydraulic folding frames may only be activated if no persons stay in the swivelling zone.

22. There are crush and shearing points at parts activated by external forces (e. g. hydraulic actuation).

23. Before leaving the tractor put the unit down on the floor, turn off the motor and take out the ignition key.

24. Nobody is allowed to stay between the tractor and the unit without the vehicle being secured against rolling away by the parking brake and/or by wheel chocks.

2.5.2 Mounted Units

1. Before mounting and dismounting of units to the three-point linkage put the operating control into the position where unintentional lifting or lowering are excluded.

2. The mounting categories for tractor and unit in the case of a three-point linkage must by all means be in conformity with each other or be adjusted.

3. In the area of the three-point linkage there is danger of injuries by crushing and shearing points.

4. Do not step between tractor and unit when operating the external control for the three-point linkage.

5. When the unit is in transport position, always take care that the tractor three-point linkage is sufficiently controlled laterally.

6. For road transports with lifted unit, the operating lever must be locked against lowering.

7. Couple/mount the units according to the regulations. Check functioning of the trailer braking system. Comply with the manufacturer's instructions.

8. Operating units shall only be transported and driven with the tractors provided for this purpose.

2.5.3 Power Take-Off

1. All PTO shafts used must be in conformity with those stipulated by the manufacturer and be equipped with protecting devices complying with the regulations.

2. Protective tube and protective guard of the PTO shaft as well as power take-off protection - on the implement input shaft - must be mounted and be in a proper condition.

3. For PTO shafts, the prescribed tube overlap in transport and working positions have to be observed. (Comply with the operating instructions of the PTO shaft manufacturer!)

4. The PTO shaft shall only be mounted and dismounted when the power take-off shaft is switched off, the motor is turned off and the ignition key is taken out.

5. Always watch for correct mounting and securing of PTO shaft.

6. Secure PTO shaft protection against following by suspending the chains.

7. Make sure before switching the power take-off shaft on that the selected power take-off speed of the tractor is in accordance with the admissible power take-off speed of the unit (operating speed). As a rule, the power take-off speed is 540 rpm.

8. Careful coupling saves tractor and unit.

9. Before switching the power take-off shaft on take care that nobody is in the danger zone of the unit.

10. Never switch the power take-off shaft on when the motor is turned off.

11. When the power take-off shaft is operated nobody is allowed to stay in the area of the swivelling power take-off shaft.

12. Always switch the power take-off shaft off if the operating angles are too large and if it is no longer needed.

13. Caution! After the power take-off shaft has been switched off there is danger by after-running centrifugal force. Keep clear of the unit during this period. Operations at the unit may only be carried out after the unit has come to a total standstill.

14. The power take-off driven unit or the PTO shaft may only be cleaned, greased or adjusted when the power take-off shaft is switched off, the motor is turned off and the ignition key is taken out.

15. After the PTO shaft has been dismounted attach protective covering on power take-off stub.

16. Damages are to be repaired immediately before the unit is operated again.

2.5.4 Hydraulic System

1. The hydraulic system is under high pressure.

2. When connecting the hydraulic cylinders and motors carefully connect the hydraulic hoses.

3. When connecting the hydraulic hoses to the hydraulic system of the tractor see to it that the hydraulic system is depressurized both on the tractor side and on the unit side.

4. Coupling sockets and plugs have to be marked for hydraulic functional connections between tractor and unit to exclude misoperations. When the connections are interchanged, the function is reverse (e. g. lifting/ lowering) - **Danger of Accidents!**

5. Regularly check hydraulic hose pipes and exchange them when showing signs of damage or ageing! The replacement pipes must be in accordance with the technical requirements stipulated by the unit manufacturer.

6. When searching for leakages use appropriate devices on account of the danger of injuries.

7. Liquids being discharged under high pressure (hydraulic oil) may penetrate the skin and cause heavy injuries. Should any injuries have occurred immediately consult a doctor.

8. Before any works at the hydraulic system are carried out, put the unit down, depressurise the system and switch off the motor and remove ignition key.

9. Hose pipes should not be used for more than six years, including a storage period of max. 2 years, if any. Hoses and hose connections are subject to natural ageing, even if properly stored and stressed within the permissible range; therefore their period of storage and usage is limited. Unlike this, the period of usage may be fixed according to empirical values, with particular consideration of the endangering potential. For hoses and hose pipes of thermo plastic construction other approximate values may be decisive.

2.5.5 General safety regulations and rules for the prevention of accidents for maintenance, repair and servicing

1. On principle, only carry out repair, maintenance and cleaning works and only eliminate malfunctions when the drive is switched off and the motor is at a standstill. Take out the ignition key.

2. Regularly check nuts and bolts for tightness - for the first time after 3-4 bin fillings - and tighten, if necessary.

3. When maintenance works are carried out with the unit being lifted, always secure it by appropriate supporting elements.

4. Duly dispose of oils, greases and filters according to Health and Safety regulation.

5. Before any works on the electrical installation are carried out the power supply has to be cut off.

6. When carrying out electrical welding on the tractor or implement, remove cable to battery and generator.

7. **Essential!** Spare parts must at least meet the stipulated technical requirements of the unit manufacturer. This is the case, for instance, if **Original** spare parts are used.

3. Take-over of the Machine

Upon receipt of the machine please find out whether any transport damages have occurred or whether any parts are missing! Only immediate complaints addressed to the forwarding company will result in payments for damages. Please check whether all parts listed on the delivery note are available.

Before starting to work, completely remove the packing including wires and check the lubrication (PTO shaft).

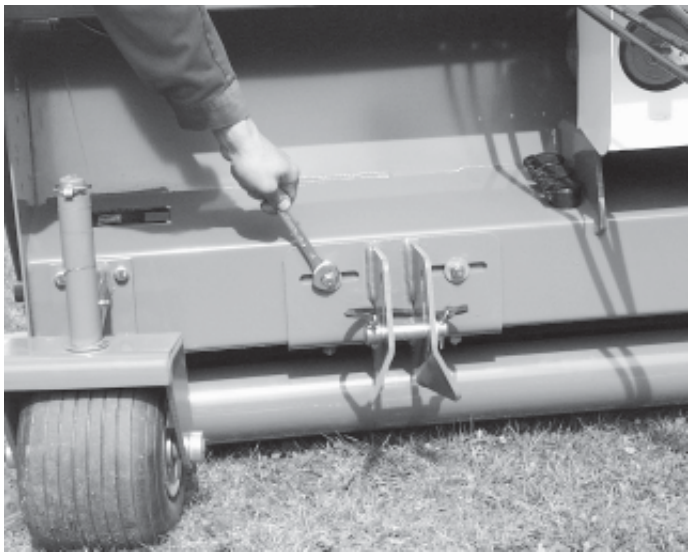
ATTENTION!

Attention ! It is absolutely necessary **before the very first set in service of the** sweeping and scarifying machine to **take appart the transport safety device :** 2 orange brackets fixed on the bottom frame (see below picture).
AMAZONE won't bear the responsibility for damages caused because of the failure to observe the above mentioned instructions.

4. Mounting and dismounting of the machine at the rear three-point linkage of the tractor

Before mounting the machine to the tractor, the lower link of the machine must be adjusted to the same distance as the lower link of the tractor. In order to do so, the lower links can be adjusted between Category I and Category II.

Lower link adjustment :
- take away the four screws each (ill. 6)
- put the lower link into the desired position
- retighten the screws.



ill. 6

The diameter of the bolts of the lower link is in accordance with category I.

Reducing bushings can be used for category II.

To ensure safe mounting and dismounting of the machine to and from the tractor (also comply with chapter 2.5.2) it is advisable to proceed in the following order:

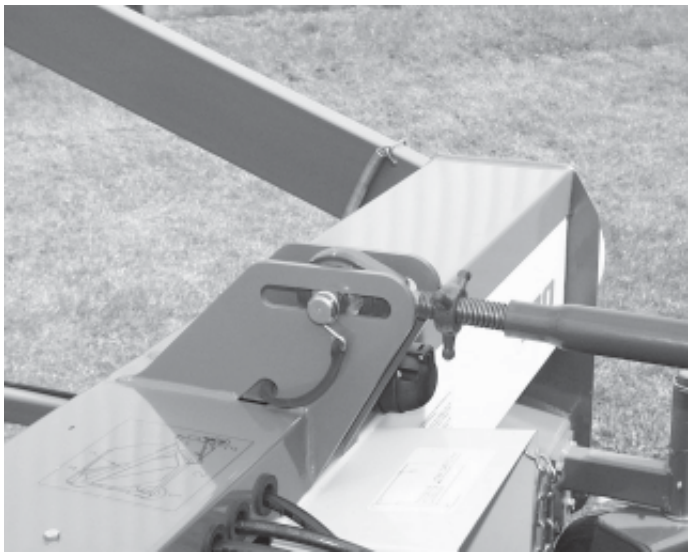
- Attach the PTO shaft on the free shaft end at the machine. (If PTO shafts with free-wheel are used, the free-wheel must be attached on the machine side.)

- Attach the lower links to the implements lower link pins.

- Ensure securing lynch pins are fitted.

- Attach the PTO shaft on the power take-off shaft of the tractor. (**Attention:** Watch for the correct length of the PTO shaft as otherwise damage may occur to the tractor or to the angular gearbox of the machine when the machine is lifted!)

- The top link adjustment is obtained when the tracing bolt is in the middle of the oblong hole in the upper three-point linkage. To realise the adjustment, the machine must be mounted on the tractor on an even or plain surface. The oblong hole is made to maintain the balance on uneven ground (ill. 7).



ill. 7

Expel persons from the danger zone behind and under the machine since the machine can swing out backwards if the top link is unscrewed or fails completely.

4.1 PTO shaft

Only use the PTO shaft prescribed by the manufacturer:

- Walterscheid W 2300 with or without free-wheel for tractors up to 40 HP max.
- Walterscheid W 2400 with or without free-wheel for tractors from 40 HP onwards.

Should you have a tractor without independent power take-off, you must use a PTO shaft with free-wheel. Otherwise, the tractor is kept in motion by the large cen trifugal force of the rotor in spite of a disengaged clutch.

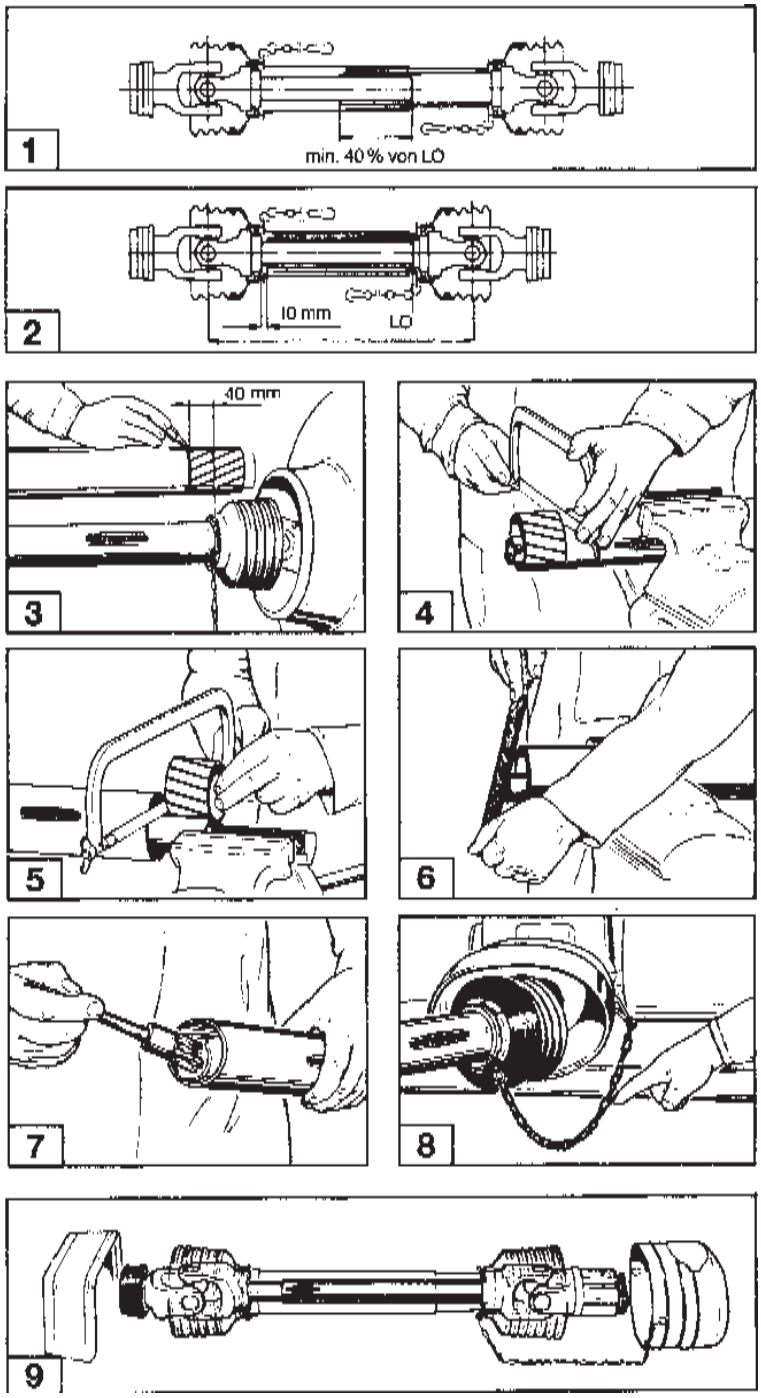
4.2 Mounting and adaptation of the PTO shaft

4.2.1 Mounting of the PTO shaft

Clean the gearbox input shaft at the machine beforehand and always attach the PTO shaft with grease on the input shaft!

4.2.2 Adaptation of the PTO shaft during first Installation

During first installation adapt the PTO shaft to the tractor according to ill. 8. As this adaptation is only valid for this particular type of tractor check or repeat PTO shaft adaptation when the type of tractor is changed.



ill. 8a

During first installation attach the other PTO shaft half on the power take-off profile of the tractor without fitting the PTO shaft guards into each other.

1. By holding both PTO shaft guards side by side check whether a sliding profile overlapping of the PTO shaft tubes of **at least 40 % L0** (length 0) is guaranteed both for a lowered and for a lifted three-point linkage coupled machine.

2. In shortest position, the PTO shaft housings must not bump against the yokes of the universal joints. A safety gap of at least 10 mm must be observed.

3. To adapt the length, hold the PTO shaft halves side by side in their shortest operating position and mark them.

4+5. Equally shorten the internal and the external protective tubes.

6. Round off parting edges and carefully remove chips.

7. Grease sliding profiles and fit them into each other.

8. The holding chains have to anchored in such a way that the construction is stable and the PTO shaft protection does not follow the rotating movement during operation.

9. Only work with a completely protected drive.

The max. cardan angle of a universal joint of the PTO shaft must not exceed 25°.

The PTO shaft manufacturer's mounting and maintenance instructions affixed to the PTO shaft also have to be observed!

To avoid damages only engage the power take-off shaft slowly at a low tractor engine speed!

4.3 Input PTO on the KMLS gear box (for machines with simple angular box)

The gearbox of the KLMS is driven by the tractor power take off (PTO). The input speed to the gear box is 540 rpm when sweeping and 1000 rpm when scarifying:

PTO input speed when sweeping	n = 540 rpm.
PTO input speed when scarifying	n = 1000 rpm.

Speeds of the driving motor which are higher than indicated lead to a considerably higher rotor speed. In extreme cases, this might result in the detachment of cutters possibly endangering the operating personnel.

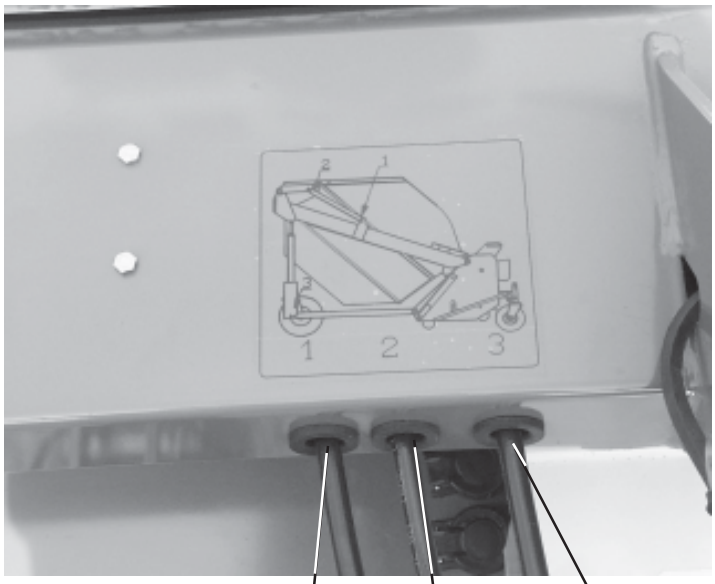
Guarantee claims for damages due to a too high speed of the driving motor of the power take-off shaft will not be accepted.

4.4 Hydraulic connections

The hydraulic connection to the tractor is obtained as follows :

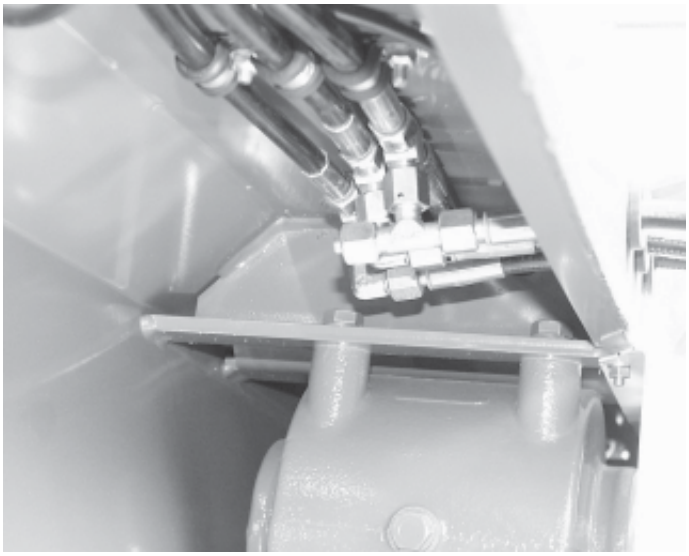
Connection 1+2 : hydraulic double acting ram
Hopper draining control

Connection 3 : hydraulic single acting ram
High emptying control

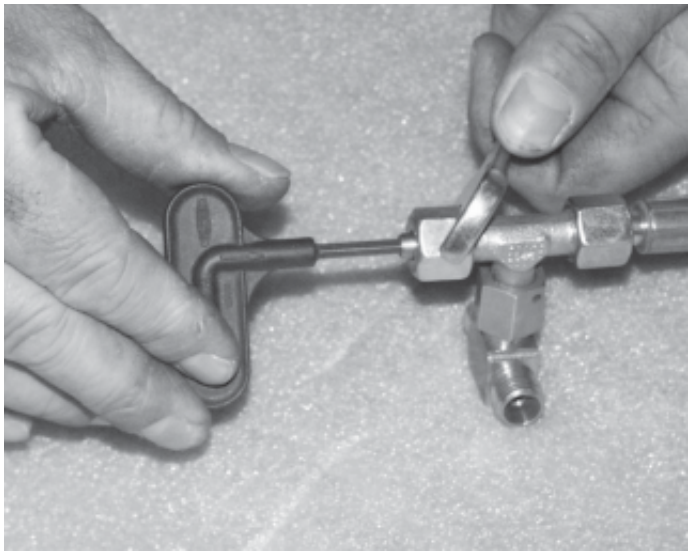


ill. 8b

The minimum hopper closing speed is at least eight seconds. If higher or lower speed, simply adjust the throttle valve (ill. 9 + 10).



ill. 9



ill. 10

5. The brush equipped rotor.

The AMAZONE KLMS sweeping and scarifying machine is equipped with a large diameter rotor (ill. 11).

The rotor is fitted with two rows of brushes, which are themselves divided into 3 or 4 sections of bristles. Each bristle block is mounted on a buffer block to prevent excessive movement. This particular rotor shape offers both the possibility to swap around the brushes on the rotor to even out the wear and tear and additionally gives the ability to fit scarifying knives.

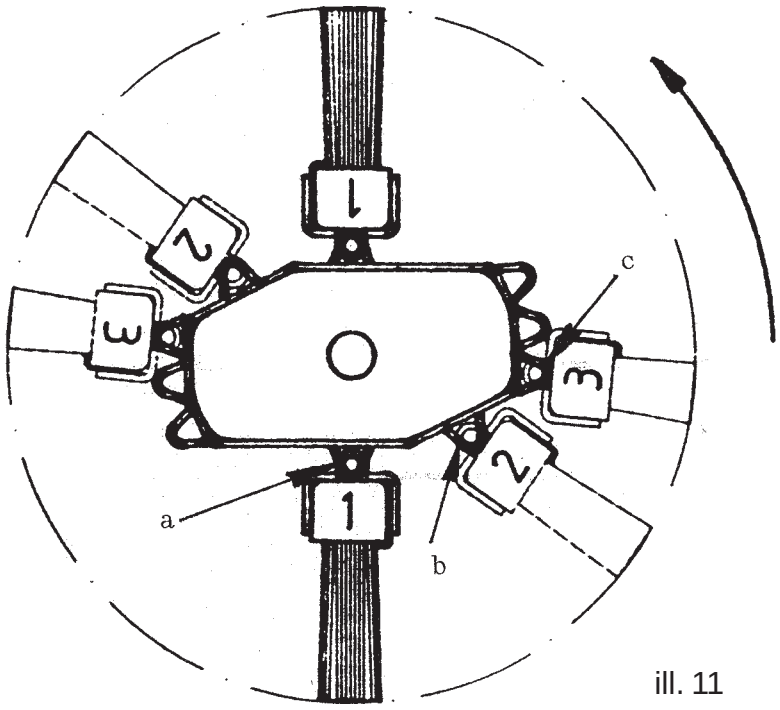
5.1 Mounting

Three different brush mounting possibilities exist :

- New brushes : position 1
(flat side of the rotor ill. 11a)

- Worn out brushes (3 cm) : position 2 (ill. 11b)

- Worn out brushes (6 cm) : position 3 (ill. 11c)



ill. 11

5.2 Dismantling of the brushes

The rotor is accessible in the following way:

- Mount the machine on a tractor,
- Lift the hopper until the final position is reached,
- Insert the securing bracket (ill. 12),
- Switch off the tractor's engine
- Fold up the hood and secure it with the pin on the right side of the hood

Attention :

Stop the tractor before starting to work on the rotor. Disconnect the PTO shaft and make sure tat the rotor stands still. It is utmostly important to set up the securing supports which block the hopper in high position for safety reasons.

ill. 12

A locking rod goes through the three brushes and the buffer blocks, it can be dismantled as follows :

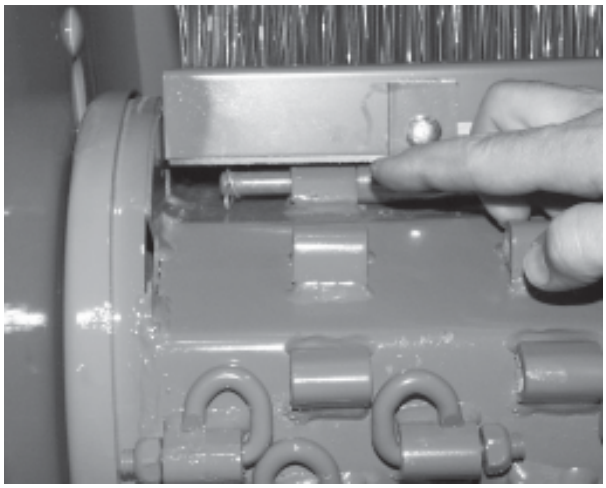
- Remove the protection plate (right side, working direction) and take off the mounting shaft (or hook bolt) (ill. 13).

- Remove the securing pin from the end of the lock rod with the hook bolt (ill. 14).

- Turn the rotor by hand until the lock rod arrives in view through the hole on the side of the frame.

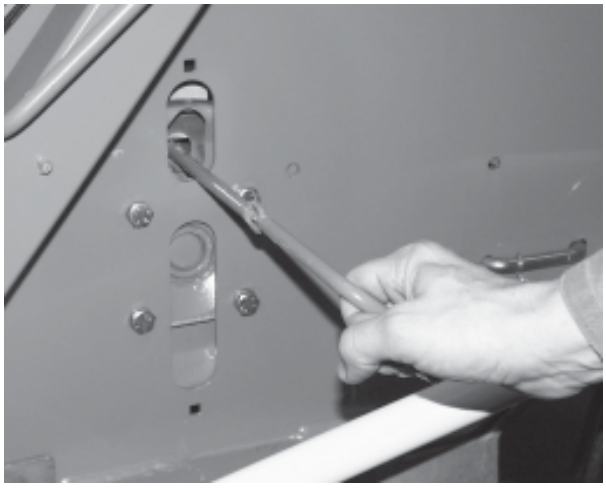
- Attach the pulling hook in the lock rod's eyelet (ill. 15) and take out the lock rod with the pulling hook through the hole on the side of the frame (ill. 16).

ill. 13



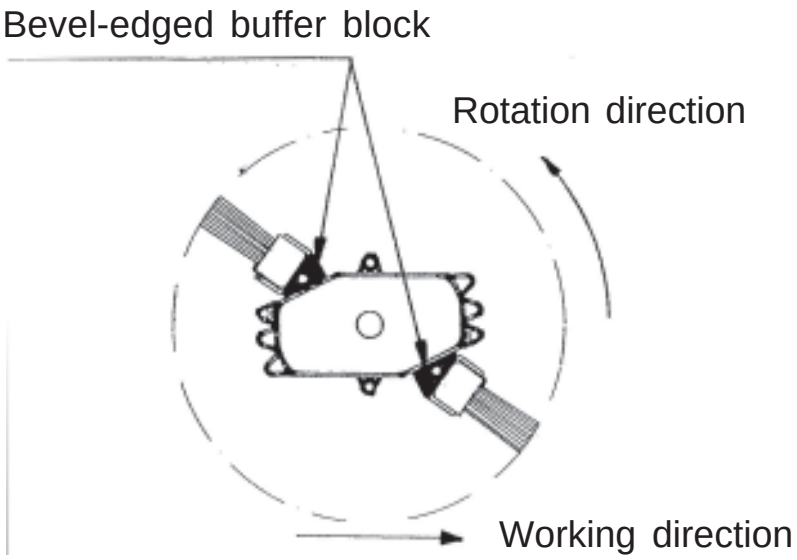
ill. 14

ill. 15



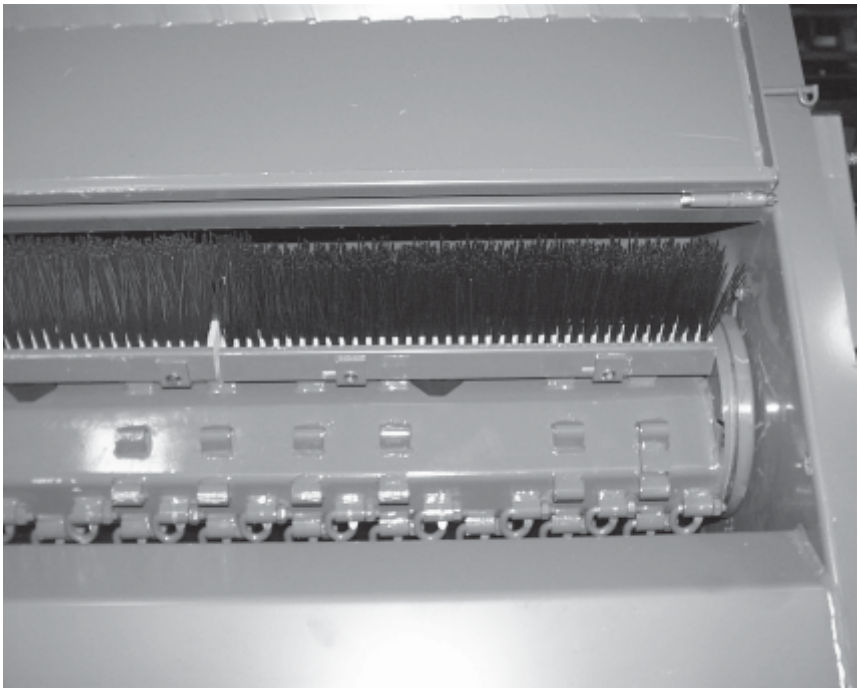
ill. 16

The brushes and the buffer blocks are positioned on the rotor such that they can be easily removed by pulling out the lock rods. To mount the brushes proceed as described above in the reverse order taking care to check that the lock rods of the brushes go through the buffer blocks. To mount the brushes as shown in figure 11 (position 2), it is necessary to mount the bevel-edged buffer blocks that are delivered with the machine (ill. 17).



ill. 17

Attention:
Each row of brushes must be fittedcompletely (3 to 4 brushes per row).
The rows equipped with brushes must always be mounted diagonally opposite !
The brushes have a protection plate mounted along one side of the brush (ill. 18). Always make sure that the brushes are fitted with this protection plate facing the rotation direction.
The brushes must never be fitted without a buffer block.
In order to guarantee a maximum security of fixing on the lock rod, only use the special securing pins available through Amazone.



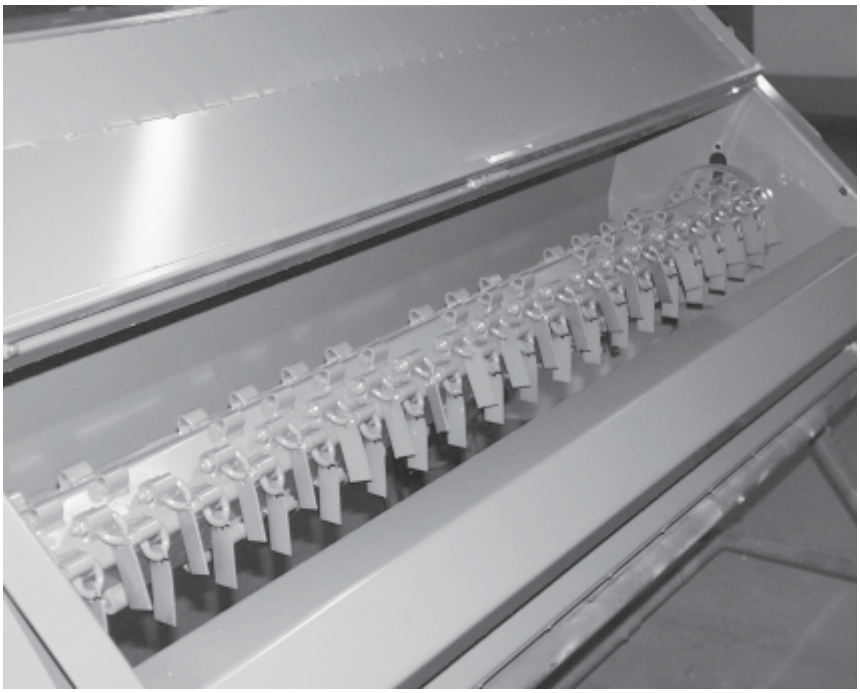
ill. 18

Note

Always check that the brushes are mounted properly. One or several missing or improperly mounted brushes can cause the rotor to become out of balance. This can, after a certain working time, lead to serious damage of the entire machine !

5.3 Mounting of the scarifying knives

Mounted on the big diameter rotor are two rows of diagonally opposed pivoting hook bolts. In order to scarify, each hook bolt is fitted with a straight scarifying knife (ill. 19).



ill. 19

When scrarifying make sure that all the brushes are taken off the rotor !

The scarifying knives are reversible and so when worn out, they can be used on the opposite side.

5.4 Sweeping

The working speed depends on the density and on the dampness of the products that are to be collected. It must be adapted to the working conditions.

Basic rules :

- A slow working speed always guarantees very good sweeping and scarifying results
- Always respect the maximum PTO speed.
- Empty the hopper at the right time in order to maintain the quality of collection.

Blockages can occur in the shaft if the hopper is filled above its capacity, this blockage will clear when the hopper is emptied.

When the machine is used only as a sweeper, set the working height as follows :

a) Collection of grass or dead leaves on a lawn

The brushes, according to the collection conditions, should never cause damage to the lawn but lightly touch it, working at a height of 3 to 4 cm off the ground.

b) Collection of dead leaves on a hard surface

When the leaves are very dry, the brushes can left working at a height of 3-4 cm off the ground. When working in these conditions it is possible to reduce the PTO speed in order to prevent the turbulence that throws the leaves out to in front or to the sides of the machine.

When the leaves are damp and maybe stuck to the ground, lower the machine until the brushes lightly touch the ground.

During work, the machine must always be raised parallel to the ground, that is to say that the tractor’s three point linkage and the rear wheels must be operated simultaneously. The input shaft to the gearbox must always stay parallel to the tractor’s PTO .

5.5 Scarifying

Rejuvenation should always be carried out at the start or finish of the growing season.

In order to scarify a lawn surface where moss and old grass cuttings have built up, it is possible to cut, scarify and collect simultaneously in one pass.

When scarifying the rotor must rotace twice as fast as when sweeping. In this case the tractor must have two PTO speeds :

- 540 rpm when sweeping
- 1000 rpm when scarifying

Before scarifying, ensured the brushes have been removed !

ATTENTION

1. **While scarifying, the soil mixes up with grass and thus the weight of the collected products will considerally be increased. We advise only to fill in half of the hopper to avoid an excess of weight and alterations or even cracks of the frame.**

2. **Morever the machine must carefully be driven when the hopper is full. The lifting of the machine must be done with care on uneven ground or severe frame damages might occur.**

3. **The machine may only be lowered slowly when the hopper is full. If the rear supporting roller hits on stones or paved edges, damages, might occur to the machine.**

5.6 Hopper emptying

The rear lifting cylinders are designed to make the emptying possible at a height of approx. 2,20 m. First of all, raise the machine to the wanted emptying height with the help of the rear hydraulic rams. Make sure that the machine is more or less in horizontal position during the operation.

Never empty in slopes.

Attention !
Only drive extremely carefully with a lifted hopper!

Never use the machine goes without the V-belt guard or the hydraulic hoses can be damaged. It is also advised to set the height of the rear support roller with the crank at least on position 3 to be easily able to take off the housing.

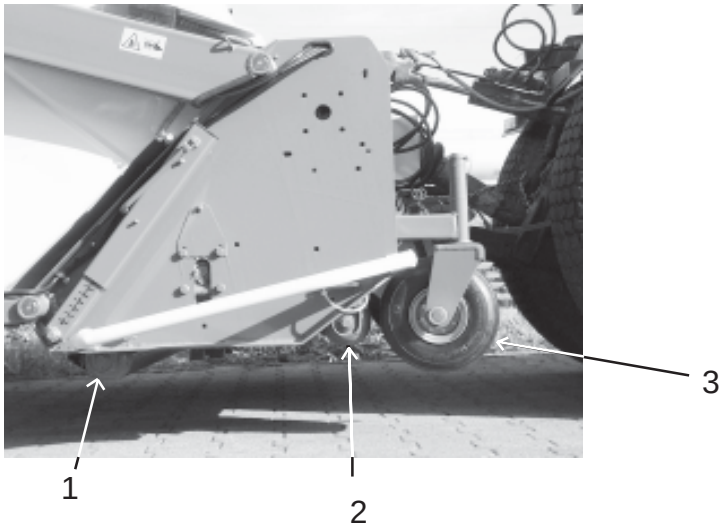
6. Adjustment of the cutting height

The KMLS sweeping and scarifying machine offers two cutting height adjustment possibilities :

- Using the rear support roller (ill. 20/1) and the front support roller (ill.20/2). This adjustment is advised for all scarifying work.

- Using the rear support roller and the front wheels (ill. 20/3).
  The frontal roller is in its highest position and ensures a certain safety when working on rough grounds

ill. 20



6.1 Adjustment of the cutting height with the rear support roller and the front roller

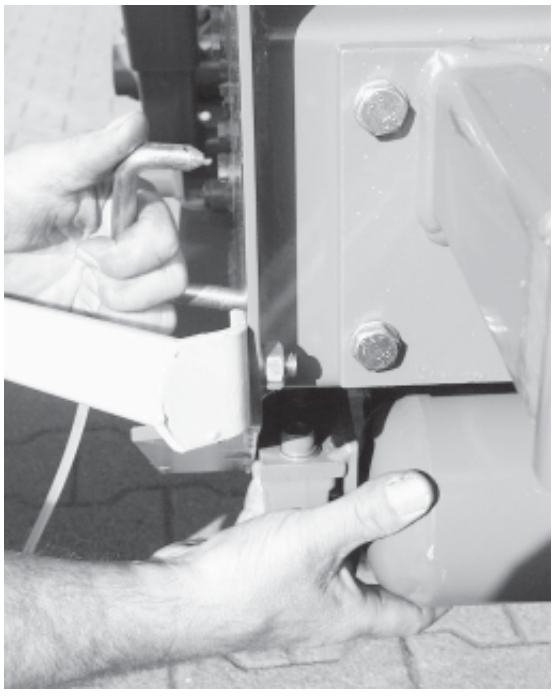
The adjustment of a uniform cutting height is ensured by the rear

ill. 21

supporting roller and the front wheels.
The height of the front wheels is adjusted when removing the distance bushings or washers and changing their plug-in connections (ill. 22).
In order to do so, the machine must be lifted with the three-point linkage of the tractor. The pin must be removed and the bushings must be positioned in accordance with the desired working height.

The supporting roller is adjusted as follows:

- Lift the machine,
- Untighten the blocking nut on the side supporting brackets
- Remove the safety bolts
- Bring the supporting roller into the desired position by turning the adjustment bolt,
- Lock the roller in the desired position with the help of the axle,
- Insert the safety bolts.



ill. 22

6.2 Adjustment of the cutting height with the rear support roller and the front wheels.

The wheels' height is adjusted by removing the distance bushing and changing their plug-in-connection (ill. 23). For this operation, raise the machine using the hydraulic arms of the tractor, take out the pin of the castor wheels and place the plug-in-connection according to the desired working height. The „fine" adjustment is done using the rear support roller. While lifting or lowering the machine, make sure that it always is in a more or less horizontal position.

ill. 23

7. Cleaning of the Machine

Above all, when mowing and scarifying wet grass which is then also partly mixed with soil the machine will soil heavily. In this case, it is recommended to clean the rotor and the hood intensively by a water jet.

8. Maintenance

The sweeping and scarifying machine was conceived and realized to reduce to a minimum the maintenance actions.

8.1 Oil Level in the Angular Gearbox

The angular gearbox of the machine does not require any lubricating service. However, once a year the oil level should be checked. For this purpose, the check screw (ill. 24) which is laterally attached to the gearbox must be opened and it has to be checked whether the oil level reaches the lower edge of the bore. If required, the gearbox has to be refilled with gear box lubricant oil SAE 90 (capacity 0,45 l).

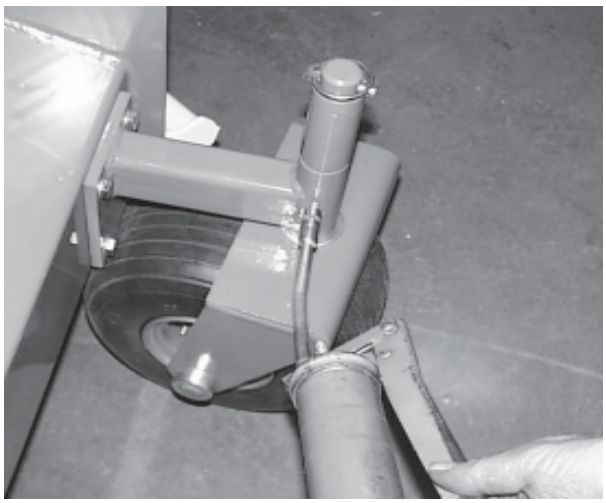
ill. 24

8.2 Greasing points

Depending upon the working intensity, the following points should regularly be lubricated with multi-purpose grease:

- Pivot of the castor wheel fork (ill. 25)
- Front castor wheels (ill. 26)
- rotor bearings left and right remove the V-belt guard on the machine's left side (ill. 27, 28),
- Rear castor wheels (ill. 29),
- Fulcrum pin of the hopper's support (ill. 30),
- Height adjustment crack (ill. 31),
- Universal joint yoke of the over load clutch and bearings of transmission shaft (remove the belt drive guard).
- PTO shaft.

ill. 25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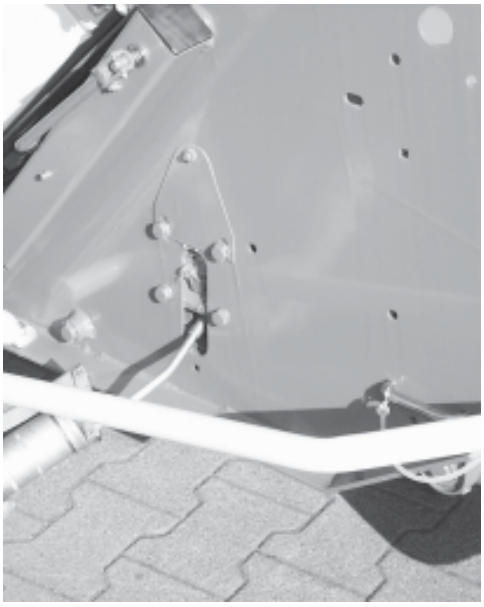
ill. 27



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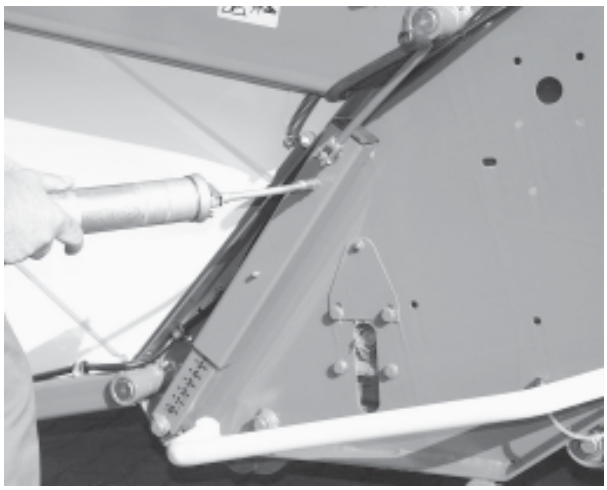
ill. 29

ill. 30



ill. 31

8.3 Longer standstill periods

If the machine has not been used for a long period of time it is advisable to clean it and to preserve it with some spray oil before storing it.

Before starting to work, an authorized workshop should check the functioning of the slip clutch arranged between angular gearbox and V-belt drive.

8.4 Inflation pressure

Front wheels : 2 bar
Rear wheels : 2 bar

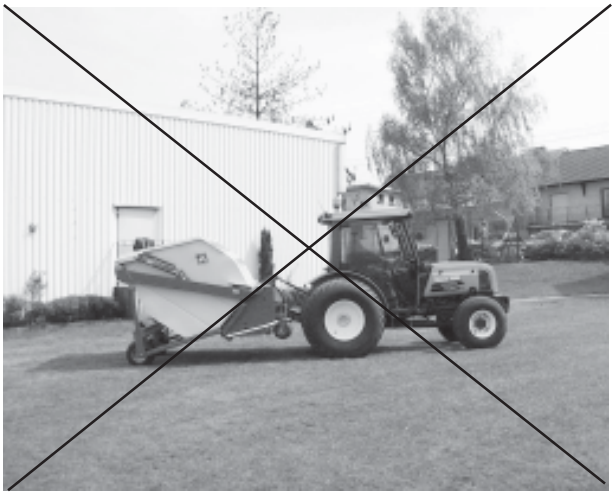
Depressurise the tyres before mounting them. Each rim is made of two separate shells and might fly apart and hurt people if take off pressurised.

If the rear wheels are vibrating, tighten the bolt on each wheel a little more.

9. Transport on public roads

Before driving on public roads make sure that the rear traffic lights at of the machine do work properly. On public roads the machine must be lifted to a desired height with the help of the rear wheels' hydraulic system and the lower steering arms of the tractor. When proceeding that way the machine must always aligne horizontally, i. e. it must neither be lifted forwards nor backwards (example : machine to much lifted backwards ill. 32).

Maximal speed on roads : 25 km/h.



ill. 32 NO

ill. 33 YES

The weight of the machine (above all when the hopper is filled) should not be underestimated, in particular for tractors having a low gross weight.

NOTES