



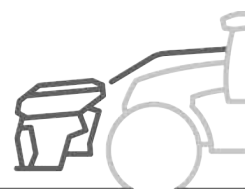
Original operating manual

Front-mounted hopper

FTender 1600

FTender 2200

FTender 2200-C



SmartLearning



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

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About this operating manual

1

CMS-T-00000081-I.1

1.1 Copyright

CMS-T-00012308-A.1

Reprinting, translation and reproduction in any form, including excerpts, require the written approval of AMAZONEN-WERKE.

1.2 Diagrams

CMS-T-005676-F.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-D.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-00005133-H.1

2.1 Basic safety instructions

CMS-T-00005134-H.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 had 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-00005135-B.1

2.1.3.1 Safety hazards on the machine

CMS-T-00005137-B.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.

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-00005136-A.1

Dangers areas on the machine

The following basic dangers are encountered in the danger areas:

The implement and its work tools move during operation.

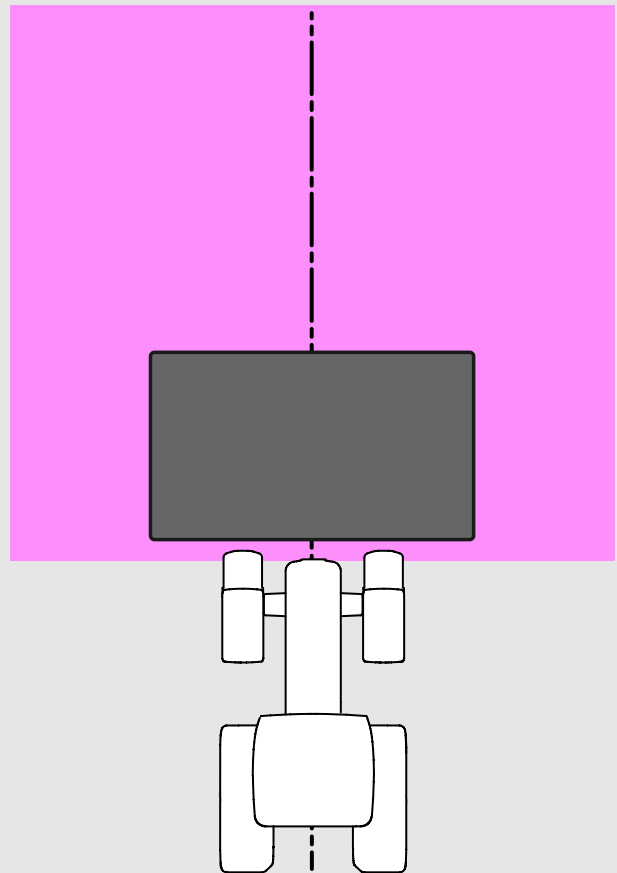
Hydraulically raised machine parts can descend unnoticed and slowly.

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 machine.
- ▶ *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-00003688

2.1.4 Safe operation and handling of the machine

CMS-T-00002304-I.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-E.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 power.*
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.
- ▶ 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.

2.1.5 Safe maintenance and modification

CMS-T-00002305-I.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-H.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 3-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-C.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 machine without using the intended access steps can slip, fall, and suffer severe injury.

- ▶ Use only the intended access steps
- ▶ *Dirt as well operating materials can impede walking safety and stability.*
Always keep steps and platforms clean and in proper condition, so that safe stepping and standing is ensured.
- ▶ Never climb onto the machine when it is in motion.
- ▶ Climb up and down facing the machine.
- ▶ When climbing up and down, maintain 3-point contact with the access steps and handrails: always keep two hands and one foot or two feet and one hand on the machine.
- ▶ When climbing up and down, never hold onto the control elements. Accidental actuation of control elements can unintentionally activate potentially dangerous functions.
- ▶ When climbing down, never jump off of the machine.

Intended use

3

CMS-T-00003605-B.1

- The implement is intended solely for professional use for the metering of seed and fertiliser according to Good Agricultural Practices.
- The implement is an agricultural machine to be mounted on the 3-point power lift of a tractor that meets the technical requirements.
- When driving on public roads, the implement, depending on the provisions of the applicable road traffic regulations, can be mounted and transported at the front of a tractor that meets the technical requirements.
- The machine may only be used and maintained by persons who fulfil the requirements. The personnel requirements are described in the section "*Personnel qualification*".
- The operating manual is part of the machine. The machine is solely intended for use in compliance with this operating manual. Uses of the machine that are not described in this operating manual can lead to serious personal injuries or even death and to machine 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.

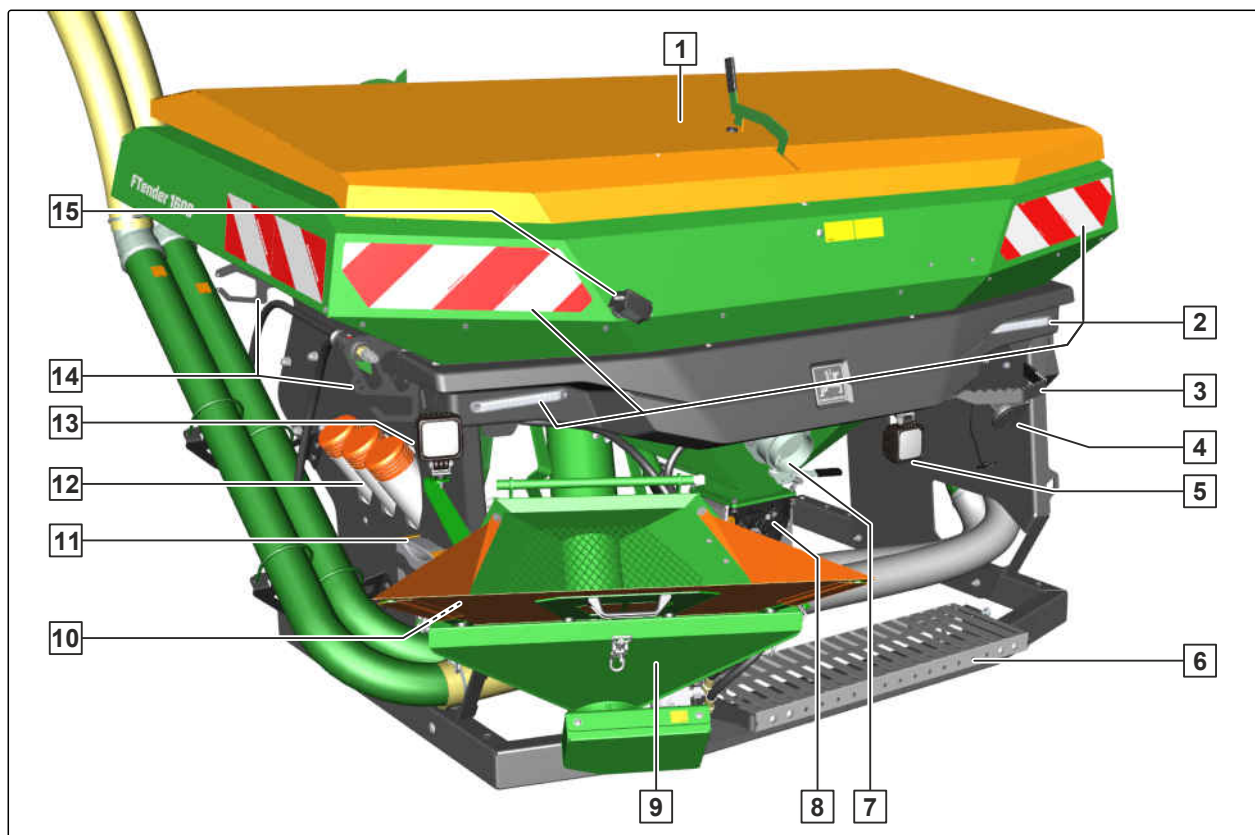
Product description

4

CMS-T-00003109-L.1

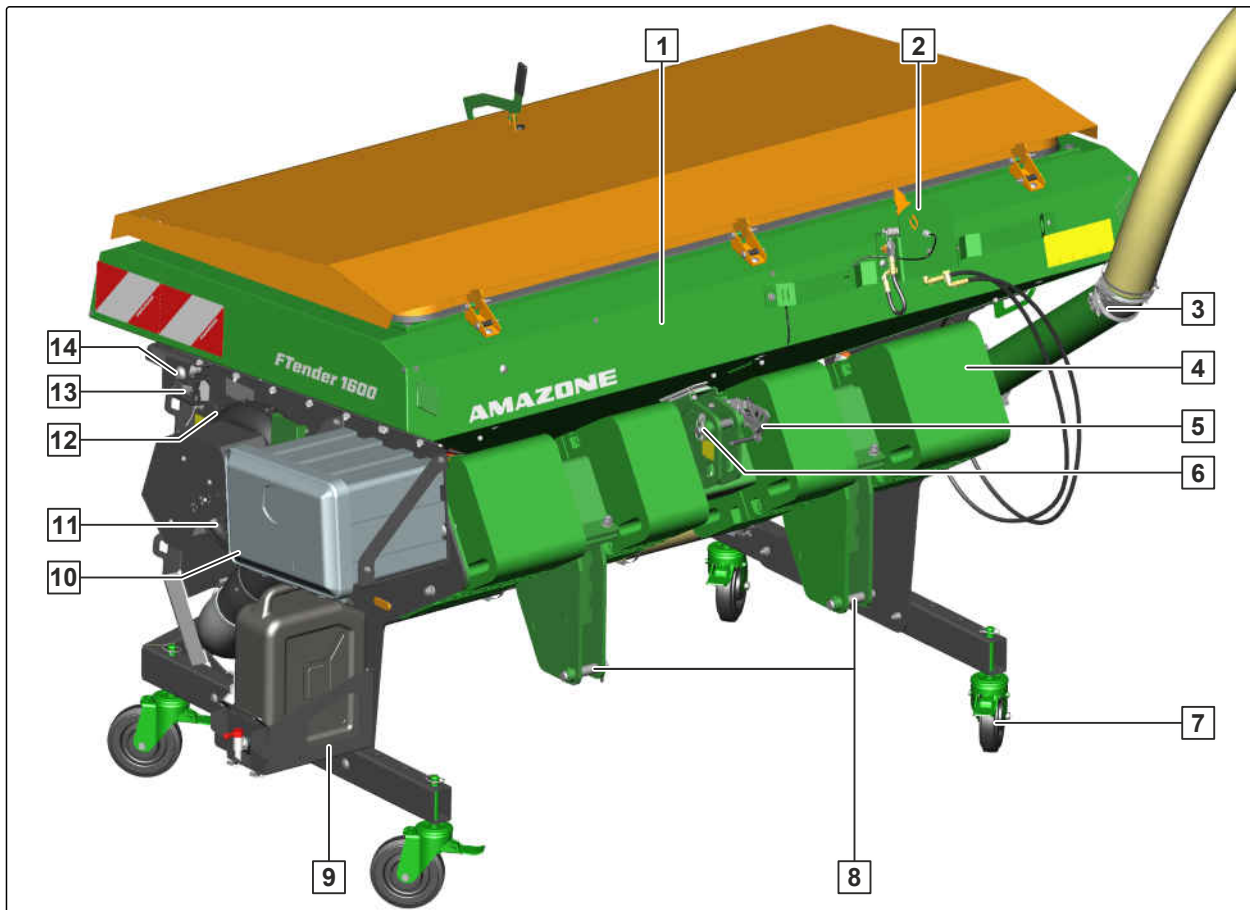
4.1 Implement overview

CMS-T-00003118-G.1



CMS-I-00002780

- | | |
|---|--|
| 1 Hopper cover | 2 Lighting and identification for road travel |
| 3 Pull-out step | 4 Radar sensor |
| 5 Work lights | 6 Loading board |
| 7 Quick emptying | 8 Metering unit |
| 9 Filling auger | 10 Weighing point |
| 11 Storage bin | 12 Threaded cartridge |
| 13 Rating plate on the implement | 14 Hose cabinet |
| 15 Filling auger camera | |



CMS-I-00002781

- | | |
|----------------------------------|---|
| 1 Hopper | 2 Hydraulically actuated working position sensor |
| 3 Conveyor line | 4 Ballast weights |
| 5 Working position sensor | 6 Top link mounting |
| 7 Parking rollers | 8 Lower link mountings |
| 9 Hand wash tank | 10 Storage bin |
| 11 Fan | 12 Interface for diagnosis or Bluetooth |
| 13 Camera system | 14 Calibration button |

4.2 Function of the implement

CMS-T-00003153-C.1

The FTender is coupled to the tractor using the 3-point front mounting. The implement consists of the hopper and a metering system. The metering unit is electrically driven. The spread rate is set on the control terminal. Depending on the implement equipment, there are 1 or 2 conveyor sections. The spreading material is metered by the metering units into the sluice or injector, and conveyed to the distributor head with the air current of the fan. Depending on the combination, the spreading material in the form of seed and/or granular fertiliser

is deposited in the soil by the implement mounted at the rear of the tractor.

4.3 Special equipment

CMS-T-00005070-E.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.

- T-Pack F
- Lower link mountings
- Working position sensor, hydraulically or mechanically actuated
- One-sided switching, electrically or mechanically actuated
- Ballast weights
- Parking rollers
- Hopper quick emptying
- Insertion sieve
- LED work lights
- LED hopper interior lighting
- Additional warning signs
- Suction guard screen
- Cyclone separator
- Hose package
- Non-certified camera system
- Certified camera system
- Manoeuvring camera system
- Filling auger
- Storage bin
- Hand wash tank

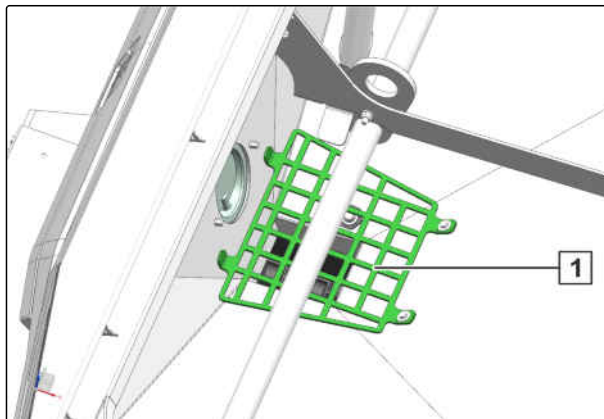
4.4 Protective equipment

CMS-T-00003120-B.1

4.4.1 Metering unit guard screen

CMS-T-00003220-A.1

The metering unit guard screen **1** protects the user against injuries caused by rotating parts and the metering unit against foreign objects.



CMS-I-00002466

4.4.2 Fan guard screen

CMS-T-00003581-B.1

The fan guard screen **1** protects the user against injuries caused by rotating parts and the fan against foreign objects.

The design of the fan guard screen can differ depending on the implement.



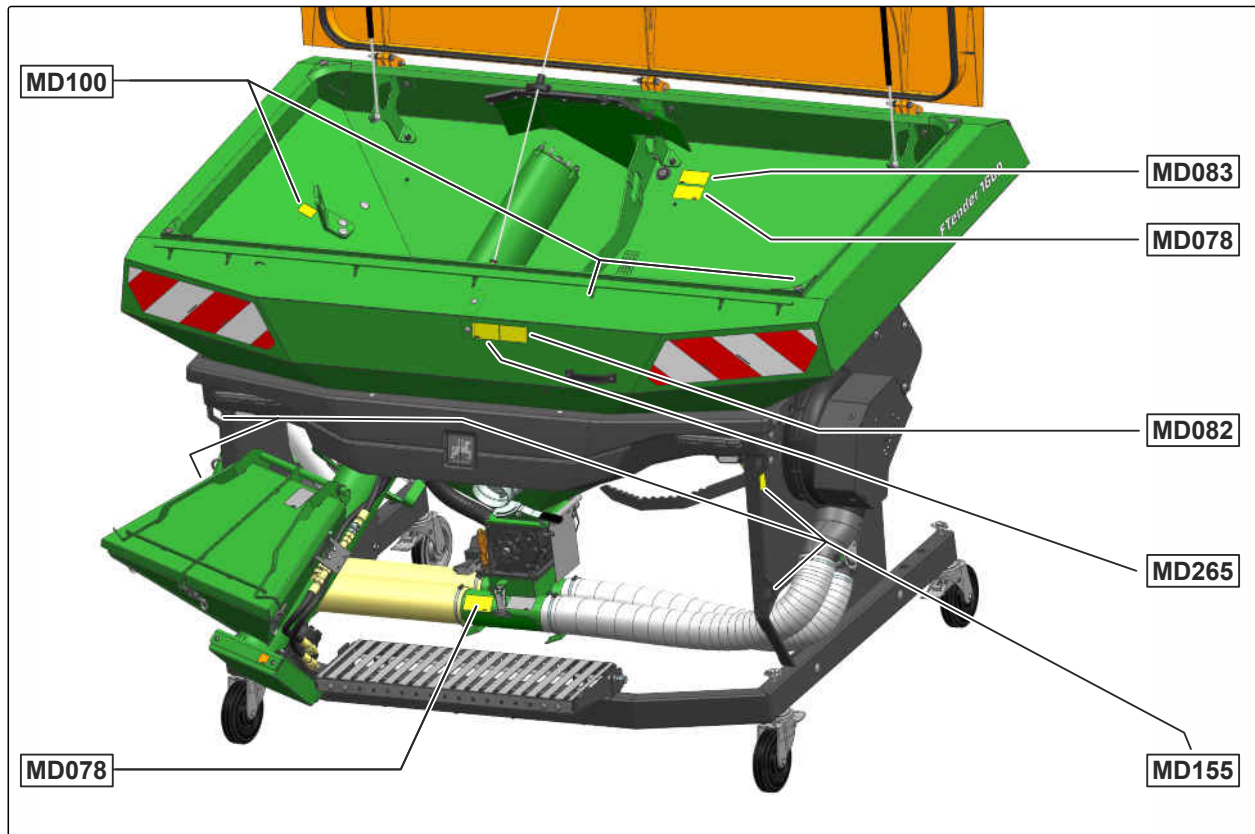
CMS-I-00002545

4.5 Warning symbols

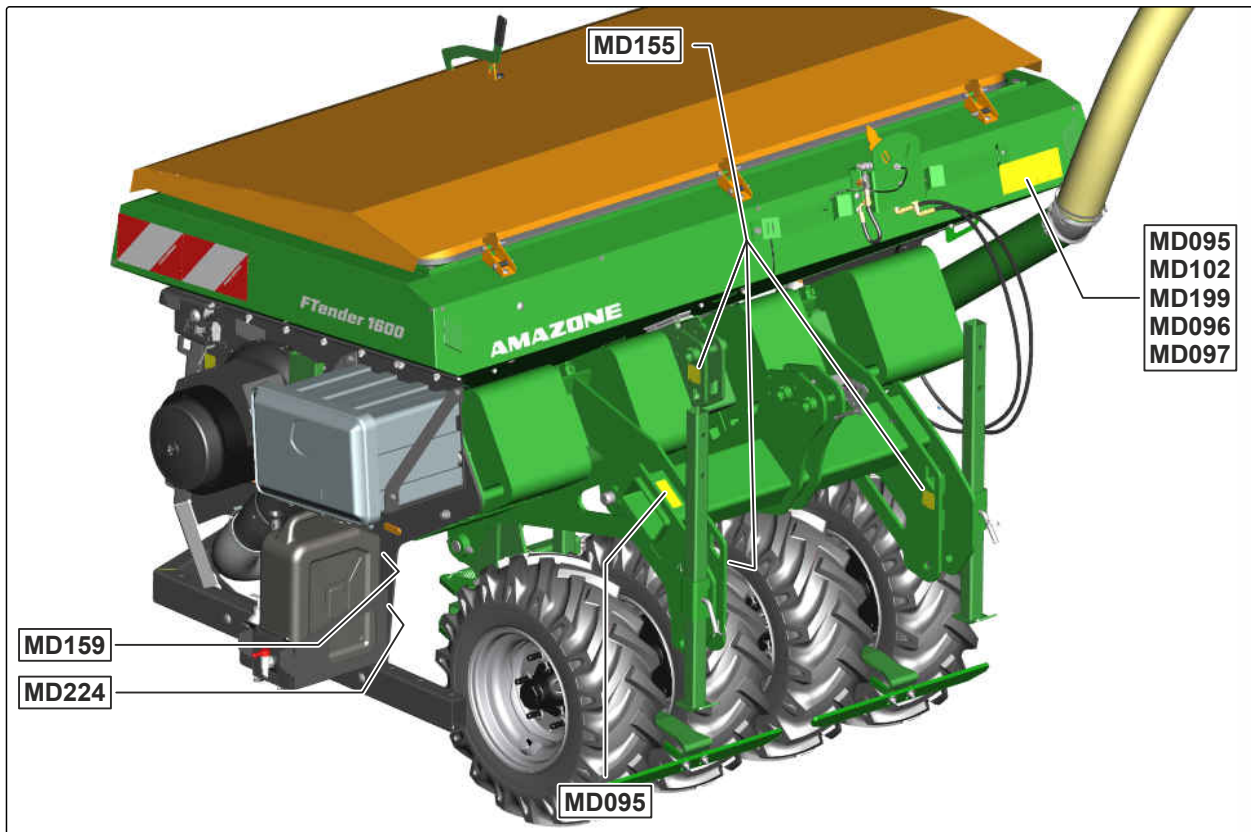
CMS-T-00003121-G.1

4.5.1 Position of the warning symbols

CMS-T-00003342-F.1



CMS-I-00002618



CMS-I-00002617

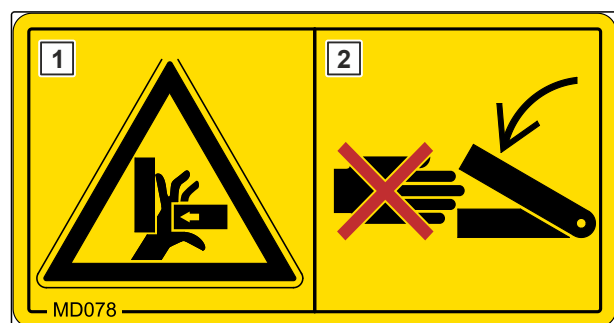
4.5.2 Layout of the warning symbols

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

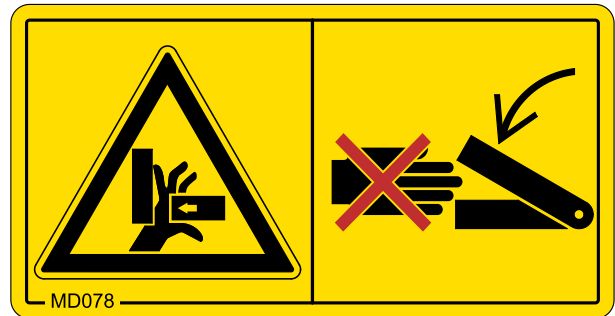
4.5.3 Description of the warning symbols

CMS-T-00003343-F.1

MD 078

Risk of crushing fingers or hands

- ▶ *As long as the tractor engine or implement motor is running,*
stay away from the danger area.
- ▶ *If you have to move marked parts with your hands,*
pay attention to the crushing areas.
- ▶ Make sure that there is nobody standing in the danger area.

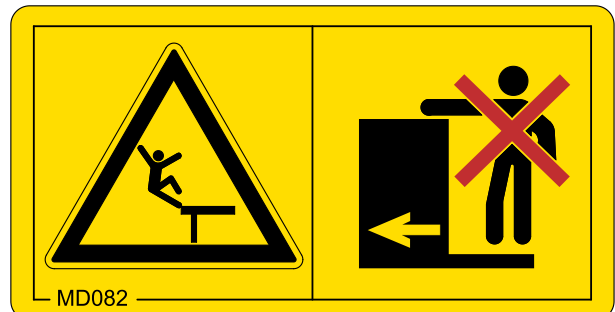


CMS-I-000074

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.

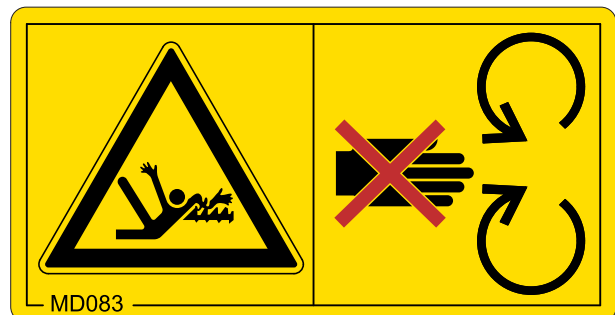


CMS-I-000081

MD 083

Risk due to being drawn in and caught

- ▶ Ensure that the energy supply to the implement is interrupted before you remove the protective devices.
- ▶ 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-00003694

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.*

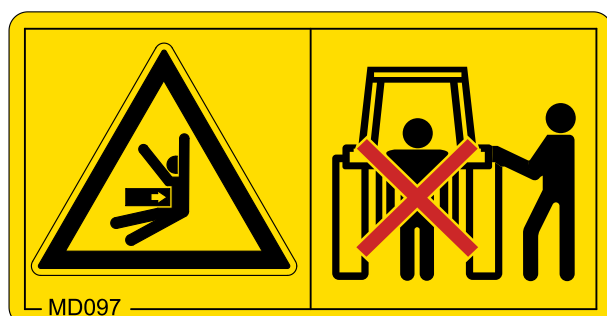


CMS-I-000216

MD 097

Risk of crushing between the tractor and the implement

- ▶ *Before you actuate the tractor hydraulic system, instruct persons away from the area between the tractor and the implement.*
- ▶ Actuate the tractor hydraulic system only from the designated work station.

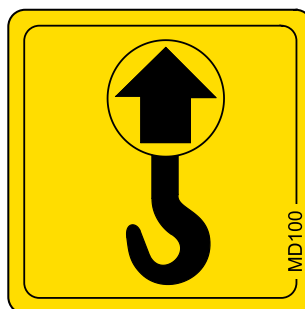


CMS-I-000139

MD 100

Risk of accidents due to improperly attached lifting gear

- Only attach the lifting gear at the marked positions.



CMS-I-000089

MD 102

Risk due to unintentional starting and rolling away of the machine

- Before performing any work, secure the implement against unintentional starting and rolling away.

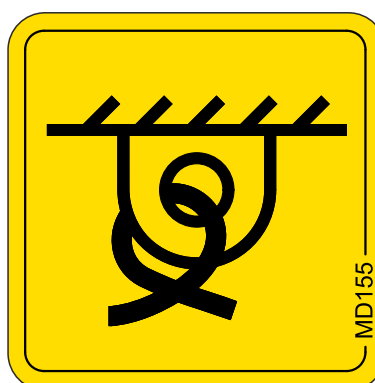


CMS-I-00002253

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 159

Mortal danger due to crop protection products in the hand wash tank

- Fill the hand wash tank only with drinking water and never with crop protection product.

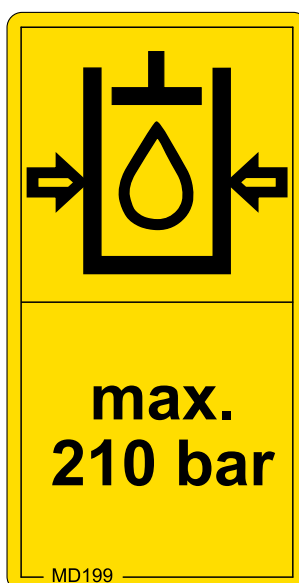


CMS-I-00007606

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 224

Health hazard due to water from the hand wash tank

- ▶ Never use the water from the hand wash tank as drinking water.

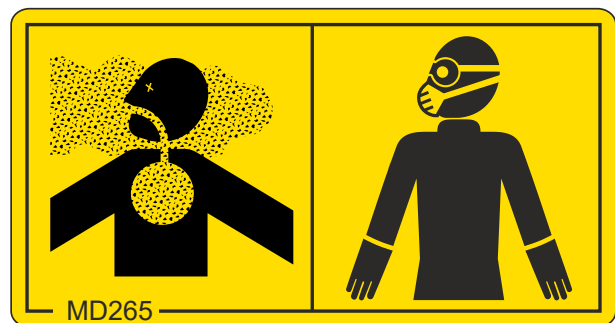


CMS-I-00005073

MD 265

Risk of chemical burns by dressing dust

- ▶ Do not breathe in the harmful substance.
- ▶ Avoid contact with eyes and skin.
- ▶ Before working with hazardous materials, put on the protective clothing recommended by the manufacturer.
- ▶ Follow the manufacturer's safety instructions for handling harmful substances.



CMS-I-00003659

4.6 Rating plate on the implement

CMS-T-00004505-G.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

4.7 Threaded cartridge

CMS-T-00001776-E.1

The threaded cartridge contains the following items:

- Documents
- Aids



CMS-I-00002306

4.8 Lighting

CMS-T-00003122-C.1

4.8.1 Lighting and identification for road travel

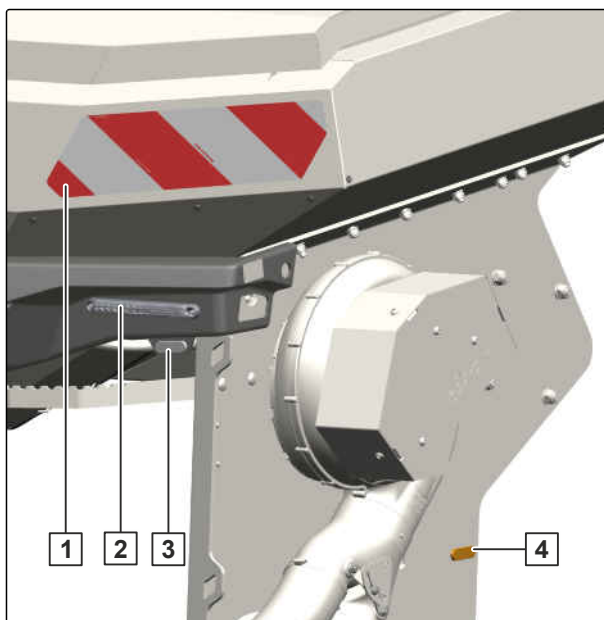
CMS-T-00003123-B.1



NOTE

Depending on the national regulations.

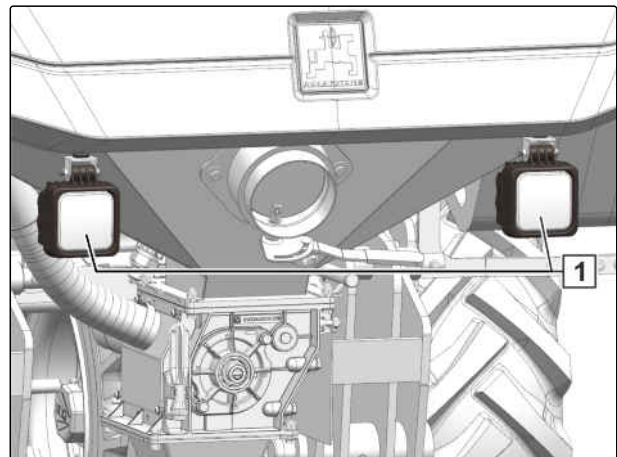
- 1 Warning signs
- 2 Marker lights and turn indicators
- 3 Reflector, white
- 4 Reflector, yellow



CMS-I-00002464

4.8.2 Work lights

The work lights **1** illuminate the implement's working area.

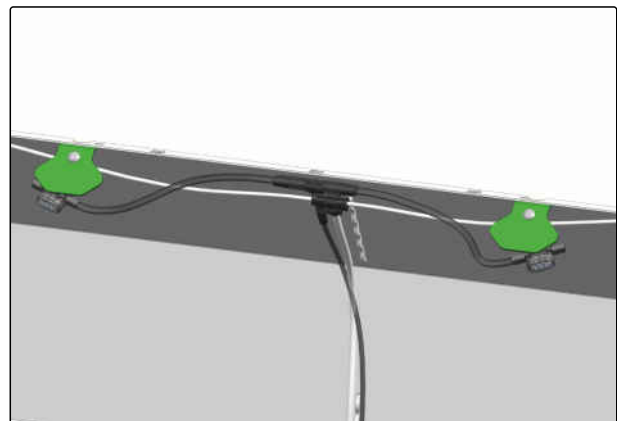


CMS-T-00003124-A.1

CMS-I-00002463

4.8.3 Hopper interior lighting

The hopper interior lighting serves for better viewing inside the hopper and makes it easier to check the fill level. The hopper interior lighting is switched on via the lighting for road travel.

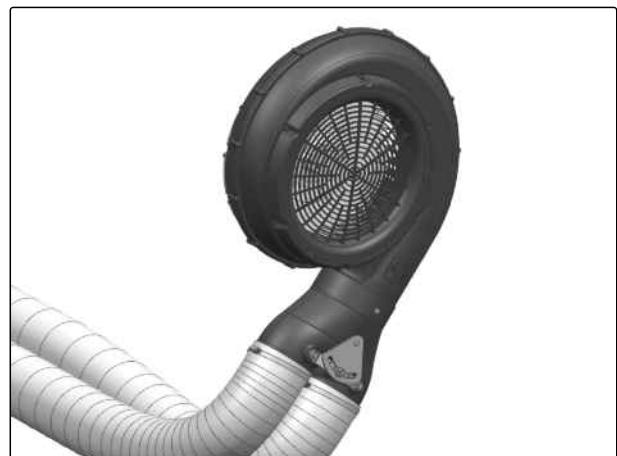


CMS-T-00001987-B.1

CMS-I-00002219

4.9 Conveyor fan

The conveyor fan produces an air current that carries the spreading material to the seed drill through the conveyor section. The conveyor fan is driven by a hydraulic motor. The fan guard screen protects the operator against injuries caused by rotating parts and the fan against foreign objects.



CMS-T-00003152-D.1

CMS-I-00002467

4.10 Cyclone separator

CMS-T-00005099-B.1

The cyclone separator **1** protects the fan and the implement under very dusty working conditions. The intake air **3** is rotated so strongly in the cyclone separator that the impurities are carried to the outer wall and escape through the opening **2**.



CMS-I-00002764

4.11 Metering system

CMS-T-00003147-F.1

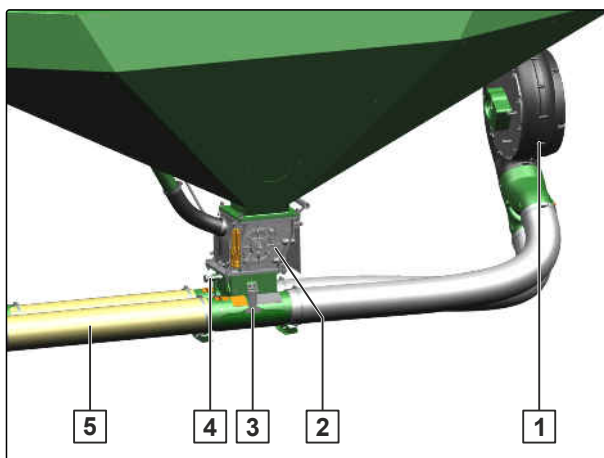
4.11.1 Conveyor sections

CMS-T-00003563-D.1

1-chamber hopper, closed

- 1 Fan
- 2 Metering unit
- 3 Double sluice
- 4 One-sided switching
- 5 Double conveyor section

Depending on the implement equipment, the closed 1-chamber hopper can also be equipped with a single sluice and a single conveyor section.

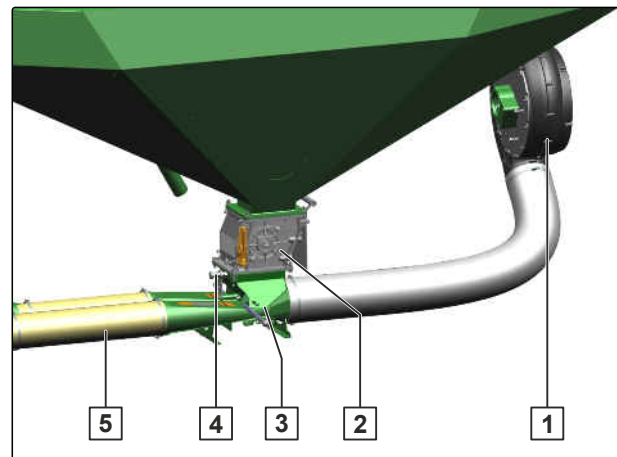


CMS-I-00003671

1-chamber hopper, open

- 1 Fan
- 2 Metering unit
- 3 Double injector
- 4 One-sided switching
- 5 Double conveyor section

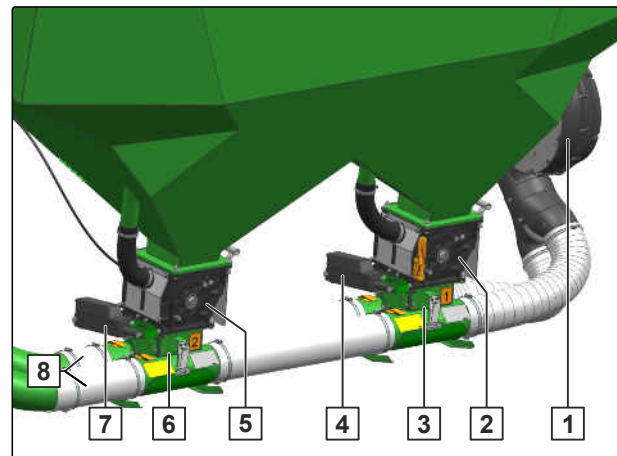
Depending on the implement equipment, the open 1-chamber hopper can also be equipped with a single sluice and a single conveyor section.



CMS-I-00003672

2-chamber hopper, closed

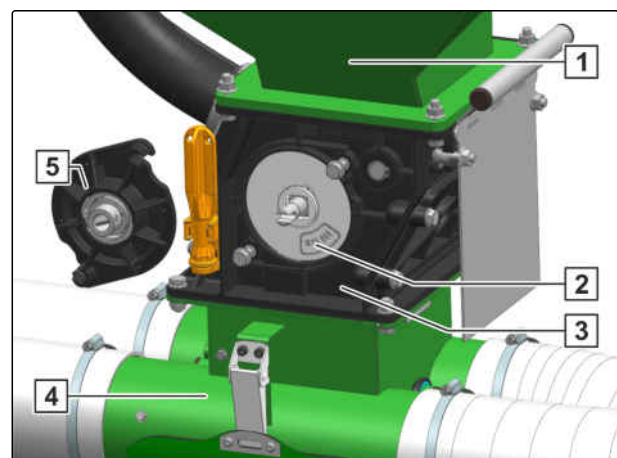
- 1 Fan
- 2 Metering unit, first hopper chamber
- 3 Double sluice, first hopper chamber
- 4 One-sided switching, first hopper chamber
- 5 Metering unit, second hopper chamber
- 6 Double sluice, second hopper chamber
- 7 One-sided switching, second hopper chamber
- 8 Double conveyor section



CMS-I-00002548

4.11.2 Metering unit

- 1 Hopper chamber
- 2 Metering roller
- 3 Metering housing
- 4 Double sluice
- 5 Metering housing cover



CMS-I-00002468

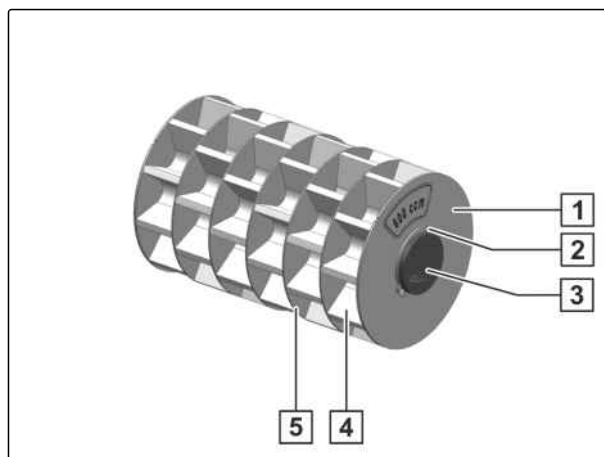
A metering unit is installed under each hopper chamber. The metering roller is electrically driven and can be exchanged. For implements with an open

conveyor section, an injector is used. For implements with a closed conveyor section, a sluice is used. The spreading material is directed by the air current to the distributor head and then on to the spreading elements. As soon as the implement is raised when turning at the end of a field, the electric motor switches off and the metering roller comes to a halt.

4.11.3 Metering roller

The metering roller is electrically driven and meters the spreading material into the sluice or the injector.

- 1 End plate
- 2 Locking ring
- 3 Drive hub
- 4 Metering wheel
- 5 Intermediate plate

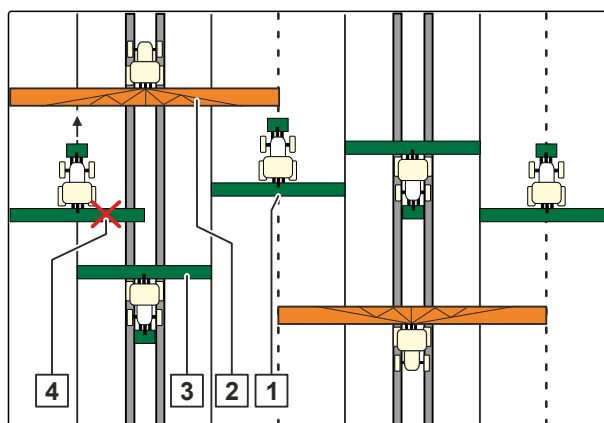


CMS-T-00003565-D.1

CMS-I-00002549

4.11.4 One-sided switching

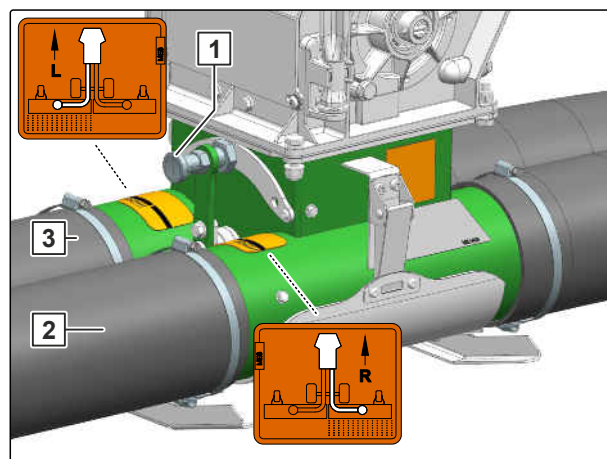
For certain working widths for crop maintenance **2**, it is necessary to perform the first field pass with the seed drill with half the working width. For example, when beginning field work at the left field edge, the coulters on the right side of the implement **4** do not deposit seeds in the soil. The following field pass **3** goes over the area again and spreads seed. The subsequent cultivation work is performed with an offset of half the working width **1**.



CMS-T-00003561-C.1

CMS-I-00002604

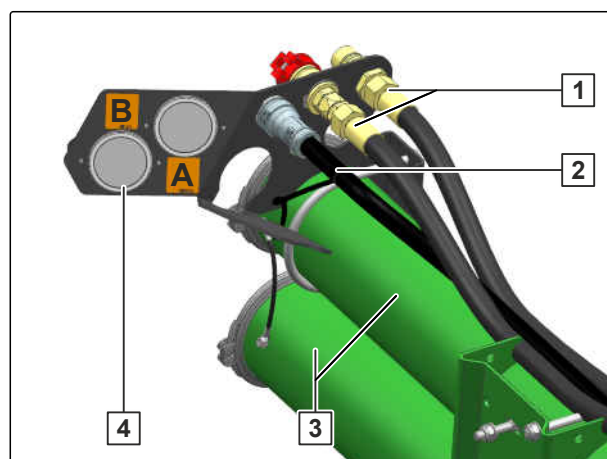
Depending on the position of the control lever **1**, the one-sided switching delivers into conveyor section **2** and/or **3**. The locking device secures the control lever in the desired position. Optionally, the one-sided switching can be electrically actuated.



CMS-I-00002544

4.11.5 Hose package

- 1** Hydraulic hose extension
- 2** Power supply via integrated implement controls
- 3** Conveyor hose
- 4** Pressure gauge



CMS-I-00002474

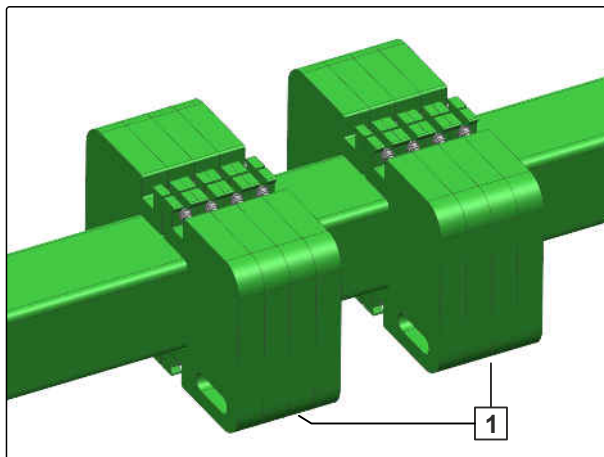
Depending on the tractor equipment, hydraulic hose extensions are required. The design of the power supply depends on the type of implement controls.

The spreading material is transported through the conveyor section into the hose package. The pressure gauge on the hose package indicates the overpressure. The overpressure is set through the fan speed.

4.12 Ballast weights

CMS-T-00003144-C.1

For optimum weight distribution, the implement can be equipped with ballast weights **1**. One set of ballast weights corresponds to 4 x 25 kg.



CMS-I-00002525

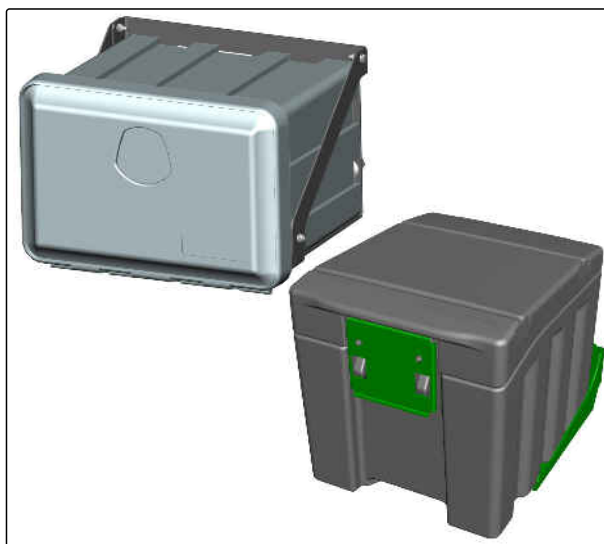
4.13 Storage bin

CMS-T-00008777-D.1

Depending on the implement equipment, the threaded cartridge with the operating manual is carried on the implement frame, the hopper or in the storage compartment.

The storage compartment is used to carry implement accessories and other aids, such as:

- Metering rollers
- Calibration bucket for calibrating the spread rate
- Digital scale for weighing the calibrated quantity

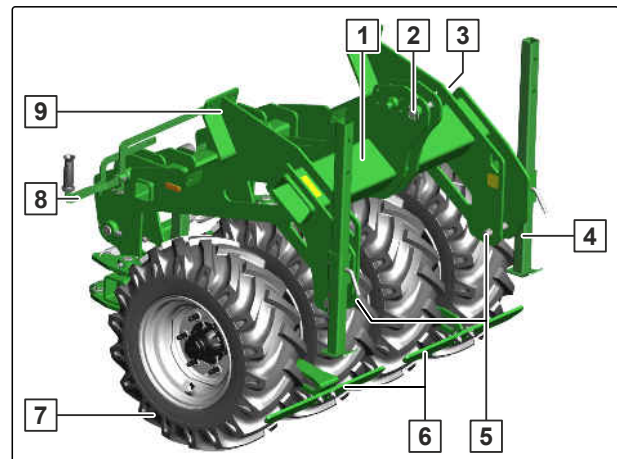


CMS-I-00006542

4.14 T-Pack F

CMS-T-00003145-D.1

- 1** T-Pack F frame
- 2** Top link mounting
- 3** Rating plate on the implement
- 4** Rear parking supports
- 5** Lower link mountings
- 6** Scraper
- 7** Packer tyres
- 8** Locking mechanism
- 9** FTender mounting



CMS-I-00005252

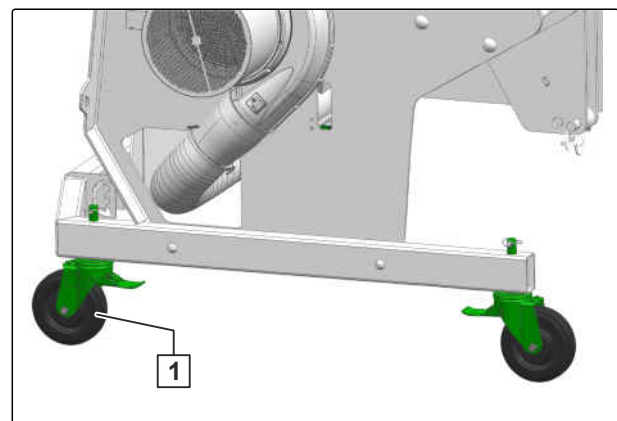
The T-Pack F provides reconsolidation of the seedbed between the tractor tyres. Depending on the operating conditions, the FTender can be used with or without the T-Pack F. For use of the FTender without the T-Pack F, lower link mountings are required.

4.15 Rolling and parking device

CMS-T-00003146-C.1

The parking rollers **1** enable easy coupling onto the tractor's 3-point power lift and manoeuvring in the farmyard and inside buildings. Before the implement is used, the parking rollers must be removed.

To prevent the implement from rolling away, two rollers are equipped with a parking brake.



CMS-I-00002470

4.16 Non-certified camera system

CMS-T-00011763-B.1



NOTE

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

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. It is used for cross-traffic monitoring with front-mounted implements.

4.17 Certified camera system

CMS-T-00011762-B.1

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 position and orientation of the cameras may not be changed.

4.18 Radar sensor

CMS-T-00001778-C.1

On electric drives, the radar sensor records the working speed. The working speed is used to determine the worked area and the required speed for the metering drives.



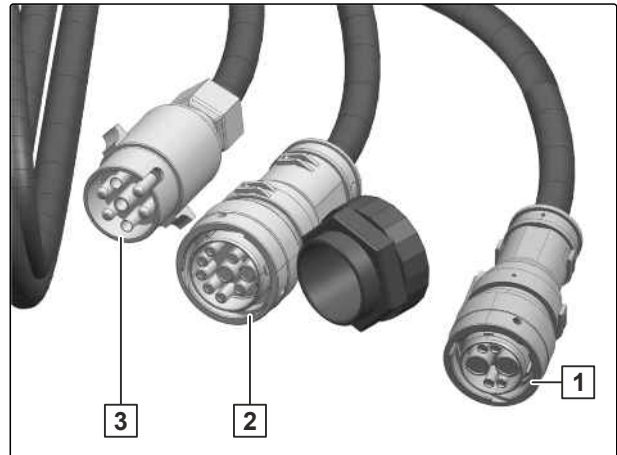
CMS-I-00002221

4.19 Power supply

CMS-T-00001852-C.1

Depending on the implement equipment, not all of the electrical supply lines are available.

- 1 Implement plug for the integrated implement controls
- 2 Implement plug for the autonomous implement controls
- 3 Plug for the lighting for road travel



CMS-I-00002606

Technical data

5

CMS-T-00003110-J.1

5.1 Serial number

CMS-T-00003137-A.1

The serial number of the implement is stamped onto the mounting frame for identification.

5.2 Dimensions

CMS-T-00003142-D.1

Dimensions	FTender 1600	FTender 2200
Transport width	2.5 m	2.5 m
Filling height without T-Pack F	1.41 m	1.59 m
Filling height with T-Pack F	1.59 m	1.76 m
Total length without T-Pack F	1.7 m	1.7 m
Total length with T-Pack F	2.1 m	2.1 m
Centre of gravity distance without T-Pack F	54.5 cm	55 cm
Centre of gravity distance with T-Pack F	85.5 cm	86.5 cm

5.3 Weights

CMS-T-00005098-E.1

Implement	FTender 1600	FTender 2200	FTender 2200-C	T-Pack F 1450-880
Tare weight of basic implement	661 kg	698 kg	783 kg	573 kg
Permissible technical implement weight	3,421 kg	4,118 kg	4,203 kg	4,276 kg

Implement equipment	Number of ballast weights
Lower link connection	9 sets of ballast weights = 900 kg
T-Pack F	3 sets of ballast weights = 300 kg

5.4 Mounting category

CMS-T-00003139-C.1

3-point mounting frame	
T-Pack F	Category 2
Front-mounted hopper	Category 3N and Category 2

5.5 Permissible payload

CMS-T-00011018-E.1

Permissible payload for operation
Permissible payload = $G_Z - G_L =$ _____ kg

- G_Z : Permissible technical implement weight according to the rating plate [kg]
- G_L : Determined tare weight [kg]

5.6 Working speed and spread rate

CMS-T-00003140-E.1

Spreading with an open system		Working width			
		3 m	4 m	6 m	9 m
Wheat	8 km/h	330 kg/ha	320 kg/ha	370 kg/ha	250 kg/ha
	12 km/h	220 kg/ha	210 kg/ha	250 kg/ha	170 kg/ha
	15 km/h	180 kg/ha	170 kg/ha	200 kg/ha	130 kg/ha
DAP	8 km/h	350 kg/ha	300 kg/ha	/	/
	12 km/h	230 kg/ha	200 kg/ha	/	/
	15 km/h	190 kg/ha	160 kg/ha	/	/

Spreading with a closed system		Working width			
		3 m	4 m	6 m	9 m
Wheat	8 km/h	770 kg/ha	770 kg/ha	890 kg/ha	590 kg/ha
	12 km/h	510 kg/ha	500 kg/ha	590 kg/ha	390 kg/ha
	15 km/h	410 kg/ha	400 kg/ha	470 kg/ha	310 kg/ha
DAP	8 km/h	750 kg/ha	510 kg/ha	500 kg/ha	340 kg/ha
	12 km/h	500 kg/ha	340 kg/ha	340 kg/ha	320 kg/ha
	15 km/h	400 kg/ha	270 kg/ha	270 kg/ha	180 kg/ha



NOTE

The specified values are reference values.

High spread rates can make it impossible to drive at the maximum possible speed.

Conveyor system	Working width	
	3 m to 4 m	5 m to 6 m
Number of distributor heads	1	1 or 2
Corrugated tube diameter on the distributor head	125 mm	125 mm

Recommended speed range
2 km/h to 18 km/h

5.7 Performance characteristics of the tractor

CMS-T-00003141-C.1

Engine rating	
FTender 1600	Starting at 66 kW / 80 hp
FTender 2200	Starting at 75 kW / 100 hp

Electrical system	
Battery voltage	12 V
Basic tractor equipment for ISOBUS	25 A
Lighting socket	7-pin

Hydraulic system	
Maximum operating pressure	210 bar
Tractor pump output	At least 28 l/min at 150 bar
Implement hydraulic oil	HLP68 DIN51524 The hydraulic oil is suitable for the combined hydraulic oil circuits of all standard tractor manufacturers.
Control units	1x double-acting 1x single-acting, with adjustable flow rate.
Pressure-free return flow	Do not exceed a back pressure of 5 bar.

5.8 Noise development data



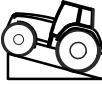
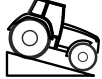
CMS-T-00002296-D.1

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-00004990-A.1

Across the slope		
On left in direction of travel	10%	
On right in direction of travel	10%	
Up the slope and down the slope		
Up the slope	10%	
Down the slope	10%	

5.10 Lubricants

CMS-T-00002396-B.1

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

5.11 Chain oil

CMS-T-00005469-B.1

Chain oil
Non-saponifiable mineral-based chain oil according to ISO VG 68

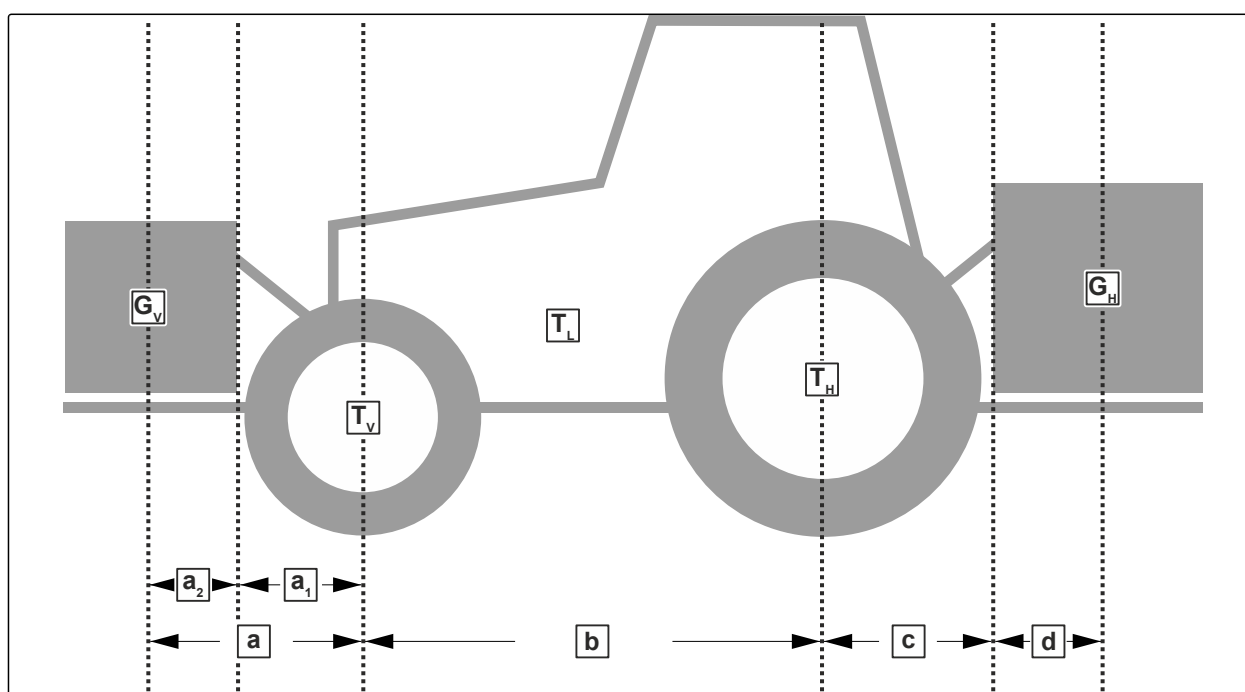
Preparing the machine

6

CMS-T-00003111-N.1

6.1 Calculating the required tractor characteristics

CMS-T-00000063-F.1



CMS-I-00000581

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	
G_H	kg	Permissible total weight of rear-mounted implement or rear ballast	
a	m	Distance between the centre of gravity of the front-mounted implement or the front ballast and the centre of the front axle	

Designation	Unit	Description	Calculated values
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	
d	m	Centre of gravity distance: Distance between the centre of the lower link coupling point and centre of gravity of the rear-mounted implement or rear ballast.	

1. Calculate the minimum front ballasting.

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

$$G_{\min} = \underline{\hspace{2cm}}$$

$$G_{\min} = \underline{\hspace{2cm}}$$

CMS-I-00000513

2. Calculate the actual front axle load.

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

$$T_{Vtat} = \underline{\hspace{2cm}}$$

$$T_{Vtat} = \underline{\hspace{2cm}}$$

CMS-I-00000516

6 | Preparing the machine

Calculating the required tractor characteristics

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

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

$$G_{tat} =$$

$$G_{tat} =$$

CMS-I-00000515

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

6.2 Coupling the implement

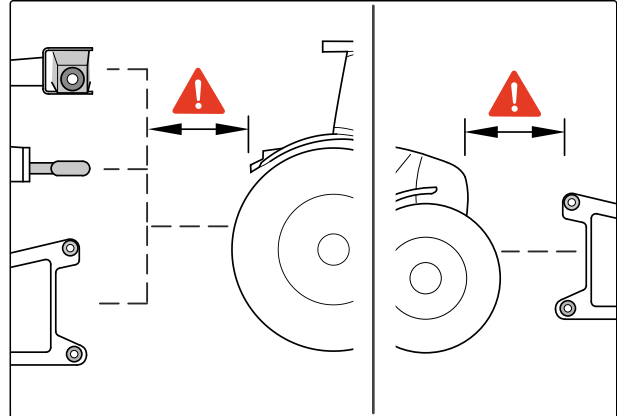
CMS-T-00003200-I.1

6.2.1 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.

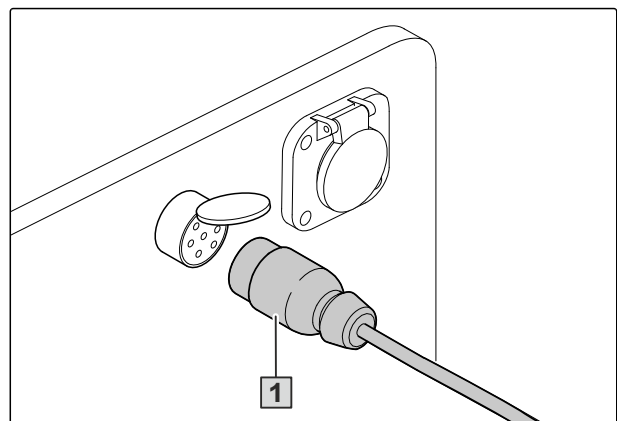


CMS-I-00004045

6.2.2 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

6.2.3 Connecting the conveyor line

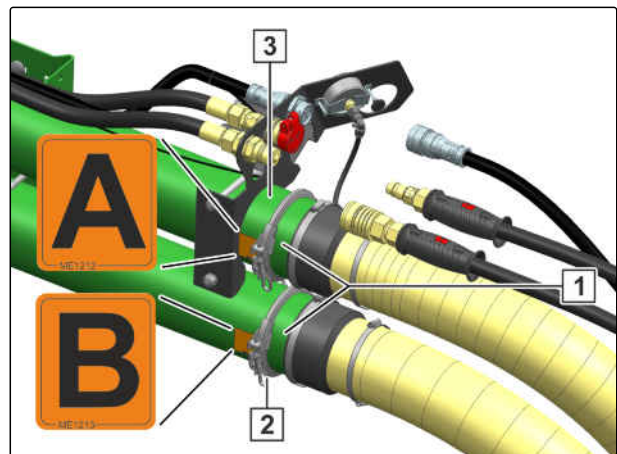
CMS-T-00003560-E.1

Depending on the implement equipment, there are one or two conveyor lines.

NOTE

Pay attention to the marking **A** and **B**.

1. Connect the connector **1** to the conveyor line **3**.
2. Connect the clamp **2**.



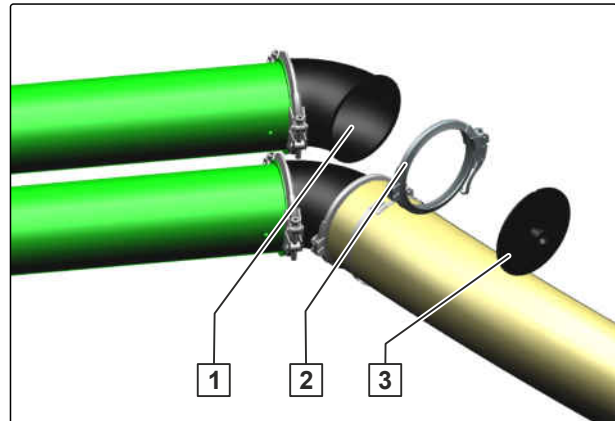
CMS-I-00002609

6 | Preparing the machine

Coupling the implement

If an FTender with two conveyor sections should be used on an implement with one conveyor line, the conveyor section **1** must be deactivated as described in the following.

3. Open the clamp **2**.
4. Put on the cover **3**.
5. Close the clamp **2**.

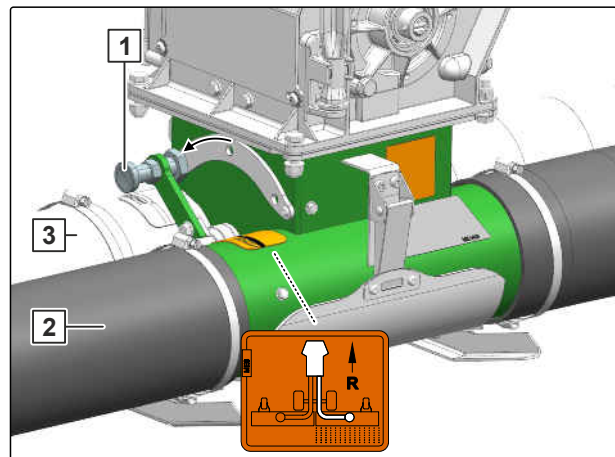


CMS-I-00005154

When the implement is equipped with mechanical one-sided switching:

6. *To deactivate the conveyor section **3**,*
Move the lever **1** to the indicated position.

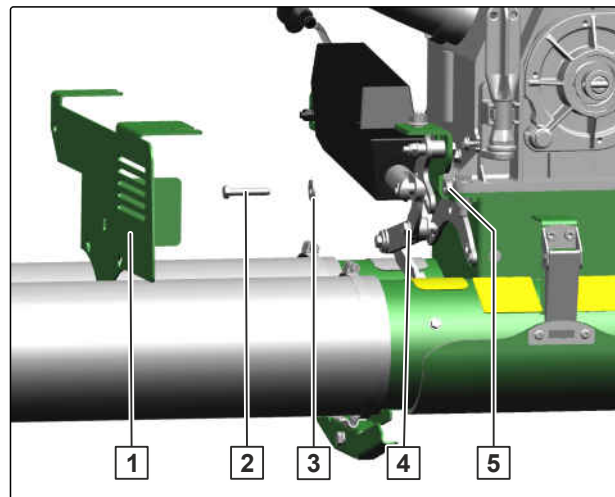
➔ The conveyor section **2** is activated.



CMS-I-00003649

When the implement is equipped with electric one-sided switching:

7. Remove the cover **1**.
8. Remove the nut **5**.
9. Remove the bolt **2** and washer **3**.
10. Pull out the lever **4** up to the stop (calibration position).
11. Install the bolt **2** and washer **3** in the elongated slot.
12. *To fix the lever in the calibration position,*
install the nut **5** and tighten it.
13. Install the cover **1**.



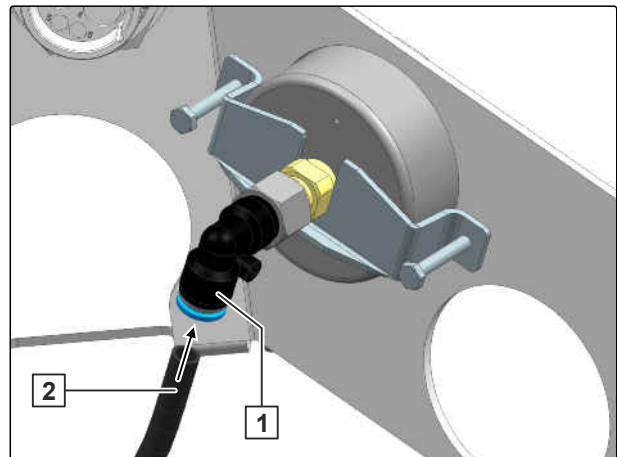
CMS-I-00005153

6.2.4 Coupling the pressure gauge

CMS-T-00003223-C.1

Depending on the implement equipment, there are one or two pressure gauges.

- Insert the air hose **2** into the coupling **1** up to the stop.



CMS-I-00002491

6.2.5 Coupling the electric supply lines

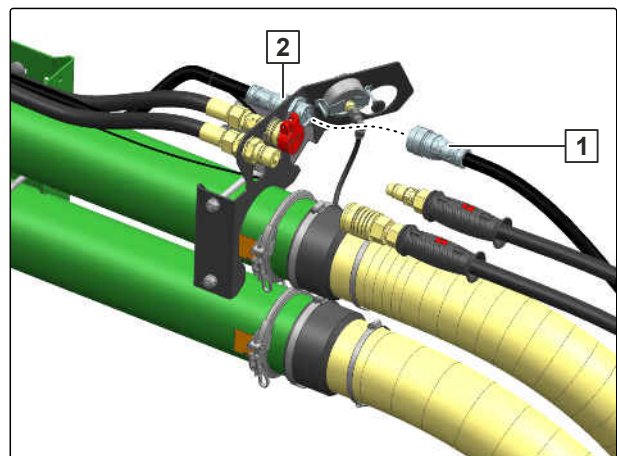
CMS-T-00005069-C.1

Depending on the implement controls, the plug for the electrical supply on the conveyor line can look different.

1. *In conjunction with integrated implement controls,*
insert the plug **1** on the interface **2**

or

In conjunction with autonomous implement controls,
insert the plug on the interface or on the front 3-point power lift.



CMS-I-00003623

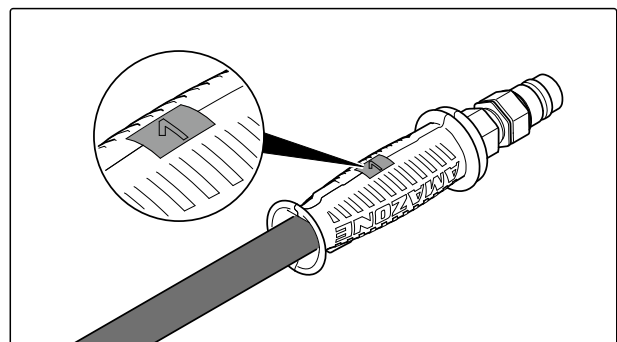
2. Route the ISOBUS cable with sufficient freedom of movement and without chafing or pinching points.

6.2.6 Coupling the hydraulic hose lines




CMS-T-00003790-G.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	
Yellow			Hydraulic working position indicator	Switching on	Double-acting	
				Switching off		
Red			Fan hydraulic motor	Switching on	Double-acting	
			Filling auger	Switching on		
Red			Fan hydraulic motor	Switching on	Single-acting	
		The implements are equipped with pressure relief through the pressureless return flow.				



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.

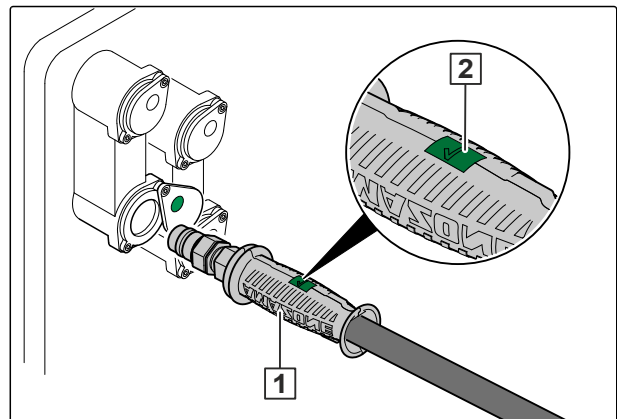


IMPORTANT

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.

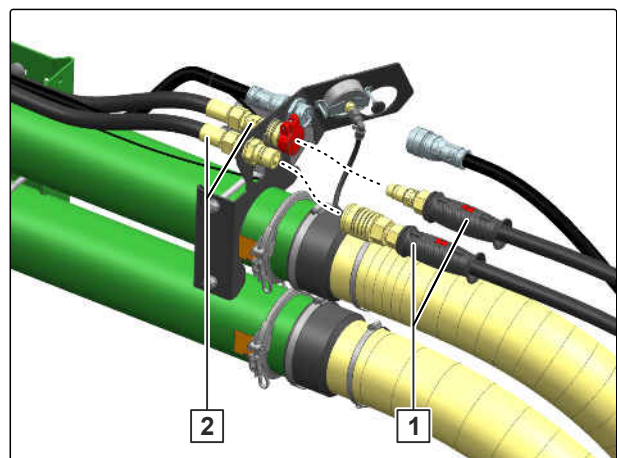
1. Depressurise the hydraulic system between the tractor and the implement using the tractor control unit.
 2. Clean the hydraulic plugs.
 3. Couple the hydraulic hoses **1** to the hydraulic sockets of the tractor according to the marking **2**.
- ➔ The hydraulic plugs lock perceptibly.
4. Route the hydraulic hoses with sufficient freedom of movement and without chafing points.



CMS-I-00001045

Depending on the implement combination, the hydraulic hoses of the front-mounted hopper are coupled to the rear-mounted implement.

5. Couple the hydraulic hoses **1** to the hydraulic sockets of the hose package according to the marking **2**.
- ➔ The hydraulic plugs lock perceptibly.
6. Route the hydraulic hoses with sufficient freedom of movement and without chafing points.



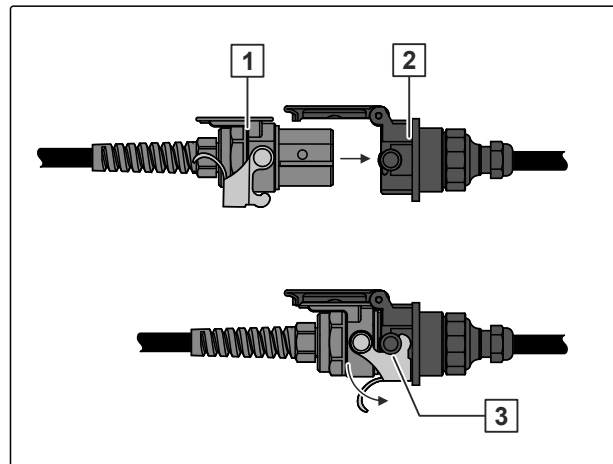
CMS-I-00002766

6.2.7 Connecting the camera system

CMS-T-00007368-A.1

Depending on the implement equipment, a certified or a non-certified camera system can be equipped.

1. Route the camera system cable with sufficient freedom of movement and without chafing or pinching points.
2. Plug the connection **1** of the monitor in the socket **2** of the camera system.
3. Close the safety clip **3**.

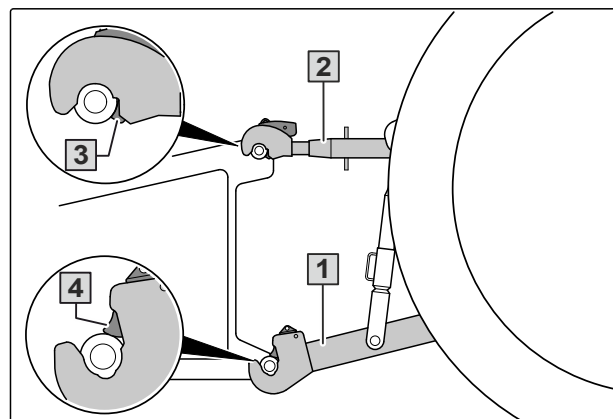


CMS-I-00005143

6.2.8 Coupling the 3-point mounting frame

CMS-T-00001400-G.1

1. Set the tractor lower links **1** to the same height.
2. Couple the lower links **1** from the tractor seat.
3. Couple the top link **2**.
4. Check whether the top link catch hooks **3** and lower link catch hooks **4** are correctly locked.

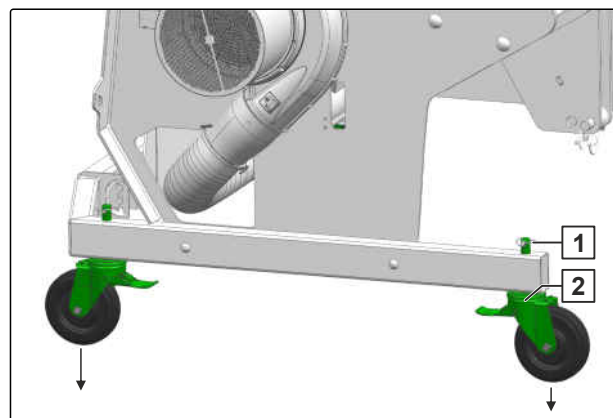


CMS-I-00001225

6.2.9 Removing the rolling and parking device

CMS-T-00003212-C.1

1. Raise the implement.
2. Remove the linch pin **1**.
3. Pull out all of the parking rollers **2** downwards.
4. Store the parking rollers and linch pins in a suitable place.



CMS-I-00002471

6.3 Preparing the implement for operation

CMS-T-00003202-N.1

6.3.1 Adjusting the working position sensor

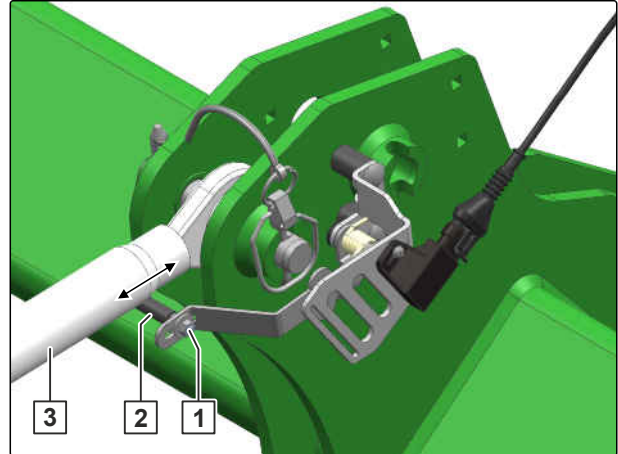
CMS-T-00003625-E.1

The working position sensor monitors the implement position in the three-point hydraulic system and switches the metering drives. The lever length is adjustable.

1. loosen the nut **1**.
2. Place the lever **2** on an level contact surface on the top link **3**.
3. Tighten the nut.
4. *To ensure that the working position sensor is resting on a level surface, completely lift and lower the implement.*
5. *To configure the working position sensor, refer to the ISOBUS software operating manual, "Configuring the working position sensor"*

or

see "control computer" operating manual.

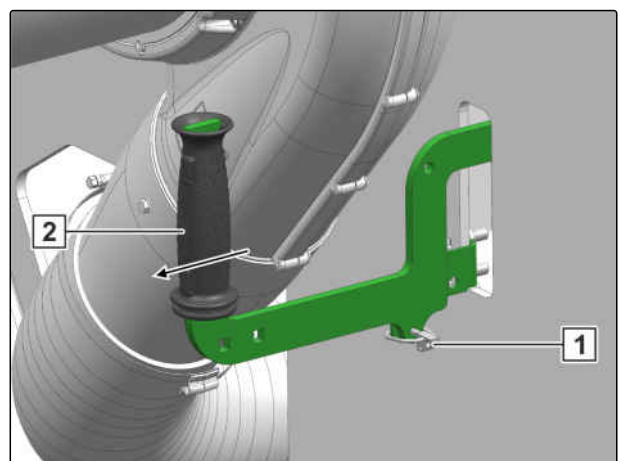


CMS-I-00002608

6.3.2 Moving the T-Pack F into working position

CMS-T-00003211-C.1

1. Lower the implement.
2. Remove the linch pin **1**.
3. Open the locking mechanism **2**.



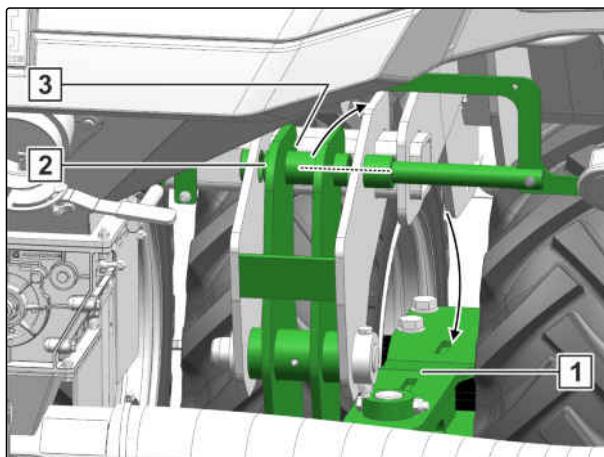
CMS-I-00002478

6 | Preparing the machine

Preparing the implement for operation

4. Raise the implement.

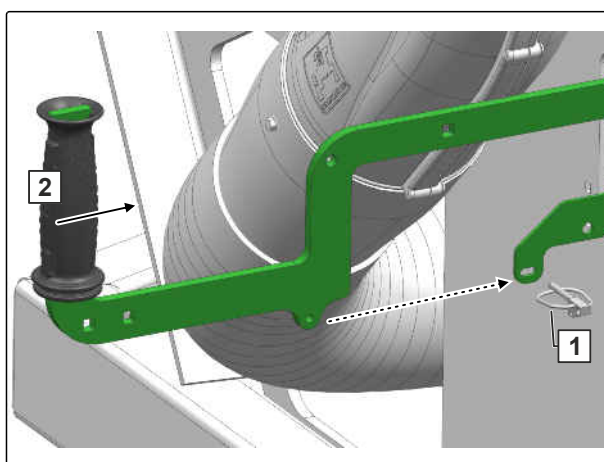
➔ The swing arm is resting on the rear stop **3**. The pegging holes for working position **2** are aligned with the positioning pins.



CMS-I-00002480

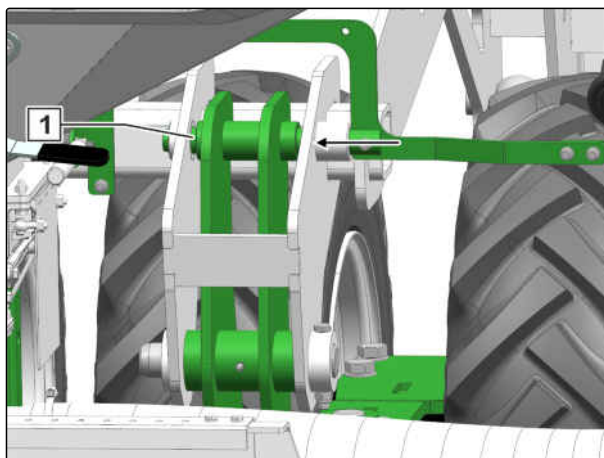
5. Close the locking mechanism **2**.

6. Secure the locking mechanism with a linch pin **1**.



CMS-I-00002477

➔ The T-Pack F is locked in working position **1**.

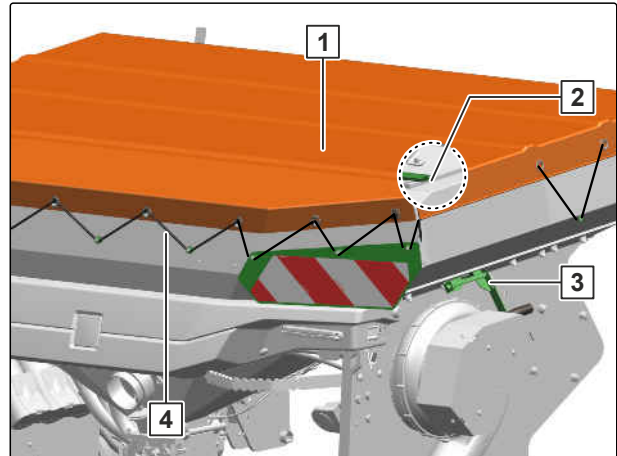


CMS-I-00002475

6.3.3 Using the hopper cover

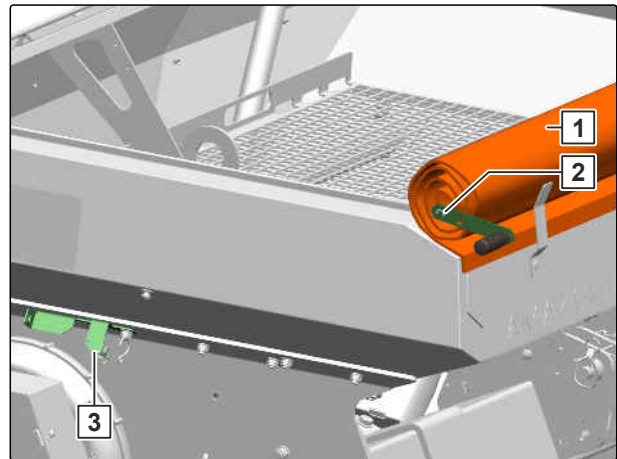
CMS-T-00003556-E.1

1. Release the rubber cord **4** from the studs.
2. Take the operating tool **3** from the parking position.
3. *To expose the winding rail **2**:*
Fold up the hopper tarpaulin **1**.
4. Insert the operating tool in the winding rail.
5. Roll up the hopper tarpaulin with the operating tool.



CMS-I-00002532

6. Insert the operating tool **2** in the winding rail .
7. Unroll the hopper tarpaulin **1** with the operating tool.
8. Stretch the rubber cord around the studs.
9. Park the operating tool in the holder **3**.
10. Secure the operating tool with a linch pin.



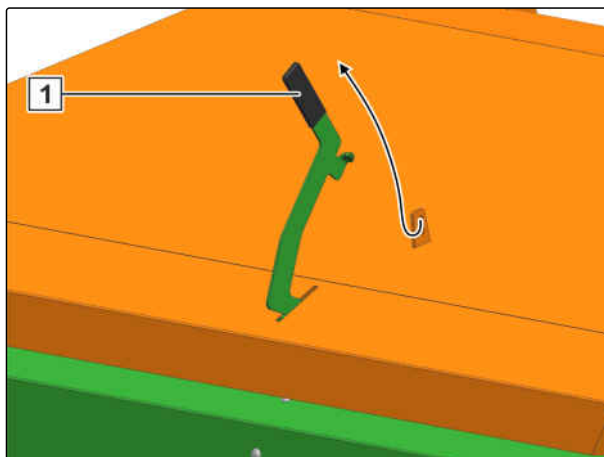
CMS-I-00002539

6 | Preparing the machine

Preparing the implement for operation

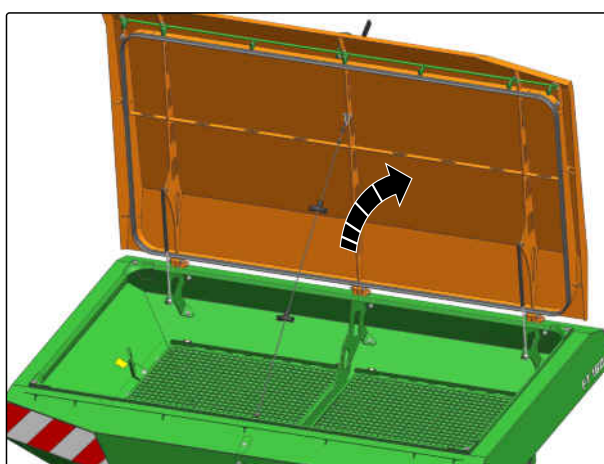
11. Switch off the fan.

12. Unlock the the locking lever **1** on the hopper cover.



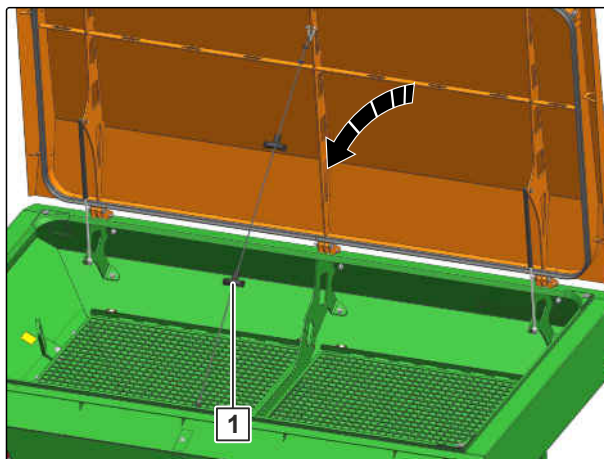
CMS-I-00002481

➔ The hopper cover opens automatically.



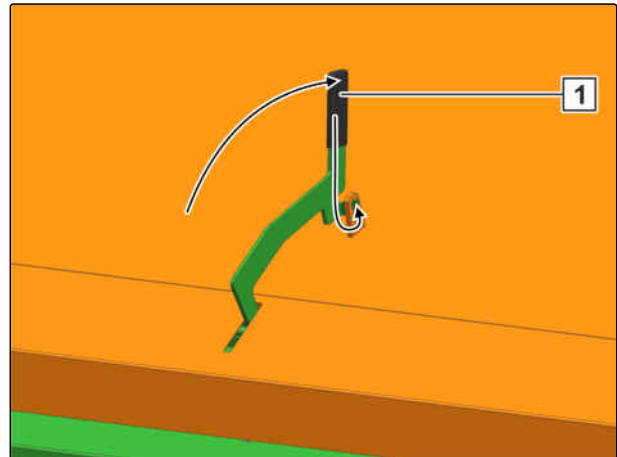
CMS-I-00002484

13. Close the hopper cover with the cord **1**.



CMS-I-00002482

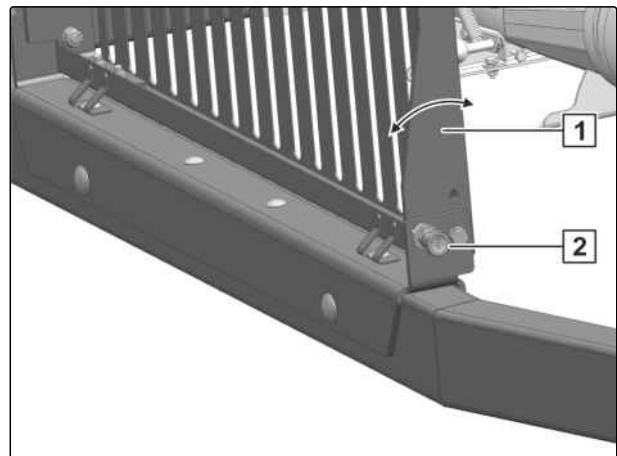
14. Lock the locking lever **1** on the hopper cover.



CMS-I-00002483

6.3.4 Using the loading board

1. Lower the implement.
2. Unlock the locking pins **2** on the loading board.
3. Swivel the loading board **1** down
or
Swivel up the loading board.
4. Secure the loading board in the desired position with the locking pin.

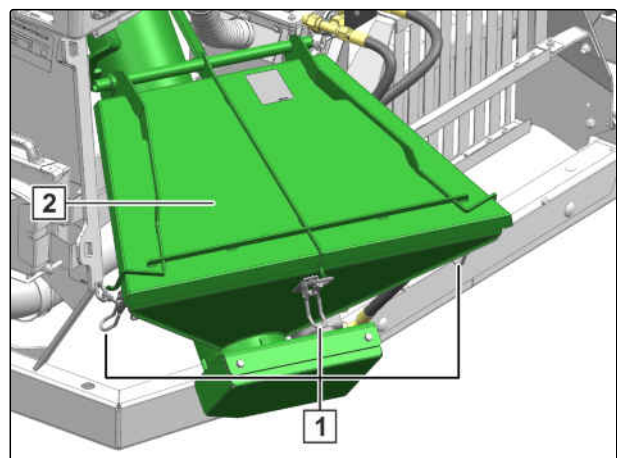


CMS-T-00003199-F.1

CMS-I-00002563

6.3.5 Using the filling auger to fill the hopper

1. Swivel the loading board down.
2. Open the hopper cover.
3. Lower the implement.
4. Open the locking mechanism **1**.
5. Remove the cover **2**.



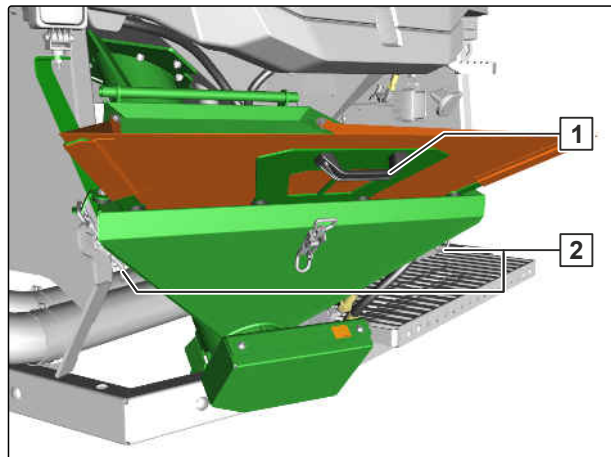
CMS-T-00005415-G.1

CMS-I-00003856

6 | Preparing the machine

Preparing the implement for operation

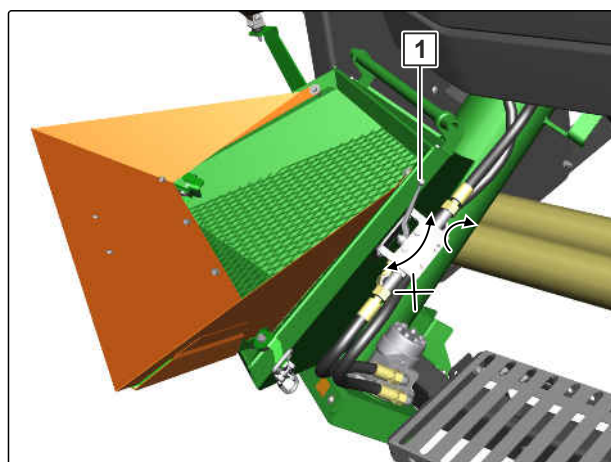
6. Unfold the filling aid **1**.
7. Fix the filling aid on the filling funnel with the locking mechanism **2**.
8. Drive the implement towards the outlet of the transport vehicle.



CMS-I-00003857

9. *To activate the oil supply for the feed auger:* switch on the "red 2" tractor control unit as required up to a maximum of 75 l/min.
10. Slowly switch on the filling auger's drive on the stop tap **1**.
11. Fill the filling funnel of the filling auger with the spreading material.

➔ The fill level in the hopper rises.



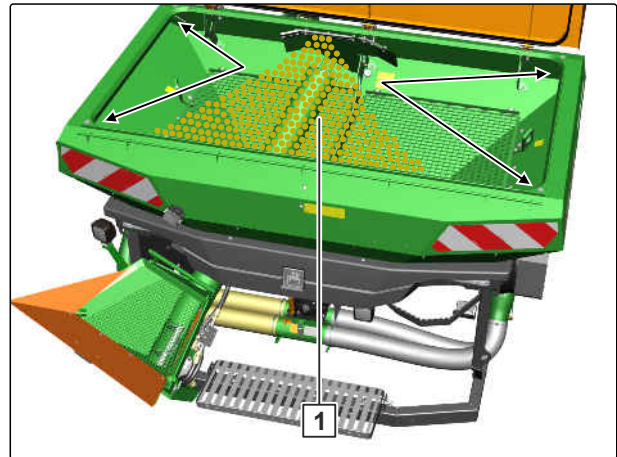
CMS-I-00003855

i NOTE

The maximum filling capacity is reached when a material cone is formed over the feed auger.

12. Monitor the fill level.
13. *When the hopper is full:* stop filling the filling funnel.
14. Leave the feed auger running until it is empty.
15. Slowly switch off the filling auger drive with the stop tap.
16. Switch off the "red 2" tractor control unit.

17. Using a suitable aid, push the material cone **1** under the filling auger into the corners of the hopper.
18. Close the hopper cover.
19. Close the filling funnel.
20. Lock the cover.
21. Swivel up the loading board.



CMS-I-00003861

6.3.6 Filling the hand wash tank

CMS-T-001707-A.1

NOTE

Use only tap water to fill the hand wash tank.

WARNING

Risk of being poisoned by unclean water

The hand wash tank is not food-safe. You can suffer poisoning if you drink the water.

- Only use the water from the hand wash tank for washing.

1. Close the water tap **3**.
2. Open the screw cap **1**.
3. Fill the hand wash tank on the implement
or
take it out of the holder to fill it.



CMS-I-00006666

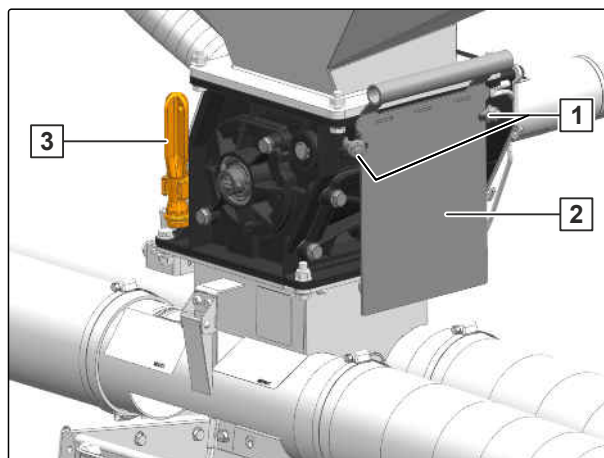
6.3.7 Preparing the metering unit for operation

CMS-T-00003566-J.1

6.3.7.1 Putting the metering unit into operation

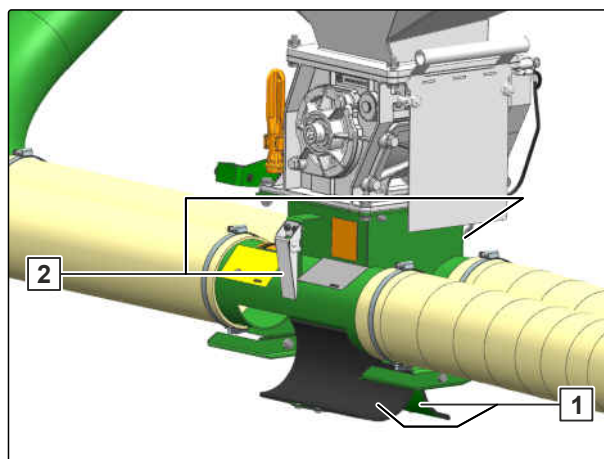
CMS-T-00005130-C.1

1. *If the hopper is full:*
Pull the sliding shutter **1** out of the metering housing.
2. Park the sliding shutter on the metering housing.
3. Swivel the bolts **2** in front of the sliding shutter.
4. Tighten the bolts with the wrench **3**.



CMS-I-00002503

5. *If work is started without calibration:*
close all of the calibration flaps **1**.
6. Lock all locking levers **2** on the metering housing.



CMS-I-00003686

6.3.7.2 Selecting the metering roller

CMS-T-00003574-L.1

Spreading material	Metering volume									
	3.75 cm³	7.5 cm³	20 cm³	40 cm³	120 cm³	210 cm³	350 cm³	600 cm³	660 cm³	880 cm³
Beans									X	
Buckwheat						X		X		
Spelt								X	X	X
Peas									X	
Flax (dressed)			X	X						
Barley						X	X	X		X

Spreading material	Metering volume									
	3.75 cm³	7.5 cm³	20 cm³	40 cm³	120 cm³	210 cm³	350 cm³	600 cm³	660 cm³	880 cm³
Grass seeds						X				
Oats						X	X	X		X
Millet			X	X						
Caraway		X	X	X						
Lupines					X		X		X	
Lucerne		X	X	X						
Maize					X					
Poppy	X	X	X							
Oil flex (moist dressed)		X	X	X						
Fodder radish		X	X	X						
Phacelia		X	X	X						
Rapeseed	X	X	X	X						
Rye						X	X	X		X
Red clover		X	X	X						
Mustard			X	X						
Soya							X		X	
Sunflowers					X	X		X		X
Turnips		X	X	X						
Triticale						X		X		X
Wheat						X	X	X		X
Vetches			X	X		X				
Fertiliser (granular)							X		X	



NOTE

For granular fertiliser, always use a flexible roller with a metering volume of 350 cm³ or 660 cm³.

The selection of metering rollers are recommendations. The optimum metering roller can only be determined through calibration.

The roller volumes are written on the side of the roller.

1. The metering roller according to the spreading material can be found in the table.
2. *To install the desired metering roller:*
See "Changing the metering roller".
3. *To perform the calibration:*
See "Calibrating the metered quantity".

6.3.7.3 Converting modular metering rollers

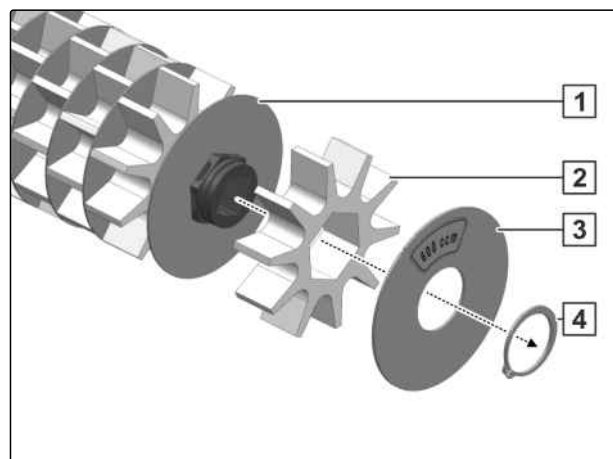
CMS-T-00003613-H.1

6.3.7.3.1 Enlarging the metering chambers

CMS-T-00003564-F.1

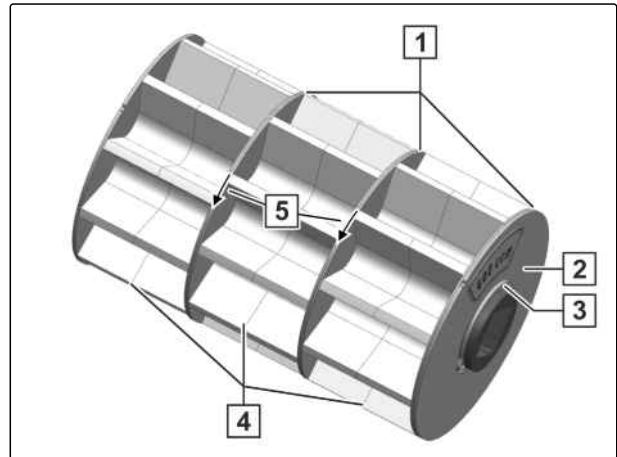
When very large seeds need to be metered, the chambers of the modular metering roller must be enlarged.

1. Remove the locking ring **4**.
2. Remove the end plate **3**.
3. Remove the metering wheels **2** and intermediate plates **1**.



CMS-I-00002550

4. Install the metering wheels **4** and intermediate plates **1** in pairs.
5. *For uniform concentricity:*
Install the metering chambers with a uniform offset **5**.
6. Install the end plate **2**.
7. Install the locking ring **3**.



CMS-I-00002551

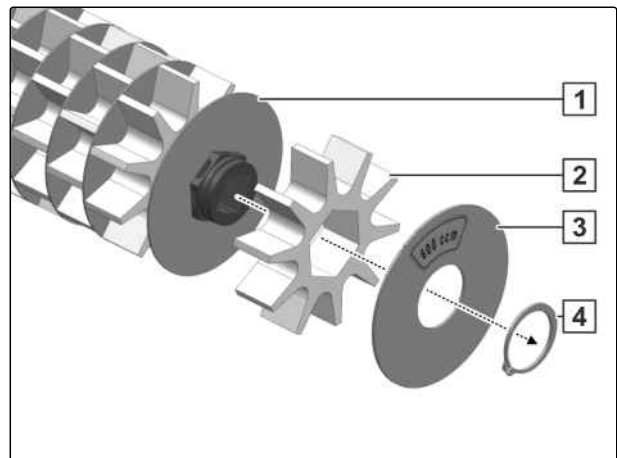
6.3.7.3.2 Adjusting the metering volume

CMS-T-00003614-G.1

The volume of a metering roller can be modified by repositioning, removing or inserting metering wheels.

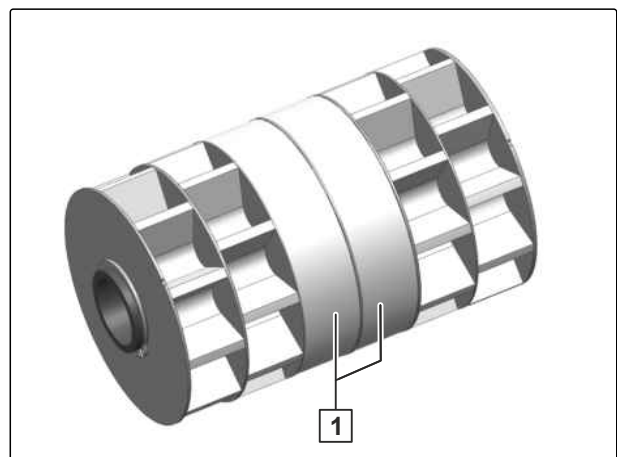
The volume of the metering roller should only be large enough so that the desired quantity of spreading material can be spread.

1. Remove the locking ring **4**.
2. Remove the end plate **3**.
3. Remove the metering wheels **2** and intermediate plates **1**.



CMS-I-00002550

4. *For uniform concentricity:*
Position the metering wheels without chambers **1** symmetrically at the centre **2**.
5. Install the metering wheels and intermediate plates.
6. Install the end plate.
7. Install the locking ring.

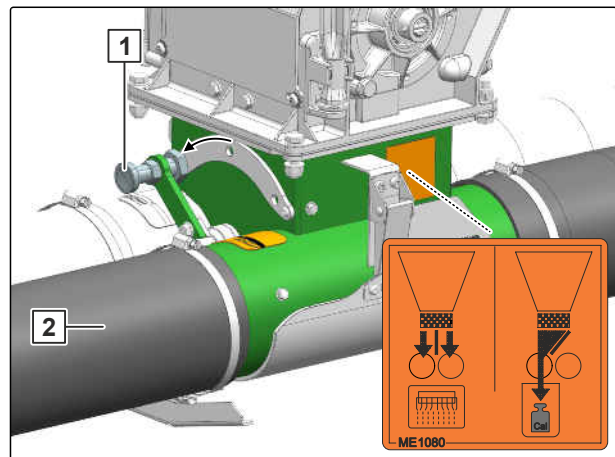


CMS-I-00002552

6.3.7.4 Changing the metering roller

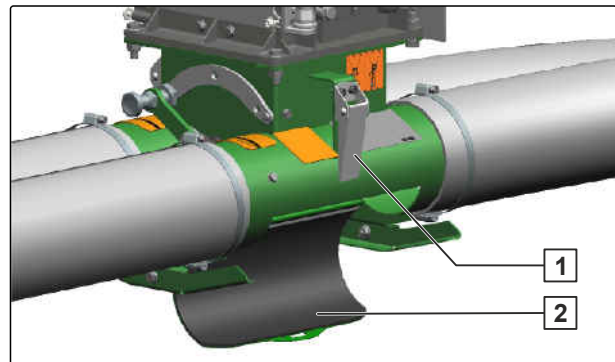
CMS-T-00003228-C.1

1. Switch off the fan.
2. *If the implement is equipped with a double sluice,*
activate the conveyor section **2** with the lever **1**.



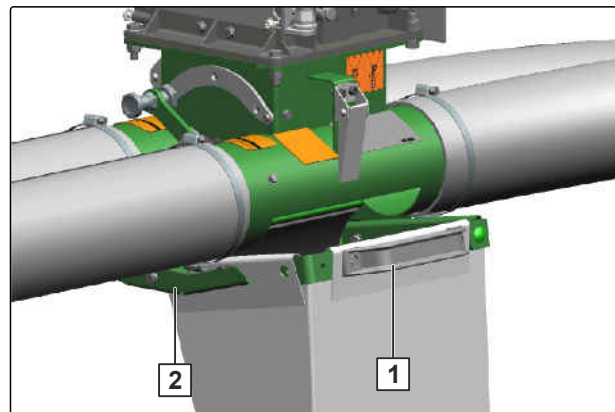
CMS-I-00002542

3. Unlock the locking lever **1** on the metering housing.
4. Open the calibration flap **2**.



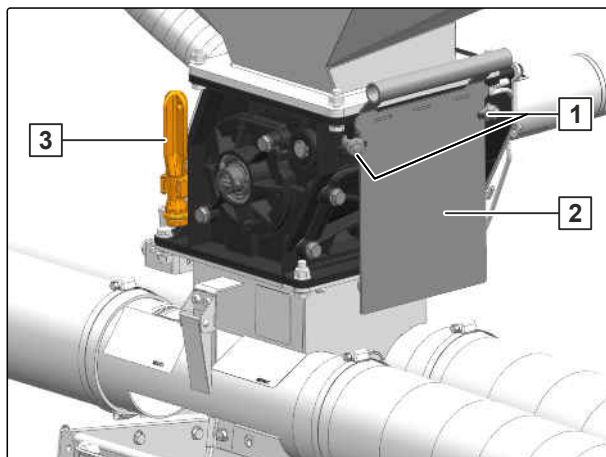
CMS-I-00003654

5. Take the calibration bucket **1** from the storage compartment.
6. Push the calibration bucket into the holder **2** under the metering housing.



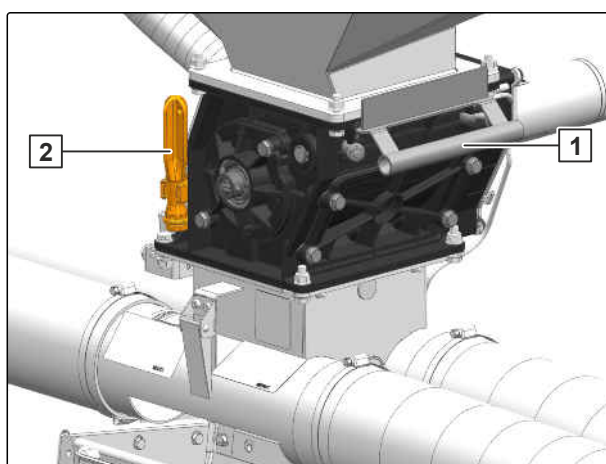
CMS-I-00003653

7. Loosen the bolts **1** with the wrench **3**.
8. Swivel the bolts to the side.
9. Take the sliding shutter **2** from its parking position.



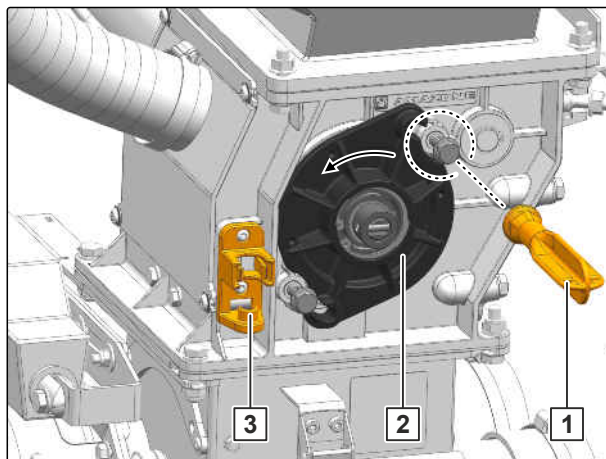
CMS-I-00002503

10. Push the sliding shutter **1** into the metering housing.
11. Park the wrench in the holder **2**.
12. *To empty the metering unit and the metering roller, refer to the ISOBUS software operating manual, "Emptying".*



CMS-I-00003650

13. Loosen the bolts with the wrench **1**.
14. Park the wrench in the holder **3**.
15. Turn the bearing cover **2**.

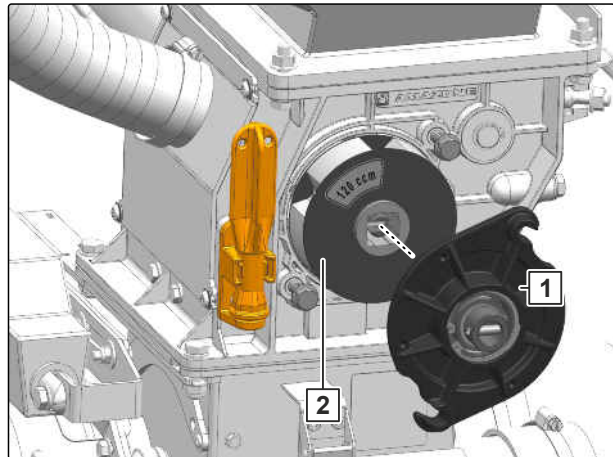


CMS-I-00002501

6 | Preparing the machine

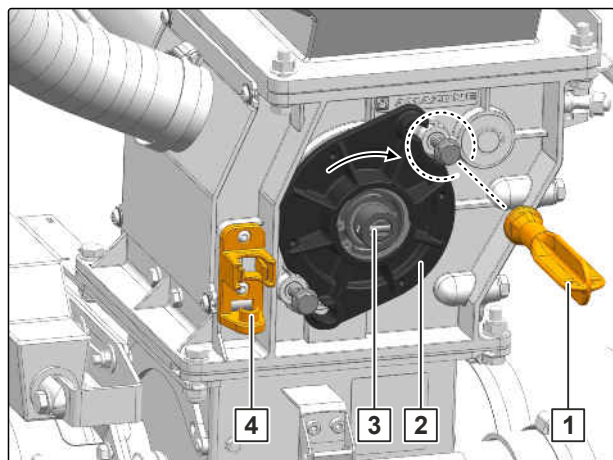
Preparing the implement for operation

16. Pull off the bearing cover **1**.
17. *When the hopper is closed off with the sliding shutter,*
pull the metering roller **2** out of the metering unit.
18. Install the new metering roller.



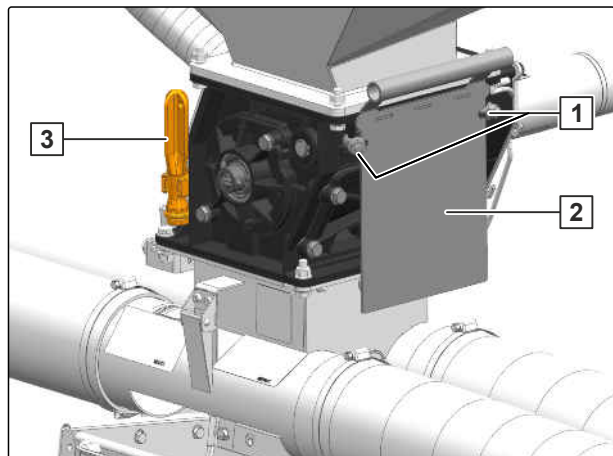
CMS-I-00002500

19. Align the catch **3** on the bearing cover **2** with the drive shaft.
20. Install the bearing cover.
21. Tighten the bolts with the wrench **1**.
22. Park the wrench in the holder **4**.



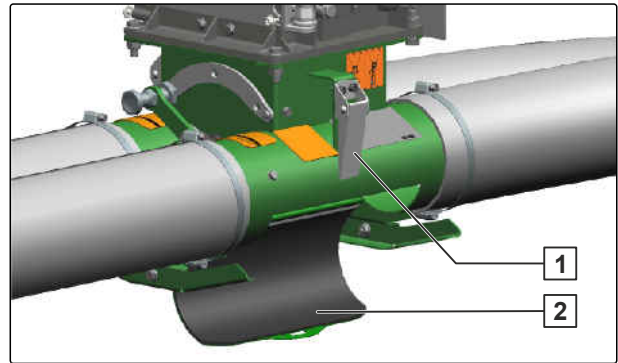
CMS-I-00002504

23. Park the sliding shutter **1** on the metering housing.
24. Swivel the bolts **2** in front of the sliding shutter.
25. Tighten the bolts with the wrench **3**.



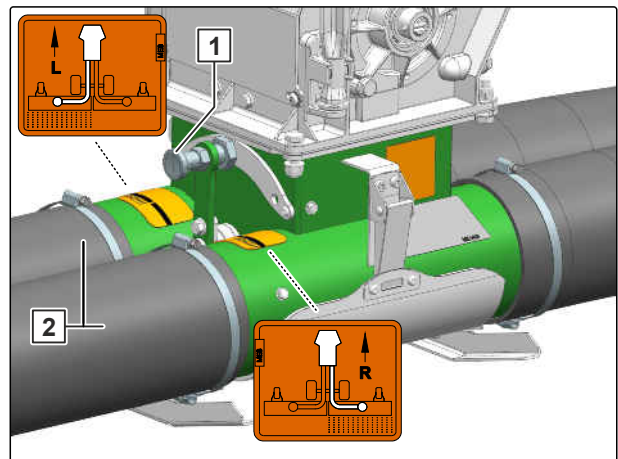
CMS-I-00002503

26. Empty the calibration bucket.
27. Put the calibration bucket in the storage compartment.
28. Close the calibration flap **2**.
29. Lock the locking lever **1** on the metering housing.



CMS-I-00003654

30. To activate both conveyor sections **2**, put the lever **1** back in the centre position.



CMS-I-00002543

6.3.7.5 Calibrating the metering unit

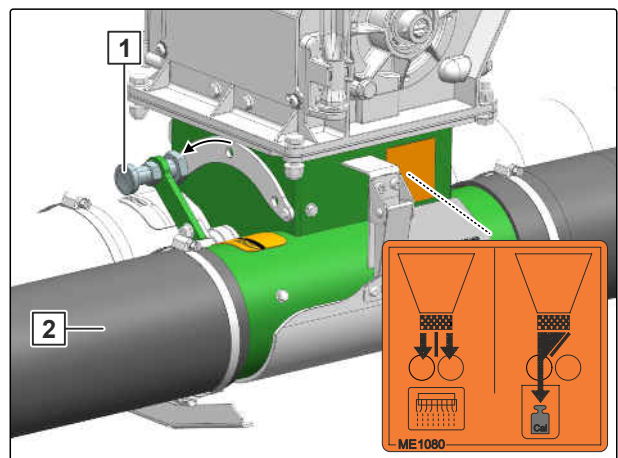
CMS-T-00003323-E.1



REQUIREMENTS

- ☑ The hopper is at least 1/4 filled with spreading material

1. If the implement is equipped with a double sluice, activate the conveyor section **2** with the lever **1**.

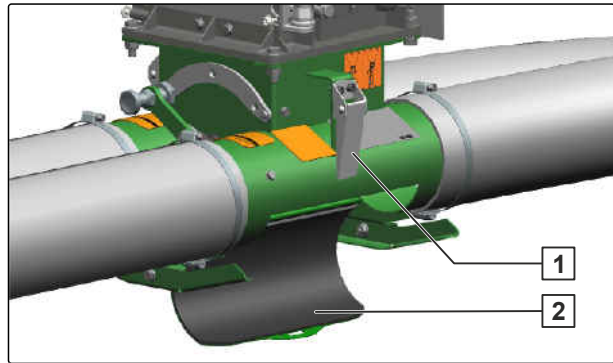


CMS-I-00002542

6 | Preparing the machine

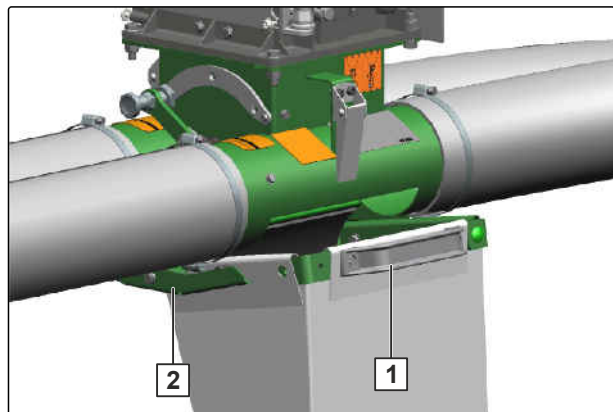
Preparing the implement for operation

2. Unlock the locking lever **1** on the metering housing.
3. Open the calibration flap **2**.



CMS-I-00003654

4. Take the calibration bucket **1** from the storage compartment.
5. Push the calibration bucket into the holder **2** under the metering housing.
6. *To fill the metering roller,*
Actuate the calibration button for 10 seconds.
7. Empty the calibration bucket.
8. Hang the calibration bucket with the calibration scale on the weighing point.
9. *To tare the calibration scale,*
switch on the calibration scale with the empty calibration bucket.
10. Push the calibration bucket into the holder under the metering housing again.



CMS-I-00003653

NOTE

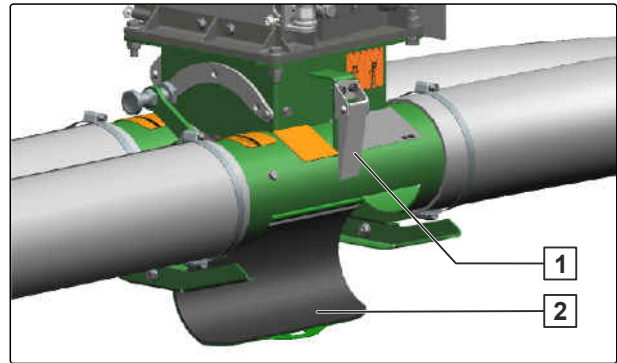
If uniform emptying is desired for a 2-chamber hopper with only one seed type, the target rates must be converted to the percentage of the hopper volume.

11. *To start the calibration via the control terminal,*
refer to the ISOBUS software operating manual,
"Calibration menu".

NOTE

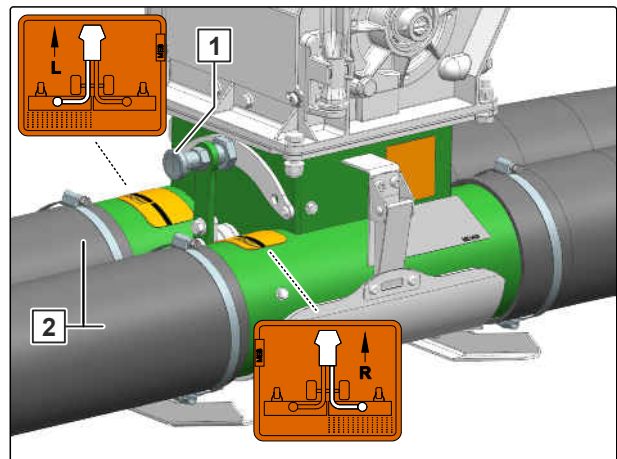
To determine the calibration factor as precisely as possible, fill the seed remaining in the sluice into the calibration bucket.

12. Empty the calibration bucket.
13. Put the calibration bucket in the storage compartment.
14. Close the calibration flap **2**.
15. Lock the locking lever **1** on the metering housing.



CMS-I-00003654

16. To activate both conveyor sections **2**, put the lever **1** back in the centre position.
17. If the implement is equipped with a 2-chamber hopper, calibrate the second metering unit.



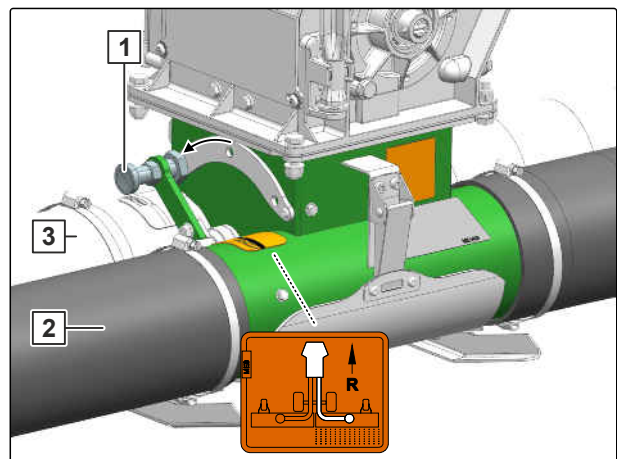
CMS-I-00002543

6.3.8 Operating the one-sided switching

CMS-T-00003562-C.1

For certain working widths for crop maintenance, it is necessary to perform the first field pass with the seed drill with half the working width. For example, when beginning field work at the left field edge, the coulters on the right side of the implement do not deposit seeds in the soil.

1. To deactivate the conveyor section **3**, unlock the control lever **1**.
 2. Put the control lever in the indicated position.
- ➔ The conveyor section **2** is activated.

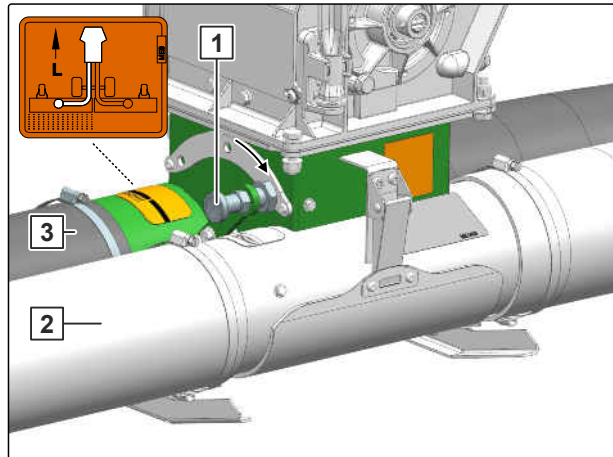


CMS-I-00003649

6 | Preparing the machine

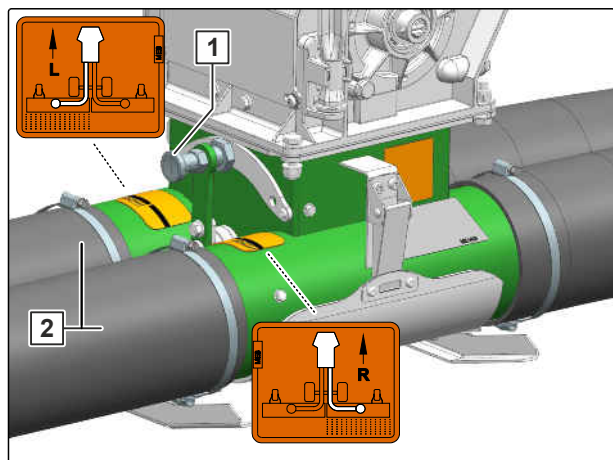
Preparing the implement for operation

3. To deactivate the conveyor section **2**, unlock the control lever **1**.
4. Put the control lever in the indicated position.
- ➔ The conveyor section **3** is activated.



CMS-I-00003648

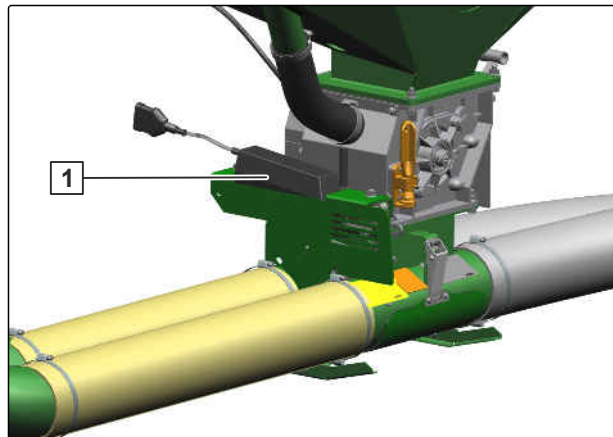
5. unlock the control lever **1**.
6. Put the control lever in the indicated position.
- ➔ Conveyor sections **2** and **3** are activated.



CMS-I-00002543

Depending on the implement equipment, the one-sided switching **1** can be electrically operated.

7. To use the electrical one-sided switching, refer to the ISOBUS operating manual.



CMS-I-00003622

6.3.9 Adjusting the fan speed

CMS-T-00003208-G.1



REQUIREMENTS

- ☑ The hopper is full
- ☑ The hopper is closed



WARNING

Risk of injury due to parts of the fan being flung out








If the fan is operated at excessive speeds, fan parts can break and be flung out.

- Make sure that the fan speed does not exceed 5,000 1/min.



NOTE

The specifications for the fan speed are recommendations.

				
			< = 150 kg/ha	> 150 kg/ha
max. 5000 min ⁻¹	3200	4000	4000	4500
ME1515			 min ⁻¹	
	3	2	1	

CMS-I-00004431

1. Read the fan speed for fertiliser **1**, seed **2** or fine seeds **3** from the table.
2. *If seed remains in the hose package or a cyclone separator is used:*
Increase the fan speed

or

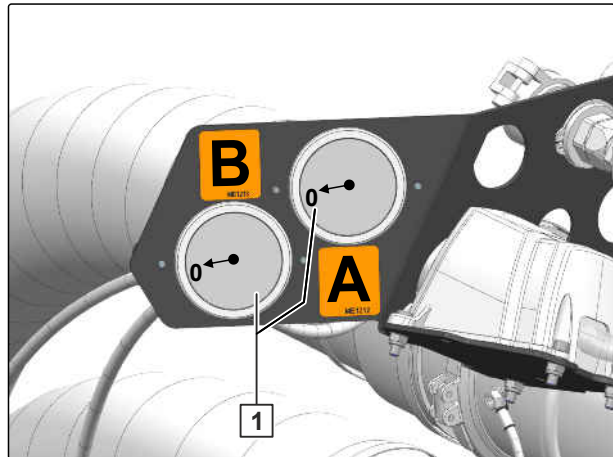
If seed is blown out of the seedbed:
Reduce the fan speed.

6 | Preparing the machine

Preparing the implement for operation

3. Check the fan pressure on the pressure gauge **1**.

➔ If the pressure gauges do not display appreciable pressure when the fan is running, check if the hopper cover and the calibration flaps are closed.



CMS-I-00002487

6.3.10 Setting up the speed sensor

CMS-T-00003210-E.1

To start the metering unit(s), a speed signal is required. The speed sensor on the implement can be used for this.

- *To set up the speed sensor on the implement, see ISOBUS software operating manual, "Setting up the speed sensor on the implement"*

or

see "control computer operating manual."

6.3.11 Changing the implement controls

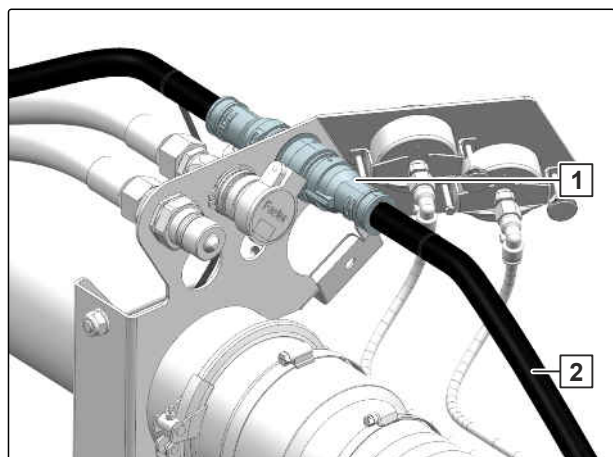
CMS-T-00005213-C.1

6.3.11.1 Autonomous implement controls

CMS-T-00005214-A.1

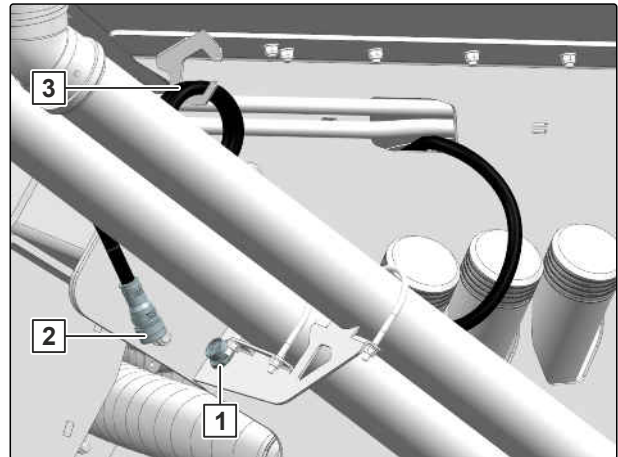
Depending on the equipment, the implement control of the FTender is integrated via the job computer of the AMAZONE implement mounted at the rear or autonomous via its own job computer.

1. *To operate the FTender with the autonomous ISOBUS implement controls,* disconnect the 6-pin plug **1** from the interface of the hose package.
2. Remove the connection cable **2** from the conveyor section.
3. Route the connection cable to the FTender.



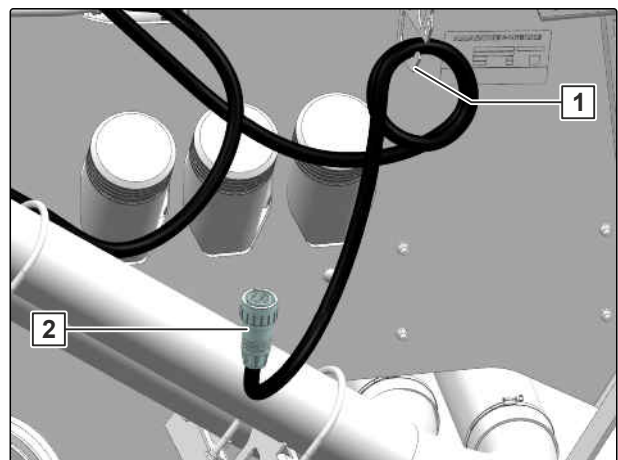
CMS-I-00003744

4. Connect the 6-pin plug **2** to the interface of the FTender **1**.
5. Roll up the excess length of the connecting cable.
6. Put the excess length in the holder **3**.



CMS-I-00003743

7. Take the connection cable with the 15-pin plug **1** from the holder **1**.
8. Connect the 15-pin plug to the tractor or the ISOBUS extension to the interface of the hose package.

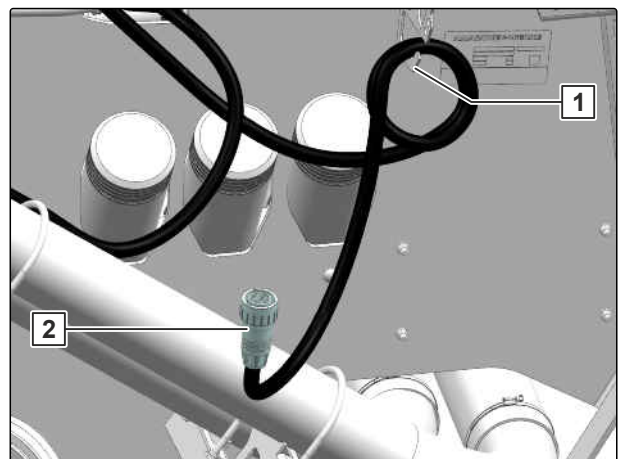


CMS-I-00003742

6.3.11.2 Integrated implement control

Depending on the equipment, the implement control of the FTender is integrated via the job computer of the AMAZONE implement mounted at the rear or autonomous via its own job computer.

1. *To operate the FTender with the integrated ISOBUS implement control,* disconnect the connection cable with the 15-pin plug **2** from the tractor or the ISOBUS extension from the interface of the hose package.
2. Roll up the excess length of the connecting cable.
3. Put the connection cable in the holder **1**.

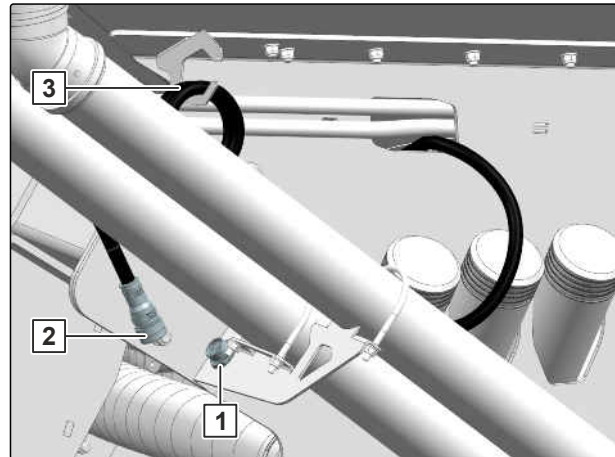


CMS-I-00003742

6 | Preparing the machine

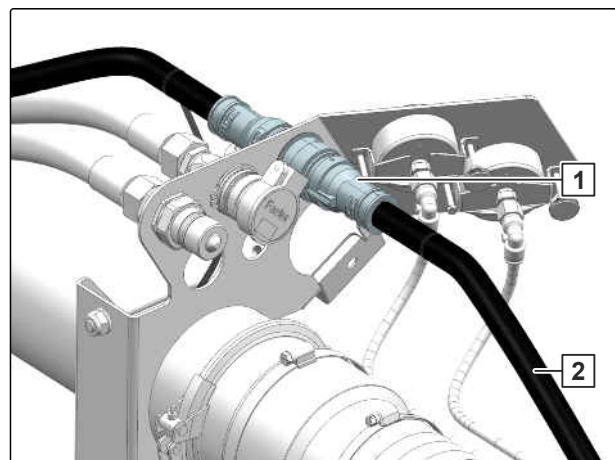
Preparing the implement for operation

4. Disconnect the 6-pin plug **2** from the interface on the FTender **1**.
5. Take the connection cable from the holder **3**.



CMS-I-00003743

6. Route the connection cable **2** with the 6-pin plug **1** to the interface of the hose package.
7. Connect the 6-pin plug to the interface of the hose package.



CMS-I-00003744

6.3.12 Adjusting the low level sensor

1. *If low spread rates should be metered:*
Insert the low level sensor in the lower mount **2**

or

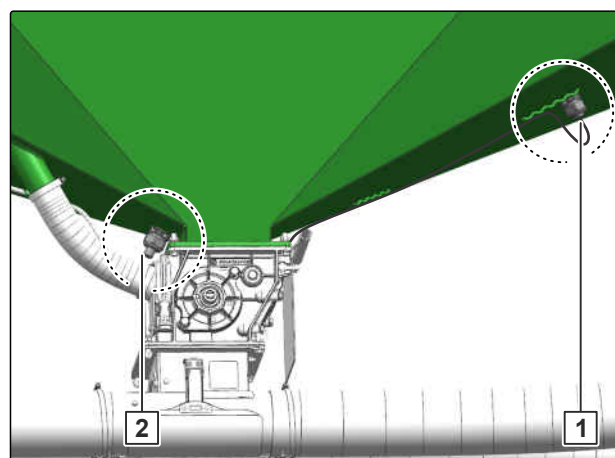
If high spread rates should be metered:
Insert the low level sensor in the upper mount **1**.



NOTE

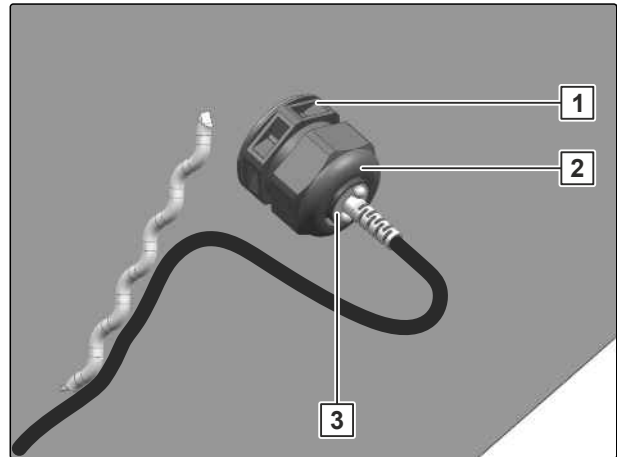
As soon as the low level sensor is no longer covered, a warning message appears on the control terminal.

When the low level sensor is inserted in the lower mount, the warning message appears very late.



CMS-T-00003330-C.1

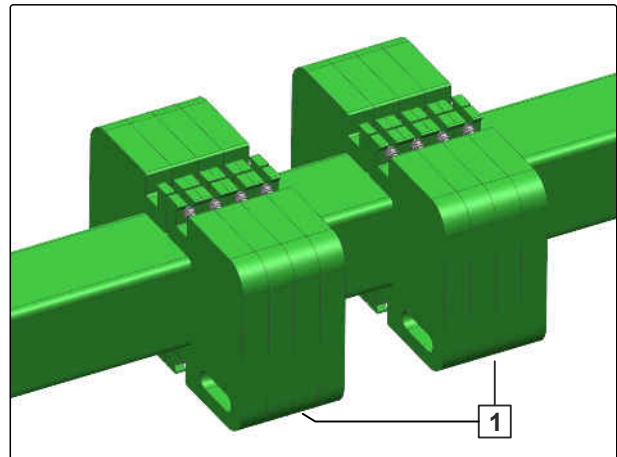
2. Empty the hopper.
3. Loosen the nuts on both sensor mounts **2**.
4. Pull the low level sensor out of the mount **1**.
5. Pull the sealing plug out of the desired mount.
6. Insert the low level sensor flush in the desired mount.
7. Insert the sealing plug in the empty mount.
8. Tighten the nuts on both sensor mounts.



CMS-I-00002513

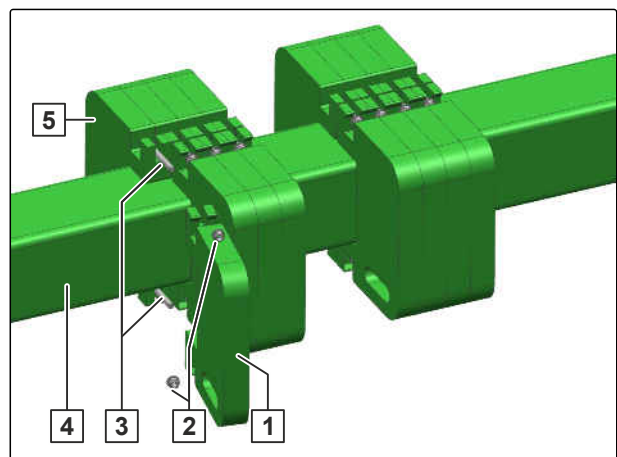
6.3.13 Installing ballast weights

1. Determine the desired number of ballast weights **1**.



CMS-I-00002525

2. Place the first ballast weight **5** on the frame tube **4**.
3. Hook the bolt and washer **3** on both sides of the ballast weight.
4. Put the second ballast weight **1** in position.
5. Install the second ballast weight with washer and nut **2**.
6. Distribute the ballast weights symmetrically on the beam section.
7. After 5 hours of operation, check the bolted connections for tight fit.



CMS-I-00003621

6.3.14 Mounting the T-Pack F

CMS-T-00003331-D.1

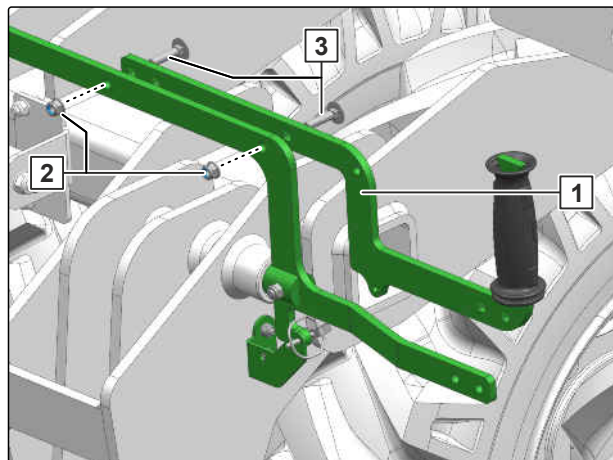
Before the T-Pack F can be connected to the FTender:

- The T-Pack F transport lock must be removed
- Removing the lower link mountings
- Removing the working position sensor from the FTender
- Mounting the T-Pack F on the FTender
- Installing the working position sensor on the T-Pack F
- Installing the transport lock on the FTender

1. To dismount the T-Pack F transport lock:
Remove the nuts and washers **2**.

2. Remove the bolts **3**.

3. Remove the operating handle **1**.



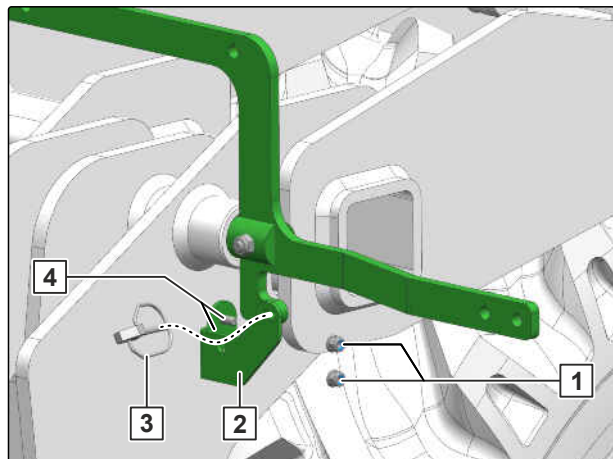
CMS-I-00003642

4. Remove the linch pin **3**

5. Remove the nuts and washers **4**.

6. Remove the locking plate **2**.

7. Remove the bolts **4**.



CMS-I-00003641

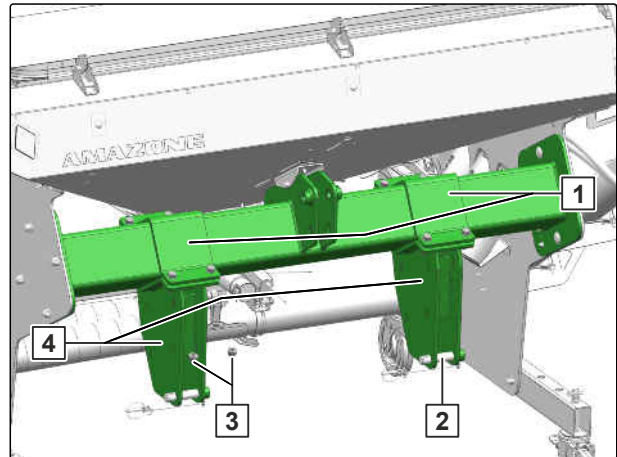
8. *To dismantle the lower link receptacles:*

Remove the lower link pin **2**.

9. Loosen all bolted connections **3** and remove them.

10. Remove the lower link mountings.

11. Remove the clamps **1**.

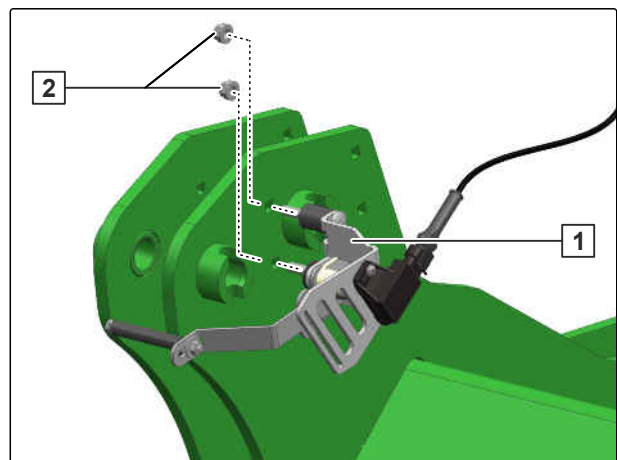


CMS-I-00002519

12. *To dismantle the working position sensor from the FTender:*

Remove the nuts and washers **2**.

13. Remove the working position sensor **1**.



CMS-I-00003636

14. *To couple the T-Pack F onto the tractor:*

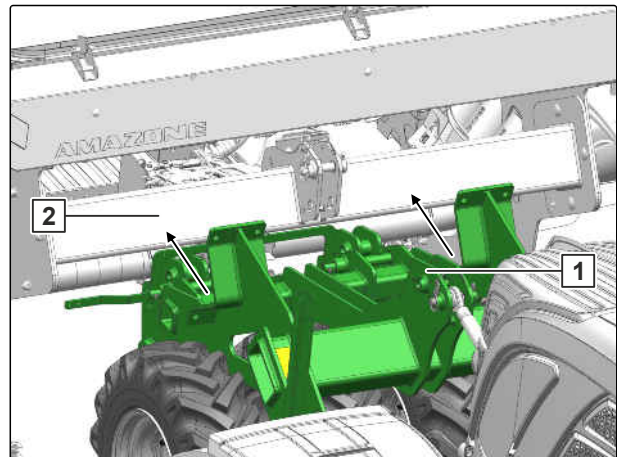
See "Coupling the 3-point mounting frame".

15. *To move the parking supports into the upper position:*

See section "Using the parking supports".

16. Slowly drive the tractor forwards.

➔ Position the T-Pack F in the tractor lift linkage **1** centrally on the FTender **2**.



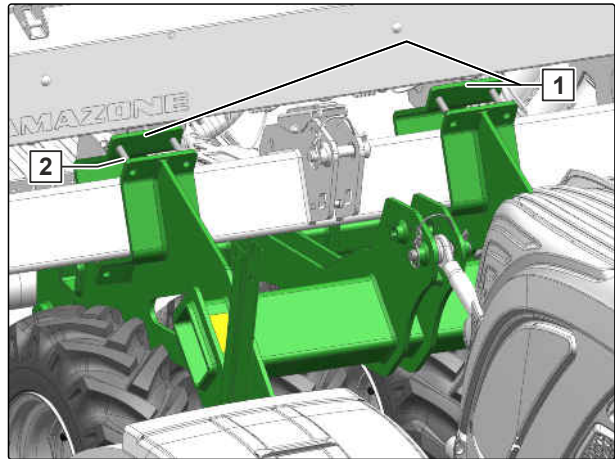
CMS-I-00002517

6 | Preparing the machine

Preparing the implement for operation

17. To mount the T-Pack F on the FTender:
Install the clamps **1**.

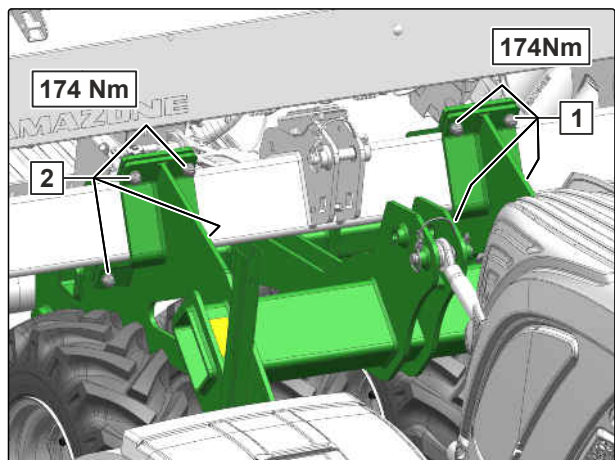
18. Install the 8 bolts **2**.



CMS-I-00002520

19. Install the nuts and washers **1** and tighten them.

20. Install the nuts and washers **2** and tighten them.



CMS-I-00003644

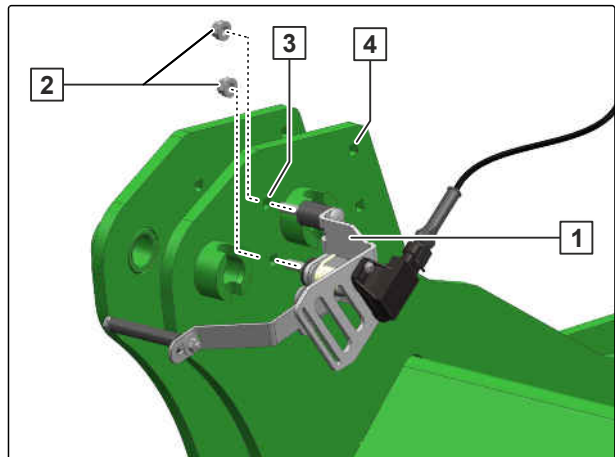
21. To mount the working position sensor on the T-Pack F:

Install the working position sensor **1** on the desired top link mounting **3** or **4**.

22. Install the nuts and washers **2**.

23. To adjust the working position sensor to the top link:

See section "Adjusting the working position sensor".



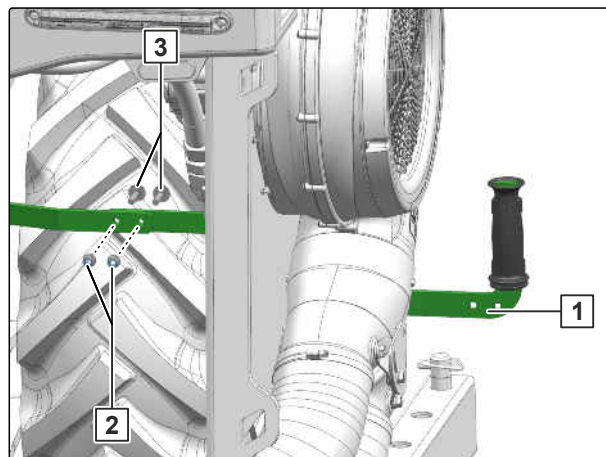
CMS-I-00003637

24. To mount the transport lock on the FTender:

Install the operating handle **1**.

25. Install the bolts **3**.

26. Install the nuts and washers **2**.

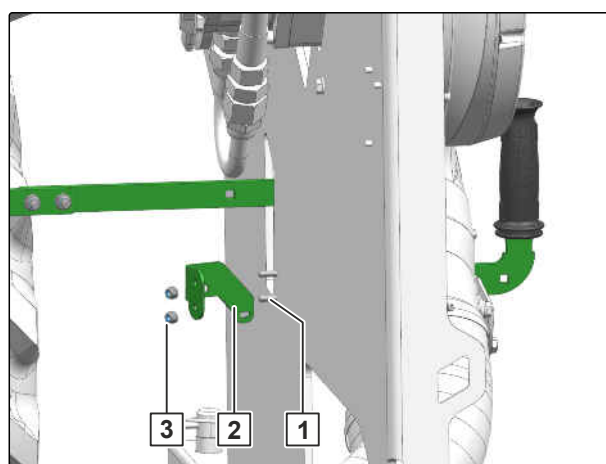


CMS-I-00003638

27. Install the bolts **1**.

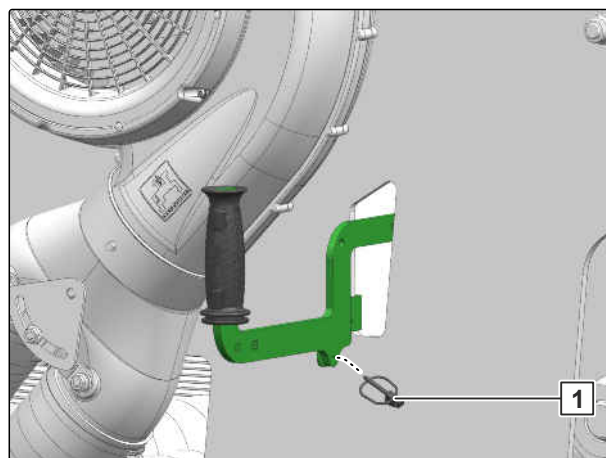
28. Install the locking plate **2**.

29. Install the nuts and washers **3**.



CMS-I-00003639

30. Install the linch pin **1**.



CMS-I-00003640

6.3.15 Dismounting the T-Pack F

CMS-T-00003332-E.1



NOTE

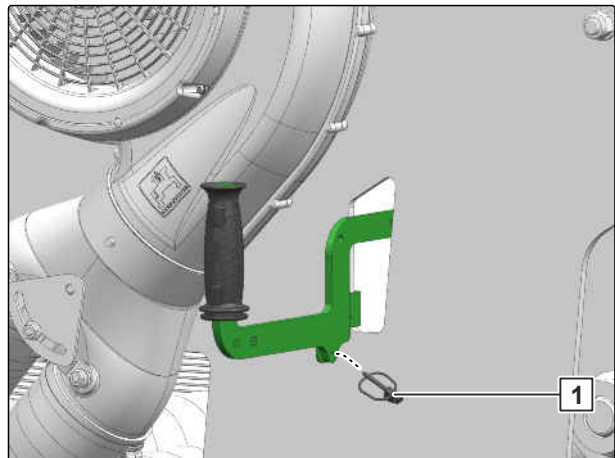
Road travel with the dismantled T-Pack F is only permitted with lighting and identification in compliance with the national regulations.

Before the T-Pack F can be disconnected from the FTender:

- Remove the transport lock from the FTender
- Remove the working position sensor from the T-Pack F
- Dismount the T-Pack F from the FTender
- Install the lower link mountings on the FTender
- Install the working position sensor on the FTender
- Install the T-Pack F transport lock

1. *To dismount the transport lock from the FTender:*

Remove the linch pin **1**.

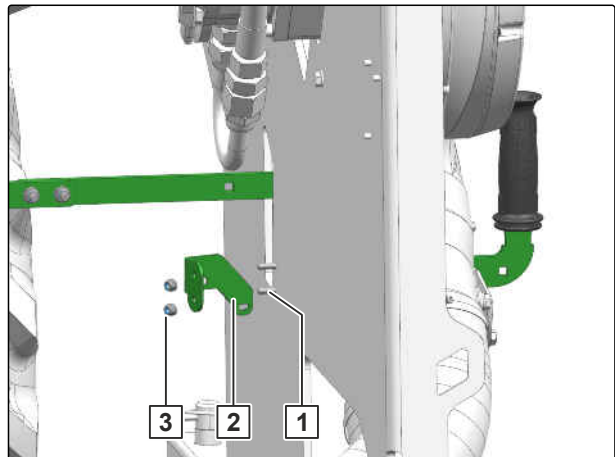


CMS-I-00003640

2. Remove the nuts and washers **3**.

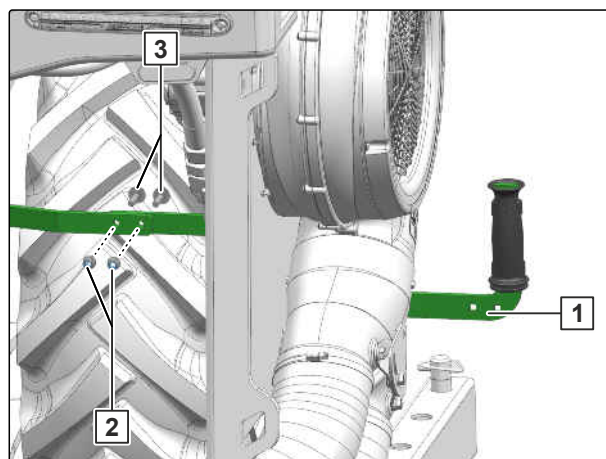
3. Remove the locking plate **2**.

4. Remove the bolts **1**.



CMS-I-00003639

5. Remove the nuts and washers **2**.
6. Remove the bolts **3**.
7. Remove the operating handle **1**.

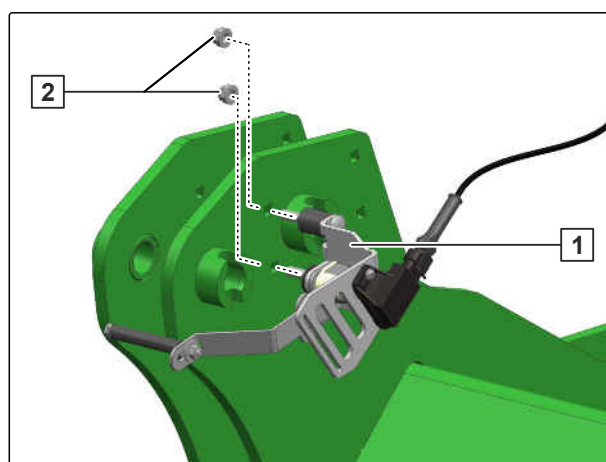


CMS-I-00003638

8. *To dismount the working position sensor from the T-Pack F:*

Remove the nuts and washers **2**.

9. Remove the working position sensor **1**.

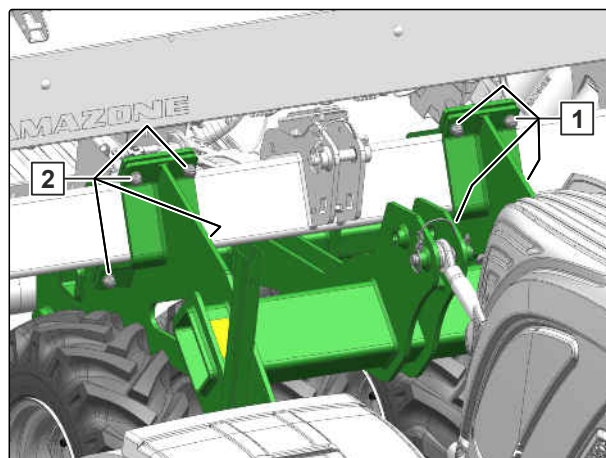


CMS-I-00003636

10. *To dismount the T-Pack F from the FTender:*

Remove the nuts and washers **1**.

11. Remove the nuts and washers **2**.



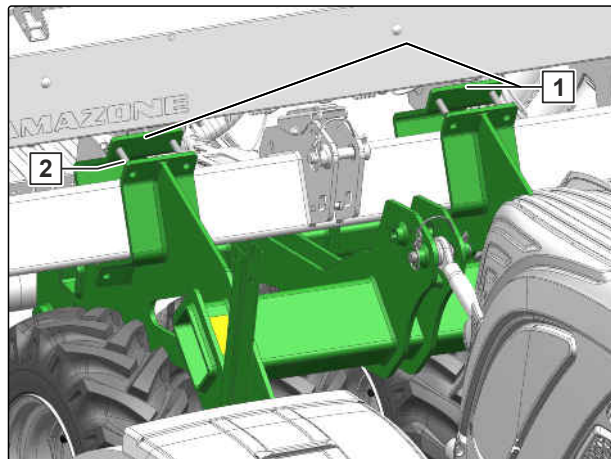
CMS-I-00003643

6 | Preparing the machine

Preparing the implement for operation

12. Remove the 8 bolts **2**.

13. Remove the clamps **1**.



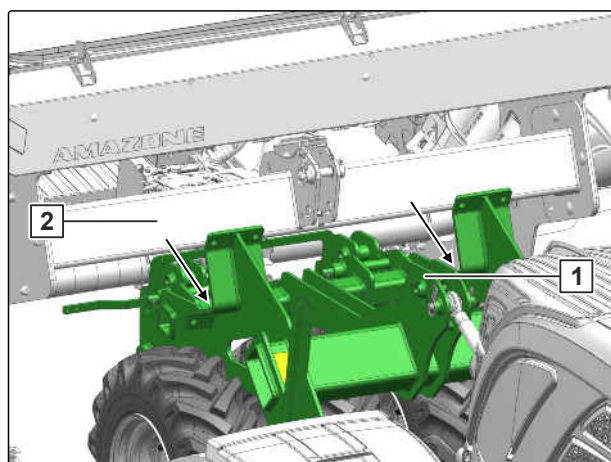
CMS-I-00002520

14. Slowly drive the tractor in reverse.

➔ Release the T-Pack F in the tractor lift linkage **1** from the front-mounted hopper **2**.

15. *To bring the parking supports into the lower position:*
See section "Using the parking supports".

16. *To uncouple the T-Pack F:*
See "Uncoupling the 3-point mounting frame".



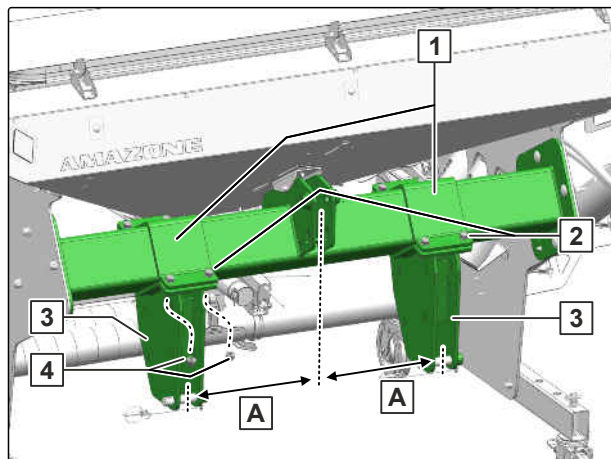
CMS-I-00002516

17. *To mount the lower link receptacles on the FTender:*

Put the clamps **1** on the beam section.

18. Insert the bolts **2**.

19. Loosely install the lower link mountings with nuts and washers **4**.



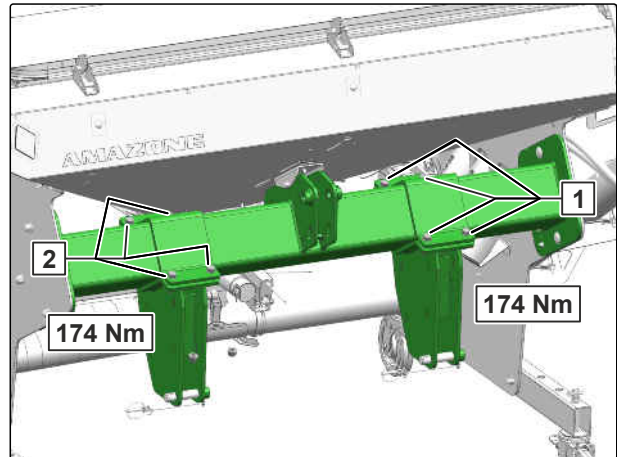
CMS-I-00002605

Mounting category	Distance measurement A
Cat. 2	435 mm
Cat. 3N	435 mm
Cat. 3	505 mm

20. The desired distance measurement **A** is specified in the table.

21. Tighten the nuts **1**.

22. Tighten the nuts **2**.



CMS-I-00003645

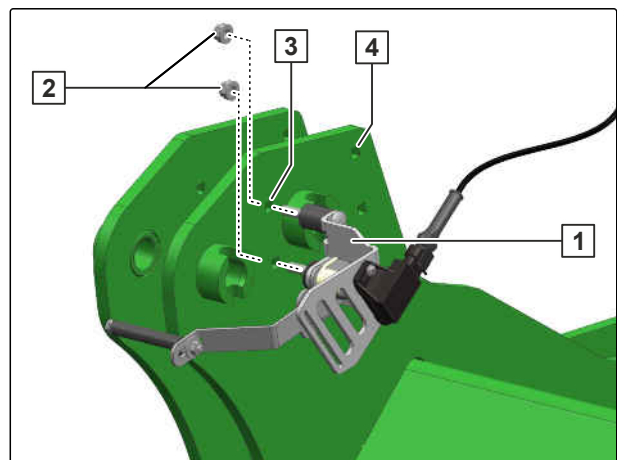
23. *To mount the working position sensor on the FTender:*

Install the working position sensor **1** on the desired top link mounting **3** or **4**.

24. Install the nuts and washers **2** and tighten them.

25. *To adjust the working position sensor to the top link:*

See section "Adjusting the working position sensor".



CMS-I-00003637

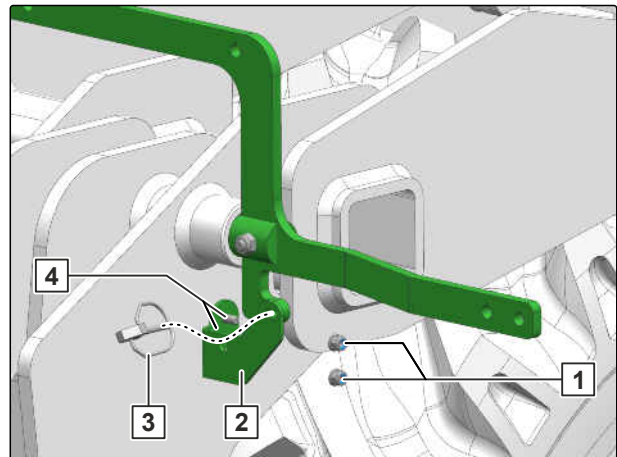
26. *To mount the T-Pack F transport lock:*

Install the locking plate **2**.

27. Install the bolts **4**.

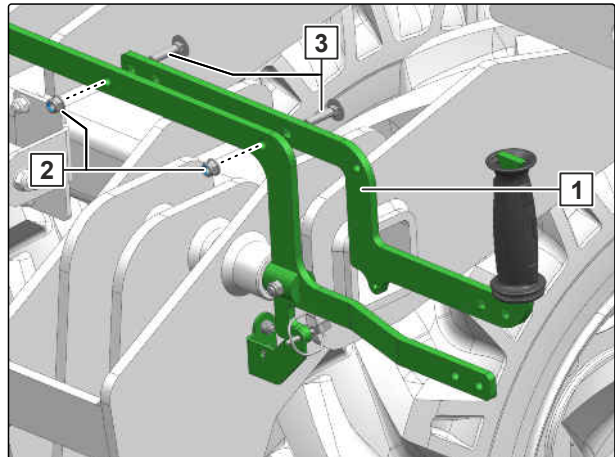
28. Install the washers and nuts **4** and tighten them.

29. Install the linch pin **3**.



CMS-I-00003641

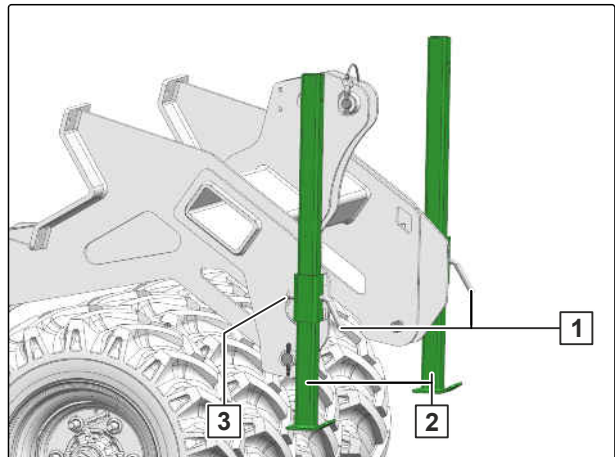
30. Install the operating handle **1**.
31. Install the bolts **3**.
32. Install the washers and nuts **2** and tighten them.



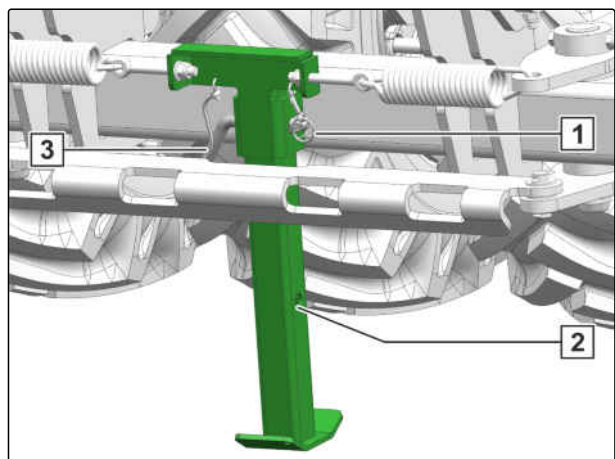
CMS-I-00003642

6.3.16 Using the parking supports

1. Raise the implement.
2. Remove the linch pin **3**.
3. Hold the parking support **2**.
4. Pull out the pin **1**.
5. Move parking supports to the desired position.
6. Secure the parking supports with pins.
7. Secure the pin with a linch pin.
8. Remove the linch pin **1**.
9. Hold the front parking support **2**.
10. Pull out the pin **3**.
11. Move the front parking support to the desired position.
12. Secure the front parking support with the pin.
13. Secure the pin with a linch pin.



CMS-I-00002514



CMS-I-00002515

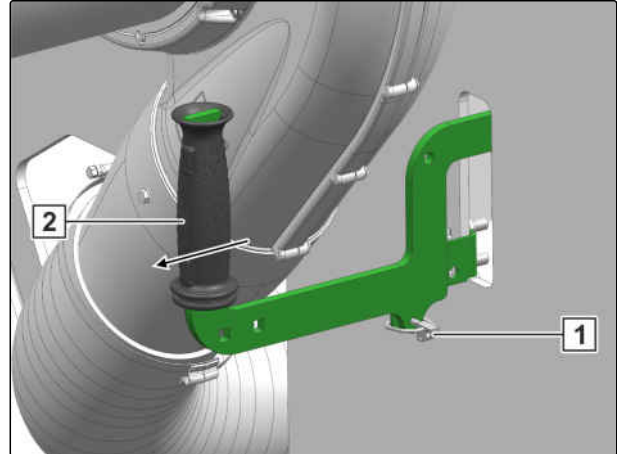
6.4 Preparing the machine for road travel

CMS-T-00003203-H.1

6.4.1 Move the T-Pack F into parking position

CMS-T-00003134-C.1

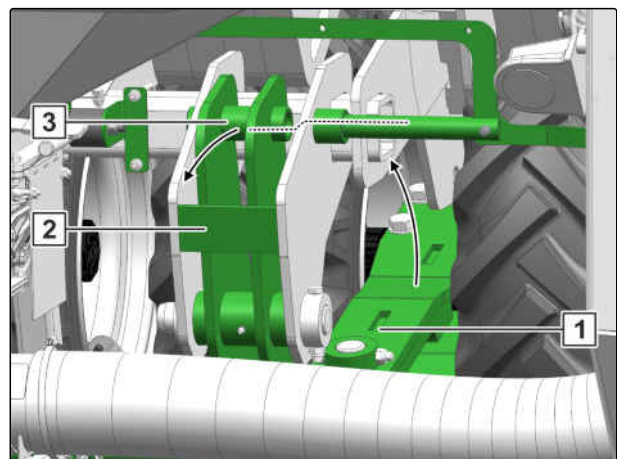
1. Raise the implement.
2. Remove the linch pin **1**.
3. Open the locking mechanism **2**.



CMS-I-00002478

4. To move the T-Pack F **1** into parking position, lower the implement.

➔ The swing arm is resting on the front stop **2**.
The pegging holes for working position **3** are exposed.

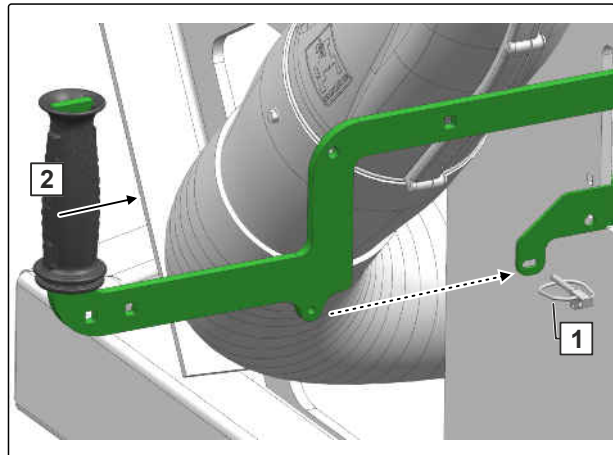


CMS-I-00002479

6 | Preparing the machine

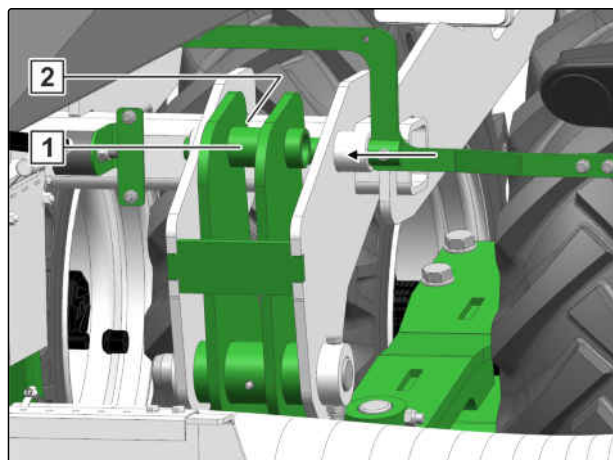
Preparing the machine for road travel

5. Close the locking mechanism **2**.
6. Secure the locking mechanism with a linch pin **1**.



CMS-I-00002477

- ➔ The T-Pack F is locked in parking position **2**.
The pegging holes **1** are exposed.



CMS-I-00002476

6.4.2 Monitoring cross-traffic

CMS-T-00011923-A.1



WARNING

Risk of injury or even death when driving without a certified camera system

If a non-certified camera system is used to monitor cross-traffic, persons or vehicles can be overseen. The camera system is an aid. The camera system does not replace the banksman

- Rely on the banksman when driving into intersections or junctions.

- Monitoring cross-traffic using a certified camera system

or

Use a banksman when driving into intersections or junctions.

6.4.3 Switching off the work lights

CMS-T-00013341-B.1

- *To switch off the work lights:*
refer to the "*ISOBUS*" operating manual

or

refer to the "*Control computer*" operating manual.

Using the machine

7

CMS-T-00003112-D.1

7.1 Using the implement

CMS-T-00003116-D.1

1. Align the implement parallel to the ground.
2. Switch on the fan.
3. Lower the implement to the working height

or

When working with the T-Pack F:

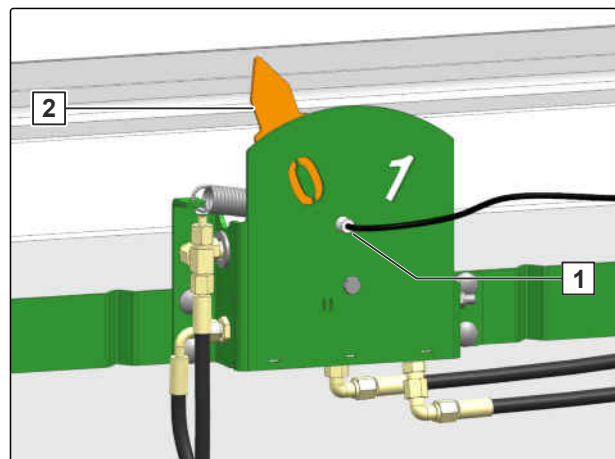
Lower the implement onto the T-Pack and move the hydraulic system of the 3-point power lift into float position.

4. *When beginning with half the implement width:*
see page 69.
5. Drive off with the tractor.

7.2 Using a hydraulically actuated working position sensor

CMS-T-00005823-C.1

The pointer **2** shows whether the metering units are activated. If the pointer is positioned above the 1, the metering units are activated. When the hydraulic tractor control unit is actuated, the pointer swivels over the 0. The working position sensor **1** deactivates the metering units.



CMS-I-00002530

- *To actuate the working position sensor:*
actuate the "yellow 1" tractor control unit

or

*To switch the working position sensor via
headland management:*
refer to the "tractor" operating manual.

7.3 Turning on the headlands

CMS-T-00003117-D.1



NOTE

- Depending on the implement equipment, the spreading material comes out of the coulters until the conveyor section is empty.
 - If the seed drill is lifted at the end of the field, the metering unit on the front-mounted hopper is switched off automatically.
1. *To prevent accumulations of metered material in the conveyor hose:*
prioritise the "red" tractor control unit.
 2. *To prevent lateral loads when driving in curves:*
Lift the implement.
 3. *When the direction of the implement matches that of the direction of travel:*
lower the implement.

Eliminating faults

8

CMS-T-00003128-B.1

Errors	Cause	Solution
The control terminal displays a fan speed that is too high.	The hydraulic control unit is incorrectly adjusted.	► <i>To adjust the fan speed, see "Setting the fan speed".</i>
The control terminal displays a metering shaft speed that is too low.	The metering roller is rotating stiffly.	► <i>To check the metering unit, see "Calibrating the spread rate".</i>
	The metering roller is blocked by foreign objects in the metering housing.	► <i>To clean the metering unit, see "Cleaning the metering unit".</i>
The electric drives do not run or start running at the wrong time.	The switch points of the working position sensor are wrong.	► <i>To configure the working position sensor, see "Configuring the working position sensor".</i>
Pressure cannot be produced in the conveyor system.	The seal for the pressure lid is not properly seated.	► Adjust the stop bolts on the pressure lid.

Parking the machine

9

CMS-T-00003113-I.1

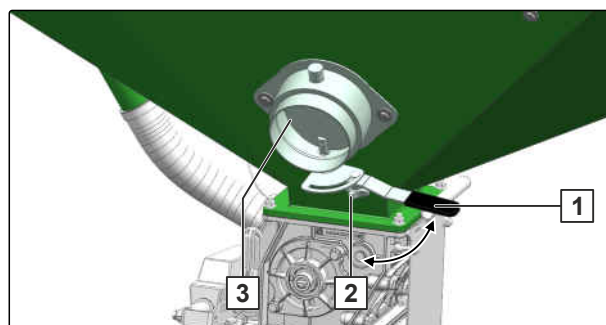
9.1 Emptying the hopper

CMS-T-00003324-E.1

9.1.1 Emptying the hopper via the quick emptying

CMS-T-00003133-E.1

1. Switch off the fan.
2. Loosen the knurled screw **2**.
3. Open the quick emptying with the lever **1**.
- ➔ The flap will be opened **3**.
4. Collect the residual quantity in a collection bucket.
5. *When the hopper is empty,*
Close the quick emptying.
6. Tighten the knurled screw.

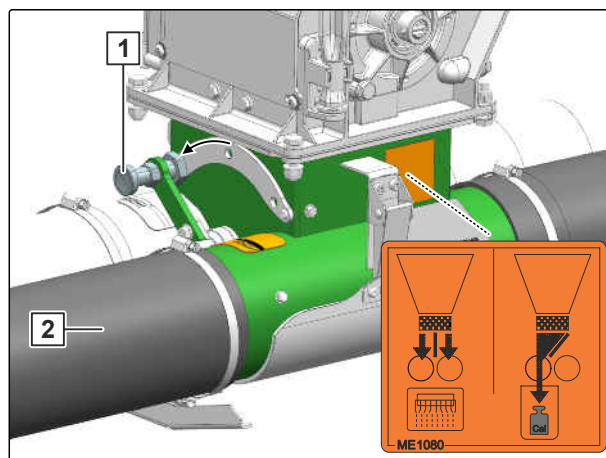


CMS-I-00009313

9.1.2 Emptying the hopper via the metering unit

CMS-T-00003325-C.1

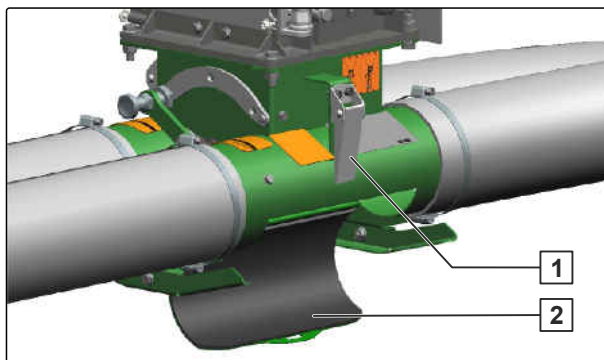
1. *If the implement is equipped with a double sluice,*
activate the conveyor section **2** with the lever **1**.



CMS-I-00002542

9 | Parking the machine Emptying the hopper

2. Unlock the locking lever **1** on the metering housing.
3. Open the calibration flap **2**.

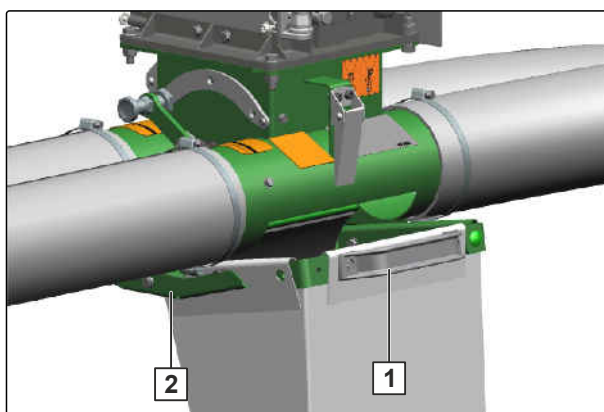


CMS-I-00003654

4. *If only small residual quantities need to be collected,*
push the calibration bucket **1** into the holder **2**
under the metering housing

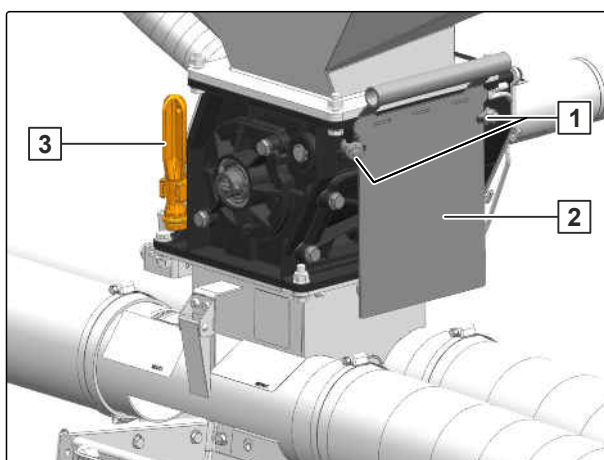
or

If larger residual quantities need to be collected,
put a larger collection bucket under the metering
housing.



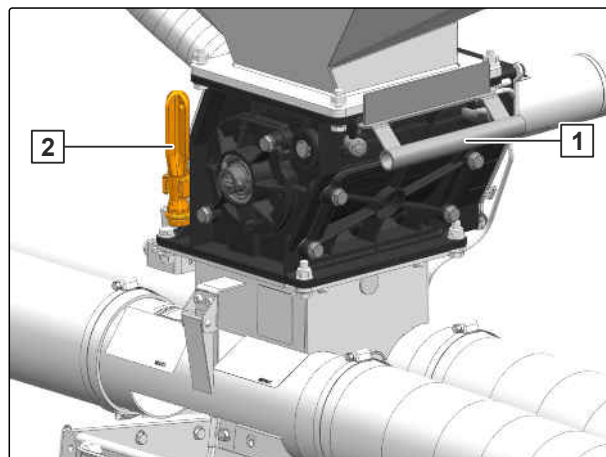
CMS-I-00003653

5. Loosen the bolts **1** with the wrench **3**.
6. Swivel the bolts to the side.
7. Take the sliding shutter **2** from its parking position.



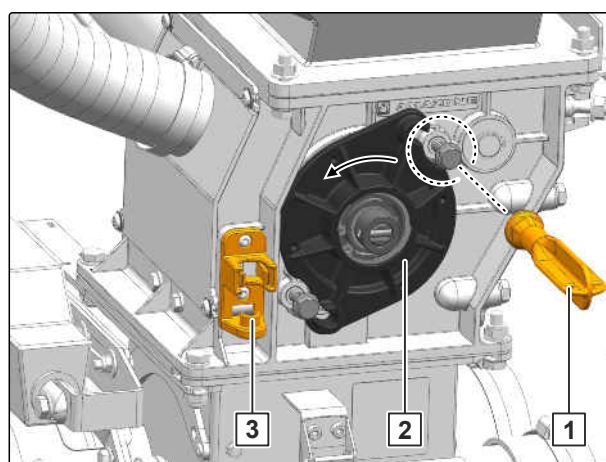
CMS-I-00002503

8. Push the sliding shutter **1** into the metering housing.
9. Park the wrench in the holder **2**.
10. *To empty the metering unit and the metering roller,*
refer to the ISOBUS software operating manual,
"Emptying".



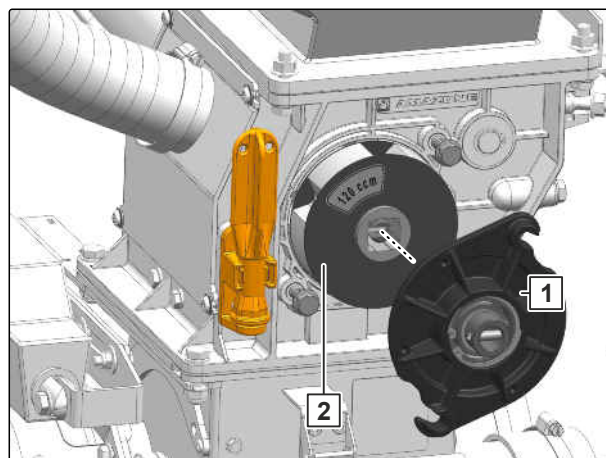
CMS-I-00003650

11. Loosen the bolts with the wrench **1**.
12. Park the wrench in the holder **3**.
13. *To align the notches in the bearing cover flush with the bolts,*
Turn the bearing cover **2**.



CMS-I-00002501

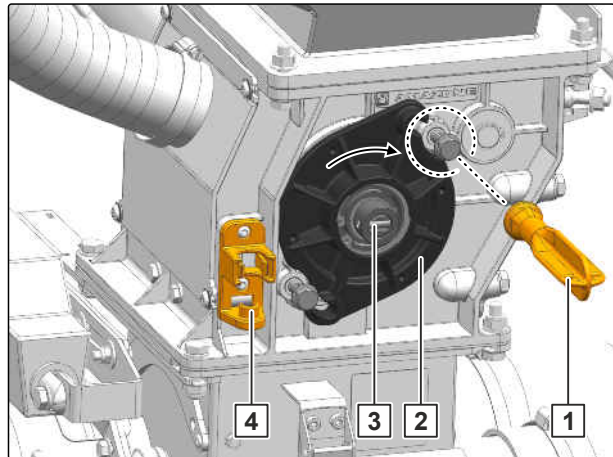
14. Pull off the bearing cover **1**.
15. *When the hopper is closed off with the sliding shutter,*
pull the metering roller **2** out of the metering unit.
16. Pull the sliding shutter out of the metering housing.
17. Collect the residual quantity.
18. *When the hopper is empty,*
reinstall the metering roller.



CMS-I-00002500

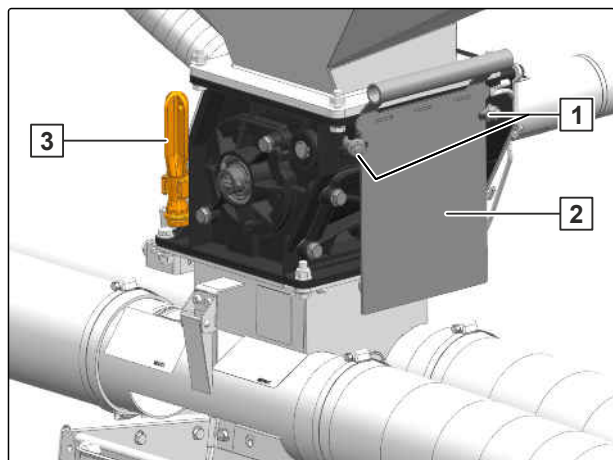
9 | Parking the machine Emptying the hopper

19. Align the catch **3** on the bearing cover **2** with the drive shaft.
20. Install the bearing cover.
21. Tighten the bolts with the wrench **1**.
22. Park the wrench in the holder **4**.



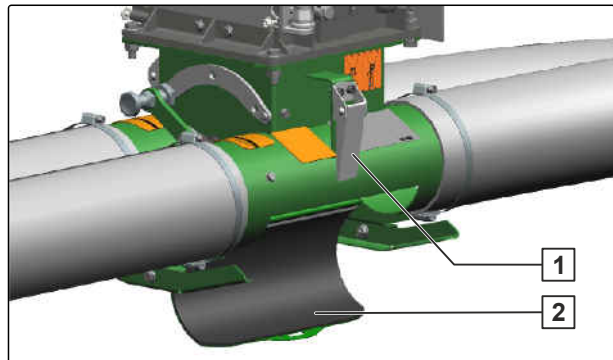
CMS-I-00002504

23. Park the sliding shutter **1** on the metering housing.
24. Swivel the bolts **2** in front of the sliding shutter.
25. Tighten the bolts with the wrench **3**.



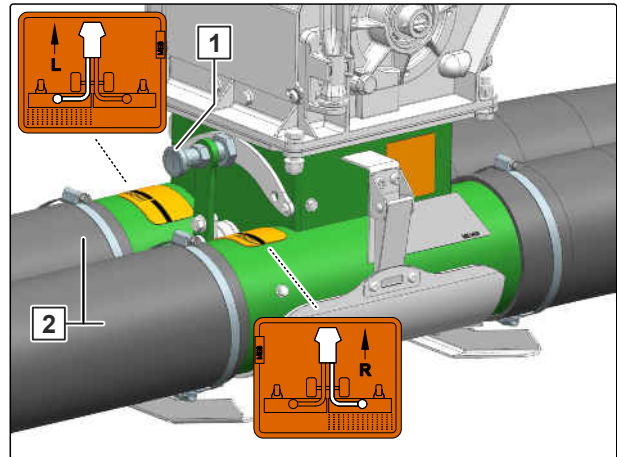
CMS-I-00002503

26. Empty the calibration bucket.
27. Put the calibration bucket in the storage compartment.
28. Close the calibration flap **2**.
29. Lock the locking lever **1** on the metering housing.



CMS-I-00003654

30. To activate both conveyor sections **2**,
put the lever **1** back in the centre position.



CMS-I-00002543

9.2 Emptying the metering unit

CMS-T-00003326-D.1

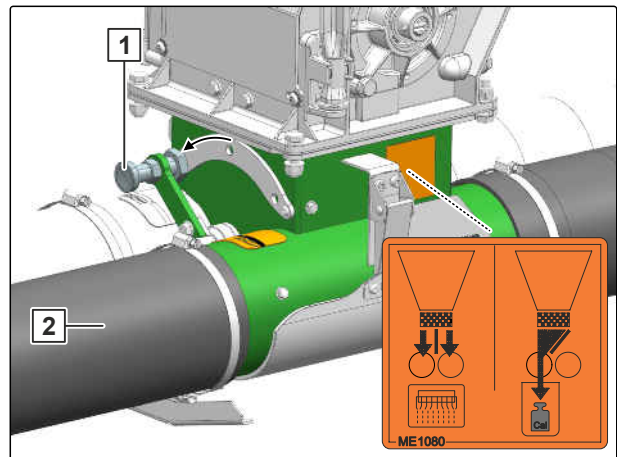


IMPORTANT

Risk of damage to the metering drive due to swelling fertiliser or germinating seed.

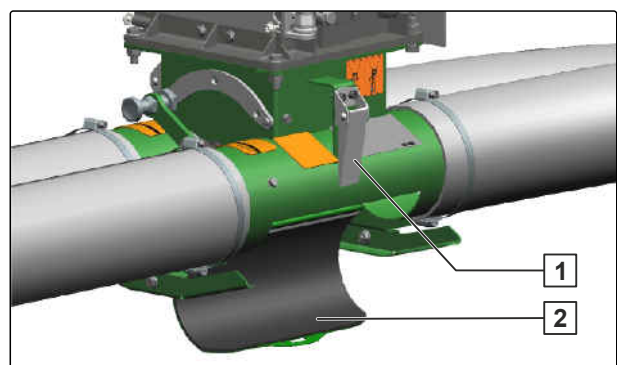
- ▶ Empty the metering unit after operation.
- ▶ Clean the metering unit after operation.

1. If the implement is equipped with a double sluice,
activate the conveyor section **2** with the lever **1**.



CMS-I-00002542

2. Unlock the locking lever **1** on the metering housing.
3. Open the calibration flap **2**.

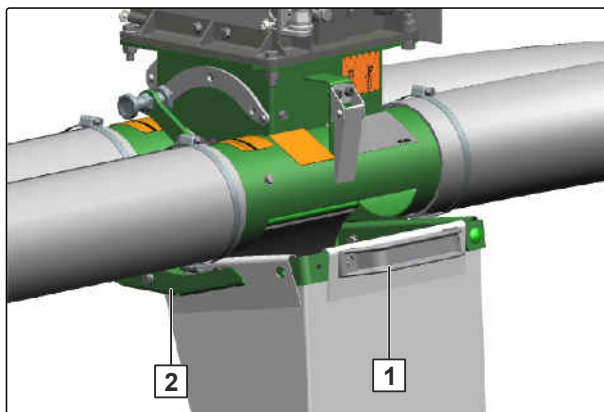


CMS-I-00003654

9 | Parking the machine

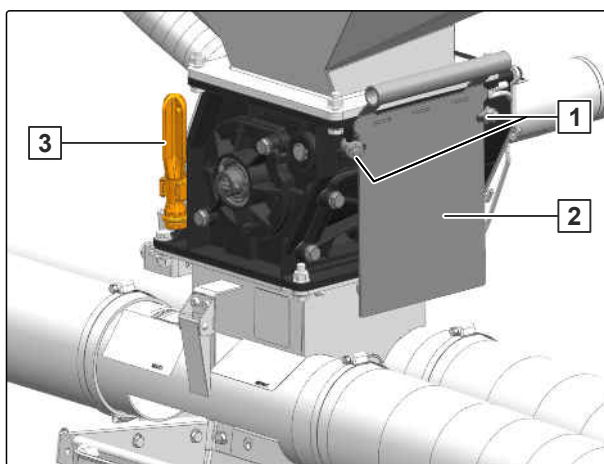
Emptying the metering unit

4. Take the calibration bucket **1** from the storage compartment.
5. Push the calibration bucket into the holder **2** under the metering housing.



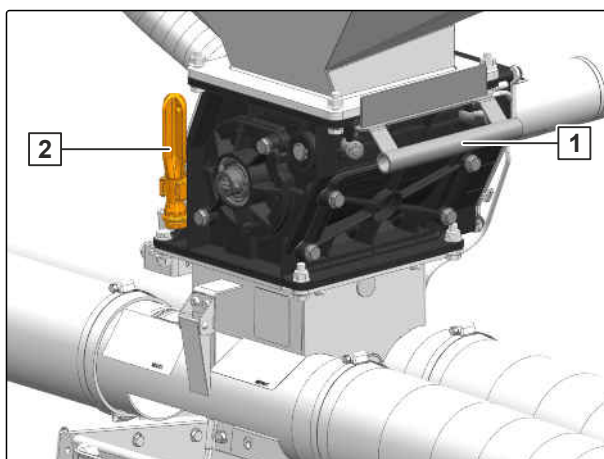
CMS-I-00003653

6. Loosen the bolts **1** with the wrench **3**.
7. Swivel the bolts to the side.
8. Take the sliding shutter **2** from its parking position.



CMS-I-00002503

9. Push the sliding shutter **1** into the metering housing.
10. Park the wrench in the holder **2**.
11. *To empty the metering unit and the metering roller, refer to the ISOBUS software operating manual, "Emptying".*

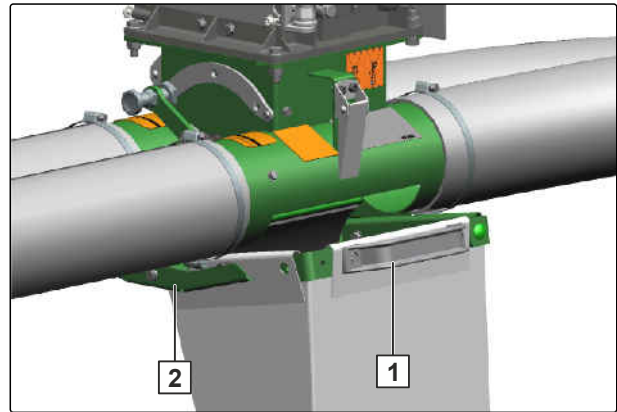


CMS-I-00003650

12. Take the calibration bucket **1** from the holder **2**.

13. Empty the calibration bucket.

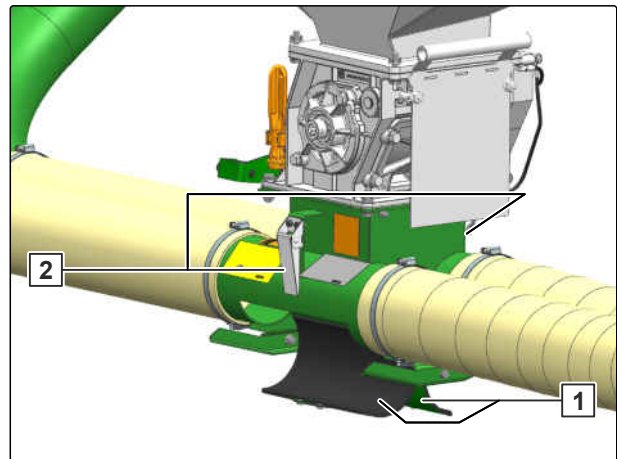
14. Park the calibration bucket in the storage compartment.



CMS-I-00003653

15. Unlock all locking levers **2** on the metering housing.

16. *To prevent the accumulation of moisture,* open all of the calibration flaps **1**.

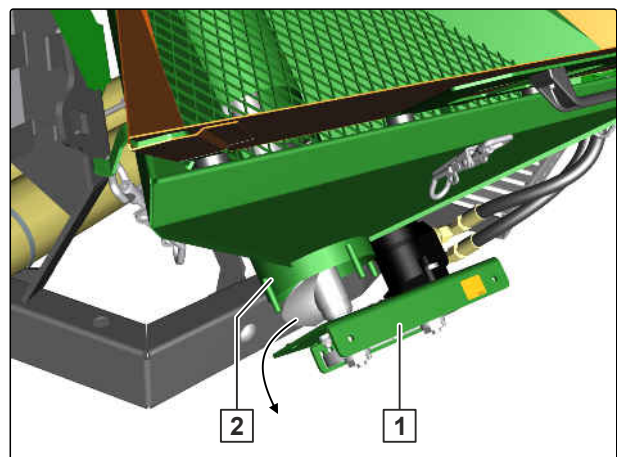


CMS-I-00003686

9.3 Emptying the filling auger

CMS-T-00005597-C.1

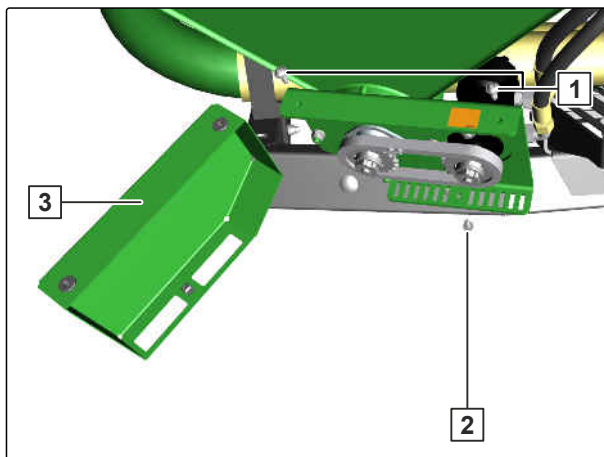
To empty the filling auger, the drive unit **1** is released far enough so that there is a gap between the conveyor tube **2** and the drive unit. The residual quantity and the water can drain out through the gap.



CMS-I-00005327

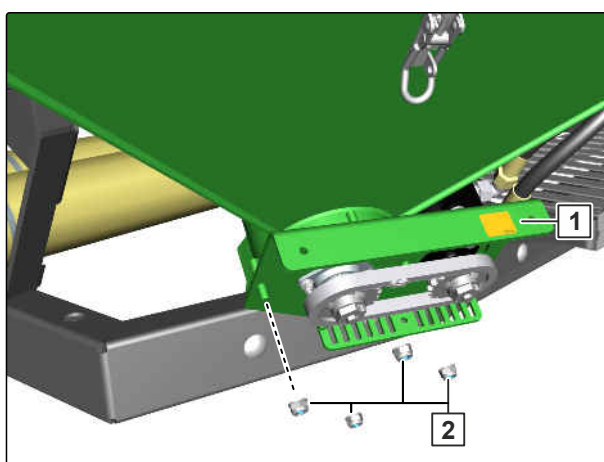
9 | Parking the machine Emptying the filling auger

1. Remove the upper bolts **1**.
2. Remove the lower bolt **2**.
3. Remove the cover **3**.



CMS-I-00003892

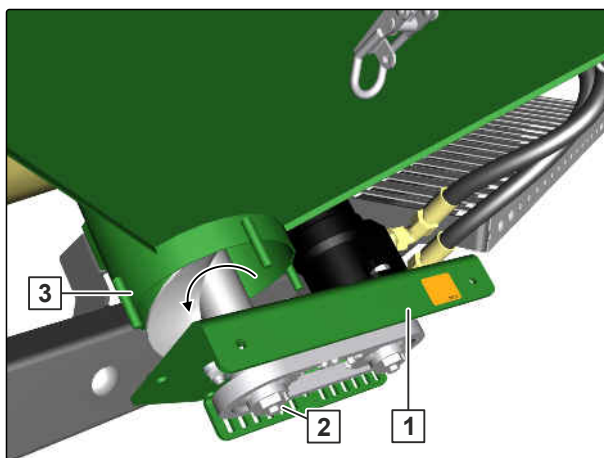
4. Remove the nuts and washers **1**.



CMS-I-00003969

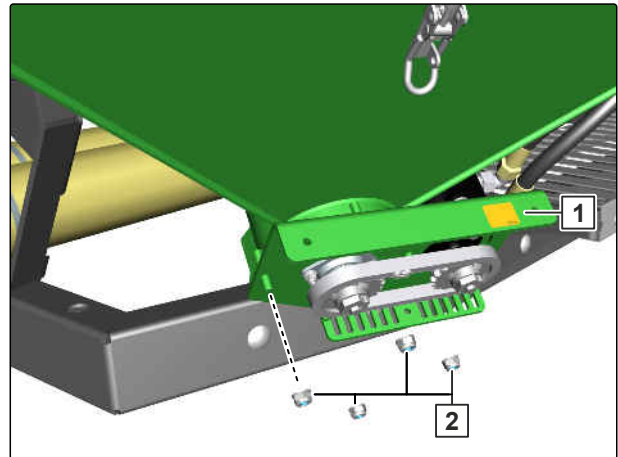
5. Release the drive unit **1** from the conveyor tube **3**.
6. *To remove coarse contamination,* turn the filling auger to the left on the drive **2**.
7. Clean the filling auger.

➔ The residual quantity and the water can drain out through the gap.



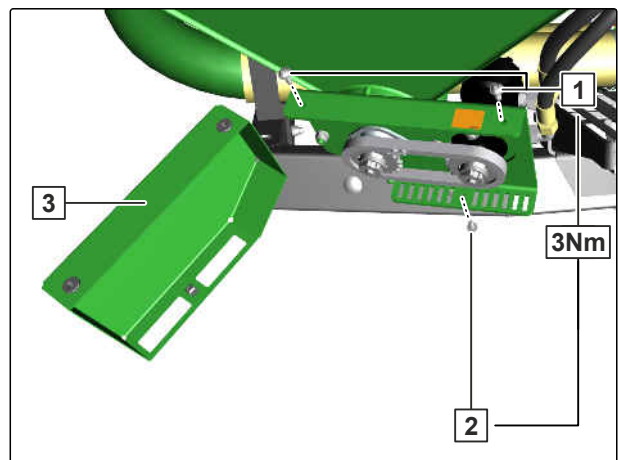
CMS-I-00003968

8. Install the drive unit **1** on the conveyor tube.
9. Install the nuts and washers.
10. Tighten the nuts **2**.



CMS-I-00003969

11. Install the cover **3**.
12. Install the upper bolts **1**.
13. Install the lower bolt **2**.



CMS-I-00003891

9.4 Installing the rolling and parking device

CMS-T-00003135-C.1

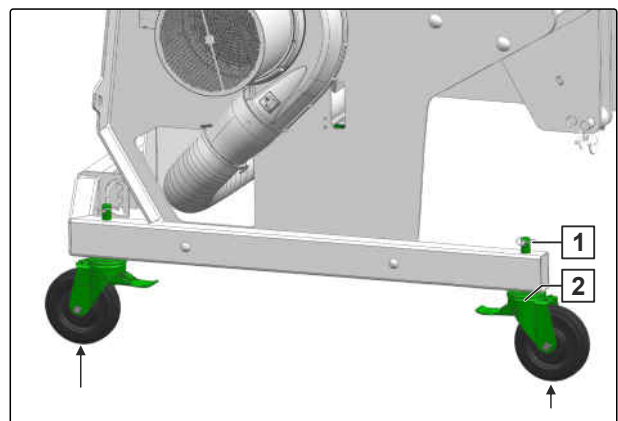


WARNING

Risk of injury or even death due to tipping over of the implement

- Park the implement on stable and even ground.

1. Raise the implement.
2. *To swivel the T-Pack F up, see section "Moving the T-Pack F into parking position".*
3. Insert the parking rollers **2**.
4. Secure the parking rollers with the linch pin **1**.



CMS-I-00002472

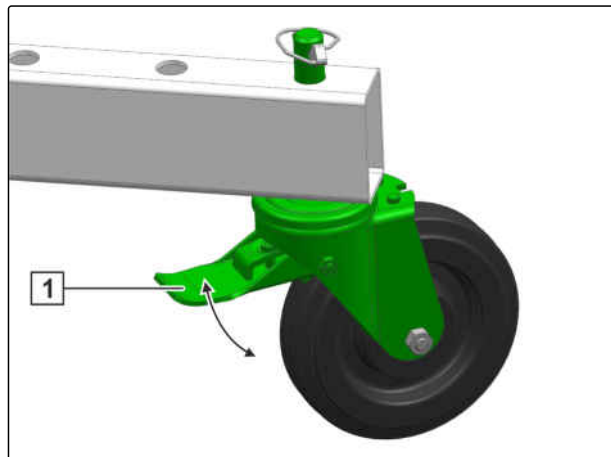


IMPORTANT

Damage to the parking rollers

- Only park the implement on the parking rollers when the hopper is empty.

5. To prevent the parked front-mounted hopper from rolling away, block the parking brake **1**.

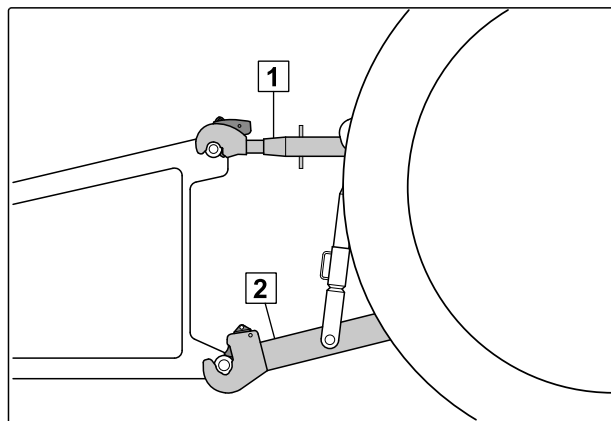


CMS-I-00002556

9.5 Uncoupling the 3-point mounting frame

CMS-T-00001401-C.1

1. Park the implement on a level surface with solid ground.
2. Release the top link **1**.
3. Uncouple the top link **1** from the implement.
4. Release the lower links **2**.
5. Uncouple the lower links **2** from the implement from the tractor seat.



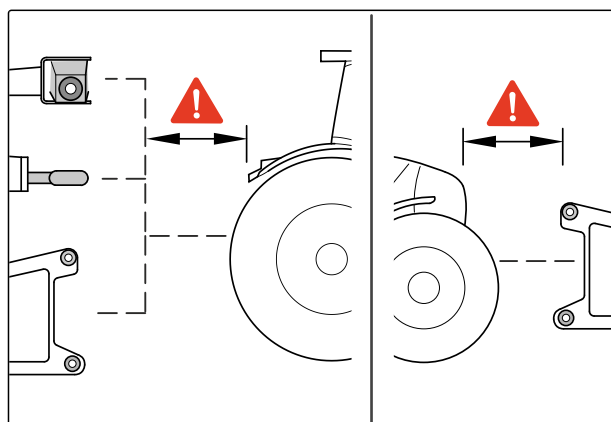
CMS-I-00001249

9.6 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.

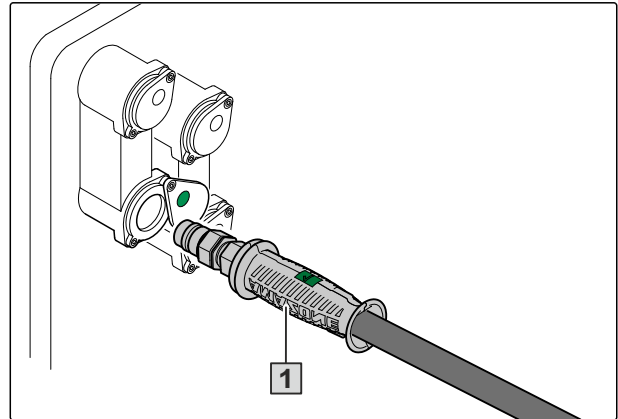


CMS-I-00004045

9.7 Disconnecting the hydraulic hose lines

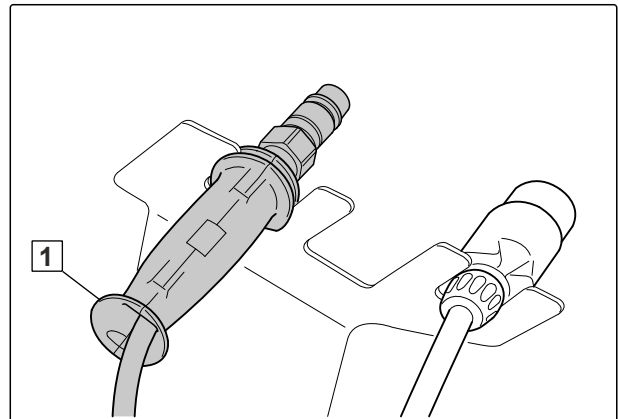
CMS-T-00000277-F.1

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.

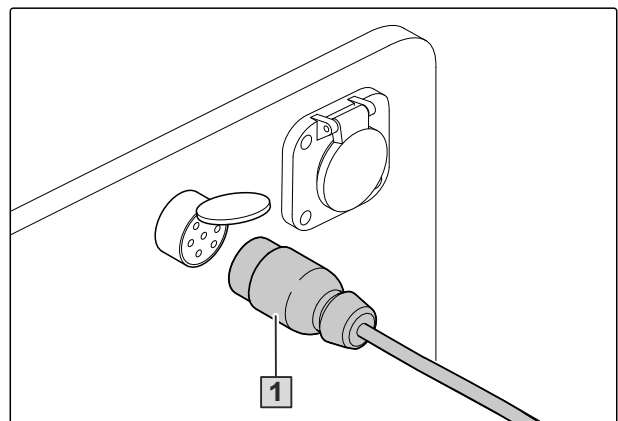


CMS-I-00001250

9.8 Uncoupling the power supply

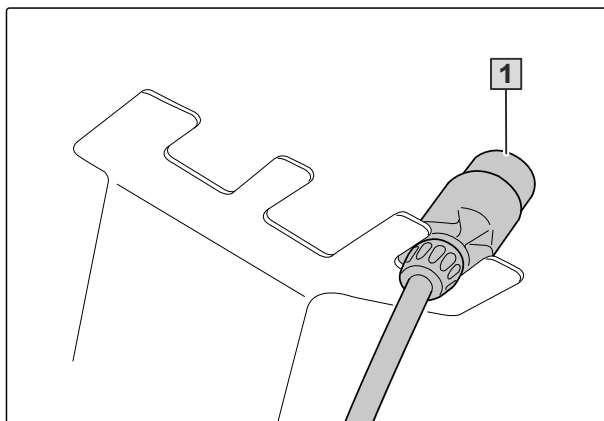
CMS-T-00001402-H.1

1. Pull out the plug **1** for the power supply.



CMS-I-00001048

2. Hang the plugs **1** in the hose cabinet.

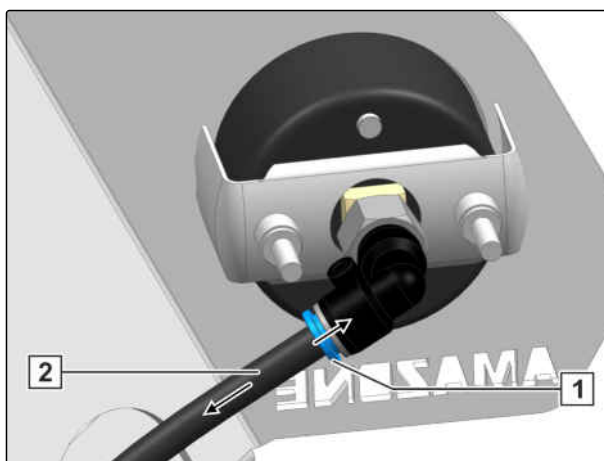


CMS-I-00001248

9.9 Uncoupling the pressure gauge

CMS-T-00003224-B.1

1. Switch off the fan.
2. *To unlock the coupling,*
press the air hose **2** together with the coupling
ring **1** into the elbow up to the stop.
3. Hold the coupling ring.
4. Pull the air hose out of the coupling.

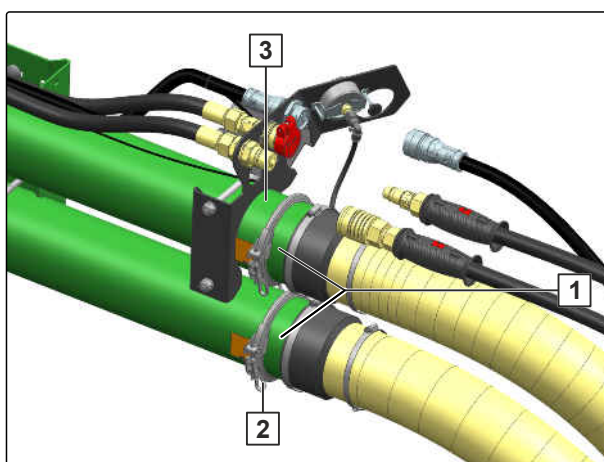


CMS-I-00002490

9.10 Uncoupling the conveyor line

CMS-T-00005822-B.1

1. Release the clamp **2**.
2. Uncouple the connector **1** from the conveyor
line **3**.



CMS-I-00005326

Repairing the machine

10

CMS-T-00003114-L.1

10.1 Maintaining the machine

CMS-T-00003129-J.1

10.1.1 Maintenance schedule

After initial operation	
Checking the hydraulic hose lines	see page 105
Checking the tightening torque for the radar sensor bolts	see page 113
Checking the wheel bolt tightening torque	see page 114
Checking the frame connection tightening torque	see page 114
Adjusting the scraper on the T-Pack F	see page 115
After the first 10 operating hours	
Checking the roller chain	see page 116
After the first 50 operating hours	
Cleaning the hand wash tank	see page 113
As required	
Cleaning the hand wash tank	see page 113
Tensioning the roller chain	see page 117
Daily	
Checking the lower link pins and top link pins	see page 104
Cleaning the metering unit	see page 109
Every 12 months	
Checking the tightening torque for the radar sensor bolts	see page 113

Every 10 operating hours / Daily	
Cleaning the suction guard screen	see page 107
Cleaning the cyclone separator	see page 107

Every 50 operating hours / Weekly	
Checking the hydraulic hose lines	see page 105
Checking the tyre inflation pressure	see page 115
Checking the roller chain	see page 116

Every 50 operating hours / As required	
Cleaning the conveyor section	see page 105
Cleaning the hopper	see page 108

Every 100 operating hours / As required	
Checking the frame connection tightening torque	see page 114

Every 100 operating hours / Every 12 months	
Checking the wheel bolt tightening torque	see page 114
Adjusting the scraper on the T-Pack F	see page 115

10.1.2 Checking the lower link pins and top link pins

CMS-T-00002330-J.1

INTERVAL

- Daily

Criteria for visual inspection of lower link pins and top link pins:

- Cracks
 - Fractures
 - Permanent deformations
 - Permissible wear: 2 mm
1. Check the lower link pins and top link pins for the listed criteria.
 2. Replace worn pins.

10.1.3 Checking the hydraulic hose lines

CMS-T-00002331-F.1



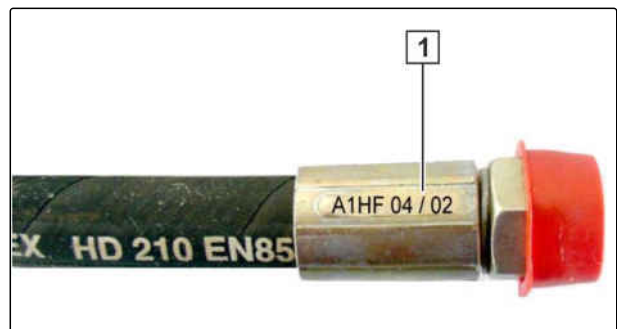
INTERVAL

- 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.

10.1.4 Cleaning the conveyor section

CMS-T-00003327-B.1



INTERVAL

- Every 50 operating hours
- or
- As required

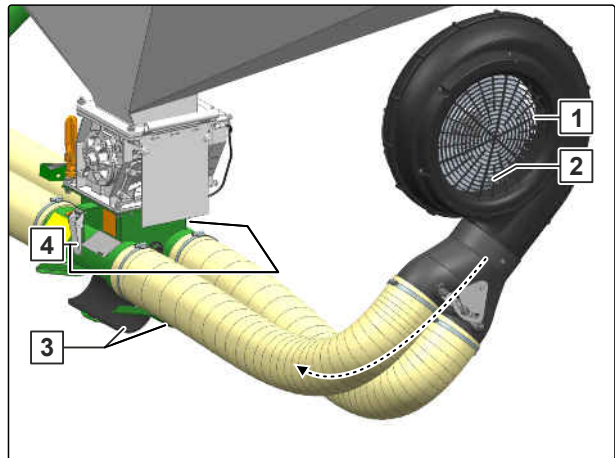
The air drawn by the fan can contain fertiliser dust or sand. These impurities can accumulate on the fan rotors and cause imbalance of the fan. This can destroy the fan.



REQUIREMENTS

- ✓ The implement is coupled to the tractor

1. Unlock the locks **4**.
2. Open the calibration flaps **3**.
3. Clean the suction cage **1**.
4. *To wash the deposits from the fan rotors **2**, direct a jet of water into the suction opening.*



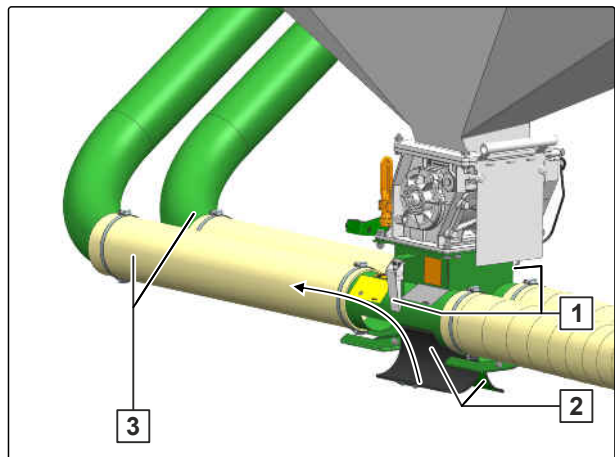
CMS-I-00002509

5. *To wash the deposits out of the conveyor hoses **3**, direct a jet of water through the calibration openings **2** into the conveyor hoses.*
6. *When most of the water has escaped through the calibration opening, close the calibration flaps **2** with the locks **1**.*

7. Run the fan for about 5 minutes.

➔ The air supply is blown dry.

8. Switch off the fan.



CMS-I-00002508

10.1.5 Cleaning the suction guard screen

CMS-T-00006210-C.1

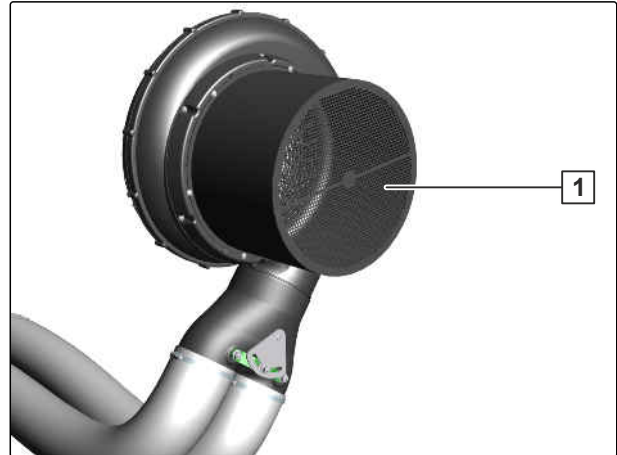


INTERVAL

- Every 10 operating hours
or
Daily

The suction guard screen **1** prevents plant residues from being drawn into the fan.

1. Switch off the fan.
2. Remove impurities from the suction guard screen **1** of the fan.



CMS-I-00002970

10.1.6 Cleaning the cyclone separator

CMS-T-00003779-E.1

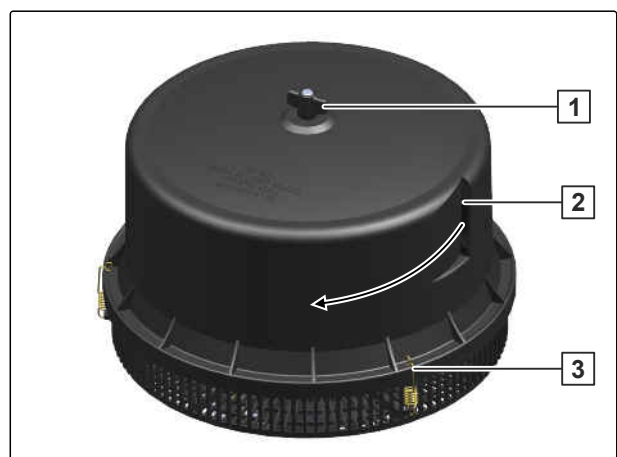


INTERVAL

- Every 10 operating hours
or
Daily

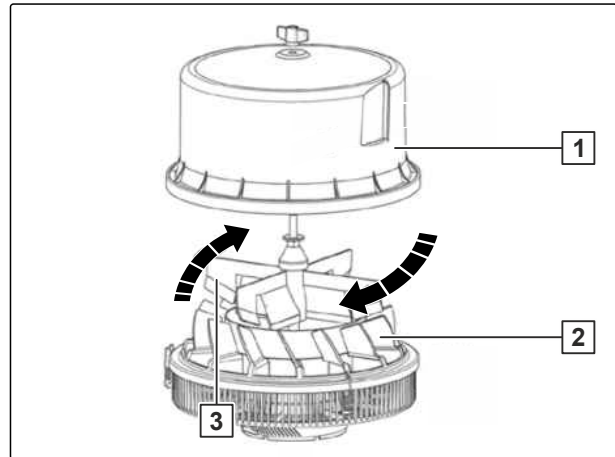
For the cyclone separator to work, the separator opening must be free of impurities.

1. Check the separator opening **2**.
2. *If the separator opening is clogged:*
Open the clips **3**.
3. Loosen the wing nut **1**.



CMS-I-00002765

4. Remove the cover **1** and clean it.
5. Clean the air guide elements **2**.
6. Clean the impeller **3**. Make sure that it runs smoothly.
7. Ensure that the impeller runs smoothly.
8. Install the cover with the wing nut.
9. Fasten the suction cage with the clips.



CMS-I-00009310

10.1.7 Cleaning the hopper

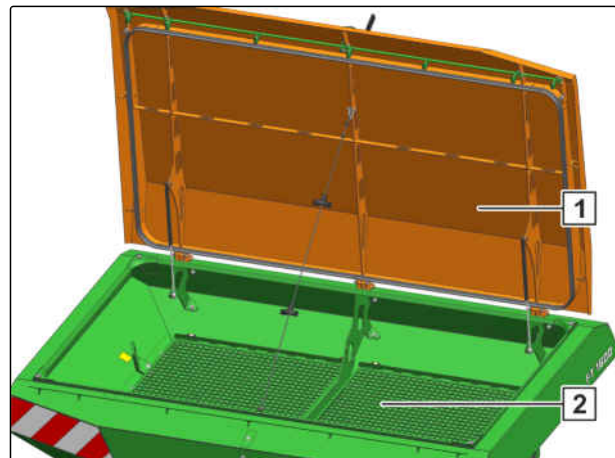
CMS-T-00003328-B.1



INTERVAL

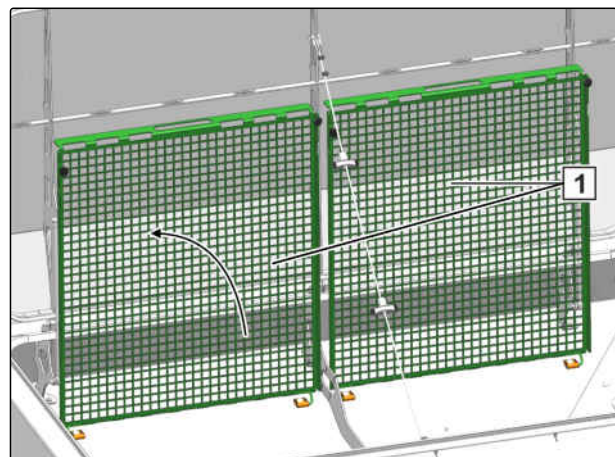
- Every 50 operating hours
or
As required

1. Open the hopper cover **1**.
2. Clean the hopper sieve **2**.



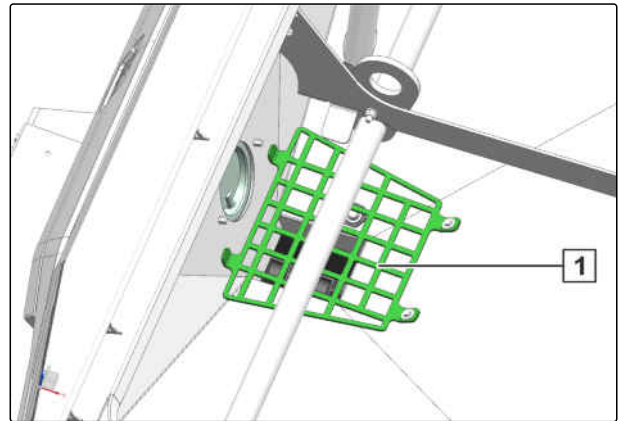
CMS-I-00002511

3. Open the hopper sieve **1**.
4. Clean the hopper.



CMS-I-00002510

5. Clean the metering unit protective screen **1**.



CMS-I-00002466

10.1.8 Cleaning the metering unit

CMS-T-00003329-E.1

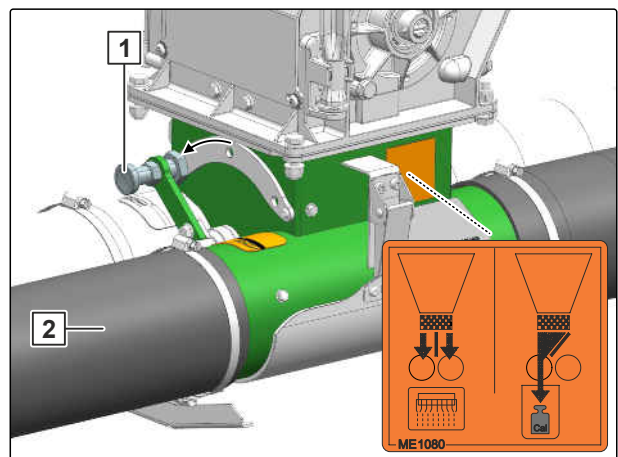


IMPORTANT

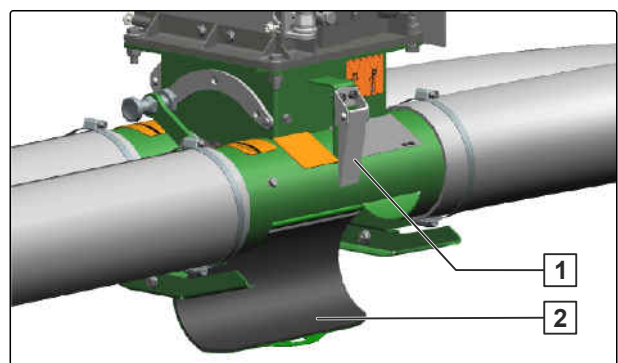
Risk of damage to the metering drive due to swelling fertiliser or germinating seed.

- ▶ Empty the metering unit after operation.
- ▶ Clean the metering unit after operation.

1. Switch off the fan.
2. *If the implement is equipped with a double sluice,* activate the conveyor section **2** with the lever **1**.
3. Unlock the locking lever **1** on the metering housing.
4. Open the calibration flap **2**.

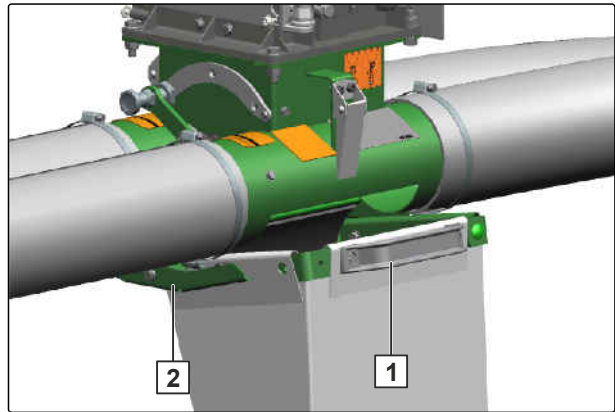


CMS-I-00002542



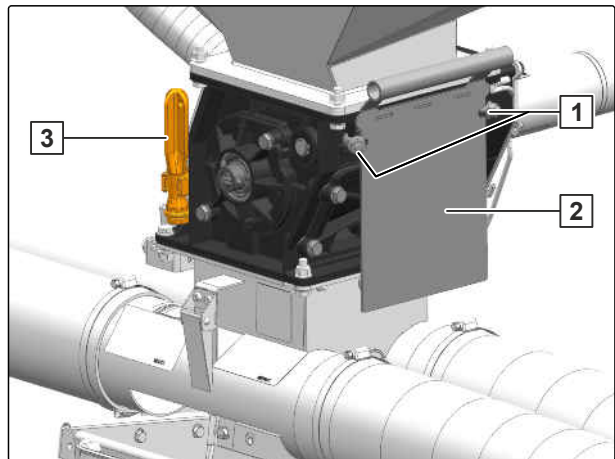
CMS-I-00003654

5. push the calibration bucket **1** into the holder **2** under the metering housing



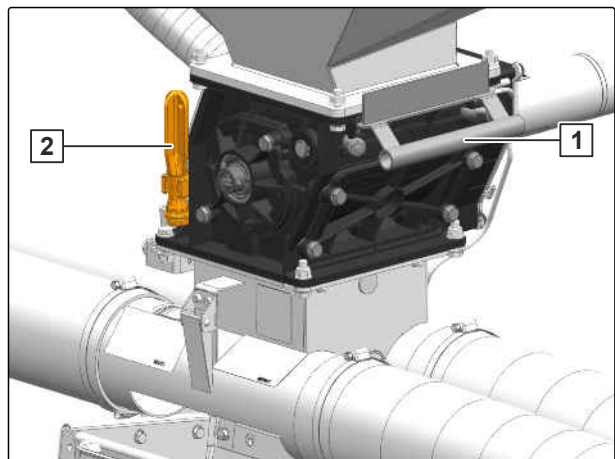
CMS-I-00003653

6. Loosen the bolts **1** with the wrench **3**.
7. Swivel the bolts to the side.
8. Take the sliding shutter **2** from its parking position.



CMS-I-00002503

9. Push the sliding shutter **1** into the metering housing.
10. Park the wrench in the holder **2**.
11. *To empty the metering unit and the metering roller, refer to the ISOBUS software operating manual, "Emptying".*

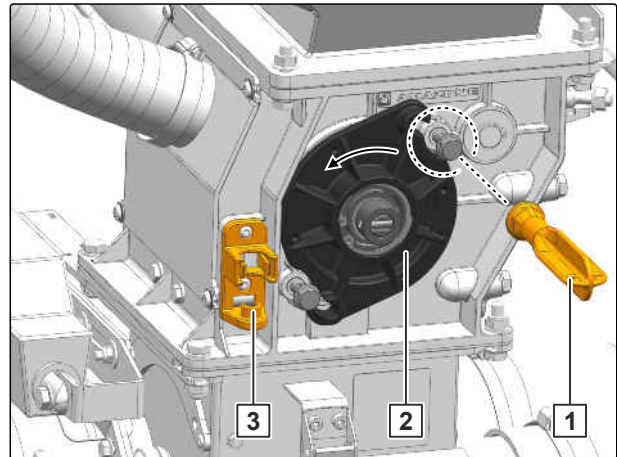


CMS-I-00003650

12. Loosen the bolts with the wrench **1**.

13. Park the wrench in the holder **3**.

14. Turn the bearing cover **2**.



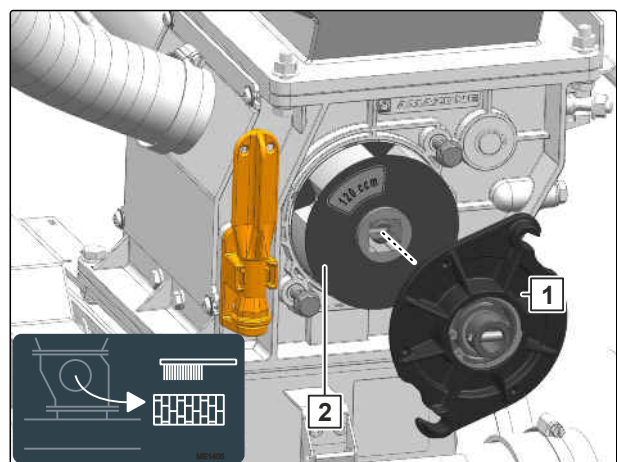
CMS-I-00002501

15. Pull off the bearing cover **2**.

16. *When the hopper is closed off with the sliding shutter **1**, pull the metering roller **3** out of the metering unit.*

17. Clean the metering housing and the metering roller.

18. *When the metering housing and the metering roller have been cleaned, reinstall the metering roller.*



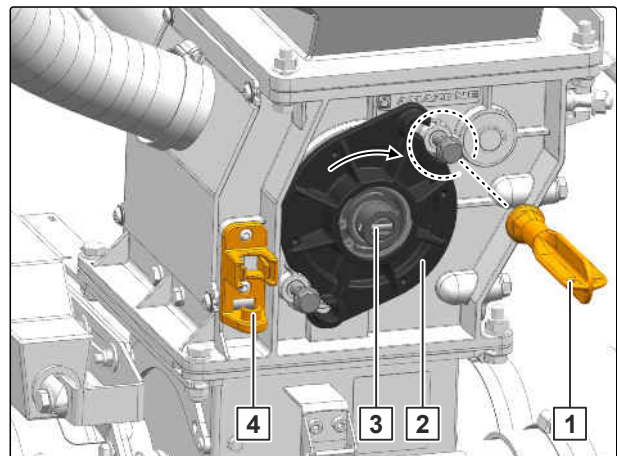
CMS-I-00002512

19. Align the catch **3** on the bearing cover **2** with the drive shaft.

20. Install the bearing cover.

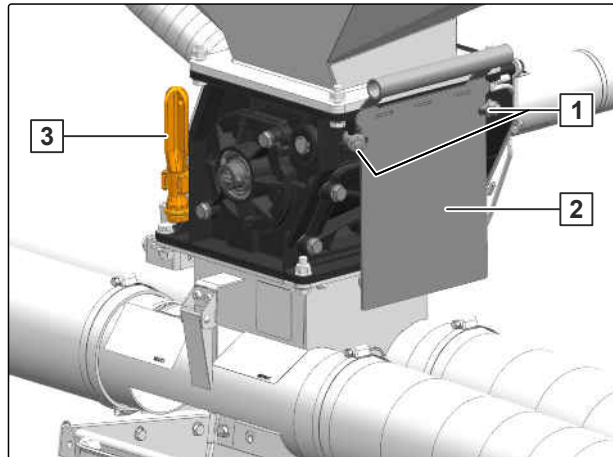
21. Tighten the bolts with the wrench **1**.

22. Park the wrench in the holder **4**.



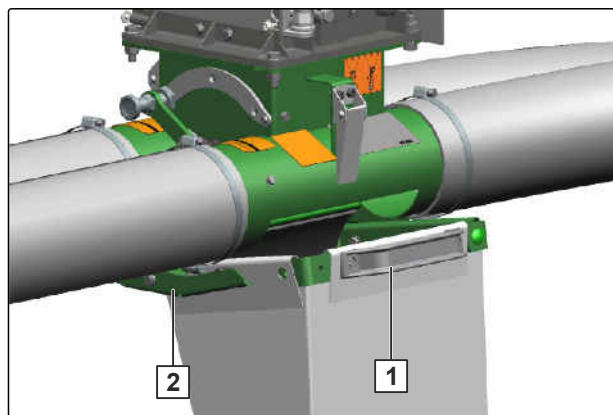
CMS-I-00002504

23. Park the sliding shutter **1** on the metering housing.
24. Swivel the bolts **2** in front of the sliding shutter.
25. Tighten the bolts with the wrench **3**.



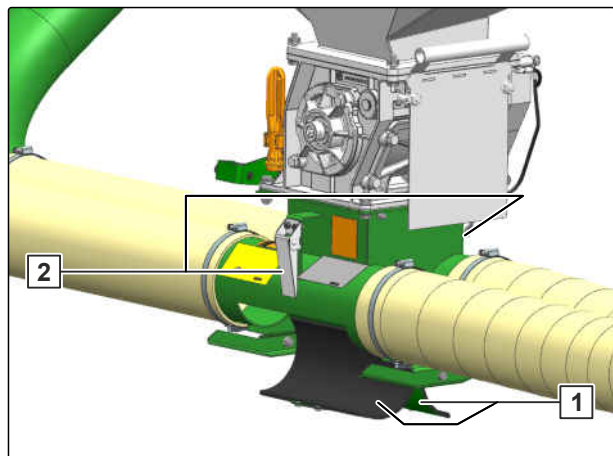
CMS-I-00002503

26. Take the calibration bucket **1** from the holder **2**.
27. Empty the calibration bucket.
28. Park the calibration bucket in the storage compartment.



CMS-I-00003653

29. Unlock all locking levers **2** on the metering housing.
30. *To prevent the accumulation of moisture,* open all of the calibration flaps **1**.



CMS-I-00003686

10.1.9 Cleaning the hand wash tank

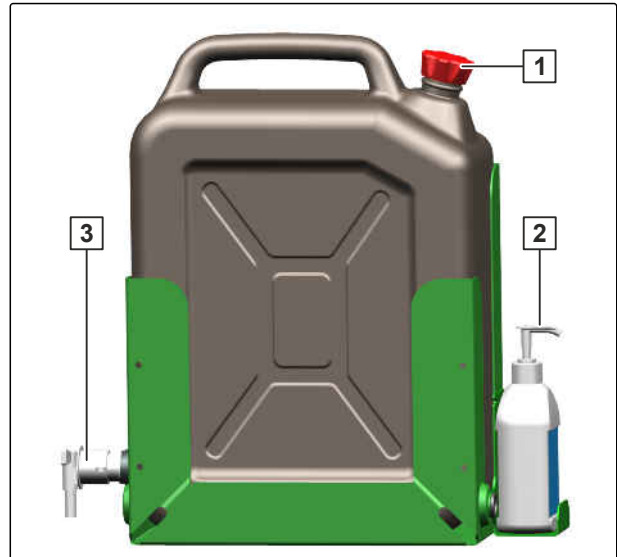
CMS-T-00009647-A.1



INTERVAL

- After the first 50 operating hours
- As required

1. *To empty the hand wash tank,* take the hand wash tank out of the holder, open the screw cap and pour out any remaining water.
2. *To remove soiling,* direct a jet of water into the hand wash tank and pour out the water.



CMS-I-00006666

10.1.10 Checking the tightening torque for the radar sensor bolts

CMS-T-00002383-H.1



INTERVAL

- After initial operation
- Every 12 months

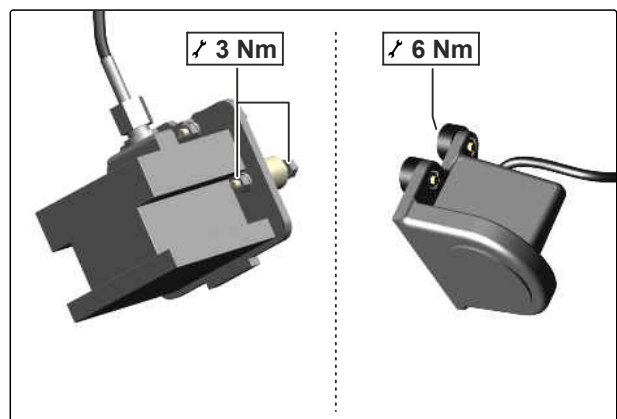


NOTE

When the tightening torque is too high, the spring-suspended sensor mount is warped. As a result, the radar sensor does not work properly.

Depending on the equipment of the implement, different radar sensors can be installed.

- Check the tightening torque on the radar sensor.



CMS-I-00002600

10.1.11 Checking the wheel bolt tightening torque

CMS-T-00003578-C.1



INTERVAL

- After initial operation
 - Every 100 operating hours
- or
- Every 12 months

Tyres	Tightening torque
Tyres 10/75-15.3-AS	300 Nm

- Check the wheel bolt tightening torque.

10.1.12 Checking the frame connection tightening torque

CMS-T-00003579-E.1

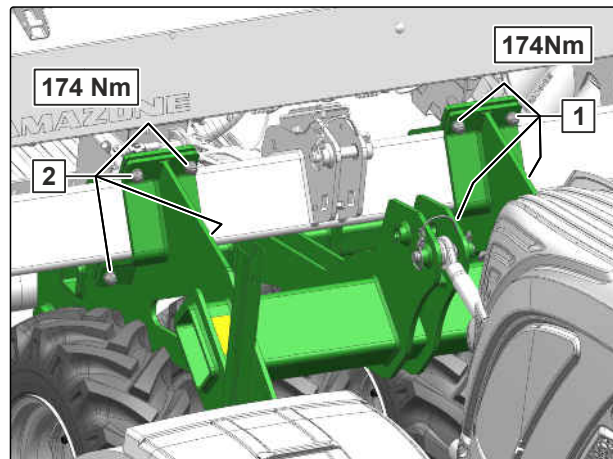


INTERVAL

- After initial operation
 - Every 100 operating hours
- or
- As required

Depending on the implement equipment,

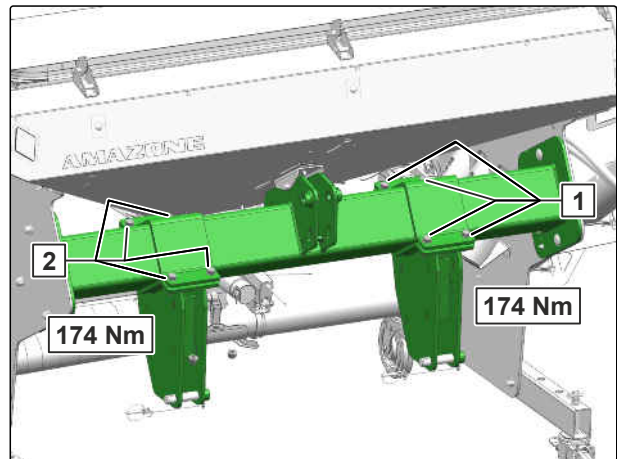
1. Check the tightening torque on the right-side connection to the T-Pack F **1**.
2. Check the tightening torque on the left-side connection to the T-Pack F **2**.



CMS-I-00003644

Depending on the implement equipment,

3. Check the tightening torque on the right lower link mounting **1**.
4. Check the tightening torque on the left lower link mounting **2**.



CMS-I-00003645

10.1.13 Checking the tyre inflation pressure

CMS-T-00004972-D.1



INTERVAL

- Every 50 operating hours
or
Weekly

There are stickers attached in the rims of the wheels, which specify the required tyre inflation pressure.

- Check the tyre inflation pressure according to the specifications on the stickers.

10.1.14 Adjusting the scraper on the T-Pack F

CMS-T-00003582-D.1



INTERVAL

- After initial operation
- Every 100 operating hours
or
Every 12 months



IMPORTANT

Damage to the tyres due to abrasion by the scraper

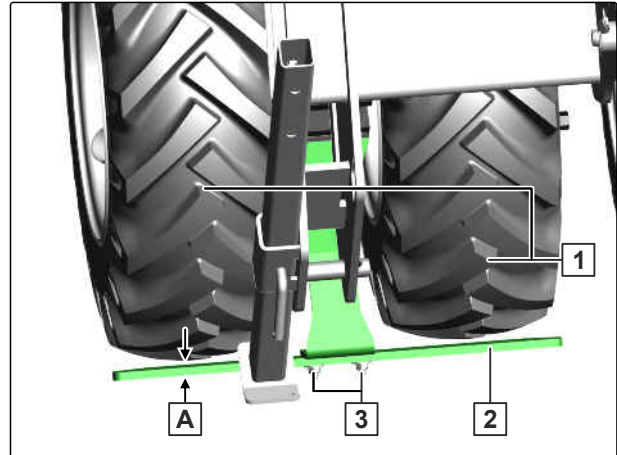
- *To check the distance,*
rotate the tyres.



NOTE

The adjustment of the scraper must be adapted to the respective operating conditions. The optimum adjustment can only be determined during field operation.

1. Remove the nuts **3**.
2. Install the scraper **2** at a distance of 3 cm.
3. *To check the distance,* rotate the tyres **1**.
4. Install the nuts.
5. Repeat the setting for the second scraper.
6. Check the adjustment of the scraper on the field after driving a short distance.



CMS-I-00002562

10.1.15 Checking the roller chain

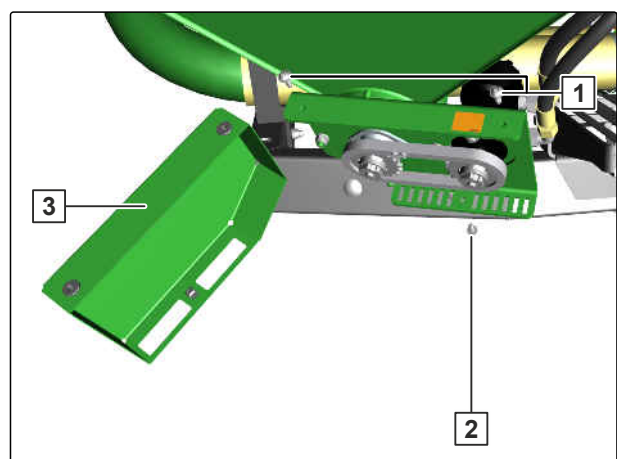
CMS-T-00005416-C.1



INTERVAL

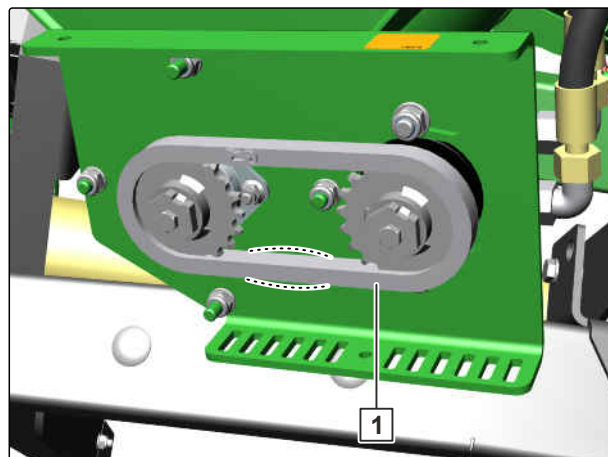
- After the first 10 operating hours
- Every 50 operating hours
- or
- Weekly

1. Remove the upper bolts **1**.
2. Remove the lower bolt **2**.
3. Remove the cover **3**.



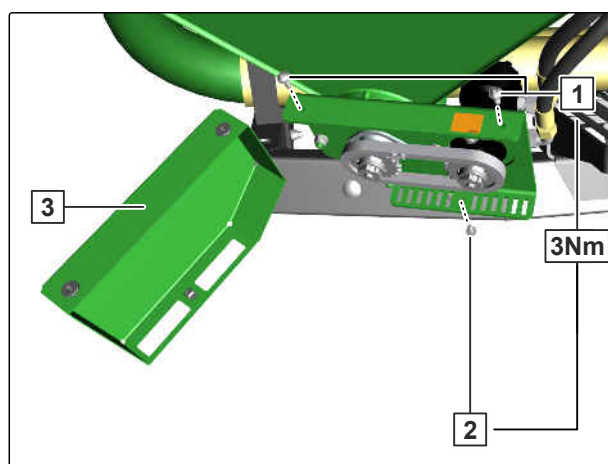
CMS-I-00003892

4. Check the tension of the roller chain **1**.
5. *If the height play is more than 3 mm, see "Tensioning the roller chain".*



CMS-I-00003893

6. Install the cover **3**.
7. Install the upper bolts **1**.
8. Install the lower bolt **2**.



CMS-I-00003891

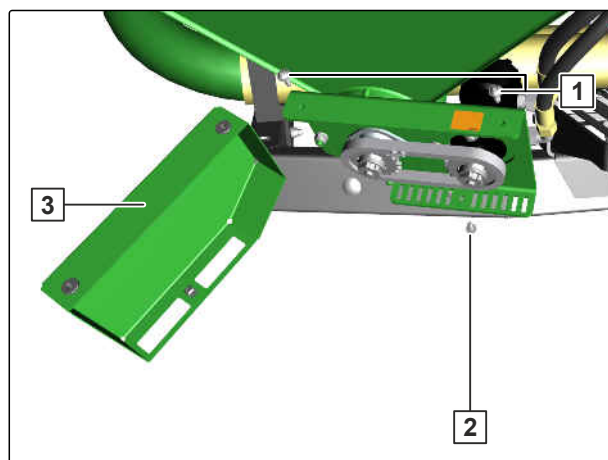
10.1.16 Tensioning the roller chain

CMS-T-00005417-B.1

INTERVAL

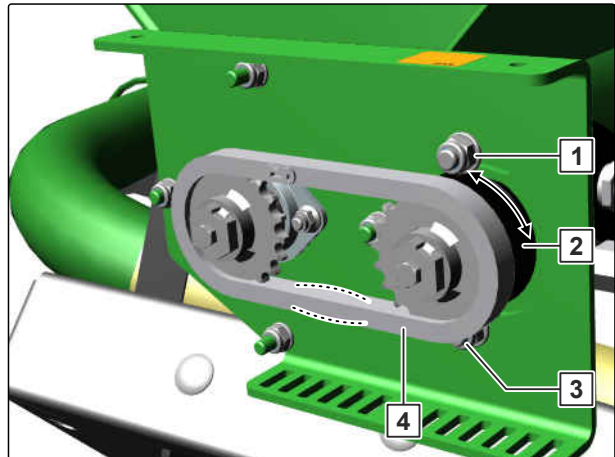
- As required

1. Remove the upper bolts **1**.
2. Remove the lower bolt **2**.
3. Remove the cover **3**.



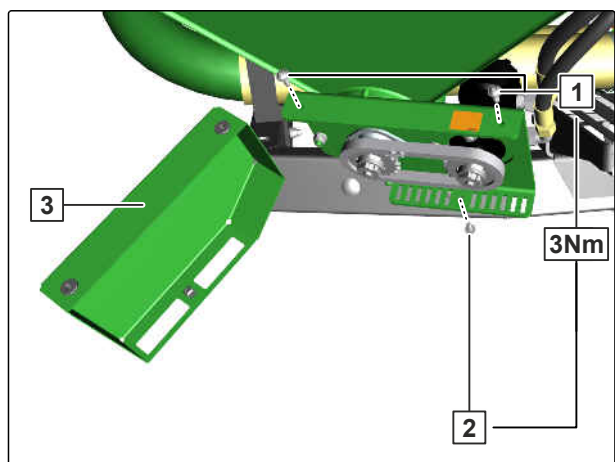
CMS-I-00003892

4. Remove the bolt **1**.
5. Remove the bolt **3**.
6. *To tension the roller chain **4**,*
turn the drive motor **2**.
- ➔ In a tensioned state, the roller chain still needs
slight height play.
7. Tighten the bolts on the drive motor.



CMS-I-00003858

8. Install the cover **3**.
9. Install the upper bolts **1**.
10. Install the lower bolt **2**.



CMS-I-00003891

10.2 Lubricating the machine

CMS-T-00003130-F.1



IMPORTANT

Implement damage due to improper lubrication

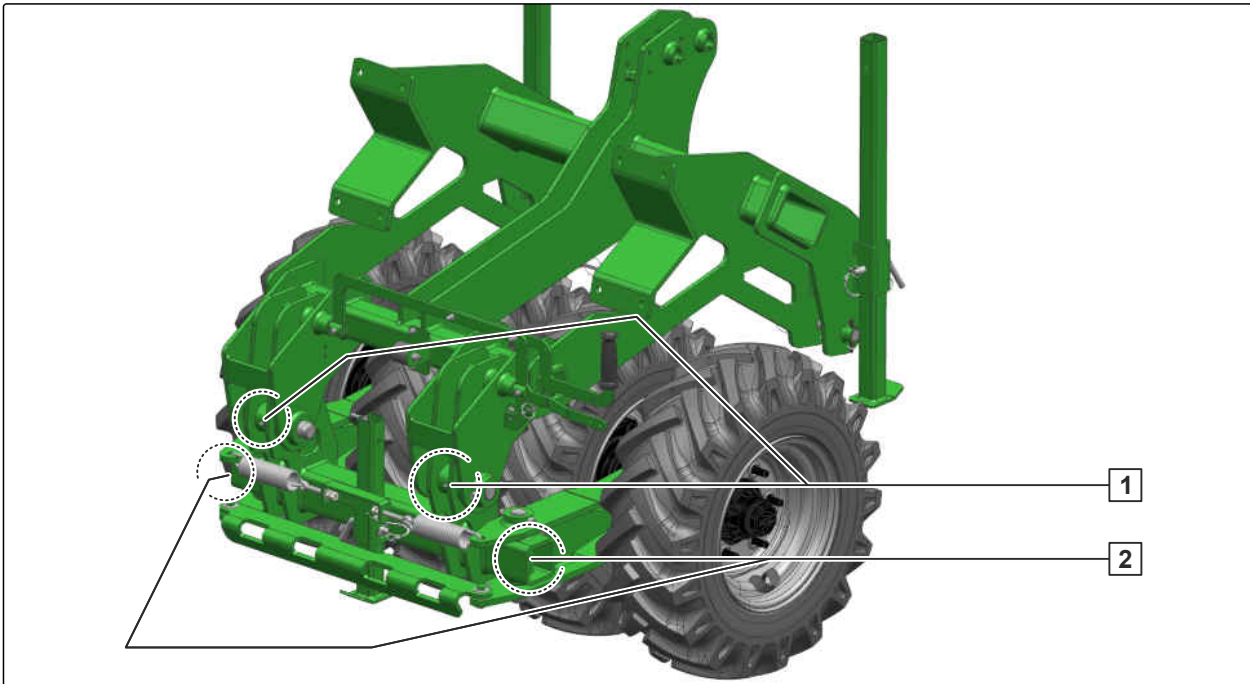
- ▶ Grease the implement at the marked lubrication points according to the lubrication schedule.
- ▶ *To ensure that dirt is not pressed into the lubrication points,* thoroughly clean the grease nipples and the grease gun.
- ▶ Only grease the implement with the lubricants listed in the technical data.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



CMS-I-00002270

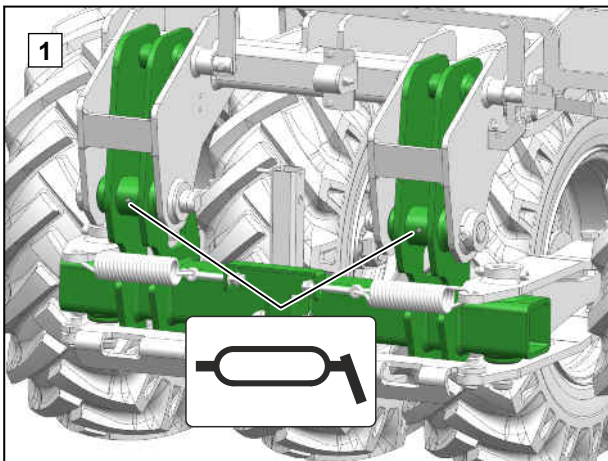
10.2.1 Overview of lubrication points

CMS-T-00003131-B.1

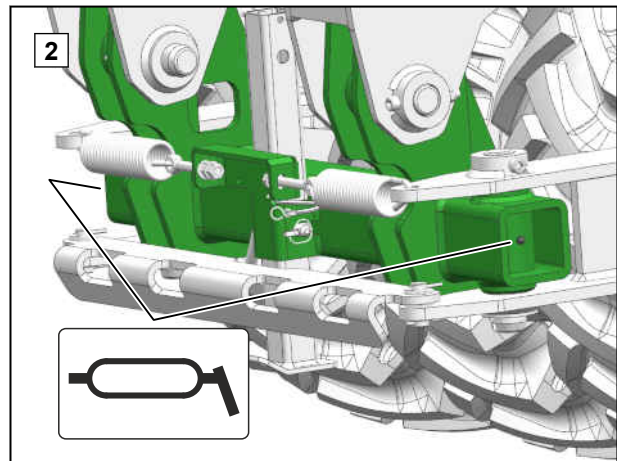


CMS-I-00002526

Every 100 operating hours / Every 6 months



CMS-I-00002527



CMS-I-00002528

10.2.2 Lubricating the roller chain on the filling auger

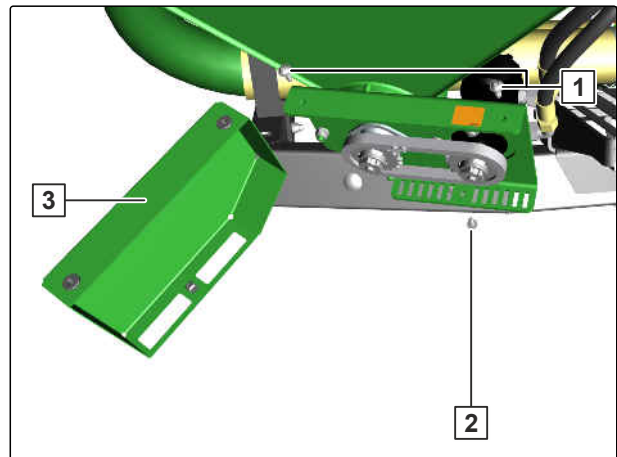
CMS-T-00005423-B.1



INTERVAL

- After the first 10 operating hours
- Every 50 operating hours
- or
- At the end of the season

1. Remove the upper bolts **1**.
2. Remove the lower bolt **2**.
3. Remove the cover **3**.



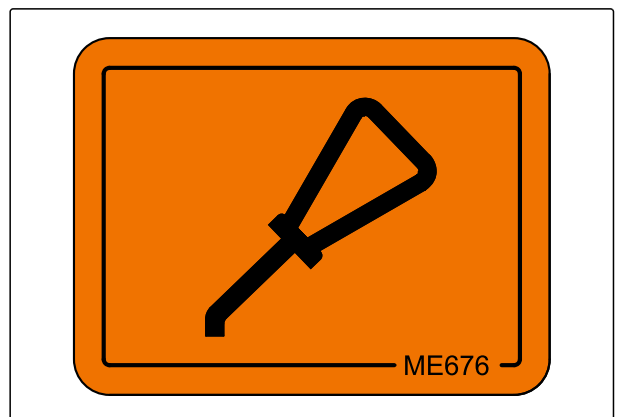
CMS-I-00003892



IMPORTANT

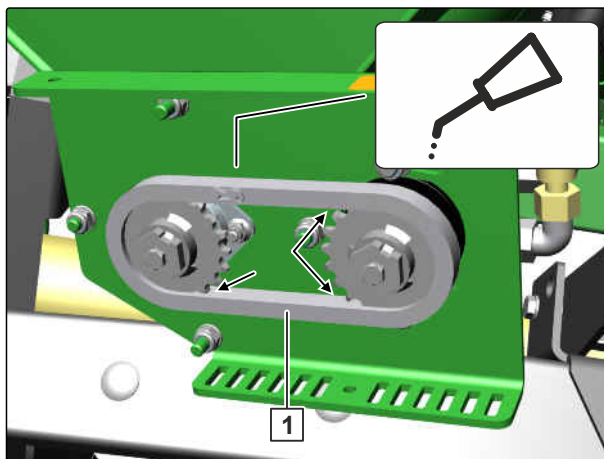
Implement damage due to improper lubrication

- ▶ Grease the implement at the marked lubrication points according to the lubrication schedule.
- ▶ Before lubrication, clean the chain with only a penetrating oil and a brush.
- ▶ Only grease the implement with the lubricants listed in the technical data.
- ▶ Do not let the lubricants drip off of the chain.



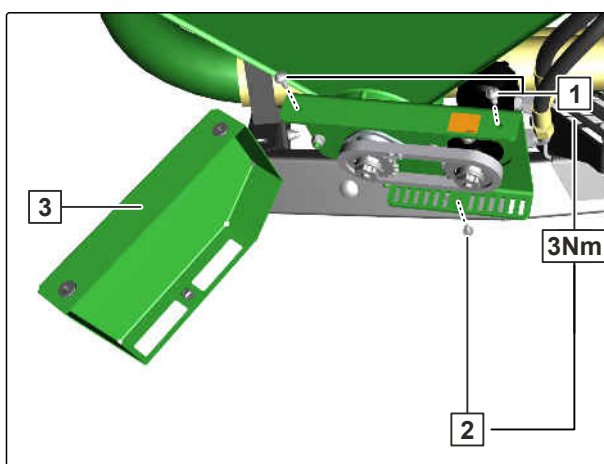
CMS-I-00001879

4. Lubricate the roller chain **1** from the inside going out.



CMS-I-00003859

5. Install the cover **3**.
6. Install the lower bolt **2**.
7. Install the upper bolts **1**.



CMS-I-00003891

10.3 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.
-
- ▶ Clean the machine with a high-pressure cleaner or a hot water high-pressure cleaner.



CMS-I-00002692

Preparing the implement for transport

11

CMS-T-00003115-G.1

11.1 Loading the implement with a crane

CMS-T-00003218-F.1

The implement has 3 lashing points for slings for lifting.



WARNING

Risk of accidents due to improperly attached slings for lifting

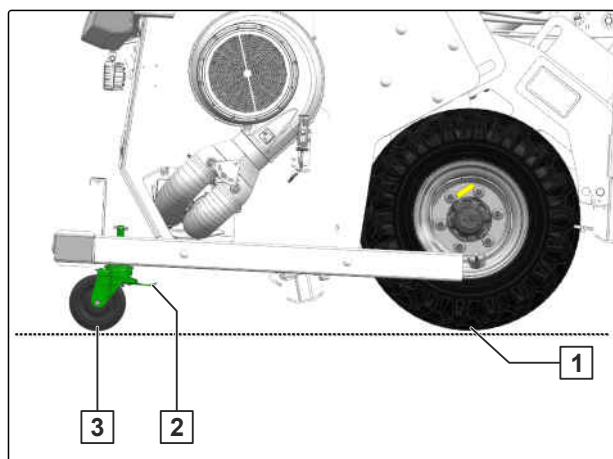
If the slings are not attached at the marked lashing points, the implement can be damaged during lifting and endanger safety.

- Only attach the slings for lifting at the marked lashing points.



CMS-I-00002460

1. To fold up the T-Pack F **1**: see page 85.
2. To remove the rear parking rollers: see page 52.
3. To install the front parking rollers **3**: see page 99.
4. Attach the slings for lifting on the intended lashing points.
5. Slowly lift the implement.



CMS-I-00002561

11.2 Manoeuvring the implement onto a transport vehicle

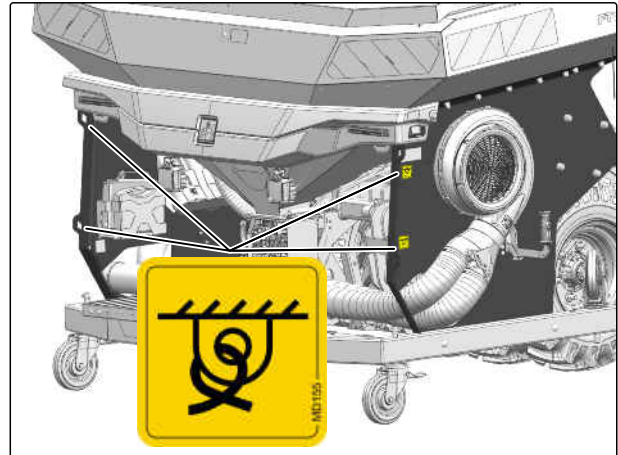
CMS-T-00012331-A.1

- Manoeuvre the implement in reverse with a shunting vehicle onto a transport vehicle.

11.3 Lashing the implement

CMS-T-00003576-D.1

The implement has 4 lashing points for lashing straps at the front.



CMS-I-00002559

The implement has 3 lashing points for lashing straps at the rear.



CMS-I-00002558



REQUIREMENTS

- ✓ The hopper is empty
 - ✓ The T-Pack F is installed
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

12

CMS-T-00010906-B.1

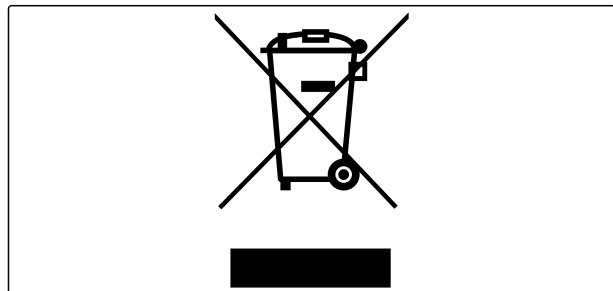


ENVIRONMENTAL INFORMATION

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.

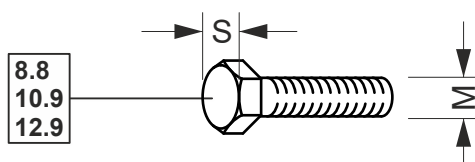
Appendix

13

CMS-T-00001755-F.1

13.1 Bolt tightening torques

CMS-T-00000373-E.1



CMS-I-000260

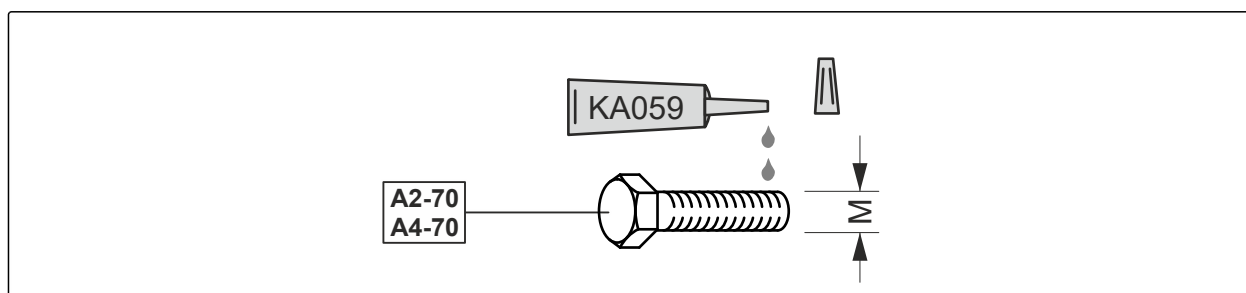


NOTE

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



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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

13.2 Other applicable documents

CMS-T-00001756-C.1

- Tractor operating manual
- ISOBUS software operating manual
- Control terminal operating manual

Directories

14

14.1 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.

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