



# Original operating manual

Trailed mower

GHS 1500 Drive SmartCut

GHS 1800 Drive SmartCut

GHS 2100 Drive SmartCut



SmartLearning



|                                                      |  |                                                            |  |
|------------------------------------------------------|--|------------------------------------------------------------|--|
| <b>AMAZONE</b>                                       |  |                                                            |  |
| Amazone S.A. 17, rue de la Verrerie F-57602 Forbach  |  |                                                            |  |
| Fahrzeug-Ident-Nr.<br>N° de châssis                  |  |                                                            |  |
| Maschinen-Ident-Nr.<br>N° de machine                 |  |                                                            |  |
| Produkt<br>Produit                                   |  |                                                            |  |
| Grundgewicht kg<br>Poids à vide kg                   |  | zul. Gesamtgewicht kg<br>Poids total autorisé en charge kg |  |
| zul. Stützlast kg<br>Charge maxi au timon kg         |  | Werk<br>Usine                                              |  |
| zul. Achslast hinten kg<br>Charge maxi essieu ar. kg |  | Modelljahr<br>Année du modèle                              |  |
| zul. Systemdruck bar<br>Pression de service maxi bar |  |                                                            |  |

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-J.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-G.1

### 1.2.1 Warnings and signal words

CMS-T-00002415-A.1

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



#### **DANGER**

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



#### **WARNING**

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



#### **CAUTION**

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

### 1.2.2 Further instructions

CMS-T-00002416-A.1



#### IMPORTANT

- Indicates a risk for damage to the implement.



#### ENVIRONMENTAL INFORMATION

- Indicates a risk for environmental damage.



#### NOTE

Indicates application tips and instructions for optimal use.

### 1.2.3 Instructions

CMS-T-00000473-E.1

#### 1.2.3.1 Numbered instructions

CMS-T-005217-B.1

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

Example:

1. Instruction 1
2. Instruction 2

#### 1.2.3.2 Instructions and responses

CMS-T-005678-B.1

Reactions to instructions are marked with an arrow.

Example:

1. Instruction 1
  - ➡ Reaction to instruction 1
2. Instruction 2



### 1.2.3.3 Alternative instructions

CMS-T-00000110-B.1

Alternative instructions are introduced with the word "or".

Example:

1. Instruction 1

or

Alternative instruction

2. Instruction 2

### 1.2.3.4 Instructions with only one action

CMS-T-005211-C.1

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

Example:

► Instruction

### 1.2.3.5 Instructions without sequence

CMS-T-005214-C.1

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

Example:

► Instruction

► Instruction

► Instruction

### 1.2.3.6 Workshop work

CMS-T-00013932-B.1



#### WORKSHOP WORK

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

### 1.2.4 Lists

CMS-T-000024-A.1

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

Example:

- Point 1
- Point 2

### 1.2.5 Item numbers in figures

CMS-T-000023-B.1

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

### 1.2.6 Direction information

CMS-T-00012309-A.1

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

## 1.3 Other applicable documents

CMS-T-00000616-B.1

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

## 1.4 Digital operating manual

CMS-T-00002024-B.1

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

## 1.5 Your opinion is important

CMS-T-000059-D.1

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

AMAZONEN-WERKE H. Dreyer SE & Co. KG  
Technische Redaktion  
Postfach 51  
D-49202 Hasbergen  
  
Fax: +49 (0) 5405 501-234  
E-Mail: [tr.feedback@amazone.de](mailto:tr.feedback@amazone.de)

CMS-I-00000638

# Safety and responsibility

# 2

CMS-T-00004601-D.1

## 2.1 Basic safety instructions

CMS-T-00004604-D.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-00002524-D.1

#### 2.1.2.1 Personnel qualification

CMS-T-00002525-A.1

##### 2.1.2.1.1 Requirements for all persons working with the machine

CMS-T-00002529-A.1

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

**the machine must meet the following minimum requirements:**

- The person is physically and mentally capable of controlling the machine.
- 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-00002526-A.1

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

- Skilled worker for communal equipment or farmer
- Communal equipment or agricultural helper

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

#### **2.1.2.1.3 Skilled worker for communal or agricultural equipment**

CMS-T-00002527-A.1

Skilled workers for communal equipment or farmers use machines to maintain green areas and parks. They decide on the use of a machine for a specific purpose.

Skilled workers for communal equipment or farmers are basically familiar with working with machines for the maintenance of green areas and parks, and if necessary, can instruct communal equipment and agricultural helpers in how to use the machines. They can perform odd tasks and simple maintenance and repair work on communal machines themselves.

**Skilled workers for communal equipment or farmers can be e.g.:**

- Skilled workers with training in the area of communal equipment.
- Skilled workers by experience, e.g. with comprehensive practical knowledge.
- Farmers with higher education or training from a technical college.
- Farmers by experience, e.g. with an inherited farm or comprehensive practical knowledge.
- Contractors who work by order of municipalities.

**Activity example:**

- Safety training for communal equipment or agricultural helpers.

**2.1.2.1.4 Communal equipment and agricultural helpers**

CMS-T-00002528-A.1

Communal equipment and agricultural helpers use machines by order of a skilled worker or the farmer. They are instructed on the use of the machine by the skilled worker or the farmer, and work independently according to the work assignment from the skilled worker or farmer.

**Communal equipment and agricultural helpers can be e.g.:**

- Employees of municipalities, contractors or service providers
- Seasonal workers and labourers
- Prospective skilled workers for communal equipment in training
- Prospective farmers in training
- Employees of the farmer, e.g. tractor driver
- Family members of the farmer

**Activity examples:**

- Driving the machine
- Adjusting the mowing height

#### 2.1.2.2 Workplaces and passengers

CMS-T-00002530-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-00002531-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-00005215-B.1

##### 2.1.2.4.1 Perfect technical condition

CMS-T-00014396-A.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 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 Protective equipment

CMS-T-00005219-A.1

#### 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.

### 2.1.2.4.3 Personal protective equipment

CMS-T-00005216-A.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.

#### **2.1.2.4.4 Warning symbols**

CMS-T-00005217-A.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-00004603-A.1

##### **2.1.3.1 Safety hazards on the machine**

CMS-T-00002654-B.1

#### **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.



### 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.

#### 2.1.3.2 Danger areas

CMS-T-00004602-A.1

##### Dangers areas on the machine

The following basic dangers are encountered in the danger areas:

Due to moving machine parts and implements during operation.

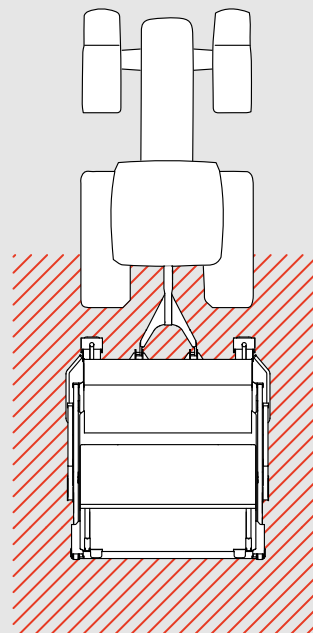
Hydraulically raised machine parts can descend unnoticed and slowly.

Due to unintentional rolling away of the machine.

Due to materials or foreign objects being ejected or thrown by the machine.

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.
- ▶ Only switch on engines and drives when there is nobody standing in the danger area.
- ▶ *If people enter the danger area, immediately switch off the engines and drives.*
- ▶ Only move the machine if there is nobody standing in the danger area.
- ▶ *If you want to move the cutting deck from transport position to working position or vice versa, direct people out of the danger area.*
- ▶ *If you are working in the danger area of the machine, secure the machine.*



CMS-I-00000973

## 2.1.4 Safe operation and handling of the machine

CMS-T-00005220-B.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-00006605-A.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 payload of 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.

### **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".

### **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-00002658-G.1

### **2.1.5.1 Changes to the machine**

CMS-T-00002659-A.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.

Vehicles with an official operating permit must be in the state specified by the permit. The same applies for devices and equipment that are connected to a vehicle that has a valid operating permit or approval for road traffic according to German road traffic regulations. This vehicle must also be in the state specified by the permit.

- ▶ Have any design changes and extensions performed only by a qualified specialist workshop.
- ▶ When making design changes, observe the permissible axle loads, drawbar loads and total weights of the machine.
- ▶ *To ensure that the operating permit remains valid in accordance with national and international regulations,*  
use only conversion parts, spare parts and special equipment approved by AMAZONE.

### 2.1.5.2 Work on the machine

CMS-T-00002323-I.1

#### Only work on the machine when it is at a standstill

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

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

#### Maintenance work

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

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

### **Raised implement parts**

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

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

### **Danger due to welding work**

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

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

#### **2.1.5.3 Operating materials**

CMS-T-00002661-B.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-00002662-A.1

##### Special equipment and spare parts

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

- ▶ Only use original parts or parts that meet AMAZONE requirements.
- ▶ If you have questions relating to equipment or spare parts, contact your dealer or AMAZONE.

## 2.2 Safety routines

CMS-T-00004828-A.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.

##### 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.

- ▶ Before performing any work on the machine, shutdown and secure the machine.

## Intended use

# 3

CMS-T-00005810-B.1

- The machine is intended solely for conventional use for the maintenance of green areas and parks.
- The implement is an communal implement to be mounted on a tractor with drawbar mount that meets the technical requirements.
- The machine is suitable and intended for mowing and scarifying green areas as well as for collecting and shredding the mowed material. Moreover, the machine is suitable for collecting e.g. leaves, twigs, acorns, chestnuts and other rubbish on the green area.
- When driving on public roads, the machine must comply with the provisions of the applicable road traffic regulations.
- The implement 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 implement. The implement is solely intended for use in compliance with this operating manual. Uses of the implement that are not described in this operating manual can lead to serious personal injuries or even death and to implement and material damage.
- The applicable accident prevention regulations as well as generally accepted safety-related, occupational health and road traffic regulations must also be observed by the users and the owner.
- Further instructions for intended use in special cases can be requested from AMAZONE.
- Uses other than those specified under the intended use are considered as improper. The manufacturer is not liable for any damage resulting from improper use, solely the operator is responsible.



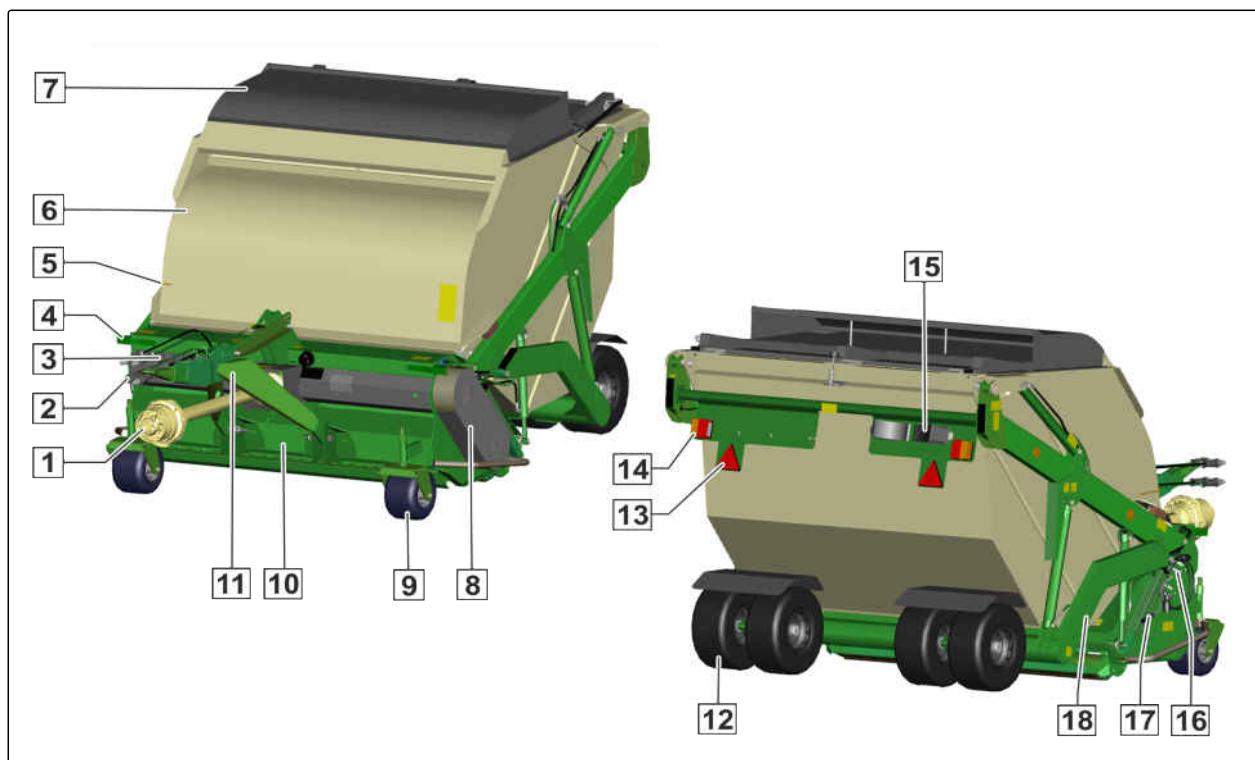
## Product description

4

CMS-T-00001161-D.1

### 4.1 Machine overview

CMS-T-00001179-A.1



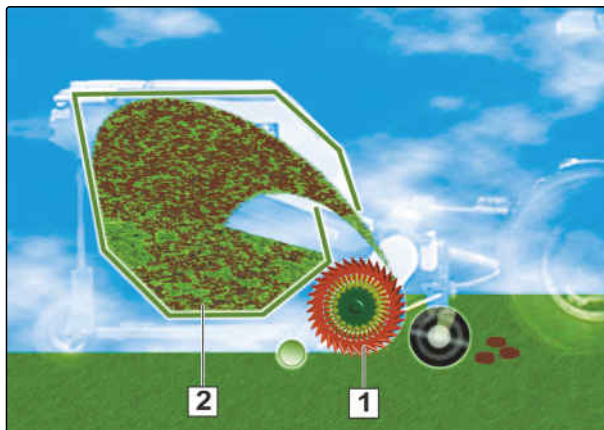
CMS-I-00001088

- |                                               |                               |
|-----------------------------------------------|-------------------------------|
| <b>1</b> Universal joint shaft                | <b>2</b> Hydraulic hose lines |
| <b>3</b> Hydraulic hose line holder           | <b>4</b> White reflector      |
| <b>5</b> Grass collector fill level indicator | <b>6</b> Grass collector      |
| <b>7</b> Air duct cover                       | <b>8</b> Transmission V-belt  |
| <b>9</b> Cutting deck support wheel           | <b>10</b> Cutting deck        |
| <b>11</b> Drawbar                             | <b>12</b> Rear tyres          |
| <b>13</b> Red reflectors                      | <b>14</b> Rear lights         |
| <b>15</b> Wheel chocks                        | <b>16</b> Threaded cartridge  |
| <b>17</b> Cutting height adjustment           | <b>18</b> Cage roller         |

## 4.2 Function of the implement

CMS-T-00003709-A.1

During mowing, the rotor **1** and the cutting blades installed on the rotor produce an air current with which the clippings are carried into the grass collector **2**.



CMS-I-00000993

## 4.3 Special equipment

CMS-T-00001621-A.1

- Lower drawbar
- Front roller
- Operating hours counter
- Electro-hydraulic control
- Air duct cover
- Mudguard

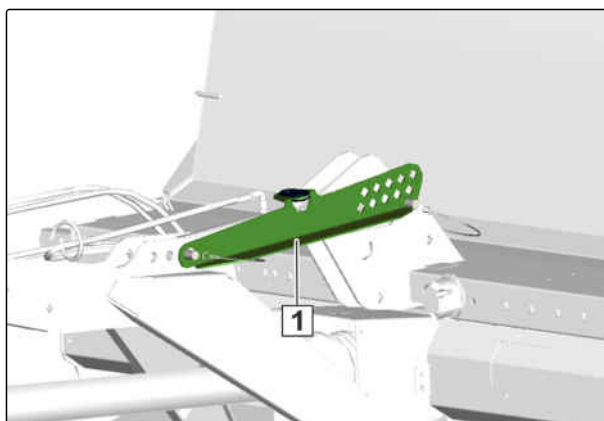
## 4.4 Protective equipment

CMS-T-00001196-B.1

### 4.4.1 Drawbar lock

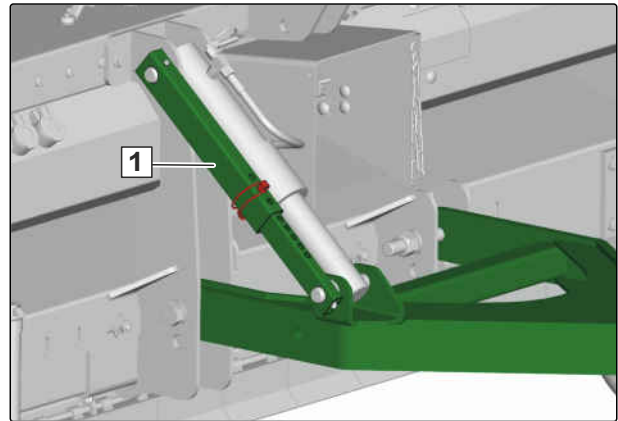
CMS-T-00001709-A.1

The safety clip **1** secures the upper drawbar in parking position when the implement is uncoupled.



CMS-I-00001078

The safety tube **1** secures the lower drawbar in parking position when the implement is uncoupled.

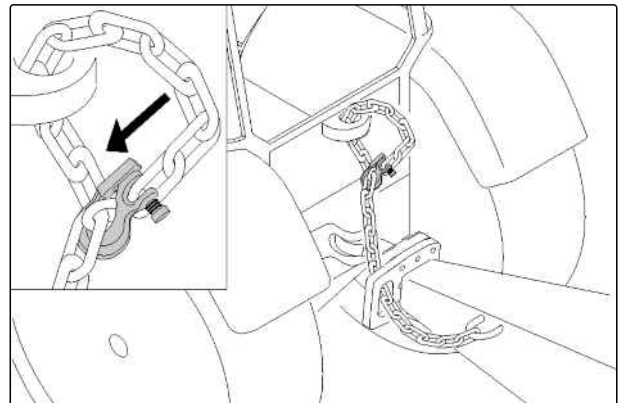


CMS-I-00003723

#### 4.4.2 Safety chain

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

CMS-T-00001425-B.1

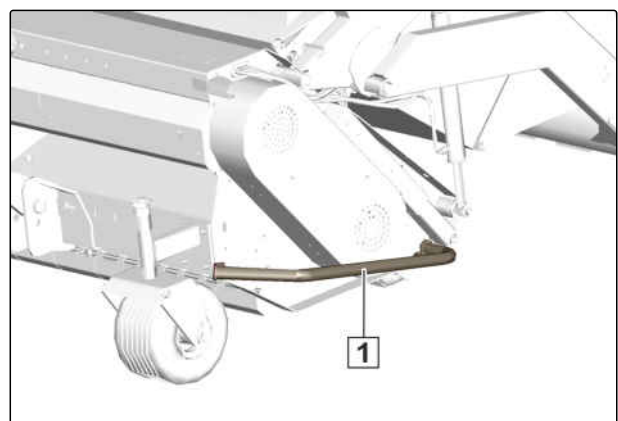


CMS-I-00003562

#### 4.4.3 Deflector bracket

The deflector brackets **1** on both sides protect the cutting deck and the transmission V-belt from colliding with large stones or other obstacles.

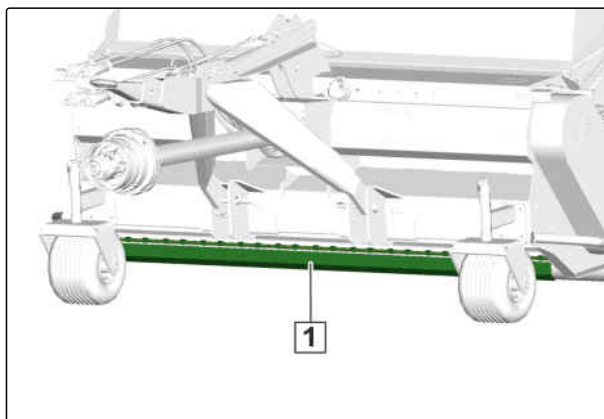
CMS-T-00001197-A.1



CMS-I-00000969

#### 4.4.4 Pendulum flaps

The pendulum flaps **1** protect persons and the tractor from foreign objects being thrown to the front.

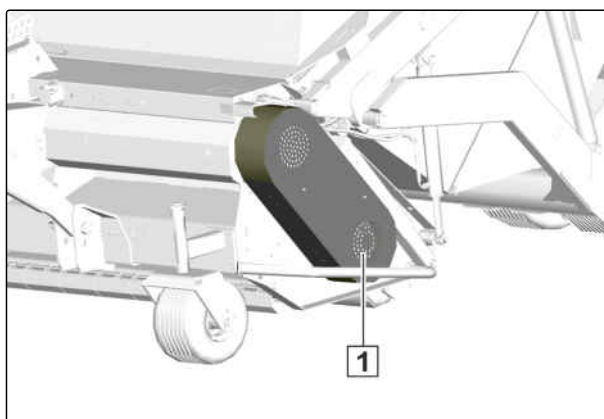


CMS-T-00001198-A.1

CMS-I-00000970

#### 4.4.5 Transmission V-belt protective cover

The transmission V-belt protective cover **1** prevents injury from the transmission V-belt. The protective cover completely covers the transmission V-belt.

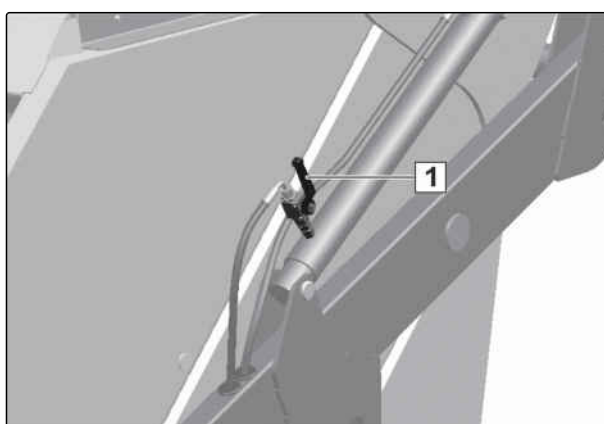


CMS-T-00001199-A.1

CMS-I-00000966

#### 4.4.6 Grass collector locking device

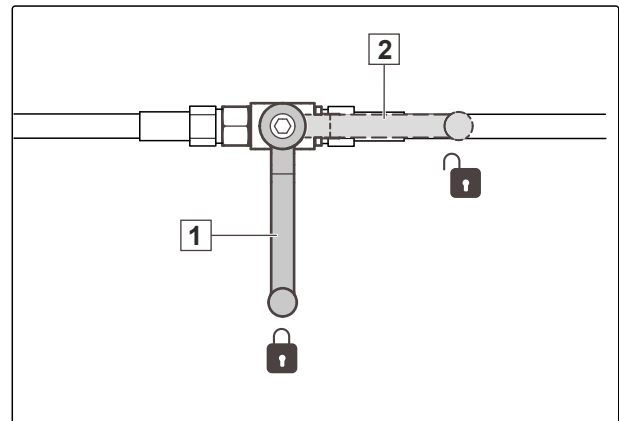
To perform repairs on the rotor or to change the blades, the grass collector can be raised. The grass collector locking device **1** prevents the raised grass collector from accidentally lowering.



CMS-T-00001200-A.1

CMS-I-00000971

- 1 Hydraulic valve closed
- 2 Hydraulic valve open

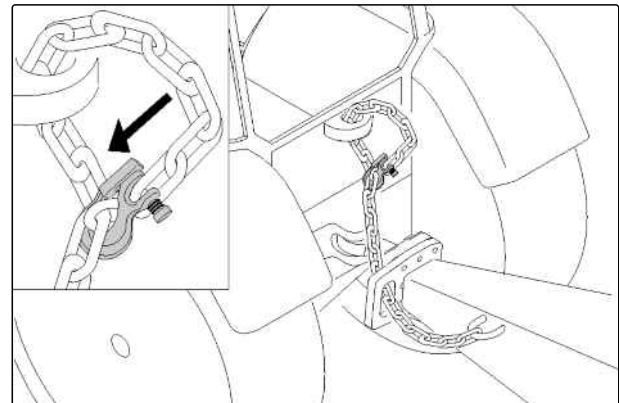


CMS-I-00001022

#### 4.4.7 Safety chain

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

CMS-T-00001425-B.1



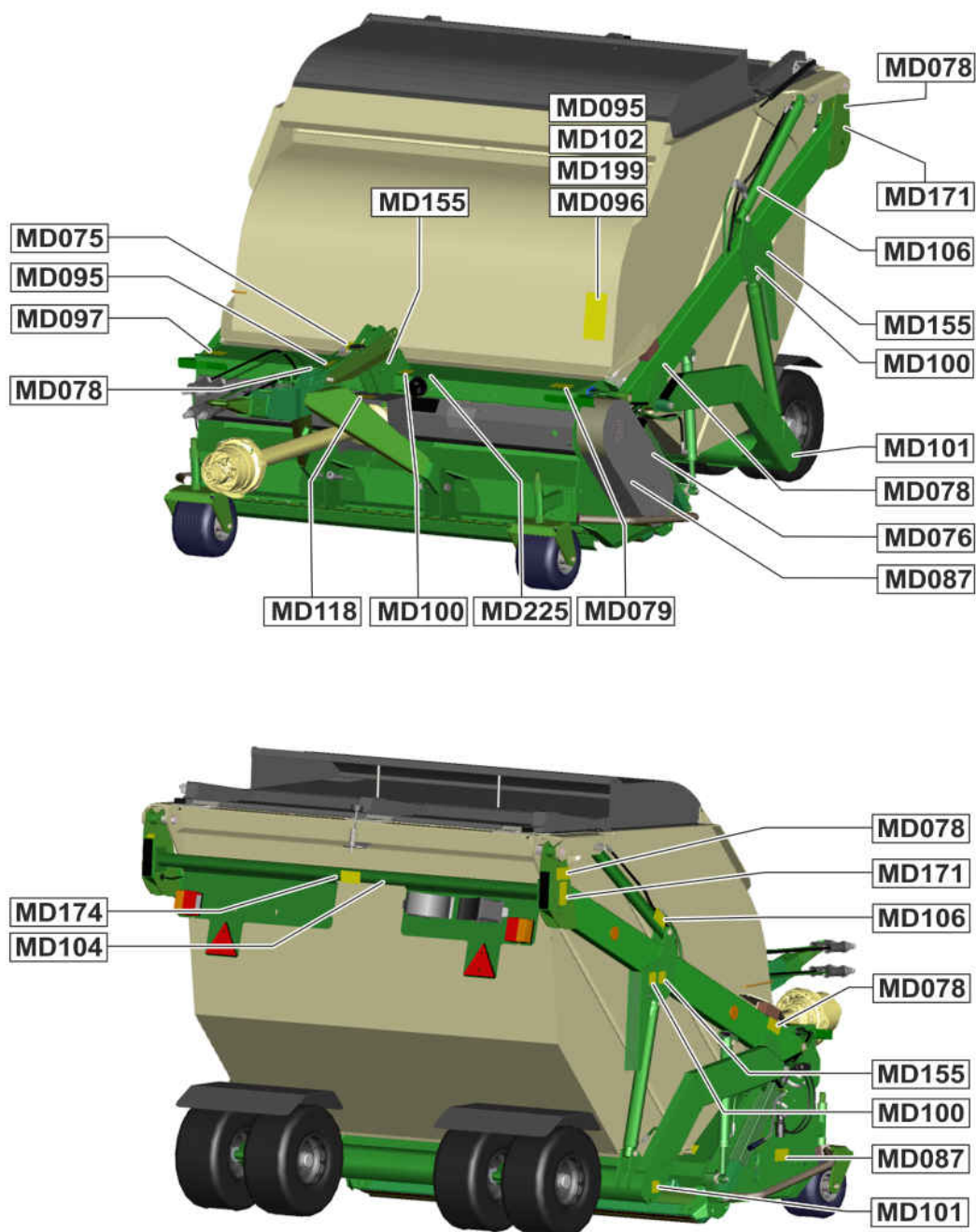
CMS-I-00003562

## 4.5 Warning symbols

CMS-T-00001180-A.1

### 4.5.1 Positions of the warning symbols

CMS-T-00003717-A.1



CMS-I-00000988



CMS-I-00002711

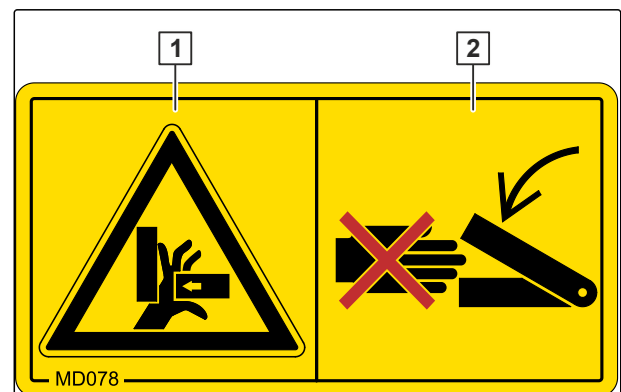
#### 4.5.2 Layout of the warning symbols

CMS-T-000141-B.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-00001181-A.1

#### MD 075

##### Risk of cuts for fingers, hands, and arms

- ▶ *As long as engine of the tractor or machine is running,*  
stay away from the danger area.
- ▶ Wait until all moving parts of the machine are at a standstill before reaching into the danger area.
- ▶ Make sure that there is nobody standing in the danger area.



CMS-I-00000418

#### MD 076

##### Risk of being drawn in or caught

- ▶ *As long as engine of the tractor or machine is running,*  
stay away from the danger area.
- ▶ *As long as engine of the tractor or machine is running,*  
do not remove any protective equipment.
- ▶ Make sure that there is nobody standing in the danger area.

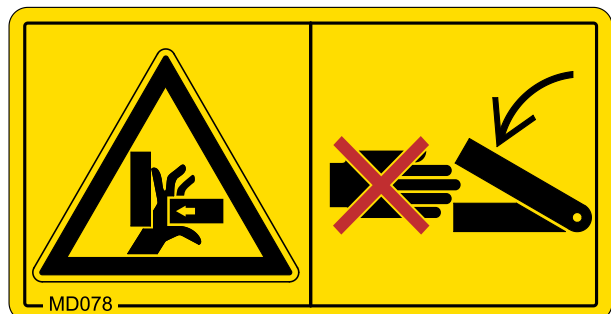


CMS-I-00000419

#### 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.

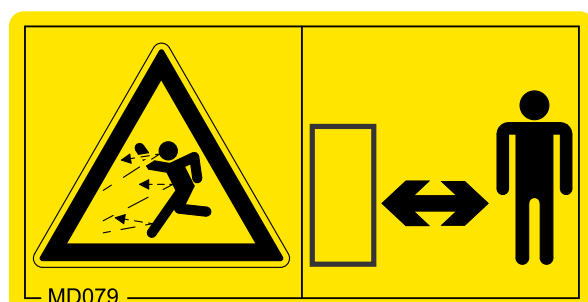


CMS-I-0000074

#### MD 079

##### Danger due to ejected material

- ▶ *As long as engine of the tractor or machine is running,*  
stay away from the danger area.
- ▶ Make sure that there is nobody standing in the danger area.



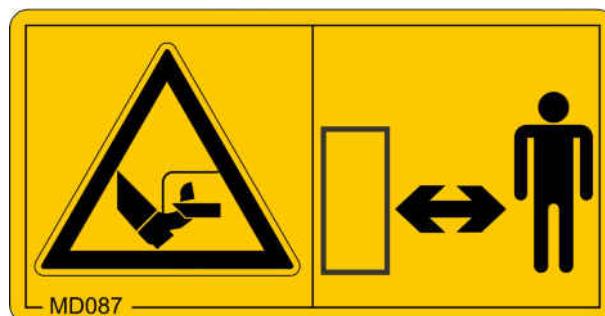
CMS-I-0000076



#### MD 087

##### **Danger due to cutting and moving machine parts**

- ▶ *As long as engine of the tractor or machine is running,*  
stay away from the danger area.
- ▶ Make sure that there is nobody standing in the danger area.



CMS-I-000691

#### 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.

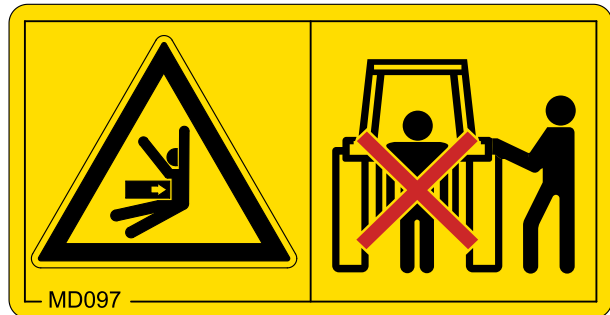


CMS-I-000216

#### 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.

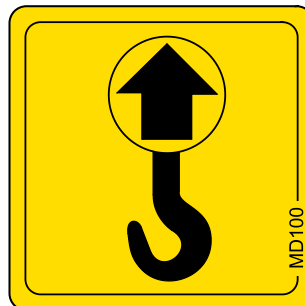


CMS-I-000139

#### MD 100

##### Risk of accidents due to improperly attached lifting gear

- ▶ Only attach the lifting gear at the marked positions.

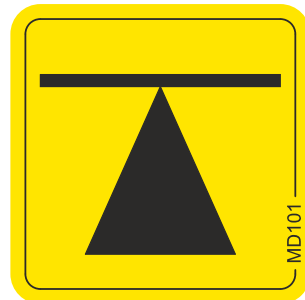


CMS-I-000089

#### MD 101

##### Risk of accidents due to improperly attached lifting equipment

- ▶ Only attach the lifting equipment at the marked positions.



CMS-I-00002252

#### 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.

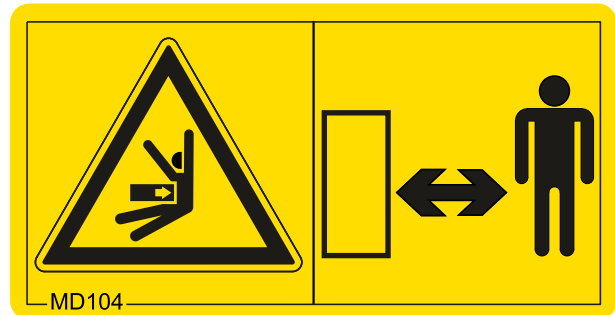


CMS-I-00002253

#### MD104

##### Risk of crushing due to swivelling parts of the implement

- ▶ *As long as the tractor engine is running, maintain an adequate safety distance from swivelling implement parts.*
- ▶ Make sure that there is nobody standing close to swivelling parts.



CMS-I-00003312

#### MD 106

##### Risk of crushing from the machine parts unintentionally lowering

- ▶ *Before entering the danger area, secure raised machine parts with a hydraulic or mechanical locking device.*



CMS-I-00000427

#### MD 118

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

- ▶ Comply with the maximum drive speed and direction of rotation of the drive shaft on the implement side.

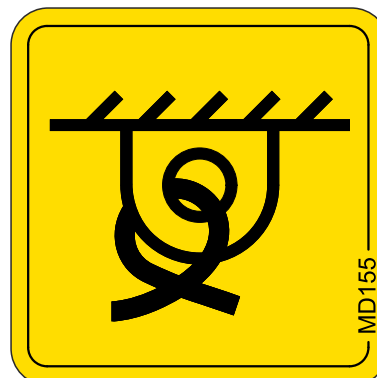


CMS-I-00000433

#### 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 170

##### Danger due to open protective device

- Before you operate the implement, close the protective device.



CMS-I-00003692

#### MD 171

##### Risk of crushing due to the lifted hopper

- *Before moving the hopper,* make sure that there is nobody standing in the danger area.

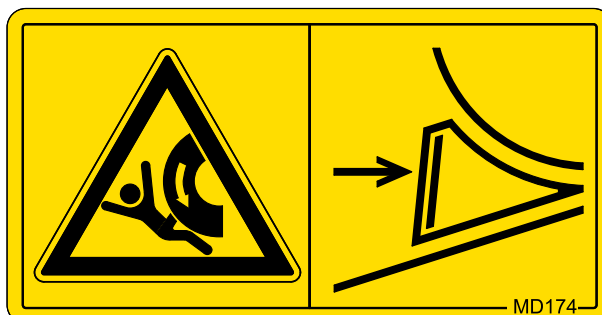


CMS-I-00000469

#### MD 174

##### Risk of rolling over due to unsecured implement

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

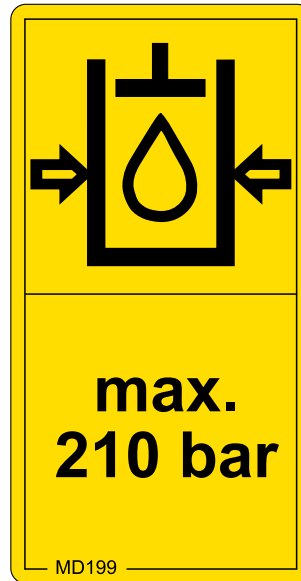


CMS-I-00000458

#### MD 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.

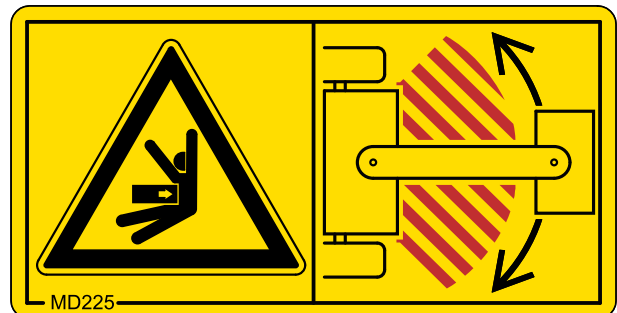


CMS-I-00000486

#### MD 225

**Risk of crushing when coupling the tractor and the implement**

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



CMS-I-00000474

## 4.6 Other information on the implement

CMS-T-00001183-A.1

### 4.6.1 Grass collector fill level indicator

CMS-T-00001184-A.1

Provides information about the fill level in the grass collector.

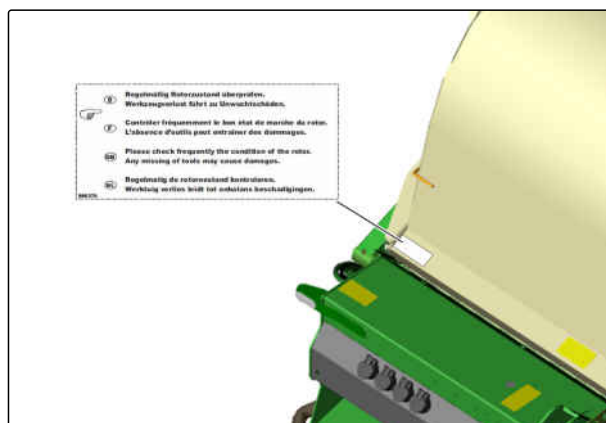


CMS-I-00000985

### 4.6.2 Rotor condition inspection

Instructions for regular inspection of the rotor condition.

CMS-T-00003703-A.1

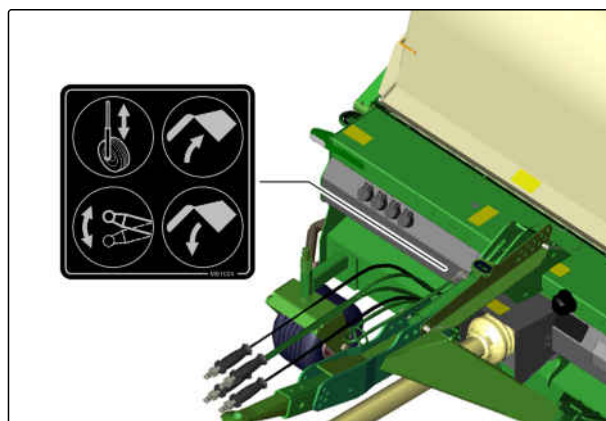


CMS-I-00000984

### 4.6.3 Assignment of the hydraulic hose lines

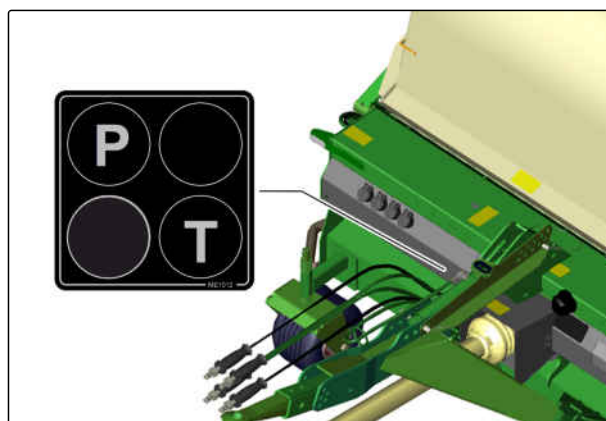
Information on the assignment of the hydraulic hose lines for the Standard hydraulic system.

CMS-T-00005144-A.1



CMS-I-00003698

Information on the assignment of the hydraulic hose lines for the electro-hydraulic control.

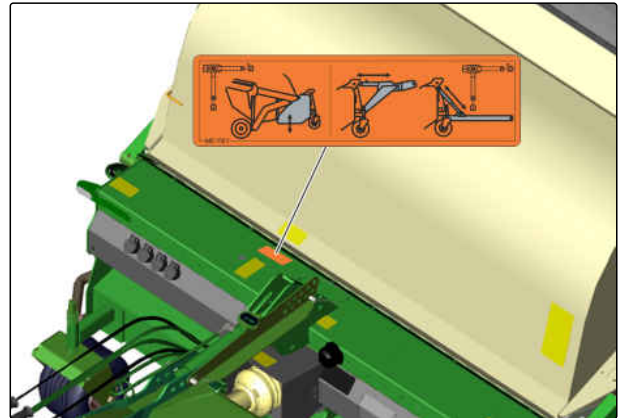


CMS-I-00003697

#### 4.6.4 Functions of the hydraulic valves

Information on the function and lever position of the hydraulic valves.

CMS-T-00003704-A.1

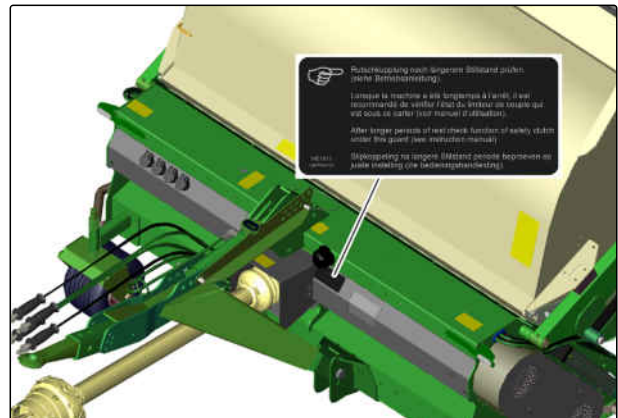


CMS-I-00000982

#### 4.6.5 Slip clutch inspection

Information for checking the slip clutch after longer periods of standstill.

CMS-T-00003706-A.1



CMS-I-00001021

#### 4.6.6 Max. permissible speed

Specifies the maximum permissible speed on public roads.

CMS-T-00003707-A.1

##### **NOTE**

This specification can differ depending on the country of use.



CMS-I-00000986

## 4.7 Rating plate and CE mark

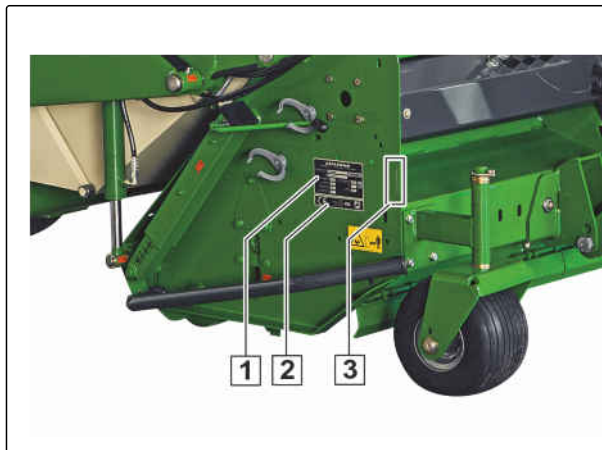
CMS-T-00005811-A.1

### 4.7.1 Rating plate and CE mark on the implement

CMS-T-00005812-A.1

The rating plate **1** and CE mark **2** are located on the implement for identification.

The vehicle ID no. **3** is also stamped on the front right of the implement.



CMS-I-00001015

The rating plate specifies:

- Vehicle ID no.
- Machine ID no.
- Product name
- Basic weight in kg
- Permissible drawbar load in kg
- Permissible rear axle load in kg
- Permissible system pressure in bar
- Permissible total weight in kg
- Factory
- Model year

| AMAZONE                                             |  |                                   |  |
|-----------------------------------------------------|--|-----------------------------------|--|
| Amazone S.A. 17, rue de la Verrerie F-57602 Forbach |  |                                   |  |
| Fahrzeug-Ident-Nr.                                  |  |                                   |  |
| N° de châssis                                       |  |                                   |  |
| Maschinen-Ident-Nr.                                 |  |                                   |  |
| N° de machine                                       |  |                                   |  |
| Produkt                                             |  |                                   |  |
| Grundgewicht kg                                     |  | zul. Gesamtgewicht kg             |  |
| Poids à vide kg                                     |  | Poids total autorisé en charge kg |  |
| zul. Stützlast kg                                   |  | Werk                              |  |
| Charge maxi au timon kg                             |  | Usine                             |  |
| zul. Achslast hinten kg                             |  | Modelljahr                        |  |
| Charge maxi essieu ar. kg                           |  | Année du modèle                   |  |
| zul. Systemdruck bar                                |  |                                   |  |
| Pression de service maxi bar                        |  |                                   |  |

CMS-I-00003689

CE mark with year of construction



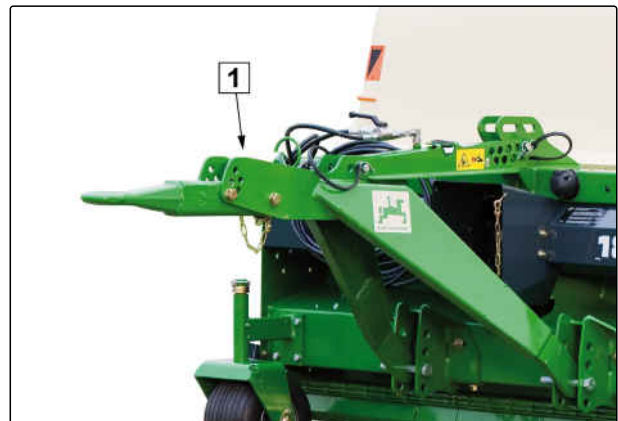
CMS-I-00000512



## 4.7.2 Rating plate on the drawbar

The rating plate **1** is located on the drawbar for identification.

CMS-T-00005813-A.1



CMS-I-00001086

The rating plate specifies:

- Manufacturer
- Designation
- Type
- Test mark
- Year of manufacture
- Permissible total trailer weight in kg
- Max. permissible speed in km/h
- Permissible drawbar load in kg
- DC value in kN

|             |                      |                            |      |
|-------------|----------------------|----------------------------|------|
| Hersteller  | AMAZONE S.A. Forbach | Werk                       | 9    |
| Bezeichnung | ZUGDEICHSEL          | zul. Gesamtgewicht Anh. kg | 2100 |
| Typ         | ZDS                  | zul. Höchstgeschw. km/h    | 40   |
| Prüfzeichen | TPSxxxxxxx           | zul. Stützlast kg          | 600  |
| Baujahr     |                      | D -Wert kN                 | 12,8 |

CMS-I-00001085

## 4.8 Threaded cartridge

The threaded cartridge contains the following items:

- Documents
- Aids

CMS-T-00001776-E.1



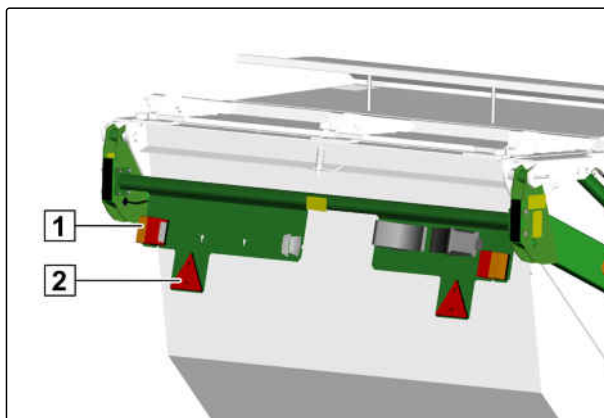
CMS-I-00002306

## 4.9 Lighting and identification for road travel

CMS-T-00001185-B.1

### Lighting and identification for road travel towards the rear

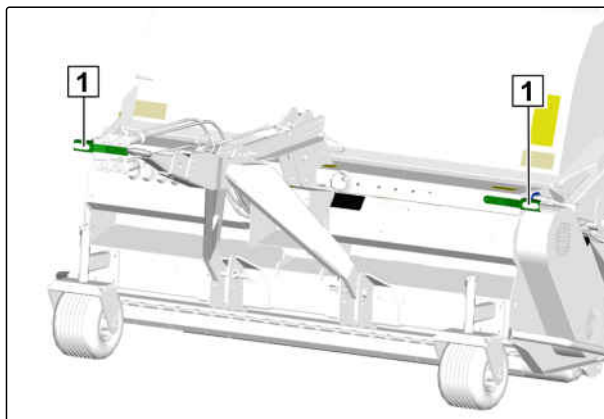
- 1 Rear lights, brake lights, and turn indicators.
- 2 Red reflectors



CMS-I-00000990

### Identification towards the front

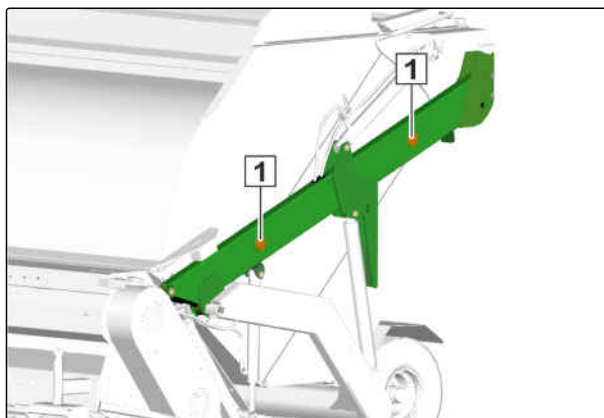
- 1 White reflector



CMS-I-00000991

### Identification to the sides

- 1 Orange reflector

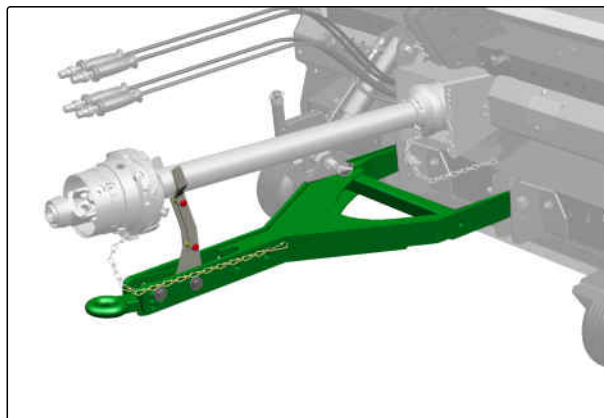


CMS-I-00000989

## 4.10 Lower drawbar

CMS-T-00004667-A.1

With the lower drawbar, the implement is coupled to tractors with a swinging drawbar.

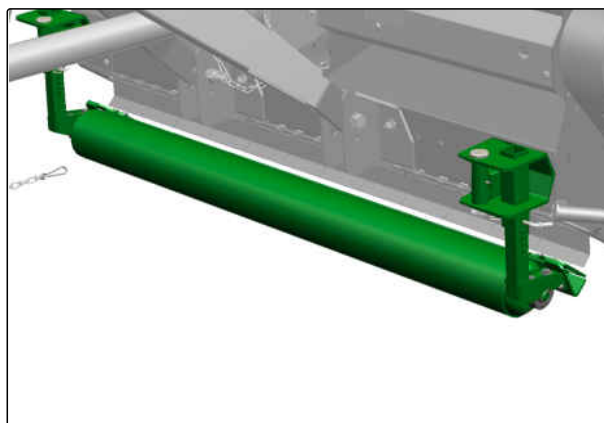


CMS-I-00001001

## 4.11 Front roller

CMS-T-00001625-A.1

The front roller is used for scarifying on uneven ground. The front roller is mounted on the brackets of the front steering wheels.



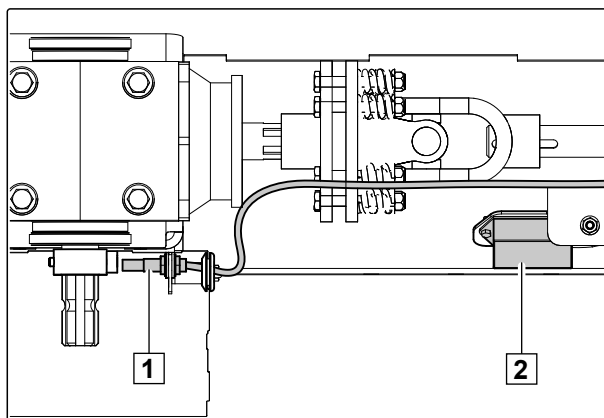
CMS-I-00000994

## 4.12 Operating hours counter

CMS-T-00001626-A.1

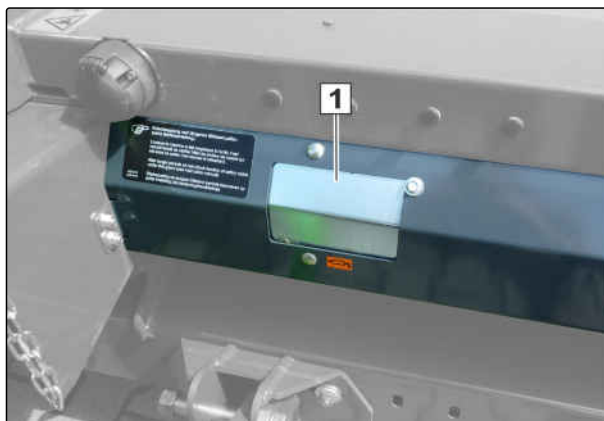
The operating hours counter enables counting of the operating hours when the universal joint shaft is running.

The operating hours are recorded on the drive gear by the sensor **1** and are shown on the display device **2**.



CMS-I-00001000

The operating hours counter can be read when the cover **1** is opened.

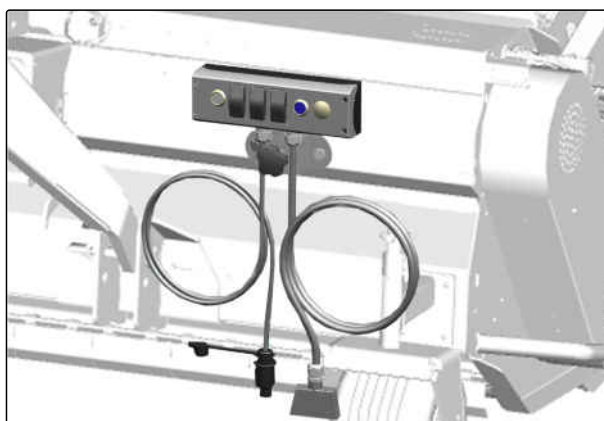


CMS-I-00003737

### 4.13 Electro-hydraulic control

CMS-T-00001195-A.1

With the remote control, the implement can be operated with only two hydraulic hoses and one additional electrical connection. The remote control is fastened with a holder in the driver's cab of the tractor.

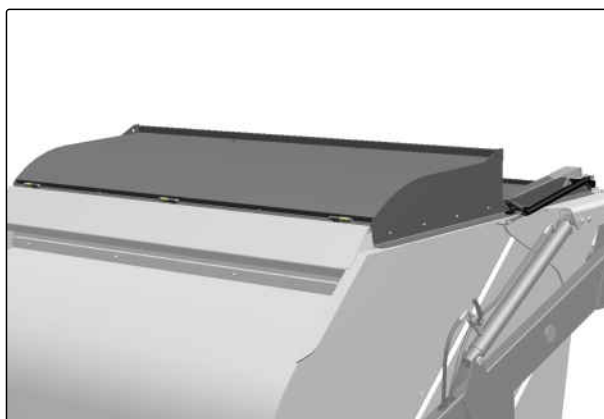


CMS-I-00000996

### 4.14 Air duct cover

CMS-T-00001623-A.1

The air duct cover guides air and mowing dust to the rear.

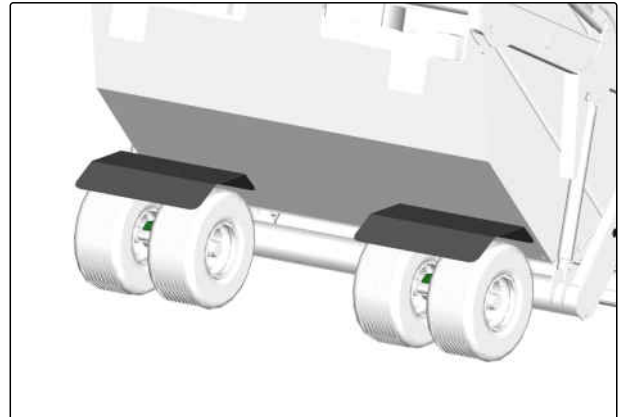


CMS-I-00000995

## 4.15 Mudguard

CMS-T-00001624-A.1

The mudguards protect the implement and the surroundings from objects being thrown up by the rear wheels, during operation or when driving on roads.



CMS-I-00000999

## 4.16 Cutting tools

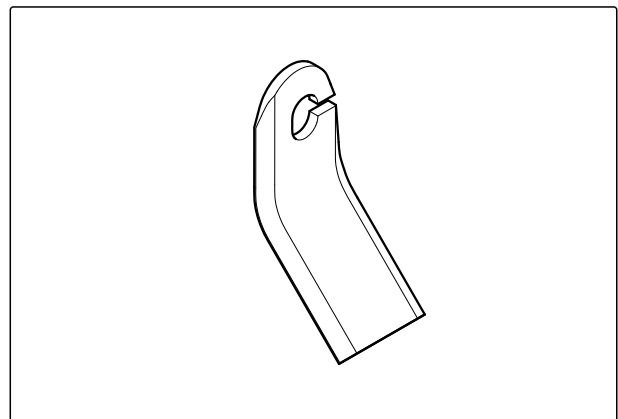
CMS-T-00001187-C.1

### 4.16.1 Cutting blades

The cutting blade is sharpened on both sides and can therefore be rotated when it is worn on one side.

The cutting blade is suitable for different application areas and blade combinations, see page 73.

CMS-T-00001188-C.1

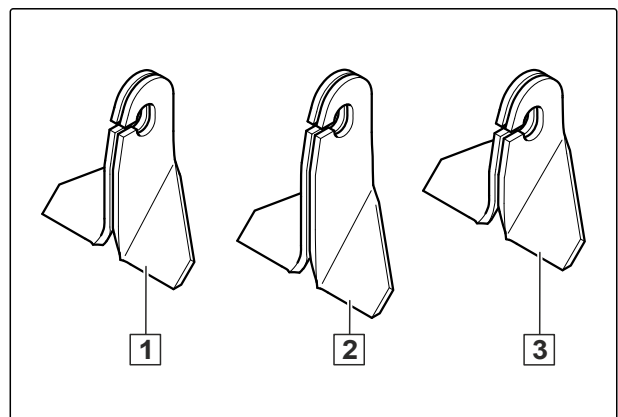


CMS-I-00001003

### 4.16.2 Flail blades

CMS-T-00005959-C.1

- 1** Flail blade, long H77
- 2** Flail blade, extra long H88
- 3** Flail blade, short H60



CMS-I-00004310

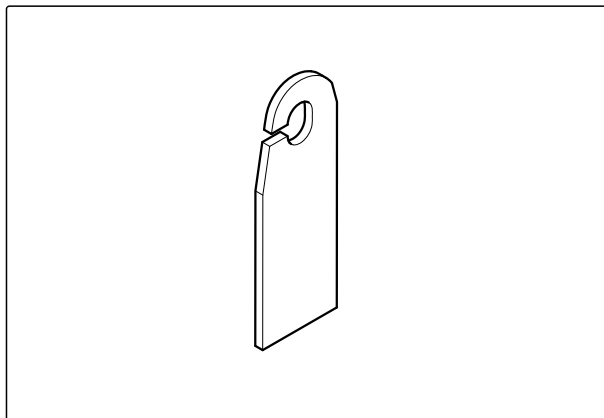
The flail blades are suitable for different application areas and blade combinations, see page 73.

#### 4.16.3 Scarifying blades

The scarifying blade is available with a thickness of 2 mm and 3 mm.

The scarifying blade is suitable for different application areas and blade combinations, see page 73.

CMS-T-00001193-D.1



CMS-I-00001002

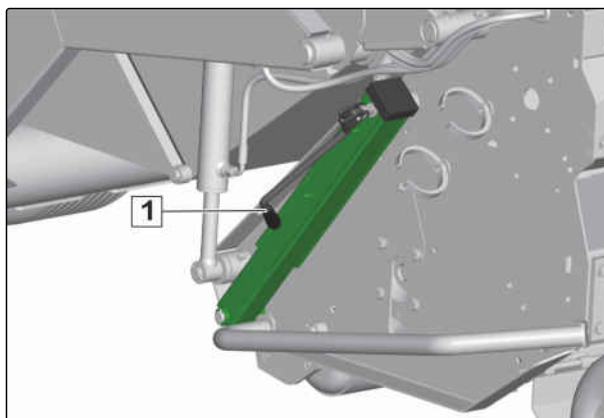
## 4.17 Control elements

CMS-T-00003711-A.1

#### 4.17.1 Crank for adjusting the cutting height

CMS-T-00003712-A.1

The crank **1** for adjusting the cutting height is located on the right side of the cutting deck. The cutting height of the cutting deck can be centrally adjusted with the crank.

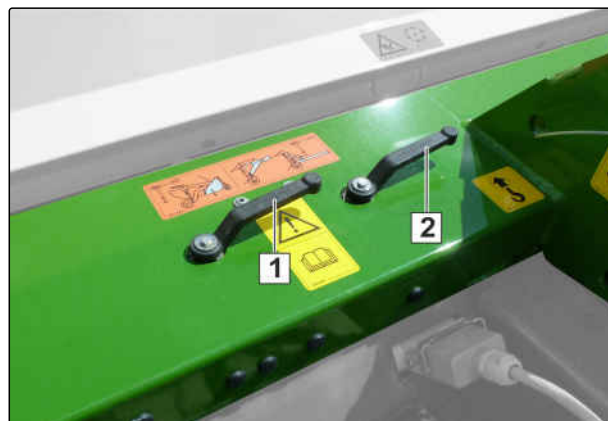


CMS-I-00002714

### 4.17.2 Hydraulic valves

CMS-T-00003713-A.1

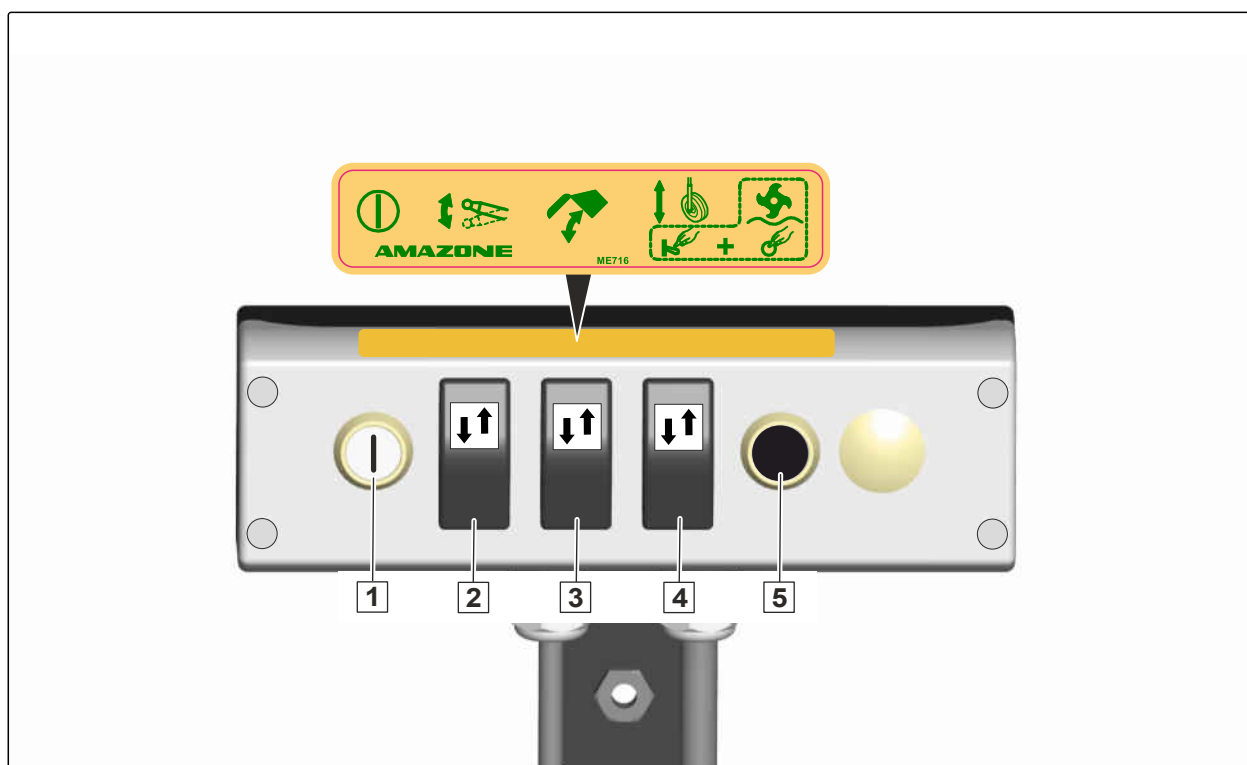
- 1** Hydraulic valves to lift, lower or lock the cutting deck.
- 2** Hydraulic valves to lift, lower or lock the implement with the drawbar.



CMS-I-00003373

### 4.17.3 Control buttons of the electro-hydraulic control

CMS-T-00003714-A.1



CMS-I-00003374

- |                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li><b>1</b> Control button for switching the electro-hydraulic control on and off.</li> <li><b>3</b> Control button to lift and lower the grass collector.</li> <li><b>5</b> Control button to activate the float position of the implement by simultaneously actuating both control buttons <b>4</b> and <b>5</b>.</li> </ol> | <ol style="list-style-type: none"> <li><b>2</b> Control button to lift and lower the front implement with the drawbar.</li> <li><b>4</b> Control button to lift and lower the rear implement.</li> </ol> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Float position means that the cutting deck is responsible for ground guidance via the front support

wheels and the cage roller. The rear wheels only have a supporting function and compensate for ground undulations between the right and left wheel. The drawbar is also in float position.

As soon as another control button is actuated, the float position is automatically switched off. The implement hydraulic system goes into transport mode.

If a control button is released during operation, the hydraulic block is locked and the implement directly remains in the current position.

#### 4.18 High tip emptying

CMS-T-00004669-B.1

High tip emptying at up to 2.3 m enables rapid emptying on an HGV or trailer.



CMS-I-00003324



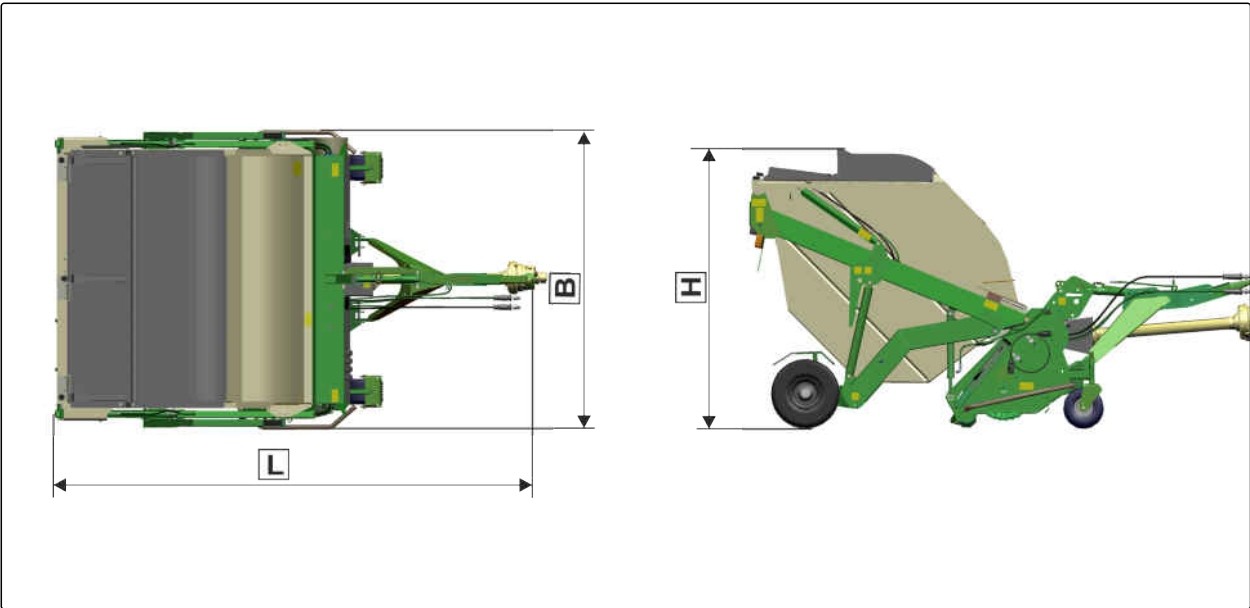
Technical data

5

CMS-T-00003683-B.1

5.1 Dimensions

CMS-T-00003685-B.1



CMS-I-00003325

| Designation |              | GHS Drive 1500 | GHS Drive 1800 | GHS Drive 2100 |
|-------------|--------------|----------------|----------------|----------------|
| <b>L</b>    | Total length | 3.65 m         | 3.65 m         | 3.65 m         |
| <b>H</b>    | Total height | 1.9 m          | 1.9 m          | 1.9 m          |
| <b>B</b>    | Total width  | 1.9 m          | 2.2 m          | 2.5 m          |

5.2 Grass collector volume

CMS-T-00003687-B.1

| GHS Drive 1500 | GHS Drive 1800 | GHS Drive 2100 |
|----------------|----------------|----------------|
| 2,500 l        | 3,000 l        | 3,500 l        |

## 5.3 Cutting deck

CMS-T-00003699-B.1

### 5.3.1 Cutting dimensions

CMS-T-00003688-B.1

|                | GHS Drive 1500 | GHS Drive 1800 | GHS Drive 2100 |
|----------------|----------------|----------------|----------------|
| Cutting height | max. 80 mm     | max. 80 mm     | max. 80 mm     |
| Cutting width  | 1.5 m          | 1.8 m          | 2.1 m          |

### 5.3.2 Cutting tools

CMS-T-00003700-B.1



#### NOTE

The specifications for the number of tools refers to 100% equipment with the same cutting tool.

|                                 | GHS Drive 1500 | GHS Drive 1800 | GHS Drive 2100 |
|---------------------------------|----------------|----------------|----------------|
| Cutting blades                  | 166 units      | 198 units      | 230 units      |
| Scarifying blades 2 mm / 3 mm   | 83 units       | 99 units       | 115 units      |
| Flail blade, long H77, standard | 83 pairs       | 99 pairs       | 115 pairs      |
| Flail blade, short H60          | 83 pairs       | 99 pairs       | 115 pairs      |
| Flail blade, extra long H88     | 83 pairs       | 99 pairs       | 115 pairs      |

## 5.4 Tyres

CMS-T-00003701-B.1

### 5.4.1 Tyre dimensions

CMS-T-00003689-A.1

|                             | GHS Drive 1500 | GHS Drive 1800 | GHS Drive 2100 |
|-----------------------------|----------------|----------------|----------------|
| Cutting deck support wheels | 11 x 7 - 4     | 11 x 7 - 4     | 11 x 7 - 4     |
| Rear tyres                  | 18.5 x 8.50-8  | 18.5 x 8.50-8  | 18.5 x 8.50-8  |

### 5.4.2 Tyre inflation pressure

CMS-T-00003702-B.1

|                             | GHS Drive 1500 | GHS Drive 1800 | GHS Drive 2100 |
|-----------------------------|----------------|----------------|----------------|
| Cutting deck support wheels | 2 bar          | 2 bar          | 2 bar          |
| Rear tyres                  | 3.4 bar        | 3.4 bar        | 3.4 bar        |

## 5.5 Permitted mounting categories

CMS-T-00003698-A.1

|               |                 |
|---------------|-----------------|
| Upper drawbar | Drawbar eye D40 |
| Lower drawbar | Drawbar eye D50 |

## 5.6 Optimal working speed

CMS-T-00003696-B.1

|           |
|-----------|
| 5-12 km/h |
|-----------|

## 5.7 Performance characteristics of the tractor

CMS-T-00003697-B.1

| Engine rating                  |                                |                                |
|--------------------------------|--------------------------------|--------------------------------|
| GHS Drive 1500                 | GHS Drive 1800                 | GHS Drive 2100                 |
| minimum 50 hp / maximum 100 hp | minimum 60 hp / maximum 120 hp | minimum 70 hp / maximum 130 hp |

| Electrical system                    |             |
|--------------------------------------|-------------|
| Battery voltage                      | 12 V        |
| Lighting socket                      | 7-pin       |
| Socket for electro-hydraulic control | 3-pin, 15 A |

| Hydraulic system                                    |                                                                                                                                                               |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum operating pressure                          | 210 bar                                                                                                                                                       |
| Tractor pump output                                 | at least 15 l/min at 150 bar                                                                                                                                  |
| Tractor pump capacity for electro-hydraulic control | max. 40 l/min at 210 bar                                                                                                                                      |
| Free oil return                                     | max. return pressure 1.5 bar                                                                                                                                  |
| Implement hydraulic oil                             | HLP68 DIN51524<br><br>The hydraulic fluid is suitable for the combined hydraulic fluid circuits of all standard tractor brands.                               |
| Control units                                       | Standard hydraulic system:<br><br>2x single-acting and 1x double-acting<br><br>Electro-hydraulic control:<br><br>1x single-acting and free return to the tank |

5.8 Noise development data

CMS-T-00003690-A.1

The workplace-related emission sound pressure level is 98 dB(A), measured in operating condition at the ear of the tractor driver with the cab closed.

Value of the sound power level, according to Regulation 2000/14/EC: LwA = 115 dB(A)

The emission sound pressure level is primarily dependent on the vehicle used.

5.9 Drivable slopes

CMS-T-00003691-A.1

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

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

## Preparing the implement

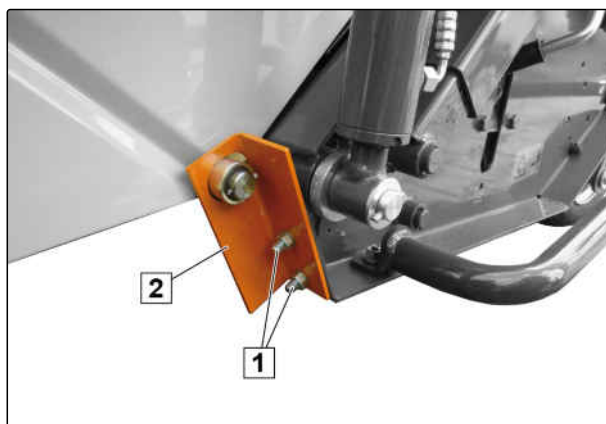
# 6

CMS-T-00015489-A.1

### 6.1 Removing the transport lock

CMS-T-00001658-A.1

1. Unscrew the bolts **1** on the left and right side.
2. Remove the transport lock **2** on the left and right side.
3. Keep the transport lock and bolts for further transport of the implement.



CMS-I-00001032

4. Remove the retaining strap **1** on the left and right side.



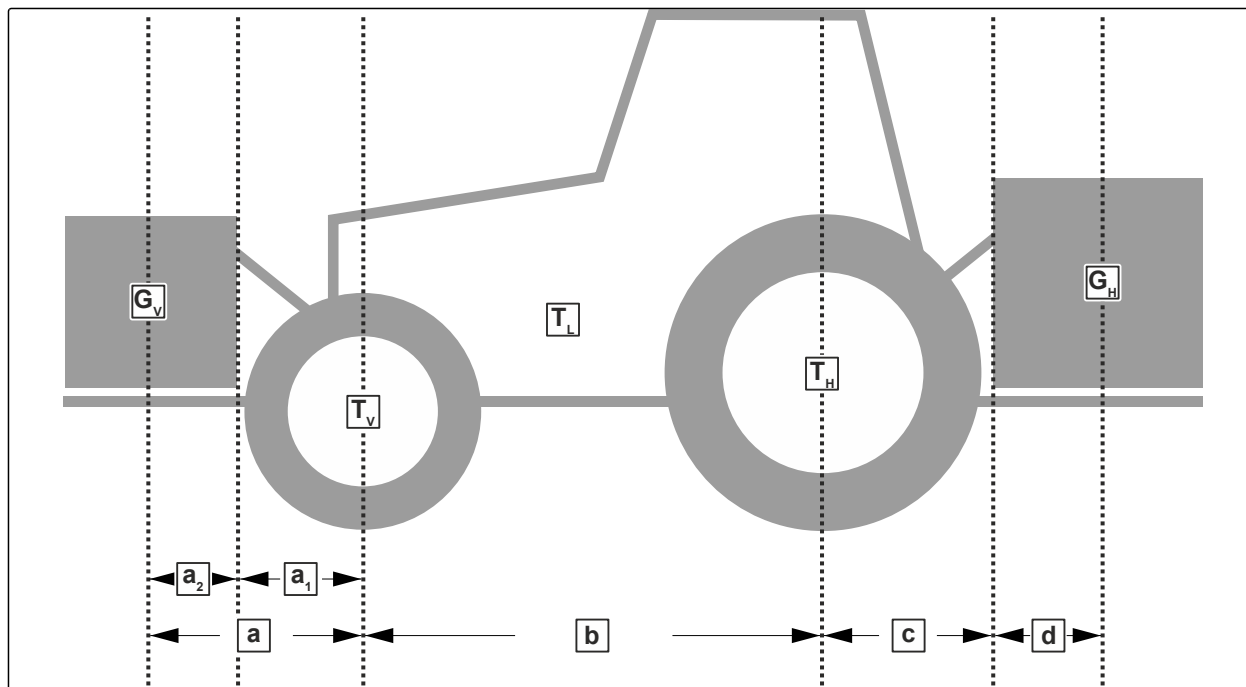
CMS-I-00001031

## 6.2 Checking the tractor suitability

CMS-T-00001660-B.1

### 6.2.1 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                                        |                   |
| $a_1$       | 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                                                                           |                   |

| Designation | Unit | Description                                                                                                                                                   | Calculated values |
|-------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 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.

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

$$G_{\min} = \underline{\hspace{10em}}$$

$$G_{\min} = \underline{\hspace{10em}}$$

CMS-I-00000513

2. Calculate the actual front axle load.

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

$$T_{\text{Vtat}} = \underline{\hspace{10em}}$$

$$T_{\text{Vtat}} = \underline{\hspace{10em}}$$

CMS-I-00000516

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

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

$$G_{\text{tat}} = \underline{\hspace{10em}}$$

$$G_{\text{tat}} = \underline{\hspace{10em}}$$

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 |



### 6.2.2 Comparing the permissible DC value with actual DC value

CMS-T-00004867-B.1

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

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

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

$$D_c = 9,81 \cdot \frac{\text{[ ]} \cdot \text{[ ]}}{\text{[ ]} + \text{[ ]}}$$

$$D_c = \text{[ ]}$$

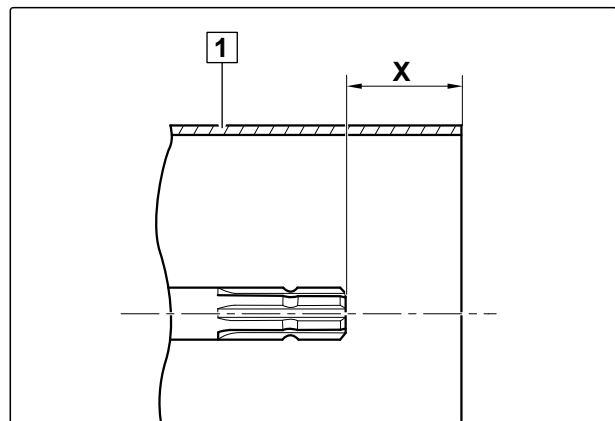
CMS-I-00003582

### 6.2.3 Checking the protective device for the tractor PTO shaft

CMS-T-00001661-A.1

The tractor's protective device **1** must cover the end of the PTO shaft and an inserted adapter.

- Check the coverage "X" of the protective device.



CMS-I-00001034

## 6.3 Calculating the permissible payload

CMS-T-00005960-A.1



### WARNING

#### Risk of accident due to exceeded payload

If the payload is exceeded, the implement can be damaged or/and it can result in uncontrolled driving behaviour of the tractor.

- Carefully determine the payload of the implement.
- Never exceed the payload of the implement.

## 6 | Preparing the implement

### Preparing the drawbar

Maximum payload = permissible total weight - basic weight

1. Read the permissible total weight from the rating plate.
2. *To obtain the basic weight,* read the basic weight from the rating plate.

or

weigh the implement with empty hoppers.

3. Calculate the payload.

## 6.4 Preparing the drawbar

CMS-T-00005183-D.1

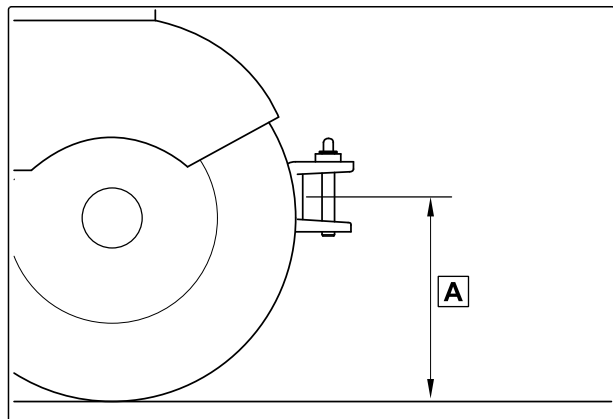
### 6.4.1 Adjusting the upper drawbar

CMS-T-00005961-D.1

#### 6.4.1.1 Determining the required drawbar height

CMS-I-00001668-B.1

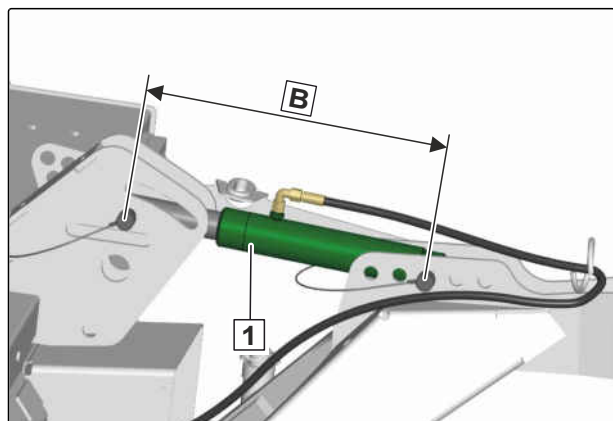
1. Park the tractor and the implement on a level surface.
2. Measure the height **A** from the centre of the straight drawbar on the tractor to the ground.



CMS-I-00003328

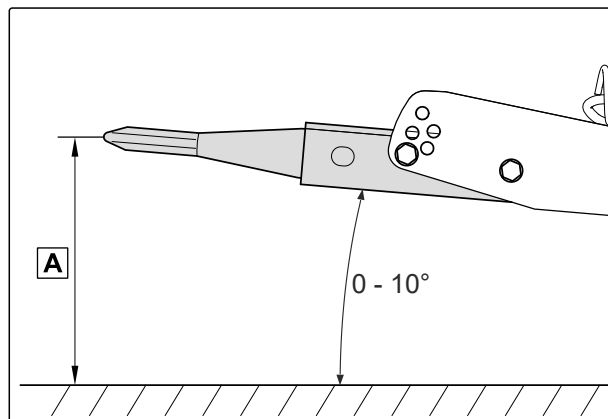
3. Measure the height of the drawbar when the hydraulic cylinder **1** is half extended.

➔ When the hydraulic cylinder is half extended, the pin distance **B** is about 545 mm.



CMS-I-00004109

4. Measure the height **A** of the drawbar and compare it to the straight drawbar height on the tractor.
- ➔ The height of the drawbar is correct when it matches the straight drawbar height on the tractor.
  - ➔ When the height is correct, the drawbar eye must have an upwards slope of 0 - 10°.



CMS-I-00004326

#### 6.4.1.2 Adjusting the height of the upper drawbar

CMS-T-00005962-D.1

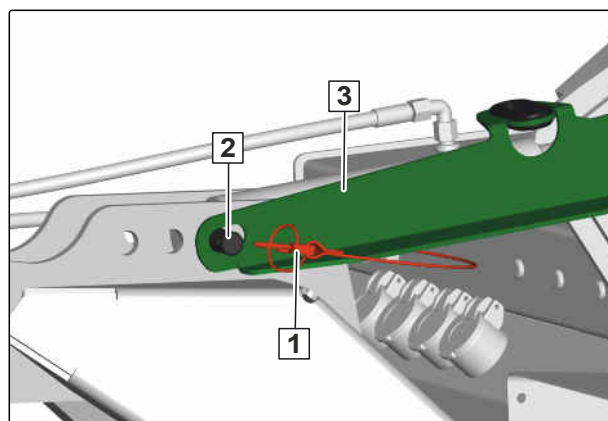


### CAUTION

**Risk of injury due to high net weight of the drawbar**

- ▶ Use a crane or suitable lifting gear to lift and lower the drawbar.
- ▶ Use slings with sufficient load-bearing capacity.
- ▶ Use supporting elements to support the drawbar.

1. Make adjustments to the drawbar height when the hydraulic cylinder is half extended.
2. Secure the drawbar with a crane or suitable lifting gear.
3. Pull out the linch pin **1** on the pin **2**.
4. Pull out the safety clip **3** from the pin.
5. Secure the pin with a linch pin.



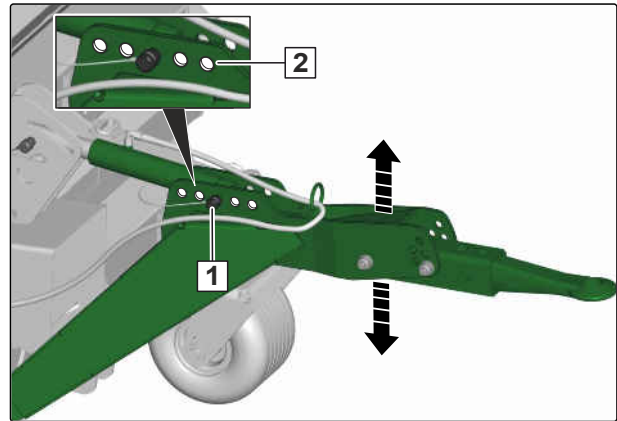
CMS-I-00004324



## CAUTION

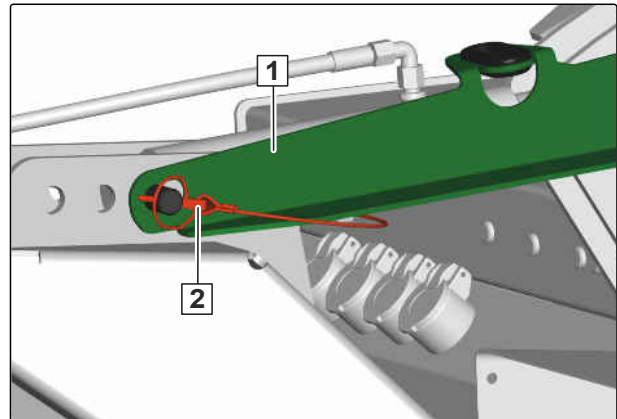
**Risk of crushing when adjusting the drawbar**

- When lifting and lowering the drawbar, never reach between the hydraulic cylinder and the hole pattern mount.



CMS-I-00004325

6. Pull out the pin **1**.
7. Lift or lower the drawbar to the required height.
8. Fix the position of the hydraulic cylinder with the pin in the hole pattern **2**.
9. Slide the safety clip **1** onto the pin.
10. Secure the pin with a linch pin **2**.
11. Remove the crane or lifting gear.



CMS-I-00004323

12. Check the slope of the drawbar eye.
- ➔ The drawbar eye must be set with an upwards slope of 0° - 10°.

13. *If the slope of the drawbar eye needs to be adjusted:*

Remove the bolt **1**.

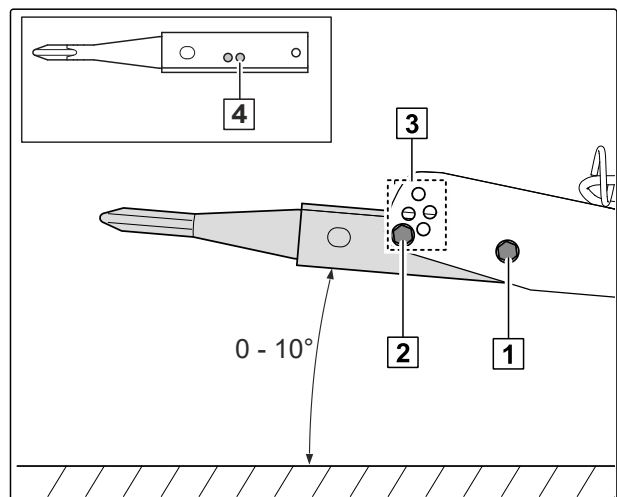
14. Unscrew the bolt **2**.

15. Set the drawbar eye to the required slope using the hole pattern **3** and fix with the bolt **2**.

16. *If the required slope cannot be achieved:*  
Install the drawbar eye rotated by 180°.

- ➔ The holes **4** are then facing down.

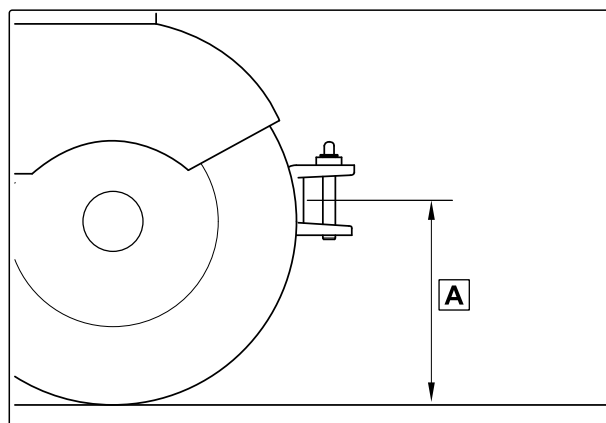
17. Tighten the bolts with 210 Nm.



CMS-I-00004327

### 6.4.2 Adjusting the lower drawbar

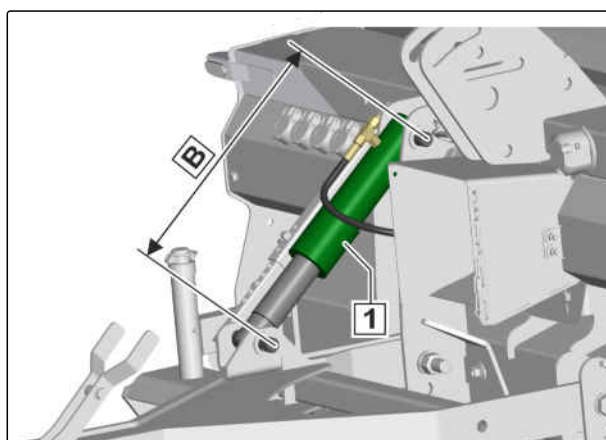
1. Park the tractor and the implement on a level surface.
2. On the tractor, measure the distance **A** from the centre of the straight drawbar to the ground.



CMS-T-00005184-C.1

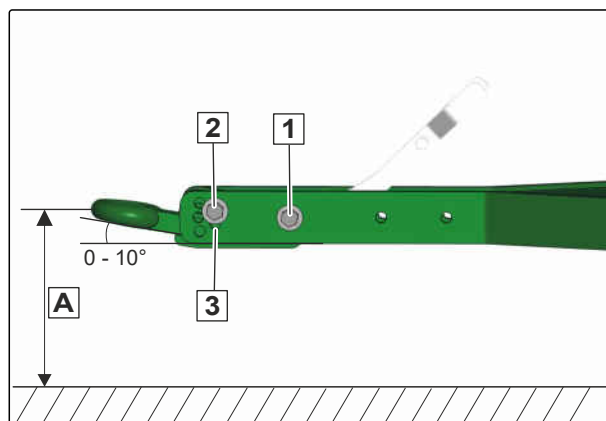
CMS-I-00003328

3. Measure the length of the drawbar when the hydraulic cylinder **1** is half extended.
- ➔ When the hydraulic cylinder is half extended, the distance **B** is about 430 mm.



CMS-I-00004108

4. Measure distance **A** for the drawbar. Compare the distance with the distance on the tractor.
5. *If the height of the drawbar needs to be adjusted:*  
Remove the bolt **1**.
6. Unscrew the bolt **2**.
7. Using the holes **3**, adjust the drawbar eye to the measured distance **A** from the tractor, with an upwards slope of 0 - 10°.

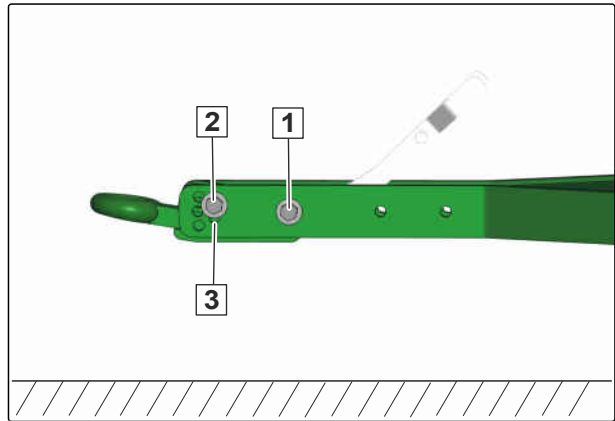


CMS-I-00003699

## 6 | Preparing the implement

### Preparing the universal joint shaft

8. Fasten the drawbar with the bolt **2** in one of the holes **3**.
9. Tighten the bolts **1** and **2** with 210 Nm.



CMS-I-00003722

## 6 Preparing the universal joint shaft

CMS-T-00015288-A.1



### WORKSHOP WORK

1. Adjust the length of the universal joint shaft.
2. Install the universal joint shaft.

## 6.5 Installing the universal joint shaft on the implement

CMS-T-00001665-B.1

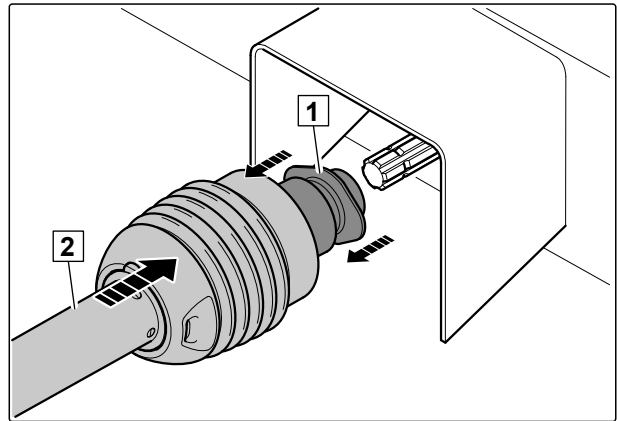


### NOTE

The tractor symbol on the universal joint shaft identifies the tractor-side connection.

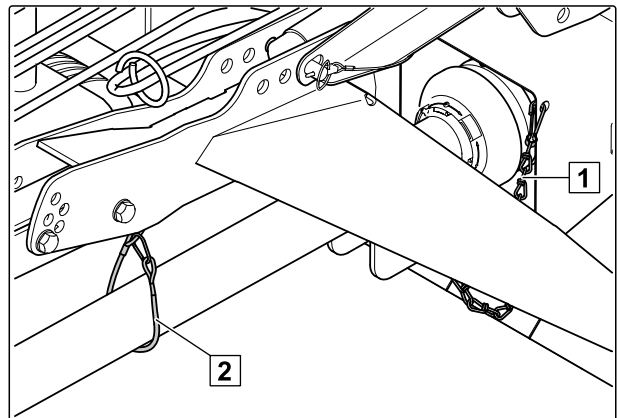
1. Clean and grease the drive shaft on the implement.
2. Make sure that the universal joint shaft guard is functional.
3. Observe the universal joint shaft operating manual.

4. Pull back the drawing sleeve **1**.
5. Push the universal joint shaft **2** onto the drive shaft until the lock engages.



CMS-I-00001041

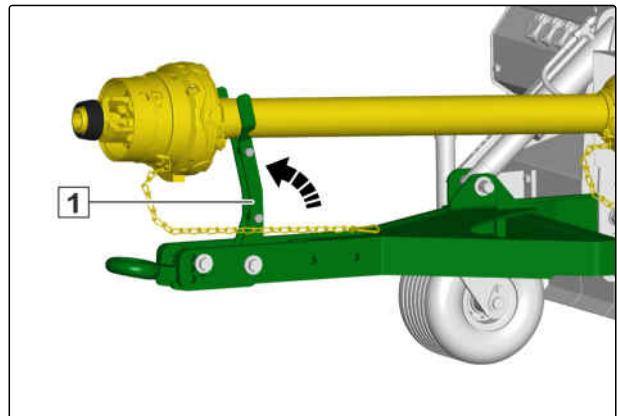
6. Put the universal joint shaft into the parking position with the retaining rope **2**.
7. Hook the fastening chain **1** onto the implement.



CMS-I-00001042

For implements with the lower drawbar:

8. Lift the universal joint shaft and hold it tight.
  9. Fold up the support **1**.
  10. Put the universal joint shaft down on the support.
- ➔ The universal joint shaft is in parking position.



CMS-I-00003701

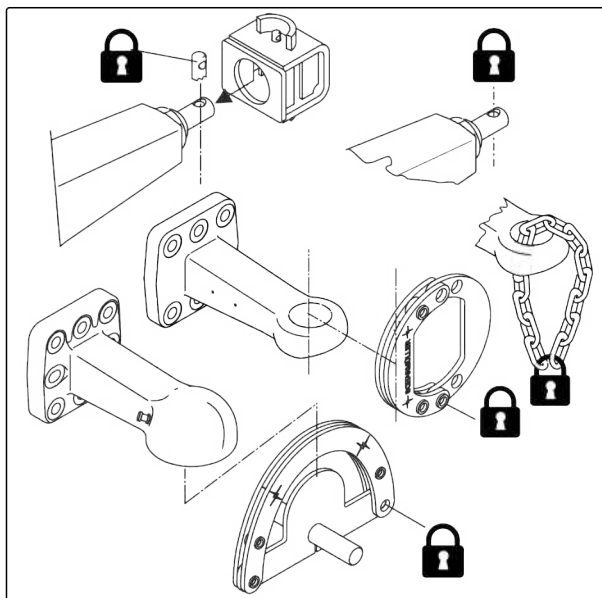
## 6.6 Coupling the implement

CMS-T-00001700-E.1

### 6.6.1 Removing the safety device against unauthorised use

CMS-T-00005089-B.1

1. Unlock the padlock.
2. Remove the safety device against unauthorised use from the hitch device.

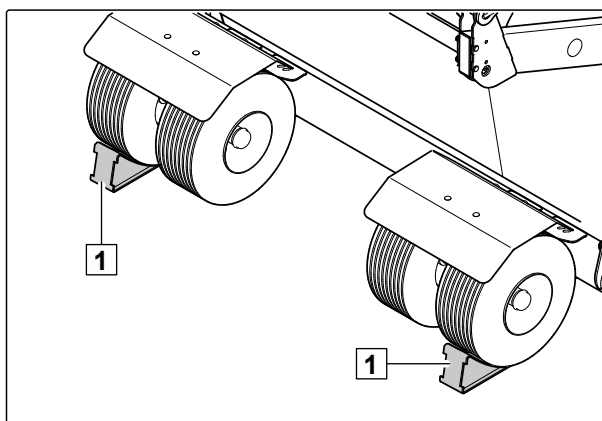


CMS-I-00003534

### 6.6.2 Driving the tractor towards the implement

CMS-T-00005824-A.1

1. Secure the implement with 2 wheel chocks **1** on the outer rear wheels.

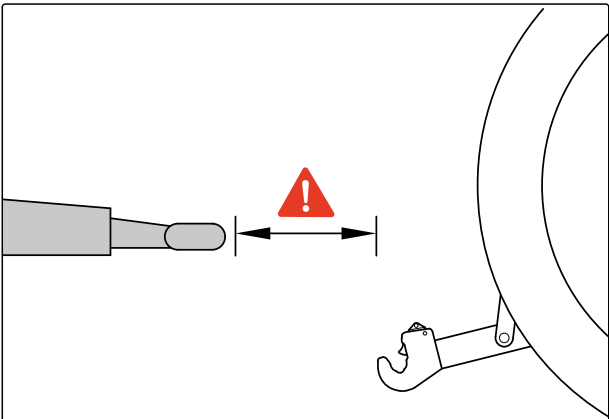


CMS-I-00001046



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

- 2. Drive the tractor towards the implement, leaving a sufficient distance.
- 3. Secure the tractor. Remove the ignition key.



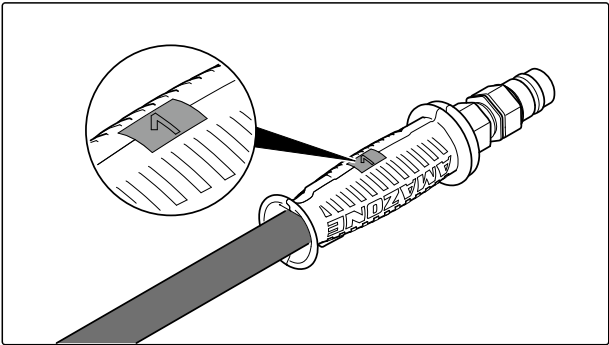
CMS-I-00004119

6.6.3 Coupling the hydraulic hose lines of the Standard hydraulic system

CMS-T-00001694-C.1

All hydraulic hose lines 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 hydraulic oil circulation                 |        |
| Momentary         |  | Hydraulic oil flow until action is executed         |        |
| Floating          |  | Free hydraulic oil flow in the tractor control unit |        |

| Designation |  | Function                  |                  | Tractor control unit |  |
|-------------|--|---------------------------|------------------|----------------------|--|
| Green       |  | Implement at the rear     | Lift             | Single-acting        |  |
|             |  |                           | Lower            |                      |  |
| Yellow      |  | Grass collector           | Tip for emptying | Double-acting        |  |
|             |  |                           | Close            |                      |  |
| Beige       |  | Implement through drawbar | Lift             | Single-acting        |  |
|             |  | Cutting deck              | Lower            |                      |  |



## 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

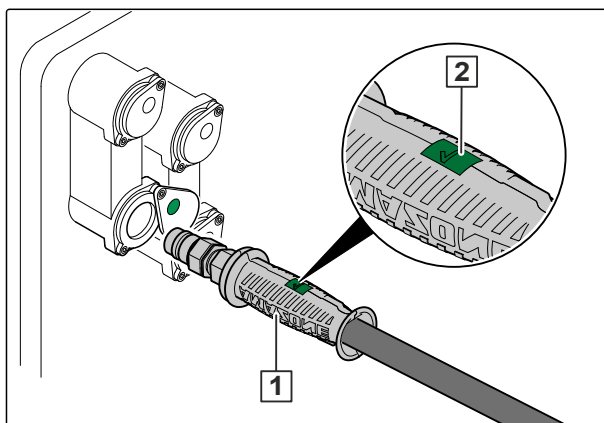
### Implement damage due to hot hydraulic oil

High volume flows in conjunction with small oil tanks promote rapid heating-up of the hydraulic fluid.

- ▶ The capacity of the oil tank should be at least twice the volume flow.
- ▶ If the oil heats up too much, have an oil cooler installed by a specialist workshop.

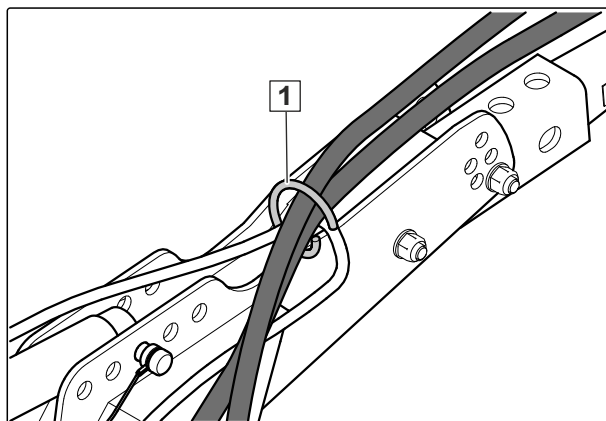
1. Depressurise the hydraulic system between the tractor and the implement using the tractor control unit.
2. Clean the hydraulic plugs.
3. Couple the hydraulic hose lines **1** to the hydraulic sockets of the tractor according to the marking **2**.

➔ The hydraulic plugs lock perceptibly.



CMS-I-00001045

4. *If the implement has an upper drawbar:*  
Route the hydraulic hose lines through the guide **1**.
5. Route the hydraulic hose lines with sufficient freedom of movement and without chafing points.

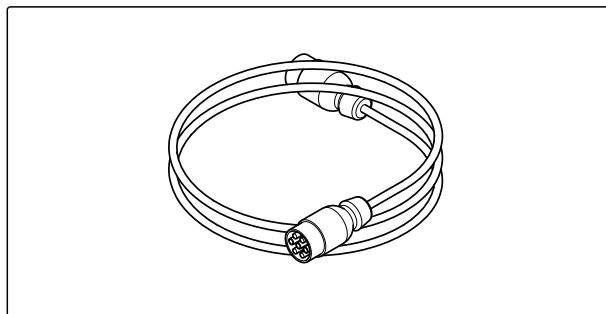


CMS-I-00001063

#### 6.6.4 Coupling the power supply for the lighting

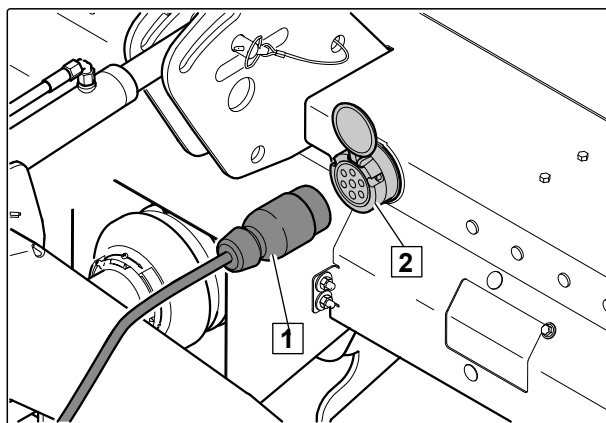
CMS-T-00001695-C.1

1. Only use the supplied 7-pin cable to establish the connection.



CMS-I-00001061

2. Insert the plug **1** in the socket **2** on the implement.

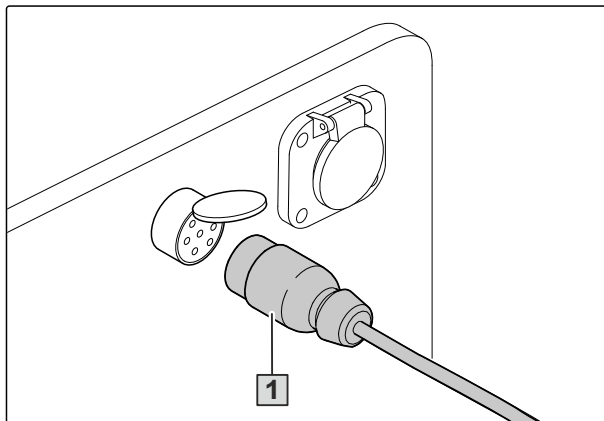


CMS-I-00001060

## 6 | Preparing the implement

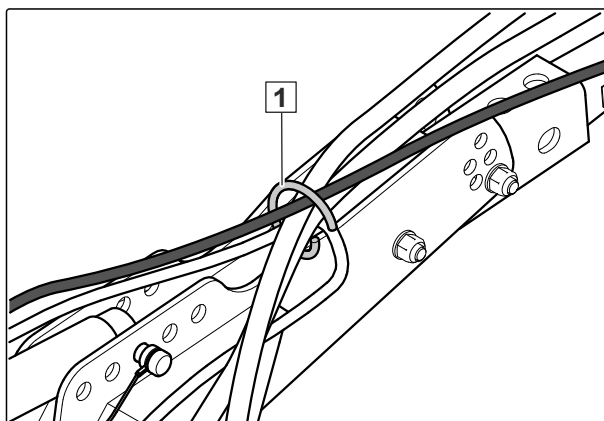
### Coupling the implement

3. Insert the plug **1** for the power supply on the tractor.



CMS-I-00001048

4. *If the implement has an upper drawbar:*  
Route the cable through the guide **1**.
5. Route the cable with sufficient freedom of movement and without chafing points.
6. Check the lighting equipment on the implement for proper function.



CMS-I-00001059

### 6.6.5 Coupling the electro-hydraulic control

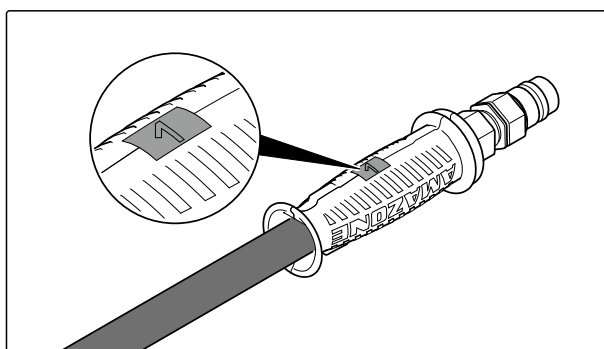
CMS-T-00001710-B.1

#### 6.6.5.1 Coupling the hydraulic hose lines

CMS-T-00001740-B.1

All hydraulic hose lines 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 hydraulic oil circulation                 |  |
| Momentary         | Hydraulic oil flow until action is executed         |  |
| Floating          | Free hydraulic oil flow in the tractor control unit |  |

| Designation |                                                                                   | Function                           | Tractor control unit                |                                                                                     |
|-------------|-----------------------------------------------------------------------------------|------------------------------------|-------------------------------------|-------------------------------------------------------------------------------------|
| Red         |  | Hydraulic oil feed line            | Permanent hydraulic oil circulation |  |
| Red         |  | Pressure-free hydraulic oil return | Oil tank                            |                                                                                     |



## 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.

## 6 | Preparing the implement

### Coupling the implement

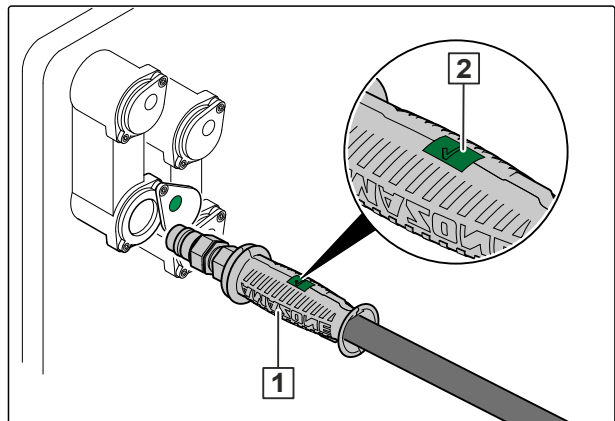
1. Depressurise the hydraulic system between the tractor and the implement using the tractor control unit.
2. Install the coupling sleeve **1** on the pressure-free oil return on the tractor.



CMS-I-00003358

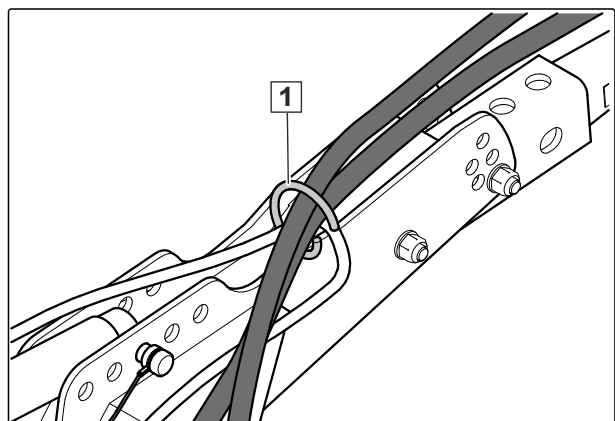
3. Clean the hydraulic plugs.
4. Couple the hydraulic hose lines **1** to the hydraulic sockets of the tractor according to the marking **2**.

➔ The hydraulic plugs lock perceptibly.



CMS-I-00001045

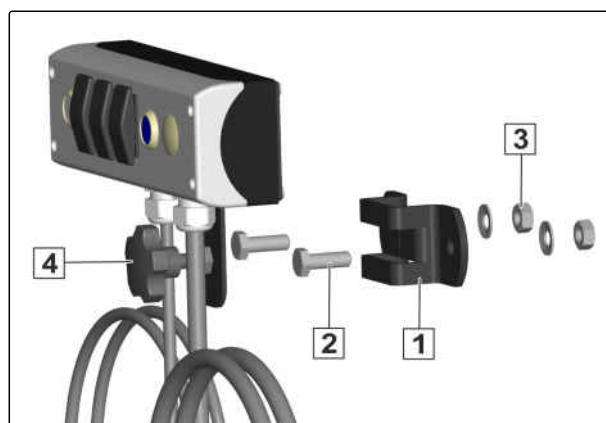
5. *If the implement has an upper drawbar:* Route the hydraulic hose lines through the guide **1**.
6. Route the hydraulic lines with sufficient freedom of movement and without chafing points.



CMS-I-00001063

### 6.6.5.2 Coupling the remote control

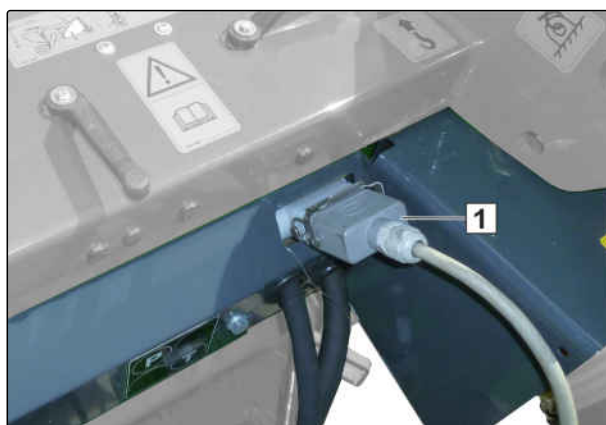
1. Install the holder **1** in the tractor cab with the bolts **2**, washers and nuts **3**.
2. Insert the remote control in the holder.
3. Fasten the remote control with the bolt **4**.



CMS-T-00004724-B.1

CMS-I-00003360

4. Insert the plug **1** on the implement.



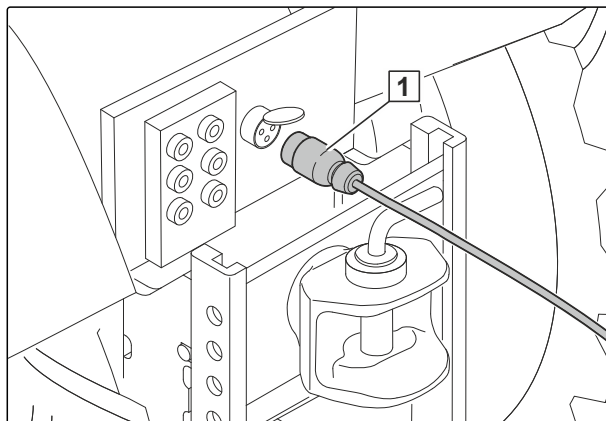
CMS-I-00003359



#### NOTE

If the tractor does not have a 3-pin socket for the power supply, an additional cable with socket can be purchased from AMAZONE.

5. Insert the 3-pin plug **1** for the power supply on the tractor.

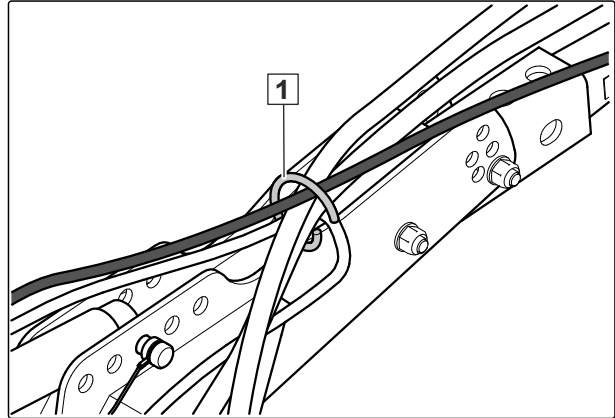


CMS-I-00003724

## 6 | Preparing the implement

### Coupling the implement

6. *If the implement has an upper drawbar:*  
Route both cables through the guide **1**.
7. Route the cable with sufficient freedom of movement and without chafing points.

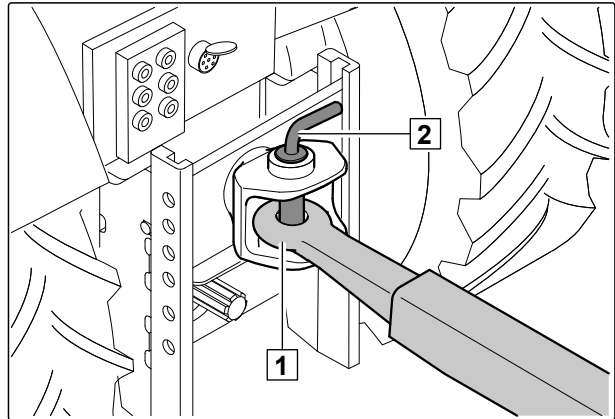


CMS-I-00001059

#### 6.6.6 Coupling the implement with the upper drawbar

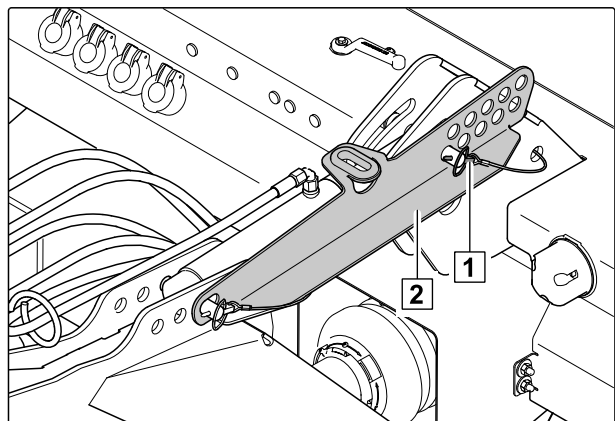
CMS-T-00001683-A.1

1. Pull the coupling pin on the tractor.
2. Drive the tractor towards the implement.
3. Secure the drawbar eye **1** of the implement on the straight drawbar with coupling pins **2**.



CMS-I-00001047

4. Remove the linch pin **1**.
5. Pull out the safety clip **2** from the pin from the side.
6. Insert the linch pin in the pin and secure it.



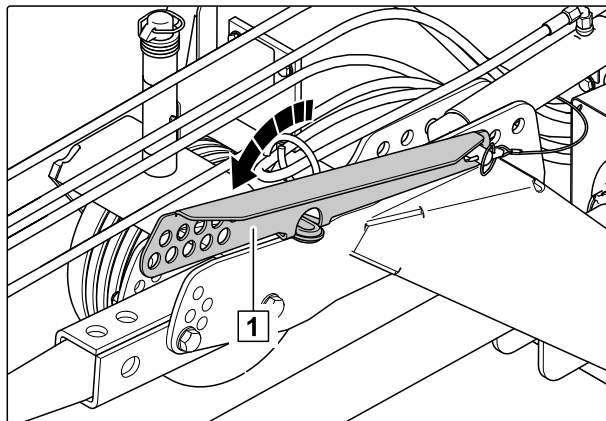
CMS-I-00001062



7. Flip the safety clip **1** all the way to the front.

➔ The safety clip must rest on the drawbar.

➔ The hydraulic cylinder can now hold the drawbar in float position.



CMS-I-00001067

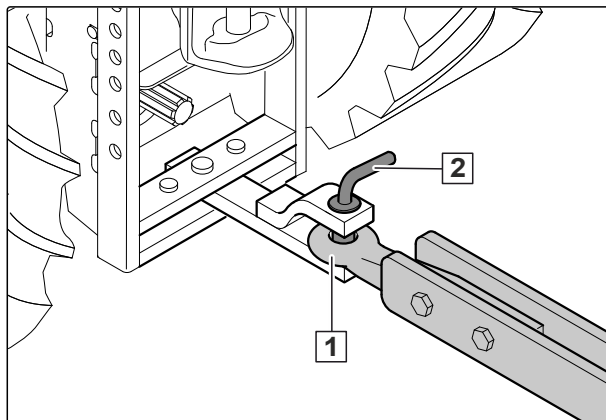
### 6.6.7 Coupling the implement with the lower drawbar

CMS-T-00005186-A.1

1. Pull the coupling pin on the tractor.

2. Drive the tractor towards the implement.

3. Secure the drawbar eye **1** of the implement on the swinging drawbar with coupling pins **2**.

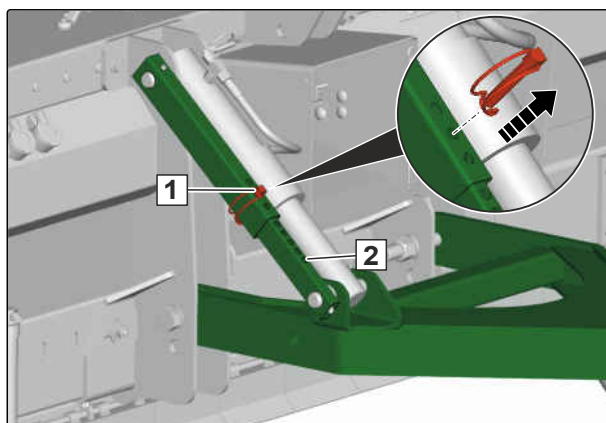


CMS-I-00004123

4. Remove the linch pin **1**.

5. Insert the linch pin in the lower position **2** of the inner tube and secure it.

➔ The hydraulic cylinder can now hold the drawbar in float position.



CMS-I-00003700

### 6.6.8 Fastening the safety chain

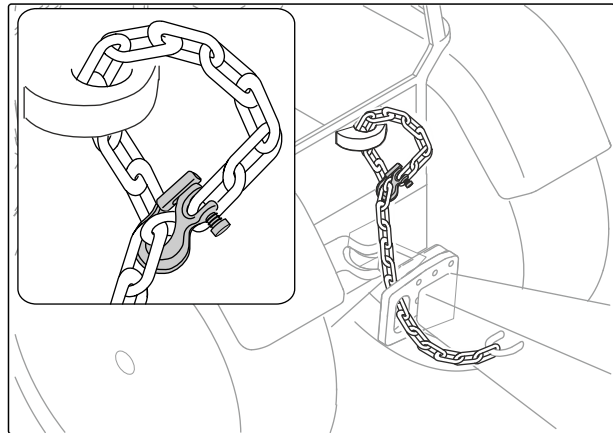
CMS-T-00004293-D.1

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

## 6 | Preparing the implement

### Coupling the implement

- Fasten the safety chain on the tractor as prescribed.

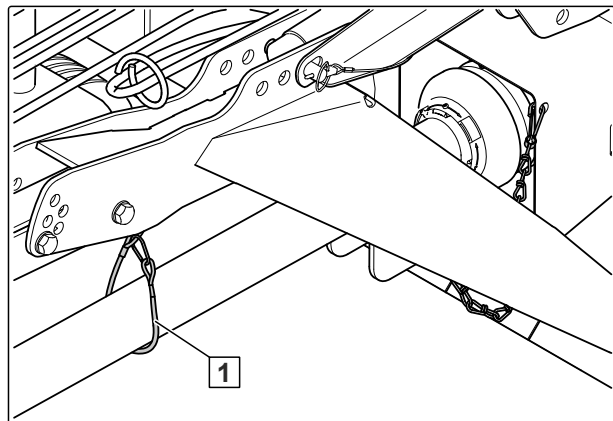


CMS-I-00007814

#### 6.6.9 Coupling the universal joint shaft

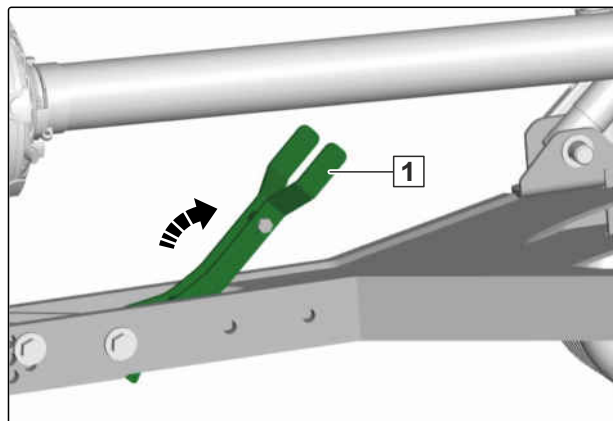
1. *If the implement has an upper drawbar:*  
Lift the universal joint shaft and hold it tight.
2. Remove the retaining rope **1** from the universal joint shaft.
3. Fasten the retaining rope securely on the drawbar.

CMS-T-00001715-C.1



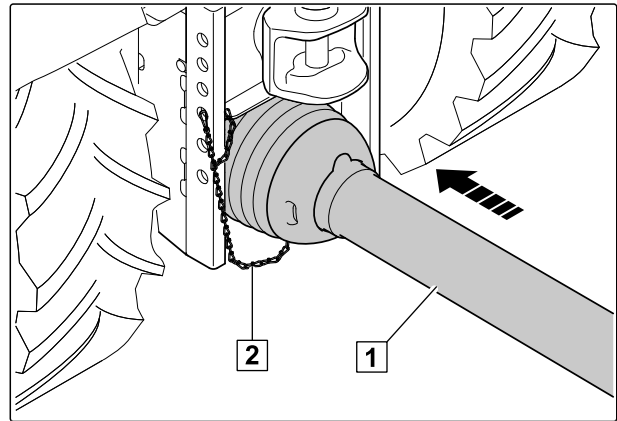
CMS-I-00003736

4. *If the implement has a lower drawbar:*  
Lift the universal joint shaft and hold it tight.
5. Fold the support **1** to the rear.



CMS-I-00003702

6. Slide the universal joint shaft **1** onto the tractor PTO shaft.
7. Press until the click sound of the lock can be heard.
8. Fasten the safety chain **2** onto the tractor.



CMS-I-00001070

### 6.6.10 Removing the wheel chocks

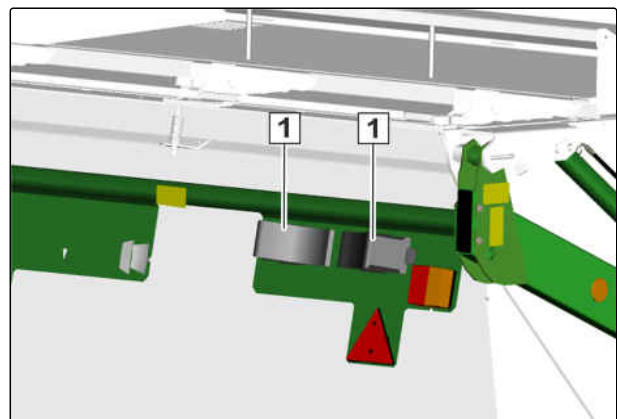
CMS-T-00001696-A.1



#### NOTE

Always carry wheel chocks.

1. Remove wheel chocks from the wheels.
2. Push the wheel chocks **1** into the holders until they engage.



CMS-I-00001064

## 6.7 Checking and adjusting the lowering time for the grass collector

CMS-T-00015490-A.1

### 6.7.1 Checking the lowering time

CMS-T-00004831-D.1



#### NOTE

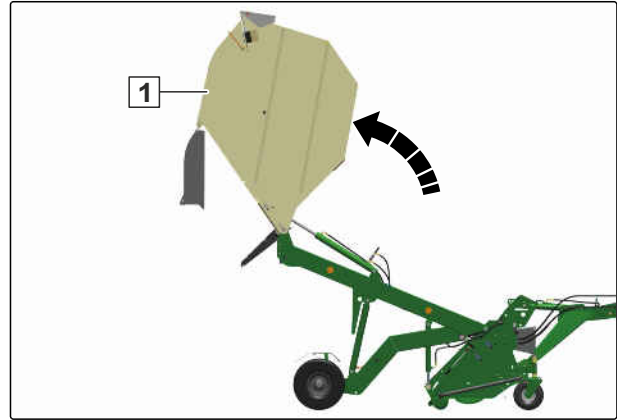
The lowering time of the grass collector is set ex-factory at 10 seconds with a tractor pump capacity of 16 l/min.

1. Couple the implement.
2. Park the tractor and implement on a level, firm surface.

## 6 | Preparing the implement

### Checking and adjusting the lowering time for the grass collector

3. Secure the tractor and implement against rolling away with wheel chocks.
4. Bring the tractor up to operating temperature.
5. Lift the grass collector **1** until the end position for emptying close to the ground is reached.



CMS-I-00004266

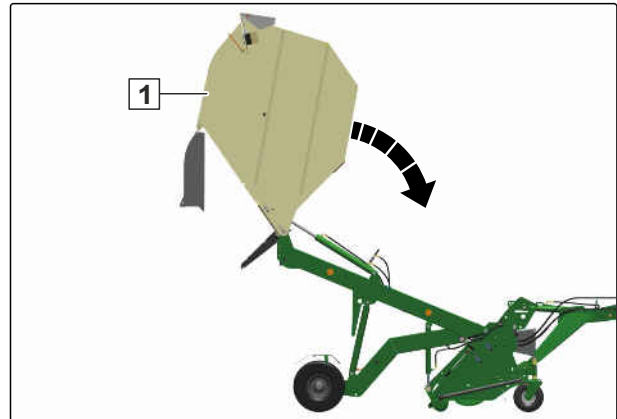


#### IMPORTANT

##### Implement damage due to rapid lowering of the grass collector

The grass collector can be damaged when it is lowered too fast.

- ▶ Set the lowering time with the tractor pump capacity.
- ▶ Check the lowering time when changing tractors.



CMS-I-00004265

6. Lower the grass collector **1** and check the lowering time.
- ➔ The lowering time must be at least 10 seconds.
7. Adjust the lowering time if necessary, see page 70.

#### 6.7.2 Adjusting the lowering time

CMS-T-00005908-C.1

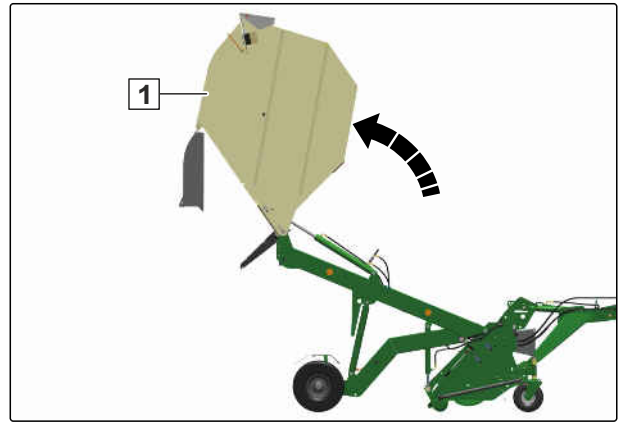


#### NOTE

The setting must be made when the hydraulic oil is warm.

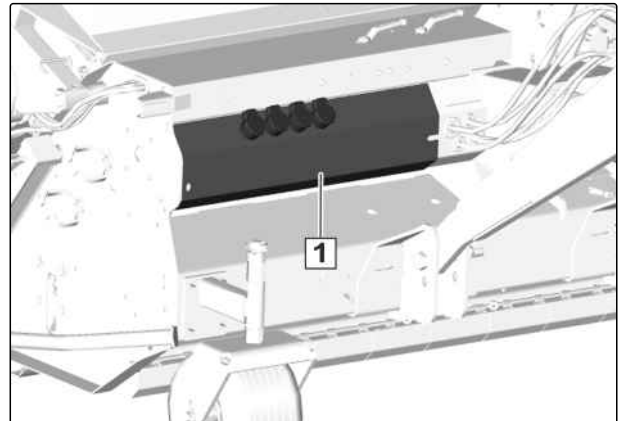
1. Couple the implement.
2. Park the tractor and implement on a level, firm surface.

3. Secure the tractor and implement against rolling away with wheel chocks.
4. Bring the tractor up to operating temperature.
5. Lift the grass collector **1** until the end position for emptying close to the ground is reached.



CMS-I-00004266

6. Remove the cover **1**.



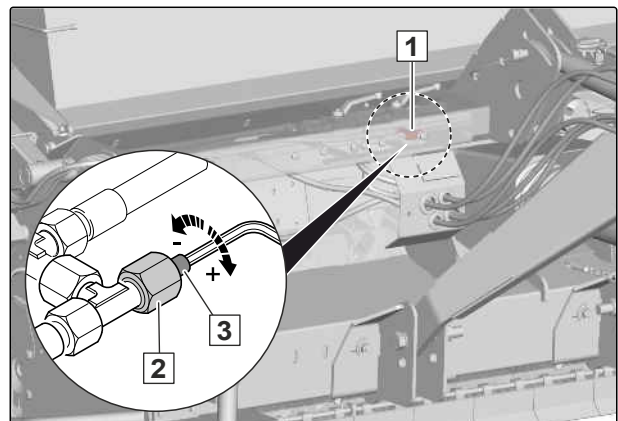
CMS-I-00003421

Make the setting on the lowering throttle **1**.

7. Loosen the union nut **2**.
8. *To reduce the lowering time:*  
turn the setting screw **3** clockwise.

or

*To increase the lowering time:*  
turn the setting screw **3** counterclockwise.

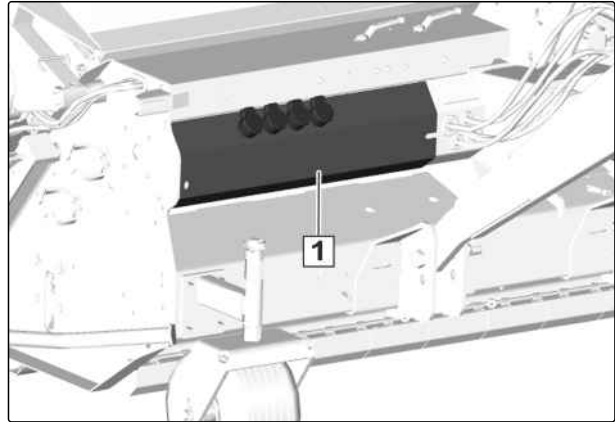


CMS-I-00003420

9. Lower the grass collector and check the lowering time.

➔ The lowering time must be at least 10 seconds.

10. Check the lowering time and readjust if necessary.
11. Tighten the union nut.
12. Put on the cover **1**.



CMS-I-00003421

## **6.8 Preparing the implement for operation**

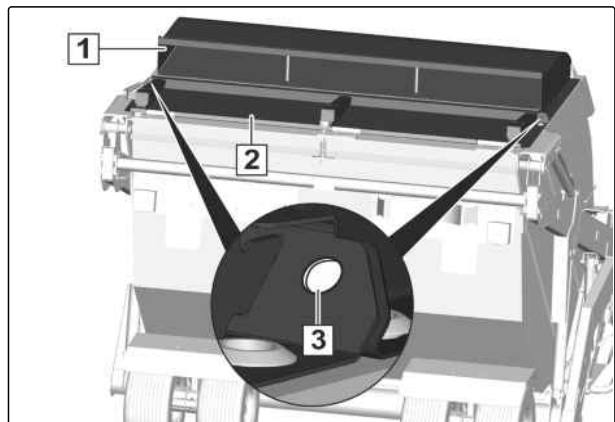
CMS-T-00015491-A.1

### **6.8.1 Removing the transport lock from the cover flap and swivel flap**

CMS-T-00005212-A.1

The transport lock prevents accidental folding open of the swivel flap during transport on a trailer.

1. Check whether a transport lock is installed on the holes **3** of the cover flap **1** and swivel flap **2**.
2. Remove the transport lock.



CMS-I-00003741

### **6.8.2 Checking the tyre inflation pressure**

CMS-T-00002541-E.1

#### **NOTE**

The required tyre inflation pressures can be found in the Technical Data. Deviating tyre inflation pressures have a negative effect on the driving behaviour.

1. Check the tyre inflation pressure on all 6 tyres.
2. Correct the tyre inflation pressure if necessary.

### 6.8.3 Checking the blades and blade mounts

CMS-T-00005190-B.1



#### WARNING

##### Rotor still running

Risk of drawing in and cutting injuries

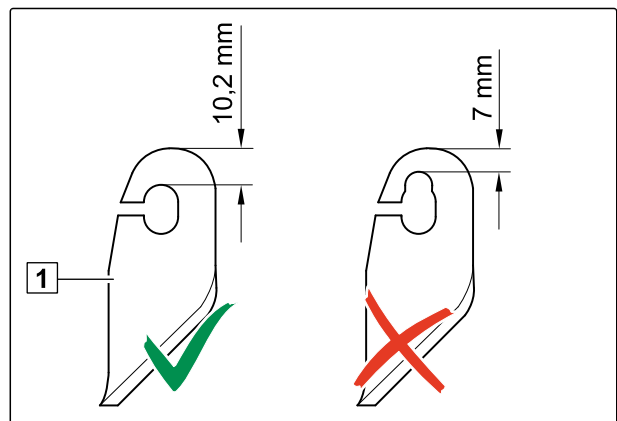
- ▶ *As long as the rotor and cutting tools are moving,*  
keep the rotor protective cover closed.



#### REQUIREMENTS

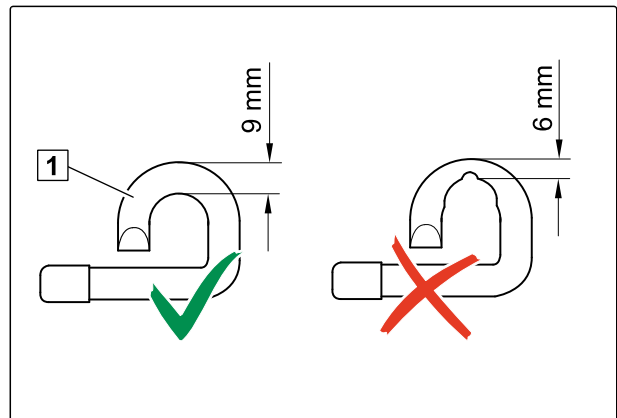
- ☑ The PTO shaft drive is switched off.

1. Open the rotor protective cover like for changing the blades, see page 78.
2. Check the wear on the blades **1**.
3. *If the wear limit of 7 mm is undercut in the mounting area:*  
replace the blade.



CMS-I-00002442

4. Check the wear on the blade mounts **1**.
5. *If the wear limit of 6 mm is undercut in the mounting area:*  
Replace the blade mount.
6. Check the bolted connections on the blade mounts for firm seating.
7. Close the rotor protective cover like for changing the blades, see page 78.



CMS-I-00002443

### 6.8.4 Selecting the blades

CMS-T-00015492-A.1

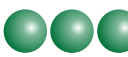
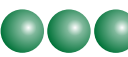
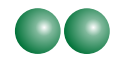
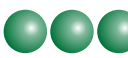
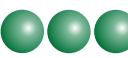
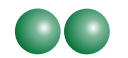
Depending on the application area, the rotor must be equipped with the right blades. The following table shows which equipment should be used to achieve very good work results.

The figure shows the standard equipment with cutting blades **1** and flail blades H77 **2**.

**6 | Preparing the implement**  
**Preparing the implement for operation**

| Application area                                                       |                      | 100% cutting blades, reversible                                                   | 50% cutting blades, reversible + 50% long flail blades H77, ground                  | 100% long flail blades H77, ground                                                   | 100% extra long flail blades H88, ground                                              | 100% scarifying blades                                                                |
|------------------------------------------------------------------------|----------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                                        |                      |  |    |    |    |    |
| Mowing of flower meadows and ecological meadows                        | Under dry conditions |  |    |    |                                                                                       |                                                                                       |
|                                                                        | Under wet conditions |  |    |    |                                                                                       |                                                                                       |
| Lawn mowing, park maintenance                                          | Under dry conditions |                                                                                   |    |    |                                                                                       |                                                                                       |
|                                                                        | Under wet conditions |                                                                                   |  |  |                                                                                       |                                                                                       |
| Golf course maintenance, lawn maintenance and sports field maintenance | Under dry conditions |                                                                                   |  |  |  |                                                                                       |
|                                                                        | Under wet conditions |                                                                                   |  |  |  |                                                                                       |
| Short cut and combing out the lawn                                     |                      |                                                                                   |                                                                                     |                                                                                      |                                                                                       |                                                                                       |
| Paddock maintenance                                                    |                      |                                                                                   |                                                                                     |                                                                                      |                                                                                       |                                                                                       |
| Leaf collection                                                        | Under dry conditions |                                                                                   |  |  |                                                                                       |                                                                                       |
|                                                                        | Under wet conditions |                                                                                   |  |                                                                                      |                                                                                       |                                                                                       |
| Scarifying and collection in one work step                             |                      |                                                                                   |                                                                                     |                                                                                      |                                                                                       |  |
| Scarifying of golf courses, sports fields or turf                      |                      |                                                                                   |                                                                                     |                                                                                      |                                                                                       |  |



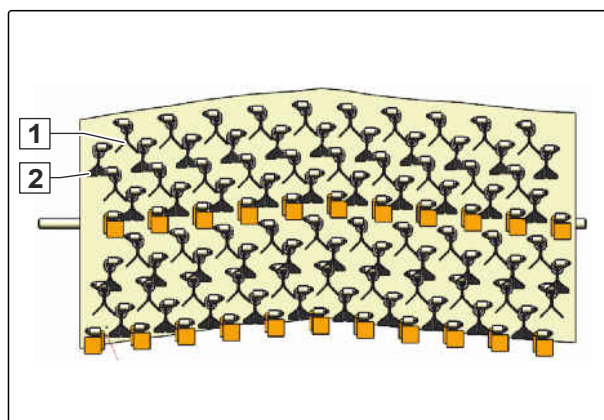
| Application area                                                       |                      | 100% cutting blades and scarifying blades, combined                                 | 50% cutting blades and scarifying blades, combined + 50% long flail blades H77, ground and scarifying blades, combined | 100% long flail blades H60, ground and scarifying blades, combined                  | 100% long flail blades H77, ground and scarifying blades, combined                   | Selection of the thickness of the scarifying blades in combination with the flail blades or cutting blades, depending on the application area |                       |
|------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
|                                                                        |                      |                                                                                     |                                                                                                                        |                                                                                     |                                                                                      | Scarifying blade 2 mm                                                                                                                         | Scarifying blade 3 mm |
|                                                                        |                      |    |                                       |    |    |                                                            |                       |
| Mowing of flower meadows and ecological meadows                        | Under dry conditions |   |                                      |   |   |                                                                                                                                               | ✓                     |
|                                                                        | Under wet conditions |  |                                     |  |  |                                                                                                                                               | ✓                     |
| Lawn mowing, park maintenance                                          | Under dry conditions |                                                                                     |                                     |                                                                                     |                                                                                      |                                                                                                                                               | ✓                     |
|                                                                        | Under wet conditions |                                                                                     |                                     |                                                                                     |                                                                                      |                                                                                                                                               | ✓                     |
| Golf course maintenance, lawn maintenance and sports field maintenance | Under dry conditions |                                                                                     |                                     |                                                                                     |                                                                                      | ✓                                                                                                                                             |                       |
|                                                                        | Under wet conditions |                                                                                     |                                     |                                                                                     |                                                                                      | ✓                                                                                                                                             |                       |
| Short cut and combing out the lawn                                     |                      |                                                                                     |                                     |  |  | ✓                                                                                                                                             |                       |
| Paddock maintenance                                                    |                      |                                                                                     |                                     |  |  |                                                                                                                                               | ✓                     |

## 6 | Preparing the implement

### Preparing the implement for operation

| Application area                                  |                      | 100% cutting blades and scarifying blades, combined | 50% cutting blades and scarifying blades, combined + 50% long flail blades H77, ground and scarifying blades, combined | 100% long flail blades H60, ground and scarifying blades, combined | 100% long flail blades H77, ground and scarifying blades, combined | Selection of the thickness of the scarifying blades in combination with the flail blades or cutting blades, depending on the application area |                       |
|---------------------------------------------------|----------------------|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
|                                                   |                      |                                                     |                                                                                                                        |                                                                    |                                                                    | Scarifying blade 2 mm                                                                                                                         | Scarifying blade 3 mm |
| Leaf collection                                   | Under dry conditions | ● ●                                                 | ● ● ●                                                                                                                  |                                                                    | ● ● ●                                                              |                                                                                                                                               | ✓                     |
|                                                   | Under wet conditions |                                                     | ● ● ●                                                                                                                  |                                                                    | ● ● ●                                                              |                                                                                                                                               | ✓                     |
| Scarifying and collection in one work step        |                      |                                                     | ● ● ●                                                                                                                  | ● ● ●                                                              | ● ● ●                                                              |                                                                                                                                               | ✓                     |
| Scarifying of golf courses, sports fields or turf |                      |                                                     | ● ●                                                                                                                    | ● ● ●                                                              |                                                                    | ✓                                                                                                                                             |                       |
|                                                   |                      | ● ● ● = Very good results<br>● ● = Good results     |                                                                                                                        |                                                                    |                                                                    |                                                                                                                                               |                       |

- Equip the rotor with the blades for the corresponding purpose.



CMS-I-00003725

## 6.8.5 Selecting the blade equipment for scarifying

CMS-T-00005200-C.1



### IMPORTANT

#### Implement damage due to different scarifying blades

Imbalance on the rotor

- ▶ Only equip the rotor with one type of scarifying blade.
- ▶ Make sure that you have the right blade combination and arrangement for your application area.

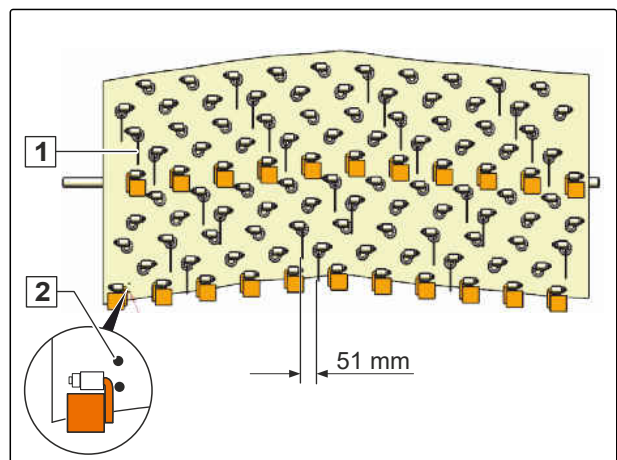
When scarifying, a distinction is made between wide scarifying and narrow scarifying.

- Wide scarifying, blade spacing 51 mm.
- Narrow scarifying, blade spacing 17 mm.

#### 1. For wide scarifying:

Install the scarifying blades **1** at a spacing of 51 mm, see page 78.

- ➔ This enables deeper action without being too aggressive on the sward.



CMS-I-00003727

2. When installing the blades **2**, pay attention to the marking for the first row.

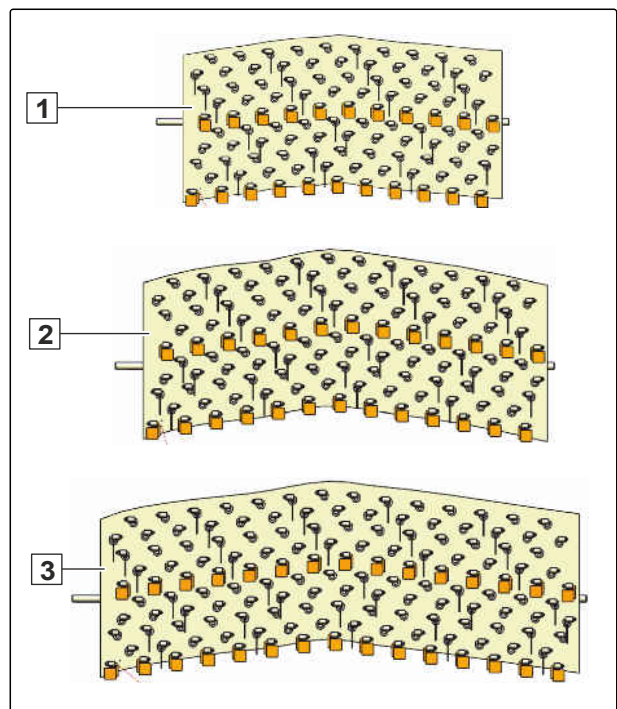
Example figure for wide scarifying:

- GHS 1500 **1**
- GHS 1800 **2**
- GHS 2100 **3**

3. Install scarifying blades with a width of 3 mm or 2 mm, see page 78.

#### 4. For narrow scarifying:

Install scarifying blades on all of the hook bolts on the rotor.



CMS-I-00003726



### NOTE

Narrow scarifying is relatively aggressive and it is suitable for regeneration work in the spring on grass that is strongly matted with moss.

### 6.8.6 Changing or replacing the blades

CMS-T-00004716-B.1



#### WARNING

**Risk of tipping when the grass collector is raised**

- ▶ Only raise the grass collector on stable and level ground.
- ▶ Never raise the grass collector on slopes or inclines.



#### REQUIREMENTS

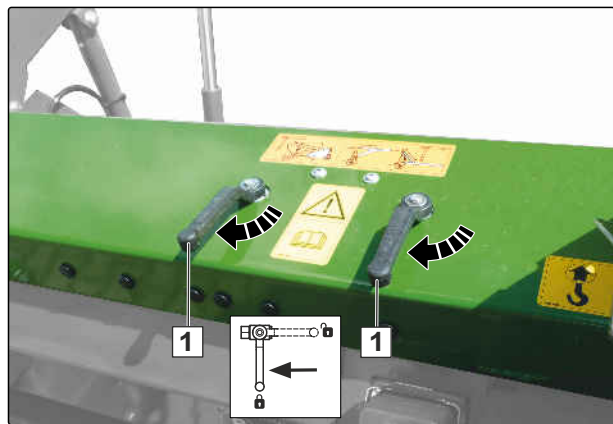
- ☑ The PTO shaft drive is switched off.

1. Completely empty the grass collector **1**.
2. Lift the grass collector up to the end position for high tip emptying.



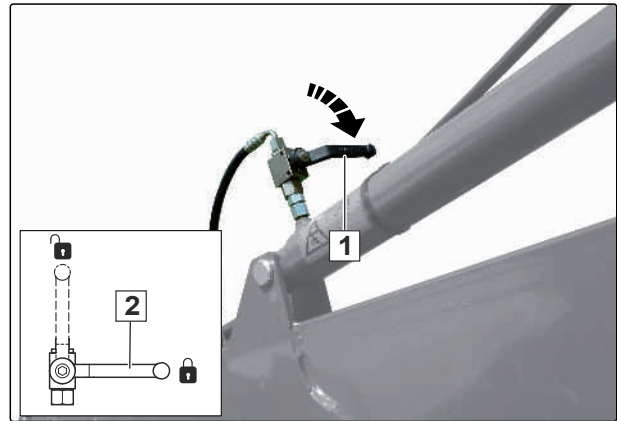
CMS-I-00003341

3. Close the hydraulic valves **1**.



CMS-I-00003356

4. To secure the grass collector against uncontrolled lowering:  
turn the hydraulic valve **1** to the **2** position.



CMS-I-00003343

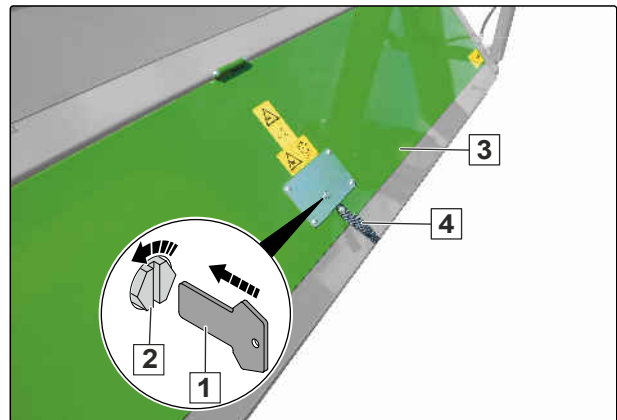


## WARNING

### Rotor still running

Risk of drawing in and cutting injuries

- ▶ As long as the rotor and cutting tools are moving, keep the rotor protective cover closed.



CMS-I-00003344

5. Turn the lock **2** to the left with the special key **1** or a flat screwdriver.

➔ The rotor protective cover **3** is unlocked.

6. Use the holding strap **4** to completely fold up the rotor protective cover.

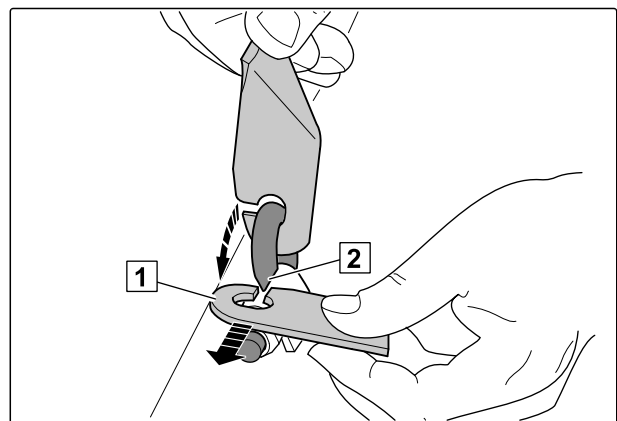


## IMPORTANT

### Machine damage due to incorrect blade selection or incorrect blade installation

Imbalance on the rotor and machine vibrations

- ▶ Select the blades appropriately for the application area.
- ▶ Always equip the rotor with the specified number of blades.
- ▶ Install the blades in the proper installation position.
- ▶ Pay attention to the wear limits.
- ▶ Replace worn blades.

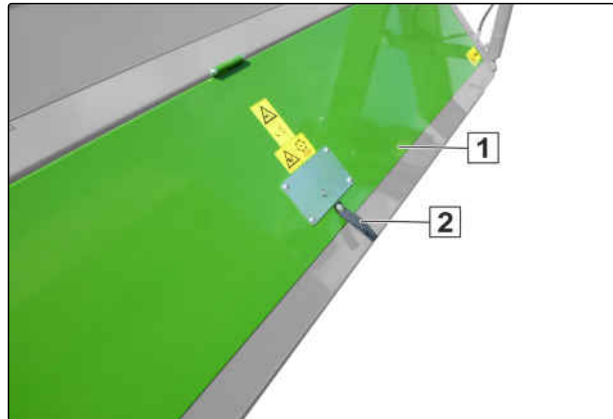


CMS-I-00002324

## 6 | Preparing the implement

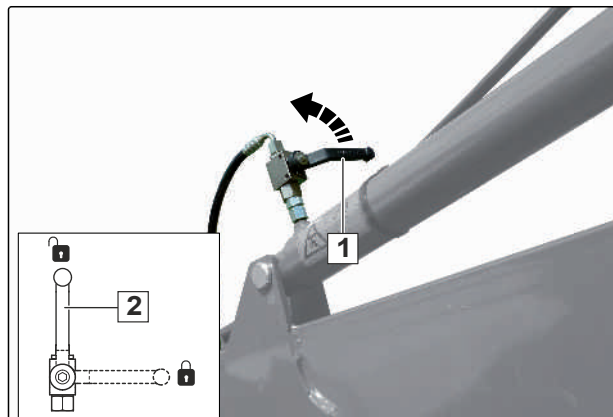
### Preparing the implement for operation

7. Swivel the blade **1** towards the pointed area **2** of the mount.
  8. Turn the blade by 90° and take it out with the open side on the pointed area.
  9. Push in a different or new blade with the open side on the pointed area and swivel the blade on the mount.
  10. Hold the rotor protective cover **1** by the holding strap **2** and close it.
  11. Press the rotor protective cover into the locking mechanism.
- ➔ The locking mechanism engages audibly.
12. Check that the rotor protective cover is properly locked.



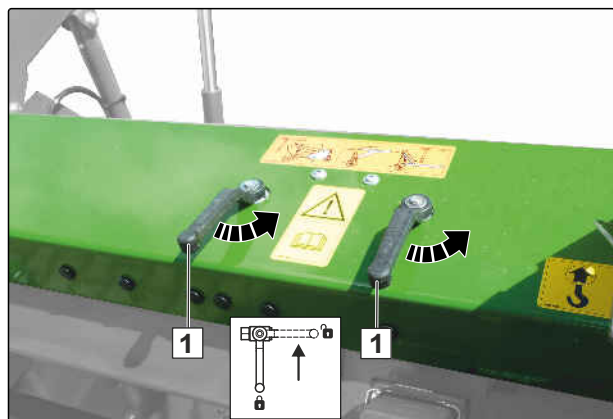
CMS-I-00003345

13. *To release the locking mechanism of the grass collector:*  
turn the hydraulic valve **1** to the **2** position.



CMS-I-00003342

14. Open the hydraulic valves **1**.
15. Start the tractor.
16. Completely lower the grass collector.



CMS-I-00003728

### 6.8.7 Adjusting the cutting height

CMS-T-00004721-B.1



#### REQUIREMENTS

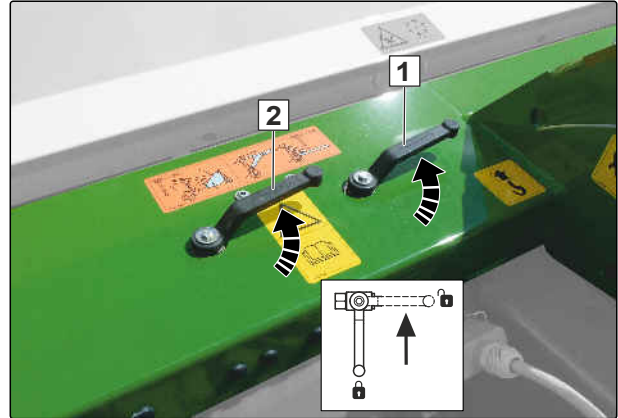
- ☉ The PTO shaft drive is switched off.

1. Open the drawbar hydraulic valve **1**.
2. Open the cutting deck hydraulic valve **2**.



#### NOTE

The hydraulic cylinder of the drawbar and the hydraulic cylinder of the cutting deck are connected in parallel. When both hydraulic valves are open, the hydraulic cylinders of the drawbar and cutting deck are actuated simultaneously.



CMS-I-00003367

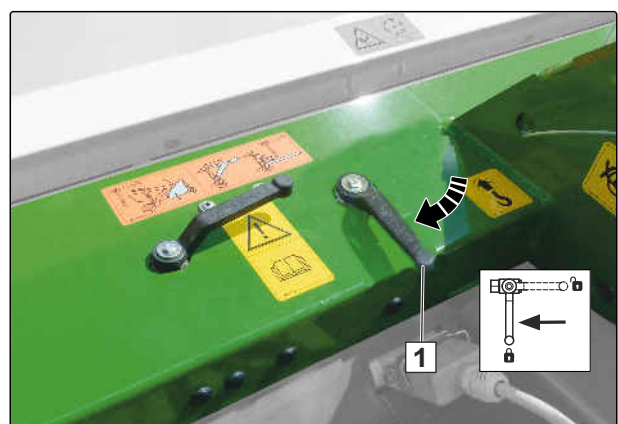
3. Lift the implement with the drawbar **1**.

➔ The cutting deck will also be lifted at the same time.



CMS-I-00003353

4. Close the drawbar hydraulic valve.



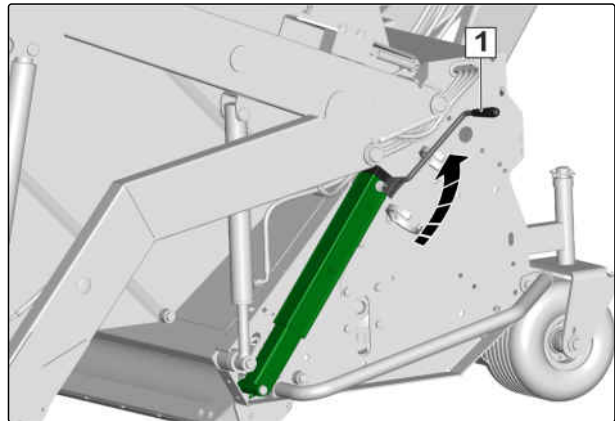
CMS-I-00004243



## 6 | Preparing the implement

### Preparing the implement for operation

5. Swivel up the crank **1**.



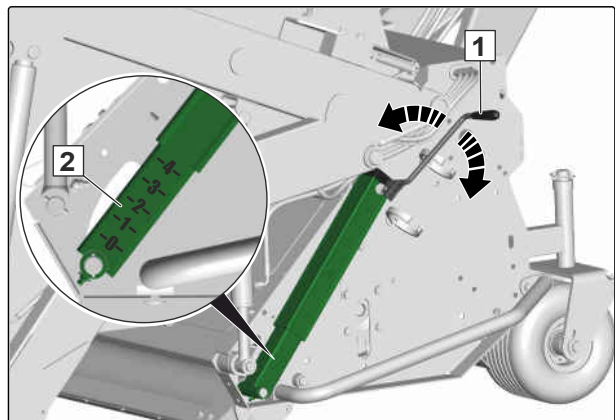
CMS-I-00003348

6. *To increase the cutting height:*  
turn the crank **1** counterclockwise.

or

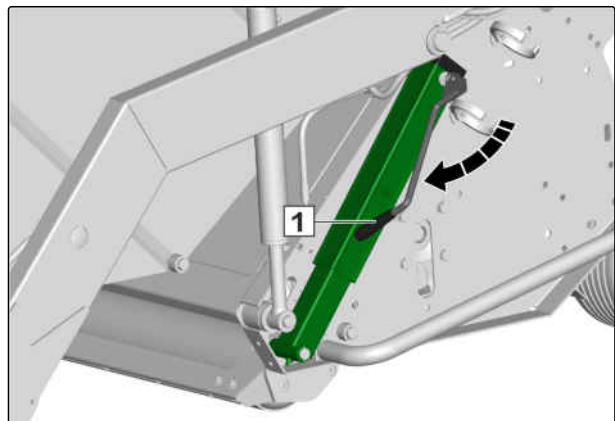
*To reduce the cutting height:*  
turn the crank clockwise.

- ➔ The set cutting height is shown on the scale **2**.



CMS-I-00003349

7. Swivel the crank **1** down.

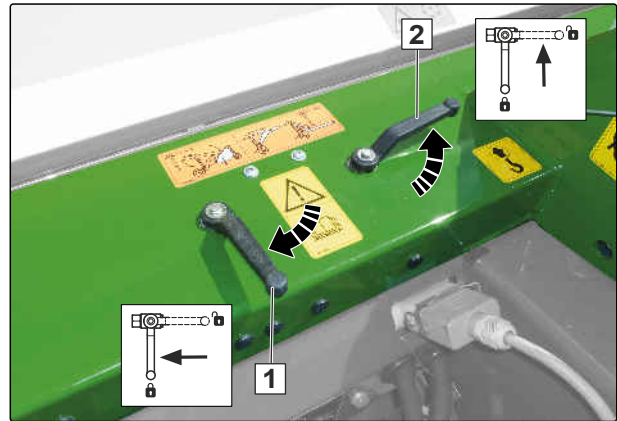


CMS-I-00003347



8. Close the cutting deck hydraulic valve **1**.

9. Open the drawbar hydraulic valve **2**.



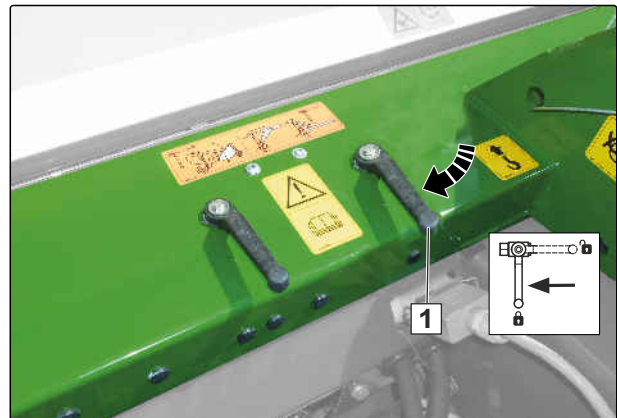
CMS-I-00003354

10. Lift the implement further with the drawbar **1** until the support wheels have enough clearance to make adjustments.



CMS-I-00003353

11. Close the drawbar hydraulic valve **1**.



CMS-I-00003735

## 6 | Preparing the implement

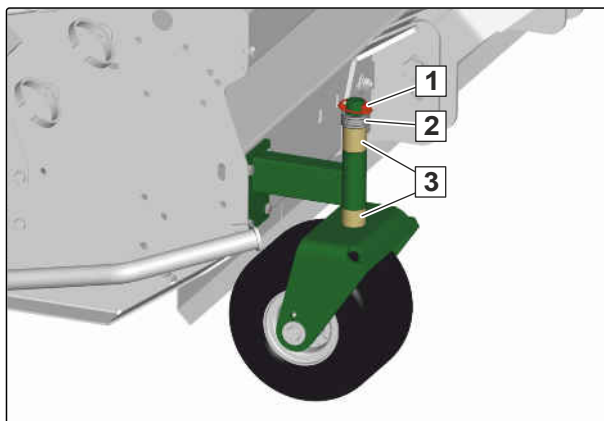
### Preparing the implement for operation

12. Remove the linch pin **1**.
13. Pull out the support wheel.
14. *To adjust the height of the support wheels:*  
Position the spacer discs **2** and the spacer sleeves **3** above or below the mount.
15. Slide the support wheel into the mount.
16. Insert the linch pin and secure it.
17. Repeat the procedure for the second support wheel.
18. Adjust the support wheels equally.
19. Open the drawbar hydraulic valve **1**.
20. Open the cutting deck hydraulic valve **2**.

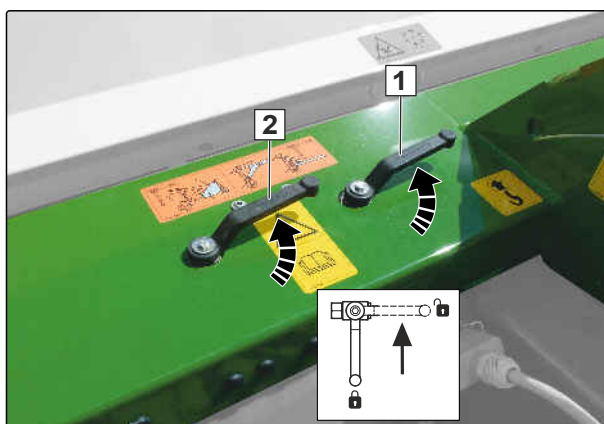


#### NOTE

The hydraulic cylinder of the drawbar and the hydraulic cylinder of the cutting deck are connected in parallel. When both hydraulic valves are open, the hydraulic cylinders of the drawbar and cutting deck are actuated simultaneously.

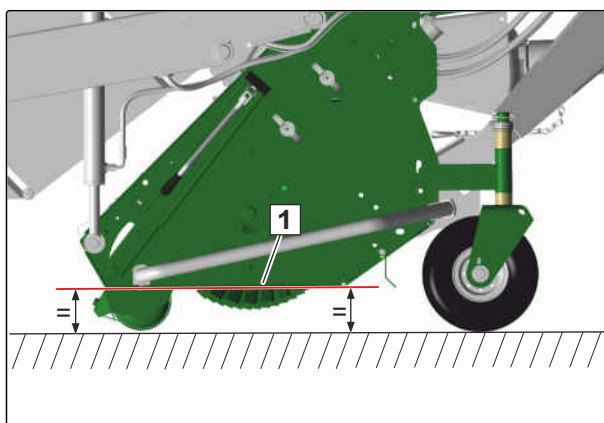


CMS-I-00003733



CMS-I-00003367

21. Lower the implement.
22. Lower the cutting deck.
23. Check whether the lower edge **1** of the cutting deck is aligned parallel to the ground.
24. If necessary, adjust the height of the support wheels.



CMS-I-00003734

### 6.8.8 Adjusting the front roller for scarifying

CMS-T-00005896-B.1

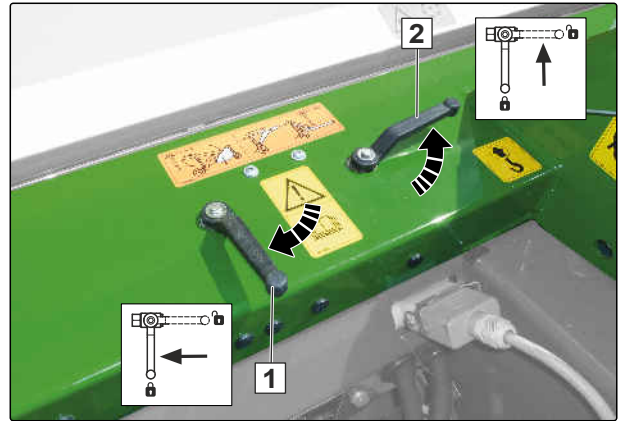
To use the front roller for scarifying, the front roller must be adjusted to the cutting height.



## REQUIREMENTS

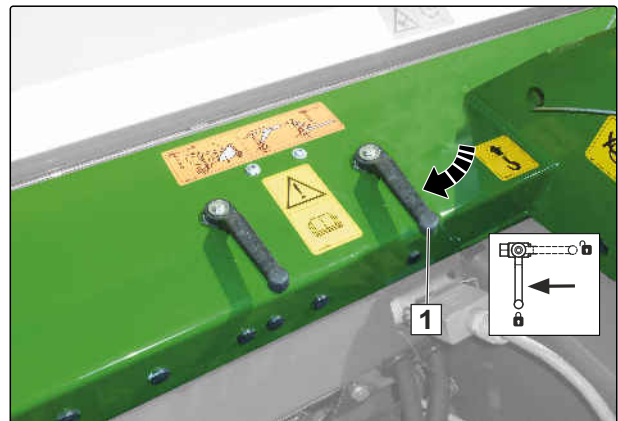
- ☑ The PTO shaft drive is switched off.

1. Adjust the cutting height using the crank, see page 81.
2. Close the cutting deck hydraulic valve **1**.
3. Open the drawbar hydraulic valve **2**.
4. Lift the implement with the drawbar **1** until the front roller has enough clearance to make adjustments.



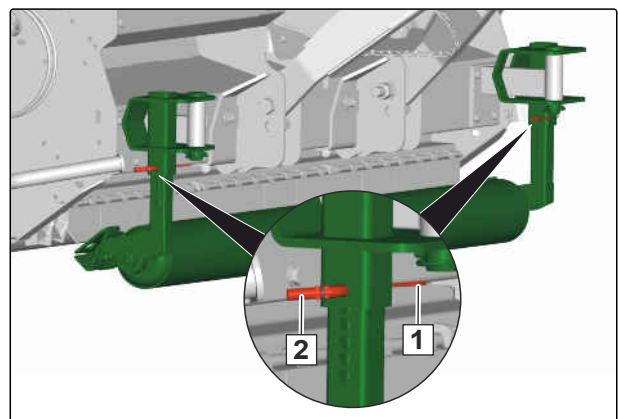
CMS-I-00003354

5. Close the drawbar hydraulic valve **1**.



CMS-I-00003735

6. Pull out the spring cotter pin **1**.
7. Pull out the fixing pin **2**.
8. Peg the front roller at the desired height with the fixing pin.
9. Secure the fixing pin with the spring cotter pin.
10. Adjust the front roller equally on both sides.



CMS-I-00003732

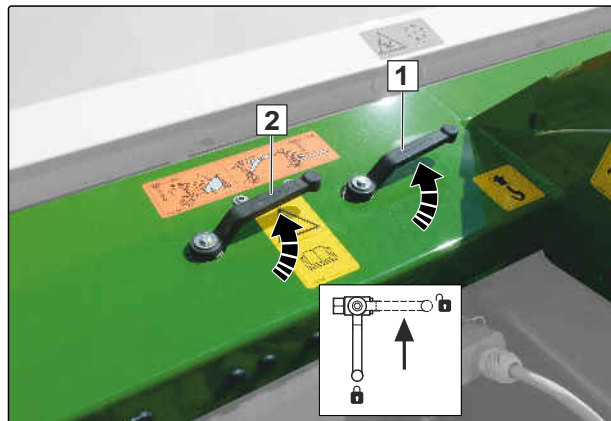
## 6 | Preparing the implement

### Preparing the implement for operation

11. Open the drawbar hydraulic valve **1**.
12. Open the cutting deck hydraulic valve **2**.

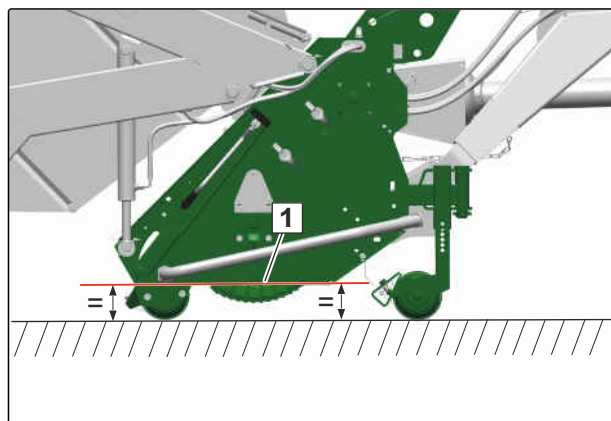
#### NOTE

The hydraulic cylinder of the drawbar and the hydraulic cylinder of the cutting deck are connected in parallel. When both hydraulic valves are open, the hydraulic cylinders of the drawbar and cutting deck are actuated simultaneously.



CMS-I-00003367

13. Lower the implement.
14. Lower the cutting deck.
15. Check whether the lower edge **1** of the cutting deck is aligned parallel to the ground.
16. If necessary, adjust the height of the front roller.

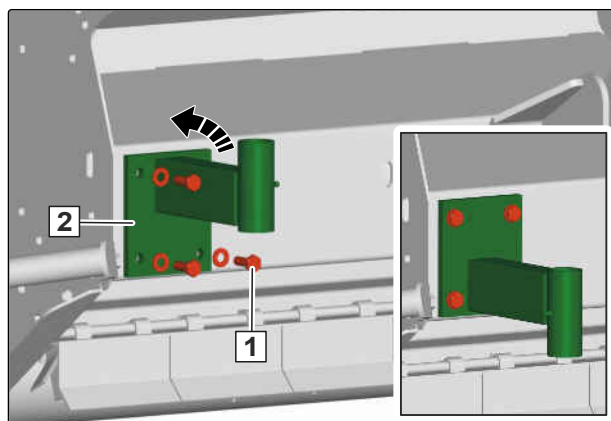


CMS-I-00004245

#### NOTE

For a larger height adjustment downwards, the brackets for the front roller can be installed rotated by 180°.

17. Lift the implement like for adjusting the front roller.
18. Close the drawbar hydraulic valve.
19. Remove the front roller according to the installation instructions.
20. Unscrew all 4 bolts **1** with washers.
21. Rotate the bracket **2** by 180°.
22. Screw on the bracket with the 4 bolts and washers.
23. Repeat the conversion for the other bracket. Both brackets must be installed the same way.



CMS-I-00004244

### 6.8.9 Setting the implement for mulching

CMS-T-00004771-B.1



#### REQUIREMENTS

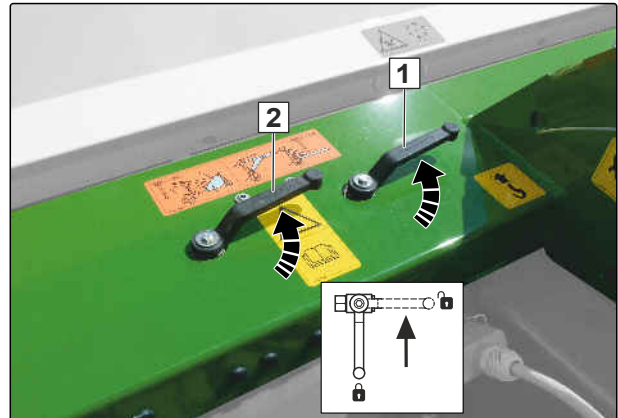
- ☑ The PTO shaft drive is switched off.
- ☑ The grass collector is completely empty.

1. Open the drawbar hydraulic valve **1**.
2. Open the drawbar hydraulic valve **2**.



#### NOTE

The hydraulic cylinder of the drawbar and the hydraulic cylinder of the cutting deck are connected in parallel. When both hydraulic valves are open, the hydraulic cylinders of the drawbar and cutting deck are actuated simultaneously.



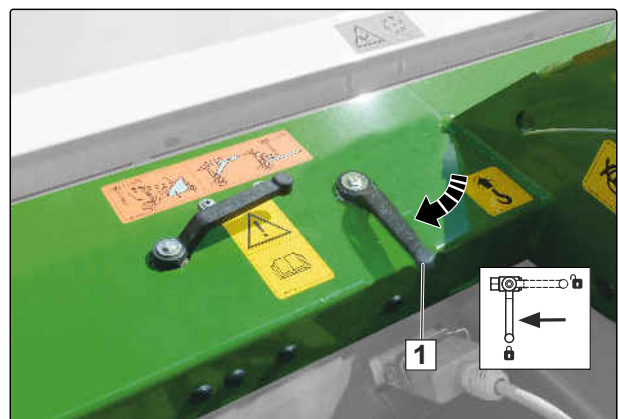
CMS-I-00003367

3. Completely lift the front implement with cutting deck.



CMS-I-00004258

4. Close the drawbar hydraulic valve **1**.



CMS-I-00004243



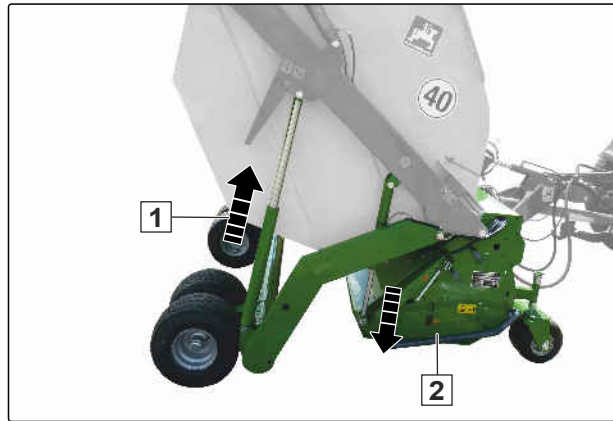
## 6 | Preparing the implement

### Preparing the implement for operation

The cover flap of the rotor normally opens automatically when lowering the grass collector. When mulching, however, the cover flap must be closed.

5. Completely raise the rear implement **1**.

6. Completely lower the cutting deck **2**.



CMS-I-00003372

7. Completely raise the grass collector **1**.

8. Completely lower the grass collector again.

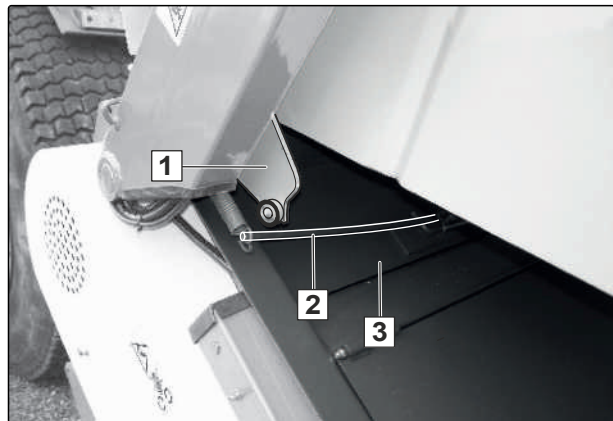


CMS-I-00003370

9. Completely lower the rear implement.

➔ In doing so, the carrier **1** slides over the flap lever **2**.

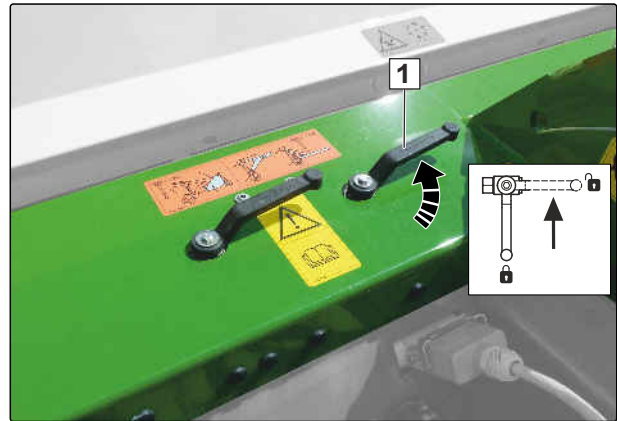
➔ The cover flap **3** for the rotor remains closed and the mowed material is no longer transported into the grass collector.



CMS-I-00003371

10. Open the drawbar hydraulic valve **1**.

➔ The implement is prepared for mulching.



CMS-I-00004257

11. *To stop mulching:*  
Completely raise the grass collector.

12. Completely lower the grass collector again.

➔ The mulch flap is open again and the mowed material is conveyed into the grass collector again.

#### 6.8.10 Setting the implement for collecting on hard ground

CMS-T-00005900-B.1

This special setting is suitable for collecting leaves, branches or waste on asphalt, paved or concrete ground.

The cage roller for cutting height adjustment does not have contact with the ground in this case.

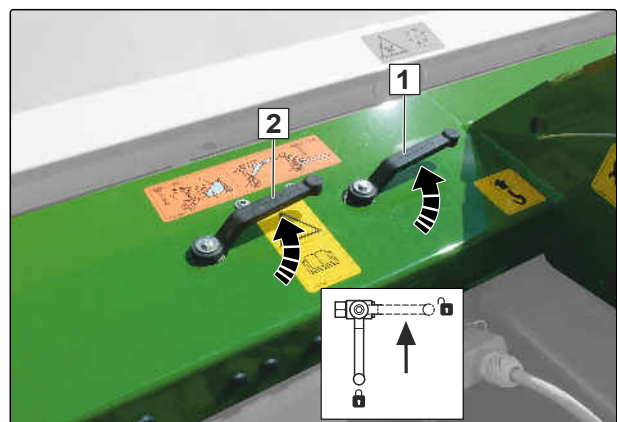
#### REQUIREMENTS

- ☑ The PTO shaft drive is switched off.

1. Open the drawbar hydraulic valve **1**.
2. Open the cutting deck hydraulic valve **2**.

#### NOTE

The hydraulic cylinder of the drawbar and the hydraulic cylinder of the cutting deck are connected in parallel. When both hydraulic valves are open, the hydraulic cylinders of the drawbar and cutting deck are actuated simultaneously.



CMS-I-00003367

## 6 | Preparing the implement

### Preparing the implement for operation

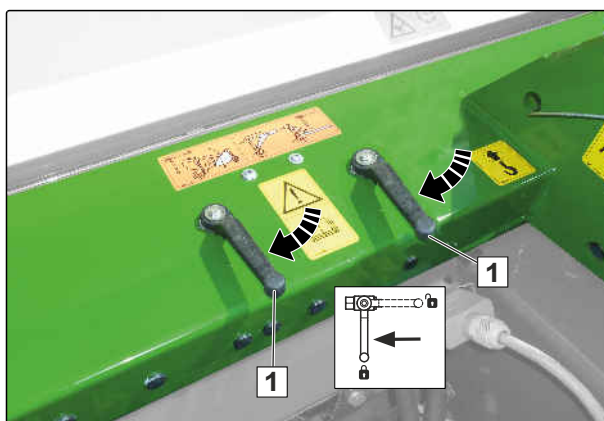
3. Lift the implement with the drawbar **1**.

➔ The cutting deck will also be lifted at the same time.



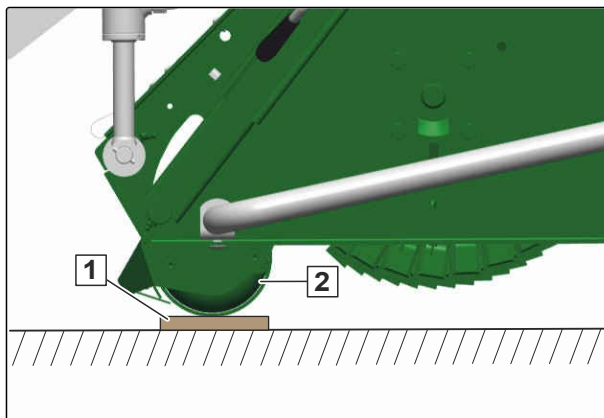
CMS-I-00003353

4. Close the hydraulic valves **1**.



CMS-I-00004259

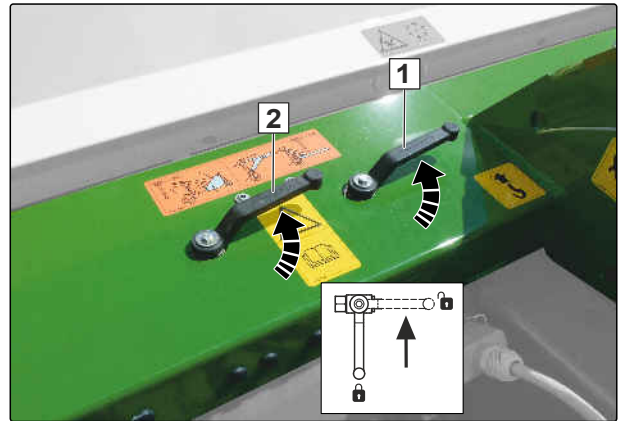
5. Place a suitable wooden board **1** with a thickness of 20 mm - 30 mm under the support roller **2**.



CMS-I-00004254

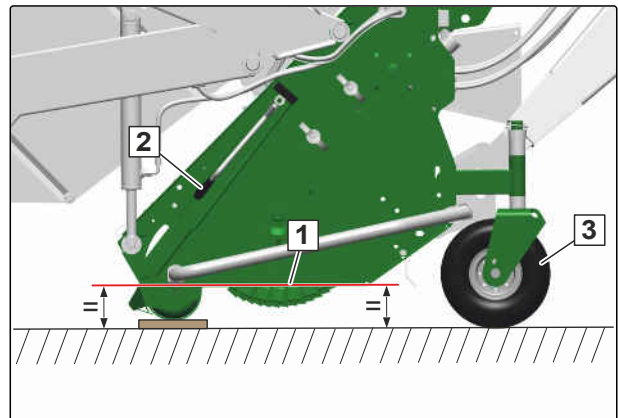


6. Open the drawbar hydraulic valve **1**.
7. Open the cutting deck hydraulic valve **2**.
8. Lower the front implement with the cutting deck until the cage roller is resting on the wooden board



CMS-I-00003367

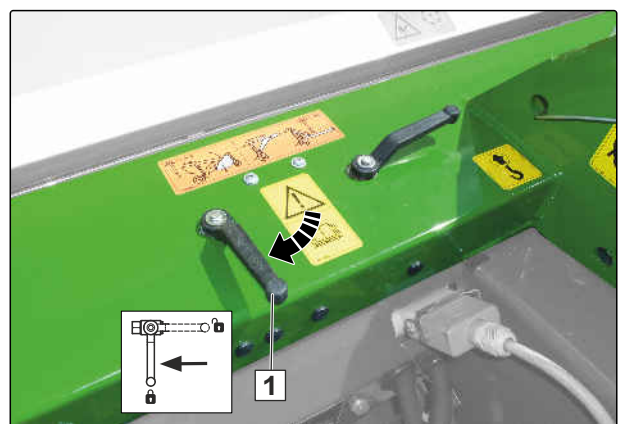
9. Check whether the lower edge **1** of the cutting deck is aligned parallel to the ground.
10. If necessary, lift the implement with the cutting deck and adjust the height of the cage roller using the crank **2**.
11. Lower the front implement with the cutting deck again onto the wooden board.
12. Check the parallel alignment of the cutting deck again.



CMS-I-00004255

13. Adjust the height of the support wheels **3** like for the cutting height adjustment, see page 81.
14. Close the cutting deck hydraulic valve **1**.

➔ The cutting deck is fixed in the setting. Only the support wheels now guide the cutting deck.



CMS-I-00004251

## 6.9 Preparing the machine for road travel

CMS-T-00004722-A.1

1. Switch off the PTO shaft drive on the tractor.
2. Completely empty the grass collector.
3. Remove loose clippings on the cutting deck.

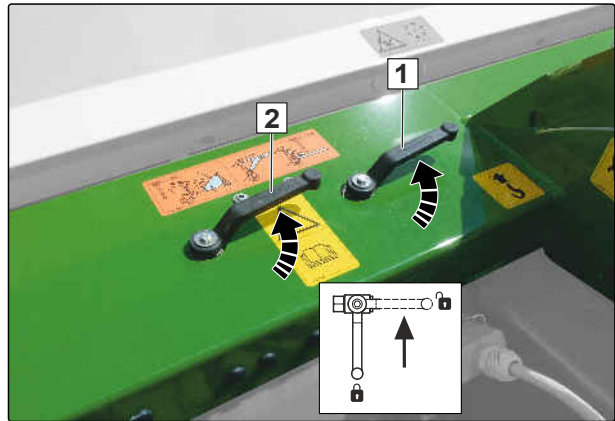
## 6 | Preparing the implement

### Preparing the machine for road travel

4. Open the drawbar hydraulic valve **1**.
5. Open the drawbar hydraulic valve **2**.

#### **i** NOTE

The hydraulic cylinder of the drawbar and the hydraulic cylinder of the cutting deck are connected in parallel. When both hydraulic valves are open, the hydraulic cylinders of the drawbar and cutting deck are actuated simultaneously.



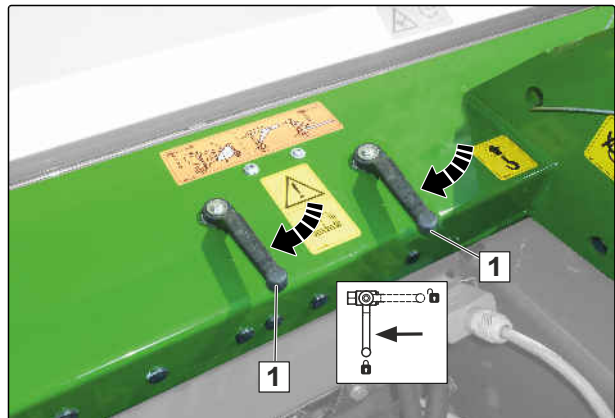
CMS-I-00003367

6. Completely lower the grass collector **1**.
7. Completely lower the rear implement **2**.
8. Completely lift the front implement with cutting deck **3**.



CMS-I-00003355

9. Close the hydraulic valves **1**.



CMS-I-00004259

# Using the machine

7

CMS-T-00001162-C.1

## 7.1 Using the implement with Standard hydraulic system

CMS-T-00004762-C.1

### 7.1.1 Starting mowing

CMS-T-00004709-B.1



#### DANGER

##### Turning rotor and ejected objects

- ▶ Lower the cutting deck completely before switching on the cutting deck.
- ▶ Only switch on the cutting deck when all of the protective covers are closed and securely locked.



#### REQUIREMENTS

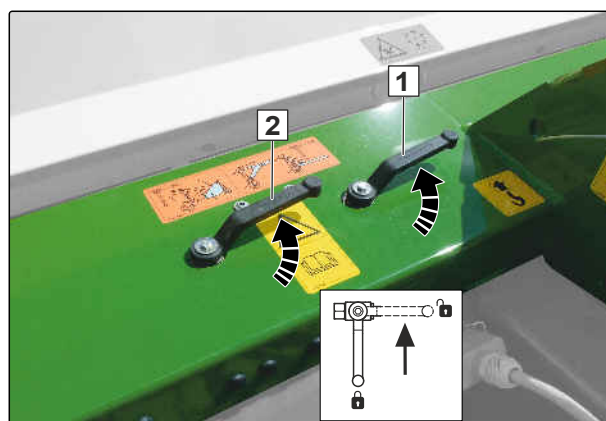
- ☑ The grass collector is closed and completely lowered.
- ☑ The grass collector is not completely full.

1. Open the drawbar hydraulic valve **1**.
2. Open the cutting deck hydraulic valve **2**.



#### NOTE

The hydraulic cylinder of the drawbar and the hydraulic cylinder of the cutting deck are connected in parallel. When both hydraulic valves are open, the hydraulic cylinders of the drawbar and cutting deck are actuated simultaneously.

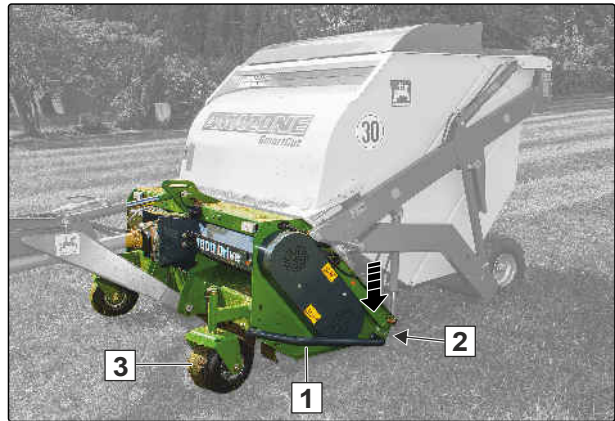


CMS-I-00003367

## 7 | Using the machine

### Using the implement with Standard hydraulic system

3. Lower the implement at the front with the cutting deck **1** using the tractor controls until the cage roller **2** and the support wheels **3** are resting on the grass.
  4. Move the drawbar and cutting deck hydraulic systems into float position.
- ➔ The cage roller and the support wheels guide the cutting deck over the ground.
  - ➔ The rear wheels only have a supporting function and compensate for ground undulations between the right and left wheel.
5. Start the PTO shaft drive on the tractor.
  6. Pay attention to the maximum drive speed.



CMS-I-00003366



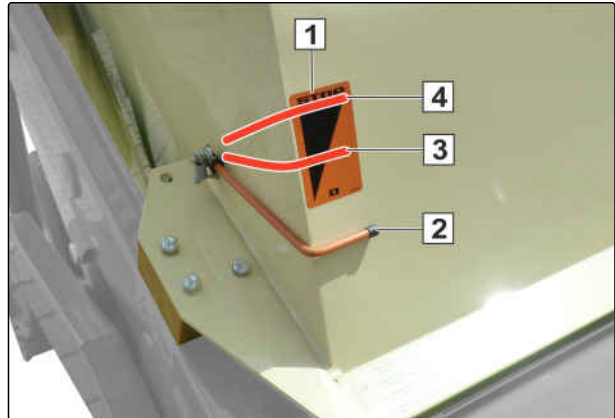
CMS-I-00000433



#### NOTE

The sensitivity of the grass collector fill level indicator depends on the mowed material.

7. Check the fill level of the grass collector on the display **1**.
8. *As long as the pointer is in the lower position **2**:*  
Mowed material can still be collected.
9. *When the pointer **3** starts to move:*  
The grass collector should be emptied.
10. *If the pointer is in the upper position **4**:*  
The grass collector must be emptied.



CMS-I-00003365

### 7.1.2 Stopping mowing

CMS-T-00004763-B.1



#### DANGER

##### Rotor still running and ejected objects

- ▶ Only raise the cutting deck when the rotor is standing still.



#### IMPORTANT

##### Risk of damage to the rotor

- ▶ *When the cutting deck is lowered and switched off,*  
do not move the machine.

1. Switch off the PTO shaft drive on the tractor.
2. Lift the front implement with cutting deck using the tractor controls.

### 7.1.3 Mulching

CMS-T-00004710-A.1



#### REQUIREMENTS

- ☑ The setting for mulching has been made.

- ▶ Start and stop mulching just like mowing.

### 7.1.4 Scarifying

CMS-T-00004770-A.1



#### REQUIREMENTS

- ☑ Scarifying blades are installed.



#### IMPORTANT

##### Machine damage due to large amount of soil

- ▶ When scarifying, only fill the grass collector halfway when there is a large amount of soil.
- ▶ Observe the maximum permissible total weight according to the technical data.

- ▶ Start and stop scarifying just like mowing.

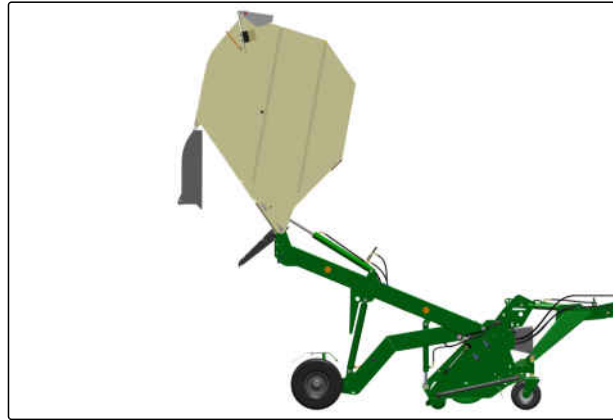
### 7.1.5 Emptying the grass collector with Standard hydraulic system

CMS-T-00004711-C.1

#### 7.1.5.1 Emptying the grass collector close to the ground

CMS-I-00004712-C.1

1. Switch off the PTO shaft drive on the tractor.
2. Drive the machine in reverse towards the unloading point.
3. Lift the grass collector using the tractor controls.
4. Completely empty the grass collector.
5. Completely lower the grass collector using the tractor controls.



CMS-I-00004263

#### 7.1.5.2 High tip emptying the grass collector

CMS-T-00004713-C.1



#### **WARNING**

**Risk of tipping when the grass collector is raised**

- ▶ Only raise the grass collector on stable and level ground.
- ▶ Never raise the grass collector on slopes or inclines.

1. Switch off the PTO shaft drive on the tractor.
2. Drive the implement in reverse up to 1 m before the unloading point.



#### **NOTE**

The maximum height for high tip emptying is 2.3 m.

3. Completely lift the rear implement using the tractor controls.
4. Lift the grass collector using the tractor controls.
5. Completely empty the grass collector.



CMS-I-00003324

6. Completely lower the grass collector using the tractor controls.
7. Completely lower the rear implement using the tractor controls.

## 7.2 Using the implement with electro-hydraulic controls

CMS-T-00004777-C.1

### 7.2.1 Starting mowing

CMS-T-00004780-B.1



#### **DANGER**

##### **Turning rotor and ejected objects**

- ▶ Lower the cutting deck completely before switching on the cutting deck.
- ▶ Only switch on the cutting deck when all of the protective covers are closed and securely locked.

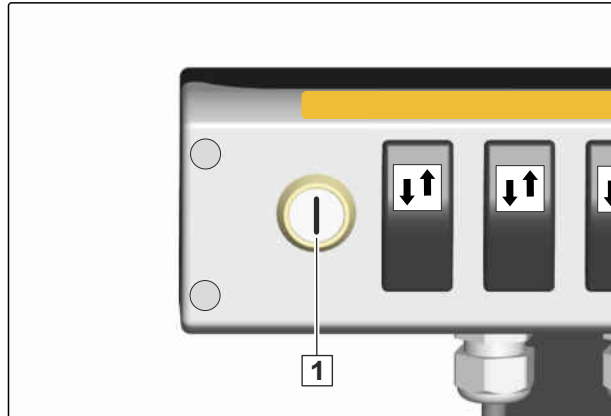


## REQUIREMENTS

- ✓ The grass collector is closed and completely lowered.
- ✓ The grass collector is not completely full.

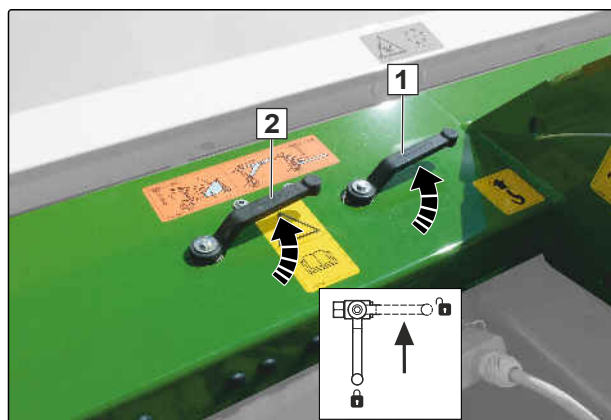
1. To switch on the electro-hydraulic controls:  
press the control button **1**.

➔ Control via the remote control is active.



CMS-I-00003384

2. Open the drawbar hydraulic valve **1**.
3. Open the cutting deck hydraulic valve **2**.



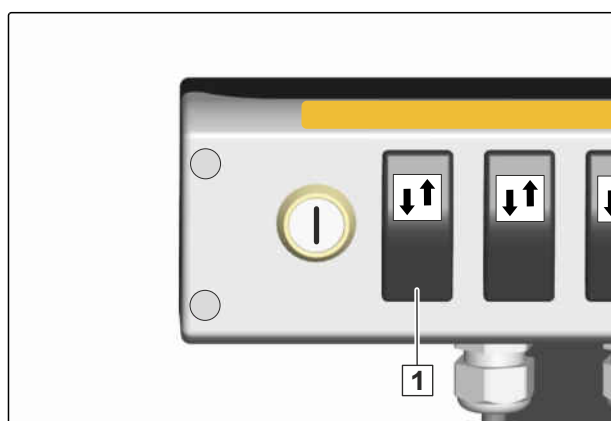
CMS-I-00003367



## NOTE

The hydraulic cylinder of the drawbar and the hydraulic cylinder of the cutting deck are connected in parallel. When both hydraulic valves are open, the hydraulic cylinders of the drawbar and cutting deck are actuated simultaneously.

4. To lower the cutting deck and the front implement:  
press the control button **1** at the bottom.
5. Lower the cutting deck and implement at the front until the cage roller and the support wheels are resting on the grass.



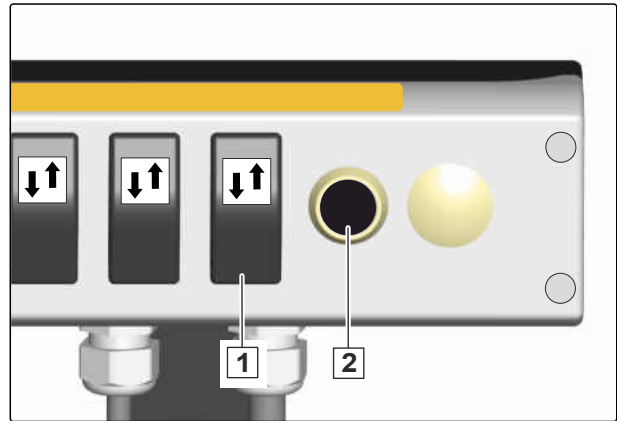
CMS-I-00003383



6. To activate the float position for the drawbar and the cutting deck:

press the control buttons **1** and **2** simultaneously.

- ➔ The cage roller and the support wheels guide the cutting deck over the ground.
- ➔ The rear wheels only have a supporting function and compensate for ground undulations between the right and left wheel.



CMS-I-00003382

7. Start the PTO shaft drive on the tractor.
8. Pay attention to the maximum drive speed.

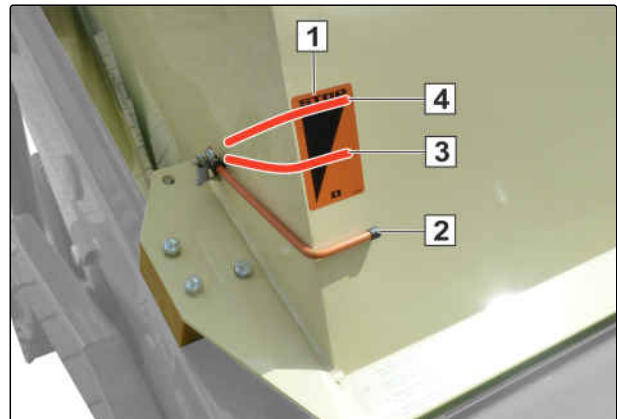


CMS-I-00000433

#### **NOTE**

The sensitivity of the grass collector fill level indicator depends on the mowed material.

9. Check the fill level of the grass collector on the display **1**.
10. As long as the pointer is in the lower position **2**:  
Mowed material can still be collected.
11. When the pointer **3** starts to move:  
The grass collector should be emptied.
12. If the pointer is in the upper position **4**:  
The grass collector must be emptied.



CMS-I-00003365

### 7.2.2 Stopping mowing

CMS-T-00004781-B.1



#### **DANGER**

##### **Rotor still running and ejected objects**

- Only raise the cutting deck when the rotor is standing still.

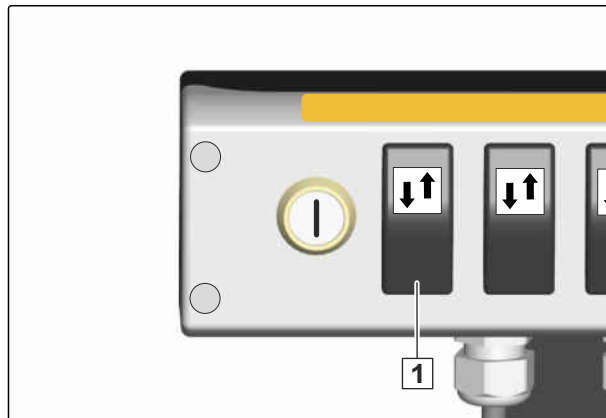


## IMPORTANT

### Risk of damage to the rotor

- ▶ *When the cutting deck is lowered and switched off, do not move the machine.*

1. Switch off the PTO shaft drive on the tractor.
2. *To raise the cutting deck and the front implement:*  
press the control button **1** at the top.



CMS-I-00003383

### 7.2.3 Mulching

CMS-T-00005903-A.1



#### REQUIREMENTS

- ✓ The setting for mulching has been made.
- ▶ Start and stop mulching just like mowing.

### 7.2.4 Scarifying

CMS-T-00005904-A.1



#### REQUIREMENTS

- ✓ Scarifying blades are installed.



## IMPORTANT

### Machine damage due to large amount of soil

- ▶ When scarifying, only fill the grass collector halfway when there is a large amount of soil.
  - ▶ Observe the maximum permissible total weight according to the technical data.
- 
- ▶ Start and stop scarifying just like mowing.

## 7.2.5 Emptying the grass collector with electro-hydraulic controls

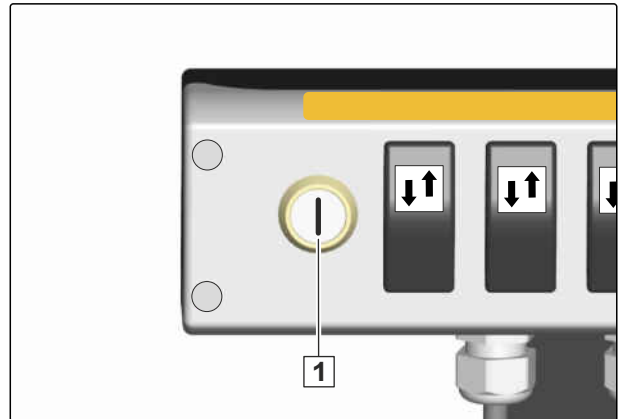
CMS-T-00004778-C.1

### 7.2.5.1 Emptying the grass collector close to the ground

CMS-T-00004782-C.1

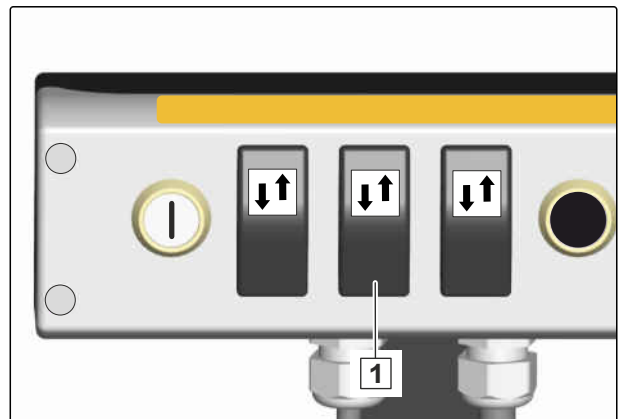
1. Switch off the PTO shaft drive.
2. Drive the machine in reverse towards the unloading point.
3. *To switch on the electro-hydraulic controls:* press the control button **1**.

➔ Control via the remote control is active.



CMS-I-00003384

4. *To lift the grass collector:* press the button **1** at the top.
5. Completely empty the grass collector.
6. *To lower the grass collector:* press the button **1** at the bottom.
7. Completely lower the grass collector.



CMS-I-00003381

### 7.2.5.2 High tip emptying the grass collector

CMS-T-00004783-C.1



#### WARNING

**Risk of tipping when the grass collector is raised**

- ▶ Only raise the grass collector on stable and level ground.
- ▶ Never raise the grass collector on slopes or inclines.

## 7 | Using the machine

### Using the implement with electro-hydraulic controls

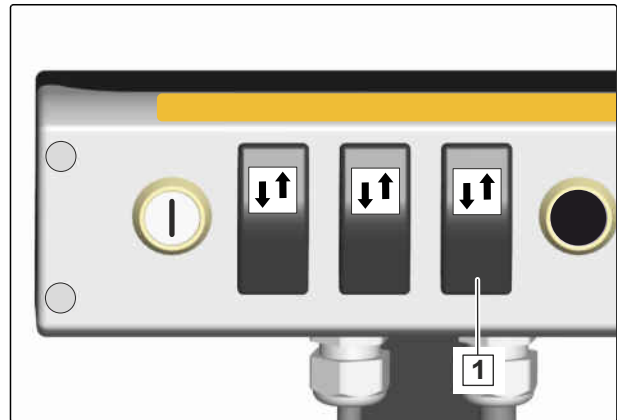
1. Switch off the PTO shaft drive.
2. Drive the implement in reverse up to 1 m before the unloading point.



#### NOTE

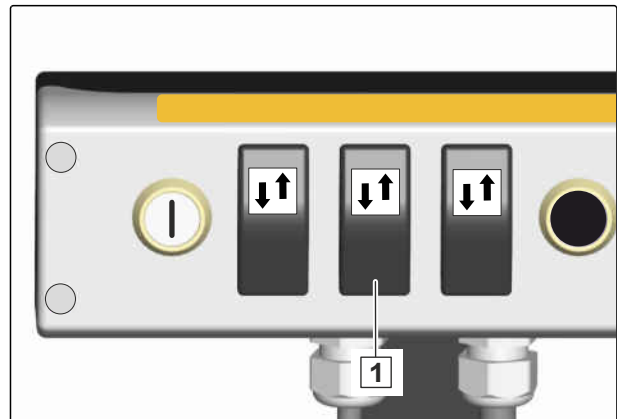
The maximum height for high tip emptying is 2.3 m.

3. Completely extend the rear running gear by pressing the button **1** at the top.



CMS-I-00003380

4. *To lift the grass collector:*  
press the button **1** at the top.
5. Completely empty the grass collector.
6. *To lower the grass collector:*  
press the button **1** at the bottom.
7. Completely lower the grass collector.



CMS-I-00003381

8. Completely lower the running gear by pressing the button **1** at the bottom.



CMS-I-00003380

## Parking the machine

8

CMS-T-00004708-E.1

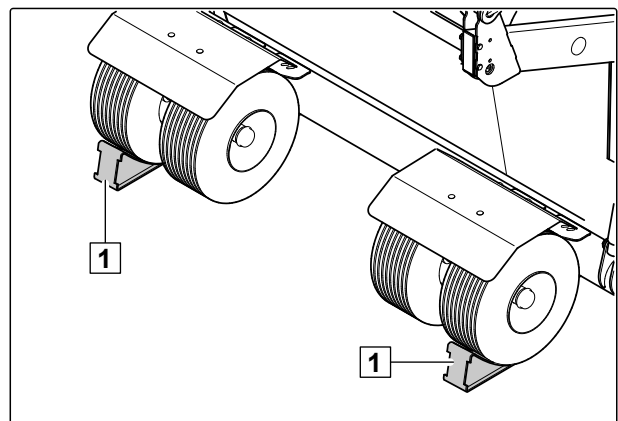
### 8.1 Parking the implement after operation

CMS-T-00004790-D.1

#### 8.1.1 Putting on the wheel chocks

1. Take the wheel chocks from the brackets.
2. Secure the implement with the wheel chocks **1** on the outer rear wheels.

CMS-T-00004830-A.1

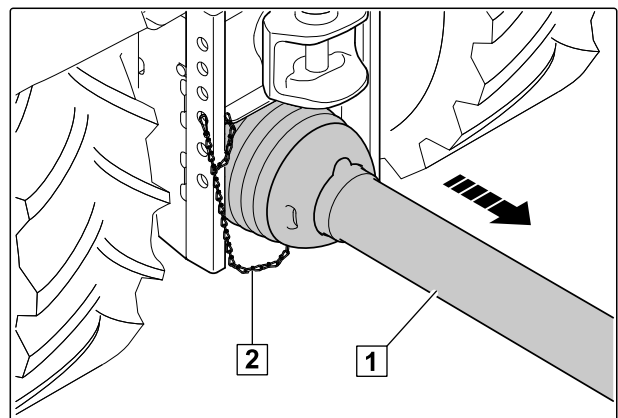


CMS-I-00001046

#### 8.1.2 Uncoupling the universal joint shaft

1. Secure the tractor and implement.
2. Remove the safety chain **2** from the tractor.
3. Pull on the lock of the universal joint shaft **1**. Pull off the universal joint shaft **1** from the tractor PTO shaft.

CMS-T-00001716-A.1

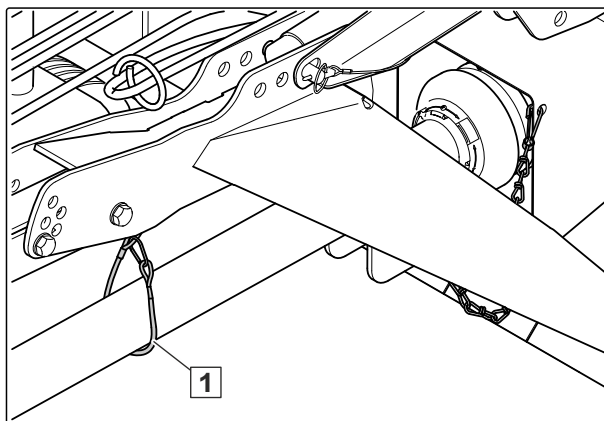


CMS-I-00001069

## 8 | Parking the machine

### Parking the implement after operation

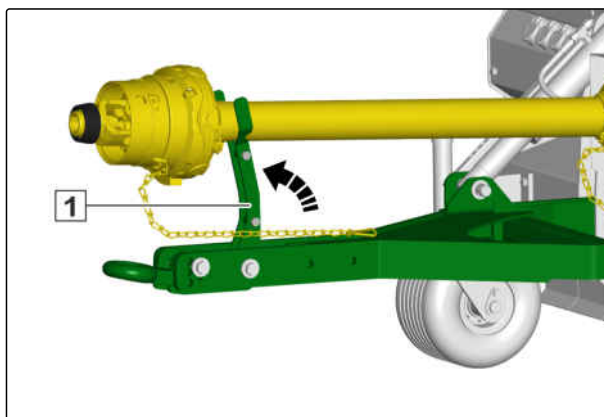
4. Secure the universal joint shaft on the drawbar with the retaining rope **1**.



CMS-I-00003423

For implements with lower drawbar:

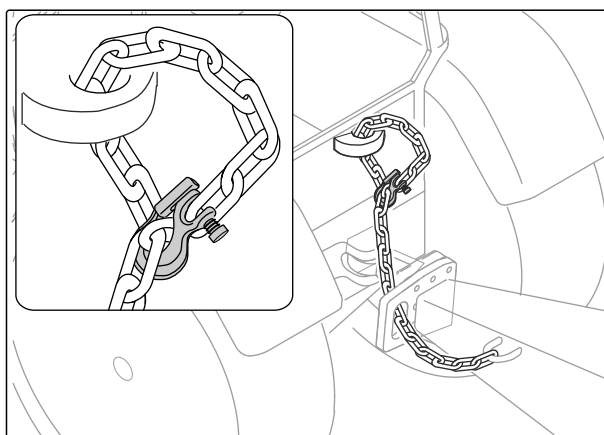
5. Lift the universal joint shaft and hold it tight.
6. Fold up the support **1**.
7. Put the universal joint shaft down on the support.



CMS-I-00003701

### 8.1.3 Releasing the safety chain

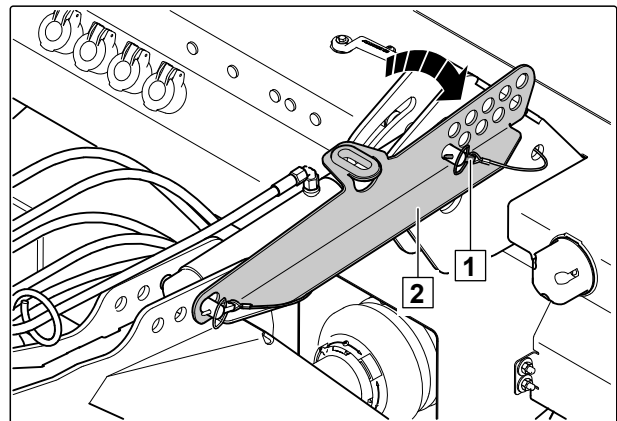
- Release the safety chain from the tractor.



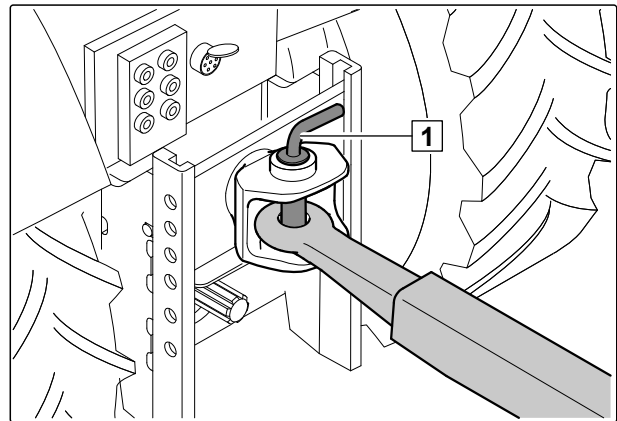
CMS-I-00007814

### 8.1.4 Uncoupling the upper drawbar

1. Remove the lynch pin **1**.
  2. Flip the safety clip **2** to the rear.
  3. Slide the safety clip onto the pin.
  4. Insert the lynch pin in the pin and secure it.
- ➔ The drawbar is secured.

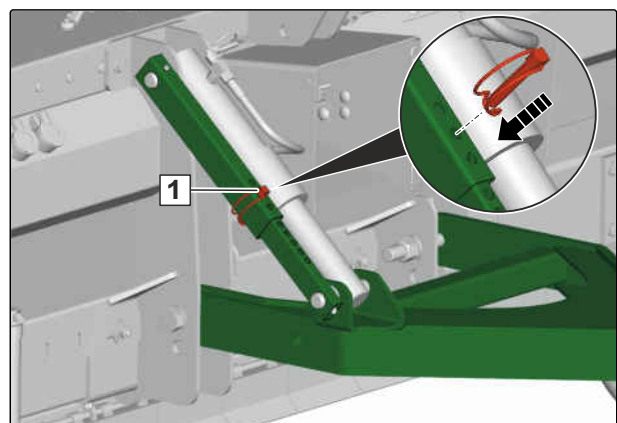


5. Pull out the coupling pin **1** on the tractor.
6. Drive the tractor away from the implement.
7. Secure the tractor and remove the ignition key.
8. Put the coupling pin on the tractor.



### 8.1.5 Uncoupling the lower drawbar

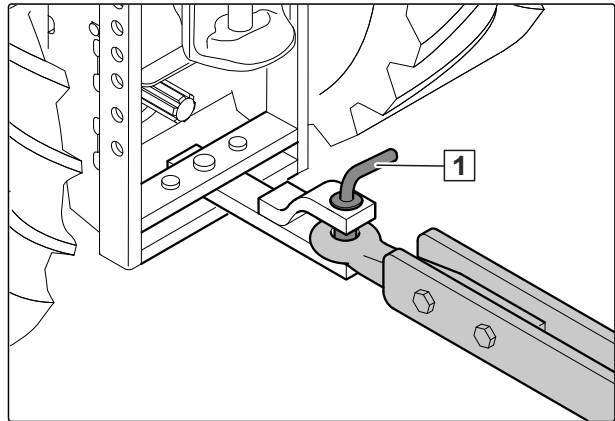
1. Insert the lynch pin **1** in the safety tube and secure it.
- ➔ The drawbar is secured.



## 8 | Parking the machine

### Parking the implement after operation

2. Pull out the coupling pin **1** on the tractor.
3. Drive the tractor away from the implement.
4. Secure the tractor and remove the ignition key.
5. Put the coupling pin on the tractor.

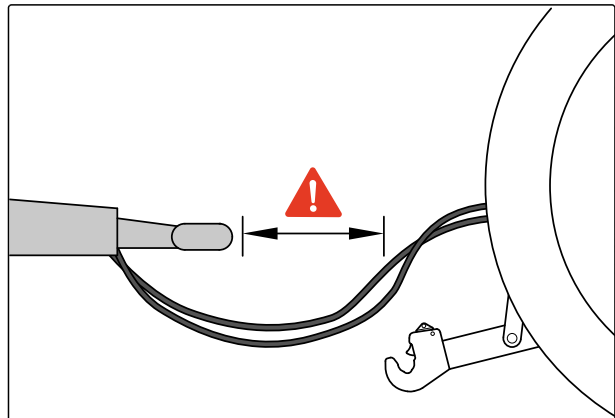


CMS-I-00004261

#### 8.1.6 Driving the tractor away from the implement

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

1. Drive the tractor away from the implement, leaving a sufficient distance.
2. Secure the tractor. Remove the ignition key.



CMS-T-00005905-A.1

CMS-I-00004118

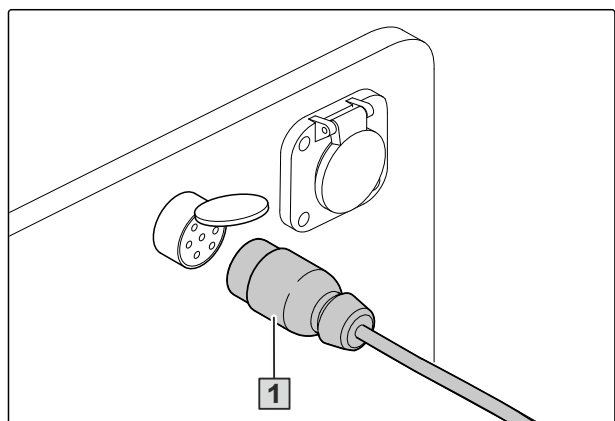
#### 8.1.7 Uncoupling the power supply for the lighting

1. Secure the tractor and implement.
2. Disconnect the plug **1** for the power supply.
3. Wind up the cable and fasten it on the drawbar.



#### NOTE

When the implement is not used for longer periods of time or is parked outdoors, we also recommend disconnecting the cable on the implement.



CMS-T-00001705-B.1

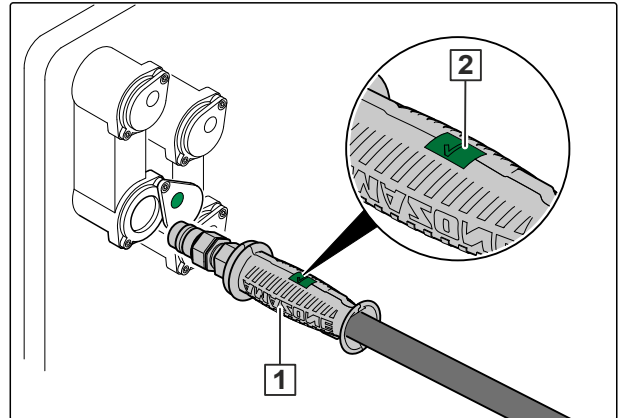
CMS-I-00001048



### 8.1.8 Disconnecting the hydraulic hose lines

CMS-T-00001706-B.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.
5. Clean the hydraulic plugs.



CMS-I-00001045

6. Insert the hydraulic hose lines into the holders **1** on the implement.



CMS-I-00001068

### 8.1.9 Uncoupling the electro-hydraulic control

CMS-T-00004787-A.1

#### 8.1.9.1 Disconnecting the hydraulic hose lines

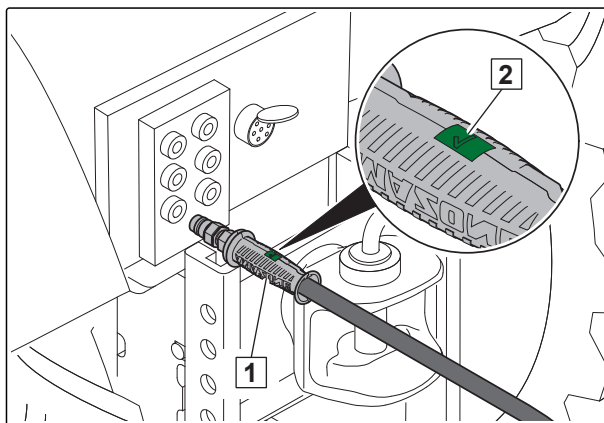
CMS-T-00004788-A.1

1. Secure the tractor and implement.
2. Put the control lever on the tractor control unit in float position.

## 8 | Parking the machine

### Parking the implement after operation

3. Disconnect the hydraulic hose lines **1**.
4. Put the dust caps on the hydraulic sockets.
5. Clean the hydraulic plugs.



CMS-I-00001045

6. Insert the hydraulic hose lines into the holders **1** on the implement.

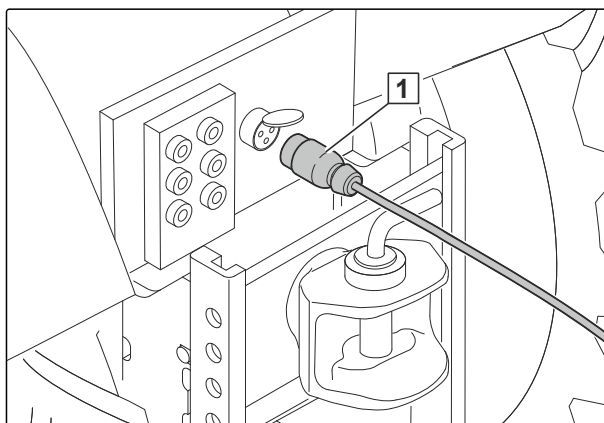


CMS-I-00003387

#### 8.1.9.2 Uncoupling the remote control

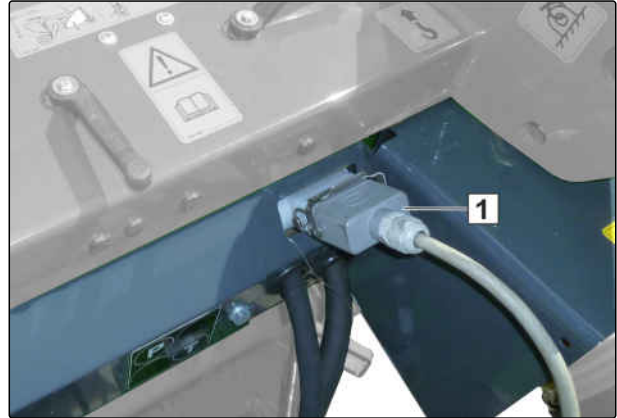
1. Secure the tractor and implement.
2. Unplug the 3-pin plug **1** from the tractor.

CMS-T-00004789-A.1



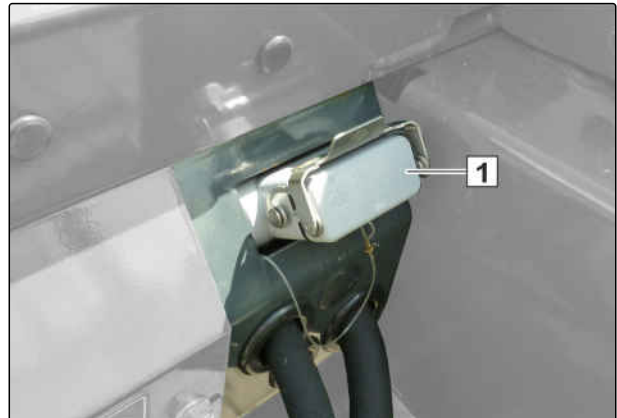
CMS-I-00003724

3. Unplug the plug **1** on the implement.



CMS-I-00003359

4. Put the protective cap **1** on the socket.
5. Keep the remote control in a dry place.

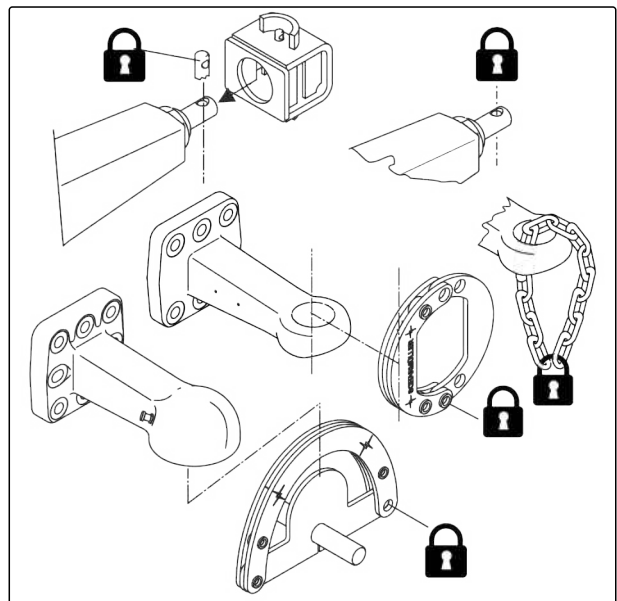


CMS-I-00003386

#### 8.1.10 Putting on the safety device against unauthorised use

CMS-T-00005090-B.1

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



CMS-I-00003534

## 8.2

### Preparing the machine for longer periods of standstill or overwintering

CMS-T-00004791-B.1

1. Completely empty the grass collector.
2. Secure the implement against rolling away with wheel chocks.
3. Clean the implement, see page 118.
4. Check the tyre inflation pressure on all 6 tyres.  
Correct the tyre inflation pressure if necessary.
5. Grease all lubrication points, see page 114.
6. Check the condition of the drive belts, see page 112.
7. Store the machine in a dry place.

# Repairing the machine

# 9

CMS-T-00001164-C.1

## 9.1 Maintaining the machine

CMS-T-00004794-B.1

### 9.1.1 Maintenance schedule

|                                          |              |
|------------------------------------------|--------------|
| <b>After initial operation</b>           |              |
| Checking the hydraulic hose lines        | see page 112 |
| <b>Every 12 months</b>                   |              |
| Checking the oil level on the gearbox    | see page 113 |
| <b>Every 50 operating hours / Weekly</b> |              |
| Checking the drive belt                  | see page 112 |
| Checking the hydraulic hose lines        | see page 112 |

### 9.1.2 Checking the drive belt

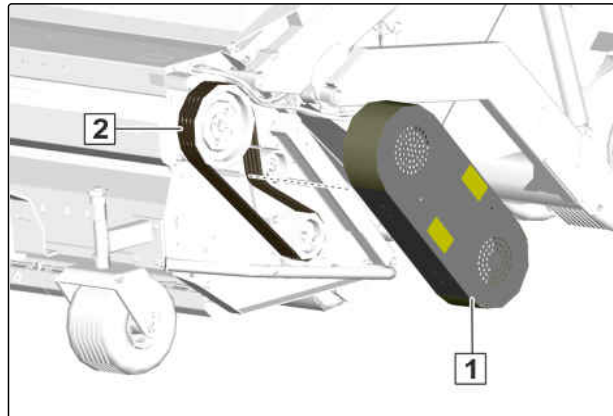
CMS-T-00004795-B.1



#### INTERVAL

- Every 50 operating hours  
or  
Weekly

1. Remove the protective cover **1**.
2. Check all 4 cutting deck drive belts for damage and wear.
3. Check the belt tension on all 4 drive belts **2**.
4. Put on the protective cover.



CMS-I-00003415



#### WORKSHOP WORK

5. Retension the drive belt.
6. Replace damaged and worn drive belts.

### 9.1.3 Checking the hydraulic hose lines

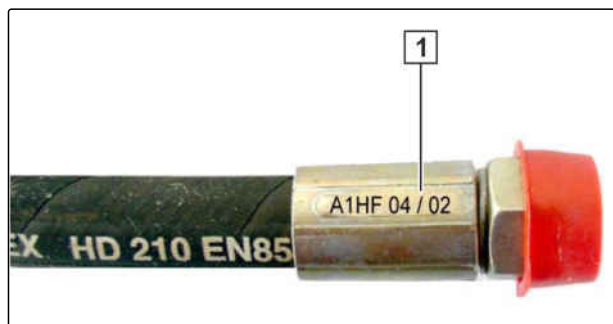
CMS-T-00004796-B.1



#### 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.
4. Check the date of manufacture **1**.



CMS-I-00000532



#### NOTE

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



## WORKSHOP WORK

5. Replace damaged or aged hydraulic hose lines.

### 9.1.4 Checking the oil level on the gearbox

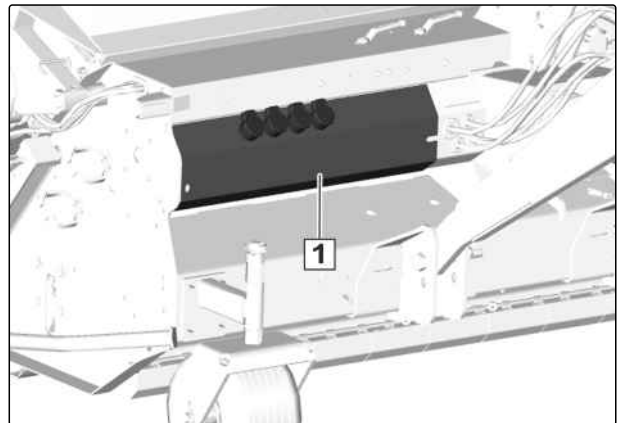
CMS-T-00005210-B.1



## INTERVAL

- Every 12 months

1. Remove the cover **1**.



CMS-I-00003421

2. Unscrew the oil level plug **2**.
3. Check if the oil level reaches up to the lower edge of the hole.
4. Refill gear oil SAE 90 or SAE 85W90 in the gearbox **1** if necessary.



## NOTE

The maximum fill quantity in the gearbox is 0.85 l.



CMS-I-00003739

5. Screw on the oil level plug.
6. Put on the cover.

## 9.2 Lubricating the implement

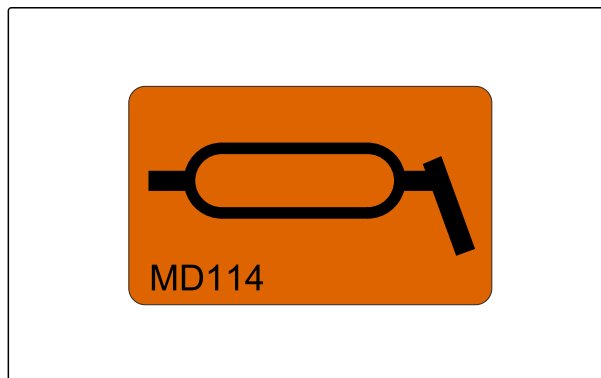
CMS-T-00004797-B.1



### IMPORTANT

#### Implement damage due to improper lubrication

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

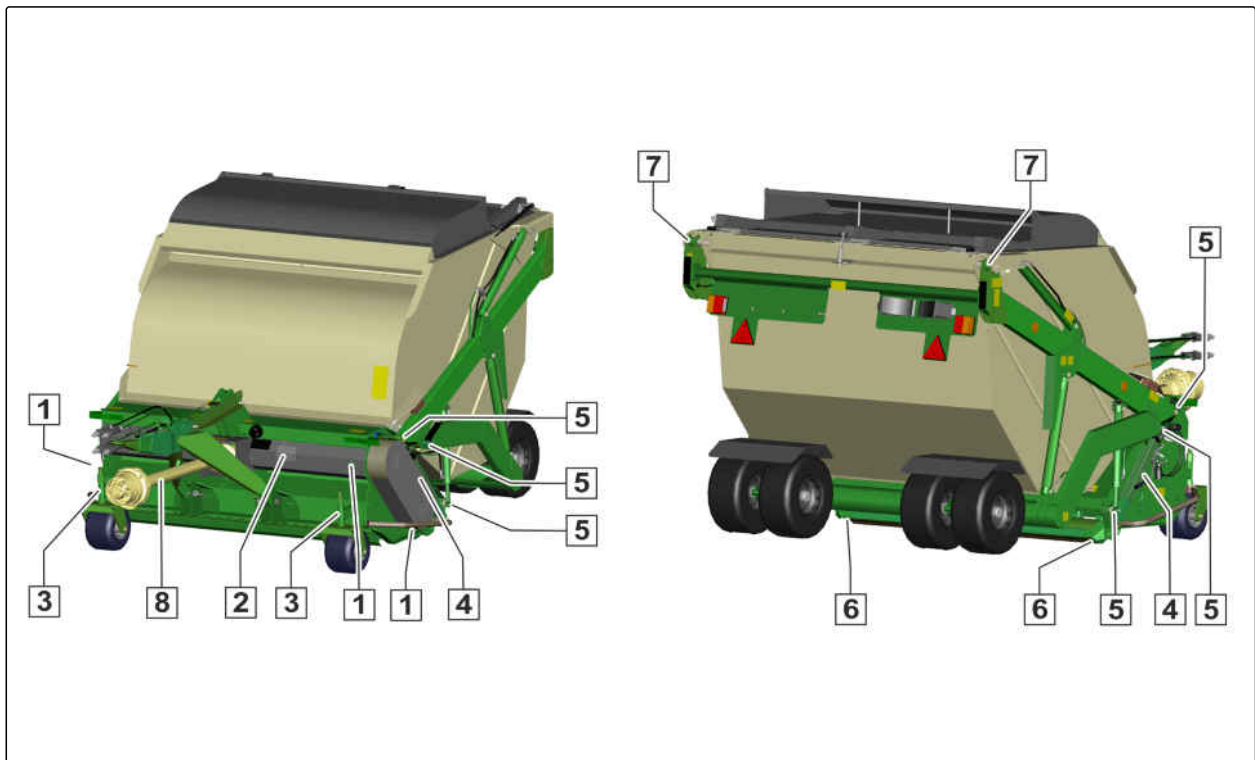


CMS-I-00002270



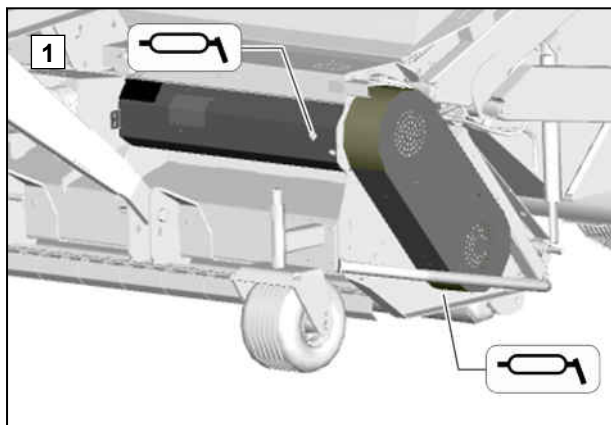
### 9.2.1 Overview of lubrication points

CMS-T-00004798-B.1



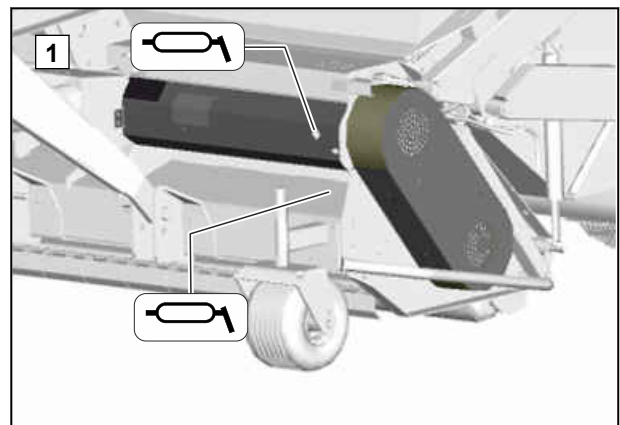
CMS-I-00003404

#### Every 10 operating hours / Daily



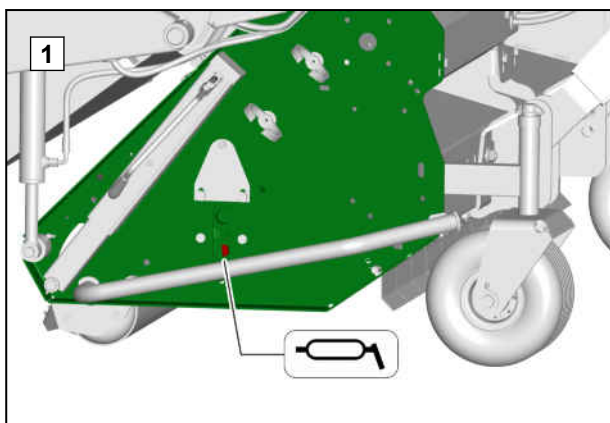
CMS-I-00003414

Up to implement number GHS0003327



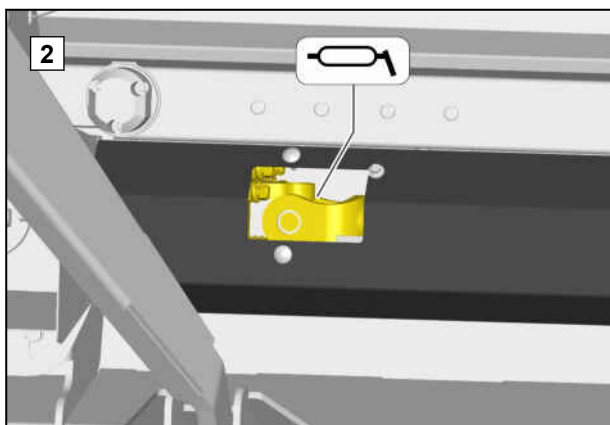
CMS-I-00006967

From implement number GHS0003328

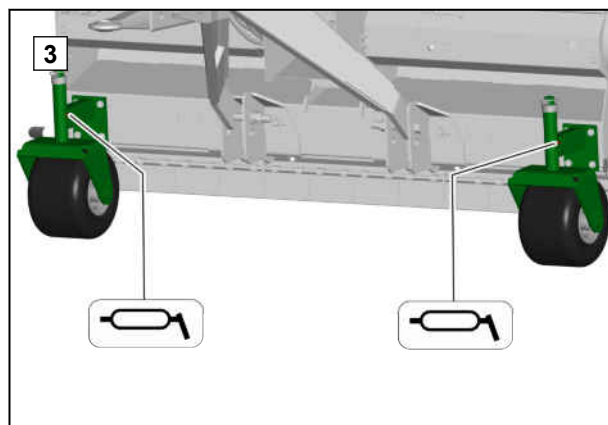


CMS-I-00003413

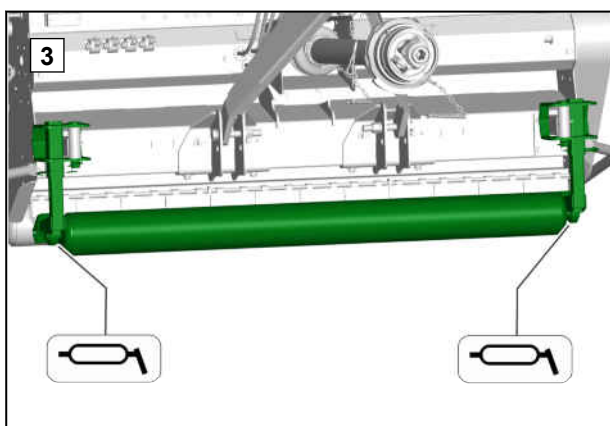
Every 50 operating hours / Weekly



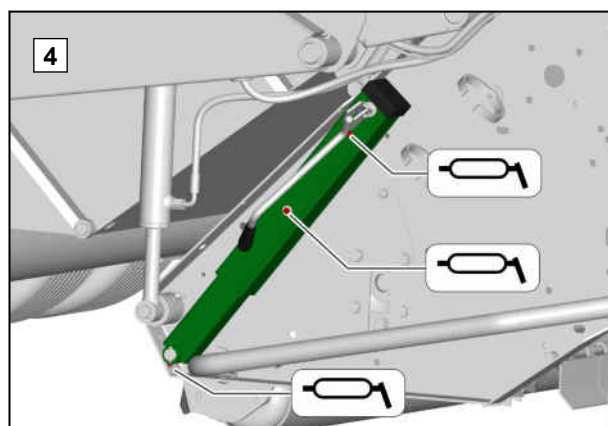
CMS-I-00003411



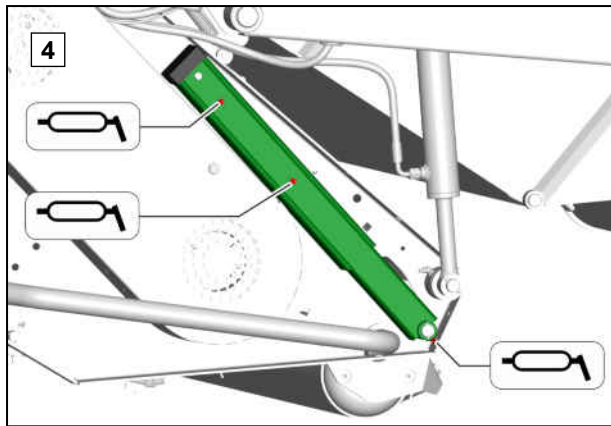
CMS-I-00003412



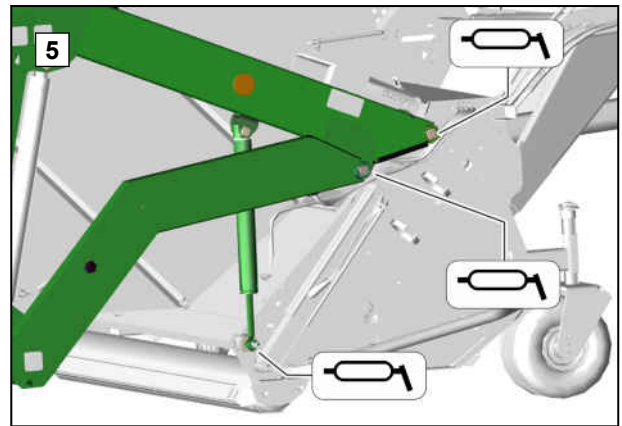
CMS-I-00003738



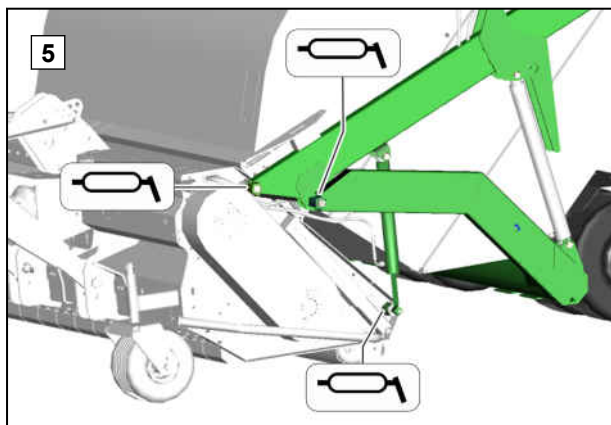
CMS-I-00003410



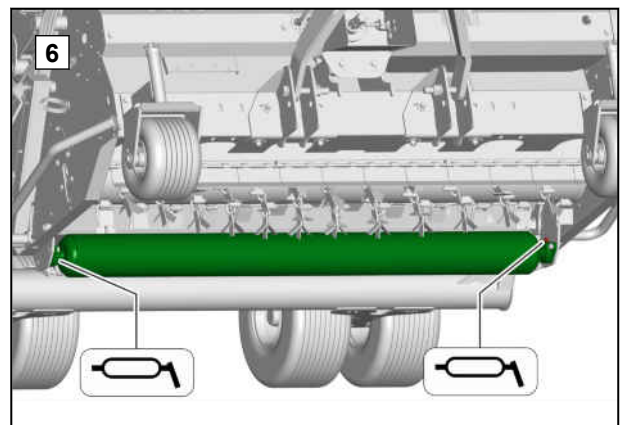
CMS-I-00003409



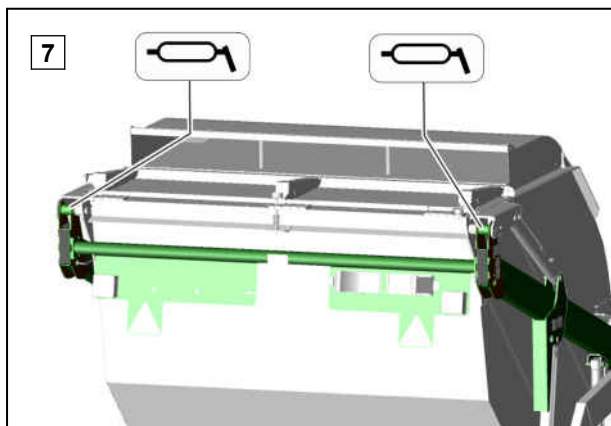
CMS-I-00003408



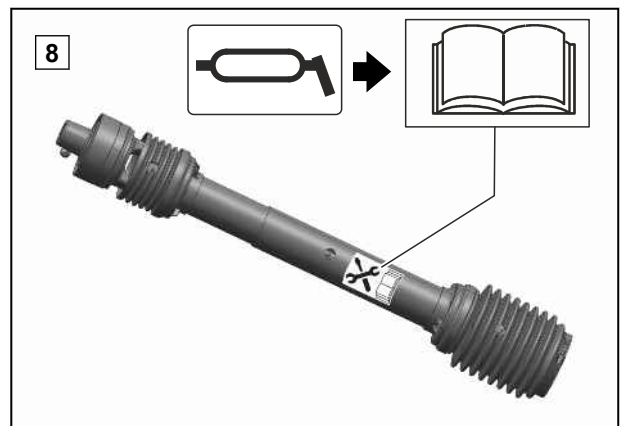
CMS-I-00003407



CMS-I-00003406



CMS-I-00003405



CMS-I-00004267

## 9.3 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.



CMS-I-00002692

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

# Preparing the implement for transport

# 10

CMS-T-00013732-B.1

## 10.1 Loading the implement

CMS-T-00001160-C.1

### 10.1.1 Loading the implement with a crane

CMS-T-00004829-B.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.



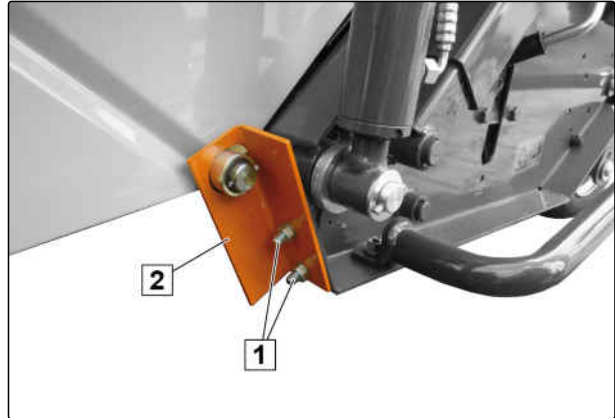
CMS-I-00003419

|                                |          |
|--------------------------------|----------|
| Required load-bearing capacity | 1,000 kg |
|--------------------------------|----------|

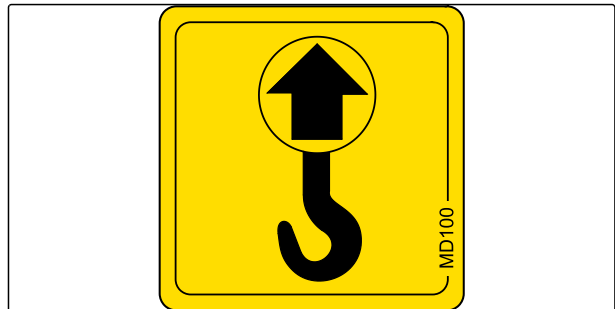


#### REQUIREMENTS

- ✓ The grass collector is completely empty.
  - ✓ The grass collector is completely lowered.
1. Put on the transport lock **2** on the left and right side.
  2. Screw on the bolts **1** on the left and right side.
  3. Only attach the lifting gear at the marked positions.
  4. Hang the slings on the crane with a crossbeam.
  5. Load the machine with a crane.



CMS-I-00001032



CMS-I-000089

#### 10.1.2 Lashing the implement

CMS-T-00005211-C.1

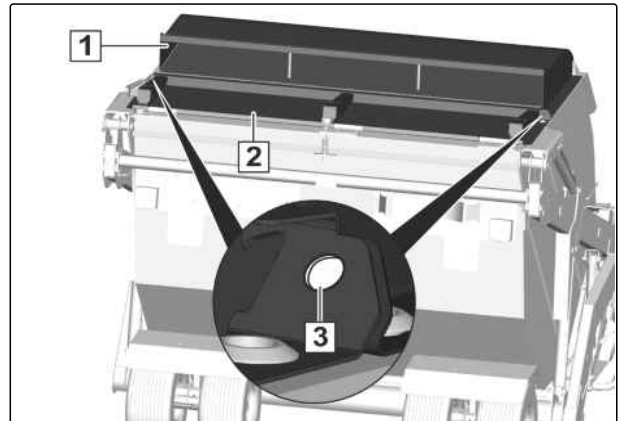
The implement has lashing points for securing the load.



CMS-I-00003740

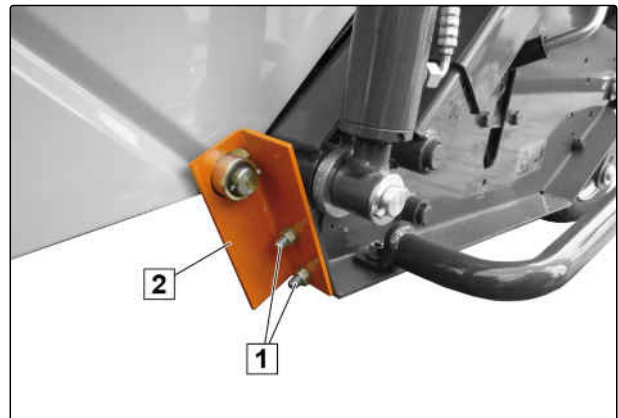
1. Fasten the cover flap **1** and swivel flap **2** together with suitable bolts or cable ties in the holes **3** on both sides.

➔ This prevents accidental opening of the flaps during transport.



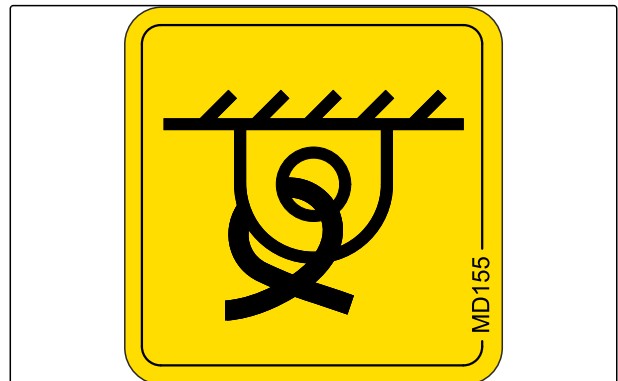
CMS-I-00003741

2. Check that the transport lock **2** is installed on the left and right side.
3. *If the transport lock is not installed:*  
Put on the transport lock **2** on the left and right side.
4. Screw on the bolts **1** on the left and right side.



CMS-I-00001032

5. Only attach lashing straps at the marked points.
6. Secure the implement in accordance with the regulations to the transport vehicle.



CMS-I-00000450



## Disposing of the implement

11

CMS-T-00010906-B.1

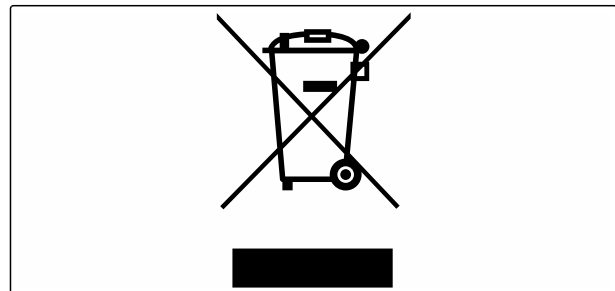


### ENVIRONMENTAL INFORMATION

#### 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.



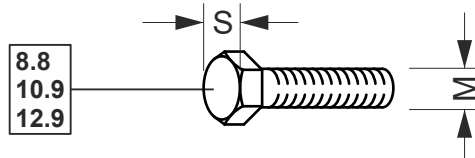
# Appendix

# 12

CMS-T-00001155-B.1

## 12.1 Bolt tightening torques

CMS-T-00000373-E.1



CMS-I-000260

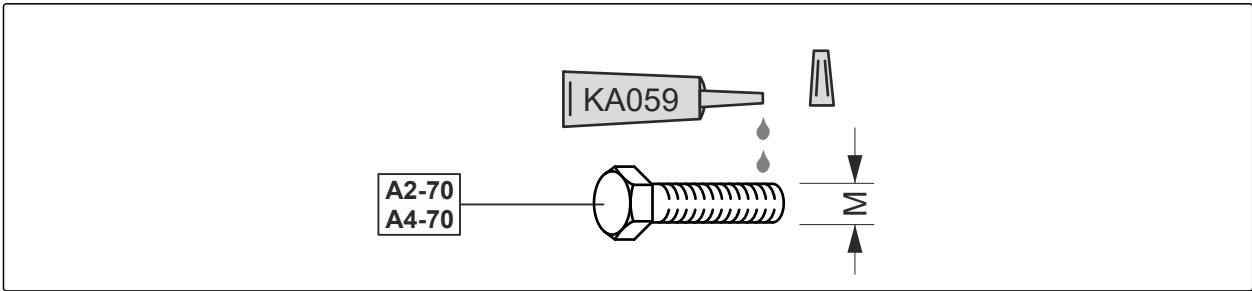


### NOTE

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

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

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



CMS-I-00000065

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

## 12.2 Other applicable documents

CMS-T-00004832-A.1

- Tractor operating manual
- Universal joint shaft operating manual
- Installation instructions for special equipment

# Directories

# 13

## 13.1 Glossary

CMS-T-00001154-A.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.*

#### Mowing

*Mowing consists of cutting blades of grass with a cutting device. The objective is to limit its growth. This procedure must be performed on a regular basis.*

#### Mulching

*With mulching, the plant is cut at its base, chopped several times, and deposited back on the ground. There is no collection.*

### 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.*

### S

#### Scarifying

*Scarifying removes felt and moss from the lawn. The lawn is cleaned and aerated.*

### 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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**AMAZONE**

**AMAZONE S.A. FORBACH**

17, rue de la Verrerie  
BP 90106  
57602 Forbach Cedex  
France

+33 (0)3 87 84 65 70  
[forbach@amazone.fr](mailto:forbach@amazone.fr)  
[www.amazone.fr](http://www.amazone.fr)