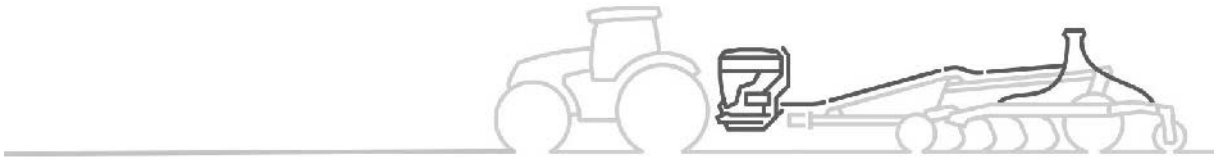
# Operating manual

# AMAZONE

# XTender 4200

## Rear-mounted hopper



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SmartLearning

**Please read this operating manual before initial operation. Keep it in a safe place for future use!**

**en**

# READING THE INSTRUCTION

*manual and to adhere 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 would 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 a good success one should go into the mind of a thing or make himself familiar with every part of the machine and to get acquainted with its handling. Only this way, you would 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

Please insert the identification data of the implement. The identification data are arranged on the rating plate.

Implement ID no.:
(10-digit) _____

Type: _____

Basic weight (kg): _____

Permissible total weight (kg): _____

Year of manufacture: _____

## Manufacturer's address

AMAZONEN-WERKE

H. DREYER SE & Co. KG

Postfach 51

D-49202 Hasbergen, Germany

Tel.: + 49 (0) 5405 501-0

E-mail: amazone@amazone.de

## 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

Document number: **Fehler! Verweisquelle konnte nicht gefunden werden.**

Compilation date: 11.22

## Foreword

Dear Customer,

You have chosen one of the quality products from the wide product range of AMAZONEN-WERKE, H. DREYER SE & Co. KG. We thank you for your trust in our products

On receiving the implement, check to see if it has been damaged during transport or if parts are missing. Using the delivery note, check that the implement has been delivered in full, including any special equipment ordered. Damage can only be rectified if problems are signalled immediately.

Before initial operation, read and observe this operating manual, and particularly the safety information. Only after careful reading will you be able to benefit from the full scope of your newly purchased implement.

Please ensure that all the implement operators have read this operating manual before they put the implement 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 implement.

## User evaluation

Dear Reader,

We update our operating manuals regularly. Your suggestions for improvement help us to create ever more user-friendly operating manuals.

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# 1 User information

The User Information section provides information on use of the operating manual.

## 1.1 Purpose of the document

This operating manual

- describes the operation and maintenance of the implement.
- provides important information on safe and efficient handling of the implement.
- is an integral part of the implement and should always be kept with the implement or the towing vehicle.
- must be kept in a safe place for future use.

## 1.2 Locations in the operating manual

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

## 1.3 Diagrams

### Instructions and responses

Activities to be carried out by the user are given as numbered instructions. Always keep to the order of the instructions. The reaction to the handling instructions is given by an arrow. Example:

1. Instruction 1
   → Reaction of the implement to handling instruction 1
2. Instruction 2

### Lists

Lists without an essential order are shown as a list with bullets. Example:

- Point 1
- Point 2

### Item numbers in diagrams

Numbers in round brackets refer to the item numbers in the diagrams. The first number refers to the diagram and the second number to the item.

Example (6):
- Item 6

# 2 General safety instructions

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

## 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 implement operation.

### Obligations of the operator

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

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

The operator is obliged

- to keep all the warning symbols on the implement in a legible state.
- to replace damaged warning symbols.

### Obligations of the user

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

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

If the user discovers that a function is not working properly, then they must eliminate this fault immediately. If this is not the task of the user or if the user does not possess the appropriate technical knowledge, then they should report this fault to their superior (operator).

## Risks in handling the implement

The implement has been constructed to the state-of-the art and the recognised rules of safety. However, operating the implement may cause risks and restrictions to

- the health and safety of the user or third persons.
- the implement itself.
- other property.

Only use the implement

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

Eliminate any faults immediately which could impair safety.

## Guarantee and liability

Our "General conditions of sales and delivery" are always applicable. These shall be available to the operator, at the latest on conclusion of the contract. Guarantee and liability claims for damage to people or property will be excluded if they can be traced back to one or more of the following causes:

- Improper use of the implement
- Improper installation, commissioning, operation and maintenance of the implement
- Operation of the implement with defective safety equipment or improperly attached or non-functioning safety and protective equipment
- Non-compliance with the instructions in the operating manual regarding commissioning, operation and maintenance
- Unauthorised design changes to the implement
- Insufficient monitoring of implement parts which are subject to wear
- Improperly executed repairs
- Disasters due to the effects of foreign objects and force majeure.

## 2.2 Representation of safety symbols

Safety instructions are indicated by the triangular safety symbol and the highlighted signal word. The signal word (DANGER, WARNING, CAUTION) describes the severity of the risk, and carries the following meaning:

**DANGER**

**Indicates a direct threat at high risk which will result in death or most serious bodily harm (loss of limbs or long-term harm), should it not be prevented.**

**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 (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 cause 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 implement handling.

Non-compliance with these instructions can cause faults on the implement or disturbance to the environment.

**NOTE**

Indicates handling tips and particularly useful information.

These instructions will help you to use all the functions of your implement in the best way possible.

## 2.3 Organisational measures

The operator must provide the necessary personal protective equipment as per the information provided by the manufacturer of the crop protection agent to be used, such as:

- Safety glasses
- Protective shoes
- Chemical-resistant overalls
- Skin protection agents, etc.

The operation manual

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

Check all the available safety equipment regularly.

## 2.4 Safety and protective equipment

Before starting up the implement each time, all the safety and protection equipment must be properly attached and fully functional. Check all safety and protection 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 you should comply with the statutory road traffic regulations.

## 2.6 User training

Only those people who have been trained and instructed may work with/on the implement. The operator must clearly specify the responsibilities of the people charged with operation and maintenance work.

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

| Person / Activity | Person specially trained for the activity [1] | Trained person [2] | Person with specialist training (specialist workshop) [3] |
|---|---|---|---|
| Loading/Transport | X | X | X |
| Initial commissioning | — | X | — |
| Set-up, tool installation | — | — | X |
| Operation | — | X | — |
| Maintenance | — | — | X |
| Troubleshooting and fault elimination | — | X | X |
| Disposal | X | — | — |

Key: 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) People with specialist technical training shall be considered as a specialist. Due to their specialist training and their knowledge of the appropriate regulations, they can evaluate the work with which they have been charged and detect possible dangers.

Comment:

A qualification equivalent to specialist training can be obtained from several years' experience in the relevant field.

Only a specialist workshop may carry out maintenance and repair work on the implement, if such work is additionally marked "Specialist workshop". The personnel of a specialist workshop shall possess the appropriate knowledge and suitable aids (tools, lifting and support equipment) for carrying out the maintenance and repair work on the implement in a way which is both appropriate and safe.

## 2.7 Safety measures in normal operation

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

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

## 2.8 Danger from residual energy

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

Use appropriate measures to inform the operating personnel. You can find detailed information in the relevant sections of this operating manual.

## 2.9 Maintenance and repair work, fault elimination

Carry out prescribed setting, maintenance and inspection work in good time.

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

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

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

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

## 2.10 Design changes

You may make no changes, expansions or modifications to the implement without the authorisation of AMAZONEN-WERKE. This also applies when welding support parts.

Any expansion or modification work shall require the written approval of AMAZONEN-WERKE. Only use modification and accessory parts approved by AMAZONEN-WERKE so that the type approval, for example, 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 crushing, cutting, being trapped or drawn in, or impact through the failure of support parts.**

It is strictly forbidden to

- drill holes in the frame or on the running gear.
- increase the size of existing holes on the frame or the running gear.
- weld support parts.

### 2.10.1 Spare and wear parts and aids

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

Use only genuine AMAZONE spare and wear parts or the parts cleared by AMAZONEN-WERKE so that the operating permit retains its validity in accordance with national and international regulations. If you use wear and spare parts from third parties, there is no guarantee that they have been designed and manufactured in such a way as to meet the requirements placed on them.

AMAZONEN-WERKE shall accept no liability for damage caused by the use of non-approved spare and wear parts or aids.

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

## 2.13 Warning symbols and other labels on the implement

Always keep all the warning symbols of the implement clean and in a legible state. Replace illegible warning symbols. You can obtain the warning symbols from your dealer using the order number (e.g. MD 075).

### Warning symbols – structure

Warning symbols indicate danger areas on the implement and warn against residual dangers. At these points, there are permanent or unexpected dangers.

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.

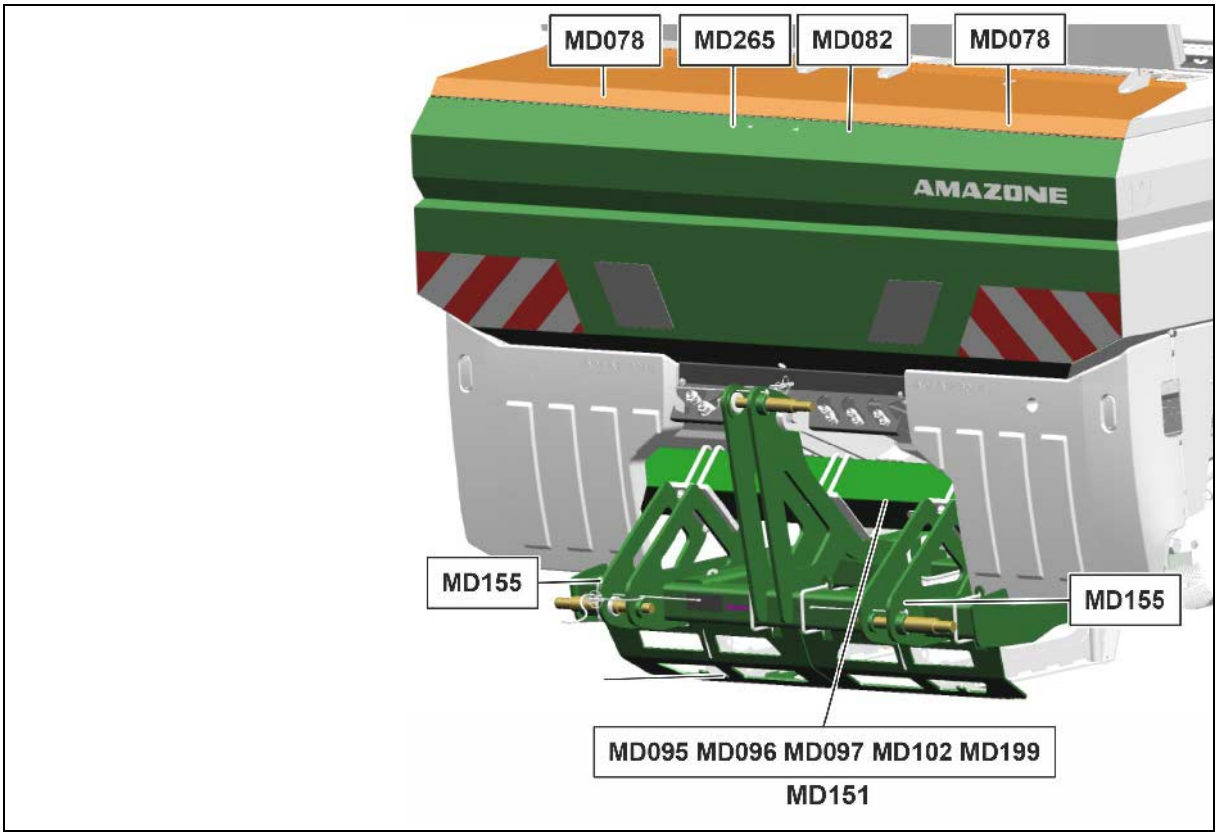
### Warning symbols – explanation

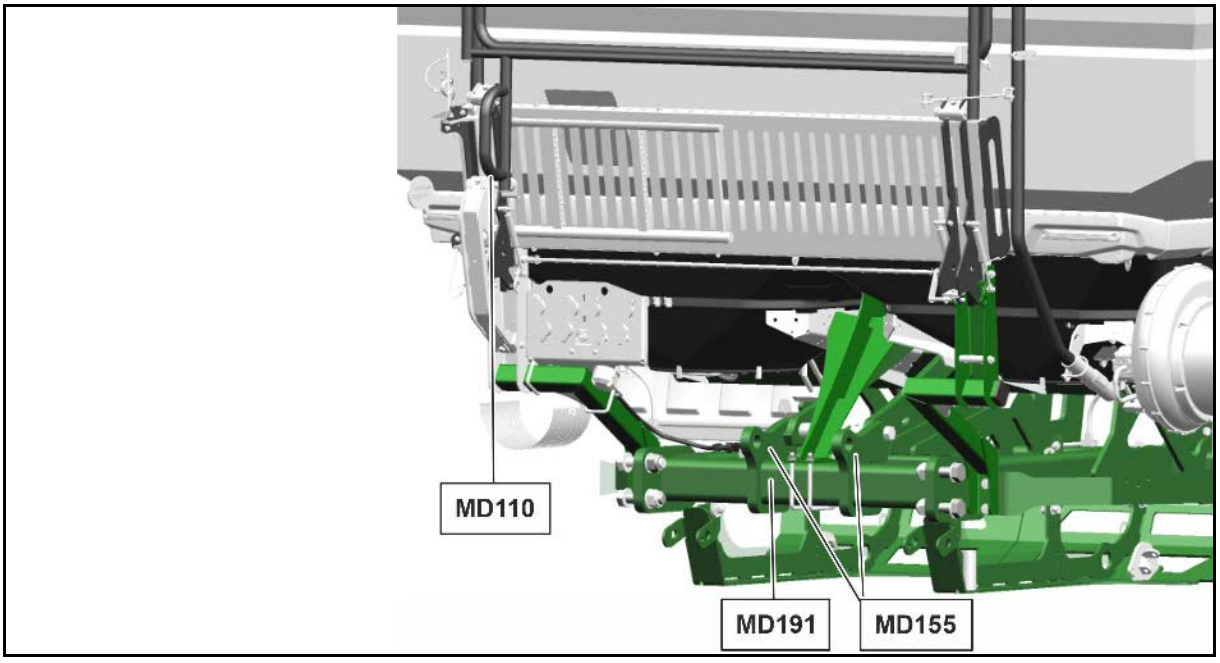
The column **Order number and explanation** provides an explanation of the neighbouring warning symbol. The description of the warning symbols is always the same and specifies, in the following order:

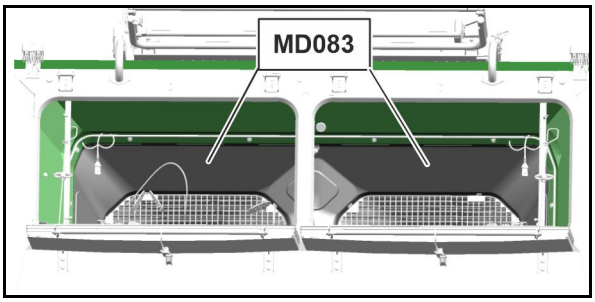
1. A description of the danger.
   For example: risk of cutting
2. The consequence of non-compliance with the risk avoidance instructions.
   For example: causes serious injuries to fingers or hands.
3. The risk avoidance instructions.
   For example: only touch implement parts when they have come to a complete standstill.

### 2.13.1 Positions of warning symbols and other labels

The following diagrams show the arrangement of the warning symbols on the implement.




MD083

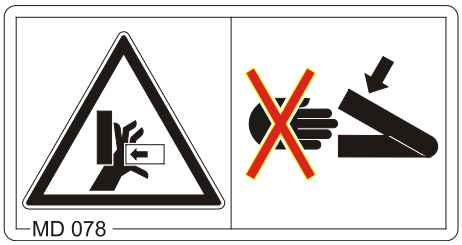
| Order number and explanation | Warning symbols |
|---|---|

**MD 078**

**Risk of contusions for fingers or hands through accessible moving machine parts!**

In these cases there is a danger of extremely serious injuries leading to the loss of body parts such as fingers or hands.

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




**MD 082**

**Risk of falling when riding the implement on treads or platforms!**

Causes serious, potentially fatal injuries anywhere on the body.

It is forbidden to ride on the implement or climb the implement when it is running. This prohibition also applies to implements with step surfaces or platforms.

Make sure that nobody is riding on the implement.

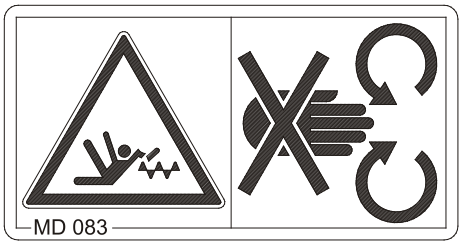

**MD 083**

**Danger of your arm or upper torso being drawn in or caught by power driven, unprotected machine elements!**

This danger can cause extremely serious injuries to the arm or upper torso.

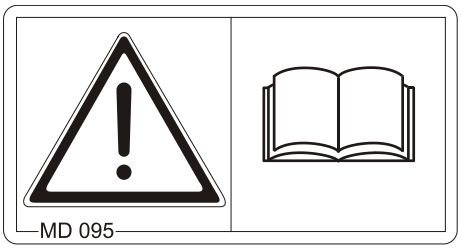
Never open or remove protective devices from driven machinery

- as long as the tractor engine is running with the PTO shaft connected / hydraulic drive engaged or
- as long as the tractor engine can be unintentionally started with the PTO shaft connected / hydraulic drive engaged.




**MD 095**

Before commissioning the implement read and observe the operating manual and the safety instructions carefully!

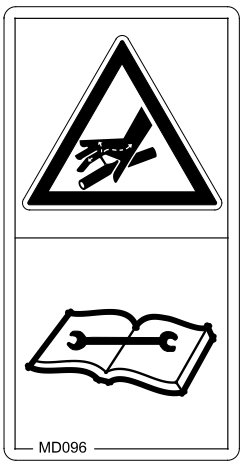


**MD 096**

**Danger from escaping high-pressure hydraulic fluid due to leaking hydraulic hose lines.**

This danger may cause serious injuries, perhaps even resulting in death, if escaping high-pressure hydraulic fluid passes through the skin and into the body.

- Never attempt to plug leaks in hydraulic hose lines with your hand or fingers.
- Read and observe the information in the operating manual before carrying out maintenance work on the hydraulic hose lines.
- If you are injured by hydraulic fluid, contact a doctor immediately.

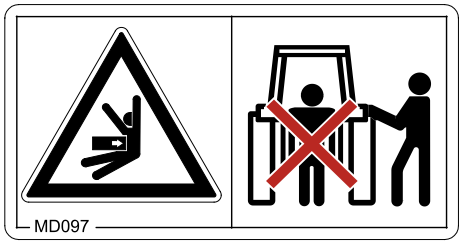



**MD 097**

**Risk of crushing the entire body by entering/remaining in the lifting area of the three-point linkage when the three-point hydraulic system is operated!**

Causes serious, potentially fatal injuries anywhere on the body.

- Personnel are prohibited from standing in the lifting area of the three-point linkage when the three-point hydraulic system is operated.
- Actuate the operating controls for the tractor's three-point hydraulic system
  - only from the designated workstation
  - under no circumstances if you are in the lifting area between the tractor and implement.

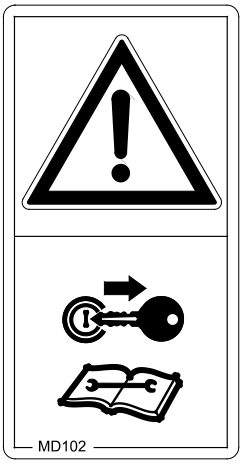



**MD 102**

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

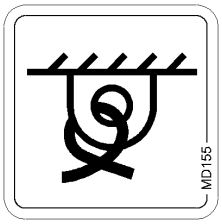
These dangers can cause extremely serious and potentially fatal injuries.

- Secure the tractor and the implement against unintentional start-up and rolling before any intervention in the implement.
- Depending on the type of intervention, read and understand the information in the relevant sections of the operating manual.



**MD 155**

This icon designates the restraint points for tieing the implement to a transport vehicle allowing the implement to be transported in a safe manner.



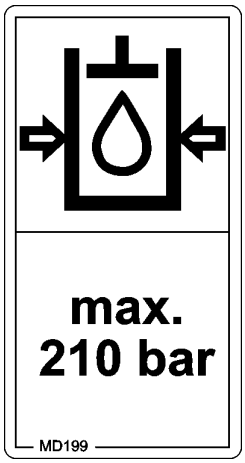

**MD 191**

**Health hazard due to radar radiation**

- When the power supply from tractor to machine is established, keep a minimum distance of 2 m from the radar sensors.


**MD 199**

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




**MD 265**

**Danger of burns due to pickling agent dust**

- Do not inhale the hazardous substance.
- Avoid contact with eyes and skin.
- Before working with substances hazardous to health, put on the protective clothing recommended by the manufacturer.
- Follow the manufacturer's safety instructions for handling the substances hazardous to health.

## 2.14 Dangers in case of non-observance of the safety instructions

Non-compliance with the safety information

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

In particular, non-compliance with the safety information could pose the following risks:

- Risk to people from working in an unsafe working environment.
- Failure of important implement functions.
- Failure of prescribed methods of maintenance and repair.
- Risk to people through mechanical and chemical influences.
- Risk to the environment through leakage of hydraulic fluid.

## 2.15 Safety-conscious working

Besides the safety information in this operating manual, the generally applicable national 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 crushing, cutting, being trapped or drawn in, or impact through inadequate roadworthiness and operational safety.**

Before starting up the implement and the tractor each time, always check their traffic and operational safety.

**CAUTION**

**Switch off the control terminal**

- before road transport.
- before adjustment, maintenance and repair work.

Risk of accident due to unintended movements of the metering unit or other implement components caused by radar pulses.

### 2.16.1 General safety instructions and accident prevention instructions

- In addition to these instructions, also comply with the generally valid national and safety and accident prevention regulations!
- The warning symbols attached on the implement provide important instructions for safe operation of the implement. Compliance with these instructions is essential for your safety!
- Before moving off and starting up the implement, check the immediate area of the implement (children). Ensure that you can see clearly.
- 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 implement.
  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 or coupled implement.

#### Coupling and uncoupling the implement

- Only connect and transport the implement with tractors suitable for the task.
- When coupling implements to the tractor's three-point hydraulic system, the attachment categories of the tractor and the implement must always be the same!
- Connect the implement to the prescribed equipment in accordance with the specifications.
- When coupling implements to the front or the rear of the tractor, the following may not be exceeded:
  - The permissible total tractor weight
  - The permissible tractor axle loads
  - The permissible load capacities of the tractor tyres
- Secure the tractor and the implement against unintentional rolling before coupling or uncoupling the implement.

- It is forbidden for people to stand between the implement to be coupled and the tractor while the tractor is approaching the implement.

  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.

- Before connecting the implement to or disconnecting the implement from the tractor's three-point hydraulic system, secure the operating lever of the tractor hydraulic system so that unintentional raising or lowering is prevented.
- When coupling and uncoupling implements, move the support equipment (if available) to the appropriate position (stability).
- When actuating the support equipment, there is a danger of injury from contusion and cutting points!
- Be particularly careful when coupling the implement to the tractor or uncoupling it from the tractor! There are nip and shear points in the area of the coupling point between the tractor and the implement.
- It is forbidden to stand between the tractor and the implement when actuating the three-point hydraulic system.
- Coupled supply lines:
  - must give without tension, bending or rubbing on all movements when travelling round corners.
  - must not chafe against other parts.
- The release ropes for quick action couplings must hang loosely and may not release themselves when lowered.
- Also ensure that uncoupled implements are stable!

## Use of the implement

- Before starting work, ensure that you understand all the equipment and actuation elements of the machine and their function. There is no time for this when the implement is already in operation!
- Wear tight-fitting clothing! There is an increased risk of loose clothing getting caught or entangled on drive shafts!
- Only place the implement in service after all protective devices have been attached and are in protective position!
- Comply with the maximum load of the connected implement and the permissible axle and drawbar loads of the tractor. If necessary, drive only with a partially filled tank.
- It is forbidden to stand in the working area of the implement.
- It is forbidden to stand in the turning and swivel range of the implement.
- There are crushing and shearing hazards on implement parts actuated by external force (e.g. hydraulically)!
- Only actuate implement parts actuated by external force if personal are maintaining an adequate safety distance to the implement!
- Secure the tractor against unintentional start-up and rolling, before you leave the tractor.

  For this:
  - Lower the implement onto the ground.
  - Apply the tractor parking brake.
  - Switch off the tractor engine.
  - Remove the ignition key.

## Implement transportation

- When using public roads, national road traffic regulations must be observed.
- Switch off the control terminal before road transport.
- Before road transport, check
  - that the supply lines are connected correctly.
  - the lighting system for damage, function and cleanliness.
  - o the brake and hydraulic system for visible defects.
  - whether the tractor parking brake is completely released.
  - the function of the brake system.
- Ensure that the tractor has sufficient steering and braking power.

  Any implements 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 tractor front 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 implement and the permissible axle and drawbar loads of the tractor.
- The tractor must guarantee the prescribed brake delay for the loaded vehicle combination (tractor plus connected implement).
- Check the brake power before moving off.
- When turning corners with the implement coupled, take the wide sweep and centrifugal mass of the implement into account.
- Before road transport, ensure sufficient side locking of the tractor lower links, when the implement is fixed to the three-point hydraulic system or lower links of the tractor.
- Before road transport, move all the swivel implement parts to the transport position.
- Before road transport, secure all the swivel implement parts in the transport position against risky position changes. Use the transport locks intended for this.
- Before road transport, secure the operating lever of the three-point hydraulic system against unintentional raising or lowering of the coupled implement.
- Before road transport, check that the required transport equipment, e.g., lighting, warning equipment and protective equipment, is correctly mounted on the implement.
- Before road transport, carry out a visual check that the top and lower link pins are firmly fixed with the linch pin against unintentional release.
- Adjust your forward speed to the prevailing conditions.
- Before driving downhill, switch to a low gear.
- Before road transport, always switch off the independent wheel braking (lock the pedals).
- Observe the maximum permissible total weight.

### 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 depressurized on both the implement and tractor sides.
- It is forbidden to block the operator controls on the tractor which are used for hydraulic and electrical movements of components, e.g. folding, swivelling and pushing movements. The movement must stop automatically when you release the appropriate control. This does not apply to equipment movements that:
  - are continuous or
  - are automatically locked or
  - require a float position or pressure position due to their function.
- Before working on the hydraulic system,
  - Lower the implement.
  - Depressurize the hydraulic system.
  - Switch off the tractor engine.
  - Apply the tractor parking brake.
  - Take out the ignition key.
- Have the hydraulic hose lines checked for proper functioning by a specialist at least once a year.
- Replace the hydraulic hose lines if they are damaged or worn. Use only genuine AMAZONE hydraulic hose lines!
- The hydraulic hose lines should not be used for longer than six years, including any storage time of maximum two years. Even with proper storage and approved use, hoses and hose connections are subject to natural aging, thus limiting the length of use. However, it may be possible to specify the length of use from experience values, in particular when taking the risk potential into account. In the case of hoses and hose lines made of thermoplastics, other guide values may be decisive.
- Never attempt to plug leaks in hydraulic hose 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. Risk 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 fuses are used that are too highly rated, the electrical system will be destroyed – risk of fire.
- Ensure that the battery is connected correctly – firstly connect the positive terminal and then connect the negative terminal. When disconnecting the battery, disconnect the negative terminal first, followed by the positive terminal.
- Always place the appropriate cover over the positive battery terminal. If there is accidental earth contact, there is a danger of explosion!
- Risk of explosion. Avoid sparking and naked flames in the area of the battery.
- The implement may be equipped with electronic components whose function is influenced by electromagnetic interference from other units. Such interference can pose risks to people, if the following safety information is not followed.
  - In the case of retrofitting electrical units and/or components on the implement, with a connection to the on-board power supply, the operator is responsible for checking whether the installation might cause faults on the vehicle electronics or other components.
  - Ensure that the retrofitted electrical and electronic components comply with the EMC Directive in the appropriate version and carry the CE mark.

### 2.16.4 Operation of the seed drill

- Observe the permissible filling quantity of the hopper!
- When filling the hopper, only use the ladder and the loading board!

  It is forbidden to ride on the implement during operation!
- When calibrating the spread rate, pay attention to the danger points from rotating and oscillating implement parts.• Do not place any parts in the hopper!
- Lock the track marker (construction-dependent) in the transport position before road transport.

### 2.16.5 Cleaning, maintenance and repair

- Only carry out cleaning, maintenance and repair work on the implement when:
  - the control terminal is switched off.
  - the drive is switched off.
  - the tractor engine is at a standstill.
  - the ignition key has been removed.
- Regularly check the nuts and bolts for a firm seat and retighten them as necessary.
- Secure the raised implement or raised implement parts against unintentional lowering before performing any cleaning, maintenance or repair work on the implement!
- When replacing work tools with blades, use suitable tools and gloves.
- Dispose of oils, greases and filters in the appropriate way.
- Disconnect the cable to the tractor generator and battery, before carrying out electrical welding work on the tractor and on attached implements.
- Spare parts must meet at least the specified technical requirements of AMAZONEN-WERKE! This is ensured through the use of original AMAZONE spare parts.

# 3 Loading and unloading

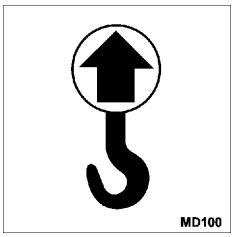
**WARNING**

**Risks of being crushed and/or struck if the implement unintentionally falls down from raised position!**

- Be sure to use the marked lashing points to attach the load-bearing equipment when you load and unload the implement with lifting gear.
- Use load-bearing equipment with a respective load capacity of at least 400 kg.
- Never remain in or enter the area below the raised implement.

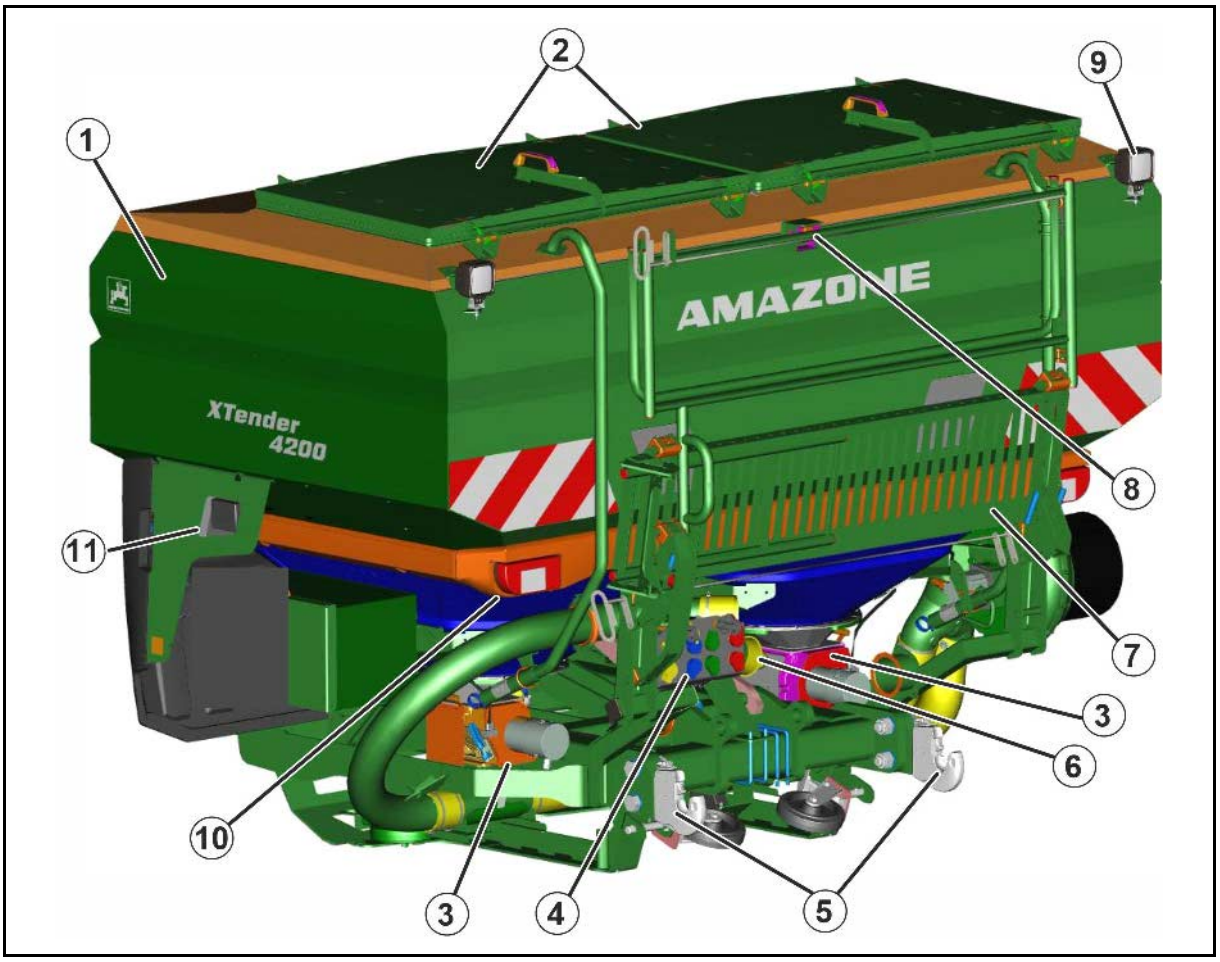
## Loading using a lifting crane:

This symbol indicates attachment points for lifting gear for loading the implement.

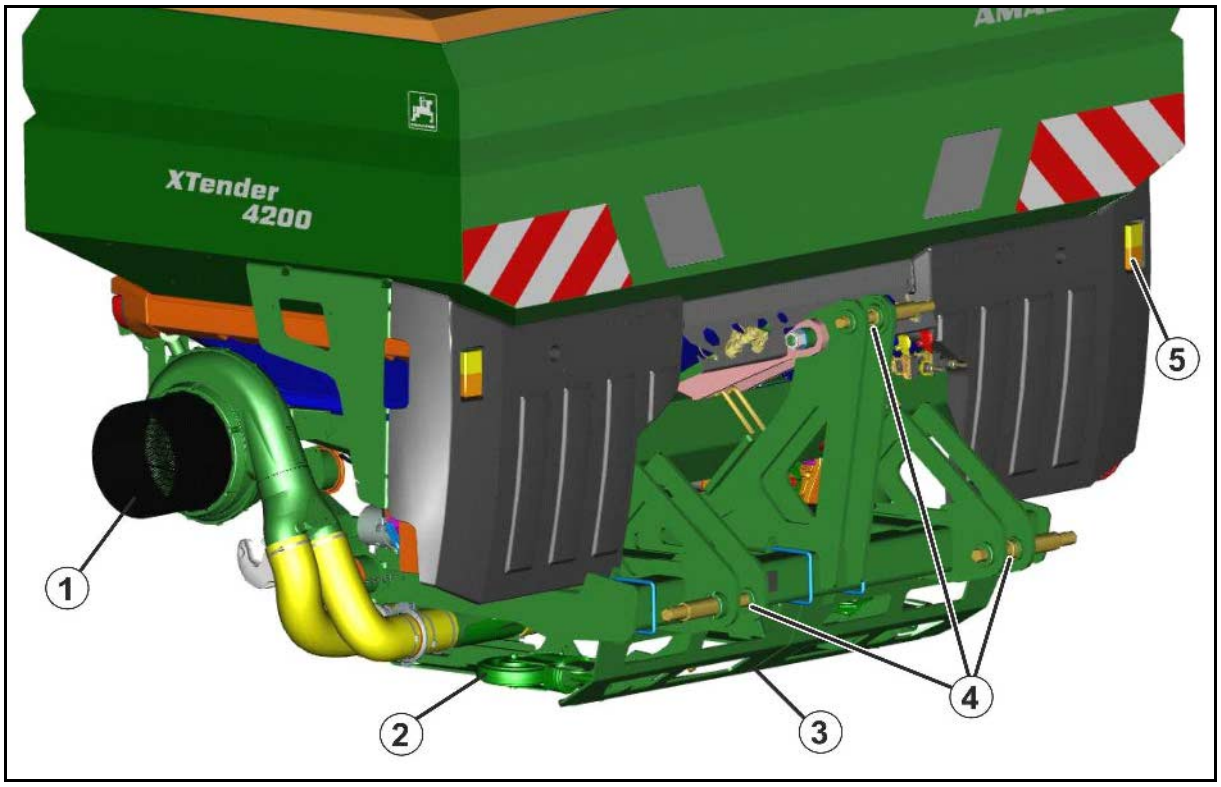


# 4 Product description

## 4.1 Overview of assembly groups

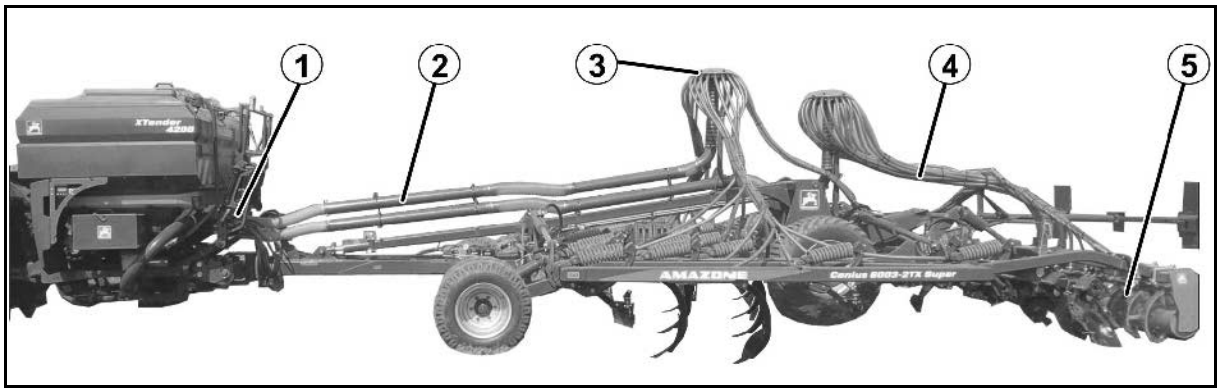



(1) Tank
(2) 2 pressure lids
(3) Metering unit
(4) Connections for the supply line from the Cenius
(5) Coupling points for mounting the Cenius
(6) Connection for the seed tube hoses
(7) Folding loading board (in different versions)
(8) Rear camera (optional)
(9) Rear lighting
(10) Work lights (optional)
(11) TwinTerminal (optional)




(1) Blower fan
(2) Parking device (rolls) with brakes
(3) Parking device (runners) (optional)
(4) 3-point hitch
(5) Front lighting

## Delivery section




Here a double delivery section

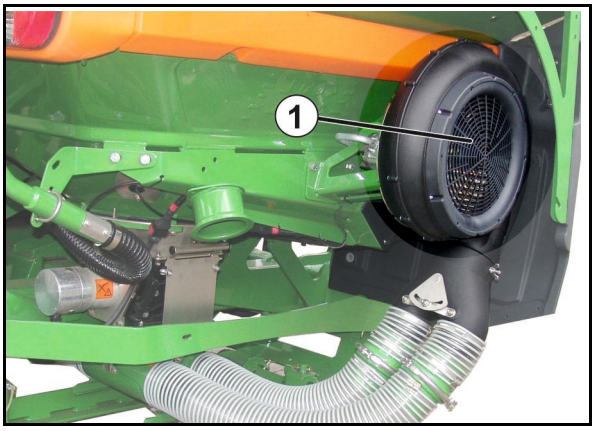
(1) Implement connection
(2) Supply line
(3) Segment distributor head
(4) Feed hose
(5) Baffle plate for catch crops

## 4.2 Thread pack with machine documentation

The thread pack with the implement documentation is behind the left mud flap.

## 4.3 Safety and protective equipment

(1) Blower fan guard

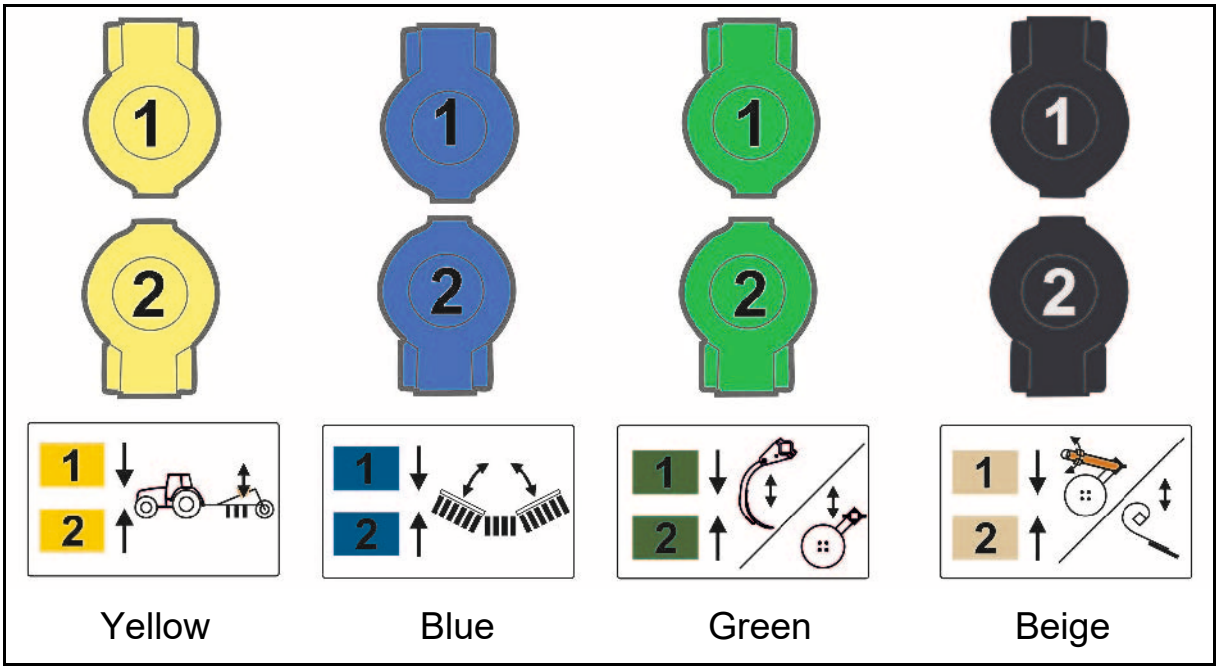



- Railing on the loading board XTender 4200


- Guard screen in the hopper

## 4.4 Supply lines between the tractor and the implement

- Hydraulic hose lines (depending on the equipment)
- Cable with connection for lighting
- ISOBUS connection cable.
- Pneumatic brake system
  - o Brake line with coupling head (yellow)
  - o Supply line with coupling head, red



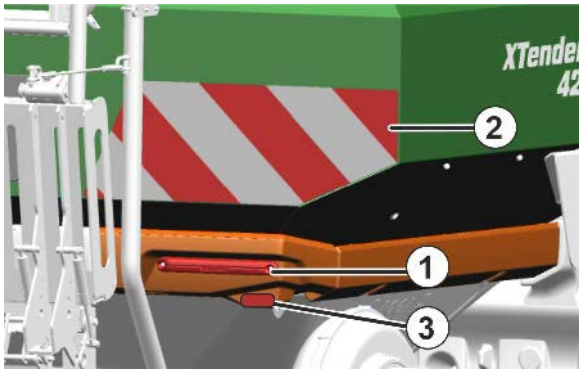
## 4.5 Transportation equipment

### Rear lighting system

(1) 2 rear lights, brake lights, and turn indicators

(2) Rear warning signs

(3) Reflectors




### Front lighting system

(1) Limiting lights and turn indicators

(2) Front warning signs

Connect the lighting system to the 7-pin tractor socket via the pin.


Connect the lighting system to the 7-pin tractor socket via the pin.

Connect the lighting system for the soil tillage implement to the 7-pin socket of the XTender using the plug.

## 4.6 Proper use

The implement

- is designed only for conventional usage for agricultural work and is suitable for the metering of seed and fertiliser.
- is mounted on the tractor's three-point hydraulic system and is operated by one person.
- is used as a coupling device for
  - Amazone Cenius-2TX, Catros-2TX, Catros-2TS, Certos-2TX soil tillage implements.
  - other suitable agricultural implements that fulfil the requirements for the coupling device and drawbar load.
- Slopes can be travelled
  - Across the slope

    | | |
    |---|---|
    | Direction of travel to the left | 15 % |
    | Direction of travel to the right | 15 % |

  - Up and down the slope

    | | |
    |---|---|
    | Up the slope | 15 % |
    | Down the slope | 15 % |

"Intended use" also covers:

- Compliance with all the instructions in this operating manual.
- Execution of inspection and maintenance work.
- Exclusive use of genuine AMAZONE spare parts.

Other uses to those specified above are forbidden and shall be considered as improper.

For any damage resulting from improper use

- the operator bears the sole responsibility,
- AMAZONEN-WERKE accepts no liability.

## 4.7 Danger areas and danger points

The danger area is the area around the implement in which people can be caught

- by unintentional rolling of the tractor and the implement.

Within the implement danger area, there are danger points with permanent or unexpected function-related risks. Warning symbols indicate these danger points and warn against residual dangers, which cannot be eliminated for construction reasons. Here, the special safety regulations from the corresponding section are applicable.

No-one may stand in the implement danger area:

- as long as the tractor engine is running with a connected universal joint shaft/hydraulic system.
- as long as the tractor and implement are not protected against unintentional start-up and running.

The operating person may only move the implement or switch or drive the tools from the transport position to the working position or vice-versa when there is no-one in the implement danger area.

Danger points exist:

- between the tractor and the implement, particularly when coupling and uncoupling.
- when climbing onto the driven implement.
- under the implement or implement parts when raised and not secured.

## 4.8 Rating plate

### Machine rating plate

(1) Implement number
(2) Vehicle identification number
(3) Product
(4) Permissible technical implement weight
(5) Model year
(6) Year of manufacture

## 4.9 Technical data

| | XTender 4200 |
|---|---|
| Overall width | 2950 mm |
| Total length | 1980 mm |
| Filling height | 2120 mm |
| Tank size | 4200 l |
| Divisibility of the hopper | 50 % / 50 % |
| Lower link hitch on the tractor | Kat. 3 / 4N |
| Lower link hitch on the implement | Kat. 3 / 4N |
| **d**<br>Distance between lower link connection point and the centre of gravity | 900 mm |
| Maximum trailer load | 15000 kg |
| **$G_H$**<br>Total weight of rear-mounted implement plus drawbar load | (with full use of the payload) |
| Cenius 4003/5003-2TX | 8130 kg |
| Cenius 6003/7003-2TX | 8509 kg |
| Certos 4000/5000-2TX | 9830 kg |
| Certos 6000/7000-2TX | 10207 kg |
| Catros 7003/8003-2TX | 10774 kg |
| Catros 9003-2TX | 11151 kg |
| Catros-2TS | 10396 kg |

### 4.9.1 Payload

| | | | | | | |
|---|---|---|---|---|---|---|
| **Payload** | = | **Permissible axle load** | + | **Permissible drawbar load** | - | **Basic weight** |

**DANGER**

**Exceeding the permitted payload is prohibited.**

**Risk of accident because of unstable driving conditions.**

Carefully determine the payload, and therefore the permitted filling amount for your machine. Not all filling media can be used to fill the tank completely.

- Refer to the implement rating plate for the values for the permissible axle load and the permissible drawbar load.
- Weigh the empty implement to determine the basic weight.

## 4.10 Necessary tractor equipment

For the implement to be operated as intended, the tractor must fulfil the following requirements:

### Tractor power

| | |
|---|---|
| maximum | • 440 kW / 600 HP |
| required | • Depending on the soil tillage implement |

### Electrical equipment

| | |
|---|---|
| Battery voltage: | • 12 V (volts) |
| Lighting socket: | • 7-pin |

### Hydraulic system

| | |
|---|---|
| Maximum operating pressure: | • 210 bar |
| Tractor pump capacity: | • at least 30 l/min at 150 bar with blower fan drive via tractor control unit |
| Implement hydraulic fluid: | • HLP68 DIN 51524<br>The implement hydraulic fluid is suitable for the combined hydraulic fluid circuits of all standard tractor brands. |
| Control units: | • see on page 42. |

### Three-point hitch

- The lower links of the tractor must have lower link hooks.
- The top links of the tractor must have top link hooks.

## 4.11 Noise production data

The workplace-related emission value (acoustic pressure level) is 74 dB(A), measured in operating condition at the ear of the tractor driver with the cab closed.

Measuring unit: OPTAC SLM 5.

The noise level is primarily dependent on the vehicle used.

# 5 Layout and function


The XTender is coupled to the tractor using the 3-point hitch.

The XTender is equipped with a mount at the rear to be able to couple a suitable implement using the tensioned crosspiece.

With this combination, the spreading material (seed or fertiliser) can be spread during soil tillage.

To achieve this, the two-part hopper has a metering unit for each partition, which meters the spreading material through the sluice into the conveyor section.

The compressed air from the blower fan carries the spreading material to the distributor.

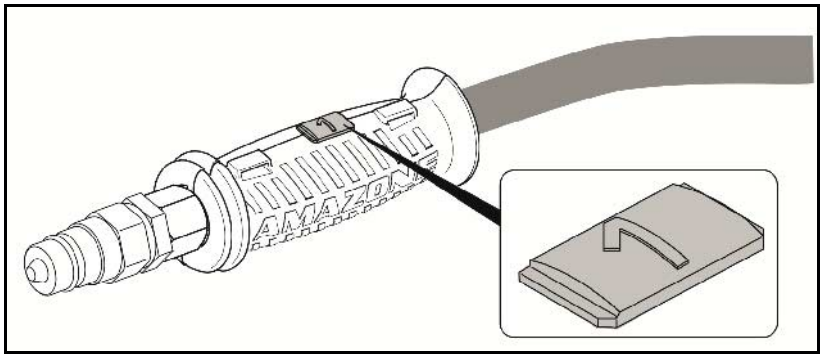
From there, the spreading material is distributed across the working width.

The XTender can be equipped with one conveyor section for spreading one spreading material or with two conveyor sections for spreading two different spreading materials.

## 5.1 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!

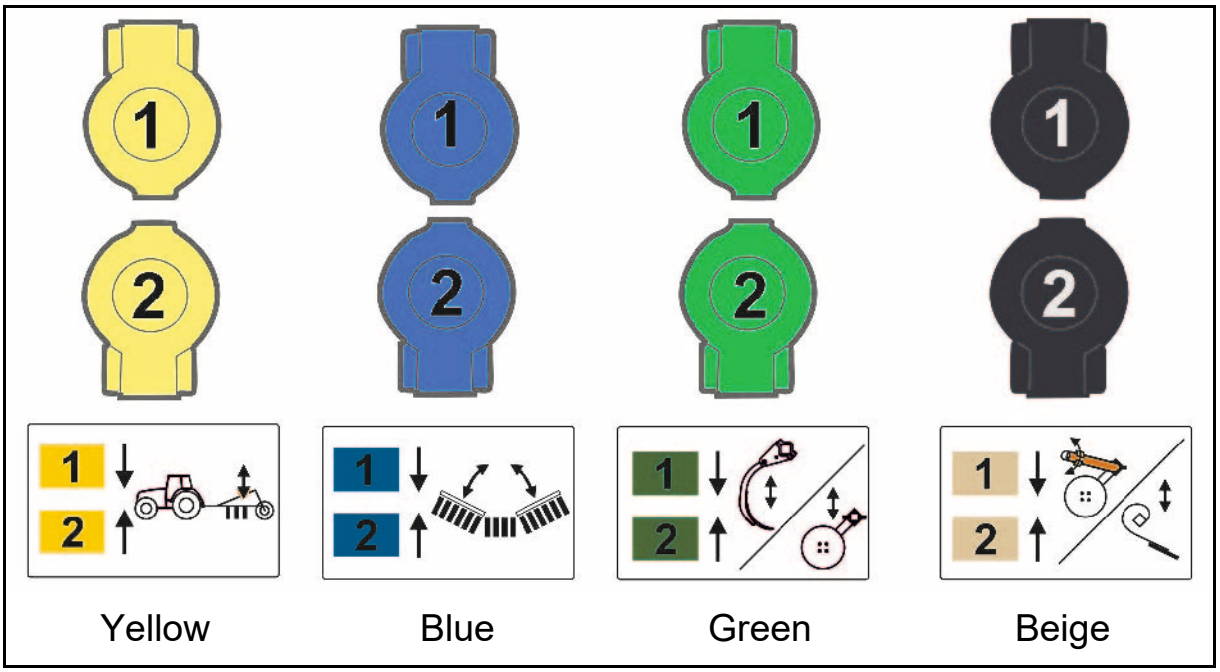


  Films are stuck on the implement for the markings that illustrate the respective hydraulic function.

- 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 |  |

| Marking | | Function | | | Tractor control unit | |
|---|---|---|---|---|---|---|
| Yellow | 1 |  | Running gear/drawbar | Move into working position | Double acting |  |
| | 2 | | | Move into headlands position / into transport position | | |
| Blue | 1 |  | Machine | Unfolding | Double acting |  |
| | 2 | | | Fold in | | |
| Green | 1 |  | Working depth | Enlarging | Double acting |  |
| | 2 | | | Reducing | | |
| Beige | 1 |  | Working depth of the levelling unit | Enlarging | Double acting |  |
| | 2 | | | Reducing | | |
| Red | 1 |  | Blower fan | | Single-acting |  |
| Red | T | Pressure-free return flow | | | | |




**WARNING**

**Danger of infection from escaping hydraulic fluid at high pressure!**

When coupling and uncoupling the hydraulic hose lines, ensure that the hydraulic system is depressurised on both the implement and tractor sides.

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

T

**Maximum permissible pressure in the oil return:** 5 bar

Therefore, do not connect the oil return to the tractor control unit, but rather to a pressure-free oil return with a large plug coupling.

**WARNING**

**Only use DN16 lines for the oil return and select short return paths.**

**Only apply pressure to the hydraulic system when the free return line is coupled correctly.**

Install the supplied coupling sleeve to the pressure-free oil return.

### 5.1.1 Coupling the hydraulic hose lines

**WARNING**

**Risk of being crushed, cut, caught, drawn in or struck due to faulty hydraulic functions when the hydraulic hose lines are connected incorrectly!**

When coupling the hydraulic hose lines, observe the coloured markings on the hydraulic connectors.

- Check the compatibility of the hydraulic fluids before connecting the implement to the hydraulic system of the tractor.
  Do not mix any mineral oils with biological oils.
- Observe the maximum approved hydraulic fluid pressure of 210 bar.
- Only couple clean hydraulic connectors.
- Push the hydraulic connector(s) into the hydraulic sleeves until you feel them lock.
- Check the coupling points of the hydraulic hose lines for a correct, tight seat.

1. Put the tractor control unit into float position (neutral).
2. Clean the hydraulic connectors of the hydraulic hose lines before coupling them.
3. Connect the hydraulic hose line(s) to the tractor control unit(s).

### 5.1.2 Uncoupling the hydraulic hose lines

1. Put the tractor control unit into float position (neutral).
2. Release the hydraulic connectors from the hydraulic sleeves.
3. Attach the hydraulic plugs to the parking couplings.

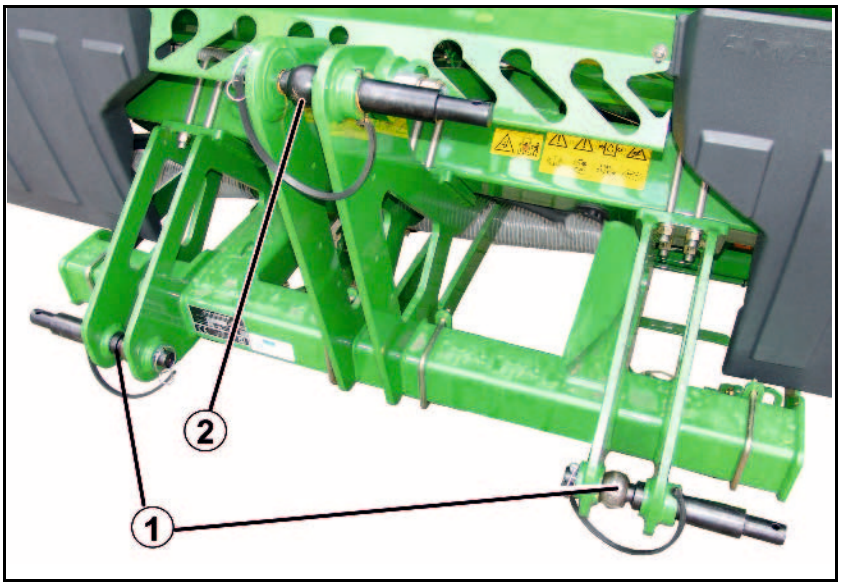
## 5.2 Three-point mounting frame

The frame of the implement is designed such that it meets the requirements and dimensions of a Category 3 or 4N three-point hitch.

(1) Lower coupling points

(2) Upper coupling point

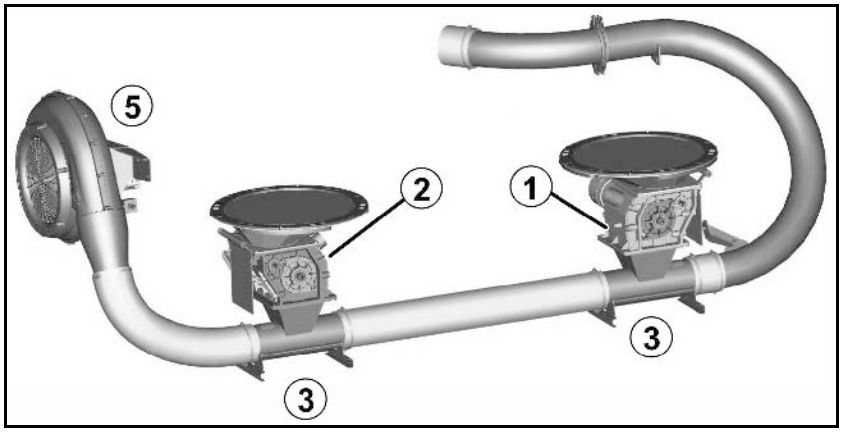
Pins for mounting on tractors with Category 3 or 4N coupling points with linch pin for securing the lower link and top link.



## 5.3 Conveyor sections

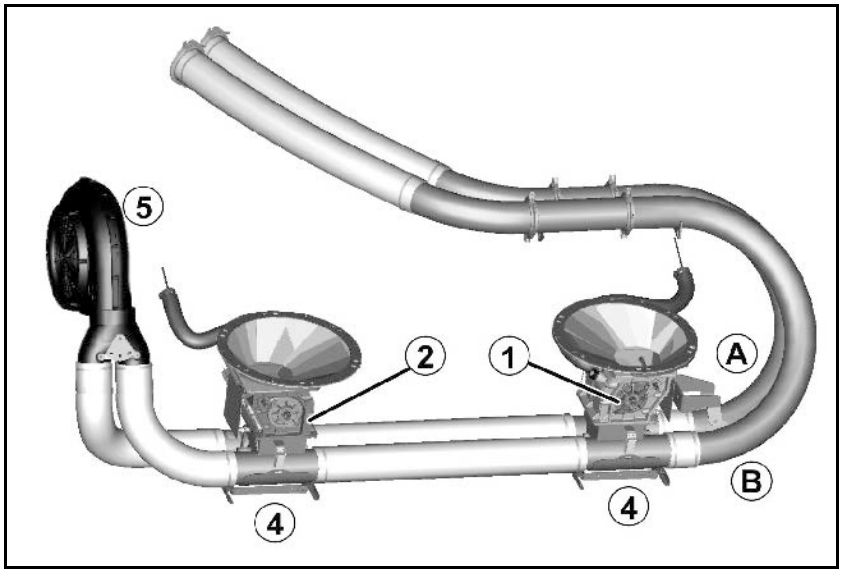
### 5.3.1 Single conveyor section

Same product in both parts of the hopper




### 5.3.2 Double conveyor section

Different products (e.g. fertiliser, seed)




(1) Hopper 1 with metering unit 1

(2) Hopper 2 with metering unit 2

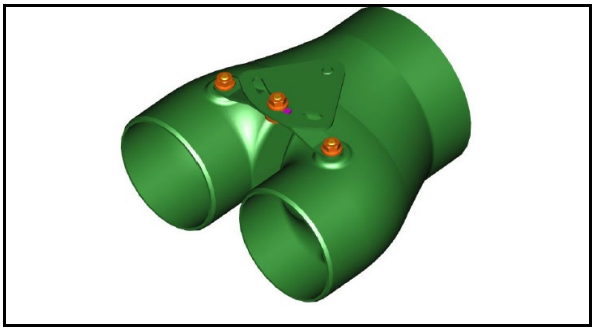
(3) Single sluice

(4) Double sluice for delivery section A and B

(5) Blower fan

Adjustable air distributor for the double delivery section.

When spreading fine seeds and fertiliser, use the maximum air current for transporting the fertiliser.

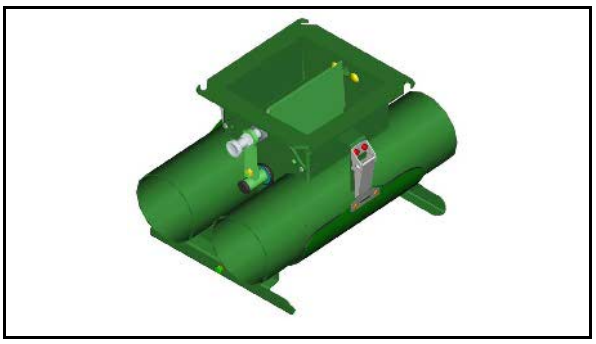


### 5.3.3 Sluices

The sluices are equipped with a calibration flap and a holder for the calibration sack. Mechanical one-sided switching is possible with the double sluice.

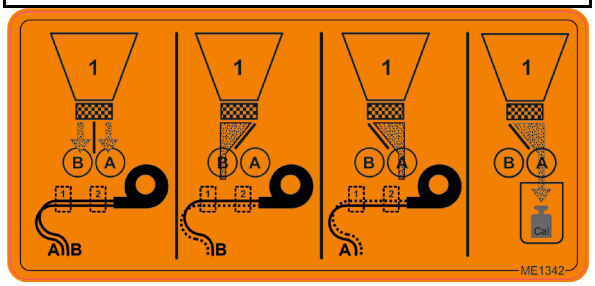
Single sluice on single conveyor section

Double sluice with setting flap and setting lever on double conveyor section

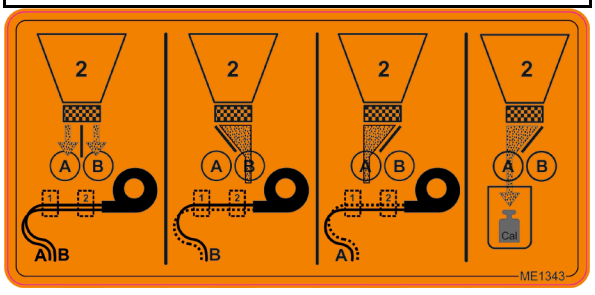


Double sluice:

Hopper 1




Hopper 2




Depending on the position of the setting lever, the respective double sluice coveys from hopper 1 and 2 in conveyor section A or / and B.

Select conveyor section A for calibration.

## 5.4 Hopper

The hopper has two separate chambers, to which air conveying pressure is applied during operation.

(1) Hopper 1

(2) Hopper 2

The chambers can be filled with the same or with different products.


The hopper covers seal the hopper pressure-tight.

Viewing window at the front and rear show the fill level in the hopper.

The charging sieves serve

- as protection against accidental contact with the metering unit
- as protection against foreign particles and fertiliser clumps when filling

There is a fill level sensor in the hopper with height-adjustable attachment.

## 5.5 Loading board XTender 4200

Loading board and ascent can be folded.

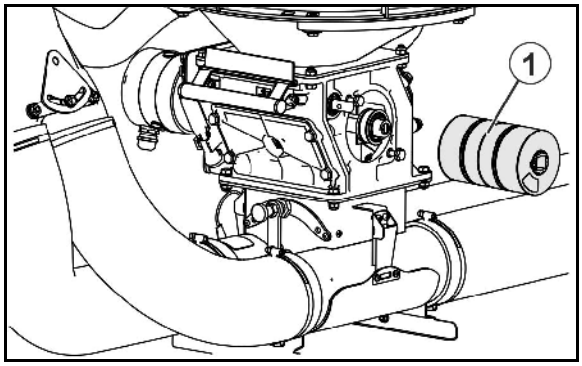

Push the ascent under the maintenance platform into transport position and secure with a linch pin.

## 5.6 Metering

A metering unit is installed under each chamber.

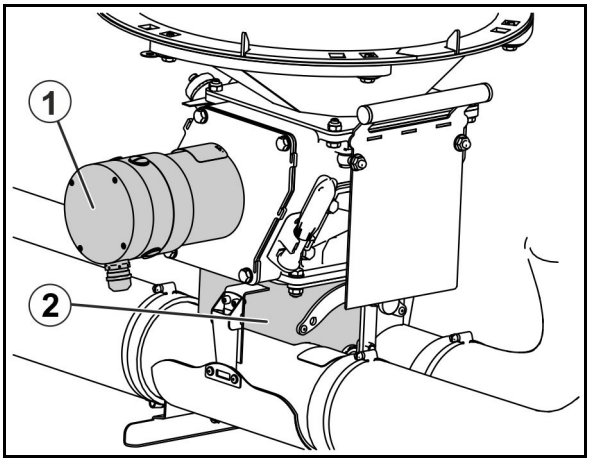
The seed is metered by a metering roller in the metering unit.

The metering roller (1) can be replaced.




The metering roller is driven by an electric motor (1) (full metering).

The metered material falls into the sluice (2) and is directed by the air current to the distributor head and then on to the spreading elements.




The speed of the metering roller

- is determined when calibrating the spread rate.
- determines the spread rate.
  The higher the speed of the electric motor, the greater the spread rate.
- automatically adjusts to changing working speeds.
- can be increased during operation by the press of a button on the control terminal when the soil changes from normal to heavy.

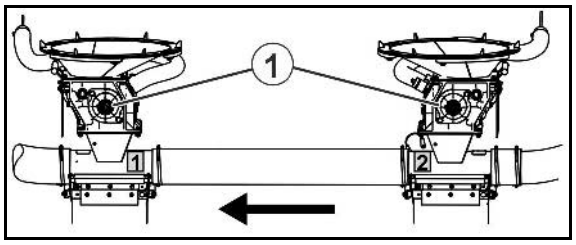
The working speed is determined e.g. by pulses from the radar. Other sources are also possible (see control terminal operating manual).

As soon as the implement is raised when turning at the end of a field, the electric motor switches off and the metering roller comes to a halt.

## 5.6.1 Metering – Two chamber system

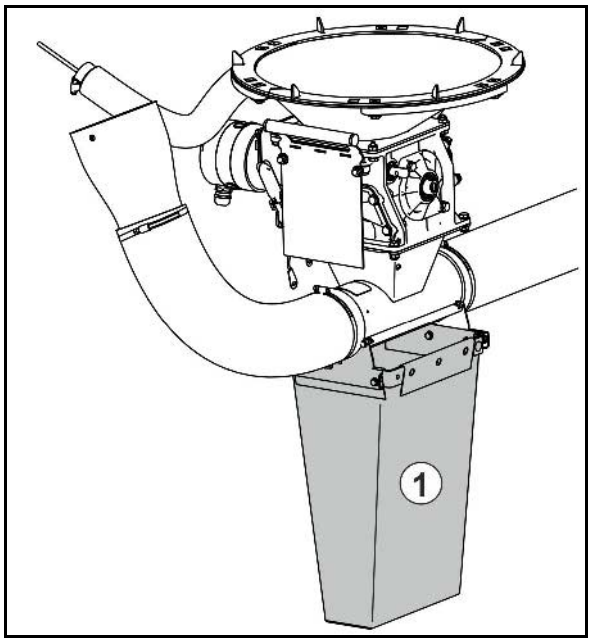
One metering unit (1) is located under each chamber of the two chamber system.

The metering units are numbered. Metering unit no. 1 is connected to the front chamber.

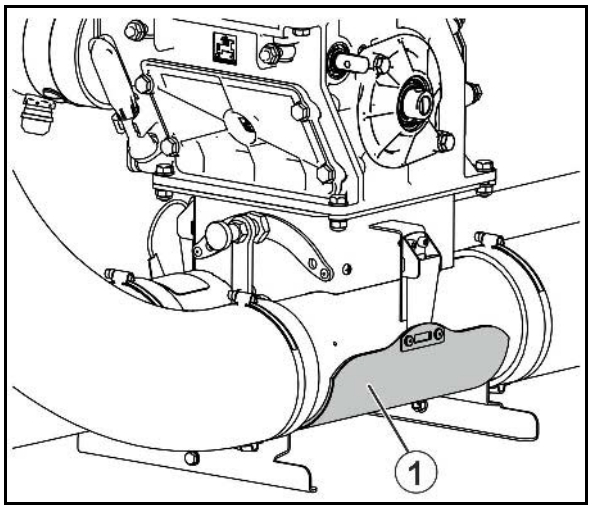



When calibrating the spread rate, the metered material falls into the collection bag through an opening (1).

The calibration procedure is performed consecutively on both metering units.




A flap (1) closes the opening.



## 5.6.2 Calibrating the metering system

By calibrating the metering unit, the required speed for the metering roller and therefore the desired spread rate is determined.

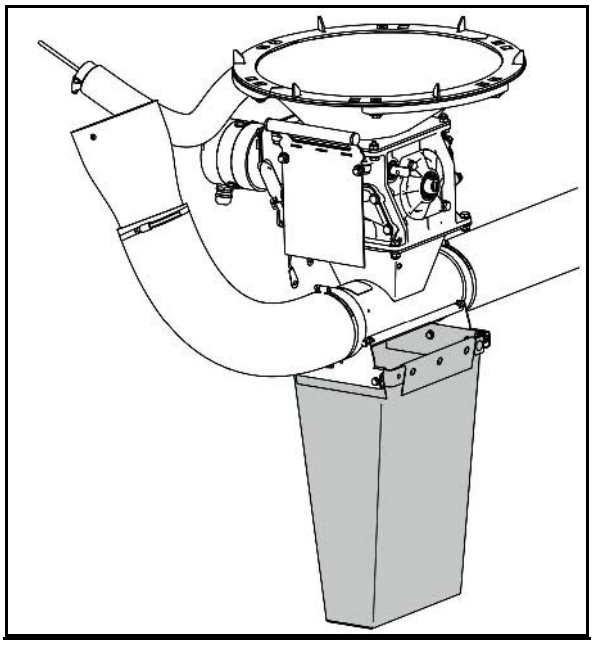
The calibration procedure simulates the later field pass. The weight of the collected metered quantity is required.

The calibration procedure must be repeated in all cases. The required spread rate is usually achieved during the second calibration procedure. Otherwise, repeat the calibration procedure until the required spread rate is achieved.

Always perform a calibration procedure

- during the initial operation
- when changing the sort
- if the seed type is identical, but the grain size, grain shape, specific weight and dressing are different
- after replacing the metering roller
- if the hopper takes more/less time than expected to empty. The actual spread rate then does not correspond with the spread rate determined by the calibration procedure.

The metered material produced during calibration is collected in a collection bag and weighed.



A digital scale is include in the scope of delivery.


The symbol marks the holder for the digital scale. The holder is used to hang the digital scale during the calibration procedure.

The communication with the control terminal in the tractor cab takes place through the TwinTerminal (optional). The TwinTerminal is located in the metering area and saves the tractor driver the walk over to the tractor cab, e.g. when starting the calibration procedure or entering the collected calibrated quantity.

Also during residual emptying of the hopper, the metering roller motor, which drives the metering roller in the metering unit, is switched on and off using the TwinTerminal. Like with the calibration test, the metered material is collected in a collection bag.

For a more detailed description, refer to the software operating manual.

## 5.6.3 Seed pre-metering

The seed pre-metering, which meters the seeds in the air current before the implement starts up, can be switched on using the control terminal (e.g. AMATRON 3).

The symbol marks the holder for the digital scale. The holder is used to hang the digital scale during the calibration procedure..

The run time of the seed pre-metering is adjustable.

### Start-up ramp

The "start-up ramp" can be adjusted on the control terminal, and is used to adjust the spread rate for the acceleration of the implement, e.g., after the turning procedure.

After turning and actuating the control unit (yellow), the implement moves into working position. Seed is metered into the delivery line. The "start-up ramp" compensates for system-related seed rate reductions during the acceleration phase of the implement. The factory settings can be adapted.

For this purpose, the intended working speed set in the "Calibration menu" is used. The starting speed and the time until the probable working speed is reached can be set as a percentage of the probable working speed.

This time and the percentage value depend on the respective tractor acceleration and prevent the metering of insufficient seed during the acceleration phase.

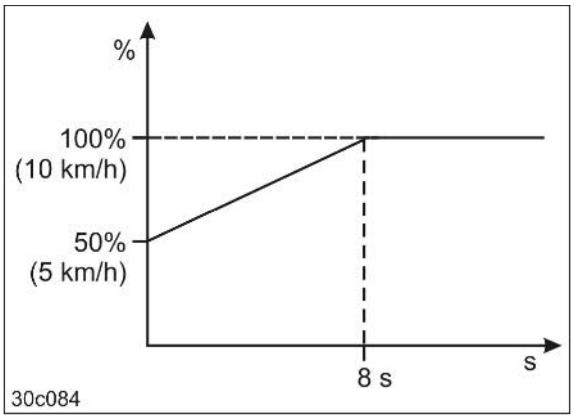
**Example**

Values that can be adjusted in the control terminal

Probable
working speed: .....10 km/h

Starting speed: .....50 %

Time to achieve working speed: ..8 seconds



## 5.6.4 Metering rollers

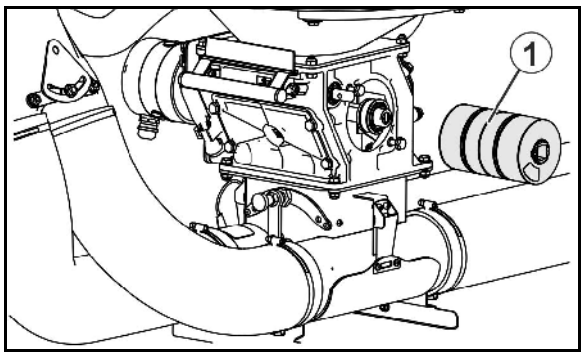
The metering roller (1) selection depends on the

- grain size,
- spread rate.

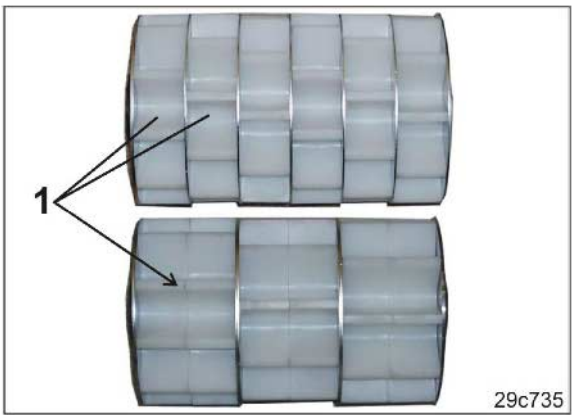
You can choose between metering rollers with various sizes of chambers or various volumes.

You must select a metering roller volume that is not too large but that is sufficient to spread the required quantity (kg/ha).

During the calibration procedure, check whether the selected metering roller achieves the spread rate.




For sowing particularly large seeds, e.g., large beans, the chambers (1) of the metering roller can be enlarged by repositioning the wheels and the plates.




The volume of some metering rollers can be modified by repositioning/removing the existing wheels and inserting metering wheels without chambers.

### 5.6.4.1 Metering roller diagram table

| Single metering rollers | | | |
|---|---|---|---|
| [cm³] | 7,5 | 20 | 40 |
| |  |  |  |
| [cm³] | 120 | 210 | 350 |
| |  |  |  |
| [cm³] | 600 | 660 | |
| |  |  | |

Metering rollers with different capacities are available.

Select the metering roller required depending on the seed or the fertiliser and the spread rate according to the following tables.

If the seed is not listed, select the metering roller of a seed that has a similar grain size.

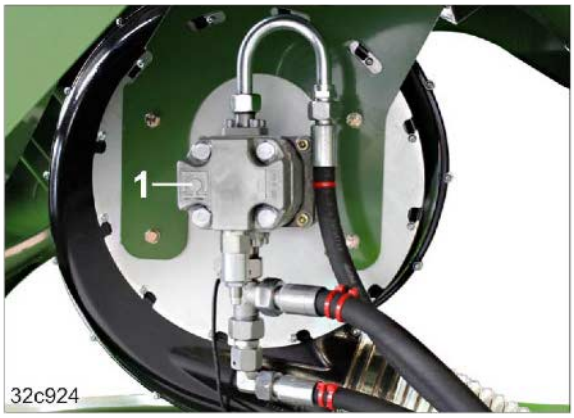
## 5.7 Blower fan

The blower fan that creates the air current is driven by a hydraulic motor (1).

The air current carries the seed to the spreading elements.

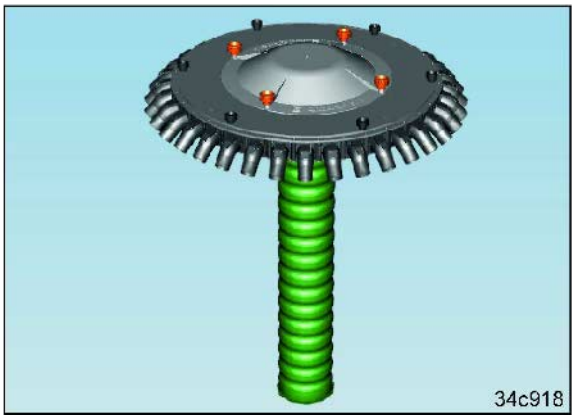
The blower fan speed determines the air volume of the air current. The higher the blower fan speed, the greater is the air volume generated.

The control terminal displays the current blower fan speed and issues an alarm if there is a deviation from the nominal speed.




### 5.7.1 Segment distributor head

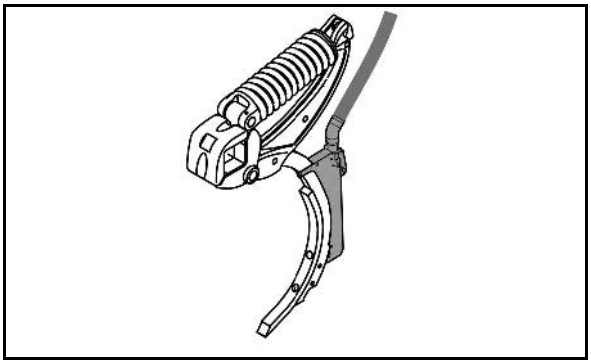
The metered material is evenly distributed over all of the segments in the segment distributor head, and is carried to the spreading elements through the connected seed line tubes.



## 5.8 Spreading

### Fertiliser spreading

Spreading of fertiliser through the fertiliser skimmers on the soil tillage implement

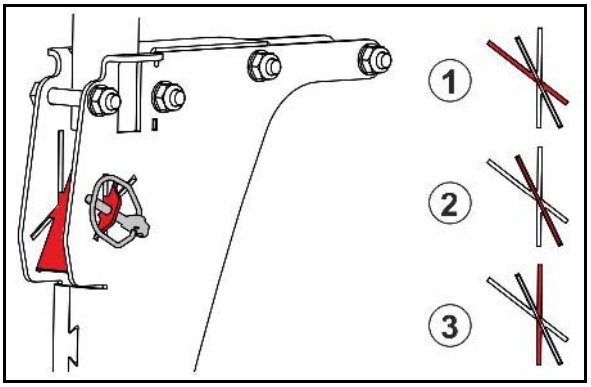


The fertiliser skimmers are adjustable

(1) Under root fertilising

(2) 50 % under root fertilising – 50 % subsoil fertilising

(3) Subsoil fertilising

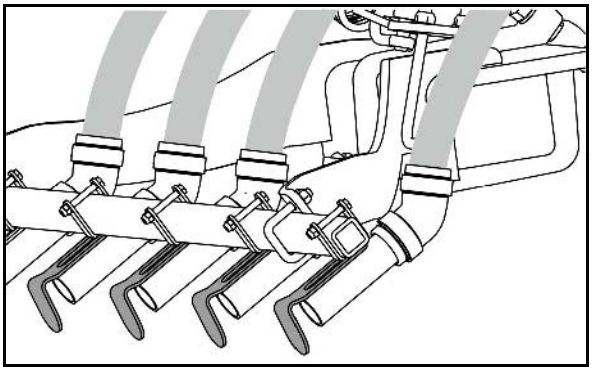



**Fertilisers:**

| Working width [m] | Number of outlets on the distributor head/tine Line distance [mm] |
|---|---|
| 4 | 26 / 13 / 307 |
| 5 | 17 / 17 / 294 |
| 6 | 21 / 21 / 286 |
| 7 | 25 / 25 / 280 |

### Seed spreading

Spreading of seed via baffle plates



**Catch crop:**

| Working width [m] | Number of outlets on the distributor head / Line distance [mm] |
|---|---|
| 4 | 17/235 |
| 5 | 17/294 |
| 6 | 21/286 |
| 7 | 21/333 |

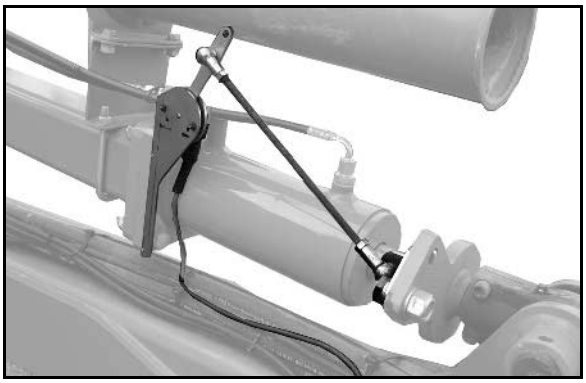
## 5.9 ISOBUS control terminal

To operate the implement, it is absolutely imperative to pay attention to the operating manual for the control terminal and the operating manual for the software!

An ISOBUS-compatible control terminal makes it easy to control, operate and monitor the implement.

## 5.10 Working position sensor on the soil tillage implement

To control the metering unit, the soil tillage implement must be equipped with a working position sensor.



## 5.11 Radar

The radar is used to detect the working speed.

The working speed data is used to determine:

- the worked area (hectare counter)
- the required speed for the speed of the metering roller(s)

## 5.12 Work floodlights

The LED work floodlights (optional) at the rear of the combination make the worked area visible even in the dark.

The floodlights are switched on and off on the operating unit of the on-board computer.

**Standard equipment**:

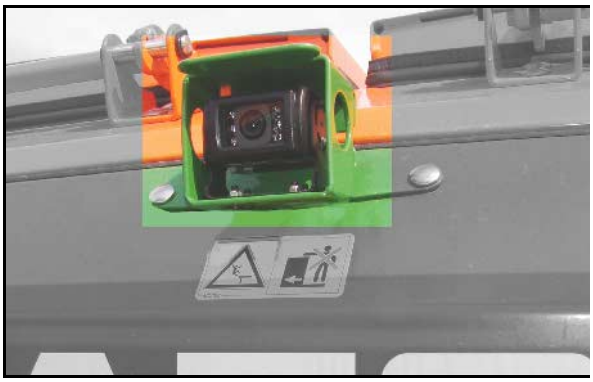
Each hopper is equipped with LED interior lighting, which is controlled via the tractor.

## 5.13 Camera system (option)

The camera at the rear of the combination makes the area hidden by the hopper visible. The large monitor in the tractor cab shows the work of the implement tools and the worked area.

The monitor is characterised by the clear, glare-free representation of multiple camera images simultaneously.

The camera system can be quickly mounted and dismounted with simple plug connections.



# 6 Initial commissioning

This section contains information

- on initial operation of your implement.
- on how to check if you may mount/couple the implement on/to your tractor.

- Before operating the implement for the first time the operator must have read and understood the operating manual.
- Follow the instructions given in the section "Safety information for the operator" when
  - Coupling and uncoupling the implement
  - Implement transportation
  - Use of the implement
- Only couple and transport the implement to/with a tractor which is suitable for the task.
- The tractor and implement must meet the national road traffic regulations.
- The operator and the user shall be responsible for compliance with the statutory road traffic regulations.

**WARNING**

**Risk of contusions, cutting, catching, drawing in and knocks in the area of hydraulically or electrically actuated components.**

Do not block the operator controls on the tractor which are used for hydraulic and electrical movements of components, e.g. folding, swivelling and pushing movements. The movement must stop automatically when you release the appropriate control. This does not apply to equipment movements that:

- are continuous or
- are automatically locked or
- require a float position or pressure position due to their function.

## 6.1 Checking the suitability of the tractor

**WARNING**

**Danger of breaking during operation, insufficient stability and insufficient tractor steering and braking power on improper use of the tractor!**

- Check the suitability of your tractor before you mount or hitch the implement onto the tractor.

  You may only connect the implement to tractors suitable for the purpose.

- Carry out a brake test to check whether the tractor achieves the required braking delay with the implement connected.

Requirements for the suitability of a tractor are, in particular:

- The permissible total weight
- The permissible axle loads
- The permissible drawbar load at the tractor coupling point
- The load capacity of the installed tyres
- The permissible trailer load must be sufficient

  You can find this data on the rating plate or in the vehicle documentation and in the tractor operating manual.

The front axle of the tractor must always be subjected to at least 20 % of the empty weight of the tractor.

The tractor must achieve the brake delay specified by the tractor manufacturer, even with the implement connected.

### 6.1.1 Calculating the actual values for the total tractor weight, tractor axle loads and load capacities, as well as the minimum ballast

The permissible total tractor weight, specified in the vehicle documentation, must be greater than the sum of the

- tractor empty weight,
- ballast weight and
- total weight of the attached implement or drawbar load of the hitched implement.

**This notice applies only to Germany.**

If, having tried all possible alternatives, it is not possible to comply with the axle loads and/or the permissible total weight, then a survey by an officially recognised motor traffic expert can, with the approval of the tractor manufacturer, be used as a basis for the responsible authority to issue an exceptional approval according to § 70 of the German Regulations Authorising the Use of Vehicles for Road Traffic and the required approval according to § 29, paragraph 3 of the German Road Traffic Regulations.

### 6.1.1.1 Data required for the calculation

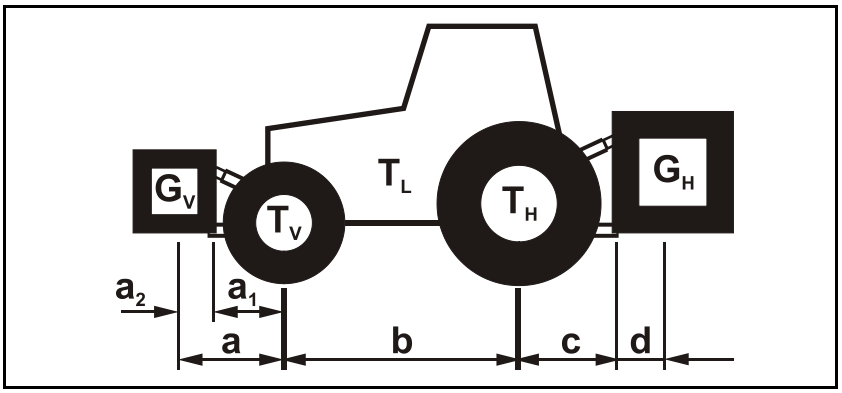



**Fig. 1**

| | | | |
|---|---|---|---|
| $T_L$ | [kg] | Tractor empty weight | See tractor operating manual or vehicle documentation |
| $T_V$ | [kg] | Front axle load of the empty tractor | |
| $T_H$ | [kg] | Rear axle load of the empty tractor | |
| $G_H$ | [kg] | Total weight of rear-mounted implement or rear ballast | See technical data for the implement or rear ballast |
| $G_V$ | [kg] | Total weight of front-mounted implement or front ballast | See technical data for front-mounted implement or front ballast |
| a | [m] | Distance between the centre of gravity of the front mounting implement or the front weight and the centre of the front axle (total $a_1 + a_2$) | See technical data of tractor and front implement mounting or front weight or measurement |
| $a_1$ | [m] | Distance from the centre of the front axle to the centre of the lower link connection | See tractor operating manual or measurement |
| $a_2$ | [m] | Distance between the centre of the lower link connection point and the centre of gravity of the front-mounted implement or front ballast (centre of gravity distance) | See technical data of front implement mounting or front weight or measurement |
| b | [m] | Tractor wheel base | See tractor operating manual or vehicle documents or measurement |
| c | [m] | Distance between the centre of the rear axle and the centre of the lower link connection | See tractor operating manual or vehicle documents or measurement |
| d | [m] | Distance between the centre of the lower link connection point and the centre of gravity of the rear-mounted implement or rear ballast (centre of gravity distance) | See technical data for the implement |

### 6.1.1.2 Calculation of the required minimum ballasting at the front $G_{V\,min}$ of the tractor to ensure steering capability

$$G_{V\ \min} = \frac{G_H \bullet (c+d) - T_V \bullet b + 0{,}2 \bullet T_L \bullet b}{a+b}$$

Enter the numeric value for the calculated minimum ballast $G_{V\,min}$, required on the front side of the tractor, in the table (section 6.1.1.7).

### 6.1.1.3 Calculation of the actual front axle load of the tractor $T_{V\,tat}$

$$T_{V\ tat} = \frac{G_V \bullet (a+b) + T_V \bullet b - G_H \bullet (c+d)}{b}$$

Enter the numeric value for the calculated actual front axle load and the approved tractor front axle load specified in the tractor operating manual in the table (section 6.1.1.7).

### 6.1.1.4 Calculation of the actual total weight of the combined tractor and implement

$$G_{tat} = G_V + T_L + G_H$$

Enter the numeric value for the calculated actual total weight and the approved total tractor weight specified in the tractor operating manual in the table (section 6.1.1.7).

### 6.1.1.5 Calculation of the actual rear axle load of the tractor $T_{H\,tat}$

$$T_{H\ tat} = G_{tat} - T_{V\ tat}$$

Enter the numeric value for the calculated actual rear axle load and the approved tractor rear axle load specified in the tractor operating manual in the table (section 6.1.1.7).

### 6.1.1.6 Tractor tyre load capacity

Enter the double value (two tyres) of the approved load capacity (see, for example, tyre manufacturer's documentation) in the table (section 6.1.1.7).

### 6.1.1.7 Table

| | Actual value according to calculation | | Approved value according to tractor operating manual | | Double approved load capacity (two tyres) |
|---|---|---|---|---|---|
| Minimum ballast front/rear | / kg | | -- | | -- |
| Total weight | kg | ≤ | kg | | -- |
| Front axle load | kg | ≤ | kg | ≤ | kg |
| Rear axle load | kg | ≤ | kg | ≤ | kg |

- You can find the approved values for the total tractor weight, axle loads and load capacities in the tractor registration papers.
- The actual calculated values must be less than or equal to ( ≤ ) the permissible values!

**WARNING**

**Risk of contusions, cutting, catching, drawing in and impact through insufficient stability and insufficient tractor steering and brake power.**

It is forbidden to couple the implement to the tractor used as the basis for calculation, if

- one of the actual, calculated values is greater than the approved value.
- there is no front weight (if required) attached to the tractor for the minimum front ballast ($G_{V\,min}$).

- Ballast your tractor with weights at the front or rear if the tractor axle load is exceeded on only one axle.
- Special cases:
  - If you do not achieve the minimum ballast at the front ($G_{V\,min}$) from the weight of the front-mounted implement ($G_V$), you must use ballast weights in addition to the front-mounted implement.
  - If you do not achieve the minimum ballast at the rear ($G_{H\,min}$) from the weight of the rear-mounted implement ($G_H$), you must use ballast weights in addition to the rear-mounted implement.

## 6.2 Securing the tractor/implement against unintentional start-up and rolling

**WARNING**

**Risk of crushing, shearing, cutting, being caught and/or drawn in, or impact when making interventions in the implement, through**

- unintentional lowering of the unsecured implement when it is raised via the three-point hydraulic system of the tractor.
- unintentional lowering of raised, unsecured parts of the implement.
- unintentional start-up and rolling of the tractor-implement combination.

**Secure the tractor and the implement against unintentional start-up and rolling before any intervention in the implement.**

**It is forbidden to make any intervention in the implement, such as installation, adjustment, troubleshooting, cleaning, maintenance and repairs**

- while the implement is being driven.
- as long as the tractor engine is running with the PTO shaft/hydraulic system connected.
- if the ignition key is inserted in the tractor and the tractor engine can be started unintentionally with the tractor PTO shaft/hydraulic system connected.
- if the tractor and implement have not each been prevented from unintentionally rolling away by applying their parking brakes and/or securing them with wheel chocks.
- if moving parts are not blocked against unintentional movement.

**Coming in to contact with unsecured components poses a hazard during this kind of work in particular.**

1. Switch off the tractor engine.
2. Remove the ignition key.
3. Apply the tractor parking brake.
4. Ensure that there are no persons (children) on the tractor.
5. If necessary, lock the tractor cab door.

# 7 Coupling and uncoupling the implement

When coupling and uncoupling machines, follow the instructions given in the section "Safety instructions for the operator" page 9.

**WARNING**

**Risk of crushing, catching, drawing in and/or knocks due to unintentional starting and rolling of the tractor when coupling or uncoupling the universal joint shaft and supply lines.**

Secure the tractor and implement against unintentional starting and rolling before entering the danger area between the tractor and implement to couple or uncouple the universal joint shaft and supply lines.

**WARNING**

**Risk of crushing and contusions between the rear of the tractor and the implement when coupling and uncoupling the implement!**

- It is forbidden to actuate the three-point hydraulic system of the tractor as long as persons are standing between the rear of the tractor and the machine.
- Actuate the operating controls for the tractor's three-point hydraulic system
  - Only from the intended workstation alongside the tractor.
  - Only when you are outside the danger area between the tractor and the implement.

## 7.1 Coupling the implement

**WARNING**

**Risk of crushing and contusions between the tractor and the implement when coupling the implement!**

Instruct people to leave the danger area between the tractor and the implement before you approach the implement.

Any helpers may only act as guides standing next to the tractor and the implement, and may only move between the vehicles when both are at a standstill.

**WARNING**

**Risk of crushing, drawing in, catching or contusions if the implement unexpectedly comes away from the tractor!**

- Use the intended equipment to connect the tractor and the implement in the proper way.
- When coupling the implement to the tractor's three-point hydraulic system, it is vital to ensure that the tractor mount categories of the tractor and the implement are the same.
- Only use the upper and lower link pins provided (original pins) for coupling the implement.
- Check the upper and lower link pins for visible defects whenever the implement is coupled. Replace the upper and lower link pins if there are clear signs of wear.
- Use locking pins to secure the upper and lower link pins against accidental loosening.
- Visually check that the upper and lower link hooks are correctly locked before you drive off.

**WARNING**

**Danger of breaking during operation, insufficient stability and insufficient tractor steering and braking power in the event of improper use of the tractor!**

You may only connect the implement to tractors suitable for the purpose. See section "Checking tractor suitability", page 62.

**WARNING**

**Risk of power supply failure between the tractor and the implement through damaged supply lines!**

During coupling, check the course of the power lines. The supply lines

- must give slightly without tension, bending or rubbing on all movements of the connected implement.
- must not chafe against other parts.

1. Secure the implement against accidental rolling away, if the implement is equipped with a transport device.
2. Always inspect the machine for visible signs of damage when coupling. Observe here the chapter "Obligations of the user", page 9.
3. Secure the ball sleeves over the upper and lower link pins in the pivot points of the three-point attachment frame.
4. Secure both the top link pin and the lower link pin against accidental loosening using the linch pins. For more information, see section "Three-point mounting frame", starting at page 45.
5. Direct people out of the danger area between the tractor and implement before you approach the implement with the tractor.
6. First connect the supply lines to the tractor before coupling the implement to the tractor as follows:
   - 6.1 Drive the tractor up to the machine in such a way that a gap (approx. 25 cm) remains between tractor and machine.
   - 6.2 Secure the tractor against unintentional starting and rolling away.
   - 6.3 Check that the tractor's PTO shaft is switched off.
   - 6.4 Connect the supply lines, for more information, see section "Connecting hydraulic hose lines" starting at page 42.
   - 6.5 Connect the light system.
   - 6.6 Couple the on-board computer (if equipped), refer to the separate operating manual for more information.
   - 6.7 Position the lower link hooks so that they are aligned with the lower pivot points on the machine.
7. Now reverse the tractor further towards the machine so that the tractor's lower link hooks connect with the lower pivot points of the machine.
8. Raise the tractor's three-point hitch hydraulics until the lower link hooks connect with the ball bushings and automatically lock.
9. Couple the top link over the top link hook with the upper pivot point of the three-point attachment frame from the tractor seat.

→ The top link hook locks automatically.

10. Visually check that the upper and lower link hooks are correctly locked before you drive off.

## 7.2 Uncoupling the implement

**WARNING**

**Risks of being crushed and/or struck**

- **due to insufficient stability and tipping over of the uncoupled implement on uneven, soft ground!**
- **due to accidental rolling away of the implement when it is set down on a transport device!**

Secure the implement against accidental rolling when you set the implement down on a transport device.

**CAUTION**

**Danger of injury due to the implement tipping.**

When setting down the fertiliser spreader, only a small residual amount may be found in the hopper.

1. Set down the implement with empty hopper on a horizontal surface with solid ground.
2. Always inspect the implement for obvious signs of damage during uncoupling. Observe here the chapter "Obligations of the user", page 9.
3. Uncouple the machine from the tractor as follows:
   - 3.1 Relieve the top links.
   - 3.2 Unlock and uncouple the top link hooks from the tractor seat.
   - 3.3 Relieve the lower links.
   - 3.4 Unlock and uncouple the lower link hooks from the tractor seat.
   - 3.5 Drive the tractor approx. 25 cm forwards.
     → This will allow more room between tractor and implement and give better access for uncoupling the universal joint shaft and supply lines.
   - 3.6 Secure the tractor against unintentional starting and rolling away.
   - 3.7 Secure the implement against accidental rolling away, if the implement is equipped with a transport device.
   - 3.8 Disconnect the supply lines.

## 7.3 Coupling the soil tillage implement

See the operating manual for the soil tillage implement.

When coupling the soil tillage implement onto the XTender, a second person is required as a guide.

The guide directs people away from the implement and directs the tractor driver (with the coupled XTender) towards the towing device of the soil tillage implement.

The guide may not stand between the implements.

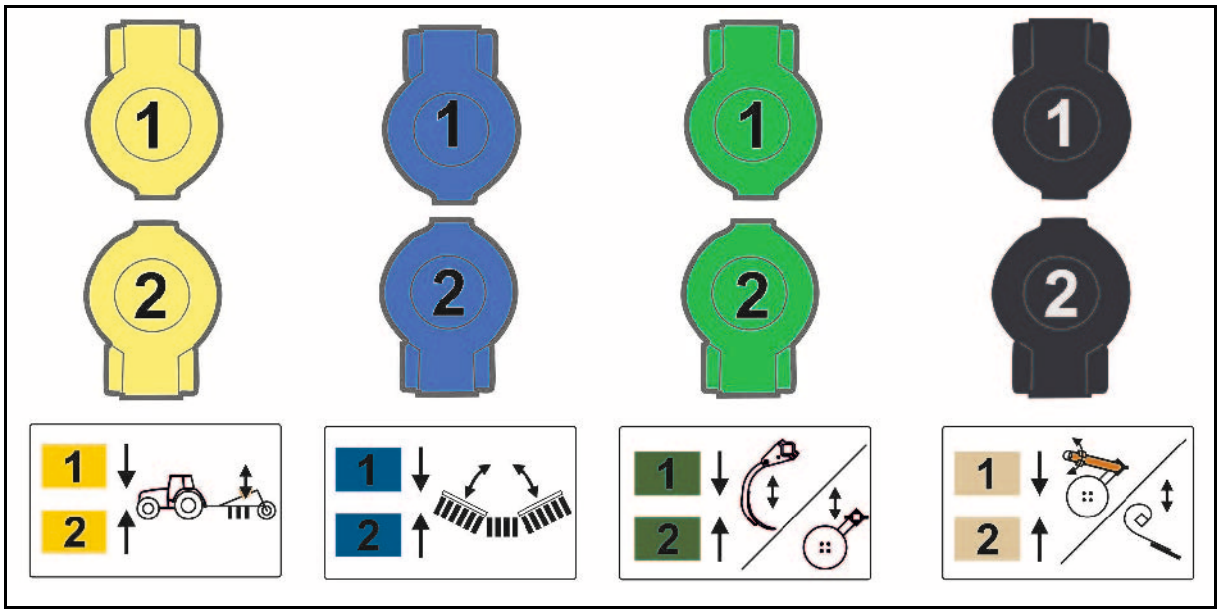
### Supply line interface

Connect the supply lines for the soil tillage implement onto the XTender.

- Hydraulic hoses
- Brake
- Working position sensor
- Lighting

Pay close attention to the correct connection of the hydraulic hoses and the working position sensor.

The colour markings correspond to the markings on the coupling plug for connection to the tractor



# 8 Settings

**WARNING**

**Danger of crushing, shearing, cutting, being caught or drawn in, winding and knocks through:**

- **unintentional falling of the implement raised using the tractor's three-point hydraulic system.**
- **unintentional lowering of raised, unsecured implement parts.**
- **unintentional start-up and rolling of the tractor-implement combination.**

Secure the tractor and the implement against unintentional start-up and rolling before working on the implement.

**CAUTION**

**Switching off the control terminal**

- before road transport.
- before adjustment, maintenance and repair work.

Risk of accident due to unintended movements of the metering unit or other implement components caused by radar pulses.

## 8.1 Select the dosing roller

Select the metering roller required depending on the seed or the fertiliser and the spread rate according to the following tables.

If the seed is not listed, select the dosing roller of a seed that has a similar grain sizeen.

### 8.1.1 Table – metering rollers

| Seeds | Metering rollers [cm³] | | | | | | |
|---|---|---|---|---|---|---|---|
| | 7,5 | 20 | 40 | 120 | 350 | 600 | 660 |
| Beans | | | | | | X | X |
| Buckwheat | | | | | | X | |
| Spelt | | | | | | X | |
| Peas | | | | | | | X |
| Flax (dressed) | | X | X | X | | | |
| Barley | | | | X | X | X | |
| Grass seed | | | | | | | |
| Oats | | | | X | X | X | |
| Millet | | | | X | | | |
| Caraway | | X | | | | | |
| Lupins | | | | X | | | |
| Alfalfa | | X | X | X | | | |
| Maize | | | | X | | | |
| Poppy | X | | | | | | |
| Oil linen (moist dressing) | | X | X | | | | |
| Fodder radish | | X | X | X | | | |
| Phacelia | | X | X | X | | | |
| Rapeseed | X | X | X | | | | |
| Rye | | | | X | X | X | |
| Red clover | | X | X | X | | | |
| Mustard | | X | X | X | | | |
| Soy | | | | | | X | X |
| Sunflowers | | | | X | | | |
| Turnips | | X | X | | | | |
| Triticale | | | | X | X | X | |
| Wheat | | | | X | X | X | |
| Vetches | | | | | | | |
| **Fertiliser** (granular) | | | | | X | | X |

## 8.2 Installing/removing the metering roller

**CAUTION**

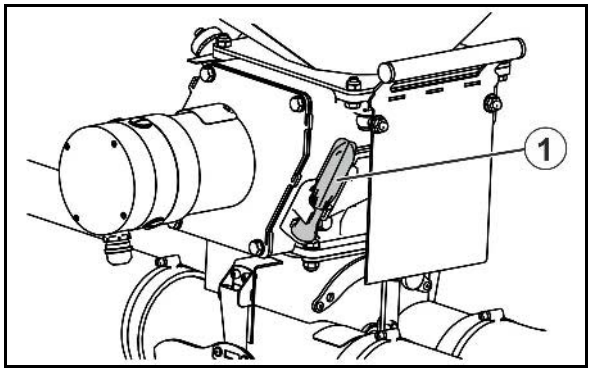
**Switch off the control terminal!**

Risk of accident due to unintended movements of the metering unit or other implement components caused by radar pulses.

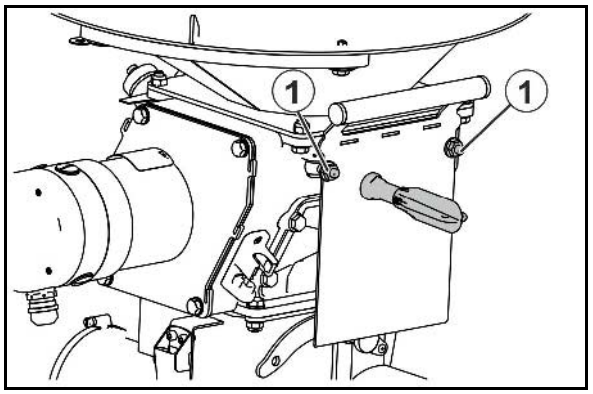
The metering roller can be replaced more easily if the hopper is empty.

1. Close the opening between the hopper and the metering unit (only necessary when the hopper is full).

   1.1 Remove the key (1) from the holder.



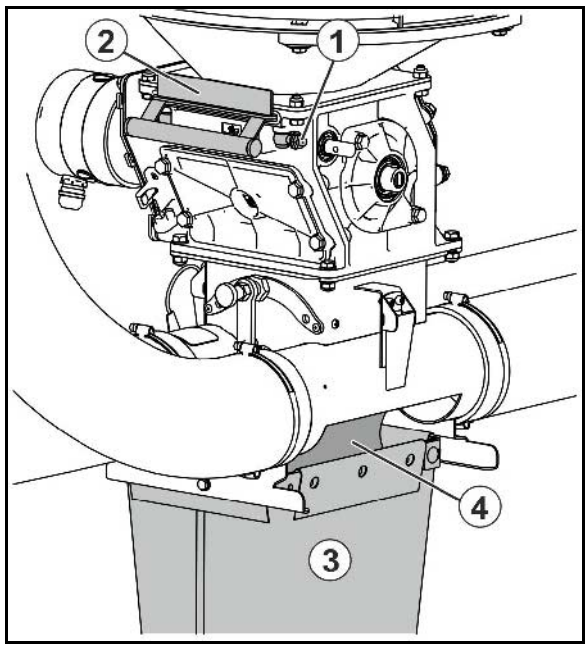

   1.2 Loosen two nuts (1) but do not remove.



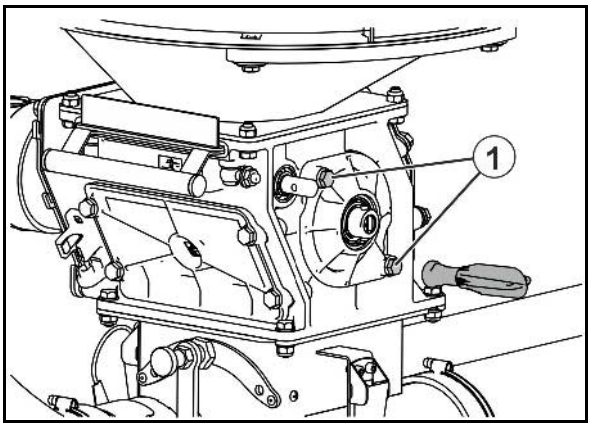

   1.3 Swivel the bolts (1).

   1.4 Push the shutter (2) into the metering unit up to the stop.

   1.5 Push the collection bag (3) under the metering unit and open the flap (4) (see section 8.3, page 77).

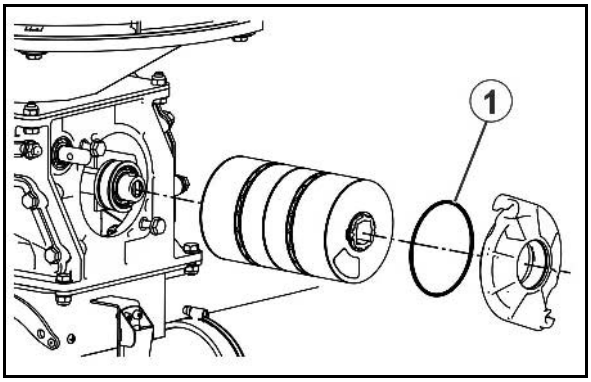


2. Loosen the two bolts (1) but do not remove.




3. Turn the bearing cover and pull it off.

The bearing cover is equipped with an O-ring (1). Replace the O-ring if it is damaged.

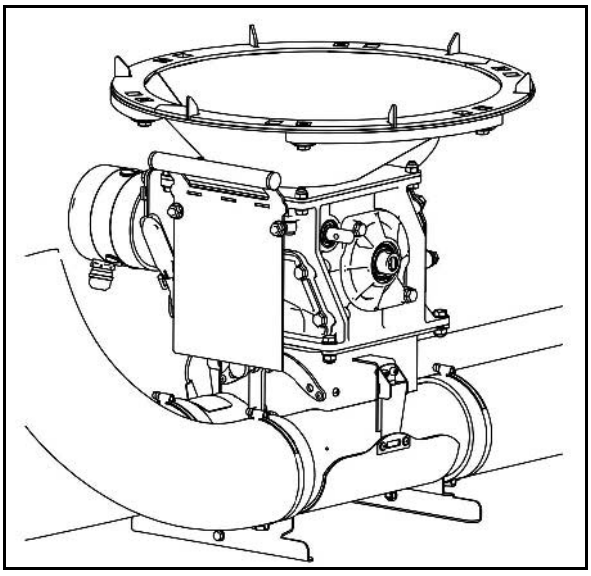



4. Remove the metering roller.

Install the metering roller in the reverse sequence.

Secure the shutter in the parking position.

Close the flap.



## 8.3 Calibrating the metering system

When calibrating the metering system, the weight of the collected metered quantity is entered on the control terminal. Using this value, the number of rotations of the electric motor that are required for the field work later on is calculated. A second calibration procedure is essential. The required seed quantity is usually produced with the second calibration procedure. Otherwise, repeat the calibration procedure until the required spread rate is achieved.

| | |
|---|---|
| **Single delivery section:** | • Only one product in the product menu  <br>• Pre-set half of the calibrated quantity for each metering unit (e.g. 50 kg/ha for metering unit 1 and 50 kg/ha for metering unit 2 = 100 kg/ha total quantity:<br>• Perform calibration for the product on each metering unit consecutively. |
| **Double delivery section:** | • Two products in the product menu  <br>• Calibration for each product must be performed successively. |

Calibrate the spread rate using this operating manual and the software operating manual.

1. Couple the implement to the tractor.
2. Fill both hoppers.

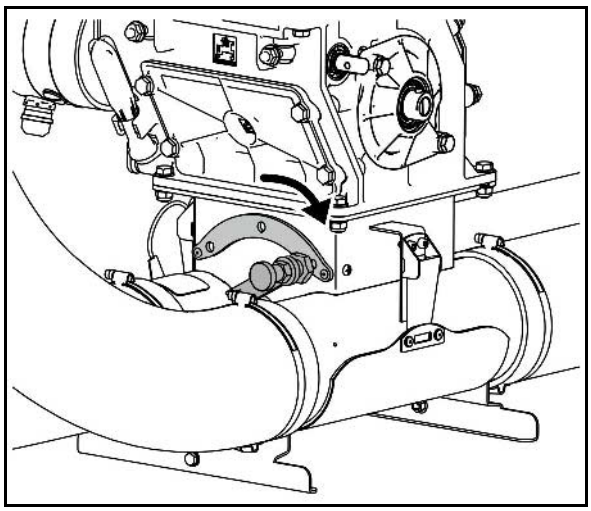
Double sluice:

Check that the lever on the sluice conveys to conveyor section 2 (standard setting).

→ This is the only way to ensure that the seed is completely collected.

Single delivery section:

Perform calibration on both metering units consecutively.



3. Push the collecting bag under the metering unit.
4. Open the sluice flap.
   (double sluice: only in conveyor section 2)
5. Repeat the calibration procedure according to the software operating manual until the desired spread rate is achieved.
6. Remove the collection bag.
7. Close the sealing flap under the metering unit.

## 8.4 Setting the blower fan speed

**DANGER**

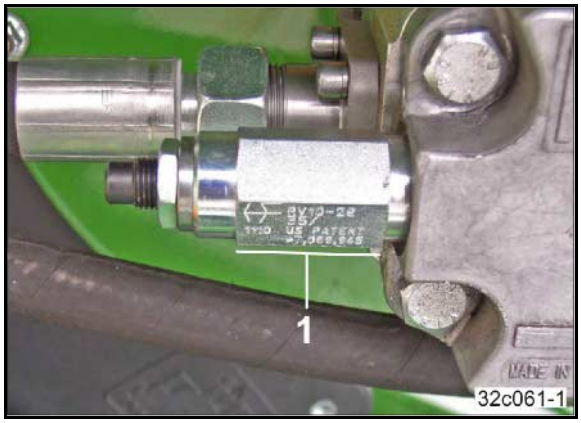
**Do not exceed the maximum blower fan speed of 4000 rpm.**

The blower fan speed changes until the hydraulic fluid has reached its operating temperature.

During initial operation, correct the blower fan speed until the operating temperature is reached.

If the blower fan is put back into operation after a longer standstill period, the set blower fan speed is only reached once the hydraulic fluid has heated up to operating temperature.

(1) Pressure control valve for the blower fan



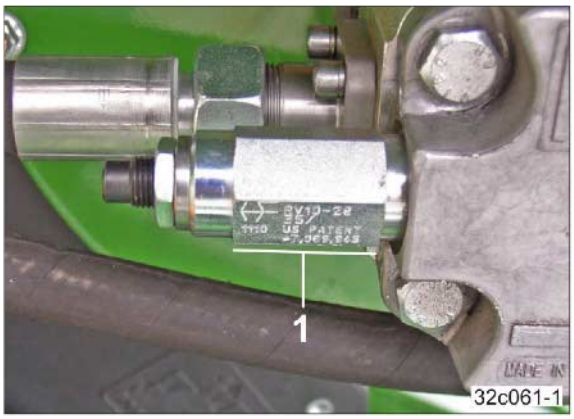

### 8.4.1 Setting the blower fan speed via the flow control valve of the tractor

1. Perform the basic setting of the pressure relief valve according to section 8.4.3.1.
2. Read the required blower fan speed from the speed table (see section 5.7).
3. Set the blower fan speed via the flow control valve of the tractor.

### 8.4.2 Setting the blower fan speed on tractors without flow control valve

1. The required blower fan speed can be found in the speed tables
2. Set the blower fan speed (depending on the version of the pressure relief valve).

### 8.4.3 Pressure relief valve with hexagonal outer contour


#### 8.4.3.1 Basic setting of the pressure relief valve

1. Loosen the lock nut.
2. Fully screw in the bolt with the hexagon socket wrench (1) (to the right).
3. Using a hexagon socket wrench, unscrew the screw back by 3 turns.
4. Tighten the lock nut.

#### 8.4.3.2 Blower fan speed setting

Only perform this setting when the blower fan hydraulic motor

- is connected to the tractor hydraulic system and the tractor is equipped with a flow control valve.
- is connected to the tractor PTO shaft.

1. Loosen the lock nut.
2. Use the hexagon socket wrench (1) to set the nominal blower fan speed on the pressure relief valve. Do not exceed the maximum blower fan speed of 4000 rpm.

**Blower fan speed**

| | |
|---|---|
| Turning to the right: | increases the nominal blower fan speed. |
| Turning to the left: | reduces the nominal blower fan speed. |

3. Tighten the lock nut.

### 8.4.4 Setting the blower fan speed monitoring

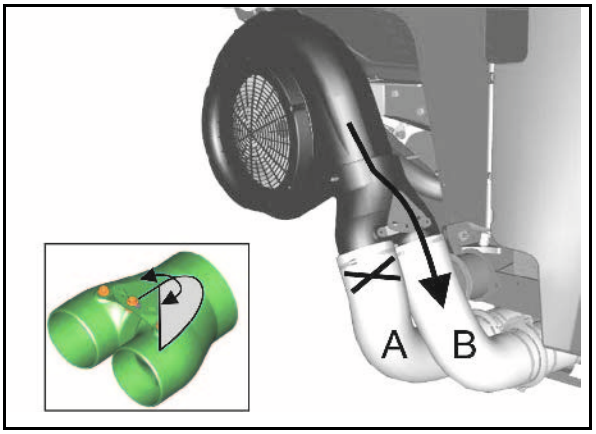
The on-board computer monitors the blower fan speed.

Set the nominal blower fan speed on the on-board computer.

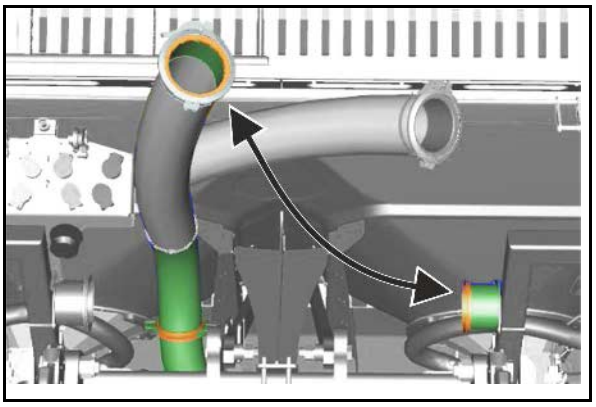
If the actual speed deviates by more than 10 % from the target speed, an acoustic signal is issued along with a screen display. It is possible to set the percentage deviation.

## 8.5 Converting a double delivery section to single delivery section

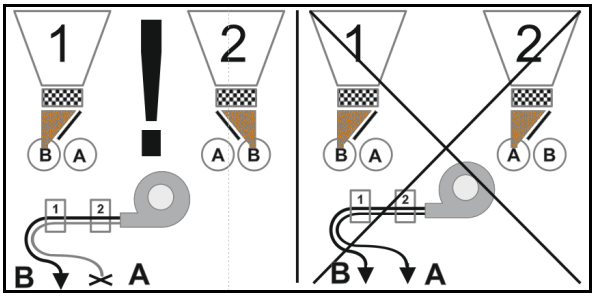
1. Replace the Y-piece with hose by a reduction with hose.




2. Insert unused hose in parking position on the blind cap.



3. Fold over the flap for both double sluices, so that hopper 1 and hopper 2 convey into the same active conveyor section.



# 9 Transportation

- Before moving off, check:
  - the correct connection of the supply lines.
  - the lighting system for damage, proper operation and cleanliness,
  - the braking and hydraulic systems for obvious defects.
  - that the parking brake is completely released.
  - the function of the brake system.

**WARNING**

**Risk of being crushed, cut, caught, drawn in or struck if the implement is unintentionally released from its attached or hitched position.**

Before transportation, visually check that the top and lower link pins are secured with the linch pin against accidental loosening.

**WARNING**

**Risk of contusions, cutting, catching, drawing in and knocks when making interventions in the implement through unintentional implement movements.**

- On folding implements, check that the transport locks are locked correctly.
- Secure the implement against unintentional movements before starting transportation.

**WARNING**

**Risk of crushing, cutting, being caught and/or drawn in, or impact from tipping and insufficient stability.**

- 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 or coupled implement.
- Before road transport, fasten the side locking of the tractor lower link, so that the connected or coupled implement cannot swing back and forth.

**WARNING**

**Danger of breaking during operation, insufficient stability and insufficient tractor steering and braking power on improper use of the tractor!**

These risks pose serious injuries or death.

Comply with the maximum load of the connected implement and the approved axle and drawbar loads of the tractor. If necessary, drive only with a partially filled hopper.

**WARNING**

**Risk of falling when riding on the implement, contrary to instructions.**

It is forbidden to ride on the implement and/or climb the implement while it is running.

Instruct people to leave the loading site before approaching the implement.

**WARNING**

**Risk of stabbing other road users through machine parts extending out into the road area!**

Cover any protruding parts on machines.

You must make protruding parts clearly visible if you can not cover them easily.

## Moving the implement in the transport position

1. Switch off the blower fan.
2. When transporting the implement on public roads, switch off the work floodlights.
3. Move the sections of the trailed soil tillage implement into transport position according to the operating manual.
4. Switch off the control terminal.
5. Disable the tractor control units (see tractor operating manual).
6. Read and observe the legal regulations and the safety instructions before and during road transport.
7. Switch on the warning beacon (if present) prior to starting a journey and check operation.

# 10 Use of the implement

When using the implement, observe the information in the following sections:

- "Warning symbols and other labels on the machine" starting on page 17 and
- "Safety information for the user", starting on page 11.

Observing this information is important for your safety.

**WARNING**

**Danger of breaking during operation, insufficient stability and insufficient tractor steering and braking power on improper use of the tractor!**

Comply with the maximum load of the connected implement and the approved axle and drawbar loads of the tractor. If necessary, drive only with a partially filled hopper.

**WARNING**

**Risk of contusions, cutting, catching, drawing in and knocks through insufficient stability and tipping of the tractor and/or the connected implement.**

Drive in such a way that you always have full control over the tractor with the mounted or trailed implement.

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 or coupled implement.

**WARNING**

**Danger of crushing, shearing, cutting, being caught or drawn in, winding and knocks through:**

- **unintentional lowering of raised, unsecured implement parts.**
- **unintentional start-up and rolling of the tractor-implement combination.**

Secure the tractor and the machine against unintentional start-up and rolling before eliminating faults on the machine. See page 67.

Wait for the implement to stop, before entering the implement danger area.

**WARNING**

**Risk of being crushed, cut, caught, drawn in or struck if the implement is unintentionally released from its attached or hitched position.**

Before every use of the implement, perform a visual check that the top and lower link pins are firmly secured with linch pins against unintentional release.

**WARNING**

**Risk of contusions, drawing in and catching during implement operation without the intended protective equipment!**

Only ever start up the implement when the protective equipment is fully installed.

## 10.1 Filling the hopper

**WARNING**

**Secure the tractor/implement against accidental start-up and rolling!**

**DANGER**

**Dressing dust is toxic and must not be inhaled or come into contact with the body.**

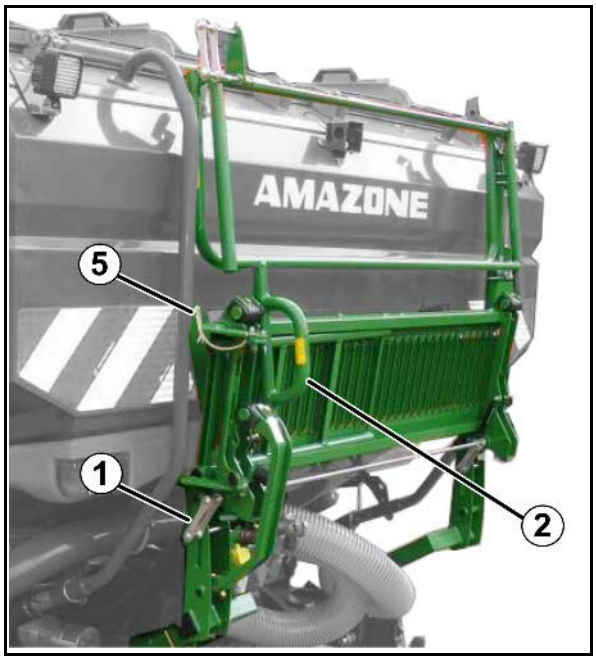
Dressing dust may escape when filling the implement. Wear a face mask and protective goggles and gloves.

If the control device triggers an alarm when the theoretically calculated residual quantity is reached in the hopper,

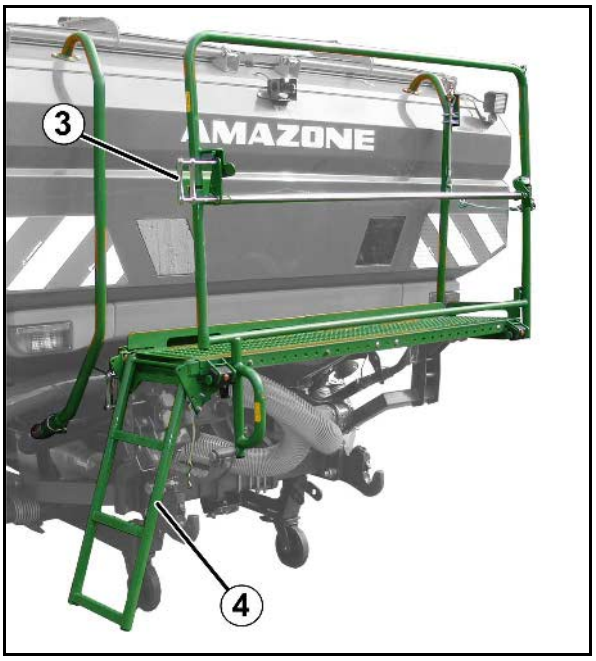
- enter the filling quantity [kg] in the control terminal.
- log off the fill level indicator of the implement in the control terminal.

### 10.1.1 Using the loading board

Loading board in transport position




Loading board in working position




(1) Loading board locking mechanism
(2) Loading board handle
(3) Railing locking mechanism
(4) Ladder
(5) Ladder locking mechanism

#### Unfolding the loading board into working position

1. Release the locking mechanism for the loading board and fold it down.
2. Release the locking mechanism for the railing, fold up the railing and lock it.
3. Pull out the linch pin on the ladder, pull it out and fold down.

#### Folding the loading board into transport position

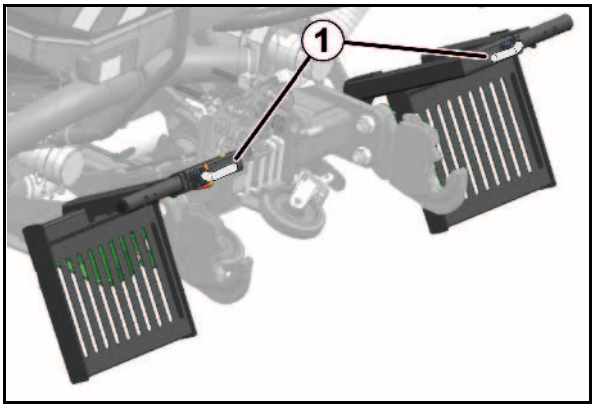
1. Lift the ladder, push it into the holder and lock with a spring cotter pin.
2. Release the locking mechanism on the railing, fold it down and lock it.
3. Fold up the loading board and lock it.

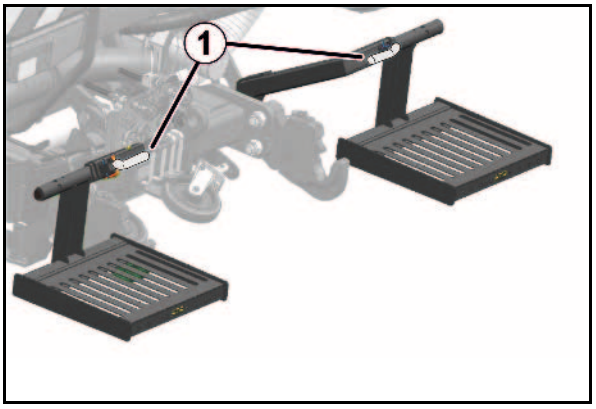
Fold in the loading board during operation.

Be sure to push the ladder into the holder to prevent damage when

- folding the sections and
- turning at end of the field

## 10.2 Using the loading platform




(1) Pins for locking the folding loading platform

1. Unlock the loading platform.
2. Raise the loading platform into filling position or lower into transport position.
3. Lock the loading platform.

## 10.3 Spreading seed/fertiliser

**Refer to the Implement control operating manual.**

- Check that all components are in working position.
- Check the seed and fertiliser lines.

Dressed seed is very toxic for birds!

The seed must be fully incorporated or covered with soil.

Avoid seed trickling out when lifting the coulters.

Immediately pick up spilled seed!

From time to time, check the distributor heads from the tractor seat for impurities.

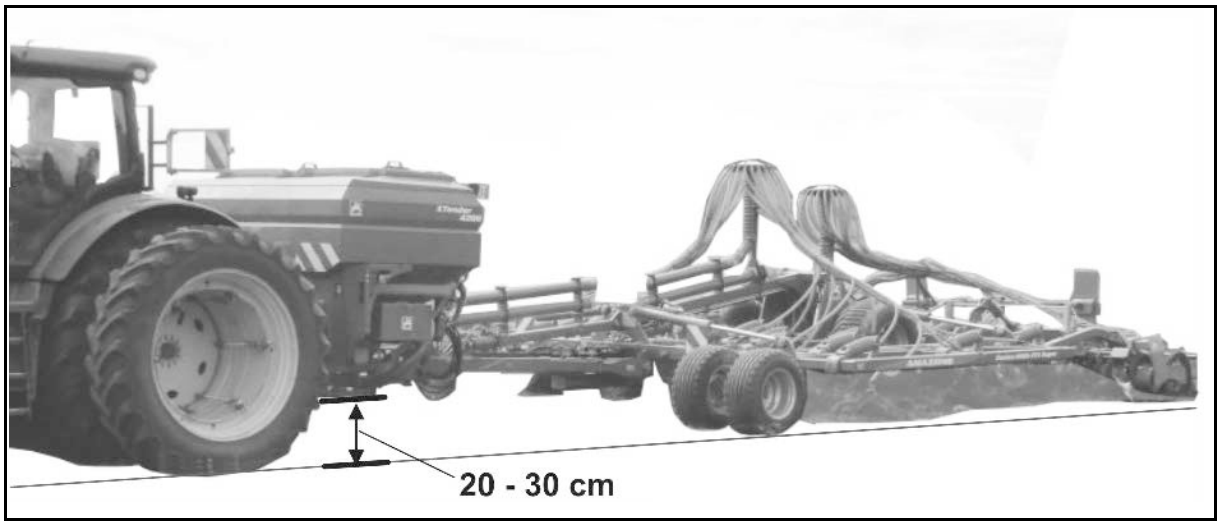
Deposits of dirt and seed remains can block up the distributor heads and must be removed immediately.

## 10.4 Work commencemen

1. Move the implement to the working position at the start of the field.

   1.1 Instruct any people in the area to stand at a minimum distance of 20 m from the implement.

   1.2 Move the Xtender into working position and ensure ground clearance of 20-30 cm, see figure.




   1.3 Unfold the implement sections of the trailed soil tillage implement and move into working position (see operating manual for the respective implement).

   1.4 Teach in the limit values for the working position sensor (when changing the working depth on the soil tillage implement).

2. Check all implement settings.
3. Run the blower fan up to nominal speed.
4. Start driving and put the soil tillage implement into operation.
5. Check after approx. 100 m completed at working speed.

## 10.5 Emptying the hopper and/or the metering unit

**DANGER**

**Switch off the control terminal, apply the tractor parking brake, switch off the tractor engine, and remove the ignition key.**

**DANGER**

**Dressing dust is toxic and must not be inhaled or come into contact with the body.**

When emptying the hopper and metering housing or when removing dressing dust, e.g. with compressed air, wear a protective suit, face mask, safety goggles and gloves.

Empty and carefully clean the fertiliser hopper daily after work! Remaining fertiliser can damage the metering unit.

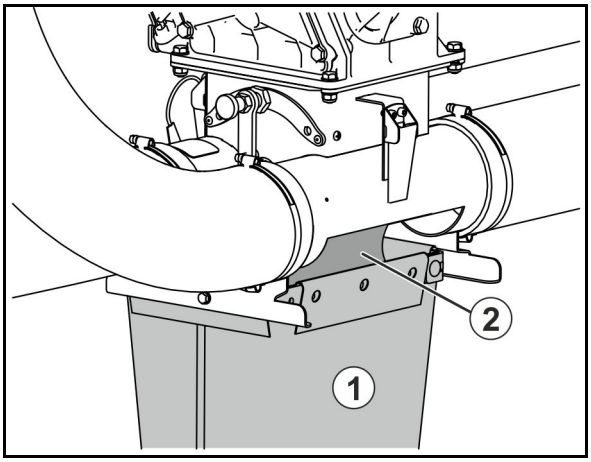
Seed residues left in the metering unit can swell or germinate if the metering unit is not completely emptied!

This can cause blocking to the rotation of the metering wheels and damage to the drive!

### 10.5.1 Hopper residual emptying

Residual emptying is then accomplished by turning the metering roller in the metering unit. Like with the calibration test, the metered material is collected in a collection bag.

1. Push the collection bag (1) under the metering unit and open the flap (2) (see section 8.3, page 77).
2. Empty the hopper by turning the metering roller (see control terminal operating manual, section "Residual emptying").




The metering roller motor is generally switched on and off on the control terminal in the tractor cab.

As an option, the Twin-Terminal can be connected to the control terminal in the tractor cab and be attached directly beside the metering unit to make entries using the keyboard.

### 10.5.2 Emptying the metering unit

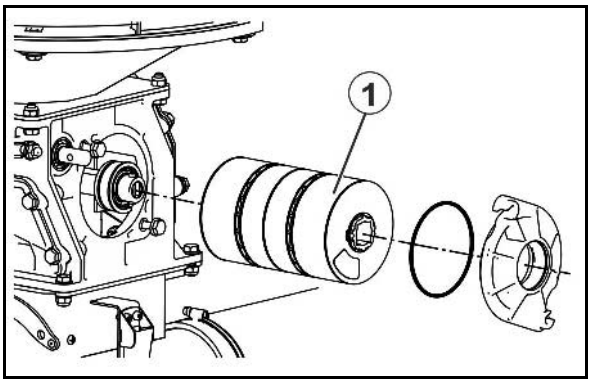
The metering unit can be emptied as described in section 10.5.1, page above. It is recommended to remove the metering roller before deep-cleaning the metering unit.

1. Empty the metering unit.

   1.1 Remove the metering roller (1) (see section 8.2, page 75).

→ The contents of the metering unit drop into the collection bag.

2. Reassemble in the reverse order (see section 8.2, page 75).



# 11 Faults

**WARNING**

**Danger of crushing, shearing, cutting, being caught or drawn in, winding and knocks through:**

- **unintentional falling of the implement raised using the tractor's three-point hydraulic system.**
- **unintentional lowering of raised, unsecured implement parts.**
- **unintentional start-up and rolling of the tractor-implement combination.**

Secure the tractor and the machine against unintentional start-up and rolling before eliminating faults on the machine. See page 67.

Wait for the implement to stop, before entering the implement danger area.

## 11.1 Error in the metering system

Possible causes that can lead to a deviation between the preset and actual seeding rates:

- For recording the worked area and the required seed spread rate, pulses of the radar are required over a calibration distance of 100 m.

  Field surfaces change during work, e.g. when changing from dry, light soil to wet, heavy soil.

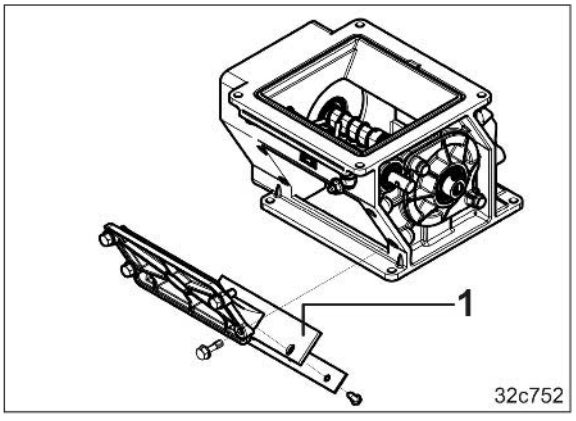
  This can also alter the calibration value "Pulse/100 m".

  If there are differences between the preset and actual seeding rates, the calibration value "Pulse/100 m" has to be re-determined by travelling a measured distance.

- When seeding with moist dressed seeds, deviations between the preset and actual seeding rates may occur if there is a period of less than 1 week (2 weeks recommended) between the dressing and seeding.

- A defective or wrongly set metering lip (1) will cause metering errors.

  Set the metering lip so that it is slightly resting on the metering roller.



# 12 Cleaning, maintenance and repair

**WARNING**

**Danger of crushing, shearing, cutting, being caught or drawn in, winding and knocks through:**

- **unintentional falling of the implement raised using the tractor's three-point hydraulic system.**
- **unintentional lowering of raised, unsecured implement parts.**
- **unintentional start-up and rolling of the tractor-implement combination.**

Secure the tractor and machine against unintentional starting and unintentional rolling away before you perform any cleaning, servicing or maintenance work on the machine. See page 67.

**WARNING**

**Risk of crushing, shearing, cutting, being caught and/or drawn in, or impact through unprotected danger points.**

- Mount protective equipment, which you removed when cleaning, maintaining and repairing the implement.
- Replace defective protective equipment with new equipment.

**DANGER**

- **When carrying out maintenance, service and repair work, observe the safety instructions!**
- **You may only carry out maintenance or repair work under moving machine parts that are in a raised position if such parts are secured with suitable, positive-fit locking devices against accidental lowering.**

- Regular and proper maintenance will keep your implement in good condition for a long time, and will prevent early signs of wear. Regular and proper maintenance is a requirement of our warranty conditions.
- Use only genuine AMAZONE spare parts (see "Spare and wear parts and aids" section, page 15).
- Use only genuine AMAZONE replacement hoses, and hose clamps made of V2A for assembly.
- Specialist knowledge is the requirement for carrying out testing and maintenance operations. This specialist knowledge is not given here in this operating manual.
- Observe environmental protection measures when carrying out cleaning and maintenance work.
- Observe legal requirements when disposing of lubricants, e.g. oils and grease. Also affected by these legal requirements are parts that come into contact with these lubricants.
- Do not exceed a greasing pressure of 400 bar when greasing with high pressure grease guns.
- The following are prohibited
  - drilling the running gear.
  - drilling through pre-existing holes on the transport frame.
  - welding on load-bearing components.
- Protective measures are necessary, such as covering lines or extending lines in particularly critical locations
  - during welding, drilling and grinding work.
  - when working with cutting discs near plastic lines and electric lines.
- Always disconnect the implement cable as well as the power supply from the on-board computer when performing any maintenance and repair work. This applies particularly to welding work on the implement.

## 12.1 Cleaning

- Pay particular attention to the brake, air and hydraulic hose lines.
- Never treat brake, air and hydraulic hose lines with petrol, benzene, petroleum or mineral oils.
- After cleaning, grease the implement, in particular after cleaning with a high pressure cleaner/steam jet or liposoluble agents.
- Observe the statutory requirements for the handling and removal of cleaning agents.

Always completely remove all adhering fertiliser residues.

Clean the dirty blower fan guard screen to ensure an unobstructed air flow.

If the required quantity of air is not reached, faults may occur in the seed delivery and distribution.

Clean the blower fan of any deposits. Deposits lead to imbalance and damage to the bearing.

### Cleaning with a high pressure cleaner/steam jet

- Always observe the following points when using a pressure washer/steam jet for cleaning:
  - Do not clean any electrical components.
  - Do not clean any chrome-plated components.
  - Never aim the cleaning jet of the cleaning nozzle of the high pressure cleaner/steam jet directly at lubrication points, bearings, rating plates, warning signs, and stickers.
  - Always maintain a minimum nozzle distance of 300 mm between the high pressure or steam jet cleaning nozzle and the implement.
  - The set pressure of the high-pressure cleaner/steam jet must not exceed 120 bar.
  - Comply with safety regulations when working with pressure washers.

The pictogram serves as a reminder never to aim the cleaning jet of the high-pressure cleaner/steam cleaner directly on

- electrical components
- lubrication points and bearings
- the rating plate, warning symbols, stickers and design foils.

The components can be damaged.

### 12.1.1 Cleaning the distributor head (specialist workshop)

**Immediately clean the distributor heads if they are contaminated with seed residues. Contaminated distributor heads can affect the seed rate.**

**WARNING**

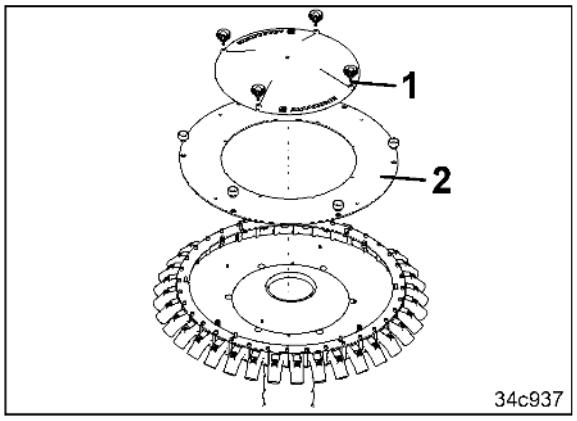
**The distributor head is located at the centre of the machine.**

**Apply the parking brake, switch the tractor engine off, and remove the ignition key.**

**Before approaching, clean the path to the distributor head and the area of the distributor head (danger of slippage).**

**There is the risk of an accident on the path to the distributor head and in the area of the distributor head.**

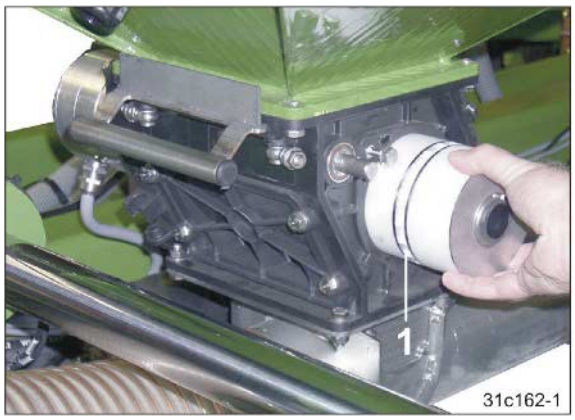
1. Open the inspection cover (1) to remove light soiling.
2. Remove the cover plate for intensive cleaning (2).
3. Remove impurities with a broom or with compressed air. Wipe out the segment distributor head with a dry cloth.




### 12.1.2 Seeding shaft bearing

Seeding shaft bearing:

Lightly grease the seat of the sowing shaft bearing with a thin mineral oil (SAE 30 or SAE 40).



## 12.2 Maintenance schedule – overview

- **Execute maintenance tasks after the first scheduled maintenance period has been reached.**
- **The time intervals, operating hours or maintenance intervals specified in any external documentation that may be provided, take priority.**

### Before each start-up

1. Check the hoses/tubes and connecting pieces for visible defects/leaky connections.
2. Repair any areas of chafing on hoses and tubes.
3. Replace any worn or damaged hose and tubes immediately.
4. Fix leaky connections immediately.

### After the first working run

| Component | Servicing work | See page | Specialist workshop |
|---|---|---|---|
| **Hydraulic system** | • Check for defects<br>• Check leak tightness | 97 | |

### Daily

| Component | Servicing work | See page | Specialist workshop |
|---|---|---|---|
| **Metering unit** | • empty | 90 | |
| **Blower fan** | • Clean the blower fan (risk of unbalancing) | | |
| **Spreading** | • Check for and remove any impurities:<br>o metering unit<br>o delivery sections and hoses<br>o distributor head/distributor heads<br>o blower fan suction protective screen | | |

### Weekly/every 50 operating hours

| Component | Servicing work | See page | Specialist workshop |
|---|---|---|---|
| **Hydraulic system** | • Check for defects | 97 | **X** |
| **Brake system** | • Perform visual inspection | **100** | |

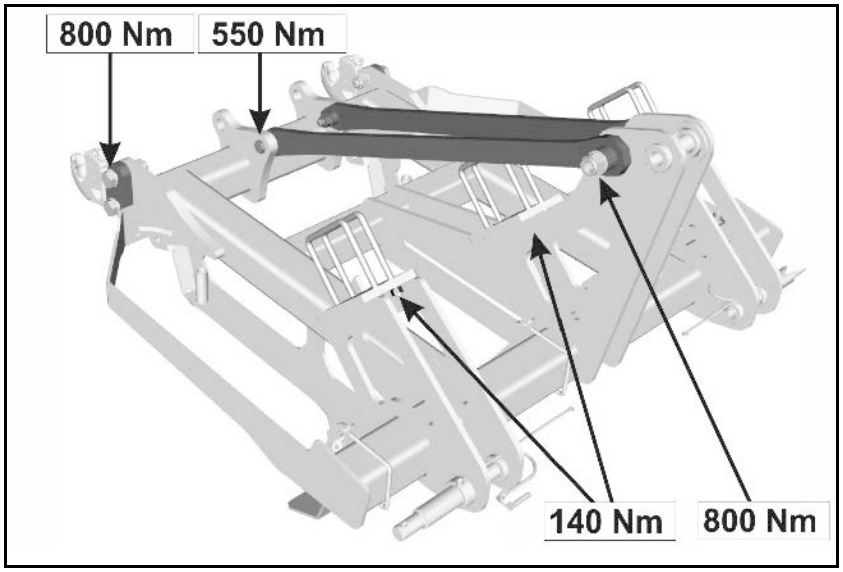
**As required**

| Component | Servicing work | See page | Specialist workshop |
|---|---|---|---|
| **Frame** | • Check for damage and deformation<br>• Check the fastening bolts for tightness | 98 | |
| **Brake system** | • Check according to the inspection instructions | 100 | **X** |
| | • Clean the line filters | 99 | |

## 12.3 Checking the frame

Check the frame for the following points:

- Damage, deformation
- Tightness of the fastening bolts



## 12.4 Brake system

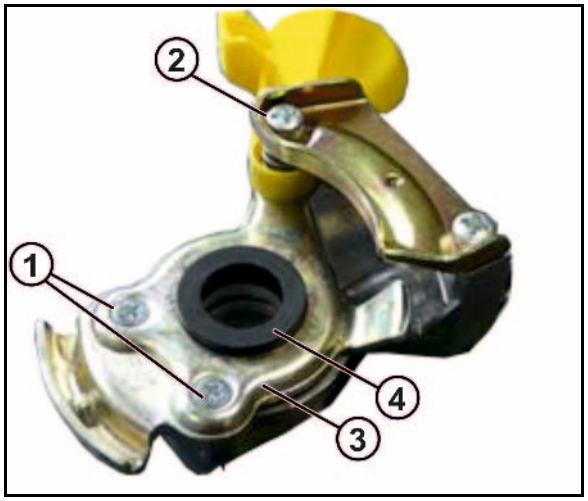
### 12.4.1 Cleaning the line filter

Perform work in an unpressurized state. Secure the implement against rolling away.

1. Remove the bolt locking compound by hammering and remove the bolts (1).
2. Unscrew the bolts (2) by a few turns.
3. Lift the plate (3) over the rubber seal (4) and turn to the side.

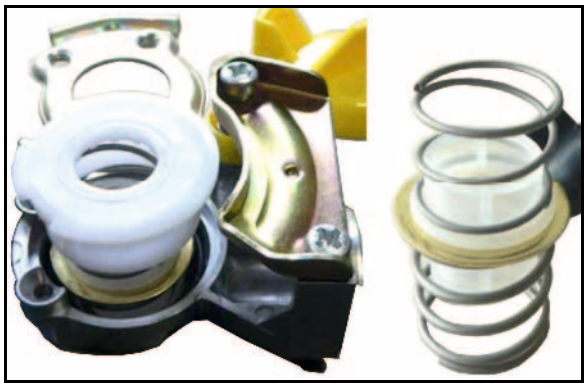
The unit is under spring tension.

4. Remove the rubber seal.




5. Clean and grease the sealing surfaces, O-ring and filter.

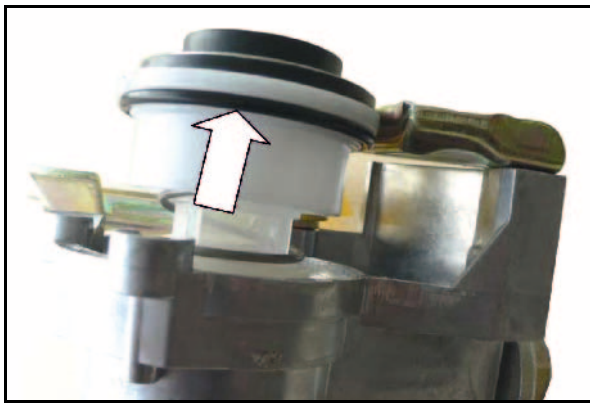
→ Replace the rubber seal if necessary.



Correctly position the O-ring on the plastic ring.

6. Reassemble in the reverse sequence.

- Bolt tightening torque (1): 2.5 Nm
- Bolt tightening torque (2): 7 Nm



## 12.4.2 Inspection instructions for pneumatic brake

### 1. Leak tightness check

1. Check all connections, pipe lines, hose lines and screw connections are tight.
2. Remedy any leaks.
3. Repair any areas of chafing on pipes and hoses.
4. Replace porous and defective hoses.
5. The brake system may be considered tight if the pressure does not drop by more than 0.15 bar within 10 minutes.
6. Seal any leaking areas or replace leaking valves.

### 2. Checking the pressure in the air reservoir

1. Connect a pressure gauge to the test connection on the air reservoir.

   Target value 6.0 to 8.1 $^{+0.2}$ bar

### 3. Checking the brake cylinder pressure

1. Connect a pressure gauge to the test connection on the brake cylinder.

   Target value: with brake not applied 0.0 bar

### 4. Visual inspection of brake cylinder

1. Check the dust collars or bellows for damage.
2. Replace damaged parts.

### 5. Joints on brake valves, brake cylinders and brake linkages

Joints on brake valve, brake cylinders and brake linkages must slide smoothly, lubricate or grease lightly if necessary.

## 12.5 Hydraulic system

**WARNING**

**Risk of infection through the high pressure hydraulic fluid of the hydraulic system entering the body.**

- Only a specialist workshop may carry out work on the hydraulic system.
- Depressurise the hydraulic system before carrying out work on the hydraulic system.
- When searching for leak points, always use suitable aids.
- Never attempt to plug leaks in hydraulic hose 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. Risk of infection!

- When connecting the hydraulic hose lines to the hydraulic system of connected implements, ensure that the hydraulic system is depressurised on both the drawing vehicle and the trailer.
- Ensure that the hydraulic hose lines are connected correctly.
- Regularly check all the hydraulic hose lines and couplings for damage and impurities.
- Have the hydraulic hose lines checked at least once a year by a specialist for proper functioning.
- Replace the hydraulic hose lines if they are damaged or worn. Only use genuine AMAZONE hydraulic hose lines!
- The hydraulic hose lines should not be used for longer than six years, including any storage time of maximum two years. Even with proper storage and approved use, hoses and hose connections are subject to natural aging, thus limiting the length of use. However, it may be possible to specify the length of use from experience values, in particular when taking the risk potential into account. In the case of hoses and hose lines made of thermoplastics, other guide values may be decisive.
- Dispose of old oil in compliance with regulations. If you have problems with disposal, contact your oil supplier.
- Keep hydraulic fluid out of the reach of children!
- Ensure that no hydraulic fluid enters the soil or waterways.

### 12.5.1 Labelling of hydraulic hose lines

**The valve chest identification provides the following information:**

**Fig. 2/...**

(1) Manufacturer's marking on the hydraulic hose line (A1HF)

(2) Date of manufacture of the hydraulic hose lines (02 04 = February 2004)

(3) Maximum approved operating pressure (210 BAR).

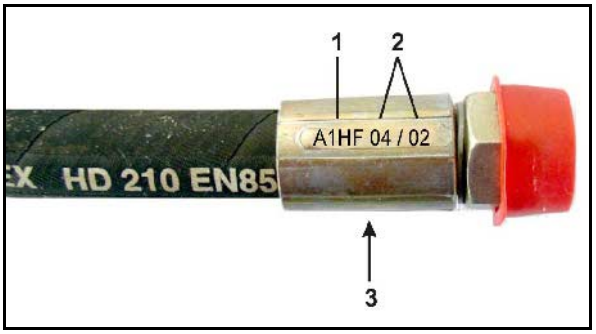



**Fig. 2**

### 12.5.2 Maintenance intervals

**After the first 10 operating hours, and then every 50 operating hours**

1. Check all the components of the hydraulic system for tightness.
2. If necessary, tighten screw unions.

**Before each start-up:**

1. Check hydraulic hose lines for visible damage.
2. Eliminate any scouring points on hydraulic hose lines and pipes.
3. Replace any worn or damaged hydraulic hose lines immediately.

### 12.5.3 Inspection criteria for hydraulic hose lines

**For your own safety, comply with the following inspection criteria!**

**Replace hydraulic hose lines, on determining any of the following during the inspection:**

- Damage to the outer layer up to the ply (e.g. scouring points, cuts, cracks).
- Brittleness of the outer layer (crack formation of the hose material).
- Deformations which do not match the natural shape of the hose. Both in a depressurized and pressurised state or when bent (e.g. layer separation, bubble formation, pinching, bends).
- Leak points.
- Damage or deformation of the hose assembly (sealing function restricted); minor surface damage is not a reason for replacement.
- Movement of the hose out of the assembly.
- Corrosion of assembly, reducing the function and tightness.
- Installation requirements not complied with.
- Life span of 6 years has been exceeded.

The date of manufacture of the hydraulic hose line on the assembly plus six years is decisive. If the date of manufacture on the assembly is "2004", then the hose should not be used beyond February 2010. For more information, see "Labelling of hydraulic hose lines".

### 12.5.4 Installation and removal of hydraulic hose lines

When installing and removing hydraulic hose lines, always observe the following information:

- Only use genuine AMAZONE hydraulic hose lines!
- Always ensure cleanliness.
- You must always install the hydraulic hose lines so that, in all states of operation:
  - There is no tension, apart from the hose's own weight.
  - There is no possibility of jolting on short lengths.
  - Outer mechanical influences on the hydraulic hose lines are avoided.

    Use appropriate arrangements and fixing to prevent any scouring of the hoses on components or on each other. If necessary, secure hydraulic hose lines using protective covers. Cover sharp-edged components.
  - The approved bending radii may not be exceeded.
- When connecting a hydraulic hose line to moving parts, the hose length must be appropriate so that the smallest approved bending radius is not undershot over the whole area of movement and/or the hydraulic hose line is not over-tensioned.
- Fix the hydraulic hose lines to the intended fixing points. There, avoid hose clips, which impair the natural movement and length changes of the hoses.
- The coating of hydraulic hose lines is not permitted.

## 12.6 Upper and lower link pins check

**DANGER!**

**Risk of contusions, catching, and knocks when the implement unexpectedly releases from the tractor!**

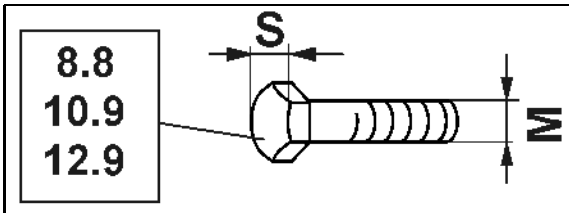
Replace damaged top link pins and lower link pins immediately for road traffic safety reasons.

**Test criteria for top link pins and lower link pins:**

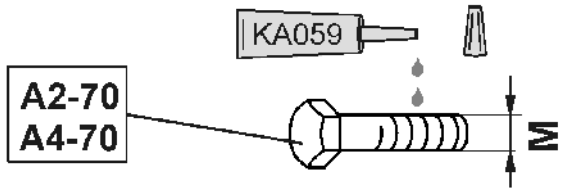
- Visual check for cracks
- Visual check for fractures
- Visual check for permanent deformations
- Visual check and measurements for wear. The permissible wear is 2 mm.
- Visual check for wear on the ball sleeves
- If applicable: check the fastening bolts for tightness

If a wear criterion is met, replace the top link pin or lower link pin.

## 12.7 Screw tightening torques




| M | S | Nm 8.8 | 10.9 | 12.9 |
|---|---|---|---|---|
| M 8 | 13 | 25 | 35 | 41 |
| M 8x1 | | 27 | 38 | 41 |
| M 10 | 16 (17) | 49 | 69 | 83 |
| M 10x1 | | 52 | 73 | 88 |
| M 12 | 18 (19) | 86 | 120 | 145 |
| M 12x1.5 | | 90 | 125 | 150 |
| M 14 | 22 | 135 | 190 | 230 |
| M 14x1.5 | | 150 | 210 | 250 |
| M 16 | 24 | 210 | 300 | 355 |
| M 16x1.5 | | 225 | 315 | 380 |
| M 18 | 27 | 290 | 405 | 485 |
| M 18x1.5 | | 325 | 460 | 550 |
| M 20 | 30 | 410 | 580 | 690 |
| M 20x1.5 | | 460 | 640 | 770 |
| M 22 | 32 | 550 | 780 | 930 |
| M 22x1.5 | | 610 | 860 | 1050 |
| M 24 | 36 | 710 | 1000 | 1200 |
| M 24x2 | | 780 | 1100 | 1300 |
| M 27 | 41 | 1050 | 1500 | 1800 |
| M 27x2 | | 1150 | 1600 | 1950 |
| M 30 | 46 | 1450 | 2000 | 2400 |
| M 30x2 | | 1600 | 2250 | 2700 |




| M | M4 | M5 | M6 | M8 | M10 | M12 | M14 | M16 | M18 | M20 | M22 | M24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nm | 2.4 | 4.9 | 8.4 | 20.6 | 40.7 | 70.5 | 112 | 174 | 242 | 342 | 470 | 589 |

Coated bolts have different tightening torques.

Observe the specific data for tightening torques in the maintenance section.

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