

Operating Manual

AMAZONE

ZG-TS 7501 Truck

ZG-TS 10001 Truck

Pack top spreader



MG6416
BAG0203.8 02.23
Printed in Germany

SmartLearning



**Please read this operating
manual before first commis-
sioning.
Keep it in a safe place for
future use.**

en



Reading the instruction

Manual and following it should seem to be inconvenient and superfluous as it is not enough to hear from others and to realize that a machine is good, to buy it and to believe that now everything should work by itself. The person in question would not only harm himself but also make the mistake of blaming the machine for possible failures instead of himself. In order to ensure success one should enter the mind of a thing, make himself familiar with every part of the machine and get acquainted with how it's handled. Only in this way could you be satisfied both with the machine and with yourself. This goal is the purpose of this instruction manual.

Leipzig-Plagwitz 1872. Rud. Sark.

Identification data

Manufacturer: AMAZONEN-WERKE
H. DREYER SE & Co. KG

Machine Ident. No.:

Type:

Year of manufacture:

Factory:

Basic weight (kg):

Approved total weight (kg):

Maximum load (kg):

Manufacturer's address

AMAZONEN-WERKE
H. DREYER SE & Co. KG
Postfach 51
D-49202 Hasbergen
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: MG6416

Compilation date: 02.23

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This operating manual is valid for all versions of the implement.

All of the equipment is described without indicating it as special optional equipment.

A description may be provided for equipment that is not fitted on the implement or is only available in certain markets. The sales documents provide information on the equipment of your implement or consult your dealer for more detailed information.

All information in this operating manual corresponds to the state of knowledge at the time of publication. Due to ongoing development of the implement, deviations are possible between the implement and the information in this operating manual.

No claims can be made based on differences in the specifications, figures or descriptions.

Figures serve as a reference and are to be understood as representations of the principle.

If you want to sell the implement, ensure that the operating manual is supplied with the implement.

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 confidence in our products.

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

Before first commissioning, read and understand 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 machine.

Please ensure that all the machine operators have read this operating manual before commissioning the machine.

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

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

User evaluation

Dear Reader,

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

AMAZONEN-WERKE

H. DREYER SE & Co. KG

Postfach 51

D-49202 Hasbergen

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

E-mail: amazone@amazone.de

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

1.2 Locations in the operating manual

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

1.3 Diagrams used

Operator control action and responses

Actions to be carried out by the operator are given as a numbered list. It is important that the sequence of steps is observed. The responses for each operator control action are given by an arrow. Example:

1. Operator control action step 1
→ Machine response to operator control action 1
2. Operator control action step 2

Lists

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

- Point 1
- Point 2

Number items in diagrams

Numbers in round bracket refer to items in diagrams. The first number refers to the diagram and the second number to the item in the figure.

Example: (Fig. 3/6)

- Figure 3
- Item 6

2 General safety instructions

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

2.1 Obligations and liability

Comply with the instructions in the operating manual

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

Obligations of the operator

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

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

The operator is obliged

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

Obligations of the user

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

- To comply with the basic workplace safety instructions and accident prevention regulations.
- To read and follow the "General safety information" section of this operating manual.
- To read the section "Warning symbols and other labels on the machine" (page 16) of this operating manual and to follow the safety instructions represented by the warning symbols when operating the machine.
- If you still have queries, please contact the manufacturer.

Risks in handling the machine

The machine has been constructed to the state-of-the art and the recognised rules of safety. However, there may be risks and restrictions which occur when operating the machine

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

Only use the machine

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

Eliminate any faults 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 the completion of the contract. Guarantee and liability claims for damage to people or goods will be excluded if they can be traced back to one or more of the following causes:

- Improper use of the machine.
- Improper installation, commissioning, operation and maintenance of the machine.
- Operation of the machine with defective safety equipment or improperly attached or non-functioning safety equipment.
- Non-compliance with the instructions in the operating manual regarding commissioning, operation and maintenance.
- Independently-executed design changes to the machine.
- Insufficient monitoring of machine parts which are subject to wear.
- Improperly executed repairs.
- Disasters through the impact of foreign bodies and acts of God.

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

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

**WARNING**

Indicates a medium risk, which could result in death or (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 machine handling.

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

**NOTE**

Indicates handling tips and particularly useful information.

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

2.3 Organisational measures

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

- Chemical-resistant gloves,
- Chemical-resistant overalls,
- Water-resistant footwear,
- A face mask,
- Breathing protection,
- Safety glasses,
- Skin protection agents, etc.



The operating manual

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

Check all the available safety equipment regularly.

2.4 Safety and protection equipment

Before each commissioning of the machine, all the safety and protection equipment must be properly attached and fully functional. Check all the 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, then you should comply with the statutory road traffic regulations.

2.6 Operator training

Only those people who have been trained and instructed may work with/on the machine. 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 machine under the supervision of an experienced person.

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

Legend:

X..permitted --...not permitted

- 1) A person who can assume a specific task and who can carry out this task for an appropriately qualified company.
- 2) Instructed persons are those who have been instructed in their assigned tasks and in the possible risks in the case of improper behaviour, have been trained if necessary, and have been informed about the necessary protective equipment and measures.
- 3) 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 through long term activity in the appropriate field of work.



Only a specialist workshop may carry out maintenance and repair work on the machine if such work is additionally marked "Workshop work". 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 machine in a way which is both appropriate and safe.

2.7 Safety measures in normal operation

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

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

2.8 Danger from residual energy

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

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 subassemblies to lifting gear when carrying out replacement work.

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

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

2.9.1 Spare and wear parts and auxiliary materials

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

Only use AMAZONE spare and wear parts released by AMAZONEN-WERKE, so that the type approval remains valid according to the national and international regulations. The use of wear and spare parts from third parties does not guarantee that they have been constructed in a way as to meet the requirements placed on them.

AMAZONEN-WERKE shall accept no liability for damage caused by the use of unreleased spare and wear parts or auxiliary materials.

2.10 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.

2.11 Operator workstation

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

2.12 Warning symbols and other labels on the machine



Always keep all the warning symbols on the machine 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 dangers on the machine 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.

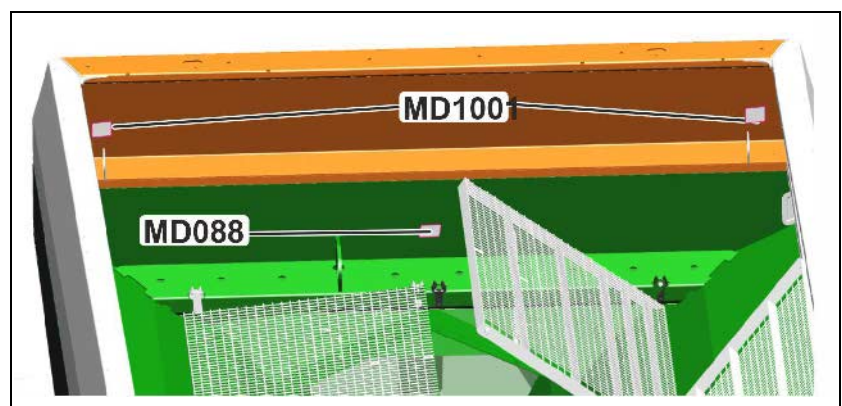
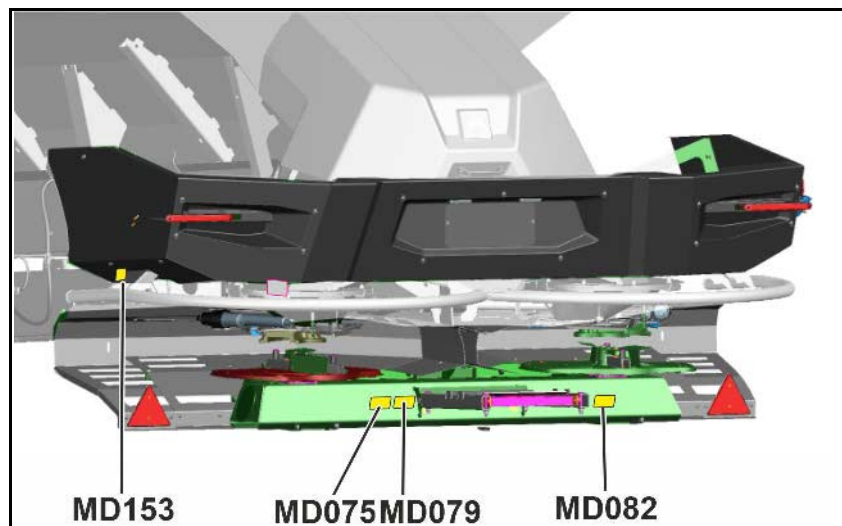
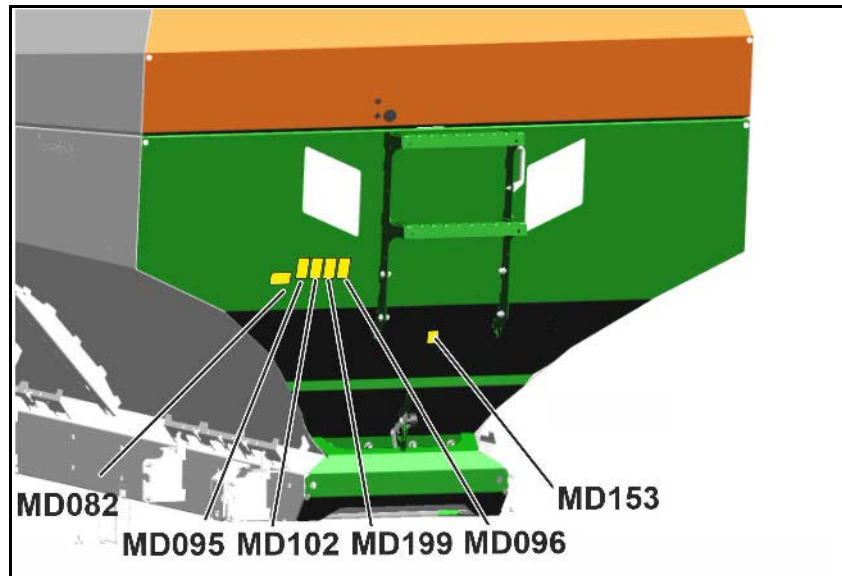
Warning symbols - explanation

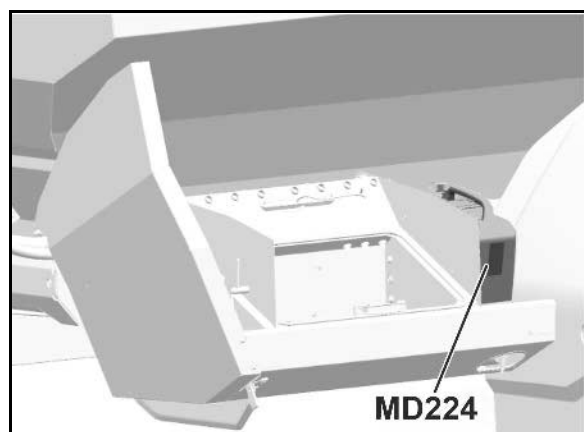
The column **Order number and explanation** provides an explanation of the neighbouring warning symbol. The description of the warning symbols is always the same and specifies, in the following order:

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

2.12.1 Positions of warning symbols and other labels

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





Order number and explanation

Warning symbols

MD 075

Risk of fingers and hands being cut or cut off by accessible, moving parts involved in the work process.

This danger can cause extremely serious injuries and the loss of body parts.

- Never reach into the danger area when the tractor engine is running with PTO shaft / hydraulic / electronics system connected.
- Wait for all moving machine parts to come to a complete standstill before reaching into the danger area.

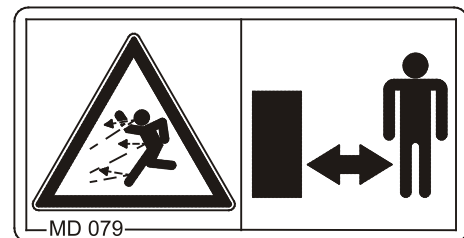


MD 079

Danger from materials or foreign objects that are thrown from or ejected by the machine at high speeds.

These dangers can cause extremely serious and potentially fatal injuries.

- Stay at a safe distance from the machine when the tractor engine is running.
- Ensure that bystanders maintain a sufficient safety distance from the danger area of the machine as long as the tractor engine is running.



MD 082

Risk of falling for personnel riding on treads or platforms.

This danger can cause extremely serious and potentially fatal injuries.

It is forbidden to ride on the machine or climb the machine when it is running. This also applies to machines with treads or platforms.

Make sure that nobody is riding on the machine.



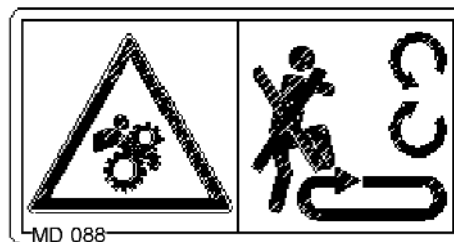
General safety instructions

MD 088

Risk of being drawn in or caught by moving parts involved in the work process, caused by climbing on the loading platform when the machine is running.

This danger can cause extremely serious and potentially fatal injuries.

Never climb onto the loading platform when the tractor engine is running with PTO shaft / hydraulic / electronics system connected.



MD 093

Danger due to catching or entrapment due to accessible powered elements of the machine.

These dangers can cause extremely serious and potentially fatal injuries.

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

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

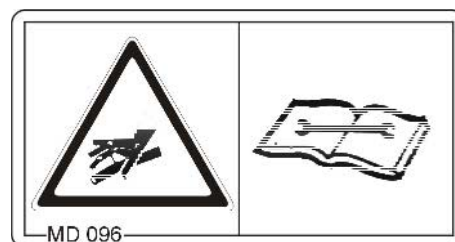


MD 096

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.

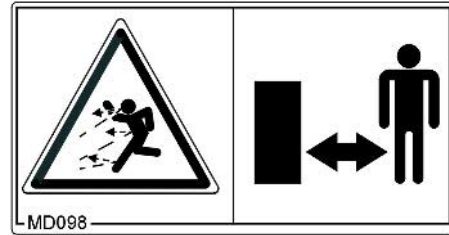
- Never attempt to plug leaks in hydraulic hose lines using your hand or fingers.
- Read and observe the information in the operating manual before carrying out maintenance and repair work on the hydraulic hose lines.
- If you are injured by hydraulic fluid, contact a doctor immediately.



MD 098

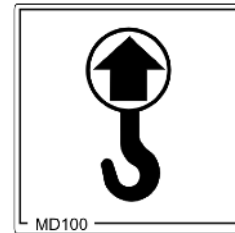
Risk from flying fertiliser particles!

Ensure that all personnel maintain an adequate safety distance and are standing outside of the danger area.



MD 100

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



MD 102

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

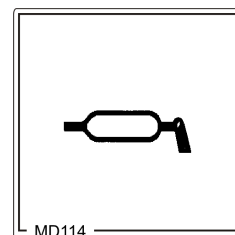
These dangers can cause extremely serious and potentially fatal injuries.

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



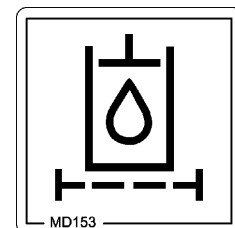
MD 114

This symbol indicates a lubrication point.



MD 153

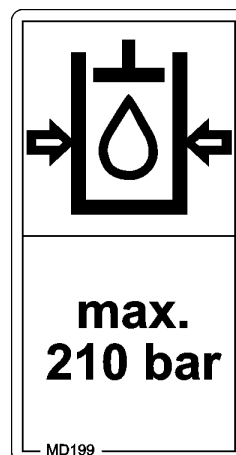
This pictogram indicates a hydraulic oil filter.



General safety instructions

MD 199

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



MD 224

Risk of contact with hazardous materials due to improper use of clear fresh water from the hand wash tank.

This danger can cause extremely serious and potentially fatal injuries.

Never use the clear water from the hand wash tank as drinking water.



2.13 Dangers if the safety information is not observed

Non-compliance with the safety information

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

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

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

2.14 Safety-conscious working

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

Comply with the accident prevention instructions on the warning symbols.

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

2.15 Safety information for the operator



WARNING

Risk of contusions, cuts, dragging, catching or knocks from insufficient traffic and operational safety.

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

2.15.1 General safety and accident prevention information

- Beside these instructions, comply with the general valid national safety and accident prevention regulations.
- The warning symbols and labels attached to the machine provide important information on safe machine operation. Compliance with this information guarantees your safety.
- Before moving off and starting up the machine, check the immediate area of the machine (children)! Ensure that you can see clearly!
- It is forbidden to ride on the machine or use it as a means of transport!

Use of the machine

- 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 machine is already in operation!
- Do not wear loose-fitting clothing! Loose clothing increases the risk over being caught by drive shafts!
- Only start-up the machine, when all the safety equipment has been attached and is in the safety position!
- It is forbidden to stand in the working area of the machine.
- It is forbidden to stand in the turning and rotation area of the machine.
- There are contusion and cutting points at externally-actuated (e.g. hydraulic) machine points.
- Only actuate externally-actuated machine parts when you are sure that there is no-one within a sufficient distance from the machine!

2.15.2 Hydraulic system

- The hydraulic system is under a high pressure.
- Replace the hydraulic hose line if it is damaged or worn. Only use original 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 ageing, 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 connections made from 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.
Danger of infection.
- When searching for leakage points, use suitable aids, to avoid the serious risk of infection.

2.15.3 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 risk of explosion.
- Risk of explosion. Avoid sparking and naked flames in the area of the battery.
- The machine can be equipped with electronic components, the function of which may be influenced by electromagnetic interference from other units. Such interference can pose risks to people, if the following safety information is not followed.
 - If retrofitting electrical units and/or components on the machine with a connection to the on-board power supply, the user 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 2014/30/EEC in the appropriate version and carry the CE mark.

2.15.4 Fertiliser spreader operation

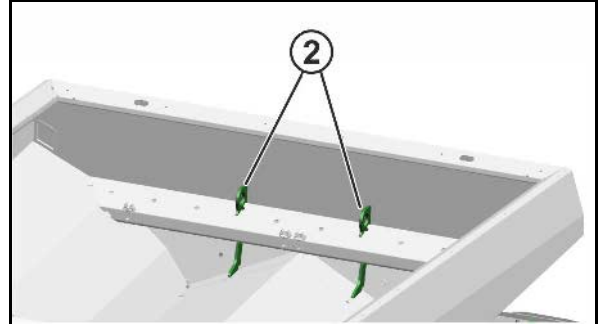
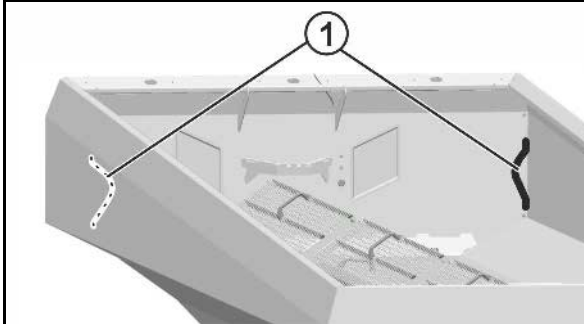
- Stay clear of the working area! Danger from flying fertiliser particles. Direct persons away from the throwing range of the fertiliser spreader. Do not walk or stand close to rotating spreading discs.
- Do not place any foreign objects in the hopper.
- While carrying out the spread rate check, beware of danger points from rotating machine parts.
- For side spreading at field edges, bodies of water or roads, use side spreading devices.
- Before each use, ensure that the attachment parts are properly fitted, particularly those for attaching the spreading discs and spreading vanes.

2.15.5 Cleaning, maintenance and repairs

- Only carry out maintenance, repair and cleaning work on the machine when
 - The drive is switched off
 - The ignition key has been removed
 - The machine connector has been removed from the on-board computer
- Regularly check the nuts and bolts for a firm seat and retighten them as necessary.
- When replacing work tools with blades, use suitable tools and gloves.
- Dispose of oils, greases and filters in the appropriate way.
- Spare parts must at least meet the specified technical requirements of AMAZONEN-WERKE. This is ensured through the use of original AMAZONE spare parts.

3 Mounting on a carrier vehicle

3.1 Loading with a lifting crane / mounting the spreader on the carrier vehicle



There are 2 attachment points respectively at the front (1) and rear (2) in the hopper.



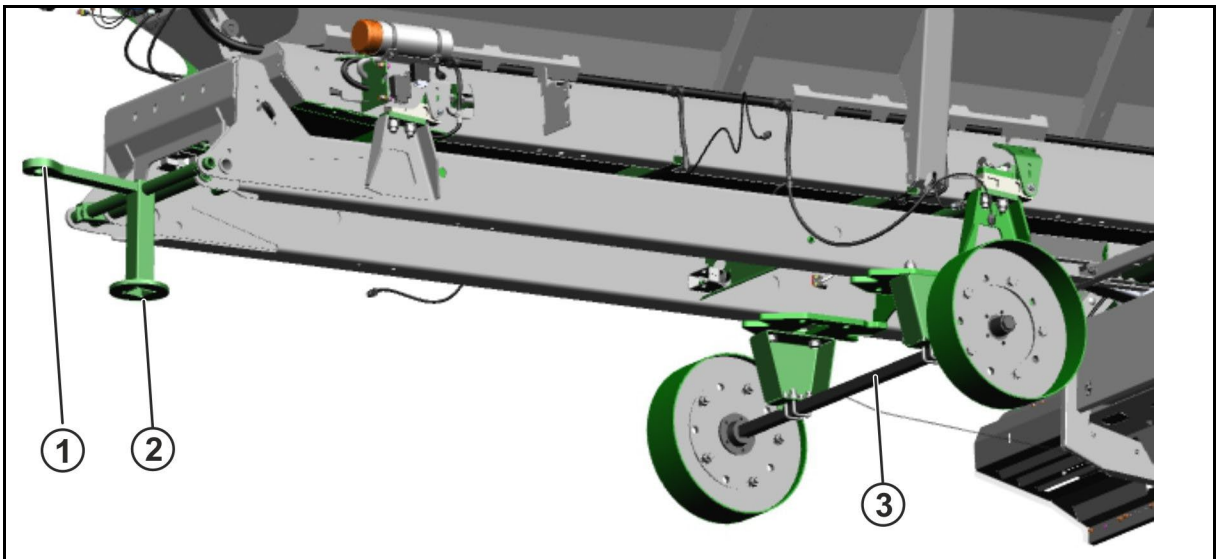
DANGER

- When loading the implement with a lifting crane, the marked attachment points for slings must be used.
- Do not step into the area under an unsecured raised load.



DANGER

The minimum tensile strength per sling must be 1000 kg!



Manoeuvring equipment (drawbar, jack and running gear) can be sent back and then reimbursed.

Mounting on a carrier vehicle

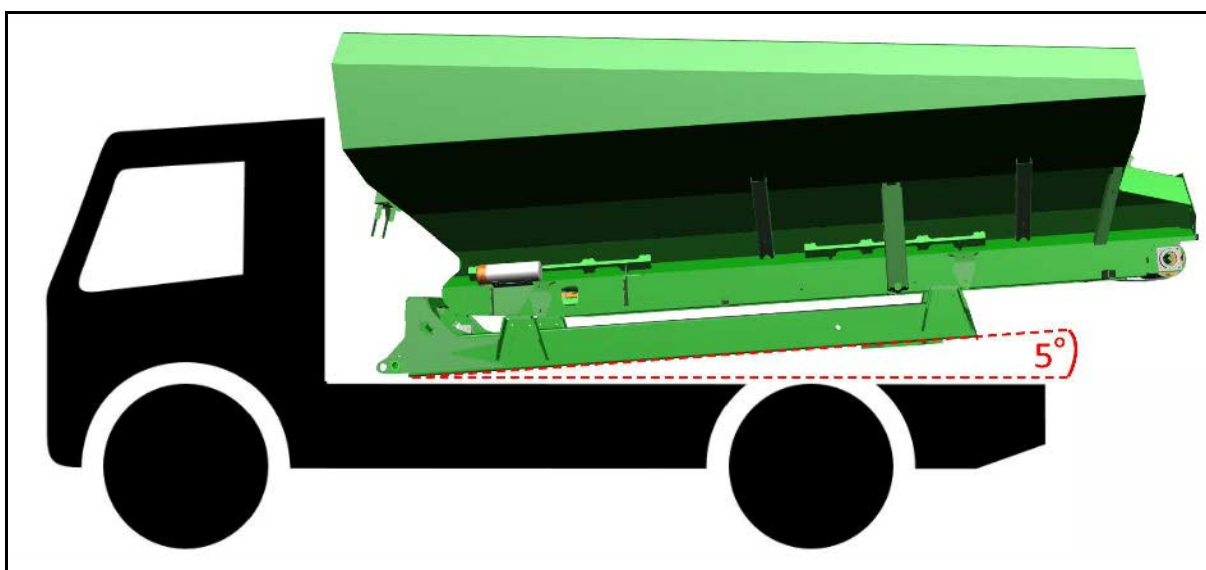
1. Lifting of the hopper using 4 attachment points.
2. Dismount the drawbar, jack and running gear (1, 2, 3).
 - To do so, support the ZG on adequately dimensioned headstocks.
3. Mount the ZG Truck on the vehicle.
4. Couple the supply lines with the vehicle.
 - o Control terminal to the on-board computer
 - o Couple the hydraulic hoses
 - o Power supply via 7-pin socket
5. Install the control terminal in the driver cab and connect with the implement plug.



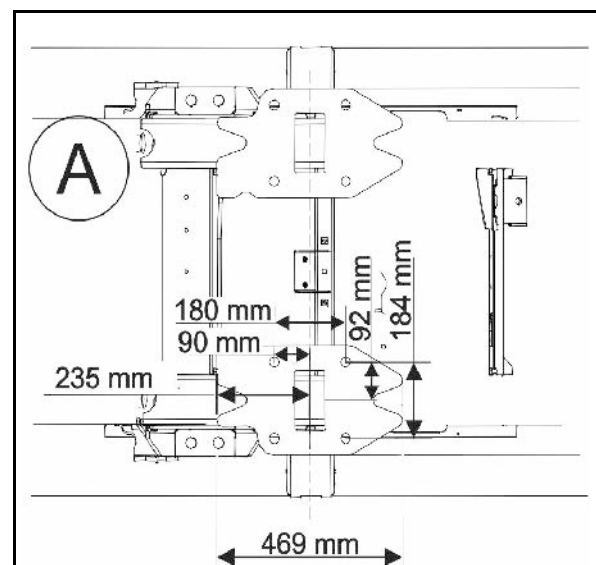
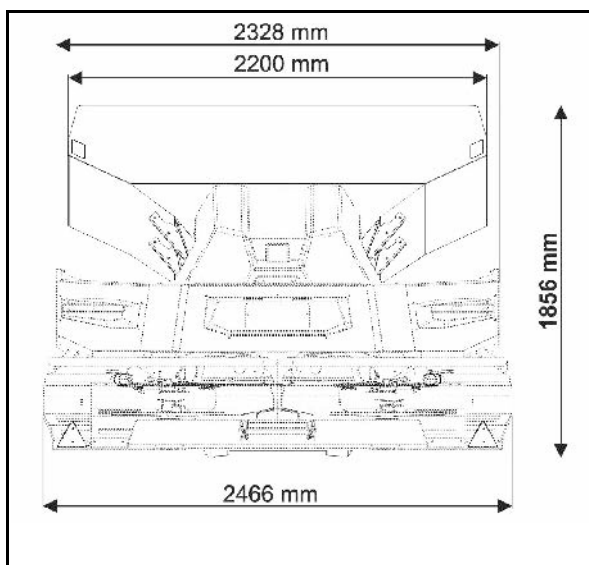
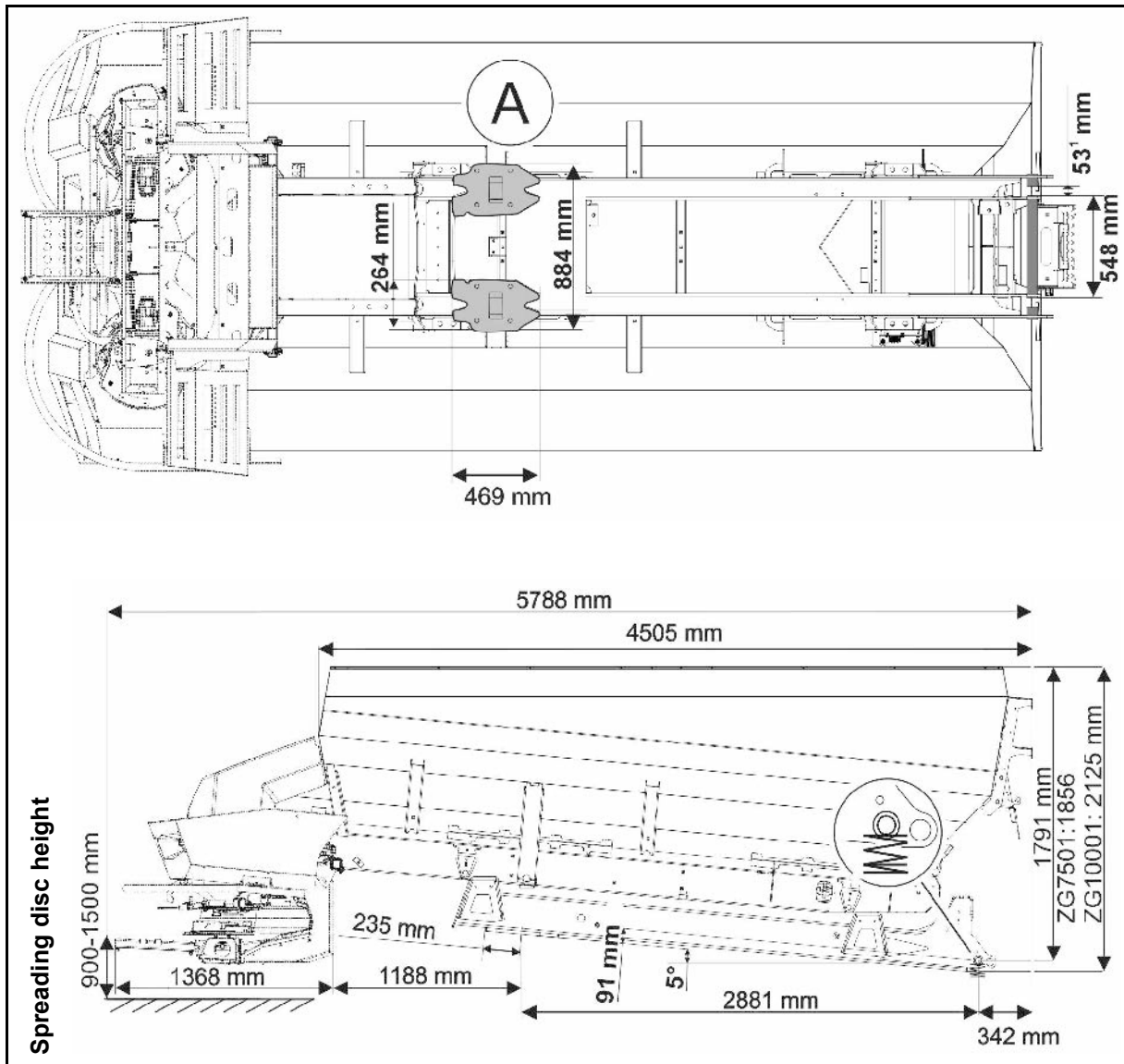
Observe that the maximum load capacity of the frame is 12000 kg!



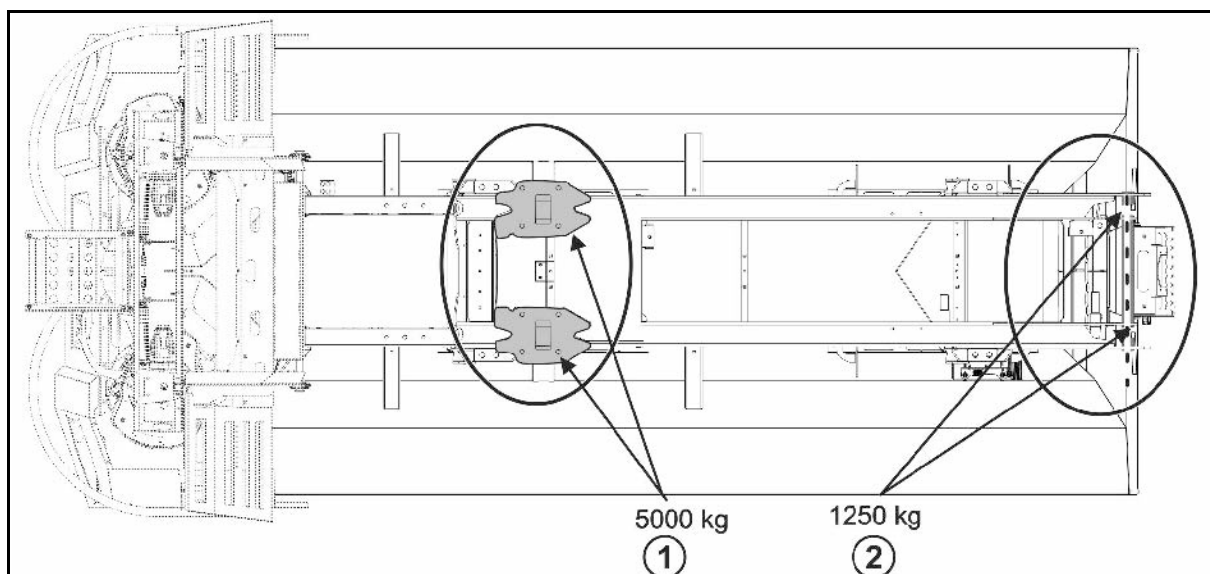
- To mount the ZG Truck on the carrier vehicle, use the mounting plates under the frame and the mounting straps at the front on the frame.
- The front mount must be spring-suspended, so that the torsion of the vehicle is not transferred onto the mounted implement.
- Use adequately dimensioned connecting elements when mounting the ZG Truck on the carrier vehicle.
 - o Mounting plate bolted connection: At least 4x M 24 bolts respectively with a bolt strength of 10.9.
 - o Mounting straps: Pin diameter of 40 mm.
- Observe the permissible spreading disc height.
- Ensure that there is enough space for the folding ladder and access to the hydraulic block at the front of the ZG-WAB.



3.2 Mounting dimensions



Mounting on a carrier vehicle



- (1) Mounting plates for M24 10.9 bolted connection.
- (2) Mounting straps for pins with 40 mm diameter

3.3 Required HGV equipment

Electrical system

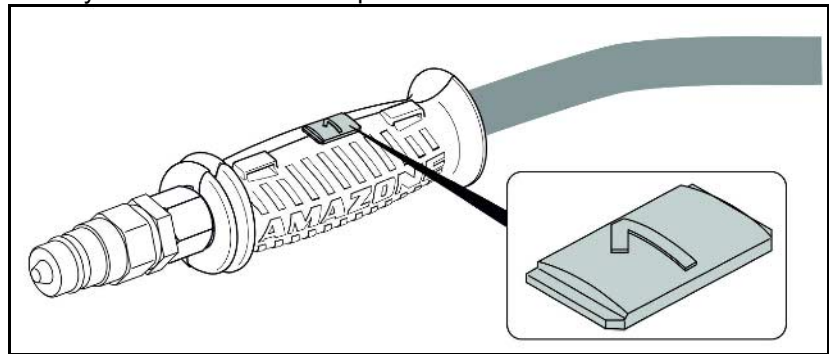
- Battery voltage: • 12V (Volt)
- Lighting socket: • 7-pin

Hydraulic system

- Maximum operating pressure: • 210 bar
- Tractor pump capacity: • At least 40 l/min at 180 bar
- Implement hydraulic fluid: • HLP68 DIN 51524




The implement hydraulic fluid is suitable for the combined hydraulic fluid circuits of all standard machines.









- Hydraulic control units: • 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 control unit!



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

- The 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	
beige			open	Double acting	
			close		
red		Permanent oil circulation		Single-acting	
red		Pressure-free return flow			
red		Load sensing control line (Where required / settings on the hydraulic block)			

Maximum permissible pressure in oil return: 8 bar

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



WARNING

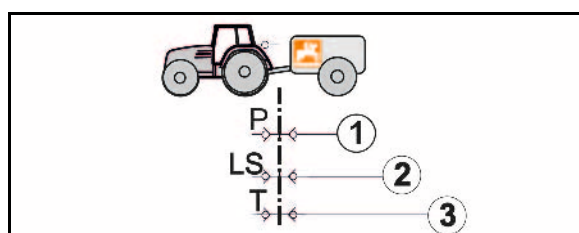
For the oil return, use only DN16 lines and select short return paths.

Pressurise the hydraulic system only when the free return has been correctly coupled.

Install the coupling union (supplied) on the pressure-free oil return flow.

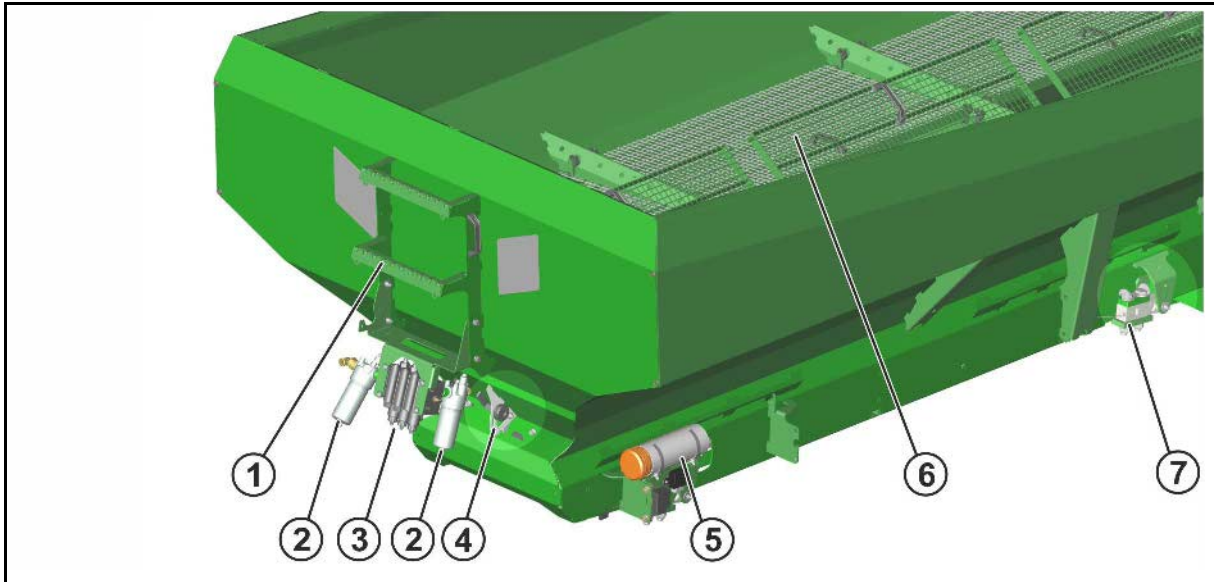
Implement-side connections in compliance with ISO15657:

- (1) P – feed line, pressure line, plug standard width 20
- (2) LS – control line, plug standard width 10
- (3) T - return line, socket standard width 20

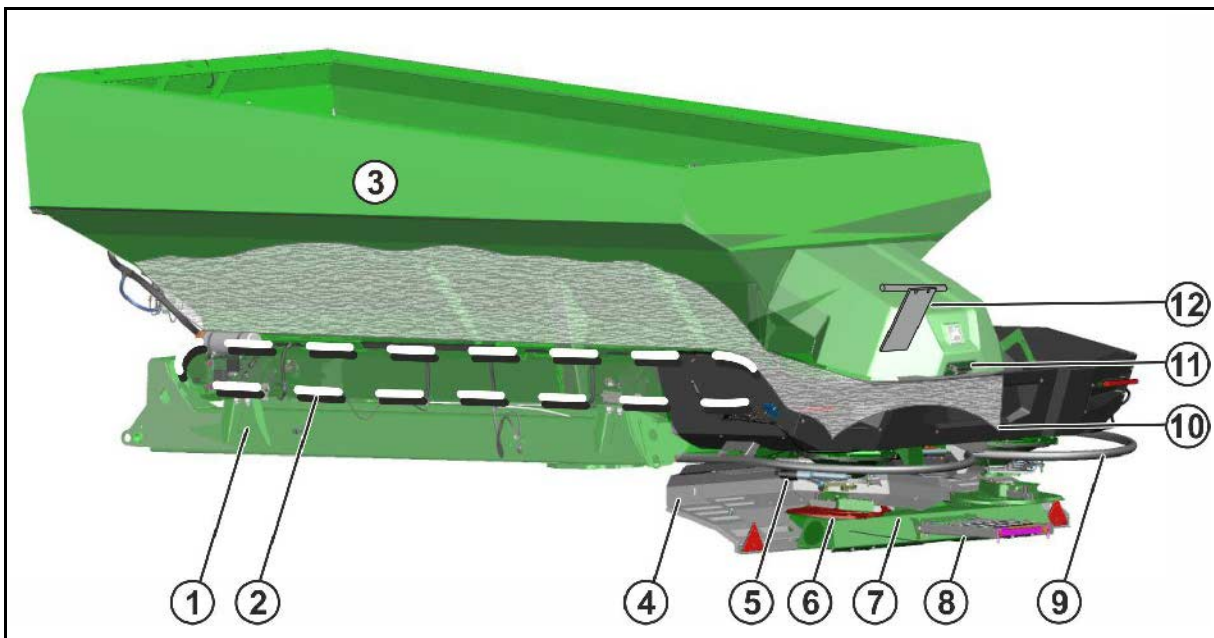


4 Product description

4.1 Overview of subassemblies



- | | |
|---------------------|--|
| (1) Ladder | (5) Thread pack with implement documentation |
| (2) Oil filter | (6) Sieve grate |
| (3) Hydraulic block | (7) Weigh cell |
| (4) Drainage flap | |



- | | |
|----------------------|--|
| (1) Frame | (7) Spray protection |
| (2) Conveyor belt | (8) Folding ladder for maintenance in the fertiliser pre-chamber |
| (3) Hopper | (9) Guard tube |
| (4) Deflector plate | (10) Hopper tip with agitator |
| (5) Metering shutter | (11) Fertiliser pre-chamber |
| (6) Spreading discs | (12) Shutter control |

4.2 Safety and protection equipment

(1) Guard tube

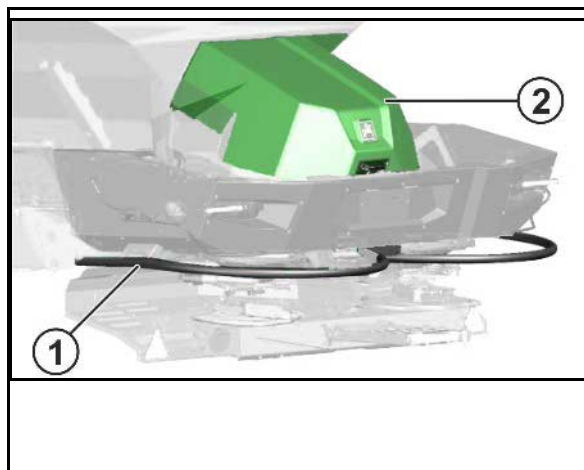
Standard: Guard tube above the spreading disc.

If the spreading disc is positioned at a height >1500 mm, the guard tube must be installed underneath the spreading disc.

(2) Hood with shutoff of the agitator shaft / spreading disc drive when opening the rear flap

Not illustrated:

- Warning signs



4.3 Transportation equipment

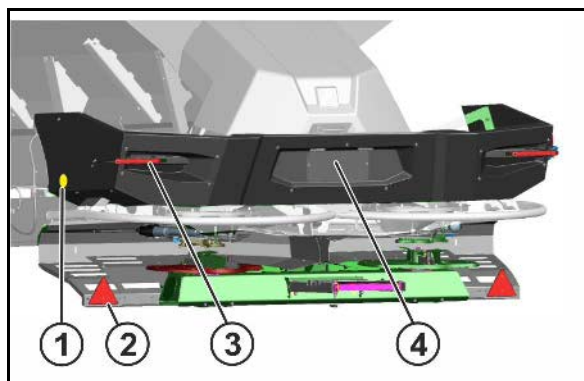
(1) Reflectors, yellow

(lateral view: distance of max. 3m)

(2) 2 red reflectors (triangular)

(3) 2 rear lights, 2 brake lights and 2 direction indicators

(4) 1 registration plate holder with lighting



4.4 Intended use

The machine

- has been designed for the use in agricultural and municipal operation and for spreading dry, granular, prilled and crystalline fertiliser (OM spreading discs, sieve screen)
- is firmly mounted on a HGV.
- operated by one person.

Sloping terrain can be navigated as follows:

- Along the contours
 - Direction of travel to the left 15 %
 - Direction of travel to the right 15 %
- Along the gradient
 - Up the slope 15 %
 - Down the slope 15 %

The intended use also includes:

- Compliance with all the instructions in this operating manual.
- Execution of inspection and maintenance work.
- Exclusive use of original 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 assumes no liability whatsoever.

4.5 Danger areas

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

- By work movements made by the machine and its tools
- By materials or foreign bodies thrown out of the machine

Within the machine danger area, there are danger points with permanent or unexpected risks. Warning symbols indicate these danger points and warn against residual dangers, which cannot be eliminated for construction reasons. Here, the special safety regulations of the appropriate section shall be valid.

No-one may stand in the machine danger area as long as the engine is running with a connected hydraulic system.

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

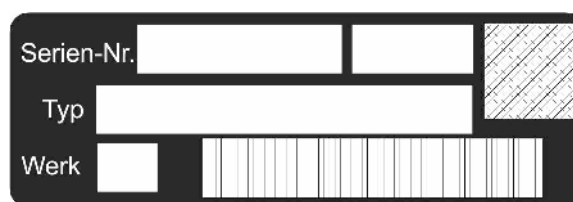
Danger points exist:

- In the area of moving parts,
 - Rotating spreading discs with spreading vanes
 - Rotating agitator shaft
 - Electrical actuation of the metering shutter
- When climbing onto the machine
- Under raised, unsecured machines and machine parts
- While spreading, from fertiliser pellets in the area of the spread fan

4.6 Rating plate

The rating plate shows:

- Machine ID no.:
- Type
- Factory





4.7 Technical data

Hopper size	7500 l	10001 l
Length over-all:	5788 mm	
Width	2412 mm	
Height	1857 mm	2125 mm
Frame load capacity	max. 12500 kg	
Drive	Standard speed Maximum permissible speed 1000 rpm	

4.7.1 Weights basic machine (empty weight)

Basic machine	1600 kg	1750 kg
Charging sieves	80 kg	
Swivelable hopper cover	434 kg	

4.8 Noise production data

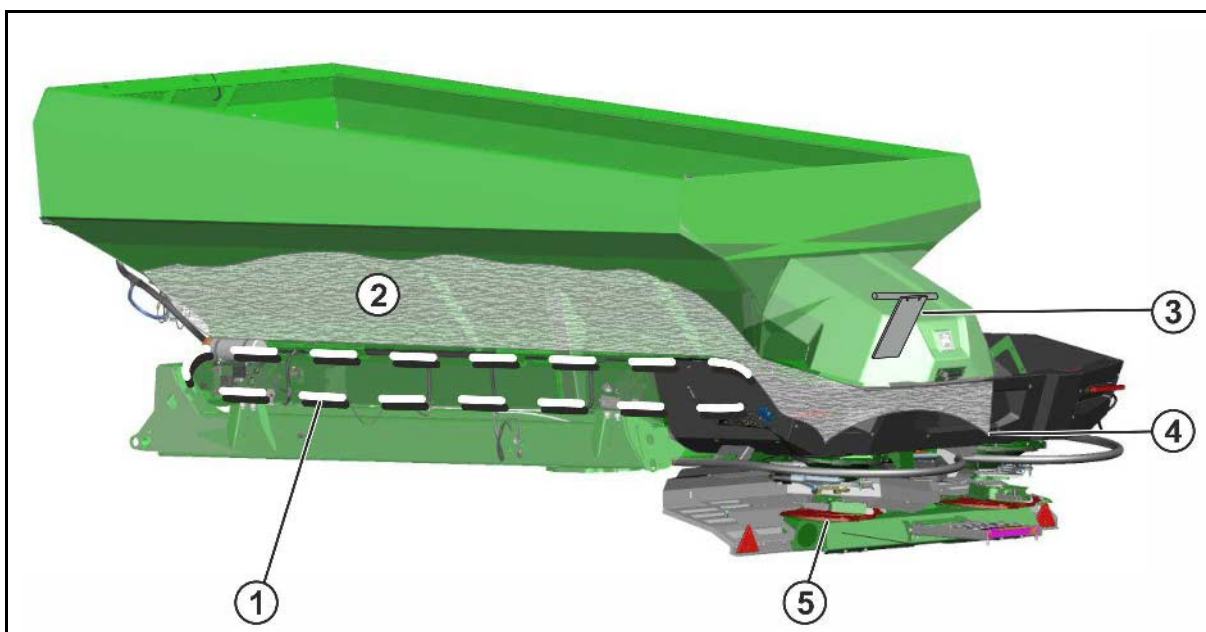
The workplace-related emission value (acoustic pressure level) is 74 dB(A), measured in operating condition at the ear of the tractor driver with the cabin closed.

Measuring unit: OPTAC SLM 5.

The noise level is primarily dependent on the vehicle used.

5 Structure and function

5.1 Function



The AMAZONE ZG-TS is a fertiliser spreader for spreading granulated fertiliser.

The product (2) is transported out of the hopper by the belt conveyor (1) by means of a flap controller (3) and delivered into the fertiliser antechamber. From there, the fertiliser is delivered to the spreading discs (5) via the hopper tips (4).

Equipment:

- o Speed-dependent metering via electro-hydraulically controlled belt conveyor.
- o Hydraulic drive for the spreading discs
- o ISOBUS on-board computer
- o Weigh cell (optional)

5.2 Fertilising technology

5.2.1 Setting chart

All common kinds of fertiliser on the market are spread in the **Amazone** spreading hall, and the setting data measured during this process are incorporated into the setting chart. The types of fertiliser listed in the setting chart were in perfect condition when the measurements were taken.



It is recommended to use the fertiliser database with the biggest fertiliser selection for all countries and the most current setting recommendations

- Through the FertiliserService application for Android and iOS mobile devices
- From the online FertiliserService

See www.amazone.de → Service & Support → FertiliserService

Using the QR codes shown below, you can directly access the AMAZONE website to download the FertiliserService application.




iOS









Android





Contact partners in the respective countries:

					
(GB)	0044 1302 755720	(I)	0039 (0) 39652 100	(H)	0036 52 475555
(IRL)	00353 (0) 1 8129726	(DK)	0045 74753112	(HR)	00385 32 352 352
(F)	0033 892680063	(FIN)	00358 10 768 3097	(BG)	00359 (0) 82 508000
(B)	0032 (0) 3 821 08 52	(N)	0047 63 94 06 57	(GR)	0030 22620 25915
(NL)	0031 316369111	(S)	0046 46 259200	(AUS)	0061 3 9369 1188
(L)	00352 23637200	(EST)	00372 50 62 246	(NZ)	0064 (0) 272467506
				(J)	0081 (0) 3 5604 7644

Identification of the fertiliser












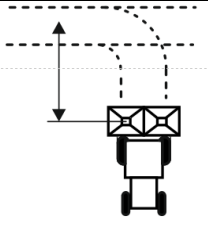

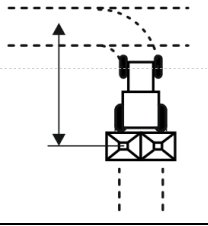

	Name of the fertiliser	
Representation of the fertiliser		Grain diameter in mm
		Bulk density in kg/l
		The calibration factor is used as a default value for fertiliser calibration.
		Throw distance parameter for WindControl
		Mounting height in cm

	If you cannot definitively assign the fertiliser to a kind listed in the setting chart
<ul style="list-style-type: none"> the AMAZONE Fertiliser Service will assist you over the telephone in assigning the fertilisers and setting recommendations. 	
 +49 (0) 54 05 / 501 111	
<ul style="list-style-type: none"> The AMAZONE Fertiliser Service provides setting recommendations after a small fertiliser sample (3 kg) is sent in. 	
<ul style="list-style-type: none"> please consult the contact partner in your country 	

Settings

Manually before use		TS-30	TS-20	Spreading vane unit												
On the operating terminal before use		48,0	36	800	D	X	900	3	5	800	3	10	720	45	4	329
On the operating terminal before use / Tronic: Manually during use		40,0	25	800	C	3	900	3	15	800	3	20	720	39	2	246
On the operating terminal before use		36,0	18	720	C	2	800	2	20	720	2	25	600	36	0	216
On the operating terminal before use / Manually before use		30,0	16	800	B	2	900	2	7	800	2	12	720	29	-1	176
On the operating terminal before use / Tronic: Manually during use		27,0	16	600	B	2	720	2	5	600	2	10	550	24	-2	176
On the operating terminal before use		24,0	16	600	B	2	720	2	5	600	2	10	550	24	-2	165
On the operating terminal before use		ArgusTwin: on the control terminal before use														
On the operating terminal before use (GPS) Manually during use		On the operating terminal before use (GPS) Manually during use														
On the operating terminal before use		On the operating terminal before use														
On the operating terminal before use / Tronic: Manually during use		Hydro: On the operating terminal before use / Tronic: Manually during use														
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Symbols and units:

	Working width in m (metre)	
	Position of the delivery system as value in the adjustment scale or entry in the control terminal	
	Spreader disc speed in rpm depending on the type of spreading	
	Border spreading	
	Boundary spreading	
	Ditch spreading	
 [1/2-m]	Select telescope A, B, C or D for boundary spreading for half a working width as boundary distance	
	Setting 1, 2 or 3 on the telescope for boundary spreading 0 - do not use the telescope for boundary spreading	
	Spreading disc speed for boundary spreading	
	Quantity reduction for boundary spreading / ditch spreading in % for entry in the control terminal	
X	Border spreading without switching on the boundary spreading vanes	
	<p>Switch-on point (point at which the shutters open) when driving into the field given as distance in m.</p> <p>Measured from the centre of the spreading disc to the centre of the track in the headlands.</p>	
	<p>Switch-off point (point at which the shutters close) prior to driving into the headlands given as distance in m.</p> <p>Measured from the centre of the spreading disc to the centre of the track in the headlands.</p>	
	Throw direction (ArgusTwin)	

5.2.2 Spreading discs TS

Variants:

- Spreading vane unit TS 10 for small working widths.
- Spreading vane unit TS 20 for medium working widths.
- Spreading vane unit TS 30 for large working widths.

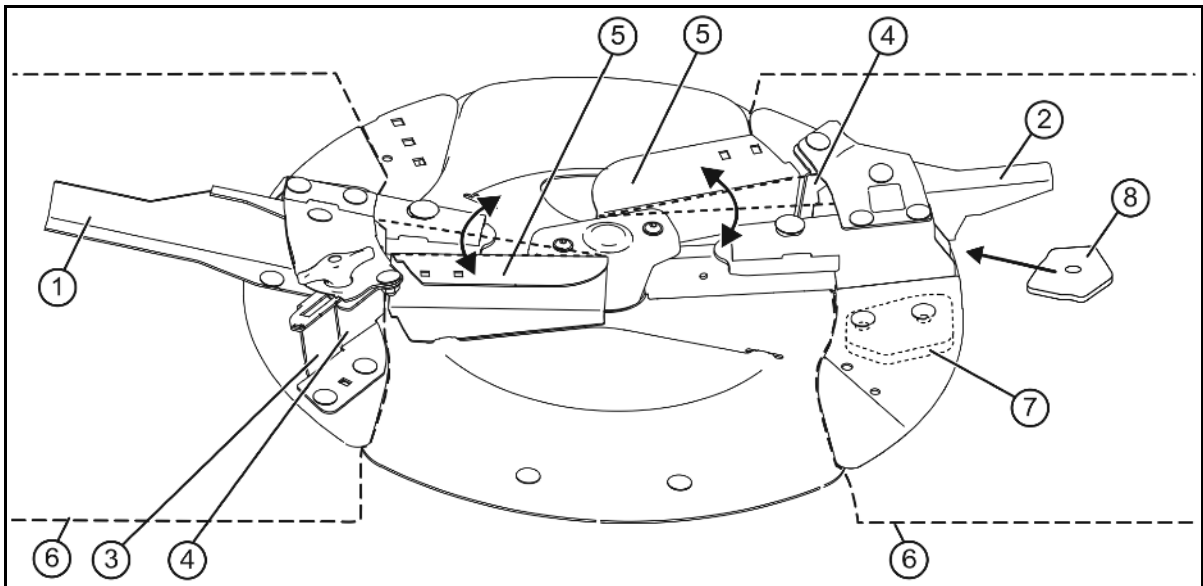


The implement is equipped with the TS boundary spreading system.

The boundary spreading system is available in the versions AutoTS and ClickTS, and can be selected as desired for any spreading disc.

AutoTS is switched using the control terminal.

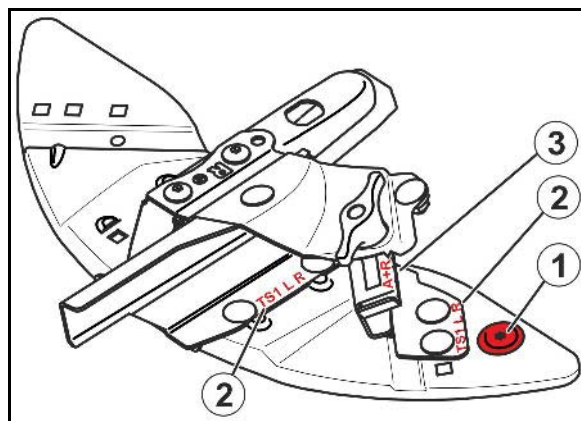
ClickTS is adjusted manually on the spreading disc.



- (1) Long spreading vane for normal spreading
- (2) Short spreading vane for normal spreading
- (3) Telescopic spreading vane for border spreading
- (4) Rigid spreading vane for border spreading
- (5) Swivel-mounted inner part of the spreading vane
- (6) Replaceable spreading vane unit for varying the spectrum of the working width
- (7) Standard balancing weight
- (8) Balancing weights for telescopic spreading vanes for boundary spreading D

Structure and function

- (1) Coloured marking of the spreading vane unit
- (2) Markings on the spreading vanes
- (3) Marking on the telescopic boundary spreading vane



Selection of the spreader units:

TS 10, TS 20, TS 30

Selection of the telescopic boundary spreading vane:

A, A+, B, C, D

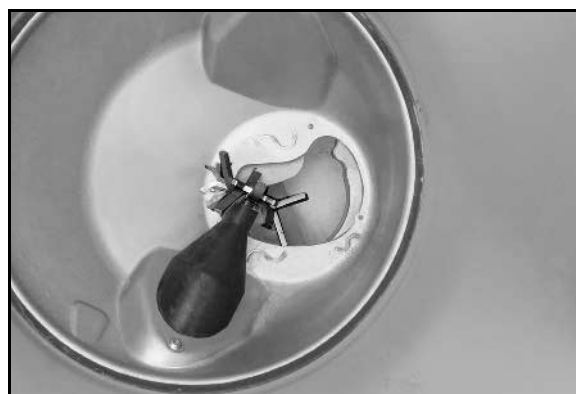
Adjustment range according to the setting chart

- 1, 2, 3
- 0 - no telescope

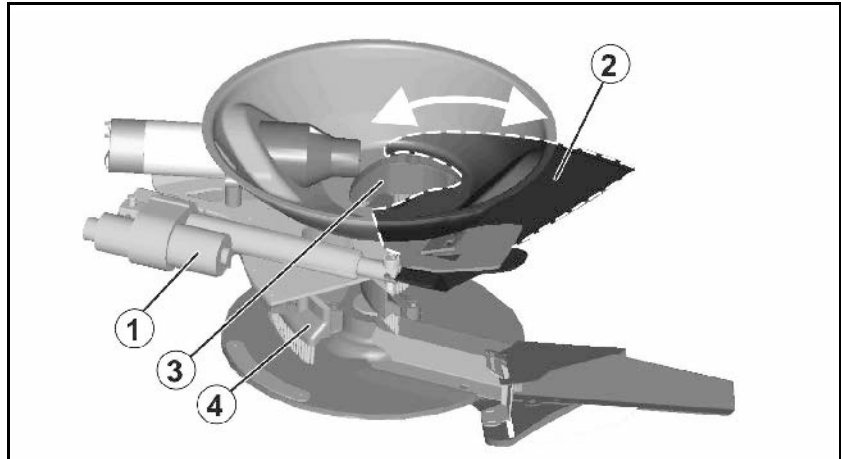
5.2.3 Agitator

Agitators in the tips of the hopper ensure a uniform fertiliser flow to the spreading discs. The slowly rotating agitators convey the fertiliser uniformly to the respective outlet opening.

The drive is carried out electrically.



5.2.4 Spread rate metering



- (1) Setting motor for metering
- (2) Metering shutter
- (3) Outlet opening
- (4) Brushing unit

The spread rate is set **electronically** via the control terminal.

In this case, dosing sliders operated by setting motors release a range of different diameters at the outlet openings.

The brushing unit ensures a clean delivery onto the spreading disc without fertiliser turbulence and dust.

When the metering shutter is completely shut it closes the outlet opening in the tank.



Da die Streueigenschaften des Düngers starken Schwankungen unterliegen, wird empfohlen, die gewählte Schieberstellung für die gewünschte Streumenge durch eine Streumengenkontrolle zu überprüfen.

Depending on the equipment, the spread rate is regulated proportional to the speed via:

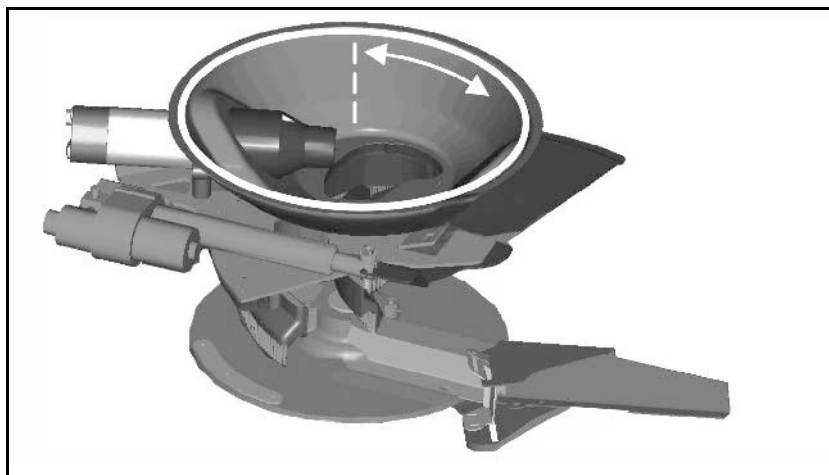
- Weighing technology

5.2.5 Drop-point system

The drop-point system that drops the fertiliser onto the spreading disc is above the spreading discs.

The drop-point system can be attached so that it rotates under the tips of the tank.

The position of the drop point system influences the lateral distribution and must be adjusted as specified in the setting chart.



Using the operating terminal, the feed system at both hopper tips can be electrically adjusted according to the setting chart.

The position of the feed system over the spreading disc depends on:

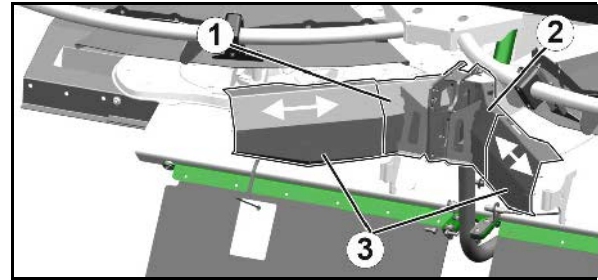
- the working width and
- the type of fertiliser.

The ArgusTwin and WindControl systems automatically optimise the position of the delivery system.

5.2.6 Bed spreading deflector

The bed spread deflector is installed between the spreading discs and influence the spread fans in a way that makes bed spreading possible.

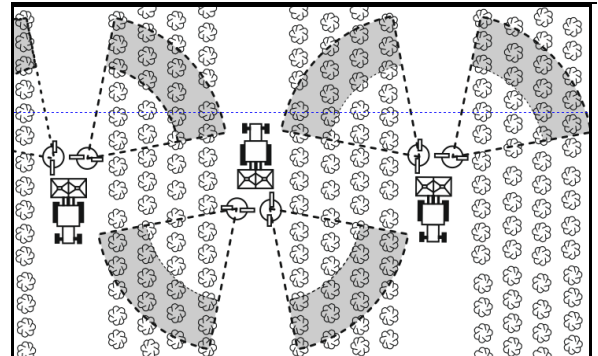
(1) Adjustable telescope



One-sided installation is possible.



Combination of boundary spread deflector and bed spread deflection possible on the right.



Fertiliser spreading on both sides with recess in the area of the tractor track.

To achieve uniform distribution over the bed, fertiliser must be spread into the bed from both sides of the bed.

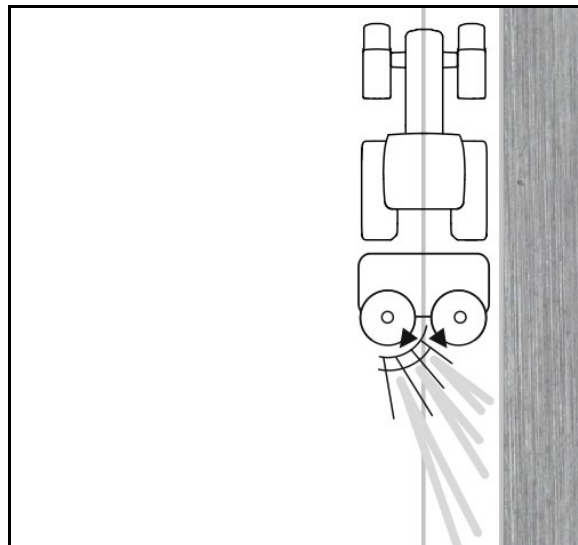
The telescopes can be pulled out to throw the fertiliser further outwards into the bed.

The telescopes can be pushed in to throw the fertiliser further inwards towards the tractor.

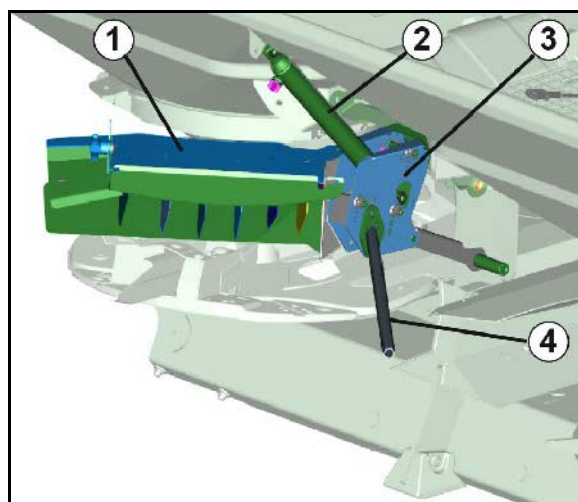
5.2.7 Boundary spreading deflector BorderTS

The boundary spread deflector is used for spreading at the field boundary.

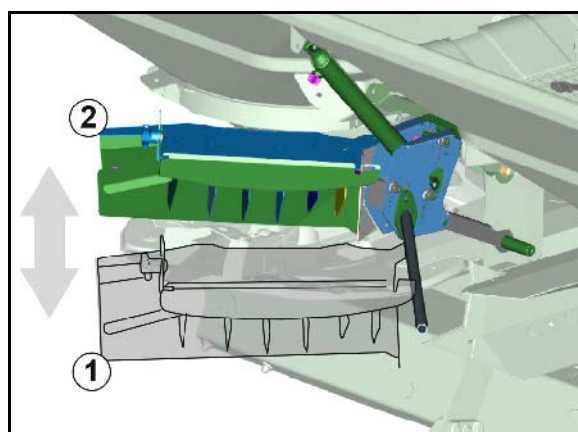
- The boundary side must be on the right
- The boundary spread deflector is installed behind the left spreading disc
- Only the left spreading disc is supplied with fertiliser
- Perform the connection of the next bout with half the working width towards the field boundary



- (1) Boundary spread deflector
- (2) Hydraulic cylinder
- (3) Bracket
- (4) Hoop guard (protective device as additional protection from the driven spreading discs)



- (1) Boundary spread deflector lowered in operating position
- (2) Boundary spread deflector lifted in non-operational position



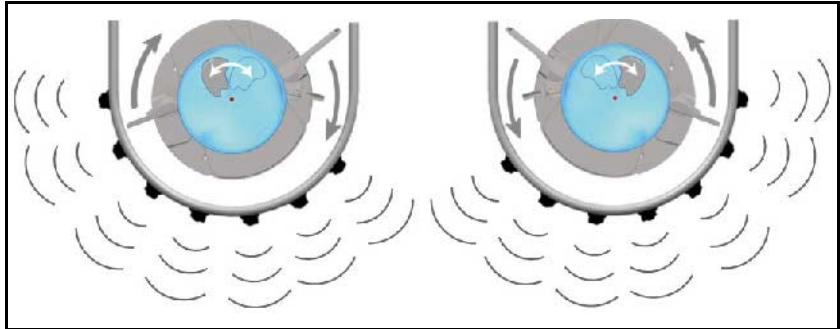
5.2.8 Argus Twin

Argus Twin constantly measures and regulates the throwing direction of the fertiliser spreader to optimise the lateral distribution.

The actual throwing direction is compared to the target values. If there are deviations, the position of the delivery system will be adjusted.

The target throwing direction is taken from the setting chart or determined using the mobile test rig.

The throwing direction is measured by 7 radar sensors respectively on each side of the spreader unit.



The throw direction depends on the fertiliser properties, working width, spreading vane unit and spreading disc speed.

Argus Twin compensates for irregularities in the fertiliser, fertiliser deposits on the spreading vanes, working on slopes, starting and braking processes.



WARNING

Health hazard due to radiation exposure!

Before you switch on the spreading discs, ensure that people maintain a safe distance of 20 cm from the sensors.



Argus Twin and mobile test rig!

Check the throwing direction using the mobile test rig with the Argus Twin activated.

→ During the evaluation of the results from the mobile test rig, a corrected value is automatically saved for the throwing direction.

For unknown fertilisers, the correct throw direction can be determined with the mobile test rig. Use the throwing direction from a similar fertiliser as a basic setting.



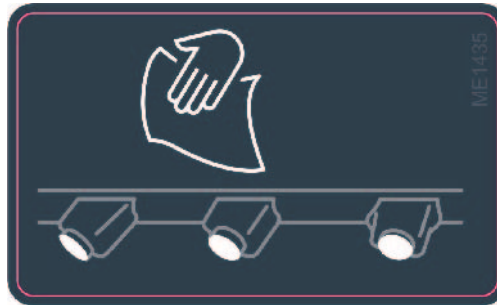
Argus Twin is only permitted at ambient temperatures from -20°C to +50°C.



Faulty fertilising due to soiled radar sensors of the ArgusTwin-system!

Strong or uneven dirt accumulations can prevent ArgusTwin from properly regulating the delivery system, and the crops are then over- or under-fertilised in strips.

- Depending on the operating conditions, check the radar sensors regularly for strong or uneven dirt accumulations.
- Clean the radar sensors if necessary.



Simplified Declaration of Conformity

AMAZONEN-WERKE H.Dreyer SE & Co. KG hereby declares that the radio communication unit type Argus complies with Directive 2014/53/EU.

The full text of the EU Declaration of Conformity is available at the following website:

<https://info.amazone.de/>

Radio frequency and transmission power



- ArgusTwin's transmission frequency range is from 24.150 GHz to 24.250 GHz.
- The equivalent isotropically radiated power (EIRP) is 17.6 dBi EIRP per radar module.

5.2.9 WindControl

WindControl is a system developed by Prof. Dr. Karl Wild for constant and automatic compensation of wind effects on the spread pattern.

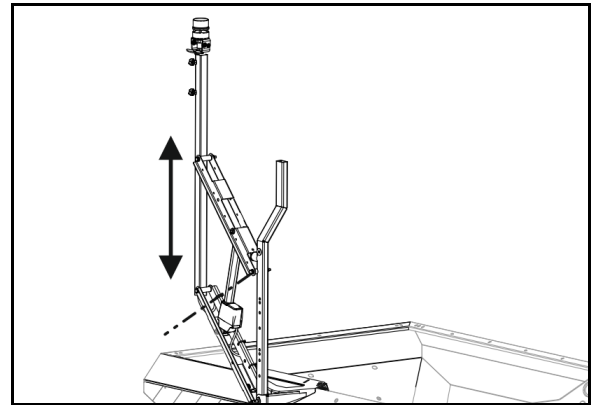
The wind effects are compensated by changing the spreading disc speed and the delivery system.

- Only in combination with ArgusTwin
- Only with hydraulic spreading disc drive
- Only for spreading vanes TS 20 and TS 30

When switching on the spreading discs, the sensor is automatically raised into operating position.

When the spreading discs are switched off, the sensor is automatically lowered into transport position.

- Condition: forward speed 0-3 km/h



In the working position, the sensor must be 500 mm above the highest point of the implement and tractor.

However, the total height may not exceed 4 m.

5.2.10 EasyCheck

EasyCheck is the digital test rig to check the lateral distribution on the field.

EasyCheck consists of collection mats for fertiliser and the smartphone app to determine the fertiliser lateral distribution on the field.

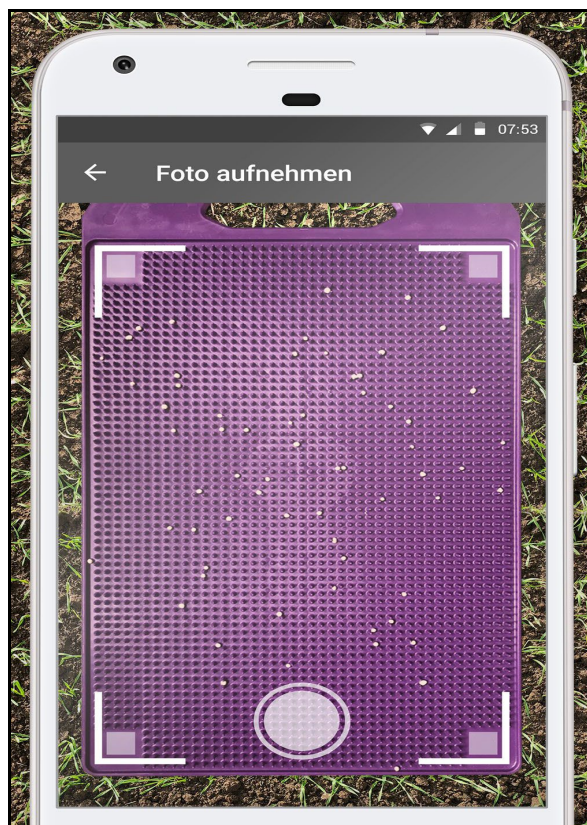
The collection mats are placed at defined positions on the field and are strewn with fertiliser by driving back and forth.

Afterwards, the collection mats are photographed using the smartphone. The app checks the lateral distribution using the photos.

If necessary, changes to the settings are suggested.

Use the AMAZONE website to download the following:

- EasyCheck app
- EasyCheck operating manual



5.2.11 Mobile test rig

The mobile test rig serves to check the lateral distribution on the field.

The mobile test rig consists of collection trays for the fertiliser and a measuring cup.

The collection trays are placed at four defined positions on the field and are strewn with fertiliser by driving back and forth.

Afterwards, the collected fertiliser is filled into a measuring cup. The evaluation is based on the fill levels in the measuring cup.

The evaluation is performed using:

- The calculation model in the mobile test rig operating manual.
- The implement software on the control terminal
- The EasyCheck app (AMAZONE website)

Refer to the operating manual for the mobile test rig



5.2.12 FlowControl (optional)

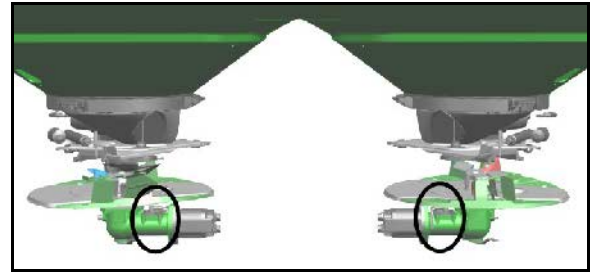
FlowControl is a constant control and correction of the speed-proportional spread rate (kg/ha).

FlowControl records the torques for the spreading disc drives and uses them to calculate the metering shutter position independently of the side.

A previous manual spread rate check (determining of the calibration factor) is not necessary.

With the weighing spreader, the measured values are referenced over a longer period of measurement with the weighing technology.

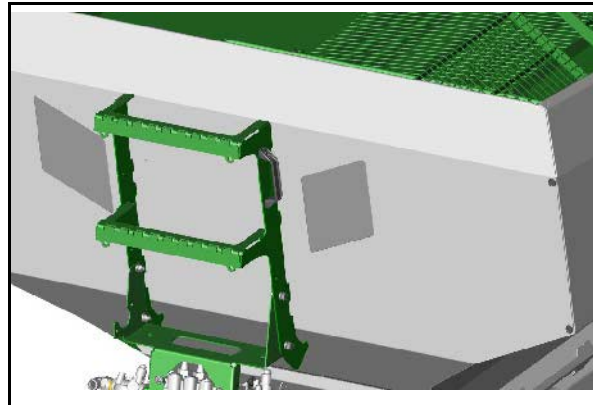
Moreover, FlowControl enables the detection and elimination of blockages and the detection of empty hopper tips.



5.3 Fertiliser hopper

5.3.1 Fertiliser hopper maintenance platform

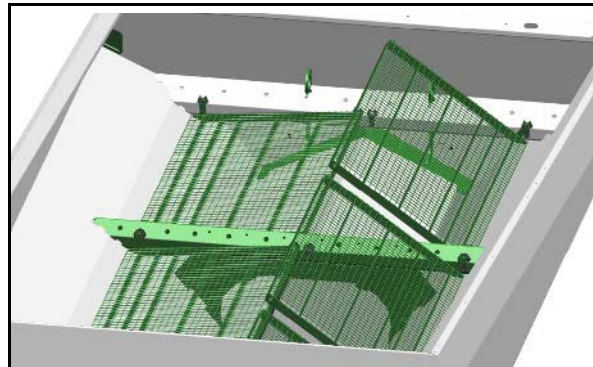
The maintenance platform with ladder enables access to the inside of the hopper for cleaning or maintenance.



5.3.2 Charging sieves

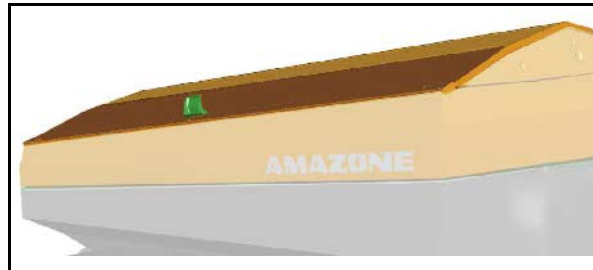
The foldable charging sieves cover the entire hopper and protect against foreign particles and fertiliser clods during filling.

The charging sieves can be trodden on in order to clean the inside of the hopper.



5.3.3 Rollup cover tarpaulin (optional)

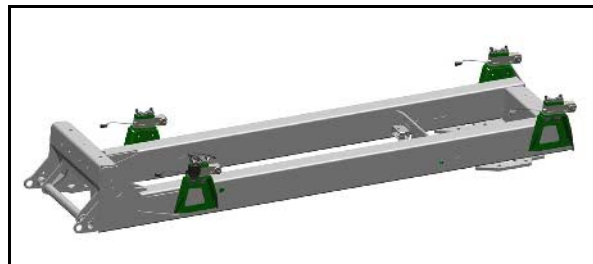
The rollup cover tarpaulin opens and closes the hopper hydraulically.



5.4 Weighing technology

The machine can be equipped with a weighing device with 4 weigh cells:

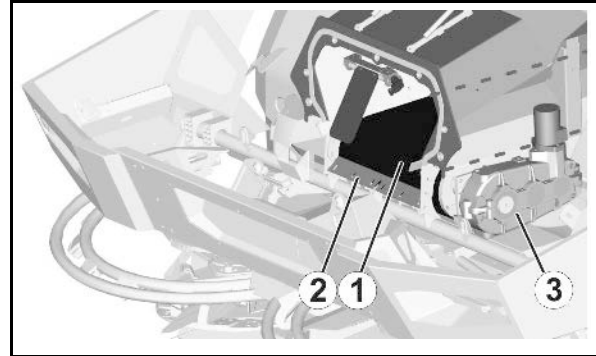
- Determine tank capacity.
- To perform the spread rate check (offline / online calibration)



5.4.1 Hydraulically driven conveyor belt

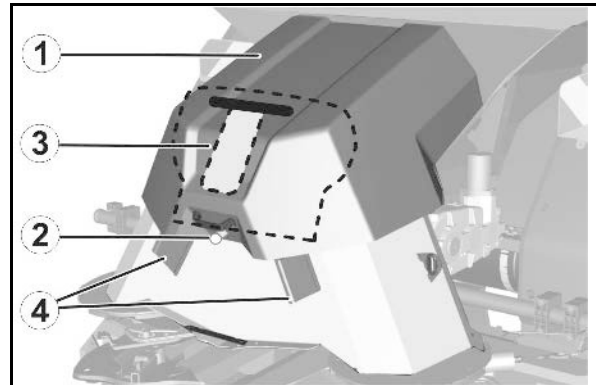
The spreading material from the hopper is fed on the conveyor belt via the fertiliser pre-chamber with shutter control to the spreaders.

- (1) Conveyor belt
- (2) Adjustable scraper
- (3) Gearbox with hydraulic motor to drive the conveyor belt



5.4.2 Fertiliser pre-chamber

- (1) Hood
- (2) Hood locking mechanism
- (3) Shutter control in the fertiliser pre-chamber
- (4) Maintenance flap



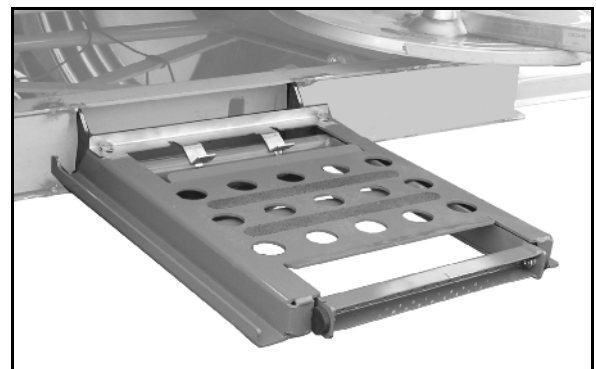
5.4.3 Fertiliser pre-chamber maintenance platform

Ascent with platform to the fertiliser pre-chamber with shutter control for cleaning and maintenance purposes.

- To climb up, pull the ladder with the platform to the rear and fold down the ladder.
- When not in use, swivel the ladder up and push to the front with the platform.



Make sure that the pushed-in ascent is locked in the end position.

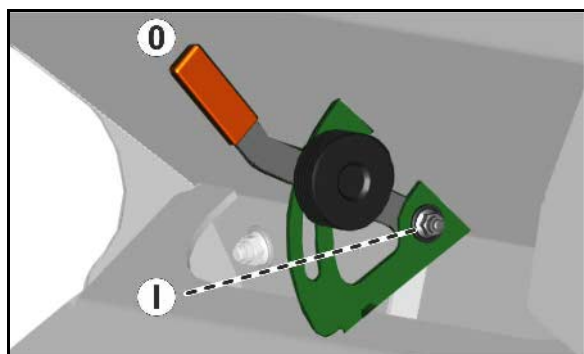


5.4.4 Drainage flap

Flap for draining the fertiliser hopper during cleaning.

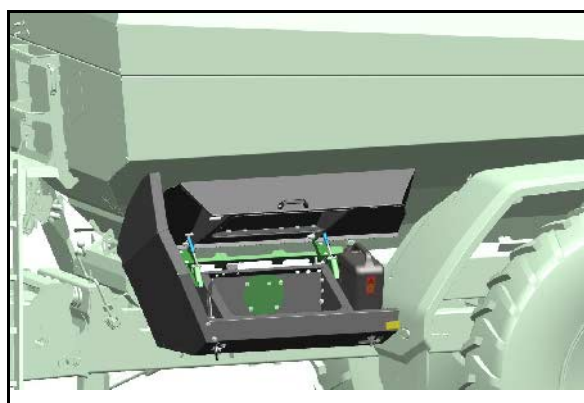
- Hand lever in position 0: Default position
- Hand lever in position I: Drainage

Secure the position of the hand lever with the knob.



5.4.5 Transport box

Lockable transport box for storage with hand wash tank



5.5 In-cab terminal



It is absolutely imperative to pay attention to the operating manual for the In-cab terminal and the operating manual for the software for implement control!

An ISOBUS compatible operating terminal makes it easy to control, operate and monitor the machine.

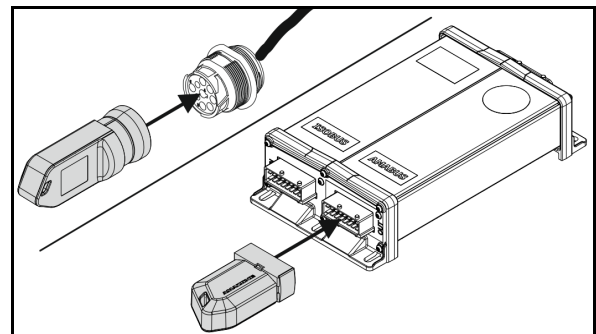
The spread rate is set electronically.



5.6 Bluetooth connection

For a Bluetooth connection, the Bluetooth adapter must be connected to the implement computer or to the diagnosis plug.

For Bluetooth coupling, refer to the ISOBUS software operating manual.



5.7 MySpreader app

The AMAZONE mySpreader app enables convenient handling of the implement using a mobile device.

The implement can be connected to a mobile end device via Bluetooth.

The fertiliser spreader can exchange data with the mySpreader app via Bluetooth.

Content of the mySpreader app:

- FertiliserService app with settings for the fertiliser spreader
- EasyCheck app to determine the lateral distribution
- EasyMix app with setting recommendations for mixed fertiliser



The app can be purchased from the iOS Store or the Play Store.

To purchase the app, use the QR code or the link

www.amazone.de/qrcode_mySpreader.



5.8 Camera system



WARNING

Risk of injury or even death.

If the camera display alone is used for manoeuvring, persons or objects can be overlooked. The camera system is an aid. It does not replace the operator's awareness of the immediate surroundings.

- **Before manoeuvring, ensure that there are no people or objects in the manoeuvring area by taking a direct look**

5.9 Work lights

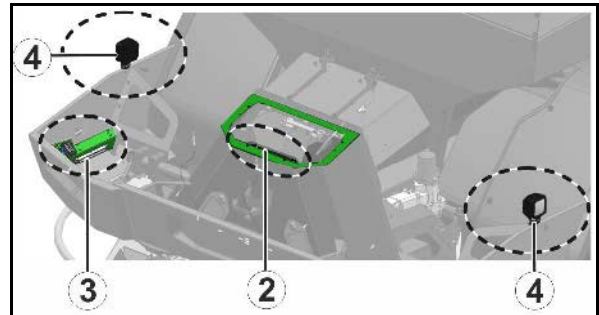
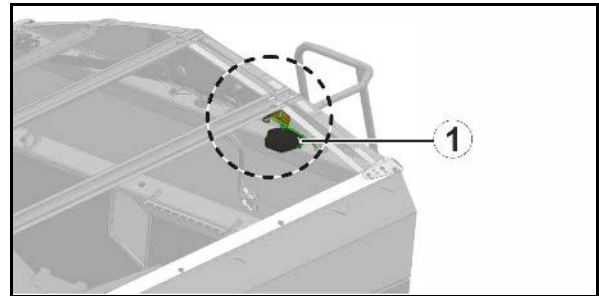


Power supply and operation via ISOBUS (only LED floodlights with a total power of 48 W).

The work lights ensure good vision on the working field at night.

The work lights are located

- (1) in the hopper
- (2) under the hood in the pre-chamber
- (3) on both sides of the spreader unit
- (4) installed on the sides for illuminating the spread fan during operation



6 Commissioning



When performing any adjustment work on the machine, observe the information in the following chapters

- "Warning symbols and other labels on the machine" from page 16 and
- "Safety information for the operator" from page 24.

Observing this information is important for your safety.



WARNING

Danger of, shearing, cutting, entrapment, entanglement, being drawn in, caught or struck during all adjustment work on the machine

- **due to unintentional contact with moving operating elements (spreading vanes of rotating spreading discs).**
- Secure the vehicle and the machine against unintentional start-up and rolling, before adjusting the machine.
- Only touch moving operating elements (rotating spreading discs) when they have come to a complete standstill.




Please note that the individual spreading properties of the spread material have a significant influence on the lateral distribution and spread rate. For this reason, the listed setting values should only be considered as a reference.




The spreading properties depend on the following factors:

- The fluctuations in the physical data (specific weight, grain size, frictional resistance, cw value, etc.) within the same type and brand
- The different properties of the spread material due to weather factors and/or storage conditions.







As a result of this, we cannot guarantee that your spreading material, even with the same name and from the same manufacturer, has the same spreading properties as the listed spreading material. The specified setting recommendations for the lateral distribution are based exclusively on the weight distribution and not on the nutrient distribution (this applies particularly for mixed fertilisers) or the active substance distribution (e.g., for slug pellets or lime). Claims for damages not caused by the centrifugal spreader itself are excluded.



















All settings on the machine are made on the basis of the setting chart for the corresponding fertilizer.

-  Pay attention to the grain diameter and  bulk density.
- The calibration factor can be used as a starting value for fertilizer calibration.
-  Entering throw distance parameters for WindControl on the operating terminal.

1.  Pay attention to the working width.
2. **TS** Selection of spreading vane unit.
3.  Position of the delivery system (manual/on the control panel, optional).
4.  Setting of the spreader vane speed (via PTO shaft speed / on the control terminal with a hydraulic drive).
5. Setting for boundary and trench spreading, see page 65.

Excerpt from the setting chart

YaraMila® NPK															
					3,61 mm										
					1,08 kg/l										
					0,99										
					13,8										
															

				 [1/2 m]											
					Side spreading		Boundary spreading			Ditch spreading					
															
TS-20	24,0	16	600	B	2	720	2	5	600	2	10	550	24	-2	166
	27,0	16	600	B	2	720	2	5	600	2	10	550	24	-2	172
	30,0	16	800	B	2	900	2	7	800	2	12	720	29	-1	172
TS-30	36,0	18	720	C	2	800	2	20	720	2	25	600	36	0	184
	40,0	25	800	C	3	900	3	15	800	3	20	720	39	2	224
	48,0	36	800	D	X	900	3	5	800	3	10	720	45	4	324

6.1 Setting the spread rate



See the ISOBUS-Software operating manual.

The **slider position** required for the desired **spread rate** is adjusted electronically via the two rate slides.

After entering the desired spread rate on the in-cab terminal [nominal quantity in kg/ha], the fertiliser calibration factor must be determined (spread rate check). It determines the spread rates set by the **in-cab terminal**.

6.2 Spread rate control (fertiliser calibration)



See operating manual Implement control software ISOBUS / Chapter Calibrate Fertilizer

Prior to checking the spread rate, see the setting chart for the calibration factor (as the initial basis) for the respective fertiliser, and enter it in the Fertiliser menu of the ISOBUS software.

Prerequisite	Different methods for spread rate check
Weighing spreader	Constant calibration while spreading (calibration methods on the field) Online calibration using weighing technology: Configure implement menu → Calibration method: online calibration.
	Calibration before / when beginning spreading operation Calibrate with each fertiliser change / change in the spread rate / change in the working width / deviations between the desired and the actual spread rate. At the beginning of spreading operation, during the calibration run when spreading the first 1000 kg of fertiliser. Configure implement menu: → Calibration method: switch on offline calibration. Work menu: Select automatic fertiliser calibration.
Calibration device	Calibration before spreading operation when the implement is at a standstill. Fertiliser menu: → Calibration method: lateral opening (via calibration device)



The fertiliser flow characteristics can change even after a brief fertiliser storage period.

Consequently, before each use, re-determine the calibration factor for the fertiliser to be spread.

The fertiliser calibration factor must always be re-determined if deviations occur between the theoretical and actual spread rate.

6.3 Setting the spreading disc speed



See the setting chart for the spreader disc speed for the respective fertiliser, and enter it in the Fertiliser menu of the ISOBUS software.

- Hydro: The spreader disc speed is regulated automatically when witching on.

6.4 Setting the working width



- There are different spreading disc pairs for the various working widths.
- The existing tramline system (distance between the tramlines) determines the selection of the required spreading disc pair.

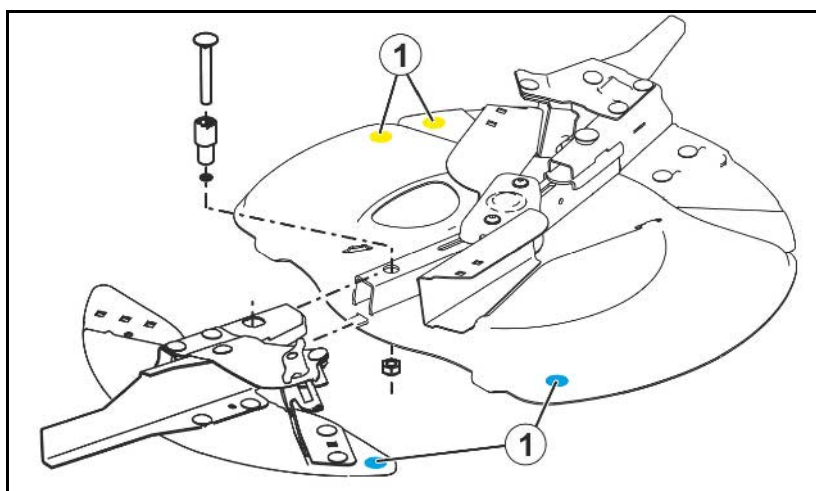


The primary factors that affect the spreading properties are:

- Granule size
- Bulk density
- Surface condition
- Humidity

We therefore recommend the use of a well granulated fertiliser by a renowned manufacturer and also checking of the working width setting using the mobile fertiliser test rig.

6.4.1 Replacing the spreading discs



1. Undo the bolt and remove the screw and the bushing.
2. Remove the spreading vane unit to the outside.
3. Insert the other spreading vane in reverse order and secure it with bolts and bushing.

See the setting chart for the designation of the spreading vane unit and enter it in the Fertiliser menu of the ISOBUS software.



- Always change short and long spreading vane units on both sides.
- When mounting the spreading vane units on the spreading disc, ensure that the coloured markings (1) are the same!

6.4.2 Setting the feed system



The setting of the inlet system is carried out according to the details in the setting chart automatically using an electric motor according to the entry in the in-cab terminal.



Setting the feed system to a higher value widens the working width, a smaller value reduces the working width.

6.5 Checking the working width and lateral distribution

The working width is influenced by the respective spreading properties of the fertiliser.

The most important influential factors on the spreading properties are known to be

- the grain size,
- the bulk density,
- the surface properties and
- the moisture.

The setting values from the setting chart are therefore only to be considered as **reference values**, since the spreading properties of the fertiliser types can change.

Check the working width and lateral distribution and optimise the fertiliser spreader settings by using:

- a mobile test rig
 - EasyCheck
- See separate operating manual



Specifications for checking the working width and lateral distribution:

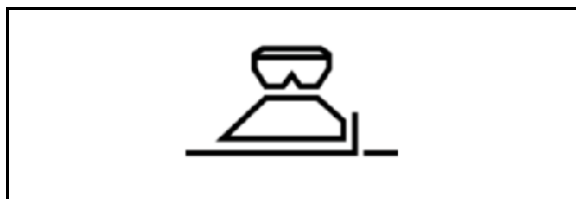
- as little wind as possible (wind speeds < 3 m/s).
- never perform a spreading test with side winds. If necessary, adjust the orientation of the spreading test for the wind direction.

6.6 Boundary, ditch and side spreading with AutoTS / ClickTS

1. Boundary spreading in accordance with fertiliser ordinance:

Along the field boundary there is a road, a field path or another person's lot.

Fertiliser is not permitted to fall beyond the boundaries in accordance with the fertiliser ordinance.



2. Ditch spreading in accordance with fertiliser ordinance:

There is body of water or a ditch along the field boundary.

The fertiliser ordinance specifies the following:

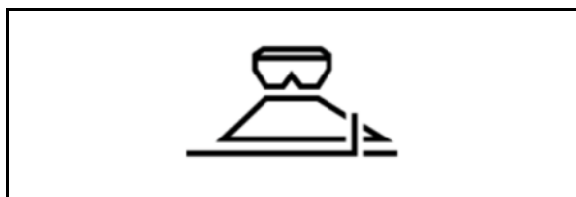
- No fertiliser must be spread within one metre of the boundary (with use of boundary spreading devices).
- No fertiliser must be spread within three metres of the boundary (without use of boundary spreading devices).
- Erosion and wash-away (e.g. in surface waters) must be prevented.



3. Side spreading in accordance with fertiliser ordinance (

The boundary is delineated by an area in agricultural use. It is acceptable for a small amount of fertiliser to be thrown across the field boundary.



The fertiliser distribution in towards the centre of the field is still close to the nominal quantity. A small amount of fertiliser is thrown across the field boundary.



6.6.1 Settings for border spreading



See the setting chart for the values for boundary spreading the appropriate fertiliser and enter them in the Fertiliser menu of the ISO-BUS software:

-  Select TS border spreading vane (A, A+, B, C, D).
-  Set TS border spreading vane (10, 20, 30)
0 – do not mount a telescope
- **X** – Perform border spreading with normal spreading vanes. Border spreading is not switched on with the operating terminal (without TS)
- Do not switch ClickTS to the boundary spreading position.
- PTO shaft drive: reduce r.p.m.

Hydro: On the boundary side, the quantity and spreading vane r.p.m. (Hydro) are reduced automatically.

Setting the TS border spreading vane on the long spreading vane on the right / left depends on:

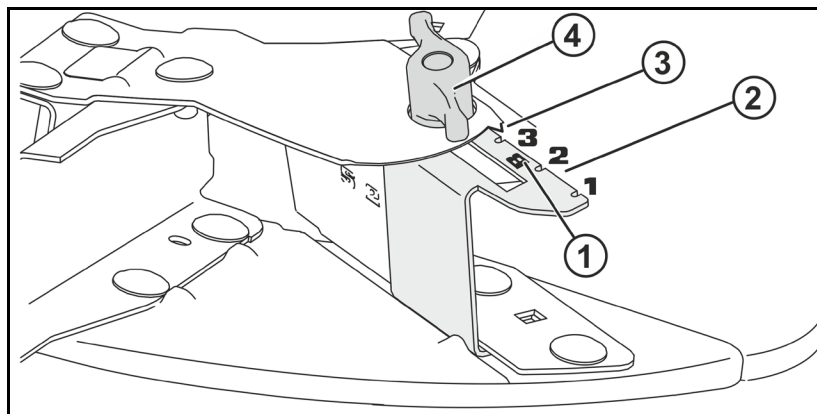
- boundary clearance,
- type of fertilizer

The value to be set should be read from the setting chart.



- The values in the setting table are intended as guideline values, since fertiliser condition may differ.
- The border distance on the setting chart basically represents half the working width.

Setting the Auto TS border spreading vane



(1) Telescope identification

TS 10→ A, A+ / TS 20→ B, D / TS 30→ C, D

(2) Scale (1, 2, 3)

(3) Pointer

(4) Thumb nut

1. Undo thumb nut.
2. Read the set value from the setting chart.
3. Set the telescopic part of the border spreading vane to the required value on the scale.
4. Tighten the thumb nut.



Setting the boundary spreading vane TS

- to a higher value causes an elongation of the spreading range toward the border,
- to a smaller value causes a reduction of the spreading range toward the field.






Replacing the telescope (A, A+, B, C, D) for the boundary spreading vane, see page 92.

6.6.2 Adapting the settings for boundary spreading

To optimise the boundary spreading pattern, the settings can be adapted in deviation from the setting chart.

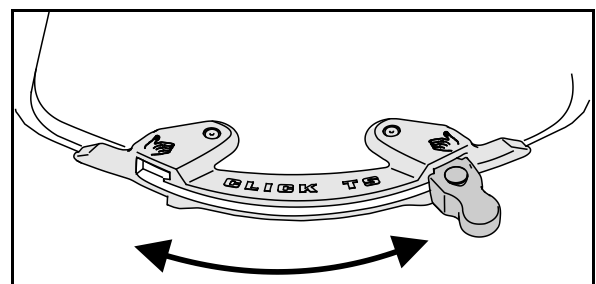
To adapt the settings you must proceed in the following sequence.

Always make only one change at a time.

		Elongation of the spreading range toward the boundary (more fertiliser to the outside)	Delimitation of the spreading range toward the field (less fertiliser to the outside).
1.		Telescope of the boundary spreading vane to a larger adjustment value.	Telescope of the boundary spreading vane to a smaller adjustment value.
Telescope is already set to the maximum value:			
2.		Replace telescope of the boundary spreading vane. $A \rightarrow A+ \rightarrow B \rightarrow C \rightarrow D$	Replace telescope of the boundary spreading vane. $D \rightarrow C \rightarrow B \rightarrow A+ \rightarrow A$
3.		Increase spreading disc speed.	Reduce spreading disc speed.
For extremely large working widths:			
4.	X	Do not switch on Auto TS / ClickTS for boundary spreading.	

6.6.3 Switch ClickTS

1. Actuate the hand lever on the boundary side. Brace your thumbs on the console.
- For boundary spreading: swivel the hand lever to the implement-side inner end position and lock into place.
 - For normal spreading: swivel the hand lever to the implement-side outer end position and lock into place.



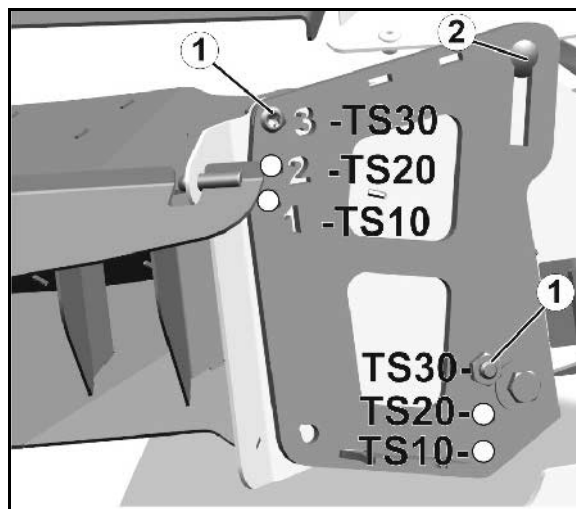
Before beginning boundary spreading with ClickTS, the corresponding boundary spreading function must be called up on the control terminal. This adjusts the spreading disc speed (Hydro) and the spread rate for the boundary spreading method.

6.7 Settings

Adjusting the spread deflector to the spreading vane system

The spread deflector can be installed in three positions, depending on the spreading vane system.

- TS10 – Spread deflector installed in the lower position
- TS20 – Spread deflector installed in the middle position
- TS30 – Spread deflector installed in the upper position

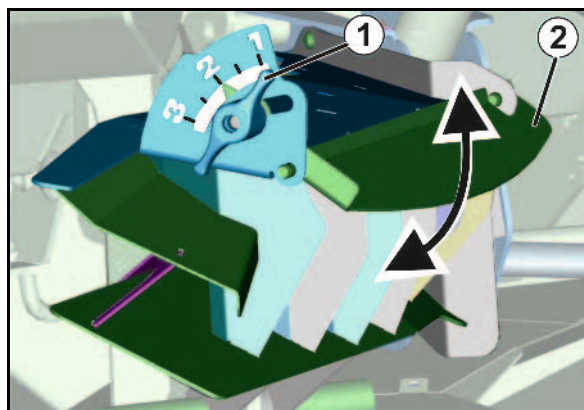


1. Unscrew the nuts (1).
2. Pull the spread deflector out of the bracket.
3. Push the spread deflector into the bracket in the desired position.
4. Put on the nut.

Adjusting the spread deflector position to the boundary distance

The upper swivelling adjustment plate can be infinitely variably adjusted depending on the boundary distance (1-3 m).

- Position 1 – Small boundary distance
- Position 3 – Large boundary distance





1. Loosen the wing nut (1).
2. Swivel the adjustment plate to the desired position.
3. Tighten the wing nut.

Entering the boundary spreading data in the ISOBUS implement control

The data for boundary spreading is entered in the ISOBUS implement control through the control terminal.

6.8 Switch-on point and switch-off point

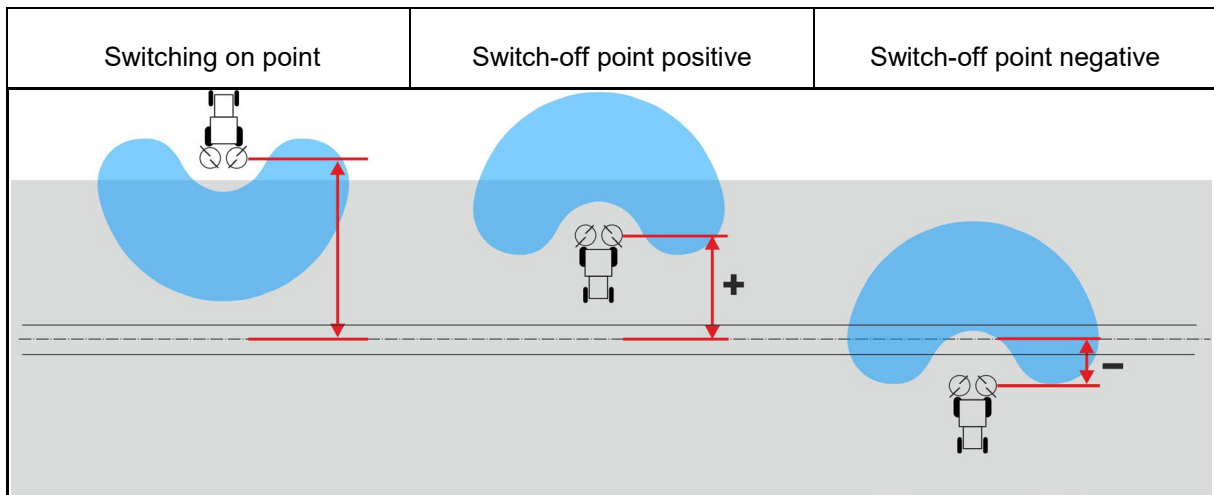
- 
The switch-on point is the position for opening the shutters when moving out of the headlands at which the best possible fertiliser distribution is achieved.
- 
The switch-off point is the position for closing the shutters when moving onto the headlands at which the best possible fertiliser distribution is achieved..

The switch-on point and switch-off point are measured from the centre of the headlands to the centre of the spreading disc.

See the setting chart for the switch-on point and switch-off point and enter it in the Fertiliser menu of the ISOBUS software.

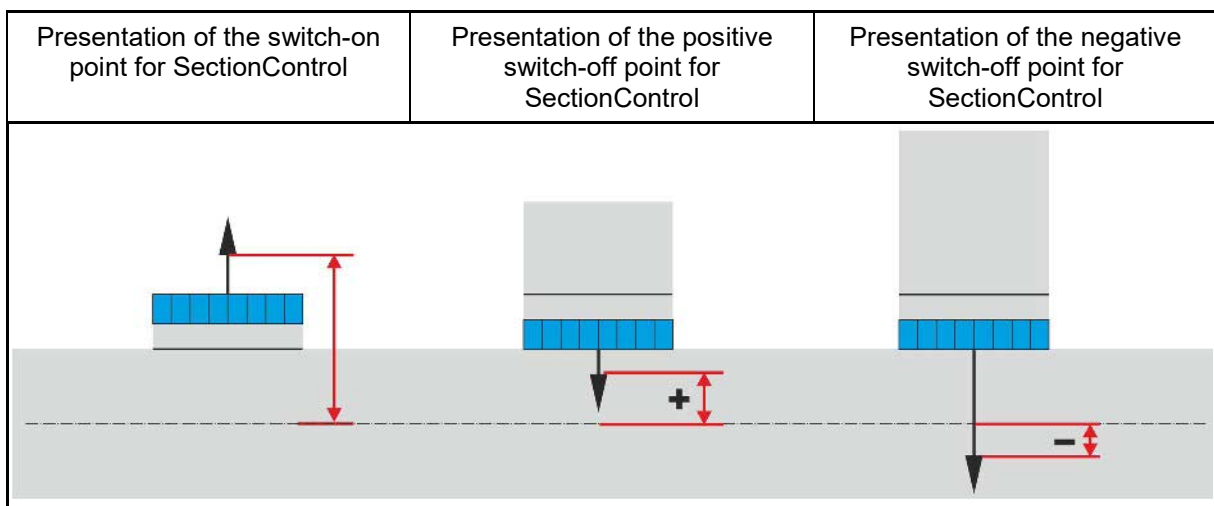
Implements without SectionControl:

- Open shutters at the switch-on point.
- Close shutters, at the switch-off point.



If direct moving into the tramline of the headlands is desired, it may be necessary to increase the value for the switch-off point. However this is not positive for fertiliser distribution on the headlands.

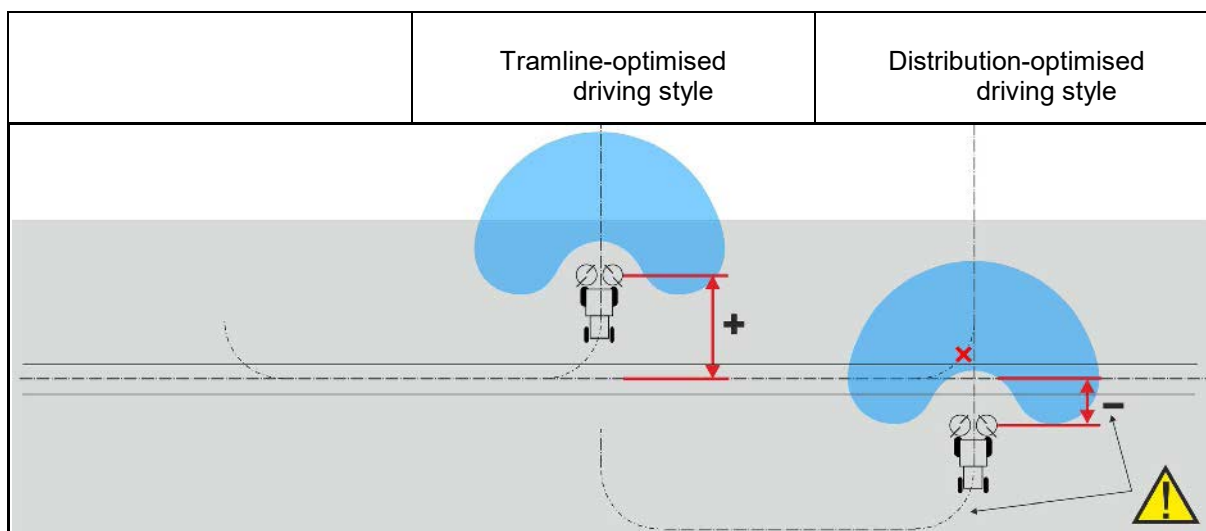
Switch-on point and switch-off point for SectionControl



Adjusting the switch-off point for the driving style

The selection of the switch-off point depends on the driving style on the headlands.

- Distribution-optimised driving style
With the distribution-optimised driving style, it is not possible to turn into the headland tramline in many cases, as, in particular with small/negative switch-off points, the shutters close too late.
 - Read the switch-off point from the setting chart.
 - Tramline-optimised driving style
 - With the tramline-optimised driving style, the switch-off point must be big enough so that the shutters close in due time before driving into the headland tramline.
- However, this is not positive for fertiliser distribution on the headlands.
- Switch-off point: at least 7 m.



7 Transportation



Comply with the chapter "Safety information for the operator", from page **24** when moving.



WARNING

Danger of injury for persons standing in the vicinity of the machine due to unintentional start-up of the implement!

Switch-off the control terminal before road transport.



WARNING

Risk of accident due to incorrectly working brake system!

When the maintenance light is green, the brakes must be checked immediately by a specialist workshop.

The brakes have emergency features and are therefore not out of service.



- Close the shutters during road transport.
- Close the swivelable hopper cover.
- Put the work platform ladder in transport position.
- Put the ladder and platform for the fertiliser chamber in transport position.

8 Use of the machine



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

- "Warning symbols and other labels on the machine" from page 16 and
- "Safety information for the operator", on page 24 ff.

Observing this information is important for your safety.



WARNING

Danger of catching or entanglement and drawing in or entrapment of loose clothing by moving elements (rotating spreading discs)!

Do not wear loose-fitting clothing. Tight clothing reduces the risk of unintentional catching or entanglement and drawing in or entrapment by moving elements.



Some products, such as Excello granulate and magnesium sulphate, cause increased wear to the spreading vanes (optional spreading vanes with enhanced wear resistance are available).

When spreading mixed fertilisers, note the following:

- Each variety may have different flight characteristics.
- The individual varieties may separate.

The recommended settings specified for lateral distribution pertain solely to weight distribution, not to nutrient distribution.



- For new machines, after 3-4 full hopper loads, check that the screws are tight and retighten if necessary.
- Use only fertiliser with the proper grain size, of the kinds listed in the setting chart. If the type of fertiliser is not known exactly, check the working width using the mobile fertiliser test rig.
- The technical condition of the spreading vanes, including their swivel vanes, is essential for uniform lateral distribution of the fertiliser on the field (i.e. forming strips).
- After every use, remove any fertiliser clinging to the spreading vanes.

8.1 Filling the machine



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 machine and the approved axle and drawbar loads of the tractor. If necessary, drive only with a partially filled hopper.



WARNING

Couple the bulk fertiliser spreader to the tractor before loading.



- Remove residues or foreign bodies from the hopper before filling with fertiliser.
- Make sure that the charging sieve is always closed before you fill the hopper. Only a closed charging sieve prevents clumps of fertiliser and/or foreign bodies getting into the hopper and blocking the agitator.
- Let the floor belt run for a short period to reduce friction.
- It is essential to observe the safety instructions from the fertiliser manufacturer. Use appropriate protective clothing as necessary.

8.2 Spreading operation



- The spreading vanes are made of especially hard-wearing stainless steel. However, the spreading vanes are wearing parts.
- The type of fertiliser, times of use and spread rates influence the service life of spreading vanes.
- The technical condition of the spreading vanes is essential for uniform lateral distribution of the fertiliser on the field (i.e. forming strips).



WARNING

Danger of ejection of parts of the spreading vanes, caused by worn spreading vanes!

Every day, at the start and end of spreading work, check all spreading vanes for visible damage/defects. Refer to the criteria for the replacement of wearing parts in the chapter, page 92.



WARNING

Danger from materials or foreign objects that are thrown from or ejected by the machine at high speeds.

- Make sure that uninvolved persons are kept well clear of the danger area of the machine in the following situations:
 - Before you switch on the power for the spreading discs.
 - While the tractor engine is running.
- When spreading at the edge of fields in residential areas / near roads, make sure you do not endanger anybody or damage anything. Keep an adequate safety distance or use suitable devices for boundary spreading and / or reduce the drive rev. speed of the spreading discs.



WARNING

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

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 driver and the connected machine.



The machine is operated using the operating terminal.

- Refer to operating manual Implement Control Software ISOBUS.
- Refer to the operating manual for the operating terminal.

- The fertilizer spreader is connected to the tractor.
- The operating terminal is connected.
- The settings have been made.
 1. Ensure hydraulic oil supply.



1. Switch on spreading discs.



- Do not open the shutter until you have reached the specified spreader disc speed!
- Maintain a constant spreading disc speed.
- Always carry out a spread rate check or turn on the online calibration at the beginning of the spreading process.



Observe the point for switching on and off in the setting chart!

The point for switching on and off is specified as distance in metres from the spreading disc centre to the centre of the track in the headlands in the setting chart.



- Switching on point when driving into the field.
- Switching off point when driving into the headlands.



2. Moving to, and when the switching on point is reached, open the shutter.



3. At the switching off point before reaching the headlands, close the shutter.

4. For border spreading: Use the boundary spreading system.
5. After finishing spreading.

- 5.1 Close shutter.



- 5.2 Disengage spreader disc drive.



To ensure low-vibration running of the spreading discs, balancing weights are installed on the spreading disc. A certain degree of vibrations caused by the manufacturing tolerances and resonances cannot be avoided. The spreading discs are balanced at the centre position (Position 2) of the telescope for the boundary spreading vanes. In Positions 1 and 3 of the respective telescopes, there may be vibrations caused by technical reasons!

The vibrations do not affect the service life of the implement.

Check for the presence of balancing weights when using spreading disc TS 3 with telescope D, see page 92.



- After long transport with a full hopper, ensure that the yield is correct before spreading begins.



- The service life of the spreading vanes depends on the kinds of fertiliser used, the operating times and the spread rates.

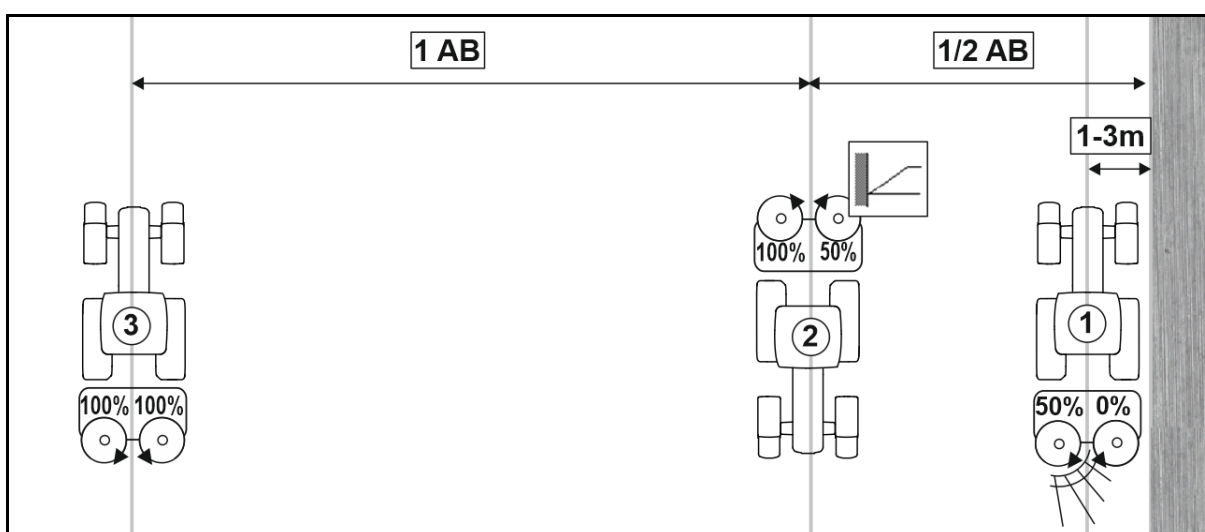
8.2.1 Using the boundary spread deflector

(1) Spread at the boundary.

- Actuate the *blue/1* tractor control unit.
- Lower the boundary spread deflector into working position before performing the boundary spreading.

The following settings are made automatically through the implement control:

- o Switching to one-sided spreading
- o Adjustment of the spread rate (right 0%, left 50%)
- o Adjustment of the position of the delivery system



(2) Spread in the first tramline.

- Actuate the *blue/2* tractor control unit.
- After driving around the boundary, raise the boundary spread deflector.

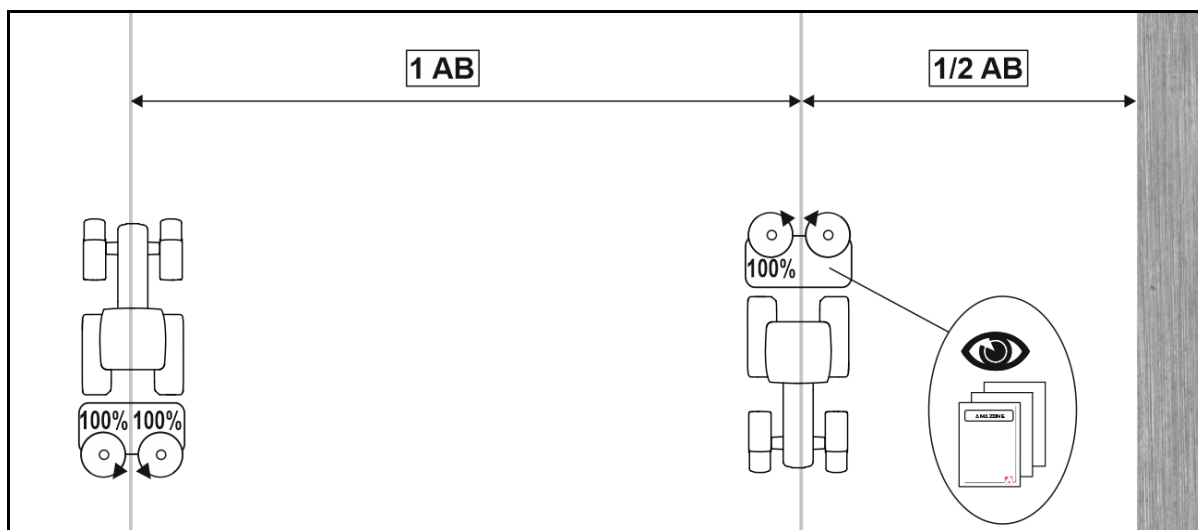


- Activate boundary spreading on the left (Auto TS).
- The spread rate on the left remains reduced to 50%.
- (3) Spread in the second and other tramlines.
- Perform normal spreading.
- The spread rate on the left will be automatically increased back to 100%.

Not using the installed boundary spread deflector



If the boundary spread deflector is not used for boundary spreading, the rate reduction on the boundary side must be adjusted / turned off according to the setting chart.



8.3 Notes for spreading slug pellets (e.g. Mesurol)



CAUTION

After the special spread rate check, the machine is suitable for the application of slug pellets.



Before spreading slug pellets:

- Use the hopper cover.
- Perform a visual check of the metering devices.
- Check the metering devices for leaks.

Pay attention to the following particularities for application of slug pellets.

- Select fine special spreading material on the control terminal.
 - Spreading of slug pellets must be executed at constant forward speed because speed-proportional quantity regulation is not active.
 - Calibration of slug pellets is executed on the left hopper tip with the calibration chute.
 - Automatic refilling of the pre-chamber using the floor belt is not active.
- **Pay attention to the emptying of the pre-chamber and run the floor belt manually through the control terminal, if necessary.**



Before spreading fine special spreading material, check the scraper position on the floor belt so that no spreading material can escape through the crack.



CAUTION

When filling the spreader, avoid inhaling product dust and direct skin contact (wear protective gloves). After use, thoroughly clean hands and all affected parts of the skin with water and soap.



DANGER

Slug pellets in some cases can be very dangerous for children and pets. Store in a place that is inaccessible to children and pets. Always comply with the instructions for use provided by the agent manufacturer!

Concerning the handling of slug pellets, in all other aspects we refer you to the instructions provided by the manufacturer of the agent and to the general precautionary measures for handling agricultural pesticides.

- When spreading slug pellets, ensure that the outlet openings are always covered with the spreading material, and that the implement runs at constant spreading disc speed. A residual quantity of substance 0.7 kg per hopper tip cannot be properly applied. To empty the spreader, open the shutters and collect the spreading material that trickles out (e.g. on a tarpaulin).
- Slug pellets must **not** be mixed with fertiliser or other substances in order to work with the spreader in a different adjustment range.

8.4 Complete discharging



DANGER

Risk of injury from rotating spreader discs.

Do not drive spreader discs to remove any residue.



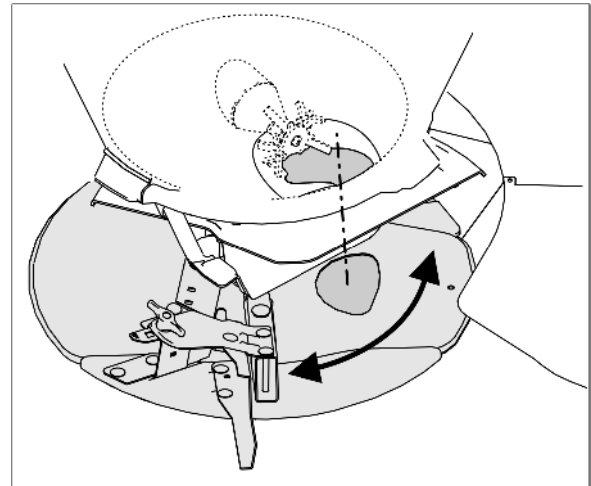
WARNING

Danger of being caught and drawn in with driven agitator!

- Never open the guard and function screen while the tractor engine is running.
- Never insert any object through the protection grating and function screen when the agitator is running.

The machine is to be emptied when stationary via the belt floor drive and the agitator.

1. Turn the spreader disc by hand so that the hole in the spreader disc is pointing inwards, directly under the opening on the hopper.
2. On the operating terminal:
 - 3.1 Open shutter.
 - 3.2 Switch agitator on.
3. Finish emptying process once hopper is empty.



Keep the hood of the fertiliser pre-chamber closed. Otherwise the agitator will switch off and prevent emptying.

9 Faults

9.1 Hydraulic system faults



The implement requires a tractor with load sensing system.

9.2 Eliminating agitator malfunctions



WARNING

Danger from crushing, shearing and/or impact through unintentional closing of the open, unsecured guard and function screen!

Secure the open guard and function screen so that it cannot move accidentally before carrying out work in this area.

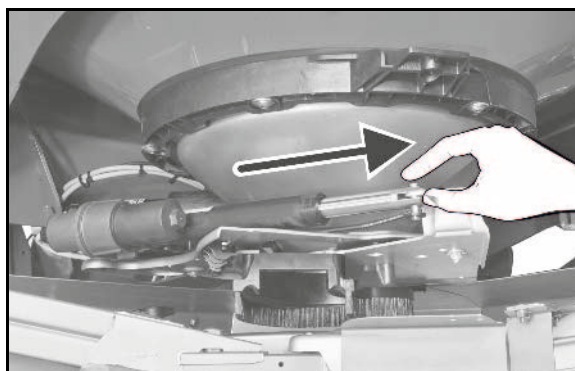
9.3 Faults in electronics

Close the shutter manually



The manual closing of the shutter prevents the fertilizer from running out accidentally if the electronics do not react due to a fault.

1. De-energize the electrics.
 2. Pull out the actuator of the piston rod manually.
- Shutter closes.
- Adjustment force required: 150 N
3. Switch the operating terminal back on and check the functions.



9.4 Faults, causes and remedies

Fault	Cause	Remedy
Fertiliser lateral distribution not uniform.	Fertiliser deposits on the spreading discs and the spreading vanes.	Clean the spreading discs and the spreading vanes.
	The spreading properties of your fertiliser differ from those of the one we tested when creating the setting chart.	Contact the AMAZONE Fertiliser Service. ☎ 05405-501 111
Too much fertiliser in the tractor track	Prescribed spreading disc speed is not reached.	Increase tractor engine speed.
	Spreading vanes and outlets defective or worn.	Check the spreading vanes and outlets. Replaced defective or worn parts immediately.
	The spreading properties of your fertiliser differ from those of the one we tested when creating the setting chart.	Contact the AMAZONE Fertiliser Service. ☎ 05405-501 111
No hydraulic functions	Fluid supply at the tractor is not switched on.	Switch on fluid supply at the tractor.
	Power supply to valve block interrupted.	Check cable, plug and contacts.
	Oil filter contaminated.	Replace/clean oil filter. (Seite 101).
	Solenoid valve dirty	Rinse solenoid valve (sivulla 101).
The on-board computer does not indicate any function	Power supply defective.	Check the power supply to the on-board computer
The spreading discs do not start rotating when they are switched on via the on-board computer	The button for switching on the spreading disc drive was not held for at least 3 seconds (safety function).	Press and hold the button for switching on the spreading disc drive for at least 3 seconds.
	The oil supply from the tractor is not switched on	Switch on the oil supply from the tractor.
The spreading disc speed cannot be reached.	Oil pressure in the return flow is too high.	Go to a specialist workshop.
hydraulic oil temperatures is too high (> 90°C).	Too high power decrease.	Reduce driving speed during use

10 Cleaning, maintenance and repairs



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 machine.
- Replace defective protective equipment with new equipment.



DANGER

- When carrying out maintenance and repair, observe the safety instructions (see page 26).
- 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 the machine 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 auxiliary materials" section, page 15).
- Only use genuine AMAZONE replacement hoses, and hose clamps made of V2A for assembly.
- Testing and maintenance operations require specialist knowledge. This is not provided 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. These legal requirements also affect 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 existing holes on the transport frame.
 - welding 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 cut-off wheels near plastic wires and electric wires.
- Clean the machine thoroughly with water before carrying out repair work.
- Disconnect the machine cable and power supply from the on-board computer when carrying out any cleaning or maintenance work. This applies especially to welding on the machine.

10.1 Cleaning



- Monitor brake, air and hydraulic hose lines particularly carefully.
- Never treat brake, air and hydraulic hose lines with benzene, benzole, petroleum or mineral oils.
- After cleaning, grease the machine, in particular after cleaning with a pressure washer / steam jet or liposoluble agents.
- Observe the statutory requirement for the handling and removal of cleaning agents.

Cleaning with a pressure washer / 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 chromed components.
 - Never aim the cleaning jet from the nozzle of the pressure washer / steam jet directly on lubrication and bearing points.
 - Always maintain a minimum jet distance of 300 mm between the high pressure cleaning or steam jet cleaning nozzle and the machine.
 - Comply with safety regulations when working with pressure washers.

- Clean machine with regular water jet (oiled implements only at washbays with oil separators).
- Give particular attention to cleaning discharge openings and sliders.
- Remove fertiliser deposits from the spreading discs and the spreading vanes.
- Before cleaning, open the drainage flap of the hopper using the hand lever. Close it again after cleaning.
- When the machine is dry, apply a coat of anti-rust compound. (Use only biodegradable compounds).
- Park the machine with the slide gates **opened**.
- Clean the spreading discs very carefully and protect from corrosion.



Stainless steel components can also corrode when they come into contact with the spreading material, however, this does not affect their function.

10.2 Lubrication point overview

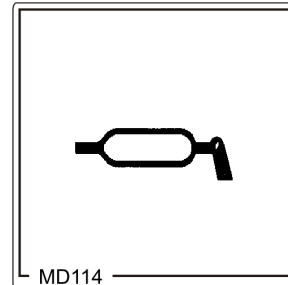


Lubricate all the lubricating nipples (keep the seals clean).

Lubricate / grease the machine at the specified intervals (operating hours h).

The lubrication points on the machine are indicated with the film.

Carefully clean the lubrication points and grease gun before greasing, so that no dirt enters the bearing. Completely press out the soiled grease in the bearings and replace it with new grease.



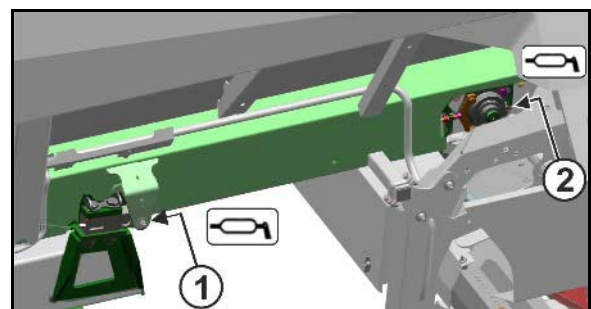
Lubricants



For lubrication, use a lithium saponified, multipurpose grease with EP additives:

Company	Lubricant designation	
	Normal use conditions	Extreme use conditions
ARAL	Aralub HL 2	Aralub HLP 2
FINA	Marson L2	Marson EPL-2
ESSO	Beacon 2	Beacon EP 2
SHELL	Retinax A	Tetinax AM

	Lubrication point	Intervall	Number
(1)	Weighing pin	1000 h	4
(2)	Floor belt flange bearing	100 h	2



10.3 Maintenance schedule – overview



- Carry out maintenance work when the first interval is reached.
- The times, continuous services or maintenance intervals of any third party documentation shall have priority.

Before each start-up

1. Check hoses/tubes and connection pieces for any visually obvious defects/leaking connections.
2. Repair any areas of chafing on pipes and hoses.
3. Immediately replace worn or damaged hoses and pipes.
4. Immediately repair leaking connections.

Once after 50 operating hours

Component	Maintenance work	see page	Workshop work
Angular gearbox	<ul style="list-style-type: none"> • Oil change 	102	

After the first working run

Component	Maintenance work	see page	Workshop work
Hydraulic system	<ul style="list-style-type: none"> • Check for leak tightness • Check for defective hose lines 	97	X

Daily

Component	Maintenance work	see page	Workshop work
Whole implement	<ul style="list-style-type: none"> • Check for visible defects 		
Control butterfly valve	<ul style="list-style-type: none"> • Check for ease of movement and adjust if necessary 	96	
Outlet openings	<ul style="list-style-type: none"> • Clean 		
Agitator	<ul style="list-style-type: none"> • Check for damage 		
Spreading vanes	<ul style="list-style-type: none"> • Condition check, replace if necessary 	92	
Hydraulic fluid filter	<ul style="list-style-type: none"> • Check clogging indicator, clean or replace if necessary 	101	X

Monthly / every 50 operating hours

Component	Maintenance work	see page	Workshop work
Hydraulic system	<ul style="list-style-type: none"> • Check for leak tightness • Check for defective hose lines 	97	X

Jährlich / 1000 Betriebsstunden

Component	Maintenance work	see page	Workshop work
Conveyor belt	<ul style="list-style-type: none"> Check the central position of the conveyor belt in the floor belt 	95	X

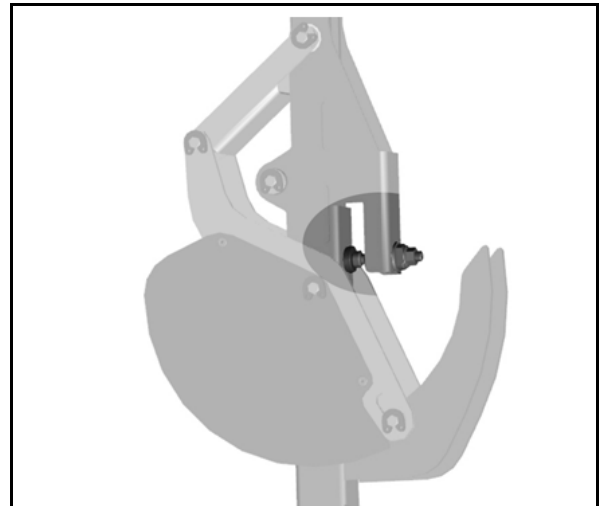
As necessary

Component	Maintenance work	see page	Workshop work
Belt conveyor	<ul style="list-style-type: none"> Tension belt conveyor if it is running unevenly 	93	
WindControl	<ul style="list-style-type: none"> Check the sections 	91	

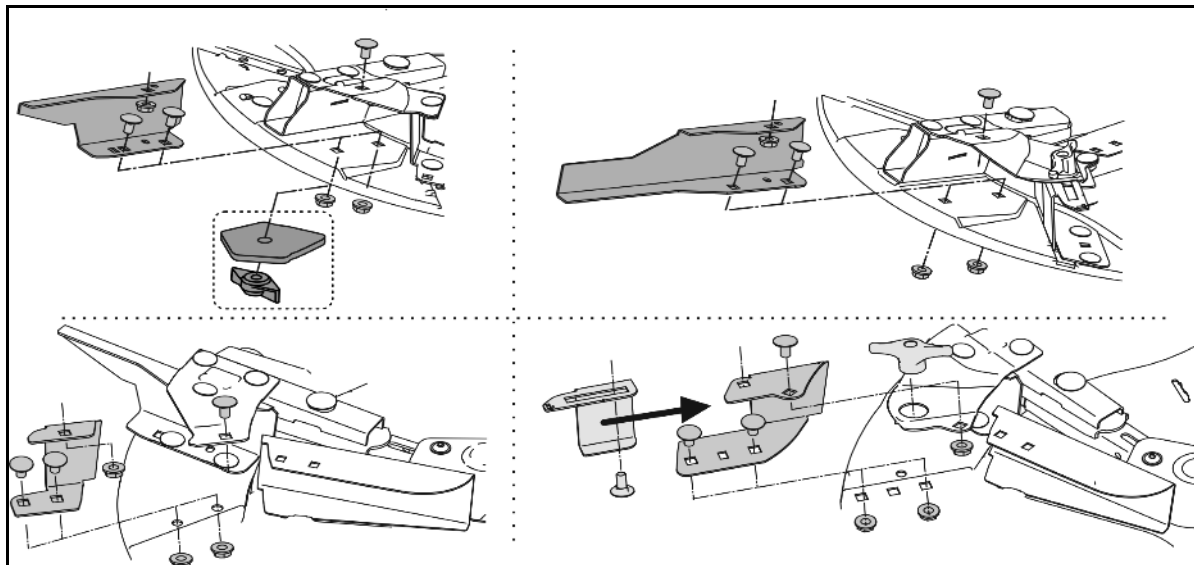
10.4 Checking the WindControl section

Check for play-free seating of the section in working position.

If necessary, retighten the bolt and lock nut.



10.5 Replacing the spreading vanes



When using spreading disc TS 30 with telescope D, install an additional balancing weight under the short spreading vane and secure with a wing nut!



When exchanging the spreading vanes, use the assembly paste provided. This is the only way to ensure that the specified tightening torque is sufficient.

Required tightening torque: 19.3 Nm



- The technical condition of the spreading vanes is essential for uniform lateral distribution of the fertiliser on the field (i.e. forming strips).
- The spreading vanes are made of especially wear-resistant stainless steel. Nevertheless, we remind you that the spreading vanes and their swivel vanes are wear parts.



Replace the spreading vanes as soon as holes from abrasion are visible.

10.6 Belt conveyor with automatic belt control

One property of belt conveyors (1) is that they give way under load on inclines such as on sloping terrain or if they are loaded on one side. The automatic belt control prevents one-sided running of the conveyor belt on AMAZONE ZG-TS trailed spreaders.

The conveyor belt is tensioned in the floor belt with automatic belt control between the drive drum (2) and the pulley (3).

While the drive drum is secured rigidly in the floor belt, the pulley can turn around the swivel axle (4). The belt conveyor is also guided between two control rollers (5), which are connected to the pulley by a control frame (6).

If the belt conveyor runs outwards due to a one-sided load, the control rollers follow this movement. Consequently, this causes the pulley to turn around the swivel axle. As a result, the distance between the pulley and the drive drum increases on the side toward which the belt conveyor is moving.

The larger distance causes the belt conveyor to return to the middle and continue to settle down in the middle.

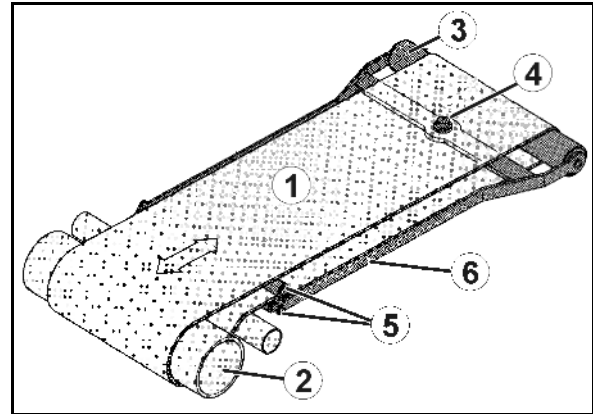
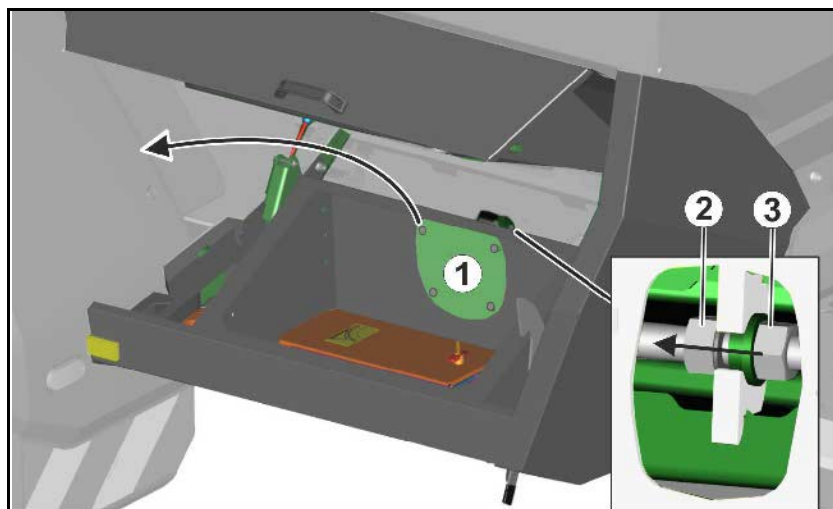


Fig. 1

Tensioning the belt conveyor:



The conveyor belt is pretensioned in the floor belt for stable and uniform belt running. If the conveyor belt should run unevenly under certain circumstances, the conveyor belt must be retightened on both sides as follows:

1. Remove the cover (1).
2. Loosen the lock nut (2).
3. Increase the pretension using the setting nuts (3).



The adjustment distance of the setting nuts (3) must be the same on both sides of the floor belt. Readjust both setting nuts by 1 ½ turns .

4. Tighten the lock nuts.
5. Check if the conveyor belt is driven evenly again.

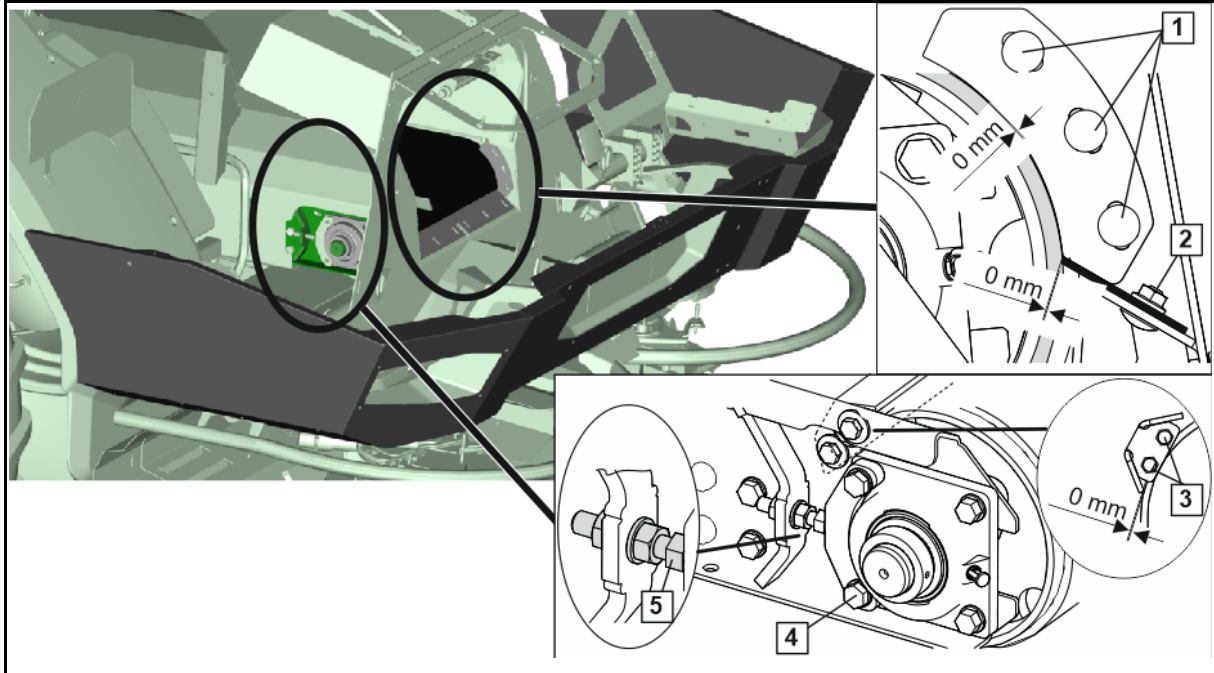
Centre the conveyor belt

If the automatic belt control cannot prevent the conveyor belt from deviating outwards, the drive drum must be adjusted.

Otherwise, the fertiliser can flow over the floor belt outwards.

The adjustment is necessary if the conveyor belt deviates by more than 10 mm. Perform a check measurement under the implement.


Make the setting on the left side.



1. Loosen the bolts of the side sealing plates (1) on both sides, the conveyor belt scraper (2) and the drive drum scraper on the left (3).
2. Loosen the bolts for the left flange bearing (4).
3. Readjust the conveyor belt using the setting screw (5) by 1/2 a turn and secure with nuts.

- Conveyor belt deviates to the left – Turn the bolt out
 - Conveyor belt deviates to the right – Turn the bolt in
4. Retighten the bolts for the left flange bearing and make sure that the flange bearing is resting on the setting screw.



5.  1 Drive the conveyor belt for 5 minutes using the empty hopper function on the control terminal.

At the same time, a second person must watch the conveyor belt.

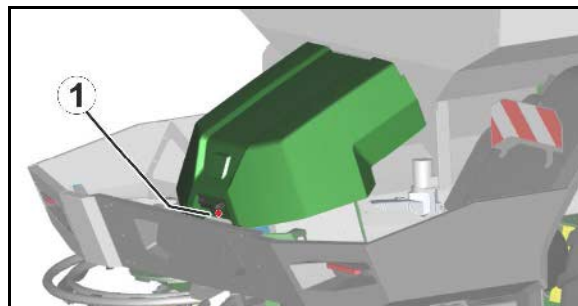
6. If the conveyor belt is not centred, repeat the setting.
7. Retighten the bolts of the side sealing plates, the conveyor belt scraper, and the drive drum scraper. In doing so, maintain the gap dimension of 0 mm.



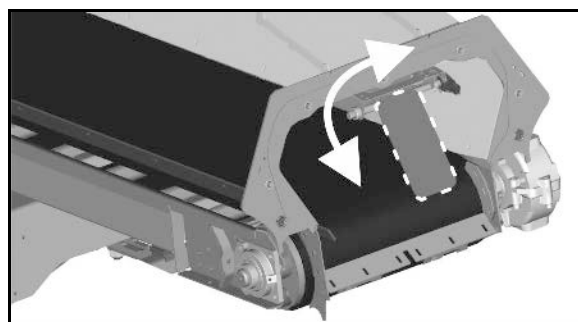
The next time fertiliser is spread, check the leak tightness of the floor belt.

10.7 Checking the control butterfly valve, outlet openings and agitator

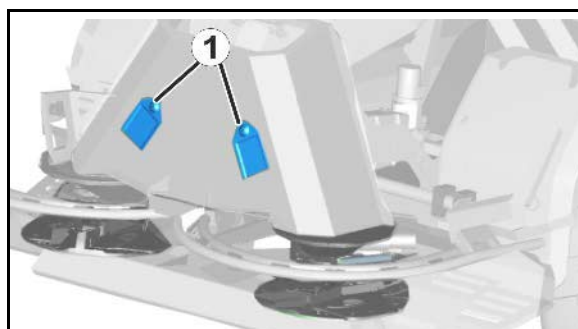
1. Release lock button of hood (1).
2. Open the hood.



3. Check the butterfly valve (1) for ease of movement and adjust the adjustment rings if necessary..



4. Loosen the bolt on the cover (1) of the installation openings and remove the covers.
5. Clean the outlet openings.
6. Install the cover.
7. Check the agitator for damage.
8. Close the hood again.



10.8 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!



WARNING

Danger of unintentional contact with hydraulic fluid!

Please take the following first-aid measures:

- Following inhalation:
 - No special action required.
- Following contact with the skin:
 - Wash off with plenty of soap and water.
- Following contact with the eyes:
 - Rinse eyes for several minutes under running water, holding the eyelid open.
- Following ingestion:
 - Seek medical assistance.

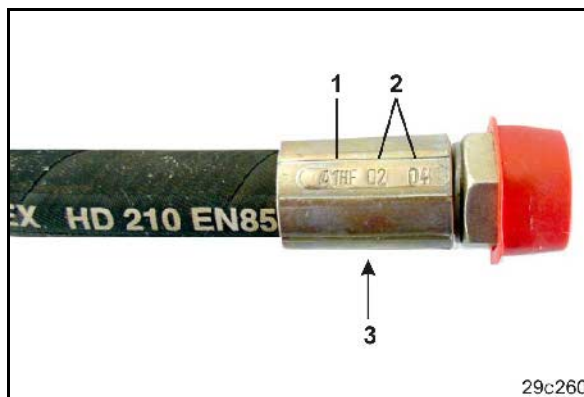


- When connecting the hydraulic hose lines to the hydraulic system of connected machines, ensure that the hydraulic system is depressurised on both the drawing vehicle and the trailer.
- Ensure that the hydraulic hose lines are connected correctly.
- Regularly check all the hydraulic hose lines and couplings for damage and impurities.
- Have the hydraulic hose line checked at least once a year by a specialist for proper functioning.
- Replace the hydraulic hose line if it is damaged or worn. Only use original 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 ageing, 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 connections made from thermoplastics, other guide values may be decisive.
- Dispose of old oil in the correct way. 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.

10.8.1 Labelling hydraulic hose lines

The assembly labelling provides the following information:

- (1) Manufacturer's labels (A1HF)
- (2) Date of manufacture of the hydraulic hose lines (02 04 = February 2004)
- (3) Maximum approved operating pressure (210 bar).



10.8.2 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.

10.8.3 Inspection criteria for hydraulic hose lines



For your own safety and in order to reduce pollution, ensure the following inspection criteria.

Replace hoses if the respective hose fulfils at least one of the following criteria:

- 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 depressurised and pressurised state or when bent (e.g. layer separation, bubble formation, pinching, bends).
 - Leak points.
 - 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 is decisive for determining these six years. If the date of manufacture on the assembly is "2004", then the hose should not be used beyond February 2010. See also "Labelling of hydraulic hose lines".



Common causes for leaking hoses / pipes and connection pieces include:

- missing O-rings or seals
- damaged or badly fitting O-rings
- brittle or deformed O-rings or seals
- foreign bodies
- badly fitting hose clips

10.8.4 Installation and removal of hydraulic hose lines



Use

- only genuine AMAZONE replacement hoses. These hoses stand up to chemical, mechanical and thermal loads.
- hose clips made from V2A for fitting hoses, as a rule.



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

- Ensure cleanliness.
- Always install the hydraulic hose lines to ensure the following in all operational positions
 - 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 overtensioned.
- Fix the hydraulic hose lines at the specified fixing points. There, avoid hose clips, which impair the natural movement and length changes of the hose.
- The coating of hydraulic hose lines is not permitted.

10.8.5 Mounting hose fittings with O-rings and sleeve nuts

1. First, tighten the sleeve nut manually.
2. Then, use the spanner to tighten the sleeve nut at least $\frac{1}{4}$ to a maximum of $\frac{1}{2}$ turn.



You must not tighten screw unions with O-rings as tight as those with compression rings.

If you tighten the sleeve nut tighter than specified, the cone-shaped screw union may break (in particular at the welded pin on the hydraulic cylinder).

10.9 Hydraulic fluid filter

Hydraulic fluid filter with contamination indicator:

Green → Filter fully functional

Red → Replace filter

Checking the oil filter for contamination

The hydraulic oil must have reached operating temperature.

1. Press in the contamination indicator.
2. Continue working with the implement.
3. Observe the contamination indicator.

Replacing the oil filter

To dismantle the filter, unscrew the filter lid and remove the filter.

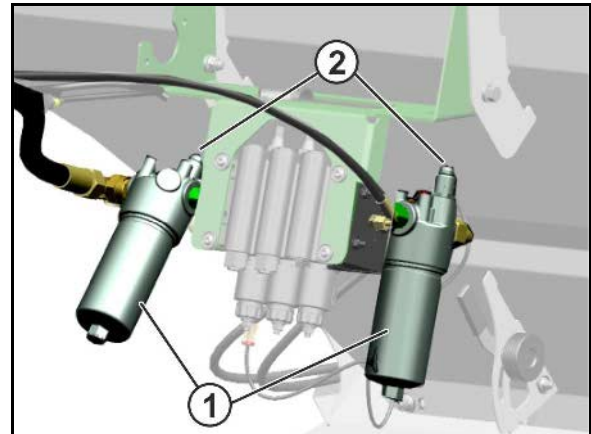


CAUTION

Dump the pressure in the hydraulic system beforehand.

After replacing the filter, press the contamination indicator back into place.

→ Green ring again visible.



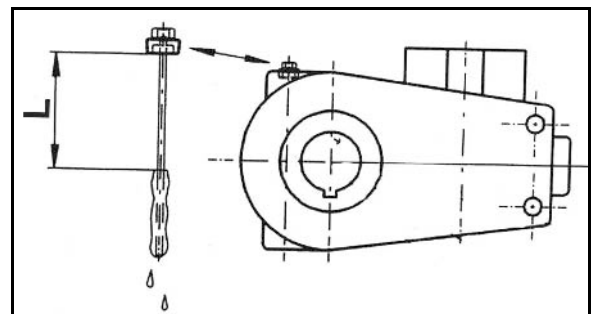
10.10 Conveyor belt gearbox

Gear oil: SAE 090

Fill levels: 1l

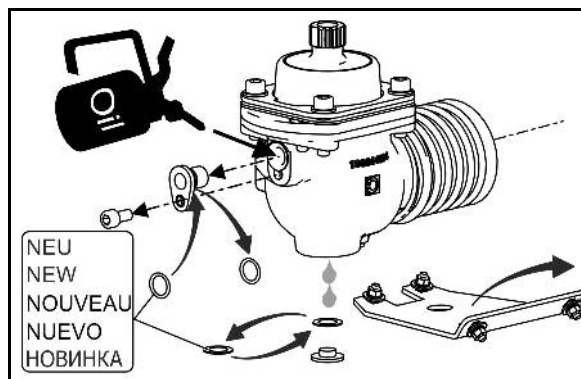
Correct oil fill level at L = 132 mm

There is no need to change the oil.!



10.11 Oil change angular gearbox

1. Dismantle the transport device if necessary.
Maintain the tension in the extension spring by inserting a retaining screw in the frame, swivel the transport device up and dismantle.
 2. Dismantle the cover underneath the gearbox.
 3. Place a container under the angular gearbox.
 4. Remove the bleed screw.
- Oil flows out.
5. Dismantle filler plug / sensor.
 6. Reinstall the bleed screw, use a new copper washer.
 7. Fill the gearbox with oil.
 8. Reinstall the filler plug / sensor.
 - o Use a new o-ring.
 - o Protect the cylindrical part of the sensor against moisture with a generous amount of grease.
 9. Reinstall the dismantled parts, remove the retaining screw from the extension spring.
- Oil: ISO VG 150 EP / SAE 90
 - Oil filling quantity: 0.23 l



10.12 Taring the spreader

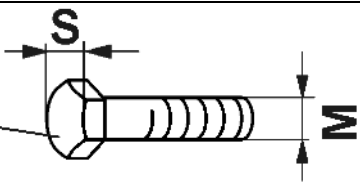
If the on-board computer does not show 0 kg (+/- 5 kg) fill weight with the spreader empty, the spreader must be retared (see on-board computer operating manual).

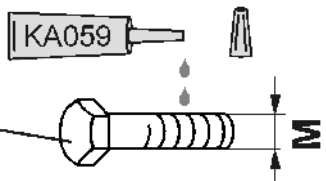
This may occur, for example, after the attachment of special accessories.

10.13 Calibrating the spreader

If after filling the retared spreader does not show the correct fill weight, the spreader must be recalibrated (see the on-board computer operating manual).

10.14 Screw tightening torques

<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;"> 8.8 10.9 12.9 </div>  </div>				
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

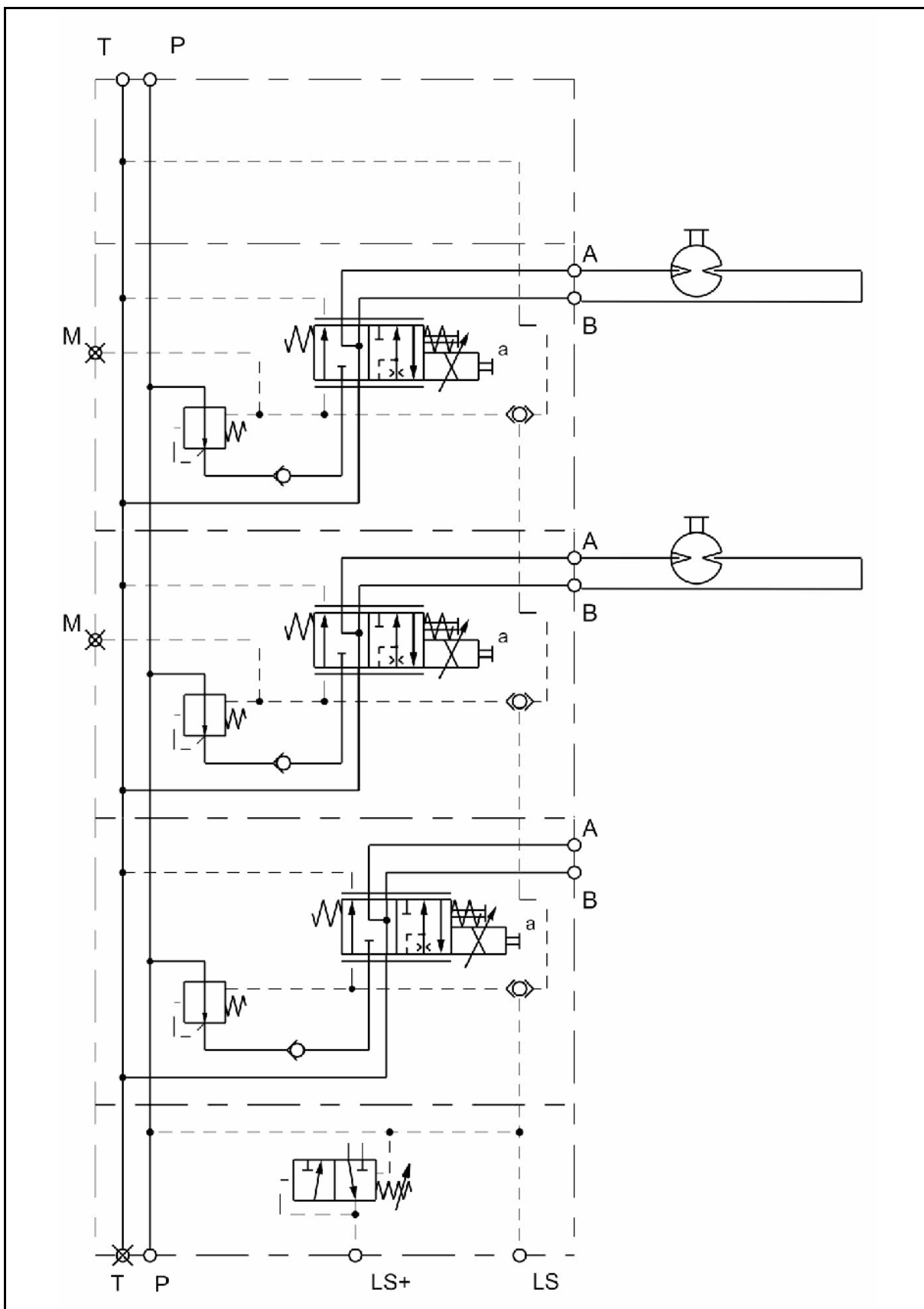
<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;"> A2-70 A4-70 </div>  </div>												
M	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
Nm	2,4	4,9	8,4	20,6	40,7	70,5	112	174	242	342	470	589



Coated bolts have different tightening torques.

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

11 Hydraulic diagram





AMAZONEN-WERKE

H. DREYER SE & Co. KG

Postfach 51
D-49202 Hasbergen-Gaste
Germany

Tel.: + 49 (0) 5405 501-0
e-mail: amazone@amazone.de
<http://www.amazone.de>
