Original operating manual

Trailed spreader

ZG-TX 6800 Special
ZG-TX 9000 Special
ZG-TX 9000 Super
ZG-TX 11200 Super

SmartLearning

www.amazone.de

Please enter the identification data of the implement. The identification data can be found on the rating plate.

TABLE OF CONTENTS

About this operating manual

1

CMS-T-00000081-J.1

1.1 Copyright

CMS-T-00012308-A.1

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1.2 Diagrams

CMS-T-005676-G.1

1.2.1 Warnings and signal words

CMS-T-00002415-A.1

Warnings are marked with a vertical bar with a triangular safety symbol and the signal word. The signal words *"DANGER"*, *"WARNING"* or *"CAUTION"* describe the severity of the potential danger and have the following meanings:

DANGER

- Indicates a direct threat with high risk for severe physical injury, such as loss of limbs or death.

WARNING

- Indicates a possible threat with moderate risk for severe physical injury or death.

CAUTION

- Indicates a threat with low risk for light or moderately severe physical injuries.

1.2.2 Further instructions

CMS-T-00002416-A.1

IMPORTANT

- Indicates a risk for damage to the implement.

ENVIRONMENTAL INFORMATION

- Indicates a risk for environmental damage.

NOTE

Indicates application tips and instructions for optimal use.

1.2.3 Instructions

CMS-T-00000473-E.1

1.2.3.1 Numbered instructions

CMS-T-005217-B.1

Actions that have to be performed in a specific sequence are represented as numbered instructions. The specified sequence of the actions must be observed.

Example:

1. Instruction 1
2. Instruction 2

1.2.3.2 Instructions and responses

CMS-T-005678-B.1

Reactions to instructions are marked with an arrow.

Example:

1. Instruction 1

➡ Reaction to instruction 1

2. Instruction 2

1.2.3.3 Alternative instructions

CMS-T-00000110-B.1

Alternative instructions are introduced with the word *"or"*.

Example:

1. Instruction 1

   or

   Alternative instruction

2. Instruction 2

1.2.3.4 Instructions with only one action

CMS-T-005211-C.1

Instructions with only one action are not numbered, but rather shown with a arrow.

Example:

▶ Instruction

1.2.3.5 Instructions without sequence

CMS-T-005214-C.1

Instructions that do not require a specific sequence are shown as a list with arrows.

Example:

▶ Instruction

▶ Instruction

▶ Instruction

1.2.3.6 Workshop work

CMS-T-00013932-B.1

WORKSHOP WORK

▶ Identifies maintenance work that must be performed at a workshop that is adequately equipped in terms of agricultural technology, safety and environmental technology by specialist personnel with appropriate training.

1.2.4 Lists

CMS-T-000024-A.1

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

Example:

- Point 1
- Point 2

1.2.5 Item numbers in figures

CMS-T-000023-B.1

A framed number in the text, e.g. a **1**, indicates an item number in an adjacent figure.

1.2.6 Direction information

CMS-T-00012309-A.1

Unless otherwise specified, all directions are always seen in the direction of travel.

1.3 Other applicable documents

CMS-T-00000616-B.1

A list of other applicable documents can be found in the Appendix.

1.4 Digital operating manual

CMS-T-00002024-B.1

The digital operating manual and e-learning can be downloaded from the Info Portal on the AMAZONE website.

1.5 Your opinion is important

CMS-T-000059-D.1

Dear reader, our documents are updated on a regular basis. Your suggestions for improvement help us to create ever more user-friendly documents. Please send us your suggestions by post, fax or email.

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CMS-I-00000638

Safety and responsibility 2

CMS-T-00013517-E.1

2.1 Basic safety instructions

CMS-T-00013518-E.1

2.1.1 Meaning of the operating manual

CMS-T-00006180-A.1

Observe the operating manual

The operating manual is an important document and a part of the implement. It is intended for the user and contains safety-related information. Only the instructions provided in the operating manual are reliable. If the operating manual is not observed, it can result in serious injury or death.

- ► The safety section must be completely read and observed before initial operation of the implement.
- ► Before starting work, also read and observe each section of the operating manual.
- ► Keep the operating manual in a safe place.
- ► Keep the operating manual available.
- ► Hand over the operating manual to the subsequent user.

2.1.2 Safe operating organisation

CMS-T-00002302-D.1

2.1.2.1 Personnel qualification

CMS-T-00002306-B.1

2.1.2.1.1 Requirements for persons working with the implement

CMS-T-00002310-B.1

If the implement is used improperly, people can be injured or killed: To prevent accidents due to improper use, every person who works with

the implement must meet the following minimum requirements:

- The person is physically and mentally capable of checking the implement.
- The person can safely perform work with the machine within the scope of this operating manual.
- The person understands the functioning of the machine within the scope of their work and can recognise and prevent dangers arising during operation.
- The person head understood the operating manual and can implement the information that is conveyed in the operating manual.
- The person must be familiar with safe driving of vehicles.
- For road travel, the person knows the relevant road traffic regulations and has the prescribed driving permit.

2.1.2.1.2 Qualification levels

CMS-T-00002311-A.1

For working with the machine, the following qualification levels are provided:

- Farmer
- Agricultural helper

As a matter of principle, the activities described in this operating manual can be performed by persons with the qualification level "Agricultural helper".

2.1.2.1.3 Farmer

CMS-T-00002312-A.1

Farmers use agricultural implement to cultivate fields. They decide on the use of an implement for a specific purpose.

Farmers are basically familiar with working with agricultural implements and can instruct agricultural helpers in how to use the implements if necessary. They can perform odd tasks and simple maintenance and repair work on agricultural implements themselves.

Farmers can be e.g.:

- Farmers with higher education or training from a technical college
- Farmers by experience (e.g. inherited farm, comprehensive practical knowledge)
- Contractors who work by order of farmers

Activity example:

- Safety training for agricultural helpers

2.1.2.1.4 Agricultural helpers

CMS-T-00002313-A.1

Agricultural helpers use agricultural implements by order of the farmer. They are instructed on the use of the implement by the farmer, and work independently according to the work assignment from the farmer.

Agricultural helpers can be e.g.:

- Seasonal workers and labourers
- Prospective farmers in training
- Employees of the farmer (e.g. tractor driver)
- Family members of the farmer

Activity examples:

- Driving the machine
- Adjusting the working depth

2.1.2.2 Workplaces and passengers

CMS-T-00002307-B.1

Passengers

Passengers can fall, be run over and severely injured or killed due to machine movements. Ejected objects can hit and injure passengers.

► Do not let anybody ride on the machine.

► Do not let anybody climb onto the driving machine.

2.1.2.3 Danger for children

CMS-T-00002308-A.1

Danger for children

Children cannot assess dangerous situations and can behave unpredictably. As a result, children are at a higher risk.

- Keep children away.
- *When you drive out or actuate machine movements,*
  make sure that there are no children in the danger area.

2.1.2.4 Operational safety

CMS-T-00002309-D.1

2.1.2.4.1 Perfect technical condition

CMS-T-00002314-D.1

Only use properly prepared machines

Without correct preparation according to this operating manual, operational safety of the machine is not ensured. This can result in accidents and serious personal injury or even death.

- Prepare the machine according to this operating manual.

Danger due to damage to the machine

Damage to the machine can impede the operational safety of the machine and cause accidents. This can result in serious injury or death.

- *If you suspect or observe damage:*
  Secure the tractor and machine.
- Repair safety-relevant damage immediately.
- Fix the damage according to this operating manual.
- *If you are not able to fix the damage according to this operating manual yourself:*
  Have the damage repaired by a qualified specialist workshop.

Observe the technical limit values

Non-observance of the technical limits values of the machine can result in accidents and serious personal injury or even death. Moreover, the machine can be damaged. The technical limit values can be found in the Technical Data.

- Comply with the technical limit values.

2.1.2.4.2 Personal protective equipment

CMS-T-00002316-B.1

Personal protective equipment

Wearing personal protective equipment is an important safety element. Missing or unsuitable personal protective equipment increases the risk of damage to health and personal injury. Personal protective equipment includes: work gloves, safety shoes, protective clothing, breathing protection, hearing protection, face protection, and eye protection

- ▶ Determine the personal protective equipment required for each job and have it ready.
- ▶ Use only protective equipment that is in proper condition and offers effective protection.
- ▶ Adjust the personal protective equipment to the person, e.g. the size.
- ▶ Observe the manufacturer's instructions regarding operating materials, seed, fertiliser, crop protection products, and cleaning agents.

Wear suitable clothing

Loosely worn clothing increases the risk of getting caught or entangled on rotating parts and getting stuck on protruding parts. This can result in serious injury or death.

- ▶ Wear close-fitting, snag-free clothes.
- ▶ Never wear rings, necklaces and other jewellery.
- ▶ *If you have long hair,*
  wear a hairnet.

2.1.2.4.3 Warning symbols

CMS-T-00002317-B.1

Keep warning symbols legible

Warning symbols on the machine warn you of risks in danger areas and are an important element of the machine's safety equipment. Missing warning symbols increase the risk of serious and lethal personal injury.

- ▶ Clean dirty warning symbols.
- ▶ Immediately replace any damaged and illegible warning symbols.
- ▶ Put the intended warning symbols on spare parts.

2.1.3 Knowing and preventing dangers

CMS-T-00013519-C.1

2.1.3.1 Safety hazards on the implement

CMS-T-00002318-F.1

Liquids under pressure

Escaping high pressure hydraulic fluid can penetrate into the body through the skin and cause serious personal injuries. A hole the size of a needle can already result in serious personal injuries.

- *Before you uncouple the hydraulic hose lines or check for damage,*
  depressurise the hydraulic system.
- *If you suspect damage on a pressure system,*
  have the pressure system checked by a qualified specialist workshop.
- Never look for leaks with your bare hands.
- Keep your body and face away from leaks.
- *If liquids penetrate the body,*
  consult a doctor immediately.

Risk of injury on the universal joint shaft

Persons can be caught, pulled in and severely injured by the universal joint shaft and driven components. If the universal joint shaft is overloaded, the implement can be damaged, parts can be ejected at high speed, and persons can be injured.

- Maintain sufficient coverage of the profile tube, universal joint shaft guard and PTO shaft protective cap.
- Maintain the direction of rotation and the permissible speed of the universal joint shaft.
- *If the universal joint shaft is angled down too strongly:*
  Switch off the universal joint shaft drive.
- *If you do not need the universal joint shaft:*
  Switch off the universal joint shaft drive.

Risk of injury on the PTO shaft

Persons can be caught, pulled in and severely injured by the PTO shaft and driven components. If the PTO shaft is overloaded, the implement can be damaged, parts can be ejected at high speed, and persons can be injured.

- Maintain sufficient coverage of the profile tube, universal joint shaft guard and PTO shaft protective cap.
- Allow the locks on the PTO shaft to engage.
- *To secure the universal joint shaft guard against rotating:*
  Hook on the safety chains.
- *To secure the coupled hydraulic pump against rotating:*
  Put on the torque support.
- Maintain the direction of rotation and the permissible speed of the PTO shaft.
- *To prevent implement damage due to torque peaks:*
  Slowly couple the PTO shaft at low tractor engine speed.

Danger due to machine parts still running

When the drives are switched off, machine parts can continue running and cause serious personal injury or death.

- Before approaching the machine, wait until any machine parts that are still running have come to a stop.
- Only touch machine parts that are standing still.

2.1.3.2 Danger areas

CMS-T-00013520-B.1

Dangers areas on the implement

The following basic dangers are encountered in the danger areas:

The implement and its work tools move during operation.

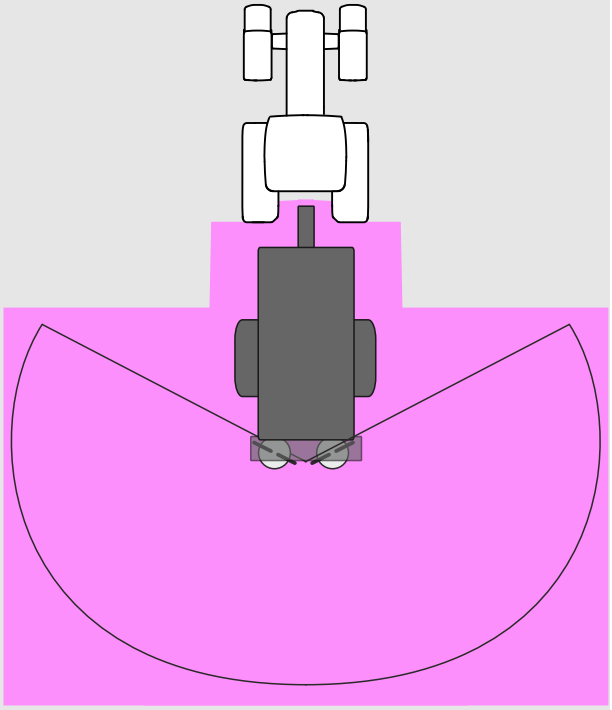
Hydraulically raised implement parts can descend unnoticed and slowly.

The tractor and implement can roll away unintentionally.

Materials or foreign objects can be ejected out of or away from the implement.

If the danger area is not observed, it can result in serious personal injury or death.

- Keep people out of the danger area of the implement.
- *If people enter the danger area,* immediately switch off the engines and drives.
- *Before you work in the danger area of the implement,* secure the tractor and implement. This also applies for quick checking work.



CMS-I-00008447

Overhead power lines

When unfolding and folding or when folding and lifting out or raising the implement or implement parts during operation, the implement can reach the height of overhead power lines. This can cause voltage to jump over to the machine and cause lethal electrical shocks or fires. Large voltage differences develop on the ground surrounding the machine.

- When unfolding and folding or when folding and raising or lifting out the implement or implement parts, maintain a sufficient distance from overhead power lines.
- Never fold or unfold the implement parts close to overhead power line pylons and overhead power lines.
- When the implement parts are unfolded, maintain a safe distance from overhead power lines.
- *If voltage has jumped over to the machine:*
  Stay in the cab.
- Do not touch any metal parts.
- Warn people to stay away from the machine.
- Wait for help from a professional recue team.
- *If people must exit the cab despite the voltage flashover, e.g. due to direct lethal danger from fire:*
  Jump away from the machine into a stable position.
- Do not touch the machine.
- Move away from the machine with small steps.

2.1.4 Safe operation and handling of the machine

CMS-T-00002304-J.1

2.1.4.1 Coupling implements

CMS-T-00002320-D.1

Coupling the implement on the tractor

Incorrectly coupling of the implement to the tractor results in hazards that can cause serious accidents.

There are crushing and shear points in the area of the coupling points between the tractor and the implement.

- *If you couple or uncouple the implement to or from the tractor,*
  be very careful.
- Use only suitable tractors for coupling and transporting the implement.
- *When the implement is coupled onto the tractor,*
  make sure that the tractor's connecting device meets the implement requirements.
- Couple the implement properly to the tractor.

2.1.4.2 Driving safety

CMS-T-00002321-F.1

Risk when driving on roads and fields

Any mounted or towed implement as well as front or rear ballast weights on the tractor influence the driving behaviour and the steering and braking power of the tractor. The driving characteristics also depend on the operating condition, the fill level of the load, and on the ground. If the driver does not take account of changing driving characteristics, he can cause accidents.

- ► Always ensure that the tractor's steering and braking systems are operating correctly.
- ► *The tractor must provide the required brake lag for the tractor and mounted implement.*
  Check the function of the brakes before moving off.
- ► *The tractor front axle must always be loaded with at least 20 % of the empty tractor weight to ensure sufficient steering capacity.*
  Use front ballast weights if necessary.
- ► Always attach the front or rear ballast weights properly on the specified fixing points.
- ► Calculate and observe the permitted payload for the mounted or towed implement.
- ► Observe the permissible axle loads and drawbar loads of the tractor.
- ► Observe the permissible drawbar load of the hitch device and drawbar.
- ► Comply with the permissible transport width of the implement.
- ► Drive in such a way that you always have full control over the tractor with the mounted or towed implement. In so doing, take your personal abilities into account, as well as the road, traffic, visibility and weather conditions, the driving characteristics of the tractor, and the influence of the mounted implement.

When driving on roads, risk of accident caused by uncontrolled lateral motions of the implement

- ► Lock the tractor lower links for road travel.

Preparing the machine for road travel

If the machine is not properly prepared for road travel, it can result in serious traffic accidents.

- ► Check the lighting and identification for road travel for proper function.
- ► Remove coarse dirt from the implement.
- ► Follow the instructions in the section "Preparing the implement for road travel".

Parking the implement

The parked machine can tip over. People can be crushed and killed.

- Only park the machine on stable and even ground.
- *Before you perform setting or maintenance work,*
  make sure that the implement is in a stable position. In case of doubt, support the implement.
- Follow the instructions in the section *"Parking the implement"*.

Unsupervised parking

Parked tractors with coupled implements that are insufficiently secured and unsupervised represent danger for people and playing children.

- *Before you leave the machine,*
  shutdown the tractor and the implement.
- Secure the tractor and machine.

Do not use the control computer or control terminal during road travel

If the driver is distracted, it can result in accidents and injuries or even death.

- Do not operate the control computer or control terminal during road travel.

2.1.5 Safe maintenance and modification

CMS-T-00002305-J.1

2.1.5.1 Changes on the implement

CMS-T-00002322-B.1

Only authorised design changes

Design changes and extensions can impede the functioning and operational safety of the machine. This can result in serious injury or death.

- Have any design changes and extensions performed only by a qualified specialist workshop.
- *To ensure that the operating permit remains valid in accordance with national and international regulations,*
  ensure that the specialist workshop only uses conversion parts, spare parts and special equipment approved by AMAZONE.

2.1.5.2 Work on the machine

CMS-T-00002323-I.1

Only work on the machine when it is at a standstill

If the machine is not standing still, part can move unintentionally or the machine can be set in motion. This can result in serious injury or death.

- *If you have to work on or under raised loads:*
  Lower the loads or secure the loads with a hydraulic or mechanical locking device.
- Switch off all drives.
- Actuate the parking brake.
- Particularly on slopes, additionally secure the machine against rolling away with wheel chocks.
- Remove the ignition key and carry it with you.
- Wait until all parts that are still running come to a stop and that hot parts cool down.

Maintenance work

Improper maintenance work, particularly on safety-related components, endangers operational safety. This can result in accidents and serious personal injury or even death. Safety-related components include, for example, hydraulic components, electronic components, frames, springs, trailer coupling, axles and axle suspensions, lines and tanks containing flammable substances.

- *Before you adjust, maintain or clean the machine,*
  secure the machine.
- Repair the machine according to this operating manual.
- Only perform the work that is described in this operating manual.
- Have maintenance work that is labelled as *"WORKSHOP WORK"* performed at a workshop that is adequately equipped in terms of agricultural technology, safety and environmental technology by specialist personnel with appropriate training.
- Never perform welding, drilling, sawing, grinding, and cutting work on the frame, running gear or coupling devices of the implement.
- Never modify safety-related components.
- Never drill out existing holes.
- Perform all maintenance work at the prescribed maintenance intervals.

Raised implement parts

Raised implement parts can descend unintentionally and crush or kill people.

- Never linger under raised implement parts.
- *If you have to work on or under raised machine parts,*
  lower the implement parts or secure the raised implement parts with a mechanical support or hydraulic locking device.

Danger due to welding work

Improper welding work, particularly on or close to safety-related components, endangers the operational safety of the implement. This can result in accidents and serious personal injury or even death. Safety-related components include, for example, hydraulic components and electronic components, frames, springs, coupling devices to the tractor such as the three-point mounting frame, drawbar, trailer support, trailer coupling or tensioned crosspiece as well as axles and axle suspensions, lines and tanks containing flammable substances.

- Allow only qualified specialist workshops with suitably approved personnel to perform welding work on safety-related components.
- Only allow qualified personnel to perform welding work on all other components.
- *If you have doubts as to whether a component can be welded:*
  Ask a qualified specialist workshop.
- *Before welding on the implement:*
  Uncouple the implement from the tractor.
- Do not weld close to a crop protection sprayer that was previously used to spread liquid fertiliser.

2.1.5.3 Operating materials

CMS-T-00002324-C.1

Unsuitable operating materials

Operating materials that do not meet AMAZONE requirements can cause implement damage and accidents.

- Only use operating material that meet the requirements in the Technical Data.

2.1.5.4 Special equipment and spare parts

CMS-T-00002325-B.1

Special equipment, accessories, and spare parts

Special equipment, accessories, and spare parts that do not meet AMAZONE requirements can impede the operational safety of the implement and cause accidents.

- Only use original parts or parts that meet AMAZONE requirements.
- *If you have any questions regarding special equipment, accessories or spare parts,* contact your dealer or AMAZONE.

2.2 Safety routines

CMS-T-00002300-D.1

Securing the tractor and implement

If the tractor and implement are not secured against unintentional starting and rolling away, the tractor and implement can be set in motion in an uncontrolled manner, and can run over, crush and kill people.

- Lower the raised implement or raised implement parts.
- Relieve pressure in the hydraulic hose lines by actuating the operating devices.
- *If you have to stand under the raised implement or components,* secure the raised implement and components against lowering with a mechanical safety support or hydraulic locking device.
- Switch off the tractor.
- Apply the tractor's parking brake.
- Remove the ignition key.

Securing the machine

After uncoupling, the implement has to be secured. If the implement and implement parts are not secured, there is a risk of personal injury due to crushing and cutting.

- Only park the implement on stable and level ground.
- *Before you depressurise the hydraulic hose lines and disconnect them from the tractor,* move the implement into working position.
- Protect people against direct contact with sharp-edged or protruding implement parts.

Make sure that the protective equipment is functional

If protective equipment is missing, damaged or removed, implement parts can cause serious personal injury or even death.

- Check the implement at least once a day for damage, proper installation, and functioning of the protective equipment.
- *If you are not sure if the protective equipment is properly installed and functional,* have the protective equipment checked by a qualified specialist workshop.
- Make sure that the protective devices are properly installed and functional before any work on the implement.
- Replace damaged protective equipment.

Climbing on and off

Negligent behaviour while climbing on and off can cause people to fall off the ladder. People who climb onto the implement without using the intended access steps can slip, fall, and suffer severe injury. Dirt and operating materials can impair stepping and standing safety. Accidental actuation of control elements can unintentionally activate potentially dangerous functions.

- Use only the intended access steps.
- *To ensure safe stepping and standing:* Always keep steps and platforms clean and in proper condition.
- *When the implement is moving:* Never climb onto or off of the implement.
- Climb up and down facing the implement.
- When climbing up and down, maintain contact with at least 3 points on the steps and handrails: always keep 2 hands and one foot or 2 feet and one hand on the implement.
- When climbing up and down, never hold onto the control elements.
- When climbing down, never jump off of the implement.

Intended use

3

CMS-T-00012721-A.1

- The implement is designed solely for professional use according to Good Agricultural Practices.
- The implement is an agricultural machine to be mounted on the clevis coupling or hitch ball of a tractor that meets the technical requirements.
- The implement is suitable and designed for transport and for full-area spreading of dry, granular, prilled, and crystalline fertilisers and earth moist lime.
- When driving on public roads, the implement, depending on the provisions of the applicable road traffic regulations, can be mounted and transported at the rear of a tractor that meets the technical requirements.
- The implement may be used and maintained only by persons who meet the requirements. The personnel requirements are described in the section *"Personnel qualification"*.
- The operating manual is part of the implement. The implement is solely intended for use in compliance with this operating manual. Uses of the implement that are not described in this operating manual can lead to serious personal injuries or even death and to implement and material damage.
- The applicable accident prevention regulations as well as generally accepted safety-related, occupational health and road traffic regulations must also be observed by the users and the owner.
- Further instructions for intended use in special cases can be requested from AMAZONE.
- Uses other than those specified under the intended use are considered as improper. The manufacturer is not liable for any damage resulting from improper use, solely the operator is responsible.

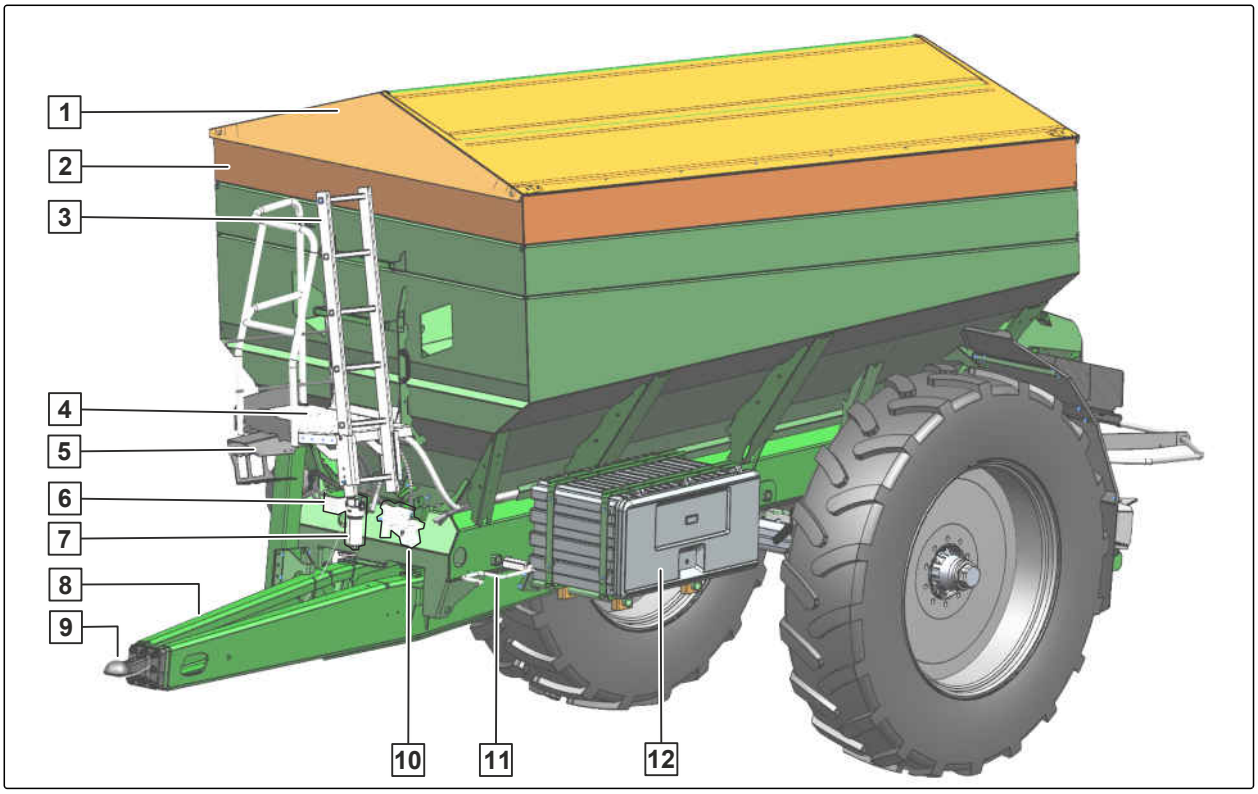
Product description

4

CMS-T-00012695-H.1

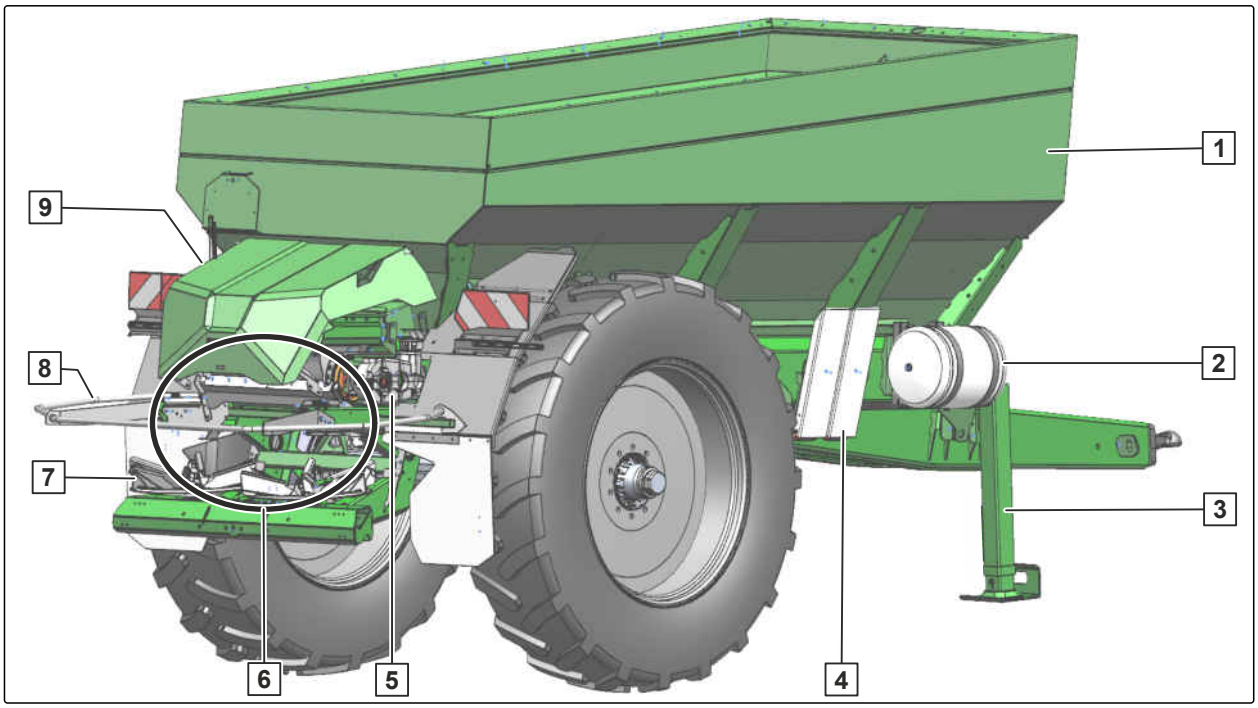
4.1 Implement overview

CMS-T-00012785-B.1



CMS-I-00008091

1 Hydraulic swivelling cover tarpaulin	2 Hopper extension
3 Folding ladder with locking mechanism	4 Service platform
5 Hose cabinet	6 Hydraulic block with LS system adjustment screw
7 Oil filter	8 Spring suspended drawbar
9 Coupling device	10 Brake valve of the dual-circuit pneumatic brake system
11 Parking brake	12 Transport box with threaded cartridge



CMS-I-00008090

1	Spreading material hopper with charging sieves and floor belt	2	Compressed air tank of the dual-circuit pneumatic brake system
3	Hydraulic jack	4	Wheel chocks
5	Dirt trap	6	Floor belt gearbox
7	Spreader unit	8	Spreading discs
9	Guard tube	10	Camera
11	Folding cover hood		

4.2 Function of the implement

CMS-T-00012701-A.1

The implement is operated from the tractor with a control terminal. The spread rate is adjusted electronically.

The floor belt in the spreading material hopper conveys the spreading material to the spreader unit.

From the spreader unit, the spreading material falls onto the rotating spreading discs and is evenly spread across the set working width.

The lime spreader unit with lime spreading discs is used for spreading lime.

The fertiliser spreader unit with fertiliser spreading discs is used for spreading fertiliser.

Spreading fertiliser:

- The working width is set by selecting the spreading vane units.
- The lateral distribution is optimised by turning the delivery system.
- The delivery system is adjusted manually with a hand lever or electrically via the control terminal.
- The TS boundary spreading system is used for boundary spreading on the right with half the working width.

4.3 Special equipment

CMS-T-00012697-B.1

Special equipment is equipment that is not fitted on the implement or is only available in certain markets. The sales documents provide information on the equipment of your implement, or consult your dealer for more detailed information.

The following equipment is considered special equipment:

- Work lights
- Roll-up cover tarpaulin
- Cover hood for spreader unit
- Extension 2200
- Printed setting chart
- Camera set for hopper and spreader unit
- Chain rake for spreading lime
- Spreading vane set TS 10, TS 20 and TS 30
- Mobile test rig
- EasySet mats with transport bags
- EasySet 2 control computer
- RAM bracket for AmaTron 4
- Software licenses for AmaTron 4

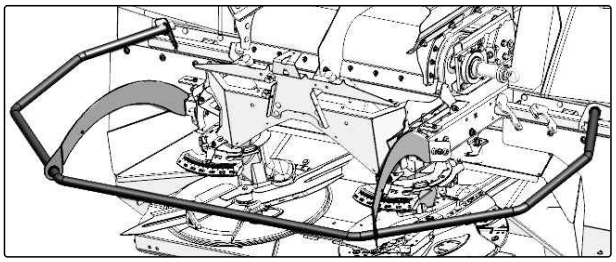
4.4 Protective equipment

CMS-T-00012723-A.1

4.4.1 Guard tube

CMS-T-00012724-A.1

The guard tube serves as protection against injuries caused by reaching into the driven spreading disc.

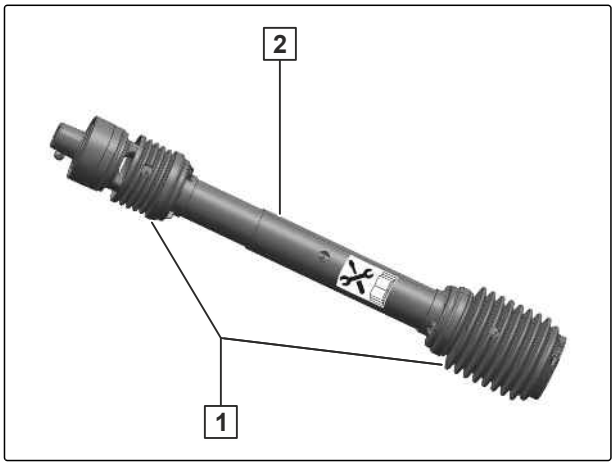


CMS-I-00008092

4.4.2 Universal joint shaft guard

CMS-T-00003992-C.1

As standard, the universal joint shafts are equipped with guard tubes **2** and protective sleeves **1**. Depending on the implement equipment, holding chains or full guard cones fix the guard tubes. This rules out the risk of winding.



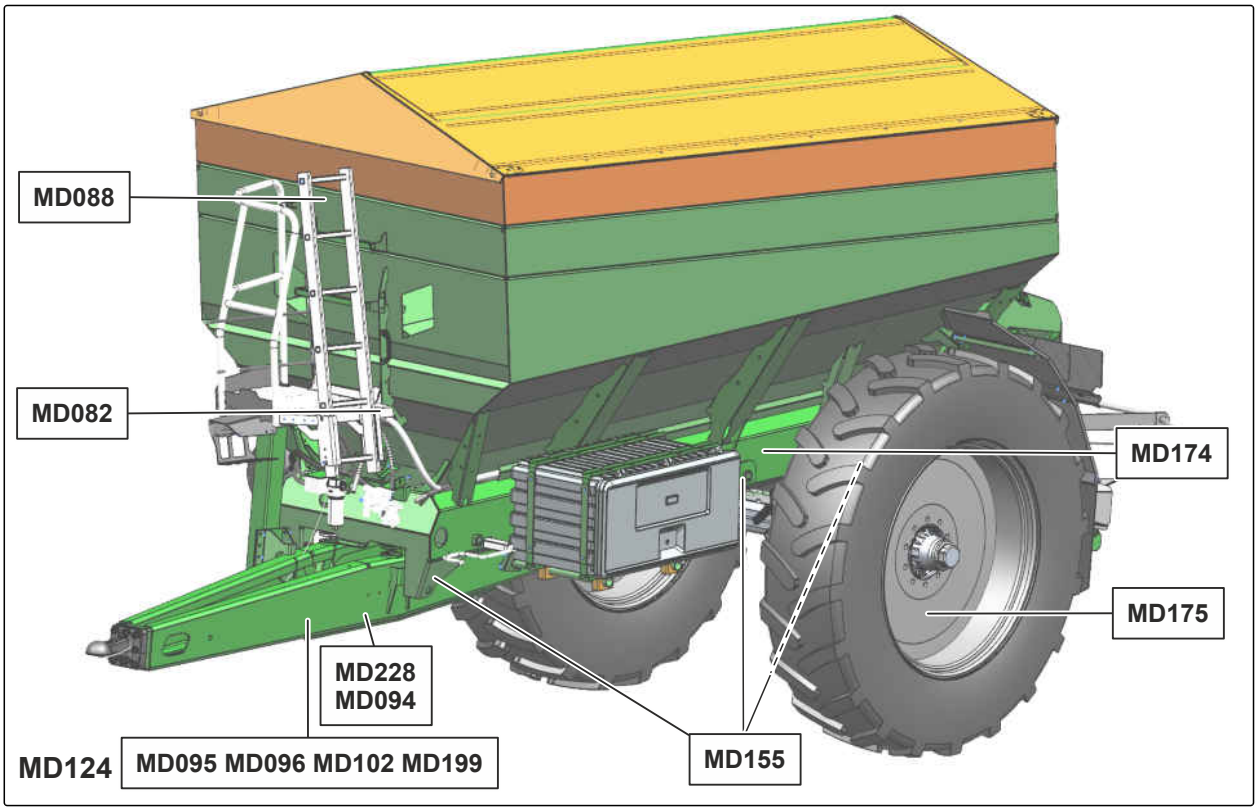
CMS-I-00002930

4.5 Warning symbols

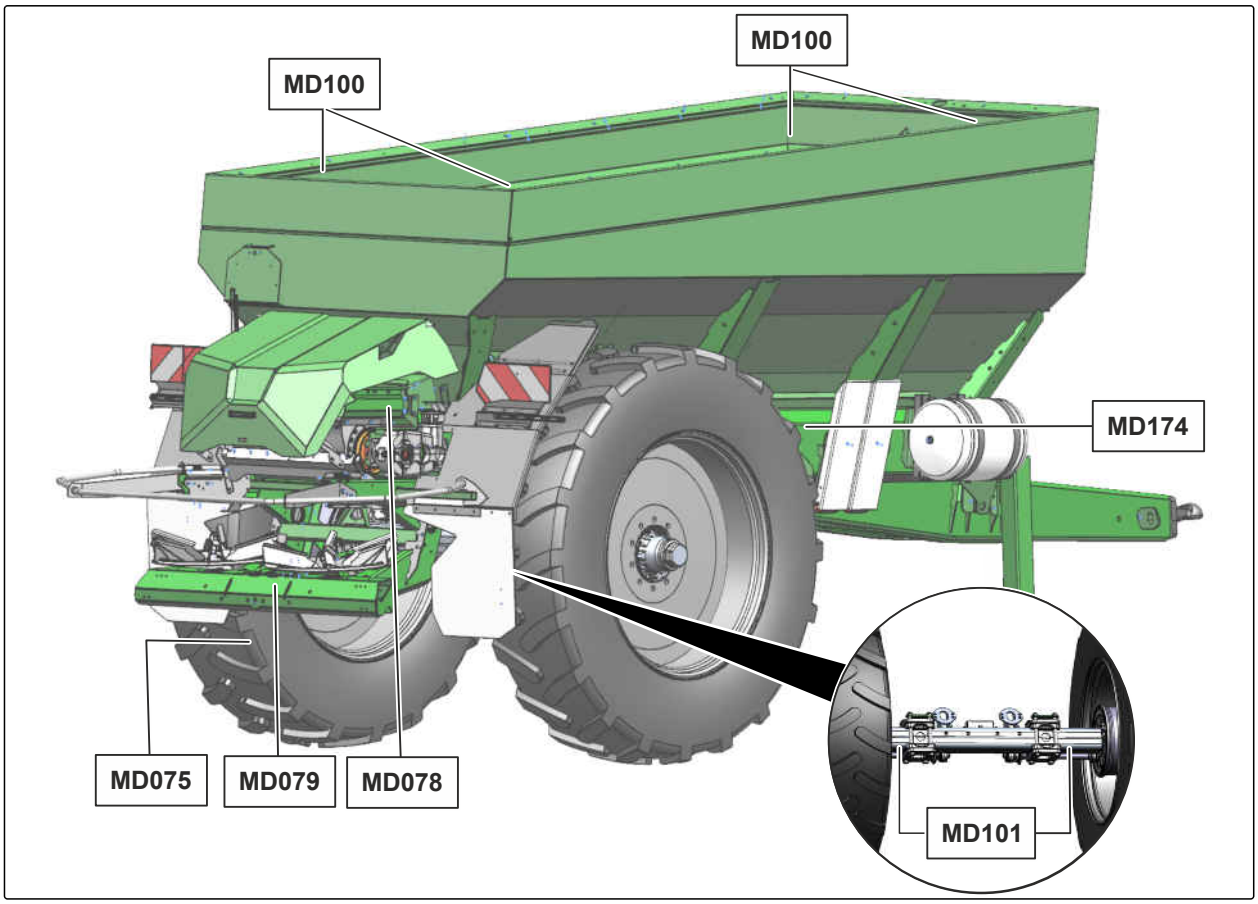
CMS-T-00012699-C.1

4.5.1 Positions of the warning symbols

CMS-T-00012792-B.1



CMS-I-00008102



CMS-I-00008099

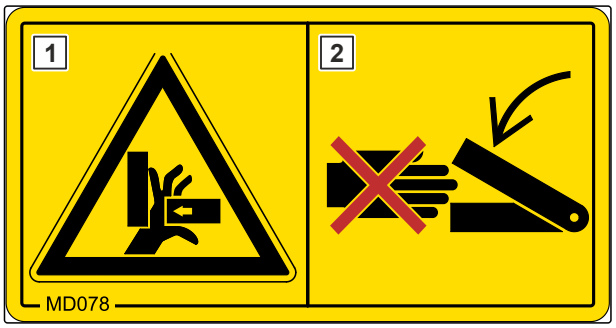
4.5.2 Layout of the warning symbols

CMS-T-000141-D.1

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

A warning symbol consists of two fields:

- Field 1 shows the following:
  - A pictogram depicting the danger area, surrounded by triangular safety symbol
  - The order number
- Field 2 shows a pictogram depicting how to avoid the danger.



CMS-I-00000416

4.5.3 Description of the warning symbols

CMS-T-00012793-B.1

MD 075

Risk of cuts for fingers, hands, and arms

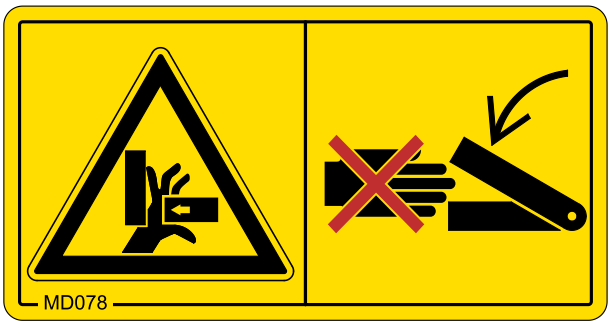
- Disconnect the power supply from the implement before approaching the danger zone.
- Wait until all moving parts are at a standstill before reaching into the danger area.
- Make sure that there is nobody standing in the danger area or close to the moving parts.

CMS-I-00000418

MD 078

Risk of crushing fingers or hands

- Disconnect the power supply from the implement before approaching the danger zone.
- Wait until all moving parts are at a standstill before reaching into the danger area.
- Make sure that there is nobody standing in the danger area or close to the moving parts.

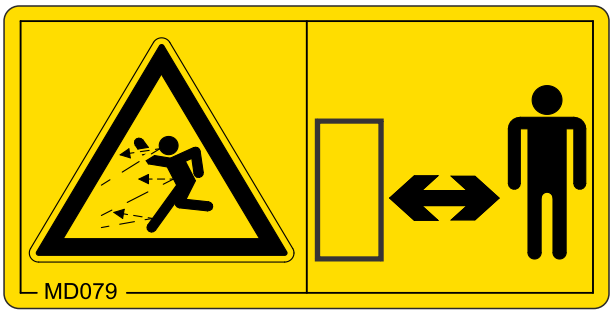


CMS-I-000074

MD 079

Danger due to ejected material

- Make sure that there is nobody standing in the danger area or close to the moving parts.

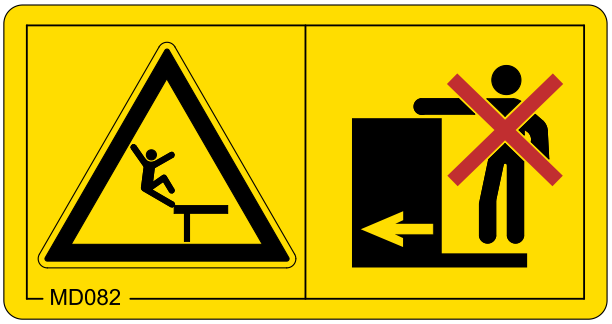


CMS-I-000076

MD 082

Risk of falling from tread surfaces and platforms

- Do not let anybody ride on the implement.
- Do not let anybody climb onto the driving implement.



CMS-I-000081

MD 084

Risk of crushing for the whole body from lowering implement parts

- Make sure that there is nobody standing in the danger area.

CMS-I-000454

MD 088

Risk due to being drawn in and caught

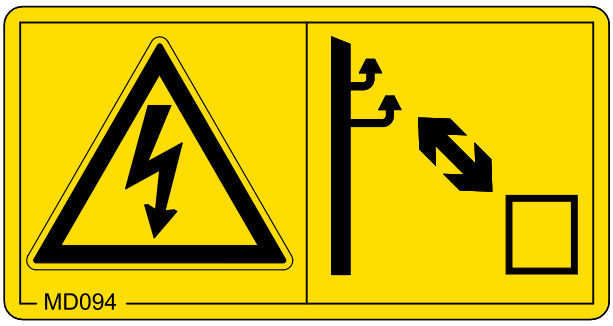
- Disconnect the power supply from the implement before approaching the danger zone.
- Wait until all moving parts are at a standstill before stepping onto the loading platform.

CMS-I-00008103

MD094

Danger due to transmission lines

- Never touch transmission lines with the implement.
- Maintain an adequately safe distance from electrical transmission lines, especially when folding or unfolding implement parts.
- Please note that the voltage can flash over when the distance is too small.



CMS-I-000692

MD095

Risk of accident due to non-compliance with the instructions in this operating manual

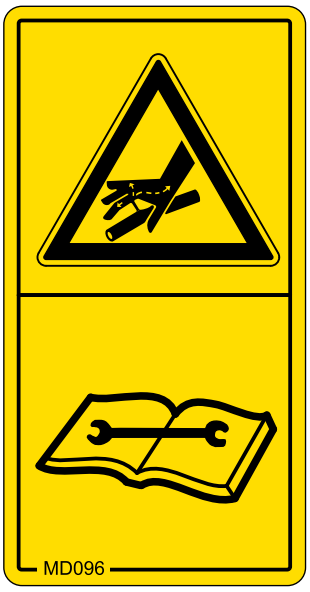
- Before your work on or with the implement, read and understand the operating manual.

CMS-I-000138

MD 096

Risk of infection from escaping hydraulic fluid under high pressure

- Never look for leaks in hydraulic hose lines using your hand or fingers.
- Never attempt to plug leaks in hydraulic hose lines using your hand or fingers.
- *If you are injured by hydraulic oil,* consult a doctor immediately.

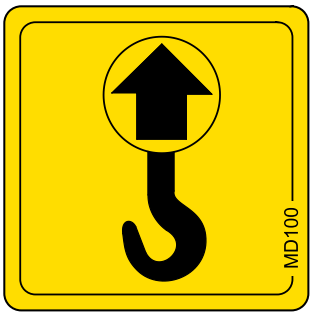


CMS-I-000216

MD 100

Risk of accidents due to improperly attached lifting gear

- Only attach the lifting gear at the marked positions.

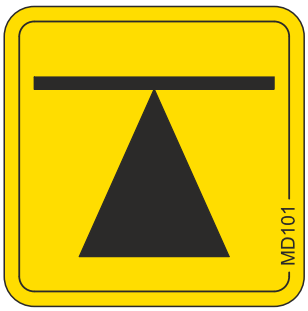


CMS-I-000089

MD 101

Risk of accidents due to improperly attached lifting equipment

- Only attach the lifting equipment at the marked positions.

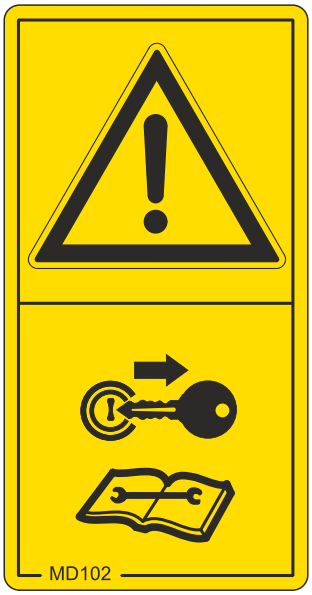


CMS-I-00002252

MD 102

Danger due to unintentional starting as well as unintentional and uncontrolled movements of the implement

- Before all tasks, secure the implement against unintentional starting as well as unintentional and uncontrolled movements.

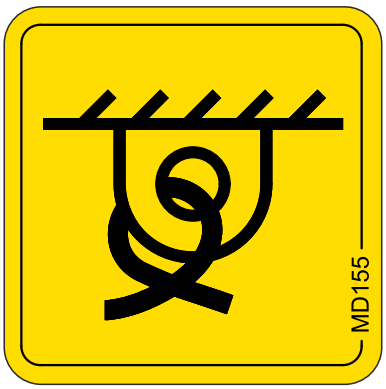


CMS-I-00002253

MD 155

Risk of accident and machine damage during transport due to improperly secured machine

- Only attach the lashing belts at the marked lashing positions for transporting the machine.

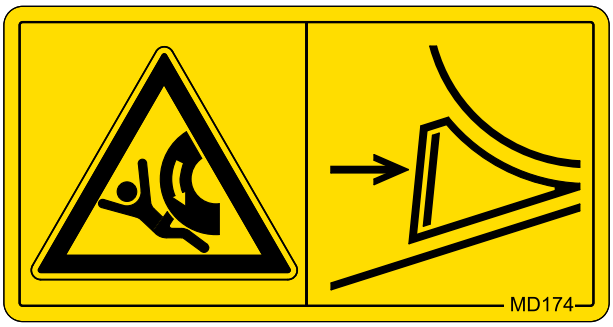


CMS-I-00000450

MD 174

Risk of rolling over due to unsecured implement

- Secure the implement against rolling away.
- To do so, use the parking brake and/or wheel chocks.



CMS-I-00000458

MD 175

Risk due to improperly tightened bolted connections

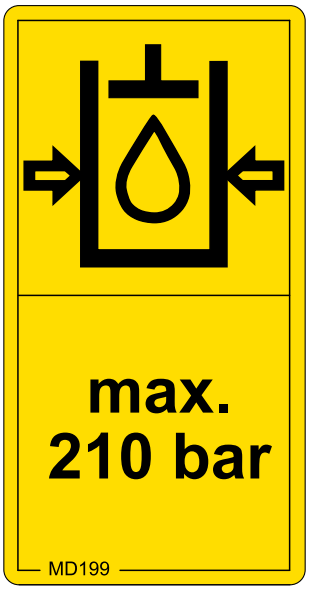
- Tighten the bolted connections with the required torque.

CMS-I-00008105

MD 199

Risk of accident if the hydraulic system pressure is too high

- Only couple the implement to tractors with a maximum tractor hydraulic pressure of 210 bar.

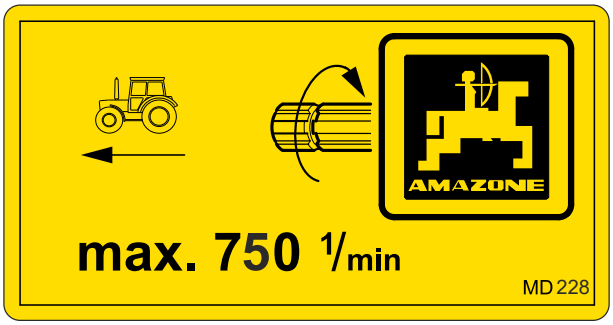


CMS-I-00000486

MD 228

Risk of implement damage due to excessively high drive speeds and incorrect direction of rotation of the drive shaft

- Comply with the maximum drive speed and direction of rotation of the drive shaft on the implement side, as shown on the pictogram.



CMS-I-00008107

4.6 Lighting and identification for road travel

CMS-T-00012698-B.1

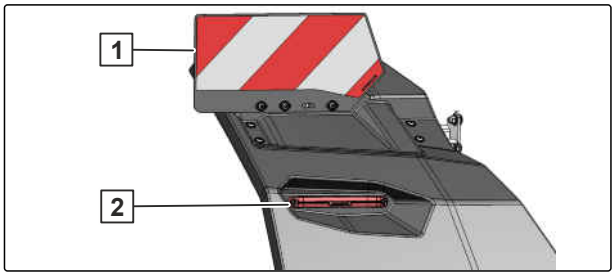
4.6.1 Rear lighting and identification

CMS-T-00012786-A.1

Yellow reflectors are mounted on the side of the implement at a distance of 3 m.

1 Warning signs

3 Rear lights, brake lights, and turn indicators



CMS-I-00008094

NOTE

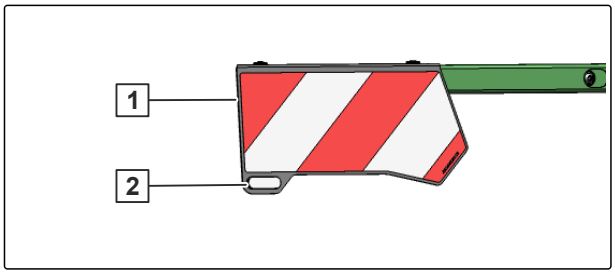
The lighting and identification for road travel can vary depending on the national regulations.

4.6.2 Front lighting and identification

CMS-T-00012787-A.1

1 Warning signs

2 Reflector, white



CMS-I-00008093

NOTE

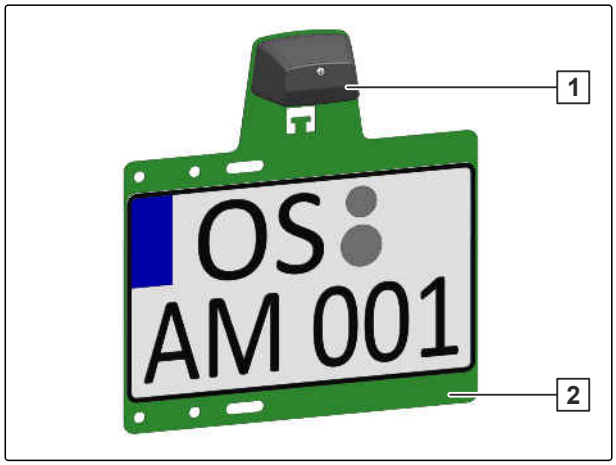
The lighting and identification for road travel can vary depending on the national regulations.

4.6.3 Additional license plate

CMS-T-00003999-C.1

1 Licence plate lighting

2 Licence plate holder



CMS-I-00003163

4.7 Threaded cartridge

CMS-T-00001776-E.1

The threaded cartridge contains the following items:

- Documents
- Aids

CMS-I-00002306

4.8 Rating plates

CMS-T-00004498-L.1

4.8.1 Rating plate on the implement

CMS-T-00004505-J.1

1 Implement number

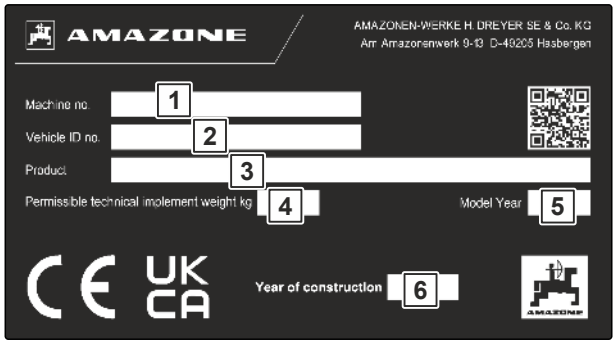
2 Vehicle ID number

3 Product

4 Permissible technical implement weight

5 Model year

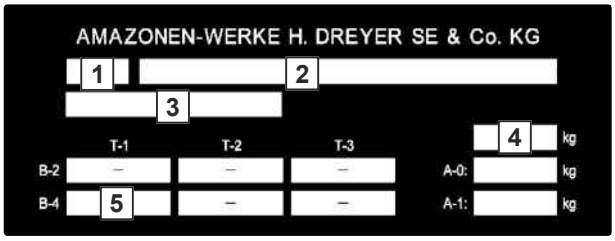
6 Year of manufacture



CMS-I-00004294

4.8.2 Additional rating plate

CMS-T-00005949-E.1



CMS-I-00005056

1 Note for type approval

2 Note for type approval

3 Vehicle identification number

4 Permissible technical total weight

5 Permissible technical trailer load for a drawbar trailer vehicle with pneumatic brake

A0 Permissible technical drawbar load

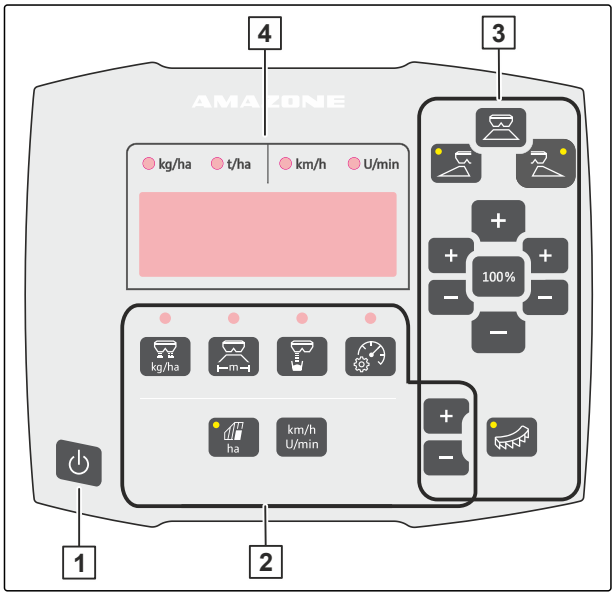
A1 Permissible technical axle load for axle 1

A2 Permissible technical axle load for axle 2

4.9 EasySet 2 control computer

CMS-T-00012823-A.1

With the EasySet 2 control computer, the implement is operated from the tractor.



CMS-I-00008192

1 On/Off button

2 Some of the adjustment buttons have LED lights

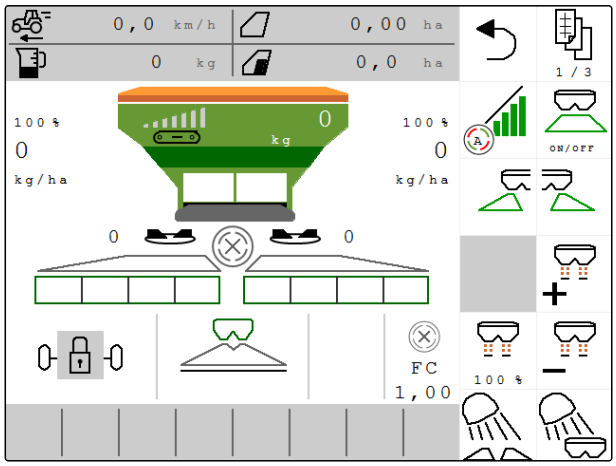
3 Some of the buttons for control during operation have LED lights

4 Display with LED lights

4.10 ISOBUS control software

CMS-T-00012824-B.1

The implement is ISOBUS-compatible. With the ISOBUS control software and an ISOBUS control terminal, the implement can be operated from the tractor.



CMS-I-00008193

4.11 mySpreader app

CMS-T-00012726-B.1

With the AMAZONE mySpreader app, the implement can be operated using a mobile device. The implement can be connected to a mobile device via Bluetooth and exchange data with the mySpreader app.

CMS-I-00008097

Content of the mySpreader app:

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

The AMAZONE mySpreader app can be obtained from the iOS Store or the Play Store. To do so, use the QR code or the link.

https://ama.zone/feouxwz

CMS-I-00008096

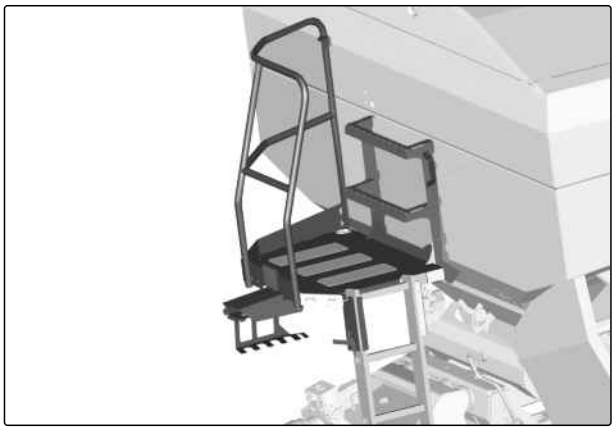
4.12 Spreading material hopper

CMS-T-00012727-B.1

4.12.1 Platform

CMS-T-00012728-A.1

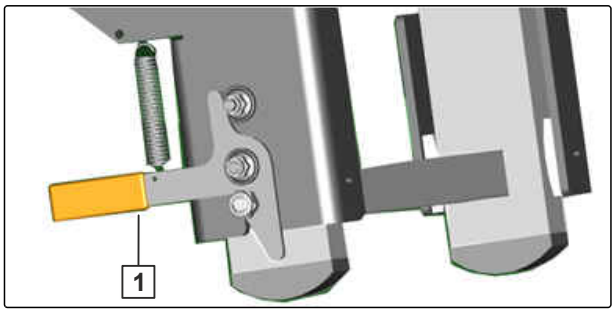
The hopper can be cleaned or maintained from the platform with the ladder.



CMS-I-00008118

The raised ladder locks automatically in the end position.

1 Hand lever for unlocking the ladder



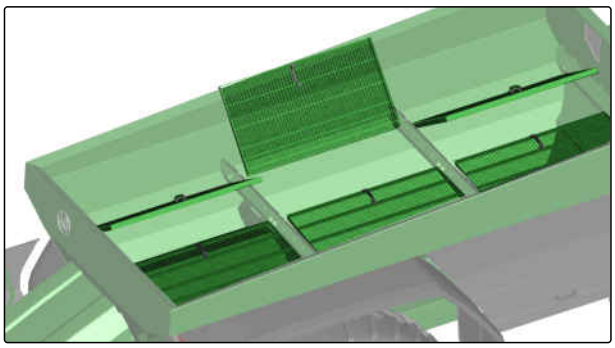
CMS-I-00008117

4.12.2 Charging sieves

CMS-T-00012729-B.1

The folding charging sieves cover the full area of the hopper and serve to catch foreign objects and fertiliser clumps while filling. For internal cleaning of the hopper, the charging sieves can be walked on.

The charging sieves must be removed for spreading lime.



CMS-I-00008116

4.12.3 Drainage flap

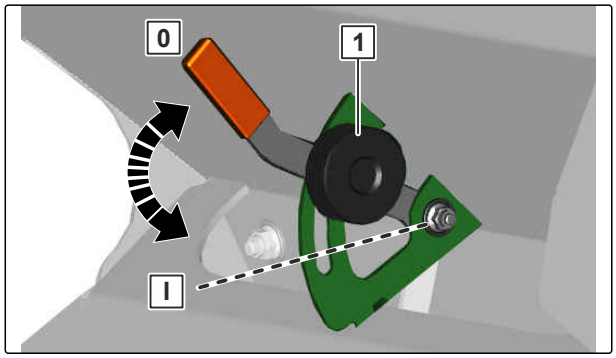
CMS-T-00012730-A.1

The spreading material hopper is drained via the drainage flap when cleaning.

0 Hand lever in closed position

I Hand lever in drainage position

1 Knob



CMS-I-00008119

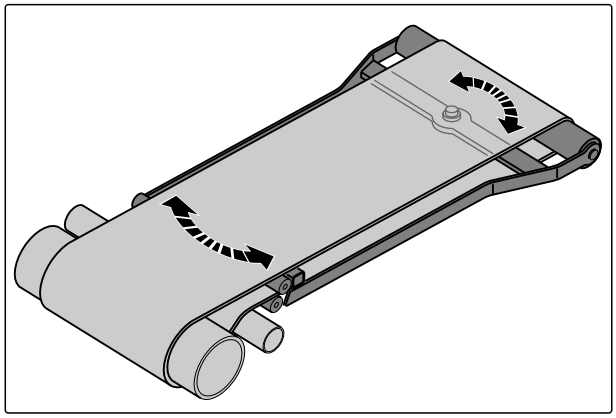
4.13 Floor belt

CMS-T-00012731-A.1

The spreading material is conveyed to the spreader unit via the floor belt. The spread rate of the spreading material is regulated via the belt speed.

The tension of the floor belt is adjustable.

The automatic floor belt control prevents one-sided running of the conveyor belt on slopes or when it is loaded on one side. The swivelling movement of the control frame ensures constant alignment towards the centre.



CMS-I-00008115

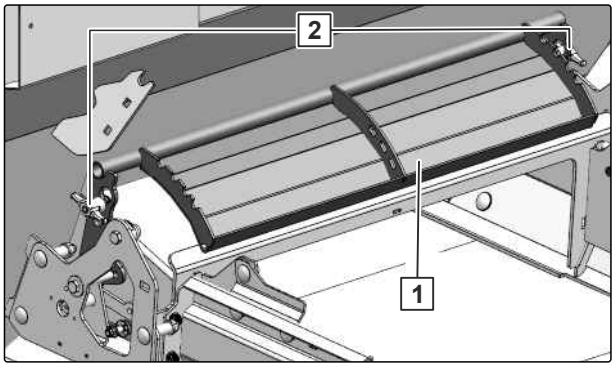
4.14 Mono shutter

CMS-T-00012732-B.1

The mono shutter is used for spreading fertiliser without a double shutter and for spreading lime. The mono shutter is manually adjusted depending on the spreading material and spread rate.

1 Mono shutter open

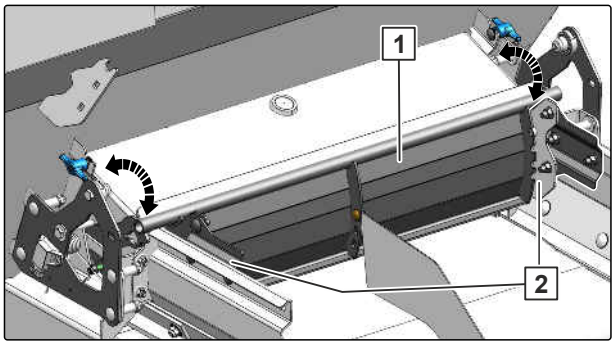
2 Mono shutter secured with 2 wing bolts



CMS-I-00008114

1 Mono shutter partially open

2 Mono shutter set via stop plate



CMS-I-00008113

4.15 Fertiliser spreading

CMS-T-00012733-C.1

4.15.1 Overview of the TS spreader unit

CMS-T-00012734-A.1

The TS spreader unit is used for spreading fertiliser. The fertiliser reaches the spreading discs via the funnel chute.

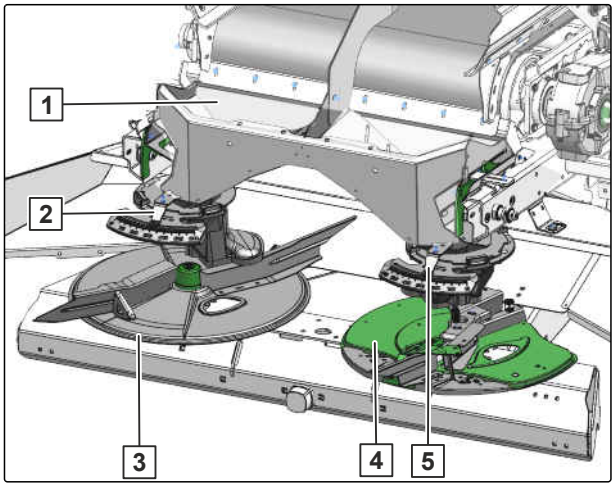
1 Funnel chute

2 Delivery system, left

3 Left spreading disc for normal spreading

4 Tight spreading disc with TS boundary spreading system

5 Delivery system, right



CMS-I-00008112

4.15.2 Explanation of the fertiliser database

CMS-T-00012735-B.1

In the AMAZONE Spreader Application Center (SAC), setting values are determined for all commercially available fertilisers and they are entered in the fertiliser database. The data in the fertiliser database can be accessed via the online FertiliserService or the mySpreader app.

The online FertiliserService can be accessed via the AMAZONE website https://amazone.de/de-de/service-support/.

The mySpreader app for mobile devices can be downloaded using the QR code, see page 35.

For questions regarding fertilisers, the contact persons for the respective countries can be reached using the following telephone numbers:

Country code	Telephone number	Country code	Telephone number	Country code	Telephone number
D	0049 5405 501 111	I	0039 3965 2100	H	0036 5247 5555
GB	0044 1302 755720	DK	0045 7475 3112	HR	00385 3235 2352
IRL	00353 1129 726	FIN	00358 10 768 3097	BG	00359 8250 8000
F	0033 8926 80063	N	0047 6394 0657	GR	0030 2262 0259 15
B	0032 3821 0852	S	0046 4625 9200	AUS	0061 3 9369 1188
NL	0031 3163 69111	EST	00372 5062 246	NZ	0064 2 7246 7506
L	00352 2363 7200			J	0081 3 5604 7644

Excerpt from the setting chart:

Identification of the fertiliser	Name of the fertiliser	
 Representation of the fertiliser	∅	Grain diameter in mm
		Bulk density in kg/l
		Use the calibration factor as the default value for fertiliser calibration
		Throw distance parameter
		Mounting height in cm

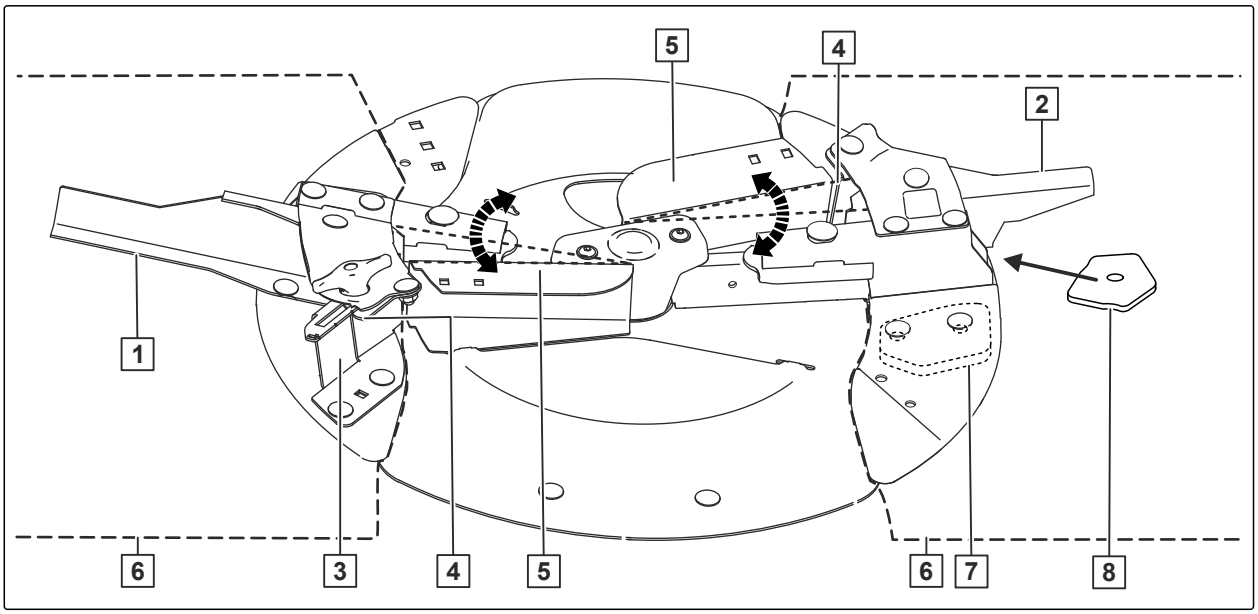
								-%			-%				
TS 20	24	16	600	B	2	720	2	5	600	2	10	550	24	-2	165
	27	16	600	B	2	720	2	5	600	2	10	550	24	-2	165
	30	16	800	B	2	900	2	7	800	2	12	720	29	-1	176

Symbol	Unit		Symbol	Unit
TS 20	Spreading vane unit TS 10, TS 20 or TS 30			Border spreading
	Working width			Boundary spreading
	Position of the delivery system			Ditch spreading
	Spreading disc speed		-%	Rate reduction for border spreading and ditch spreading
	Telescope A, B, C or D		X	Border spreading without switching on the boundary spreading telescope
	Position 1, 2 or 3 on the telescope			Switch-on point
	Throwing angle			Switch-off point

4.15.3 Spreading disc with AutoTS boundary spreading system

CMS-T-00012736-A.1

The spreader unit is equipped with the AutoTS boundary spreading system on the right side. The AutoTS boundary spreading system is switched using the control terminal.

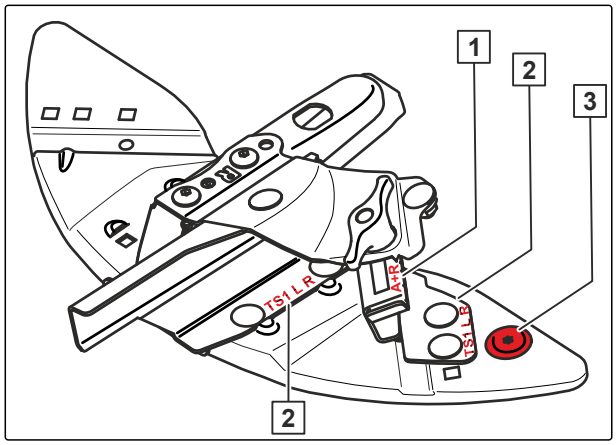


CMS-I-00008149

1 Long spreading vane for normal spreading
2 Short spreading vane for normal spreading
3 Telescopic spreading vane for boundary spreading
4 Rigid spreading vane for boundary spreading
5 Swivel-mounted inner part of the spreading vane
6 Spreading vane unit
7 Balancing weight
8 Telescopic balancing weights for boundary spreading vanes

Spreading vane set TS 10, TS 20 and TS 30, depending on the working width:

1 Marking A, A+, B, C, D on the telescopic boundary spreading vane
2 Markings on the spreading vanes
3 Coloured marking of the spreading vane unit

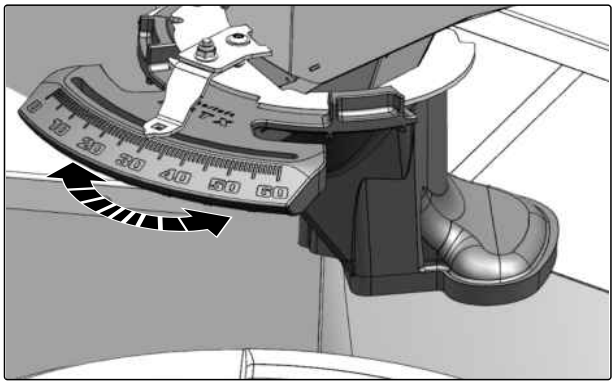


CMS-I-00008163

4.15.4 Delivery system

CMS-T-00012737-A.1

The delivery system over the spreading discs guides the fertiliser onto the spreading disc. The position of the delivery system influences the lateral distribution and must be adjusted as specified in the setting chart. The position of the delivery system depends on the working width and the fertiliser type.



CMS-I-00008164

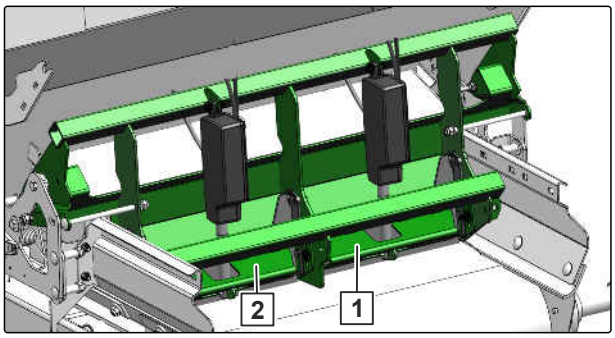
EasySet 2: The delivery system is manually adjustable.

ISOBUS: The delivery system is automatically set according to the entries on the control terminal.

4.15.5 Double shutter

CMS-T-00012738-A.1

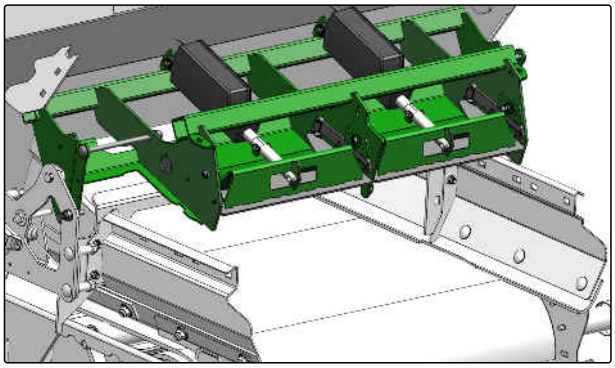
The double shutter is used to regulate the spread rate in addition to the floor belt. The right shutter **1** and the left shutter **2** can be electrically operated separately from one another.



CMS-I-00008166

The double shutter is also used for one-sided fertiliser spreading.

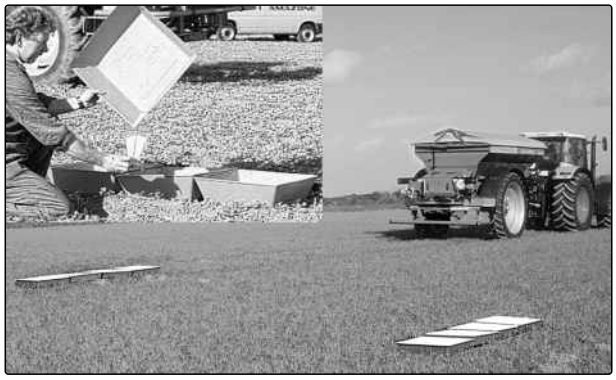
To spread lime, the double shutter is manually swivelled up into parking position.



CMS-I-00008165

4.15.6 Mobile test rig

CMS-T-00012739-A.1



CMS-I-00008168

The mobile test rig is a measuring method for the lateral distribution on the field. The mobile test rig contains collection trays for fertiliser and a measuring cup.

The collection trays are placed at defined positions on the field and are strewn with fertiliser by driving back and forth. Afterwards, the collected fertiliser is filled into a measuring cup. The evaluation is based on the fill level in the measuring cup.

The evaluation is performed using:

- The calculation model, refer to the mobile test rig operating manual
- Implement software on the control terminal
- The EasyCheck app, accessible via the AMAZONE website https://amazone.de/de-de/service-support/

4.15.7 EasyCheck digital mobile test rig

CMS-T-00012740-A.1

EasyCheck is a digital mobile test rig for simple optimisation of the lateral distribution with centrifugal fertiliser spreaders. EasyCheck consists of collection mats for fertiliser and the app for mobile devices to determine the fertiliser lateral distribution on the field.

The collection mats are placed at defined positions on the field and collect the fertiliser while spreading. Afterwards, the collection mats are photographed using the mobile device. The app checks the lateral distribution using the photos. If necessary, changes to the settings are suggested.

The EasyCheck app and the operating manual are accessible via the AMAZONE website https://amazone.de/de-de/service-support/.

CMS-I-00008167

4.16 Lime spreading

CMS-T-00012741-A.1

4.16.1 Overview of the lime spreader unit

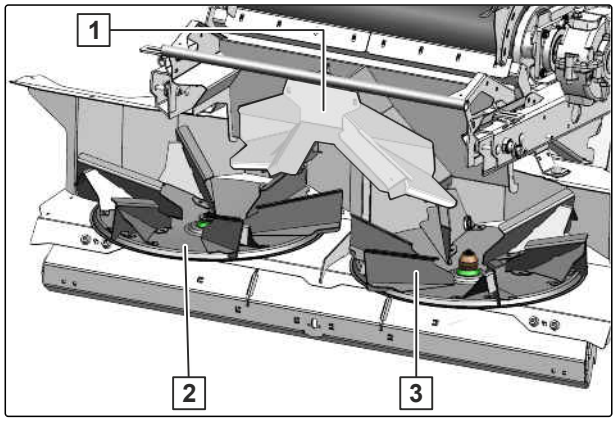
CMS-T-00012742-A.1

The lime spreader unit is used for spreading lime.

1 Lime chute

2 Right spreading disc for lime

3 Left spreading disc for lime



CMS-I-00008170

4.16.2 Chain rake

CMS-T-00012743-A.1

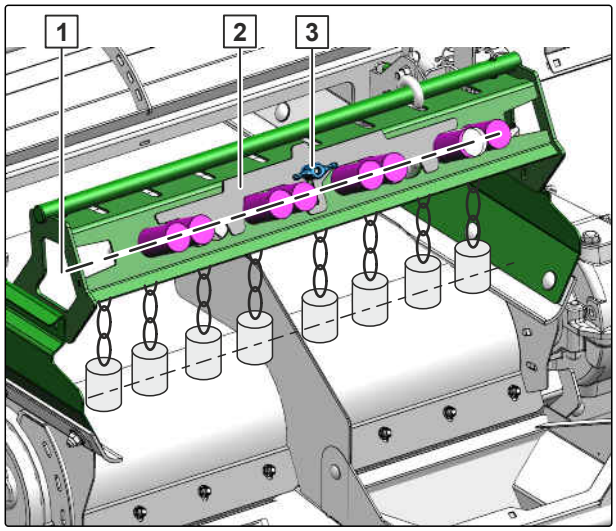
The chain rake distributes the lime evenly on the floor belt and ensures uniform flow of spreading material onto the spreading discs. The safety plate is fastened with the wing nut.

1 Chain rake in parking position when spreading fertiliser

2 Safety plate

3 Wing nut

4 Chain rake in working position when spreading lime

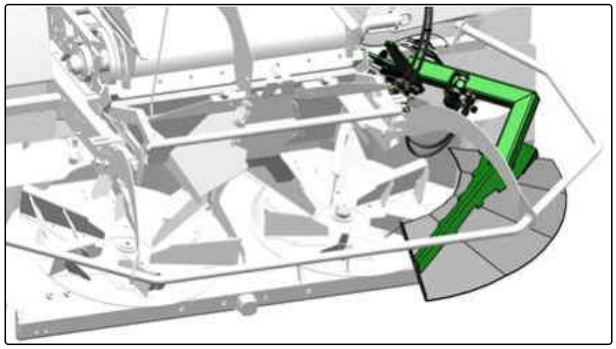


CMS-I-00008169

4.16.3 Boundary spreading device for lime

CMS-T-00012744-A.1

The boundary spreading device for lime is used for boundary spreading on the right with half the working width.



CMS-I-00008194

4.17 Dual-circuit pneumatic brake system

CMS-T-00012086-A.1

The dual-circuit pneumatic brake system brakes the coupled implement when the tractor brake is actuated.

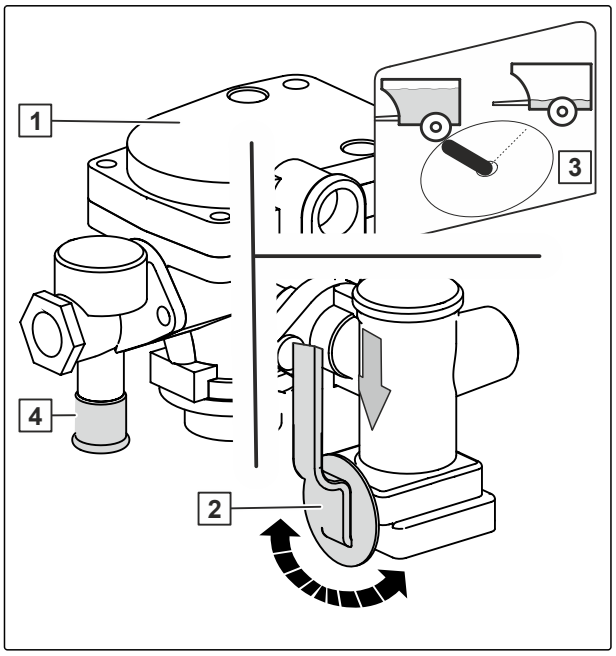
If the compressed air lines are uncoupled, the implement is braked as long as there is compressed air in the pressure accumulator.

The brake line is controlled via the brake valve **1**.

The brake valve can vary depending on the implement:

- Depending on the version, the brake line can be adjusted in 2 or 3 levels using the hand lever **2**.
- The brake line can be adjusted in 2 levels using the rotary knob **3**.

With the control knob **4** or the hand lever **2**, the brake can be released for manoeuvring with the implement.



CMS-I-00007785

4.18 Camera system

CMS-T-00014877-A.1

NOTE

If a technical test report is present, it is a certified camera system.

The certified camera system is used for cross-traffic monitoring. It does not replace the requirements for the field of vision.

The certified camera system can replace a banksman at intersections and junctions.

The certified camera system includes one camera on the left and right side of the implement respectively.

The non-certified camera system consists of one or several cameras on the implement.

The cameras serve to observe the surroundings and as a manoeuvring aid.

4.19 Work lights

CMS-T-00011665-B.1

The work lights are used to illuminate the work area.

Depending on the implement equipment, the work lights are either supplied with power and operated via ISOBUS or supplied with power from the tractor and operated via the control box separately.

CMS-I-00002218

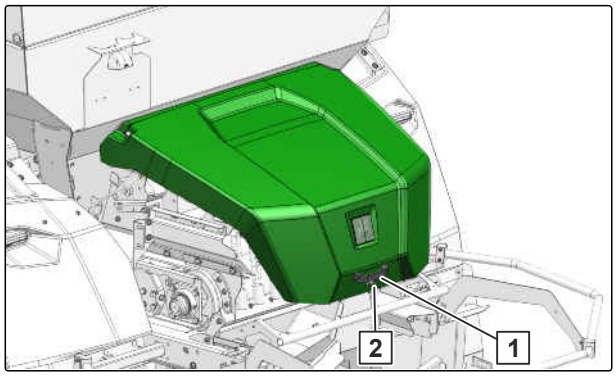
4.20 Cover hood

CMS-T-00015534-A.1

Transport position

1 Handle

2 Locking pin



CMS-I-00010198

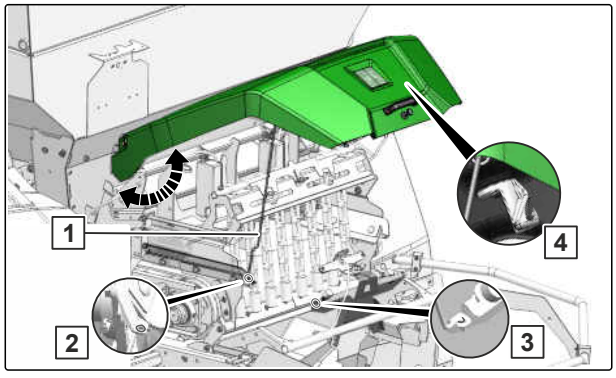
Maintenance position

1 Support

2 Pegging position for completely opened cover hood

3 Pegging position for half-opened cover hood

4 Parking position for support



CMS-I-00010197

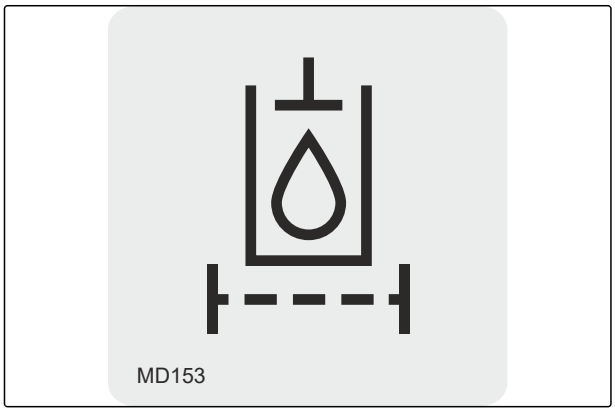
4.21 More information on the implement

CMS-T-00012795-B.1

4.21.1 Information on the hydraulic oil filter

CMS-T-00012796-A.1

The figure shows the hydraulic oil filter.



CMS-I-00003489

4.21.2 Confirmation of the Fertiliser Directive

CMS-T-00015826-A.1

EN standards 13739-1 and -2 define the requirements for boundary spreading and normal spreading. The requirements for boundary spreading are met by all AMAZONE boundary spreading devices. The requirements for distribution accuracy for normal spreading resulting from the standards are also fully met by all AMAZONE mineral fertiliser spreaders.

CMS-I-00010390

Technical data

5

CMS-T-00012707-E.1

5.1 Dimensions

CMS-T-00012708-B.1

	ZG-TX 6800 Special	ZG-TX 9000 Special	ZG-TX 9000 Super	ZG-TX 11200 Super
Working width for mineral fertiliser	15 to 54 m			
Working width for lime	to 16 m			
Filling depth	1.84 m			
Filling width	2.4 m to 3 m			
Filling height	2.1 m to 3.1 m	2.3 m to 3.3 m		2.6 m to 3.6 m
Total length	7.1 m to 7.8 m		7.3 m to 7.8 m	

5.2 Hopper volume

CMS-T-00012745-B.1

ZG-TX 6800 Special	ZG-TX 9000 Special	ZG-TX 9000 Super	ZG-TX 11200 Super
6,800 l	9,000 l	9,000 l	11,200 l

5.3 Gear oil

CMS-T-00013600-D.1

Component	Oil quantity	Designation
Angular gearbox oil on the spreading disc	0.23 l	ISO VG 150 EP/SAE 90
Centre gearbox oil	0.35 l	ISO VG 150 EP/SAE 90
Gear oil on the conveyor belt	1.5 l	SAE 90

5.4 Permissible payload

CMS-T-00015297-B.1

	ZG TX Special	ZG TX Super
Permissible payload on the field	9,000 kg	17,000 kg
Permissible payload for road travel	9,000 kg	10,000 kg

5.5 Forward speed

CMS-T-00015791-A.1

Optimal working speed	12-18 km/h

5.6 Performance characteristics of the tractor

CMS-T-00012710-C.1

Engine rating			
ZG-TX 6800 Special	**ZG-TX 9000 Special**	**ZG-TX 9000 Super**	**ZG-TX 11200 Super**
Starting at 90 kW/122 hp	Starting at 100 kW/136 hp	Starting at 100 kW/136 hp	Starting at 110 kW/150 hp

Electrical system	
Battery voltage	12 V
Lighting socket	7-pin

Hydraulic system	
Maximum operating pressure	210 bar
Tractor pump output	at least 45 l/min at 180 bar
Implement hydraulic oil	HLP68 DIN51524 The hydraulic oil is suitable for the combined hydraulic oil circuits of all standard tractors.
Control units	Depending on the implement equipment
Pressure-free return flow	Maximum permissible pressure: 8 bar

Universal joint shaft	
Maximum permissible speed	750 1/min
Direction of rotation	Clockwise

Brake system	
Implement	**Tractor**
Dual-circuit pneumatic brake system	Dual-circuit pneumatic brake system

5.7 Tightening torques for wheels

CMS-T-00015872-A.1

Tyres	Tightening torque
Running gear wheel	510 Nm

5.8 Noise development data

CMS-T-00002296-D.1

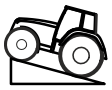
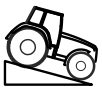
The workplace-related emission sound pressure level is lower than 70 dB(A), measured in operating condition at the ear of the tractor driver with the cab closed.

The emission sound pressure level mainly depends on the vehicle used.

5.9 Drivable slope inclination

CMS-T-00002297-E.1

Across the slope		
On left in direction of travel	15 %	
On right in direction of travel	15 %	

Up the slope and down the slope		
Up the slope	15 %	
Down the slope	15 %	

5.10 Lubricants

CMS-T-00002396-B.1

Manufacturer	Lubricant
ARAL	Aralub HL2
FINA	Marson L2
ESSO	Beacon 2
SHELL	Retinax A

Preparing the machine 6

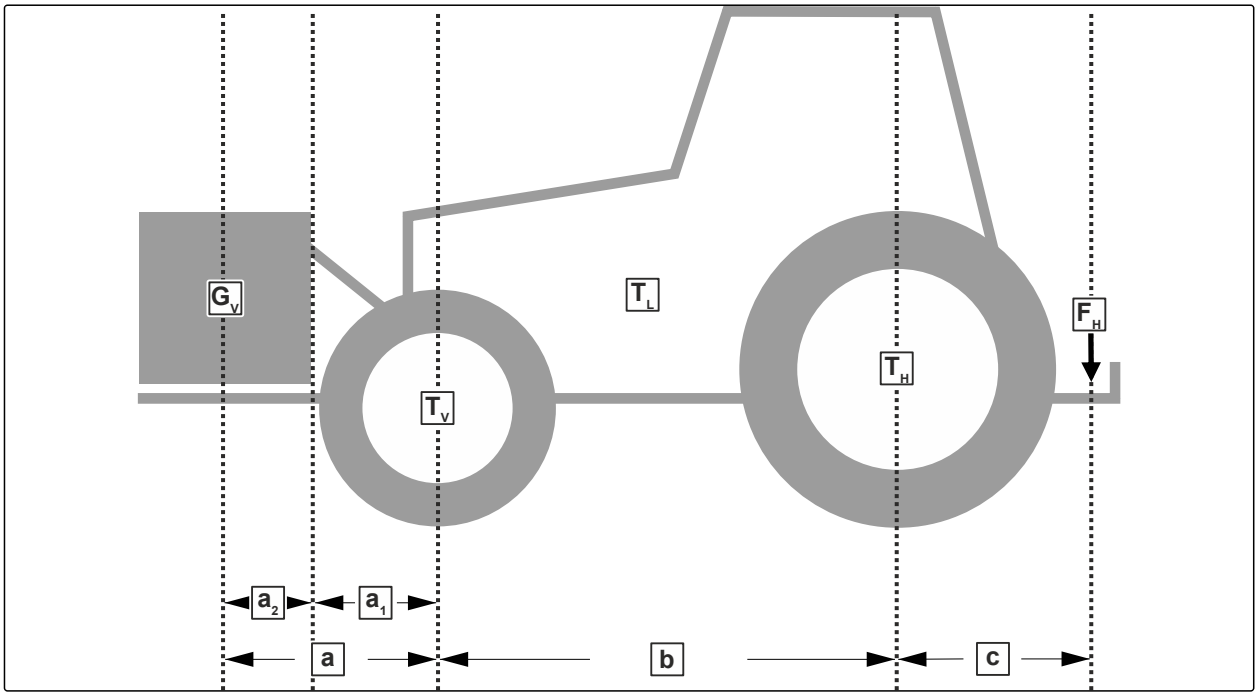
CMS-T-00012711-F.1

6.1 Checking the tractor suitability

CMS-T-00004592-G.1

6.1.1 Calculating the required tractor characteristics

CMS-T-00004868-G.1



CMS-I-00000580

Designation	Unit	Description	Calculated values
T_L	kg	Tractor empty weight	
T_V	kg	Front axle load of the operational tractor without mounted implement or ballast weights	
T_H	kg	Rear axle load of the operational tractor without mounted implement or ballast weights	
G_V	kg	Total weight of front-mounted implement or front ballast	
F_H	kg	Drawbar load	

Designation	Unit	Description	Calculated values
a	m	Distance between the centre of gravity of the front-mounted implement or the front ballast and the centre of the front axle	
a_1	m	Distance between the centre of the front axle and the centre of the lower link connection	
a_2	m	Centre of gravity distance: Distance between the centre of gravity of the front-mounted implement or the front ballast and the centre of the lower link connection	
b	m	Wheelbase	
c	m	Distance between the centre of the rear axle and the centre of the lower link connection	

1. Calculate the minimum front ballasting.

$$G_{Vmin} = \frac{F_H \cdot c - T_V \cdot b + 0{,}2 \cdot T_L \cdot b}{a + b}$$

$G_{Vmin} =$ _____

$G_{Vmin} =$

CMS-I-00003504

2. Calculate the actual front axle load.

$$T_{Vtat} = \frac{G_V \cdot (a + b) + T_V \cdot b - F_H \cdot c}{b}$$

$T_{Vtat} =$ _____

$T_{Vtat} =$

CMS-I-00005422

3. Calculate the actual total weight of the tractor-implement combination.

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

$$G_{tat} =$$

$$G_{tat} =$$

CMS-I-00006344

4. Calculate the actual rear axle load.

$$T_{Htat} = G_{tat} - T_{Vtat}$$

$$T_{Htat} =$$

$$T_{Htat} =$$

CMS-I-00000514

5. Determine the tyre load capacity for two tractor tyres in the manufacturer specifications.

6. Write down the determined values in the following table.

IMPORTANT

Danger of accident due to implement damage caused by excessive loads

- ▶ Make sure that the calculated loads are smaller or equal to the permissible loads.

	Actual value according to calculation			Permitted value according to tractor operating manual			Tyre load capacity for two tractor tyres	
Minimum front ballasting		kg	≤		kg		-	-
Total weight		kg	≤		kg		-	-
Front axle load		kg	≤		kg	≤		kg
Rear axle load		kg	≤		kg	≤		kg

6.1.2 Determining the required coupling devices

CMS-T-00004593-D.1

Coupling device		
Tractor	AMAZONE implement	
Upper hitch		
Pin coupling, form A, B, C	Drawbar eye	Bushing 40 mm
A, not automatically	Drawbar eye	40 mm
A, automatically, smooth pin A, automatically, crowned pin	Drawbar eye	50 mm, only compatible with form A
Upper hitch or lower hitch		
Ball hitch coupling 80 mm	Ball hitch coupling	80 mm
Lower hitch		
Towing hook or hitch hook	Drawbar eye	Centre hole Ø 50 mm Eyelets Ø 30 mm
	Rotating drawbar eye	compatible only with form Y, hole Ø 50 mm
	Drawbar eye	Centre hole Ø 50 mm Eyelets Ø 30-41 mm
Swinging drawbar, Category 2	Drawbar eye	Centre hole 50 mm Eyelets 30 mm
		Bushing, 40 mm
		40 mm
		50 mm
Swinging drawbar	Drawbar eye	
Swinging drawbar or Piton-fix	Drawbar eye	Centre hole 50 mm Eyelets 30 mm
	Rotating drawbar eye	compatible only with form Y, hole Ø 50 mm
Non-swivel clevis coupling	Rotating drawbar eye	
Lower link hitch	Lower link traverse	

- ▶ Check whether the coupling device of the tractor is compatible with the coupling device of the implement.

6.1.3 Comparing the permissible DC value with actual DC value

CMS-T-00004867-B.1

Designation	Description
T	Permissible total weight of the tractor in t, including the drawbar load
C	Sum of the permissible axle loads of the implement in t

1. Calculate the D_C value.

2. Check whether the calculated D_C value is smaller or equal to the D_C values on the rating plate of the connection devices of the implement and tractor.

$$Dc = 9{,}81 \cdot \frac{T \cdot C}{T + C}$$

$$Dc = 9{,}81 \cdot \frac{\quad \cdot \quad}{\quad + \quad}$$

$$Dc =$$

CMS-I-00003582

6.2 Preparing the universal joint shaft

CMS-T-00005128-C.1

WORKSHOP WORK

1. Have the length of the universal joint shaft adjusted.

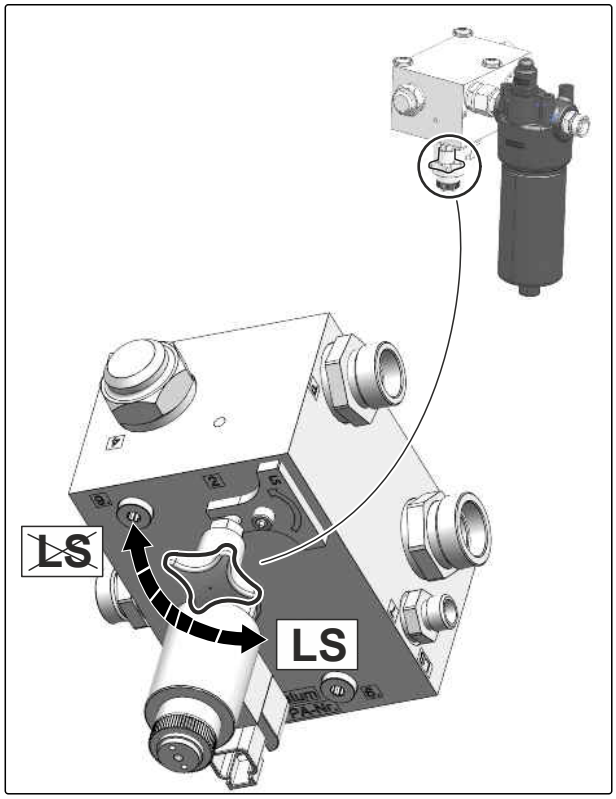
2.

3. Have the universal joint shaft installed.

6.3 Adjusting the implement hydraulic system to the tractor hydraulic system

CMS-T-00012748-A.1

The implement hydraulic system must be compatible with the tractor hydraulic system. The implement hydraulic system can be adjusted to a tractor hydraulic system with or without *"LS"* load sensing system. To do so, the implement hydraulic system is adjusted on the implement's hydraulic block.



CMS-I-00008196

CAUTION

Malfunction and failure of important hydraulic functions

If the implement hydraulic system is not adjusted to the tractor hydraulic system, it can lead to malfunctions and elevated hydraulic oil temperatures.

- Adjust the implement hydraulic system to the tractor hydraulic system.

1. Depressurise the hydraulic system.

2. *Load sensing system:*
   Completely unscrew the adjustment screw on the hydraulic block.

   or

   Oil circulation:
   Completely screw in the adjustment screw on the hydraulic block.

3. *Load sensing system*
   Couple the load sensing system onto the tractor.

4. *Oil circulation:*
   Limit the oil quantity of the tractor control unit to the oil quantity required by the implement.

6.4 Coupling the implement

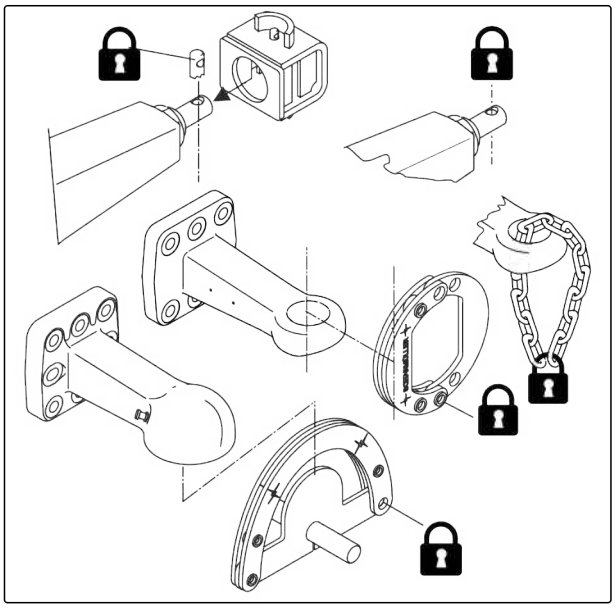
CMS-T-00012713-B.1

6.4.1 Removing the safety device against unauthorised use

CMS-T-00005089-B.1

1. Unlock the padlock.

2. Remove the safety device against unauthorised use from the hitch device.



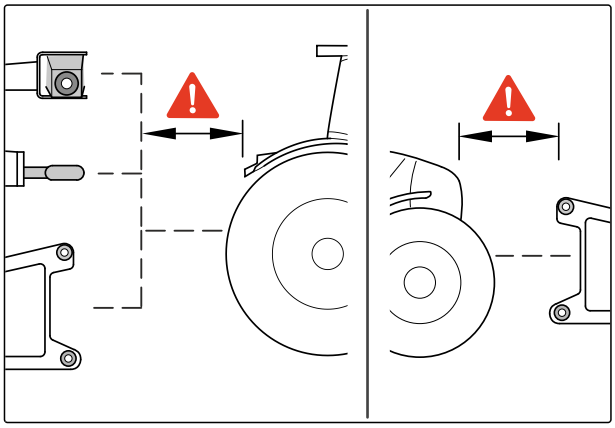
CMS-I-00003534

6.4.2 Driving the tractor towards the implement

CMS-T-00005794-D.1

Enough space must remain between the tractor and implement so that the supply lines can be coupled without obstructions.

► Drive the tractor towards the implement, leaving a sufficient distance.



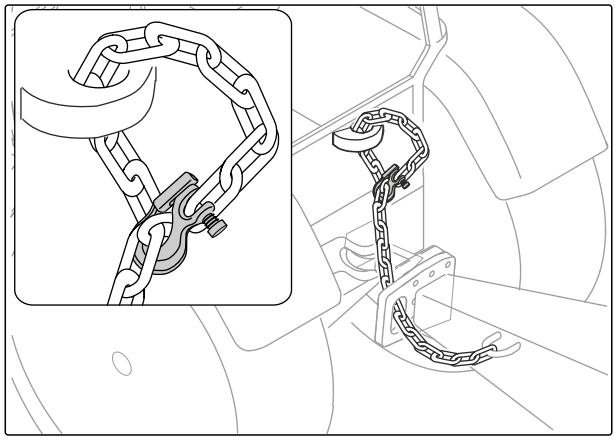
CMS-I-00004045

6.4.3 Fastening the safety chain

CMS-T-00004293-D.1

Depending on country-specific regulations, implements are equipped with a safety chain.

▶ Fasten the safety chain on the tractor as prescribed.



CMS-I-00007814

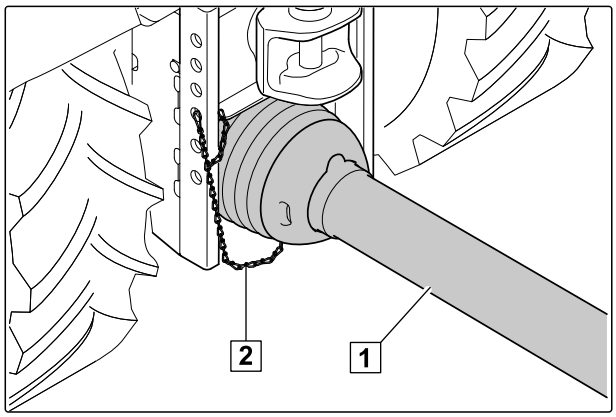
6.4.4 Coupling the universal joint shaft

CMS-T-00012829-B.1

1. Take the universal joint shaft out of its holder on the implement.
2. Pull back the drawing sleeve **1** on the tractor side.
3. Push the universal joint shaft onto the tractor PTO shaft.

➡ The drawing sleeve engages.

4. *To secure the universal joint shaft guard against rotating:*
   Fasten the safety chain **2** onto the tractor.
5. Check the guard on the universal joint shaft.



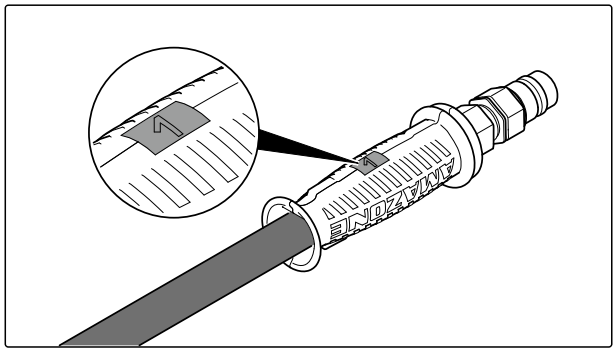
CMS-I-00001069

6.4.5 Coupling the hydraulic hose lines

CMS-T-00012714-A.1

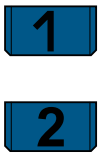
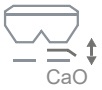
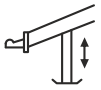
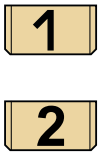
All hydraulic hoses are equipped with handles. The handles have colour markings with a code number or a code letter. The markings are assigned to the respective hydraulic functions of the pressure line of a tractor control unit. Stickers are applied on the implement for the markings, which illustrate the respective hydraulic functions.

The tractor control unit is used with different types of actuation, depending on the hydraulic function:



CMS-I-00000121

Type of actuation	Function	Symbol
Latching	Permanent oil circulation	
Momentary	Oil circulation until action is executed	
Floating	Free oil flow in the tractor control unit	

Designation		Function			Tractor control unit	
Blue			Boundary spreading system for lime	Lower Lift	Double-acting	
Blue			Jack	Lift Lower	Double-acting	
Beige			Cover tarpaulin	opening closing	Double-acting	
Red		Load sensing pressure line			Single-acting	
Red		Pressure-free return flow				
Red		Load sensing control line				

WARNING

Risk of injury or even death

If the hydraulic hose lines are incorrectly connected, the hydraulic functions may be faulty.

- ▶ When coupling the hydraulic hose lines, observe the coloured markings on the hydraulic plugs.

1. Depressurise the hydraulic system between the tractor and the implement using the tractor control unit.

2. Clean the hydraulic plugs.

3. Install the supplied coupling sleeve on the pressure-free oil return of the tractor.

4. Couple the hydraulic hose line of the return flow **T** with the pressure-free oil return of the tractor.

IMPORTANT

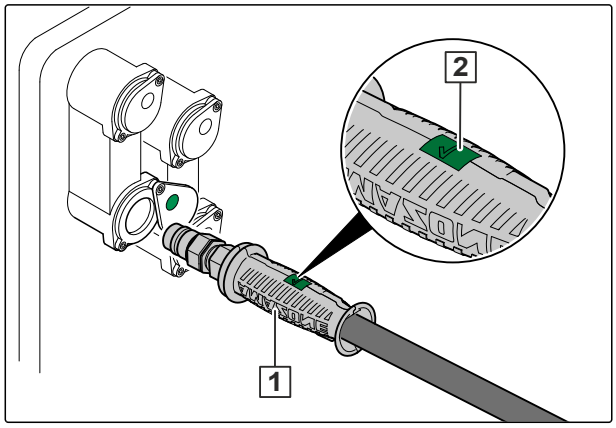
Implement damage due to insufficient hydraulic oil return flow

- Only use lines of size DN16 or larger for the pressureless hydraulic oil return flow.
- Select short return paths.
- Connect the pressureless hydraulic return flow to the intended coupling.
- *Depending on the implement equipment:* couple the leakage oil line in the intended coupling.
- Install the supplied coupling sleeve on the pressureless hydraulic oil return.

5. Couple the hydraulic hose lines **1** to the hydraulic sockets of the tractor according to the marking **2**.

➡ The hydraulic plugs lock perceptibly.

6. Route the hydraulic hose lines with sufficient freedom of movement and without chafing points.



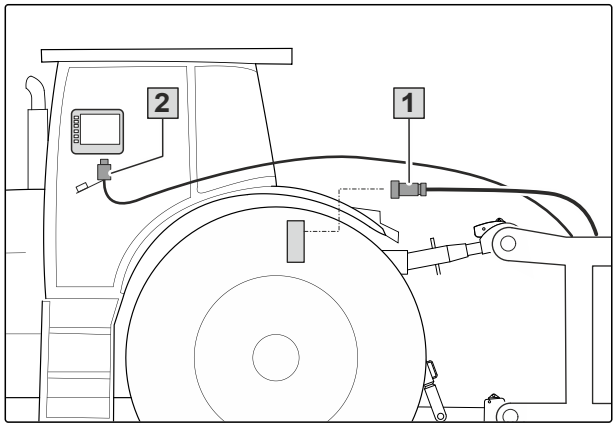
CMS-I-00001045

6.4.6 Coupling the ISOBUS or control computer

CMS-T-00003611-F.1

1. Insert the plug of the ISOBUS line **1** or control computer line **2**.

2. Route the ISOBUS line with sufficient freedom of movement and without chafing or pinching points.

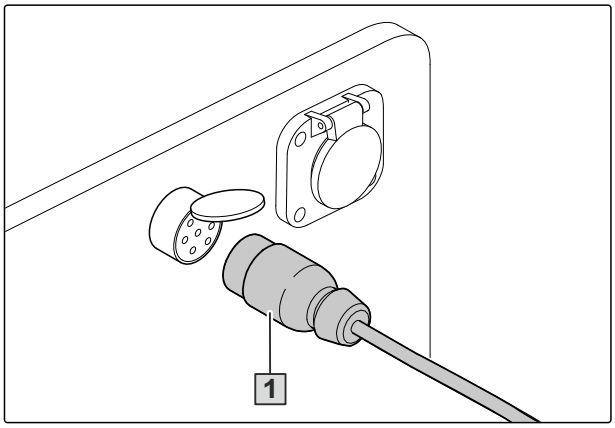


CMS-I-00006891

6.4.7 Coupling the power supply

CMS-T-00001399-G.1

1. Insert the plug **1** for the power supply.
2. Route the power supply cable with sufficient freedom of movement and without chafing or pinching points.
3. Check the lighting on the implement for proper function.

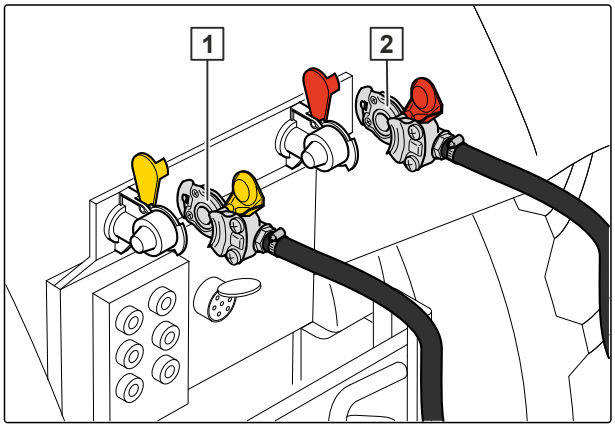


CMS-I-00001048

6.4.8 Coupling the dual-circuit pneumatic brake system

CMS-T-00004318-F.1

1. Open the cover of the coupling heads on the tractor.
2. Clean off any dirt from the sealing rings on the coupling heads.
3. Disconnect the yellow coupling head for the brake line **1** from the parking device.
4. Connect the yellow coupling head to the coupling marked in yellow on the tractor.
5. Disconnect the red coupling head for the brake line **2** from the parking device.
6. Connect the red coupling head to the coupling marked in red on the tractor.
7. Route the brake lines with sufficient freedom of movement and without chafing or pinching points.



CMS-I-00003559

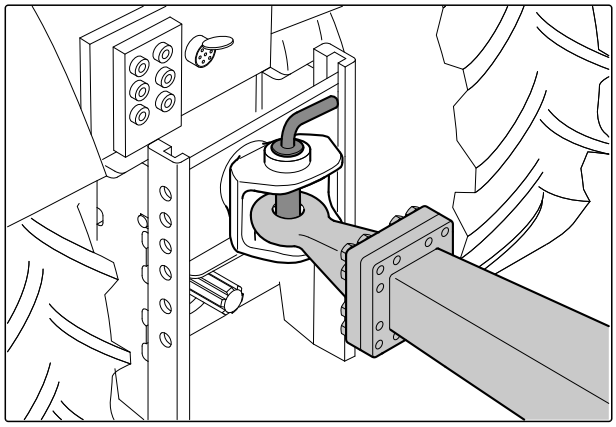
6.4.9 Coupling the ball hitch coupling or drawbar eye

CMS-T-00012826-A.1

6.4.9.1 Coupling the drawbar eye

CMS-T-00012827-A.1

1. Drive the tractor towards the implement.
2. Couple the drawbar eye with the clevis coupling of the tractor.
3. *To lift the jack:*
   Actuate the *"blue"* tractor control unit.

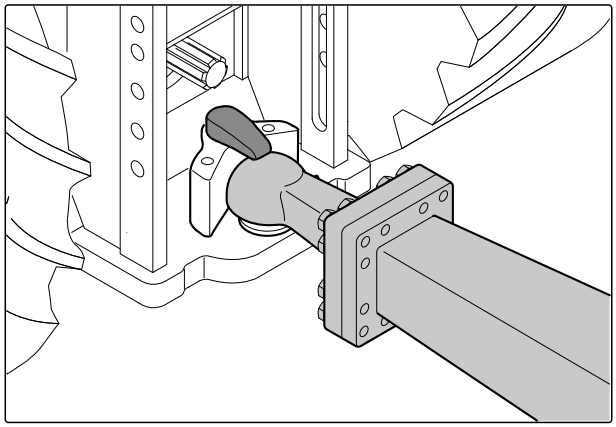


CMS-I-00003557

6.4.9.2 Coupling the ball hitch coupling

CMS-T-00012828-A.1

1. Drive the tractor towards the implement.
2. *To rest the ball hitch coupling on the hitch ball and lift the jack:*
   Actuate the *"blue"* tractor control unit.
3. Lock the ball hitch coupling.

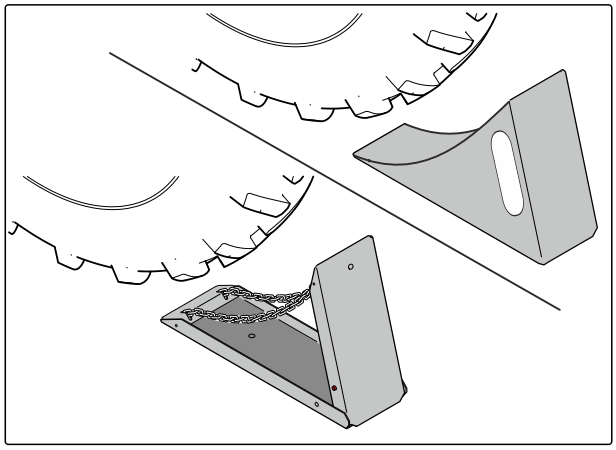


CMS-I-00003558

6.4.10 Removing the wheel chocks

CMS-T-00004296-D.1

1. Remove wheel chocks from the wheels.
2. Fold the foldable wheel chocks.
3. Put the wheel chocks in the holder.



CMS-I-00007790

6.4.11 Releasing the parking brake

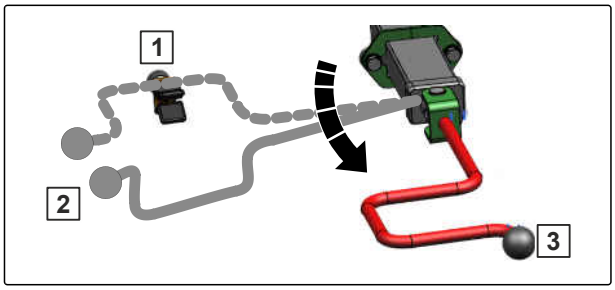
CMS-T-00012830-A.1

The parking brake requires approx. 20 kg manual force to be applied.

1 Holding spring

2 Hand crank position for releasing and applying in the end area

3 Hand crank position for rapid releasing and applying



CMS-I-00008205

1. Pull the hand crank out of the holding spring.
2. *To release the parking brake:*
   Turn the hand crank counter-clockwise until the brake cable is relaxed.
3. Fasten the hand crank back into the holding spring.

6.5 Preparing the implement for spreading fertiliser

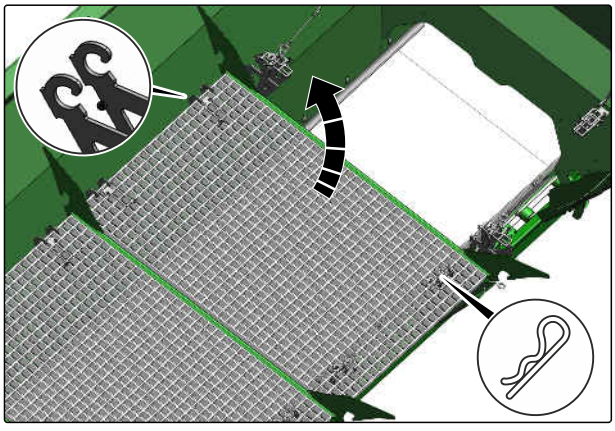
CMS-T-00012712-C.1

6.5.1 Installing charging sieves

CMS-T-00013767-A.1

WORKSHOP WORK

1. Adjust the charging sieves with lifting gear in the hopper.
2. Insert the charging sieves into the mount.
3. Fold down the charging sieves.
4. Lock the charging sieves with the spring cotter pin.
5. Install all of the charging sieves.



CMS-I-00008569

6.5.2 Removing the spreader unit for lime

CMS-T-00012946-A.1

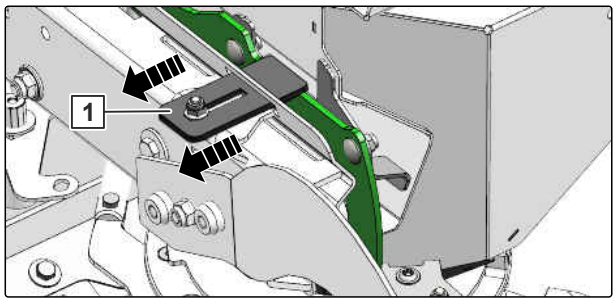
6.5.2.1 Removing the spreader unit for lime

CMS-T-00012751-A.1

REQUIREMENTS

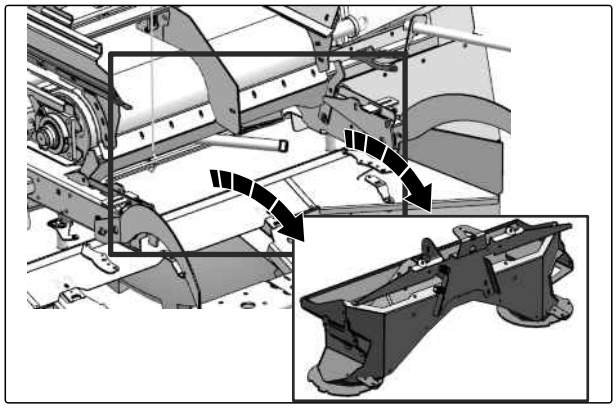
- ⊘ Boundary spread deflector in working position

1. *To unlock the funnel chute on both sides:*
   Loosen the nut and slide the stop plate **1** outwards.



CMS-I-00008213

2. Slightly lift the funnel chute and take it out.

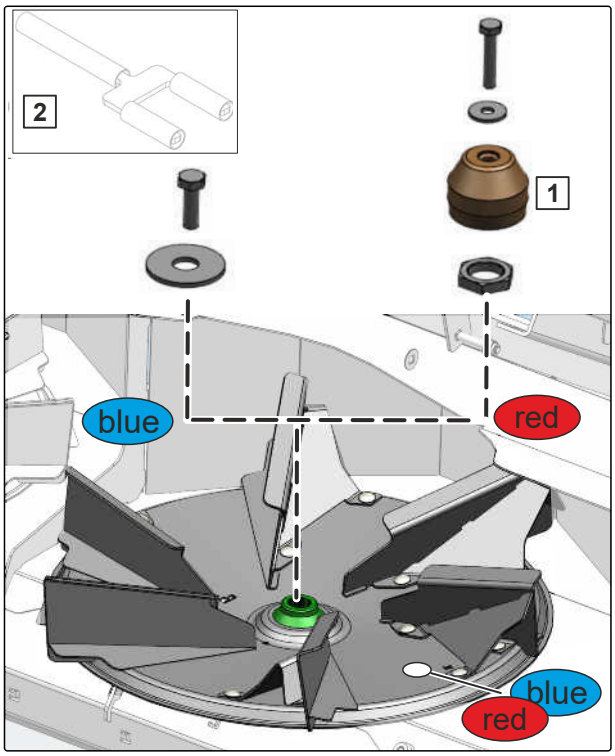


CMS-I-00008212

6.5.2.2 Removing the spreading discs for lime

1. Loosen the bolt on the left spreading disc for lime and take it off with the washer. To do so, use the auxiliary tool **2** to pry the spreading disc off of the hub.
2. Take off the left spreading disc for lime.
3. Loosen the bolt on the right spreading disc and take it off with the washer and sealing cap **1**.
4. Loosen and remove the M24 nut.
5. Remove the right spreading disc for lime. To do so, use the auxiliary tool **2** to pry the spreading disc off of the hub.

CMS-T-00012947-A.1

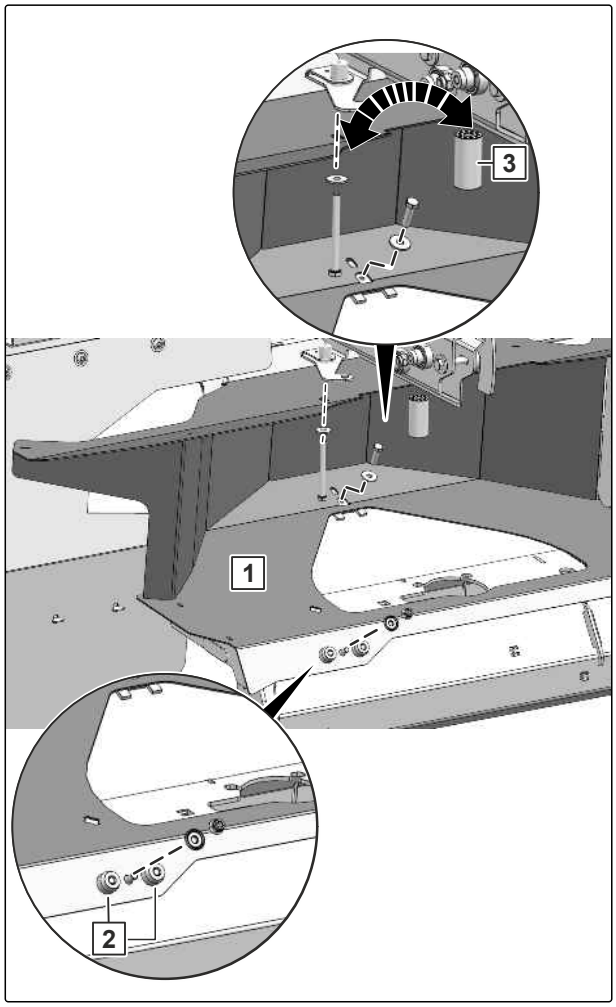


CMS-I-00008214

6.5.3 Removing the splash guard for lime

CMS-T-00013189-A.1

1. Loosen 2 bolts [2] with washers on the splash guard [1] on both sides.
2. Remove the spacer sleeves [3] on both sides.
3. Loosen the nuts on both sides.
4. Take the splash guard off of the mounting sleeves and take it out.

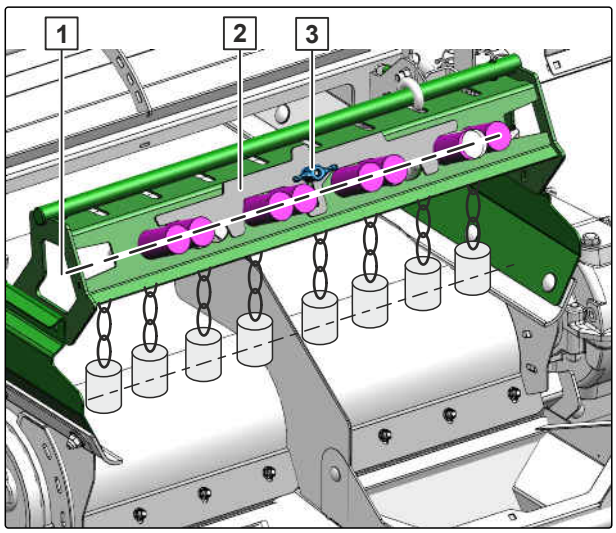


CMS-I-00008216

6.5.4 Moving the chain rake into transport position

CMS-T-00012750-A.1

1. Loosen the wing nut [3].
2. Lift the locking plate [2].
3. Insert all of the individual weights [1] into the rail.
4. Lower the locking plate.
5. Tighten the wing nut.

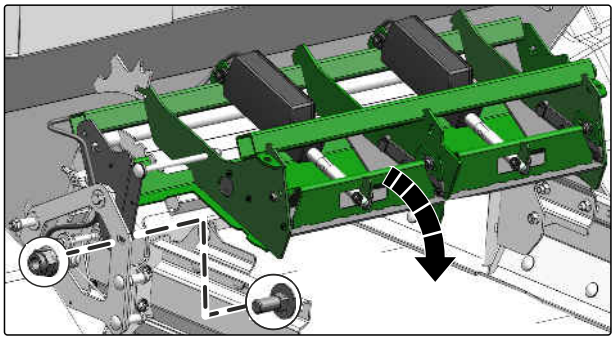


CMS-I-00008169

6.5.5 Putting the double shutter into operation

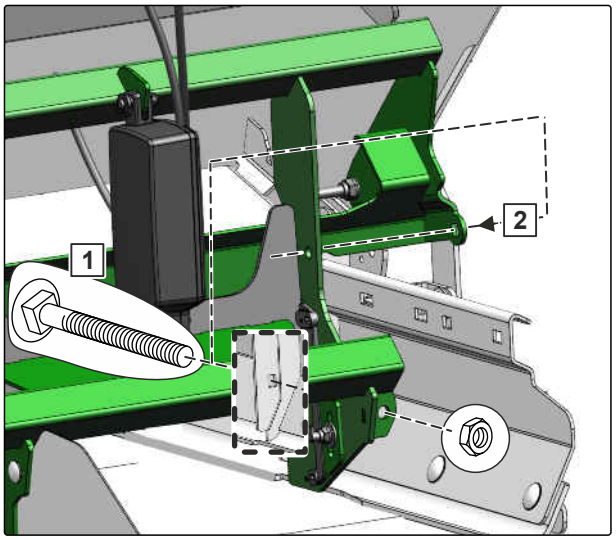
CMS-T-00012749-A.1

1. Loosen the bolts on both sides.
2. Swivel down the double shutter.



CMS-I-00008211

3. Remove the bolt from the parking position **2**.
4. Insert the bolt in working position **1** and secure with nuts.
5. Fasten the bolt on both sides in working position.



CMS-I-00008210

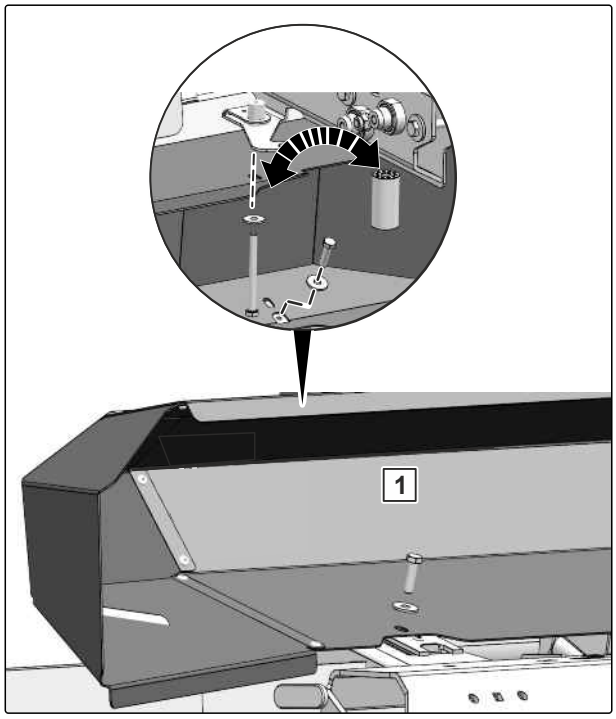
6.5.6 Installing the spreader unit for fertiliser

CMS-T-00012985-A.1

6.5.6.1 Installing the splash guard for fertiliser

CMS-T-00013208-A.1

- Fasten the splash guard 1 with 3 bolts and the washers on both sides.

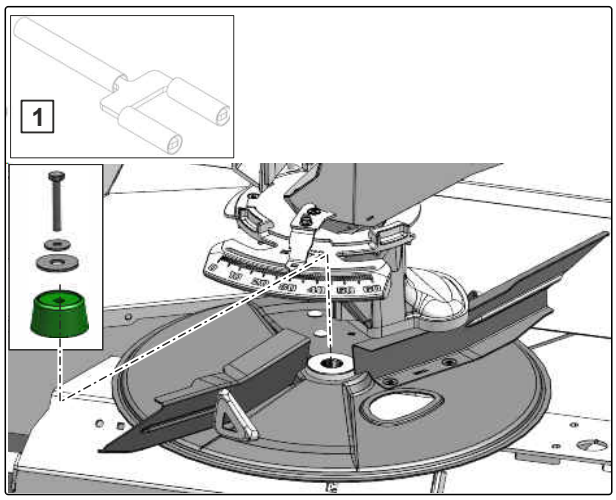


CMS-I-00008215

6.5.6.2 Installing the left spreading disc for fertiliser

CMS-T-00012987-A.1

1. Put on the spreading disc, locking cone and washers.
2. Fasten the spreading disc with the bolt M10x65.

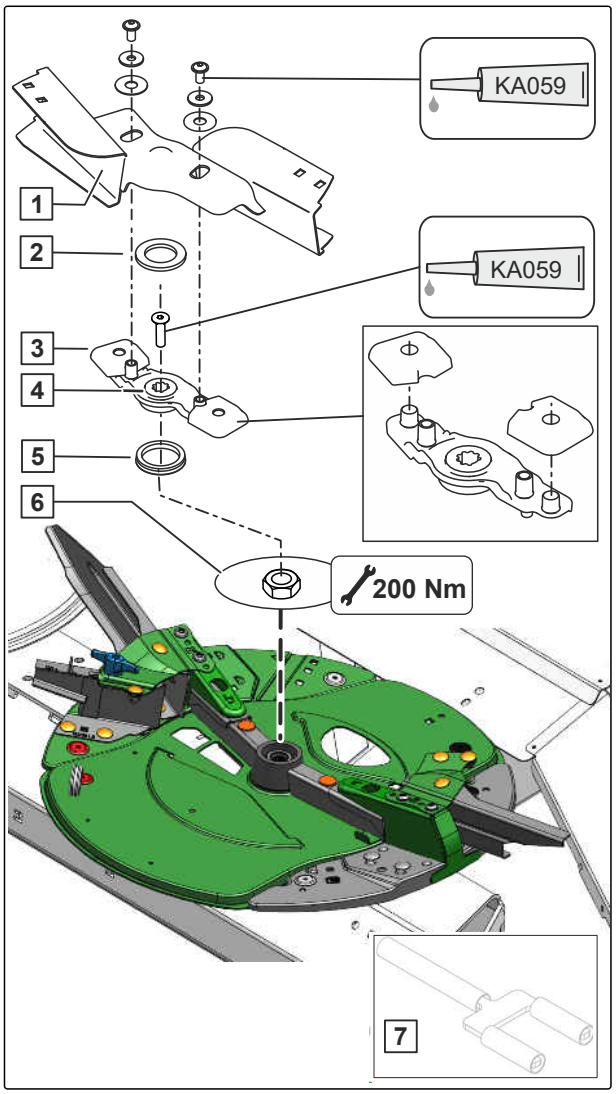


CMS-I-00008262

6.5.6.3 Installing the right spreading disc for fertiliser

CMS-T-00012988-A.1

1. Apply assembly paste on the bolts.
2. Put on the spreading disc.
3. Tighten the nut M24 **6** with 200 Nm.
4. Install the V-ring **5**.
5. Put on the shifting hub **4** and fasten with the bolt M8x16.
6. Put on the balancing elements **3**.
7. Put on the seal **2**.
8. Put on the delivery vane **1** and fasten with the washers and 2 bolts M8x16.

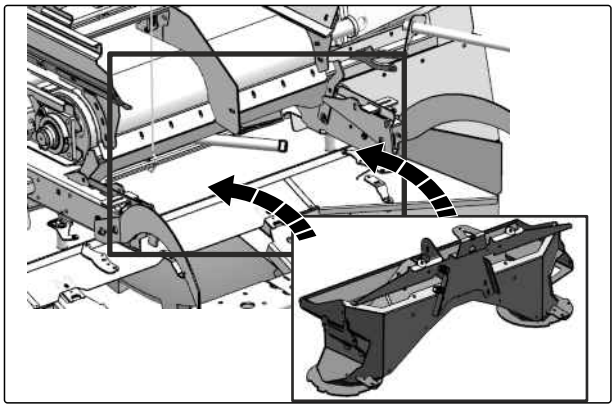


CMS-I-00008261

6.5.6.4 Installing the TS spreader unit

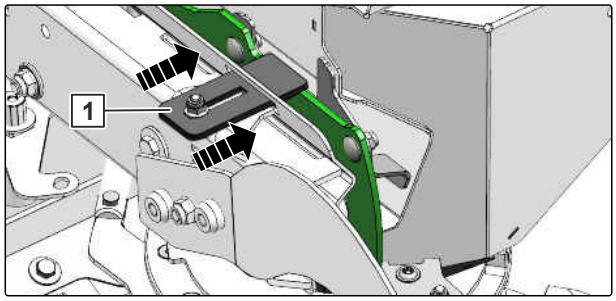
CMS-T-00012986-A.1

1. Insert the funnel chute into the mounts from the top.



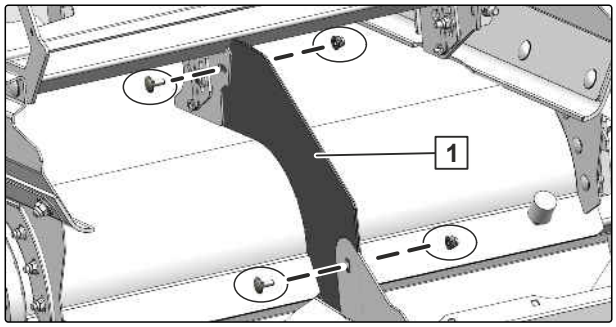
CMS-I-00008423

2. *To lock the funnel chute in the stop:*
   Slide the stop plate **1** inward and tighten the nut.



CMS-I-00008424

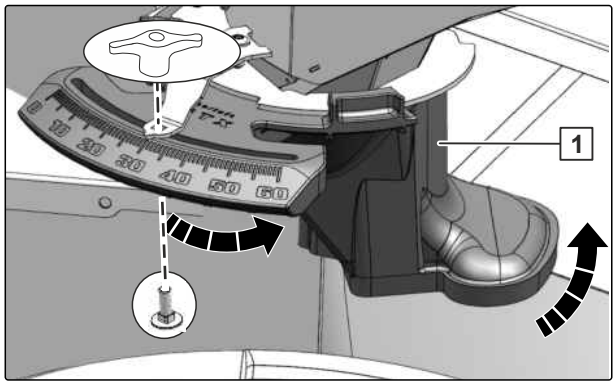
3. Install the central partition plate for the double shutter with 2 bolts and 1 mm from the conveyor belt.



CMS-I-00008265

4. *To install the two hopper tips:*
   Put on the hopper tips **1** from below and turn to the right.

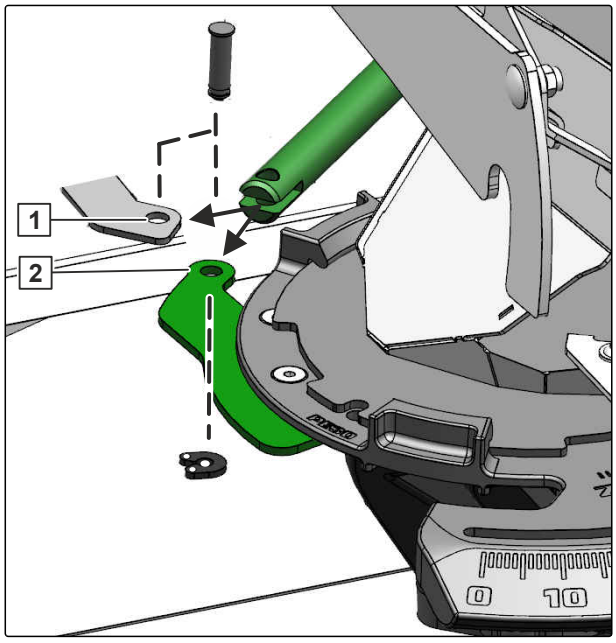
5. *EasySet:*
   Install the bolt for the scale on the delivery system.



CMS-I-00008264

6. *ISOBUS:*
   Take both motors from the parking position **1**.

7. Secure both motors on the hopper tip **2**.

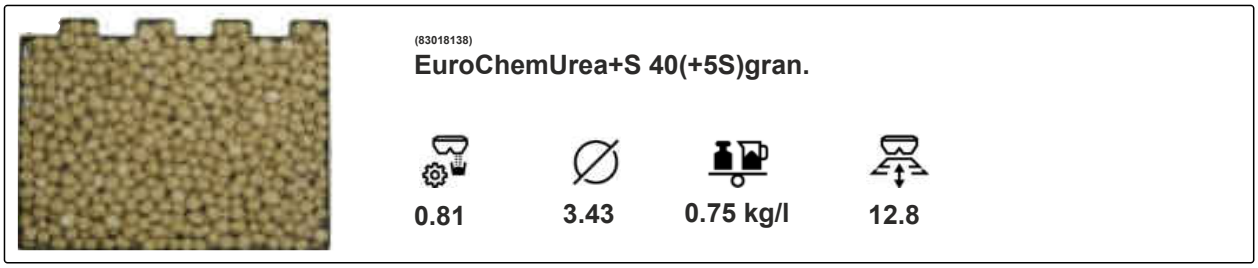


CMS-I-00008263

6.5.7 Reading data from the setting chart

CMS-T-00012752-A.1

For all commercially available fertilisers, setting values are determined and entered in setting charts in the fertiliser database as shown in the following example.



CMS-I-00008260

								-%			-%					
TS 20	24	16	600	B	2	720	2	5	600	2	10	550	24	-2	165
	27	16	600	B	2	720	2	5	600	2	10	550	24	-2	165
	30	16	800	B	2	900	2	7	800	2	12	720	29	-1	176

1. Select the spreading material.
2. Call up the setting chart for the spreading material.
3. Enter the data from the setting chart on the control terminal.
4. Keep the data from the setting chart to prepare the implement at hand.
5. Keep the data from the setting chart for the settings while spreading at hand.

6.5.8 Adjusting the working width

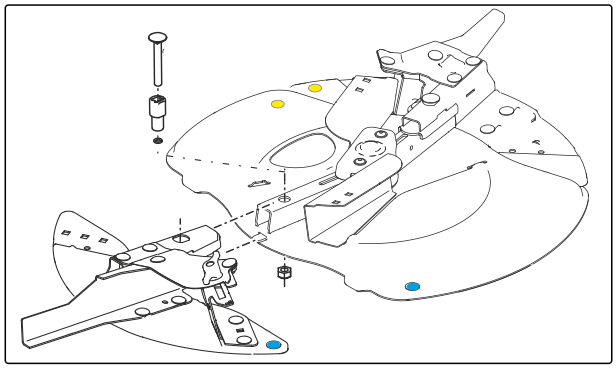
CMS-T-00012996-A.1

6.5.8.1 Replacing the right spreading vane unit

CMS-T-00012753-A.1

The spreading vane units TS10, TS20 and TS30 are available for different working widths. The distance between the tracks determines the selection of the spreading vane units.

1. Loosen the bolted connection and remove the bolt with the sleeve.
2. Pull off the spreading vane units outwards.
3. Select the desired spreading vane units from the setting chart.
4. Insert the spreading vane unit according to the colour marks.
5. Fasten the spreading vane unit with the bolt and the sleeve.
6. Always replace the short and long spreading vane units on both sides.
7. *ISOBUS:*
   Enter the designation of the spreading vane unit in the *"Product"* menu of the ISOBUS software.



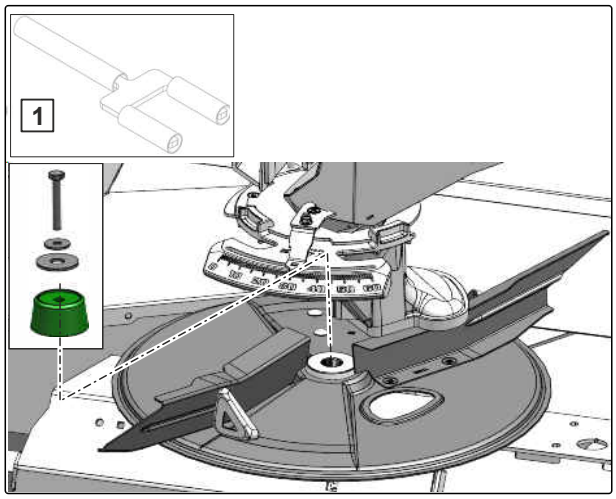
CMS-I-00008266

6.5.8.2 Exchanging the left spreading disc

CMS-T-00012997-A.1

Spreading discs TS10, TS20 and TS30 are available for different working widths.

1. Loosen the bolt and take it off with the locking cone.
2. Take off the spreading disc.
3. Select the desired spreading disc from the setting chart.
4. Put on the spreading disc. Put on the locking cone and the washers.
5. Tighten the bolt.



CMS-I-00008262

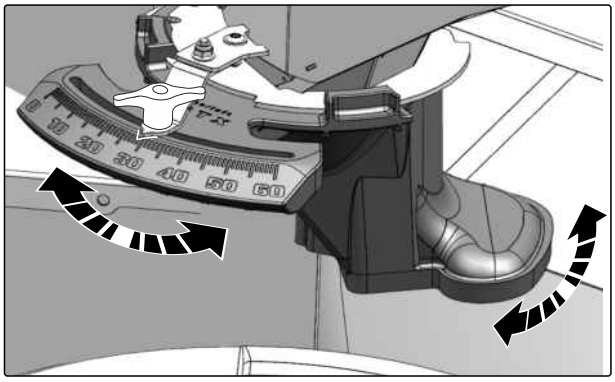
6.5.8.3 Adjusting the delivery system manually

CMS-T-00012998-A.1

ISOBUS: The delivery system is automatically adjusted.

When the delivery system is set to a higher value, the working width is increased. When the delivery system is set to a lower value, the working width is reduced.

1. Read the value for the delivery system position from the setting chart.
2. Loosen the wing nut.
3. Turn the hopper tip 1 until the pointer is at the desired value.
4. Tighten the wing nut.
5. Adjust the delivery system on both sides.



CMS-I-00008326

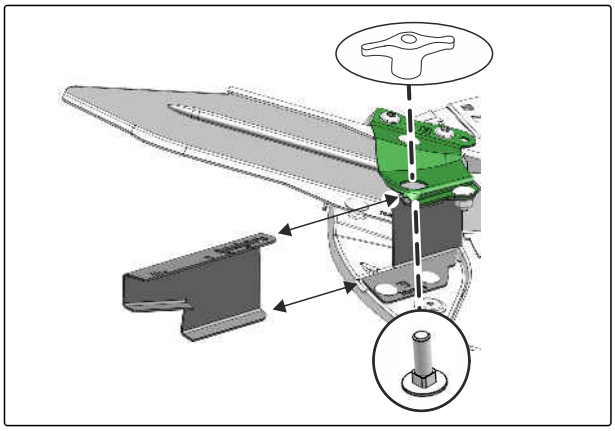
6.5.9 Preparing the AutoTS boundary spreading device

CMS-T-00012999-B.1

6.5.9.1 Installing the boundary spreading telescope

CMS-T-00012754-B.1

1. Select boundary spreading telescope A, A+, B, C or D from the setting chart.
2. Loosen the wing nut.
3. Remove the bolt.
4. Replace the boundary spreading telescope.
5. Fasten the boundary spreading telescope with the bolt and the wing nut.
6. Hand-tighten the wing nuts firmly.
7. *ISOBUS:*
   Enter the designation of the boundary spreading telescope in the *"Product"* menu of the ISOBUS software.



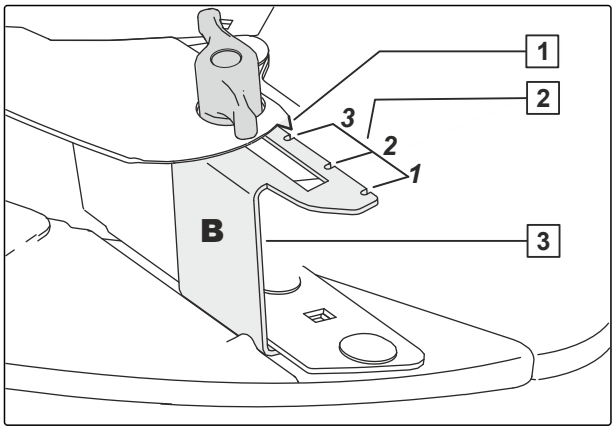
CMS-I-00008267

6.5.9.2 Adjusting the boundary spreading telescope

CMS-T-00013000-B.1

The notches 2 on the boundary spreading telescope 3 indicate mounting positions 1, 2 or 3.

1. Read the mounting position for the boundary spreading telescope from the setting chart.
2. Loosen the wing nut.
3. Slide the boundary spreading telescope so that the pointer 1 is pointing at the desired mark.



CMS-I-00008268

4. Hand-tighten the wing nuts firmly.

5. *ISOBUS:*
   Enter the position of the boundary spreading telescope in the *"Product"* menu of the ISOBUS software.

6.6 Adjusting the mono shutter to the spreading material

CMS-T-00012756-B.1

Positions of the mono shutter

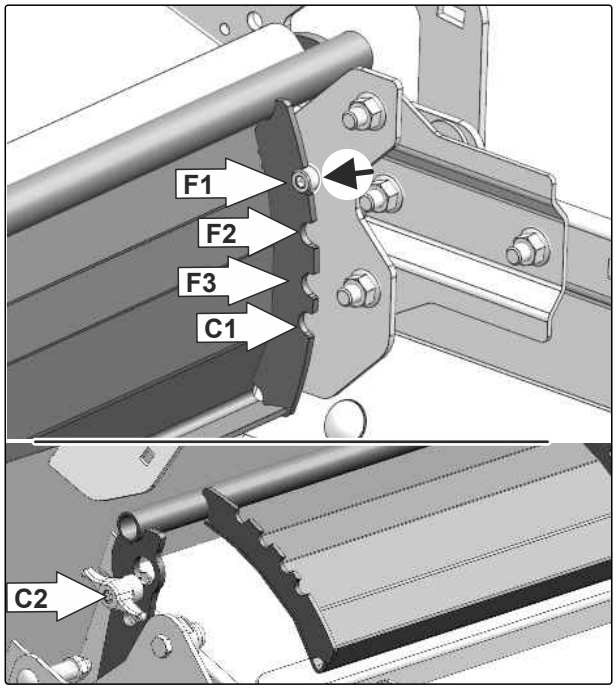
F1 Fertiliser: low application rates, no double shutter

F2 Fertiliser: medium application rates, no double shutter

F3 Fertiliser: high application rates, no double shutter

C1 Moist lime: low application rates up to 1,000 kg/ha, suitable for sticky spreading material and low forward speeds

C2 Moist lime: application rates higher than 1,000 kg/ha, mono shutter completely open or spreading fertiliser via double shutter

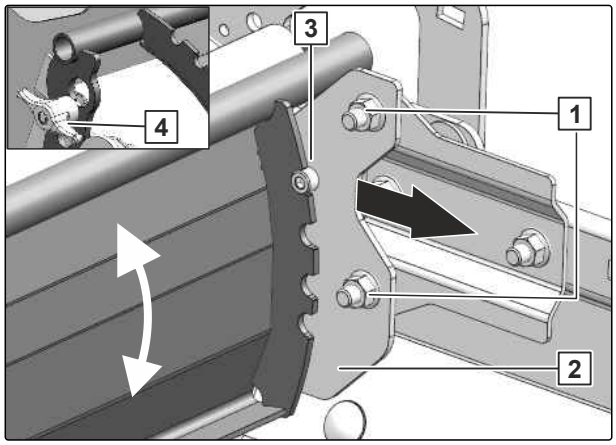


CMS-I-00008270

1. Loosen the bolts **1** on both sides.
2. Pull the stop plate **2** to the rear.
3. Swivel the mono shutter.
4. Push the stop plate to the front. Fasten the position of the mono shutter with the pin **3**

   or

   Secure the completely opened mono shutter with the wing nut **4**.
5. Tighten the bolts **1** on both sides.



CMS-I-00008269

6.7 Preparing the implement for spreading lime

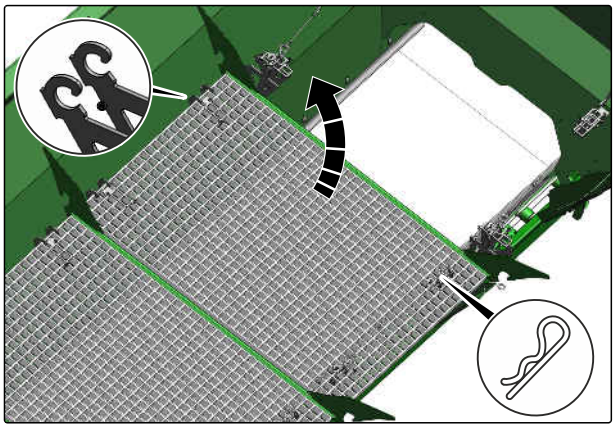
CMS-T-00012755-C.1

6.7.1 Removing the charging sieves

CMS-T-00013768-A.1

WORKSHOP WORK

1. Pull out the spring cotter pin and unlock the charging sieves.
2. Fold up the charging sieves.
3. Pull the charging sieves inward and release them from the mount.
4. Remove the charging sieves with lifting gear.
5. Remove all of the charging sieves.



CMS-I-00008569

6.7.2 Removing the spreader unit for fertiliser

CMS-T-00013026-B.1

6.7.2.1 Moving the electric drives into maintenance position

CMS-T-00012757-A.1

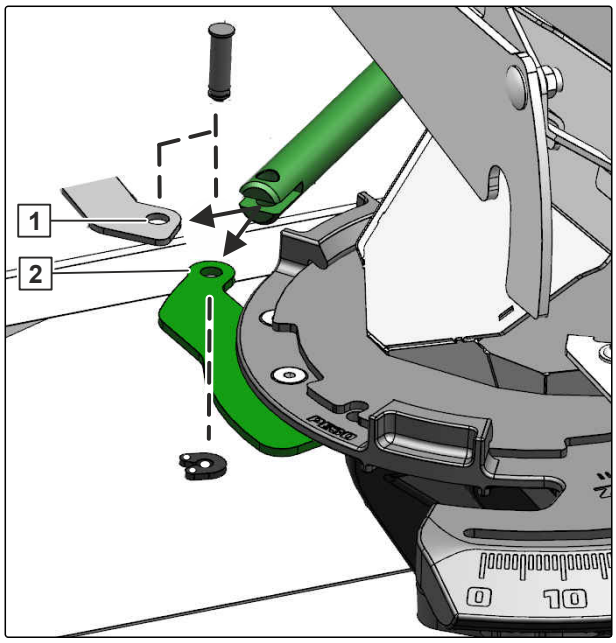
► *ISOBUS:*
In the *"Implement"* menu, select *"Spreader maintenance"* and follow the instructions, refer to the ISOBUS software operating manual.

6.7.2.2 Removing the TS spreader unit for fertiliser

CMS-T-00013031-B.1

1. *To facilitate access to the spreader unit:*
   Remove the guard tube.

2. *ISOBUS:*
   Reposition both motors from position **2** to maintenance position **1**.

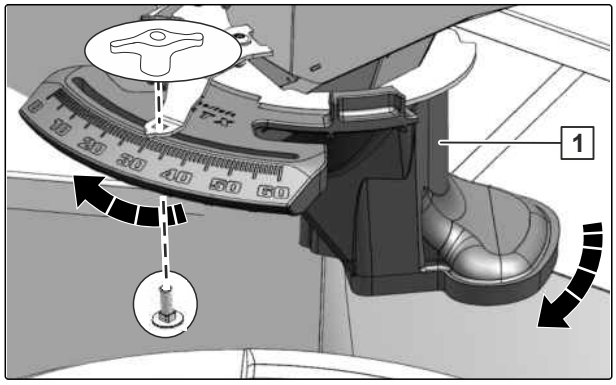


CMS-I-00008263

3. *EasySet:*
   Remove the bolt for the scale on the delivery system.

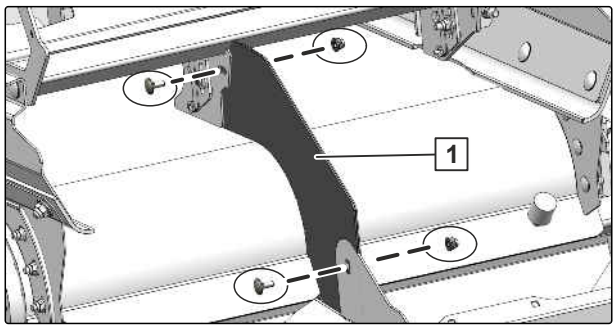
4. *To remove the hopper tips:*
   Turn the hopper tip **1** to the left and take it off downward.

5. Remove both hopper tips.



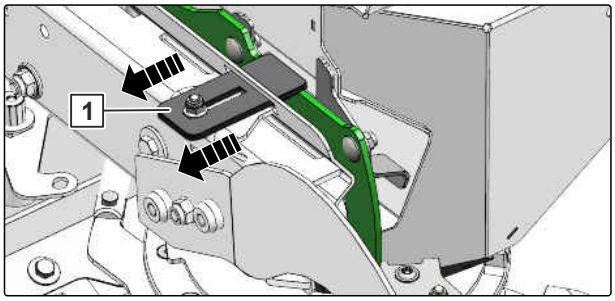
CMS-I-00008425

6. Remove the partition plate **1** for the double shutter.



CMS-I-00008265

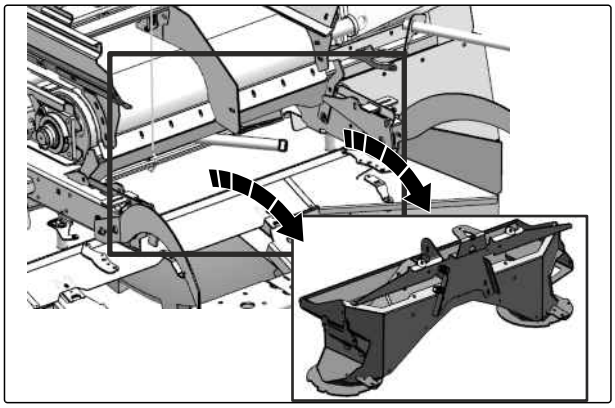
7. *To unlock the funnel chute in the stop:*
   Loosen the nut and slide the stop plate [1] outwards.



CMS-I-00008213

8. Slightly lift the funnel chute and take it out.

9. Install the guard tube.



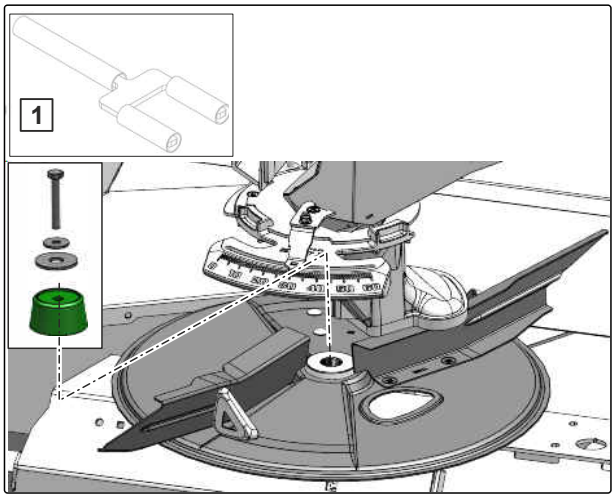
CMS-I-00008212

6.7.2.3 Removing the left fertiliser spreading disc

CMS-T-00013027-A.1

1. Loosen the bolt and take it off with the locking cone.

2. Take off the spreading disc. To do so, use the auxiliary tool [1] to pry the spreading disc off of the hub.

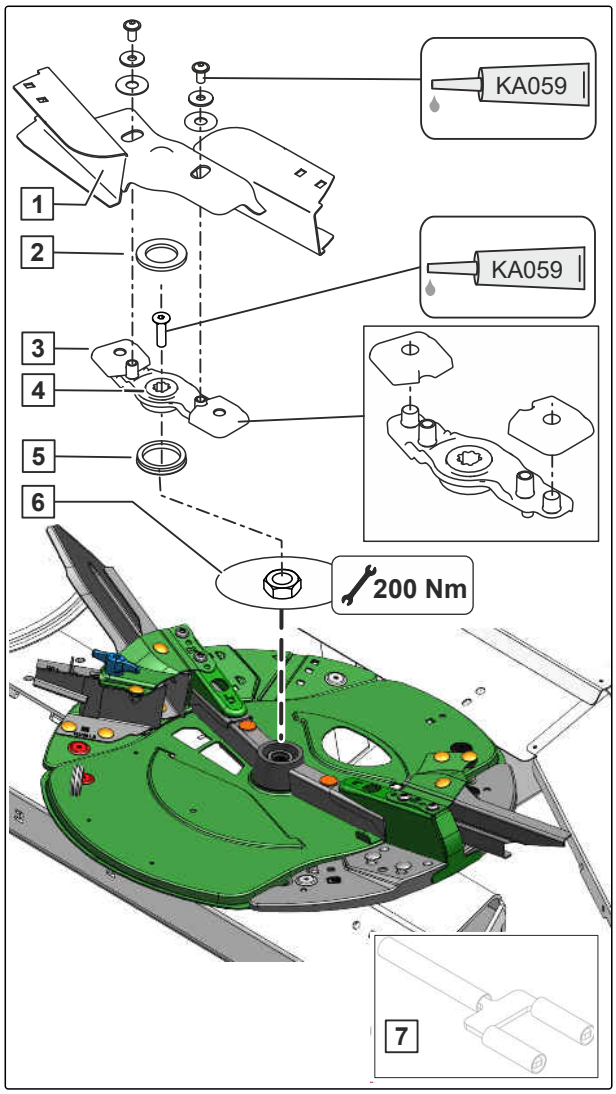


CMS-I-00008262

6.7.2.4 Removing the right fertiliser spreading disc

CMS-T-00013028-A.1

1. Loosen the bolts on the delivery vane **1** and take off the delivery vane.
2. Take of the seal **2**.
3. Take off the balancing elements **3**.
4. Loosen the bolt on the shifting hub **4** and take off the shifting hub.
5. Take off the V-ring **5**.
6. loosen the nut **6**.
7. Take off the spreading disc. To do so, use the auxiliary tool **7** to pry the spreading disc off of the hub.



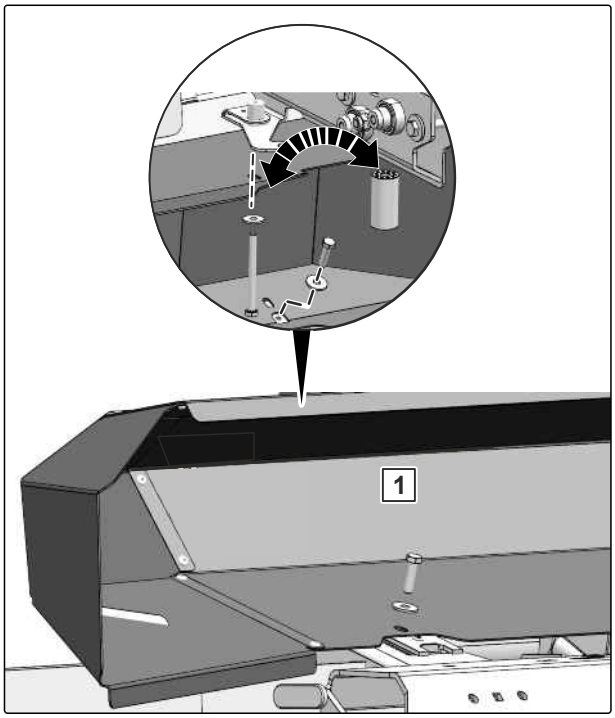
CMS-I-00008261

6.7.2.5 Removing the splash guard

CMS-T-00013209-A.1

1. Loosen the 3 bolts with washers on the splash guard 1 and take off the splash guard.

2. Install the guard tube.



CMS-I-00008215

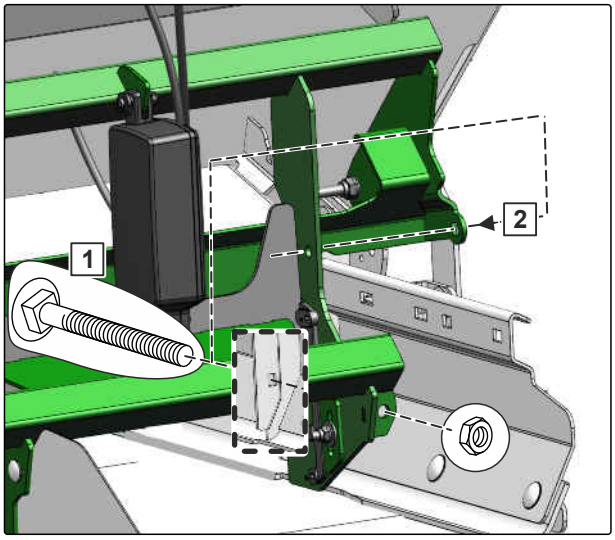
6.7.3 Taking the double shutter out of operation

CMS-T-00012759-A.1

1. Remove the bolt 1.

2. Insert the bolt in parking position 2 and secure the nut.

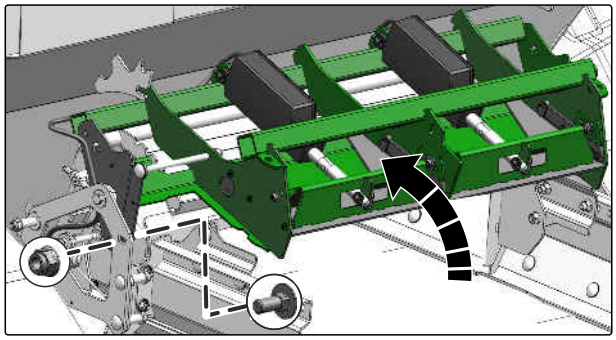
3. Install the bolt on both sides in parking position.



CMS-I-00008210

4. Swivel up the double shutter.

5. Secure the double shutter with the bolt on both sides.



CMS-I-00008422

6.7.4 Moving the chain rake into working position

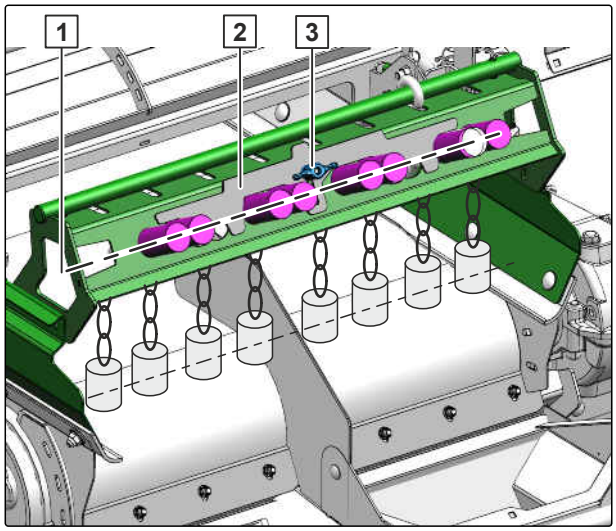
CMS-T-00012760-A.1

1. Loosen the wing nut **3**.

2. Lift the locking plate **2**.

3. Take all of the individual weights **1** out of the rail and allow them to hang freely.

4. Tighten the wing nut.



CMS-I-00008169

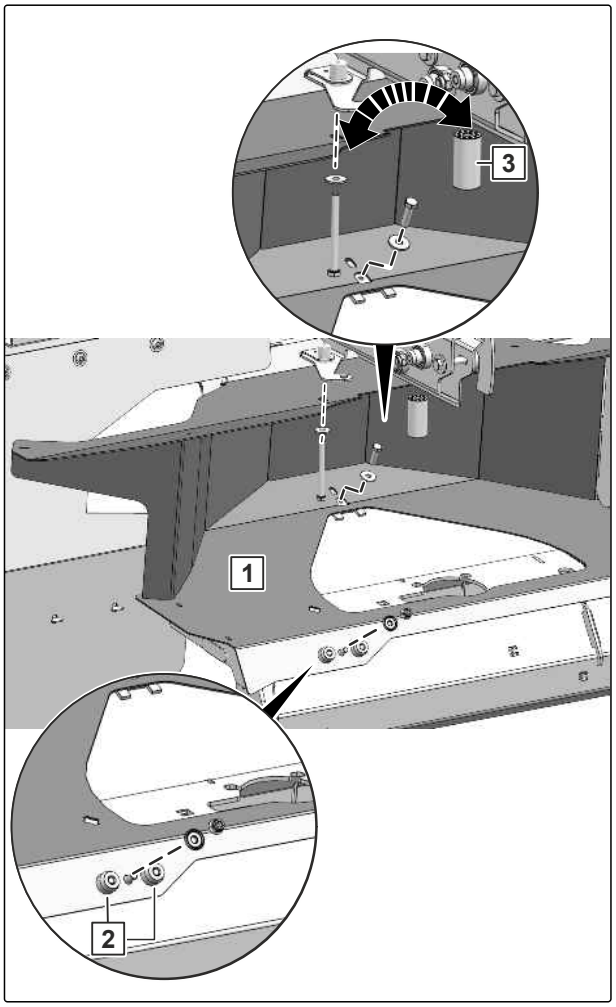
6.7.5 Installing the spreader unit for lime

CMS-T-00013029-A.1

6.7.5.1 Installing the splash guard for lime

CMS-T-00012758-A.1

1. Put the splash guard 1 on the mounting sleeves 2.
2. Install the upper bolt and washer on both sides with a spacer sleeve 3.
3. Install the lower bolt on both sides.
4. Install the nut on both sides with the plastic washer.

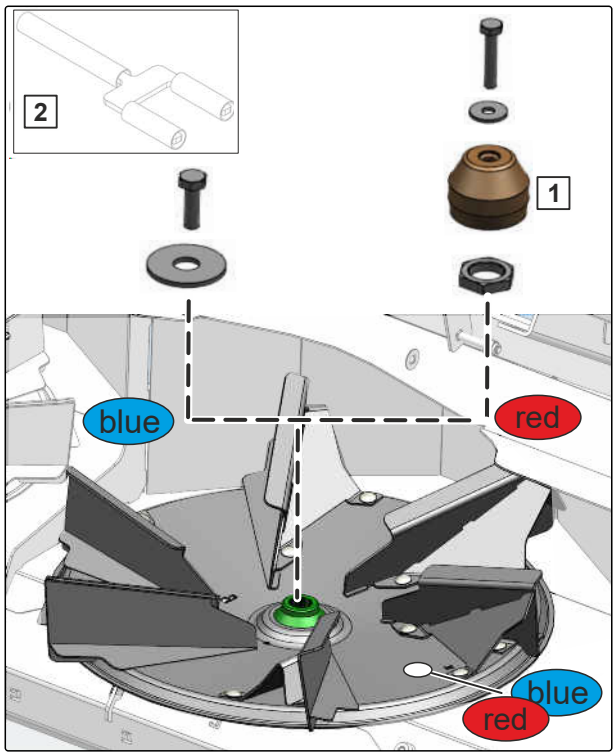


CMS-I-00008216

6.7.5.2 Installing the spreading discs for lime

CMS-T-00013030-A.1

1. Put on the spreading disc for lime with the blue mark on the left.
2. Fasten the spreading disc for lime with the washer and the bolt M10x30.
3. Put on the lime spreading disc with the red mark on the right.
4. Fasten the spreading disc with the nut M24.
5. Put on the sealing cap 1.
6. Fasten the sealing cap with the washer and the bolt M8x40.

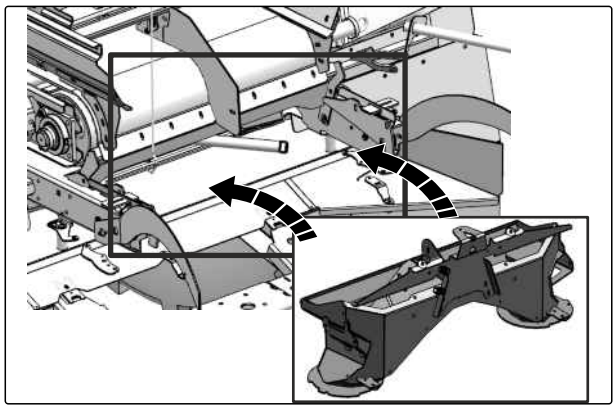


CMS-I-00008214

6.7.5.3 Installing the spreader unit for lime

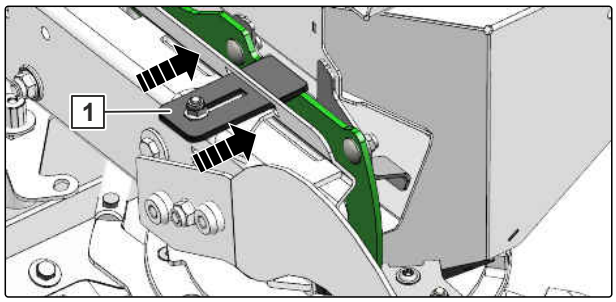
CMS-T-00013190-A.1

1. Insert the funnel chute into the mounts from the top.



CMS-I-00008423

2. *To lock the funnel chute:*
   Slide the stop plate 1 inward and tighten the nut.



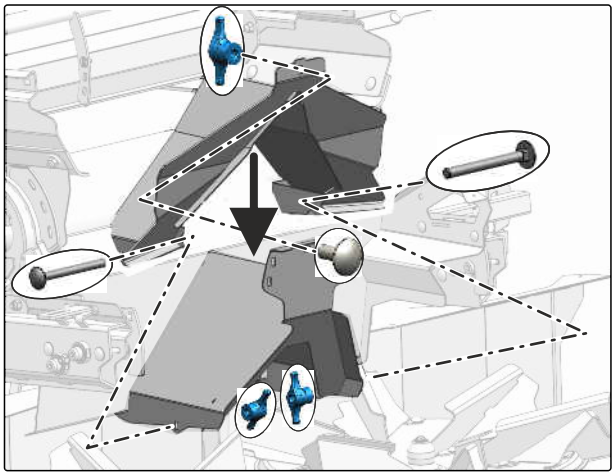
CMS-I-00008424

6.7.6 Installing the additional chute for lime

CMS-T-00012761-A.1

An additional chute can be installed for evenly moist to very moist, sticky lime. Dry to slightly earth moist lime can be spread without an additional chute.

1. Put the additional chute on the lime chute.
2. Fasten the additional chute with 3 bolts and wing nuts.



CMS-I-00008274

6.8 Filling the spreading material hopper

CMS-T-00012762-A.1

1. Observe the safety instructions from the spreading material manufacturer. Wear personal protective clothing if specified.
2. Couple the implement onto the tractor.
3. Close the drainage flap.
4. *To open the swivelling cover tarpaulin:*
   Actuate the *"beige"* tractor control unit.
5. Check the spreading material hopper for residues or foreign objects.
6. Briefly run the floor belt before filling the hopper.
7. Fill the spreading material hopper evenly.

6.9 Preparing the machine for road travel

CMS-T-00012715-B.1

6.9.1 Removing spreading material residues

CMS-T-00012763-A.1

Spreading material residues remaining on the floor belt and spreader unit can fall onto the road.

- Remove spreading material residues from the implement.

6.9.2 Adjusting the brake power of the dual-circuit pneumatic brake system

CMS-T-00012110-A.1

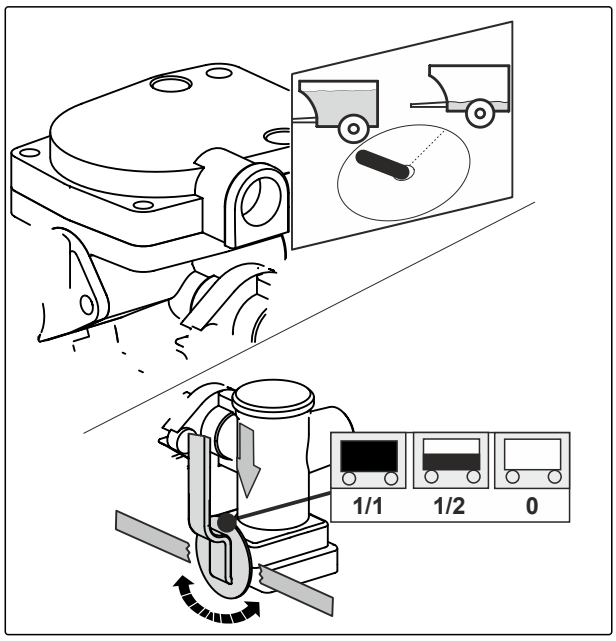
If the implement is equipped with a manually adjustable brake valve, the brake power can be adapted to the load status.

There are 2 different brake valves.

- Set the rotary knob to the symbol for the load status

  or

  Turn the hand lever so that the symbol for the load status is pointing to the arrow on the brake valve.

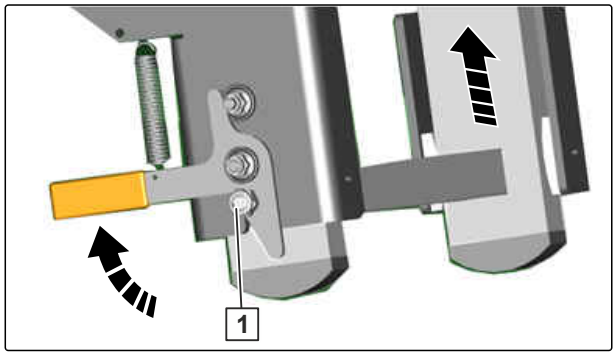


CMS-I-00007784

6.9.3 Locking the ladder in transport position

CMS-T-00013032-A.1

1. Push up the ladder.
2. Lock the ladder locking mechanism with the lever.
3. Check the stop [1] of the ladder locking mechanism.

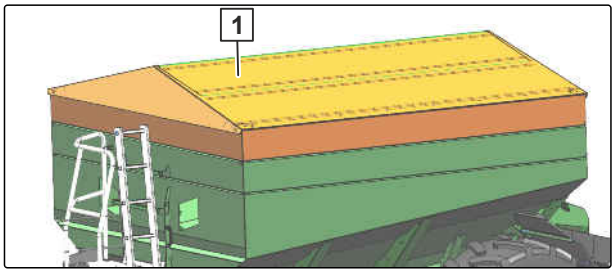


CMS-I-00008276

6.9.4 Closing the swivelling cover tarpaulin

CMS-T-00012766-A.1

► *To close the swivelling cover tarpaulin* **1**:
Actuate the *"beige"* tractor control unit.



CMS-I-00008277

6.9.5 Switching off the work lights

CMS-T-00013341-C.1

► *To avoid blinding other road users, switch off* the work lights according to *"ISOBUS"* operating manual

or

"control computer" operating manual

or

using the rocker switch.

Using the machine 7

CMS-T-00012716-C.1

7.1 Checking the spread rate

CMS-T-00012767-B.1

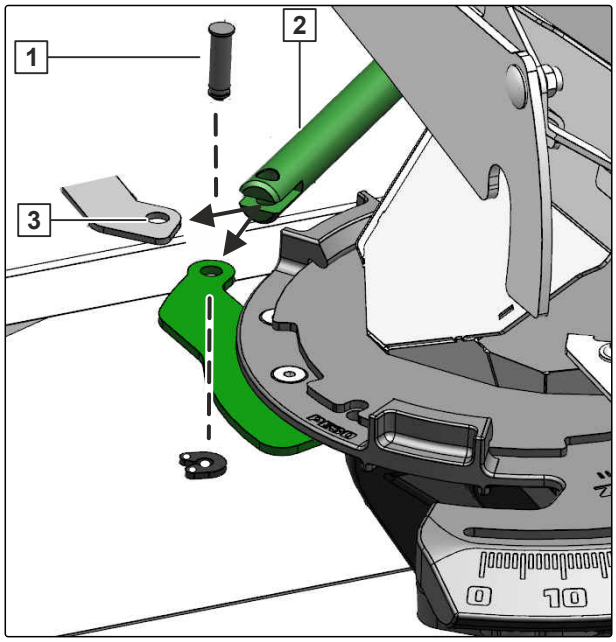
7.1.1 Preparing the spread rate check for fertiliser

CMS-T-00013210-B.1

7.1.1.1 ISOBUS: decoupling the delivery system motor

CMS-T-00012768-A.1

1. Remove the locking ring.
2. Pull out the pin [1].
3. Swivel the cylinder rod [2] of the delivery system motor into parking position [3].
4. Fasten the cylinder rod with the pin and secure with the locking ring.
5. Decouple the delivery system motor on the left and right.



CMS-I-00008278

7.1.1.2 Preparing the hopper tips

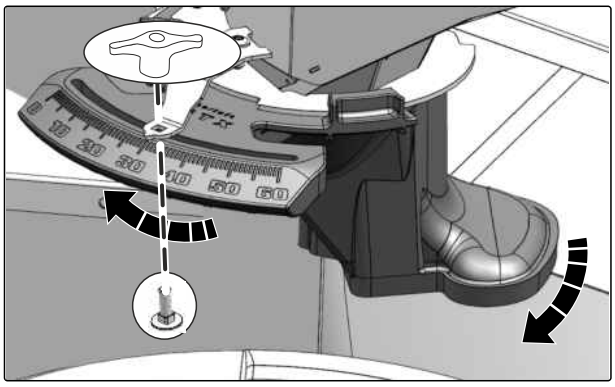
CMS-T-00013211-A.1

1. *To rule out small movements of the spreading discs:*
   Set the speed pre-selection of the tractor PTO shaft to 0 1/min.

2. *EasySet:*
   Remove the bolt for the scale on the delivery system.

3. Turn the hopper tip to the left until the hopper tip can be taken off downward.

4. Take off both hopper tips.

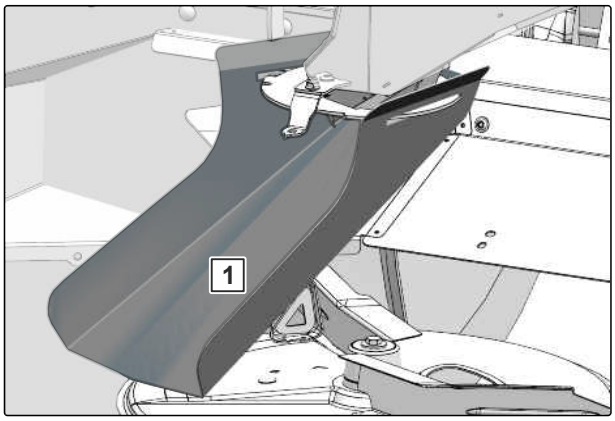


CMS-I-00008381

5. Hook the fertiliser chute **1** onto the funnel chute.

6. Install the fertiliser chute on both sides.

7. Perform a brief test run before the spread rate check.



CMS-I-00008279

7.1.2 Determining the calibration factor for the spreading material

CMS-T-00012769-B.1

The calibration factor is determined during the spread rate check.

To do so, a collected spread rate is compared to the theoretical spread rate, and the calibration factor is determined.

1. *If the calibration factor should be determined with a low spread rate:*
   Place a bucket under each fertiliser chute and collect the spreading material

   or

   If the calibration factor should be determined with a high spread rate:
   Drive the implement into a storage area for spreading material and allow the spreading material to flow out.

2. Determine the calibration factor, see ISOBUS software operating manual or EasySet 2 operating manual.

3. After checking the spread rate, reassemble the parts.

7.2 Spreading

CMS-T-00012770-B.1

WARNING

Danger due to ejected parts from worn spreading vanes

- ▶ Check the spreading vanes for visible defects every day before operation.

The technical condition of the spreading vanes plays an important role in uniform fertiliser lateral distribution on the field. Worn spreading vanes can cause the formation of stripes.

REQUIREMENTS

- ✓ Working width and lateral distribution checked with the mobile test rig or EasyCheck

1. Switch on the control terminal or control computer.

2. Check the settings on the control terminal or control computer.

3. Run the spreading discs at the nominal speed.

4. Drive onto the field.

5. Operate the implement using the control terminal or control computer, see ISOBUS software or EasySet 2 control computer operating manual.

6. Switch on spreading at the switch-on point from the setting chart

   or

   Switching on automatically with Section Control.

7. After longer road transport with a full spreading material hopper, make sure the implement is spreading properly when starting operation.

8. *When boundary spreading begins:*
   Switch on the boundary spreading system and drive around the periphery of the field.

9. Switch off the boundary spreading system after boundary spreading.

10. After spreading, switch off the spreading operation.

    or

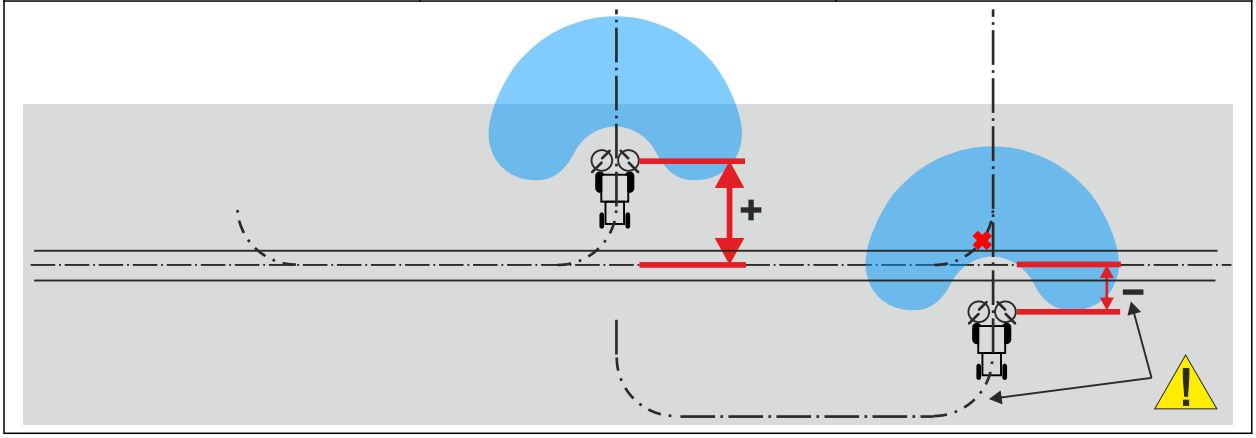
    Switching off automatically with Section Control.

7.3 Adjusting the switch-off point for the driving style

CMS-T-00012771-A.1

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

- With the distribution-optimised driving style, it is not possible to turn into the headland tramline in many cases, because the shutters close too late with small or negative switch-off points.
- 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. This is not positive for fertiliser distribution on the headlands.

	Tramline-optimised driving style	Distribution-optimised driving style
		

► For the distribution-optimised driving style, read the switch-off point from the setting chart

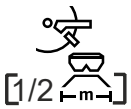
or

For the distribution-optimised driving style, select a switch-off point of at least 7 m.

7.4 Adapting the settings for boundary spreading of fertiliser

CMS-T-00012772-B.1

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

		Elongation of the spreading range toward the boundary with more fertiliser toward the outside	Elongation of the spreading range toward the field with less fertiliser toward the outside
1.		Set the boundary spreading telescope to a higher value.	Set the boundary spreading telescope to a lower value.
2.		Exchange the boundary spreading telescope. A->A+->B->C->D	Exchange the boundary spreading telescope. D->C->B->A+->A
3.		Increase spreading disc speed.	Reduce the spreading disc speed.
4.	X	Do not use the boundary spreading system.	

► Enter the settings in steps in the specified sequence.

7.5 Using the boundary spreading device for lime

CMS-T-00012773-A.1

1. *To lower the boundary spreading device into the spread fan:*
   Actuate the *"blue"* tractor control unit.

2. Drive along the field boundary at a distance of half the working width while spreading.

3. *To deactivate the boundary spreading device:*
   Actuate the *"blue"* tractor control unit.

7.6 Headland

CMS-T-00013238-B.1

7.6.1 Turning the implement without double shutter

CMS-T-00012774-B.1

1. *When the switch-off point according to the setting chart has been reached:*
   

   Stop spreading.

➡ Spreading material residues remain on the end of the conveyor belt.

2. Turn on the headland and drive back onto the field.

3. Run the spreading discs at the nominal speed.

4. *When the switch-on point according to the setting chart has been reached:*
   

   Start spreading.

7.6.2 Turning on the headlands with double shutter

CMS-T-00013239-B.1

NOTE

When spreading with Section Control, spreading operating stops and starts automatically.

1. 

   Stop spreading approximately 17 m before the switch-off point.

➡ The double shutter closes.

➡ The conveyor belt continues running until the fertiliser behind the double shutter is spread.

➡ Spreading stops at the switch-off point.

2. Turn on the headland and drive back onto the field.

3. Run the spreading discs at the nominal speed.

4. 

Start spreading approximately 10 m before the switch-on point.

➡ The spreading material reaches the spreading disc at the switch-on point.

7.7 After spreading operation

CMS-T-00012775-A.1

▶ Stop the spreading disc drive.

7.8 Emptying the hopper

CMS-T-00012776-A.1

DANGER

Risk of injury from rotating spreading discs

Injuries can be sustained by touching the rotating spreading discs or ejected fertiliser while emptying the hopper.

▶ Stop the spreading disc drive before emptying the hopper.

CAUTION

Risk of injury due to stumbling on the running floor belt

▶ Do not step onto the floor belt when emptying the hopper.

▶ Empty the hopper, see ISOBUS TX software operating manual and EasySet 2 operating manual.

7.9 Using the camera system

CMS-T-00014817-B.1

WARNING

Risk of accident due to restricted field of vision of the camera system

- Before manoeuvring, ensure that there are no persons or objects in the driving area by taking a direct look.
- Also use the exterior mirror for the largest possible coverage of the field of vision.

NOTE

Equipment with a non-certified camera system does not replace the marshalling person in road traffic.

NOTE

The position and orientation of the cameras of the certified camera system may not be changed.

1. *To check the camera system:*
   Check the locking mechanism of the plug-in connection.

2. *To use the certified camera system:*
   Switch on the screen with the *"POWER"* **1** button.

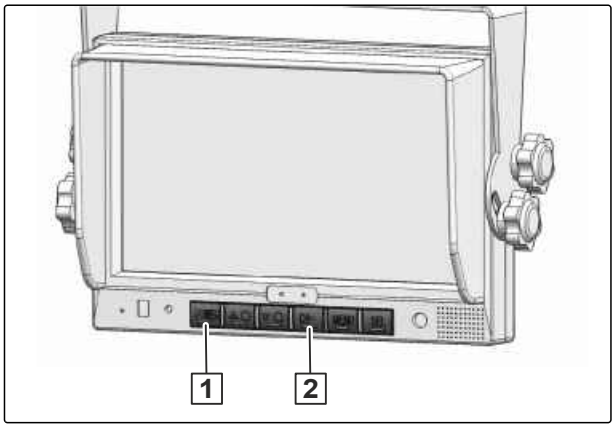
➡ The image from the camera will be shown on the screen.

3. *To select the displayed camera:*
   Press the *"CH+"* **2** button.

➡ Via the display mode, it is possible to display one camera or both cameras.

4. *To switch off the camera system:*
   Switch off the screen with the *"POWER"* button.

5. For other settings, observe the operating manual for the camera system.



CMS-I-00009566

Eliminating faults

8

CMS-T-00012706-B.1

Errors	Cause	Solution
The double shutter is not responding	Blockage on the double shutter	► see page 96
Uneven fertiliser lateral distribution	Fertiliser deposits on spreading discs and spreading vanes	► Clean the spreading vanes and spreading discs.
	Differences in the fertiliser properties compared to the setting chart specifications	► Contact AMAZONE FertiliserService under the phone number 05405 501 111.
Too much fertiliser in the tractor track	The spreading vanes and outlets are defective or worn.	► Check the spreading vanes and outlets. ► Replace defective or worn parts promptly.
The floor belt is not conveying	Oil pressure is too low.	► Increase the oil pressure from the tractor.
	The conveyor belt slips.	► see page 96
The swivelling cover tarpaulin does not open or opens too fast	The throttle is incorrectly adjusted.	► Adjust the throttle.
No hydraulic functions	The oil supply on the tractor is not switched on.	► Switch on the oil supply on the tractor.
	Power supply to the valve block is interrupted	► Check the line, plug and contacts.
	The oil filter is contaminated.	► see page 97
The control terminal or control computer is not working	The power supply is defective.	► Check the power supply to the control terminal or control computer.
Vibration of the TS30 spreading discs	Lacking balancing weight	► see page 97
Jack damages the crops	Jack installed too low	**WORKSHOP WORK** ► Install the jack higher up.

The double shutter is not responding

CMS-T-00013038-A.1

1. *To eliminate the blockage:*
   Activate the simulated speed.

2. Open and close the shutters in the *"Emptying"* menu.

WARNING Risk of crushing fingers in the electrically actuated shutters

- *When the shutters are being opened or closed:*
  Direct people out of the working range of the shutters.

3. Before working on the bottom group, switch off the control computer.

The floor belt is not conveying

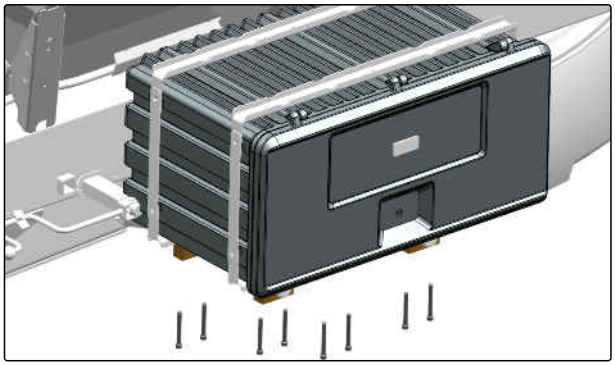
CMS-T-00013041-A.1

1. Clean the inside of the conveyor belt, see page 118

The conveyor belt is pretensioned in the floor belt. Tension the conveyor belt on both sides through the openings in the frame side sections if it is running unevenly.

2. Loosen the 8 bolts underneath the transport box on the left.

3. Take off the transport box outwards.



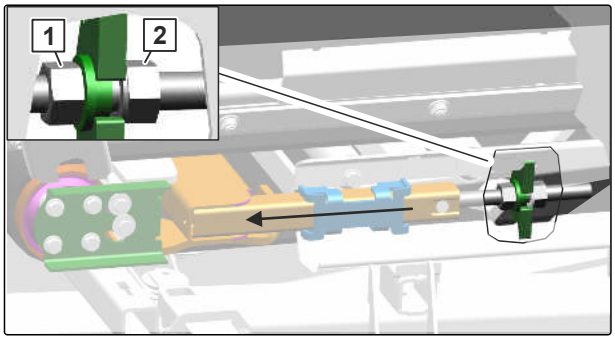
CMS-I-00008413

4. Remove the lock nut 2.

5. Using the adjustment nut 1, increase the pretension by half a turn of the spanner.

6. Tighten the lock nut.

7. Make the same adjustments evenly on both sides.



CMS-I-00008412

8. Install the transport box.

9. Check if the conveyor belt is driven evenly again.

No hydraulic functions

CMS-T-00013043-A.1

- Clean the oil filter.

  or

  Replace the oil filter.

Vibration of the TS30 spreading discs

CMS-T-00013243-A.1

When the telescope is installed in Position 1 and 3, vibrations occur due to technical reasons.

- *If the spreading disc TS30 is used with telescope D:*
  Install an additional balancing weight.

Parking the machine 9

CMS-T-00012694-B.1

9.1 Applying the parking brake

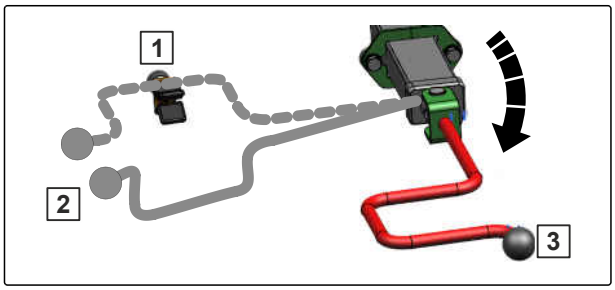
CMS-T-00013248-A.1

The parking brake requires approx. 20 kg manual force to be applied.

1 Holding spring

2 Hand crank position for releasing and applying in the end area

3 Hand crank position for rapid releasing and applying



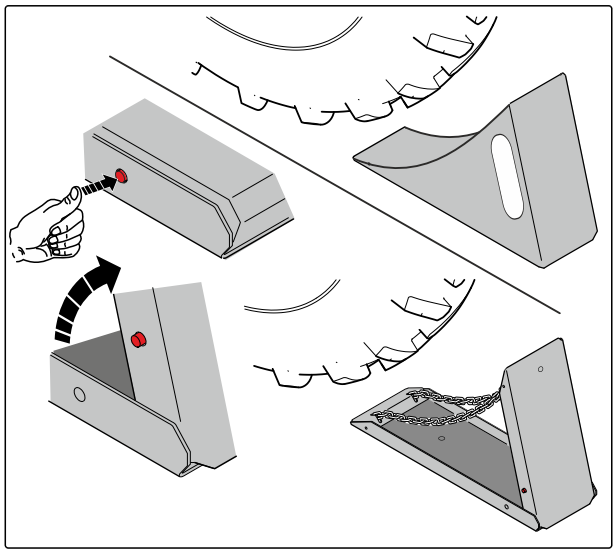
CMS-I-00008383

1. Pull the hand crank out of the holding spring.
2. *To actuate the parking brake:*
   Turn the hand crank clockwise until the brake cable is tensioned.
3. Fasten the hand crank back into the holding spring.

9.2 Placing the wheel chocks

CMS-T-00004316-C.1

1. Take the wheel chocks out from the holder.
2. For folding wheel chocks, actuate the press button and unfold the wheel chock.
3. Place the wheel chocks under the wheels.



CMS-I-00007809

9.3 Uncoupling the drawbar eye or ball coupling

CMS-T-00013396-A.1

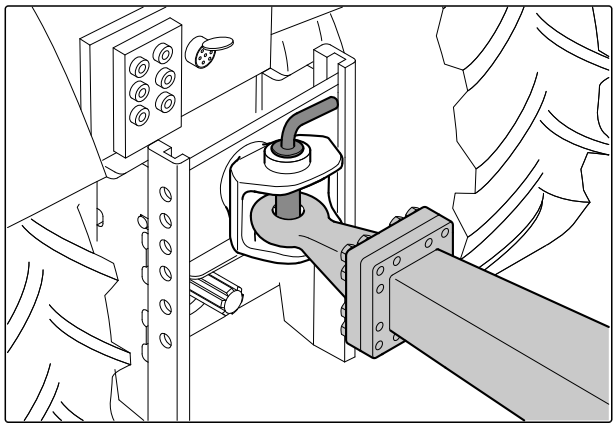
9.3.1 Uncoupling the drawbar eye

CMS-T-00013397-A.1

1. *To lower the jack:*
   Actuate the *"blue"* tractor control unit.

➡ Lift the implement until the ball bracket is lifted off of the hitch ball.

2. Uncouple the drawbar eye from the clevis coupling of the tractor.



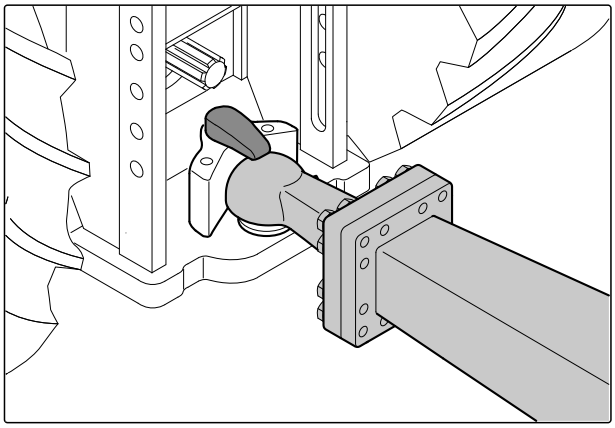
CMS-I-00003557

9.3.2 Uncoupling the ball hitch coupling

CMS-T-00013398-A.1

1. Unlock the ball hitch coupling.
2. *To lower the jack:*
   Actuate the *"blue"* tractor control unit.

➡ Lift the implement until the ball bracket is lifted off of the hitch ball.



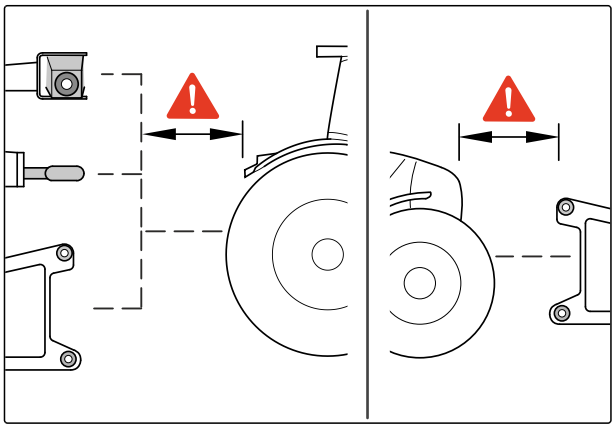
CMS-I-00003558

9.4 Driving the tractor away from the implement

CMS-T-00005795-D.1

There must be enough space between the tractor and implement so that the supply lines can be uncoupled without obstructions.

▶ Drive the tractor away from the implement, leaving a sufficient distance.

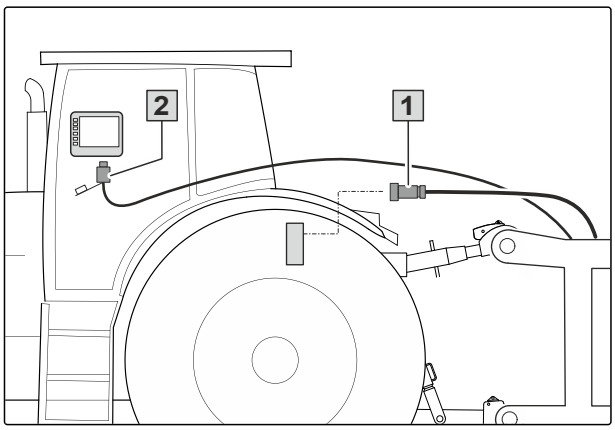


CMS-I-00004045

9.5 Uncoupling the ISOBUS or control computer

CMS-T-00006174-D.1

1. Unplug the connector of the ISOBUS line **1** or the control computer line **2**.
2. Protect the plug with a dust cap.
3. Hang the plug in the hose cabinet.

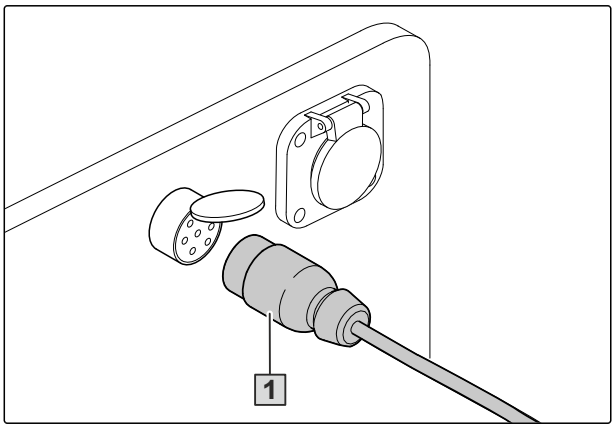


CMS-I-00006891

9.6 Uncoupling the power supply

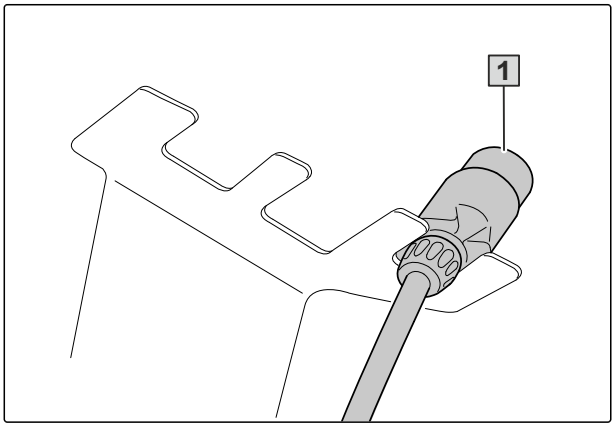
CMS-T-00001402-H.1

1. Pull out the plug [1] for the power supply.



CMS-I-00001048

2. Hang the plugs [1] in the hose cabinet.

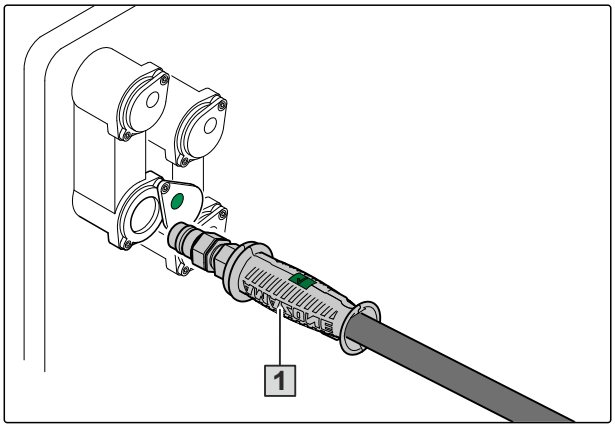


CMS-I-00001248

9.7 Disconnecting the hydraulic hose lines

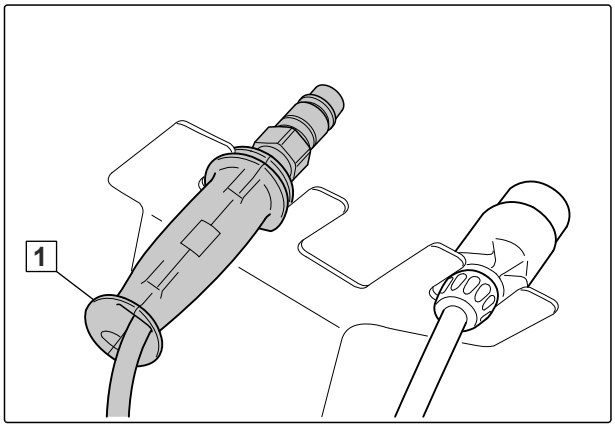
CMS-T-00000277-F.1

1. Secure the tractor and implement.
2. Put the control lever on the tractor control unit in float position.
3. Disconnect the hydraulic hose lines [1].
4. Put the dust caps on the hydraulic sockets.



CMS-I-00001065

5. Hang the hydraulic hose lines [1] in the hose cabinet.

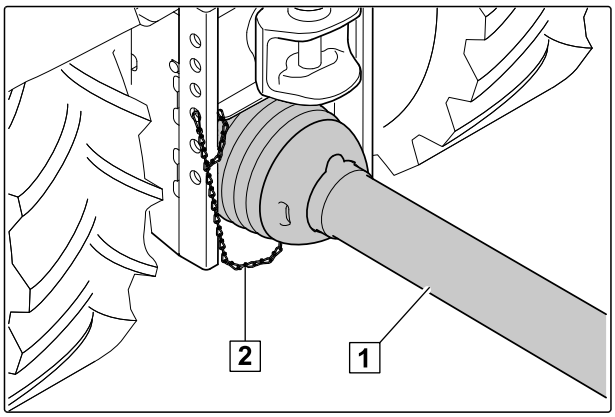


CMS-I-00001250

9.8 Uncoupling the universal joint shaft

CMS-T-00001843-C.1

1. Remove the safety chain [2] from the tractor.
2. Pull on the pull sleeve [1] of the universal joint shaft.
3. Pull off the universal joint shaft from the tractor PTO shaft.
4. Place the universal joint shaft in its holder on the implement.

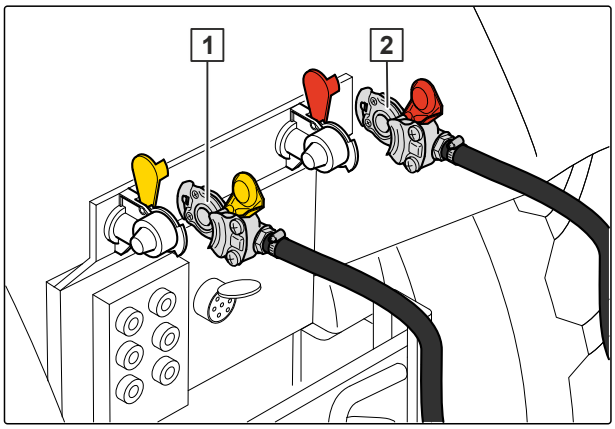


CMS-I-00001069

9.9 Uncoupling the dual-circuit pneumatic brake system

CMS-T-00004570-D.1

1. Uncouple the red coupling head of the brake line [2] from the tractor.
2. Couple the red coupling head with the empty coupling on the implement.
3. Uncouple the yellow coupling head of the brake line [1] from the tractor.
4. Couple the yellow coupling head with the empty coupling on the implement.
5. Close the tractor coupling head caps.



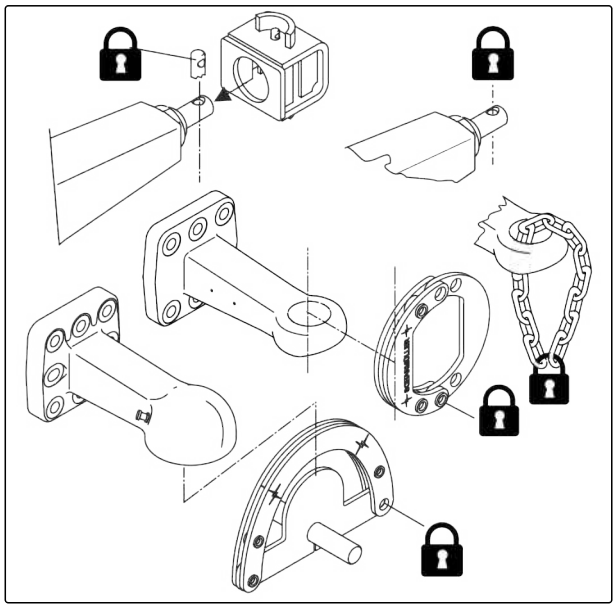
CMS-I-00003559

9.10 Putting on the safety device against unauthorised use

CMS-T-00005090-B.1

1. Put the safety device against unauthorised use on the hitch device.

2. Put on the padlock.



CMS-I-00003534

Repairing the machine 10

CMS-T-00012703-H.1

10.1 Maintaining the implement

CMS-T-00012705-H.1

10.1.1 Maintenance schedule

After initial operation		
Checking the hydraulic hose lines	see page 111	
Changing the oil in the angular gearbox and centre gearbox	see page 113	

After the first 10 operating hours		
Configuring the fill level indicator	see page 105	

As required		
Carrying out brake matching for the brake system	see page 107	

Daily		
Checking the TS fertiliser spreading vanes	see page 106	
Checking the lime spreading vanes	see page 106	
Checking the conveyor belt	see page 107	
Draining the compressed air tank	see page 109	
Checking the compressed air tank	see page 109	

Every 50 operating hours		
Checking the ball hitch coupling	see page 113	
Checking the drawbar eye	see page 114	

Every 50 operating hours / Weekly		
Checking the wheels and tyres	see page 110	
Checking the hydraulic hose lines	see page 111	
Check the hydraulic oil filter for soiling	see page 112	

Every 200 operating hours / Every 3 months		
Checking the brake pads	see page 108	
Checking the dual-circuit pneumatic brake system	see page 108	

Every 200 operating hours / Every 12 months		
Changing the oil in the angular gearbox and centre gearbox	see page 113	

Every 1000 operating hours / Every 12 months		
Configuring the fill level indicator	see page 105	
Checking the automatic slack adjuster	see page 110	
Checking the wheel bearing	see page 111	**WORKSHOP WORK**
Checking the oil level in the conveyor belt gearbox	see page 112	

10.1.2 Configuring the fill level indicator

CMS-T-00015457-A.1

INTERVAL

- After the first 10 operating hours
- Every 1000 operating hours

  or

  Every 12 months

► *To configure the fill level indicator:*
see ISOBUS software operating manual.

10.1.3 Checking the TS fertiliser spreading vanes

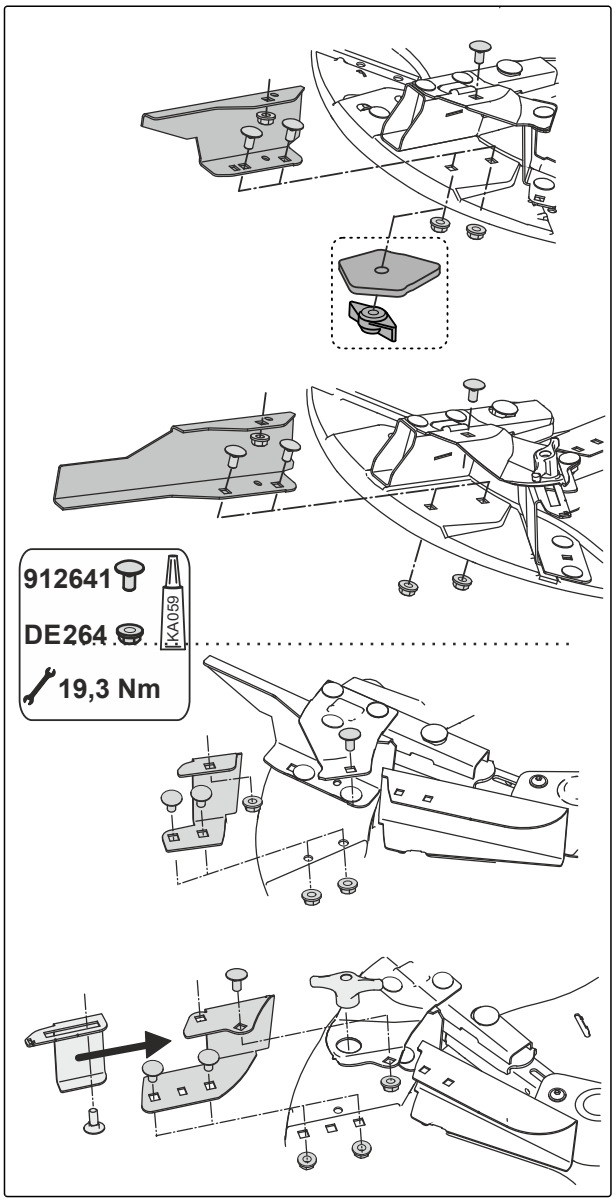
CMS-T-00012778-A.1

INTERVAL

- Daily

1. Check the spreading vanes and telescopes for ruptures and perforations.
2. Replace worn spreading vanes and telescopes.
3. *If the spreading disc TS30 is used with telescope D:*
   Install an additional balancing weight under the short spreading vane. Secure with the wing nut.
4. *To reach the specified tightening torque:*
   Apply assembly paste on the bolts.

➡ Required tightening torque: 19.3 Nm



CMS-I-00008388

10.1.4 Checking the lime spreading vanes

CMS-T-00012779-A.1

INTERVAL

- Daily

1. Check the lime spreading vanes for ruptures and perforations.
2. Replace worn lime spreading vanes.

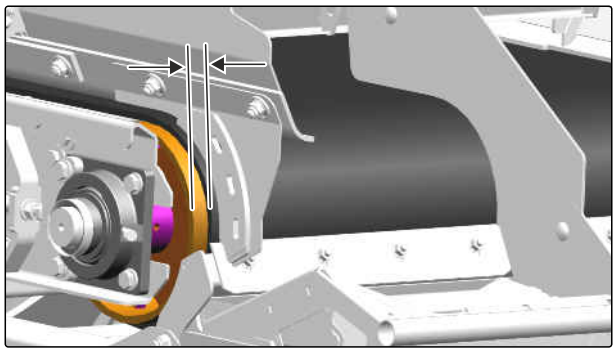
10.1.5 Checking the conveyor belt

CMS-T-00012780-A.1

INTERVAL

- Daily

1. Before operation, check that the conveyor belt is centred on the deflector rollers.
2. During operation, make sure that the conveyor belt runs evenly.
3. *If the conveyor belt runs unevenly:*
   Retighten the conveyor belt on both sides.



CMS-I-00008411

10.1.6 Carrying out brake matching for the brake system

CMS-T-00013379-A.1

INTERVAL

- As required

For optimum brake performance with minimal wear, it is recommended to carry out brake matching between the tractor and the implement.

1. *To optimise the brake performance:*
   After a suitable running period, have the brake matching checked at a specialist workshop.
2. *To prevent excessive wear on the brake pads:*
   Have the brake matching performed by a specialist workshop.
3. *To prevent braking difficulties:*
   Have the implements adjusted according to EC Directive 71/320.

10.1.7 Checking the brake pads

CMS-T-00004984-E.1

INTERVAL

- Every 200 operating hours

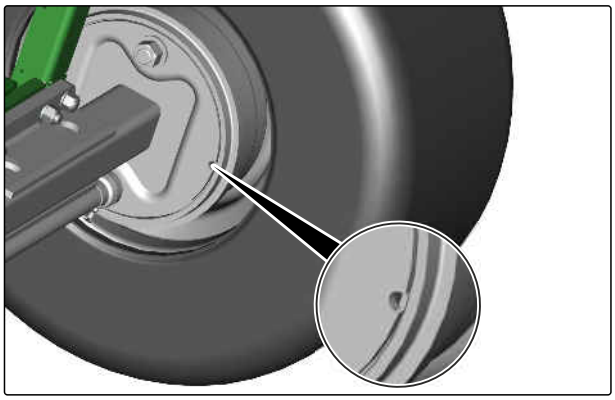
  or

  Every 3 months

Test criteria:

- Wear limit: 2 mm
- Damage
- Coarse dirt

1. Check the brake pads through the inspection holes.



CMS-I-00003599

WORKSHOP WORK

2. Replace the brake pads if they are worn, damaged or soiled.

10.1.8 Checking the dual-circuit pneumatic brake system

CMS-T-00004985-G.1

INTERVAL

- Every 200 operating hours

  or

  Every 3 months

1. Check the compressed air lines and bellows for damage.

WORKSHOP WORK

2. Replace damaged components.

Test criteria	Setpoints
Pressure drop in the dual-circuit pneumatic brake system	maximum of 0.15 bar in 10 minutes
Air pressure in the compressed air tank	6 bar-8.2 bar
Brake cylinder pressure	0 bar when the brake is not actuated

3. Check the specified test criteria.

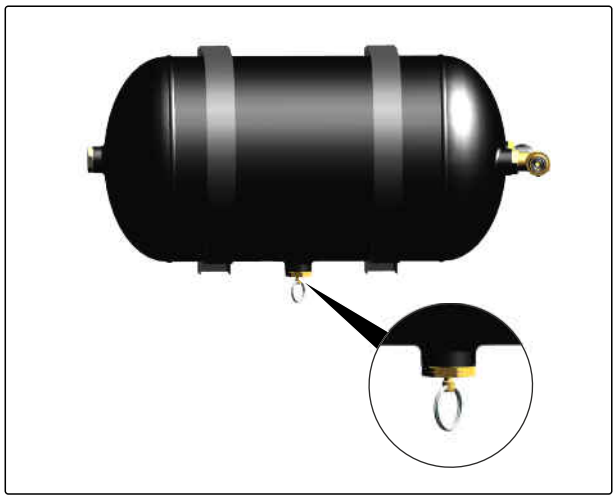
10.1.9 Draining the compressed air tank

CMS-T-00004588-E.1

INTERVAL

- Daily

1. *To fill the compressed air tank,*
   run the tractor engine for 3 minutes.
2. Switch off the tractor engine.
3. *To drain the water,*
   Pull the drainage valve to the side using the ring.



CMS-I-00003555

10.1.10 Checking the compressed air tank

CMS-T-00004589-D.1

INTERVAL

- Daily

1. Check the compressed air tank for damage and corrosion.
2. Check the tensioning belts of the compressed air tank.
3. *If the tensioning belts are loose,*
   tighten the tensioning belts with nuts.

WORKSHOP WORK

4. Replace the compressed air tank if damaged or corroded.
5. *If the tensioning belts are damaged or cannot be tightened,*
   replace the tensioning belts.

10.1.11 Checking the automatic slack adjuster

CMS-T-00013380-B.1

INTERVAL

- Every 1000 operating hours

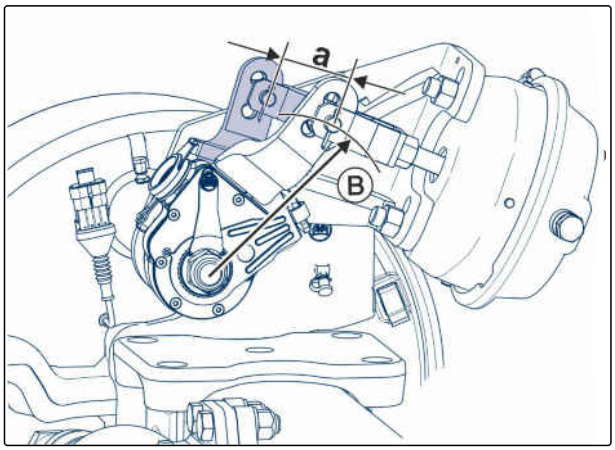
  or

  Every 12 months

1. Secure the implement against rolling away. Release the service brake and parking brake.

The free travel *"a"* may not exceed 15 % of the connected brake lever length *"b"*.

2. *To check the free travel,*
   manually actuate the slack adjuster.



CMS-I-00008395

WORKSHOP WORK

3. *If the free travel on the slack adjuster is outside of the tolerance:*
   Check the automatic readjustment.

10.1.12 Checking the wheels and tyres

CMS-T-00013383-C.1

INTERVAL

- Every 50 operating hours

  or

  Weekly

1. Check the tyre inflation pressure according to the sticker on the rim.

2. Tighten the bolts according to the tightening torque in the technical data.

3. Check the tyres for damage.

10.1.13 Checking the wheel bearing

CMS-T-00014967-B.1

WORKSHOP WORK

- Every 1000 operating hours

  or

  Every 12 months

1. Check the wheel bearing.
2. Adjust the bearing clearance if necessary.
3. Regrease the wheel bearing.

10.1.14 Checking the hydraulic hose lines

CMS-T-00002331-G.1

INTERVAL

- After initial operation
- Every 50 operating hours

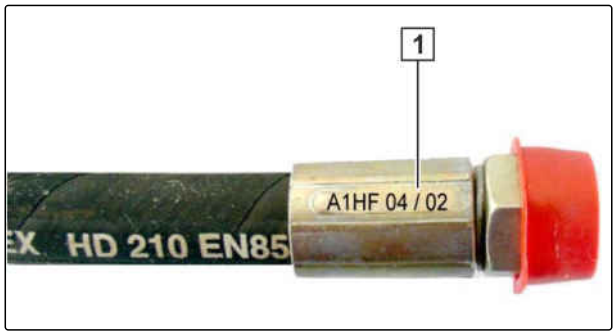
  or

  Weekly

1. Check the hydraulic hose lines for damage, such as chafing point, cuts, tears and deformation.
2. Check the hydraulic hose lines for leaks.
3. Retighten loose bolted connections.

Hydraulic hose lines must not be more than 6 years old.

4. Check the manufacturing date 1.



CMS-I-00000532

WORKSHOP WORK

5. Replace worn, damaged or aged hydraulic hose lines.

10.1.15 Check the hydraulic oil filter for soiling

CMS-T-00012782-A.1

INTERVAL

- Every 50 operating hours

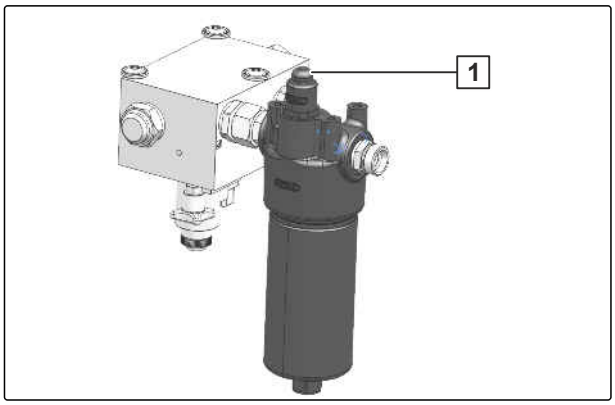
  or

  Weekly

1. Heat the hydraulic oil up to the operating temperature.
2. Press in the contamination indicator **1**.
3. Continue working with the implement.
4. Observe the contamination indicator.

- Green: oil filter is working
- Red: oil filter is contaminated

5. *If the contamination indicator is soiled:*
   Depressurise the hydraulic system. Change the oil filter.



CMS-I-00008448

10.1.16 Checking the oil level in the conveyor belt gearbox

CMS-T-00012781-A.1

INTERVAL

- Every 1000 operating hours

  or

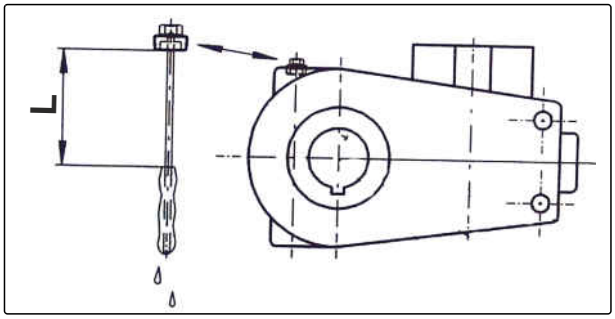
  Every 12 months

There is no need to change the oil.

1. Park the implement on a horizontal surface.
2. Take out the oil dipstick.
3. Measure the oil-free length *"L"*.

➡ Correct oil level at L = 132 mm

4. *If there is too little oil in the conveyor belt gearbox:*
   Refill the gear oil.
5. Install the oil dipstick.



CMS-I-00008400

10.1.17 Changing the oil in the angular gearbox and centre gearbox

CMS-T-00012783-B.1

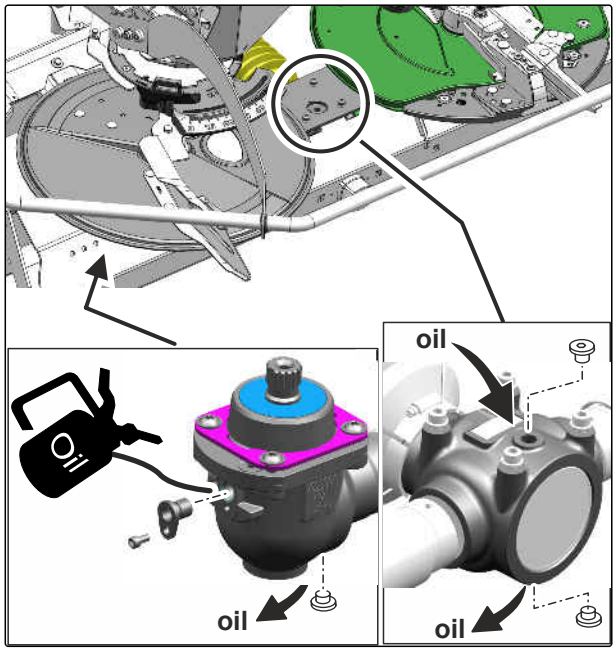
INTERVAL

- After initial operation
- Every 200 operating hours

  or

  Every 12 months

1. Park the implement on a horizontal surface.
2. Place an oil collection bucket under the oil drain outlet.
3. Remove the fill plug and drain plug.
4. Install the drain plug with a new copper washer.
5. Fill oil through the filling opening, refer to the technical data for oil specifications.
6. Install the fill plug with a new copper washer.
7. *If a sensor is installed in the fill plug:*
   Protect the sensor from moisture using enough grease.



CMS-I-00008399

10.1.18 Checking the ball hitch coupling

CMS-T-00006968-G.1

INTERVAL

- Every 50 operating hours

Ball hitch coupling	Wear dimension	Fixing bolts	Quantity	Bolt tightening torque
K80 (LI009)	82 mm	M16 10.9	8	300 Nm
K80 (LI040)	82 mm	M20 10.9	8	560 Nm
K80 (LI015)	82 mm	M20 10.9	12	560 Nm

1. Check the bolt tightening torques.
2. Check the ball hitch coupling for damage, deformation, cracks and wear.

WORKSHOP WORK

3. Replace the ball hitch coupling if damaged.

10.1.19 Checking the drawbar eye

CMS-T-00006969-F.1

INTERVAL

- Every 50 operating hours

Drawbar eye	Wear dimension	Fixing bolts	Quantity	Bolt tightening torque
D35 (LI038)	42 mm	M16 12.9	6	340 Nm
D40 (LI017)	41.5 mm	M16 10.9	6	300 Nm
D40 (LI006)	42.5 mm	M20 8.8	8	395 Nm
D46 (LI034)	48 mm	M20 10.9	12	550 Nm
D50 (LI037)	60 mm	M16 12.9	4	340 Nm
D50 (LI010)	51.5 mm	M16 10.9	8	300 Nm
D50 (LI059)	51.5 mm	M20 10.9	4	560 Nm
D50 (LI011)	51.5 mm	M20 8.8	8	410 Nm
D50 (LI060)	52.5 mm	M20 10.9	8	560 Nm
D51 (LI039)	53 mm	M20 10.9	12	600 Nm
D51 (LI059)	53 mm	M16 10.9	6	290 Nm
D58 (LI031)	60 mm	M20 10.9	12	550 Nm
D62 (LI007)	63.5 mm	M20 10.9	8	590 Nm
D79 (LI021)	81 mm	M20 10.9	12	550 Nm

1. Check the bolt tightening torques.

2. Check the drawbar eye for damage, deformation, cracks and wear.

WORKSHOP WORK

3. Replace the drawbar eye if damaged.

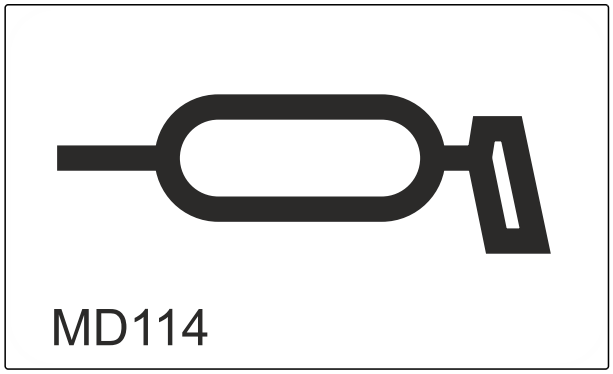
10.2 Lubricating the implement

CMS-T-00012704-B.1

IMPORTANT

Implement damage due to improper lubrication

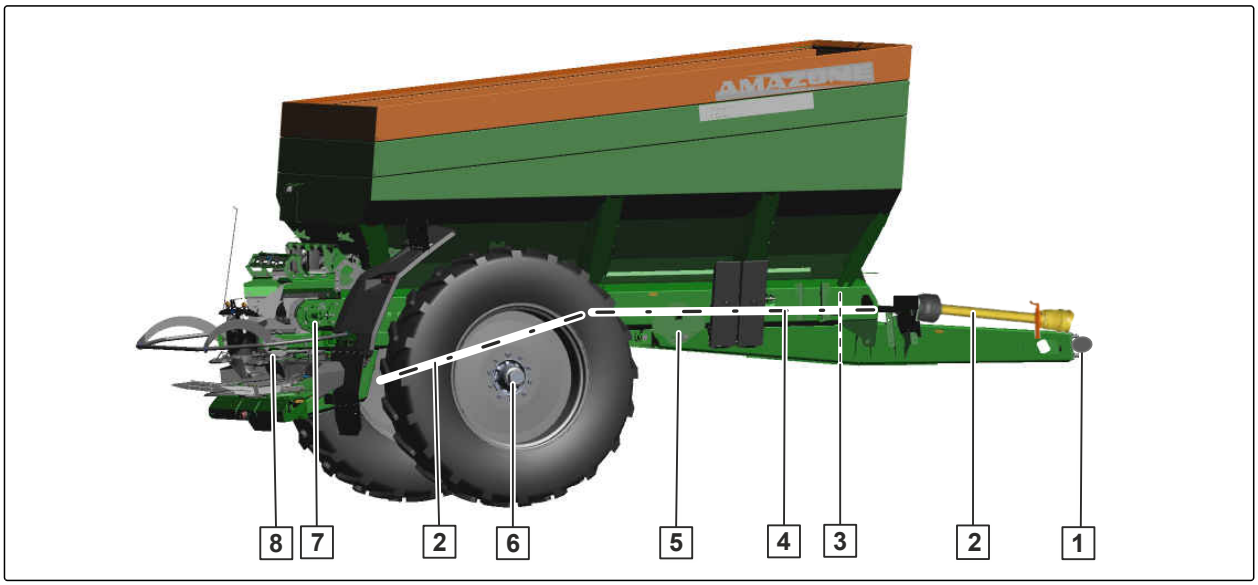
- Grease the implement at the marked lubrication points according to the lubrication schedule.
- *To ensure that dirt is not pressed into the lubrication points:*
  Thoroughly clean the grease nipples and the grease gun.
- Only grease the implement with the lubricants listed in the technical data.
- Press the dirty grease completely out of the bearings.



CMS-I-00002270

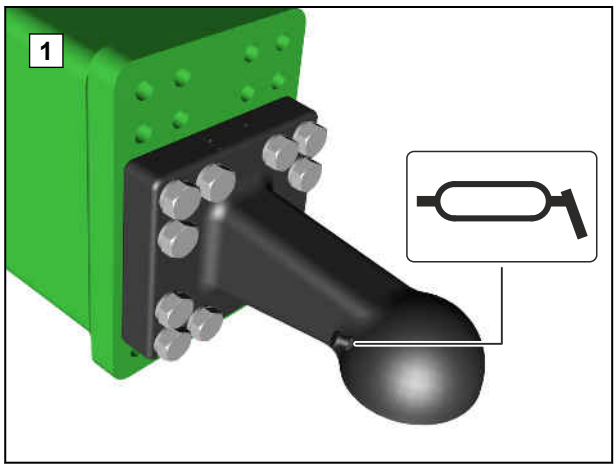
10.2.1 Overview of lubrication points

CMS-T-00013423-A.1



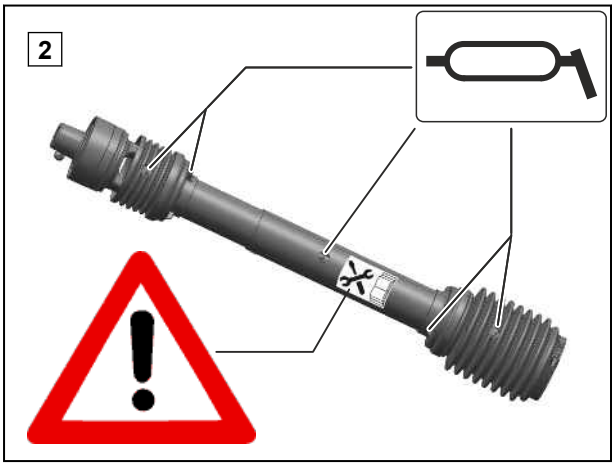
CMS-I-00008408

Every 10 operating hours

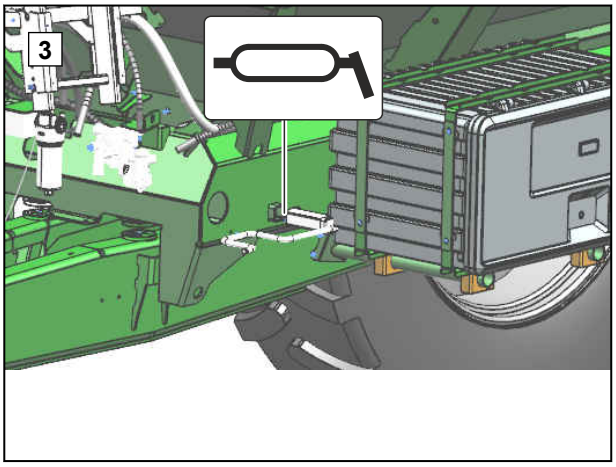


CMS-I-00006711

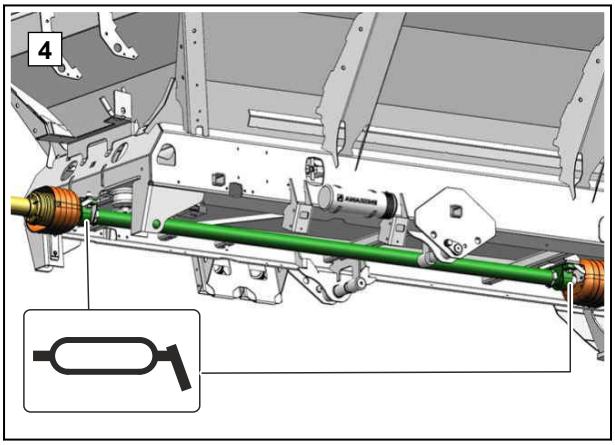
Every 50 operating hours



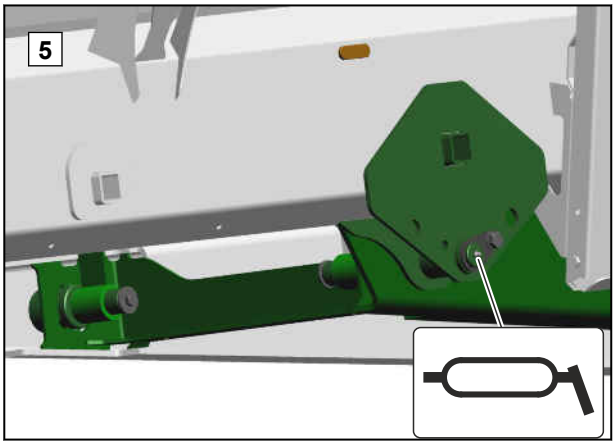
CMS-I-00003006



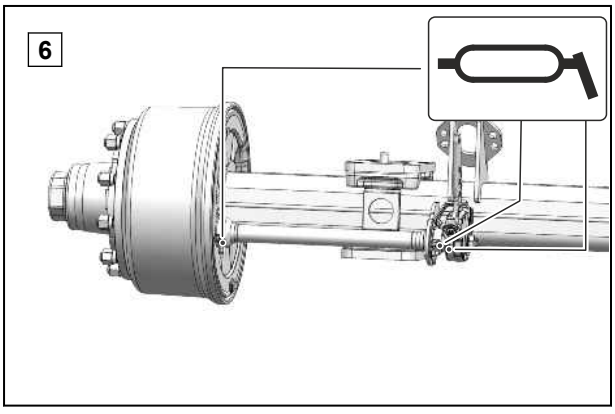
CMS-I-00008515



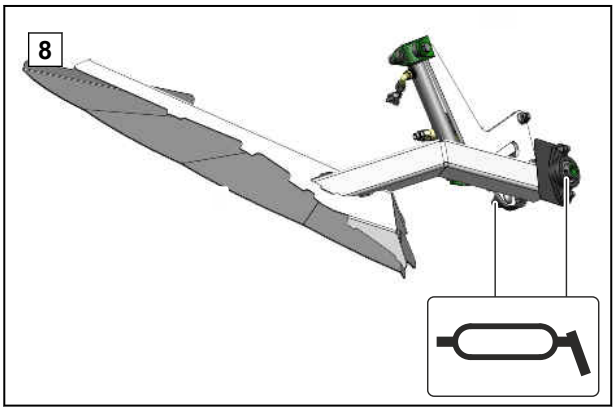
CMS-I-00008511



CMS-I-00008409

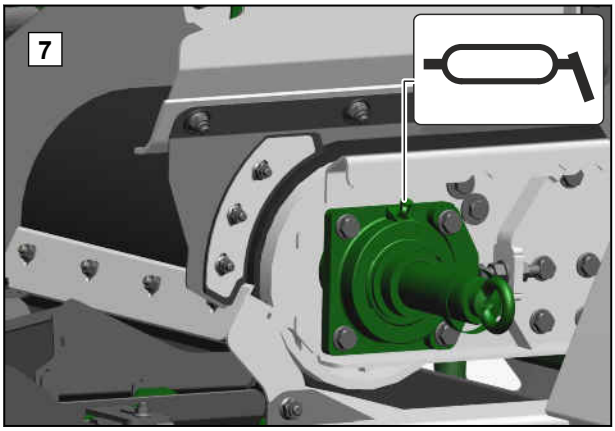


CMS-I-00008407



CMS-I-00008510

Every 100 operating hours



CMS-I-00008410

10.3 Cleaning the implement

CMS-T-00013246-A.1

10.3.1 Cleaning the implement

CMS-T-00000593-F.1

IMPORTANT

Risk of machine damage due to cleaning jet of the high-pressure nozzle

- Never direct the cleaning jet of the high-pressure cleaner or hot water high-pressure cleaner onto the marked components.
- Never aim the cleaning jet of high-pressure cleaners or hot water high-pressure cleaners on electrical or electronic components.
- Never aim the cleaning jet of the high pressure cleaner directly on lubrication points, bearings, rating plates, warning signs, and stickers.
- Always maintain a minimum distance of 30 cm between the high-pressure nozzle and the implement.
- Do not exceed a water pressure of 120 bar.

CMS-I-00002692

- Clean the machine with a high-pressure cleaner or a hot water high-pressure cleaner.

10.3.2 Cleaning the inside of the conveyor belt

CMS-T-00013247-A.1

The floor belt must be cleaned after spreading hygroscopic fertilisers.

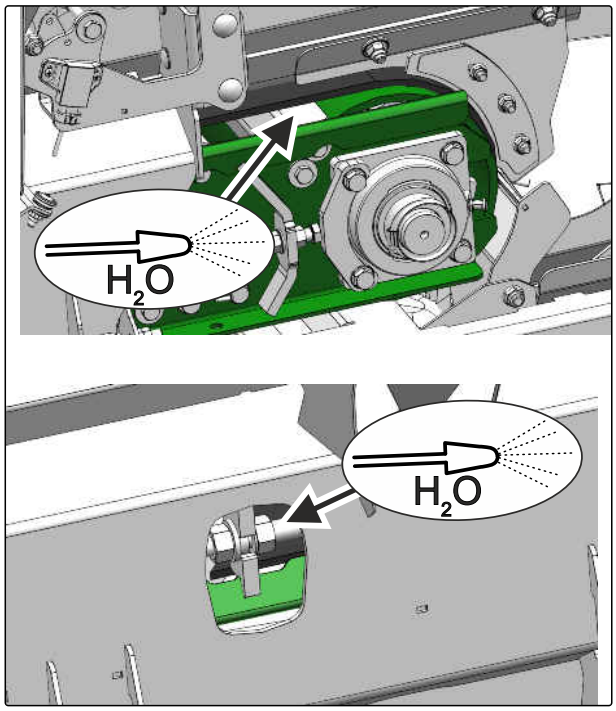
Swelling fertiliser residues impede the floor belt drive. The floor belt can slip and no longer convey the spreading material.

The floor belt can be cleaned at the rear deflection roller and at the belt tension adjustment device.

1. *ISOBUS:*
   On the control terminal, select the *"Emptying"* menu.
2. Start emptying.

➡ The floor belt is running.

3. Clean the inside of the conveyor belt intensively with the water pistol.
4. After cleaning, stop the emptying.



CMS-I-00008382

10.4 Storing the implement

CMS-T-00005282-A.1

IMPORTANT

Implement damage due to corrosion

Dirt attracts moisture and leads to corrosion.

► Store the implement only in a clean state and protected from the weather.

1. Clean the machine.
2. Protect unpainted components from corrosion using a suitable corrosion inhibitor.
3. Grease all lubrication points. Remove excess grease.
4. Park the implement in a sheltered place.

Manoeuvring the implement 11

CMS-T-00012395-A.1

11.1 Manoeuvring the implement with dual-circuit pneumatic brake system

CMS-T-00006898-D.1

If the implement is uncoupled from the tractor, the compressed air from the compressed air tank acts on the brakes and the wheels are blocked. To be able to move the uncoupled implement, the compressed air must be vented with the release valve on the brake valve.

WARNING

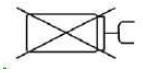
Risk of accident due to unbraked implement

- ▶ *To manoeuvre the implement:* Couple the implement to a suitable tractor using the coupling device.
- ▶ Manoeuvre the implement only at walking speed.

There are two versions of brake valves.

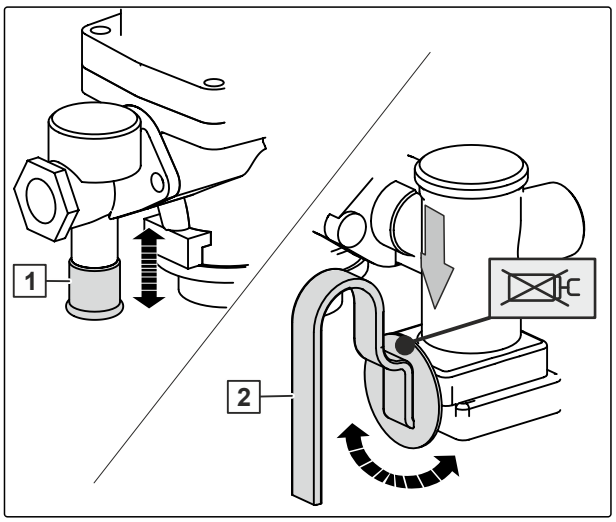
1. Press in the control knob [1] of the release valve up to the stop

   or

   Turn the hand lever [2] of the brake valve to the  position.

➡ The compressed air that acts on the brakes escapes.

2. Manoeuvre the implement.



CMS-I-00007826

3. Pull out the control knob of the release valve up to the stop

   or

   Adjust the hand lever of the brake valve to the load status.

➥ Compressed air flows back out of the compressed air tank to the brakes. The wheels are blocked again.

NOTE

To brake the implement again, there must be enough compressed air in the compressed air tank.

4. *If there is not enough compressed air:*
   Couple the dual-circuit pneumatic brake system to a tractor.

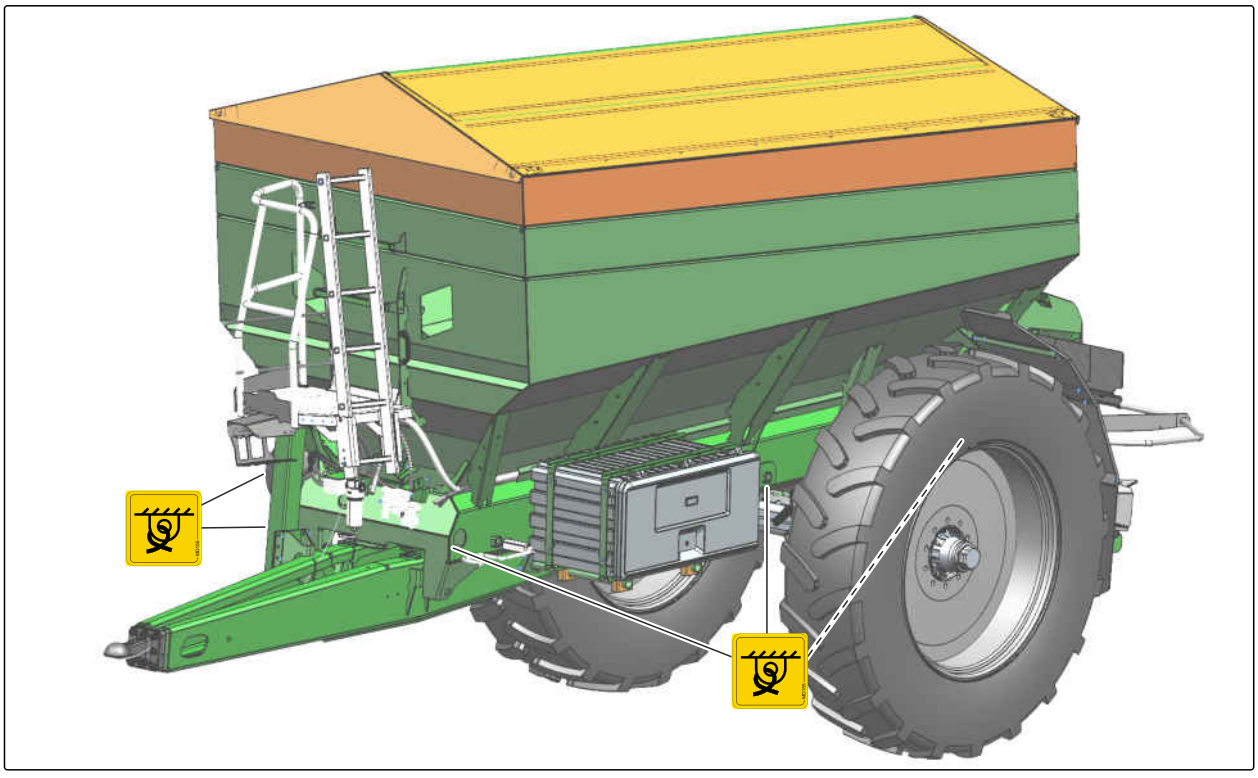
Loading the machine 12

CMS-T-00012718-B.1

12.1 Lashing the implement

CMS-T-00012719-B.1

The implement has 4 lashing points for lashing straps.



CMS-I-00008098

WARNING

Risk of accidents due to improperly attached lashing straps

If the lashing straps are not attached at the marked lashing points, the implement can be damaged during lashing and endanger safety.

- ▶ Attach the lashing straps only at the marked lashing points.

1. Put the implement on the transport vehicle.

2. Attach the lashing straps at the marked points.

3. Lash down the implement in compliance with the national regulations for load securing.

Disposing of the implement 13

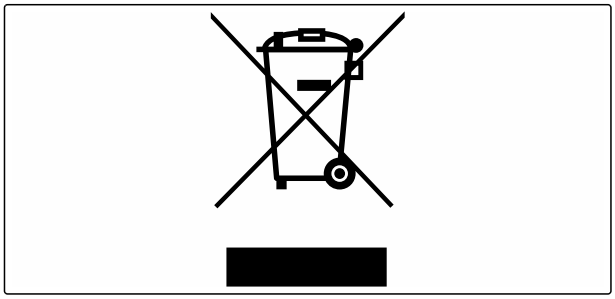
CMS-T-00010906-B.1

ENVIRONMENTAL INFORMATION

Environmental damage due to improper disposal

- Observe the regulations of the local authorities.
- Observe the symbols on the implement regarding disposal.
- Observe the following instructions.

1. Components with this symbol should not be disposed of with household waste.



CMS-I-00007999

2. Return batteries to the distributor

   or

   Dispose of batteries at a collection point.

3. Put recyclable materials in the recycling.

4. Treat operating materials like hazardous waste.

WORKSHOP WORK

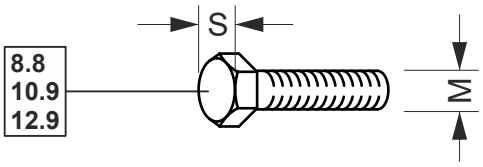
5. Dispose of the coolant.

Appendix 14

CMS-T-00012702-B.1

14.1 Bolt tightening torques

CMS-T-00000373-E.1



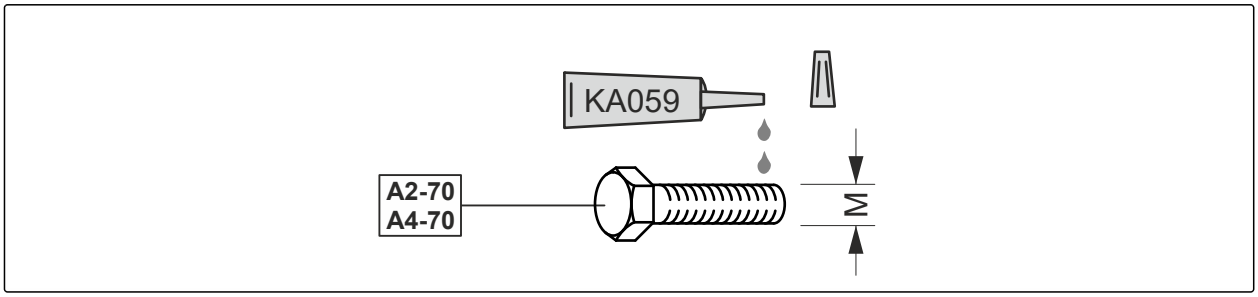
CMS-I-000260

NOTE

Unless specified otherwise, the bolt tightening torques listed in the table apply.

M	S	Strength classes		
		8.8	10.9	12.9
M8	13 mm	25 Nm	35 Nm	41 Nm
M8x1		27 Nm	38 Nm	41 Nm
M10	16(17) mm	49 Nm	69 Nm	83 Nm
M10x1		52 Nm	73 Nm	88 Nm
M12	18(19) mm	86 Nm	120 Nm	145 Nm
M12x1.5		90 Nm	125 Nm	150 Nm
M14	22 mm	135 Nm	190 Nm	230 Nm
M 14x1.5		150 Nm	210 Nm	250 Nm
M16	24 mm	210 Nm	300 Nm	355 Nm
M16x1.5		225 Nm	315 Nm	380 Nm
M18	27 mm	290 Nm	405 Nm	485 Nm
M18x1.5		325 Nm	460 Nm	550 Nm
M20	30 mm	410 Nm	580 Nm	690 Nm
M20x1.5		460 Nm	640 Nm	770 Nm

M	S	Strength classes		
		8.8	10.9	12.9
M22	32 mm	550 Nm	780 Nm	930 Nm
M22x1.5		610 Nm	860 Nm	1,050 Nm
M24	36 mm	710 Nm	1,000 Nm	1,200 Nm
M24x2		780 Nm	1,100 Nm	1,300 Nm
M27	41 mm	1,050 Nm	1,500 Nm	1,800 Nm
M27x2		1,150 Nm	1,600 Nm	1,950 Nm
M30	46 mm	1,450 Nm	2,000 Nm	2,400 Nm
M30x2		1,600 Nm	2,250 Nm	2,700 Nm



CMS-I-00000065

M	Tightening torque	M	Tightening torque
M4	2.4 Nm	M14	112 Nm
M5	4.9 Nm	M16	174 Nm
M6	8.4 Nm	M18	242 Nm
M8	20.4 Nm	M20	342 Nm
M10	40.7 Nm	M22	470 Nm
M12	70.5 Nm	M24	589 Nm

14.2 Other applicable documents

CMS-T-00012784-B.1

- Tractor operating manual
- Operating manual of the control terminal
- ISOBUS software or EasySet 2 on-board computer operating manual
- Universal joint shaft operating manual
- Third-party documentation for the axle and tyres

Directories

15

15.1 Glossary

CMS-T-00000513-B.1

M

Machine

Mounted implements are accessory parts of the tractor. However, mounted implements are always referred to as the implement in this operating manual.

O

Operating materials

Operating materials serve to ensure operational readiness. Operating materials include e.g. cleaning agents and lubricants such as lubricating oil, greases or cleaners.

T

Tractor

In this operating manual, the designation tractor is always used, even for other agricultural tractor units. Implements are mounted on the tractor or towed by the tractor.

15.2 Index

E

F

G

H

I

J

L

M

O

P

Q

R

S

T

U

W

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