

Operating manual

AMAZONE

**GROUNDKEEPER
SmartCut**

GH 1350

GH 1500

GH 1800

**HorseHopper
SmartCut**

HH 1500

HH 1800



MG5069
BAF0005.4 06.21
Printed in France

Read and observe this operating manual before putting the equipment into operation for the first time!

Keep in a safe place for future reference!

en



READING THE INSTRUCTION

manual and adhering to it should not appear to be inconvenient and superfluous as it is not enough to hear from others and to realise that a machine is good, to buy it and to believe that now everything should work by itself. The person concerned would not only harm himself but also make the mistake of blaming the machine for the reason of a possible failure instead of himself. In order to ensure good success one should go into the mind of a thing, make himself familiar with every part of the machine and to get acquainted with its handling. Only in this way would you be satisfied both with the machine as also with yourself. To achieve this is the purpose of this instruction manual.

Leipzig-Plagwitz 1872. Rud. Sark.



Identification data

Enter the identification data for the machine here. You can find the identification data on the rating plate.

Machine identification number:
(ten-digit)

Type:

Groundkeeper GH / HH
SMARTCUT

Year of manufacture:

Basic weight (kg):

Approved total weight (kg):

Maximum load (kg):

Manufacturer's address

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Spare part orders

Spare parts lists are freely accessible in the spare parts portal at www.amazone.de.

Please send orders to your AMAZONE dealer.

Formalities of the operating manual

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Foreword

Foreword

Dear Customer,

You have chosen a quality product from the comprehensive range of products supplied by AMAZONEN-WERKE, H. DREYER SE & Co. KG. Thank you for placing your trust in our brand.

When the machine arrives, please make sure that no damage has occurred in transit and that no parts are missing! Check the machine for completeness including the special optional equipment ordered against the delivery note. Replacements will only be made for claims made immediately!

Read this operating manual before putting the equipment into operation for the first time, paying particular attention to the safety instructions. By reading the manual carefully you will be able to fully exploit the potential of your newly acquired machine.

Please ensure that all the machine operators have read this operating manual before they put the machine into operation.

Should you have any questions or problems, please consult this operating manual or contact your local service partner.

Regular maintenance and timely replacement of worn or damaged parts increases the lifespan of your machine.

User evaluation

Dear Reader

Our operating manual is updated regularly. Your suggestions for improvements will help us always to present the operating manual in a more user-friendly form. Please send your suggestions to:

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1 User information

The "User information" section supplies information on using the operating manual.

1.1 Purpose of the document

This operating manual

- Describes the operation and maintenance of the machine.
- Provides important information on safe and efficient handling of the machine.
- Is a component part of the machine and should always be kept with the machine or the traction vehicle.
- Keep it in a safe place for future use.

1.2 Locations in the operating manual

All the directions specified in the operating manual are always viewed in the direction of travel.

1.3 Diagrams used

Instructions for action and reactions

Tasks to be carried out by the owner/operator appear in the form of numbered handling instructions. Observe the sequence of the handling instructions given. The result of the relevant handling instruction is indicated by an arrow as necessary.

Example:

1. Instruction for action 1
→ Reaction of the machine to instruction for action 1
2. Instruction for action 2

Lists

Lists without a mandatory sequence are presented as a list with bullet points.

Example:

- Point 1
- Point 2

Item numbers in diagrams

Digits shown in round brackets refer to the position number in the illustration. The first digit refers to the illustration, the second refers to the position number in the illustration. Example: (Fig. 3/6)

- Figure 3
- Item 6



2 General safety instructions

This section contains important information on safe operation of the machine.

2.1 Obligations and liability

Comply with the instructions in the operating manual

Knowledge of the basic safety information and safety regulations is a basic requirement for safe handling and fault-free machine operation.

Obligations of the operator

The operator is obliged only to let those people work with/on the machine who

- Are aware of the basic workplace safety information and accident prevention regulations.
- Have been trained in working with/on the machine.
- Have read and understood this operating manual.

The operator is obliged

- To keep all the warning symbols on the machine in a legible state.
- To replace damaged warning symbols.

If you still have queries, please contact the manufacturer.

Obligations of the user

Before starting work, anyone charged with working with/on the machine is obliged

- To comply with the basic workplace safety instructions and accident prevention regulations.
- To read and understand the section "General safety information" of this operating manual.
- To read the section "Warning symbols and other labels on the machine" of this operating manual and to follow the safety instructions represented by the warning symbols when operating the machine.
- To get to know the machine.
- To read the sections of this operating manual, important for carrying out your work.

If it comes to the attention of the user that the safety features of the equipment are not in working order, the user must rectify this immediately. If this is not a task that is normally carried out by the user or if the user has insufficient technical knowledge to do so, the user must notify his superior (owner/operator) about the defect.



Risks in handling the machine

Although the machine is built using state-of-the-art technology according to standard safety regulations, this does not rule out the possibility of danger and impaired operation when the machine is in use

- For the health and safety of the user or third persons,
- For the machine,
- For other goods.

Only use the machine

- For the purpose for which it was intended.
- In a perfect state of repair.

Eliminate any faults that could impair safety immediately.

Guarantee and liability

Our "General terms and conditions of sale and delivery" generally apply. These are available to the owner/operator upon conclusion of the contract at the latest. Warranty and liability claims in the event of injury to persons and material damage will be excluded if they are based on one or several of the following causes:

- Improper use of the machine.
- Improper installation, start-up, operation and maintenance of the machine.
- Operation of the machine with defective safety equipment or improperly attached or non-functioning safety equipment.
- Non-compliance with the instructions in the operating manual regarding commissioning, operation and maintenance.
- Independently-executed construction changes to the machine.
- Insufficient monitoring of machine parts that are subject to wear.
- Improperly executed repairs.
- Catastrophic events as a result of the impact of foreign objects or force majeure.

2.2 Representation of safety symbols

Safety instructions are indicated by the triangular safety symbol preceded by a signal word. The words (DANGER, WARNING, CAUTION) describe the severity of the danger present and have the following significance:



DANGER

Indicates an immediate high risk, which will result in death or extremely serious physical injury (loss of body parts or long term damage) if not avoided.

If the instructions are not followed, then this will result in immediate death or serious physical injury.



WARNING

Indicates a medium risk, which could result in death or (extremely serious) physical injury if not avoided.

If the instructions are not followed, then this may result in death or serious physical injury.



CAUTION

Indicates a low risk, which could incur minor or medium level physical injury or damage to property if not avoided.



IMPORTANT

Indicates an obligation to special behaviour or an activity required for proper machine handling.

Non-compliance with these instructions can cause faults on the machine or in the environment.



NOTE

Indicates handling tips and particularly useful information.

These instructions will help you to use all the functions of your machine to the optimum.



2.3 Organisational measures

The operator must provide the necessary personal protective equipment, such as:

- Protective glasses
- Protective shoes
- Protective suit
- Skin protection, etc.



The operation manual

- Must always be kept at the place at which the machine is operated.
- Must always be easily accessible for the user and maintenance personnel.

Check all the available safety equipment regularly.

2.4 Safety and protection equipment

All safety and protective equipment must be properly installed and functional each time the machine is put into operation. Check all safety and protective equipment regularly.

Faulty safety equipment

Faulty or disassembled safety and protection equipment can lead to dangerous situations.

2.5 Informal safety measures

As well as all the safety information in this operating manual, comply with the general, national regulations pertaining to accident prevention and environmental protection.

When driving on public roads and routes, then you should comply with the statutory road traffic regulations.



2.6 User training

Only persons who have received appropriate training and instruction may work on or with the machine. The owner/operator must clearly define the responsibilities of those in charge of the operation, maintenance and repair of the machine.

People being trained may only work with/on the machine under the supervision of an experienced person.

Activity \ People	Person specially trained for the activity ¹⁾	Trained person ²⁾	Person with specialist training (specialist workshop) ³⁾
Loading/Transport	X	X	X
Commissioning	--	X	--
Set-up, tool installation	--	--	X
Operation	--	X	--
Maintenance	--	--	X
Troubleshooting and fault elimination	--	X	X
Disposal	X	--	--

Legend:

X..permitted

--..not permitted

- 1) A person who can assume a specific task and who can carry out this task for an appropriately qualified company.
- 2) Instructed persons are those who have been instructed in their assigned tasks and in the possible risks in the case of improper behaviour, have been trained if necessary, and have been informed about the necessary protective equipment and measures.
- 3) A specialist is a person who has received specific technical training (i.e. an expert) and has knowledge of the appropriate regulations, and can therefore properly assess the work entrusted to him and identify the dangers associated with this work.

Comment:

A qualification equivalent to specialist training can be obtained through long term activity in the appropriate field of work.



Only a specialist workshop may carry out maintenance and repair work on the machine when such work is specifically designated "workshop work". The personnel in a specialist workshop have the requisite knowledge and suitable equipment (tools, lifting and support devices) to carry out the maintenance and repair work on the machine properly and safely.



2.7 Safety measures in normal operation

Only operate the machine if all the safety and protection equipment is fully functional.

Check the machine at least once a day for visible damage and check the function of the safety and protection equipment.

2.8 Dangers from residual energy

Note that there may be residual mechanical, hydraulic, pneumatic and electrical/electronic energy at the machine.

Take appropriate measures when instructing the operating personnel. Detailed information is provided again in the various chapters of this operating manual.

2.9 Maintenance and repair work, fault elimination

Carry out prescribed setting, maintenance and inspection work in a timely manner.

Secure all media such as compressed air and the hydraulic system against unintentional start-up.

Carefully fix and secure larger subassemblies to lifting gear when carrying out replacement work.

Regularly check that bolted connections are firmly secured and tightened if necessary.

When the maintenance work is completed, check the function of the safety devices

2.10 Constructive changes

You must not modify, add to or convert the machine without the consent of AMAZONE. This also applies to welding work on load-bearing parts.

Any addition or conversion measures require the written consent of AMAZONE. Use only modification and accessory parts approved by AMAZONE – this ensures (for example) that the operating permit remains valid in accordance with national and international regulations.

Vehicles with an official type approval or with equipment connected to a vehicle with a valid type approval or approval for road transport according to the German road traffic regulations must be in the state specified by the approval.



WARNING

Risk of being crushed, cut, caught, drawn in or struck if supporting parts break.

It is forbidden to:

- Drill holes in the frame or on the chassis.
- Increasing the size of existing holes on the frame or the chassis.
- Welding support parts.

2.10.1 Spare and wear parts and aids

Immediately replace any machine parts which are not in a perfect state.

Only use genuine **AMAZONE** spare and wear parts or parts approved by AMAZONE. This ensures that the operating permit remains valid in accordance with national and international regulations. Where spare and wear parts of other makes are used, it cannot be guaranteed that they are appropriately designed and manufactured for the corresponding loading and safety requirements.

AMAZONE accepts no liability for damage arising from the use of unapproved spare parts, wear parts or auxiliary materials.

2.11 Cleaning and disposal

Handle and dispose of any materials used carefully, in particular:

- When carrying out work on lubrication systems and equipment and
- When cleaning using solvents.

2.12 User workstation

The machine may be operated by only one person sitting in the driver's seat of the tractor.



2.13 Warning symbols and other signs on the machine



Always ensure that all warning symbols on the machine are clean and clearly legible! Renew unreadable warning symbols. Warning symbols can be obtained via your dealer by quoting the order number (e.g. MD 075).

Warning symbols - structure

Warning symbols identify danger areas on the machine and warn against residual dangers. A permanent or unexpectedly occurring danger exists at these points.

A warning symbol consists of two fields:



Field 1

is a symbol describing the danger, surrounded by triangular safety symbol.

Field 2

is a symbol showing how to avoid the danger.

Warning symbols - explanation

A description of the warning symbol is given in the **order number and explanation** column next to it. The description of the warning symbol always has the same structure with the information being provided in the following order:

1. A description of the danger.
For example: danger of cutting!
2. The consequence of non observance of the danger protection instructions.
For example: causes serious injuries to fingers or hands.
3. Instructions for avoiding the danger.
For example: only touch machine parts when they have come to a complete standstill.

Order number and explanation

Warning symbols

MD 075

Risk of fingers and hands being cut or severed by rotating machine parts.

This hazard can cause extremely serious injuries with the loss of body parts such as fingers or hands.

Never reach into the danger area when the tractor engine is running with the PTO shaft/hydraulic system connected.

Do not touch machine parts until they have come to a complete standstill.



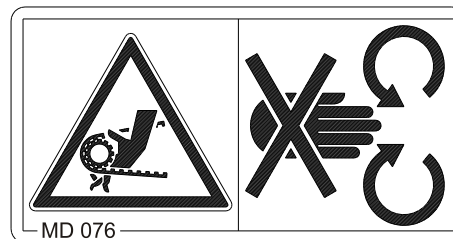
MD 076

Risk of hands or arms being drawn in or caught by power-driven, unprotected chain or belt drives.

This hazard can cause extremely serious injuries, including loss of parts of the body from hands or arms.

Never open or remove protective equipment from chains or belt drives,

- while the tractor engine is running and the PTO shaft is connected/hydraulic drive is engaged
- or the ground wheel drive is in motion



MD 078

Risk of fingers or hands being crushed by accessible moving machine parts.

This hazard can cause extremely serious injuries with the loss of body parts such as fingers or hands.

Never reach into the danger area when the tractor engine is running with the PTO shaft/hydraulic system connected.



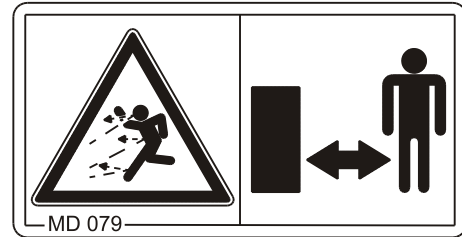


MD 079

Hazard from materials or foreign objects that are thrown from or ejected by the machine.

This hazard can cause extremely serious injuries to any part of the body.

Ensure that persons not involved in the operation of the machine maintain a sufficient safety distance from the danger area created by the machine while the tractor engine is running.

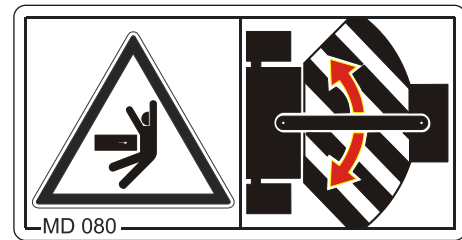


MD 080

Danger of crushing of torso in articulated area of drawbar due to sudden steering movements!

This can inflict extremely serious injuries to the torso which may also be fatal.

Persons must not enter or remain in the danger zone between the tractor and machine if the tractor engine is running and the tractor is not secured to prevent it from accidentally rolling away.

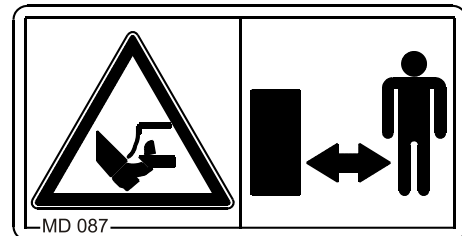


MD 087

Risk of toes or feet being cut or severed by power-driven tools.

This hazard can cause serious injuries, including loss of parts of the body from toes or feet.

Maintain a sufficient safety distance from the danger area while the tractor engine is running and the PTO shaft/hydraulic system is connected.

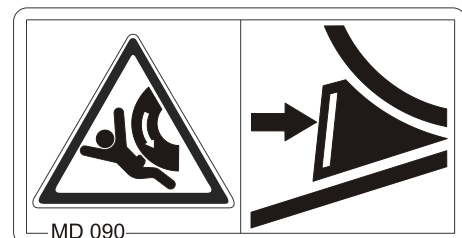


MD 090

Risk of contusions from unintentional rolling of the uncoupled, unsecured machine!

This hazard can cause extremely serious injuries anywhere on the body, or even death.

Secure the machine to prevent it from accidentally rolling away before uncoupling it from the tractor using the parking brake and/or wheel chock(s).



General safety instructions

MD 095

Read and understand the operating manual safety information before starting up the machine!



MD 096

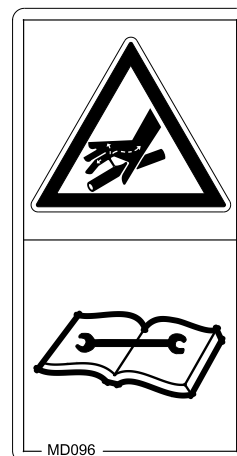
Danger of infection to the whole body from liquids escaping at a high pressure (hydraulic fluid)!

This danger will cause serious injuries over the whole body, if hydraulic fluid escaping at high pressure passes through the skin and into the body.

Never attempt to plug leaks in hydraulic lines using your hand or fingers.

Read and understand the information in the operating manual before carrying out maintenance and repair work.

If you are injured by hydraulic fluid, contact a doctor immediately.

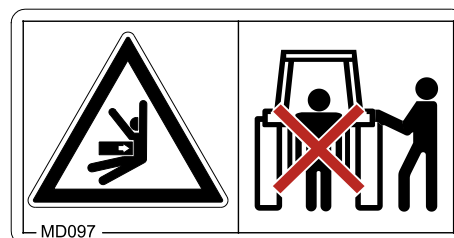


MD 097

Risk of any part of the body being crushed due to standing in the stroke area of the three-point suspension when the three-point hydraulics are operated.

This hazard can cause extremely serious and potentially fatal injuries.

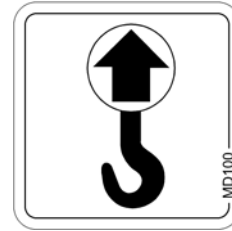
- Personnel are prohibited from standing in the stroke area of the three-point suspension when the three-point hydraulics are operated.
- Actuate the operating controls for the tractor's three-point hydraulic system
 - only from the designated workstation,
 - never from a location in the stroke area between tractor and machine.





MD 100

This symbol indicates lashing points for fastening slinging gear when loading the machine.

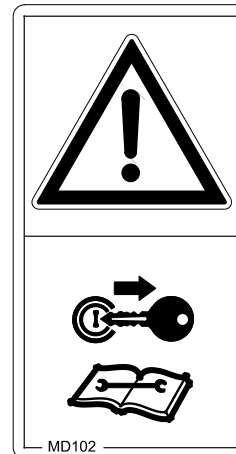


MD 102

Danger during intervention in the machine, e.g. installation, adjusting, troubleshooting, cleaning, maintaining and repairing, due to the tractor and the machine being started unintentionally and rolling.

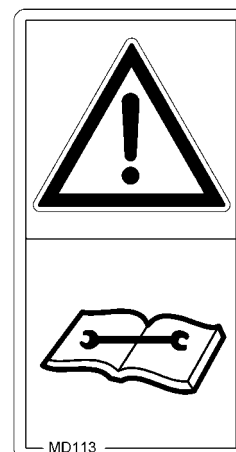
These dangers can cause extremely serious and potentially fatal injuries.

- Secure the tractor and the machine against unintentional start-up and rolling before any intervention in the machine.
- **Read and observe the information in the relevant chapter for the type of intervention**



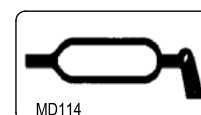
MD 113

Study and observe the instructions for cleaning, servicing and maintaining in the appropriate chapter of the operating manual.



MD 114

This symbol indicates a lubrication point



General safety instructions

MD 118

This symbol indicates the maximum drive speed (540 rpm) and direction of rotation of the drive shaft on the machine side.



MD 170

Risk of being crushed, drawn in or caught by unprotected, moving machine parts as a result of missing safety devices.

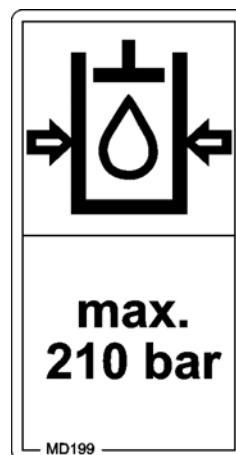
This hazard can cause extremely serious injuries, including the loss of body parts.

Close protective equipment which has been opened or refit protective equipment which has been removed before you start the machine.



MD 199

The maximum operating pressure of the hydraulic system is 210 bar.

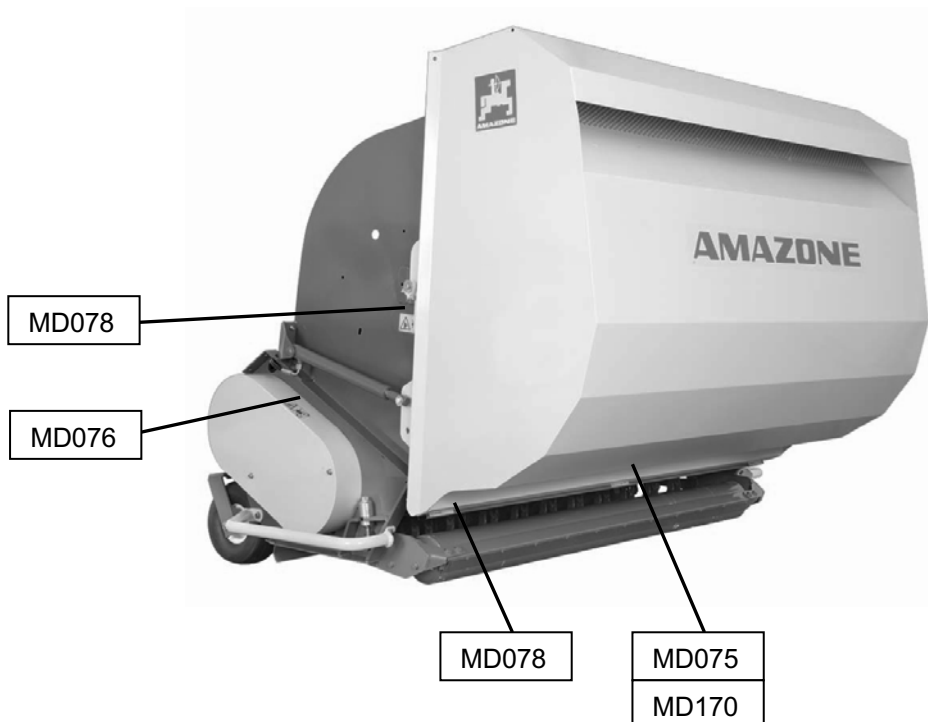
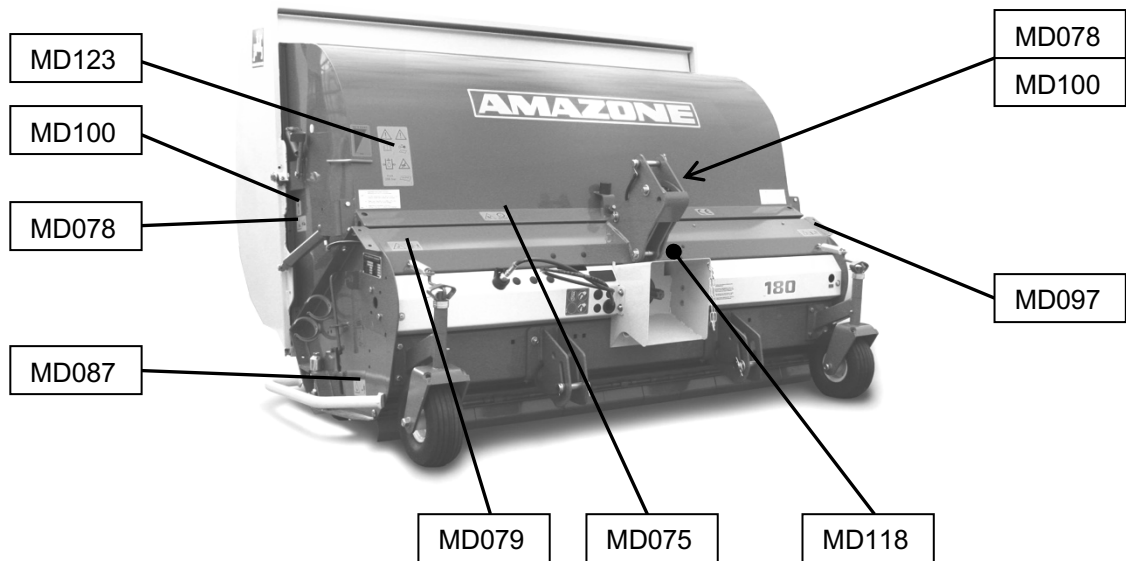




2.13.1 Positioning of warning symbols and other labels

Warning symbols

The following diagrams show the location of the warning symbols on the machine. (GH)



2.14 Dangers if the safety information is not observed

Non observance of the safety information

- Can pose both a danger to people and also to the environment and machine.
- Can lead to the loss of all warranty claims.

Seen individually, non-compliance with the safety information could pose the following risks:

- Danger to people through non-secured working areas.
- Failure of important machine functions.
- Failure of prescribed methods of maintenance and repair.
- Danger to people through mechanical and chemical impacts.
- Risk to environment through leakage of hydraulic fluid.

2.15 Safety-conscious working

Besides the safety information in this operating manual, the national general workplace safety and accident prevention regulations are binding.

Comply with the accident prevention instructions on the warning symbols.

When driving on public roads and routes, comply with the appropriate statutory road traffic regulations.



2.16 Safety information for users



WARNING

Risk of being crushed, cut, caught, drawn in or struck due to insufficient traffic and operational safety!

Before starting up the machine and the tractor, always check their traffic and operational safety.

2.16.1 General safety and accident prevention information

- Beside these instructions, comply with the general valid national safety and accident prevention regulations.
- The warning symbols mounted on the machine and other labels are important information that assist with danger-free operation of the machine. It is important in the interests of your safety to observe this information!
- Before starting and putting the machine into operation, check the area immediately next to the machine (children)! Ensure sufficient visibility!
- It is forbidden to ride on the machine or use it as a means of transport!
- Drive in such a way that you always have full control over the tractor with the attached machine.
In so doing, take your personal abilities into account, as well as the road, traffic, visibility and weather conditions, the driving characteristics of the tractor and the connected machine.

Connecting and disconnecting the machine

- Only connect and transport the machine with tractors suitable for the task.
- When connecting machines to the tractor three-point hydraulic system, the attachment categories of the tractor and the machine must always be the same!
- Connect the machine to the prescribed equipment in accordance with the specifications.
- When coupling machines to the front or the rear of the tractor, the following may not be exceeded:
 - The approved total tractor weight
 - The approved tractor axle loads
 - The approved load capacities of the tractor tyres
- Secure the tractor and the machine against unintentional rolling, before coupling or uncoupling the machine.
- Do not stand between the machine and tractor to be coupled while the tractor is approaching the machine.
Any helpers may only act as guides standing next to the vehicles, and may only move between the vehicles when both are at a standstill.

- Secure the operating lever of the tractor hydraulic system so that unintentional raising or lowering is impossible, before connecting the machine to or disconnecting the machine from the tractor's three-point hydraulic system.
- When coupling and uncoupling machines, move the support equipment (if available) to the appropriate position (stability).
- When actuating the support equipment, there is a risk of injury from nip and shear points.
- Be particularly careful when coupling/uncoupling the machine and the tractor! Crushing and shearing points exist in the area around the coupling point between the tractor and machine!
- It is forbidden to stand between the tractor and the machine when actuating the three-point hydraulic system.
- Coupled supply lines:
 - Must give without tension, bending or rubbing on all movements when travelling round corners.
 - May not scour other parts.
- The release ropes for quick action couplings must hang loosely and may not release themselves when lowered.
- Also ensure that uncoupled machines are stable!

Use of the machine

- Familiarise yourself with all equipment and control elements of the machine and their corresponding functions before starting work. It is too late to do this when work is already in progress!
- Wear close fitting clothing! Loose fitting clothing increases the danger of entrapment or entanglement in drive shafts!
- Only start-up the machine, when all the safety equipment has been attached and is in the safety position!
- Observe the maximum load of the mounted/coupled machine and permissible axle and drawbar loads of the tractor! Drive with the hopper only partly full, if necessary.
- It is forbidden to stand in the working area of the machine.
- It is forbidden to stand in the turning and rotation area of the machine.
- There are contusion and cutting points at externally-actuated (e.g. hydraulic) machine points.
- Only actuate externally-actuated machine parts when you are sure that there is no-one within a sufficient distance from the machine!
- Secure the tractor against unintentional start-up and rolling before you leave the tractor.
For this:
 - Lower the machine onto the ground
 - Apply the parking brake
 - Switch off the tractor engine
 - Remove the ignition key



Machine transportation

- When using public highways, national road traffic regulations must be observed.
- Before moving off, check:
 - the correct connection of the supply lines
 - the lighting system for damage, function and cleanliness
 - the brake and hydraulic system for visible damage
 - that the parking brake is released completely
 - the proper functioning of the braking system
- Ensure that the tractor has sufficient steering and braking power. Any machines and front/rear weights connected to the tractor influence the driving behaviour and the steering and braking power of the tractor.
- If necessary, use front weights.

The front tractor axle must always be loaded with at least 20 % of the empty tractor weight, in order to ensure sufficient steering power.
- Always fix the front or rear weights to the intended fixing points according to regulations.
- Comply with the maximum load of the connected machine and the approved axle and support loads of the tractor.
- The tractor must guarantee the prescribed brake delay for the loaded vehicle combination (tractor plus connected machine).
- Check the brake power before moving off.
- When turning corners with the machine connected, take the broad load and balance weight of the machine into account.
- Before moving off, ensure sufficient side locking of the tractor lower links, when the machine is fixed to the three-point hydraulic system or lower links of the tractor.
- Before moving off, move all the swivel machine parts to the transport position.
- Before transporting the machine, secure swivelable parts of the machine in the transport position using the transport safety catches provided to prevent dangerous movements!
- Before moving off, secure the operating lever of the three-point hydraulic system against unintentional raising or lowering of the connected machine.
- Check that the transport equipment, e.g. lighting, warning equipment and protective equipment, is correctly mounted on the machine.
- Before transportation, carry out a visual check that the upper and lower link pins are firmly fixed with the lynch pin against unintentional release.
- Adjust your driving speed to the prevailing conditions.
- Before driving downhill, switch to a low gear.
- Before moving off, always switch off the independent wheel braking (lock the pedals).

2.16.2 Hydraulic system

- The hydraulic system is under a high pressure.
- Ensure that the hydraulic hose lines are connected correctly.
- When connecting the hydraulic hose lines, ensure that the hydraulic system is unpressurised on both the machine and tractor sides.
- The blocking of control elements on the tractor that serve the direct execution of hydraulic or electrical movements of components, e.g. folding, swivelling and sliding operations, is prohibited. The movement must stop automatically when the relevant control element is released. This does not apply if the equipment movements
 - are continuous or
 - are automatically locked or
 - necessarily require an open centre or pressure position to operate correctly
- Before working on the hydraulic system
 - Lower the machine
 - Depressurise the hydraulic system
 - Switch off the tractor engine
 - Apply the parking brake
 - Take out the ignition key
- Have the hydraulic hose line checked at least once a year by a specialist for proper functioning.
- Replace hydraulic hose lines that are damaged or are showing signs of ageing! Only use genuine **AMAZONE** hydraulic hose lines!
- Hydraulic hose lines should not be used for more than six years, including a maximum storage time of two years (if applicable). Hoses and hose connections are subject to a natural ageing process even if they are stored properly and the permissible loading is applied during use which means their storage time and time of use is limited. A different period of use can be defined depending on empirical values and taking in particular the potential danger into account. Other guide numbers may apply for hoses and hose lines made of thermoplastics.
- Never attempt to plug leaks in hydraulic lines using your hand or fingers.

Escaping high pressure fluid (hydraulic fluid) may pass through the skin and ingress into the body, causing serious injuries!
If you are injured by hydraulic fluid, contact a doctor immediately.
Danger of infection!
- When searching for leakage points, use suitable aids, to avoid the serious risk of infection.



2.16.3 Electrical system

- When working on the electrical system, always disconnect the battery (negative terminal).
- Only use the prescribed fuses. If the rating of the fuses used is too high this may damage the electrical system beyond repair – danger of fire
- Make sure the battery is connected correctly - connect the positive terminal before the negative terminal! When disconnecting, disconnect the negative terminal before the positive terminal!
- Always fit the cover provided on the positive terminal of the battery. If a ground fault occurs, this may cause an explosion
- Risk of explosion: avoid sparking or the presence of naked flames in the vicinity of the battery.

3 General description of the machine

3.1 Areas of application

The AMAZONE Groundkeeper / HorseHopper is intended to be used for grass cutting and scarifying in public parks as well as sports fields and gardens, etc.

It can be used to collect and chop foliage in the autumn.

3.2 Declaration of conformity

The Groundkeeper / HorseHopper complies with the requirements of the EC Machinery Directives 2006/42/EC and associated additional guidelines.

3.3 Details required for enquiries



When ordering special optional equipment and spare parts, please always quote the **machine number** of the Groundkeeper / HorseHopper.

The safety requirements are only complied with if genuine AMAZONE spare parts are used when carrying out repairs. If parts by other manufacturers are used, AMAZONE may not accept liability for the consequences!

3.4 Identification of the machine

Rating plate on the machine (Fig. 3.4/1)

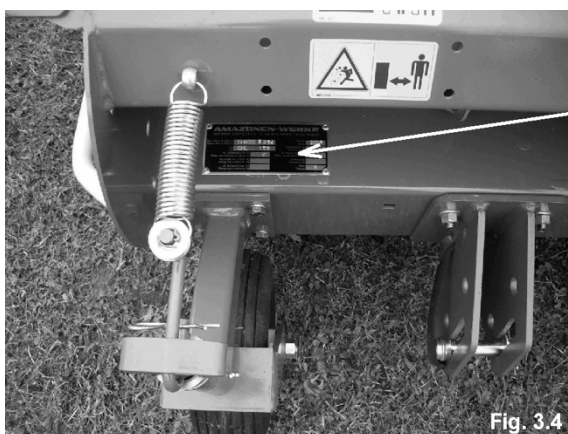


Fig. 3.4



The whole identification plate has the status of a certificate and must not be altered or made unrecognisable.



3.5 Technical data

Model	Working width	Hopper	Tare weight	Permissible total weight	Dimensions L x B x H [m]
GH-1350	1,35 m	1350 l	550 kg	910 kg	1,8 x 1,75 x 1,48
GH-1500	1,50 m	1500 l	580 kg	970 kg	1,80 x 1,90 x 1,48
GH-1800	1,80 m	1800 l	640 kg	1110 kg	1,80 x 2,20 x 1,48
HH-1500	1,50 m	1500 l	600 kg	970 kg	1,80 x 1,90 x 1,48
HH-1800	1,80 m	1800 l	660 kg	1110 kg	1,80 x 2,20 x 1,48
Front tyres	4.10 – 4 4PR				
Front tyre air pressure	1,50 bar				
Overall height	1,60 m				

3.5.1 Performance characteristics of the tractor

Model	Tractor attachment	Engine rating	
		Minimum	Maximum
GH-1350	Kat. I N, II	30 PS	60 PS
GH-1500	Kat. I, II	40 PS	80 PS
GH-1800	Kat. I, II	50 PS	100 PS
HH-1500	Kat. I, II	40 PS	80 PS
HH-1800	Kat. I, II	50 PS	100 PS

**Tractor attachment:**

Specified performance characteristics are used to check the lifting capacity and permissible total weight of the tractor.

3.5.2 Noise production data

The emission value (noise level) applicable to the working area is:
LpA = 98 dB(A). Measurement taken at the ear of the driver during operation. Maximum noise emission: LwA = 115 dB(A).



3.6 Intended use

The AMAZONE Groundkeeper / HorseHopper has been designed for conventional use in maintaining grassed open areas and parks (intended use).

Any use beyond the scope defined above is improper use. The manufacturer will not accept liability for resulting damage.
The risk involved in such use is borne solely by the user.

Intended use also includes compliance with instructions specified by the manufacturer concerning operation, servicing and maintenance as well as the exclusive use of **genuine AMAZONE spare parts**.

The AMAZONE machine may only be used, serviced and maintained by persons who are familiar with the machine and who have received instruction concerning the risks involved.

All relevant accident prevention regulations and any other generally recognised rules concerning safety, occupational health and traffic laws must be observed and the safety instructions listed on the labels attached to the machine must be strictly followed.

Any unauthorised modification of the machine will automatically render all warranty claims against the manufacturer for resulting damage invalid.

4 Taking delivery of the machine

When the machine arrives, check for transit damage and/or for missing parts! Replacements will only be made if claims are submitted promptly to the haulage company. Please check that all parts listed in the delivery note are present and correct.

Before starting up, completely remove all packaging (including cables) and check lubrication.



5 Attaching and removing the machine at the tractor's rear three-point system



Before attaching the machine to the tractor, make sure that the lateral setting of the three-point system on the machine matches the mount category of the tractor (CAT I or II).

- Release the fastener on the lower link sockets (Fig. 5-1),
- Move the lower link sockets to the required position and fasten in place with 4 screws each.



- Adjust the lower 3-point linkage to the tractor, so that the tractor tire is in contact with the machine front castor wheels.



The diameter of the lower link pins corresponds to CAT I.

Adapter sleeves will have to be used for CAT II.

In order to guarantee that the machine is attached to and detached from the tractor safely, it is recommended that the procedure be carried out in the following sequence:

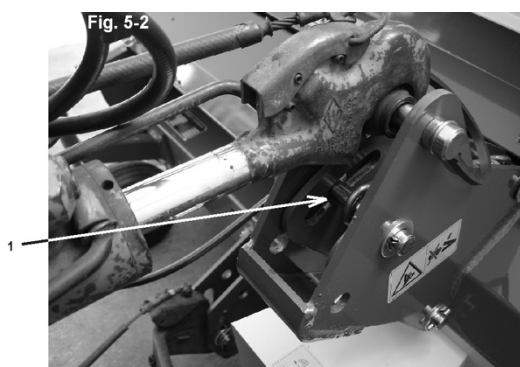
- Attaching the PTO shaft to the free shaft end on the machine.
(Where freewheel PTO shafts are used, the freewheel must be attached to the machine side).
- Hook the tractor lower link arms into the three point sockets.
- Secure all pins using the appropriate securing plugs.
- Attach the PTO shaft to the tractor's universal joint shaft.
(**Caution:** make sure that the PTO shaft is the correct length, otherwise the tractor or the machine's angular gearbox may be damaged when the machine is raised or lowered).
- Attach the upper link.
- Pretension the upper link to halfway along the slotted hole (see Fig. 5-2/1)
- Plug in the hydraulic lines
- To uncouple the machine, follow the same procedure in reverse.



Instruct those present to leave the danger area behind or underneath the machine, since the machine may lurch backwards if the halves of the upper link have been screwed apart by mistake or if they break apart.



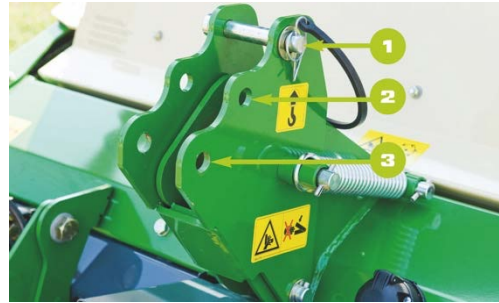
If fitted, adjust the lowering restrictor on the tractor.





Attaching and removing the machine at the tractor's rear three-point system

Choice the optimal adjustment of the upper 3-point linkage.



5.1 PTO shaft



Only use the PTO shaft specified by the manufacturer:

- Walterscheid W 2300 with or without freewheel for tractors with max. 40 HP output
- Walterscheid W 2400 with or without freewheel for tractors with outputs higher than 40 HP



If you have a tractor without a double clutch for the universal joint shaft drive, you must necessarily use a freewheel PTO shaft.

Otherwise, the tractor will remain in motion due to the flywheel mass of the rotor, even if the clutch pedal has been depressed.



5.2 Fitting and adjusting the PTO shaft

5.2.1 Fitting the PTO shaft



Before fitting, clean the gearbox input shaft on the machine and always use grease to push the PTO shaft onto the input shaft.

5.2.2 Adjusting the PTO shaft when first attached



When connecting the PTO shaft for the first time, adapt it to the tractor as shown in Fig. 5.2.2. As this adjustment applies for one tractor type only, check that the PTO shaft is correctly adjusted after changing the tractor type and readjust if necessary.

When attaching other PTO shaft halves onto the tractor's universal joint shaft profile, fit them without sliding the PTO shaft tubes into each other.

1. Hold the two PTO shaft tubes side by side and check whether the PTO shaft tubes provide a guaranteed sliding profile overlap of **at least 40 % of the LO** both when the machine is lowered and raised.
2. When pushed together, the PTO shaft tubes must not bump against the forks of the universal joints. A safety distance of at least 10 mm must be maintained.
3. To adjust the length, hold the PTO shaft halves alongside each other in the shortest operational position and draw a mark.
4. Shorten the inner and outer protective tube equally.
5. Round off the cut edges and carefully remove swarf.
6. Grease the sliding profiles and slide inside each other.
7. Hook in the supporting chains in such a way that the PTO shaft guard does not turn at the same time during operation.
8. Only use the machine if the drive is fully guarded.

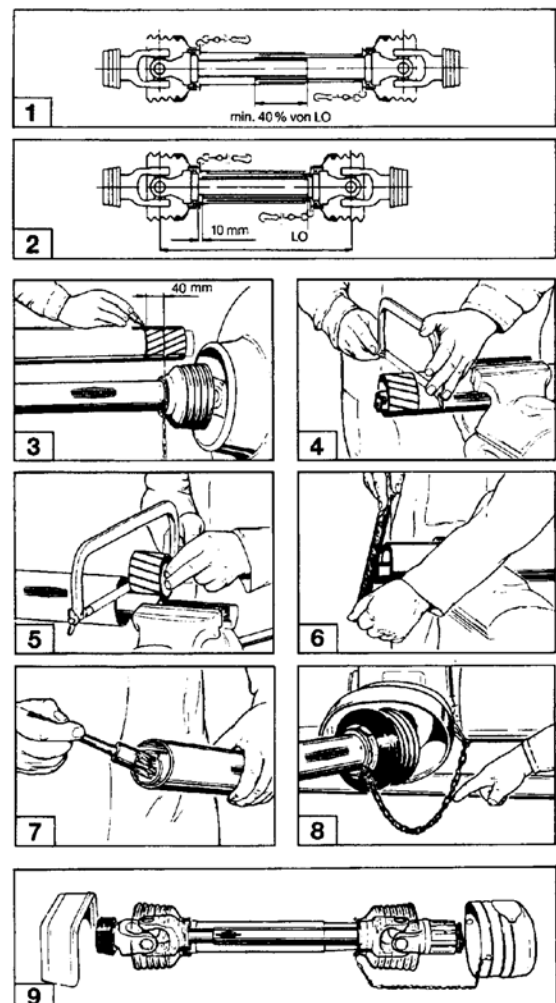


Fig. 5.2.2

Use the PTO shaft in conjunction with full PTO shaft and additional protection on the tractor and machine. Replace damaged protective equipment immediately.



The angle defining the maximum joint bends in a universal joint on the PTO shaft can be found in the accompanying operating manual provided by the manufacturer.



This manual also contains instructions which must be observed regarding fitting and maintenance operations.

To avoid damage, only connect the universal joint shaft slowly when the tractor engine is running at low revs.

5.3 Groundkeeper / HorseHopper transmission input speed

The gearbox of the Groundkeeper / HorseHopper is equipped with a universal joint shaft connection. The maximum permissible drive speed of the machine is 540 rpm:

Drive speed $n = 540$ rpm.



If the specified drive speeds are exceeded, this causes the rotor to turn at a significantly higher speed which, in exceptional cases, could cause the blades to detach thus endangering persons and property.

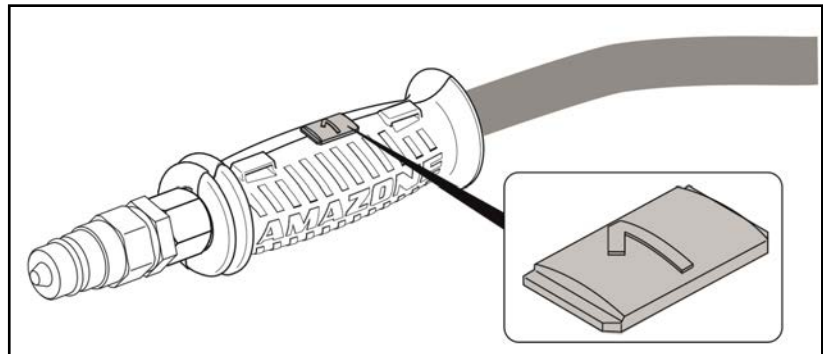
Warranty claims for damage which can be traced back to an excessively high drive speed of the universal joint shaft will not be recognised.



5.4 Hydraulic connections




- All hydraulic hose lines are equipped with grips.











Coloured markings with a code number or code letter have been applied to the gripping sections in order to assign the respective hydraulic function to the pressure line of a tractor control unit!



Films are stuck on the implement for the markings that illustrate the respective hydraulic function.

- The tractor control unit must be used in different types of activation, depending on the hydraulic function.

Latched, for a permanent oil circulation	
Tentative, activate until the action is executed	
Float position, free oil flow in the control unit	

Folding using tractor control units		Function		Hose identification	
yellow		Raise / lower hopper		Single acting	
green		Machine	raise	Double acting	
			lower		
nature		Drawbar+ (Cutting deck operation)		Single acting	
red		Flow for Hydraulic block		Single acting	
red		Pressure-free return flow			

**WARNING****Risk of infection from hydraulic fluid escaping at high pressure.**

When coupling/uncoupling the hydraulic hose line, ensure that the hydraulic system is not under pressure on the tractor or machine side.

If you are injured by hydraulic fluid, contact a doctor immediately.

5.4.1 Coupling hydraulic hose lines

**WARNING****Risk of crushing, cutting, being trapped or drawn in, or impact through faulty hydraulic functions when hydraulic hose lines are incorrectly connected.**

When coupling the hydraulic hose lines, please note the coloured markings on the hydraulic plugs.



- Check the compatibility of the hydraulic fluids before connecting the machine to the tractor hydraulic system.
Do not mix any mineral oils with biological oils.
- Observe the maximum permissible hydraulic fluid pressure of 200 bars.
- Only couple clean hydraulic connectors.
- Plug the hydraulic plug(s) into the hydraulic sockets until you can feel the hydraulic plug(s) locking.
- Check the coupling points on the hydraulic hose lines, to see if they are sitting correctly and are sealed.

1. Swivel the actuation lever on the control valve on the tractor to float position (neutral position).
2. Clean the hydraulic plugs on the hydraulic hose lines before coupling the hydraulic hose lines with the tractor.
3. Connect the hydraulic hose line(s) to the tractor control unit(s).

5.4.2 Disconnecting hydraulic hose lines

1. Swivel the actuation lever on the tractor control unit on the tractor to float position (neutral position).
2. Unlock the hydraulic connectors from the hydraulic sockets.
3. Protect the hydraulic plug and hydraulic socket against soiling using the dust protection caps.
4. Store the hydraulic hose lines in the hose cabinet.



6 The mower unit

The Groundkeeper / HorseHopper is equipped with a flail-type mower unit. In this type, cutting tools are suspended freely on a large-diameter tube. When the rotor starts to turn, the centrifugal force moves the mowing and scarifying blades into an upright position which causes them to engage with and mow the material below. The blades are made of special steel and are suspended from clip bolts in four rows around the circumference of the rotors.

6.1 Fitting the mowing and scarifying tools

There are 5 different tool arrangements as shown in table 11.

If the mowing blades (Tab. 11, A) or scarifying blades (Tab. 11, B) are worn on one side, they can be reused by turning them round as these blades have a cutting edge on the front and rear sides.

The blades can be turned or replaced without the use of tools (fig. 6.1-1).



Care must be taken to ensure that the blades are uniformly distributed on the rotor. If cutting tools are missing or incorrectly mounted, this will cause an imbalance that, over time, will lead to the whole machine being damaged.

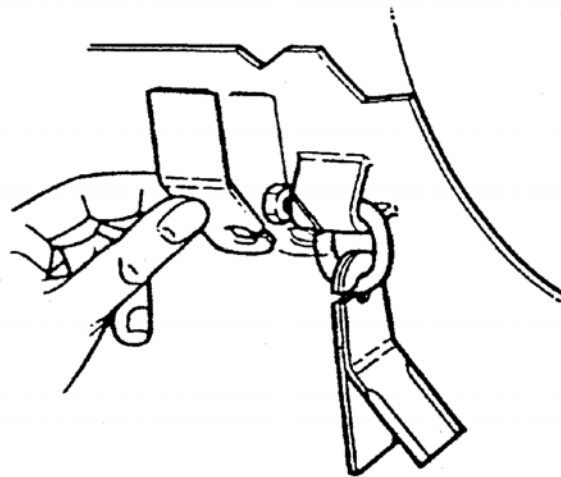


Fig. 6.1-1

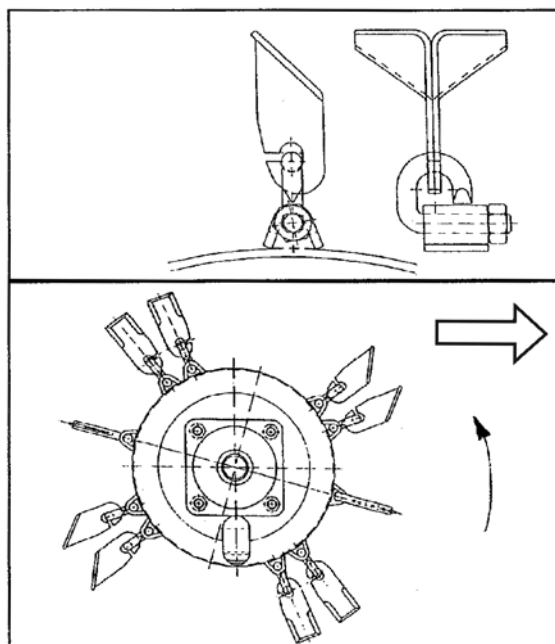





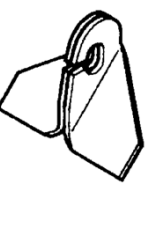


Fig. 6.1-2

						
	50 %	100 %	100 %	50 %	100 %	100 %
	Mowing blade	Scarifying blade (2 mm)	Scarifying blade (3 mm)	Wing blade, long, H77 ground	Wing blade, long, H77 ground sharpened	Wing blade, long, H60 ground
	Piece	Piece	Piece	Pair	Pair	Pair
Working width 1.35 m	76 Pieces.	76 Pieces.	76 Pieces.	38 Pair	76 Pair	76 Pair
Working width 1.50 m	82 Pieces.	83 Pieces.	83 Pieces.	42 Pair	83 Pair	83 Pair
Working width 1.80 m	100 Pieces.	100 Pieces.	100 Pieces.	50 Pair	100 Pair	100 Pair

Wear limit of suspended tools:

The blade and clip bolt fastenings must be checked regularly for wear. Tools that are very worn must be renewed immediately.

Figs. 6.1-3 and 6.1-4 show the limits of wear for the mounting brackets.

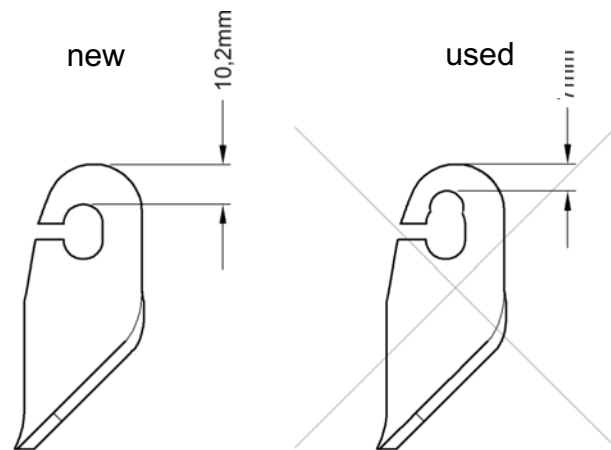


Fig. 6.1-3

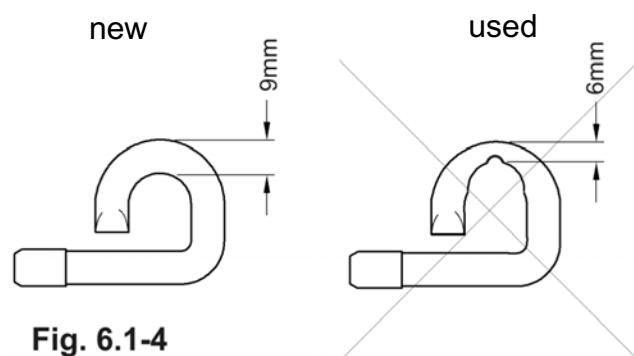

























Fig. 6.1-4





CAUTION




































The blades and blade fasteners must be always be checked before starting work.



All screw unions must be firmly tightened.

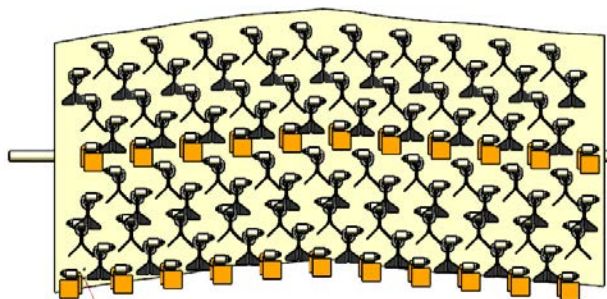
Blade overview					
Blade replacement without tools		100% Cutting blade	50% Cutting blades + 50% Wing cutting blades long H77	100% Wing cutting blades long H77	100% Wing cutting blades extralong H88
Flower residue and environmental sites (biotopes, annual mowing, fallow land)	Dry conditions				
	Wet conditions				
Mowing lawns, parks	Dry conditions				
	Wet conditions				
Mowing fairways, lawns and sports fields	Dry conditions				
	Wet conditions				
Fine cutting and grass grooming					
Cleaning of horse paddocks					
Leaf collection	Dry conditions				
	Wet conditions				
Scarifying and collecting in one single pass					
Scarifying fairways, sports fields or turf					

 Very good result  Good result



					Scarifying blade for combination*	
					2mm	3mm
						✓
						✓
						✓
						✓
					✓	
					✓	
					✓	
						✓
						✓
						✓
						✓
					✓	

 Very good result  Good result



The figure shows the standard equipment with cutting blades and flail blades H77.

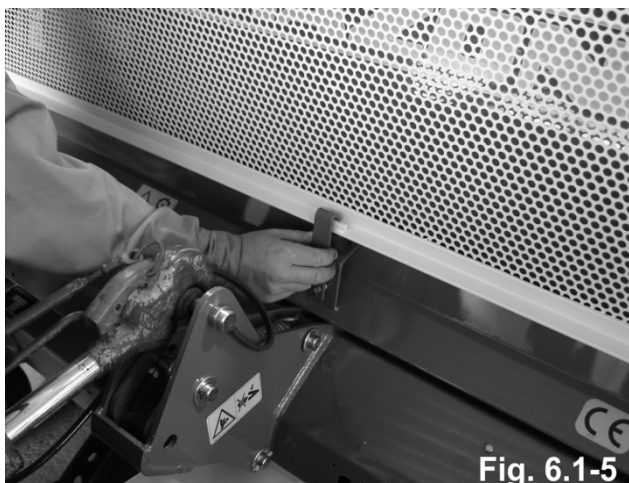


Caution:

When you intend to work on the rotor with the hopper raised, make sure that the rotor is stationary and engage the retaining hook on the container.

The rotor is accessed in the following manner:

- Attach the machine to a tractor.
- Open container to max. position,
- Turn off the tractor engine.
- Hang in retaining hook (Fig. 6.1-5)



- Fold up intermediate hood and secure with retaining bolts (Fig 6.1-6/1).



6.2 Mowing

The cutting tools described above are designed for mowing or scarifying. The working speed depends on the density and humidity of the turf and must be adapted to the conditions. The maximum speed of the PTO shaft (540 rpm) must be observed. The container must be emptied on time to guarantee efficient collection. If the container becomes too full, a blockage may occur in the vertical shaft above the rotor which will also not be dislodged when the container is emptied.

The hopper is fitted with an indicator that shows whether the container needs to be emptied (Fig. 6.6).

Cuttings can still be collected while the indicator is in the lower position.

When the pointer starts to move, the catch basket should be emptied. If the pointer is in the upper position, the catch basket needs to be emptied.

The sensitivity of the display depends on the type of cuttings.



6.3 Scarifying

Scarifying is usually carried out at the start or end of the vegetation period.

It is possible to clean and aerate turf containing thatch and moss by simultaneously mowing, scarifying and collecting in one operation.

To do this, straight scarifying blades are mounted between the curved pairs of mowing blades. If the turf is already mowed short, only the straight scarifying blades need to be mounted. The best suction effect is achieved by combining mowing and scarifying blades so this combination should be used in difficult wet conditions.

- **Wide scarifying, blade spacing 51 mm**

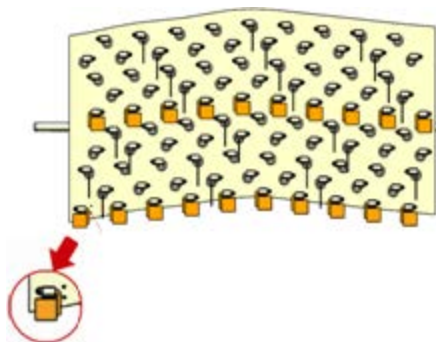
In this case, 2 mm or 3mm thick scarifying blades are mounted on the rotor.



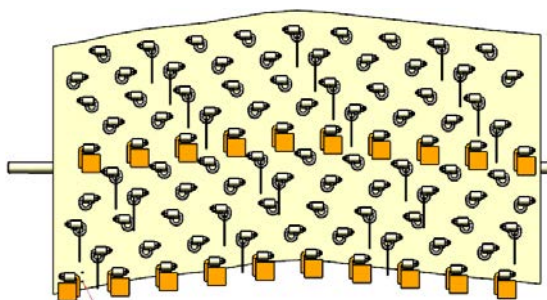
CAUTION! Always mount only one type of scarifying blade on the rotor as otherwise the machine will be out of balance and will be damaged!

This allows the working depth to be increased without engaging too aggressively with the turf.

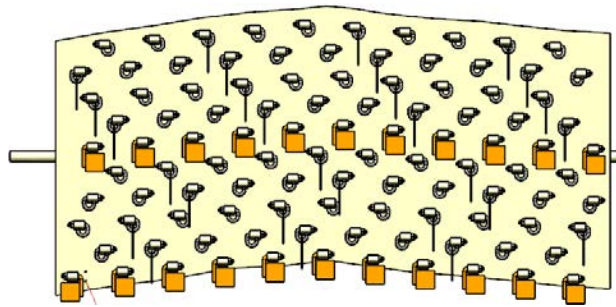
Marker for row 1



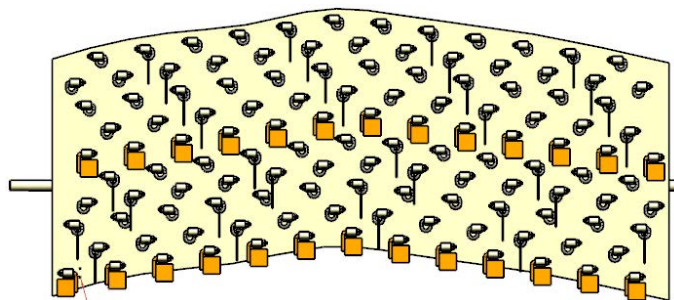
GH 1350



GH 1500



GH 1800



- **Narrow scarifying, blade spacing 17 mm**

All clip bolts on the rotor must be fitted with scarifying blades.

This type of scarifying is relatively aggressive and is suitable for restorative work on heavily thatched turf (moss) in the spring.

CAUTION



1. Care must be taken to ensure that the rotor has one of the above blade arrangements. If cutting tools are missing or incorrectly mounted, this will cause an imbalance that may cause long-term damage to the machine in general.
2. Only one type of scarifying blade may be used in each case! Danger of imbalance!
3. If a high proportion of soil content is produced from scarifying, only fill the hopper to approximately half way as otherwise there is a risk that the tractor and machine frame will be overloaded when driving with a full hopper.
4. By the same token, the tractor must also be driven carefully across uneven terrain when the hopper is full and the machine is raised as otherwise the frame may be damaged due to overloading.
5. The machine must be lowered slowly when the container is full. If the rear cage roller strikes stones or fixed edges, the machine may be damaged.

6.4 Mulching

If the surface is only to be mowed and the cuttings pulverised then deposited immediately, the mulch flap can be closed.
To set the flap, the actuating lever is swung downwards (Fig. 6.4-1) and secured in the locking slot provided.

Control stalk in horizontal position = collecting (Fig. 6.4-2)

Control stalk in vertical position = mulching (Fig. 6.4-3)

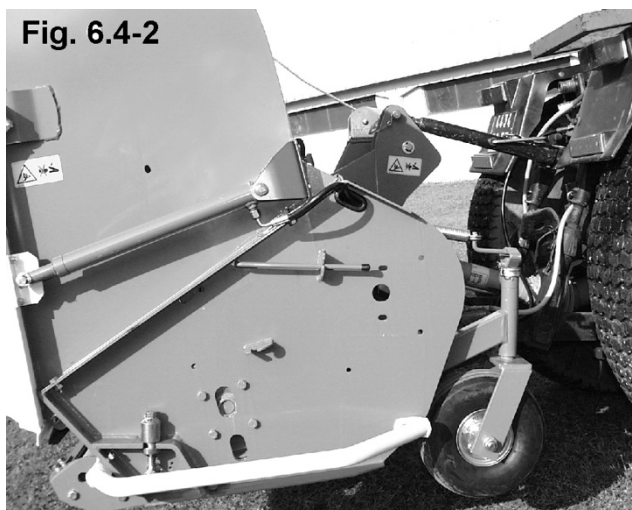




Fig. 6.4-3

6.5 Collecting

Due to the strong suction effect of the rotor, the machine can also be used to collect grass that has already been mowed, or other loose material. The material is then lifted up by air suction, chopped to smaller pieces by the rotating blades and conveyed through the chute to the hopper.

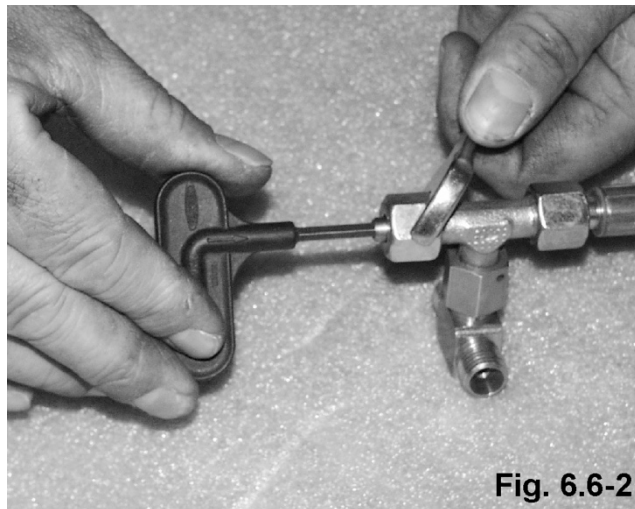
6.6 Emptying the hopper

The machine is initially raised by the tractor's three-point hydraulic system. The hopper is then opened about its rotary axes by the laterally-mounted cylinders which causes the cuttings to slide downwards and land on the ground.



Always drive with great care if the hopper is open.

The opening procedure of the hopper should take at least 8 seconds. This opening speed can be adjusted via the integrated check valve (Fig. 6.6-1 and 6.6-2) mounted at the front next to the angular gearbox.



7 Adjusting the cutting height

The height of the guide wheels can be adjusted by removing the spacer sleeves and reinserting them in a different location (Fig. 7-1). To do this, the machine must be raised using the tractor's hydraulic system. The guide wheel retractor must then be removed and the sleeves positioned according to the required height. The guide wheel retractor is then hung back in and secured.



The height of the rear cage roller is adjusted as follows:

- Raise the machine.
- Loosen the clamping screw (fig. 7-2),





- Select the required working height via the height-adjusting screw (Fig. 7-3)
- Tighten the clamping screw (Fig. 7-2)

Ensure that the cage roller is adjusted equally on both sides using the check scale that has been fitted (Fig. 7-4).

Fig. 7-3

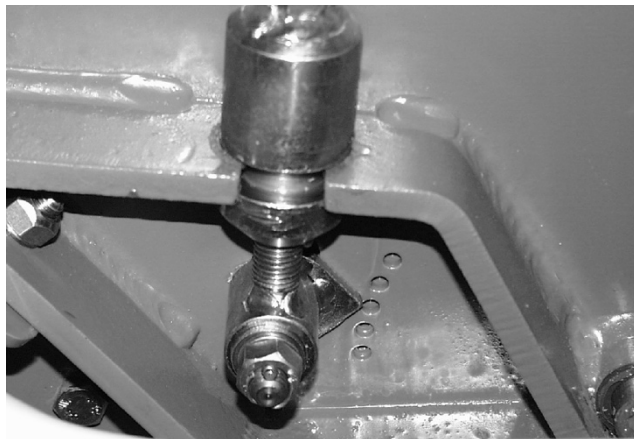
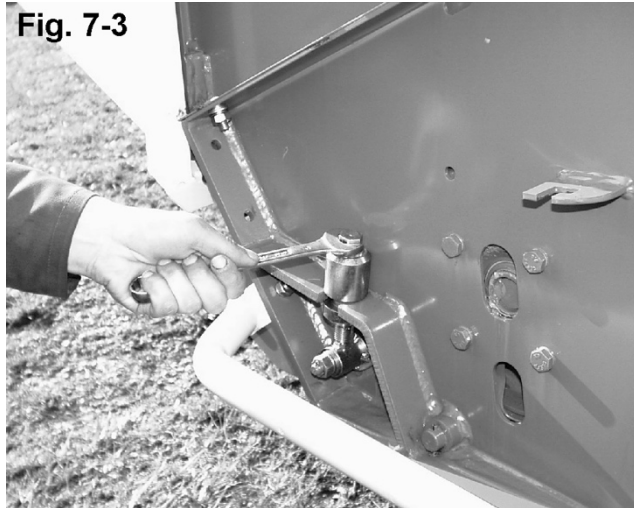


Fig. 7-4

7.1 Front roller (option)

The front roller is a special accessory that is used when scarifying uneven terrain and is mounted on the front guide wheel supports (Fig. 7.1-1).



To adjust the height of the machine it must be raised and the lynch pin and bolt on both sides removed. The roller is then located in the desired position and the bolt secured with the lynch pin. (fig. 7.1-2).





8 Cleaning the machine

The machine may become heavily soiled, particularly when mowing and scarifying wet grass that subsequently also becomes partly mixed with earth. In such cases it is recommended that the rotor and container are thoroughly cleaned by spraying them with water.

The rotor and hood can be accessed as follows:

- Open container and secure with hook (Fig. 8-1)
- The cover flap is then opened towards the rotor compartment that can now be accessed and cleaned (Fig. 8-2)
- Remove retaining bolts on hood (Fig. 8-3)
- Tilt hood slowly backwards until the limit stop is reached (Fig. 8-4/1)

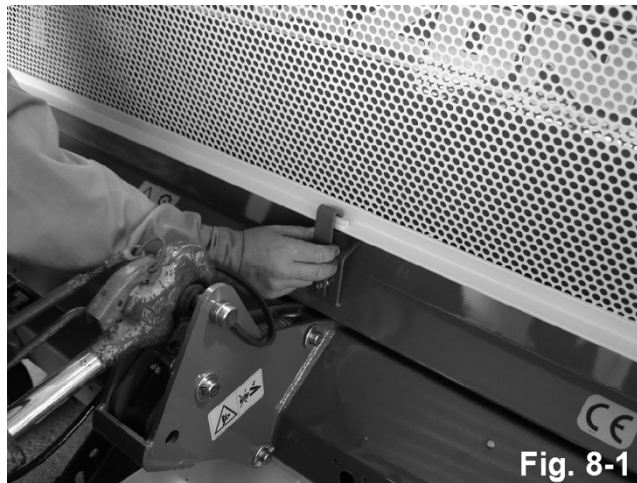
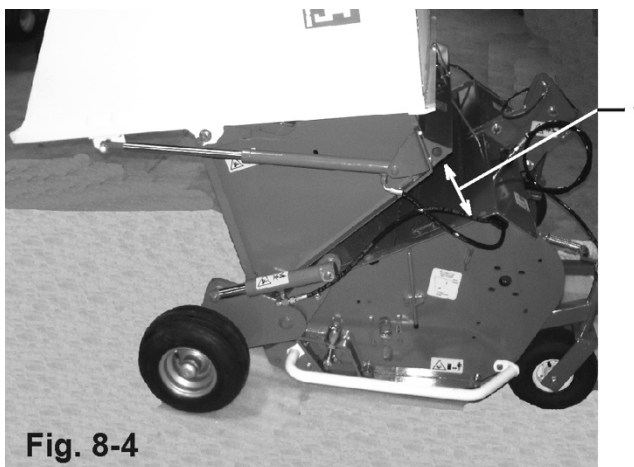


Fig. 8-1



Fig. 8-2



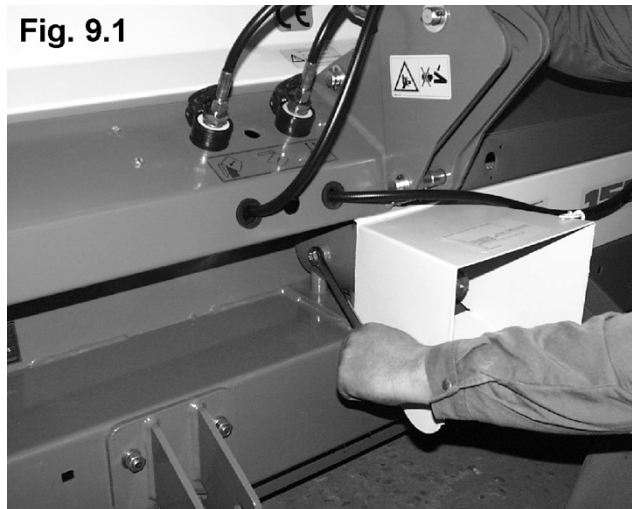
9 Maintenance and care

Due to its design, the Groundkeeper / HorseHopper is extensively maintenance-free. However, the following points must be observed.

9.1 Oil level in the angular gearbox

Although the machine's angular gearbox does not require lubrication servicing, the oil level must be checked once annually. To do this, the inspection screw mounted on the side of the gearbox must be opened (Fig. 9.1) and the oil level checked to ensure it reaches the bottom edge of the hole. The gearbox must be topped up with SAE 90 transmission fluid (contains 0.45l), if necessary.

Fig. 9.1



9.2 Lubrication points

Depending on the intensity of work, the following areas should be regularly lubricated with multipurpose grease:

- Guide wheel fork bearing (fig. 9.2-1).
- Rotor bearings (the V-belt protection on the left-hand side of the machine must be removed beforehand (WAF 13) (Fig. 9.2-2, 9.2-3),
- Rear cage roller bearing (Fig. 9.2-4).
- Shaft bearing (Fig. 9.2-5)
- PTO shaft.
- (if the front cage roller accessory is used, also lubricate the corresponding bearings).

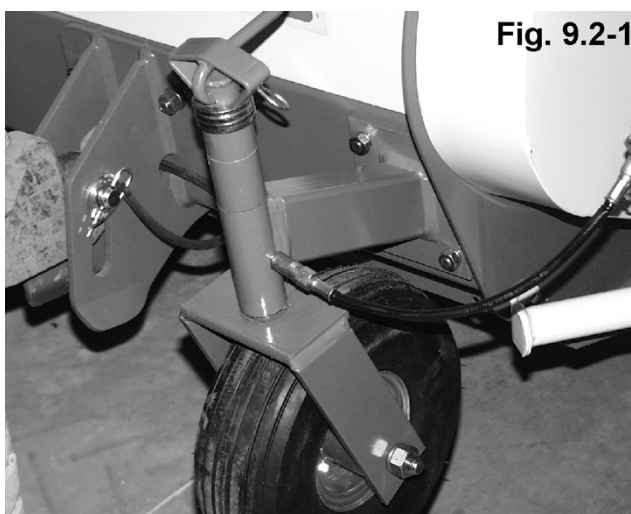


Fig. 9.2-4

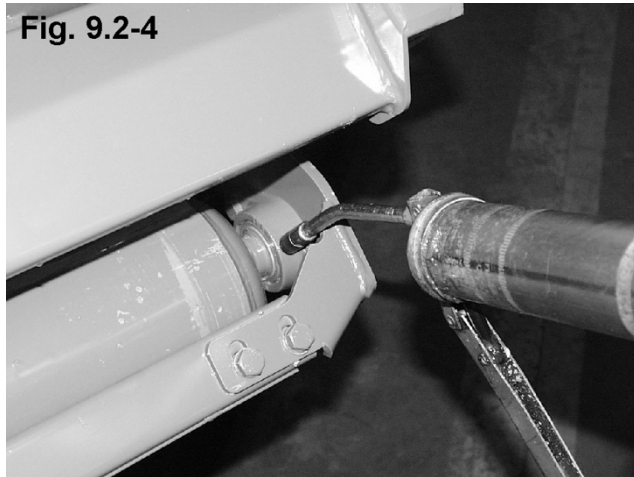
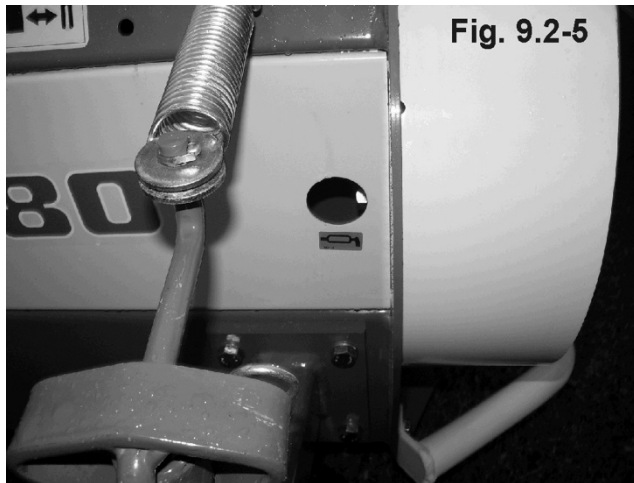


Fig. 9.2-5



9.3 Extended periods of downtime

If the machine is not used for an extended period, it should be cleaned and sprayed with a suitable preservative before being stored. The function of the overload clutch which is located between the angular gearbox and belt drive, should be checked by an authorised workshop before the machine is brought back into operation.

9.4 Tyre pressure

Front guide wheels: 1,5 bar



When removing or fitting tyres, the tyres must always be fully deflated (a split tyre wall can fly apart with explosive force during removal).

NOTES

This image shows a full page of white paper with horizontal dotted lines. The lines are evenly spaced and run across the width of the page, providing a guide for handwriting or typing. There are no margins, text, or other markings on the page.



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