

Operating Manual

AMAZONE

ZG-TS 5500 WAB

ZG-TS 8200 WAB

Large-area fertiliser spreader for mounting on a HGV



MG5980
BAG0168.1 08.17
Printed in Germany

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 GmbH & Co. KG
Machine Ident. No.:	
Type:	ZG-TS 8200 WAB
Year of manufacture:	
Factory:	
Basic weight (kg):	
Approved total weight (kg):	
Maximum load (kg):	

Manufacturer's address

AMAZONEN-WERKE
H. DREYER GmbH & 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

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Foreword

Foreword

Dear Customer,

You have chosen one of the quality products from the wide product range of AMAZONEN-WERKE, H. DREYER GmbH & 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 GmbH & 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 15) 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.

2.10 Design changes

You may make no changes, expansions or modifications to the machine without the approval of AMAZONEN-WERKE. This is also valid when welding support parts.

Any expansion or modification work shall require the written approval of AMAZONEN-WERKE. Only use the modification and accessory parts released by AMAZONEN-WERKE, so that the type approval remains valid according to the national and international regulations.

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



WARNING

Risk of contusions, cuts, dragging, catching or knocks from support parts.

It is forbidden to:

- Drill holes in the frame or on the running gear.
- Increase the size of existing holes on the frame or the running gear.
- Weld support parts.

2.10.1 Spare and wear parts and 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.

2.11 Cleaning and disposal

Handle and dispose of any materials used carefully, in particular

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

2.12 Operator workstation

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

2.13 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.

2.13.1 Positions of warning symbols and other labels

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

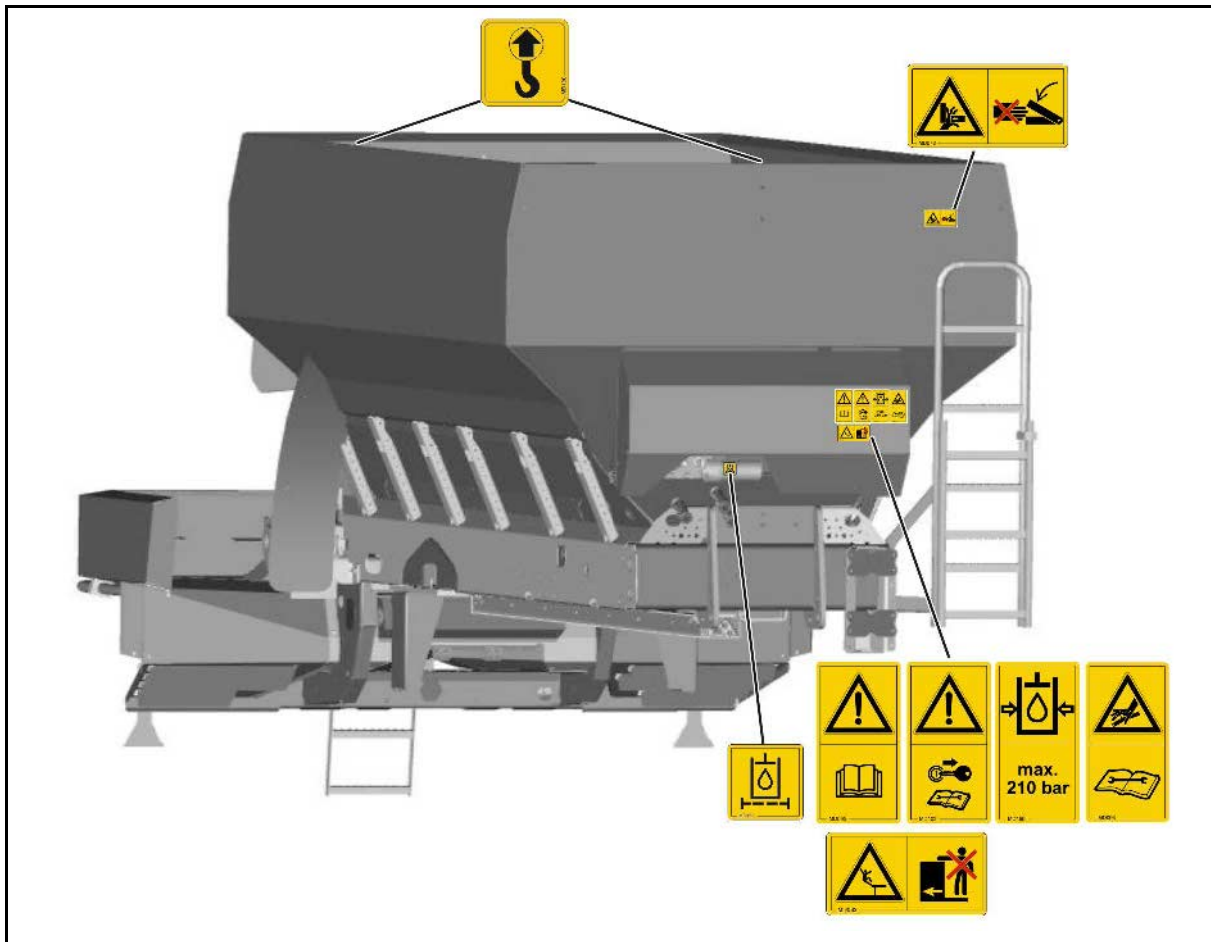


Fig. 1

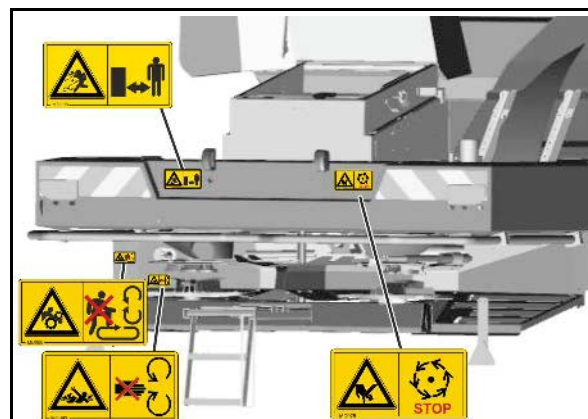


Fig. 2

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 078

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

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

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



MD 082

Risk of falling 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.

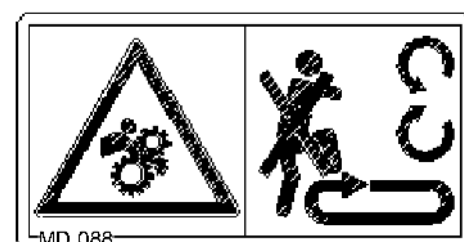


MD 088

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.



General safety instructions

MD 095

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

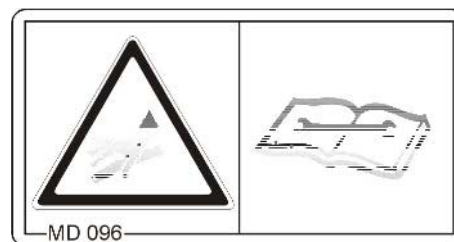


MD 096

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.

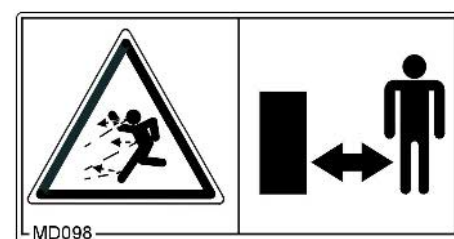
- Never attempt to plug leaks in hydraulic hose lines using your hand or fingers.
- Read and observe the information in the operating manual before carrying out maintenance and repair work on the hydraulic hose lines.
- If you are injured by hydraulic fluid, contact a doctor immediately.



MD 098

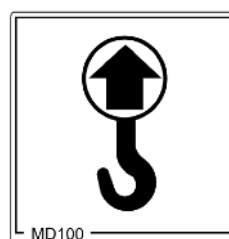
Danger from flying fertiliser particles.

Please ensure that all personnel maintain a sufficient safety distance and stay outside 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.

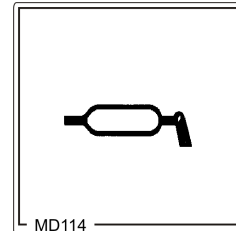
These dangers can cause extremely serious and potentially fatal injuries.

- 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.



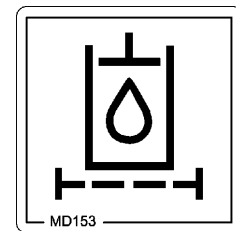
MD 114

This symbol indicates a lubrication point.



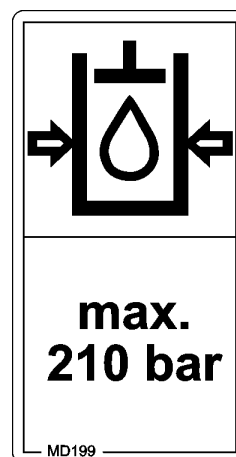
MD 153

This pictogram indicates a hydraulic oil filter



MD 199

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



2.14 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.

2.15 Safety-conscious working

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

Comply with the accident prevention instructions on the warning symbols.

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

2.16 Safety information for the operator

2.16.1 General safety and accident prevention information

- Beside these instructions, comply with the general valid national safety and accident prevention regulations.
- The warning symbols 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!
- Drive in such a way that you always have full control over the tractor with the attached machine.

In so doing, take your personal abilities into account, as well as the road, traffic, visibility and weather conditions, the driving characteristics of the tractor and the connected machine.

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!
- 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.
- 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!

2.16.2 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.

2.16.3 Electrical system

- When working on the electrical system, always disconnect the battery (negative terminal).
- Only use the prescribed fuses. If fuses are used that are too highly rated, the electrical system will be destroyed – risk of fire.
- Ensure that the battery is connected correctly - firstly connect the positive terminal and then connect the negative terminal. When disconnecting the battery, disconnect the negative terminal first, followed by the positive terminal.
- Always place the appropriate cover over the positive battery terminal. If there is accidental earth contact, there is a 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.

2.16.4 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.

2.16.5 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.
- Secure the raised machine and/or raised machine parts against unintentional falling before maintaining, repairing or cleaning the machine.
- When replacing work tools with blades, use suitable tools and gloves.
- Dispose of oils, greases and filters in the appropriate way.
- Disconnect the cable from the tractor generator and battery before carrying out electrical welding work on the tractor and on attached machines.
- 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

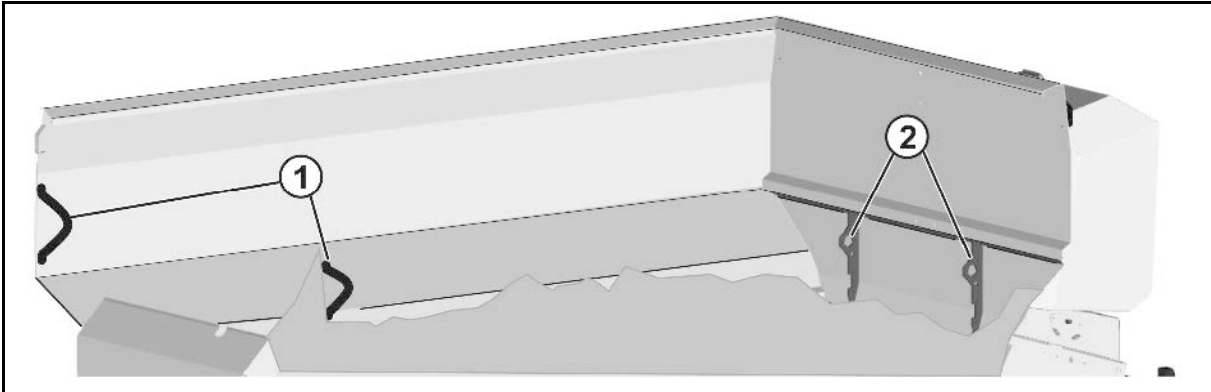


Fig. 3

There are 2 attachment points respectively at the front (**Fig. 3/1**) and rear (**Fig. 3/2**) in the hopper.



DANGER

When loading the implement with a lifting crane, the marked attachment points for slings must be used.



DANGER

The minimum tensile strength per sling must be 1000 kg!

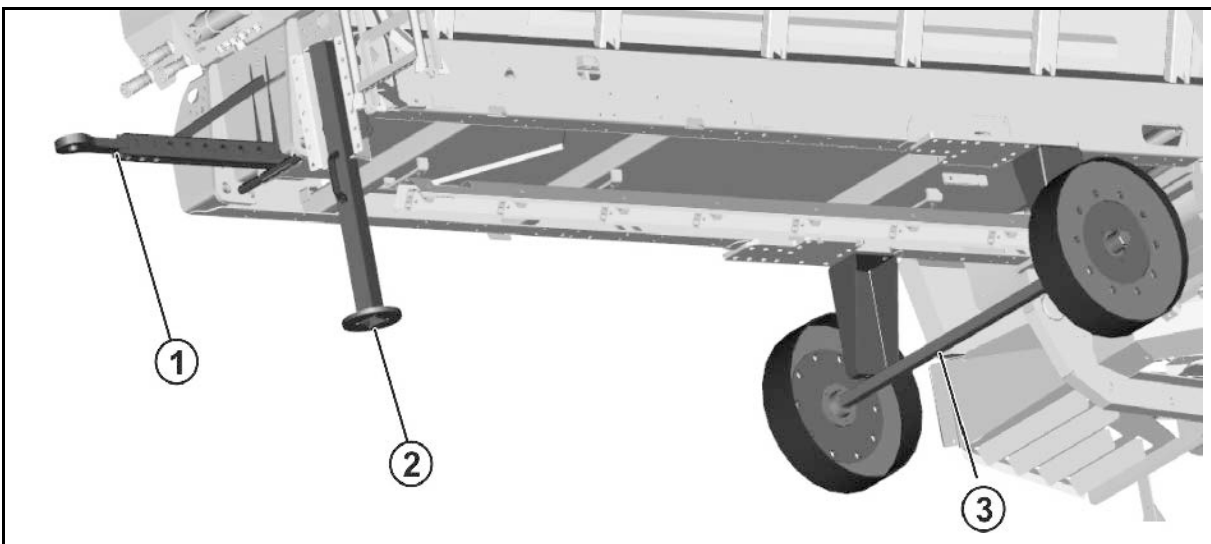


Fig. 4



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

1. Lifting of the hopper using 4 attachment points.

2. Dismount the drawbar, jack and running gear (Fig. 4/1, 2, 3).
3. Mount the ZG WAB 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.

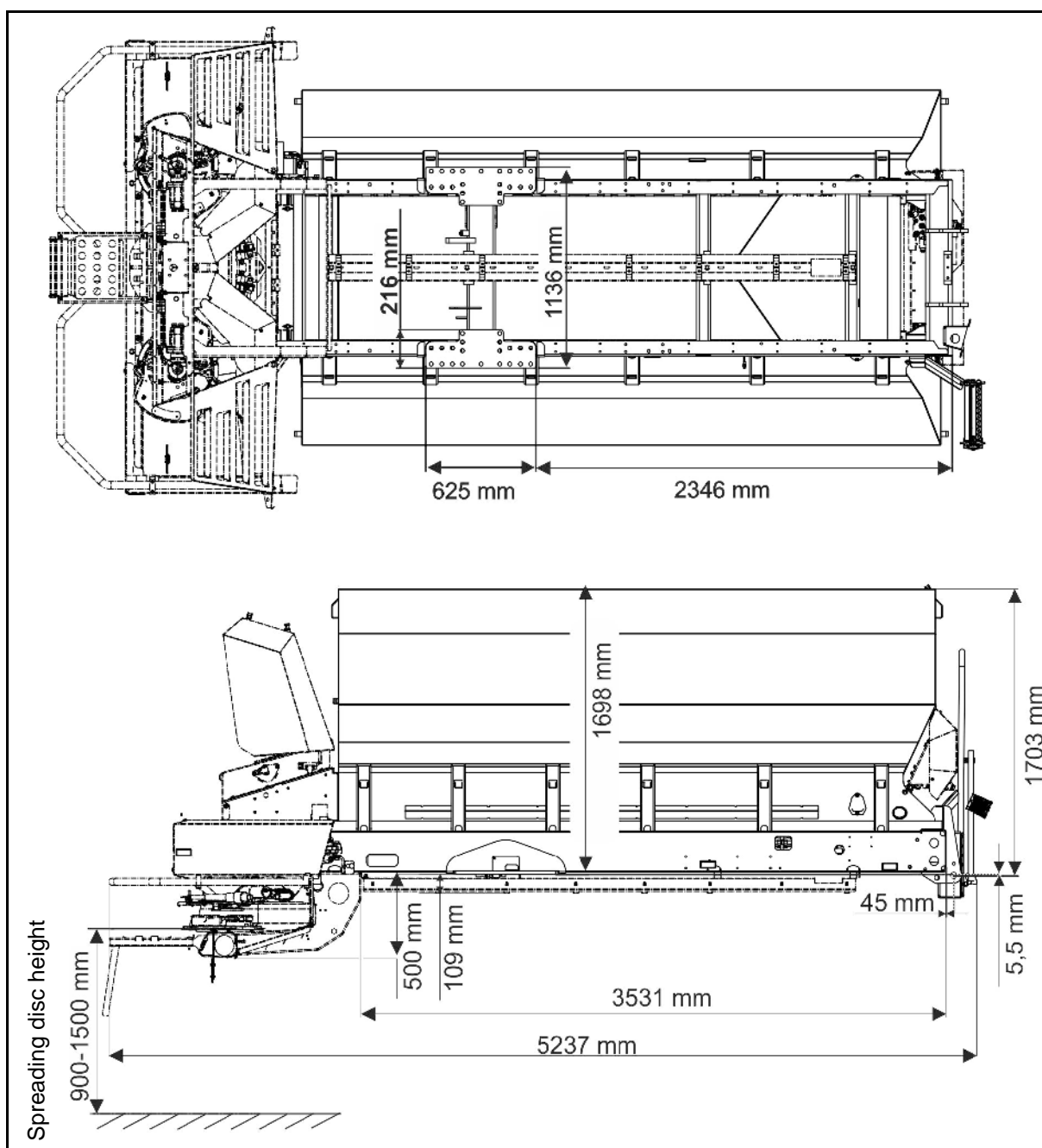


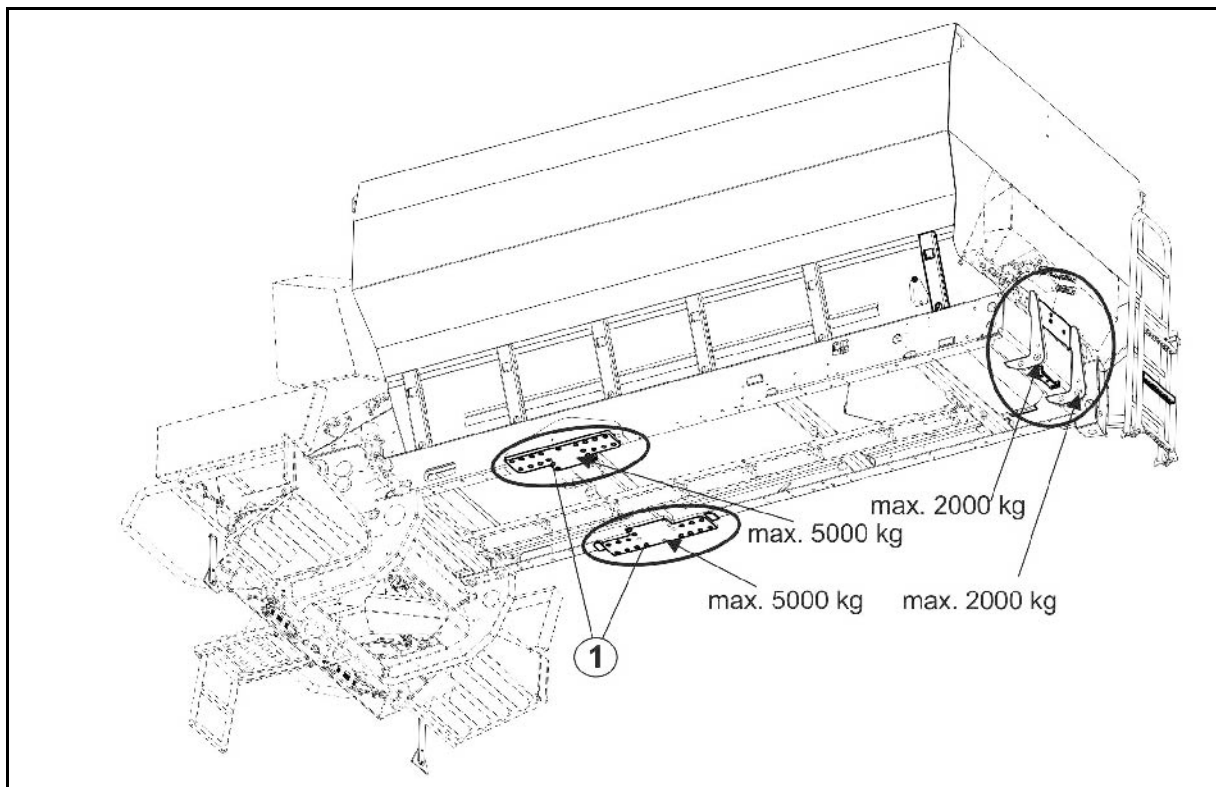
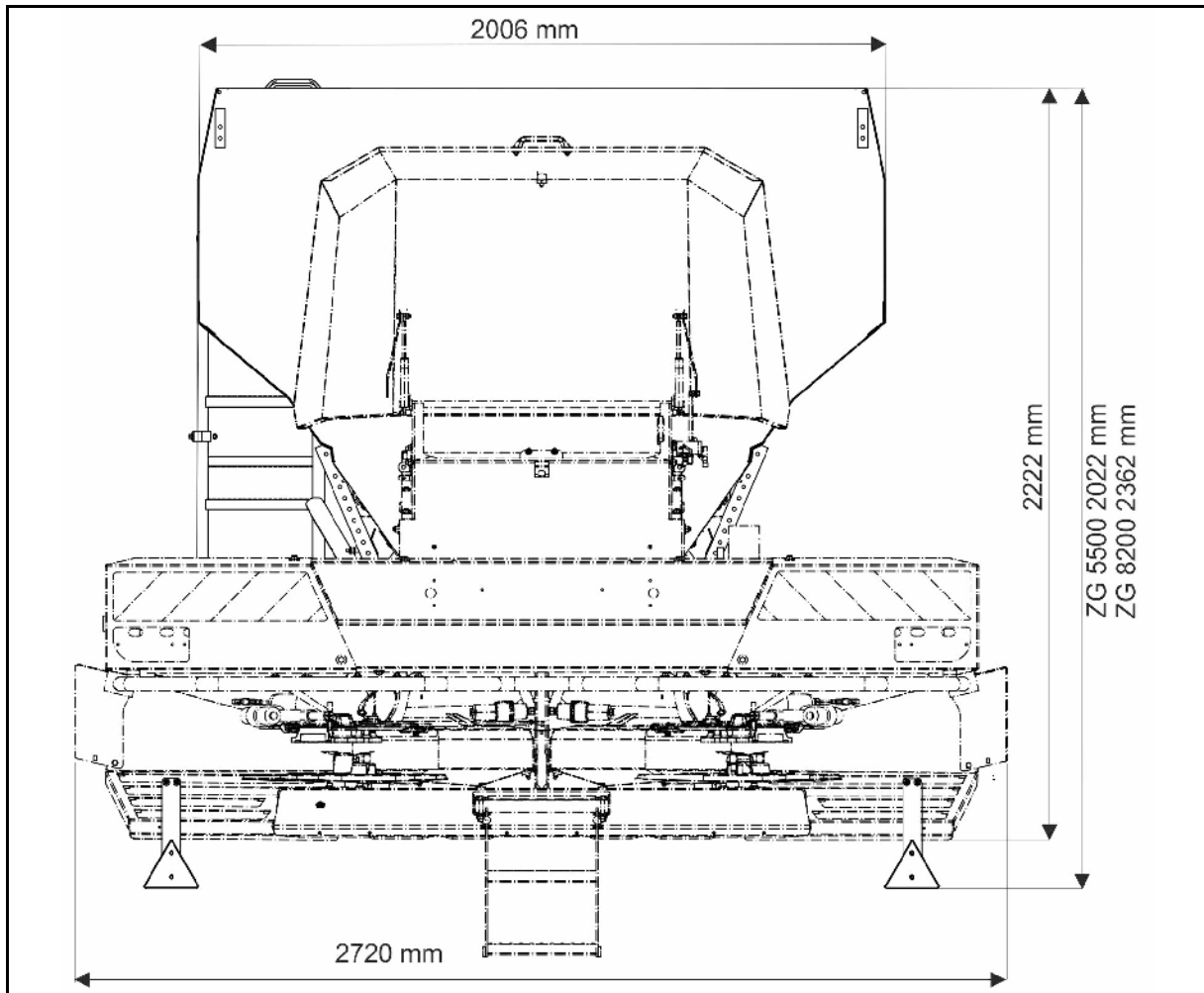
Observe that the maximum load capacity of the frame is 12000 kg!



- To mount the ZG WAB on the carrier vehicle, use the mounting plates under the frame and the mounting straps at the front on the frame.
- Use adequately dimensioned connecting elements when mounting the ZG WAB on the carrier vehicle.
 - o Mounting plate bolted connection: At least 4x M 20 bolts respectively.
 - 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





- (1) Mounting plates for M20 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

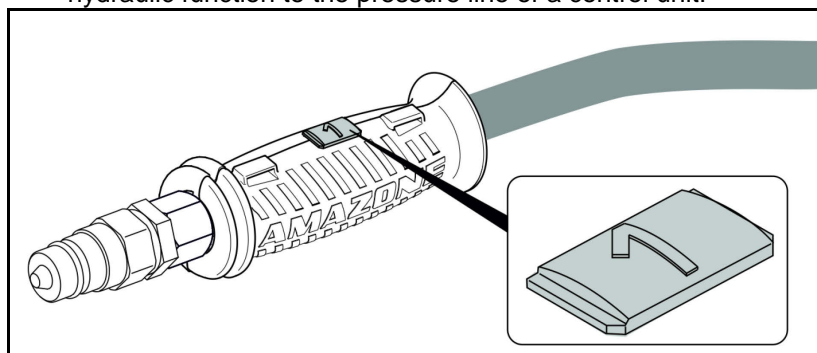
Tractor pump capacity: • At least 40 l/min at 180 bar

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	
natural			natural		
			Schließen		
red		Permanent oil circulation		red	
red		Pressure-free return flow		red	
red		Load sensing control line (Where required / settings on the hydraulic block)		red	

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.

3.4 Adjusting the hydraulic system with the system setting screw



The hydraulic block is located at the front right on the implement behind the cover plate.



- Be sure to match the hydraulic systems of the tractor and the implement.
- The implement hydraulic system is adjusted using the system setting screw on the hydraulic block of the implement.
- Elevated hydraulic oil temperatures are the result of incorrect adjustment of the system setting screw, caused by persistent strain on the pressure relief valve of the tractor hydraulic system.
- Adjustments may only be made in a pressureless state!
- If there are hydraulic malfunctions between the tractor and the implement during start-up, please contact your service partner.

- (1) System setting screw can be adjusted in position A and B
- (2) LS connection for the load sensing control line

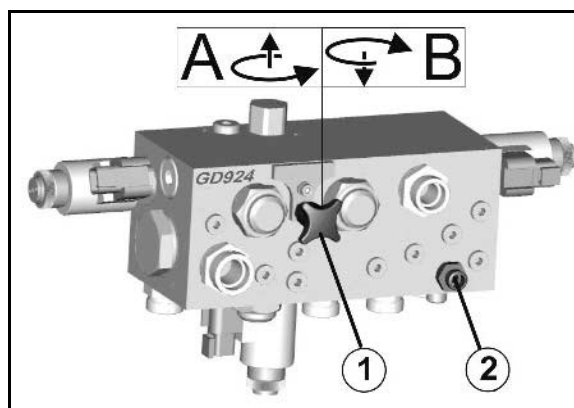


Fig. 5

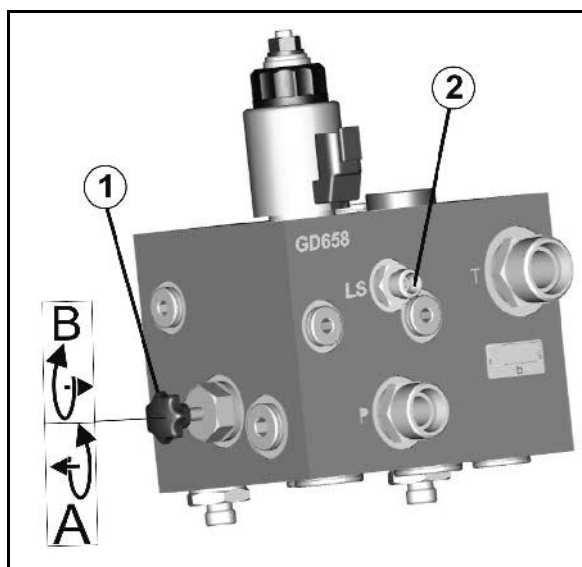


Fig. 6

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

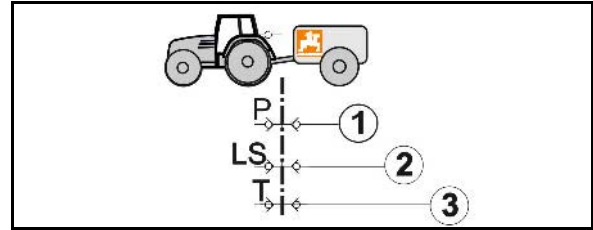


Fig. 7

- (1) Open-Center hydraulic system with constant flow pump (gear pump) or setting pump.

→ Put the system setting screw in position A.



Setting pump: Set the maximum required oil quantity on the tractor control unit. If the oil quantity is insufficient, correct functioning of the implement cannot be ensured.

- (2) Load-Sensing hydraulic system (pressure- and flow-regulated setting pump) with direct load sensing pump connection and LS setting pump.

→ Put the system setting screw in position B.

- (3) Load-Sensing hydraulic system with constant flow pump (gear pump).

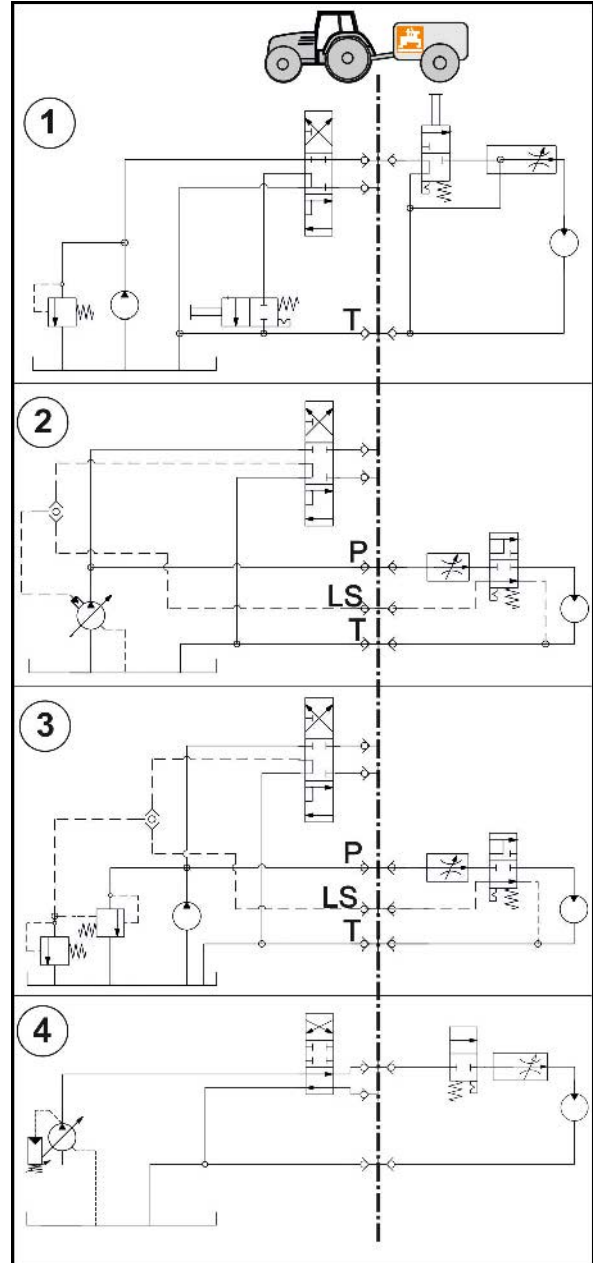
→ Put the system setting screw in position B.

- (4) Closed-Center hydraulic system with pressure-regulated setting pump.

→ Put the system setting screw in position B.



Risk of overheating of the hydraulic system: the Closed-Center hydraulic system is less suitable for the operation of hydraulic motors.



4 Product description

4.1 Overview of subassemblies

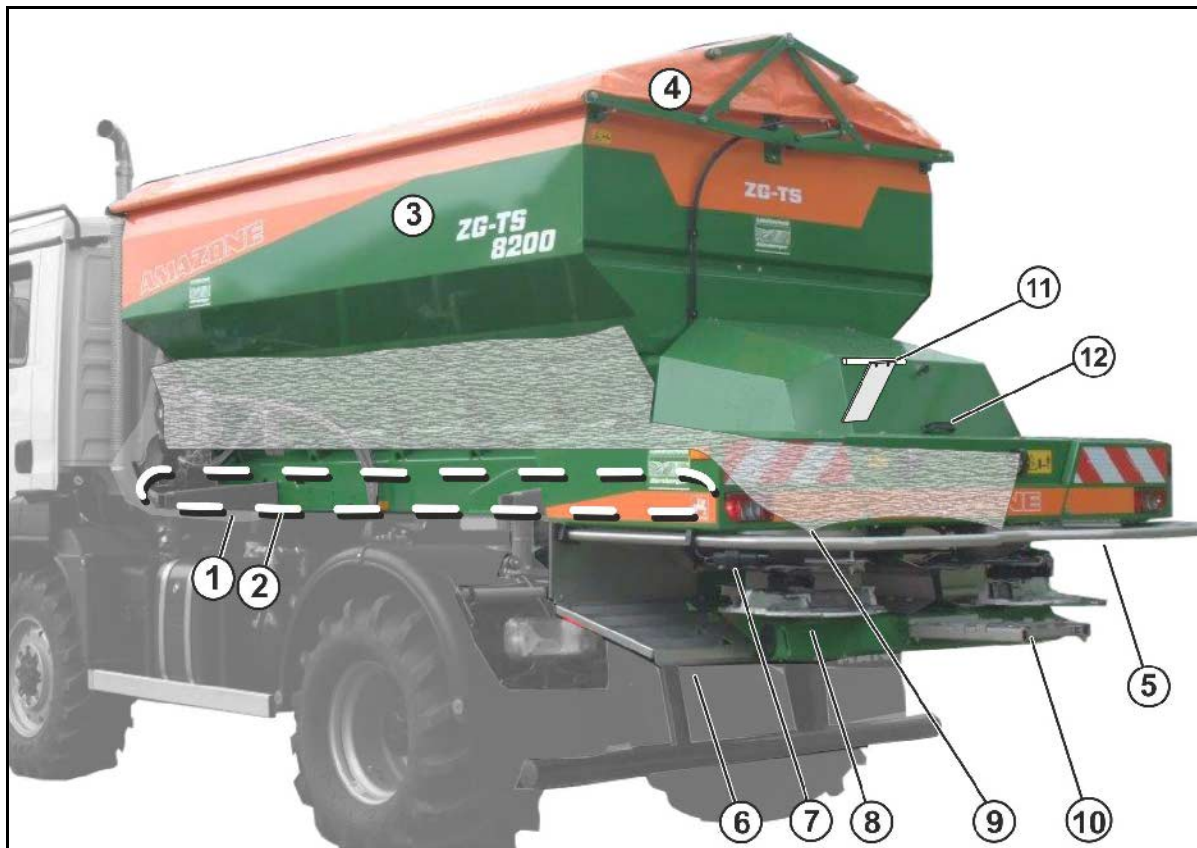


Fig. 8

- | | |
|-----------------------------|--------------------------------------------------------------------|
| (1) Frame | (7) Dosing slider |
| (2) Belt conveyor | (8) Spreading discs |
| (3) Hopper | (9) Hopper tip with agitator |
| (4) Swivelable hopper cover | (10) Fold-out ladder for maintenance of the fertiliser antechamber |
| (5) Guard tube | (11) Flap controller |
| (6) Deflector plate | (12) Fertiliser antechamber |

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 of 1500 mm, the guard tube must be installed underneath the spreading disc.
- (2) Hood with agitator shaft/spreading-disc drive cut-off when the rear flap is opened

Without illustration:

- Warning symbol

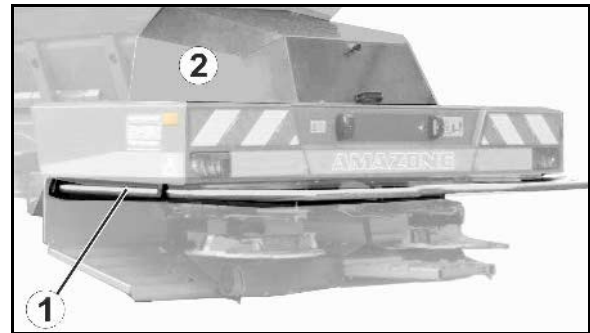


Fig. 9

4.3 Transportation equipment

- (1) Warning signs
- (2) 2 rear reflectors (square)
- (3) 2 red reflectors (triangular)
- (4) registration plate holder with lighting

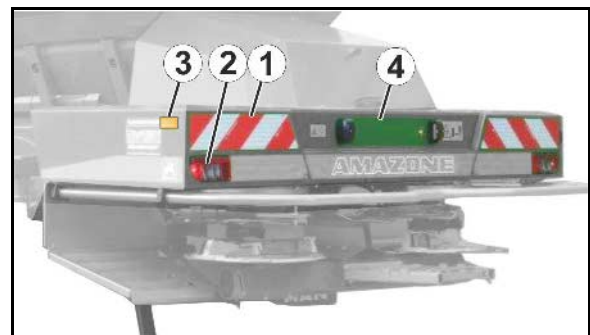


Fig. 10

- (1) 2 x 3 reflectors, yellow
(lateral view: distance of max. 3m)



Fig. 11

4.4 Intended use

The implement

- Is designed exclusively for conventional agricultural applications and is suitable for spreading dry, granulated, prilled and crystalline fertiliser.
- is firmly mounted on a HGV.

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



Fig. 12

4.7 Technical data

Hopper size	[l]	5500	8200
Length over-all:	[mm]		5237
Width	[mm]		2720
Height	[mm]	2022	2362
Frame load capacity	[kg]	max. 12000	
Drive		Standard speed Maximum permissible speed 1000 rpm	

4.7.1 Weights basic machine and modules

ZG-TS WAB	550	8200
Basic machine	1207	1297
Charging sieves	75	
Swivelable hopper cover	80	

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 following section provides information on the machine structure and the functions of the individual components.

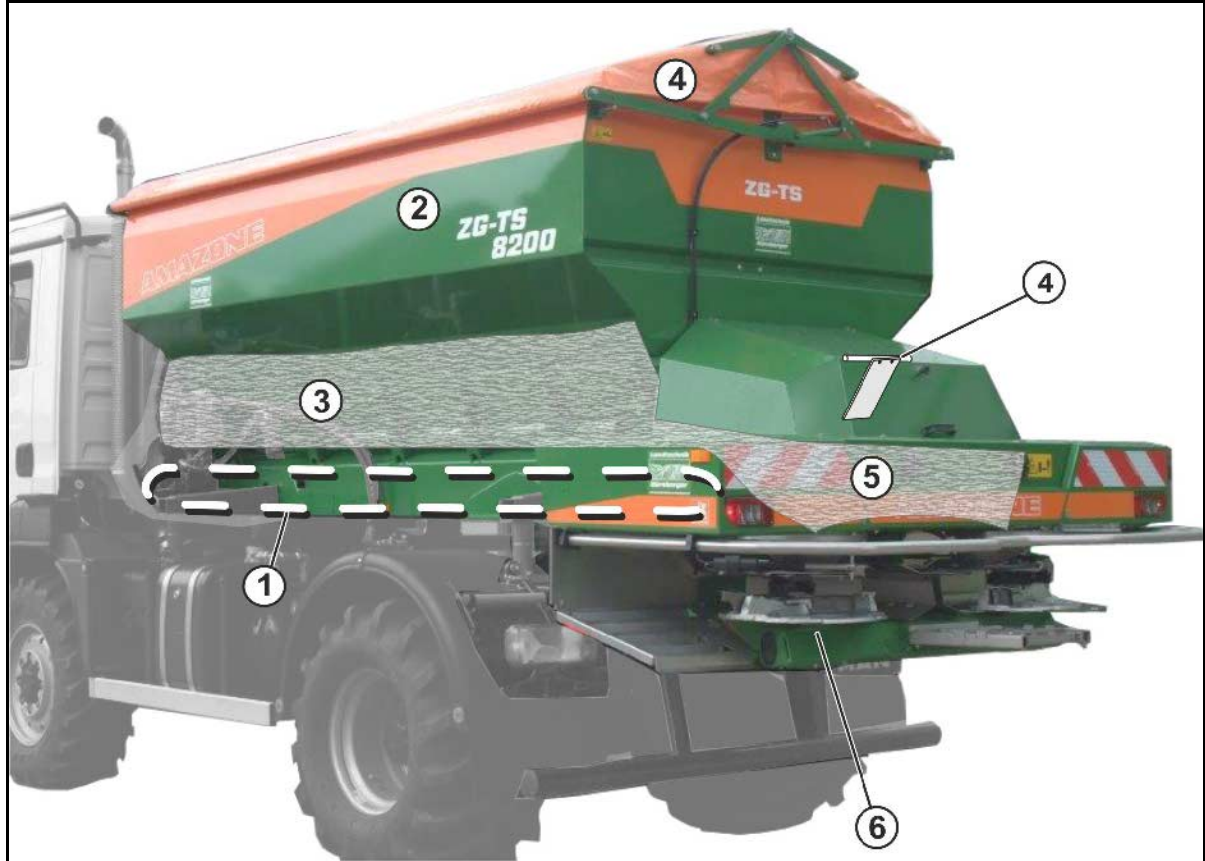


Fig. 13

The AMAZONE ZG-TS WAB bulk fertiliser spreader is a fertiliser spreader with hoppers from 5,200 l to 8,200 l in volume.

It is used to apply granulated fertiliser.

The product (Fig. 13/3) is transported out of the hopper (Fig. 13/2) by the belt conveyor (Fig. 13/1) by means of a flap controller (Fig. 13/4) and delivered into the fertiliser antechamber (Fig. 13/5). From there, the fertiliser is delivered to the spreading discs via the hopper tips (Fig. 13/6).

The working width is max. 48 m, depending on the spreading disc.

Equipment:

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

5.2 Setting chart

All common kinds of fertiliser on the market are spread in the **Amazon** 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 → FertiliserService

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

iOS




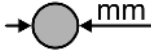
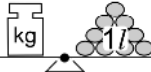
Android



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	<div data-bbox="662 353 813 403">  </div> <div data-bbox="906 353 1082 385"> Grain diameter </div> <div data-bbox="662 421 813 492">  </div> <div data-bbox="906 430 1050 461"> Bulk density </div> <div data-bbox="662 515 853 577"> Calibration factor </div> <div data-bbox="906 515 1401 577"> The calibration factor is used as a default value for fertiliser calibration. </div>


















If you cannot definitively assign the fertiliser to a kind listed in the setting chart

- the AMAZONE Fertiliser Service will assist you over the telephone in assigning the fertilisers and setting recommendations.




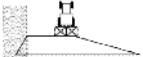



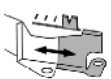
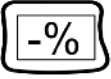
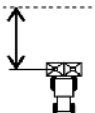
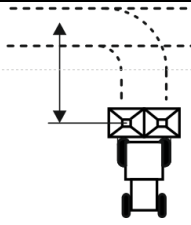

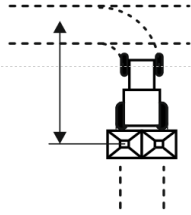

 +49 (0) 54 05 / 501 111

- please consult the contact partner in your country

Settings

	Spreading vane unit														
															
	Working width		Position of the feed system	Spreading disc speed for normal spreading	Telescope for boundary spreading	Side spreading		Boundary spreading		Ditch spreading		Switching on point when driving into the field	Switching off point when driving into the headlands	Throwing direction (Argus)	
															
TS-2	24,0	16	600	B	2	720	2	5	600	2	10	550	24	-2	165
	27,0	16	600	B	2	720	2	5	600	2	10	550	24	-2	176
	30,0	16	800	B	2	900	2	7	800	2	12	720	29	-1	176
TS-3	36,0	18	720	C	2	800	2	20	720	2	25	600	36	0	216
	40,0	25	800	C	3	900	3	15	800	3	20	720	39	2	246
	48,0	36	800	D	X	900	3	5	800	3	10	720	45	4	329
Einstellung durchführen...															
Manually before use															
On the operating terminal before use															
On the operating terminal before use / Manually before use															
Hydro: On the operating terminal before use / Tronic: Manually during use															
Manually before use															
Manually before use															
Hydro: On the operating terminal before use / Tronic: Manually during use															
Manually before use															
On the operating terminal before use															
Hydro: On the operating terminal before use / Tronic: Manually during use															
Manually before use															
On the operating terminal before use															
Hydro: On the operating terminal before use / Tronic: Manually during use															
On the operating terminal before use (GPS) Manually during use															
On the operating terminal before use (GPS) Manually during use															
Argus: on the control terminal before use															

Symbols and units:

TS-2	Fit spreading vane units TS1, TS2 or TS3 onto the spreading disc for one working width spectrum each	
	Working width in m (metre)	
	Position of the inlet system as value in the adjustment scale or entry in the In-cab terminal	
	Spreader disc speed in rpm depending on the type of spreading	
	Side spreading	
	Boundary spreading	
	Ditch spreading	
	Select telescope A, B, C or D for boundary spreading for a half working width as boundary stand-off distance	
	Setting 1, 2 or 3 on the telescope for boundary spreading 0 - do not use the telescope 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 / ditch spreading vanes	
	Switch-on point (point at which the shutters open) when driving into the field given as distance in m. Measured from the centre of the spreading disc to the centre of the track in the headlands.	
	Switch-off point (point at which the shutters close) prior to driving into the headlands given as distance in m. Measured from the centre of the spreading disc to the centre of the track in the headlands.	
	Throwing direction (Argus)	

5.3 Spreading discs TS

Variants:

- Spreading vane unit TS1 for small working widths.
- Spreading vane unit TS2 for medium working widths.
- Spreading vane unit TS3 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.

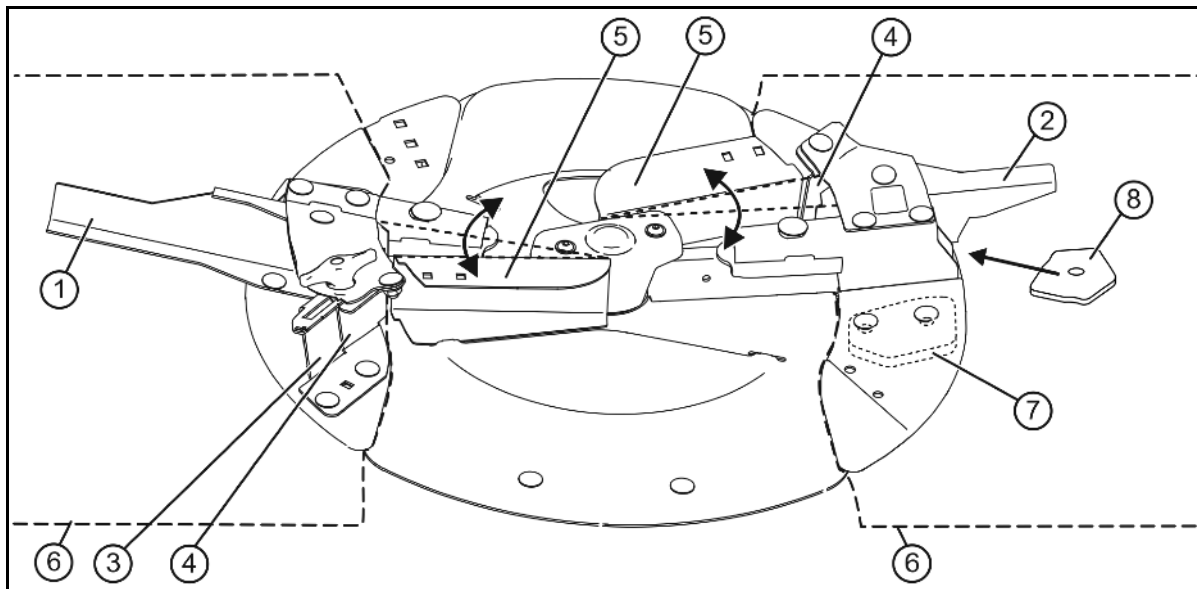


Fig. 14

- (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

- (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 1, TS 2, TS 3

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

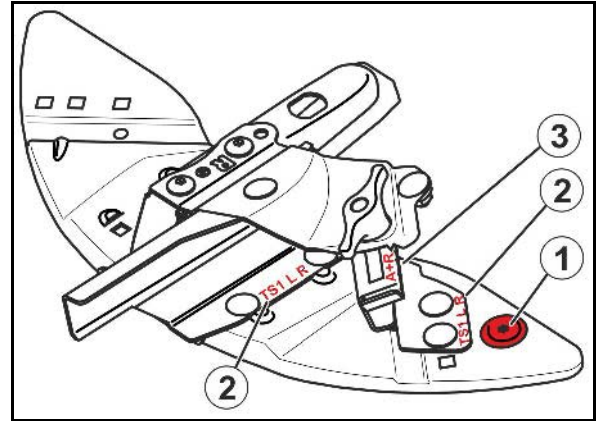


Fig. 15

Manual adjustment of the boundary spreading system with ClickTS on the spreading disc.

- (1) Hand lever
- (2) Slotted link guide
- (3) End position normal spreading (implement-side, outer) or boundary spreading (implement-side, inner)

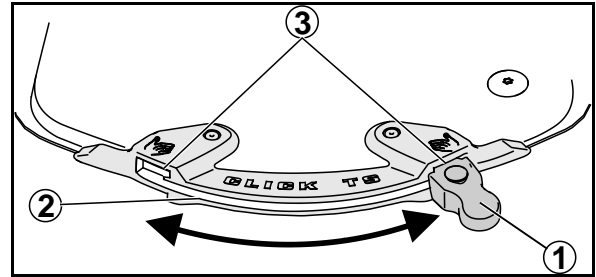


Fig. 16

5.4 Agitator

Agitators in the tips of the hopper (Fig. 17) 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.



Fig. 17

5.5 Spread rate metering

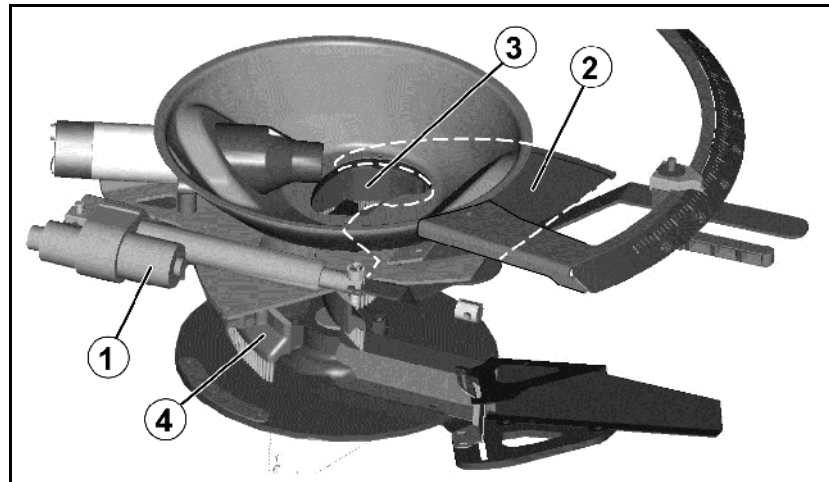


Fig. 18

- (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.



As the spreading properties of the fertiliser are subject to considerable fluctuations, it is recommended that a spread rate check be carried out for the selected slider position.

5.6 Calibration kit (option)

Using the calibration kit, the operating terminal can determine the calibration factor of the fertilizer.

The calibration factor and the application rate set are used to calculate the necessary shutter position.

Refer to the software operating manual Implement control.

- (1) Calibration kit is mounted on the hopper at the rear on the left.
- (2) Hand lever
- (3) Sensor
- (4) Bucket to collect the fertilizer

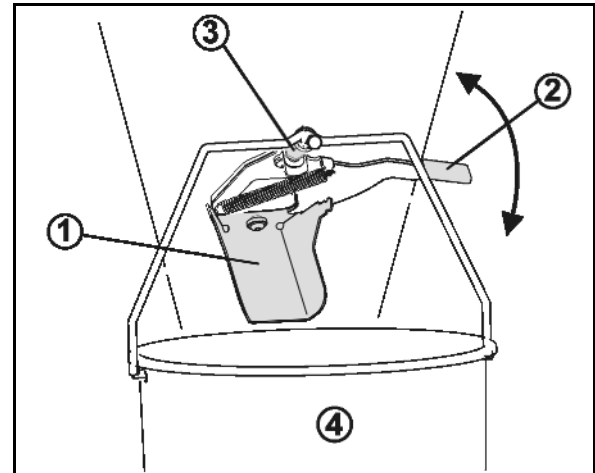


Fig. 19

5.7 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.

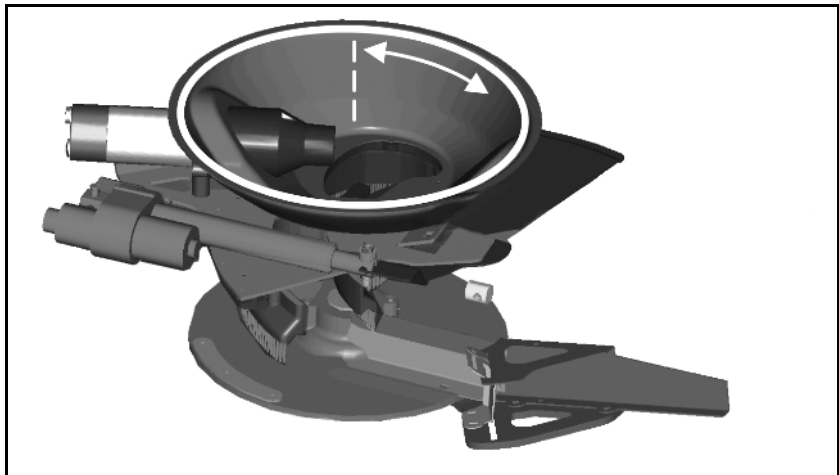


Fig. 20

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.

5.8 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.

5.9 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.

Fig. 21/...

- (1) Conveyor belt
- (2) Shutter control

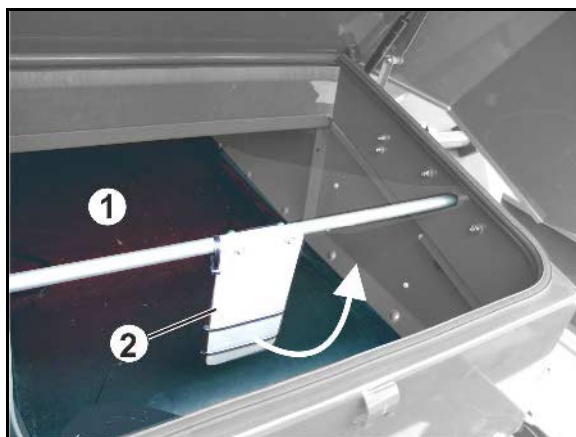


Fig. 21

The conveyor belt is driven hydraulically via a gearbox.

Fig. 22/...

- (1) Hydraulic motor
- (2) Gearbox

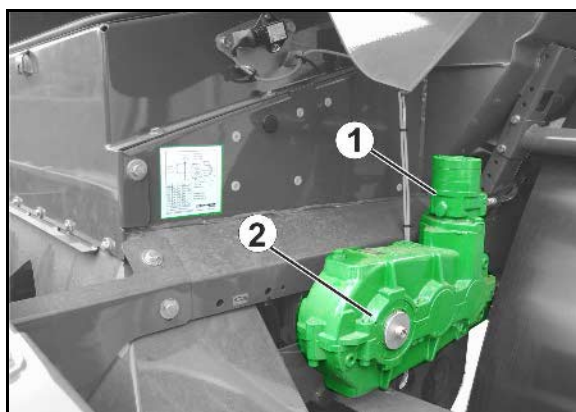


Fig. 22

5.10 Foldable ladder

The foldable ladder (Fig. 23/1) enables a user to comfortably ascend the hopper for cleaning purposes.



Warning

Keep the ladder folded in and locked when the vehicle is in motion (Fig. 23/2).

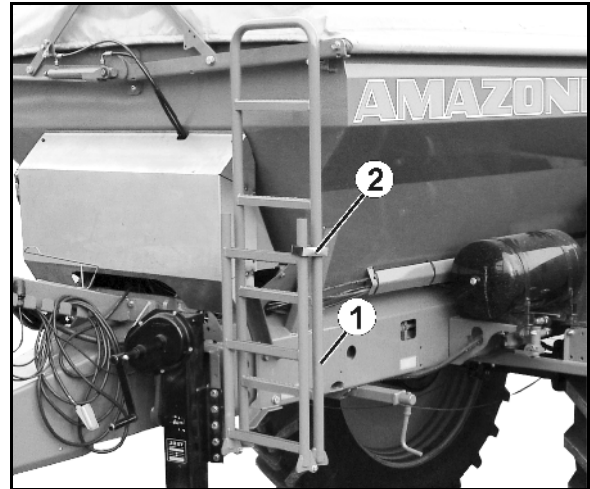


Fig. 23

5.11 Charging sieves

The foldable charging sieves (Fig. 24/1) 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.



Fig. 24

5.12 Ascent with platform

Ascent via platform to the fertiliser antechamber with flap controller for cleaning and maintenance purposes.

- To climb up, pull out the ladder with platform and fold down the ladder (Fig. 25)
- If the ladder is no longer needed, swing it up (Fig. 26) and slide it forwards, along with the platform.



Fig. 25

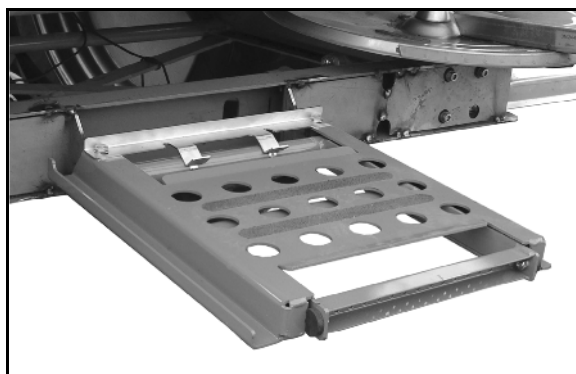
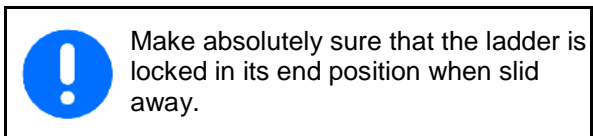


Fig. 26

5.13 Swivelable hopper cover (optional)

The swivelable hopper cover can be swivelled hydraulically or manually.



Fig. 27

5.14 Control block and machine computer

The valves of the hydraulic block are actuated via the in-cap terminal, thus ensuring all the hydraulic functions.

Depending on the equipment, the adjustable hydraulic throttles for the hydraulic swivelable hopper cover can be found on the hydraulic block.

The oil filter is equipped with a maintenance indicator and should be cleaned according to this.

Fig. 28/... (Illustration without cover plate)

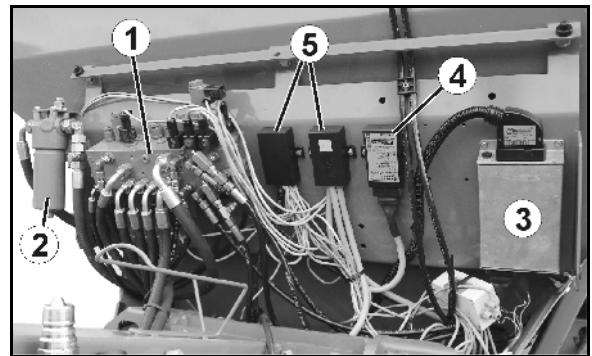


Fig. 28

- (1) Hydraulic block
- (2) Oil filter
- (3) Machine computer I
- (4) Machine computer II
- (5) Cable harness

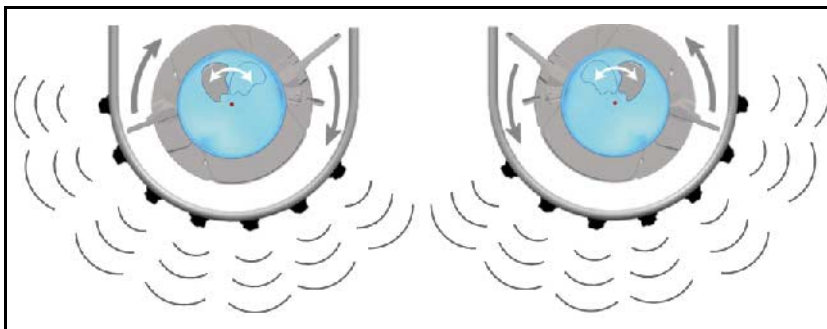
5.15 Argus Twin (optional)

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.



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.

6 Adjustments



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 15 and
- "Safety information for the operator" from page 21.

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).**
- **due to tractor and connected machine unintentionally starting up or rolling away.**
- 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.



WARNING

Risk of catching, trapping and knocks during all adjustment work on the machine due to unintentional lowering of the coupled and raised machine.

Secure the tractor cabin against entry of other persons to prevent unintentional actuation of the tractor's hydraulic system.

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.


Adjustments

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.

1. Pay attention to the working width.
2. **ZG-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 56.

Excerpt from the setting chart




















YaraMila® NPK 21-9-8 gran
(83008263)

mm
3,61 mm

kg/l
1,08 kg/l

Calibration factor **0,99**

ZG-TS															
					Side spreading		Boundary spreading			Ditch spreading					
															
TS-2	24,0	16	600	B	2	720	2	5	600	2	10	550	24	-2	
	27,0	16	600	B	2	720	2	5	600	2	10	550	24	-2	
	30,0	16	800	B	2	900	2	7	800	2	12	720	29	-1	
TS-3	36,0	18	720	C	2	800	2	20	720	2	25	600	36	0	
	40,0	25	800	C	3	900	3	15	800	3	20	720	39	2	
	48,0	36	800	D	X	900	3	5	800	3	10	720	45	4	



For unknown kinds of fertiliser or a general check of the set working width, you can easily check the working width using the mobile fertiliser test rig (optional).

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

Spread rate control must be carried out:

- each time fertiliser is changed
- when spread rate is changed
- when working width is changed

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.

Before spreading, when the implement is at a standstill

→ Fertiliser menu:

Determine the calibration factor using the calibrating device or the left hopper tip with calibration chute



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.

- Tronic: Correctly set and maintain the spreader disc speed via the PTO shaft.
- Hydro: The spreader disc speed is regulated automatically when switching 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

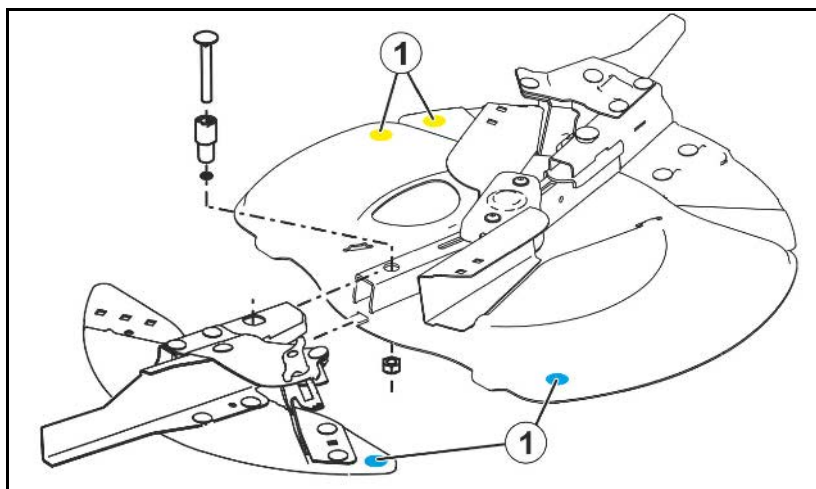


Fig. 29

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.

6.4.3 Checking the working width with the mobile test rig (optional)

The working width is determined in part by the specific spreading properties of the fertiliser.

As is well known, the primary factors that affect the spreading properties are:

- Granule size
- Bulk density
- Surface condition and
- Humidity

The setting values of the setting chart are, therefore, to be considered **guideline values** only, as the spreading properties of the different types of fertiliser may change. We recommend checking the working width of the machine using the **mobile fertiliser test rig** (Fig. 30).

See the operating manual for the **mobile test rig**.



Fig. 30

6.5 Boundary, ditch and side spreading

1. Boundary spreading in accordance with fertiliser ordinance (Fig. 31):

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 (Fig. 32):

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.

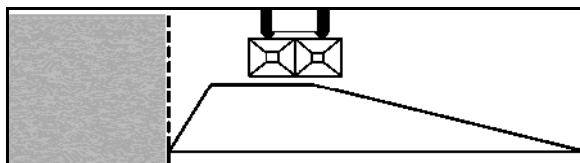


Fig. 31

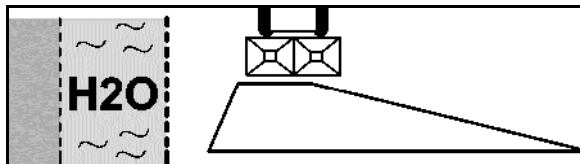


Fig. 32

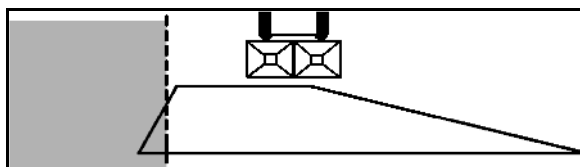

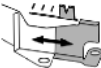


Fig. 33

6.5.1 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 (1, 2, 3)
 - 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.

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.

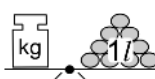
Excerpt from the setting chart



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





3,61 mm



1,08 kg/l

Calibration factor **0,99**

ZA-TS														
					Side spreading		Boundary spreading			Ditch spreading				
														
TS-2	24,0	16	600	B	2	720	2	5	600	2	10	550	24	-2
	27,0	16	600	B	2	720	2	5	600	2	10	550	24	-2
	30,0	16	800	B	2	900	2	7	800	2	12	720	29	-1
TS-3	36,0	18	720	C	2	800	2	20	720	2	25	600	36	0
	40,0	25	800	C	3	900	3	15	800	3	20	720	39	2
	48,0	36	800	D	X	900	3	5	800	3	10	720	45	4

Setting the Auto TS border spreading vane

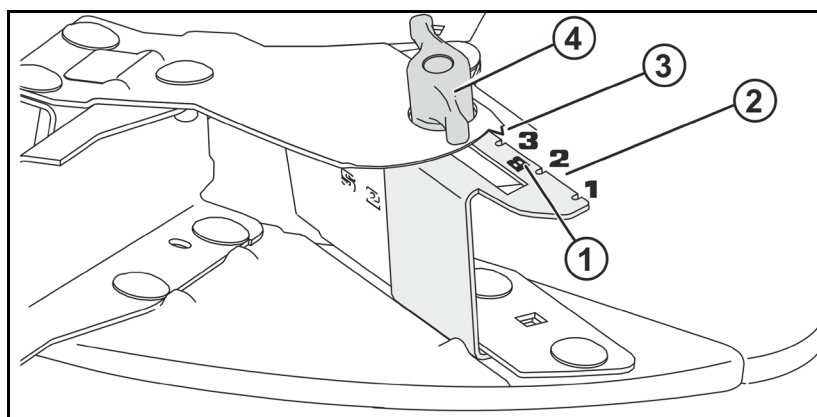


Fig. 34

(1) Telescope identification

TS1→ A, A+ / TS2→ B, C / TS3→ 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.



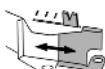


Replacing the telescope (A, A+, B, C, D) for the boundary spreading vane, see page 76.

6.5.2 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.	

6.5.3 Switch ClickTS

1. Secure the tractor against unintentional starting and unintentional rolling away.
 2. 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.

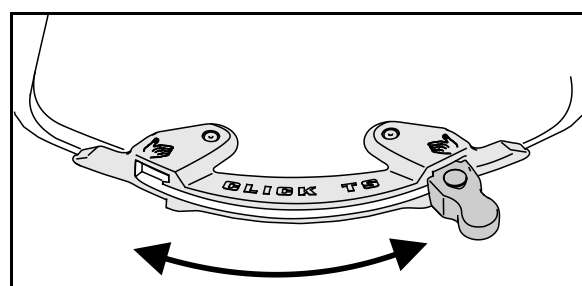




Fig. 35



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.

6.6 Switch-on point and switch-off point

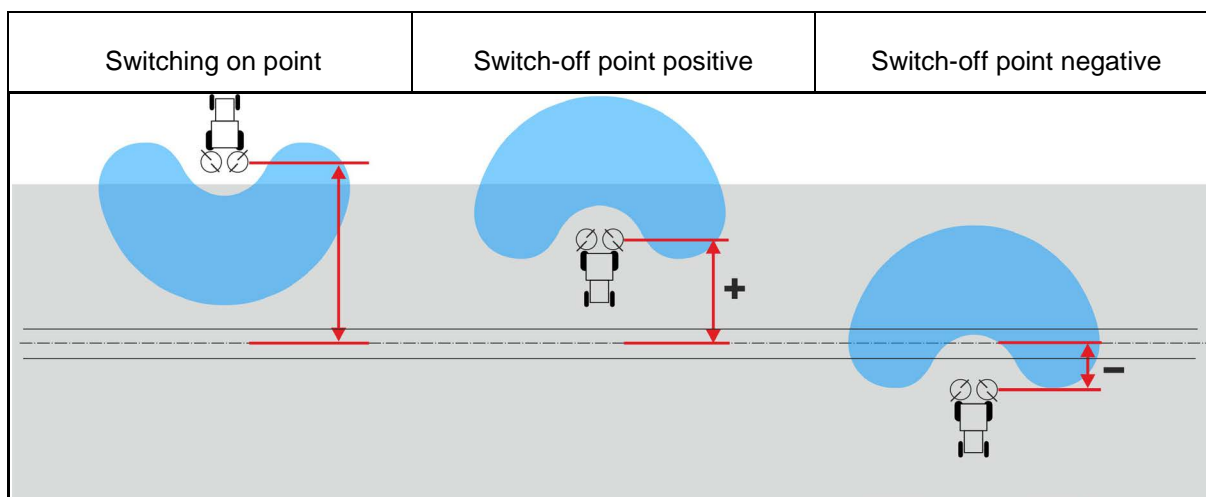
- 
The switch-on point is the position for opening the shutters when moving out of the headlands at which the best possible fertiliser distribution is achieved.
- 
The switch-off point is the position for closing the shutters when moving onto the headlands at which the best possible fertiliser distribution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

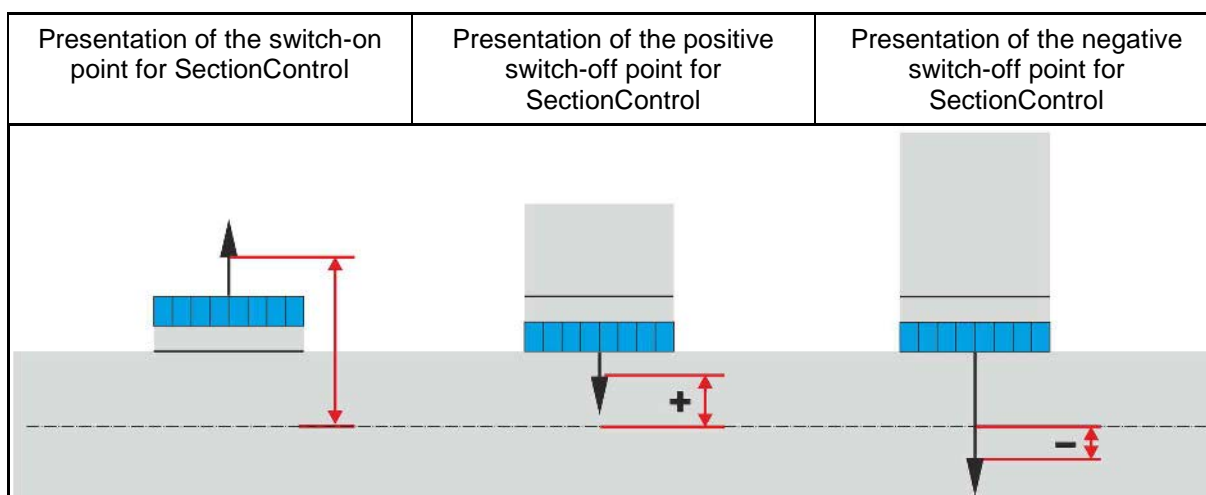
Implements without SectionControl:

- 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.

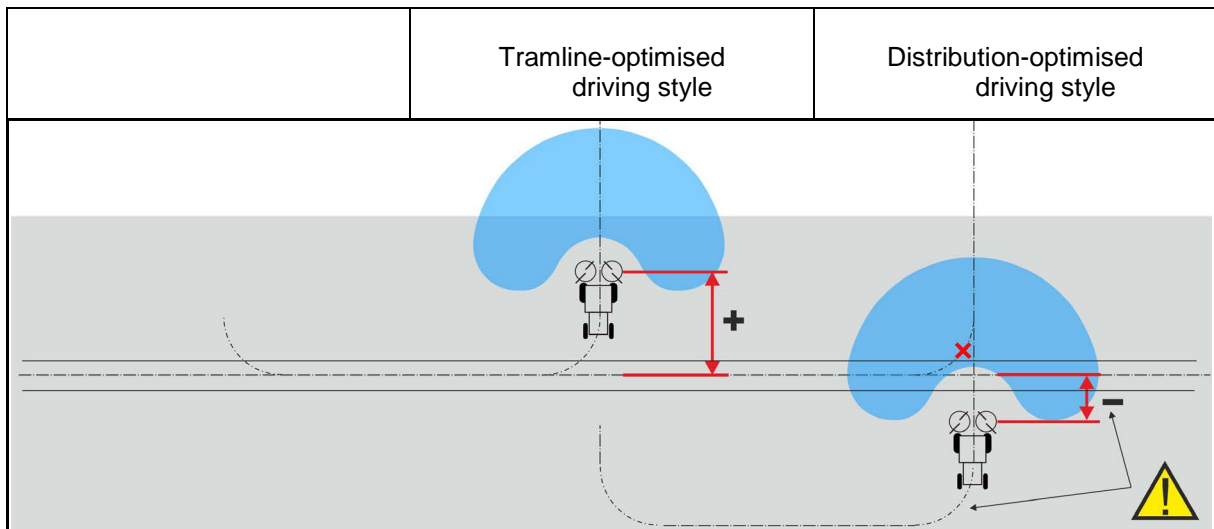
→ Read the switch-off point from the setting chart.

- 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

**WARNING**

Risk of crushing, shearing, cutting, being caught and/or drawn in, or impact when making interventions in the machine, through unintentional machine movements.

- Secure the machine against unintentional movements before starting transportation.

**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 falling from the machine if riding against regulations!

It is forbidden to ride on the machine and/or climb the running machine.

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

**CAUTION**

Use transport locking for locking the raised ladder to prevent it from folding down again accidentally.



- Close the slider for road travel.
- Close the swivelable hopper cover.

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 15 and
- "Safety information for the operator", on page 21 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.



- 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 76.



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 settings have been made.

1. Secure the hydraulic oil supply.





- 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.



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: Switch on Auto TS / ClickTS.
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 76.



- 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.

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

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.

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

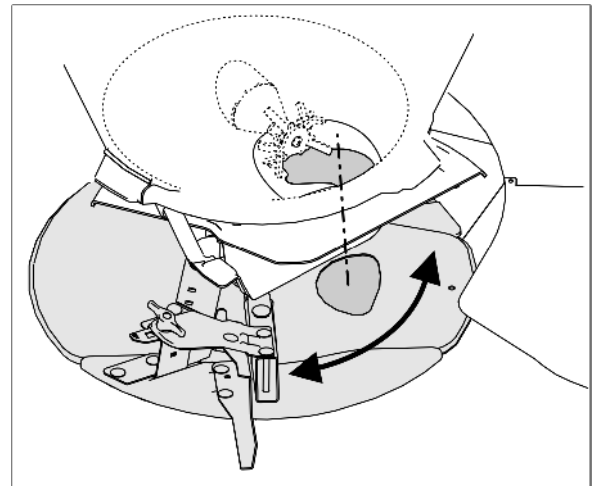


Fig. 36



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



Machines with a mechanical spreading disc drive:

Empty the residue on the left and right sides separately.

9 Faults



WARNING

Danger of crushing, shearing, cutting, being drawn in and/or caught if the tractor/machine combination is started and/or rolls unintentionally.

Secure the vehicle and the machine against unintentional start-up and rolling, before eliminating faults on the machine. See page **Fehler! Textmarke nicht definiert..**

Wait for the machine to stop before entering the machine danger area.

9.1 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.

9.2 Faults in electronics

Close the shutter manually



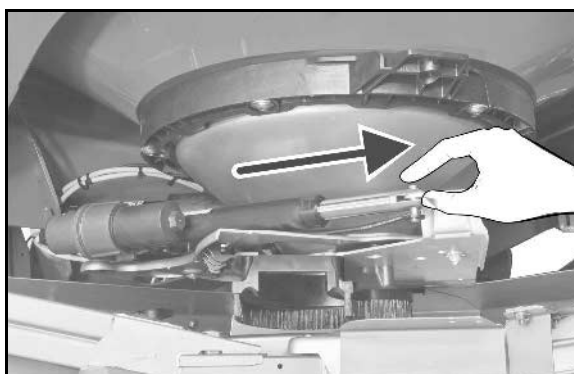
The manual closing of the shutter prevents the fertilizer from running out accidentally if the electrics do not react due to a fault.

1. De-energize the electrics.
2. Secure the tractor against unintentional start-up and unintentional rolling.
3. Pull out the actuator of the piston rod manually.

→ Shutter closes.

Adjustment force required: 150 N

4. Switch the operating terminal back on and check the functions.



9.3 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
Floor belt does not convey fertiliser	Oil pressure too low.	Increase the oil pressure from the tractor.
Swivelable hopper cover does not open/opens too fast	Throttle not adjusted correctly.	Adjust throttle.
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 83).
	Solenoid valve dirty	Rinse solenoid valve (sivulla 83).
Overheating of the tractor hydraulic fluid	System converting bolt on the hydraulic block is incorrectly set	Adjust the system converting bolt correctly on the hydraulic block
	Fluid quantity not reduced enough on the tractor control unit.	Reduce the fluid quantity on the tractor control unit.

10 Cleaning, maintenance and repairs



- 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 14).
- 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.
- Carry out repair work on the machine with the pump switched off.
- Thorough cleaning must be carried out before repair work can be carried out inside the spray liquid tank. Keep out of the spray liquid tank.
- 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.
- When the machine is dry, apply a coat of anti-rust compound. (Use only biodegradable compounds).
- Park the machine with the slide gates **opened**.

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 (Fig. 37).

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.

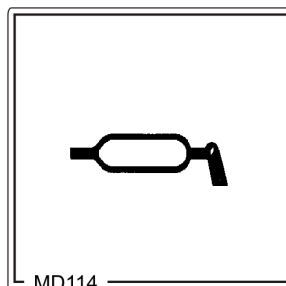


Fig. 37

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

Floor belt flange bearing, rear

Interval: 100 h

Number of lubricating points: 2

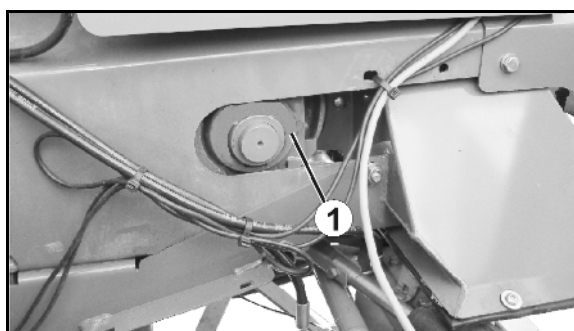


Fig. 38

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 	84	

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 	79	X

Daily

Component	Maintenance work	see page	Workshop work
Control butterfly valve	<ul style="list-style-type: none"> • Check for ease of movement and adjust if necessary 	78	
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 	76	
Hydraulic fluid filter	<ul style="list-style-type: none"> • Check clogging indicator, clean or replace if necessary 	83	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 	79	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 	77	

10.4 Replacing the spreading vanes

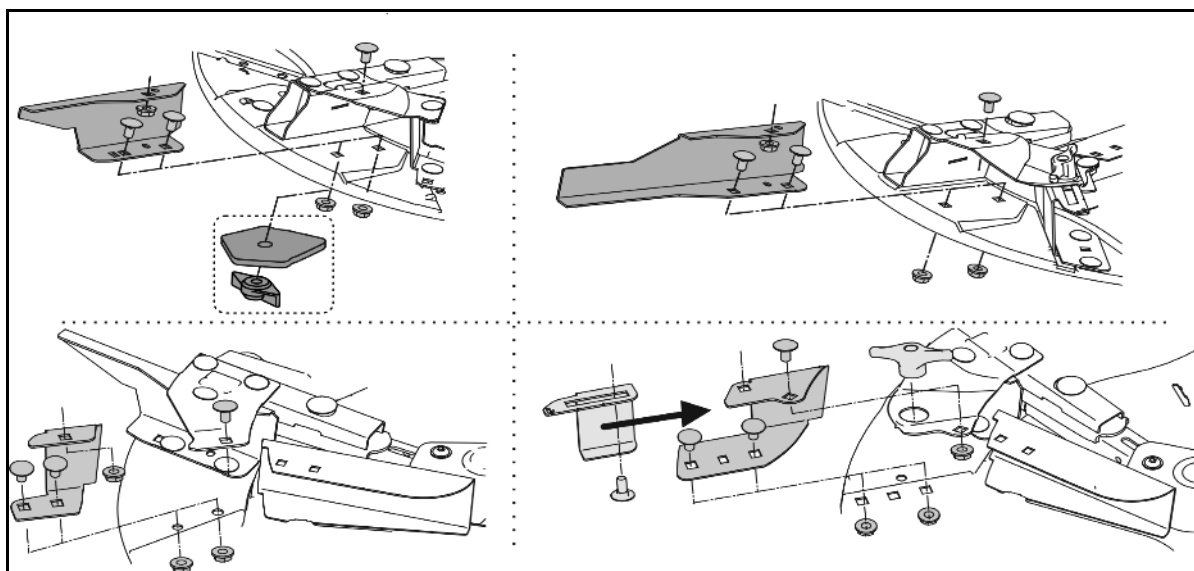


Fig. 39



When using spreading disc TS 3 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.

10.5 Belt conveyor with automatic belt control

One property of belt conveyors (Fig. 40/1) is that they give way under load on inclines such as on sloping terrain or if they are loaded on one side only. The belt conveyor then runs outwards. One-sided belt conveyor running is prevented by the automatic belt control in AMAZONE bulk fertiliser spreaders ZG-TS.

The conveyor belt is tensioned in the floor belt with automatic belt control between the drive drum (Fig. 40/2) and the pulley (Fig. 40/3).

While the drive drum is secured rigidly in the floor belt, the pulley can turn around the swivel axle (Fig. 40/4). The belt conveyor is also guided between two control rollers (Fig. 40/5), which are connected to the pulley by a control frame (Fig. 40/6).

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.

Tensioning the belt conveyor:

The belt conveyor is tensioned with pretension in the floor belt for stable, even belt movement. If the belt conveyor runs unevenly in any circumstance, the belt conveyor should be retensioned on both sides as described below:

1. Loosen the rear lock nuts on both sides when viewed in the direction of travel (see arrow) (Fig. 41/1) by turning them anti-clockwise.
2. Turn the nuts on both sides evenly to the left when viewed in the direction of travel (see arrow) (Fig. 41/2).
3. Tighten the lock nuts.



The adjustment travel of the nuts (Fig. 41/2) must be equal on both sides of the floor belt. Do not turn either nut (Fig. 41/2) more than a ½ spanner turn. Tighten the lock nuts and check whether the belt conveyor is driven evenly again.

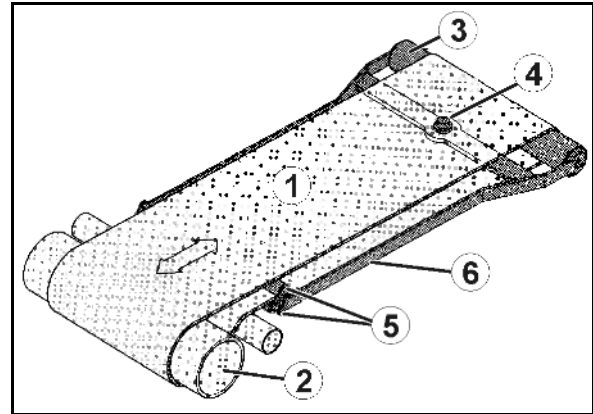


Fig. 40

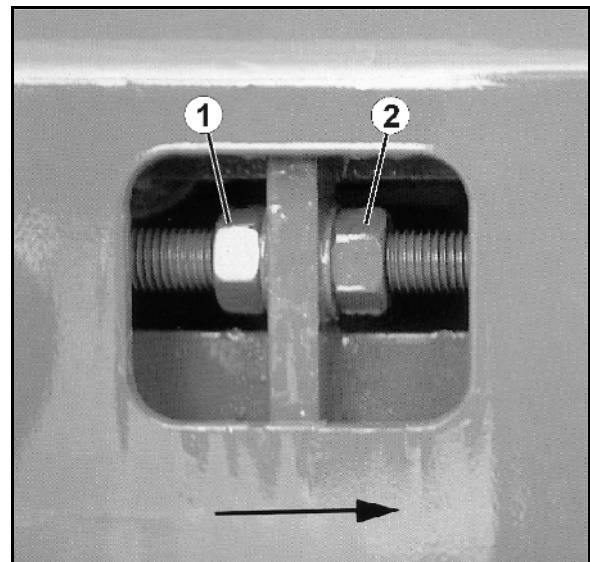


Fig. 41

10.6 Checking the control butterfly valve, outlet openings and agitator

1. Release lock button of hood (Fig. 42/1).
2. Open the hood.
3. Check the butterfly valve (Fig. 43/1) for ease of movement and adjust the adjustment rings if necessary.
4. Check limit stop of control butterfly valve.

The limit stop of the control butterfly valve is adjusted by means of the screw (Fig. 43/2). If the control butterfly valve is moved to the limit stop, the impulse disc (Fig. 43/4) must cover the sensor (Fig. 43/3).

→ Otherwise there will be considerable malfunction in the control of the belt conveyor.

5. Clean the outlet openings.
6. Check the agitator for damage.
7. Close the hood again.

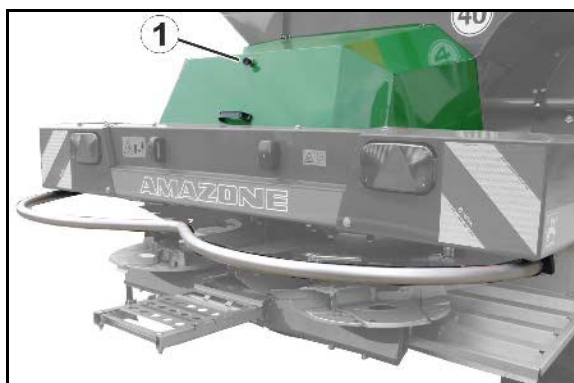


Fig. 42

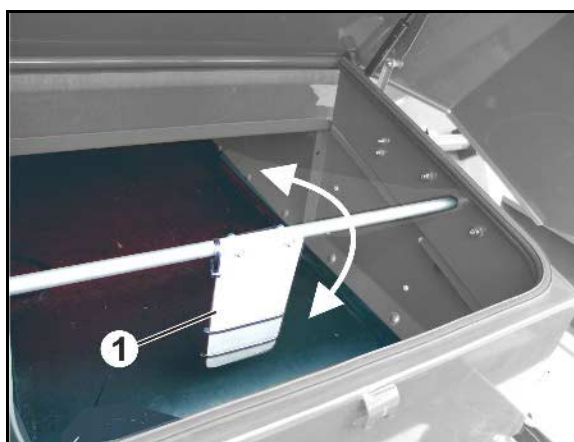


Fig. 43

10.7 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.

10.7.1 Labelling hydraulic hose lines

The assembly labelling provides the following information:

Fig. 44/...

- (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).

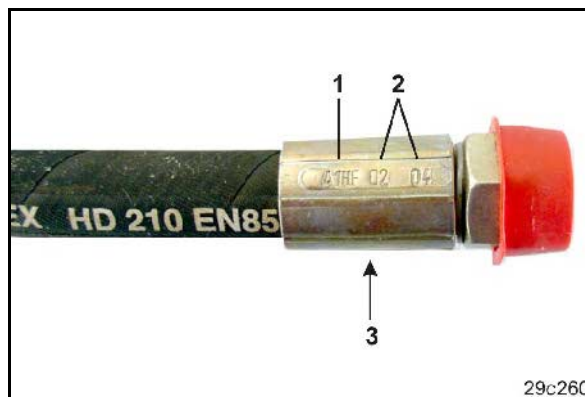


Fig. 44

10.7.2 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.

10.7.3 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

10.7.4 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.

10.7.5 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).

10.8 Hydraulic fluid filter

Hydraulic fluid filter (Fig. 45/1) with contamination indicator (Fig. 45/2):

Green → Filter fully functional

Red → Replace filter

To remove the filter, twist off the filter cover and replace 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.

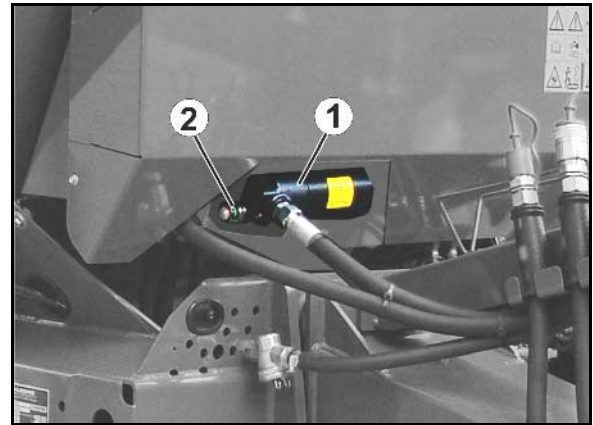


Fig. 45

10.9 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.!

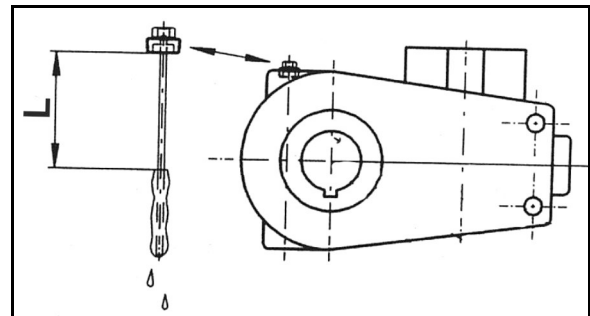


Fig. 46

10.10 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

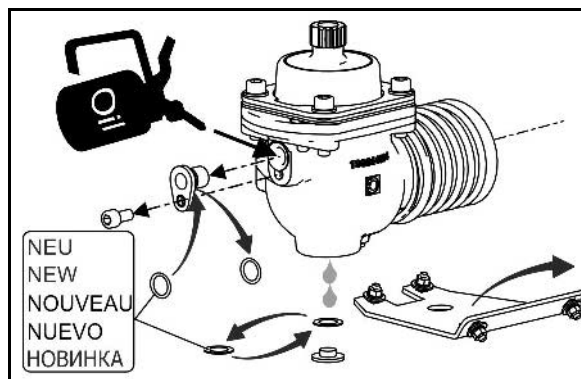
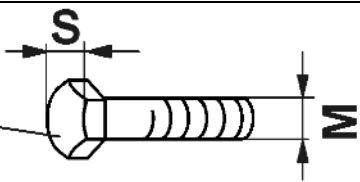
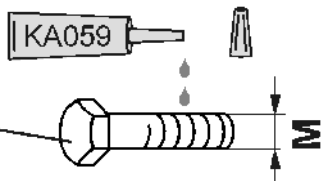


Fig. 47

10.11 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

Hydraulic spreader disc drive

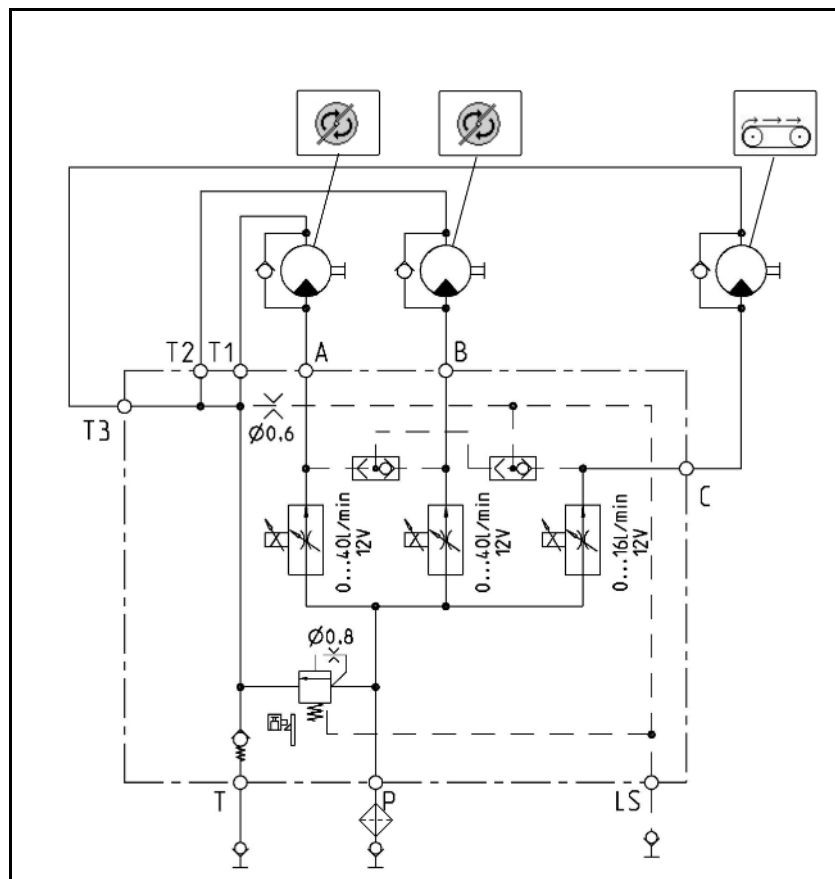


Fig. 48



AMAZONEN-WERKE

H. DREYER GmbH & Co. KG

Postfach 51
D-49202 Hasbergen-Gaste
Germany

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

