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# Original operating instructions

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BP305-10

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## Large square baler

### BiG Pack 1270

From machine number: 1073285

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## Information for enquiries and orders

Model	
Vehicle identification number	
Year of manufacture	

## Contact data of your dealer

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# 1 Information on This Document

## 1.1 Validity

This document is valid for machines of type:

BP305-10 (BiG Pack 1270)

All information, illustrations and technical data in this document correspond to the latest state at the time of publication.

We reserve the right to make design changes at any time and without notification of reasons.

## 1.2 Significance of the document

This is an important document. It is addressed to the user and contains safety-relevant information.

- ▶ Prior to starting work, read the complete document and observe its contents.
- ▶ Keep this document ready to hand in the document storage tube for the user of the machine, *see Page 52*.
- ▶ Hand over this document to subsequent users.

## 1.3 Re-ordering

You can request a replacement document if this document became completely or partly unusable, or if you need it in a different language. Please specify the document number shown on the cover page in your order. Alternatively, you can download the document online from KRONE MEDIA <https://media.mykrone.green>.

## 1.4 Applicable documents

To ensure that the machine is used safely and as intended, observe the following further applicable documents.

- Operating instruction(s) universal shaft(s)
- Operating instructions terminal
- AUX joystick operating instructions
- Supplement to operating instructions "Error messages and parameters"
- Circuit diagram, KRONE
- Spare parts list, KRONE

## 1.5 Target group of this document

This document aims at the operator of the machine who fulfills the minimum requirements of personnel qualification, *see Page 17*.

## 1.6 How to use this document

### 1.6.1 Directories and references

#### Contents/headers

The contents and headers in this document ensure quick orientation in the chapters.

## Index

The index contains catchwords in alphabetical order which enable to find information on a desired topic easily. The index can be found on the last pages of this document.

## Cross references

Cross references to another place in the document or to another document are in the text with page number.

Examples:

- Check the tight seat of all screws on the machine, [see Page 11](#). (**INFO:** If you use an electronic version of this document, click on the link to go to the specified page.)
- For further information, refer to the operating instructions of the universal shaft manufacturer.

### 1.6.2 Information on direction

Directional information in this document, such as front, rear, right and left, applies in the direction of travel of the machine.

### 1.6.3 Term “machine”

Throughout the rest of this document, the “large square baler” will also be referred to as the “machine”.

### 1.6.4 Figures

The figures in this document do not always represent the exact machine type. The information that refers to the figure always corresponds to the machine type of this document.





### 1.6.5 Scope of the document

In addition to standard equipment, accessories kits and versions of the machine are described in this document. Your machine may deviate from this document.

### 1.6.6 Means of representation

#### Icons in the text

The following means of representation (icons) are used to present the text more clearly:

-  This arrow characterizes an **action step**. Several arrows in a row identify a sequence of actions to be performed step by step.
-  This icon identifies a **prerequisite** that has to be fulfilled to perform an action step or a sequence of actions.
-  This arrow marks the **intermediate result** of an action step.
-  This arrow identifies the **result** of an action step or sequence of actions.
- This bullet point identifies an **enumeration**. If the bullet point is intended, it identifies the second level of the enumeration.

### Icons in figures

The following icons can be used in illustrations:

Icon	Explanation	Icon	Explanation
	Reference sign for part		Position of a part (e.g. move from position I to position II)
	Dimensions (e. g. also W = width, H = height, L = length)		Magnification of display detail
	Left side of machine		Right side of machine
	Direction of travel		Direction of motion
	Reference line for visible material		Reference line for covered material
	Centre line		Cable routes
	Open		Closed
	Apply liquid lubricant (e.g. lubricating oil)		Apply lubricating grease

### Warning signs

Warnings of dangers are separated from the remaining text as warning signs and are identified with a danger sign and signal words.

The warning signs must be read and the measures must be observed in order to prevent personal injury.

#### Explanation of danger sign



This is the danger sign that warns of a risk of injury.

Please observe all notes marked with the danger sign in order to avoid injuries or death.

#### Explanation of signal words

<b>DANGER</b>
The signal word DANGER warns of a hazardous situation which will result in serious injuries or death if the warning sign is ignored.

<b>WARNING</b>
The signal word WARNING warns of a hazardous situation which will result in serious injuries or death if the warning sign is ignored.

 **CAUTION**

The signal word CAUTION warns of a hazardous situation which will result in minor to moderate injuries if the warning sign is ignored.

Example of a warning sign:

 **WARNING**

**Eye damage caused by flying dirt particles**

When cleaning with compressed air, dirt particles are ejected at high speed and could get into the eyes. Therefore eyes could be hurt.

- ▶ Keep people away from the working area.
- ▶ Wear personal protective equipment when performing cleaning work with compressed air (e.g. eye protection).

### Warnings of property damage/environmental damage

Warnings of property/environmental damage are separated from the remaining text and marked with "Notice".

Example:

**NOTICE**

**Gearbox damage due to low oil level**

The gearboxes could be damaged when the oil level is too low.

- ▶ Check gear oil level at regular intervals and top up oil, if necessary.
- ▶ Check gear oil level approx. 3 to 4 hours after the machine has been switched off. Check oil level only when machine is in horizontal position.

### Notes with information and recommendations

Additional information and recommendations for trouble-free and productive operation of the machine are separated from the remaining text and marked with "Information".

Example:

**INFO**

Each safety label is provided with an order number and can be ordered directly from the manufacturer or from the authorized specialist dealer.

## 1.6.7 Conversion table

The following table can be used to convert metric units into US units.

Size	SI units (metric)		Factor	Inch-pound units	
	Unit name	Abbreviation		Unit name	Abbreviation
Area	Hectare	ha	2.47105	Acre	acres
Volume flow	Litres per minute	L/min	0.2642	US gallons per minute	gpm
	Cubic metres per hour	m <sup>3</sup> /h	4.4029		

Size	SI units (metric)		Factor	Inch-pound units	
	Unit name	Abbreviation		Unit name	Abbreviation
Force	Newton	N	0.2248	Pound force	lbf
Length	Millimetre	mm	0.03937	Inch	in.
	Metre	m	3.2808	Foot	ft.
Power	Kilowatt	kW	1.3410	Horsepower	hp
Pressure	Kilopascal	kPa	0.1450	Pounds per square inch	psi
	Megapascal	MPa	145.0377		
	bar (non-SI)	bar	14.5038		
Torque	Newtonmeter	Nm	0.7376	pound-foot or foot-pound	ft·lbf
			8.8507	pound-inch or inch-pound	in·lbf
Temperature	Degrees Celsius	°C	°Cx1.8+32	Degrees Fahrenheit	°F
Velocity	Metres per minute	m/min	3.2808	Feet per minute	ft/min
	Metres per second	m/s	3.2808	Feet per second	ft/s
	Kilometres per hour	km/h	0.6215	Miles per hour	mph
Volumes	Litres	L	0.2642	US gallon	US gal.
	Millilitre	ml	0.0338	US ounce	US oz.
	Cubic centimetre	cm <sup>3</sup>	0.0610	Cubic inch	in <sup>3</sup>
Weight	Kilogram	kg	2.2046	Pound	lbs

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## 2 Safety

### 2.1 Intended use

This machine is a large square baler and is used to press crops to big bales.

The crops designated for the intended use of this machine are cut stalk and leaf crops.

The machine is designed exclusively for use in agriculture and may only be used when

- all safety devices are available according to the operating instructions and are located in the protective position.
- all safety instructions of the operating instructions have been observed and complied with, both in chapter "Basic safety instructions", [see Page 17](#), and directly in the chapters of the operating instructions.

The machine may be used only by people who satisfy the personnel qualification requirements designated by the machine manufacturer, [see Page 17](#).

These operating instructions are part of the machine and must therefore be at hand when the machine is in use. The machine may be operated only when the operator has received training and in compliance with these operating instructions.

If the machine is used for applications which are not described in these operating instructions, this may result in serious injuries or death and damage to the machine and other property.

Unauthorised modifications to the machine may affect the properties of the machine or disrupt the proper operation. For this reason, unauthorised modifications shall exclude any liability of the manufacturer for consequential damage.

The intended use shall also include the adherence to the operating, maintenance and repair conditions set by the manufacturer.

### 2.2 Reasonably foreseeable misuse

Any use beyond the intended use [see Page 16](#) is regarded as improper use and is therefore misuse according to the Machinery Directive. The manufacturer is not liable for damage resulting from this, the user alone bears the risk.

Such misuse is for example:

- Processing of crops which are outside the intended use of the machine, [see Page 16](#)
- Transport of people
- Transport of goods
- Exceeding the permitted technical gross weight
- Non-compliance with the safety labels on the machine and safety notes in the operating instructions
- Performing troubleshooting, setting, cleaning, repair and maintenance work contrary to the information in the operating instructions
- Unauthorised modifications to the machine
- Attachment of unauthorised or unapproved additional equipment
- Use of spare parts which are not KRONE original spare parts
- Stationary operation of the machine

Unauthorised modifications to the machine may affect the properties of the machine or disrupt proper operation. For this reason, unauthorised modifications will exclude any liability of the manufacturer for consequential damage.



## 2.3 Service life of the machine

- The service life of this machine depends on its proper operation and maintenance as well as the operating and harvesting conditions.
- By heeding the instructions and information in these operating instructions, permanent operational readiness and a long service life of the machine can be achieved.
- After each operating season, inspect the entire machine for wear and other damage.
- Replace damaged and worn components before recommissioning the machine.
- Carry out a full technical inspection of the machine after five years of machine operation and make a decision on further machine usage taking the results of this inspection into account.
- Theoretically, the service life of this machine is unlimited as all worn or damaged components can be replaced.

## 2.4 Basic safety instructions

### Non-compliance with the safety instructions and warnings

Non-compliance with the safety instructions and warnings may result in injuries and damage to the environment and property.

### 2.4.1 Importance of operating instructions

The operating instructions are an important document and a part of the machine. They are intended for the user and contain information that is relevant to safety.

Only the procedures specified in the operating instructions are safe. If the operating instructions are not followed, there is a risk of serious or even fatal injuries.

- ▶ Prior to using the machine for the first time, read and observe the "Basic safety notices" completely.
- ▶ Prior to starting work, read and observe the respective sections in the operating instructions too.
- ▶ Keep the operating instructions ready to hand for the user of the machine in the document storage tube, [see Page 52](#).
- ▶ Hand over the operating instructions to subsequent users.

### 2.4.2 Personnel qualification of the operating personnel

If the machine is not used properly, people may be seriously injured or killed. To avoid accidents, each person who works with the machine must satisfy the following minimum requirements:

- He is physically capable of controlling the machine.
- He can work safely with the machine in accordance with these operating instructions.
- He understands the method of operation of the machine within the scope of his work and can identify and avoid the dangers associated with the work.
- He has read the operating instructions and can implement the information in the operating instructions accordingly.
- He is familiar with driving vehicles safely.
- For road travel he has adequate knowledge of the highway code and has the stipulated driving licence.

### 2.4.3 Personnel qualification of the technicians

If the work (assembly, conversion, modification, extension, repairs, retrofitting) is performed improperly on the machine, people may be seriously or fatally injured. To avoid accidents, everyone who performs work according to these instructions must meet the following minimum requirements:

- Qualified professional, with relevant training.
- Capable of assembling the (partially) disassembled machine according to the assembly instructions provided by the manufacturer.
- He is capable, e.g. by attending a training course, of extending, modifying or repairing the function of the machine according to the relevant instructions provided by the manufacturer.
- He has read the operating instructions and can implement the information in the operating instructions accordingly.
- Ability to perform the work safely according to these instructions.
- Understands the mode of operation of the work to be performed and the machine and is able to identify and avoid risk in carrying out the necessary work.
- Has read these instructions and is able to implement the information explained in these instructions accordingly.

### 2.4.4 Children in danger

Children are not in a position to assess dangers and behave unpredictably.

Thus children are particularly at risk.

- ▶ Keep children away from the machine.
- ▶ Keep children away from consumables.
- ▶ Make sure that there are no children in the danger zone, especially when starting and triggering machine movements.

### 2.4.5 Connecting the machine

When tractor and machine are not correctly connected, there is a risk of causing serious accidents.

- ▶ When connecting, follow all operating instructions:
  - the operating instructions of the tractor
  - the operating instructions of the machine, [see Page 109](#)
  - the operating instructions of universal shaft
- ▶ Observe the changed driving behaviour of the combination.

### 2.4.6 Structural modifications on the machine

Structural modifications and extensions that were not approved by KRONE can impair the functionality, operational safety and also the road traffic certification of the machine. As a result, persons can be seriously injured or killed.

Any structural modifications and extensions that are not authorised by KRONE are not permitted.

### 2.4.7 Additional equipment and spare parts

Additional equipment and spare parts that do not correspond to the requirements of the manufacturer may affect the operational safety of the machine and cause accidents.

- ▶ To ensure operational safety, use original parts or standard parts which correspond to the requirements of the manufacturer.

## 2.4.8 Jobs on the machine

### Passengers

Passengers may be seriously injured by the machine or fall off the machine and run over. Ejected objects may strike and injure passengers.

- ▶ Never carry passengers on the machine.

## 2.4.9 Operational safety: Technically sound condition

### Operation only after proper commissioning

The operational safety of the machine is not guaranteed without proper commissioning in accordance with these operating instructions. This may result in accidents and people may be seriously or fatally injured.

- ▶ Use the machine only after proper commissioning, [see Page 109](#).

### Technically sound state of the machine

Improper maintenance and setting could influence the operational safety of the machine and cause accidents. Thus there is a risk of serious injuries or death.

- ▶ All maintenance and setting work must be performed according to the chapters "Maintenance and Setting".
- ▶ Before performing any maintenance and setting work, shut down and safeguard the machine, [see Page 29](#).

### Danger resulting from damage to the machine

Damage to the machine may impair the operational safety of the machine and cause accidents. As a result, people may be seriously injured or killed. The following parts of the machine are particularly important for safety:

- Brakes
- Steering
- Safety Devices
- Connecting devices
- Lighting
- Hydraulics
- Tyres
- Universal shaft

If there are doubts about the operational safety of the machine, for example due to an unexpected change to the operational behaviour, visible damage or leaking consumables:

- ▶ Shut down and safeguard the machine, [see Page 29](#).
- ▶ Immediately eliminate potential causes of damage, for example heavy soiling, or tighten slack screws.
- ▶ Determine the cause of damage according to these operating instructions and repair the damage, if possible, [see Page 327](#).
- ▶ In case of damage which may affect operational safety and cannot be repaired according to these operating instructions: Have damage repaired by a qualified service centre.

### Technical limit values

If the technical limit values of the machine are not observed, the machine may be damaged. As a result, accidents may occur and people may be seriously or fatally injured. With regard to safety, it is especially important to observe the following technical limit values:

- maximum permitted operating pressure of the hydraulics
  - maximum permitted drive speed
  - maximum permitted total weight
  - maximum permitted axle load/axle loads
  - maximum permitted drawbar load
  - maximum permitted axle loads of the tractor
  - maximum permitted transport height and width
  - maximum permitted speed
- ▶ Comply with limit values, [see Page 76](#).

### 2.4.10 Danger zones

If the machine is switched on, its surrounding can present a danger zone.

Avoid entering the danger zone of the machine by observing the minimum safety distance.

If the safety distance is not observed, people may be seriously injured or killed.

- ▶ Do not switch on the drives and engine if the minimum safety distance has not been observed.
- ▶ If people fail to observe the minimum safety distance, switch off the drives.
- ▶ Switch the machine off in shunting and field mode.

The safety distance is:

For machine in shunting and field mode	
In front of the machine	3 m
Behind the machine	5 m
On either side of the machine	3 m
For machine switched on without driving motion	
In front of the machine	3 m
Behind the machine	5 m
On either side of the machine	3 m

The safety distances specified here are minimum distances in terms of intended use. If necessary, these safety distances must be increased according to the operating and ambient conditions.

- ▶ Before working in front of and behind the tractor and in the danger zone of the machine: Shut down and secure the machine, [see Page 29](#). This also applies to brief inspection work.
- ▶ Consider the information in all relevant operating instructions:
  - the operating instructions for the tractor
  - the operating instructions of the machine
  - the operating instructions of universal shaft

### **Danger zone universal shaft**

People may be caught, pulled in and seriously injured by the universal shaft.

- ▶ Observe operating instructions of universal shaft.
- ▶ Ensure sufficient overlap of section tube and universal shaft guards.
- ▶ Make sure that the universal shaft guards are mounted and that they are fully functional.
- ▶ Allow the universal shaft locks to engage. There must be no areas of the locking device on the PTO shaft fork which could cause catching or entrapment (e.g. by annular design, protective collar around the locking pin).
- ▶ Attach chains to prevent the universal shaft guards from rotating with the shaft.
- ▶ Make sure that there is no one in the danger zone of PTO shaft and universal shaft.
- ▶ Ensure that the selected speed and direction of rotation of the PTO shaft of the tractor match the permitted speed and direction of rotation of the machine.
- ▶ Switch off the PTO shaft when the angles between the universal shaft and the PTO shaft are too large. The machine may be damaged. Parts may be hurled up and cause injury to people.

### **Danger zone PTO shaft**

People may be caught, pulled in and seriously injured by the PTO shaft and the driven components.

Before switching on the PTO shaft:

- ▶ Ensure that all protective devices are mounted and brought into protective position.
- ▶ Make sure that there is no one in the danger zone of PTO shaft and universal shaft.
- ▶ Switch off drives if they are not needed.

### **Danger zone between tractor and machine**

People standing between the tractor and machine may be seriously injured or killed if the tractor rolls away or by carelessness or machine movements:

- ▶ Before carrying out any work between the tractor and the machine: Always turn off and secure the machine, [see Page 29](#). This also applies to brief inspection work.
- ▶ If the lifting device must be actuated, instruct all people to keep away from the range of movement of the lifting device.

### **Danger zone when drive is switched on**

When the drive is switched on, there is a danger to life caused by rotating machine parts. Ensure that there are no persons in the danger zone of the machine.

- ▶ Before starting the machine, instruct all people to leave the danger zone of the machine.
- ▶ In case of dangerous situations, immediately switch off drives and instruct people to leave the danger zone.

### **Danger zone due to trailing machine parts**

If machine parts are trailing, people may be seriously injured or killed.

After the drives have been switched off, the following machine parts will trail:

- Universal shaft
- Drive chains
- Pick-up
- Cutting rotor
- Tying unit
- Flywheel
- Plunger
- Packer
- Main gearbox
- ▶ Shut down and safeguard the machine, [see Page 29](#).
- ▶ Do not attempt to approach the machine until all moving machine parts have come to a standstill.

### 2.4.11 Ensuring functionality of safety devices

If safety devices are missing or damaged, people may be seriously injured or killed by moving machine parts.

- ▶ Replace damaged safety devices.
- ▶ Mount dismantled safety devices and machine parts again before start-up and move them to protective position.
- ▶ If it is doubtful whether all safety devices have been correctly installed and are functional, have a service centre check them.

#### Keeping universal shaft guard functional

The overlap of universal shaft and protective cap on the machine must not be less than 50 mm. This minimum overlap is also required for protective devices of wide-angle universal shaft and if couplings or other components are used. If the operator has to reach between the universal shaft guard and the protective cap to connect the universal shaft, the clearance on one level must be at least 50 mm. On all levels the clearance must be no more than 150 mm.

### 2.4.12 Personal protective equipment

The wearing of personal protective equipment is an important safety measure. Missing or unsuitable personal protective equipment increases health risks and injuries.

Personal protective equipment includes, for example:

- Suitable protective gloves
- Safety shoes
- Tight-fitting protective clothing
- Hearing protection
- Protective goggles
- If dust is generated: appropriate breathing protection
- ▶ Specify and provide personal protective equipment for the particular job.
- ▶ Use only personal protective equipment which is in proper condition and offers effective protection.
- ▶ Adjust personal protective equipment to the person, for example the size.
- ▶ Remove unsuitable clothing and jewellery (e.g. rings, necklaces) and cover long hair with a hairnet.

### 2.4.13 Safety markings on the machine

Safety labels on the machine warn of hazards at danger points and are an important component of the machine's safety equipment. Missing safety labels increase the risk of serious and fatal injuries.

- ▶ Clean dirty safety labels.
- ▶ After each cleaning, check to ensure that the safety labels are complete and legible.
- ▶ Immediately replace missing, damaged and unrecognisable safety labels.
- ▶ Label spare parts with the required safety labels.

Descriptions, explanations and order numbers of the safety labels, [see Page 31](#).

### 2.4.14 Road safety

#### Dangers during road travel

Other road users can be put at risk when you drive on public roads and the machine is not properly illuminated and/or exceeds the maximum dimensions and weights laid down by national law.

- ▶ Prior to driving on public roads, ensure that the maximum permissible dimensions, weights and axle, support and trailer loads are not exceeded which are applicable under national law for driving on public roads.
- ▶ Before driving on roads, switch on the road travel lighting and ensure that it functions properly.
- ▶ Before driving on roads, close all stop cocks for the hydraulic supply to the machine between tractor and machine.
- ▶ Before driving on roads, move the tractor control units to the neutral position and lock them.

#### Danger when driving on road and field

Hitched and mounted machines change the handling characteristics of the tractor. The handling characteristics depend for instance on operating state and ground. If changed handling characteristics are not considered, the driver may cause accidents.

- ▶ Observe measures for driving on road and field, [see Page 263](#).

#### Dangers if the machine is not prepared properly for road travel

If the machine is not prepared properly for road travel, serious accidents may occur with traffic.

- ▶ Before driving on roads, prepare the machine for road travel, [see Page 264](#).

#### Danger when cornering with a machine hitched and due to the overall width

Accidents may occur when cornering due to the machine swinging out and also due to the overall width.

- ▶ Consider the overall width of the combined tractor and machine.
- ▶ Consider the larger swivel range when cornering.
- ▶ Adjust the driving speed when cornering.
- ▶ When turning, watch out for people, oncoming traffic and obstacles.

### **Dangers when operating the machine on slopes**

The machine may tilt when it is used on slopes. As a result, accidents may occur and people may be seriously injured or killed.

- ▶ Do not work and drive on a slope unless the ground of the slope is flat and the adhesion of the tyres to the ground is ensured.
- ▶ Turn the machine at low speed. Turn in a large arc.
- ▶ Avoid driving across a slope because the centre of gravity of the machine will be changed by payload and by executing machine functions.
- ▶ Avoid abrupt steering movements on slopes.
- ▶ Do not park the machine on slopes.

### **Fire hazard**

Frequent braking when driving on public roads, for example when driving downhill, can cause the brake to produce more heat.

Dust, contamination and crop residues can ignite on the hot surfaces of the brake. People can be seriously injured or killed by the fire.

- ▶ Prevent excessive heat from building up on the brake by driving with foresight in road traffic.
- ▶ Check and clean the machine in the brake area at regular intervals during the working day.

## **2.4.15 Parking the machine safely**

An incorrectly parked and insufficiently safeguarded machine can represent a danger for people, especially children, and can be set into motion or fall over in an uncontrolled manner. People may be injured or killed.

- ▶ Park the machine on a horizontal and level ground capable of bearing the load.
- ▶ Before adjusting, repairing, servicing and cleaning the machine, ensure that it is securely positioned.
- ▶ Observe section "Parking the Machine" in chapter Driving and Transport. [see Page 268](#)
- ▶ Before parking: Shut down and safeguard the machine, [see Page 29](#).

## **2.4.16 Consumables**

### **Unsuitable consumables**

Consumables which do not comply with the requirements of the manufacturer may impair the operational safety of the machine and cause accidents.

- ▶ Use only consumables which comply with the requirements of the manufacturer.

For requirements on consumables, [see Page 78](#).

### **Contamination of hydraulic system and/or fuel system**

Foreign objects and/or liquids in the hydraulic system and/or fuel system may impair the operational safety of the machine and cause accidents.

- ▶ Clean all connections and components.
- ▶ Close open connections by means of protective caps.



### **Environmental protection and disposal**

Consumables such as diesel fuel, brake fluid, antifreeze and lubricants (e.g. gearbox oil, hydraulic oil) may damage the environment and the health of people.

- ▶ Do not release consumables into the environment.
- ▶ Fill consumables in a liquid-tight labelled container and dispose of according to the official regulations.
- ▶ Absorb leaked consumables with an absorbent material, fill them in a liquid-tight labelled container and dispose of according to the official regulations.

## **2.4.17 Dangers arising from environment**

### **Fire hazard**

Combustible materials may accumulate in the machine due to operation or animals, such as rodents or nesting birds, or dust resuspension.

In case of dry usage conditions, dust, impurities and crop residue may ignite on hot parts and the resulting fire may seriously injure or kill people.

- ▶ Check and clean the machine every day before using it for the first time.
- ▶ Check and clean the machine regularly during the working day.

### **Behavior in the case of voltage flashover of overhead lines**

High electric voltage may be applied to electrically conducting parts of the machine due to voltage flashover. In case of voltage flashover, a voltage drop where major voltage differences are present is created on the ground around the machine. Due to major voltage differences in the ground, people may be killed by electric shocks when making big steps, laying on the ground or supporting themselves with their hands.

- ▶ Do not leave the cabin.
- ▶ Do not touch any metal parts.
- ▶ Do not establish any conductive connection to the ground.
- ▶ Warn people: Do not approach the machine. Electrical voltage differences on the ground may lead to severe electric shocks.
- ▶ Wait for help from professional rescue teams. The overhead line must be switched off.

If people have to leave the cabin despite the voltage flashover, for example because there is an imminent danger to life due to fire:

- ▶ Avoid simultaneous contact with machine and ground.
- ▶ Jump away from the machine. Jump into a safe standing position. Do not touch the machine from the outside.
- ▶ Move away from the machine in very small steps keeping your feet close together.

## 2.4.18 Sources of danger on the machine

### Noise may damage your health

The noise development of the machine during operation may cause health damage such as hardness of hearing, deafness or tinnitus. When using the machine at high rotational speed, the noise level also increases. The height of the sound pressure level depends mainly on the tractor used. The emissions value was measured with the cabin closed under conditions according to DIN EN ISO 4254-1, Appendix B, [see Page 76](#).

- ▶ Before starting up the machine, estimate the risk caused by noise.
- ▶ Depending on the ambient conditions, working hours and the working and operating conditions of the machine, specify and use suitable hearing protection.
- ▶ Specify rules for the use of hearing protection and for the working time.
- ▶ During operation keep windows and doors of the cabin closed.
- ▶ Remove hearing protection for road travel.

### Liquids under high pressure

The following liquids are under high pressure:

- Hydraulic oil

Liquids escaping under high pressure may penetrate through the skin and cause severe injuries.

- ▶ Shut down and safeguard the machine and contact qualified specialist workshop upon suspicion of damaged hydraulic system.
- ▶ Never search for leaks with bare hands. Even a very pin-sized hole may lead to serious injuries.
- ▶ When searching for leaks, use suitable aids, e.g. a piece of cardboard to avoid injuries.
- ▶ Keep body and face away from leaks.
- ▶ If liquids penetrate the body, immediately consult a doctor. The liquid must be removed from the body as quickly as possible.

### Hot liquids

Persons can suffer burns and/or scalding when hot liquids are drained.

- ▶ Wear personal protective equipment when hot consumables are drained.
- ▶ If necessary, allow liquids and machine parts to cool down before you start repair, maintenance and cleaning work.

### Damaged compressor unit

Damaged compressed-air hoses of compressor unit can tear off. Hoses moving in an uncontrolled manner can cause severe injuries.

- ▶ Contact a specialist workshop immediately if you suspect that the compressor unit is damaged.
- ▶ Shut down and safeguard the machine, [see Page 29](#).

### Damaged hydraulic hoses

Damaged hydraulic hoses may tear off, burst or cause oil leaks. As a result, the machine may be damaged and people may be seriously injured.

- ▶ Shut down and safeguard the machine, [see Page 29](#).
- ▶ If it is suspected that hydraulic hoses are damaged, immediately contact a service centre, [see Page 305](#).

### Hot surfaces

The following components may become hot during operation and may burn people:

- Capacitor (optional)
- ▶ Maintain an adequate distance from hot surfaces and adjacent components.
- ▶ Leave machine parts to cool down and wear protective gloves.

## 2.4.19 Dangers in connection with certain activities: climbing up and down

### Climbing up and down safely

You can fall from the ladder if you are careless when climbing up and down. You can slip, fall and seriously injure yourself when you climb onto the machine outside the ladders provided for this purpose.

Dirt, operating fluids and lubricants can make it difficult to step or stand safely on the equipment.

- ▶ Always keep ladder steps and platforms clean and in a proper condition so that you can step and stand on them safely.
- ▶ Never climb up and down while the machine is moving.
- ▶ Always climb up and down with your face towards the machine.
- ▶ When getting on and off, ensure a three-point contact with steps and handrails (always ensure that both hands and one foot, or both feet and one hand are in contact with the machine).
- ▶ Never use control elements as a handle when you climb up and down. Accidental actuation of control elements can start functions inadvertently that may pose a danger.
- ▶ Never jump off the machine when you climb down.
- ▶ To climb up and down, use only the steps and platforms specified in these operating instructions, [see Page 48](#).

## 2.4.20 Dangers in connection with certain activities: Working on the machine

### Only perform work when the machine is at standstill

If the machine is not shut down and safeguarded, parts may move unintentionally or the machine may start moving. Thus there is a risk of serious injuries or death.

- ▶ Before carrying out any repair, maintenance and cleaning work on the machine, shutdown and safeguard it, [see Page 29](#).

### **Maintenance and repair work**

Improper maintenance and repair work endanger operational safety. Thus there is a risk of accidents, serious injuries or death.

- ▶ Only perform work which is described in this operating instructions. Prior to any work, stop and safeguard the machine, [see Page 29](#).
- ▶ All other maintenance and repair work must only be performed by qualified specialist workshop.

### **Working at or on heights of the machine**

There is a risk of falling when working at or on heights of the machine. As a result, accidents may occur and people may be seriously or fatally injured.

- ▶ Prior to any work, stop and safeguard the machine, [see Page 29](#).
- ▶ Make sure you stand securely.
- ▶ Use a suitable fall protection.
- ▶ Secure the area below the assembly point against falling objects.

### **Raised machine and machine parts**

The raised machine and machine parts may fall or tilt unintentionally. People may be seriously injured or killed, as a result.

- ▶ Do not stay under the raised machine or machine parts which are not safely supported, [see Page 30](#).
- ▶ Prior to all work on raised machines or machine parts, lower the machine or machine parts.
- ▶ Before performing any work under raised machines or machine parts, secure the machine or machine parts with rigid safety support or with hydraulic shut-off device or by supporting against lowering.

### **Danger associated with welding work**

Improper welding work will endanger the operational safety of the machine. As a result, accidents may occur and people may be seriously or fatally injured.

- ▶ Never perform welding work on the following components:
  - Gearbox
  - Components of the hydraulics
  - Components of the electronics
  - Frame or supporting components
  - Running gear
- ▶ Before carrying out welding work on the machine, obtain consent by KRONE customer service and, if required, identify alternatives.
- ▶ Before performing welding work on the machine, park the machine safely and disconnect it from the tractor.
- ▶ Welding work must only be performed by experienced qualified personnel.
- ▶ Attach the earthing of the welding device near the welding points.
- ▶ Caution when performing welding work near electric and hydraulic parts, plastic parts and pressure accumulators. The parts may be damaged, endanger people or cause accidents.

### 2.4.21     **Dangers in connection with certain activities: working on wheels and tyres**

Improper assembly or disassembly of wheels and tyres will endanger the operational safety. As a result, accidents may occur and people may be seriously injured or killed.

The fitting of wheels and tyres requires adequate knowledge and approved mounting tools.

- ▶ If there is a lack of knowledge, have the wheels and tyres fitted by the KRONE dealer or by a qualified tyre service.
- ▶ When fitting tyres on the rims, never exceed the maximum permitted pressure specified by KRONE, otherwise the tyre or even the rim may explode, [see Page 76](#).
- ▶ When mounting the wheels, mount the wheel nuts with the specified tightening torque, [see Page 289](#).

### 2.4.22     **Behaviour in dangerous situations and in case of accidents**

Any measures not taken or incorrect measures in dangerous situations can make it difficult or impossible to rescue exposed persons. Due to the impeded conditions of rescue, the chances to help and heal injured people deteriorate.

- ▶ As a matter of principle: Park the machine.
- ▶ Get an overview of the existing danger and identify the reason.
- ▶ Secure the accident site.
- ▶ Save persons from the danger zone.
- ▶ Leave danger zone and do not enter it again.
- ▶ Alarm rescue workers and seek help, if possible.
- ▶ Carry out immediate lifesaving actions.

## 2.5     **Safety routines**

### 2.5.1     **Shutting down and safeguarding the machine**

 **WARNING**

**Risk of injury due to movement of the machine or machine parts**

If the machine has not been shut down, machine or machine parts may move unintentionally. As a result, people may be seriously injured or killed.

- ▶ Before leaving the operating position: Shut down and safeguard the machine.

To shut down and safeguard the machine:

- ▶ Park the machine on a stable, horizontal and level ground.
- ▶ Switch off the drives and wait until coasting parts have come to a complete stop.
- ▶ Switch off the tractor engine, remove the ignition key and take it with you.
- ▶ Secure the tractor against rolling away.
- ▶ Secure the machine against rolling away by using wheel chocks.
- ▶ If fitted, apply the parking brake on the machine.
- ▶ By using the flywheel brake, secure the machine to prevent unpredictable movements of machine parts.

## 2.5.2 Securing raised machine and machine parts against lowering

 **WARNING**

**Crushing hazard due to movement of machine or machine parts**

If the machine or machine parts are not secured against lowering, the machine or machine parts may roll, fall or sag. Thus people could be squeezed or killed.

- ▶ Lower the raised machine parts.
- ▶ Shut down and safeguard the machine, [see Page 29](#).
- ▶ Before working on or under raised machine parts: Secure machine or machine parts against lowering by means of hydraulic shut-off device (e.g. stop cock) on machine side.
- ▶ Before working on or under raised machine parts: Safely support machine or machine parts.

In order to safely support the machine or machine parts:

- ▶ To support, only use suitable and sufficiently dimensioned materials that do not break or yield.
- ▶ Bricks and hollow blocks are not suitable for safely supporting the machine and machine parts. Therefore they must not be used.
- ▶ Car jacks are also not suitable for safely supporting the machine and machine parts. They must not be used, as well.

## 2.5.3 Carrying out oil level check and oil and filter element changes safely

 **WARNING**

**Safely checking the oil level and changing oil and filter element**

The operational safety of the machine can be impaired if oil level check and oil and filter element changes are not carried out safely. This can lead to accidents.

- ▶ Safely check the oil level and change oil and filter element.

To check the oil level and change oil and filter element safely:

- ▶ Lower raised machine parts or secure them against falling down, [see Page 30](#).
- ▶  Shut down and safeguard the machine, [see Page 29](#).
- ▶ Observe the intervals for oil level check, oil and filter element changes, [see Page 280](#).
- ▶ Use only the oil grades/oil quantities specified in the consumables table, [see Page 78](#).
- ▶ Ensure that the oil and the equipment for filling are clean.
- ▶ Clean the area around the components (for example gearbox, high-pressure filter) and make sure that no foreign objects get into the components or the hydraulic system.
- ▶ Check installed seal rings for damage. Replace them if necessary.
- ▶ Collect leaking oil and/or waste oil in a container provided for this purpose, and dispose of it properly, [see Page 25](#).

## 2.5.4 Running actuator test

 **WARNING**

### Run actuator test safely

When actuators are energised, functions are carried out directly and without a safety prompt. This may cause the unintentional movement of machine parts, trapping and seriously or fatally injuring persons.

- ✓ Only persons familiar with the machine are permitted to perform the actuator test.
- ✓ The person performing the test must know which machine parts are activated by controlling the actuators.
- ▶ Run the actuator test safely.

To run the actuator test safely:

- ▶ Lower raised machine parts or secure them against falling, [see Page 30](#).
- ▶ Shut down and secure the machine, [see Page 29](#).
- ▶ Cordon off the danger zone of the actuated moving machine parts in a clearly visible manner.
- ▶ Ensure that there is nobody in the danger zone of the actuated moving machine parts.
- ▶ Switch on the ignition.
- ▶ The actuator test must only be performed from a safe position outside the area that is affected by machine parts moved by the actuators.

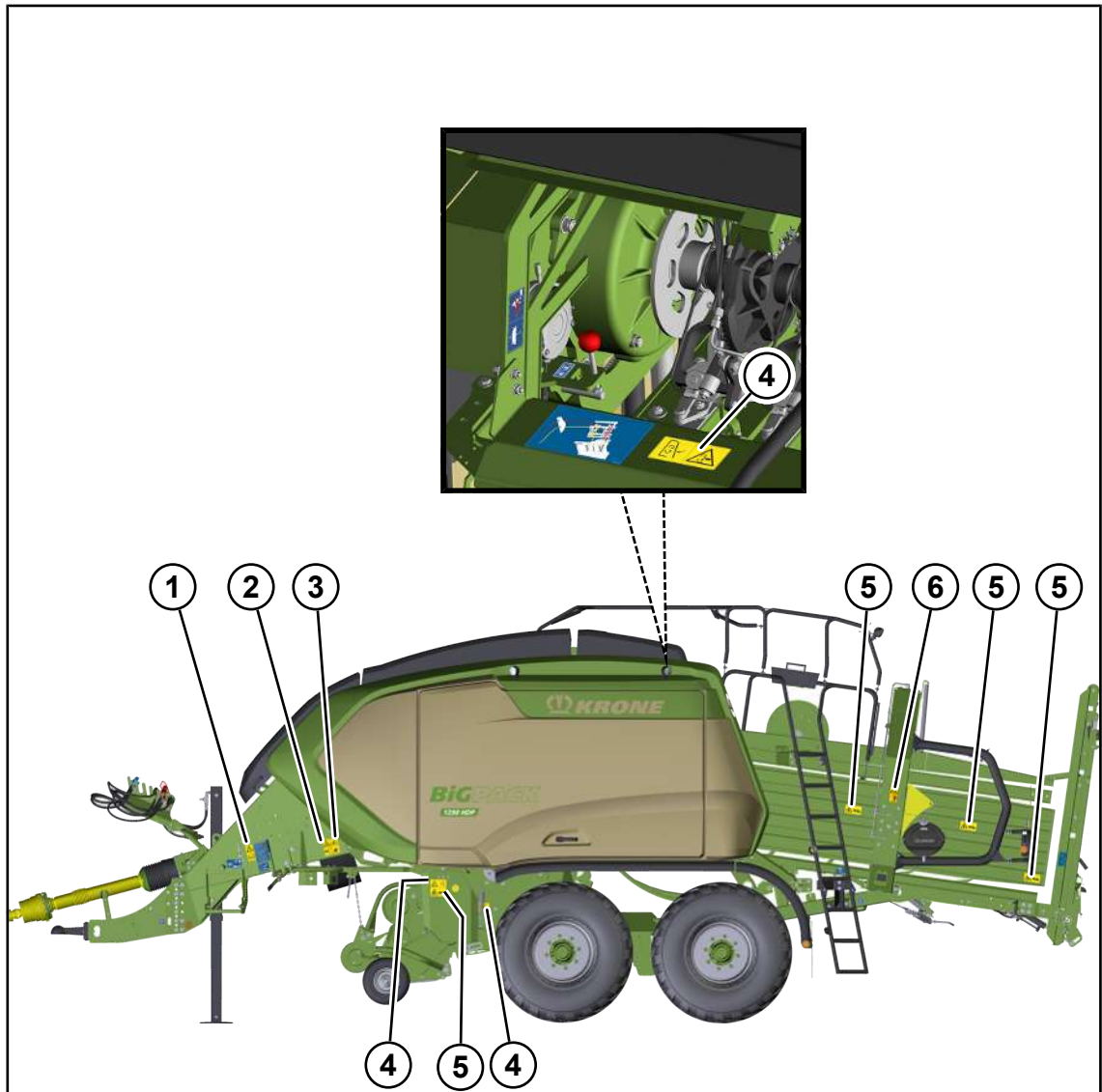
## 2.6 Safety labels on the machine

Every safety label is provided with an order number and can be ordered directly from the authorised KRONE dealer. Immediately replace missing, damaged and unrecognisable safety labels.

When attaching safety labels, the contact surface on the machine must be clean and free of dirt, oil and grease to ensure optimum adhesion of the labels.

### Position and meaning of safety labels


#### Left-hand machine side




BP000-575




1. Ord. no. 939 471 1 (1x)

	<p><b>Danger due to incorrect operation and lack of knowledge</b></p> <p>Incorrect operation and lack of knowledge of the machine as well as incorrect behaviour in hazardous situations is risking the life of the operator and third parties.</p> <ul style="list-style-type: none"> <li>▶ Before starting up the machine, read and follow the operating instructions and safety instructions.</li> </ul>
---	---


2. Ord. no. 939 520 1 (1x)

	<p><b>Danger due to rotating auger</b></p> <p>There is a risk of being pulled in or caught by the rotating auger.</p> <ul style="list-style-type: none"> <li>▶ Never reach into the rotating auger.</li> <li>▶ Maintain an adequate distance from moving machine parts.</li> </ul>
---	--


3. Ord. no. 939 407 1 (1x)

	<p><b>Danger due to rotating pick-up</b></p> <p>There is a danger of being drawn in if you approach the danger zone and if you use your hands or feet to remove crop blockages.</p> <ul style="list-style-type: none"> <li>▶ Before working on the pick-up, switch off the PTO shaft and the engine.</li> </ul>
---	---

4. Ord. no. 942 002 4 (3x)

	<p><b>Danger due to rotating machine parts</b></p> <p>When the machine is running, there is a risk of injury due to rotating machine parts.</p> <ul style="list-style-type: none"> <li>▶ Before starting up, move the guards into their protective position.</li> </ul>
---	---

5. Ord. no. 942 459 0 (4x)

	<p><b>Danger due to crushing or shearing</b></p> <p>Risk of injury due to crushing or shearing points on moving machine parts.</p> <ul style="list-style-type: none"> <li>▶ While parts are moving, never reach into areas where there is a risk of being crushed.</li> </ul>
---	---

6. Ord. no. 939 408 2 (1x)



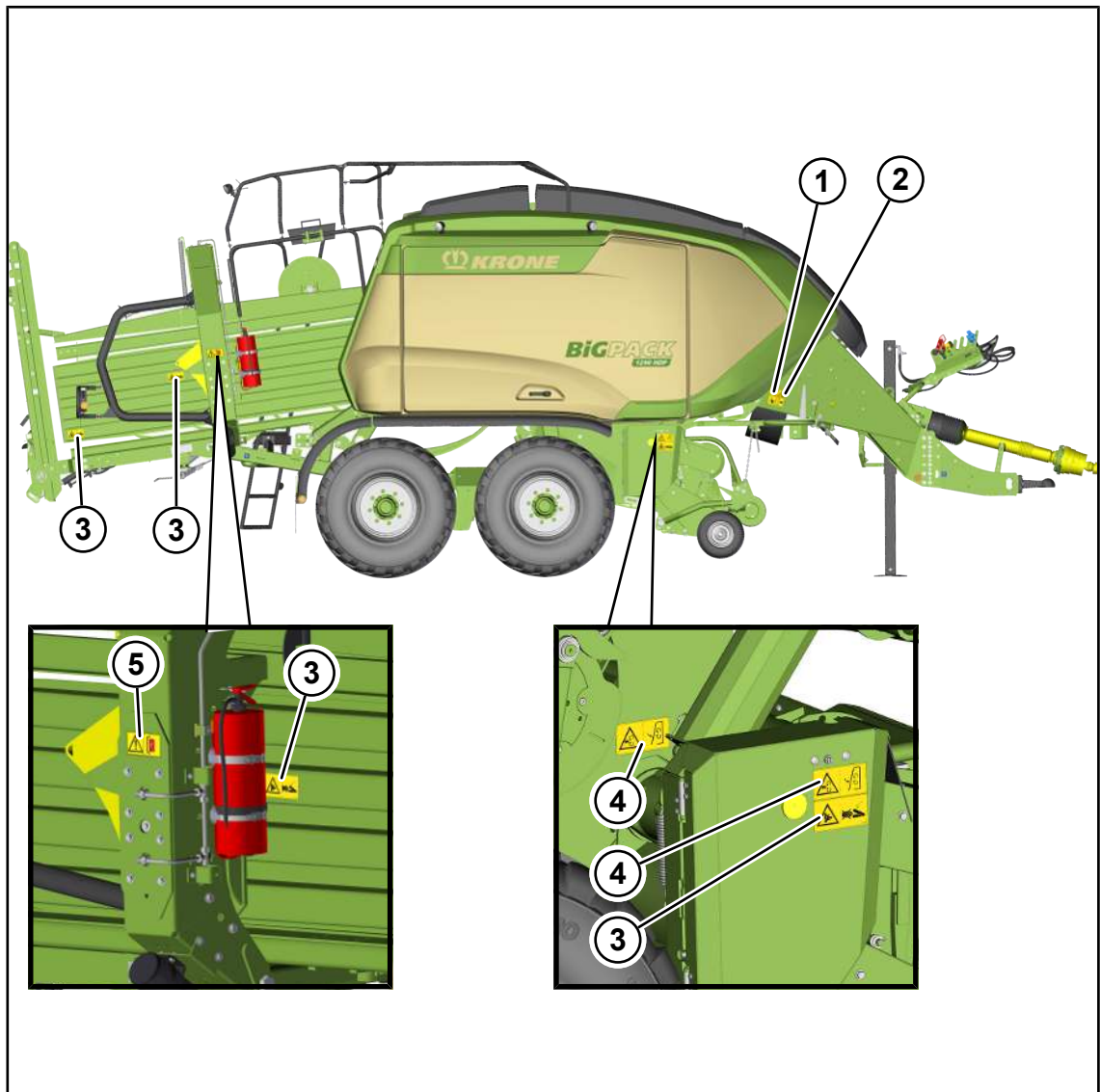
**Danger due to rotating machine parts**

When climbing onto the machine while the PTO shaft is running, there is a risk of being pulled in by rotating machine parts.

- ▶ Before climbing onto the machine, switch off the PTO shaft and the engine.




Right-hand machine side




BP000-576


1. Ord. no. 939 407 1 (1x)

	<p><b>Danger due to rotating pick-up</b></p> <p>There is a danger of being drawn in if you approach the danger zone and if you use your hands or feet to remove crop blockages.</p> <ul style="list-style-type: none"> <li>▶ Before working on the pick-up, switch off the PTO shaft and the engine.</li> </ul>
---	---

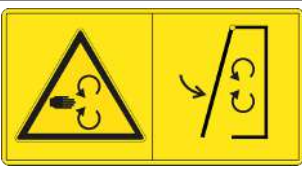
2. Ord. no. 939 520 1 (1x)

	<p><b>Danger due to rotating auger</b></p> <p>There is a risk of being pulled in or caught by the rotating auger.</p> <ul style="list-style-type: none"> <li>▶ Never reach into the rotating auger.</li> <li>▶ Maintain an adequate distance from moving machine parts.</li> </ul>
---	--


3. Ord. no. 942 459 0 (4x)

	<p><b>Danger due to crushing or shearing</b></p> <p>Risk of injury due to crushing or shearing points on moving machine parts.</p> <ul style="list-style-type: none"> <li>▶ While parts are moving, never reach into areas where there is a risk of being crushed.</li> </ul>
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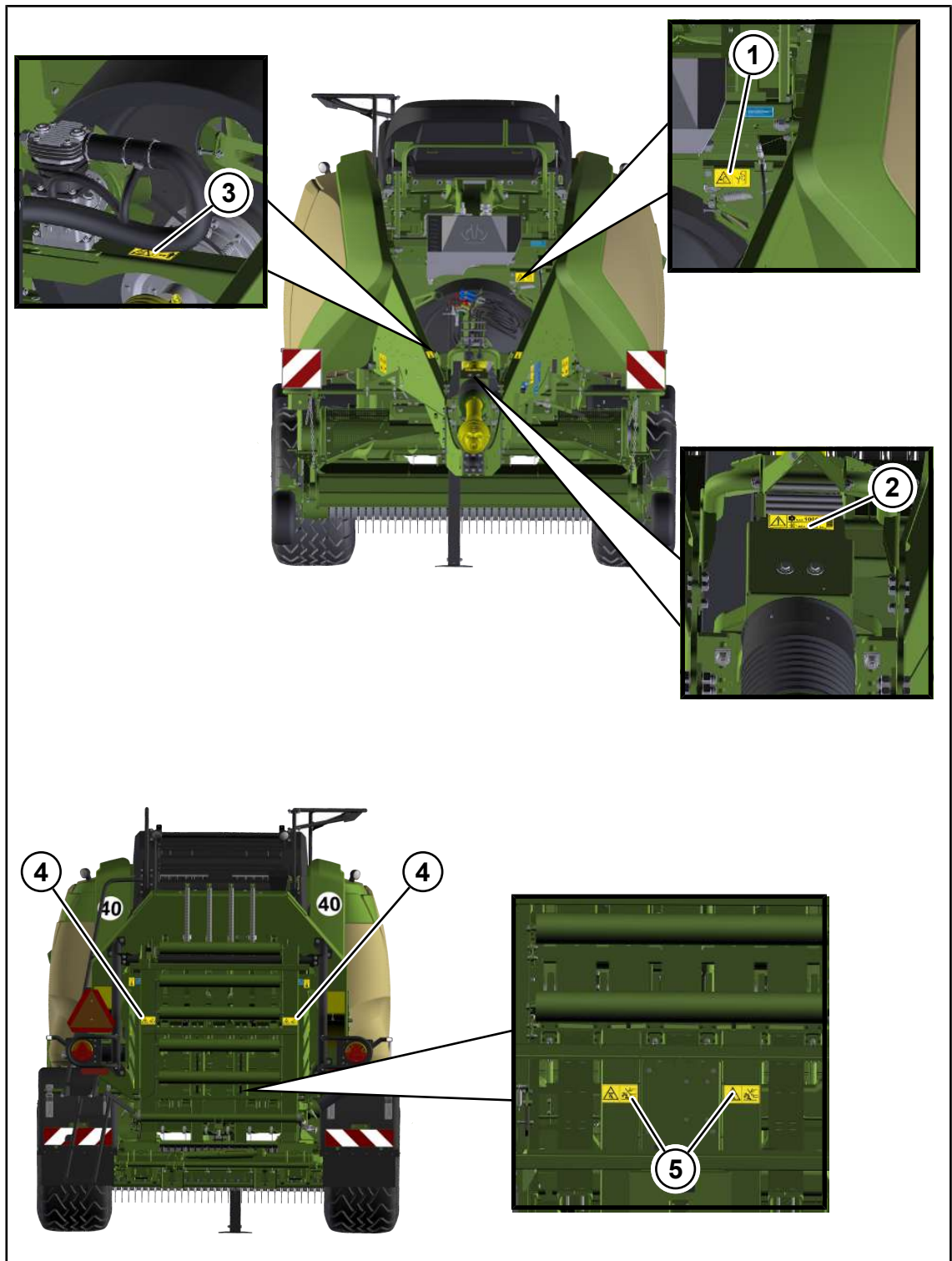
4. Order no. 942 002 4 (2x)

	<p><b>Danger due to rotating machine parts</b></p> <p>When the machine is running, there is a risk of injury due to rotating machine parts.</p> <ul style="list-style-type: none"> <li>▶ Before starting up, move the guards into their protective position.</li> </ul>
---	---

5. Ord. no. 942 290 0 (1x)


	<p><b>Danger due to fire</b></p> <p>Risk of injury due to fire on the machine.</p> <ul style="list-style-type: none"> <li>▶ Do not operate the machine unless there is a functional fire extinguisher available.</li> </ul>
---	---

Front and rear view




BP000-577


1. Order no. 942 002 4 (1x)

	<p><b>Danger due to rotating machine parts</b></p> <p>When the machine is running, there is a risk of injury due to rotating machine parts.</p> <ul style="list-style-type: none"> <li>▶ Before starting up, move the guards into their protective position.</li> </ul>
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2. Ord. no. 939 101 4 (1x)

	<p><b>Danger when exceeding the maximum permissible PTO speed or the maximum permissible operating pressure</b></p> <p>When exceeding the permissible PTO speed, machine parts may be destroyed or ejected.</p> <p>If the maximum permissible operating pressure is exceeded, hydraulic parts may be damaged.</p> <p>As a result, people may be seriously or fatally injured.</p> <ul style="list-style-type: none"> <li>▶ Observe the permissible PTO speed.</li> <li>▶ Observe the permitted operating pressure.</li> </ul>
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3. Order no. 942 210 0 (1x) for "compressor" version

	<p><b>Danger from hot surfaces</b></p> <p>There is a risk of burns when touching hot surfaces.</p> <ul style="list-style-type: none"> <li>▶ Keep sufficient distance as long as the surfaces are hot.</li> </ul>
--	--

4. Order no. 939 469 1 (2x) without "weighing device" version

	<p><b>Danger due to impact or crushing</b></p> <p>Danger of death due to machine parts folding down or lowering.</p> <ul style="list-style-type: none"> <li>▶ Ensure that there is nobody in the swivel range of the machine parts.</li> <li>▶ Maintain an adequate distance from moving machine parts.</li> </ul>
---	--

5. Order no. 939 469 1 (2x) for "weighing device" version

	<p><b>Danger due to impact or crushing</b></p> <p>Danger of death due to machine parts folding down or lowering.</p> <ul style="list-style-type: none"> <li>▶ Ensure that there is nobody in the swivel range of the machine parts.</li> <li>▶ Maintain an adequate distance from moving machine parts.</li> </ul>
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## 2.7 Information labels on the machine

Each information label has an order number. You can order the labels directly from your KRONE dealer. Replace missing, damaged and illegible information labels immediately.

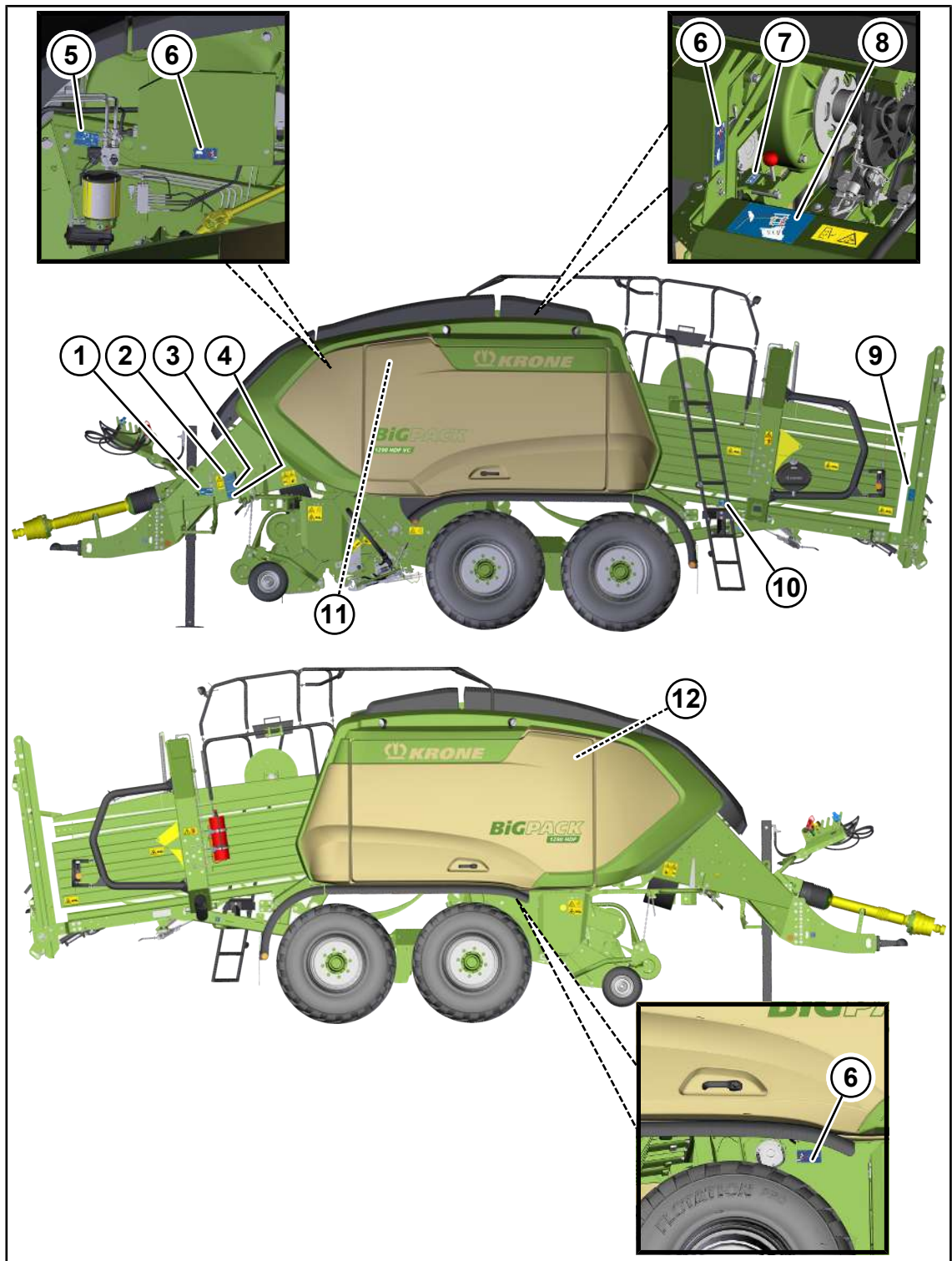
Prior to attaching an information label, ensure that the contact surface on the machine is clean and free of dirt, oil and grease so that the label can adhere to properly.

## Location and meaning of the information labels



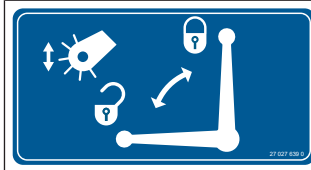


Left and right side of the machine



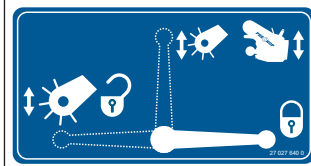
BP000-694

1. Ord. no. 27 027 639 0 (1x)



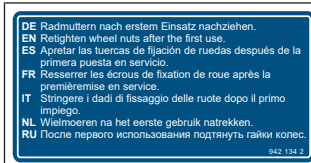
Locking/releasing the pick-up via the stop cock, [see Page 148](#).

• Ord. no. 27 027 640 0 (1x)



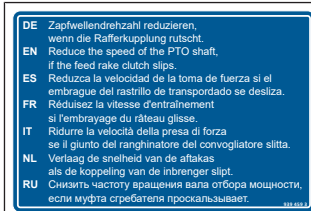
**For "PreChop" version:** Locking/releasing the pick-up/the PreChop via the stop cock, [see Page 148](#).

2. Ord. no. 942 134 2 (1x)



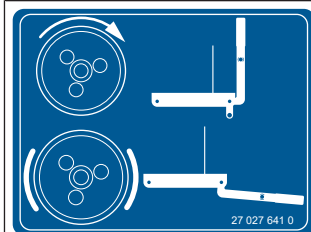
This label tells you that the wheel nuts must be retightened after the first use.

3. Ord. no. 939 459 3 (1x)



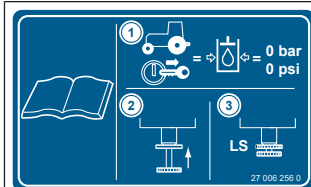
Reduce the PTO speed when the packer clutch is slipping.

4. Ord. no. 27 027 641 0 (1x)



Applying/releasing the flywheel brake via the brake lever, [see Page 127](#).

5. Ord. no. 27 006 256 0 (1x)

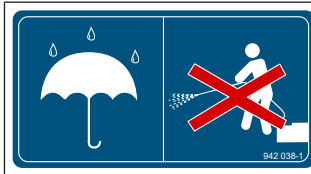


The machine can be operated with Load Sensing. This requires the following procedure:

- ▶ Switch off the tractor engine, remove the ignition key and take it with you (1).
  - ⇒ The hydraulic system is depressurised.
- ▶ Screw in the system screw until it hits the stop (2).
- ▶ The machine can only be operated with tractors that are equipped with a Load Sensing system (3).

For details [see Page 105](#).

6. Ord. no. 942 038 1 (3x)



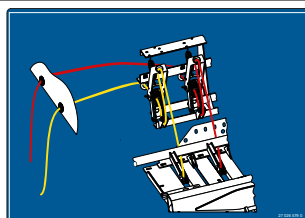
Areas marked with this label shall be protected against splashing water. Never direct the water jet of a high-pressure cleaner at bearings and electric/electronic components.

7. Ord. no. 27 027 301 0 (1x)



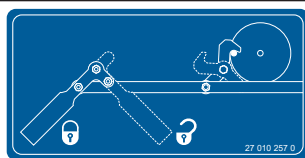
Secure/release the knotted shaft, [see Page 131](#).

8. Ord. no. 27 026 579 0 (1x)



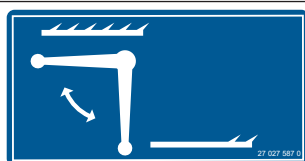
The label shows you how the upper twines are threaded up to the upper needles, [see Page 143](#), [see Page 146](#).

9. Ord. no. 27 010 257 0 (1x)



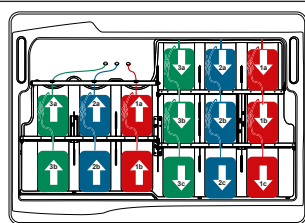
**For "Weighing device" version:** To ensure that the last big bale can be put down properly, the bale brake must be released for the last big bale, [see Page 75](#).

10. Ord. no. 27 027 587 0 (1x)



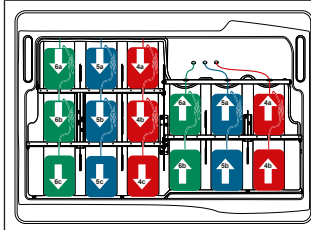
Coupling/uncoupling the bale ejector via the stop cock, [see Page 152](#).

11. Ord. no. 27 027 617 0 (1x)



The label shows how the spools of twine in the left-hand twine box are connected with each other. [see Page 132](#).

12. Ord. no. 27 027 620 0 (1x)



The label shows how the spools of twine in the right-hand twine box are connected with each other, [see Page 132](#).

- Ord. no. 27 021 260 0



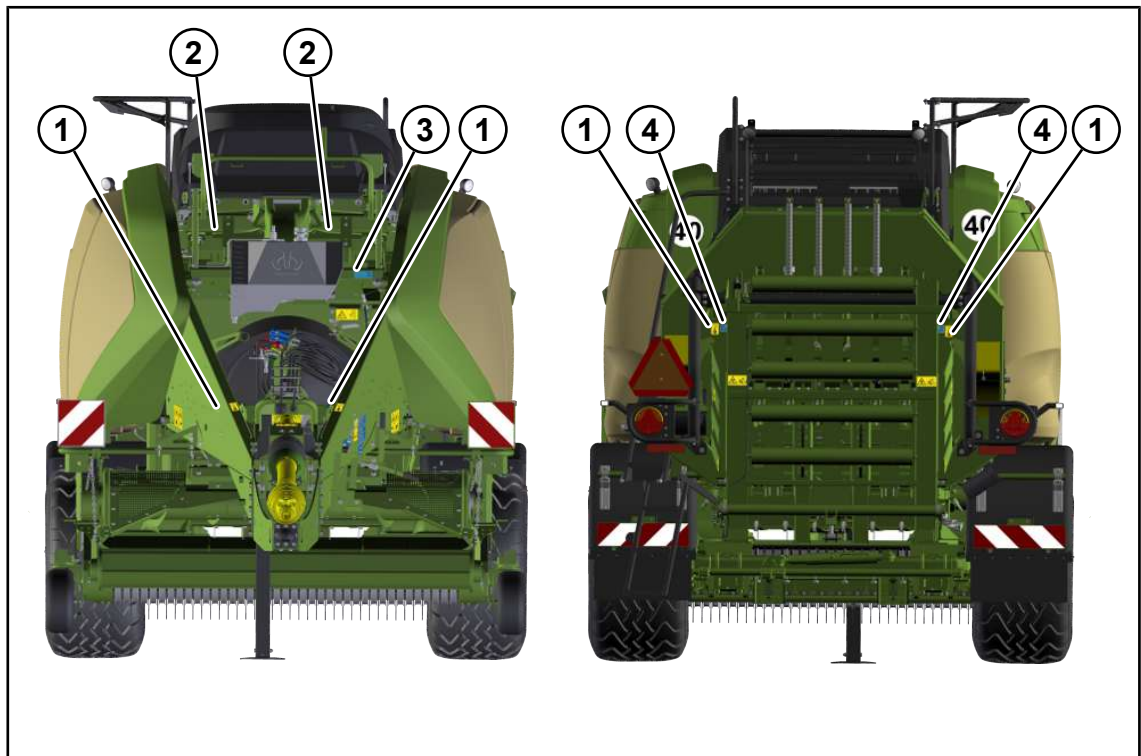
There are several lubrication points on the machine which must be lubricated at regular intervals, [see Page 299](#). Lubrication points that are not directly visible are additionally marked with this information label.

- Ord. no. 27 023 958 0



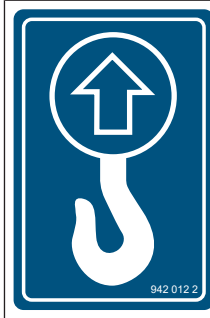
There are lashing points on the machine that are identified with this label, [see Page 272](#).

Front/rear view



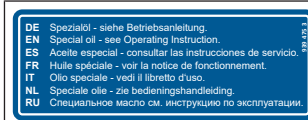
BP000-696

1. Ord. no. 942 012 2 (4x)



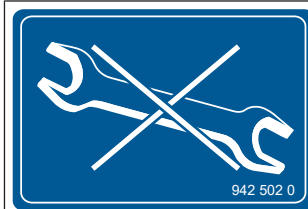
The lifting points on the machine are marked with this label, [see Page 271](#).

2. Ord. no. 939 475 3 (1x)



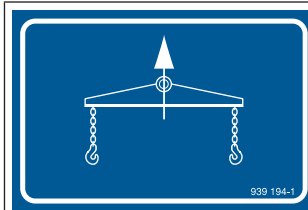
Special oil – see operating instructions, [see Page 78](#).

3. Ord. no. 942 502 0 (2x)



Do not make any settings on the force sensor.

4. Ord. no. 939 194 1 (1x)



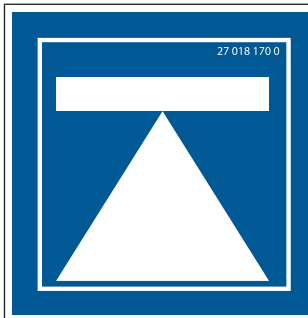
Use a load beam when the machine is lifted, [see Page 271](#).

• Ord. no. 27 021 260 0



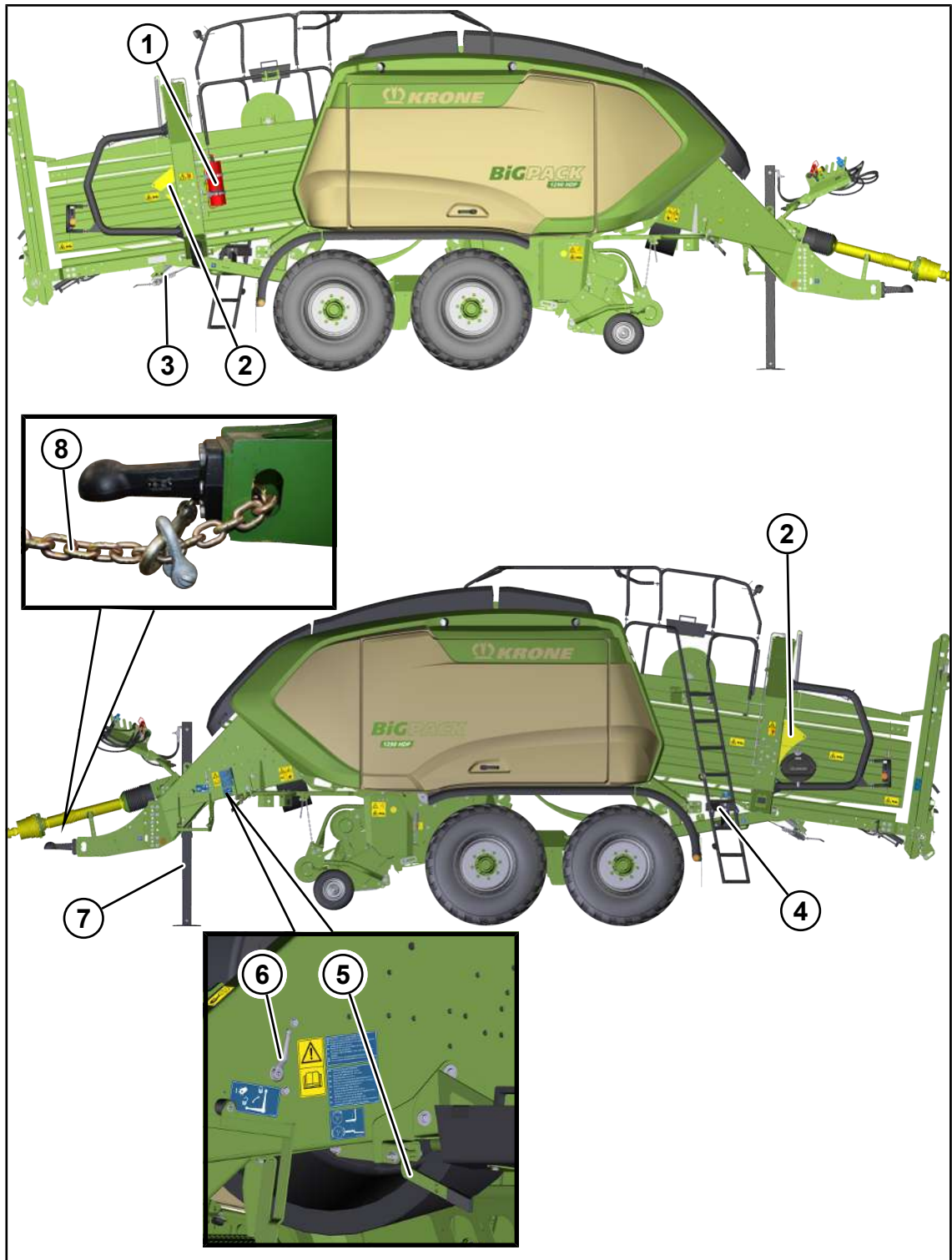
There are several lubrication points on the machine which must be lubricated at regular intervals, [see Page 299](#). Lubrication points that are not directly visible are additionally marked with this information label.

• Ord. no. 27 018 170 0



There are jacking points on the machine that are identified with this label, [see Page 343](#).

## 2.8 Safety equipment



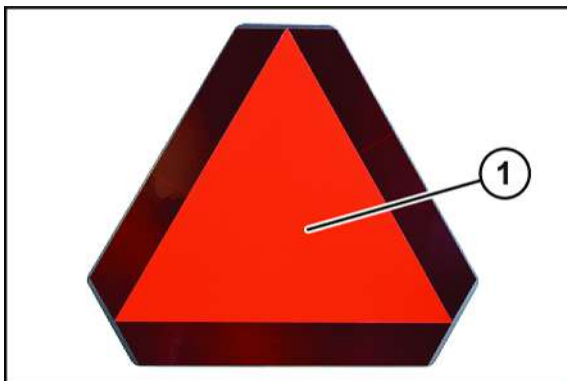
BPG000-006



Pos.	Designation	Explanation
1	Fire extinguisher	<ul style="list-style-type: none"> <li>The machine is equipped with a fire extinguisher ex works.</li> <li>► Ensure that the fire extinguisher is registered.</li> </ul> <p>This is the only way to ensure that all the required inspection intervals (every two years) will be observed.</p> <ul style="list-style-type: none"> <li>► The provisions of the respective country must be observed.</li> </ul> <p>The inspection intervals may differ from one country to another. In this case, the instructions on the fire extinguisher must be observed.</p> <p>Further information, <a href="#">see Page 107</a>, <a href="#">see Page 290</a>.</p>
2	Wheel chock	<ul style="list-style-type: none"> <li>The wheel chocks secure the machine against rolling away. Two wheel chocks are mounted on the machine, <a href="#">see Page 159</a>.</li> <li>Additionally apply the parking brake to secure the machine against rolling away.</li> </ul>
3	Parking brake	<ul style="list-style-type: none"> <li>The parking brake secures the machine against rolling away unintentionally, especially the unhitched machine, <a href="#">see Page 157</a>.</li> <li>To prevent the machine from rolling away, also use the wheel chocks.</li> </ul>
4	Ladder	<ul style="list-style-type: none"> <li>Ladder to platform in order to carry out maintenance work at knotting mechanism.</li> <li>The ladder must be folded up and locked when driving on the road and working on the field, <a href="#">see Page 48</a>.</li> </ul>
5	Flywheel brake	<ul style="list-style-type: none"> <li>The flywheel brake avoids an unexpected start-up of the movable parts of the machine during repair or maintenance work, <a href="#">see Page 127</a>.</li> <li>A brake strap retains the flywheel.</li> </ul>
6	Stop cock pick-up	<ul style="list-style-type: none"> <li>Always lock the pick-up via the stop cock when you transport the machine or when you work under the machine, <a href="#">see Page 148</a>.</li> </ul>
7	Support jack	<ul style="list-style-type: none"> <li>The support jack is used to keep the machine stable when it is not connected to the tractor, <a href="#">see Page 155</a>.</li> </ul>
8	Safety chain	<ul style="list-style-type: none"> <li>The safety chain is used for the additional protection of trailed machines in case they become unhitched during transport, <a href="#">see Page 124</a>.</li> <li>The country-specific regulations for using the safety chain during transportation of the machine must be observed.</li> </ul>

### 2.8.1 SMV emblem

For the version with “SMV emblem”



KM000-567

The SMV emblem (Slow-Moving Vehicle) (1) can be mounted on slow-moving machines or vehicles. The country-specific specifications must be observed.

The SMV emblem (1) is at the rear in the centre or on left.

If the machine is transported on transport vehicles (for example lorry or train), the SMV emblem must be covered or dismantled.

### 3 Data memory

A large number of electronic components of the machine contains data memories which save temporarily or permanently technical information on machine condition, events and errors. This technical information generally documents the condition of a part, a module, a system or the environment:

- Operating states of system components (e.g. filling levels)
- Status messages of the machine and its individual components (e.g. number of revolutions of wheel, wheel speed, motion delay, lateral acceleration)
- Malfunctions and defects in essential system components (e.g. light and brakes)
- Reactions of the machine in special driving situations (e.g. activation of the stability control systems)
- Ambient conditions (e.g. temperature).

This data, which is of an exclusively technical nature, is used to identify and eliminate faults and to optimise machine functions. The data cannot be used to generate movement profiles of travelled distances.

For service activities (e.g. repair services, service processes, warranty cases, quality assurance), employees of the service network (including manufacturer) can use special diagnostic units to read this technical information from the event and error data memories. If necessary, you can obtain further information there. After the error has been eliminated, the information in the error memory is either deleted or continuously overwritten.

When using the machine, situations are possible in which this technical data, in conjunction with other information (accident protocol, damage to the machine, witness statements etc.) - if necessary with the assistance of an expert - can be related to persons.

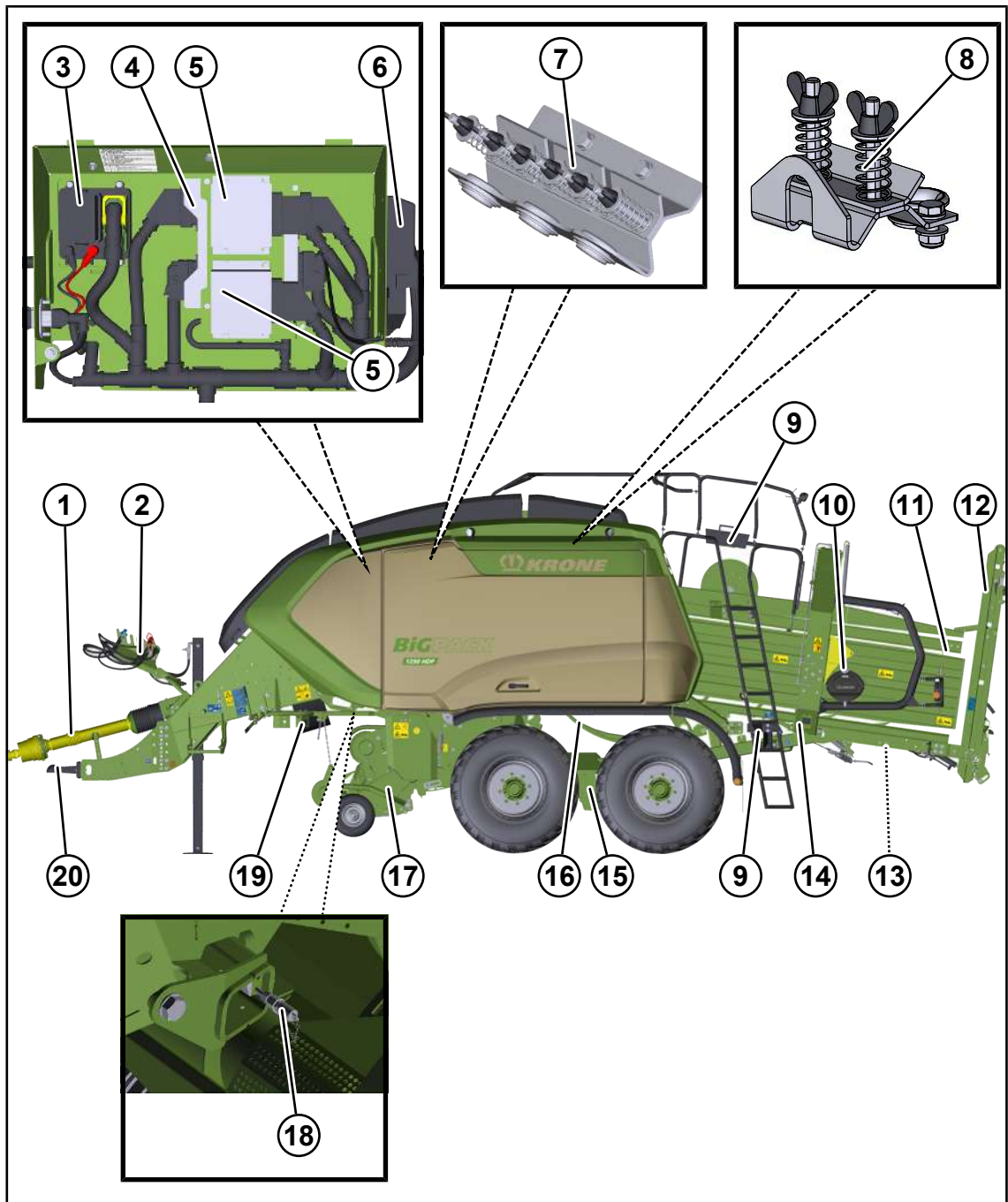
Additional functions, which are contractually agreed with the customer (e.g. teleservice), allow the transmission of certain machine data from the machine.

**4 Machine description**

**4.1 Machine overview**



Left-hand machine side

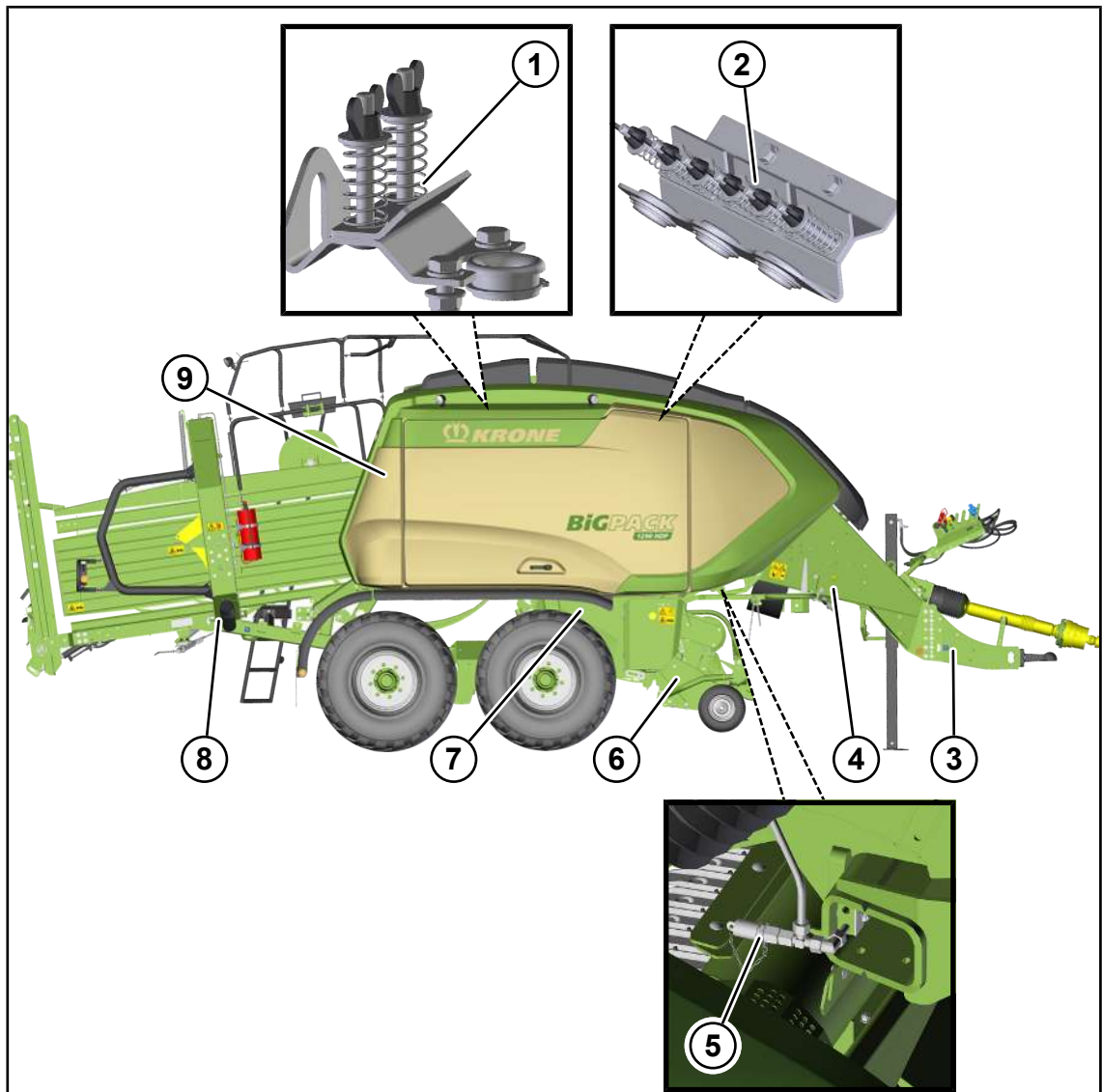


BP000-591

---

1	Wide-angle universal shaft	8	Twine brake for lower twine
2	Hose support for: Hydraulic connections Compressed-air connections, in "Com- pressed-air brake" version Hydraulic connection, in "hydraulic brake" version Cable (road travel lighting) Cable (tractor-machine connection)	9 10 11 12 13 14	Twine brake for upper twine Water tank with soap dispenser Moisture measurement for "moisture measurement" version Bale chute, optionally also with "Weigh- ing device" version 12-volt-socket Bale chute keypad
3	Tool box	15	Tandem unit, self-steering axle
4	Distributor central electrical system: Fuses, relays	16	Twine control and tensioning device (lower twine)
5	KRONE Machine Controller (KMC)	17	Compressed-air connection
6	Force measurement (FM)	18	Drawbar eye
7	SmartConnect		

Right-hand machine side

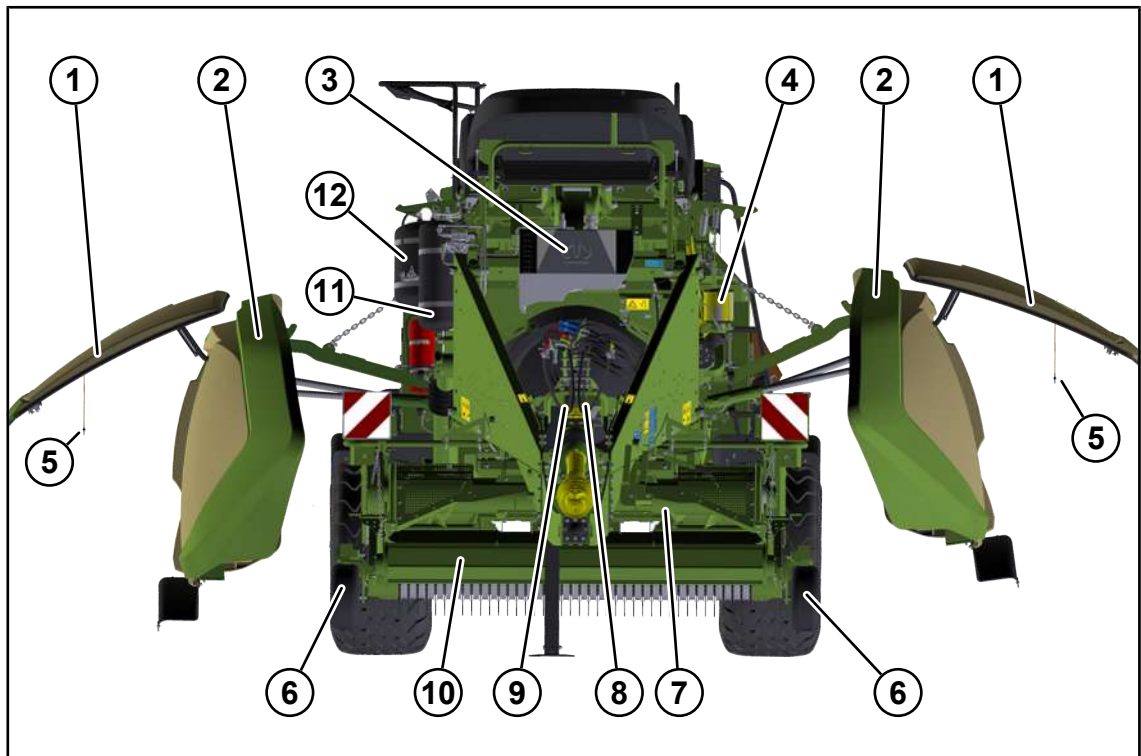


BP000-592



- |   |                             |   |   |
|---|-----------------------------|---|---|
| 1 | Twine brake for lower twine | 6 | Drive of pick-up  |
| 2 | Twine brake for upper twine | 7 | Variable Filling System (VFS)                           |
| 3 | Drawbar                     | 8 | Document storage tube                                   |
| 4 | Release valve 6             | 9 | Moisture measurement for “moisture measurement” version |
| 5 | Compressed-air connection   |   |   |

Front view



BP000-593

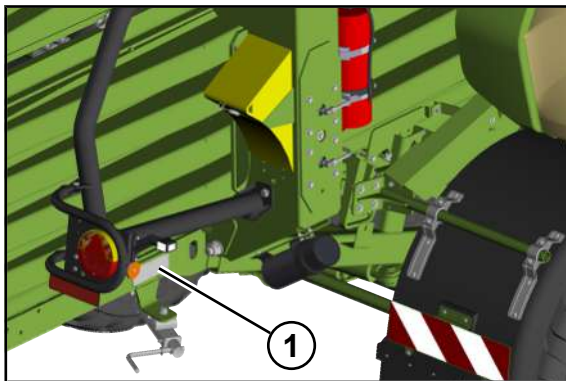
1 Twine box hood	7 Intake roller
2 Twine box	8 11-pole socket (tractor-machine connection)
3 Hydraulic oil tank	9 12-V socket (road travel lighting)
4 Central lubrication	10 Crop press roller unit
5 Operating cable to swivel down the twine box hood	11 Compressed-air tank, in "Knotter cleaning" version
6 Pick-up guide wheel	12 Compressed air reservoir for "compressed air brake" version

## 4.2 Labelling

### INFO

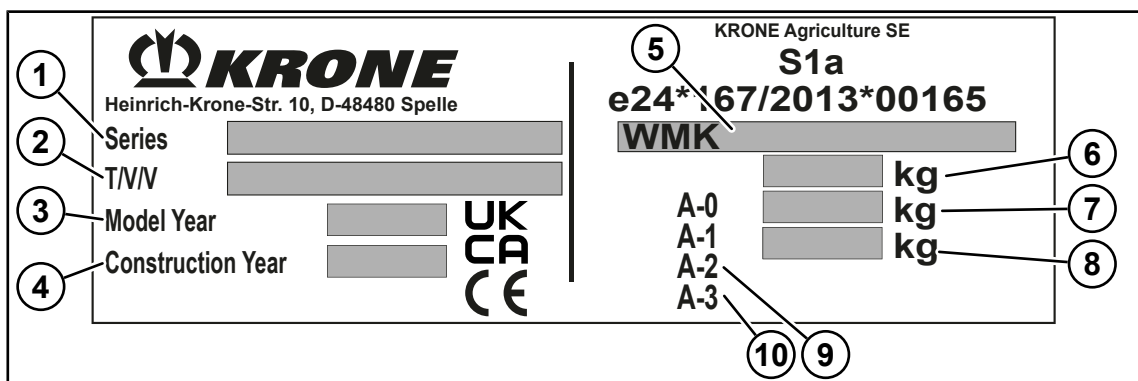
The entire identification plate represents a legal document and should not be altered or rendered illegible!

### Type plate



BPG000-007

The machine data is specified on a type plate (1). The type plate is at the rear on the right side of the machine above the parking brake.



DVG000-004

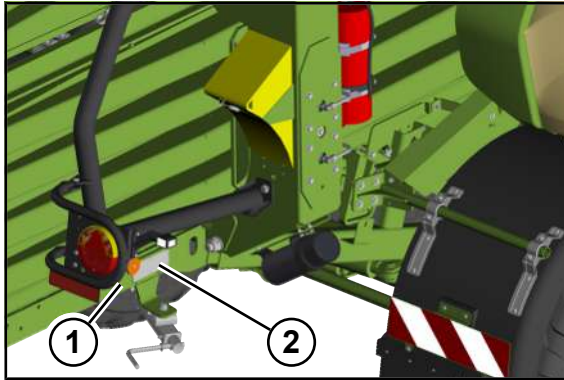
### Example image

- |                                 |                               |
|---------------------------------|-------------------------------|
| 1 Series                        | 6 Total weight of the machine |
| 2 Type/variant/version (T/V/V ) | 7 Drawbar load (A-0 )         |
| 3 Model year                    | 8 Axle load (A-1 )            |
| 4 Year of manufacture           | 9 Axle load (A-2 )            |
| 5 Vehicle identification number | 10 Axle load (A-3 )           |

In case of queries about the machine and when ordering spare parts, ensure that you specify the series (1), the vehicle identification number (5) and the year of manufacture (4) of the corresponding machine. The machine number results from the last 7 digits of the vehicle identification number (5).

To ensure that the data is always available, KRONE recommends that you enter it in the boxes on the front cover of these operating instructions.

#### Location of the vehicle identification number



BPG000-157

In addition, the vehicle identification number (1) is stamped into the frame near the type plate (2).

## 4.3 Baling process

- ✓ The terminal shows the working screen „manual mode“, [see Page 189](#).

#### Starting with an empty bale channel

- ▶ In manual mode, set the target baling flap pressure to 50 bar (in case of dry crops, e. g. straw) and to 25 bar (in case of silage), [see Page 199](#).
- ▶ Do not pick up the swath until the set target bale channel flap pressure is reached in the terminal in order to produce a firm big bale.
- ▶ Press two big bales in manual mode to fill the bale channel completely. In order to always achieve the same solidity of bales automatically with materials of different properties (for example with differing moisture content of materials on the same field), finally switch to automatic mode, [see Page 200](#).
- ▶ In automatic mode, the target baling force must be set to a level high enough so that the big bale reaches the desired bale firmness. The contact pressure of the bale channel flaps in the bale channel is controlled automatically by the job computer so that the pre-selected baling force is reached. As the material becomes moister, it becomes more difficult to compress the big bales. Thus, the baling flap pressure is reduced. If the material becomes dryer, the baling flap pressure is increased. Thus, the pressure display may fluctuate considerably. Bale quality and firmness remain at a constant level.

#### Starting with full bale channel

- ▶ Do not switch to automatic mode until the target baling flap pressure has been reached in manual mode.
- ▶ If baling should be done in manual mode, only pick up the swath if the target baling flap pressure has been reached.

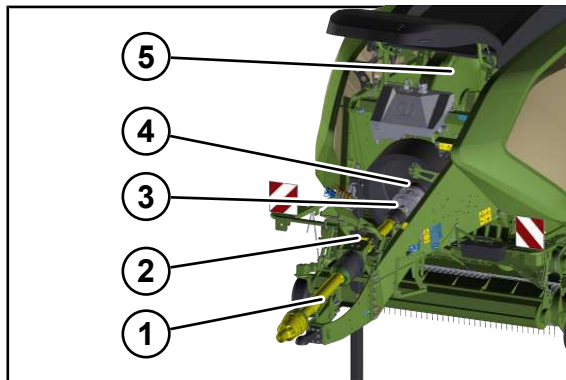
## 4.4 Compressing a big bale

The machine is able to compress hay and straw to a highly compacted big bale (square bale). The square baler is compressed in 9 steps.

1. The pick-up gathers the crops.
2. The crop press roller unit and the intake roller behind it make sure that crops can be picked up properly.
3. The integrated intake roller conveys the crops to the packer drum.
4. The packer drum fills the feed channel.
5. When a determined filling level has been reached, the sensing rake is swung back and the bale channel is filled via the feeder strip with the crop.
6. The crops are pressed in the bale channel to a highly compacted big bale.
7. The knotting mechanism is triggered and the big bale is tied after the set bale length has been reached.
8. The next big bale conveys the big bale further to the bale chute. From the bale chute, the big bale is laid down on the field.
9. The last big bale is conveyed to the bale chute via bale ejector.

## 4.5 Overview of the drives

### 4.5.1 Main drive



BPG000-009

The maximum drive speed must not exceed 1000 min<sup>-1</sup>.

The universally-jointed drive shaft (1) transmits the drive output of the tractor further to the intermediate bearing (2).

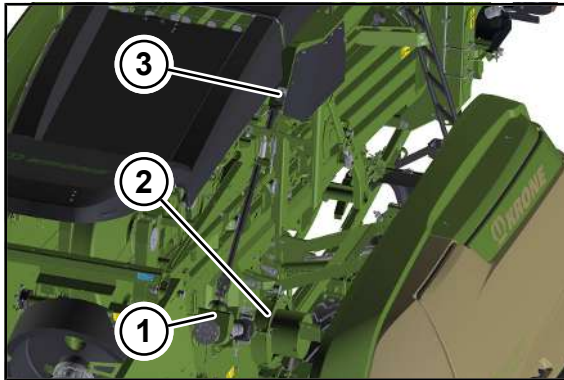
The intermediate bearing transmits the force further to the intermediate universal shaft (3).

The intermediate universal shaft drives the flywheel (4) via a friction disc clutch. The flywheel drives the main gearbox (5) via a cam clutch.

### The main gearbox

The main gearbox (5) drives the plunger, distributes the force further to the right and left and drives the following gearboxes:

### Left-hand machine side

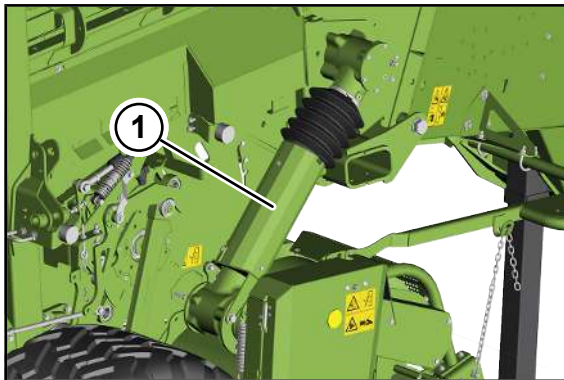


BPG000-010

The main gearbox drives the transfer gearbox (1).

The transfer gearbox (2) drives the packer gearbox (2) and the knottter gearbox (3) via cam clutch.

### Right-hand machine side



BPG000-011

The main gearbox drives the pick-up gearbox (1) via ratchet clutch. The pick-up gearbox (1) drives the pick-up.

## 4.6 Overload protection on the machine

### NOTICE

#### Machine damage due to load peaks

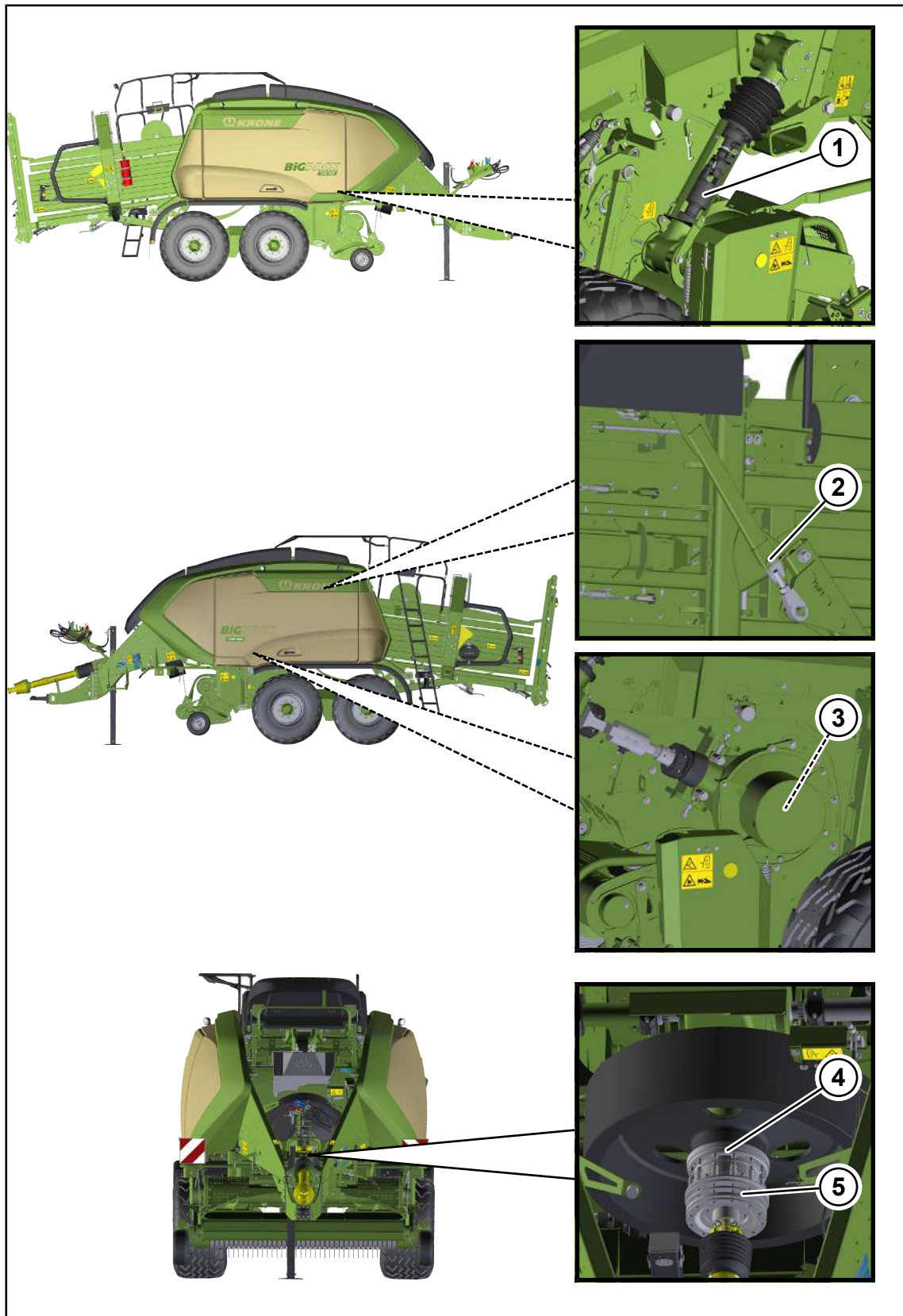
The overload protections protect the tractor and the machine from load peaks. For this reason, overload protections must not be modified. The warranty for the machine becomes void if other than the factory-specified overload protections are used.

- ▶ Only use the overload protections installed in the machine.
- ▶ To avoid early wear of the overload protection, switch the PTO shaft off if the overload protection responds for a longer period of time.
- ▶ Shut down and safeguard the machine, [see Page 29](#).
- ▶ Remedy the malfunction, [see Page 327](#).



## 4 Machine description

### 4.6 Overload protection on the machine

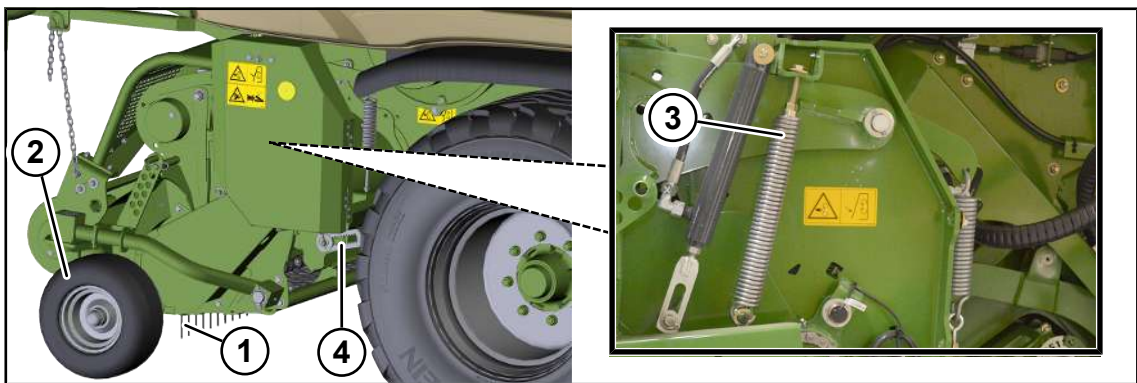


BPG000-097



1	Star ratchet clutch	<ul style="list-style-type: none"> <li>– The star ratchet clutch protects the pick-up drive from load peaks.</li> </ul>
2	Shear bolt	<ul style="list-style-type: none"> <li>The shear bolt protects the knottter needles and the needle yokes against load peaks.</li> </ul>
3	Cam clutch	<ul style="list-style-type: none"> <li>The cam clutch protects the packer gearbox against load peaks.</li> </ul>
4	Cam clutch	<ul style="list-style-type: none"> <li>The cam clutch protects the machine against load peaks.</li> </ul>
5	Friction disc clutch	<ul style="list-style-type: none"> <li>The friction disc clutch protects the tractor, the universally-jointed drive shaft and the intermediate universal shaft against load peaks.</li> </ul>


## 4.7 Description of pick-up functions



BPG000-016

The pick-up (1) is used to pick up the crops.

The pick-up (1) starts to rotate when turning on the PTO shaft.

The pick-up (1) is raised and lowered via the single-acting control unit (  ) on the tractor, [see Page 148](#).

The pick-up (1) is equipped with guide wheels (2). The working height of the pick-up (1) is set via the guide wheels (2), [see Page 273](#).

The bearing pressure of the guide wheels (2) can be adjusted to the ground conditions via the spring (3), [see Page 275](#).

### NOTICE

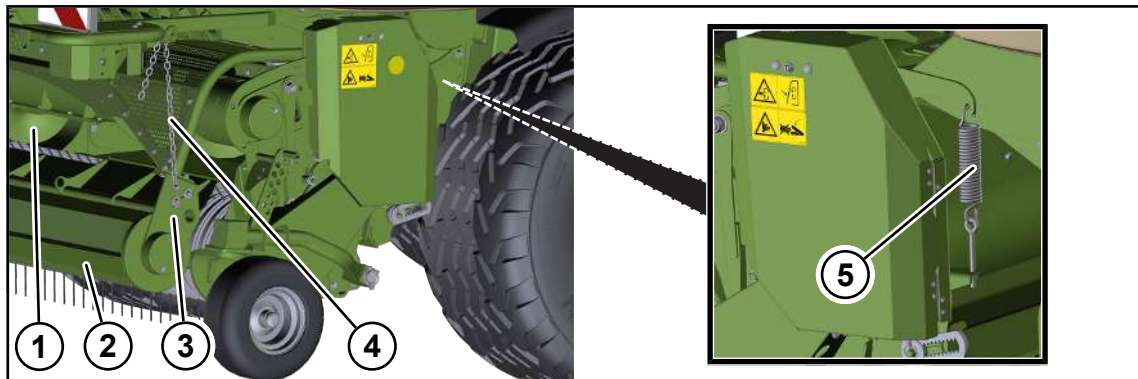
#### **Damages to the guide wheels and increased wear at the pivot point of the pick-up if the lowering of the pick-up is not limited**

If the lowering of the pick-up is not limited by means of the depth limiters (4), the guide wheels may be damaged or there will be an increased wear at the pivot point of the pick-up when passing deep furrows.

- ▶ Limit the lowering of the pick-up by means of the depth limiters (4), [see Page 274](#).

The working height of the pick-up can be limited downward manually by moving the depth limiters (4) on both sides of the machine so that the crops can be taken up without using the guide wheels, [see Page 274](#).

### 4.8 Description of functions of crop press roller unit



BPG000-017

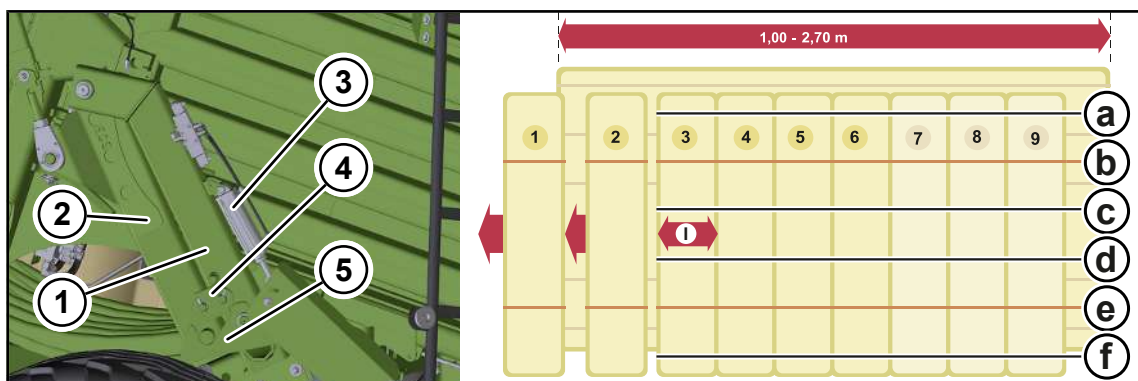
The crop press roller unit (3) and the intake roller (1) regulate the transport of the crops. They ensure that the pick-up collects crops regularly.

The height of the crop press roller unit can be adjusted to the height of the swath via the supporting chain (4), [see Page 275](#).

The bearing pressure of the crop press roller (2) on the swath is set by means of the spring (5), [see Page 276](#).

### 4.9 MultiBale - operating description

#### In "MultiBale" version



BPG000-008

In "MultiBale" version, the big bales are held together by 4 twines (a, c, d, f) and the small bales are held together by 2 twines (b, e). If the "MultiBale" function is switched off, the conventional big bale is tied up with 6 twines.

If the "MultiBale" function has been preselected, the small bales are tied with the front needle yoke (1). The entire bale is tied with the needle yoke (2) that is connected in the rear.

A pneumatic cylinder (3) connects the various needle yokes and actuates the locking ratchet (5). The control block of the pneumatic cylinder (3) is controlled directly by the comfort electronics.

In case of "MultiBale" version, the number of small bales is limited to 6 units ex works. The minimum length of the small bales is set to 45 cm. This results in a variable length of the small bales from 45 - 135 cm if the total length (270 cm) of the big bale is at a maximum. Therefore, the set number of small bales depends on the bale length and the minimum length of the small bales. The bale length and the number of layers are set from the tractor via terminal, [see Page 201](#).



## 4 Machine description

### 4.10 Description of twine box functions

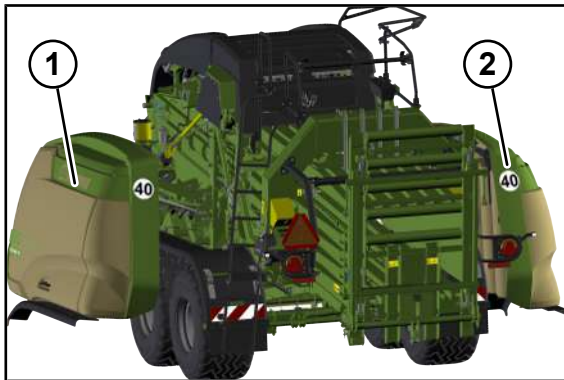


Number of layers (z)	Layer thickness (c)	Evaluation
2	24 cm/9 inch	do not select
3	16 cm/6 inch	not recommended
4	12 cm/5 inch	optimal
5	10 cm/4 inch	not recommended
6	8 cm/3 inch	optimal
7	7 cm/2.7 inch	optimal
8	6 cm/2.4 inch	optimal
9	5 cm/2 inch	do not select

- ▶ The determined layer thickness must be maintained during the entire baling process.

### 4.10 Description of twine box functions

The twine boxes protect people from accessing moving parts of the machine. When travelling on the road or working in the field, always ensure that the twine boxes have been raised.



BP000-532

The twine boxes (1, 2) can hydraulically be lowered/raised or swivelled up/down.

The twine boxes can be lowered/raised or swivelled up/down via the terminal, [see Page 128](#).

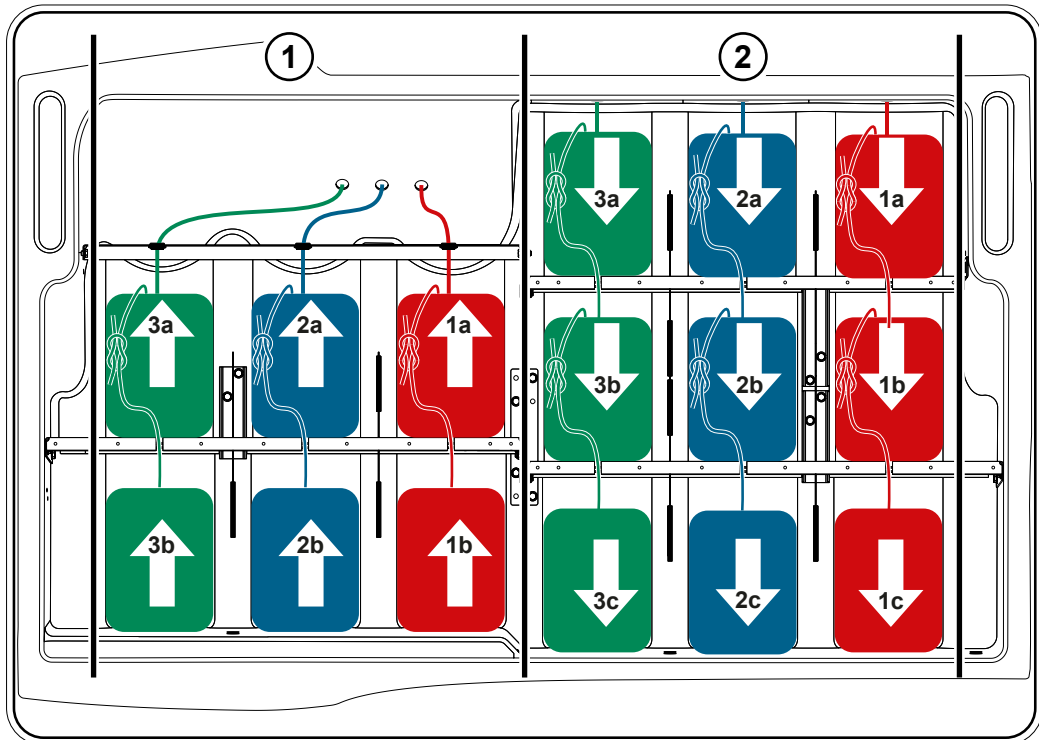
For safety reasons, key module 1 (bale channel) can be used only to lower or swivel up the twine boxes, [see Page 130](#).

### 4.11 Twine feed - operating description

#### **INFO**

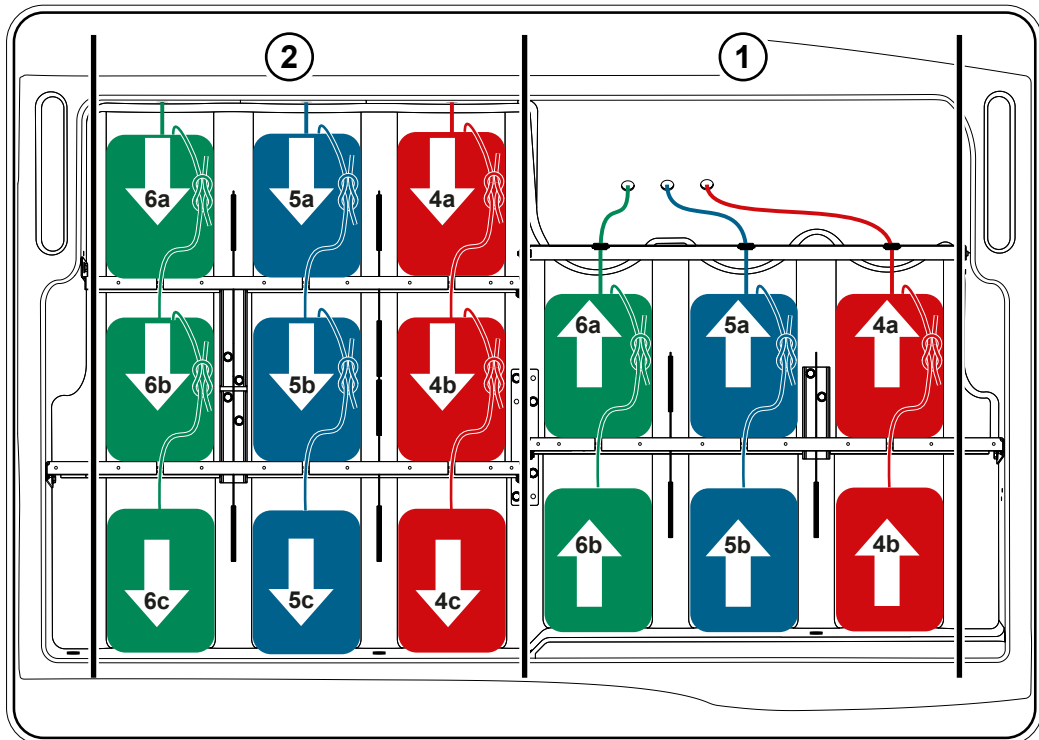
When placing the twine rolls in the twine box, make certain that the labeling on the twine roll can be read. Watch the side that is marked with “**Above**”.

Left-hand machine side



BPG000-085

Right-hand machine side



BPG000-086

The large square baler is equipped with twine boxes on both machine sides which can be folded down hydraulically. Each twine box can hold 15 spools of twine.

The 3 upper twines come from the 6 twine rolls (1) in the front.

## 4 Machine description

### 4.12 Description of functions of electric twine empty display for lower twine



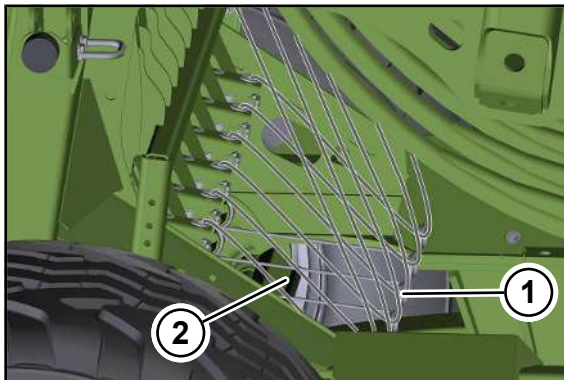
The 3 lower twines come from the 9 twine rolls (2) in the rear.

During the baling process, each of the 6 knotters is fed with an upper twine and a lower twine. The knotters are fed with 3 upper twines and 3 lower twines on each machine side.

The lower twine is provided with more twine rolls since it needs more twine for reaching around the underside and both ends of the big bale. In contrast to that, the upper twine only reaches around the upper side of the big bale.

- ▶ To ensure adequate tying safety, use only plastic twines with a running length of 100 – 130 m/kg.
- ▶ Use KRONE original twine.

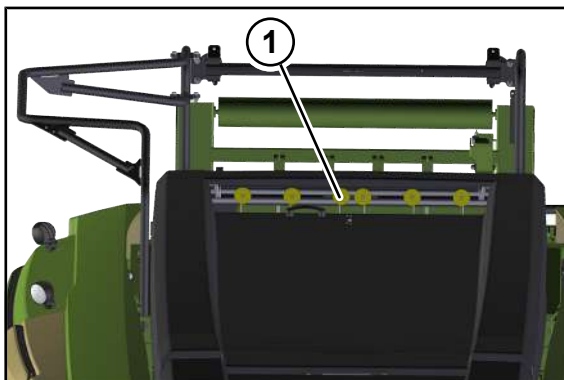
### 4.12 Description of functions of electric twine empty display for lower twine



BPG000-098

If the end of the lower twine is reached or if the twine is broken, the spring-loaded twine tensioners (1) come to rest on the angle of rotation (2). An acoustic warning signal sounds on the terminal and an error message is shown on the display of the terminal. The acoustic warning signal can be switched off during twine threading, [see Page 327](#).

### 4.13 Function description of upper twine motion indicator



BPG000-099

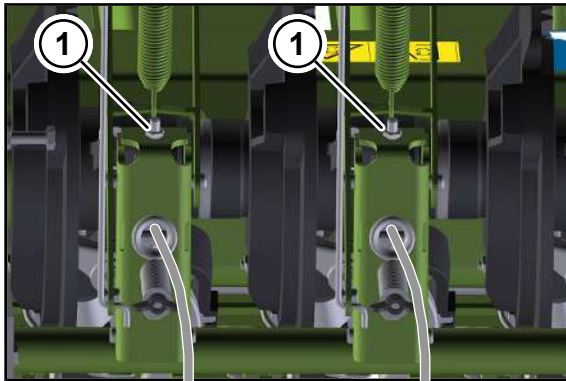
The upper twine motion can be monitored optically via the movement of the twine motion indicators (1) (reflectors). The twine motion indicators (1) are located on the top of the machine. In the course of bale formation, there should be a pulsating back-and-forth movement of the twine motion indicators (1). In normal operation, all twine motion indicators (1) move up and down simultaneously. In the event of a disturbance, the disturbed twine motion indicator (1) of the twine path is not in the same position as the other twine motion indicators (1).

**Possible disturbance when the twine motion indicators (1) remain at the top:**

- Twine is wrapped around the billhook.
- The knotter needle missed the upper twine strand (twine is not cut).
- The knot is caught on the billhook (after tying has been completed, one twine motion indicator (1) stays down longer than the other ones).

**Possible disturbance when the twine motion indicators (1) remain at the bottom:**

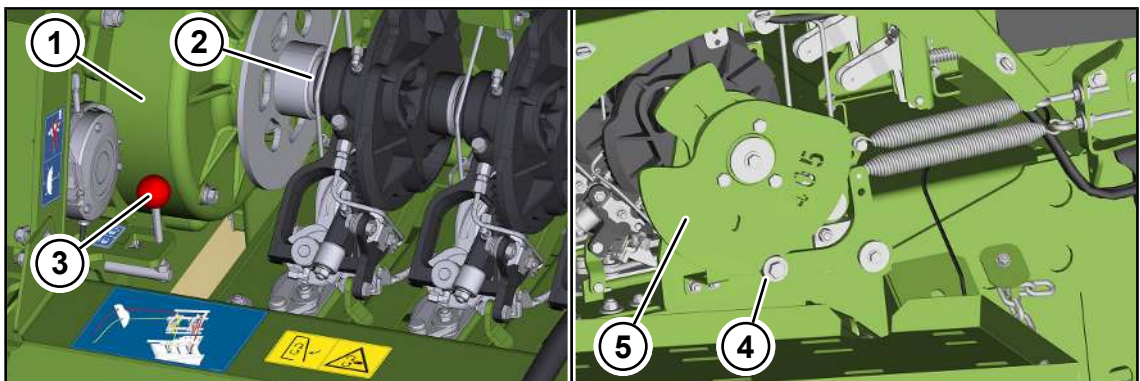
- The twine tension is too low.
- The upper twine strand is broken.
- The billhook did not tie a knot.

**4.14 Description of functions of electric knotter monitoring**


BPG000-100

The machine is equipped with electrical knotter monitoring. In this process, each knotter is monitored individually by a sensor (1). An error message appears on the display of the terminal when a malfunction of the knotter is detected, [see Page 327](#).

The knotters are numbered from 1 to 6 in direction of travel from left to right.

**4.15 Tying cycle - operating description**


BPG000-101

A tying cycle consists of one rotation of the cam disc (5). The system automatically triggers the knotting mechanism after the selected bale length has been reached. During this process, the cam disc (5) rotates, presses the roll (4) out of the recess in the cam disc (5) and continues to rotate until the roll (4) slides back into the recess in the cam disc (5). In one revolution of the cam disc (5), the first knot (closing knot) is tied first, followed immediately by the second knot (starting knot).

1st knot: Closing knot, ties the pressed big bale.

2nd knot: Starting knot, ties the initial knot for the next big bale.

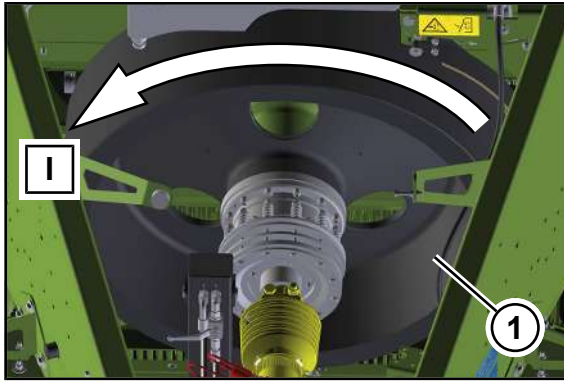
**Knotter shaft in rest position**

The knotter shaft (2) is driven by the knotter gearbox (1), left machine side.

The lever (3) releases/secures the knotter shaft (2).

The knotter shaft is in rest position when the roll (4) of the upper needle is in the recess of the cam disc (5) of the knotter shaft, right machine side.

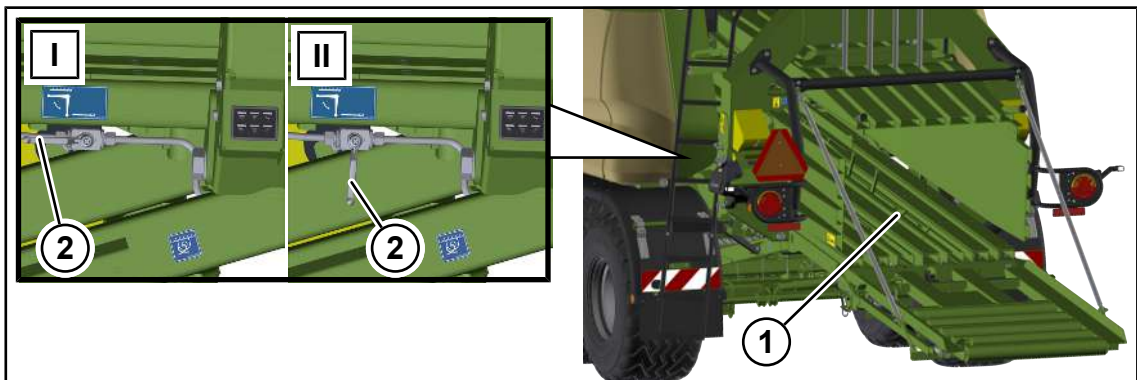
**Triggering the tying cycle manually**



BPG000-106

In case of maintenance, setting or repair work, you can trigger the tying cycle manually when the tractor is not connected. The tying cycle proper is carried out by manually turning the flywheel (1) in working direction (I); see Page 159.

**4.16 Description of bale ejector/bale chute functions**



BPG000-021

Stop cock (2) in position (I)	Bale ejector (1) coupled	To empty the bale channel completely.
Stop cock (2) in position (II)	Bale ejector (1) uncoupled	To move the last big bale onto the bale chute.

**Bale chute**

The bale chute is used as an extension of the bale channel when it is unfolded. The next big bale transports the big bale from the bale channel to the bale chute. The big bale is deposited From the bale chute on the field.

**Bale ejector**

The last big bale is transported to the bale chute by the bale ejector.



The bale ejector (1) can be split. To transport only the last big bale onto the bale chute, the rear part of the bale ejector can be uncoupled from the front part via the stop cock (2). To completely empty the bale channel, the front and the rear parts of the bale ejector must be coupled to each other.

The bale ejector is operated either via the terminal ([see Page 155](#)) or via the bale chute keypad ([see Page 153](#)).

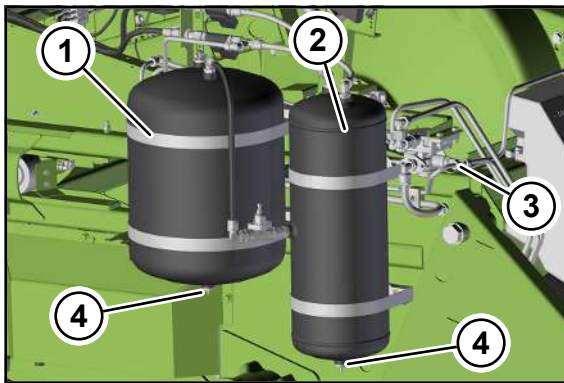
## 4.17 Description of compressed air reservoir functions

### Compressed-air tank in "Compressed-air brake" version

The compressed-air tank stores the compressed air. The stored compressed air ensures that the brake functions work properly.

### Compressed-air tank in "Knotter cleaning" version:

The compressed-air tank stores the compressed air. The stored compressed air ensures that knotter cleaning functions properly.



BPG000-022

- |   |  |   |               |
|---|--|---|---------------|
| 1 | Compressed-air tank, in "Compressed-air brake" version | 3 | Pressure line |
| 2 | Compressed-air tank, in "Knotter cleaning" version     | 4 | Drain valve   |

## 4.18 Description of functions of central lubrication system

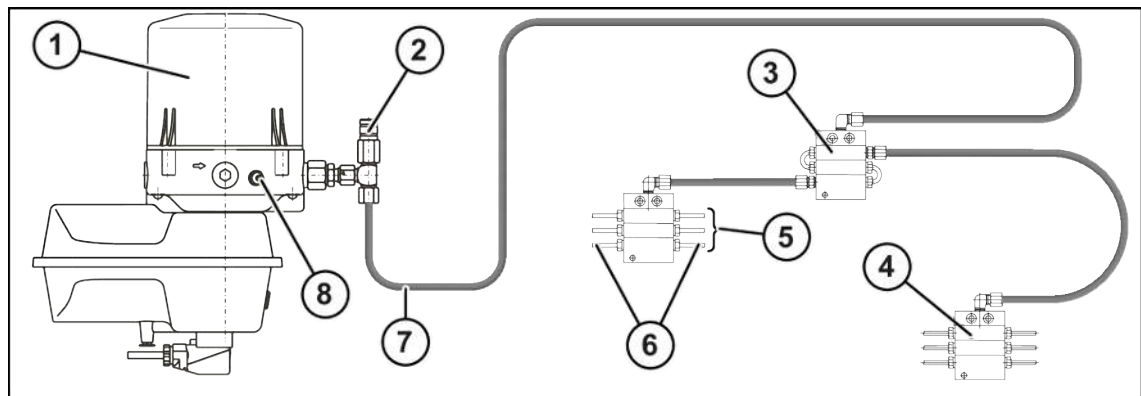
The central lubrication unit is a progressive system. "Progressive" means that all lubrication points included in the central lubrication unit are lubricated one after the other. As the lubrication points are lubricated one after the other, a progressive central lubrication unit can be monitored easily by a pressure limiting valve. If a lubrication point does not take any grease from the progressive distributor, the progressive distributor is blocked and a pressure of 280 bar (4060 PSI) is built up in the central lubrication unit. A blockage can be detected on the pressure limiting valve of the pump element by escaping grease. Error messages are shown on the terminal display.

### Design of the central lubrication system

An electrically driven piston pump delivers lubricant to the main progressive distributor. Its task is to distribute grease to the sub-progressive distributors at the correct ratio. Then, the sub-progressive distributors pump the grease to the individual lubrication points. The lubrication duration and the break times are controlled via terminal, [see Page 216](#).

## 4 Machine description

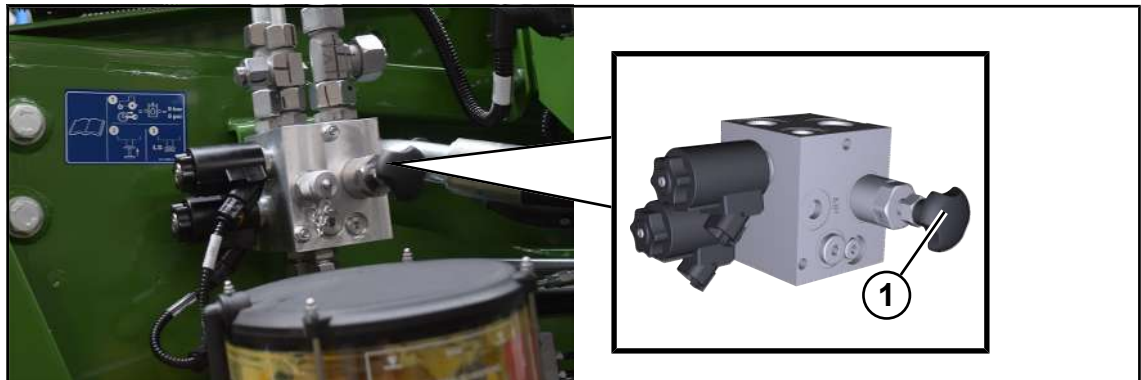
### 4.19 Description of hydraulic system functions



BP000-282

- |   |                              |   |                    |
|---|------------------------------|---|--------------------|
| 1 | Reservoir                    | 5 | Lubrication points |
| 2 | Pressure limiting valve      | 6 | Lubricant line     |
| 3 | Main progressive distributor | 7 | Main line          |
| 4 | Main progressive distributor | 8 | Filling nipple     |

### 4.19 Description of hydraulic system functions



BPG000-018

The hydraulic system of the machine is designed for tractors with **constant flow system** and for tractors with **Load Sensing system**.

At the factory, the hydraulic system of the machine is set for tractors with **constant flow system**. In this setting, the system screw (1) is completely unscrewed from the control block.

The hydraulic system is adjusted to the hydraulic system of the tractor (**constant flow system or Load Sensing system**) via the system screw (1) on the control block of the machine, [see Page 105](#).

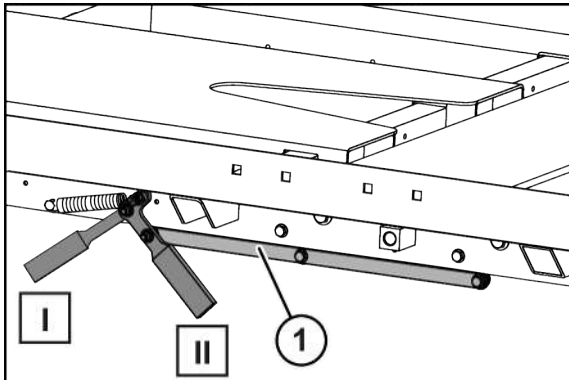
The control block sits at the front left on the frame, next to the distributor central electrical system.

>>>

[Adapting hydraulic system \[▶ 105\]](#)

## 4.20 Description of bale brake functions

For "Weighing device" version



BP000-092

The first two rolls of the bale chute are locked via bale brake (1). This is necessary to achieve an exact weight control of the big bales.

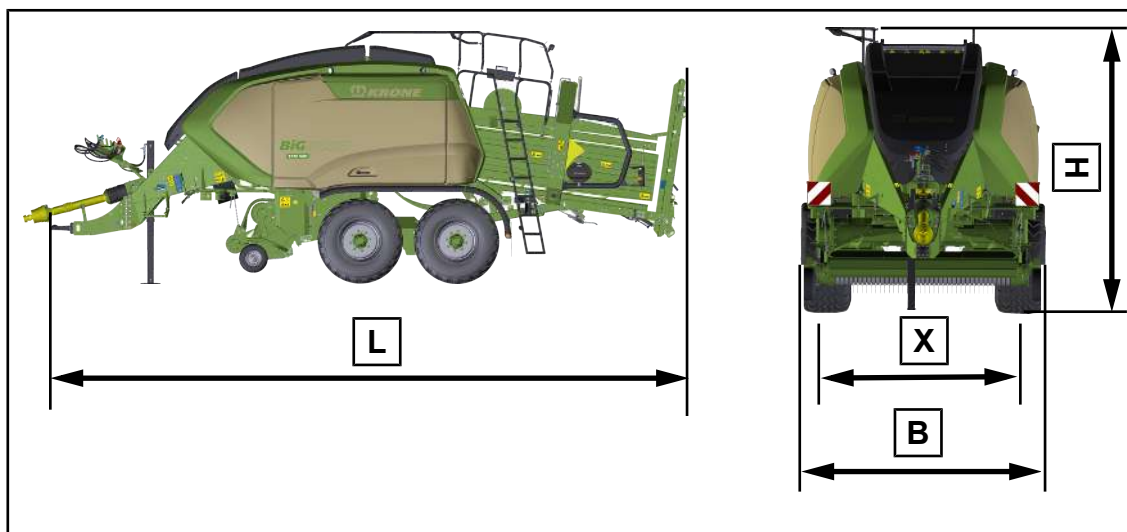
Lever in position (I) = rolls locked

Lever in position (II) = rolls can be turned freely

In order to ensure that the last big bale can be put down properly, the bale brake must be released for the last bale.

## 5 Technical data

### 5.1 Dimensions



BPG000-130

Dimensions	
Width [B]	3,000 mm
Height [H]	3,255 mm
Length [L]	8,850 mm
Working width [X]	2,350 mm

### 5.2 Weights

Weights	
Weights	See information on the type plate, <a href="#">see Page 59</a> .

### 5.3 Technically permitted maximum speed (road travel)

The technically permitted maximum speed may be restricted by different equipment features (e.g. coupling device, axle, brake, tyres, etc.) or by statutory regulations in the country of use.

Technically permitted maximum speed (road travel)	
Technically permitted maximum speed (road travel)	25 km/h, 40 km/h, 60 km/h

### 5.4 Airborne noise emission

Airborne noise emission	
Emissions value (sound pressure level)	74.2 db(A)
Measurement device	Bruel & Kjaer, Type 2236
Accuracy class	2
Measurement uncertainty (according to DIN EN ISO 11201)	4 dB

## 5.5 Ambient temperature

Ambient temperature	
Temperature range for machine operation	-5 to +45 °C

## 5.6 Tyres

Tyre designation	Maximum pressure	Recommended tyre pressure <sup>1</sup>
<b>Guide wheels</b>		
15x6.00-6 10PR	3.7 bar	1.5 bar

Tyre designation	Minimum pressure Vmax<=10 km/h	Maximum pressure	Recommended tyre pressure <sup>1</sup>
<b>Tandem axle</b>			
500/60R22.5 155D	1.6 bar	4.0 bar	3.5 bar
620/50R22.5 154D	1.6 bar	3.2 bar	3.2 bar

<sup>1</sup> The recommendation applies in particular to the usual mixed operation (field/road) at the maximum permitted speed of the machine. If required, the tyre pressure can be reduced to the indicated minimum air pressure. However, the associated maximum speed must then be observed.

## 5.7 safety chain

Safety chain	
Tensile strength	at least 178 kN (40,000 lbf)

## 5.8 universal shaft

universal shaft	
Main universal shaft at machine side	1 3/4", Z=6

## 5.9 Bale dimensions

Bale dimensions	
Length	1,000 – 3,200 mm/39 – 126 inch
Width	1,200 mm
Height	700 mm

## 5.10 Twine wrapping and tying material

Twine wrapping and tying material	
Roll length	100 – 130 m/kg
Maximum diameter of the spool of twine	340 mm
Maximum height of the spool of twine	370 mm

## 5.11 Requirements for tractor - power

Requirements for tractor - power	
Power requirement	120 kW (163 PS)
PTO speed	1,000 rpm
PTO shaft end	1 3/8", Z=6
	1 3/8", Z=21
	1 3/4", Z=6
	1 3/4", Z=20

## 5.12 Tractor requirements – hydraulics

Tractor requirements – Hydraulics	
Maximum operating pressure of the hydraulic system	200 bar
Hydraulic oil quality	Oil ISO VG 46
Pressure connection Power Beyond (P)	1x
Load Sensing connection Power Beyond (LS)	1x
Pressureless return connection Power Beyond (T)	1x
Single-acting hydraulic connection	1x
<b>For version with "Hydraulic support jack"</b>	
Double-acting hydraulic connection	1x

## 5.13 Requirements for the tractor – electrics

Requirements for tractor – electrics	
Road travel lighting	12 V, 7-pin socket
Terminal power supply	12 V, 9-pin socket
ISOBUS	12 V, 9-pin socket

## 5.14 Requirements for tractor – brake system

Requirements for tractor – brake system	
Compressed-air connection for "compressed air brake" version	2x
Maximum operating pressure for "hydraulic brake" version	120 bars / 1740 PSI

## 5.15 Consumables

<i>NOTICE</i>
<p><b>Complying with change intervals for biooils</b></p> <p>To ensure high life expectancy of the machine, it is absolutely necessary to comply with change intervals for biooils due to the ageing of the oils.</p>

**NOTICE**
**Machine damage due to mixing of oil**

If oils, which have different specifications, are mixed with each other, the machine may be damaged.

- ▶ Never mix oils, which have different specifications, with each other.
- ▶ Contact your KRONE service partner before using an oil with a different specification after changing the oil.

Bio-degradable lubricants on request

**5.15.1 Oils**

Machine component	Filling quantity	Specification	Initial filling ex works
Main gearbox	16.0 L	SAE 90 GL4	ExxonMobil Mobilgear 600XP150
Packer gearbox	1.23 L	SAE 90 GL4	Wiolin ML SAE 90
Transfer gearbox, in "cleaning fan" version	1.9 L	SAE 90 GL4	Wiolin ML SAE 90
Transfer gearbox, in "Knotter cleaning" version	1.7 L	SAE 90 GL4	Wiolin ML SAE 90
Gearbox pick-up top part	0.5 L	SAE 90 GL4	Wiolin ML SAE 90
Gearbox pick-up bottom part	0.5 L	SAE 90 GL4	Wiolin ML SAE 90
Gearbox starter aid	1.2 L	SAE 90 GL4	Wiolin ML SAE 90
Hydraulic oil tank "Cleaning fan" version	45 L	HVLP 46 (ISO VG 46) DIN 51524	SRS Wiolan HS 46 AZOLLA ZS 46 (Total)
Hydraulic oil tank "Knotter cleaning" version	25 L	HVLP 46 (ISO VG 46) DIN 51524	SRS Wiolan HS 46 AZOLLA ZS 46 (Total)
Compressor	0.2 L	Engine oil SAE 10W-40	SRS Cargolub TLA 10W-40

The filling quantities of the gearboxes are guide values. The correct values result from oil change/oil level check, [see Page 309](#).

**5.15.2 Lubricating grease**

Designation	Filling quantity	Specification
Central lubrication unit	5.0 L	Grease up to NLGI class 2 with EP additives adjusted to the outside temperatures (thickener: Lithium Complex), basic oil viscosity at 40°C: 85 ... 180 mm <sup>2</sup> /s.
Lubrication points (manual lubrication)	As required <sup>1)</sup>	

<sup>1)</sup> Lubricate the lubrication point until grease comes out of the bearing position. After lubricating, remove the grease coming out of the bearing position.

**5.15.3 silage additives**

Designation	Filling quantity	Specification
Silage additives tank	400 l	Use silage additives that are neither aggressive nor corrosive.



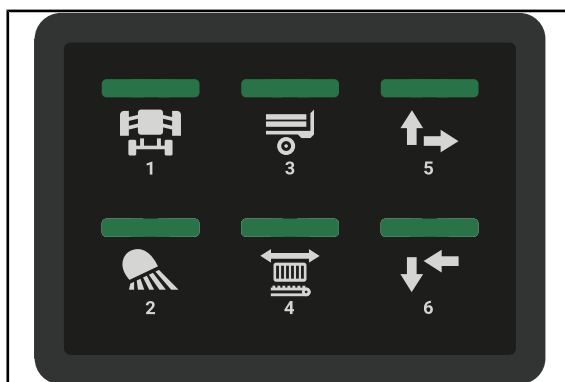
## 6 Operating and display elements

Further information about terminals, [see Page 177](#).








### 6.1 Hydraulic control units of the tractor





Icon	Designation
<b>Connection for control block</b>	
	<ul style="list-style-type: none"> <li>P: Pressure line, nominal width 15</li> </ul>
	<ul style="list-style-type: none"> <li>T: Return, nominal width 18</li> </ul>
	<ul style="list-style-type: none"> <li>LS: Load Sensing (message line), nominal width 12</li> </ul> For details see the operating instructions of the tractor manufacturer.
<b>Single-acting control unit</b>	
	<ul style="list-style-type: none"> <li>Pressure: Raise pick-up</li> <li>Float position: Lower pick-up</li> </ul>
<b>Double-acting control unit</b>	
	<ul style="list-style-type: none"> <li>Raise hydraulic support jack</li> </ul>
	<ul style="list-style-type: none"> <li>Lower hydraulic support jack</li> </ul>

### 6.2 Bale chute keypad



BP000-531

Icon	Designation	Explanation
	Twine boxes	<ul style="list-style-type: none"> <li>• <b>NOTICE!</b> For safety reasons, you can only lower or raise the twine boxes via the key module. When one of the two functions has been selected, the other function can <b>not</b> be carried out, or can only be carried out again when the twine boxes are back in the home position (raised/swivelled down).</li> <li>• The LED is lit when selected.</li> <li>• The LED blinks when a lowering/swivelling up function is executed.</li> <li>• The LED goes out if a function is not activated within 10 seconds.</li> </ul>
	Swivelling up	<ul style="list-style-type: none"> <li>• Inching = the function is executed as long as the key is pressed.</li> <li>• The LED shines when the key is pressed.</li> <li>• The twine boxes are swivelled up when they are preselected. <ul style="list-style-type: none"> <li>• The lowering twine boxes function can then not be executed.</li> </ul> </li> </ul>
	Lowering	<ul style="list-style-type: none"> <li>• Inching = the function is executed as long as the key is pressed.</li> <li>• The LED shines when the key is pressed.</li> <li>• The twine boxes are lowered when they are preselected. <ul style="list-style-type: none"> <li>• The swivelling twine boxes up function can no longer be executed.</li> </ul> </li> </ul>
	Working lights	<ul style="list-style-type: none"> <li>• Switching all working lights on/off.</li> </ul>
	Bale chute	<ul style="list-style-type: none"> <li>• The LED is lit when selected.</li> <li>• The LED blinks when a function for raising/lowering is executed.</li> <li>• The LED goes out if a function is not activated within 10 seconds.</li> </ul>
	Raising	<ul style="list-style-type: none"> <li>• Inching = the function is executed as long as the key is pressed.</li> <li>• The LED shines when the key is pressed.</li> <li>• The bale chute is raised when it is selected.</li> </ul>
	Lowering	<ul style="list-style-type: none"> <li>• Inching = the function is executed as long as the key is pressed.</li> <li>• The LED shines when the key is pressed.</li> <li>• The bale chute is lowered when it is selected.</li> </ul>

Icon	Designation	Explanation
	Bale ejector	<ul style="list-style-type: none"> <li>• The LED is lit when selected.</li> <li>• Pressing 1x = the baling flaps are set to the preset baling flap pressure.</li> <li>• Press 2x within 2 seconds = The baling flaps are completely released.</li> <li>• The LED flashes when automatic bale ejection has been activated.</li> </ul>
	Moving rearwards	<ul style="list-style-type: none"> <li>• Inching = the function is executed as long as the key is pressed.</li> <li>• The LED shines when the key is pressed.</li> <li>• The bale ejector is moved rearwards when it is preselected.</li> </ul>
	Moving forwards	<ul style="list-style-type: none"> <li>• Inching = the function is executed as long as the key is pressed.</li> <li>• The LED shines when the key is pressed.</li> <li>• The bale ejector is moved forwards when it is preselected.</li> </ul>
	Automatic bale ejection	<ul style="list-style-type: none"> <li>✓ The bale ejector (4) is preselected.</li> <li>• Automatic bale ejection is started when both keys are pressed within 2 seconds.                             <ul style="list-style-type: none"> <li>• The LEDs (4, 5, 6) are blinking.</li> <li>• 10 bale ejections are performed.</li> </ul> </li> <li>• Press the key 5 or 6 to terminate automatic bale ejection prematurely.                             <ul style="list-style-type: none"> <li>• The bale ejector remains selected.</li> </ul> </li> </ul>

## 7 Initial operation

This chapter describes assembly and adjustment work on the machine which may be carried out by qualified technicians only. Here, the notice “Personnel qualification of technicians” applies, [see Page 18](#).

**WARNING**

**Risk of injury or damage to the machine due to faulty initial operation**

If the initial operation is carried out incorrectly or incompletely, the machine may present defects. As a result, people may be injured or killed or the machine may be damaged.

- ▶ Initial operation must only be carried out by authorised technicians.
- ▶ Read in full and observe the “Personnel qualification of technicians”, [see Page 18](#).

**WARNING**

**Risk of injury due to non-observance of relevant safety notices**

If the relevant safety notices are not observed, persons may get seriously injured or killed.

- ▶ To avoid accidents, the basic safety instructions must be read and observed, [see Page 17](#).

**WARNING**

**Risk of injury due to non-observance of safety instructions**

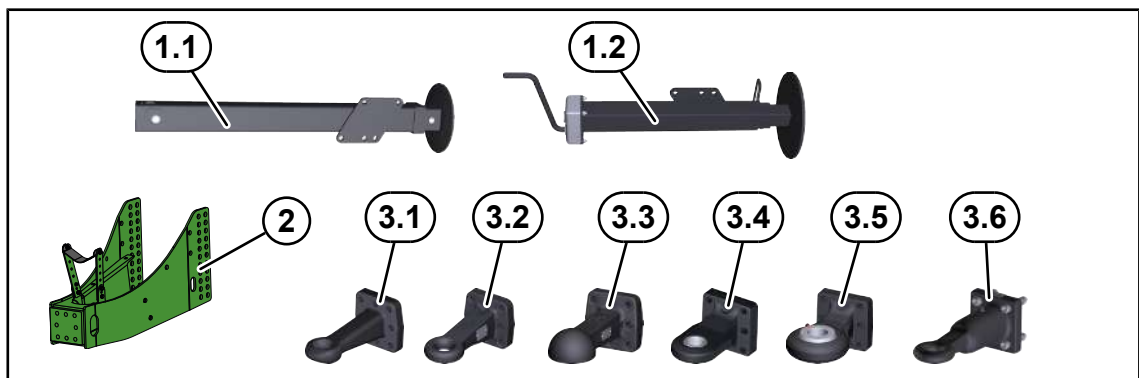
If the relevant safety routines are not observed, persons may be seriously injured or killed.

- ▶ The safety routines must be read and observed to avoid accidents, [see Page 29](#).

### 7.1 Scope of Delivery

The machine is delivered together with the following additional parts that can be found at the rear in the bale channel, in the left twine box, or in the tool box at the ladder.

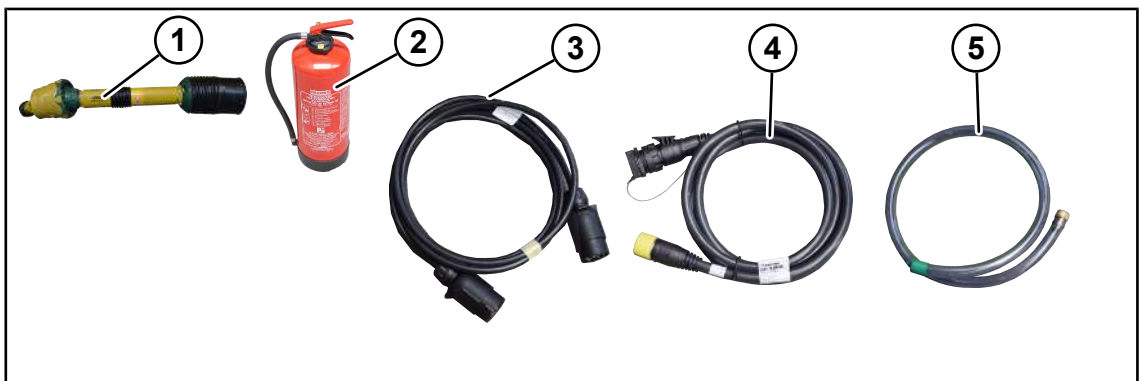
#### Parts in the bale channel



BP000-685

- |   |  |
|---|--|
| 1 Support jack, depending on version:                             | 3 Drawbar eye with connection material depending on version: |
| 1.1 Hydraulic support jack for "Hydraulic support jack" version   | 3.1 Drawbar eye Ø 40 mm                                      |
| 1.2 Mechanical support jack for "Mechanical support jack" version | 3.2 Drawbar eye Ø 50 mm                                      |
| 2 Front part of the drawbar with connection material              | 3.3 Ball drawbar eye Ø 80 mm                                 |
|   | 3.4 Ball joint drawbar eye attachment category 3             |
|   | 3.5 Ball joint drawbar eye attachment category 4             |
|   | 3.6 Cuna drawbar eye (only for Italy)                        |

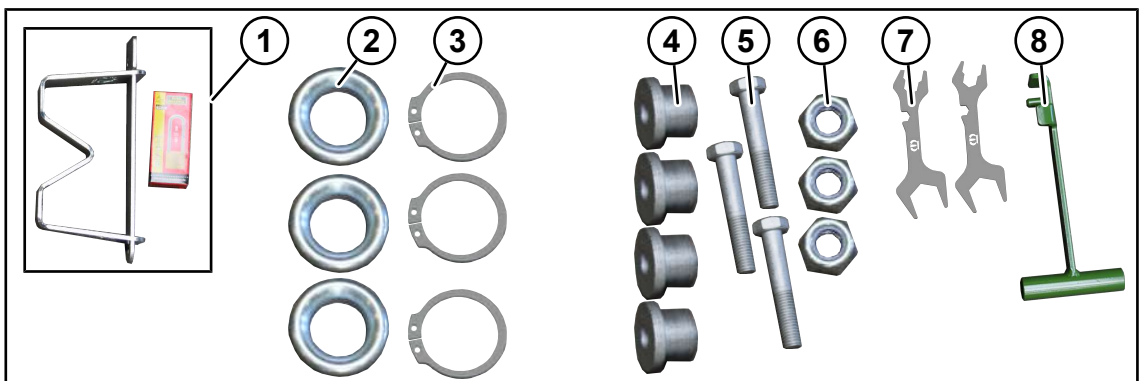
**Parts in the twine box**



BP000-686

- |   |                                       |
|---|---------------------------------------|
| 1 universal shaft                                     | 4 ISOBUS cable (machine power supply) |
| 2 Fire extinguisher                                   | 5 Drain hose (for hydraulic oil tank) |
| 3 7-way cable (power supply for road travel lighting) |                                       |

**Parts in the tool box on the ladder**



BP000-687

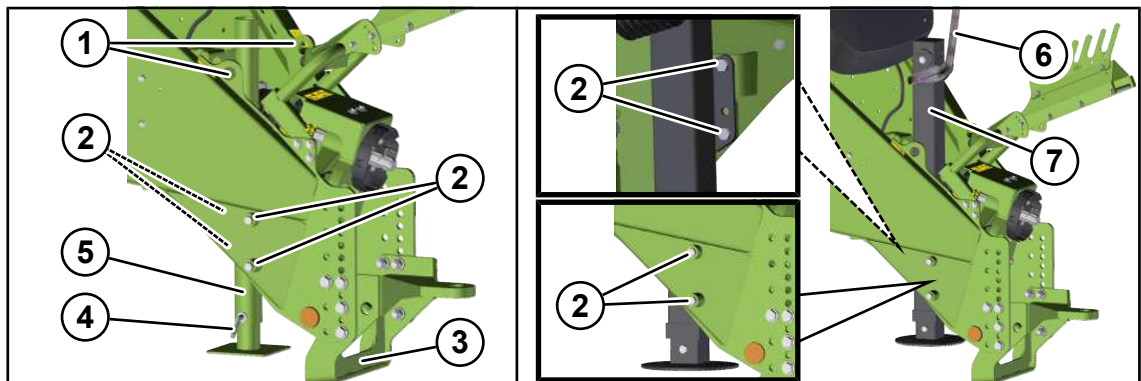
- |   |                         |
|---|-------------------------|
| 1 Safety device which prevents unauthorised use | 5 Shear bolts           |
| 2 Twine guide eyes                              | 6 Locknuts              |
| 3 Retaining rings                               | 7 Sensor key            |
| 4 Shear bushings                                | 8 Pivoted knotter lever |

## 7.2 Checklist for initial operation

- ✓ The cable ties are removed that were mounted to secure the front hood (*see Page 269*) and the guide wheels (*see Page 270*).
- ✓ The lashing strap is removed that was mounted to secure the top hood, *see Page 270*.
- ✓ **In "Hydraulic support jack" version:** The hydraulic support jack is mounted, *see Page 87*.
- ✓ **In "Mechanical support jack" version:** The mechanical support jack is mounted, *see Page 89*.
- ✓ The tractor corresponds to the machine requirements, *see Page 76*.
- ✓ The drawbar height is adjusted, *see Page 95*.
- ✓ The height of the drive train has been adjusted, *see Page 104*.
- ✓ The universal shaft has been adjusted, for the "Walterscheid" version, *see Page 96*.
- ✓ The hydraulic system has been adjusted, *see Page 105*.
- ✓ The hydraulic system has been checked for leaks.
- ✓ The bale chute has been set, *see Page 106*.
- ✓ The fire extinguisher is mounted, *see Page 107*.
- ✓ All screws and nuts are checked for tightness, and are tightened to the specified tightening torques, *see Page 284*.
- ✓ All sensors have been checked for tight fit and tightened to the specified tightening torques. The location of the sensors is shown in the circuit diagram.
- ✓ The safety devices are mounted and checked for completeness and damage.
- ✓ The oil level has been checked for all gearboxes, *see Page 309*.
- ✓ The machine is fully lubricated, *see Page 299*.
- ✓ The universal shafts are lubricated, *see Page 298*.
- ✓ There are no leakages present in the machine.
- ✓ All cable and plug connections are properly connected and laid.
- ✓ All hoses are properly laid.
- ✓ The wheel chocks are at hand and ready to use, *see Page 48*.
- ✓ The tyres have been checked and the tyre pressure is adjusted correctly, *see Page 289*.
- ✓ The road travel lighting has been checked for function and cleanliness, *see Page 116*
- ✓ The supplied operating instructions are in the document storage tube.

## 7.3 Attaching the hydraulic support jack

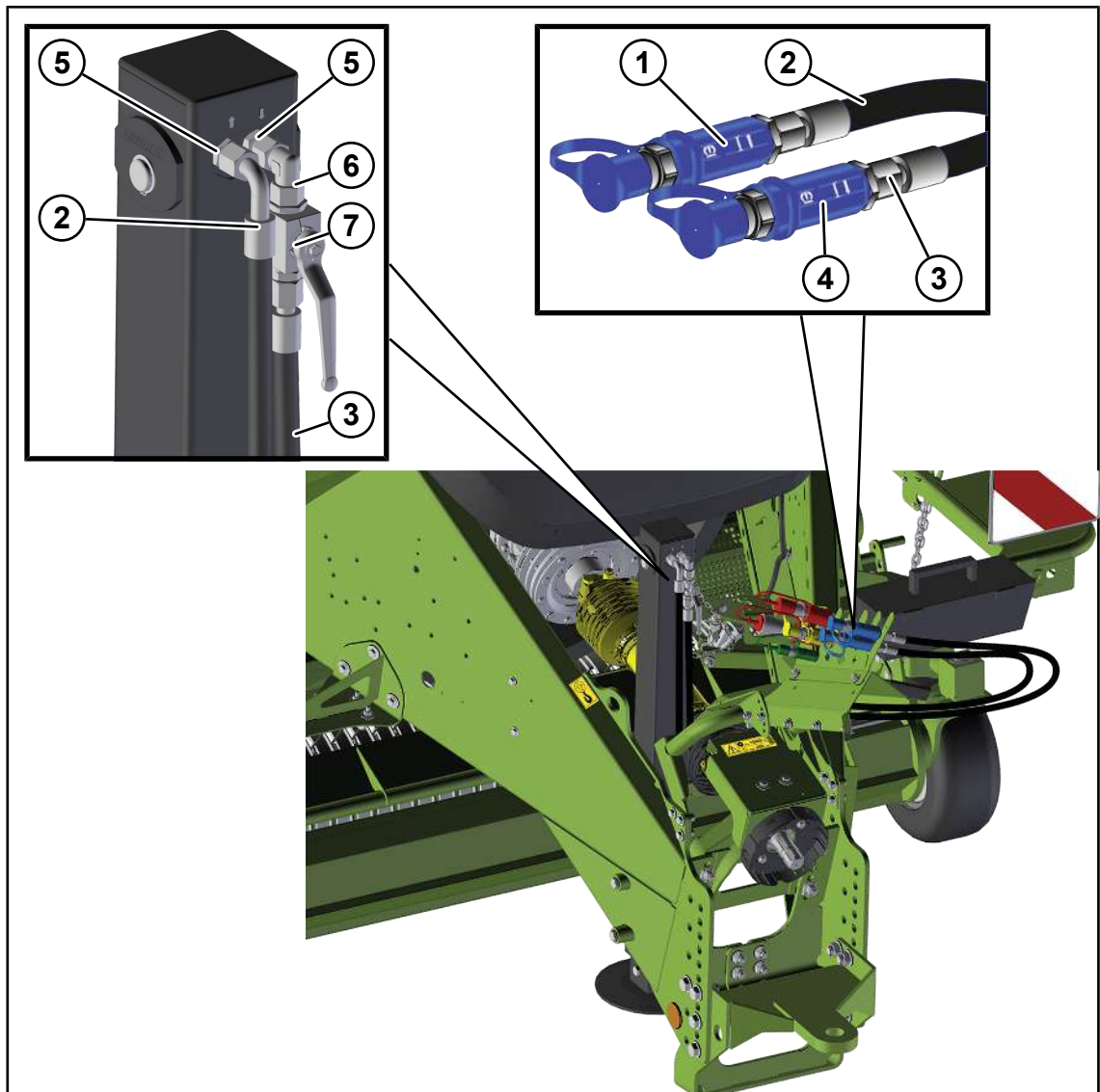
For the “hydraulic support jack” version





BPG000-132

- ✓ The machine is shut down and safeguarded, [see Page 29](#).
- ▶ Attach a suitable hoist to the suspension point (1) of the drawbar.
- ▶ To be able to push up the existing support jack (5), slightly raise the drawbar with the hoist, and support is securely, [see Page 30](#).
- ▶ Pull the socket pin (4), push up the existing support jack (5) all the way and secure with the socket pin (4).
- ▶ Lower the drawbar onto the transport support (3) using the hoist.
- ▶ To remove the support jack (5), remove the 4 screws (2), take out the support jack and put it down to the side.
- ▶ Insert the supplied support jack (7) in the same position.
- ▶ Attach the supplied support jack (7) to the hoist (6) and lift it.
- ▶ Mount the screws (2) with the detent edged washers and nuts.
- ▶ Tighten the screws (2) to the corresponding tightening torque, [see Page 284](#).

### Mounting hydraulic hoses



BPG000-133

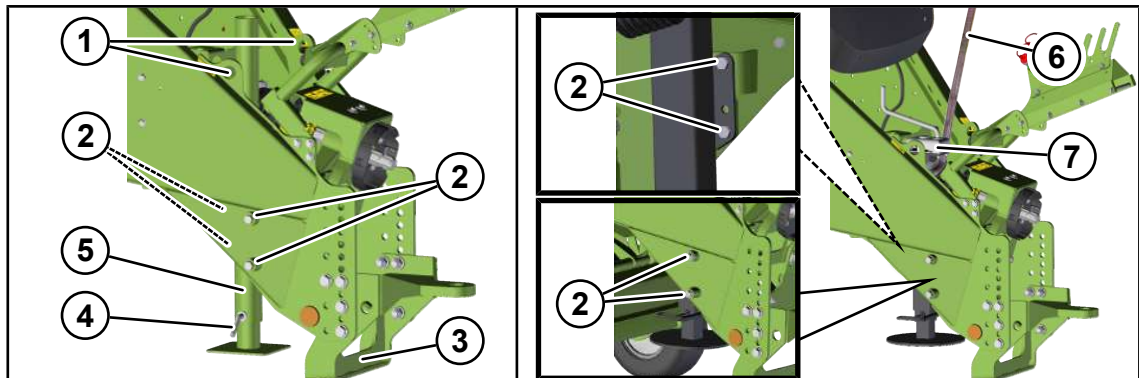
- ✓ A suitable container is available for escaping oil.
- ▶ Mount the screw-in supports (5).
- ▶ Mount the hydraulic hose (2) DKOL/DKOL90° with the DKOL90° connection to the right screw-in socket (5).
- ▶ Mount the angle support (6) on the left screw-in support (5).
- ▶ Mount the ball valve (7) on the angle support (6).
- ▶ Mount the hydraulic hose line (3) DKOL/DKOL on the ball valve (7).
- ▶ Mount the Kennfix (1)  on the hydraulic hose line (2) DKOL/DKOL90°.
- ▶ Mount the Kennfix (4)  on the hydraulic hose line (3) DKOL/DKOL.
- ▶ Connect the hydraulic hose lines (2, 3) on the tractor side.



- ▶ Check function "Retracting/extending support jack", [see Page 156](#)
  - ▶ If the connections "Retracting/extending support jack" are interchanged, switch hydraulic hose lines (2, 3) on the hydraulic support jack.
  - ▶ If the connections "Retracting/extending support jack" are correct, retract or extend the support jack until the machine is in a horizontal position.

## 7.4 Mounting the mechanical support jack

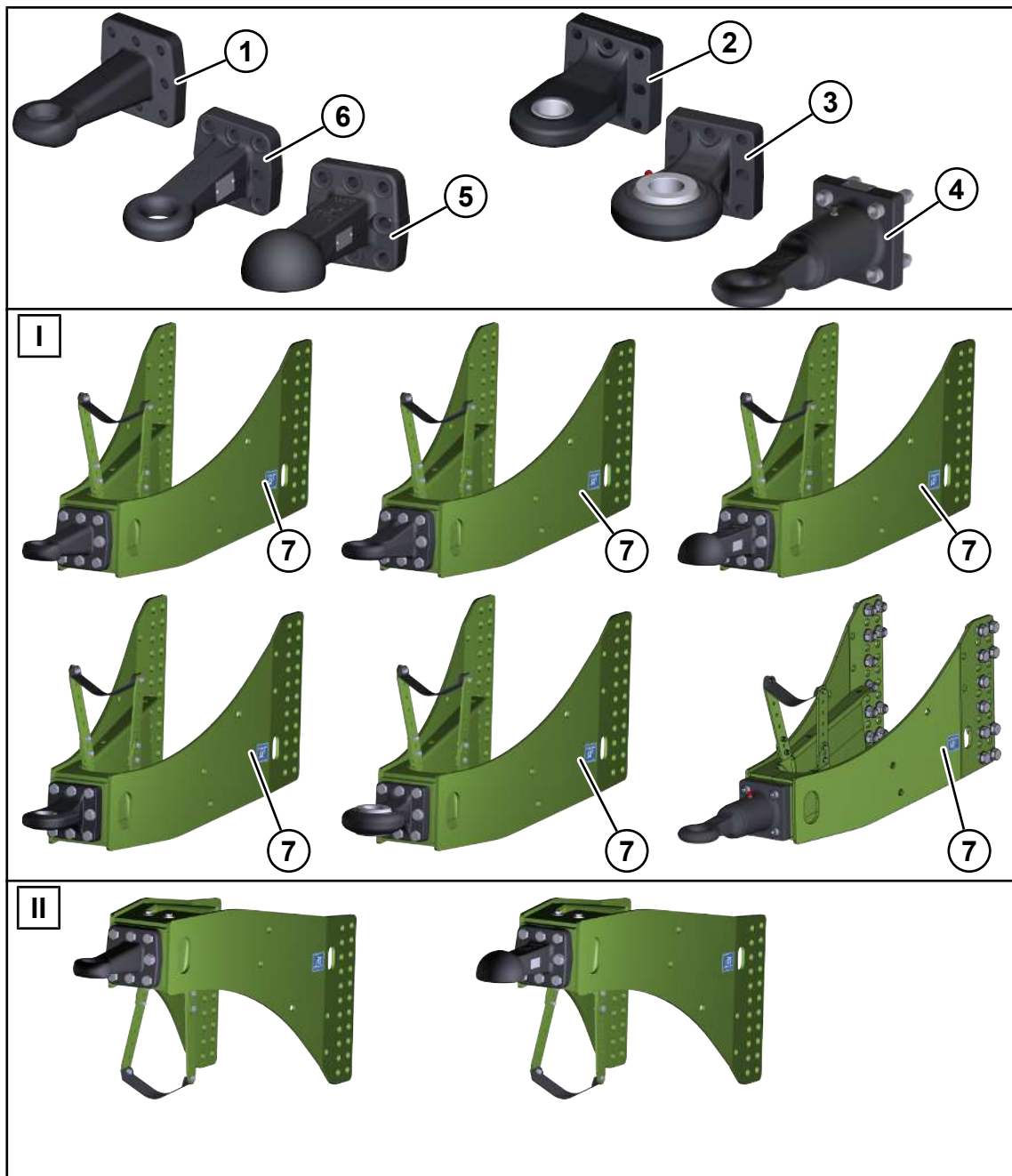
### For version with "Mechanical support jack"



BPG000-134

- ✓ The machine is shut down and safeguarded, [see Page 29](#).
- ▶ Attach a suitable hoist to the suspension point (1) of the drawbar.
- ▶ To be able to push up the existing support jack (5), slightly raise the drawbar with the hoist, and support is securely, [see Page 30](#).
- ▶ Pull the socket pin (4), push up the existing support jack (5) all the way and secure with the socket pin (4).
- ▶ Lower the drawbar onto the transport support (3) using the hoist.
- ▶ To remove the support jack (5), remove the 4 screws (2), take out the support jack and put it down to the side.
- ▶ Insert the supplied support jack (7) in the same position.
- ▶ Attach the supplied support jack (7) to the hoist (6) and lift it.
- ▶ Mount the screws (2) with the detent edged washers and nuts.
- ▶ Tighten the screws (2) to the corresponding tightening torque, [see Page 284](#).

### 7.5 Mounting drawbar eye on front part of the drawbar



BP000-512

- |  |                                     |
|--|-------------------------------------|
| 1 Drawbar eye Ø 40 mm                          | 4 Ball drawbar eye Ø 80 mm          |
| 2 Ball joint drawbar eye attachment category 3 | 5 Drawbar eye Ø 50 mm               |
| 3 Ball joint drawbar eye attachment category 4 | 6 Cuna drawbar eye (only for Italy) |
| 7 Front part of drawbar                        |                                     |

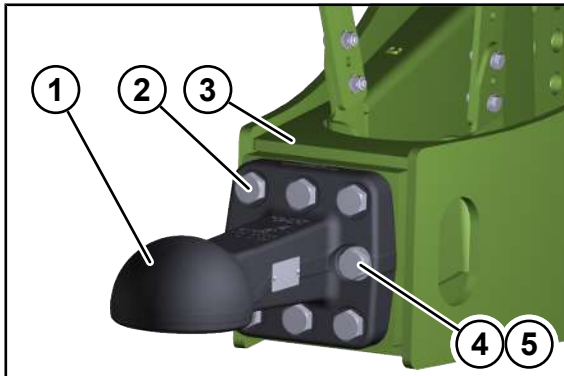
There are 6 drawbar eye types for hitching the machine. The Cuna drawbar eye is only permitted for Italy.

Depending on the height of the hitching device on the tractor side, the front part of the drawbar (6) can be mounted on the machine as a bottom hitching (I) or top hitching (II).

Do not exceed the maximum drawbar load of the tow coupling on the tractor side, see operating instructions of the tractor manufacturer.

To avoid unnecessary work steps, it is a good idea to decide beforehand on the bottom hitching (I) or top hitching (II).

## 7.6 Mounting the drawbar eye



BP000-518

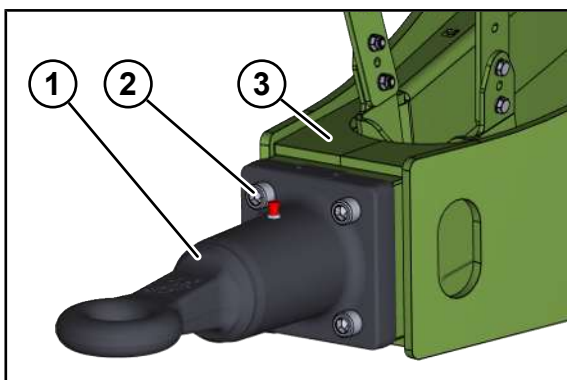
Attachment of the drawbar eye is described by way of example using a ball drawbar eye. Other types of drawbar eyes are attached in the same way.

- ▶ Do not exceed the maximum drawbar load of the tow coupling on the tractor side, see operating instructions of the tractor manufacturer.
- ▶ Do not exceed the maximum drawbar load of the drawbar eye. See type plate of the drawbar eye.
- ▶ Do not exceed the maximum drawbar load of the machine. See type plate of the machine.
- ➔ If the maximum drawbar load of the drawbar eye is greater than/equal to the maximum drawbar load of the machine, the drawbar eye may be mounted.
- ➔ If the maximum drawbar load of the drawbar eye is less than the maximum drawbar load of the machine, the drawbar eye must not be mounted.

Always mount the drawbar eye (1) on the front part of the drawbar (3) with the lettering or the type plate pointing upwards.

- ✓ The contact surface of the drawbar eye (1) and the contact surface of the front part of the drawbar (3) are clean and grease-free.
- ▶ Loosely pre-assemble the 3 upper and the 3 lower screws (2).
- ▶ Loosely pre-assemble the 2 middle screws (4) with disc (5).
- ▶ Tighten the screws (2,4) crosswise to a tightening torque of 300 Nm.

## 7.7 Mounting Cuna drawbar eye (only for Italy)



BP000-735

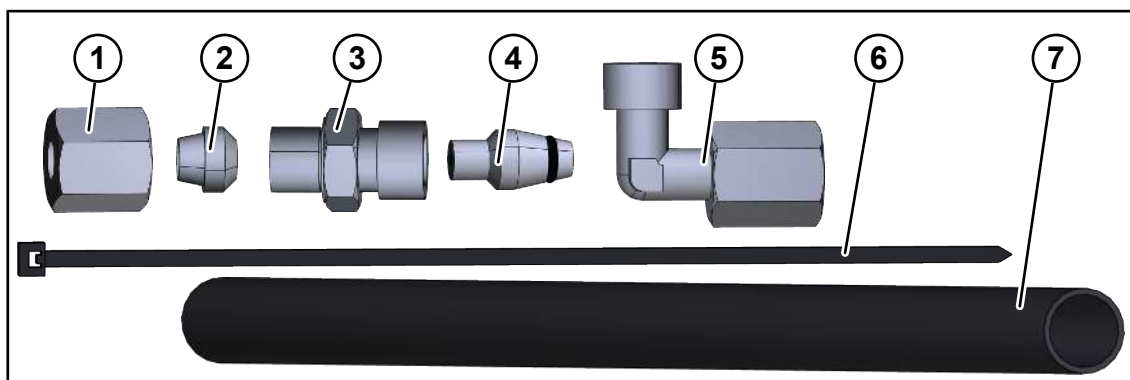
- ▶ Do not exceed the maximum drawbar load of the tow coupling on the tractor side, see operating instructions of the tractor manufacturer.
- ▶ Do not exceed the maximum drawbar load of the drawbar eye. See type plate of the drawbar eye.
- ▶ Do not exceed the maximum drawbar load of the machine. See type plate of the machine.
- ➔ If the maximum drawbar load of the drawbar eye is greater than/equal to the maximum drawbar load of the machine, the drawbar eye may be mounted.
- ➔ If the maximum drawbar load of the drawbar eye is less than the maximum drawbar load of the machine, the drawbar eye must not be mounted.

Always mount the drawbar eye (1) on the front part of the drawbar (3) with the type plate pointing upwards.

- ✓ The contact surface of the drawbar eye (1) and the contact surface of the front part of the drawbar (3) are clean and grease-free.
- ▶ Loosely pre-assemble the 4 screw connections (2).
- ▶ Tighten the 4 screw connections (2) in diagonally opposite sequence to a tightening torque of 300 Nm.

## 7.8 Mounting the central lubrication line on the drawbar eye

The mounting material for mounting the central lubrication line can be found at the rear left in the tool box on the ladder.



BP000-741

Item	Quantity	Designation	Ord. no.
(1)	2x	Union nut series L 6 mm Zn8	00 921 039 1
(2)	1x	Cutting ring row L 6 mm Zn8	00 921 045 1
(3)	1x	Screw-in support L 6 / M10 x 1 E Zn8	00 921 059 2
(4)	1x	Locking cone with O-ring seal L 6	90 000 236 0
(5)	1x	Angle bracket with direction setting. L 6 Zn8	00 921 225 0
(6)	20x	Cable ties 4.8 x 300 mm	00 922 671 1
(7)	1x	Hose 14 x 1	00 938 540 0

### 7.8.1 Dismounting the central lubrication line from the reservoir

#### Dismounting the central lubrication line from the reservoir

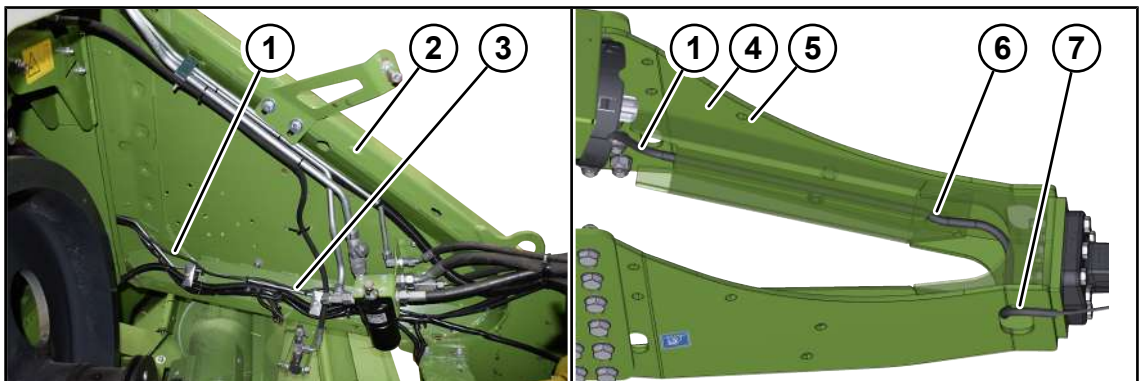


BP000-737

- ✓ The left-hand twine box is lowered, [see Page 128](#).
- ✓ The machine has been shut down and secured, [see Page 29](#).
- ▶ Dismount the central lubrication line (1) from the central lubrication pump (2).
- ▶ Mount the locking cone (3) and the union nut (4) on the central lubrication pump (2).

### 7.8.2 Routing path of the central lubrication line

The routing path of all drawbar eye types (not the Cuna drawbar eye) is described below. The routing path of the Cuna drawbar eye is described separately, [see Page 94](#).



BP000-738

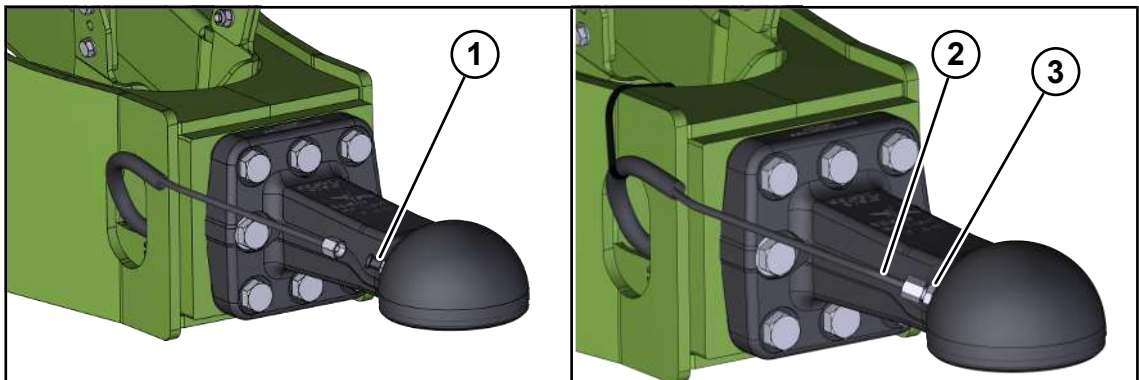
- ▶ Route the central lubrication line (1) along the installed hydraulic tubes (3) to the front part of the drawbar (4).

Routing the central lubrication line (1) to the front part of the drawbar (4) may require cable ties along the routing path to be cut.

- ▶ Route the central lubrication line (1) behind the stiffening profile (5) through the borehole (6).
- ▶ Route the central lubrication line (1) from the borehole (6) from the inside through the oblong hole (7) to the outside.
- ▶ Route the central lubrication line (1) to the grease nipple of the drawbar eye.
- ▶ Secure the central lubrication line (1) on the routing path with cable ties.

### 7.8.2.1 Mounting the central lubrication line on the drawbar eye

Assembly of the central lubrication line is described by way of example on a ball drawbar eye. Other types of drawbar eyes, with the exception of the Cuna drawbar eye, are assembled in the same way.

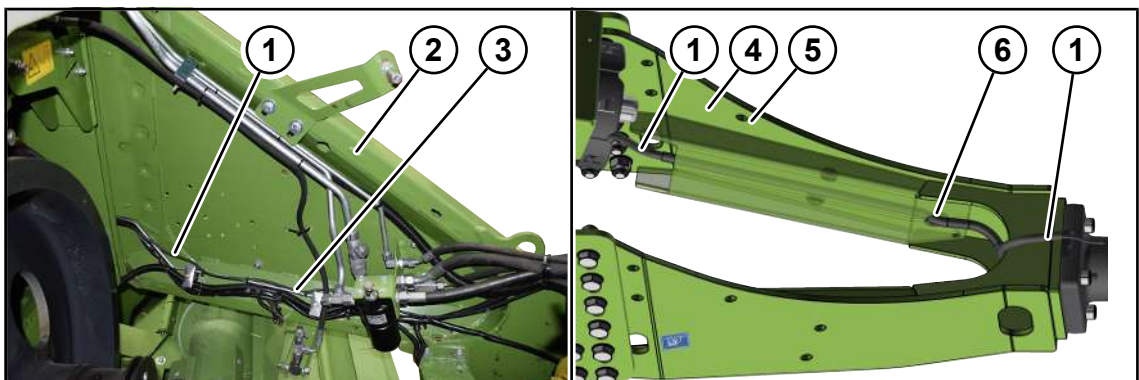


BP000-739

- ▶ Dismount the grease nipple (1).
- ▶ Mount the screw-in support (3).
- ▶ Mount the central lubrication line (2) on the screw-in support (3).
- ▶ Check visually to ensure that the central lubrication line (1) does not rub and does not get into contact with moving parts.
- ▶ When using a safety chain, ensure that the central lubrication line (1) does not rub against the safety chain.

### 7.8.3 Routing path of the central lubrication line

The routing path of the Cuna drawbar eye is described below. The routing path of other drawbar eyes is described separately, [see Page 93](#).



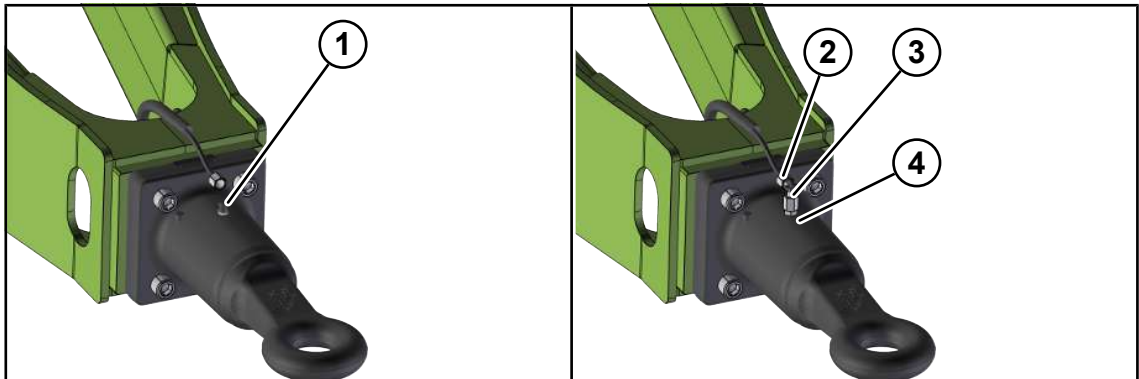
BP000-742

- ▶ Route the central lubrication line (1) along the installed hydraulic tubes (3) to the front part of the drawbar (4).

Routing the central lubrication line (1) to the front part of the drawbar (4) may require cable ties along the routing path to be cut.

- ▶ Route the central lubrication line (1) behind the stiffening profile (5) through the borehole (6).
- ▶ Route the central lubrication line (1) from the borehole (6) centrally over the front part of the drawbar to the grease nipple of the drawbar eye.
- ▶ Secure the central lubrication line (1) on the routing path with cable ties.

### 7.8.3.1 Mounting the central lubrication line on the Cuna drawbar eye



BP000-740

- ▶ Dismount the grease nipple (1).
- ▶ Mount the screw-in support (4).
- ▶ Mount the angle bracket (3).
- ▶ Mount the central lubrication line (2) to the angle bracket (3).
- ▶ Check visually to ensure that the central lubrication line (2) does not rub and does not get into contact with moving parts.

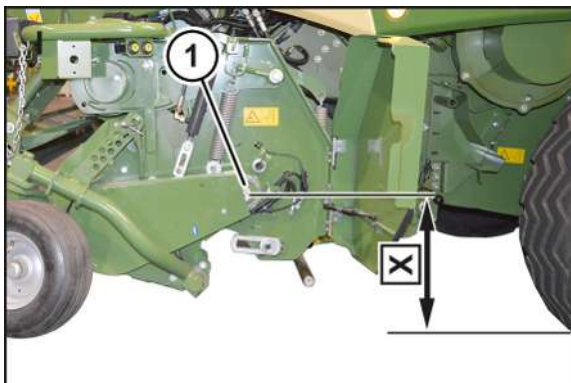
## 7.9 Adjusting the drawbar height

To ensure that the pick-up evenly picks up the crops, the drawbar height of the machine must be adjusted to the tractor used.


The pivot point (1) of the pick-up is used as a reference point to align the machine.

Setting the drawbar height is described by way of example using a bottom hitching with a ball drawbar eye. Setting the drawbar height as a bottom hitching with other drawbar eyes or as a top hitching with other drawbar eye types is set in a similar way.

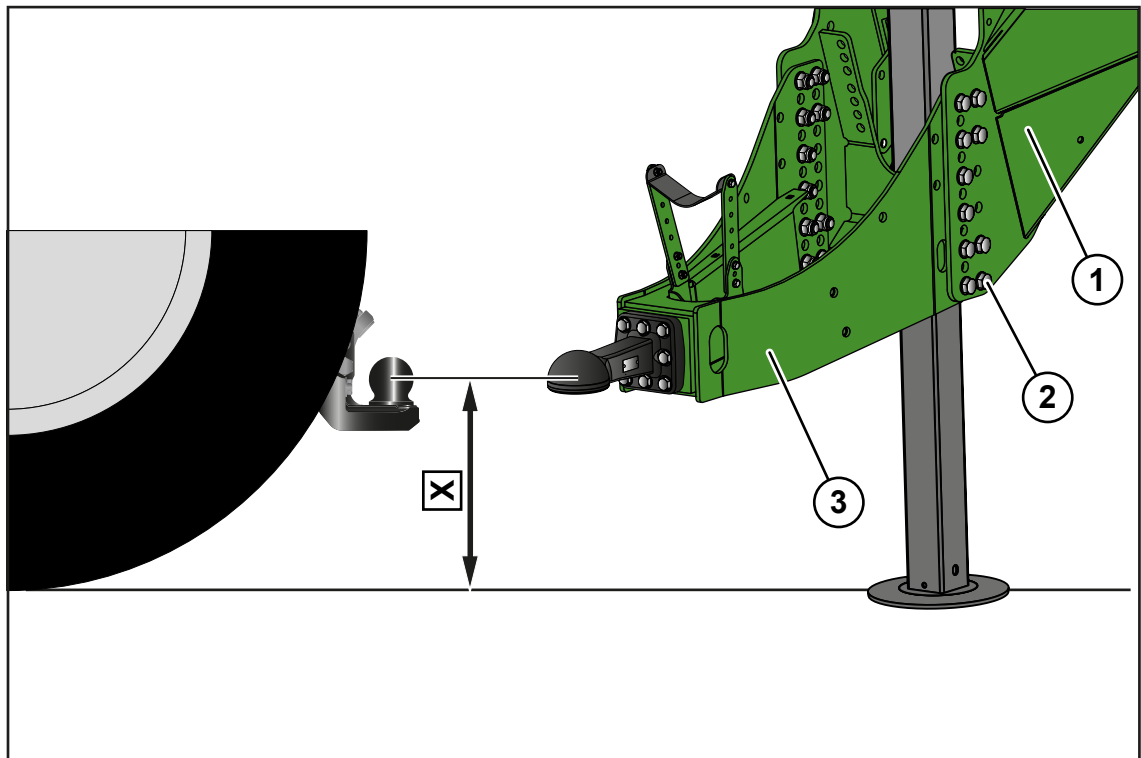
### Before making the setting



BPG000-077

- ✓ The machine is not connected to the tractor.
- ▶ For "**Mechanical support jack**" version: Raise/lower the support jack until the **dimension X=650–680 mm** is measured between the pivot point (1) and the ground.
- ▶ For "**Hydraulic support jack**" version: Reverse the tractor towards the drawbar until the hydraulic hoses for the support jack can be connected.
  - ▶ Switch off the tractor engine, remove the ignition key and take it with you.
  - ▶ Connect the hydraulic hoses () on the machine to a double-acting control unit on the tractor.
  - ▶ Using the double-acting control unit, raise/lower the support jack until the **dimension X=650–680 mm** is measured between the pivot point (1) and the ground.

### Mounting the front part of the drawbar



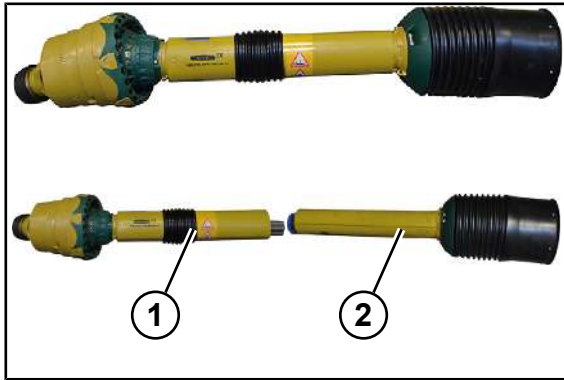
BP000-522

- ✓ The front part of the drawbar (3) is supported during the adjustment process using a suitable hoist.
- ▶ Determine the height (dimension X) of the tow coupling on the tractor side, measured between the middle of the ball head and ground.
- ▶ Mount the front part of the drawbar (3) on the drawbar (1) at the determined dimension X.
- ▶ Tighten the 20 screws (2) (strength class 10.9) to the corresponding tightening torque, [see Page 284](#).

## 7.10 Gelenkwelle anpassen [Walterscheid]

It must be possible to push together the both universal shaft halves in the narrowest position (cornering with maximum steering angle and simultaneously driving a slope up or down) without any contact of the both section tube ends. In this process, the displacement path (overlap) must be at least 220 mm, both in straight-ahead driving and when cornering.

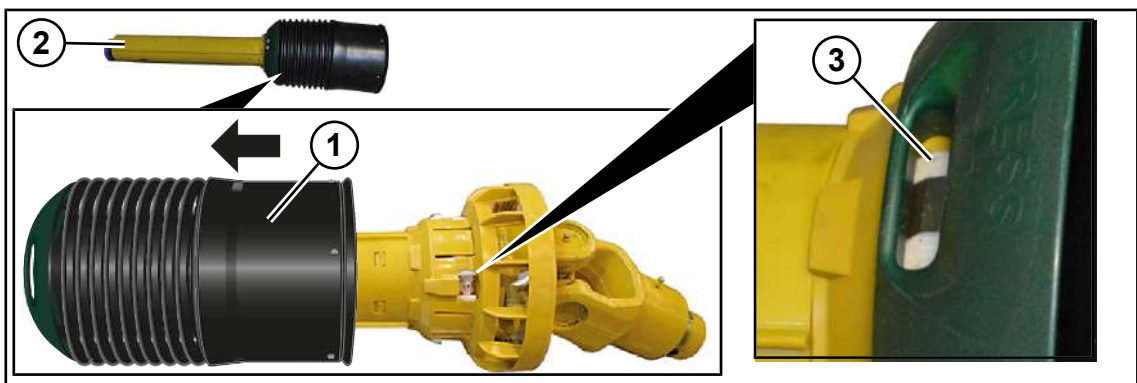




BP000-391

- ▶ Pull apart the universal shaft halves (1, 2).

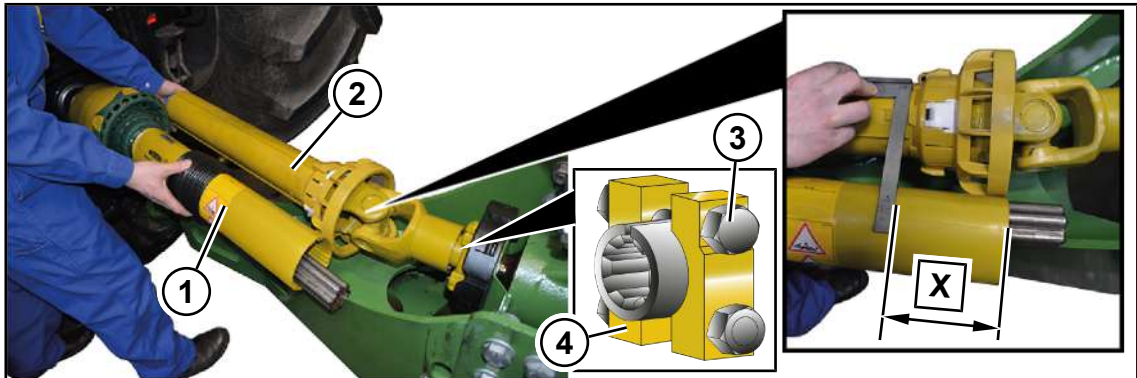
### Removing the protective cap



BP000-392

- ▶ In order to remove the protective cap (1) from the universal shaft half (2), push in the both locks (3) using a screwdriver and push back the protective cap (1).
- ▶ Put aside the protective cap (1) for later reinstallation.

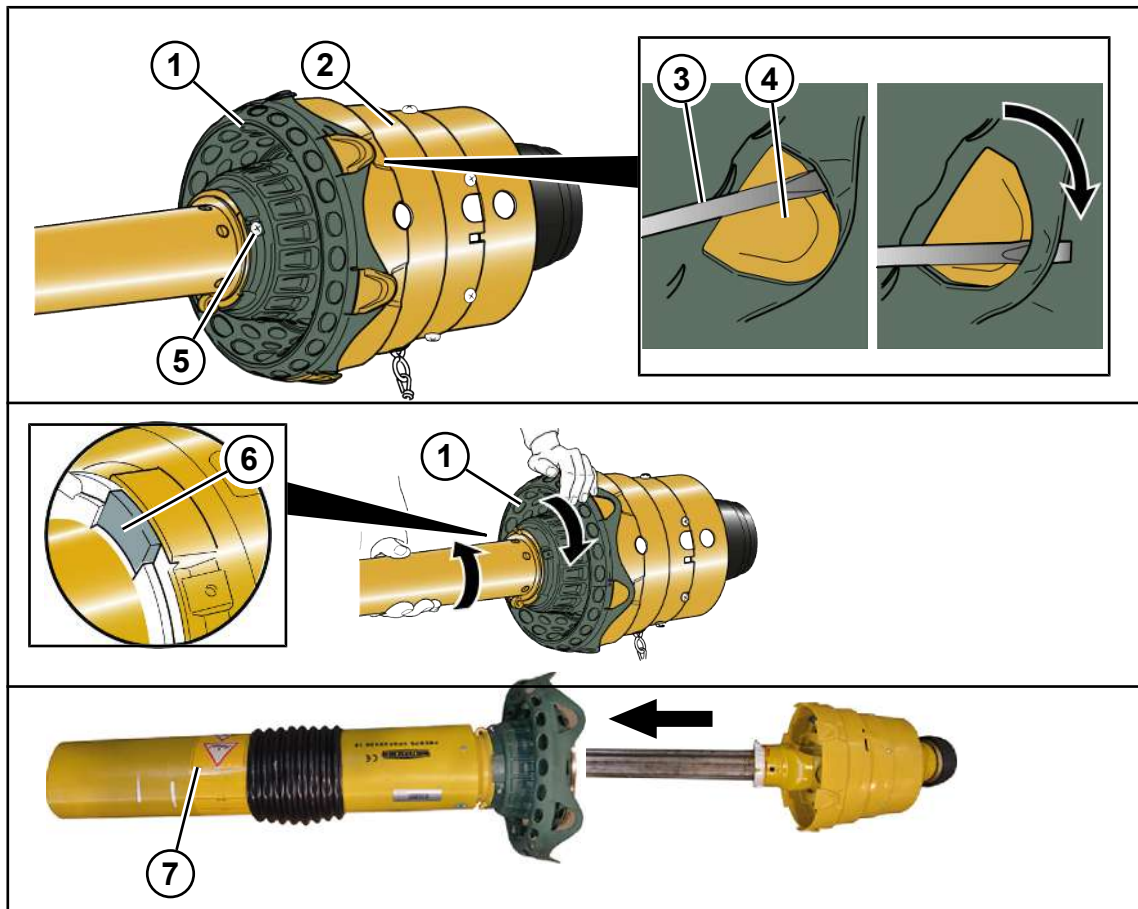
### Determining overlap



BP000-393

- ▶ Connect the machine to the tractor without universal shaft.
- ▶ Shut down and safeguard the machine, [see Page 29](#).
- ▶ Slide the universal shaft half (1) on the tractor PTO shaft until the lock snaps into place automatically.
- ▶ Dismount the clamping bridge (4).
- ▶ Slide the universal shaft half (2) on the machine PTO shaft until the boreholes of the clamping bridge (4) protrude beyond the annular groove.
- ▶ Mount the clamping bridge (4) by means of the screws (3).
- ▶ Determine dimension X and mark it on the outer guard tube (1).
- ▶ Remove the universal shaft halves (1,2) on tractor and machine side.

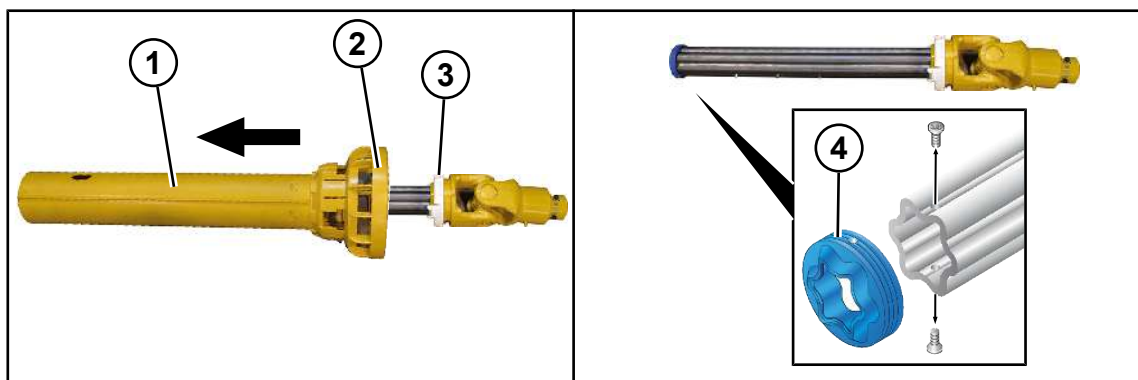
### Dismounting outer guard tube



BP000-394

- ▶ Use a screwdriver (3) to pull the collar (1) over the locks (4) of the guard funnel (2).
- ▶ Screw out the 3 screws (5).
- ▶ Turn the collar (1) until you can feel a stop (6) and push back the outer guard tube (7).

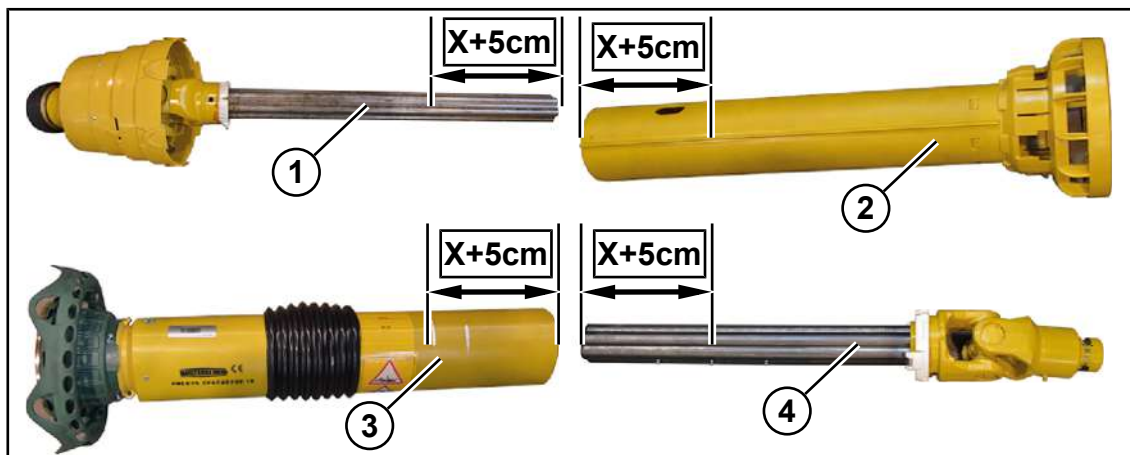
### Dismounting inner guard tube



BP000-395

- ▶ Loosen the inner guard tube (1) from the slide ring (3) by lightly tapping the cap (2) and push it back.
- ▶ Dismount the seal (4).

### Shortening guard tubes and section tubes



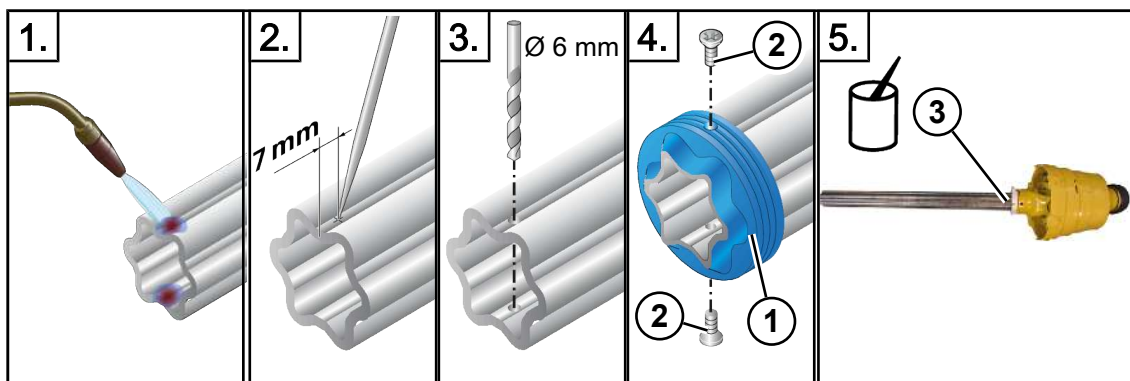
BP000-396

- ▶ Mark the determined dimension  $X + 5\text{ cm}$  on the guard tubes (2, 3) and on the section tubes (1, 4).

**NOTE:** In order to protect the section tube from chips, stuff a damp cloth in the section tube when using an angle grinder.

- ▶ Shorten the guard tubes (2, 3) and the section tubes (1, 4) at right angles on the placed markings, deburr from outside and inside and remove the chips.

### Mounting seal

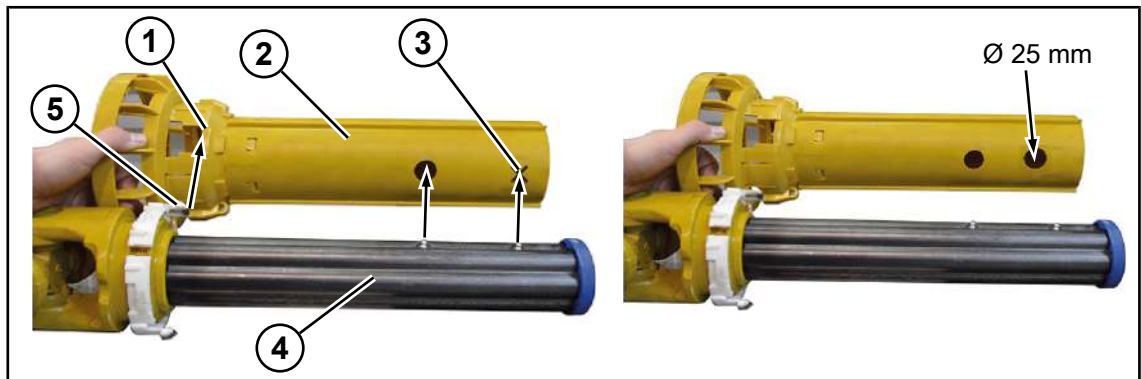


BP000-400

**INFORMATION:** Ensure that the boreholes for the seal (1) are in alignment with the existing grease nipples.

- ▶ Heat the outer section tube at the point on the opposite side.
- ▶ Mark out the borehole for the seal (1) 7 mm away from the end of the tube.
- ▶ Drill a borehole  $\varnothing 6\text{ mm}$  into the section tube through both walls and deburr from inside and outside.
- ▶ Slide the seal (1) onto the section tube and mount with 2 screws (2).
- ➔ The screws must not protrude into the inside of the tube.
- ▶ Grease the inner section tube (3) from the outside.

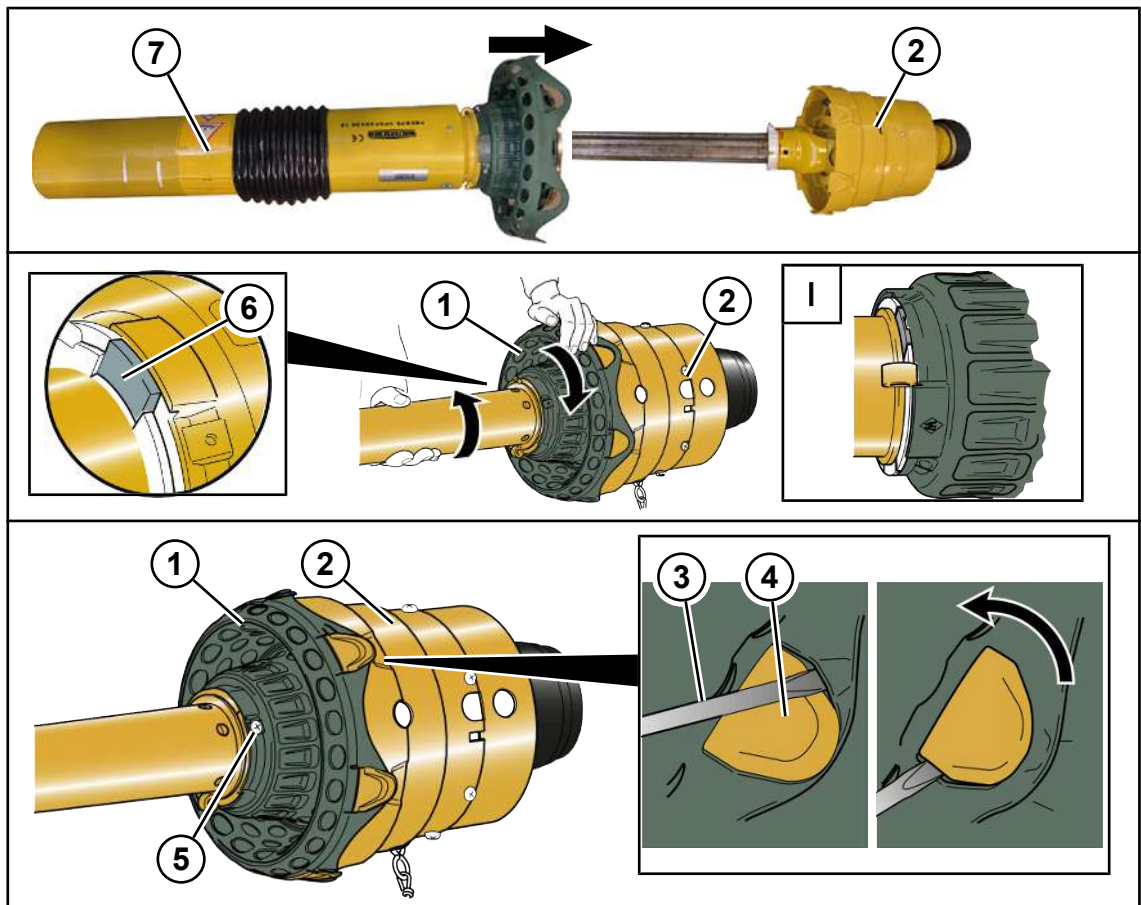
### Drilling lubrication borehole into inner guard tube



BP000-401

- ▶ Place the inner guard tube (2) next to the outer section tube (4) so that the slide ring lock (5) is in alignment with the opening (1).
- ▶ Mark the position (3) of the grease nipples on the inner guard tube (2).
- ▶ Drill a borehole  $\varnothing$  25 mm in the inner guard tube (2) and deburr it.

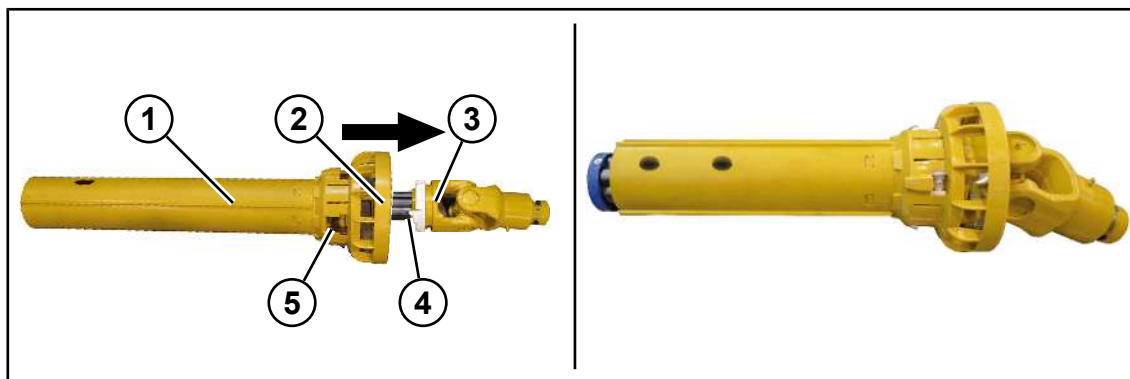
### Mounting outer guard tube



BP000-403

- ▶ Push the outer guard tube (7) onto the inner section tube and align it so that the stop (6) of the slide ring and the opening of the guard funnel (2) are in alignment.
- ▶ Turn the collar (1) until you can feel a stop, refer to detail (I).
- ▶ Mount the 3 screws (5).
- ▶ Use a screwdriver (3) to pull the collar (1) over the locks (4) of the guard funnel (2)

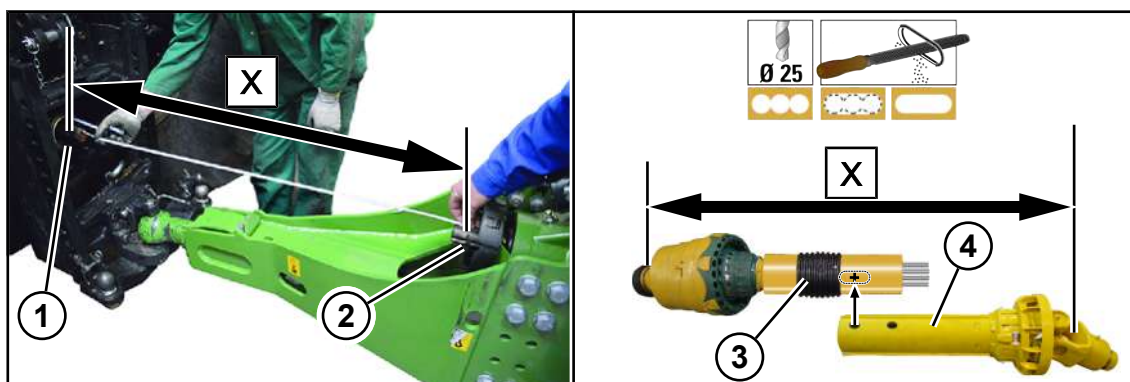
### Mounting inner guard tube



BP000-402

- ▶ Slide the inner guard tube (1) on the outer section tube (3) and align so that the opening (5) of the cap (2) and the slide ring lock (4) are in alignment.
- ▶ Slide on the inner guard tube (1) until the slide ring lock (4) engages audibly in the opening (5).

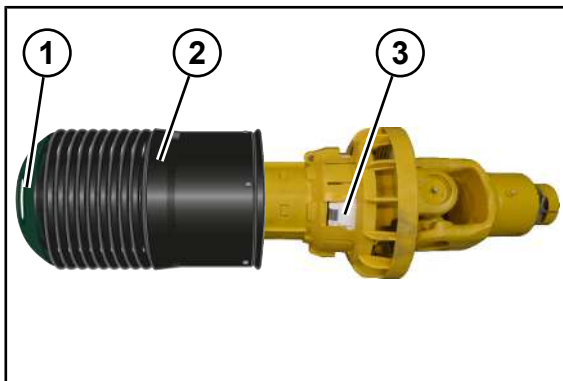
### Drilling lubrication borehole into outer guard tube



BP000-405

- ▶ Bring the machine into the widest position (straight-ahead driving).
- ▶ Shut down and safeguard the machine, [see Page 29](#).
- ▶ In order to determine dimension X, measure the distance between the centre of the annular groove (1) (tractor PTO shaft) and the centre of the annular groove (2) (machine PTO shaft).
- ▶ Lay the universal shaft half (3) and the inner guard tube (4) next to each other so that the determined dimension X is reached.
- ▶ Mark the position of the lubrication borehole of the inner guard tube (4) on the outer guard tube (3).
- ▶ Dismount the outer guard tube (3), [see Page 99](#).
- ▶ Drill three boreholes of  $\varnothing 25$  mm into the outer guard tube (3), file them to an oblong hole and deburr.
- ▶ Mount the outer guard tube (3), [see Page 101](#).

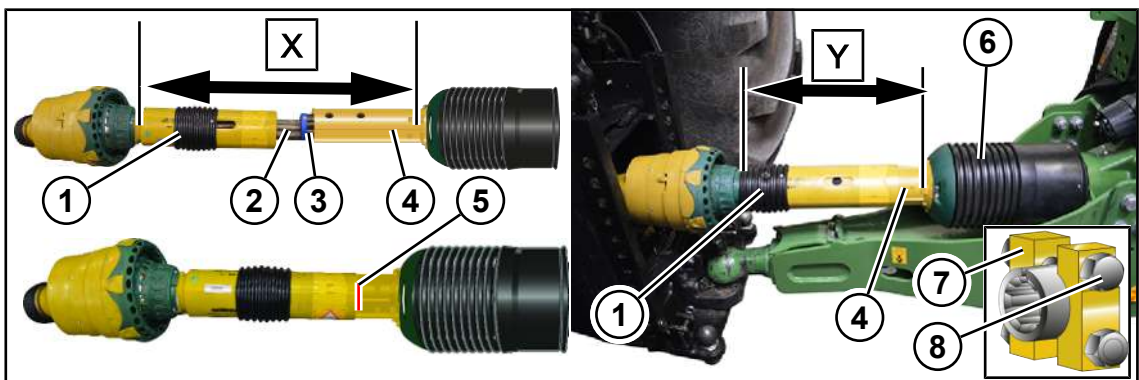
### Mounting protective cap



BP000-406

- ▶ Slide on the protective cap (2) and align it so that the both openings (1) are in alignment with the slide ring locks (3).
- ▶ Slide on the protective cap (2) until both slide ring locks (3) engage audibly in the openings (1).

### Determining displacement path (overlap)



BP000-404

- ▶ Position the universal shaft halves (1, 4) so that the outer section tube (3) is located in front of the inner section tube (2).
- ▶ Determine dimension "X".
- ▶ Assemble the universal shaft halves (1, 4) until the stop is reached.
- ▶ At the end of the outer guard tube, draw a marking (5) on the inner guard tube.
- ▶ In order to facilitate the assembly of the universal shaft half (4), push back the protective cap (6), [see Page 97](#).
- ▶ Slide the universal shaft half (1) on the tractor PTO shaft until the lock snaps into place automatically.
- ▶ Dismount the clamping bridge (7).
- ▶ Slide the universal shaft half (4) on the machine PTO shaft until the boreholes of the clamping bridge (7) protrude beyond the annular groove.
- ▶ Mount the clamping bridge (7) by means of the screws (8). Tightening torque: M12=80 Nm, M14=130 Nm, M16= 200 Nm.
- ▶ Bring the machine into the widest position (straight-ahead driving).
- ▶ Shut down and safeguard the machine, [see Page 29](#).
- ▶ Determine the dimension Y.

### Calculating displacement path

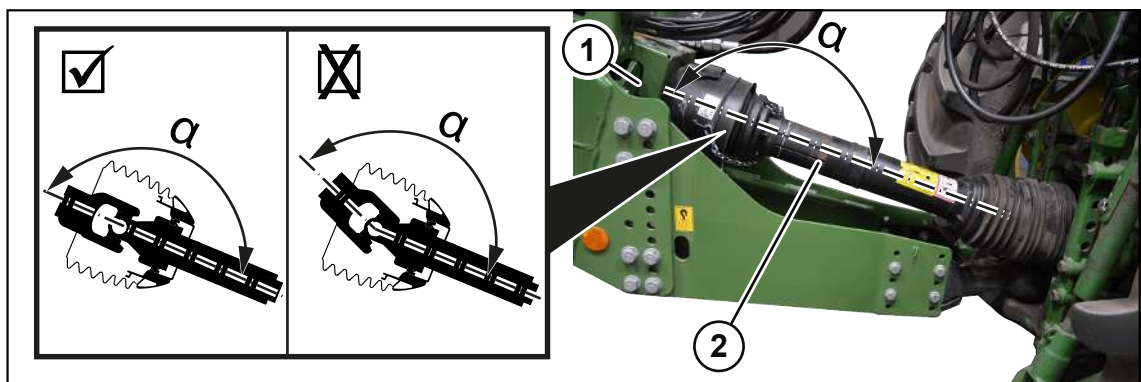
- ▶ Calculating the displacement path "V" (overlap):  $V=X-Y$ .
- ➔ The displacement path (overlap) must be at least  $V \geq 220$  mm.

### Checking shortened universal shaft when driving around curves

- ▶ Drive a right or left curve with the tractor. In doing so, observe the marking (5).
- ➔ The outer guard tube must not touch the marking (5) in the narrowest position (cornering with maximum steering angle and simultaneous driving up and driving down a slope).
  - ▶ If the outer guard tube touches the marking (5), shorten the both universal shaft halves by the same length as described above until the outer guard tube does no longer touch the marking.

## 7.11 Check the angle of the universally-jointed drive shaft.

The universally-jointed drive shaft (2) transmits the power of the tractor to the intermediate bearing (1). To avoid damage to the machine and ensure optimal power transmission, the bending angle ( $\alpha$ ) of the universally-jointed drive shaft (2) in the area of the intermediate bearing (1) should be between  **$\alpha=170-190$  degrees**. The less the bending angle ( $\alpha$ ) deviates from 180 degrees, the less the wear on the components.



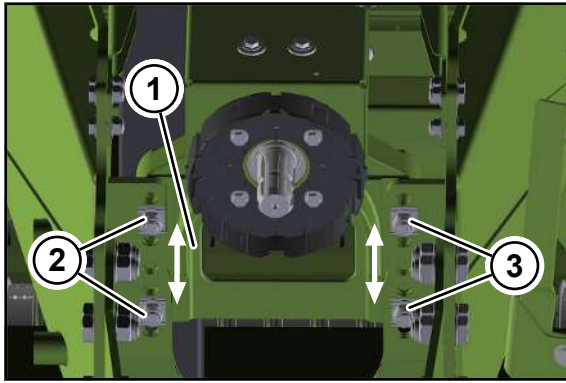
BPG000-083

- ✓ The machine has been shut down and secured, [see Page 29](#).
- ✓ The universal shaft on the tractor is adapted.
- ✓ The universal shaft is mounted.
- ▶ Determine the bending angle of the universally-jointed drive shaft ( $\alpha$ ) in the area of the intermediate bearing.
  - ⇒ If the bending angle is  **$\alpha=170-190$  degrees**, power transmission of the universally-jointed drive shaft is ideally set.
  - ⇒ If the bending angle is **not  $\alpha=170-190$  degrees** power transmission of the universally-jointed drive shaft is not ideally set and this could cause damage to the intermediate bearing.
  - ▶ To reduce/increase the bending angle of the universally-jointed drive shaft, the powertrain on the intermediate bearing must be set, [see Page 104](#).

## 7.12 Drive train: Adjusting height

The bending angle on the universally-jointed drive shaft ([see Page 104](#)) is set via the powertrain.





BPG000-024

- ✓ The machine has been shut down and secured, [see Page 29](#).
- ✓ The drawbar height is adjusted, [see Page 95](#).
- ✓ The universal shaft on the tractor is adapted.
- ✓ The machine has been connected to the tractor.
- ▶ Remove the universal shaft.
- ▶ Use a suitable auxiliary fixture to support the intermediate bearing (1) during the whole adjustment process.
- ▶ Dismount the screws (2) of the intermediate bearing (1).
- ▶ Move intermediate bearing (1) in the hole pattern.
- ▶ Assemble the screws (2), tightening torque, [see Page 284](#).
- ▶ Install the universal shaft.
- ▶ Check the bending angle of the universally-jointed drive shaft, [see Page 104](#).

## 7.13 Adapting hydraulic system



BPG000-018

- ▶ Move the control units on the tractor into float position.
- ▶ Depressurise the hydraulic system on the tractor and the machine.
- ▶ Shut down and safeguard the machine, [see Page 29](#).

### Operation of the machine on tractors with constant flow system

For tractors with open hydraulic system:

- ▶ Unscrew the system screw (1) up to the stop.

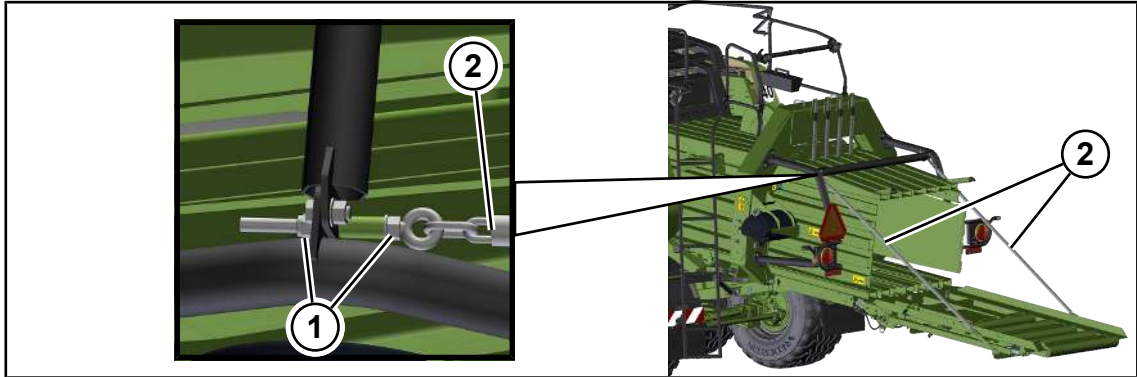
### Operation of the machine on tractors with Load Sensing system

For tractors with closed hydraulic system (signal line is connected):

- ▶ Screw in the system screw (1) up to the stop.

## 7.14 Setting the bale chute

When it is unfolded, the bale chute represents an extension of the bale channel. In order to make sure that big bales are set down on the ground correctly, the back edge of the bale chute must not be set too high above the ground. Otherwise the bales will be damaged when they are placed on the ground.



BPG000-102

The inclination of the bale chute to ground can be set via the length of the bale chute supporting chains (2).

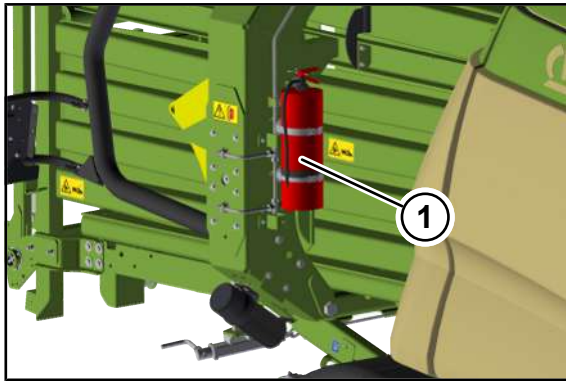
- ✓ The machine is parked on stable, solid and even ground.
- ✓ The bale chute has been lowered, [see Page 149](#).
- ▶ Shut down and safeguard the machine, [see Page 29](#).
- ▶ Adjust the nuts (1) on both sides of the bale channel until the height of the bale chute back edge is set appropriately.

#### For "Weighing device" version:

For the "Weighing device" version, the big bale is to rest temporarily on the bale chute so that it can be weighed. For this reason, the inclination of the bale chute with the "Weighing device" version is to be set less strong than the version without a weighing device.

If the inclination of the bale chute is changed, the weighing device must be readjusted, [see Page 219](#).

## 7.15 Mounting fire extinguisher



BPG000-034

- ✓ The machine has been shut down and secured, [see Page 29](#).
- ▶ Replenish the fire extinguisher (1) according to the operating instructions of fire extinguisher manufacturer.
  - ⇒ If the operating instructions of the fire extinguisher manufacturer are missing, consult the homepage of the fire extinguisher manufacturer.
- ▶ Insert the fire extinguisher (1) into the support to the right in front of the yoke so that the operating instructions on the type plate are legible and are facing outwards.

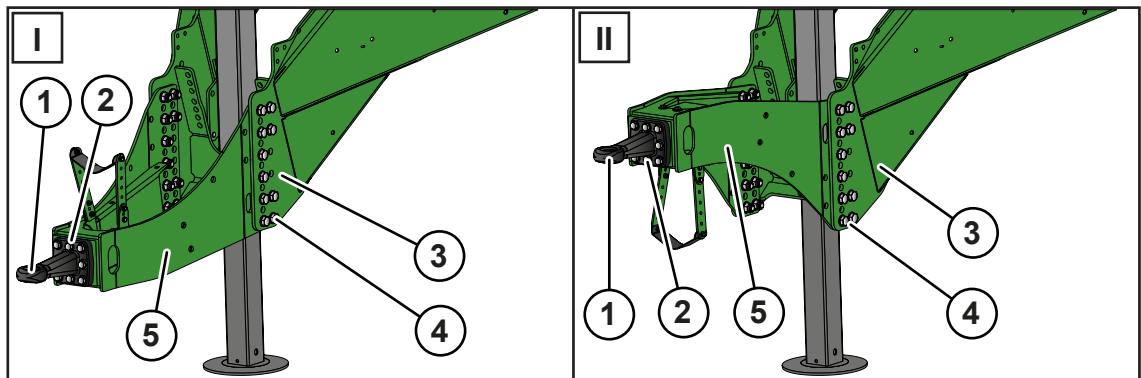
**WARNING! Risk of injury due to falling fire extinguisher! In order to secure the fire extinguisher, adjust the tensioning straps with sufficient tension according to the circumference of the fire extinguisher.**

- ▶ Adjust the length of the tensioning straps according to the circumference of the fire extinguisher.
- ▶ Shorten the length of the tensioning straps by a few millimetres and close the fasteners to guarantee that the closed tensioning straps are tensioned sufficiently.
- ➔ The tensioning straps have been properly adjusted if the fasteners can only be closed by means of an auxiliary tool (e. g. screwdriver).
- ➔ If it is possible to close the fasteners manually:
  - ▶ Shorten the length of the tensioning straps so far that the fasteners can only be closed by an auxiliary tool (e. g. screwdriver).

## 7.16 Converting the drawbar from bottom to top hitching

The drawbar is mounted as standard as bottom hitching (I).

To convert from bottom hitching (I) to top hitching (II), the front part of the drawbar (3) and the drawbar eye (1) are turned by 180 degrees.



BP000-083

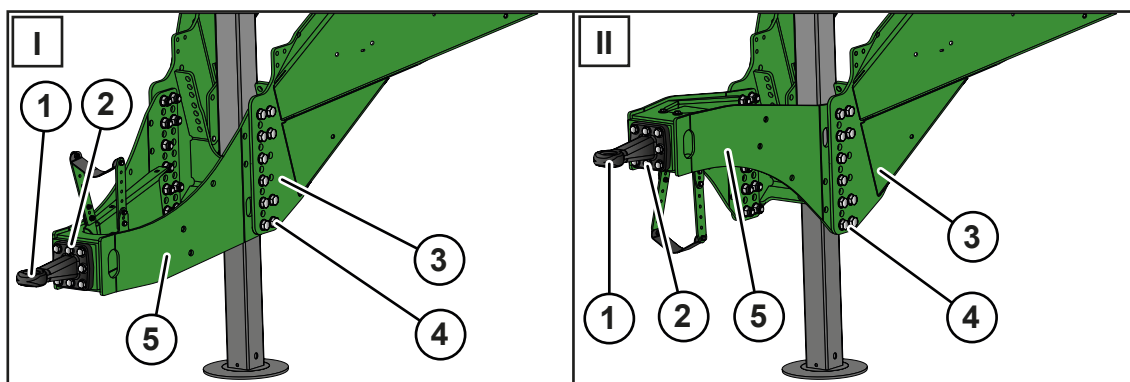
## I Bottom hitching

## II Top hitching

- ✓ The machine has been shut down and secured, [see Page 29](#).
- ✓ The front part of the drawbar (5) is secured during the adjustment process using a suitable hoist.
- ▶ To disassemble the drawbar eye (1) undo the screw connection (2).
- ▶ To disassemble the front part of the drawbar (5), undo the screw connection (4).
- ▶ Turn the front part of the drawbar (5) by 180°, guide them between the drawbar (3) and mount them with the screw connection (4).
- ▶ Assemble the drawbar eye (1) with the screw connection (2).
- ▶ Adjust the drawbar height, [see Page 95](#).
- ▶ Check the bending angle of the universally-jointed drive shaft, [see Page 104](#).

## 7.17 Converting the drawbar from top to bottom hitching

To convert from top hitching (II) to bottom hitching (I), the front part of the drawbar (5) and the drawbar eye (1) are turned by 180 degrees.



BP000-083

## I Bottom hitching

## II Top hitching

- ✓ The machine has been shut down and secured, [see Page 29](#).
- ✓ The front part of the drawbar (5) is secured during the adjustment process using a suitable hoist.
- ▶ To disassemble the drawbar eye (1) undo the screw connection (2).
- ▶ To disassemble the front part of the drawbar (5), undo the screw connection (4).
- ▶ Turn the front part of the drawbar (5) by 180°, guide them between the drawbar (3) and mount them with the screw connection (4).
- ▶ Assemble the drawbar eye (1) with the screw connection (2).
- ▶ Adjust the drawbar height, [see Page 95](#).
- ▶ Check the bending angle of the universally-jointed drive shaft, [see Page 104](#).

## 8 Start-up

 **WARNING**

**Risk of injury due to non-observance of relevant safety notices**

If the relevant safety notices are not observed, persons may get seriously injured or killed.

- ▶ To avoid accidents, the basic safety instructions must be read and observed, [see Page 17](#).

 **WARNING**

**Risk of injury due to non-observance of safety instructions**

If the relevant safety routines are not observed, persons may be seriously injured or killed.

- ▶ The safety routines must be read and observed to avoid accidents, [see Page 29](#).

 **WARNING**

**Risk of injury or damage to the machine due to connection lines which have been incorrectly connected, interchanged or improperly installed**

If the connection lines of the machine have been incorrectly connected to the tractor or have been improperly installed, they may pull off or be damaged. This may result in serious accidents. If connection lines are interchanged, functions may inadvertently be actuated which may also result in serious accidents.

- ▶ Correctly connect and secure the hoses and cables.
- ▶ Lay the hoses, cables and ropes so that they do not scrape, come under tension or become jammed or come into contact with other components (e.g. tractor tyres).
- ▶ Couple and connect the hoses and cables to the designated connections as described in the operating instructions.

### 8.1 Connecting the machine to the tractor

**NOTICE**

When the tractor and machine are in a horizontal position, the hitched mechanical connection devices (e.g. ball-head hitch) must be in a horizontal position (+/- 3°) with respect to the ground so as not to obstruct the operational swivel angle between the mechanical connection devices.

For the "Drawbar eye" version

For "Ball head drawbar eye 80" version



BPG000-066

- ✓ The drawbar height is adjusted, [see Page 95](#).
- ✓ The safety device, which prevents unauthorised use, has been removed, [see Page 166](#).

#### For the “drawbar eye” version

**WARNING! Increased risk of injury!** Ensure that there is no one between the tractor and the machine while connecting the machine (especially while driving the tractor backwards).

- ▶ Move the tractor in reverse onto the drawbar until the drawbar eye of the machine has been inserted into the hitching device of the tractor.
- ▶ Shut down and safeguard the machine, [see Page 29](#).
- ▶ Secure the hitching device according to the operating instructions of the tractor manufacturer.

#### For “Ball head drawbar eye 80” version“

**WARNING! Increased risk of injury!** Ensure that there is no one between the tractor and the machine while connecting the machine (especially while driving the tractor backwards).

- ▶ Drive the tractor backwards towards the drawbar and move the ball-head hitch of the tractor under the machine.
- ▶ Shut down and safeguard the machine, [see Page 29](#).

#### For the “mechanical support jack” version

- ▶ Lower the drawbar by means of the support jack until the ball drawbar eye rests on the ball-head hitch.
- ▶ Secure the hitching device according to the operating instructions of the tractor manufacturer.

#### For the “hydraulic support jack” version

- ▶ Connect the hydraulic hoses for the support jack, [see Page 114](#).
- ▶ The drawbar has to be lowered via support jack until the ball drawbar eye rests on the ball-head hitch.
- ▶ Shut down and safeguard the machine, [see Page 29](#).
- ▶ Secure the hitching device according to the operating instructions of the tractor manufacturer.

## 8.2 Installing universal shaft

 **WARNING**

**Risk of injury by failure to take account of the danger zone of the universal shaft**

If the danger zone of the universal shaft is ignored, persons can be seriously hurt or killed.

- ▶ To avoid accidents, observe the danger zone of the universal shaft, [see Page 21](#).

 **WARNING**

**Increased risk of injury if the flywheel brake is not applied**

If the flywheel brake is not applied, parts may start to move unexpectedly. People may be seriously injured or killed as a result.

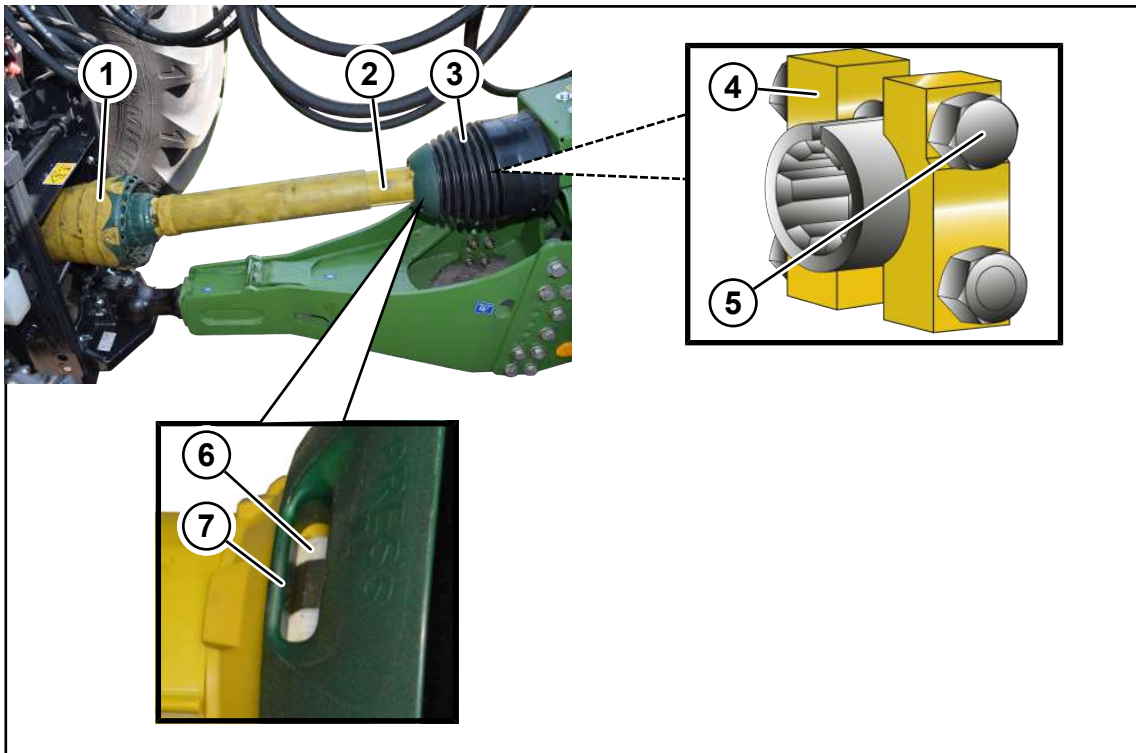
- ▶ To avoid accidents, the flywheel brake must be applied before the universal shaft is connected or disconnected.

**NOTICE**

**Changing the tractor**

There is a risk of damaging the machine if the length of the universal shaft is not checked when the tractor is changed.

- ▶ To prevent damage to the machine, check the length of the universal shaft whenever you change tractors. Have it corrected by a KRONE service partner if necessary.



BP000-678

- ✓ The machine is shut down and safeguarded, [see Page 29](#).

### On machine side

- ▶ To remove the protective cap (3) from the universal shaft half (2), use a screwdriver to press in the two locks (6) and push back the protective cap (3).
- ▶ Dismount the clamping bridge (4).
- ▶ Slip the universal shaft half (2) on the machine PTO shaft until the boreholes of the clamping bridge (4) are above the annular groove.
- ▶ Mount the clamping bridge (4) with the screws (5).

Tightening torque: M12=80 Nm, M14=130 Nm, M16= 200 Nm.

- ▶ Slip on the protective cap (3) until both slide ring locks (6) engage audibly in the openings (7).

### On tractor side

- ▶ Push the universal shaft half with the wide-angle clutch (1) onto the tractor PTO shaft until the lock engages automatically.

#### INFO

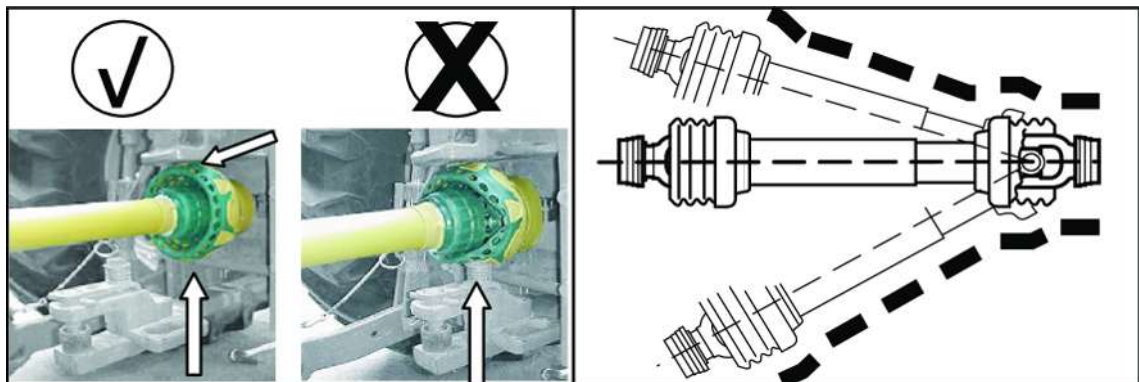
More details can be found in the operating instructions for the universal shaft.

#### NOTICE

##### Damage to the machine due to swivel range of the universal shaft

Make sure to take into account the swivel range of the universal shaft in all operating states. Otherwise parts may touch the universal shaft which leads to damages at the tractor and/or machine.

- ▶ Ensure there is enough room for the universal shaft to swivel in all operating states (cornering with maximum steering angle).



BP000-096



### 8.3 Connecting the hydraulic hoses

 **WARNING**

**Risk of injury from escaping hydraulic oil**

The hydraulic system operates at very high pressure. Escaping hydraulic oil may seriously injure skin, limbs and eyes.

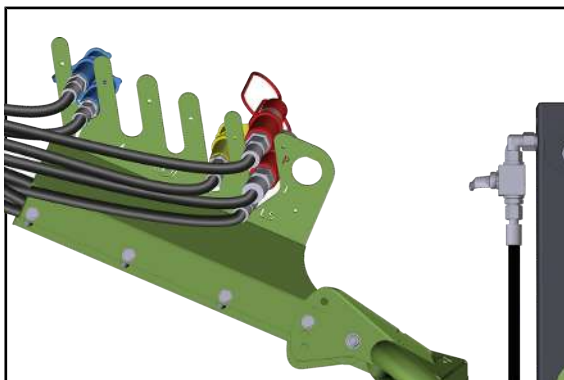
- ▶ Prior to connecting the hydraulic hoses to the tractor, depressurise both sides of the hydraulic system.
- ▶ Depressurise the hydraulic system before you uncouple the hoses and work on the hydraulic system.
- ▶ When connecting the quick couplings, ensure that they are clean and dry.
- ▶ Check hydraulic hoses at regular intervals [see Page 305](#) and replace them if they are damaged (e.g chafing areas or points of contact) or aged. The replacement lines must comply with the technical requirements of the device manufacturer.

**NOTICE**

**Damage to the machine due to soiling of the hydraulic system**

If foreign objects or liquids get into the hydraulic system, the hydraulic system may be severely damaged.




- ▶ When connecting the quick couplings, ensure that they are clean and dry.
- ▶ Check the hydraulic hoses for abrasion and pinch point and replace if required.






BPG000-104

- ▶ Depressurise the tractor hydraulics.
- ▶ Shut down and safeguard the machine, [see Page 29](#).
- ▶ Clean and dry the connections of the hydraulic quick connector.

### Tractor with Load Sensing system

- ✓ The system screw of the hydraulic system is fully screwed in, [see Page 105](#).
- ▶ Connect the hydraulic hose () to the Load Sensing connection of the tractor.
- ▶ Connect the hydraulic hose () to the connection for the depressurised return.
- ▶ Connect the hydraulic hose () to the connection for the Load Sensing control unit of the tractor.

### Tractor with constant flow system

- ✓ The system screw of the hydraulic system has been fully unscrewed, [see Page 105](#).
- ▶ Connect the hydraulic hose () to the pressure connection of the tractor.
- ▶ Connect the hydraulic hose () to the connection for the depressurised return.
- ▶ Place the hydraulic hose () in the hose support on the machine.

#### INFO

Alternatively, the hydraulic hoses (P/T) can be connected to a double-acting control unit.

### Hydraulic connection pick-up

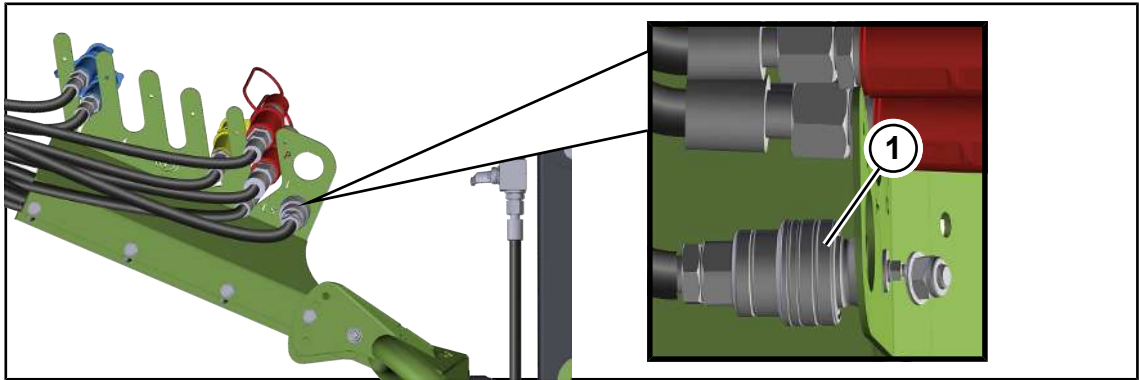
- Connect the hydraulic hose () with a single-acting control unit of the tractor.

### Hydraulic connection of hydraulic support jack

- Connect the hydraulic hoses () on the machine to a double-acting control unit on the tractor.

## 8.4 Connecting hydraulic brake (export)

A hydraulic brake may be required on the machine to meet country specific standards. A brake valve is required on the tractor for the hydraulic brake. The corresponding hydraulic hose is connected to the brake valve on the tractor. The brake is activated by actuating the brake pedal.

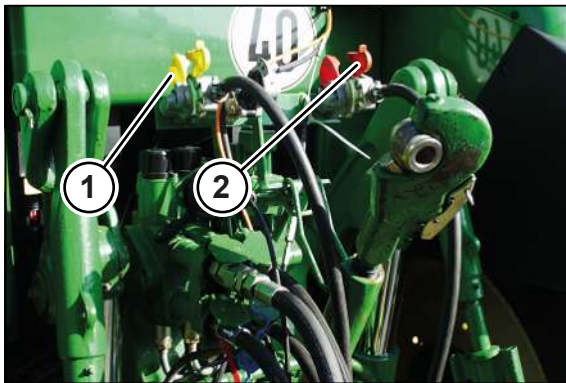


BPG000-105

- ✓ The machine has been shut down and secured, [see Page 29](#).
- ▶ Connect the hydraulic hose (1) of the hydraulic brake to the connection for the hydraulic brake on the tractor.

## 8.5 Connecting/disconnecting compressed air connections for the compressed air brake

The machine features a dual-line compressed air braking system. The coupling heads are connected to the machine for attachment of the supply line (2) (red coupling head) and brake line (1) (yellow coupling head) of the tractor.



BP000-101

- ✓ The machine has been shut down and secured, [see Page 29](#).

### Connecting

**Observe the correct order when connecting the compressed air lines.**

- ▶ Firstly, connect the brake line (1) (yellow coupling head).
- ▶ Then connect the supply line (2) (red coupling head).

### Disconnecting

**Observe the correct order when disconnecting the compressed air lines.**

- ▶ Firstly, disconnect the supply line (2) (red coupling head).
- ▶ Then disconnect the brake line (1) (yellow coupling head).

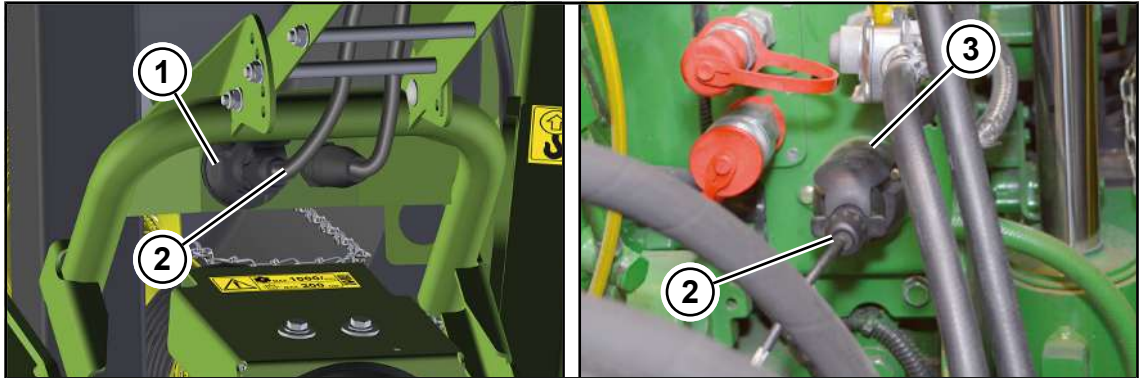
## 8.6 Connecting the road lighting

### NOTICE

#### Short circuit caused by impurities and moisture in the plug connection

The machine may be damaged by a short circuit.

- ▶ Make sure that the plugs and sockets are clean and dry.



BPG000-067

The road travel lighting is connected by means of the enclosed 7-pin lighting cable (2).

- ✓ The machine has been shut down and secured, [see Page 29](#).
- ▶ Connect the 7-pin plug of the lighting cable (2) to the 7-pin socket (1) of the machine.
- ▶ Connect the 7-pin plug of the lighting cable (2) to the 7-pin socket (3) of the tractor.
- ▶ Route the lighting cable (2) so that it does not come into contact with the tractor wheels or other moving parts of the machine.

## 8.7 Connecting KRONE terminal DS 500

### NOTICE

#### Short circuit caused by impurities and moisture in the plug connection

The machine may be damaged by a short circuit.

- ▶ Make sure that the plugs and sockets are clean and dry.

### Tractors with integrated ISOBUS system



EQ003-251

- ✓ The machine has been shut down and secured, [see Page 29](#).

#### Connection terminal to tractor

- ▶ Connect the 9-pin plug (2) of the cable (1) to the 9-pin socket (3) (In-cab).

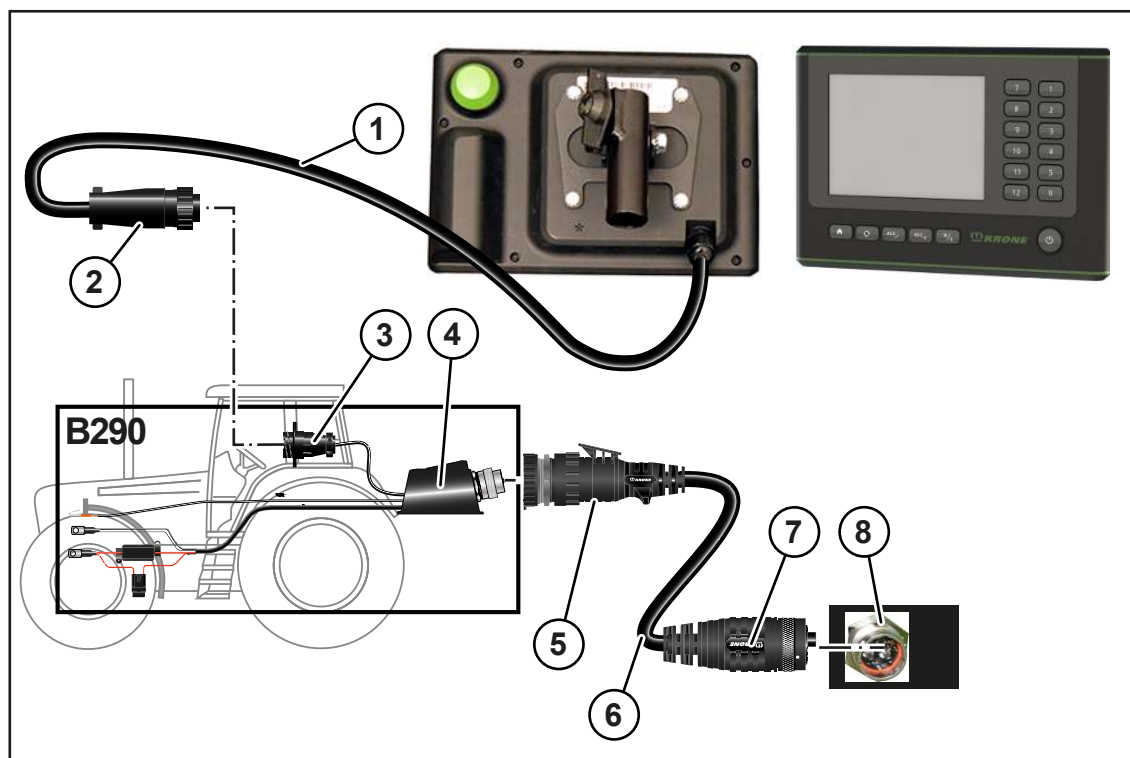
#### Connection tractor to machine

##### **INFO**

The cable (6) can be ordered by quoting the order number 20 086 886 \*.

- ▶ Connect the 9-pin plug (5) of the cable (6) to the 9-pin ISOBUS socket (4) of the tractor.
- ▶ Connect the 11-pin plug (7) of the cable (6) to the 11-pin socket (8) of the machine.

### Tractors without ISOBUS system



EQ003-252

- ✓ The machine has been shut down and secured, [see Page 29](#).
- ✓ The accessories kit B290 “KRONE tractor retrofitting” is mounted.

#### Connection terminal to tractor

- ▶ Connect the 9-pin plug (2) of the cable (1) to the 9-pin socket (3) (In-cab).

#### Connection tractor to machine

##### **INFO**

The cable (6) can be ordered by quoting the order number 20 086 886 \*.

- ▶ Connect the 9-pin plug (5) of the cable (6) to the 9-pin ISOBUS socket (4) of the tractor.
- ▶ Connect the 11-pin plug (7) of the cable (6) to the 11-pin socket (8) of the machine.

## 8.8 Connecting the KRONE ISOBUS terminal (CCI 800, CCI 1200)

##### **NOTICE**

##### **Short circuit caused by impurities and moisture in the plug connection**

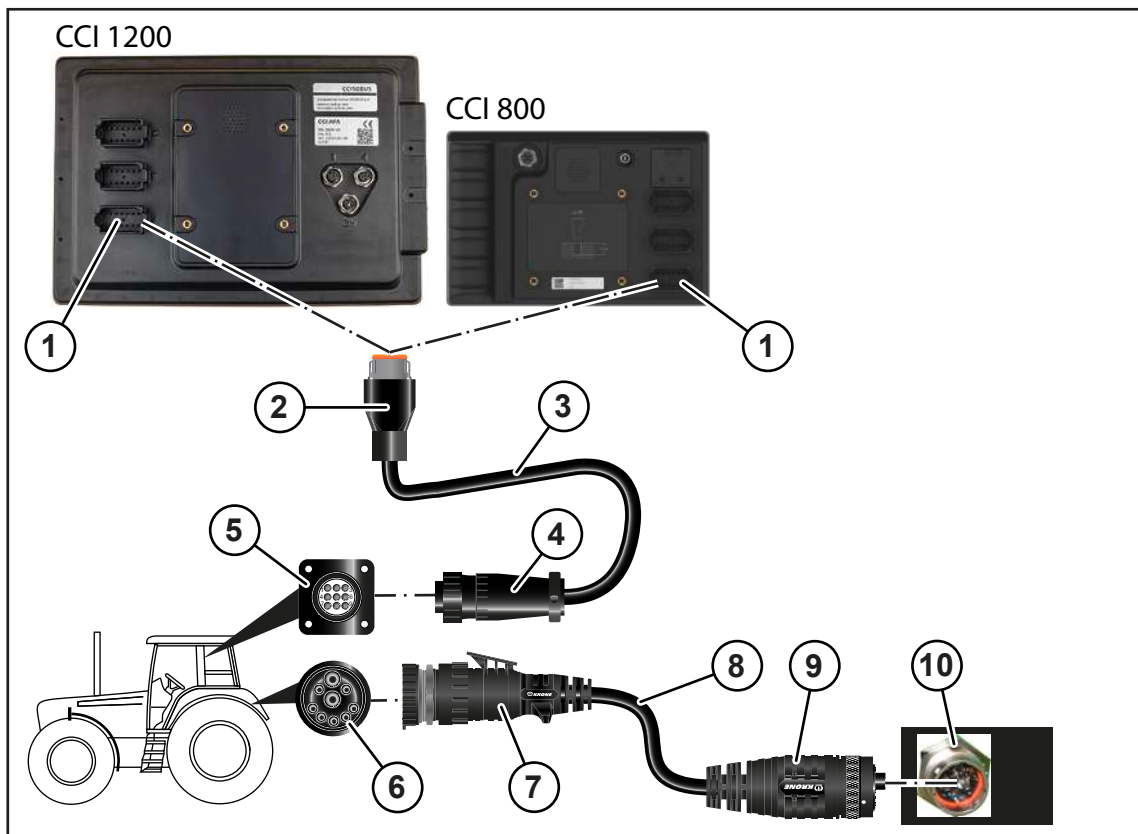
The machine may be damaged by a short circuit.

- ▶ Make sure that the plugs and sockets are clean and dry.

##### **INFO**

To mount the terminal in the tractor cabin, observe the provided operating instructions of terminal.

**Tractors with integrated ISOBUS system**



EQ001-173

✓ The machine has been shut down and secured, [see Page 29](#).

**Connection terminal to tractor**

- ▶ Connect the 12-pin plug (2) of the cable (3) to the 12-pin socket (1) of the terminal.
- ▶ Connect the 9-pin plug (4) of the cable (3) to the 9-pin socket (5) (In-cab).

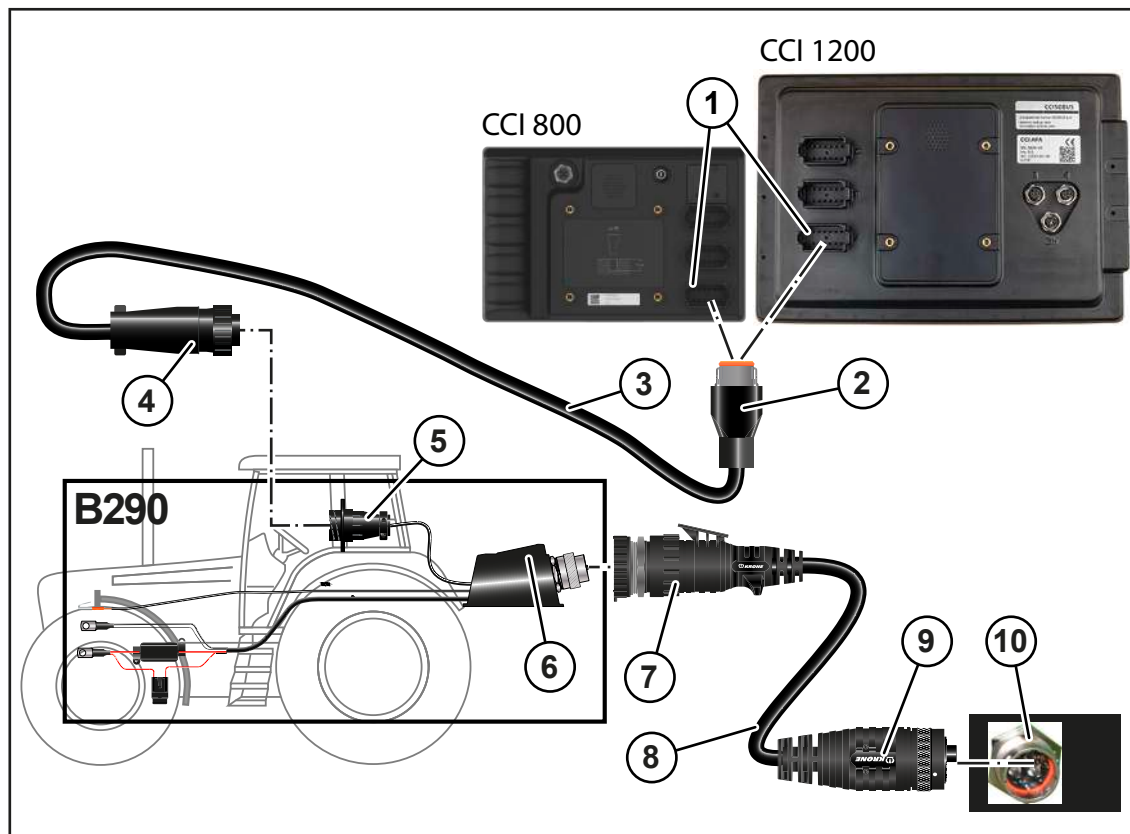
**Connection tractor to machine**

**INFO**

The cable (8) can be ordered by quoting the order number 20 086 886 \*.

- ▶ Connect the 9-pin plug (7) of the cable (8) to the 9-pin ISOBUS socket (6) of the tractor.
- ▶ Connect the 11-pin plug (9) of the cable (8) to the 11-pin socket (10) of the machine.

### Tractors without ISOBUS system



EQ001-181

- ✓ The machine has been shut down and secured, [see Page 29](#).
- ✓ The accessories kit B290 “KRONE tractor retrofitting” is mounted.

#### Connection terminal to tractor

- ▶ Connect the 12-pin plug (2) of the cable (3) to the 12-pin socket (1) of the terminal.
- ▶ Connect the 9-pin plug (4) of the cable (3) to the 9-pin socket (5) (In-cab).

#### Connection tractor to machine

##### **INFO**

The cable (8) can be ordered by quoting the order number 20 086 886 \*.

- ▶ Connect the 9-pole plug (7) of the cable (8) to the 9-pole ISOBUS socket (6) of the tractor.
- ▶ Connect the 11-pole plug (9) of the cable (8) to the 11-pole socket (10) of the machine.

## 8.9 Connecting foreign ISOBUS terminal

##### **NOTICE**

##### **Short circuit caused by impurities and moisture in the plug connection**

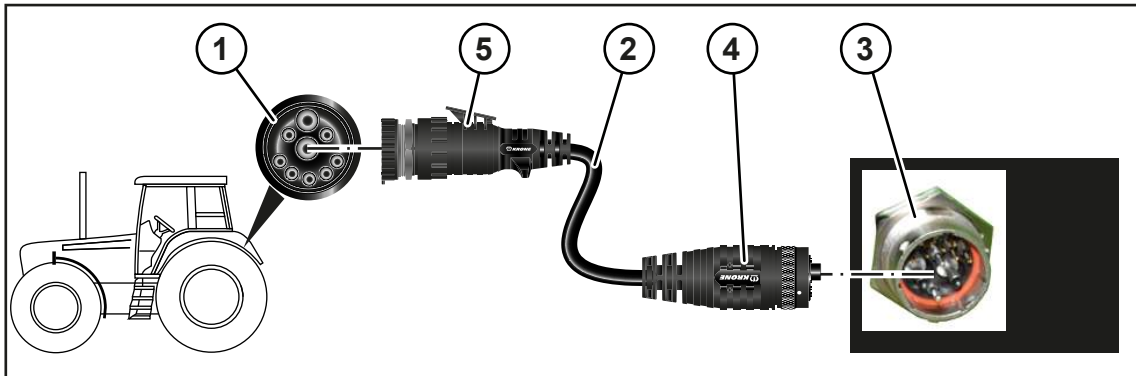
The machine may be damaged by a short circuit.

- ▶ Make sure that the plugs and sockets are clean and dry.



**INFO**

To mount the terminal in the tractor cabin, observe the provided operating instructions of terminal.



EQ001-146

- ✓ The machine has been shut down and secured, [see Page 29](#).

**Connection tractor to machine**

- ▶ Connect the 9-pole plug (5) of the cable (2) to the 9-pole ISOBUS socket (1) of the tractor.
- ▶ Connect the 11-pole socket (4) of the cable (2) to the 11-pole socket (3) of the machine.

**Connection terminal to tractor**

**INFO**

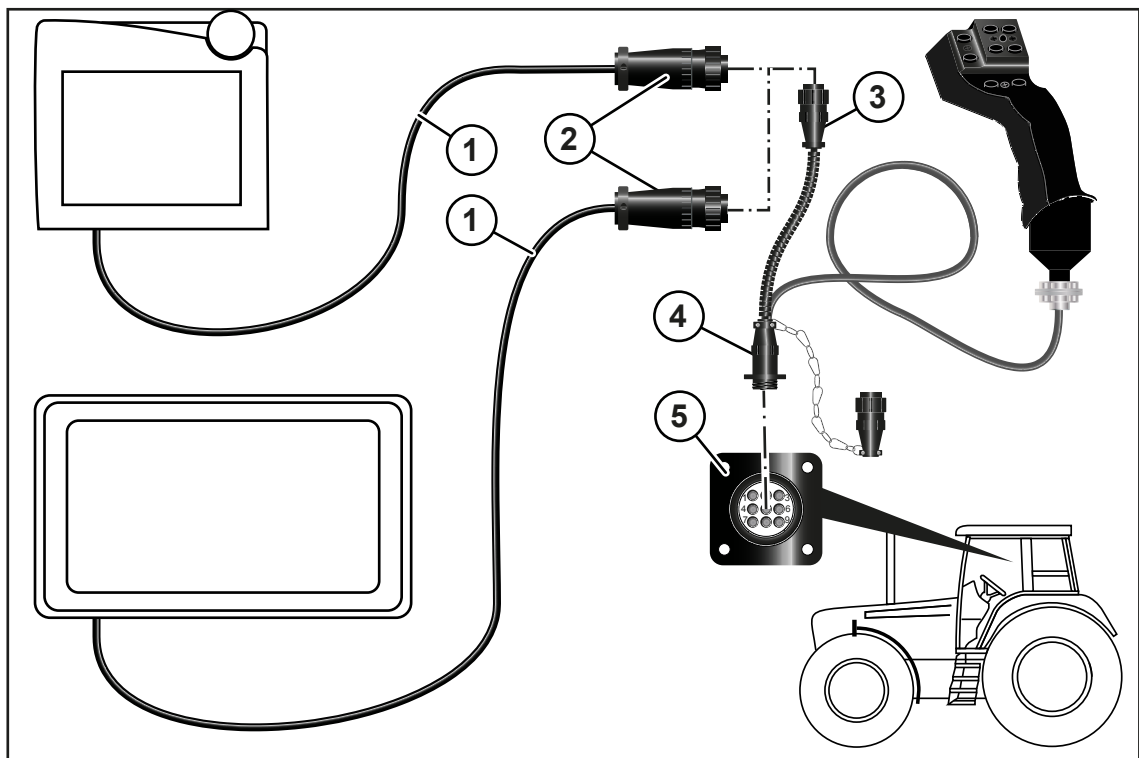
For further details on terminal connection, observe operating instructions of ISOBUS terminal manufacturer.

## 8.10 Connecting joystick

**INFO**

Follow the supplied joystick operating instructions for attachment of the joystick in the tractor cabin.

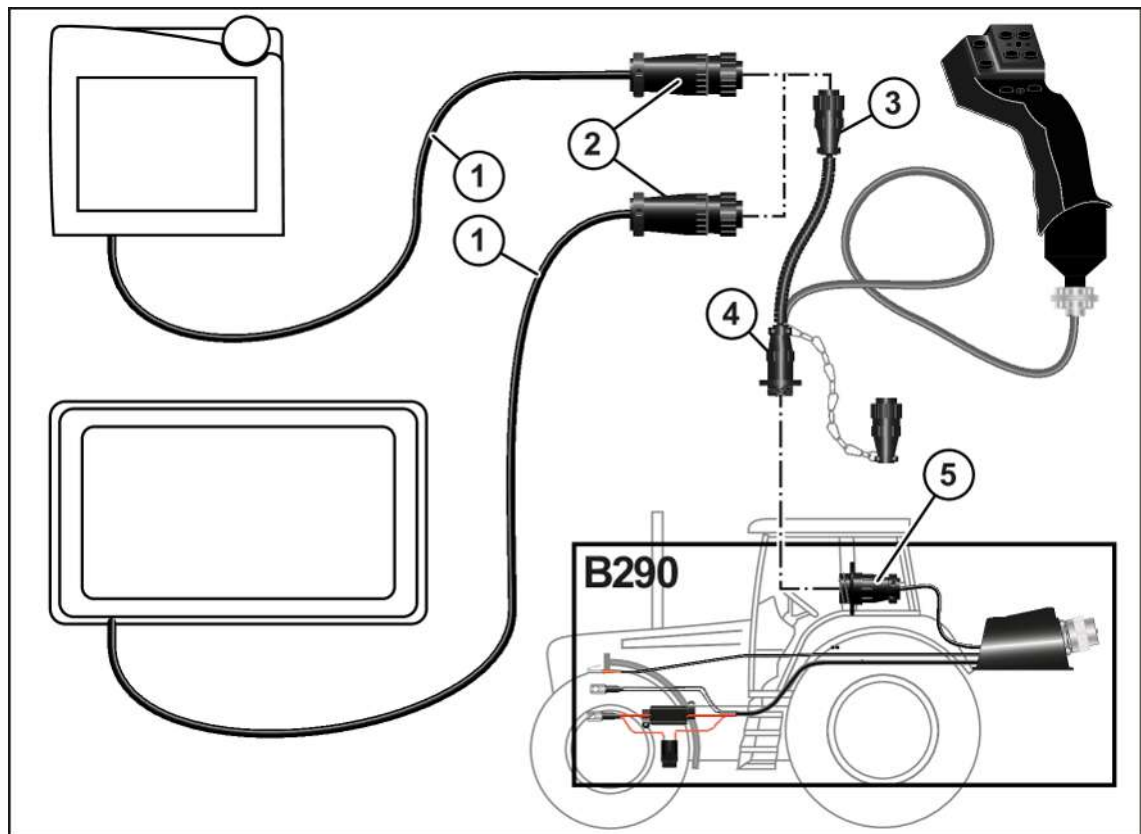
### KRONE ISOBUS terminal on tractors with integrated ISOBUS system



EQ001-150

- ✓ The machine has been shut down and secured, [see Page 29](#).
- ▶ Connect the 9-pin plug (2) of the cable (1) to the 9-pin socket (3) of the joystick.
- ▶ Connect the 9-pin plug (4) of the joystick to the 9-pin socket (5) (In-cab).

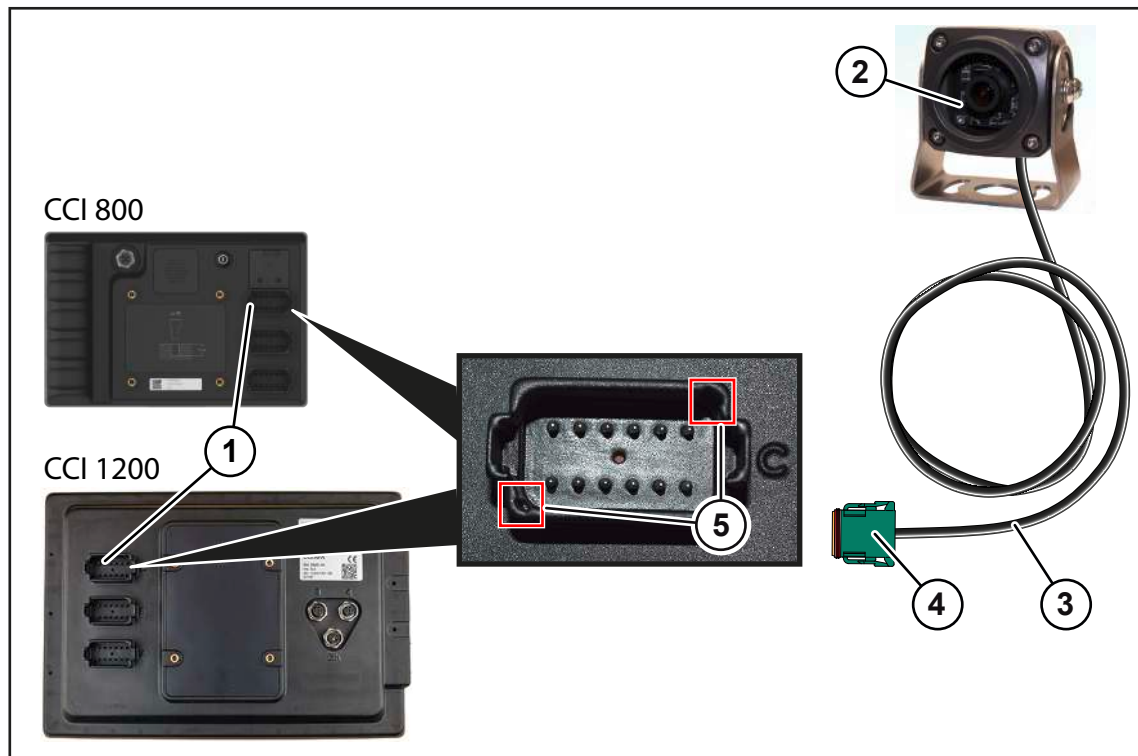
### KRONE ISOBUS terminal on tractors without integrated ISOBUS system



EQ001-151

- ✓ The machine has been shut down and secured, [see Page 29](#).
- ✓ The accessories kit B290 “KRONE tractor retrofitting” is mounted.
- ▶ Connect the 9-pin plug (2) of the cable (1) to the 9-pin socket (3) of the joystick.
- ▶ Connect the 9-pin plug (4) of the joystick to the 9-pin socket (5) (In-cab).

## 8.11 Connecting the camera to the KRONE ISOBUS terminal CCI 800 or CCI 1200



EQ000-212

- ▶ Insert the plug (4) on the camera (2) cable (3) into the connection C (1) of the KRONE ISOBUS terminal CCI 800 or CCI 1200 .
- ▶ To connect the plug (4) correctly, ensure that it is aligned with the marked points (5).

## 8.12 Mounting the safety chain

### **WARNING**

#### **Risk of accident due to a incorrectly dimensioned safety chain**

When using a incorrectly dimensioned safety chain, the safety chain may tear if the machine loosens unintentionally. This may result in serious accidents.

- ▶ Always use safety chain with a minimum tensile strength of 178 kN (40,000 lbf).

### **WARNING**

#### **Risk of injury or damage to the machine due to incorrectly installed safety chain.**

If the installed safety chain is too taut or too slack, the safety chain may tear. As a result, people may be seriously injured or the tractor and machine may be damaged.

- ▶ Install the safety chain in such a way that, when cornering, it is not tensioned and does not come into contact with the tractor wheels or other parts of the tractor or machine.

### **INFO**

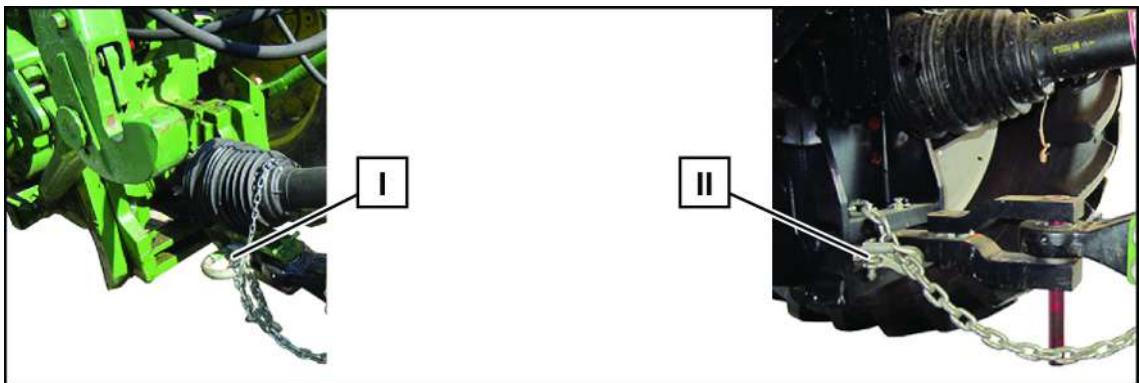
The country-specific regulations for using the safety chain during transportation of the machine must be observed.

The safety chain serves as an additional safety precaution for trailed devices in case these come loose from the hitch during transport. Attach the safety chain with the respective mounting parts to the hitching device holder of the tractor or to another specified coupling point. The safety chain should have enough play when driving around curves.



BPG000-131

- ✓ The machine is shut down and safeguarded, [see Page 29](#).
- ▶ Mount the safety chain (1) with the shackle (2) on the machine.



BP000-106

- ▶ Install the safety chain (1) at a suitable position (for example: [I] or [II]) on the tractor.

## 9 Operation

### **WARNING**

#### **Risk of injury due to non-observance of relevant safety notices**

If the relevant safety notices are not observed, persons may get seriously injured or killed.

- ▶ To avoid accidents, the basic safety instructions must be read and observed, [see Page 17](#).

### **WARNING**

#### **Risk of injury due to non-observance of safety instructions**

If the relevant safety routines are not observed, persons may be seriously injured or killed.

- ▶ The safety routines must be read and observed to avoid accidents, [see Page 29](#).

## 9.1 Preparation for baling process

### **Before starting baling process**

- ✓ The bale ejector is in front position, [see Page 151](#).
- ✓ **For "Weighing device" version:** The bale brake is locked [see Page 75](#).
- ✓ Twine reserves are sufficient.
- ✓ The working height of the pick-up is set, [see Page 273](#).
- ✓ The correct bale length is set, [see Page 200](#).
- ✓ The target baling flap pressure is set, [see Page 199](#).
- ✓ The knotter shaft is unlocked, [see Page 131](#).
- ✓ The flywheel brake is released, [see Page 127](#).
- ▶ Lower the bale chute to working position (via the terminal: [see Page 195](#), via the bale chute keypad: [see Page 149](#)).
- ▶ Lower pick-up into working position, [see Page 148](#).

### **Baling process**

- ✓ The conditions in "Before baling process" are fulfilled.
- ▶ Turn on the PTO shaft at minimum speed.
- ▶ Slowly increase the PTO speed to 1000 rpm.
- ▶ Wait until the pre-selected target bale channel flap pressure is reached in the terminal before driving up into the swath for the first time, [see Page 199](#).

The bale channel must be completely filled in order to bale in automatic mode. This can best be done by baling the first two big bales in manual mode.

- ▶ Switch to automatic mode in the terminal after the second big bale is finished, [see Page 190](#).
- ▶ Set the target baling force when in automatic mode, [see Page 200](#).

### After baling process

- ▶ For "Weighing device" version: In order to pull down the last bound large bales perfectly by hand, release the bale brake on the bale chute, [see Page 75](#).
- ▶ Lay down the bales being tied last on the field.
- ▶ Pull down the last big bale manually standing laterally next to the bale chute.
- ▶ Clean the machine.
- ▶ Prepare the machine for road travel, [see Page 264](#).

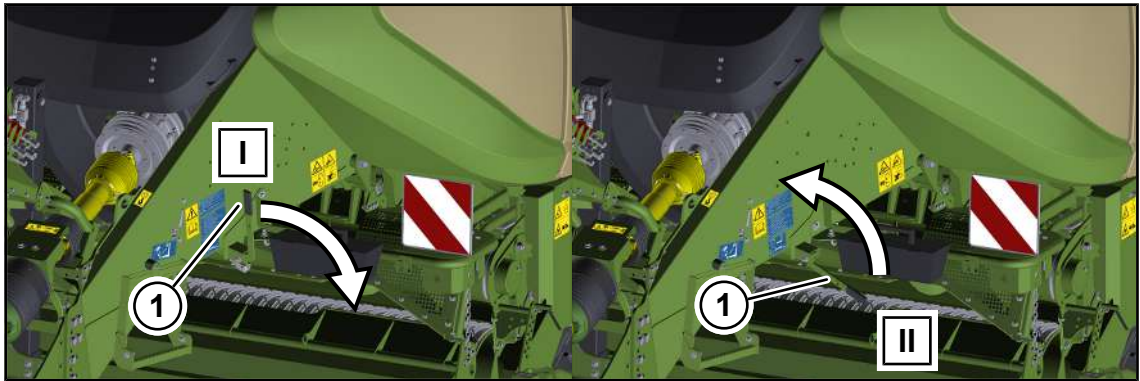
## 9.2 Applying/releasing flywheel brake

### NOTICE

#### Damage to the machine due to non-released flywheel brake

If the flywheel brake is not released before switching on the PTO shaft, the machine can be damaged.

- ▶ Release the flywheel brake before switching on the PTO shaft.



BPG000-031

Position (I) = Flywheel brake is released (flywheel unbraked)

Position (II) = Flywheel brake applied (flywheel braked)

- ✓ The machine is shut down and safeguarded, [see Page 29](#).

### Applying the flywheel brake

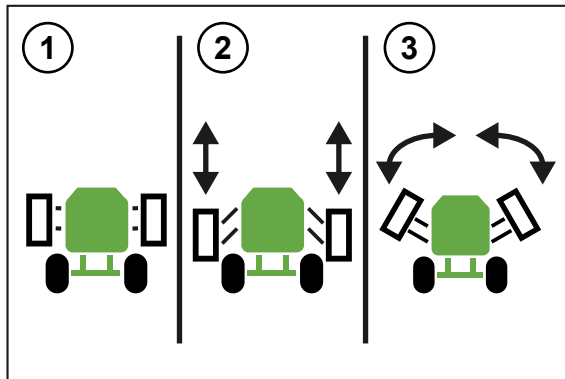
- ▶ In order to apply the flywheel brake, switch the brake lever (1) from position (I) to position (II).
- ➔ The flywheel is now braked.
- ➔ When the electronics of the machine are turned on, a hoot will sound.
- ➔ If the flywheel is braked, no pressure builds up in the bale channel.

### Releasing the flywheel brake

- ▶ In order to apply the flywheel brake, switch the brake lever (1) from position (II) to position (I).
- ➔ The flywheel is now unbraked.

### 9.3 Operate twine boxes

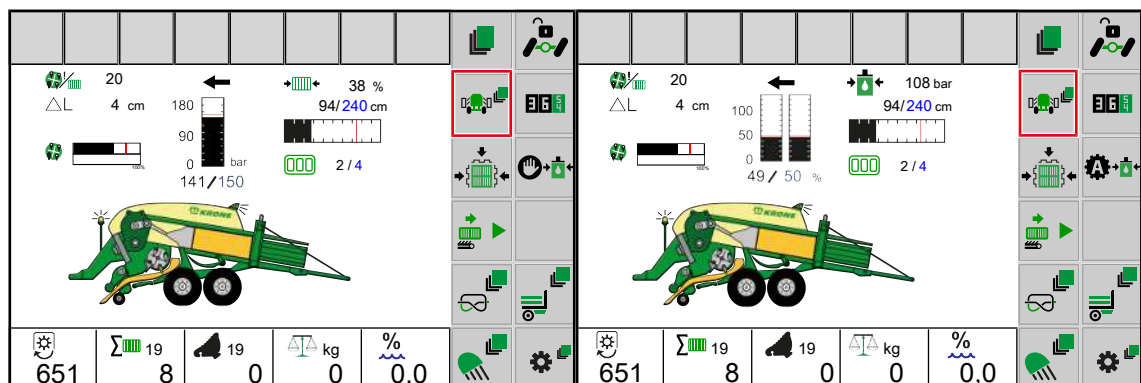
The graphic schematically explains the functions raising/lowering and swivelling down/up.



BP000-688

- 1 Twine boxes in transport position (raised and swivelled down)
- 2 Raising/lowering twine boxes
- 3 Swivelling twine boxes up and down

#### 9.3.1 Operating the twine boxes via the terminal



EQ001-234

Manual mode

Automatic mode

##### 9.3.1.1 Lowering the twine boxes

✓ The twine boxes are swivelled down, [see Page 129](#).

**WARNING! Danger of being struck when twine boxes are being lowered! While lowering the twine boxes, ensure that there is nobody in the danger zone of the twine boxes.**

▶ Press

⇒ The and icons are displayed.





▶ To lower the twine boxes, press and hold it down.

▶ The swivelling twine boxes up function is blocked until the twine boxes are raised down via the terminal, [see Page 129](#).



### 9.3.1.2 Raising the twine boxes





**WARNING! Crush hazard when lifting the twine boxes! While lifting the twine boxes, ensure that there is nobody in the danger zone of the twine boxes.**

- ▶ Press .
- ⇒ The  and  icons are displayed.
- ▶ To raise the twine boxes, press  and hold it down.

### 9.3.1.3 Swivelling twine boxes up





- ✓ The twine boxes are raised, [see Page 129](#).
- ▶ To prevent scratches on the twine box hoods, ensure that the twine box hoods have been swivelled down, [see Page 131](#).

**WARNING! Danger of collision when swivelling up the twine boxes! While swivelling up the twine boxes, ensure that there is nobody in the danger zone of the twine boxes.**

- ▶ Press .
- ⇒ The icons  and  icons are displayed.
- ▶ To swivel up the twine boxes, press and hold .
- ▶ The lowering twine boxes function is blocked until the twine boxes are swivelled down via the terminal, [see Page 129](#).

### 9.3.1.4 Swivelling twine boxes down

**WARNING! Crush hazard when swivelling down the twine boxes! While swivelling down the twine boxes, ensure that there is nobody in the danger zone of the twine boxes.**

- ▶ Press .
- ⇒ The  and  icons are displayed.
- ▶ To swivel down the twine boxes, press and hold .

### 9.3.2 Operating the twine boxes via the bale chute keypad





BP000-531

#### 9.3.2.1 Lowering the twine box via the bale chute keypad

✓ The twine boxes are swivelled down, [see Page 129](#).



**WARNING! Danger of being struck when twine boxes are being lowered! While lowering the twine boxes, ensure that there is nobody in the danger zone of the twine boxes.**

- ▶ Press  to preselect the twine boxes.
- ➔ The LED (1) lights up. The LED (1) goes out and the twine boxes are no longer preselected if a function is not activated inside of 10 seconds.
- ▶ To lower the twine boxes, press  and hold it down.
- ➔ The LED (6) shines and the LED (1) blinks.
- ➔ The swivelling twine boxes up function is blocked until the twine boxes are raised down via the terminal, [see Page 129](#).

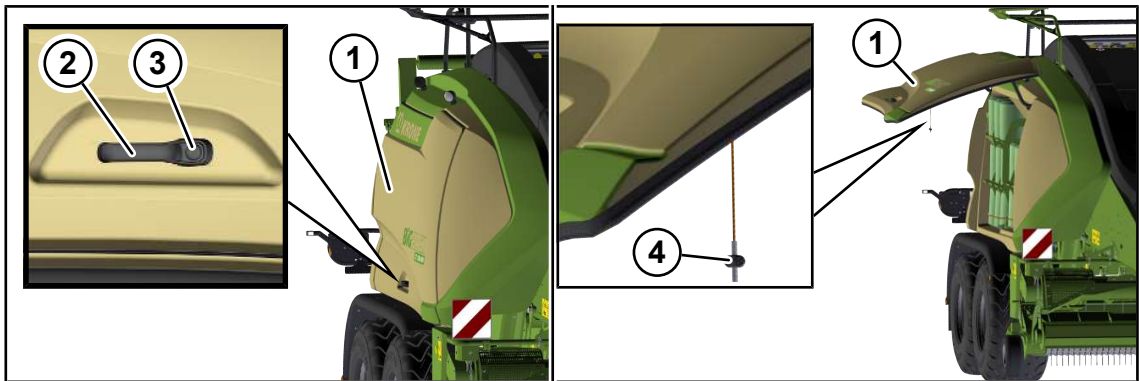
#### 9.3.2.2 Swivelling up the twine box via the bale chute keypad

✓ The twine boxes are raised, [see Page 129](#).

**WARNING! Danger of collision when swivelling up the twine boxes! While swivelling up the twine boxes, ensure that there is nobody in the danger zone of the twine boxes.**

- ▶ Press  to preselect the twine boxes.
- ➔ The LED (1) lights up. The LED (1) goes out and the twine boxes are no longer preselected if a function is not activated inside of 10 seconds.
- ▶ To swivel up the twine boxes, press and hold .
- ➔ The LED (5) shines and the LED (1) blinks.
- ➔ The lowering twine boxes function is blocked until the twine boxes are swivelled down via the terminal, [see Page 129](#).

## 9.4 Swivelling the twine box hood up/down



BP000-613

✓ The machine is shut down and safeguarded, [see Page 29](#).

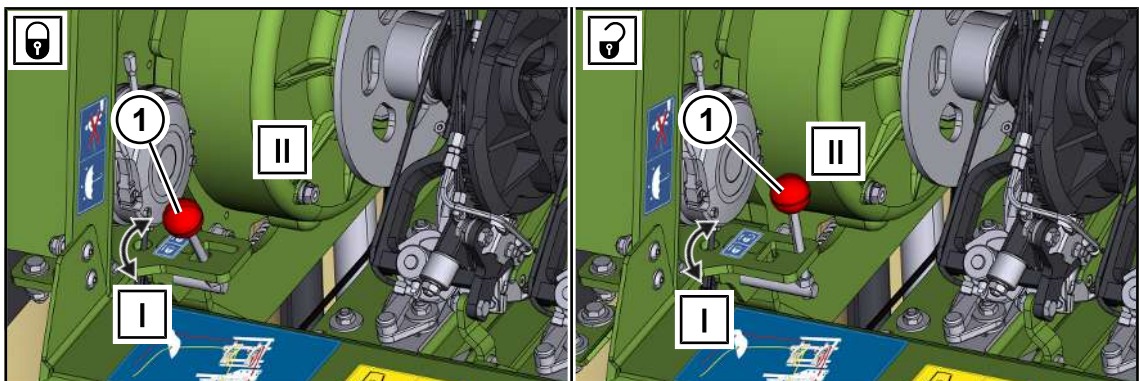
### Swivelling up the twine box hood

- ▶ Press the push button (3) on the handle (2) and manually swivel up the twine box hood (1).

### Swivelling down the twine box hood

- ▶ Using the operating cable (4), swivel down the twine box hood (1) until you can hold the twine box hood (1) with your hand.
- ▶ Manually swivel down the twine box hood (1) until the locking of the handle (2) is closed.
- ▶ Pull at the twine box hood (1) to ensure that the twine box hood (1) is locked.
- ➔ The twine box hood (1) is locked if the twine box hood (1) cannot be opened.
- ➔ If you can open the twine box hood (1), swivel the twine box hood (1) down again until the locking of the handle (2) is closed.

## 9.5 Securing/releasing knotter shaft



BPG000-107

✓ The machine is shut down and safeguarded, [see Page 29](#).

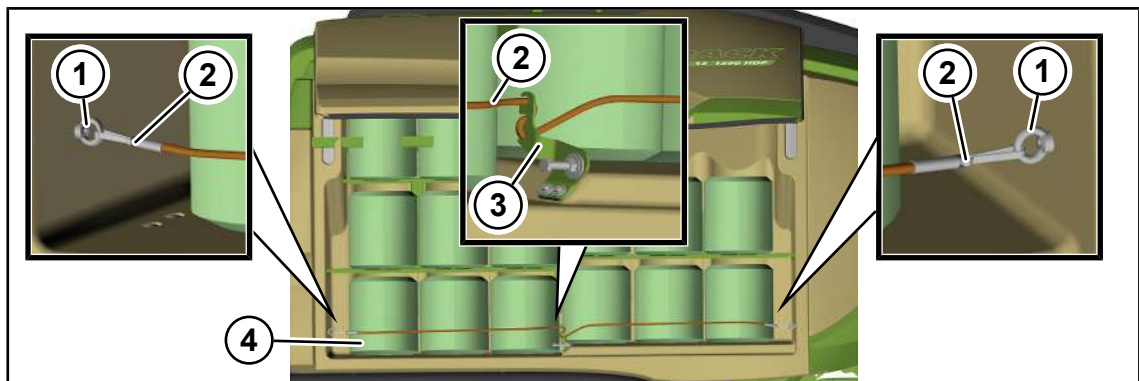
### Securing

- ▶ To secure the knotter shaft, move the safety lever (1) from position (II) to position (I).

### Releasing

- ▶ To release the knotter shaft, move the safety lever (1) from position (I) to position (II).

## 9.6 Securing the lower spools of twine



BP000-743

- ✓ The machine has been shut down and secured, [see Page 29](#).
- ✓ The twine box hood is swivelled up, [see Page 131](#).

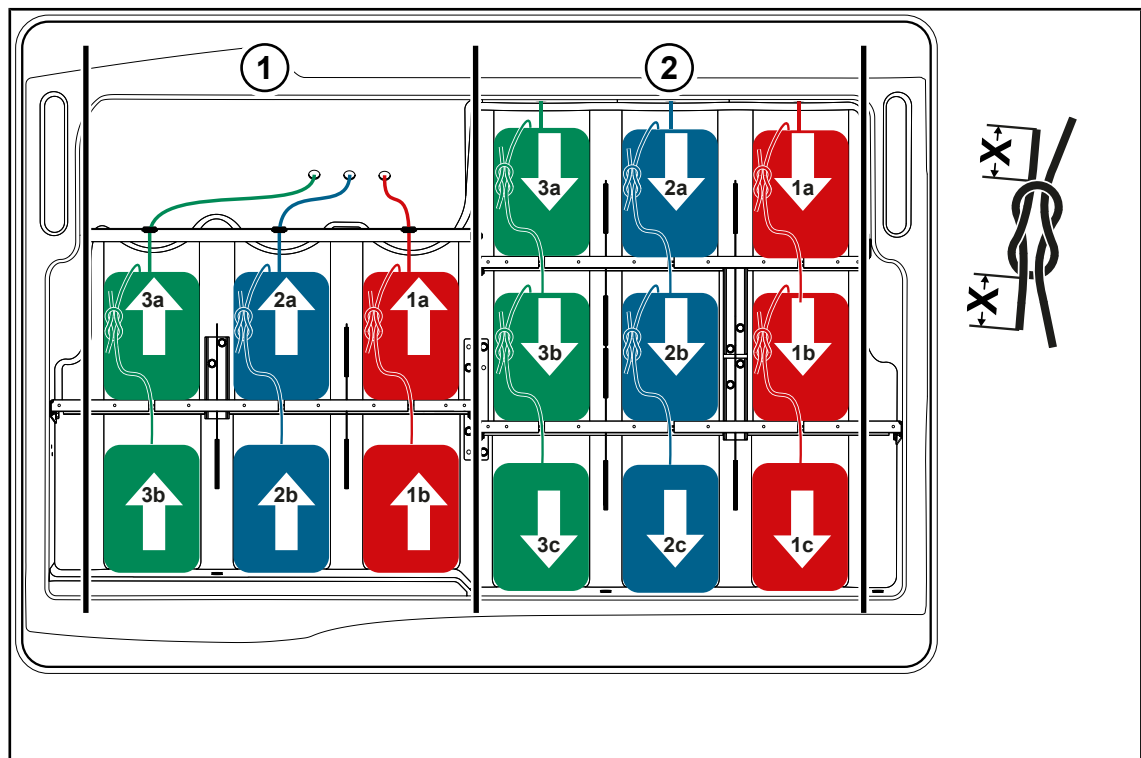
Perform the following steps on both sides of the machine:

- ▶ To secure the lower spools of twine (4), engage the expander rope (2) in the ring nuts (1).
- ▶ Route the expander rope (2) around the lock retaining sheet (3) as shown in the figure.

## 9.7 Connecting spools of twine with each other

- ✓ The machine is shut down and safeguarded, [see Page 29](#).
- ✓ The knotter shaft is secured [see Page 131](#).
- ✓ The twine boxes are lowered (via the terminal: [see Page 128](#), via the bale chute keypad: [see Page 130](#)).
- ✓ The twine box hood is swivelled up, [see Page 131](#).

### Connecting the upper twines (1) on the left machine side



BPG000-087

- ▶ Make sure that the upper twines never cross over each other.

#### Connecting spool of twine 1a with spool of twine 1b

- ▶ Thread the front end of the twine from spool of twine (1a) through the eye above out of the twine box.
- ▶ Connect the front end of the twine of spool of twine (1b) with a reef knot to the end of the twine of spool of twine (1a).
- ▶ Shorten the ends of all reef knots to  $15-20$  mm.

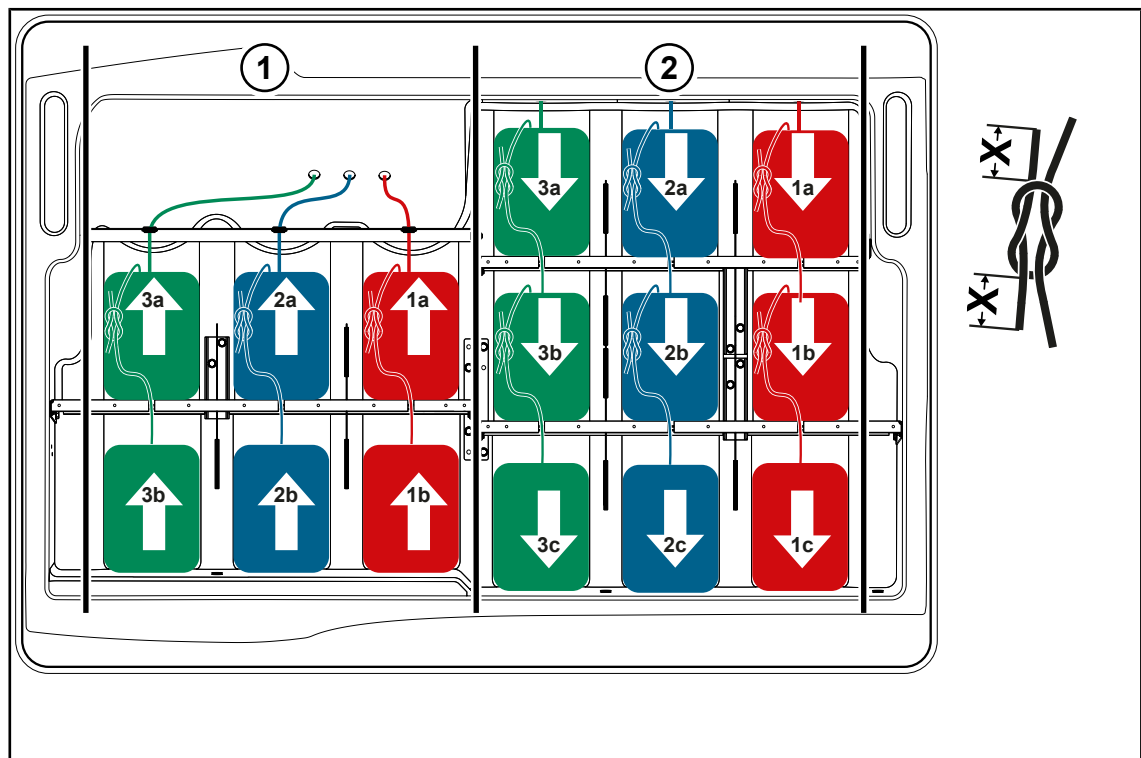
#### Connecting spool of twine 2a with spool of twine 2b

- ▶ Thread the front end of the twine from spool of twine (2a) through the eye above out of the twine box.
- ▶ Connect the front end of the twine of spool of twine (2b) with a reef knot to the end of the twine of spool of twine (2a).
- ▶ Shorten the ends of all reef knots to  $15-20$  mm.

#### Connecting spool of twine 3a with spool of twine 3b

- ▶ Thread the front end of the twine from spool of twine (3a) through the eye above out of the twine box.
- ▶ Connect the front end of the twine of spool of twine (3b) with a reef knot to the end of the twine of spool of twine (3a).
- ▶ Shorten the ends of all reef knots to  $15-20$  mm.

### Connecting the lower twines (2) on the left machine side



BPG000-087

- ▶ Make sure that the lower twines never cross over each other.

### Connecting spools of twine 1a, 1b, and 1c with each other

- ▶ Route the front end of the twine from spool of twine (1a) out of the twine box.
- ▶ Connect the front end of the twine of spool of twine (1b) with a reef knot to the end of the twine of spool of twine (1a).
- ▶ Connect the front end of the twine of spool of twine (1c) with a reef knot to the end of the twine of spool of twine (1b).
- ▶ Shorten the ends of all reef knots to  $x=15-20$  mm.

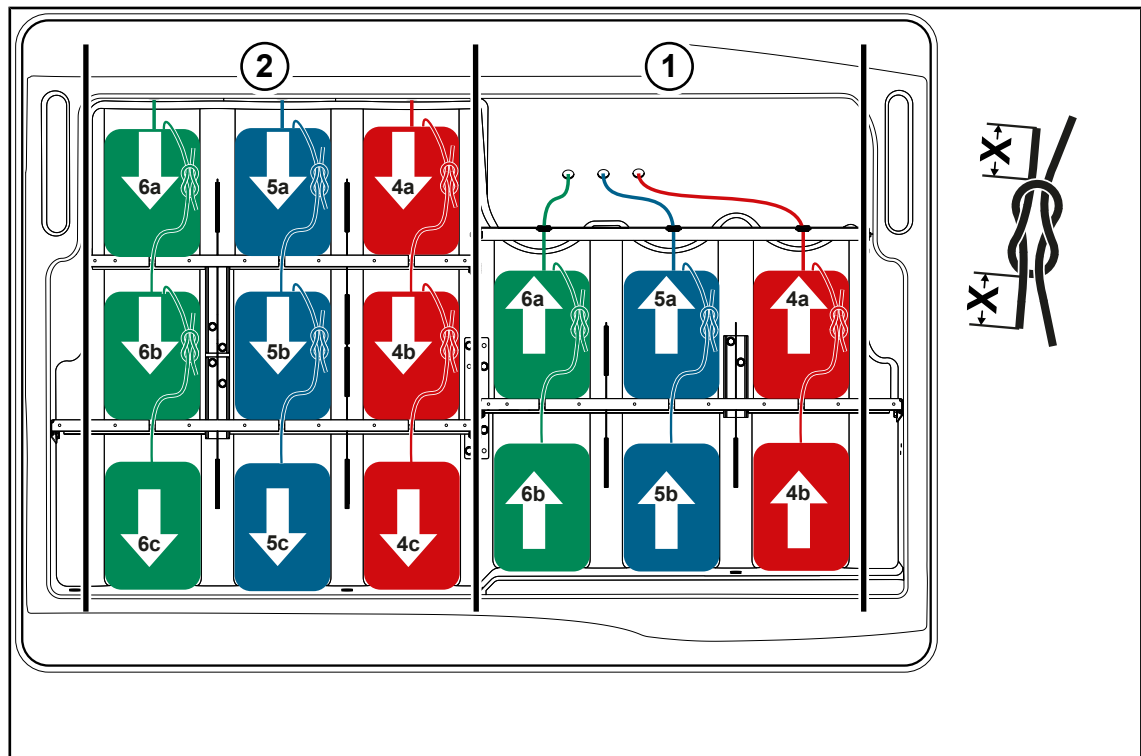
### Connecting spools of twine 2a, 2b, and 2c with each other

- ▶ Route the front end of the twine from spool of twine (2a) out of the twine box.
- ▶ Connect the front end of the twine of spool of twine (2b) with a reef knot to the end of the twine of spool of twine (2a).
- ▶ Connect the front end of the twine of spool of twine (2c) with a reef knot to the end of the twine of spool of twine (2b).
- ▶ Shorten the ends of all reef knots to  $x=15-20$  mm.

### Connecting spools of twine 3a, 3b, and 3c with each other

- ▶ Route the front end of the twine from spool of twine (3a) out of the twine box.
- ▶ Connect the front end of the twine of spool of twine (3b) with a reef knot to the end of the twine of spool of twine (3a).
- ▶ Connect the front end of the twine of spool of twine (3c) with a reef knot to the end of the twine of spool of twine (3b).
- ▶ Shorten the ends of all reef knots to  $x=15-20$  mm.

### Connecting the upper twines (1) on the right machine side



BPG000-088

- ▶ Make sure that the upper twines never cross over each other.

### Connecting spool of twine 4a with spool of twine 4b

- ▶ Thread the front end of the twine from spool of twine (4a) through the eye above out of the twine box.
- ▶ Connect the front end of the twine of spool of twine (4b) with a reef knot to the end of the twine of spool of twine (4a).
- ▶ Shorten the ends of all reef knots to  $x=15-20$  mm.

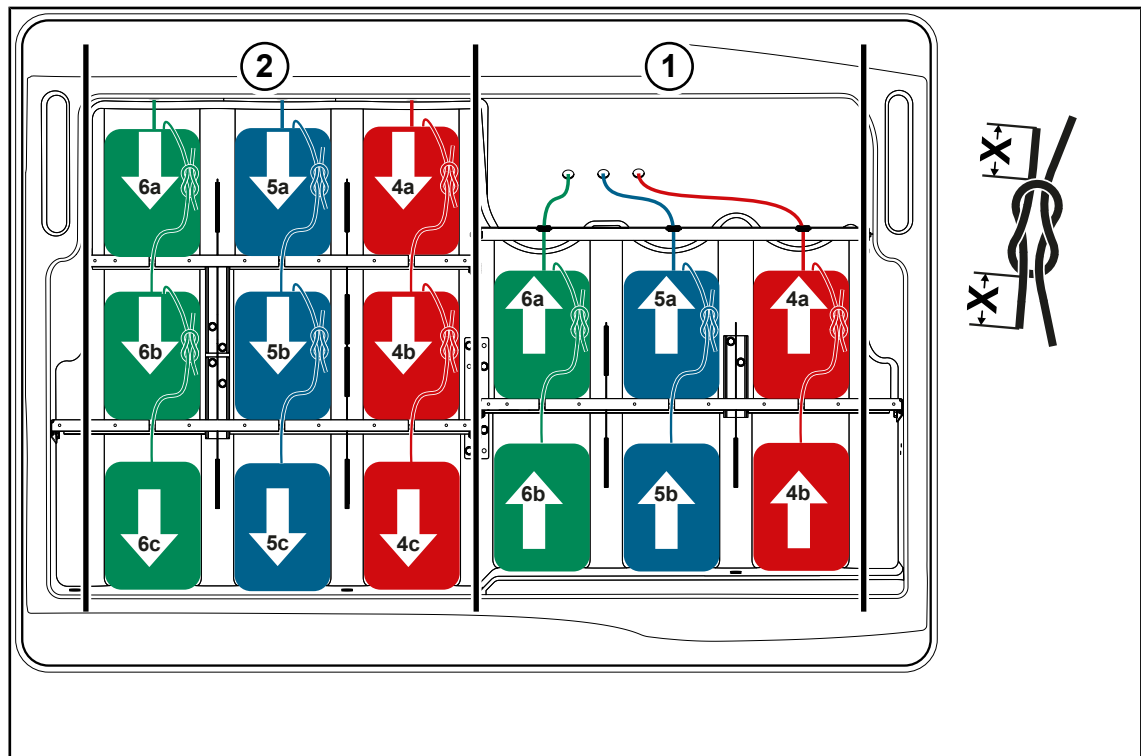
### Connecting spool of twine 5a with spool of twine 5b

- ▶ Thread the front end of the twine from spool of twine (5a) through the eye above out of the twine box.
- ▶ Connect the front end of the twine of spool of twine (5b) with a reef knot to the end of the twine of spool of twine (5a).
- ▶ Shorten the ends of all reef knots to  $x=15-20$  mm.

### Connecting spool of twine 6a with spool of twine 6b

- ▶ Thread the front end of the twine from spool of twine (6a) through the eye above out of the twine box.
- ▶ Connect the front end of the twine of spool of twine (6b) with a reef knot to the end of the twine of spool of twine (6a).
- ▶ Shorten the ends of all reef knots to  $x=15-20$  mm.

### Connecting the lower twines (2) on the right machine side



BPG000-088

- ▶ Make sure that the lower twines never cross over each other.

### Connecting spools of twine 4a, 4b, and 4c with each other

- ▶ Route the front end of the twine from spool of twine (4a) out of the twine box.
- ▶ Connect the front end of the twine of spool of twine (4b) with a reef knot to the end of the twine of spool of twine (4a).
- ▶ Connect the front end of the twine of spool of twine (4c) with a reef knot to the end of the twine of spool of twine (4b).
- ▶ Shorten the ends of all reef knots to  $x=15-20$  mm.

### Connecting spools of twine 5a, 5b, and 5c with each other

- ▶ Route the front end of the twine from spool of twine (5a) out of the twine box.
- ▶ Connect the front end of the twine of spool of twine (5b) with a reef knot to the end of the twine of spool of twine (5a).
- ▶ Connect the front end of the twine of spool of twine (5c) with a reef knot to the end of the twine of spool of twine (5b).
- ▶ Shorten the ends of all reef knots to  $x=15-20$  mm.

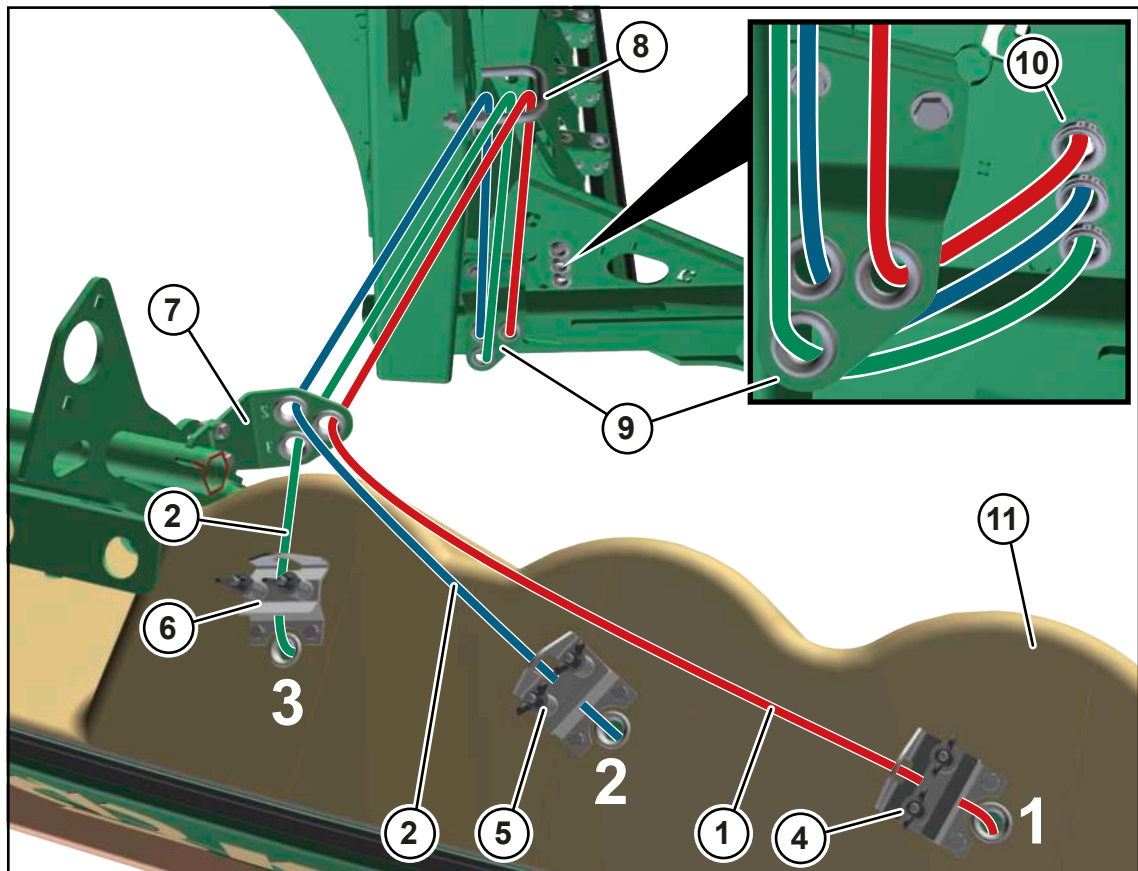


**Connecting spools of twine 6a, 6b, and 6c with each other**

- ▶ Route the front end of the twine from spool of twine (6a) out of the twine box.
- ▶ Connect the front end of the twine of spool of twine (6b) with a reef knot to the end of the twine of spool of twine (6a).
- ▶ Connect the front end of the twine of spool of twine (6c) with a reef knot to the end of the twine of spool of twine (3b).
- ▶ Shorten the ends of all reef knots to  $\approx 15-20$  mm.

**9.8 Threading the lower twines on the left machine side**

**Route the lower twine from the twine box to the lower twine guide on the frame**

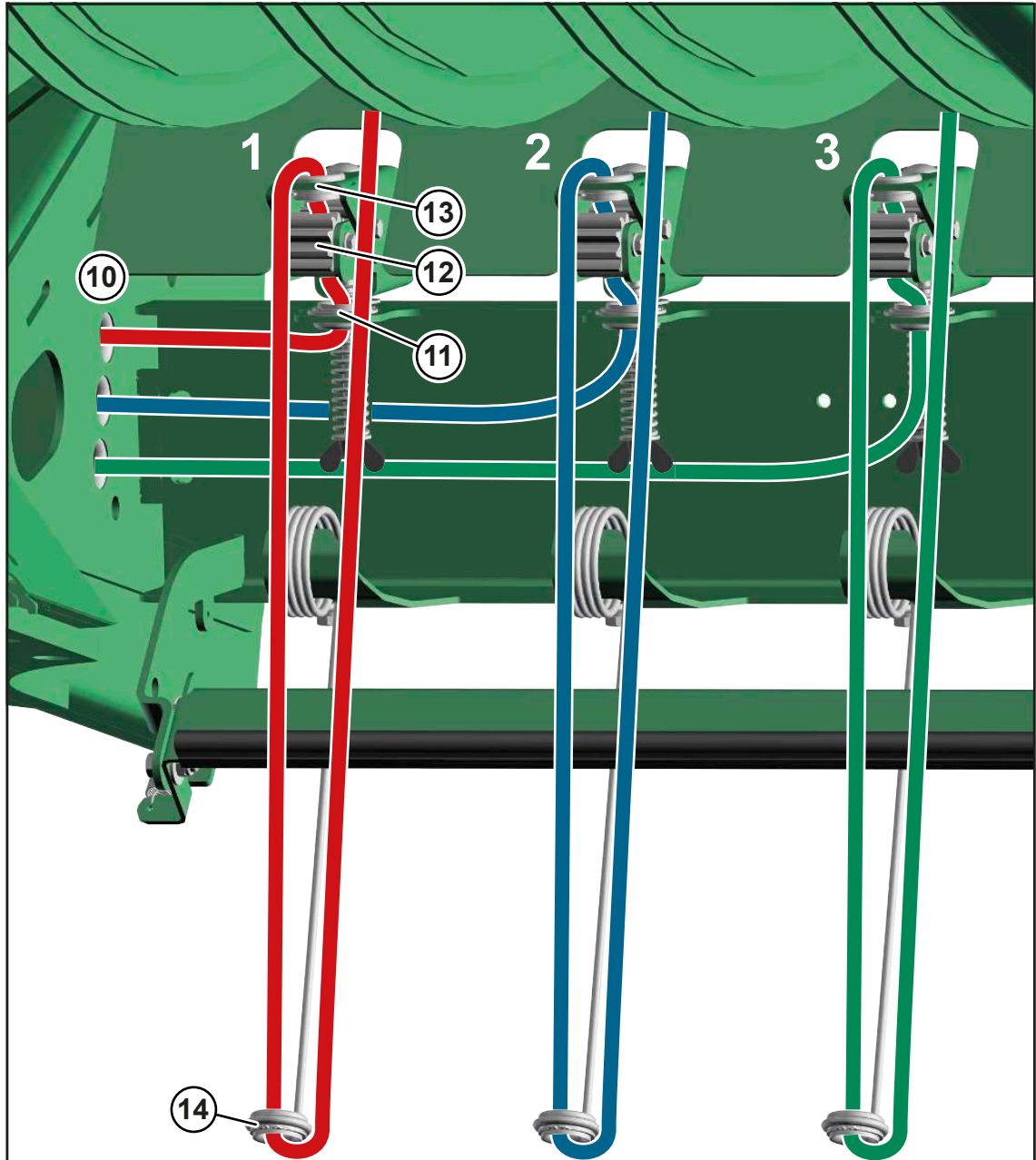


BPG000-089

- ▶ Ensure that the lower twines never cross each other.
- ▶ Route the lower twine (1) from the twine box (11) through the twine brake (4) to the twine guide (7).
- ▶ Route the lower twine (2) from the twine box (11) through the twine brake (5) to the twine guide (7).
- ▶ Route the lower twine (3) from the twine box (11) through the twine brake (6) to the twine guide (7).
- ▶ Route the 3 lower twines (1, 2, 3) from above through the eyes of the twine guide (7) and then further to the retaining clip (8).

- ▶ Route the 3 lower twines (1, 2, 3) from above through the retaining clip (8) and further to the twine guide (9).
- ▶ Route the 3 lower twines (1, 2, 3) from above through the eyes of the twine guide (9) and then further to the twine guide (10).
- ▶ Route the 3 lower twines (1, 2, 3) through the eyes of the twine guide (10) and then further to the lower twine brakes.

**Routing the lower twine from the lower twine guide to the twine tension springs**

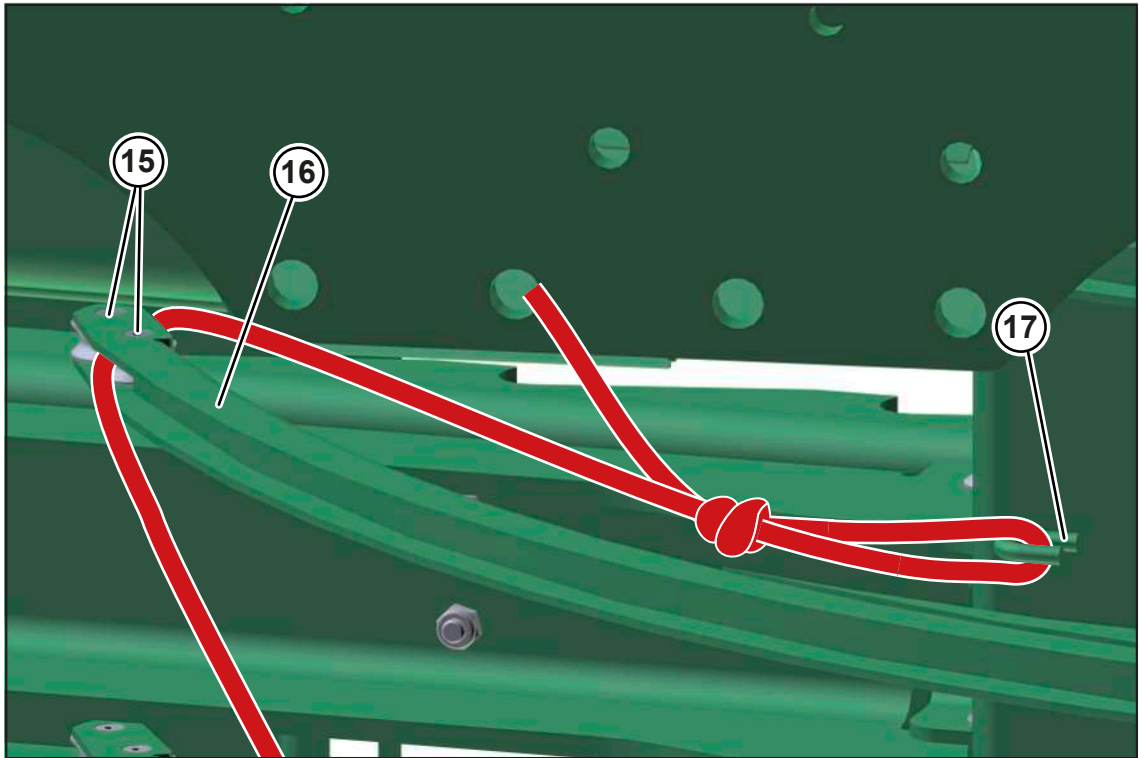


BPG000-090

- ▶ Release the twine brake.
- ▶ Thread the lower twine from the twine guide (10) through the lower eye (11) and attach it on the brake rollers (12).
- ▶ Manually rotate the brake rollers (12). This guides the lower twine through the brake rollers (12).

- ▶ Thread the lower twine through the upper eye (13).
- ▶ Route the lower twine further through the eye of the twine tension springs (14) and then upwards to the knotter needle.
- ▶ Repeat this process for all lower twines.

**Routing the lower twine from the twine tension springs to the frame/tying**

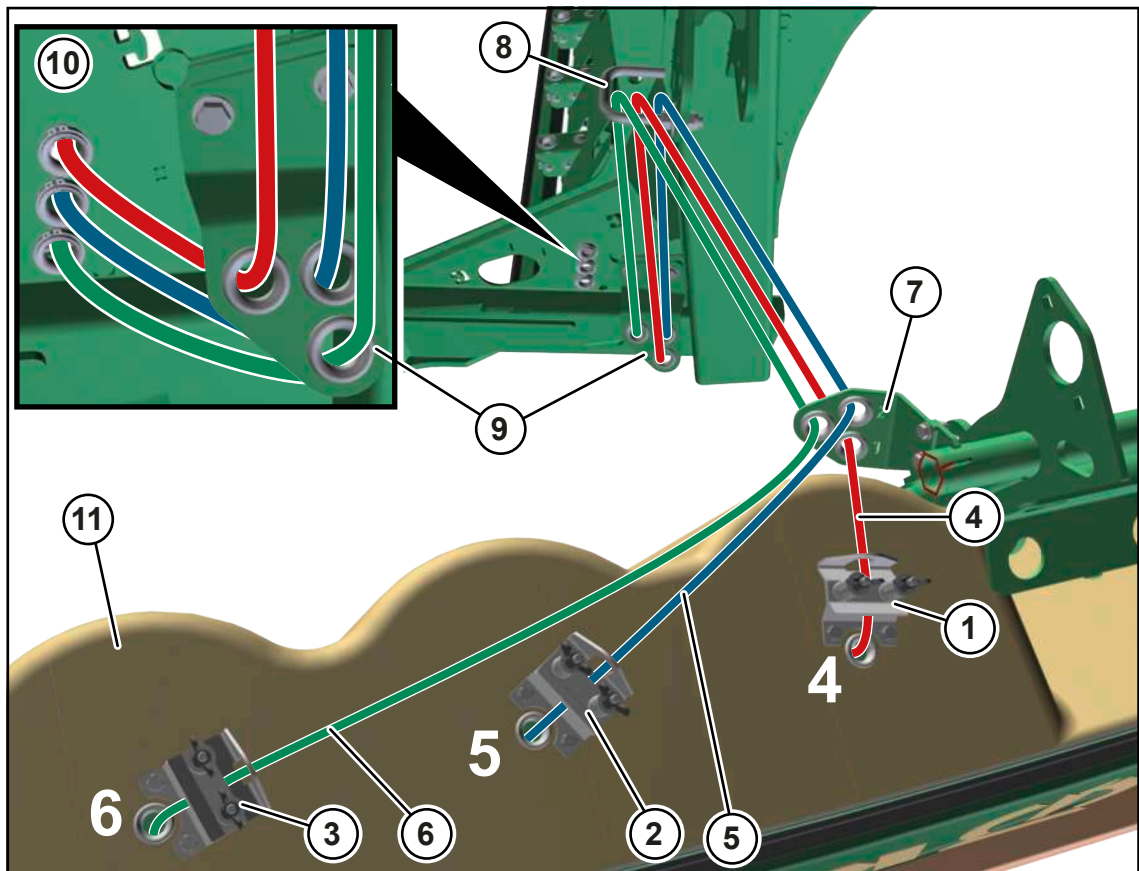


BP000-553

- ▶ Route the lower twine from the twine tension spring (14) between the rolls (15) of the knotter needle (16).
- ▶ Pull the lower twine down to the frame (17) and tie it to the frame (17).
- ▶ Repeat this process for all lower twines.

## 9.9 Threading the lower twines on the right machine side

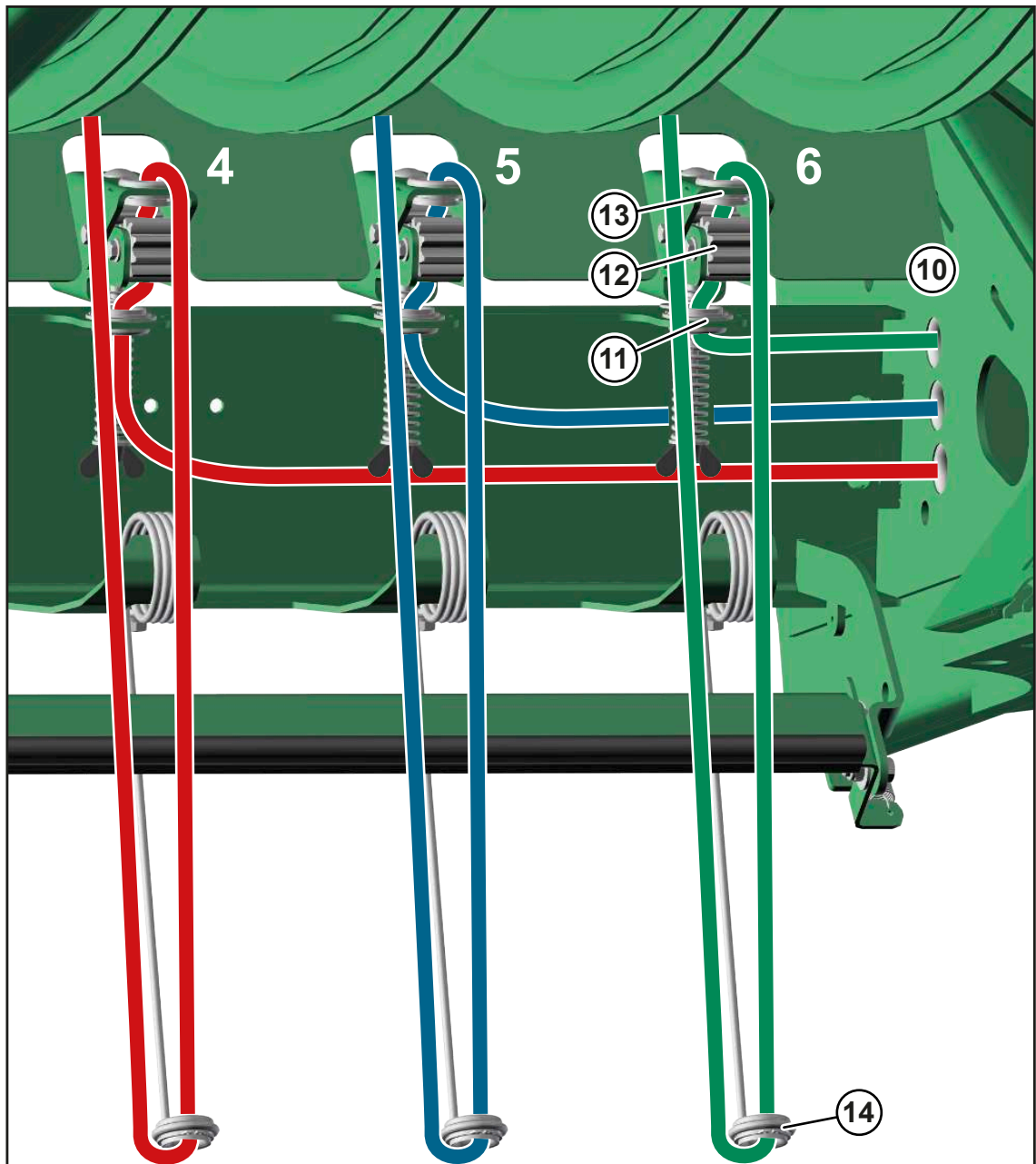
Route the lower twines from the twine box to the lower twine guide on the frame



BPG000-091

- ▶ Ensure that the lower twines never cross each other.
- ▶ Route the lower twine (4) from the twine box (11) through the twine brake (1) to the twine guide (7).
- ▶ Route the lower twine (5) from the twine box (11) through the twine brake (2) to the twine guide (7).
- ▶ Route the lower twine (6) from the twine box (11) through the twine brake (3) to the twine guide (7).
- ▶ Route the 3 lower twines (4, 5, 6) from above through the eyes of the twine guide (7) and then further to the retaining clip (8).
- ▶ Route the 3 lower twines (4, 5, 6) from above through the retaining clip (8) and further to the twine guide (9).
- ▶ Route the 3 lower twines (1, 2, 3) from above through the eyes of the twine guide (9) and then further to the twine guide (10).
- ▶ Route the 3 lower twines (4, 5, 6) through the eyes of the twine guide (10) and then further to the lower twine brakes.

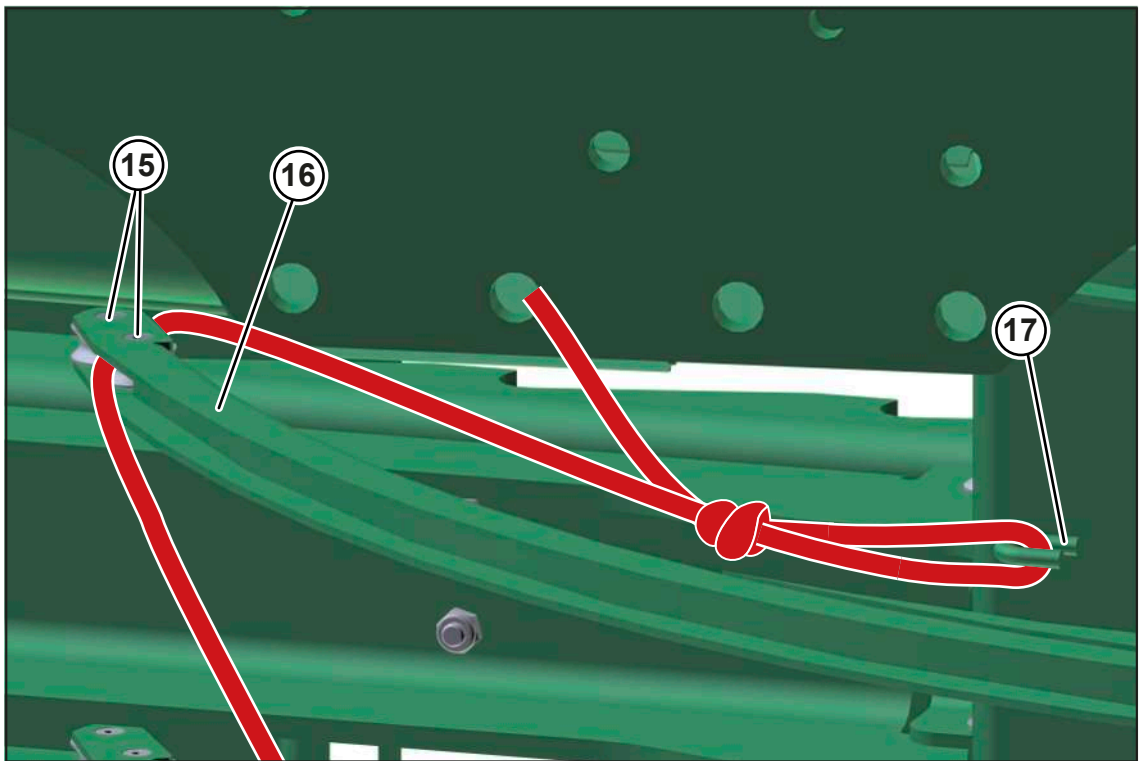
### Routing the lower twine from the lower twine guide to the twine tension springs



BPG000-092

- ▶ Release the twine brake.
- ▶ Thread the lower twine from the twine guide (10) through the lower eye (11) and attach it on the brake rollers (12).
- ▶ Manually rotate the brake rollers (12). This guides the lower twine through the brake rollers (12).
- ▶ Thread the lower twine through the upper eye (13).
- ▶ Route the lower twine further through the eye of the twine tension springs (14) and then upwards to the knotter needle.
- ▶ Repeat this process for all lower twines.

**Routing the lower twine from the twine tension springs to the frame/tying**

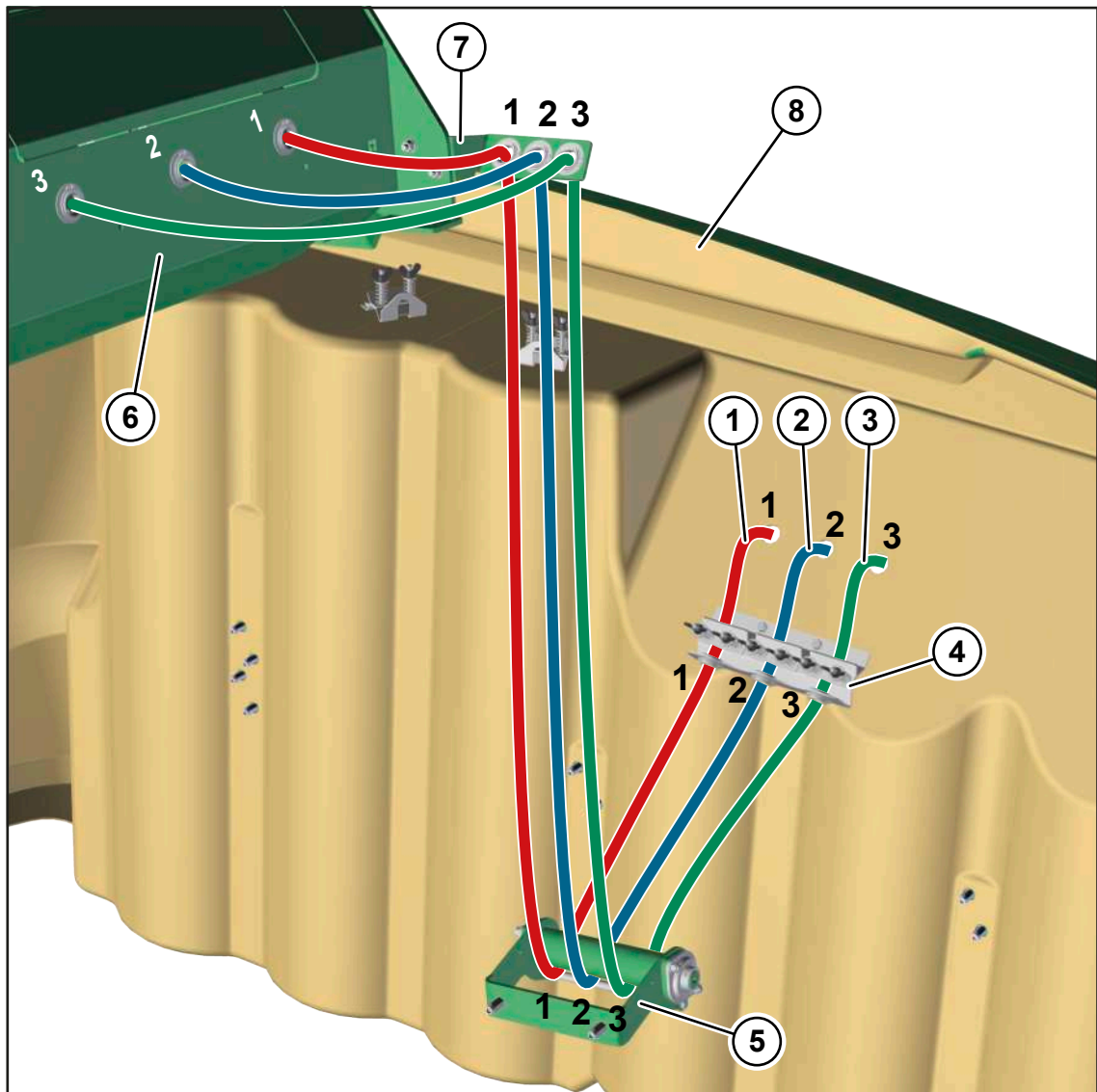


BP000-553

- ▶ Route the lower twine from the twine tension spring (14) between the rolls (15) of the knoter needle (16).
- ▶ Pull the lower twine down to the frame (17) and tie it to the frame (17).
- ▶ Repeat this process for all lower twines.

## 9.10 Threading the upper twine on the left machine side

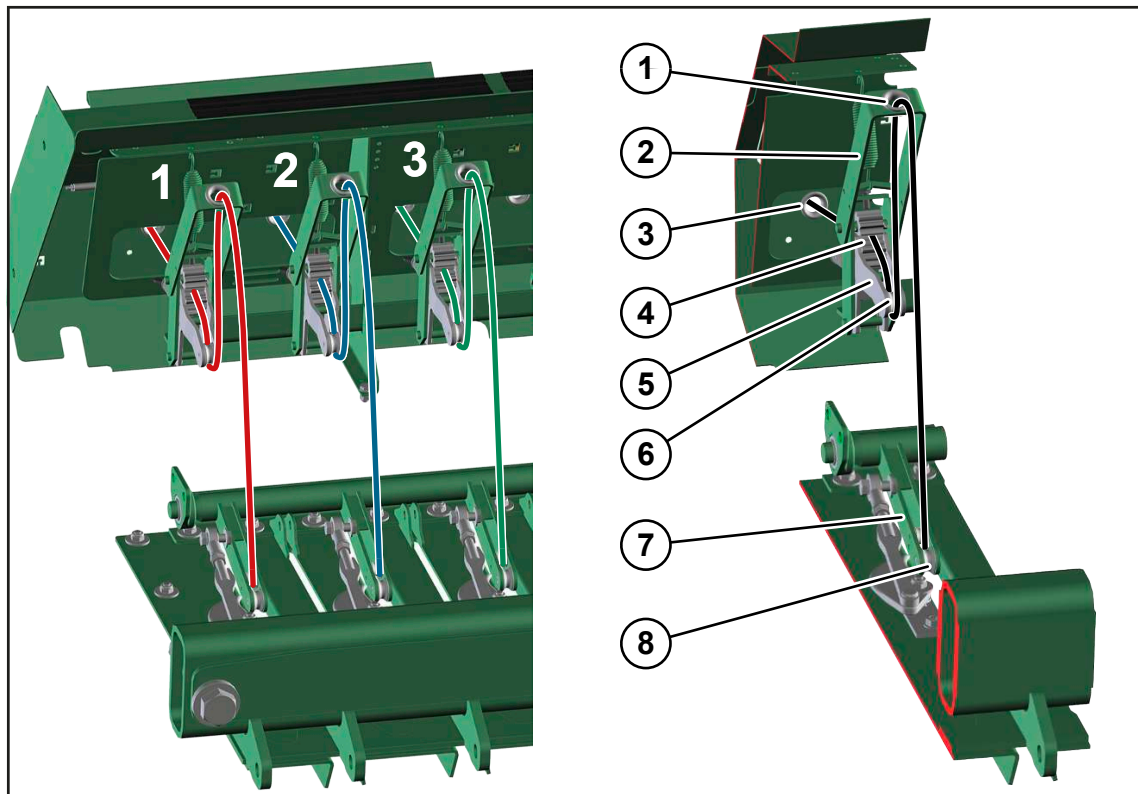
### Routing the upper twine from the twine box to the central lubrication guard



BPG000-093

- ▶ Ensure that the upper twines never cross each other
- ▶ Route the 3 upper twines (1, 2, 3) from the twine box (8) through the twine brake (4) to the deflection roll (5).
- ▶ Route the 3 upper twines (1, 2, 3) from below around the deflection roll (5) and then further to the upper twine guide (7).
- ▶ Route the 3 upper twines (1, 2, 3) through the eyes of the upper twine guide (7) and to the central lubrication guard (6).
- ▶ Route the 3 upper twines (1, 2, 3) through the eyes of the central lubrication guard (6) and to the twine brakes on the knotters.

### Routing the upper twine from the central lubrication guard to the upper needle



BPG000-094

- ▶ Release the twine brake (4).
- ▶ Route the upper twine from the central lubrication guard (3) through the rear eye of the twine brake (4) and attach it to the brake rollers.
- ▶ Manually rotate the brake rollers. This guides the upper twine through the brake rollers.
- ▶ Route the upper twine from the brake rollers underneath the roll (6) of the cranked lug (5).
- ▶ Guide the upper twine further through the eye (1) of the tensioning arm (2).
- ▶ Pull the upper twine towards the bottom and guide it between the rolls (8) of the upper needle (7).
- ▶ Route the other upper twines analogous to the first upper twine from the central lubrication guard further on to the upper needle.
  - ⇒ The next and final step for threading the upper twine depends on whether the bale channel is empty or filled.

#### If the bale channel is empty:

- ▶ Knot the upper twine to the lower twine in the middle of the bale chamber.

Or

- ▶ Route the upper twine underneath the crossbeam of the knotter table and knot it on the crossbeam of the upper baling flap.
- ▶ To tension the tensioning arm (2), pull back the upper twine before the central lubrication guard (3).

#### If the bale channel is filled:

- ▶ Read the actual bale length on the terminal.



**If the difference between the actual bale length and the target bale length is more than 50 cm:**

- ▶ Let the loose twine end of the upper twine hang down by approx. 50 cm into the bale channel.

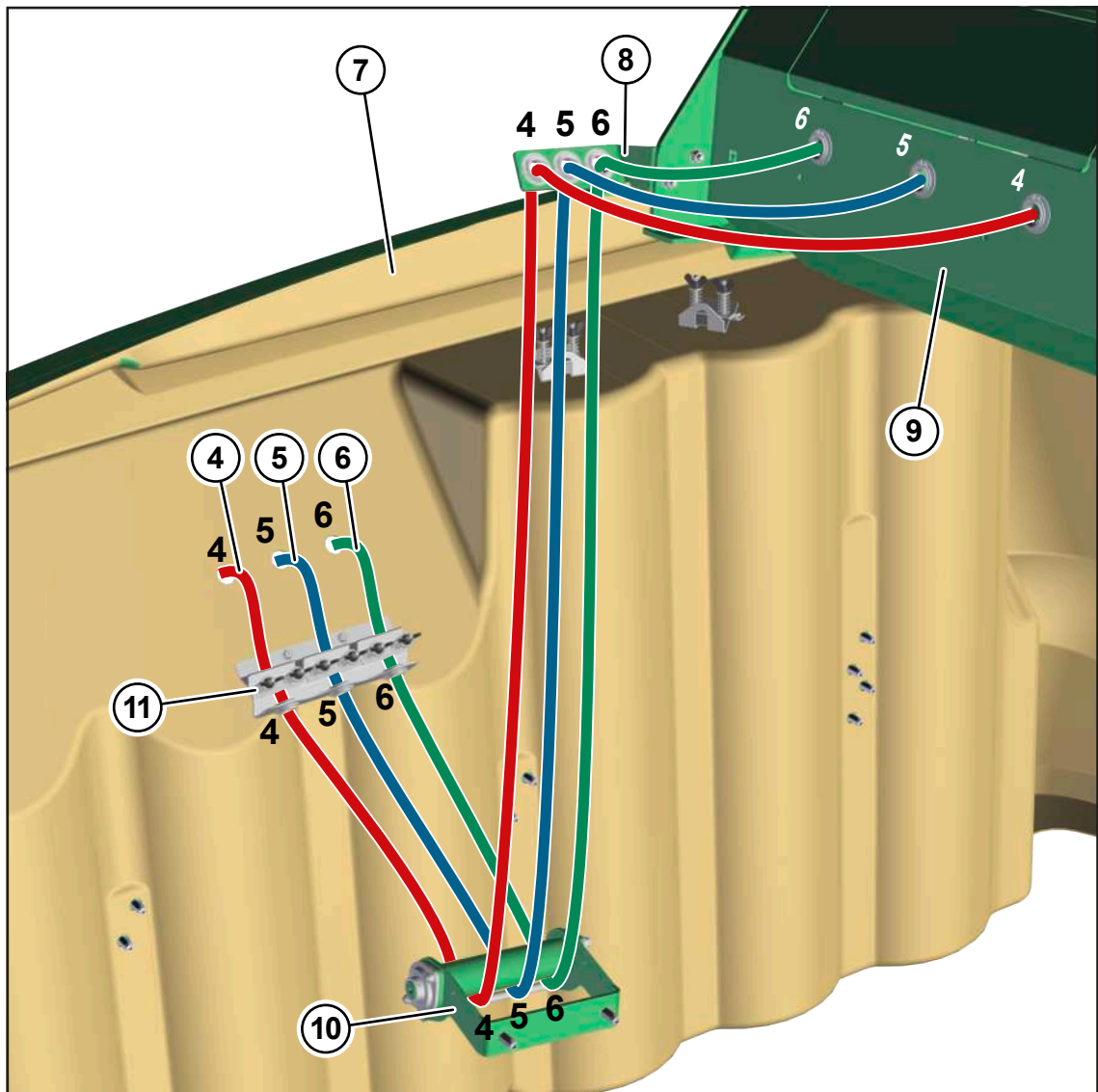
The tensioning arm (2) is tensioned when the upper twine is caught in the crops during subsequent baling.

**If the difference between the actual bale length and the target bale length is less than 50 cm:**

- ▶ Route the upper twine underneath the crossbeam of the knotter table and knot it on the crossbeam of the upper baling flap.
- ▶ To tension the tensioning arm (2), pull back the upper twine before the eye (1).

## 9.11 Threading the upper twine on the right machine side

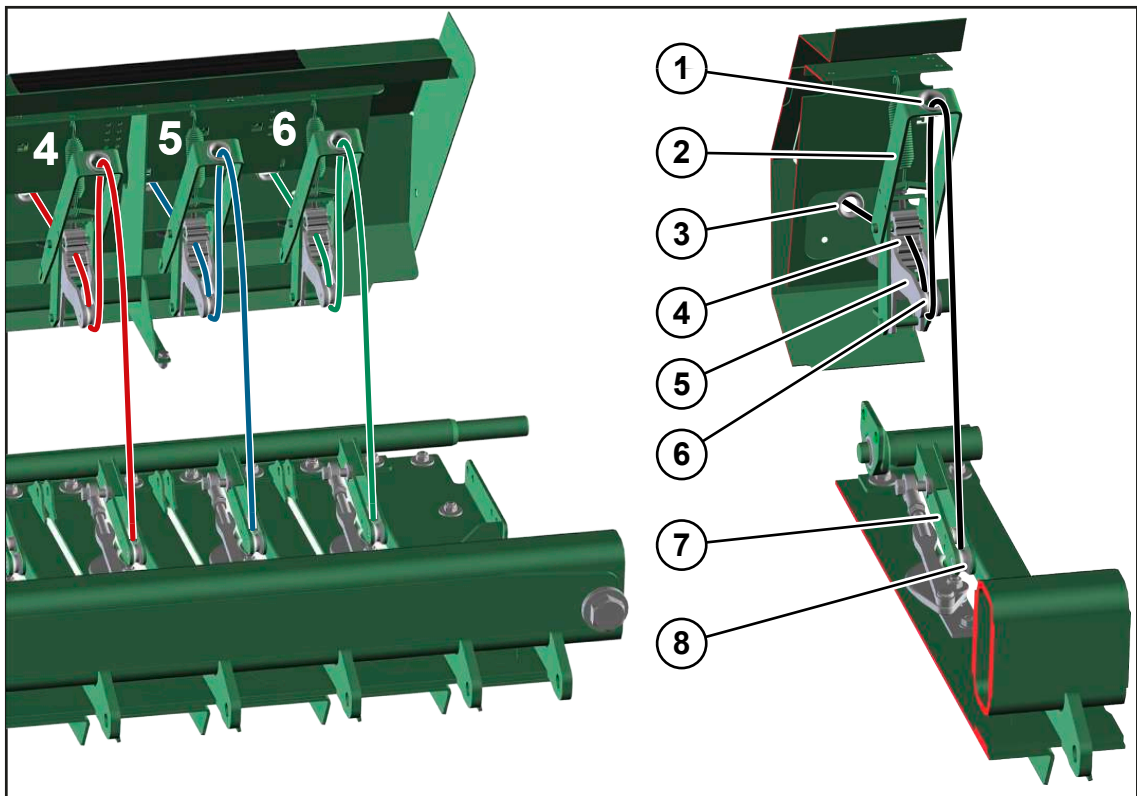
### Routing the upper twine from the twine box to the central lubrication guard



BPG000-095

- ▶ Ensure that the upper twines never cross each other
- ▶ Route the 3 upper twines (4, 5, 6) from the twine box (7) through the twine brake (11) to the deflection roll (5).
- ▶ Route the 3 upper twines (4, 5, 6) from below around the deflection roll (5) and then further to the upper twine guide (7).
- ▶ Route the 3 upper twines (4, 5, 6) through the eyes of the upper twine guide (7) and to the central lubrication guard (6).
- ▶ Route the 3 upper twines (4, 5, 6) through the eyes of the central lubrication guard (6) and to the twine brakes on the knotters.

### Routing the upper twine from the central lubrication guard to the upper needle



BPG000-096

- ▶ Release the twine brake (4).
- ▶ Route the upper twine from the central lubrication guard (3) through the rear eye of the twine brake (4) and attach it to the brake rollers.
- ▶ Manually rotate the brake rollers. This guides the upper twine through the brake rollers.
- ▶ Route the upper twine from the brake rollers underneath the roll (6) of the cranked lug (5).
- ▶ Guide the upper twine further through the eye (1) of the tensioning arm (2).
- ▶ Pull the upper twine towards the bottom and guide it between the rolls (8) of the upper needle (7).
- ▶ Route the other upper twines analogous to the first upper twine from the central lubrication guard further on to the upper needle.
  - ⇒ The next and final step for threading the upper twine depends on whether the bale channel is empty or filled.

#### If the bale channel is empty:

- ▶ Knot the upper twine to the lower twine in the middle of the bale chamber.

Or

- ▶ Route the upper twine underneath the crossbeam of the knotter table and knot it on the crossbeam of the upper baling flap.
- ▶ To tension the tensioning arm (2), pull back the upper twine before the central lubrication guard (3).

#### If the bale channel is filled:

- ▶ Read the actual bale length on the terminal.

**If the difference between the actual bale length and the target bale length is more than 50 cm:**

- ▶ Let the loose twine end of the upper twine hang down by approx. 50 cm into the bale channel.

The tensioning arm (2) is tensioned when the upper twine is caught in the crops during subsequent baling.

**If the difference between the actual bale length and the target bale length is less than 50 cm:**

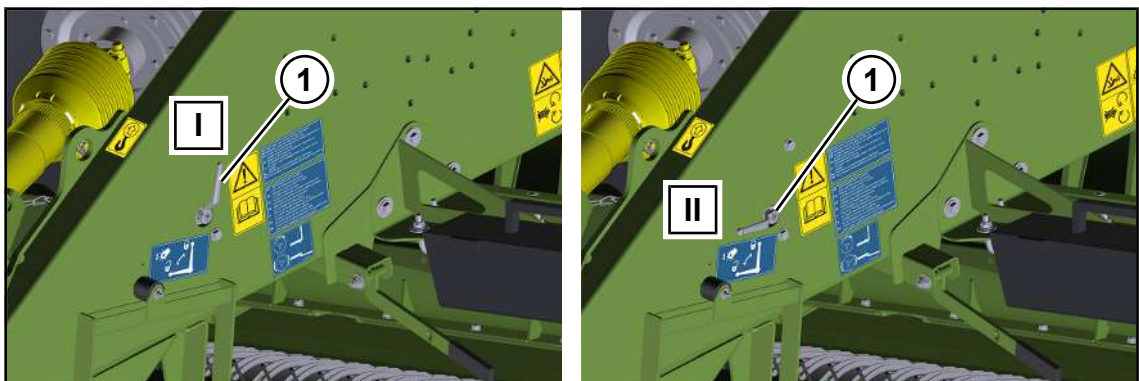
- ▶ Route the upper twine underneath the crossbeam of the knotter table and knot it on the crossbeam of the upper baling flap.
- ▶ To tension the tensioning arm (2), pull back the upper twine before the eye (1).

## 9.12 Pick-up

### INFO

Lift the pick-up for driving in the headland or during reverse travel.

### 9.12.1 Locking/releasing pick-up via stop cock



BPG000-108

- ✓ The machine is shut down and safeguarded, [see Page 29](#).

#### Locking

- ▶ Move stop cock (1) into position (I).


#### Releasing

- ▶ Move the stop cock (1) into position (II).

### 9.12.2 Moving pick-up into transport/working position

#### Working position

- ▶ In order to lower the pick-up into working position, move the single-acting control unit

() into the float position.

### Transport position

- ▶ In order to lift the pick-up into transport position, actuate the single-acting control unit



## 9.13 Lifting/lowering the bale chute

**⚠ WARNING**

**There is an increased risk of injury if functions are performed directly at the machine while the tractor engine is running.**

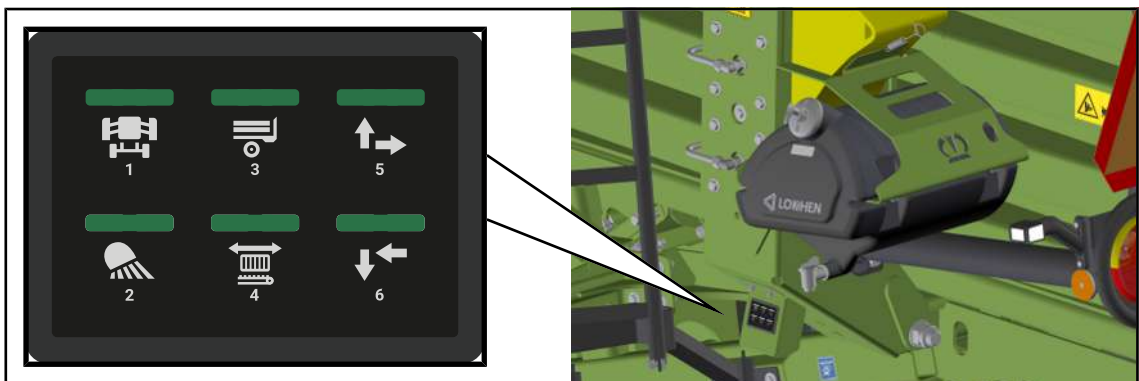
If functions are performed directly at the machine while the tractor engine is running, people standing in the danger zone can be crushed or killed.

Only operate the machine while the tractor engine is running, if:

- ✓ The person operating the machine knows which functions are executed as a consequence of various operations.
- ✓ The person operating the machine is standing outside the radius of action of the moving parts of the machine.
- ✓ There is no one in the danger zone.
- ▶ Switch off the PTO shaft and wait until trailing machine parts have come to a complete stop.
- ▶ Secure tractor against rolling away.
- ▶ Apply the parking brake (*see Page 157*) and the flywheel brake (*see Page 127*) of the machine.

The bale chute can be lowered/raised via the terminal or via the bale chute keypad.


### 9.13.1 Lifting/lowering the bale chute via the bale chute keypad



BP000-616


- ▶ Switch off the PTO shaft and wait until trailing machine parts have come to a complete stop.
- ▶ Secure the tractor against rolling away.
- ▶ Apply the parking brake (*see Page 157*) and the flywheel brake (*see Page 127*) of the machine.

### Preselecting the bale chute

- ▶ Press  to preselect the bale chute.
- ➔ The LED is lit when selected.
- ➔ The LED goes out if a function (raising/lowering) is not activated within 10 seconds.


### Lowering the bale chute to working position

**WARNING! Danger of being struck when bale chute is being lowered! While the bale chute is being lowered, ensure that there is nobody in the danger zone of the bale chute.**

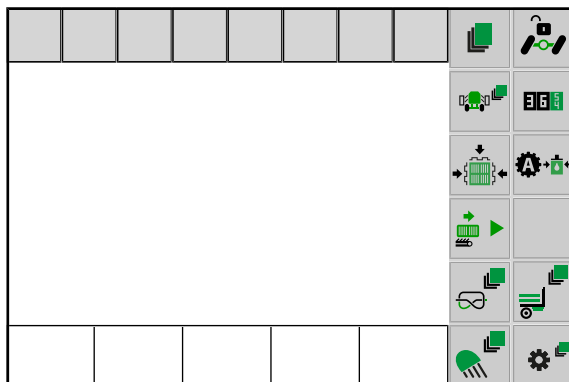
- ▶ The bale chute is preselected.
- ▶ To lower the bale chute, press and hold .
- ▶ The function is executed as long as the key is pressed.
- ▶ The LED shines as long as the key is pressed.

### Lifting into transport position

**WARNING! Danger of being struck when bale chute is being lifted! While the bale chute is being lifted, ensure that there is nobody in the danger zone of the bale chute.**

- ▶ The bale chute is preselected.
- ▶ To raise the bale chute, press and hold .
- ➔ The function is executed as long as the key is pressed.
- ➔ The LED shines as long as the key is pressed.





## 9.13.2 Raising/lowering the bale chute via the terminal



EQ001-205





### 9.13.2.1 Lower the bale chute

**WARNING! Increased risk of injury! While the bale chute is being lowered, ensure that there is nobody in the danger zone (particularly behind the machine).**

- ▶ Press .
- ➔ The  and  icons are displayed.
- ▶ To lower the bale chute, press and hold .

### 9.13.2.2 Lift bale chute

**WARNING! Increased risk of injury! While the bale chute is being raised, ensure that there is nobody in the danger zone (particularly behind the machine).**

- ✓ The tractor control unit (T-ECU) provides data for forward movement and the tractor speed is higher than 1 km/h.
- ▶ Press .
- ➔ The  and  icons are displayed.
- ▶ To raise the bale chute, press and hold .

## 9.14 Operating the bale ejector

### **WARNING**

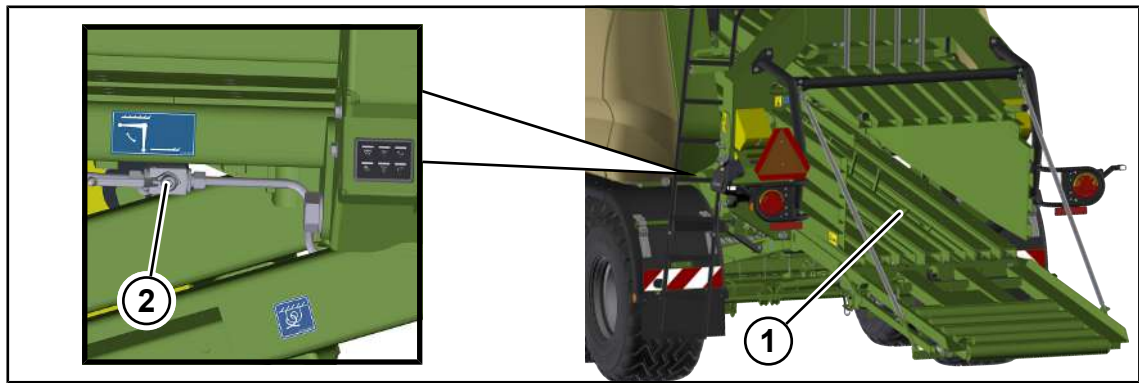
**There is an increased risk of injury if functions are performed directly at the machine while the tractor engine is running.**

If functions are performed directly at the machine while the tractor engine is running, people standing in the danger zone can be crushed or killed.

Only operate the machine while the tractor engine is running, if:

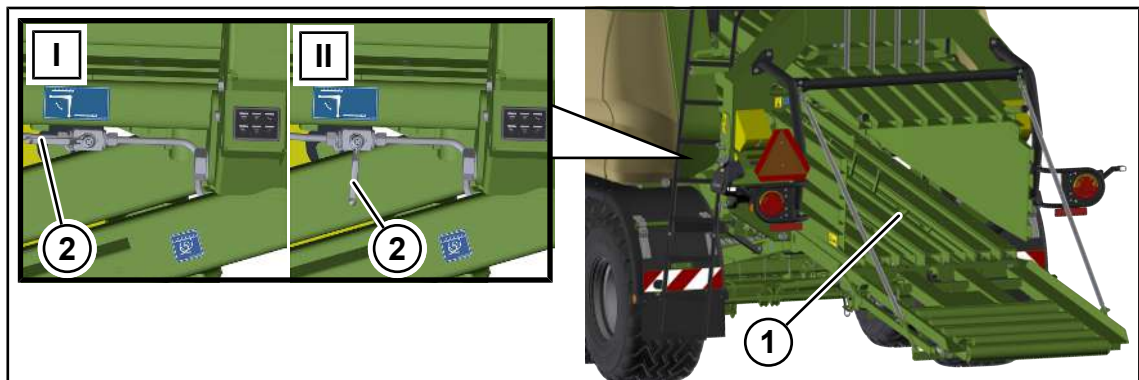
- ✓ The person operating the machine knows which functions are executed as a consequence of various operations.
- ✓ The person operating the machine is standing outside the radius of action of the moving parts of the machine.
- ✓ There is no one in the danger zone.
- ▶ Switch off the PTO shaft and wait until trailing machine parts have come to a complete stop.
- ▶ Secure tractor against rolling away.
- ▶ Apply the parking brake (*see Page 157*) and the flywheel brake (*see Page 127*) of the machine.

The bale ejector (1) can be split. To transport only the last big bale onto the bale chute, the rear part of the bale ejector can be uncoupled from the front part via the stop cock (2). To completely empty the bale channel, the front and the rear parts of the bale ejector must be coupled to each other.



BP000-619

### 9.14.1 Coupling/uncoupling the bale ejector



BP000-620

Stop cock (2) in position (I)	Bale ejector (1) coupled	To empty the bale channel completely.
Stop cock (2) in position (II)	Bale ejector (1) uncoupled	To move the last big bale onto the bale chute.

- ▶ Shut down and safeguard the machine, [see Page 29](#).

#### Uncoupling

- ▶ To uncouple the bale ejector, move the stop cock (2) to position (II).

#### Coupling


- ▶ To couple the bale ejector, move the stop cock (2) to position (I).



### 9.14.2     Operating the bale ejector via the bale chute keypad





BP000-531

- ✓ The bale chute has been lowered, [see Page 149](#).
- ▶ Switch off the PTO shaft and wait until trailing machine parts have come to a complete stop.
- ▶ Secure the tractor against rolling away.
- ▶ Apply the parking brake ([see Page 157](#)) and the flywheel brake ([see Page 127](#)) of the machine.
- ✓ To move the last big bale to the bale chute, the bale ejector must be uncoupled, [see Page 151](#).
- ✓ To empty the bale channel, the bale ejector is coupled, [see Page 151](#).
- ▶ **Without "Load Sensing" version:** Actuate the control unit ().







#### Loosen baling flaps

The baling flaps can be released with a preset baling flap pressure or completely (baling flap pressure = 0 bar).




- ▶ Press the key () to release the baling flaps with the preset baling flap pressure.
  - ➔ The LED shines; the baling flaps are released with the preset baling flap pressure.
  - ➔ The bale ejector can be moved manually ([see Page 154](#)), or automatic bale ejection ([see Page 154](#)) can be started.
- ▶ To release the baling flaps completely, press the key () 2x within 2 seconds.
  - ➔ The LED flashes 3x and the baling flaps are released completely.

### Starting automatic bale ejection

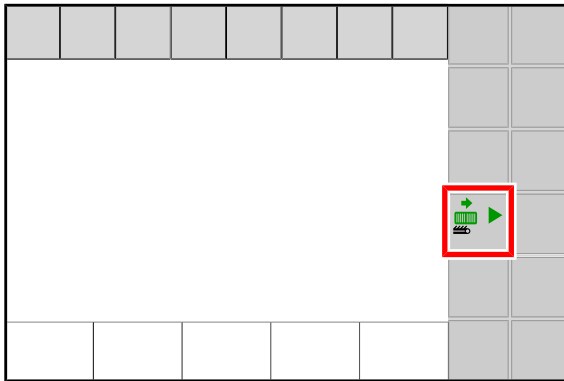
10 bale lifts are carried out when automatic bale ejection is started. Automatic bale ejection can be terminated prematurely.

- ▶ Press the  key.
- ▶ To start automatic bale ejection, press the two keys ( ) inside of 2 seconds.
- ➔ The LEDs (4, 5, 6) blink and 10 bale lifts are performed.
- ▶ Press the key () or () to terminate automatic bale ejection prematurely.
- ➔ The bale ejector () remains preselected. Automatic bale ejection can be restarted or the bale ejector can be moved manually.



### Moving the bale ejector manually

- ▶ Press the  key.
- ➔ The LED shines and the system sets the baling flaps to the preset baling flap pressure.
- ➔ The bale ejector can be moved manually.
- ▶ To move the bale ejector rearwards, press and hold the key () until the bale ejector is at the rear.
- ▶ To move the bale ejector forwards, press and hold the key () until the bale ejector is at the front.
- ▶ Move the bale ejector backwards/forwards until the bale channel is empty.
- ▶ After the big bale has been ejected, move the bale ejector back to the front.

### 9.14.3 Operating the bale ejector via the terminal



BP000-137

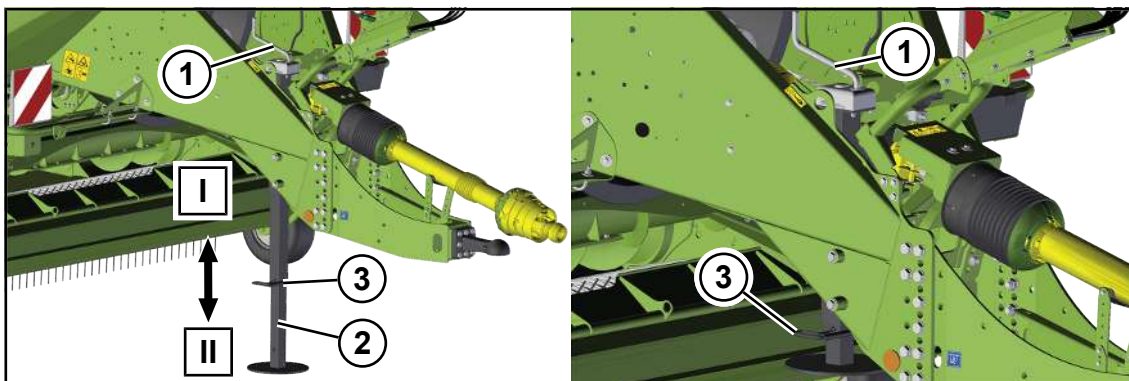
- ✓ The bale chute has been lowered, [see Page 149](#).
- ▶ Switch off the PTO shaft and wait until trailing machine parts have come to a complete stop.
- ▶ Secure the tractor against rolling away.
- ▶ Apply the parking brake ([see Page 157](#)) and the flywheel brake ([see Page 127](#)) of the machine.
- ✓ To move the last big bale to the bale chute, the bale ejector must be uncoupled, [see Page 151](#).
- ✓ To empty the bale channel, the bale ejector is coupled, [see Page 151](#).
- ▶ **Without "Load Sensing" version:** Actuate the control unit ().
- ▶ To execute 10 bale ejections, press  again.
- ➔ When the bale channel flaps are opened, 10 bale ejections are executed immediately.
- ➔ When the bale channel flaps are closed, first the bale channel flaps are opened and then 10 bale ejections are executed.

### 9.15 Operating the support jack

**INFO**

In order to increase the base of the support jack when the ground is soft, use a suitable support.

### Operating the mechanical support jack



BPG000-109

- ✓ The machine is shut down and safeguarded, [see Page 29](#).
- ✓ The machine is connected to the tractor, [see Page 109](#).

#### Moving the support jack into transport position

- ▶ Turn the crank handle (1) several times clockwise until the support jack (2) is relieved.

**WARNING! Crush hazard due to the support jack! Keep hands and feet out of the danger zone of the support jack.**

- ▶ Pull out the bolt (3), insert the support jack (2) into position (I) and secure it with the bolt (3).
- ▶ Raise the support jack completely.

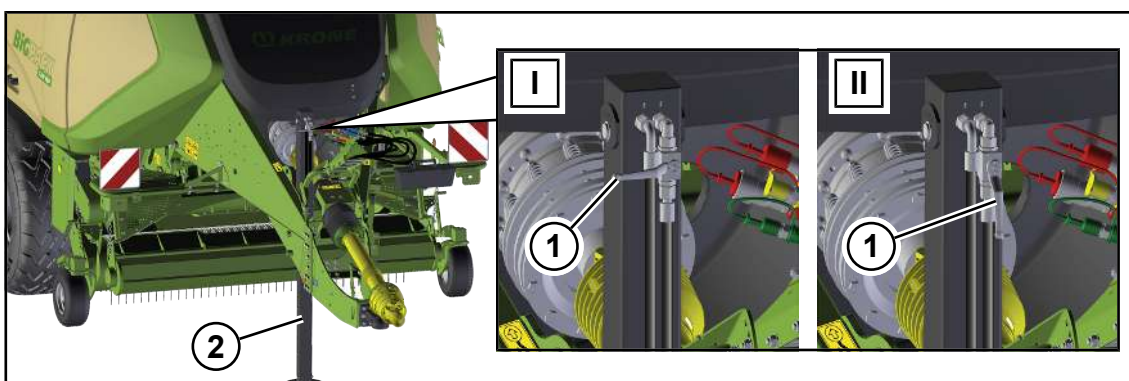
#### Moving the support jack into support position

- ▶ Turn the crank handle (1) several revolutions anti-clockwise.

**WARNING! Crush hazard due to the support jack! Keep hands and feet out of the danger zone of the support jack.**

- ▶ Pull out the bolt (3), lower the support jack (2) and secure it with the bolt (3).
- ▶ Turn the crank handle (1) anti-clockwise until the drawbar eye is relieved.


### Operating the hydraulic support jack



BPG000-110

- ✓ The machine is shut down and safeguarded, [see Page 29](#).
- ✓ The machine is connected to the tractor, [see Page 109](#).
- ✓ The stop cock (1) is open, position II.

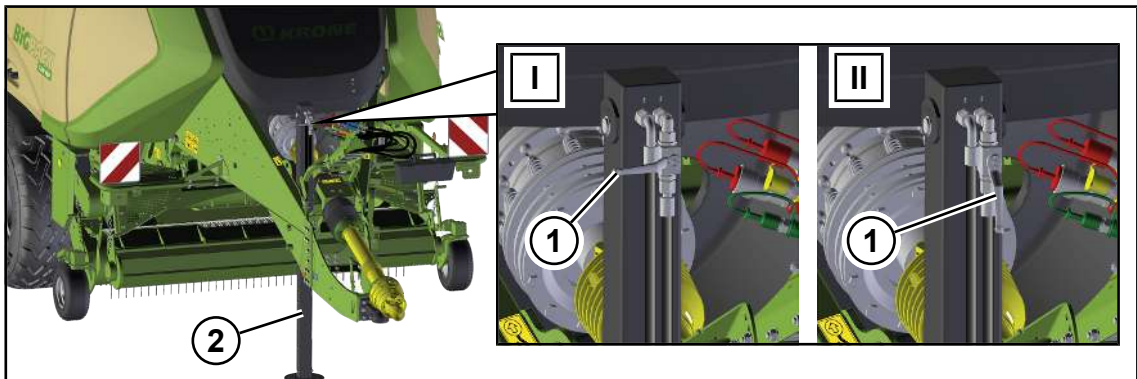
**Moving the support jack into support position**

- ▶ Actuate the double-acting control unit (  ) until the support jack (1) stands firmly on the ground and the drawbar eye is relieved.

**Moving the support jack into transport position**

- ▶ Actuate the double-acting control unit (  ) until the support jack has been retracted.
- ▶ Close the stop cock (1), position (I).

**9.15.1 Locking/releasing hydraulic support jack using the stop cock**



BPG000-110

- ✓ The machine is shut down and safeguarded, [see Page 29](#).

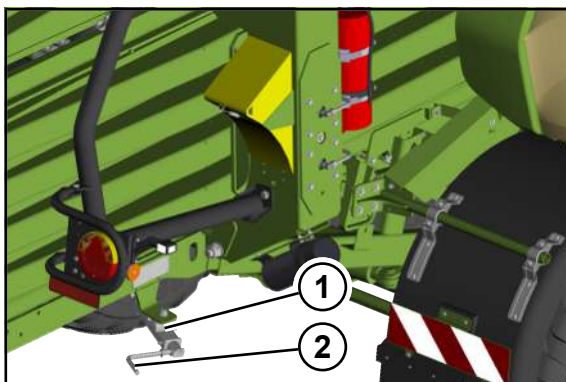
**Locking**

- ▶ Move stop cock (1) into position (I).

**Releasing**

- ▶ Move the stop cock (1) into position (II).

**9.16 Releasing/applying the parking brake**



BPG000-111

- ▶ Shut down and safeguard the machine, [see Page 29](#).

### Releasing

- ▶ In order to release the parking brake (1), turn the crank handle (2) anti-clockwise until the brake cable slightly sags.

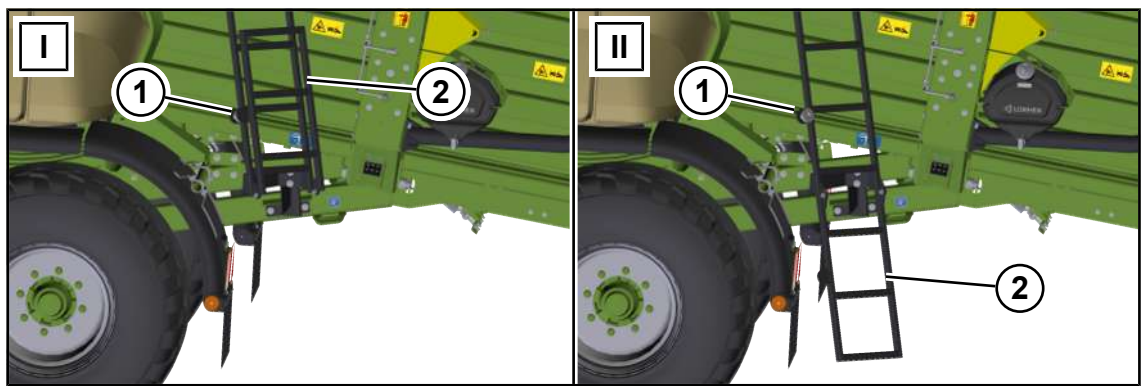
### Applying

- ▶ In order to apply the parking brake, turn the crank handle (2) clockwise until a noticeable resistance can be felt.

#### INFO

In order to prevent the machine from rolling away, use the wheel chocks in addition to the parking brake, [see Page 159](#).

## 9.17 Folding down/up the ladder



BP000-624

I Road position

II Ascent/descent position

- ✓ The machine is shut down and safeguarded, [see Page 29](#).

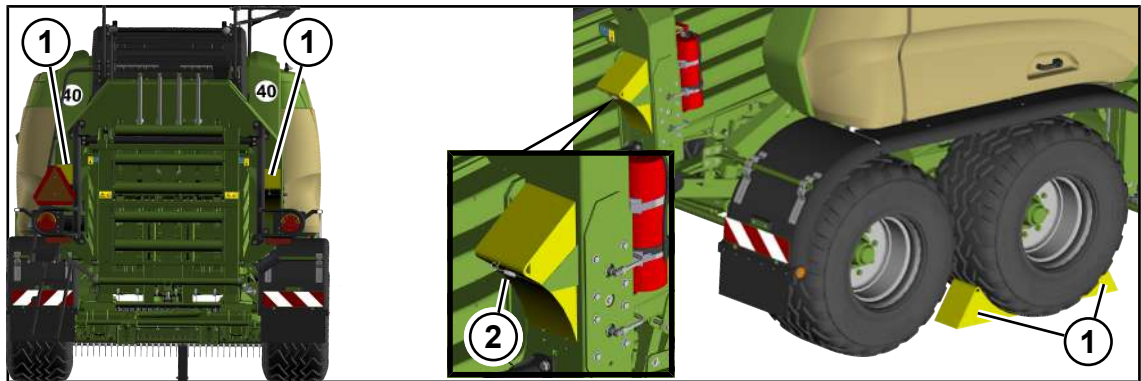
### Folding down the ladder

- ▶ Pull at the ladder (2) and fold it down.

### Folding up the ladder

- ▶ Pull at the ladder (2) and fold it up until the ladder (2) is in contact with the magnets (1).
- ▶ Ensure that the ladder (2) is in contact with the magnets (1).

## 9.18 Fitting wheel chocks



BPG000-065

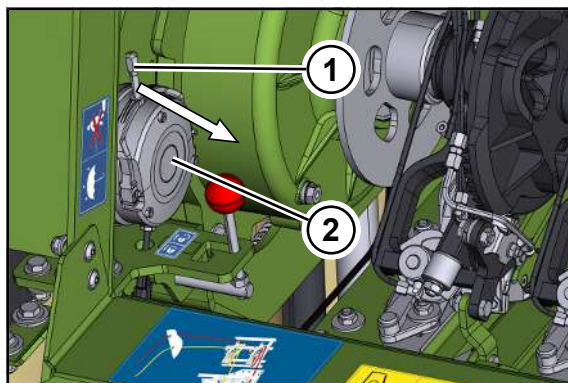
The wheel chocks (1) secure the machine against rolling away. 2 wheel chocks are installed on the machine.

To prevent the machine from rolling away, use the parking brake in addition to the wheel chocks, [see Page 157](#).

- ✓ The machine is parked on a stable, horizontal and even surface.
- ✓ The machine is shut down and safeguarded, [see Page 29](#).
- ▶ To remove the wheel chock (1) from the support, loosen the spring (2).
- ▶ Place the wheel chocks (1) tightly up against the wheel, in front of and behind it, to prevent the machine from rolling away.
- ▶ **For the "Self-steering axle" version:** Place the wheel chocks (1) tightly in front of and behind the same wheel of the front axle to prevent the machine from rolling away.

## 9.19 Initiate the tying process manually

Triggering the tying cycle manually is only necessary for maintenance, adjustment and repair tasks.



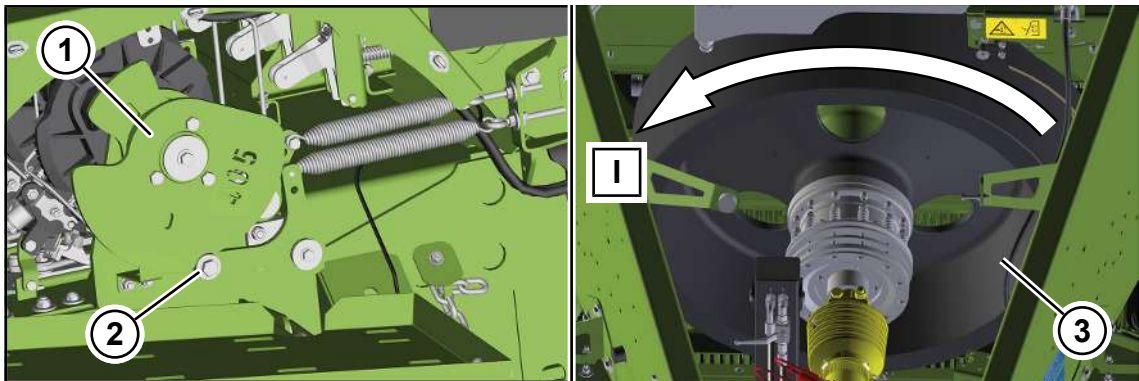
BPG000-112

- ✓ The machine is shut down and safeguarded, [see Page 29](#).
- ✓ The machine is disconnected from the tractor.

### Triggering the tying cycle:

- ✓ The knotter shaft is released, [see Page 131](#).
- ▶ To trigger the tying cycle, pull the lever (1) of the electrical brake (2) in the direction of the arrow.

## 9.20 Finishing the tying process manually



BPG000-113

A tying cycle consists of one rotation of the cam disc (1).

The knotter shaft is in rest position when the roll (2) of the upper needle is in the recess of the cam track (1) of the knotter shaft.

- ✓ The machine is shut down and safeguarded, [see Page 29](#).
- ✓ The machine is disconnected from the tractor.
- ✓ The tying cycle is triggered, [see Page 159](#).

### Working direction flywheel

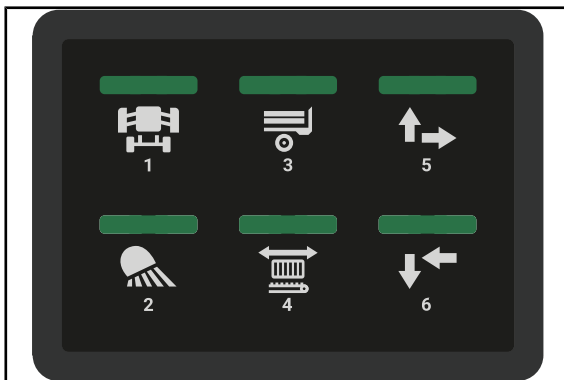
#### **WARNING! Risk of injury from unforeseeable machine movements**

If the flywheel is rotated manually, there is a risk that persons can be injured by moving machine parts.



Instruct all persons to leave the danger zone of the machine while you are rotating the flywheel.

- ▶ Rotate the flywheel (3) manually in working direction (I) until the roll (2) of the upper needle slips into the recess of the cam disc (1) of the knotter shaft.

## 9.21 Switching working lights on and off via the bale chute keypad



















BP000-531

- ▶ To switch on all working lights, press .
- ➔ The indicator lamp is lit.
- ▶ To switch off all working lights, press  again.
- ➔ The indicator lamp goes out.







## 9.22 Operating the working lights via the terminal





Icon	Designation	Explanation
	Operating working lights	<ul style="list-style-type: none"> <li>Depending on the machine configuration, the following icons are shown in the display.</li> <li>The icon  reappears if none of the icons is activated within approx. 5 seconds.</li> </ul>
	Switching on all working lights	<p>The working lights:</p> <ul style="list-style-type: none"> <li>Twine boxes lighting</li> <li>Knotter/pick-up lighting</li> </ul> <p>In "Rear working lights" version</p> <ul style="list-style-type: none"> <li>Rear lighting</li> </ul> <p>In "Side hoods working lights" version</p> <ul style="list-style-type: none"> <li>Side hoods lighting</li> </ul> <p>are switched on.</p>
	Switching off all working lights	<p>The working lights:</p> <ul style="list-style-type: none"> <li>Twine boxes lighting</li> <li>Knotter/pick-up lighting</li> </ul> <p>In "Rear working lights" version</p> <ul style="list-style-type: none"> <li>Rear lighting</li> </ul> <p>In "Side hoods working lights" version</p> <ul style="list-style-type: none"> <li>Side hoods lighting</li> </ul> <p>are switched off.</p>
	Working lights – switching on automatic	<ul style="list-style-type: none"> <li>Appears only when the tractor control unit (T-ECU) provides data for lighting.</li> <li>If the tractor control unit (T-ECU) provides data for lighting, the working lights of the machine can be switched on or off from the tractor in "Automatic working lights" mode.</li> <li>Alternatively, the working lights can be switched on and off manually.</li> </ul>
	Working lights – switching off automatic	<ul style="list-style-type: none"> <li>Alternatively, the working lights can be switched on and off manually.</li> </ul>
	Working lights – switching on working lights	<p>The working lights:</p> <ul style="list-style-type: none"> <li>Knotter/pick-up lighting</li> </ul> <p>In "Rear working lights" version</p> <ul style="list-style-type: none"> <li>Rear lighting</li> </ul> <p>In "Side hoods working lights" version</p> <ul style="list-style-type: none"> <li>Side hoods lighting</li> </ul> <p>are switched on.</p>

Icon	Designation	Explanation
	Working lights – switching off working lights	The working lights: <ul style="list-style-type: none"> <li>• Knotter/pick-up lighting</li> </ul> In "Rear working lights" version <ul style="list-style-type: none"> <li>• Rear lighting</li> </ul> In "Side hoods working lights" version <ul style="list-style-type: none"> <li>• Side hoods lighting</li> </ul> are switched off.
	Working lights – switching on maintenance lighting	The working lights: <ul style="list-style-type: none"> <li>• Twine boxes lighting</li> <li>• Knotter/pick-up lighting</li> </ul> In "Rear working lights" version <ul style="list-style-type: none"> <li>• Rear lighting</li> </ul> In "Side hoods working lights" version <ul style="list-style-type: none"> <li>• Side hoods lighting</li> </ul> are switched on.
	Working lights – switching off maintenance lighting	The working lights: <ul style="list-style-type: none"> <li>• Twine boxes lighting</li> <li>• Knotter/pick-up lighting</li> </ul> In "Rear working lights" version <ul style="list-style-type: none"> <li>• Rear lighting</li> </ul> In "Side hoods working lights" version <ul style="list-style-type: none"> <li>• Side hoods lighting</li> </ul> are switched off.
	Working lights – switching on rear lighting	<ul style="list-style-type: none"> <li>• Is only available in "Rear working lights" version.</li> </ul>
	Working lights – switching off rear lighting	<ul style="list-style-type: none"> <li>• Is only available in "Rear working lights" version.</li> </ul>
	Working light – switching on side hood lighting	<ul style="list-style-type: none"> <li>• Is only available in "Side hood working lights" version.</li> </ul>
	Working light – switching off side hood lighting	<ul style="list-style-type: none"> <li>• Is only available in "Side hood working lights" version.</li> </ul>
	Switch off warning beacon	<ul style="list-style-type: none"> <li>• <a href="#">see Page 165</a></li> </ul>
	Switch on warning beacon	<ul style="list-style-type: none"> <li>• <a href="#">see Page 165</a></li> </ul>




### 9.22.1 Switching on all working lights

- ▶ Press .
- ⇒ The  and  icons are displayed.
- ▶ To switch on all working lights, press .




### 9.22.2 Switching off all working lights

- ▶ Press .
- ⇒ The  and  icons are displayed.
- ▶ To switch off all working lights, press .




### 9.22.3 Working lights – switching working lights on/off

- ▶ Press .
- ⇒ The icon  is displayed when working lights – working lights are switched on.
- ⇒ The icon  is displayed when working lights – working lights are switched off.



#### Switching on


- ▶ Press .
- ➔ The display switches from  to .

#### Switching off

- ▶ Press .
- ➔ The display switches from  to .

### 9.22.4 Working lights – switching maintenance lighting on/off

- ▶ Press .
- ⇒ The icon  is displayed when working lights – maintenance lighting are switched on.

⇒ The icon  is displayed when working lights –maintenance lighting are switched off.

### Switching on

▶ Press .

➔ The display switches from  to .

### Switching off


▶ Press .


➔ The display switches from  to .

## 9.22.5 Working lights – switching rear lighting on/off

Is only available in "Rear working lights" version

▶ Press .

⇒ The icon  is displayed when working lights –rear lighting are switched on.

⇒ The icon  is displayed when working lights –rear lighting are switched off.

### Switching on

▶ Press .

➔ The display switches from  to .

### Switching off


▶ Press .


➔ The display switches from  to .

## 9.22.6 Working light – switching side hood lighting on/off

Is only available in "Rear working lights" version

▶ Press .

⇒ The icon  2 is displayed when working lights –side hood lighting are switched on.

⇒ The icon  2 is displayed when working lights –side hood lighting are switched off.

### Switching on

▶ Press  2 .

➔ The display switches from  2 to  2 .


### Switching off


▶ Press  2 .

➔ The display switches from  2 to  2 .

## 9.22.7 Switching the warning beacon on/off



▶ Press  .

➔ The icon  is shown on the display when the warning beacon is switched on.

➔ The icon  is shown on the display when the warning beacon is switched off.

### Switching ON

▶ Press  .

➔ The display switches from  to  .

### Switching off

▶ Press  .

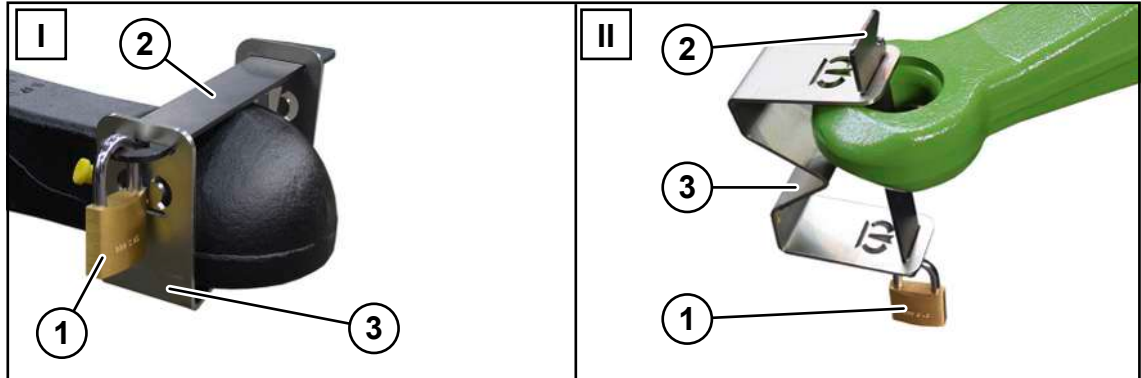
➔ The display switches from  to  .

### 9.23 Removing/mounting the safety device which prevents unauthorised use

The safety device is used to prevent unauthorised use when the machine has been switched off.

- ✓ The machine has been parked, [see Page 268](#).

For version with "ball-head attachment" or "drawbar eye attachment"



KS000-414

I Version with ball-head attachment

II Version with drawbar eye attachment

#### Removing

- ▶ Remove the padlock (1), the latch (2) and the bracket (3) and take them with you.

#### Mounting

- ▶ Mount the bracket (3) with the latch (2) and secure with the padlock (1) and keep the key in a safe place.

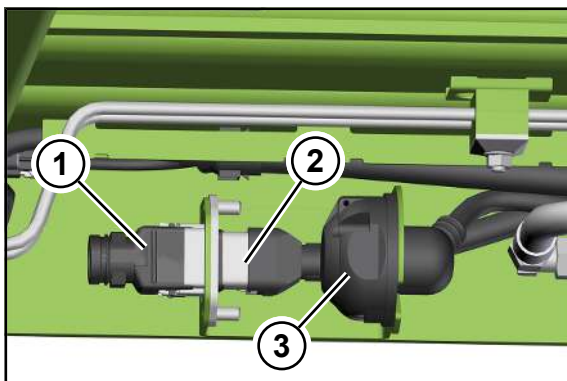
### 9.24 Operation of machine without bale chute

Operating the machine without bale chute is necessary if, for example, a bale accumulator is connected to the rear of the machine.

Establishing the plug connection (2) with the terminating resistor (1) is necessary if the machine is operated without bale chute. The plug connection sits near the 12-V socket (3), at the rear left under the machine.

#### INFO

The terminating resistor (2) can be ordered with the order number 20 086 023 0.



BPG000-114

- ✓ The bale chute is dismantled.
- ✓ The machine is shut down and safeguarded, [see Page 29](#).
- ▶ Establish the plug connection (2) with the terminating resistor (1).

## 10 KRONE ISOBUS terminal (CCI 800, CCI 1200)

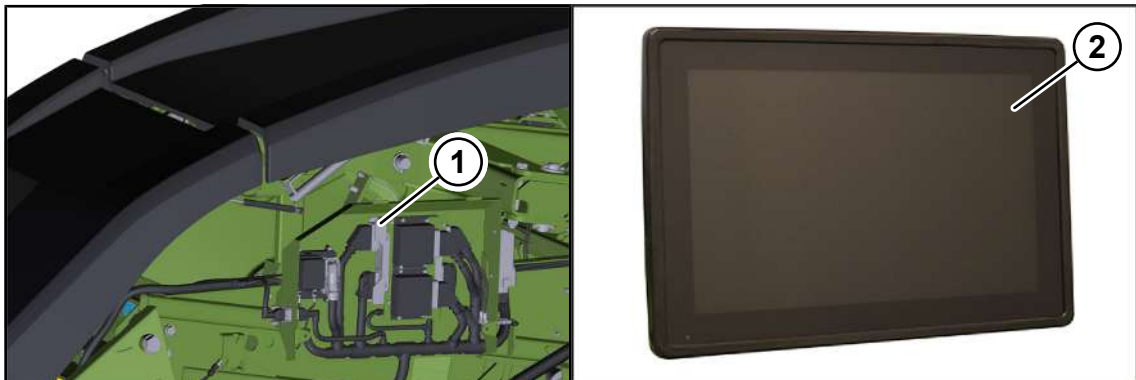
### NOTICE

**Penetration of water in the terminal could lead to malfunction. As a result, the machine can no longer be operated safely.**

- ▶ Protect the terminal from water.
- ▶ If the machine is not used for an extended period of time (for example in winter), the terminal must be stored in a dry place.
- ▶ For mounting and repair jobs, especially for welding jobs on the machine, disconnect the power supply to the terminal.

The ISOBUS system is an internationally standardised communications system for agricultural machines and systems. The designation of the associated series of standards is: ISO 11783. The agricultural ISOBUS system enables information and data to be exchanged between tractor and unit of different manufacturers. For this purpose, both the required plug connections and the signals are standardised which are required for the communication and transmission of commands. The system also enables machines to be operated with operation units (terminals) which are already available on the tractor or have been attached e.g. to the tractor cabin. The relevant information can be found in the technical documents of the operation device or on the units themselves.

KRONE machines, which have ISOBUS equipment, are coordinated with this system.



EQG000-057

The electronic equipment of the machine consists essentially of the job computer (1), the terminal (2) and the control and function elements.

The job computer (1) sits on the front left of the machine, behind the twine box.

Functions of the job computer (1):

- Control of actuator system installed on the machine.
- Transmission of error messages.
- Evaluation of sensor system.
- Diagnostics of sensor system and actuator system.

The driver gets information by means of the terminal (2) and settings for the operation of the machine are performed which are gathered by the job computer and further processed.

### 10.1 Touchable display

To provide menu guidance and entry of values/data, the terminal is equipped with a touch-capable display. By touching the display, you can call up and change values in blue font.



## 10.2 Switching terminal on/off



EQ001-174

KRONE ISOBUS terminal CCI 1200	KRONE ISOBUS terminal CCI 800
--------------------------------	-------------------------------

- ▶ Before switching on the terminal for the first time, check that the connections are correct and tight.

### INFO

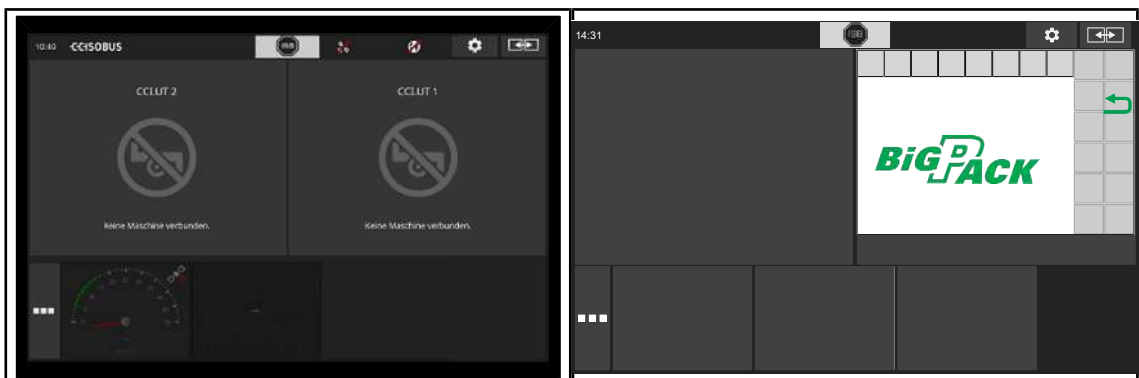
When the terminal is switched on for the first time, the machine configuration is loaded into the terminal and saved in the terminal memory. Loading may take a few minutes.

### Switching ON

- ▶ Press and hold down the key (1).
  - ⇒ If the machine is not connected, the display shows the main menu after switching on.
  - ⇒ If the machine is connected, the display shows the road travel screen after switching on.
- ➔ The terminal is ready to operate.

If machine is not connected: "Main menu"

If machine is connected: "Road travel screen"



EQG000-056

The display appears in landscape mode after starting the terminal. Refer to the CCI terminal operating instructions if you want the display in portrait rather than landscape mode or if you wish to expand the terminal applications to full view.

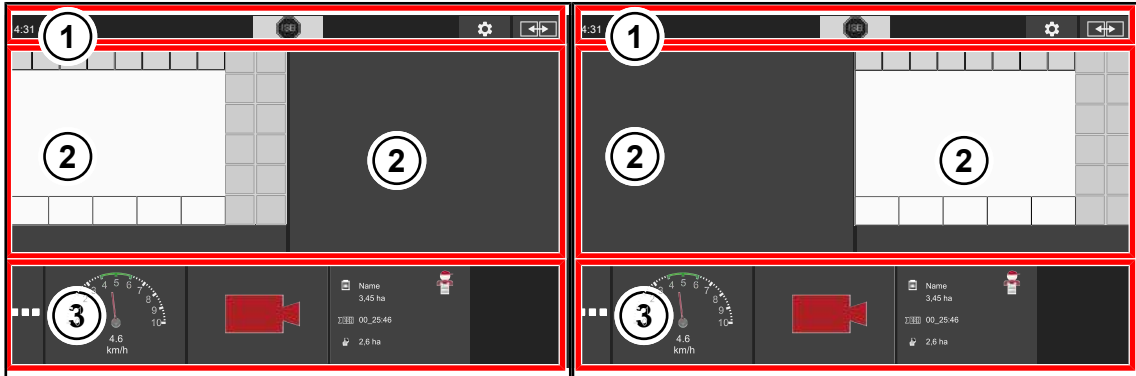
### Switching off

- ▶ Press and hold down the key (1).

**INFO**

► For more details on how the terminal functions, follow the terminal operating instructions.

### 10.3 Design of display



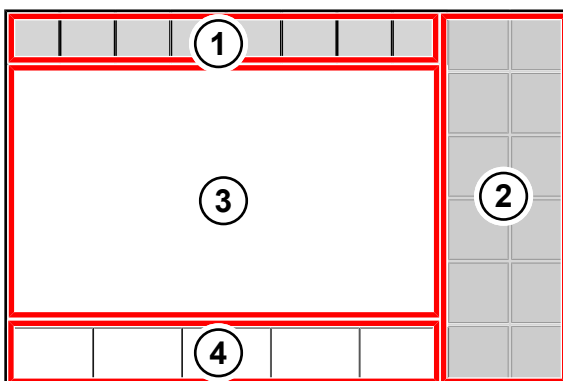
EQG000-058

Pos.	Designation	Explanation
1	Status line	
2	Main view left/right	When operating the machine, KRONE recommends positioning the machine application in the main view.
3	Information view	Additional applications (apps) can be selected from the App menu and displayed in the Information view. The apps can be dragged and dropped into the Main view.

**INFO**

► For more details on how the terminal functions, follow the terminal operating instructions.

### 10.4 Design of the KRONE machine application



EQG000-059

The KRONE machine application is divided into the following areas:

**Status line (1)**

The status line (1) indicates current states of the machine (depending on how it is equipped), see [Page 176](#).

**Keys (2)**

The machine is operated by pressing the keys (2) via touch function, [see Page 177](#).

**Main window (3)**

Values (figures) shown in blue in the main window can be selected using the touch function.

There are the following main window views:

- Road travel screen, [see Page 190](#)
- Working screen/s, [see Page 189](#)
- Menu level, [see Page 196](#)

**Information bar (4)**

The information bar shows information about the working screen, [see Page 185](#), and can be individually configured, [see Page 246](#).

## 11 KRONE Terminal DS 500

### NOTICE

**Penetration of water in the terminal could lead to malfunction. As a result, the machine can no longer be operated safely.**

- ▶ Protect the terminal from water.
- ▶ If the machine is not used for an extended period of time (for example in winter), the terminal must be stored in a dry place.
- ▶ For mounting and repair jobs, especially for welding jobs on the machine, disconnect the power supply to the terminal.

### 11.1 Touchable display

To provide menu guidance and entry of values/data, the terminal is equipped with a touch-capable display. By touching the display, you can call up and change values in blue font.

### 11.2 Switching terminal on/off



EQ003-253

- ▶ Before switching on the terminal for the first time, check that the connections are correct and tight.

### INFO

When the terminal is switched on for the first time, the machine configuration is loaded into the terminal and saved in the terminal memory. Loading may take a few minutes.

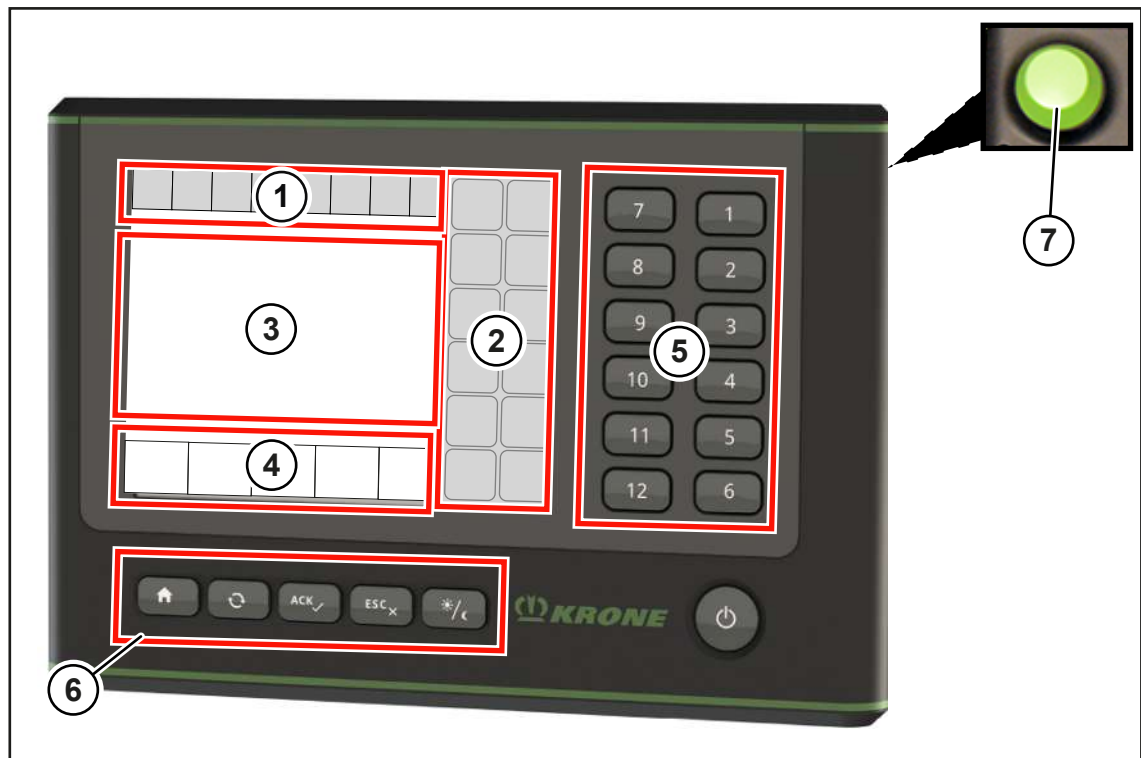
#### Switching ON

- ▶ Press and hold down the key (1).
  - ⇒ If the machine is not connected, the display shows the main menu after switching on.
  - ⇒ If the machine is connected, the display shows the road travel screen after switching on.
- ➔ The terminal is ready to operate.

#### Switching off

- ▶ Press and hold down the key (1).

## 11.3 Design DS 500



EQ003-254

The KRONE machine application is divided into the following areas:

### Status line (1)

The status line (1) indicates current states of the machine (depending on how it is equipped), [see Page 176](#).

### Keys (2)

The machine is operated by pressing the keys (2) via touch function, [see Page 177](#).

### Main window (3)

Values (figures) shown in blue in the main window can be selected using the touch function.

There are the following main window views:

- Road travel screen, [see Page 190](#)
- Working screen/s, [see Page 189](#)
- Menu level, [see Page 196](#)

### Information bar (4)






The information bar shows information about the working screen, [see Page 185](#), and can be individually configured, [see Page 246](#).

### Keys (5)

Alternatively, the machine is operated by pressing the keys (5) without the touch function.

## Keys (6)

The keys (6) can be used to open the main menu or the working screen and to confirm the error messages and set the brightness.

Icon	Designation	Explanation
	Main menu	Open the main menu of the terminal.
	Swap key	Switch between the main menu and the working screen of the terminal. With more than one machine mask, the views switches to the next one.
	ACK (acknowledgement key)	Confirm error messages.
	ESC (back key)	Leave the menu without saving.
	Brightness	Switch from day to night design and vice versa.

## Scroll wheel (7)

Alternatively, the values (figures) shown in the main window (3) can be selected and set using the scroll wheel (7). The scroll wheel (7) can also be used to navigate between the individual menus.

Turning the scroll wheel to the right:

- Increase the value.
- Navigate to the next value in the menu.
- Navigate to the next menu.

Turning the scroll wheel to the left:

- Reduce the value.
- Navigate to the previous value in the menu.
- Navigate to the previous menu.

Press the scroll wheel:

- Select the value.
- Save the value.
- Open the menu.

## 12 Foreign ISOBUS terminal

 **WARNING**

**Risk of injury caused by utilization of foreign terminal or other operation units**

When using terminals and other operation units which have not been delivered by KRONE mind that the user:

- ✓ assumes the responsibility for the use of KRONE machines when using the machine on operation units (terminal / other operating elements) which have not been delivered by KRONE.
- ✓ only connects such systems (if possible) which have passed a AEF/DLG/VDMA test (so-called ISOBUS COMPATIBILITY TEST).
- ✓ has to follow the operating and safety instructions of the supplier of ISOBUS operation unit (e.g. terminal).
- ✓ must ensure that the used operating elements and machine controls concerning IL (IL = Implementation Level; describes compatibility levels of different software versions) must fit together (condition: IL same or higher).
- ▶ Before using the machine, make sure that all machine functions are performed according to the enclosed operating instructions.

**INFO**

KRONE ISOBUS systems regularly pass the ISOBUS COMPATIBILITY TEST (AEF/DLG/VDMA test). The operation of this machine at least requires implementation level 3 of ISOBUS system.

The ISOBUS system is an internationally standardised communications system for agricultural machines and systems. The designation of the associated series of standards is: ISO 11783. The agricultural ISOBUS system enables information and data to be exchanged between tractor and unit of different manufacturers. For this purpose, both the required plug connections and the signals are standardised which are required for the communication and transmission of commands. The system also enables machines to be operated with operation units (terminals) which are already available on the tractor or have been attached e.g. to the tractor cabin. The relevant information can be found in the technical documents of the operation device or on the units themselves.

KRONE machines, which have ISOBUS equipment, are coordinated with this system.

### 12.1 Varying functions to KRONE ISOBUS terminal

The job computer provides information and control functions of the machine on the display of the external ISOBUS terminal. Operation with an external ISOBUS terminal is similar to operation with the KRONE ISOBUS terminal. Before commissioning, refer to the mode of operation of the KRONE ISOBUS terminal in the operating instructions.

A major difference to the KRONE ISOBUS terminal is the arrangement and number of keys with functions determined by the selected external ISOBUS terminal.

Only the functions which differ from the KRONE ISOBUS terminal are described below.

#### 12.1.1 Acoustic signals

If necessary, acoustic signals must be released on the external ISOBUS terminal (see operating instructions of the terminal manufacturer).

## 13 Terminal – Machine functions

**WARNING**

**Personal injuries and/or machine damage caused by non-compliance of error messages**

If error messages are ignored and the malfunction is not remedied, people may be injured and/or the machine may be damaged seriously.

- ▶ Remedy the malfunction when the error message is displayed, [see Page 327](#).
- ▶ If the malfunction cannot be remedied, consult a KRONE service partner.

### 13.1 Status line

**INFO**

**Using a terminal with a resolution of less than 480x480 pixels.**

On terminals with a resolution of less than 480x480 pixels, only 7 fields are displayed in the status line. Thus, not all icons for the status line are shown.

On terminal with a resolution of more than/equal to 480x480 pixels, 8 fields are shown in the status line.



EQ000-901

Icons displayed with shading ( ) can be selected. If an icon with shading is selected:

- a window with further information opens or
- a function is activated or deactivated.

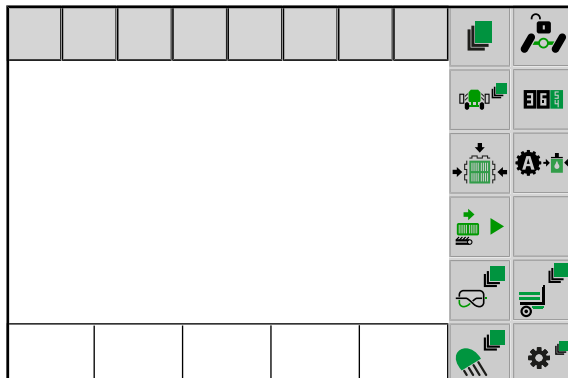
The status line shows the current states of the machine (depending on how it is equipped):

Icon	Designation	Explanation
	Error message present	One or more error messages are present.  For the “touch-sensitive display” version: If this icon is pressed, a window opens with the present error messages, <a href="#">see Page 327</a> .
	Twine boxes not in transport position	
	Self-steering axle locked	



Icon	Designation	Explanation
	Self-steering axle released	
	Packer is conveying	<ul style="list-style-type: none"> <li>The packer fills the bale channel with crops.</li> <li>Packer utilisation is optimal when the icon is displayed continuously.</li> <li>Check the "Packer feed" sensor if the icon never has a black background during the baling process.</li> </ul>
	Packer is collecting	<ul style="list-style-type: none"> <li>The packer collects crops and fills only the feed channel.</li> <li>Low packer utilisation.</li> <li>Increase the driving speed until the  icon is displayed continuously.</li> </ul>
	Silage additives unit switched off	
	Silage additives unit switched on	
	Silage additives tank almost empty	Fill up silage additives
	Maximum pump capacity reached	<ul style="list-style-type: none"> <li>The pump of the silage additives unit reached its maximum output capacity.</li> <li>Reduce the driving speed or reduce the silage additives dosing, <a href="#">see Page 232</a>.</li> </ul>
	Baling flaps opened	The icon flashes.
	Baling flaps closed	

## 13.2 Keys














EQ001-205








The available icons comply with the equipment of the machine. The following represented icons are not always available.




Dimmed keys are currently not available.







Icon	Designation	Explanation
	Select the machine menu level	<a href="#">see Page 196</a>
	Operate twine boxes	The display shows the icons  ,  ,  and  . <a href="#">see Page 197</a>
	Lower twine boxes	<a href="#">see Page 197</a>
	Raise twine boxes	<a href="#">see Page 198</a>
	Swivelling twine boxes up	<a href="#">see Page 198</a>
	Swivelling twine boxes down	<a href="#">see Page 199</a>
Icon	Designation	Explanation
	Select second page	<ul style="list-style-type: none"> <li>• Appears only on terminals with less than 12 keys.</li> <li>• Calls up the second page of the keys.</li> </ul>
	Select first page	<ul style="list-style-type: none"> <li>• Appears only on terminals with less than 12 keys.</li> <li>• Calls up the second page of the keys.</li> </ul>
	Close baling flaps	<a href="#">see Page 195</a>
	Open baling flaps	<a href="#">see Page 195</a>
	Starting automatic bale ejection	<p><b>When the baling flaps are open</b> Implements 10 bale ejections.</p> <p><b>When the baling flaps are closed</b> Opens the baling flaps and implements 10 bale ejections.</p> <a href="#">see Page 196</a>
	Stopping the automatic bale ejection	

Icon	Designation	Explanation
	Operating the knotter	<ul style="list-style-type: none"> <li>The display shows the icons  and .</li> </ul>
	Trigger knotter	<i>see Page 197</i>
	Reset current bale length to zero	Hold down the key for 2 s. <i>see Page 197</i>

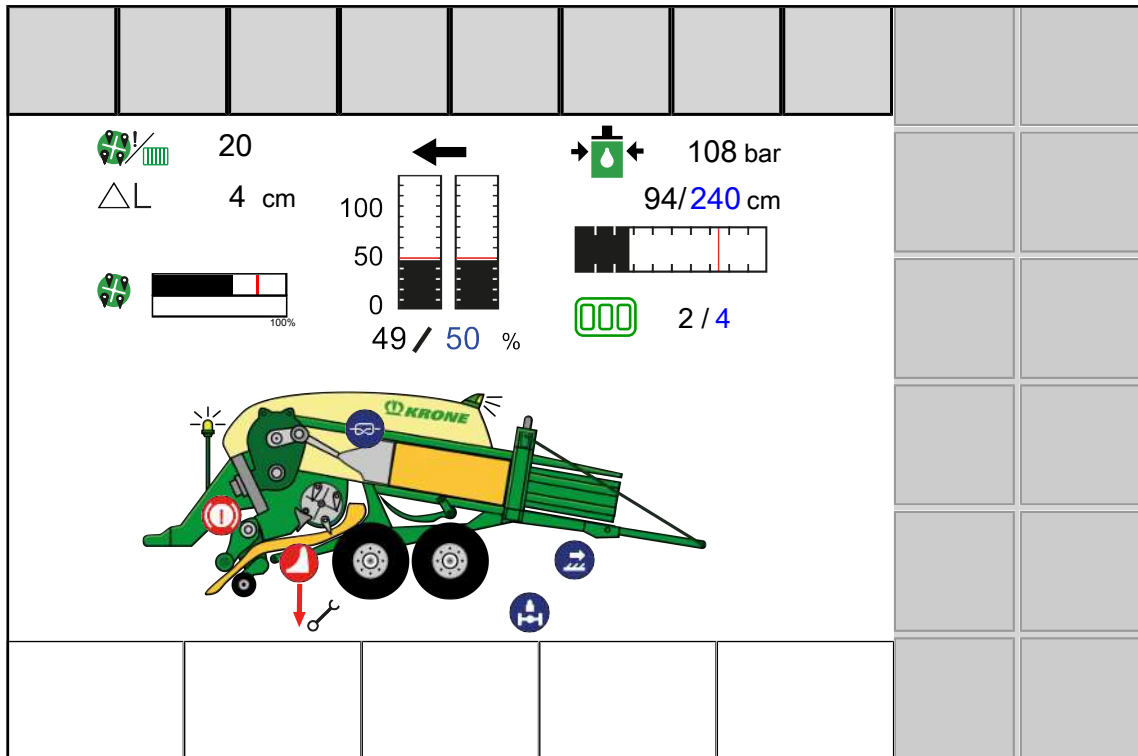
Icon	Designation	Explanation
	Operating working lights	<ul style="list-style-type: none"> <li>Depending on the machine configuration, the following icons are shown in the display.</li> <li>The icon  reappears if none of the icons is activated within approx. 5 seconds.</li> </ul>
	Switching on all working lights	The working lights: <ul style="list-style-type: none"> <li>Twine boxes lighting</li> <li>Knotter/pick-up lighting</li> </ul> In "Rear working lights" version <ul style="list-style-type: none"> <li>Rear lighting</li> </ul> In "Side hoods working lights" version <ul style="list-style-type: none"> <li>Side hoods lighting</li> </ul> are switched on.
	Switching off all working lights	The working lights: <ul style="list-style-type: none"> <li>Twine boxes lighting</li> <li>Knotter/pick-up lighting</li> </ul> In "Rear working lights" version <ul style="list-style-type: none"> <li>Rear lighting</li> </ul> In "Side hoods working lights" version <ul style="list-style-type: none"> <li>Side hoods lighting</li> </ul> are switched off.
	Working lights – switching on automatic	<ul style="list-style-type: none"> <li>Appears only when the tractor control unit (T-ECU) provides data for lighting.</li> <li>If the tractor control unit (T-ECU) provides data for lighting, the working lights of the machine can be switched on or off from the tractor in "Automatic working lights" mode.</li> <li>Alternatively, the working lights can be switched on and off manually.</li> </ul>
	Working lights – switching off automatic	<ul style="list-style-type: none"> <li>Alternatively, the working lights can be switched on and off manually.</li> </ul>

Icon	Designation	Explanation
	Working lights – switching on working lights	The working lights: <ul style="list-style-type: none"> <li>• Knotter/pick-up lighting</li> </ul> In "Rear working lights" version <ul style="list-style-type: none"> <li>• Rear lighting</li> </ul> In "Side hoods working lights" version <ul style="list-style-type: none"> <li>• Side hoods lighting</li> </ul> are switched on.
	Working lights – switching off working lights	The working lights: <ul style="list-style-type: none"> <li>• Knotter/pick-up lighting</li> </ul> In "Rear working lights" version <ul style="list-style-type: none"> <li>• Rear lighting</li> </ul> In "Side hoods working lights" version <ul style="list-style-type: none"> <li>• Side hoods lighting</li> </ul> are switched off.
	Working lights – switching on maintenance lighting	The working lights: <ul style="list-style-type: none"> <li>• Twine boxes lighting</li> <li>• Knotter/pick-up lighting</li> </ul> In "Rear working lights" version <ul style="list-style-type: none"> <li>• Rear lighting</li> </ul> In "Side hoods working lights" version <ul style="list-style-type: none"> <li>• Side hoods lighting</li> </ul> are switched on.
	Working lights – switching off maintenance lighting	The working lights: <ul style="list-style-type: none"> <li>• Twine boxes lighting</li> <li>• Knotter/pick-up lighting</li> </ul> In "Rear working lights" version <ul style="list-style-type: none"> <li>• Rear lighting</li> </ul> In "Side hoods working lights" version <ul style="list-style-type: none"> <li>• Side hoods lighting</li> </ul> are switched off.
	Working lights – switching on rear lighting	<ul style="list-style-type: none"> <li>• Is only available in "Rear working lights" version.</li> </ul>
	Working lights – switching off rear lighting	<ul style="list-style-type: none"> <li>• Is only available in "Rear working lights" version.</li> </ul>
	Working light – switching on side hood lighting	<ul style="list-style-type: none"> <li>• Is only available in "Side hood working lights" version.</li> </ul>

Icon	Designation	Explanation
	Working light – switching off side hood lighting	<ul style="list-style-type: none"> <li>Is only available in "Side hood working lights" version.</li> </ul>
	Switch off warning beacon	<ul style="list-style-type: none"> <li><a href="#">see Page 191</a></li> </ul>
	Switch on warning beacon	<ul style="list-style-type: none"> <li><a href="#">see Page 191</a></li> </ul>

Icon	Designation	Explanation
	Releasing self-steering axle	Releases the self-steering axle. When the icon flashes, the self-steering axle is being locked. When the icon is displayed continuously, the self-steering axle is locked. <a href="#">see Page 193</a>
	Locking self-steering axle	Locks the self-steering axle. When the icon flashes, the self-steering axle is being released. When the icon is displayed continuously, the self-steering axle is released. <a href="#">see Page 193</a>
	Call detail counter	The detail counter for the selected customer counter is called. <a href="#">see Page 240</a>
	Switch to automatic mode	The machine switches from manual mode to automatic mode. <a href="#">see Page 190</a>
	Switch to manual mode	The machine switches from automatic mode to manual mode. <a href="#">see Page 190</a>
	Leave working screen	Back to the previous working screen.

Icon	Designation	Explanation
	Operating the bale chute	<ul style="list-style-type: none"> <li>The icon  is shown on the display.</li> <li>The display shows the icon  when the tractor control unit (T-ECU) provides data for forward movement and the tractor speed is higher than 1 km/h.</li> </ul> <p><i>see Page 195</i></p>
	Lower bale chute	<i>see Page 195</i>
	Lift bale chute	<ul style="list-style-type: none"> <li>Appears only when the tractor control unit (T-ECU) provides data for forward movement and the tractor speed is higher than 1 km/h.</li> </ul> <p><i>see Page 195</i></p>
Icon	Designation	Explanation
	Operate the starter aid/in-take	<ul style="list-style-type: none"> <li>Depending on the machine configuration, the following icons are shown in the display.</li> <li>If none of the icons are activated within around 5 seconds, the icon  is shown again.</li> </ul>
	Switching on starter aid	<ul style="list-style-type: none"> <li>✓ The PTO speed is less than 150 rpm.</li> <li>The icon changes from  to </li> <li>When the starter aid reaches its final speed, the system switches off the starter aid.</li> <li>If the final speed is not reached within approx. 5 seconds, the symbols for "Operate starter aid/collection" are no longer shown with the exception of the  icon.</li> <li>Upon reaching the final speed, the icon changes from  to </li> </ul>
	Switching off starter aid	

**13.3 Displays on the working screen**


EQ001-043

The available icons comply with the equipment of the machine. The following represented icons are not always available.

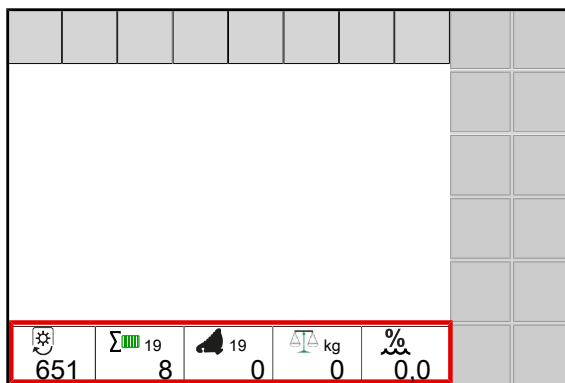
Icon	Designation	Explanation
	Current baling force in %	<ul style="list-style-type: none"> <li>In manual mode.</li> <li>Maximum 100%.</li> </ul>
	Current baling flap pressure	<ul style="list-style-type: none"> <li>In automatic mode.</li> <li>In bar or PSI (depending on selected system of units).</li> </ul>
	Current number of layers of the bale compressed last	
	Current layer thickness	<ul style="list-style-type: none"> <li>In cm or inch (depending on the set system of units).</li> </ul>
	Packer filling degree (upper bargraph) Packer utilisation (lower bargraph)	Packer filling degree: Depends on selected mode, <a href="#">see Page 223</a> .

Icon	Designation	Explanation
	Direction display	<ul style="list-style-type: none"> <li>The arrows (left/right) indicate to the driver the side he/she should correct towards and by how much when driving over the swath to ensure that the bale chamber is evenly filled.</li> <li>Up to 3 arrows can be displayed.</li> <li>1 arrow: Low change in direction required.</li> <li>3 flashing arrows: Greater change in direction required.</li> <li>The direction display can be set, <a href="#">see Page 216</a></li> </ul>
<p>94 / 240 cm</p>	Bale length display	<ul style="list-style-type: none"> <li>The black value and the bar indicate the current bale length.</li> <li>The blue value and the red mark indicate the set target bale length.</li> <li>The blue value is touch-sensitive.</li> </ul>
<p>180</p> <p>90</p> <p>0 bar</p> <p>141 / 150</p>	Baling flap pressure	<ul style="list-style-type: none"> <li>In manual mode.</li> <li>In bar or PSI (depending on selected system of units).</li> <li>The black value under the bar display and the bar indicate the current baling flap pressure.</li> <li>The blue value under the bar display and the red marking indicate the set target baling flap pressure.</li> <li>The blue value is touch-sensitive.</li> </ul>
<p>100</p> <p>50</p> <p>0</p> <p>49 / 50 %</p>	Baling force as %	<ul style="list-style-type: none"> <li>In automatic mode.</li> <li>Display for the baling force on the right and left in the bale channel.</li> <li>The black value under the bar display and the bar indicate the current baling force.</li> <li>The blue value under the bar display and the red mark indicate the set target baling force.</li> <li>The display may fluctuate considerably. The control only functions when the packer is supplying crops to the piston.</li> <li>The bale channel flap pressure is automatically set by the system based on the measured plunger force.</li> <li>The blue value is touch-sensitive.</li> </ul>
	Flywheel brake applied	
	Knot run	<ul style="list-style-type: none"> <li>Is displayed briefly after a knot is tied.</li> <li>When the knotter signal is activated, a horn sounds for approx. 1 s, <a href="#">see Page 211</a>.</li> </ul>
	Bale ejector active	



Icon	Designation	Explanation
	Self-steering axle locked	
	Warning beacon switched on	
	Warning beacon switched off	
	Working lights switched on	
	Working lights switched off	
	Bale chute top	
	Bale chute down	
	Bale is deposited	
2 / 4	MultiBale	For the “MultiBale” version <ul style="list-style-type: none"> <li>• The black value indicates the current number of small bales.</li> <li>• The blue value indicates the set target number of small bales.</li> <li>• The blue value is touch-sensitive.</li> <li>• A horn sounds after each knotting process.</li> </ul>

### 13.4 Displays on the information bar



EQ001-049








#### INFO

The information bar on the working screen can be individually configured, [see Page 246](#).

The available icons comply with the equipment of the machine. The following represented icons are not always available.

Icon	Designation	Explanation
	Current PTO speed	In min <sup>-1</sup>
	Operating hours counter	Counts only when PTO shaft is running. The adjacent number indicates the selected customer counter (customer counter 19 in the example).
	Current total number of bales	The adjacent number indicates the selected customer counter (customer counter 19 in the example).
	Current degree of moisture of the crops	Data is only recorded if an internal moisture measurement has been installed on the machine.
	Current degree of moisture of the crops	Is always available. Data is only recorded if an external moisture measurement has been installed on the machine.
	Bale weight	Weight of the last weighed bale
	Current average weight of the weighed bales	The adjacent number indicates the selected customer counter (customer counter 19 in the example).
	Current total weight of all bales	The adjacent number indicates the selected customer counter (customer counter 19 in the example).
	Total length of all pressed bales	In m or ft (depending on selected system of units). The adjacent number indicates the selected customer counter (customer counter 19 in the example).

**For "Silage additives unit" version**

Icon	Designation	Explanation
	Silage additives volume per bale OFF	The value refers to the bale weighed last. In litres or gallons (depending on the selected system of units).
	Silage additives volume per bale ON	
	Silage additives volume per minute OFF	
	Silage additives volume per minute ON	
	Silage additives volume per tonne OFF	
	Silage additives volume per tonne ON	
	"Silage additives tank" filling level	

**13.5 ISOBUS Shortcut Button (ISB)**
 **WARNING**

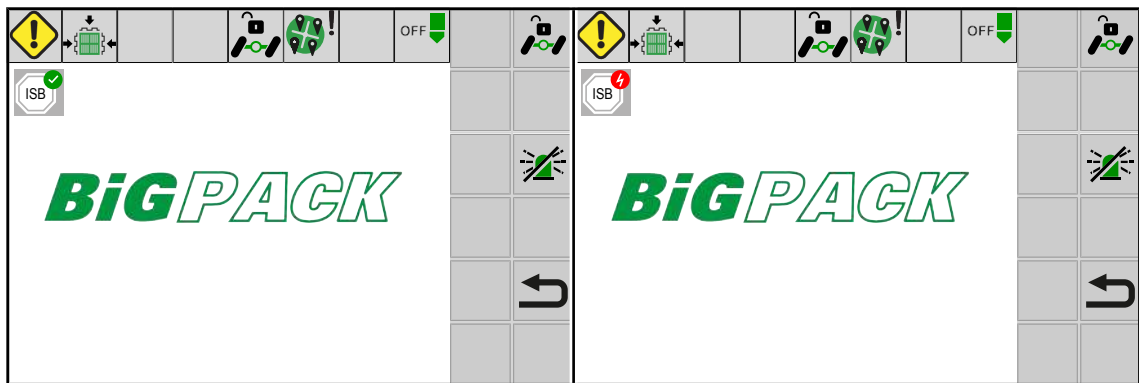
**The ISOBUS Shortcut Button is not an EMERGENCY STOP switch. If the ISOBUS Shortcut Button is confused with the EMERGENCY STOP switch, there is danger to life.**

When actuating the ISOBUS Shortcut Button, activated machine functions are deactivated. Process oriented procedures perform to the end. Therefore machine parts can continue to run after actuating the ISOBUS Shortcut Button. This may lead to injuries.


The ISOBUS Shortcut Button does in no case intervene in the tractor functions, i.e. neither the universal shaft function nor the hydraulic function is affected. Therefore, the machine can continue to run after actuating the ISOBUS Shortcut Button. This may lead to injuries.


- ▶ Never use the ISOBUS Shortcut Button as an EMERGENCY STOP switch.

The ISOBUS Shortcut Button allows the functions of a machine, which was activated via an ISOBUS terminal, to be deactivated. To be able to use the function of the ISOBUS Shortcut Button, at least one ISOBUS Shortcut Button must be available. The ISOBUS Shortcut Button can be integrated both in/on the terminal or can be available as an external momentary switch in the ISOBUS system. The KRONE Machine Controller (KMC) reads out the information whether an ISOBUS Shortcut Button is available in the ISOBUS system.



EQG000-022

If the KRONE Machine Controller (KMC) detects an ISOBUS Shortcut Button, the icon  is displayed when the terminal starts.

If the KRONE Machine Controller (KMC) detects no ISOBUS Shortcut Button, the icon  is displayed when the terminal starts.

### Actuating ISOBUS Shortcut Button

A stop command is sent to the ISOBUS when the ISOBUS Shortcut Button is pressed. This command is evaluated by the connected ISOBUS machine to deactivate activated machine functions. Process-oriented sequences run through to the end.



EQG001-009

- ▶ Actuate the ISOBUS Shortcut Button.
- ➔ The message above appears on the display.

The job computer blocks the following functions on machine side:

- Start the knotter motor.
- Start knotter cleaning.

Depending on the machine configuration:

- Raise/lower blade cassette.
- Move the bale ejector forwards/backwards.
- The automatic bale ejection.
- Raise/lower the bale chute.
- Switch to MultiBale.

### Releasing the machine functions

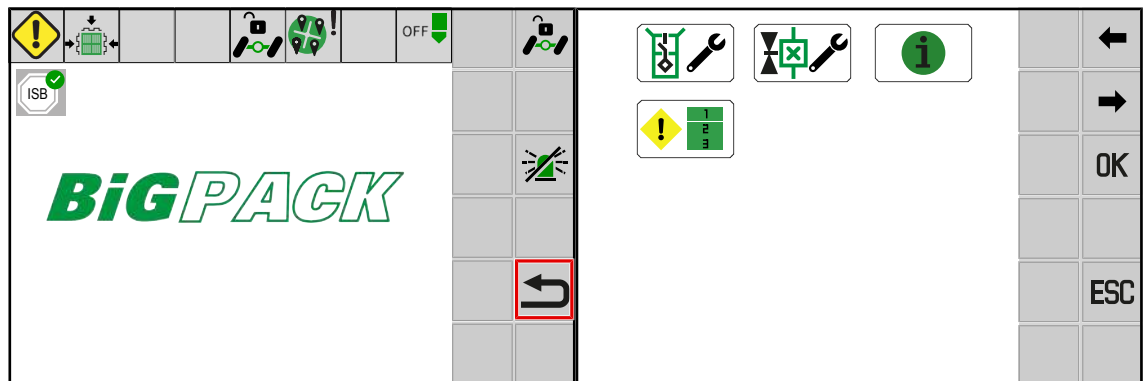
▶ Press .

➔ The message above goes out on the display and all machine functions are available again.

## 13.6 Selecting working screens

Road travel screen

Example menu



EQ000-011 / EQ001-080

### From each menu

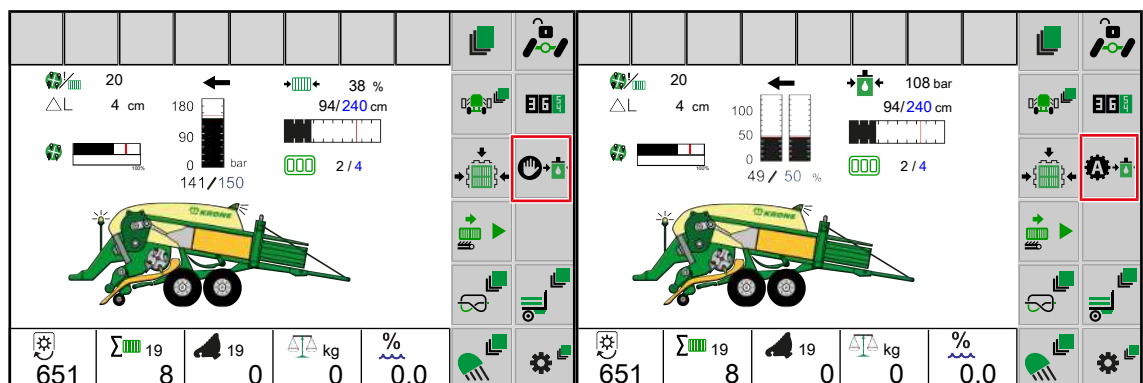
✓ One menu is called up.

▶ Press longer.

### From the road travel screen

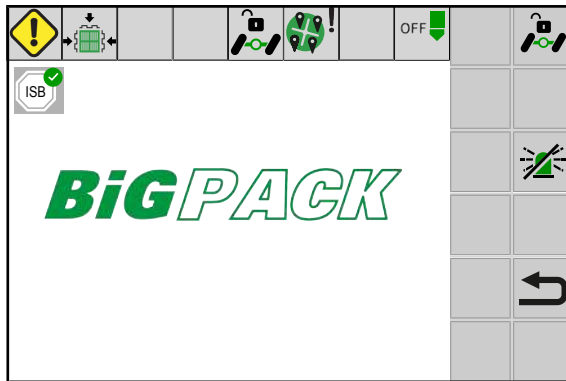
▶ Press .

➔ When the terminal is switched on, the machine starts in manual mode with a target bale channel flap pressure of 50 bars.



EQ001-226 / EQ001-227

### 13.7 Automatic call of the Road travel screen



EQG000-026

The terminal changes automatically to the road travel screen after approximately 60 s, provided that the following prerequisites have been met:

- ✓ The bale chute has been raised.
- ✓ None of the hydraulic functions, which are operated via the terminal, is actuated.
- ✓ The pick-up is raised.
- ✓ The PTO shaft is switched off.

### 13.8 Changing to automatic mode

▶ Press .

➔ The display shows the  icon (automatic mode).


### 13.9 Changing to manual mode


▶ Press .

➔ The display shows the  icon (manual mode).




### 13.10 Switching the warning beacon on/off

▶ Press .




➔ The icon  is shown on the display when the warning beacon is switched on.

➔ The icon  is shown on the display when the warning beacon is switched off.





### Switching ON

- ▶ Press  .
- ➔ The display switches from  to .





### Switching off

- ▶ Press  .
- ➔ The display switches from  to .




## 13.11 Switching on all working lights

- ▶ Press  .
- ⇒ The  and  icons are displayed.
- ▶ To switch on all working lights, press .

## 13.12 Switching off all working lights

- ▶ Press  .
- ⇒ The  and  icons are displayed.
- ▶ To switch off all working lights, press .

## 13.13 Working lights – switching working lights on/off

- ▶ Press  .
- ⇒ The icon  is displayed when working lights – working lights are switched on.
- ⇒ The icon  is displayed when working lights – working lights are switched off.



**Switching on**

▶ Press .

➔ The display switches from  to .


**Switching off**


▶ Press .

➔ The display switches from  to .

**13.14 Working lights – switching maintenance lighting on/off**


▶ Press .

⇒ The icon  is displayed when working lights –maintenance lighting are switched on.

⇒ The icon  is displayed when working lights –maintenance lighting are switched off.



**Switching on**

▶ Press .

➔ The display switches from  to .

**Switching off**


▶ Press .


➔ The display switches from  to .

**13.15 Working lights – switching rear lighting on/off**

Is only available in "Rear working lights" version




▶ Press .

⇒ The icon  1 is displayed when working lights –rear lighting are switched on.




⇒ The icon  1 is displayed when working lights –rear lighting are switched off.



**Switching on**




- ▶ Press  1 .
- ➔ The display switches from  1 to  1 .

**Switching off**




- ▶ Press  1 .
- ➔ The display switches from  1 to  1 .

## 13.16 Working light – switching side hood lighting on/off




Is only available in "Rear working lights" version

- ▶ Press  .
- ⇒ The icon  2 is displayed when working lights –side hood lighting are switched on.
- ⇒ The icon  2 is displayed when working lights –side hood lighting are switched off.

**Switching on**




- ▶ Press  2 .
- ➔ The display switches from  2 to  2 .

**Switching off**




- ▶ Press  2 .
- ➔ The display switches from  2 to  2 .

## 13.17 Releasing/locking self-steering axle

**Releasing**


- ▶ Press  .
- ⇒ The icon flashes until the self-steering axle is released.
- ➔ The display switches from  to  .

### Lock

- ▶ Press .
  - ⇒ The icon flashes until the self-steering axle is locked.
- ➔ The display switches from  to .






## 13.18 Operating the starter aid

Pressing the icon  shows the icon



 = Activate starting aid

in the display.




### 13.18.1 Switching on starter aid

- ✓ The PTO speed is less than 150 rpm.
- ▶ Press .
- ➔ The icon  is shown on the display.
- ▶ To switch on the starting aid, press .
- ➔ The display switches from  to .

When the speed of the starter aid is reached, the system switches off the starter aid. The




display switches from  to .

### 13.18.2 Switching off starter aid




- ▶ To switch off the starter aid, press .
- ➔ The display switches from  to .
- ➔ The starter aid is switched off.

## 13.19 Opening/closing bale channel flaps

### Open




- ▶ Press .
- ➔ The display switches from  to .

### Close

- ▶ Press .
- ➔ The display switches from  to .





## 13.20 Operating the bale chute

Dimmed keys are currently not available.

- ▶ Press the icon  to display the icons
- ▶  = lower bale chute
- ▶  = raise bale chute
- ▶ on the display.

### 13.20.1 Lower the bale chute

**WARNING! Increased risk of injury! While the bale chute is being lowered, ensure that there is nobody in the danger zone (particularly behind the machine).**

- ▶ Press .
- ➔ The  and  icons are displayed.
- ▶ To lower the bale chute, press and hold .

### 13.20.2 Lift bale chute

**WARNING! Increased risk of injury! While the bale chute is being raised, ensure that there is nobody in the danger zone (particularly behind the machine).**

- ✓ The tractor control unit (T-ECU) provides data for forward movement and the tractor speed is higher than 1 km/h.


▶ Press .

➔ The  and  icons are displayed.

▶ To raise the bale chute, press and hold .

### 13.21 Automatic bale ejection

A dimmed key is currently not available.

▶ To execute 10 bale ejections, press  again.

➔ When the bale channel flaps are opened, 10 bale ejections are executed immediately.


➔ When the bale channel flaps are closed, first the bale channel flaps are opened and then 10 bale ejections are executed.

### 13.22 Selecting "Counter/Detail counter" menu

▶ Press .

➔ The menu "Detail Counter" is displayed, [see Page 240](#).

### 13.23 Selecting a menu Level


▶ To bring up the menu level from the working screen, press .

➔ The display indicates the menu level.





### 13.24 Operating the knotter

Press the icon  to display the icons





 = trigger knotter

 = reset current bale length to zero

### 13.24.1 Trigger knotter

- ▶ Press .
- ➔ The  and  icons are displayed.
- ▶ Press  to trigger the knotter.


### 13.24.2 Reset bale length to zero


- ▶ Press .
- ➔ The  and  icons are displayed.
- ▶ Press  for approx. 2 seconds to reset the total bale length.


## 13.25 Operating twine boxes


Dimmed keys are currently not available.

- ▶ Press the icon  to display the icons

 = lower twine box

 = raise twine box

 = swivel twine boxes up

 = swivel twine boxes down

on the display.


### 13.25.1 Lowering the twine boxes

- ✓ The twine boxes are swivelled down, [see Page 199](#).

**WARNING! Danger of being struck when twine boxes are being lowered! While lowering the twine boxes, ensure that there is nobody in the danger zone of the twine boxes.**

▶ Press .

⇒ The  and  icons are displayed.

▶ To lower the twine boxes, press  and hold it down.


➔ The swivelling twine boxes up function is blocked until the twine boxes are raised down via the terminal, [see Page 198](#).

### 13.25.2 Raising the twine boxes

**WARNING! Crush hazard when lifting the twine boxes! While lifting the twine boxes, ensure that there is nobody in the danger zone of the twine boxes.**

▶ Press .

⇒ The  and  icons are displayed.

▶ To raise the twine boxes, press  and hold it down.

### 13.25.3 Swivelling twine boxes up


✓ The twine boxes are raised, [see Page 198](#).

▶ To prevent scratches on the twine box hoods, ensure that the twine box hoods have been swivelled down, [see Page 131](#).

**WARNING! Danger of collision when swivelling up the twine boxes! While swivelling up the twine boxes, ensure that there is nobody in the danger zone of the twine boxes.**

▶ Press .





⇒ The icons  and  icons are displayed.

▶ To swivel up the twine boxes, press and hold .

➔ The lowering twine boxes function is blocked until the twine boxes are swivelled down via the terminal, [see Page 199](#).

### 13.25.4 Swivelling twine boxes down

**WARNING! Crush hazard when swivelling down the twine boxes! While swivelling down the twine boxes, ensure that there is nobody in the danger zone of the twine boxes.**

- ▶ Press .
- ⇒ The  and  icons are displayed.
- ▶ To swivel down the twine boxes, press and hold .

### 13.26 Setting the target bale channel flap pressure (manual mode)

#### NOTICE

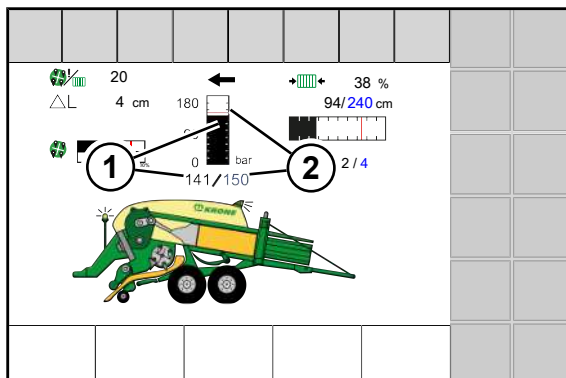
**If an excessively high target baling flap pressure is set, the machine may be mechanically overloaded during baling. Therefore the machine may be damaged.**

The display shows one of the alarm messages "Baling force exceeded" (, ,



- ▶ If the error message "Baling force exceeded" occurs more frequently, reduce the target bale channel flap pressure in order to prevent damage to the machine.

The bale channel flap pressure is entered by the user in manual mode. The pressure is built up immediately if the PTO shaft is running and the machine is stopped. The pressure display barely fluctuates on the display. To prevent damage to the machine, the bale channel flap pressure is reduced to a non-critical value just before the system overloads. After several seconds, the pressure set by the user is built up again. The bale channel flap pressure is displayed in **bar** or **PSI** depending on selected system of units.



EQ001-056

Value (1) and the bar display = actual bale channel flap pressure

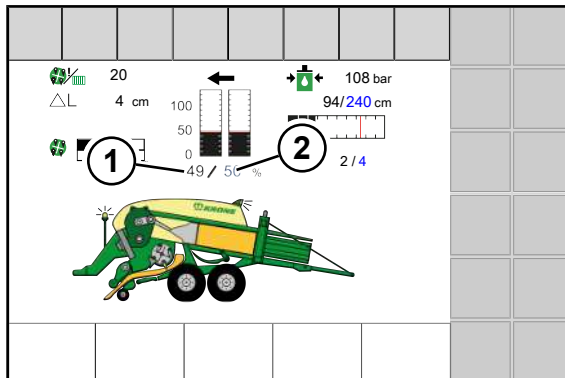
Value (2) and the red mark on the bar display = set target bale channel flap pressure

#### Setting the target bale channel flap pressure

- ✓ Manual mode has been selected, [see Page 190](#).
- ▶ Change the value, [see Page 208](#).

### 13.27 Setting target baling force (automatic mode)

In Automatic mode, the pressure is automatically set based on the measured plunger force. The pressure indication on the display may fluctuate considerably. The control functions only when the packer is supplying forage to the piston. The baling force is displayed as a percentage.



EQ001-055

Value (1) and the bar displays on right/left = actual baling force as %.

Value (2) and the red marks on the bar displays = target baling force as %.

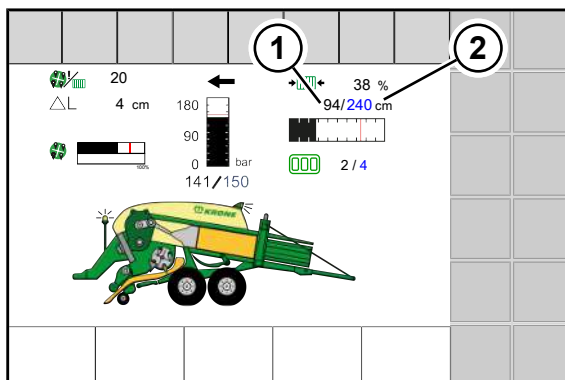
#### Setting the target force of pressure

- ✓ Automatic mode has been selected, [see Page 190](#).
- ▶ Change the value, [see Page 208](#).

### 13.28 Setting target bale length

#### INFO

The target bale length (2) can be changed steplessly at any time. It is not recommended to switch over the target bale length at the end of the bale, as the knotter could actuate too late.



EQ001-044

Value (1) and the bar display = actual bale length

Value (2) and the red mark on the bar display = set target bale length

#### Setting target bale length

Setting range: 1,000 – 3,200 mm/39 – 126 inch

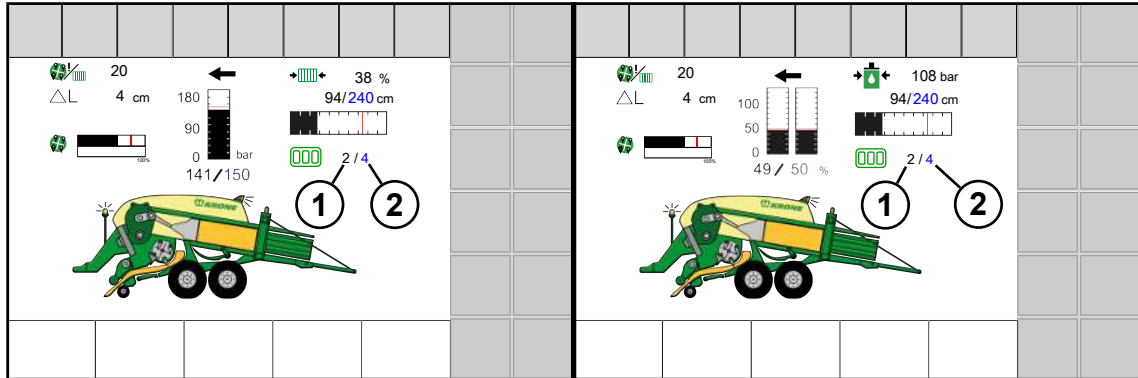
- ▶ Change the value, [see Page 208](#).



## 13.29 Setting the target number of MultiBales

### INFO

To prevent a mixture of entire bales and MultiBales, set the target number (2) of MultiBales always at the start of an entire bale.



EQ001-057

Value (1) = actual number of MultiBales

Value (2) = set target number of MultiBales

### Setting the target number

- ✓ The bale length has been set, [see Page 200](#).
- ▶ Change the value, [see Page 208](#).

## 13.30 Operating machine via joystick

### 13.30.1 Auxiliary functions (AUX)

There are terminals which support the additional function “Auxiliary” (AUX). By means of this function, programmable keys of peripheral equipment (e.g. joystick) can be assigned with functions of the connected job computers. A programmable key can be assigned with several different functions. If key assignments are saved, the display shows corresponding menus when switching on the terminal.

The following functions are available in the “Auxiliary” (AUX) menu:

auxiliary	Function
	Increase baling pressure/baling force
	Reduce baling pressure/baling force
	Manual/automatic mode changeover
	Start/stop starter aid
	Lock/release self-steering axle

**INFO**

For further information, please refer to the operating instructions of the used terminal.

**13.30.2 Auxiliary configuration of a joystick**

**INFO**

If a joystick on the tractor side is to be configured with functions from the operating terminal, the joystick must feature AUX functionalities.

For further information, see the operating instructions for the terminal and tractor used.

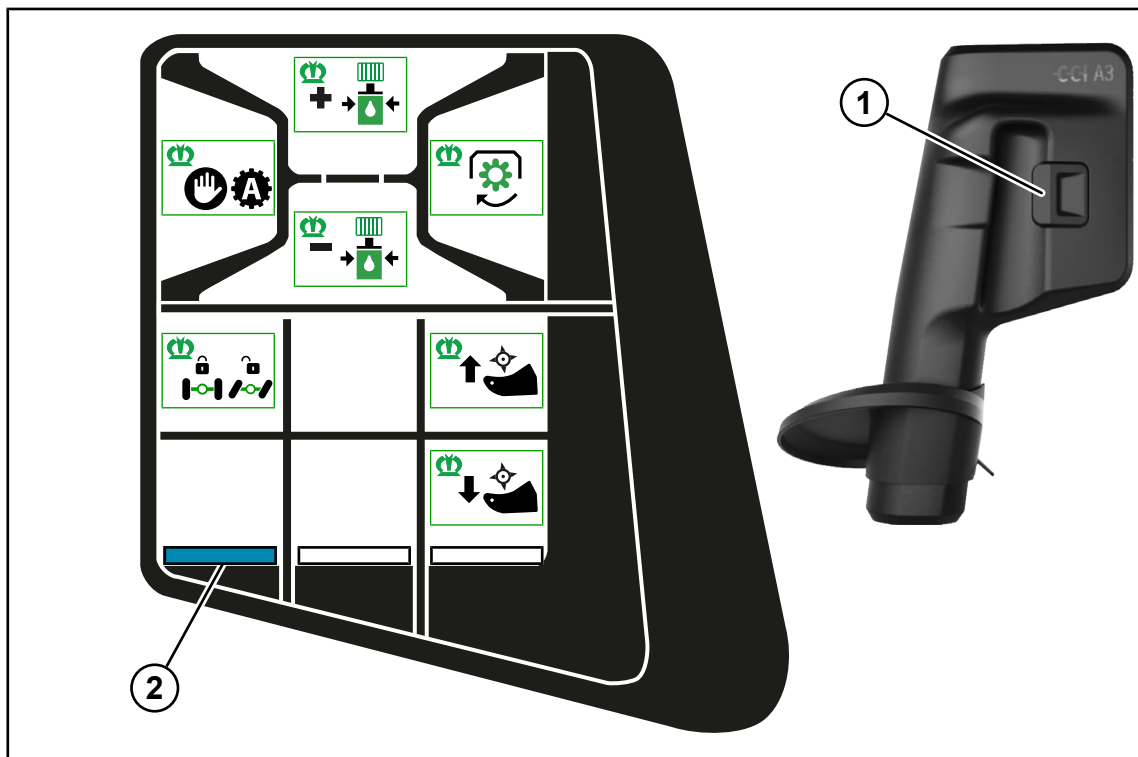
**INFO**

The examples below represent a recommendation. The assignment of the joystick can be adapted to own desires.

For further information, please refer to the operating instructions of the used terminal.

**Recommended configuration of an AUX joystick CCI A3**

Operating level 1



EQ001-149













The indicator lamp (2) shines, showing that operating level 1 is active.













- ▶ Actuate the switch (1) on the rear, the next operating level is displayed.










## 14 Terminal – Menus

### 14.1 Menu Structure

The menu structure is divided into the following menus depending on the machine configuration.






Menu	Sub-menu	Designation
1 		Knotter, <a href="#">see Page 209</a>
	1-1 	Correction value bale length, <a href="#">see Page 210</a>
	1-2 	Knotter signal, <a href="#">see Page 211</a>
	1-3 	Knotter monitoring, <a href="#">see Page 211</a>
	1-4 	Blowing interval knotter cleaning, <a href="#">see Page 212</a>
	1-5 	Duration of cleaning operation, <a href="#">see Page 213</a>
	1-9 	Calibrating MultiBale, <a href="#">see Page 214</a>
2 		Sensitivity direction display, <a href="#">see Page 216</a>
3 		Central lubrication, <a href="#">see Page 216</a>
4 		Weighing device, <a href="#">see Page 217</a>
5 		Moisture measurement, <a href="#">see Page 219</a>
	5-1 	Error message for moisture measurement, <a href="#">see Page 220</a>

Menu	Sub-menu	Designation
	5-2 	Correction value for moisture measurement, <a href="#">see Page 221</a>
	5-3 	Select internal / external moisture measurement, <a href="#">see Page 222</a>
7 		Packer, <a href="#">see Page 223</a>
	7-1 	Packer filling, <a href="#">see Page 223</a>
	7-2 	Calibrate sensing rake, <a href="#">see Page 227</a>
8 		Self-steering axle, <a href="#">see Page 228</a>
12 		Silage additives unit, <a href="#">see Page 230</a>
	12-1 	Silage additives tank, <a href="#">see Page 231</a>
	12-2 	Silage additives dosing, <a href="#">see Page 232</a>
13 		Counter, <a href="#">see Page 238</a>
	13-1 	Customer counter <a href="#">see Page 239</a>
	13-2 	Total counter, <a href="#">see Page 243</a>
14 		ISOBUS, <a href="#">see Page 244</a>
	14-2 	Driving speed/direction of travel diagnostics, <a href="#">see Page 245</a>

Menu	Sub-menu	Designation
	14-3 	Configure main window, <i>see Page 246</i>
	14-4 	Setting the background colour, <i>see Page 248</i> .
	14-5 	KRONE SmartConnect, <i>see Page 249</i>
	14-9 	Switching between terminals, <i>see Page 249</i>
15 		Settings, <i>see Page 250</i>
	15-1 	Sensor test, <i>see Page 251</i>
	15-2 	Actuator test, <i>see Page 256</i>
	15-3 	Software information, <i>see Page 260</i>
	15-4 	Error list, <i>see Page 260</i>

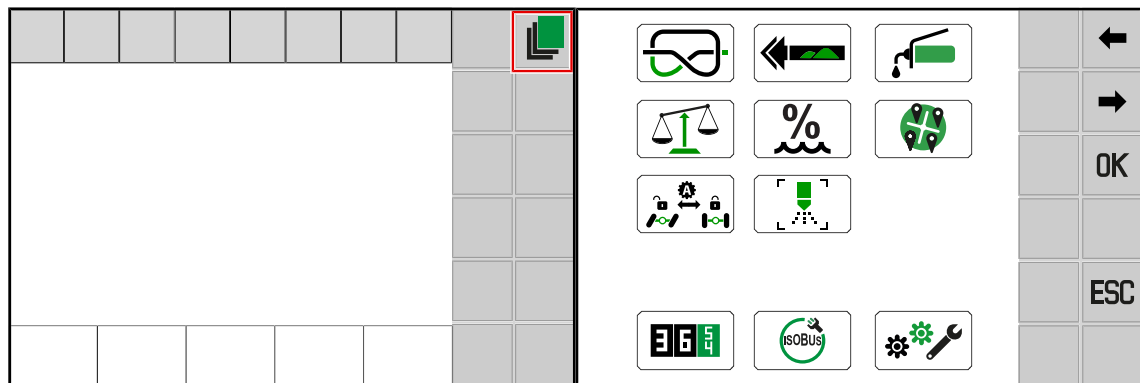
## 14.2 Recurrent icons

To navigate in the menu level/menus, the following icons appear again and again.

Icon	Designation	Explanation
	Up arrow	Move up to select something.
	Down arrow	Move down to select something.
	Right arrow	Move right to select something.
	Left arrow	Move left to select something.
	Disk	Save the setting.

Icon	Designation	Explanation
	ESC	Leave the menu without saving. By pressing the key a little longer, the previously viewed working screen is selected.
	DEF	Reset to factory setting.
	Disk	The mode or value is saved.
	Plus	Increase the value.
	Minus	Reduce the value.

### 14.3 Bring up menu level








EQG000-049

- ▶ To bring up the menu level from the working screen, press .
- ➔ The display indicates the menu level.

Depending on how the machine is equipped, the menu level 4 is divided into the following menus:

Icon	Designation
	Menu 1 "Knotter" <a href="#">see Page 209</a>
	Menu 2 "Sensitivity direction display", <a href="#">see Page 216</a>
	Menu 3 "Central lubrication", <a href="#">see Page 216</a>
	Menu 4 "Weighing device", <a href="#">see Page 217</a>
	Menu 5 "Moisture measurement", <a href="#">see Page 219</a>
	Menu 7 "Packer", <a href="#">see Page 223</a>

Icon	Designation
	Menu 8, "Self-steering axle", <a href="#">see Page 228</a>
	Menu 12 "Silage additives unit", <a href="#">see Page 230</a>
	Menu 13 "Counters", <a href="#">see Page 238</a>
	Menu 14 "ISOBUS", <a href="#">see Page 244</a>
	Menu 15 "Settings", <a href="#">see Page 250</a>




## 14.4 Selecting a menu

### Calling up menu

The menus are selected depending on used terminal (touch sensitive or not touch sensitive).

#### For version with "Touch-sensitive and not touch-sensitive terminal"

##### By means of adjacent keys

- ▶ To select a menu, press the keys next to  or  until the desired menu is selected.
  - ⇒ The selected menu is highlighted in colour.
- ▶ To call up the menu, press the key next to .
- ➔ The menu opens.

#### **INFO**


For version with "Touch-sensitive terminal", the icons can be pressed directly.

##### By means of the scroll wheel


- ▶ Select the desired menu by means of scroll wheel.
  - ⇒ The selected menu is highlighted in colour.
- ▶ To call up the menu, press the scroll wheel.
- ➔ The menu opens.

#### For version with touch-sensitive terminal

##### By pressing the icons

- ▶ To call up a menu, press the icon (e.g. ) in the display.
- ➔ The menu opens.

#### Leaving the menu

- ▶  or press the adjacent key.
- ➔ The menu closes.



## 14.5 Changing value

Values must be entered or changed for the settings in the menus. The values are selected depending on used terminal (touch-sensitive or not touch-sensitive).

#### For version with "Touch-sensitive" and "Not touch-sensitive terminal"

- Via scroll wheel.

#### Additionally for "Touch-sensitive terminal" version


- By pressing  or .
- By tipping the blue value on the display.  
If a numerical value is tapped, an input mask opens. For further information on entering values see the supplied terminal operating instructions.

#### Examples:

##### By means of the scroll wheel

- ▶ Choose the desired value by using the scroll wheel.
  - ⇒ The value is highlighted in colour.
- ▶ Press the scroll wheel.
  - ⇒ An input mask opens.
- ▶ Turn the scroll wheel to increase or reduce the value.
- ▶ Press scroll wheel to save the value.
- ➔ The setting is saved and the input mask closes.






##### Using the value

- ▶ Tap on the value.
  - ⇒ An input mask opens.
- ▶ Increase or reduce the value.
- ▶ In order to save the value, press .
- ➔ The setting is saved and the input mask closes.

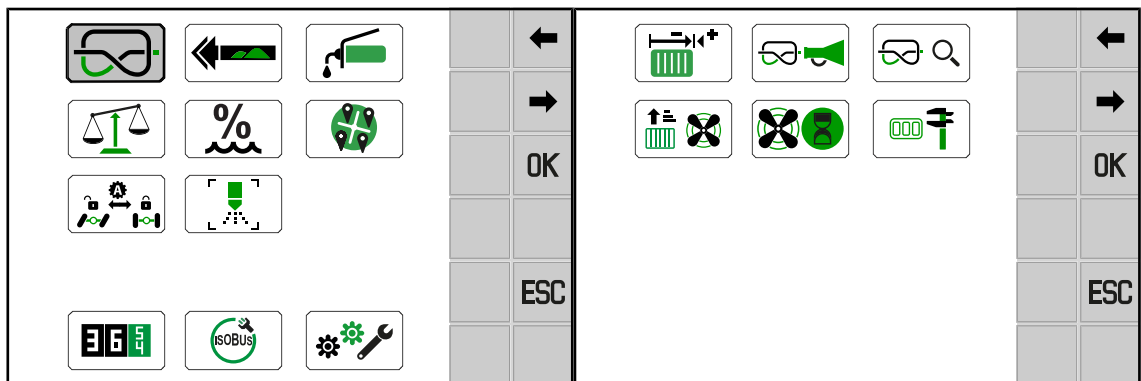


## 14.6 Changing mode

It is possible to select between different modes in individual menus.


- ▶ To select the next mode, press .
- ▶ To select the previous mode, press .
- ▶ To save, press .
- ➔ An acoustic signal sounds, the set mode is saved and the  icon is briefly displayed in the upper line.
- ▶ To leave the menu, press .

## 14.7 Menu 1 "Knotter"






EQG000-050

✓ For The menu level is active, [see Page 206](#).

- ▶ To open the menu, press .
- ➔ The display shows the "Knotter" menu.

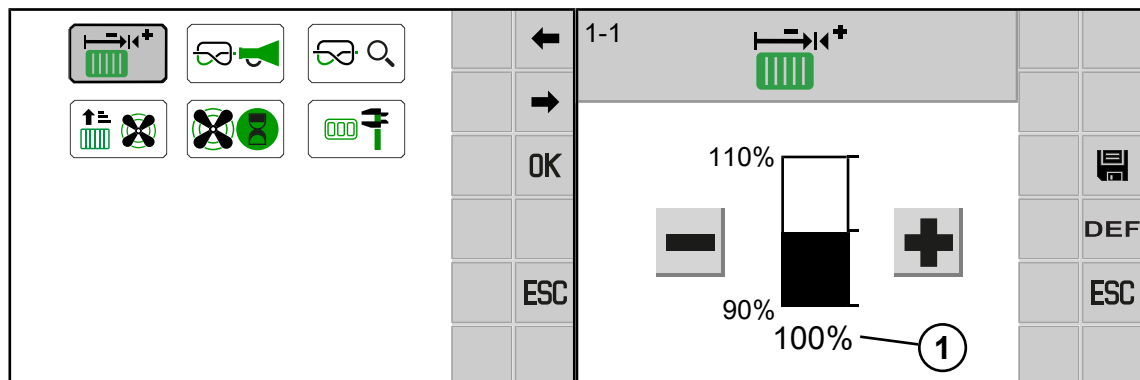
The "Knotter" menu is divided into the following sub-menus depending on the machine configuration:

1 		Knotter, <a href="#">see Page 209</a>
	1-1 	Correction value bale length, <a href="#">see Page 210</a>
	1-2 	Knotter signal, <a href="#">see Page 211</a>

	1-3 	Knotter monitoring, <a href="#">see Page 211</a>
	1-4 	Blowing interval knotter cleaning, <a href="#">see Page 212</a>
	1-5 	Blowing time, <a href="#">see Page 213</a>
	1-9 	Calibrating MultiBale, <a href="#">see Page 214</a>

### 14.7.1 Menu 1-1 "Correction value for bale length"

Because of the different properties of materials (e.g. straw, silage) the actual bale length may deviate from the set setpoint value. The correction value can be used to correct this deviation.



EQ001-005 / EQ001-059

✓ Menu 1 "Knotter" has been selected, [see Page 209](#).

▶ To open the menu, press

➔ The display shows the "Correction value for bale length" menu.

Recurring icons [see Page 205](#).

#### Display area

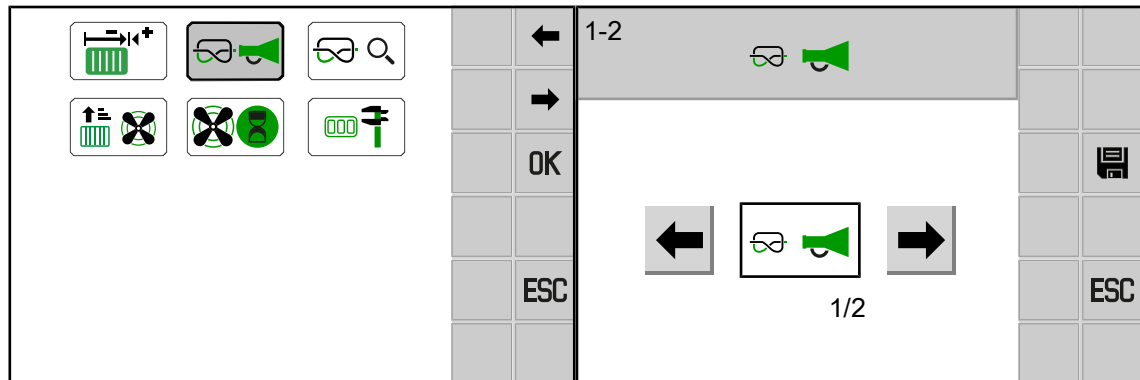
Item	Designation	Explanation
(1)	Correction value for bale length	<ul style="list-style-type: none"> <li>Adjustable value range: 90 - 110 %</li> <li>If a correction value of e.g. 110 % is set, the bale will be 10 % longer.</li> <li>Factory setting: 100 %</li> </ul>

▶ Increase or reduce the value, [see Page 208](#).

▶ In order to save the value, press


### 14.7.2 Menu 1-2 "Knotter signal"

This menu can be used to set whether an acoustic signal is to sound after a knot is tied.



EQ001-005 / EQ001-060

✓ Menu 1 "Knotter" has been selected, [see Page 209](#).

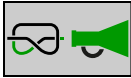
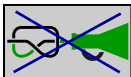
▶ To open the menu, press .

➔ The display shows the "Knotter signal" menu.

Recurring icons [see Page 205](#).

#### Display area

One of two modes can be selected:

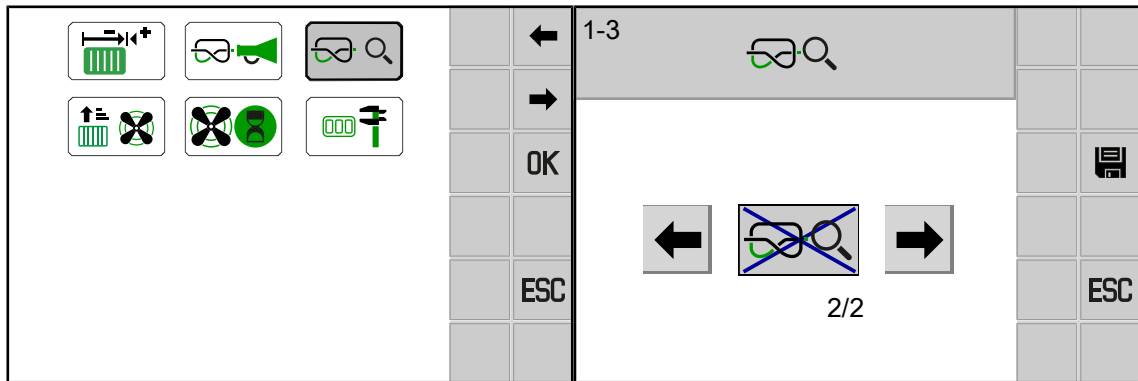
Icon	Designation	Explanation
 Mode 1/2	Knotter signal activated	After a knot is tied, an acoustic signal sounds.
 Mode 2/2	Knotter signal deactivated	After a knot is tied, an acoustic signal does not sound.

#### Changing the mode

▶ Select and save the mode, [see Page 209](#).

### 14.7.3 Menu 1-3 "Knotter monitoring"

This menu can be used to set whether the upper twines of the knotters are to be monitored. The knotters are numbered in direction of travel from left to right: Knotters from 1 to 6.



EQ001-005 / EQ001-061

✓ Menu 1 "Knotter" has been selected, [see Page 209](#).

▶ To open the menu, press .

➔ The display shows the "Knotter monitoring" menu.

Recurring icons [see Page 205](#).

### Display area

One of two modes can be selected:

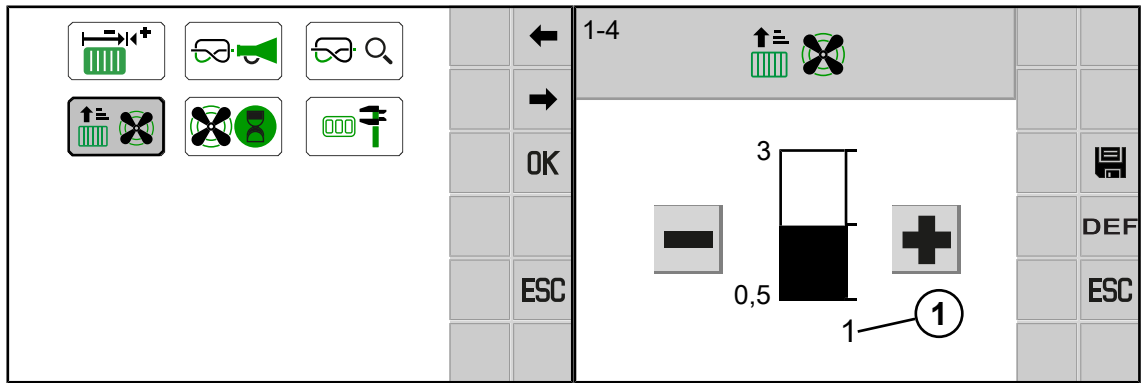
Icon	Designation	Explanation
 Mode 1/2	Knotter monitoring activated	The upper twines are individually monitored.
 Mode 2/2	Knotter monitoring deactivated	The upper twines are not monitored.

### Changing the mode

▶ Select and save the mode, [see Page 209](#).

## 14.7.4 Menu 1-4 "Blowing Interval Knotter Cleaning"

This menu can be used to set after how many bales the knotters are blown off with compressed air to remove dust and accumulation of crops.



EQ001-005 / EQ001-062

✓ Menu 1 "Knotter" has been selected, [see Page 209](#).

▶ To open the menu, press .

➔ The display shows the "Blow interval knotter cleaning" menu.

Recurring icons [see Page 205](#).

### Display area

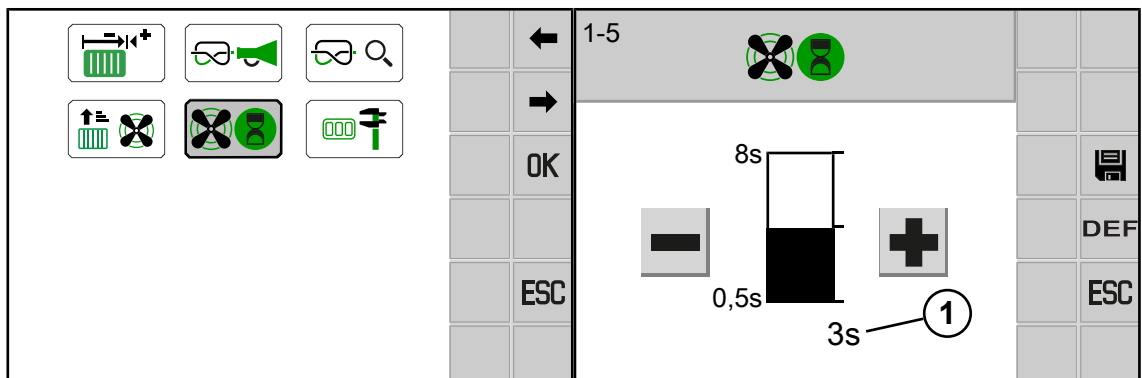
Item	Designation	Explanation
(1)	Number of bales	<ul style="list-style-type: none"> <li>Adjustable value range: 0.5 - 3 bales</li> <li>If 0.5 is set, the knotters are blown off halfway along the bale and at the end of the bale.</li> </ul>

▶ Increase or reduce the value, [see Page 208](#).

▶ In order to save the value, press .

## 14.7.5 Menu 1-5 "Blowing time"

This menu can be used to set how long the knotters are blown.



EQ001-005 / EQ001-063

✓ Menu 1 "Knotter" has been selected, [see Page 209](#).

▶ To open the menu, press .


➔ The display shows the "Blowing time" menu.

Recurring icons [see Page 205](#).

**Display range**

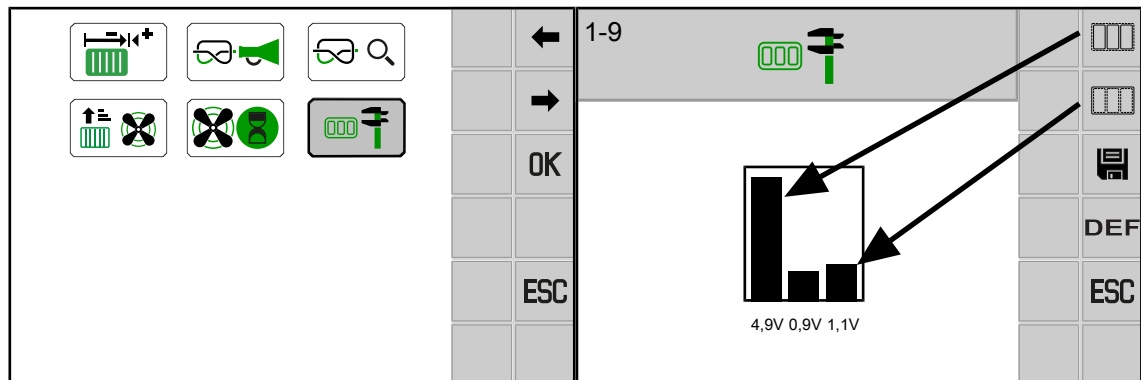
Pos.	Designation	Explanation
(1)	Blowing time	<ul style="list-style-type: none"> <li>• In seconds.</li> <li>• Adjustable value range: 0.5 - 8 s</li> </ul> <p><b>Info:</b> To prevent an excessive pressure drop at the compressed air tank, it is recommended to first shorten the blowing interval, <i>see Page 212.</i></p>

▶ Increase or reduce the value, *see Page 208.*

▶ In order to save the value, press .


**14.7.6 Menu 1-9 "Calibrate MultiBale"**

In this menu the sensor for locking the MultiBale can be calibrated. Following repair work, a calibration may be required due to high operational demands or settling of the components, if the centre bar is higher or lower than the outer bars.



EQ001-005 / EQ001-082

✓ Menu 1 "Knotter" has been selected, *see Page 209.*

▶ To open the menu, press .

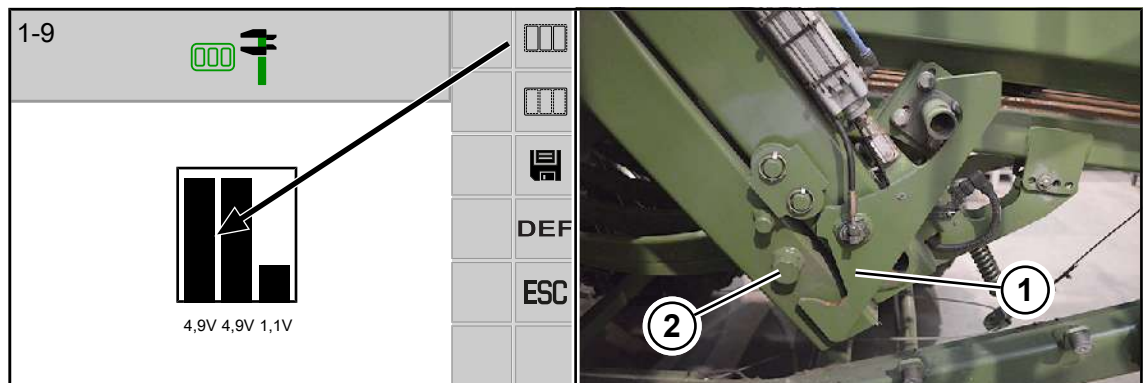
➔ The display shows the "Calibrate MultiBale" menu.

Recurring icons *see Page 205.*




✓ The machine is shut down and safeguarded, *see Page 29.*

✓ The compressor unit has been filled.

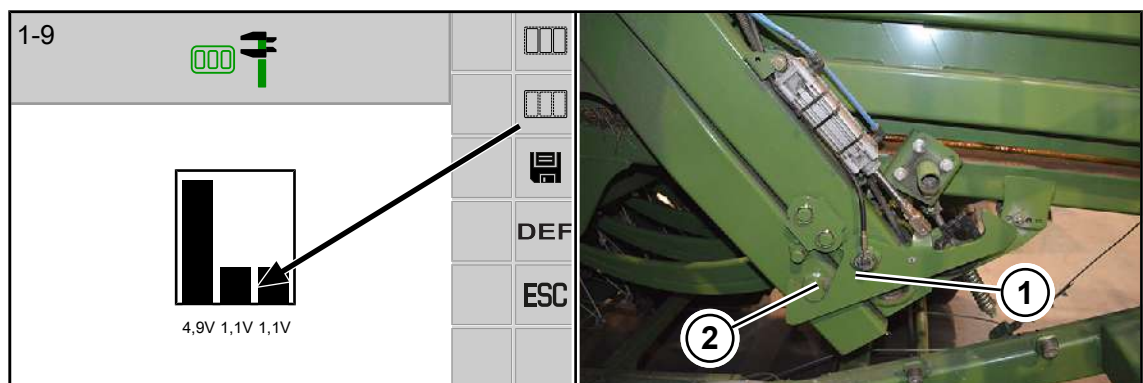
### Move lock to "MultiBale" position



EQ001-082 / BP000-389




- ▶ Ensure that the number of small bales (**000** 2 / 4) in the working screen is set to a value greater than 1, [see Page 201](#).
- ▶ Press and hold down  until the centre bar and the left bar are the same height.
- ▶ Visually check that the lock (1) unlocks properly.
  - ⇒ The lock (1) has unlocked properly when the locking (1) is below the journal (2).
- ▶ Press  to save the value.
- ➔ The icon  is briefly displayed in the upper line.
- ➔ The centre bar assumes the value of the left bar.

### Move lock to "Entire bale" position



EQ001-082 / BP000-390

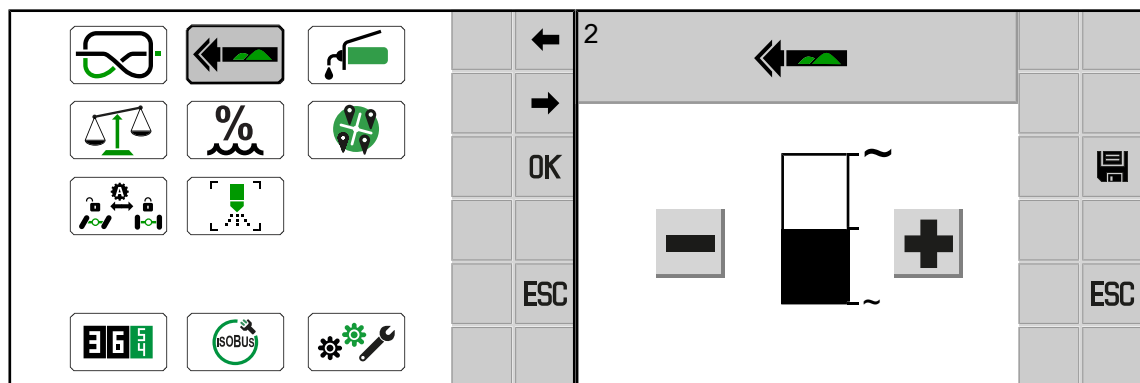
- ▶ Call up the working screen.
- ▶ In the working screen, set the number of MultiBales (**000** 1 / 1) to 1, [see Page 201](#).
- ▶ Call up the "Calibrating MultiBale" menu, [see Page 214](#).

- ▶ Press and hold down  until the centre bar and the right bar are the same height.
- ▶ Visually check that the lock (1) locks properly.
  - ⇒ The locking (1) has locked properly when the lock (1) closes around the journal (2).
- ▶ Press  to save the value.
- ➔ The icon  is briefly displayed in the upper line.
- ➔ The centre bar takes over the value of the right bar.
- ▶ In the working screen, set the required number of MultiBales, [see Page 201](#).


## 14.8 Menu 2 "Sensitivity of direction display"

This menu is used to set the sensitivity of the direction display.


The direction display shows whether the swath is being picked up in the centre of the pick-up and provides information on the direction in which the tractor must travel. The higher the bar on the display, the more sensitive the direction display is set. The higher the sensitivity of the direction display is set, the stronger the motion indication appears in the form of arrows on the working screen.



EQG000-066

- ✓ For The menu level is active, [see Page 206](#).
- ▶ To open the menu, press .
- ➔ The display shows the "Sensitivity of direction display" menu.

### Adjusting the sensitivity

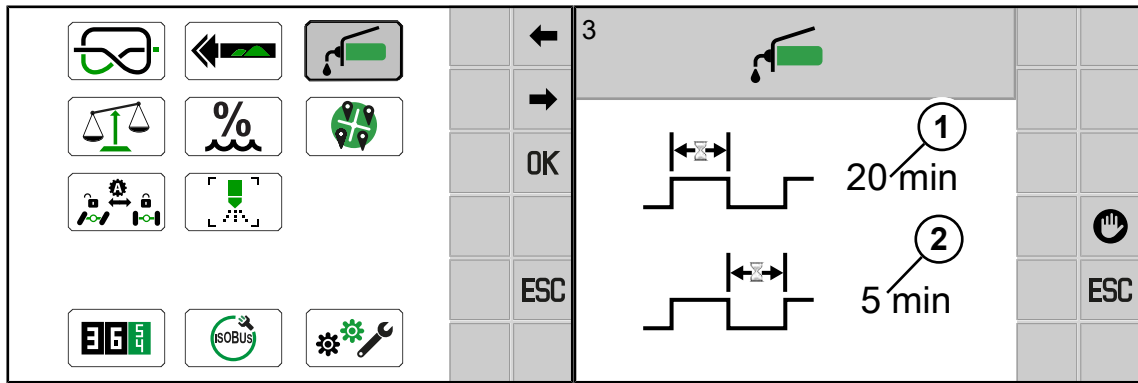
- ▶ Increase or reduce the value, [see Page 208](#).
- ▶ In order to save the value, press .

## 14.9 Menu 3 "Central lubrication"

### For the "central lubrication" version


This menu displays the non-adjustable lubrication intervals of the central lubrication. In addition, intermediate lubrication can be manually actuated.





EQG000-067


✓ For The menu level is active, [see Page 206](#).

► To open the menu, press .

➔ The display shows the "Central lubrication" menu.

Recurring icons [see Page 205](#).

### Display area

Icon	Designation	Explanation
(1)	Lubrication duration	<ul style="list-style-type: none"> <li>• Not adjustable</li> <li>• Factory setting: 20 min</li> </ul>
(2)	Lubrication pause	<ul style="list-style-type: none"> <li>• Not adjustable</li> <li>• Factory setting: 5 min</li> </ul>
	Triggering intermediate lubrication manually	Central lubrication is switched off.

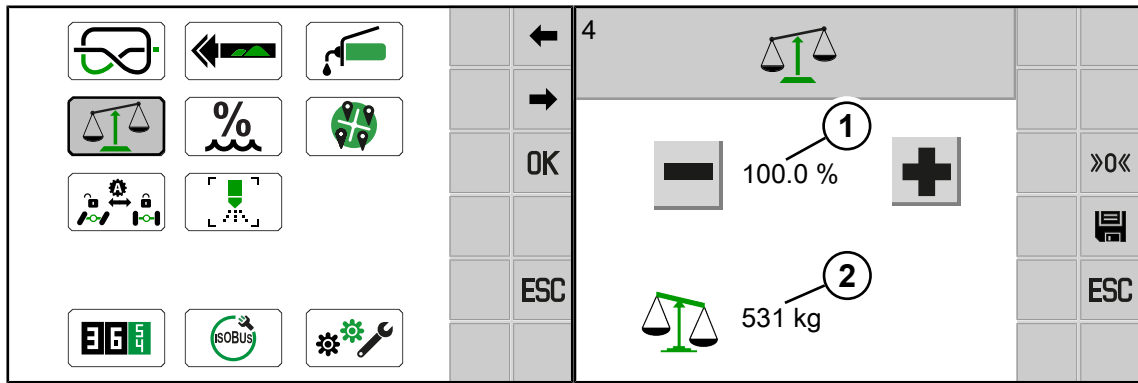
### Triggering intermediate lubrication

► Press .

## 14.10 Menu 4 "Weighing device"

### For "Weighing device" version

In this menu a correction value can be set for the weighing device if the calculated weight (2) deviates from the weight of external calibrated scales.



EQG001-000

✓ For The menu level is active, [see Page 206](#).

▶ To open the menu, press .

➔ The display shows the "Weighing device" menu.

Recurring icons [see Page 205](#).

### Display area

Icon	Designation	Explanation
(1)	Correction value	<ul style="list-style-type: none"> <li>Adjustable value range: 90 - 110%</li> <li>Factory setting: 100%</li> </ul>
(2)	Value	<ul style="list-style-type: none"> <li>Calculated weight</li> <li>Unit depending on selected system of units</li> </ul>
	Zeroin	<ul style="list-style-type: none"> <li>Zeroin only when the weighing device is unloaded</li> </ul>

### Setting the weighing device

✓ The machine is shut down and safeguarded, [see Page 29](#).

### Checking

▶ Zeroin the weighing device, [see Page 219](#).

▶ Place a calibrated test weight from 200 - 300 kg in the centre of the weighing device.

▶ Read off the displayed weight.

➔ If the displayed value corresponds to the weight of the test weight, it is not necessary to adjust the weighing device.

➔ If the displayed value differs from the weight of the test weight, the weighing device must be adjusted.

### Adjusting the weighing device

- ▶ Press or until the value (2) corresponds to the weight of the test weight.
- ▶ In order to save the value, press .
- ➔ The icon is briefly displayed and the value is saved.

#### INFO

- ▶ If the limit range is not adequate to adjust the weighing device, contact KRONE customer service.

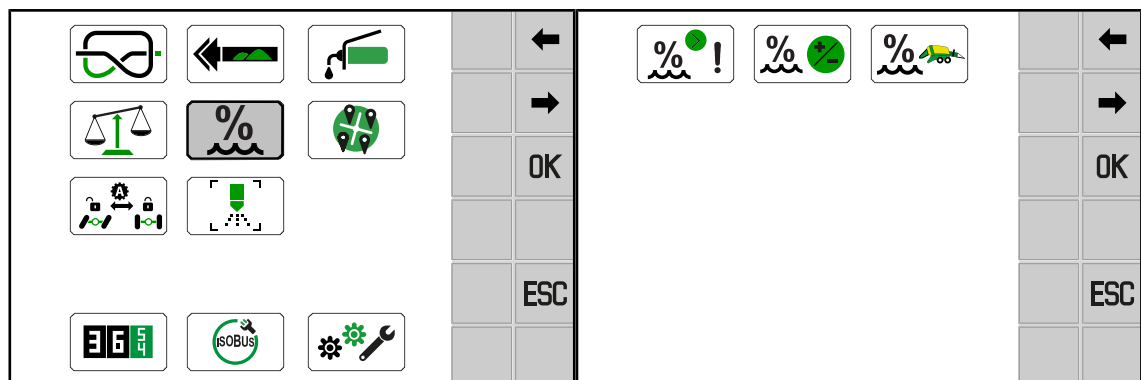
### Zeroising the weighing device

If there is no bale (weight) on the bale scale when the bale chute is lowered but a value (2) is displayed, the sensors B55 "Force sensor rear left" and B56 "Force sensor rear right" must be zeroised. During the zeroising process the acceleration sensor is calibrated.

- ✓ The bale chute is lowered, [see Page 149](#).
  - ✓ There is no bale (weight) on the bale chute.
  - ✓ The machine is shut down and safeguarded, [see Page 29](#).
- ▶ To zeroise the weighing device, press .

⇒ The icon is displayed briefly and the acceleration sensor is calibrated.

## 14.11 Menu 5 "Moisture measurement"



EQG000-068

- ✓ For The menu level is active, [see Page 206](#).

▶ To open the menu, press .

➔ The display shows the "Moisture measurement" menu.

The "Moisture measurement" menu is divided into the following sub-menus depending on the machine configuration:

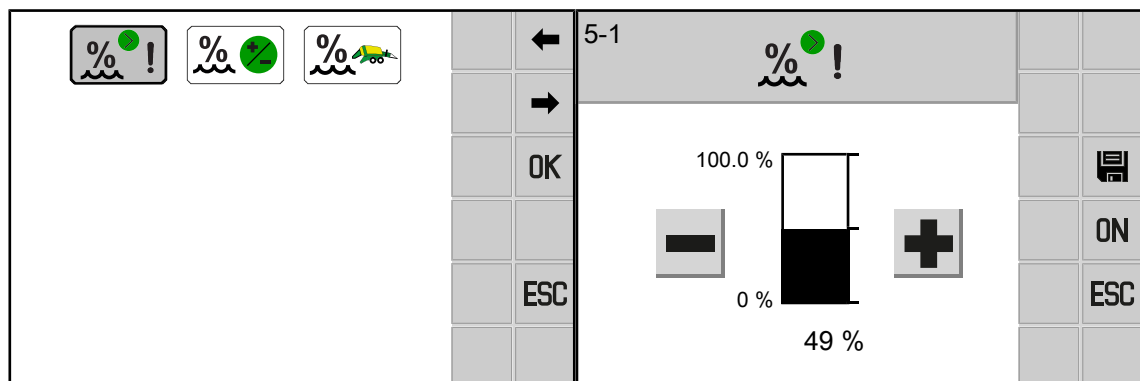
5 		Moisture measurement, <a href="#">see Page 219</a>
	5-1 	Error message for moisture measurement, <a href="#">see Page 220</a>
	5-2 	Correction value for moisture measurement, <a href="#">see Page 221</a>
	5-3 	Select internal / external moisture measurement, <a href="#">see Page 222</a>

### 14.11.1 Menu 5-1 "Error message for moisture measurement"

The error message 522078-15 "Moisture measurement upper limit" warns if the crops are too moist; see the supplement to operating instructions (software), chapter "Error list". The degree of moisture, i. e. when the error message is to appear, can be selected in this menu.

The error message for the display can also be deactivated or re-activated.

The lower limit value has been permanently set ex works and cannot be changed.



EQ001-006 / EQ001-067

✓ Menu 5 "Moisture measurement" has been selected, [see Page 219](#).

▶ To open the menu, press

➔ The display shows the "Error message for moisture measurement" menu.

Recurring icons [see Page 205](#).

#### Setting value for display

▶ Increase or reduce the value, [see Page 208](#).

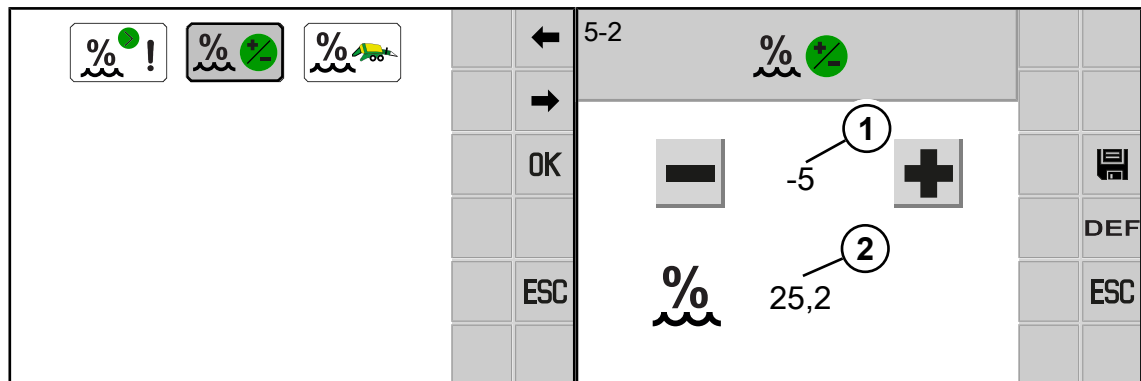
▶ In order to save the value, press

### Deactivating/activating error message

- ▶ In order to deactivate the error message, press **ON**.
- ➔ The display on the key switches from **ON** to **OFF**.
- ▶ In order to activate the error message, press **OFF**.
- ➔ The display on the key switches from **OFF** to **ON**.

### 14.11.2 Menu 5-2 "Correction value for moisture measurement"

In this menu a correction value can be set for the moisture measurement if the displayed value deviates from the value of an external measuring system.



EQ001-006 / EQ001-068

✓ Menu 5 "Moisture measurement" has been selected, [see Page 219](#).

- ▶ To open the menu, press .
- ➔ The display shows the "Correction value for moisture measurement" menu.  
Recurring icons [see Page 205](#).

### Display range

Pos.	Designation	Explanation
(1)	Correction value	Adjustable value range: +10 to -10
(2)	Value	Measured moisture

### Determining the moisture

- ▶ Using a calibrated moisture measuring system, determine the moisture of the crops.
- ➔ If the measured value matches the value (2) on the display, the moisture measurement has been correctly set.
- ➔ If the measured value does not match the value (2) on the display, the correction value (1) must be set.

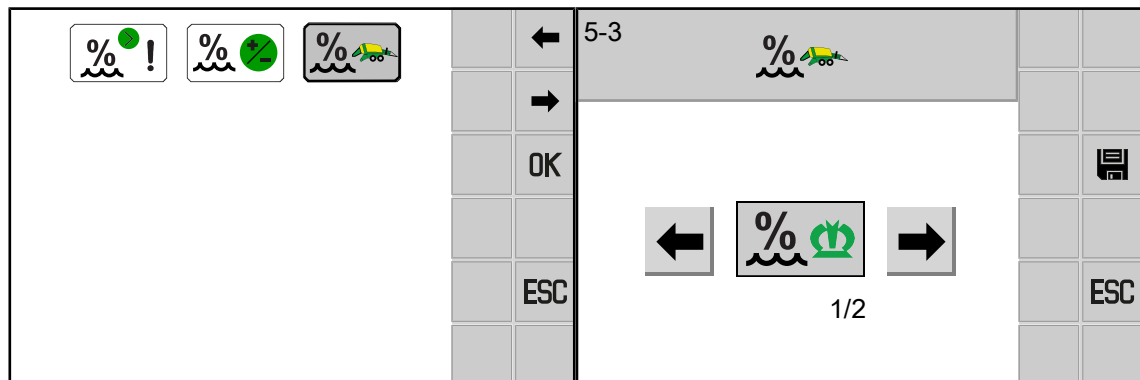
### Setting the correction value

- ▶ Press or until the value (1) matches the measured value.
- ▶ In order to save the value, press .
- ➔ The is displayed briefly.
- ➔ The value is saved.

### 14.11.3 Menu 5-3 "Select internal / external moisture measurement"

This menu is only displayed if an internal moisture measurement and an external moisture measurement have been installed on the machine and the parameter KMC-671 "FEUCHTE\_MESSUNG\_EXTERN\_FÜR\_TC" has been activated.

In this menu, the mode can be set whether the system records and processes data for the Task Controller via the internal moisture measurement or via the external moisture measurement.



EQ001-006 / EQ001-258

- ✓ The parameter KMC-671 "FEUCHTE\_MESSUNG\_EXTERN\_FÜR\_TC" was activated by KRONE technical staff.
- ✓ Menu 5 "Moisture measurement" has been selected, [see Page 219](#).

- ▶ To open the menu, press .
- ➔ The display shows the menu "Select internal / external moisture measurement".

Recurring icons [see Page 205](#).

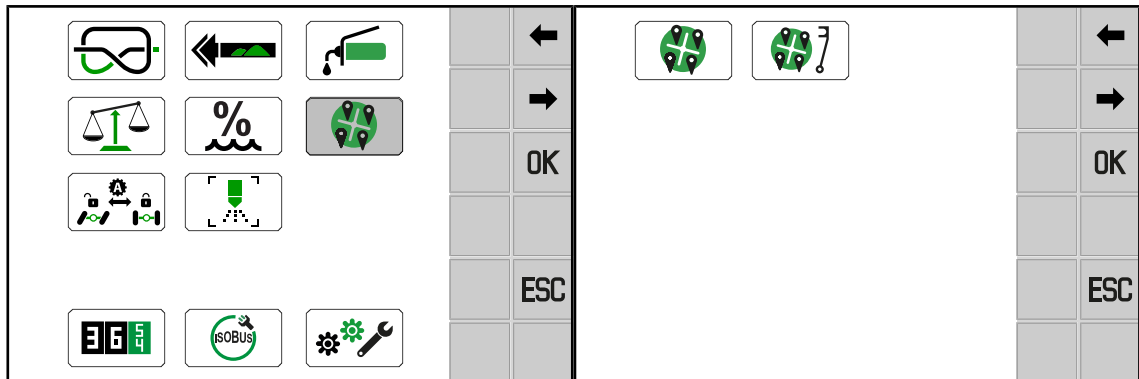
You can select between 2 modes:

Icon	Designation	Explanation
 Mode 1/2	Internal moisture measurement	• Must be activated if the KRONE moisture measurement is to be used.
 Mode 2/2	External moisture measurement	• Must be activated if the external moisture measurement is to be used.

### Changing the mode


- ▶ Select and save the mode, [see Page 209](#).

## 14.12 Menu 7 "Packer"






EQ001-228 / EQ001-259

✓ For The menu level is active, [see Page 206](#).

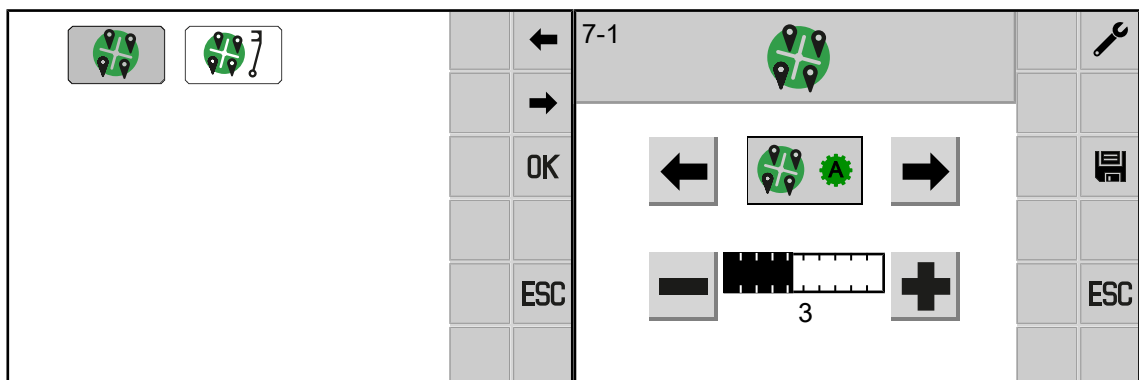
▶ To open the menu, press .

➔ The display shows the "Packer" menu.

Depending on how the machine is equipped, the "Packer" menu is divided into the following sub-menus:


7 		Packer, <a href="#">see Page 223</a>
	7-1 	Packer filling, <a href="#">see Page 223</a>
	7-2 	Calibrate sensing rake, <a href="#">see Page 227</a>

### 14.12.1 Menu 7-1 "Packer filling"



EQ001-228 / EQ001-231

✓ Menu 7 "Packer" has been called up, [see Page 223](#).

▶ To open the menu, press .

➔ The display shows the "Packer filling" menu.

Recurring icons [see Page 205](#).

**Keys**

Icon	Designation	Explanation
	Calling the "Packer test" submenu	Only for specialists

**Display area**

You can select between two modes:

Icon	Designation	Explanation
	Automatic packer	<ul style="list-style-type: none"> <li>The packer drum fills the feed channel until the system has reached the set switching threshold of the sensor B39 "Top sensing rake position, <a href="#">see Page 224</a>.</li> <li>The display for the filling degree  (  ) is evaluated on the working screen.</li> </ul>
	Packer 1:1	<ul style="list-style-type: none"> <li>The packer drum fills the feed channel. With each plunger stroke, the sensing rake swings back and the bale channel is filled with crops through the feeder strip, <a href="#">see Page 225</a>.</li> <li>The display for the filling degree  (  ) is evaluated in the working screen.</li> </ul>

**Changing the mode**

- ▶ Select and save the mode, [see Page 209](#).

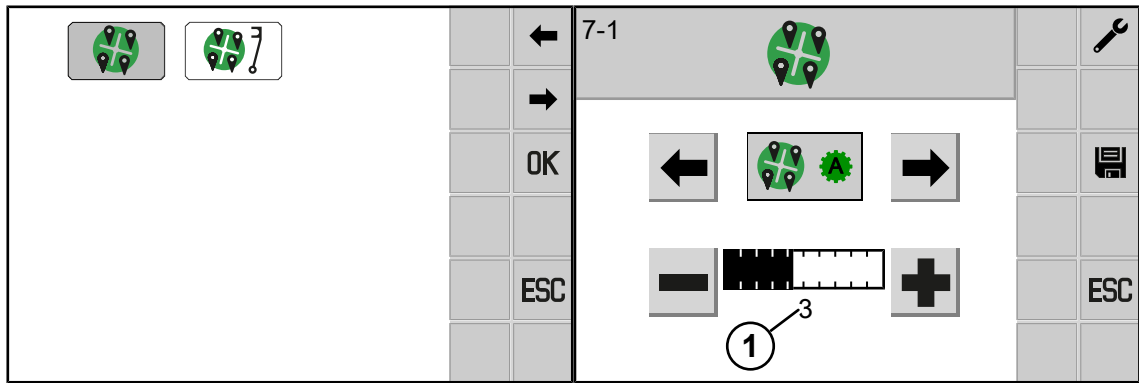
**14.12.1.1 Selecting "Automatic packer" mode**

In " Automatic packer" mode, the packer drum fills the feed channel until the system has reached the set switching threshold of the sensor B39 "Top sensing rake position" for actuating the Variable Filling System.

If the switching threshold for actuating the Variable Filling System has been reached, the sensing rake swings back and the bale channel is filled with crops through the feeder strip.

The higher the switching threshold for actuating the Variable Filling System, the more crops are collected in the feed channel.






EQ001-228 / EQ001-231

✓ Menu 7-1 "Packer filling" has been called up, [see Page 223](#).


- ▶ Select and save "  Automatic packer" mode.

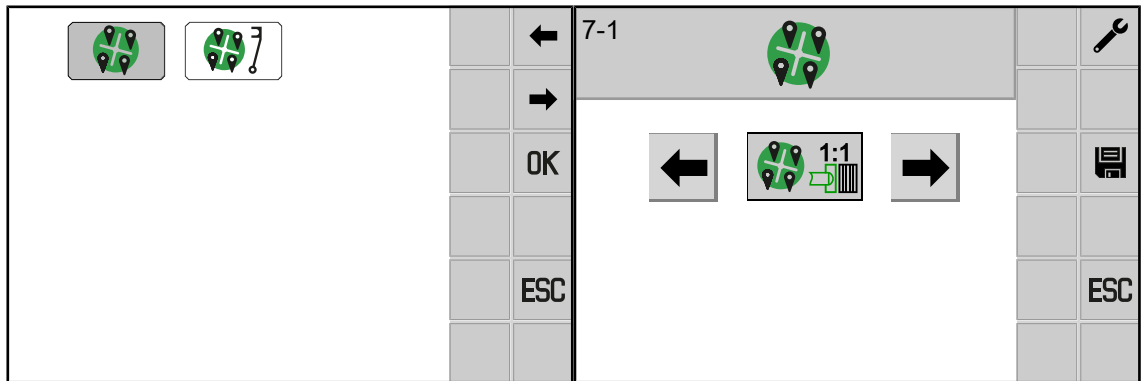
### Display area

Item	Designation	Explanation
(1)	Switching threshold	<ul style="list-style-type: none"> <li>• Switching threshold: 1 – 6</li> <li>• The higher the value is set for the switching threshold of the sensor B39 "Top sensing rake position", the more crops are collected in the feed channel.</li> <li>• If possible, set a low switching threshold for actuating the Variable Filling System, with an acceptable bale shape.</li> </ul>

- ▶ Increase or reduce the value, [see Page 208](#).
- ▶ In order to save the value, press .

#### 14.12.1.2 Setting "Packer 1:1" mode

In "  Packer 1:1" mode, the packer drum fills the feed channel. With each plunger stroke, the sensing rake swings back and the bale channel is filled with crops through the feeder strip.



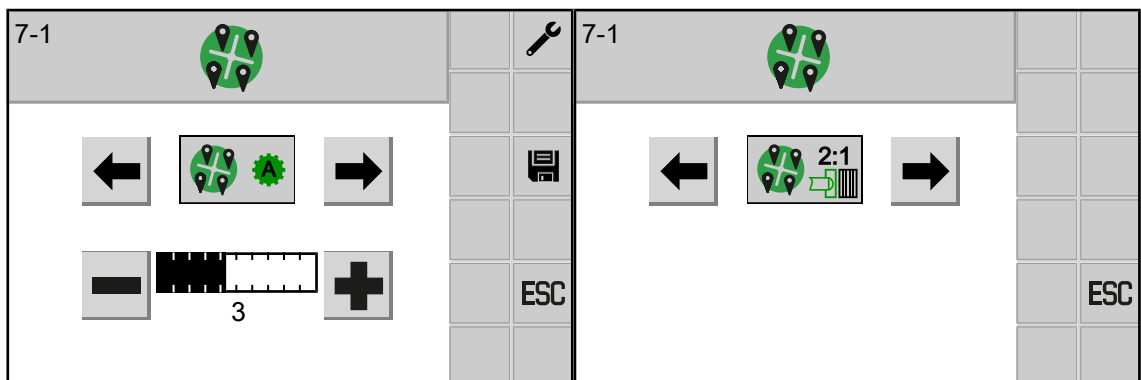
EQ001-228 / EQ001-229

✓ Menu 7-1 "Packer filling" has been called up, [see Page 223](#).

- ▶ Select and save " Packer 1:1" mode.

### 14.12.1.3 "Packer test" submenu

The "Packer test" submenu is used by the technical staff for testing the packer. Running through the individual modes ( Packer 2:1, Packer 3:1), the technical staff are able to identify any malfunctions in the actuators. The modes are temporary settings and cannot be saved. When the "Packer test" submenu has been exited, the mode of the "Packer filling" menu is active again.



EQ001-228 / EQ001-230

✓ Menu 7-1 "Packer filling" has been called up, [see Page 223](#).

- ▶ Press to call up the "Packer test" submenu.

### Display area

You can select between two modes:

Icon	Designation	Explanation
	Packer 2:1	The packer drum fills the feed channel. With every second plunger stroke, the sensing rake swings back and the bale channel is filled with crops through the feeder strip.
	Packer 3:1	The packer drum fills the feed channel. With every third plunger stroke, the sensing rake swings back and the bale channel is filled with crops through the feeder strip.

### Changing the mode

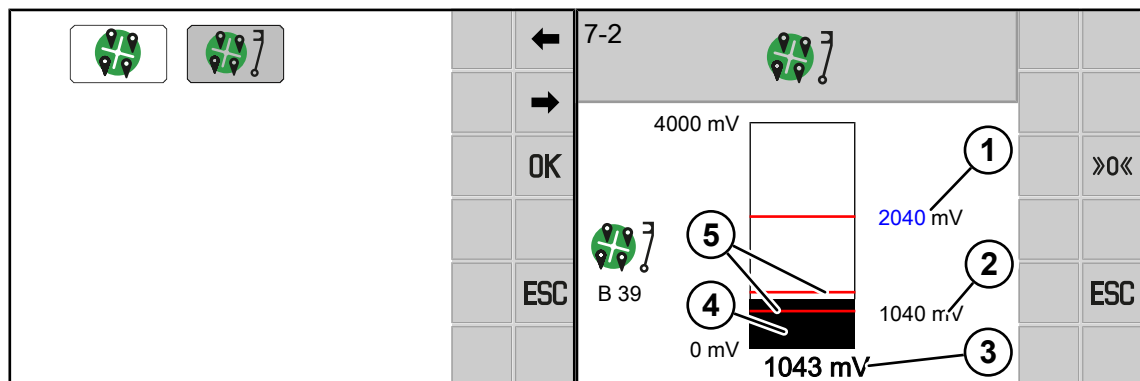
- ▶ Press or to change the mode.
  - ⇒ The mode is temporary and cannot be saved.
- ➔ The selected mode remains active until the "Packer test" submenu is exited.
- ➔ When the "Packer test" submenu has been exited, the mode from the "Packer filling" menu is active again.

#### 14.12.2 Menu 7-2 "Calibrate sensing rake"

The sensing rake is always calibrated in the zero position of the Variable Filling System and in the zero position of the sensing rake.

Zero position of the sensing rake = the tines of the sensing rake are in the packer tray.

The sensor B39 "Top sensing rake position" must be calibrated if the bar (4), in the zero position of the Variable Filling System, is not centred between the two lower red lines (5).




EQ001-259 / EQ001-260

- ✓ Menu 7 "Packer" has been called up, [see Page 223](#).
  - ▶ To open the menu, press
  - ➔ The display shows the "Calibrate sensing rake" menu.
- Recurring icons [see Page 205](#).

Item	Designation	Explanation
(1)	Actual value first switching threshold	The value is adjustable. The value of the sensor B39 "Top sensing rake position" for the first switching threshold for "Automatic packer" mode, <a href="#">see Page 224</a> . The higher the value is set, the higher the first switching threshold of the sensor B39 "Top sensing rake position" for "Automatic packer" mode, the more crops are collected.
(2)	Saved actual value	The actual value of the sensor B39 "Top sensing rake position" of the last saved calibration while the Variable Filling System was in zero position.
(3)	Current actual value	The currently measured value of the sensor B39 "Top position sensing rake".

- ✓ The Variable Filling System (VFS) is in zero position and has been correctly set.
- ✓ The sensing rake is in zero position (the tines of the sensing rake are in the packer tray).
- ▶ Check visually that the bar (4) is centred between the two lower red lines (5).
- ➔ If the bar (4) is centred between the two lower red lines (5), the sensor B39 has been correctly set.
- ➔ If the bar (4) is not centred between the two lower red lines (5), the sensor B39 must be calibrated.

### Calibrate sensor B39 "Top sensing rake position"

- ▶ To calibrate the sensor B39, press  until the bar (4) is centred between the two lower red lines (5).
- ➔ The saved actual value (2) takes over the current actual value (3). The actual value (1) for the first switching threshold of sensor B39 is automatically adjusted by the system.
- ▶ If the sensor B39 cannot be calibrated, the installation position of the sensor wheel must be checked or adjusted by a KRONE service partner.

## 14.13 Menu 8 "Self-steering axle"

In this menu it can be set whether and from what speed the self-steering axle is automatically blocked/released by the system when moving forwards.

- ✓ The tractor control unit (TECU) provides data for forward travel.

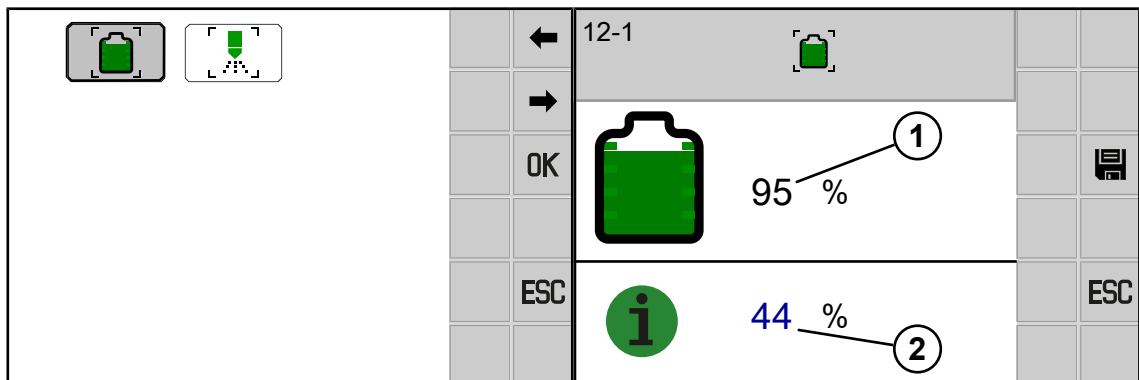




12 		Silage additives unit, <a href="#">see Page 230</a>
	12-1 	Silage additives tank, <a href="#">see Page 231</a>
	12-2 	Silage additives dosing, <a href="#">see Page 232</a>

### 14.14.1 Menu 12-1 "Silage additives tank"

The error message 522099-18 "Silage additives tank empty" indicates that the silage additives tank must be filled. The fill level, i.e. when the error message shall appear, can be selected in this menu.



EQ001-248 / EQ001-249

✓ Menu 12 "Silage additives unit" is called up, [see Page 230](#).

▶ To open the menu, press

➔ The display shows the "Silage additives tank" menu.

Recurring icons [see Page 205](#).

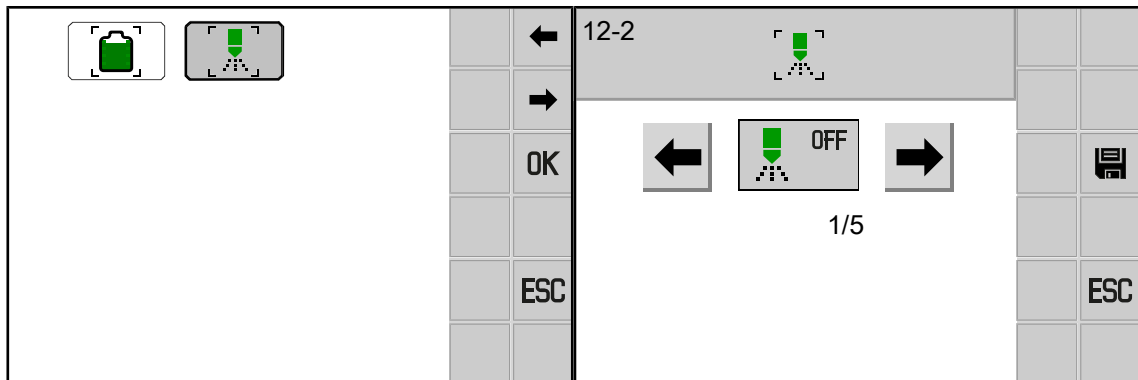
#### Display range

Item	Designation	Explanation
(1)	Silage additives fill level	<ul style="list-style-type: none"> <li>Shows the current fill level of the silage additives in the silage additives tank in percent.</li> </ul>
(2)	Selected value	<ul style="list-style-type: none"> <li>Touch to select the value.</li> <li>The error message 522099-18 "Silage additives tank empty" appears in the display when the silage additives level reaches the selected value (2).</li> </ul>

▶ Increase or reduce the value, [see Page 208](#).

▶ In order to save the value, press

14.14.2 Menu 12-2 "Silage additives dosing"



EQ001-248 / EQ001-250

✓ Menu 12 "Silage additives unit" is called up, [see Page 230](#).

▶ To open the menu, press

➔ The display shows the "Silage additives dosing" menu.

Depending on the machine equipment, you can choose between five modes.

Icon	Designation	Explanation
 Mode 1/5	Silage additives dosing OFF	<ul style="list-style-type: none"> <li>No silage additives are added to the crops.</li> </ul>
 Mode 2/5	Silage additives dosing by time	<ul style="list-style-type: none"> <li>Silage additives are added to the crops by litres per minute, <a href="#">see Page 233</a>.</li> <li>The value is adjustable.</li> <li>Setting range: 0.25 l/min ... 6.5 l/min</li> <li>The silage additives unit is switched on as soon as the pick-up is in float position.</li> </ul>
 Mode 3/5	Silage additives dosing by weight	<ul style="list-style-type: none"> <li>Silage additives are added to the crops by litres per tonne, <a href="#">see Page 233</a>.</li> <li>The value is adjustable.</li> <li>Setting range: 0.25 l/t ... 6.5 l/t</li> <li>The silage additives unit is switched on as soon as the pick-up is in float position.</li> </ul>
 Mode 4/5	Silage additives dosing by degree of moisture	<ul style="list-style-type: none"> <li>Silage additives are added to the crops by degree of moisture and weight, <a href="#">see Page 235</a>.</li> <li>The values are adjustable.</li> <li>Setting range: 0.0 l/t ... 6.5 l/t</li> <li>The silage additives unit is switched on as soon as the pick-up is in float position.</li> </ul>
 Mode 5/5	Silage additives dosing continuous operation	<ul style="list-style-type: none"> <li>Intended to rinse the silage additives unit.</li> <li>The pump runs continuously.</li> <li>The pump output can be adjusted in percent, <a href="#">see Page 237</a>.</li> </ul>

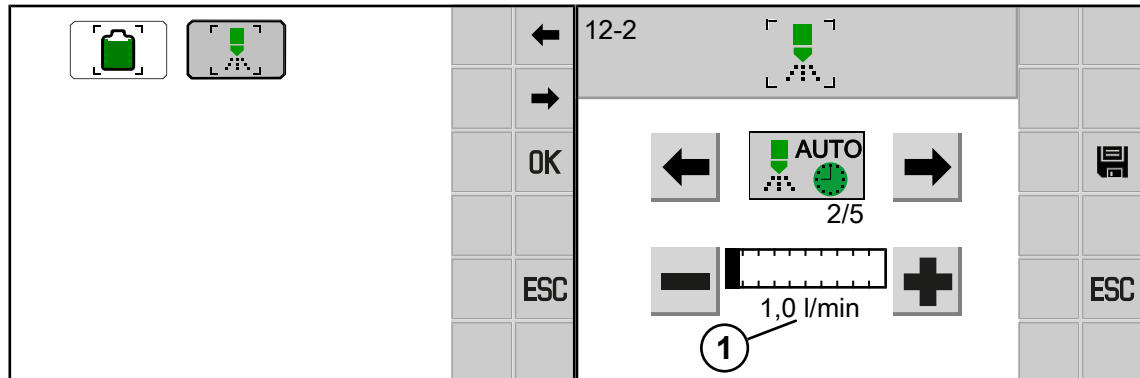


### Changing the mode

- ▶ Select and save the mode, [see Page 209](#).

#### 14.14.2.1 Setting the "Silage additives dosing by time" mode

In this menu, you can select the volume in litres of silage additives per minute you want to add to the crops.




EQ001-248 / EQ001-251

- ✓ For The menu level is active, [see Page 206](#).
- ✓ Menu 12-2 "Silage additives dosing" is called up.

- ▶ Select and save the "  Silage additives dosing by time" mode.

### Display range


Item	Designation	Explanation
(1)	Value	<ul style="list-style-type: none"> <li>• Adjustable value range: 0.25 ... 6.5 l/min</li> <li>• The amount of silage additives added to the crops increases as the value rises.</li> </ul>


- ▶ Increase or reduce the value, [see Page 208](#).
- ▶ In order to save the value, press .

#### 14.14.2.2 Setting the "Silage additives dosing by weight" mode

In this menu, you can select the volume in litres of silage additives per tonne you want to add to the crops.


##### For the "bale scales" version

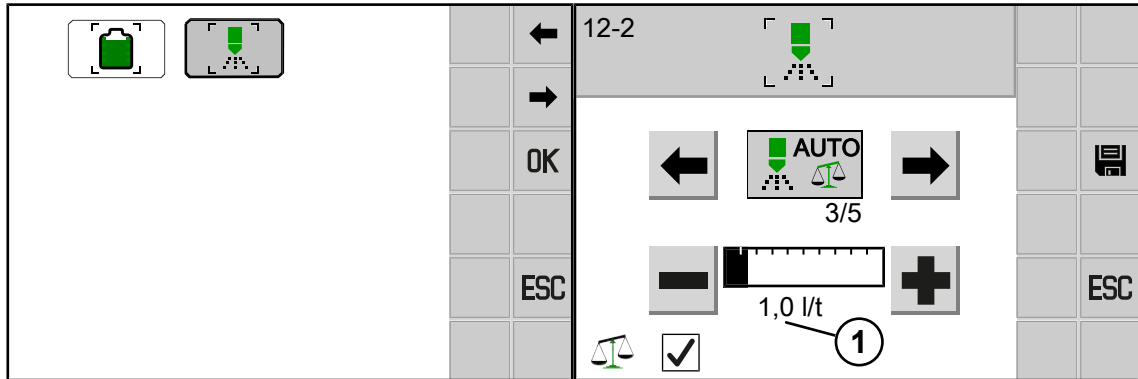
**Checkbox activated** (   ): On the basis of the weight of the previously weighed big bale, the system calculates the amount in litres of silage additives to be added to the crops.

**Checkbox not activated** (   500 kg ): A fixed weight of the big bale can be entered.


The system uses the fixed weight to determine the amount of silage additives to be added to the crops.



**For the "without bale scales" version**

**Without checkbox** ( 500 kg): A fixed weight of the big bale can be entered. The system uses the fixed weight to determine the amount of silage additives to be added to the crops.




EQ001-248 / EQ001-252

- ✓ For The menu level is active, [see Page 206](#).
- ✓ Menu 12-2 "Silage additives dosing" is called up.
- ▶ Select and save the " Silage additives dosing by weight" mode.

Icon	Designation	Explanation
	Checkbox activated	<p><b>For the "bale scales" version</b></p> <ul style="list-style-type: none"> <li>• Touch to activate/deactivate the checkbox.</li> <li>• On the basis of the weight of the previously weighed big bale, the system calculates the amount in litres of silage additives to be added to the crops.</li> </ul>
	Checkbox not activated	<p><b>For the "bale scales" version</b></p> <ul style="list-style-type: none"> <li>• Touch to activate/deactivate the checkbox.</li> <li>• A fixed weight of the big bale can be entered.</li> <li>• The system uses the fixed weight to determine the amount of silage additives to be added to the crops.</li> </ul>
500 kg	Fixed weight	<p><b>For the "bale scales" version</b></p> <ul style="list-style-type: none"> <li>• Is displayed when the checkbox is not activated.</li> <li>• The blue value is touch-sensitive.</li> <li>• Is not displayed when the checkbox is activated.</li> </ul> <p><b>For the "without bale scales" version</b></p> <ul style="list-style-type: none"> <li>• Is displayed without the checkbox.</li> <li>• The blue value is touch-sensitive.</li> </ul>
(1)	Value	<ul style="list-style-type: none"> <li>• Adjustable value range: 0.25 l/tonne ... 6.5 l/tonne</li> <li>• Value to calculate the added silage additives quantity.</li> <li>• The amount of silage additives added to the crops increases as the value rises.</li> </ul>

► Increase or reduce the value, [see Page 208](#).

► In order to save the value, press .

### 14.14.2.3 Setting the "Silage additives dosing by degree of moisture" mode

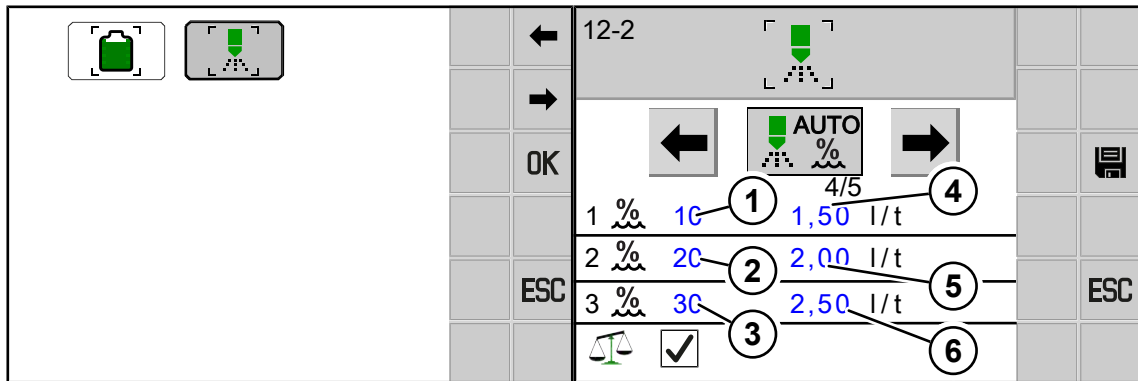
In this menu, you can enter three different values for the degree of moisture of the crops. For each of these three values, you can enter individually how much silage additives (litres per tonne) should be added to the crops when the degree of moisture is reached. The values must be in ascending order.

If the actual degree of moisture is **less than** or **equal to** the **first** value (here 10), silage additives are added to the crop based on the individually **entered** value (here 1.5 l/tonne).

If the actual degree of moisture is **between** the **first** value (here 10) and the **second** value (here 20), the system calculates an **average value** (here from 1.5 l/tonne and 2.00 l/tonne). Silage additives are added to the crops based on the **average value**.


If the actual degree of moisture is **between** the **second** value (here 20) and the **third** value (here 30), the system calculates an **average value** (here from 2.0 l/tonne and 2.50 l/tonne). Silage additives are added to the crops based on the **average value**.

If the actual degree of moisture is **higher than** or **equal to** the **third** value (here 30), silage additives are added to the crops based on the individually **entered** value (here 2.5 l/tonne).



EQ001-248 / EQ001-254

- ✓ For The menu level is active, [see Page 206](#).
- ✓ Menu 12-2 "Silage additives dosing" is called up.

► Select and save the "  Silage additives dosing by degree of moisture" mode.

**Display range**

Item	Designation	Explanation
(1)	degree of moisture	<ul style="list-style-type: none"> <li>• Touch to select the value.</li> <li>• Adjustable value range: 1 ... 100%</li> <li>• The value (1) must be lower than the value (2).</li> </ul>
(2)	degree of moisture	<ul style="list-style-type: none"> <li>• Touch to select the value.</li> <li>• Adjustable value range: 1 ... 100%</li> <li>• The value (2) must be higher than the value (1).</li> <li>• The value (2) must be lower than the value (3).</li> </ul>
(3)	degree of moisture	<ul style="list-style-type: none"> <li>• Touch to select the value.</li> <li>• Adjustable value range: 1 ... 100%</li> <li>• The value (3) must be higher than the value (2).</li> </ul>
(4)	Silage additives quantity	<ul style="list-style-type: none"> <li>• Touch to select the value.</li> <li>• The value (4) must be lower than the value (5).</li> </ul>
(5)	Silage additives quantity	<ul style="list-style-type: none"> <li>• Touch to select the value.</li> <li>• The value (5) must be higher than the value (4).</li> <li>• The value (5) must be lower than the value (6).</li> </ul>
(6)	Silage additives quantity	<ul style="list-style-type: none"> <li>• Touch to select the value.</li> <li>• The value (6) must be higher than the value (5).</li> </ul>

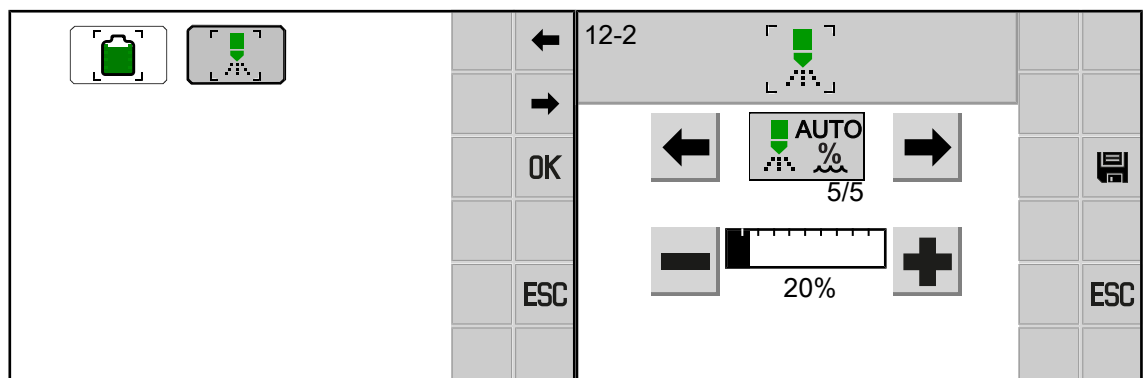
Icon	Designation	Explanation
	Checkbox activated	<b>For the "bale scales" version</b> <ul style="list-style-type: none"> <li>• Touch to activate/deactivate the checkbox.</li> <li>• On the basis of the weight of the previously weighed big bale, the system calculates the amount in litres of silage additives to be added to the crops.</li> </ul>
	Checkbox not activated	<b>For the "bale scales" version</b> <ul style="list-style-type: none"> <li>• Touch to activate/deactivate the checkbox.</li> <li>• A fixed weight of the big bale can be entered.</li> <li>• The system uses the fixed weight to determine the amount of silage additives to be added to the crops.</li> </ul>
500 kg	Fixed weight	<b>For the "bale scales" version</b> <ul style="list-style-type: none"> <li>• Is displayed when the checkbox is not activated.</li> <li>• The blue value is touch-sensitive.</li> <li>• Is not displayed when the checkbox is activated.</li> </ul> <b>For the "without bale scales" version</b> <ul style="list-style-type: none"> <li>• Is displayed without the checkbox.</li> <li>• The blue value is touch-sensitive.</li> </ul>

► Increase or reduce the value, [see Page 208](#).

► In order to save the value, press

#### 14.14.2.4 Setting the "Silage additives dosing continuous operation" mode

Continuous operation is mainly intended to rinse the silage additives unit. The continuous operation of the silage additives unit can be set in this menu. This means that the pump output can be set in percent.



EQ001-248 / EQ001-256

✓ For The menu level is active, [see Page 206](#).


✓ Menu 12-2 "Silage additives dosing" is called up.

► Select and save the " ON Silage additives dosing continuous operation" mode.

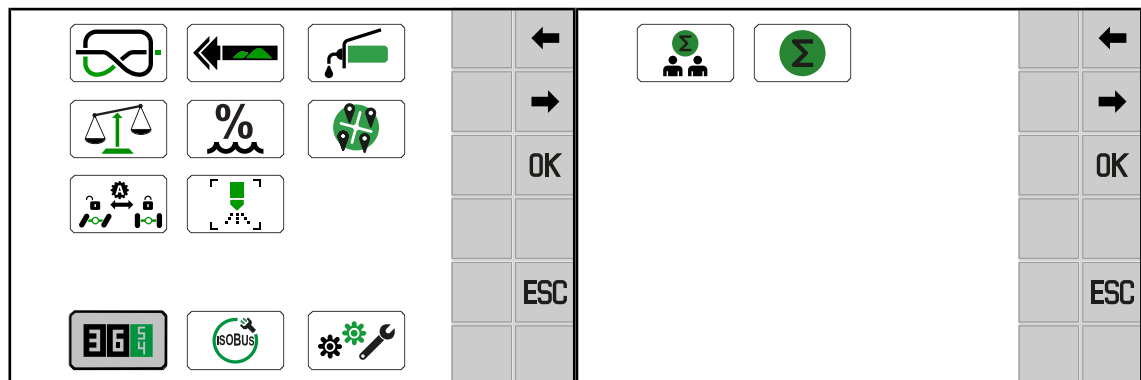
**Display range**

Item	Designation	Explanation
(1)	Value	<ul style="list-style-type: none"> <li>Adjustable value range: 1 - 100%</li> <li>The pump output increases as the value increases.</li> </ul>

▶ Increase or reduce the value, [see Page 208](#).


▶ In order to save the value, press .

**14.15 Menu 13 "Counters"**





EQG000-054

✓ For The menu level is active, [see Page 206](#).

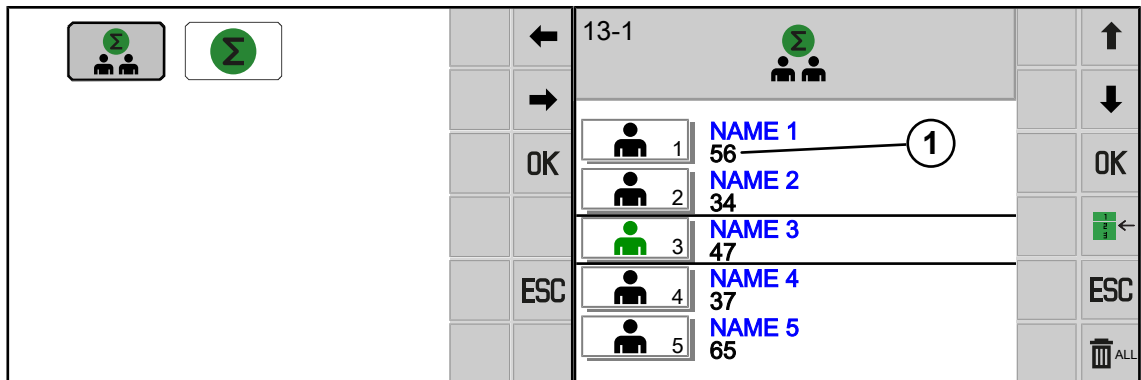
▶ To open the menu, press .

➔ The display shows the menu "Counter".

Depending on the machine equipment, the "Counters" menu is divided into the following sub-menus:


Icon	Designation
	Menu 13-1 "Customer counter", <a href="#">see Page 239</a>
	Menu 13-2 "Total counter", <a href="#">see Page 243</a>

## 14.15.1 Menu 13-1 "Customer counter"






EQ001-008 / EQ001-070

✓ Menu 13 "Counter" is called. [see Page 238](#).



▶ To open the menu, press .

➔ The display shows the "Customer Counter" menu.

## Display area

Icon	Designation	Explanation
	Customer counter	<ul style="list-style-type: none"> <li>Customer counters 1 to 20.</li> <li>The activated customer counter () is highlighted in grey.</li> <li>The selected customer counter is the one between the lines.</li> <li>The selected customer counter must not be activated.</li> <li>The name next to the customer counter is touch-sensitive. An input mask opens.</li> <li>Tap the icon to open the detail counter. <a href="#">see Page 240</a></li> </ul>
(1)	"Total bales" counter	<ul style="list-style-type: none"> <li>Corresponds to the value of the <math>\Sigma</math>  "Total bales" counter in the detailed counter, <a href="#">see Page 241</a>.</li> </ul>

Recurring icons [see Page 205](#).

Icon	Designation	Explanation
	Display detailed counter	Displays counter information for the selected customer counter.
	Setting all customer counters to zero	All 20 customer counters and their detail counters are set to zero. The name is retained.

## Changing the designation of a customer counter

▶ Press on "Designation".

- ⇒ An input mask opens.
- ▶ Enter designation via keypad.
- ▶ Press **OK** to save the designation.
- ▶ In order to leave the input mask without saving, press **ESC**.

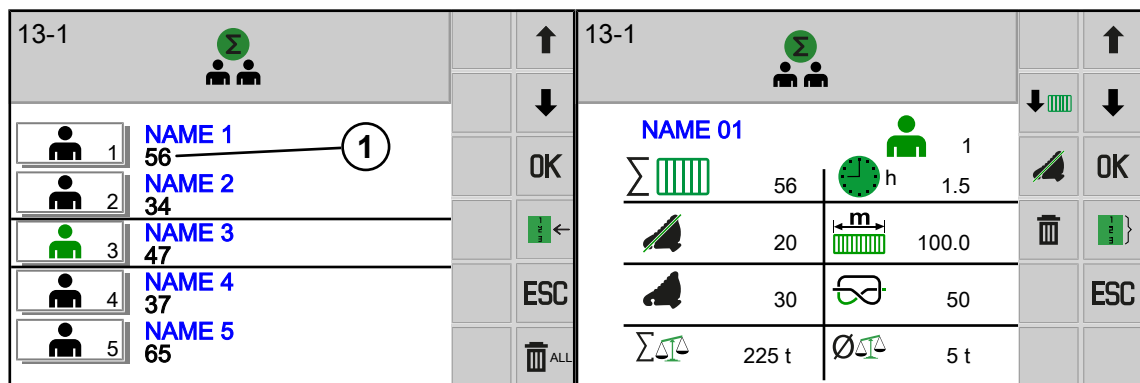
**Activating customer counter**

- ✓ The detail counter has been selected.
- ▶ To select the customer counter, press or .
- ▶ To activate the customer counter, press **OK**.
- ➔ The new activated customer counter is highlighted in green.

**Setting all customer counters and detail counters to zero**

- ▶ To set all customer counters and their detail counters to zero, press and hold until a signal tone sounds.
- ➔ All 20 customer counters and their detail counters are set to zero.
- ➔ The name is retained.

**14.15.1.1 Detail counter**



EQG000-055

Customer counter

Detail counter

**Call detail counter**

- ✓ The menu 13-1 "Customer Counter" is selected.
- ▶ To select the detail counter, press .






### Select the customer counter

✓ The detail counter has been selected.

► To return to the customer counter, press .

### Description of the keys




Icon	Designation
	Reduce number of bales
	Select "Uncut bales" counter
	Select "Cut bales" counter

### Display range of detail counter



Icon	Designation	Explanation
	Selected customer counter	<ul style="list-style-type: none"> <li>• Here customer counter 1</li> <li>• Further information <a href="#">see Page 239</a>.</li> </ul>
	"Total bales" counter	Number of all bales
	"Uncut bales" counter	<b>For version with "cutting unit":</b> Number of uncut bales
	"Cut bales" counter	<b>For version with "cutting unit":</b> Number of cut bales
	Operating hours counter	Starts counting as soon as the electronics are switched on.
	"Total length" counter	<ul style="list-style-type: none"> <li>• Total length of all bales for this customer.</li> <li>• In m or ft (depending on selected system of units).</li> </ul>
	Knot counter	<b>For version with "MultiBale":</b> Including the MultiBale knot
	"Total weight" counter	<b>For "Weighing device" version:</b> Total weight of all bales
	"Average weight" counter	<b>For "Weighing device" version:</b> Average weight of the weighed bales

### Reset customer counter

The customer counter, which is to be reset, must not be activated.




- ▶ To select the customer counter, press  or .
- ▶ Press .
  - ⇒ The selected customer counter is reset to zero.
  - ⇒ The name of the customer counter is not deleted.

### Change the number of bales

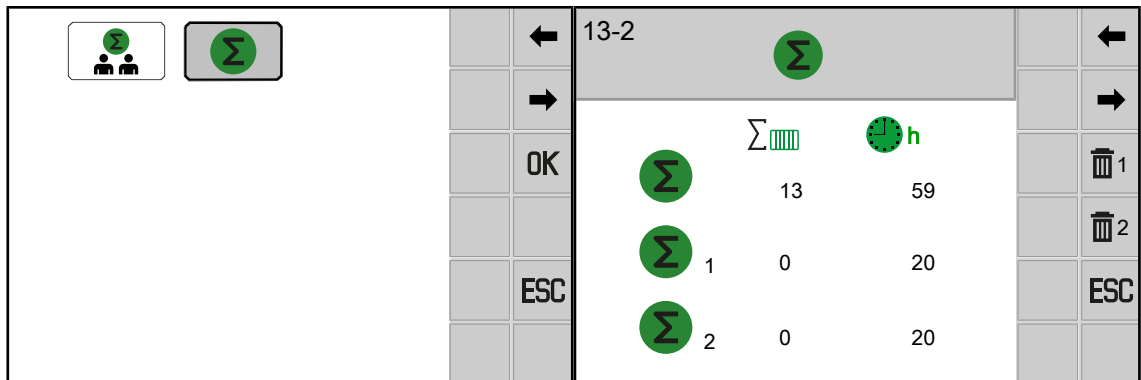
- ▶ Press  or  until the customer counter has been selected.

The selected customer counter must not be activated.

### Changing the "Uncut bales" counter


- ▶ Press .
- ▶ To reduce the number of bales, press .
- ➔ At the same time, the following points are changed:
  - the season counter
  - the day counter
  - the "Total length" counter
  - the knot counter
  - **For "Weighing device" version:** The "total weight" counter
  - **For "Weighing device version":** The "average weight" counter
- ▶ To reduce the number of bales, press .
- ➔ At the same time, the following points are changed:
  - the season counter
  - the day counter
  - the "Total length" counter
  - the knot counter
  - **For "Weighing device" version:** The "total weight" counter
  - **For "Weighing device version":** The "average weight" counter

### 14.15.2 Menu 13-2 "Total counter"













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✓ Main menu 13 "Counters" has been opened, [see Page 238](#).

► To open the menu, press .

⇒ The display shows the "Total Counter" menu.

#### Display area

Icon	Designation	Explanation
	"Total number of bales" counter	
	"Uncut bales" counter	<b>For version with "cutting unit":</b> Number of uncut bales
	"Cut bales" counter	<b>For version with "cutting unit":</b> Number of cut bales
	Operating hours counter	Starts counting as soon as the electronics are switched on.
	Knot counter	<b>For version with "MultiBale":</b> Including the MultiBale knot
	"Total weight" counter	<b>For "Weighing device" version:</b> Total weight of all bales
	"Total length" counter	<ul style="list-style-type: none"> <li>Total length of all bales for this customer.</li> <li>In m or ft (depending on selected system of units).</li> </ul>
	Bale counter	Cannot be deleted
	Season counter 1	Can be deleted
	Season counter 2	Can be deleted

**For "Weighing device" version**

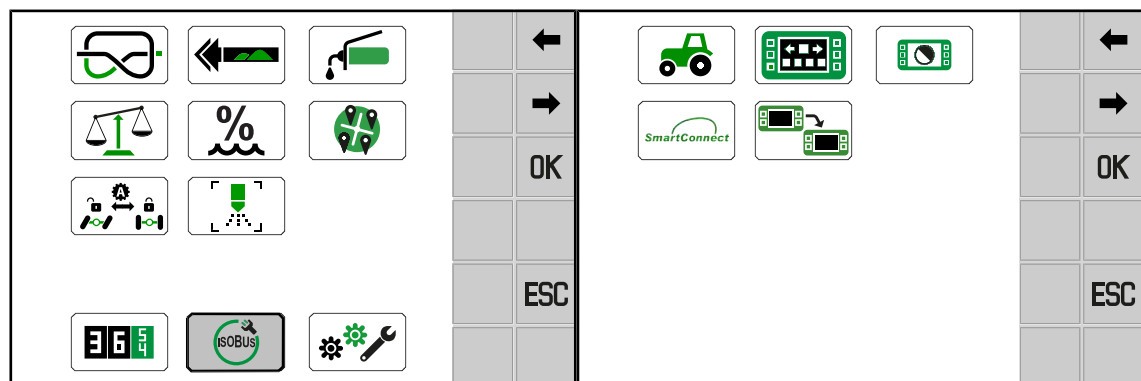
Icon	Designation	Explanation
	"Total weight" counter	Total weight of all compressed bales. Cannot be deleted
	Season counter 1	Can be deleted
	Season counter 2	Can be deleted

Recurring icons [see Page 205](#).

**Set season counter 1 or 2 to zero**

- ▶ Press and hold to set season counter 1 to zero.
- ▶ Press and hold to set season counter 2 to zero.

**14.16 Menu 14 "ISOBUS"**









EQG001-001

✓ The menu level is open, [see Page 206](#).

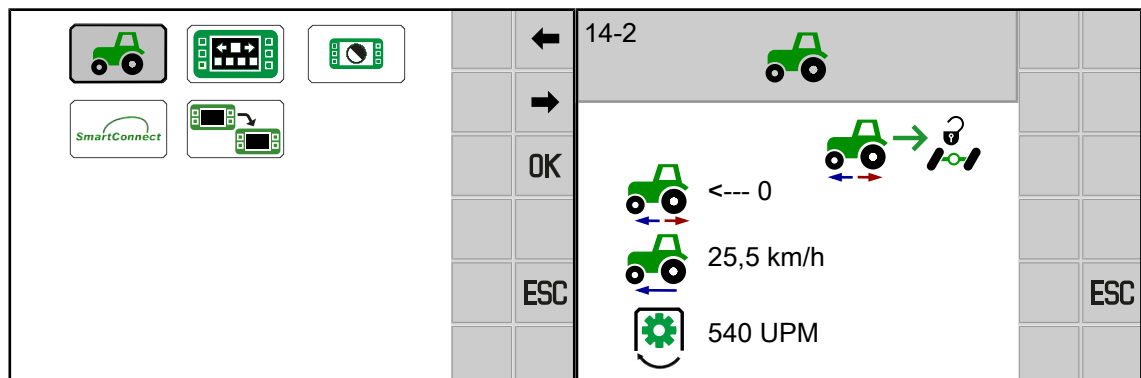
▶ To open the menu, press .

➔ The display shows the "ISOBUS" menu.

Depending on the machine equipment, the "ISOBUS" menu is divided into the following submenus:


Menu	Sub-menu	Designation
14 		ISOBUS, <i>see Page 244</i>
	14-2 	Driving speed/direction of travel diagnostics, <i>see Page 245</i>
	14-3 	Configure main window, <i>see Page 246</i>
	14-4 	Setting the background colour, <i>see Page 248</i> .
	14-5 	KRONE SmartConnect, <i>see Page 249</i>
	14-9 	Switching between terminals, <i>see Page 249</i>

### 14.16.1 Menu 14-2 “Driving speed/direction of travel diagnostics”



EQG000-065

✓ The menu 14 “ISOBUS” has been selected, *see Page 244*.

► To open the menu, press .

➔ The display shows menu "Diagnostics of driving speed/direction of travel".

#### Display area

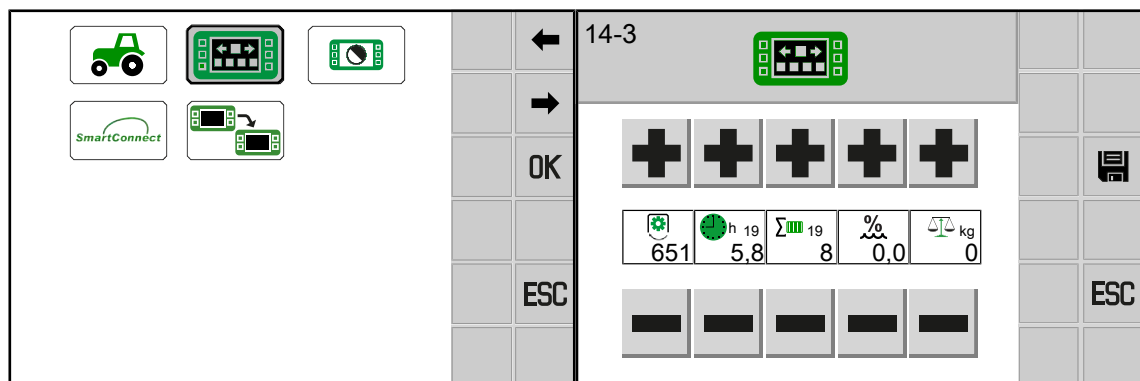
Icon	Designation	Explanation
<--- 0	Driving forward	
0 --->	Reverse travel	
+25.5 km/h	Speed for forward travel	km/h or mph depending on set system of units.
-25.5 km/h	Speed for reverse travel	

Icon	Designation	Explanation
	PTO speed	Value is provided via ISOBUS from the tractor.
	The direction of travel of the tractor is evaluated for locking the steering axle.	If the evaluation of the ISOBUS data from the tractor has been activated.
	The direction of travel of the tractor is not evaluated for locking the steering axle.	If the evaluation of the ISOBUS data from the tractor has not been activated.

### 14.16.2 Menu 14-3 "Configuring main window"

In this window the display elements which are shown in the lower information bar on the working image (see Page 185) can be set. Up to 5 display elements can be shown at the same time in the information bar on the working image. Each display element can be selected only once.

Depending on the machine configuration, 5 displays elements (from a total of up to 9) can be selected for display in the information bar of the working image.



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✓ The menu 14 "ISOBUS" has been selected, see Page 244.




▶ To open the menu, press

➔ The display shows the "Configure main window" menu.

Recurring icons see Page 205.







### Display area

Icon	Designation	Explanation
	Show next display element	
	Show previous display element	

- ▶ To select the required display element, press  or .
- ⇒ The display shows the new display element.
- ▶ To save the new display element, press .
- ➔ The new display element is saved for the information bar of the main window.

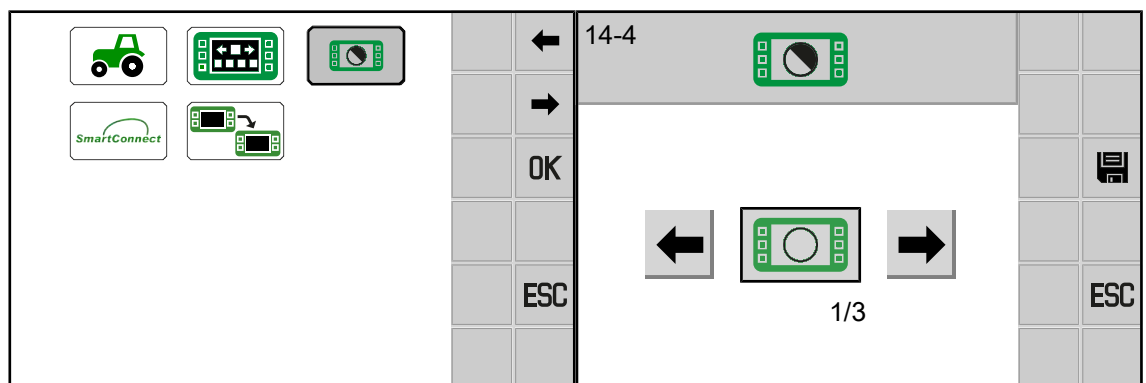
### Selectable display elements

Depending on the machine configuration, the following display elements can be positioned in the information bar of the main window, [see Page 185](#).

Icon	Designation	Explanation
	Current PTO speed	In min <sup>-1</sup>
	Operating hours counter	Counts only when PTO shaft is running. The adjacent number indicates the selected customer counter (customer counter 19 in the example).
	Current total number of bales	The adjacent number indicates the selected customer counter (customer counter 19 in the example).
	Current degree of moisture of the crops	Data is only recorded if an internal moisture measurement has been installed on the machine.
	Current degree of moisture of the crops	Is always available. Data is only recorded if an external moisture measurement has been installed on the machine.
	Bale weight	Weight of the last weighed bale

Icon	Designation	Explanation
	Current average weight of the weighed bales	The adjacent number indicates the selected customer counter (customer counter 19 in the example).
	Current total weight of all bales	The adjacent number indicates the selected customer counter (customer counter 19 in the example).
	Total length of all pressed bales	In m or ft (depending on selected system of units). The adjacent number indicates the selected customer counter (customer counter 19 in the example).

### 14.16.3 Menu 14-4 "Set background colour"



EQG000-042

✓ The menu 14 "ISOBUS" has been selected, [see Page 244](#).

▶ To open the menu, press

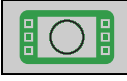
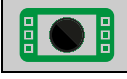
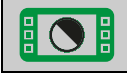
➔ The display shows menu "Background colour".

Recurring icons [see Page 205](#).

#### Display area

You can select between three modes.



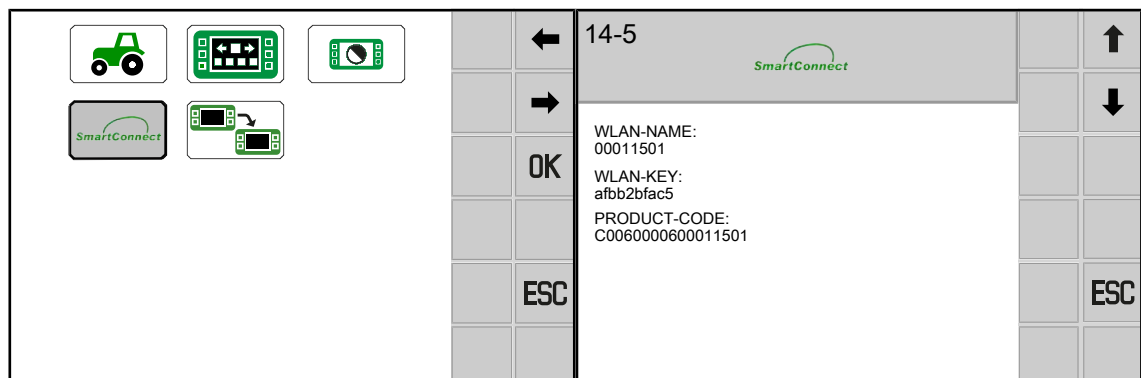
Icon	Designation	Explanation
 Mode 1/3	Background colour white	Recommended for day use.
 Mode 2/3	Background colour grey	Recommended for night use.
 Mode 3/3	Background colour auto- matic	The tractor controls the background colour via the transmitted illumination information.  For example: <ul style="list-style-type: none"> <li>• Tractor parking light on, background colour grey.</li> <li>• Tractor parking light off, background colour white.</li> </ul>

### Changing the mode

- ▶ Select and save the mode, [see Page 209](#).


#### 14.16.4 Menu 14-5 "KRONE SmartConnect"

The access data for the KRONE SmartConnect (KSC) can be seen in this menu.



EQG000-064

- ✓ One or more KRONE SmartConnects have been installed.
- ✓ The menu 14 "ISOBUS" has been selected, [see Page 244](#).

- ▶ To open the menu, press .
- ➔ The display shows the "SmartConnect" menu.

#### 14.16.5 Menu 14-9 "Switching Between the Terminals"

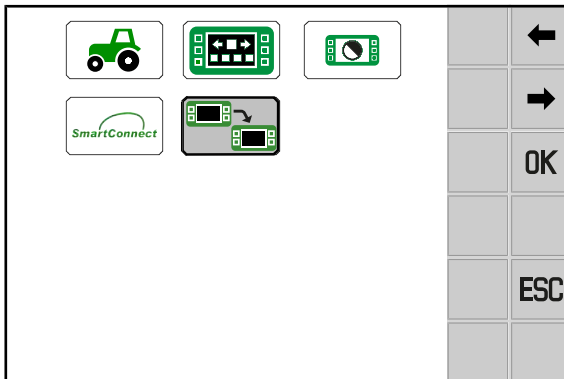
##### **INFO**

This menu is only available if several ISOBUS terminals are connected.

When the user switches terminals for the first time, the configuration of the machine is loaded into the next terminal. The loading process can take a few minutes. The configuration is stored in the memory of the next terminal.


Up to the next call, the machine is no longer available in the previous terminal.

When restarting, the system makes attempts to start the last used terminal. If the last used terminal is no longer available (e.g. because it was dismantled), the restart is delayed as the system searches for a new terminal and loads the specific menus into the terminal. The loading process can take a few minutes.

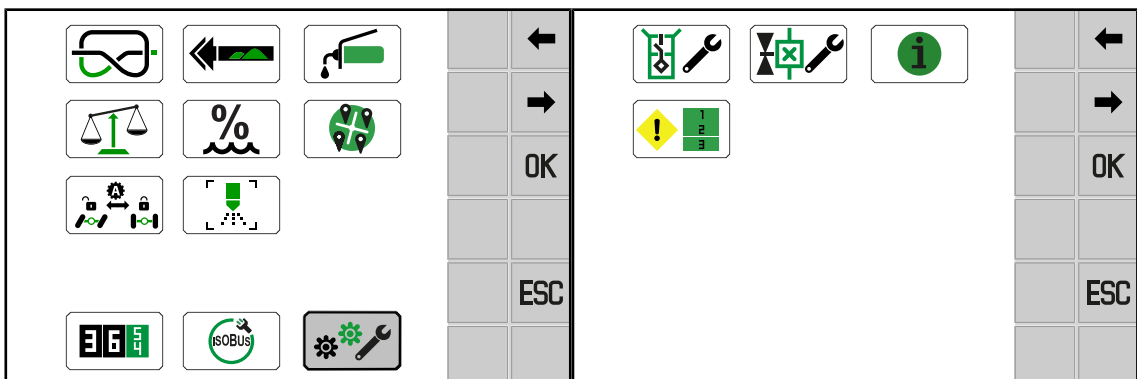


EQG000-013

✓ The menu 14 "ISOBUS" has been selected, [see Page 244](#).


▶ To change to the next terminal, press .

### 14.17 Menu 15 "Settings"



EQG000-051

✓ For The menu level is active, [see Page 206](#).

▶ To open the menu, press .

➔ The display shows the "Settings" menu.

The "Settings" menu is divided into the following sub-menus depending on the machine configuration:

15 		Settings, <a href="#">see Page 250</a>
	15-1 	Sensor test, <a href="#">see Page 251</a>
	15-2 	Actuator test, <a href="#">see Page 256</a>
	15-3 	Software information, <a href="#">see Page 260</a>
	15-4 	Error list, <a href="#">see Page 260</a>

### 14.17.1 Menu 15-1 "Sensor Test"

**WARNING**

**Danger of injury in the danger zone of the machine**

If the PTO shaft runs during the sensor test, machine parts may start to move unintentionally. Thus there is a risk of serious injuries or death.

► Turn off PTO shaft.

In the sensor test, the sensors installed on the machine are checked for faults. Furthermore the sensors can be correctly set in the sensor test. There is no guarantee the machine is working correctly until after the sensors have been adjusted.

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✓ Menu 15 "Settings" is called, [see Page 250](#).

► To open the menu, press .

➔ The display shows the "Sensor test" menu .

Icon	Designation	Explanation
	Choose previous sensor	
	Choose next sensor	
<b>ESC</b>	Leave menu	

**Settings for inductive proximity switches (NAMUR):**

The minimum and maximum setting value with attenuated sensor (metal in front of the sensor) are shown in the upper part of the bargraph. The current setting value (actual value) is displayed under the bar display.

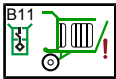
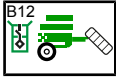

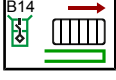


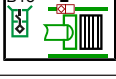
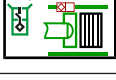






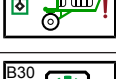



The distance from the sensor to the metal must be adjusted so that in the attenuated state the bar is in the upper marking. Then check whether the bar is in unattenuated state in the lower marked area.

**Possible sensors (depending on the machine configuration)**

An overview of the position of the sensors, actuators and control units is provided in the circuit diagram.

Electrical component identification (BMK):

Ref.	Sensor	Designation
A33B2		Silage additives fill level
B1		Flywheel brake
B3		Central lubrication
B4		Plunger at rear (measuring)
B5		Front plunger (calibrate)
B6		Rotational speed of packer
B7		Packer feed active
B8		Lower twine monitoring
B9		Needle connecting rod left
B10		Knotter monitoring

Ref.	Sensor	Designation
B11		Bale chute down
B12		Bale ejection
B13		Needle connecting rod right
B14		Bale ejector
B15		Star wheel
B17		Baling flap pressure
B18		Force sensor left
B19		Force sensor right
B20		Pick-up speed
B21		Position MultiBale
B22		Bale on scale
B23		Pick-up position
B27		Packer position
B28		Contact pressure feed rotor
B29		Bale chute top
B30		Rotational speed PTO shaft
B31		Rotational speed feed rotor
B38		Weighing device acceleration sensor

Ref.	Sensor	Designation
B39		Top position sensing rake
B41		Upper twine monitoring 1
B42		Upper twine monitoring 2
B43		Upper twine monitoring 3
B44		Upper twine monitoring 4
B45		Upper twine monitoring 5
B46		Upper twine monitoring 6
B50		Pressure of steering axle
B51 / B52		Force sensor front Consisting of: B51 Force sensor front left B52 Force sensor front right
B53 / B54		Force sensor rear Consisting of: B53 Force sensor rear left B54 Force sensor rear right
B61		Twine box transport position left
B62		Twine box transport position right
B63		Twine box maintenance position left
B64		Twine box maintenance position right

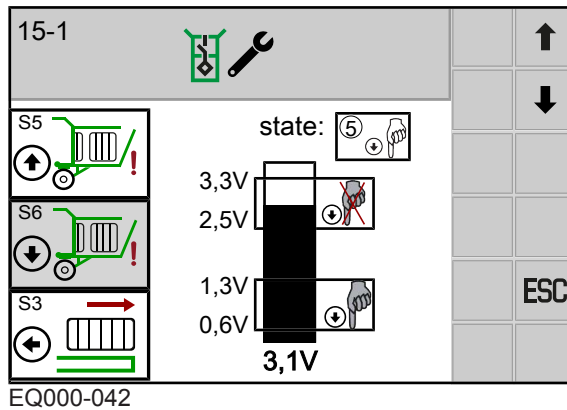
**Possible status displays of the sensors**

Icon	Designation
1	Sensor attenuated (metal in front of the sensor)
2	Sensor unattenuated (no metal in front of the sensor)
5	Momentary switch pressed
6	Momentary switch not pressed
20	Cable break
21	Short circuit
	Self-steering axle locked
	Self-steering axle released

**Diagnostics momentary switch**

When the pushbutton is pressed, the bar must be in the lower marked area of the bar display.

When the pushbutton is not pressed, the bar must be in the upper marked area of the bar display.


**Possible pushbuttons (depending on the machine configuration)**

Electrical component identification:

BMK	Momentary switch	Designation
S3		Move in bale ejector
S4		Move out bale ejector
S5		Lift bale chute
S6		Lower bale chute

14.17.2 Menu 15-2 "Actuator test"

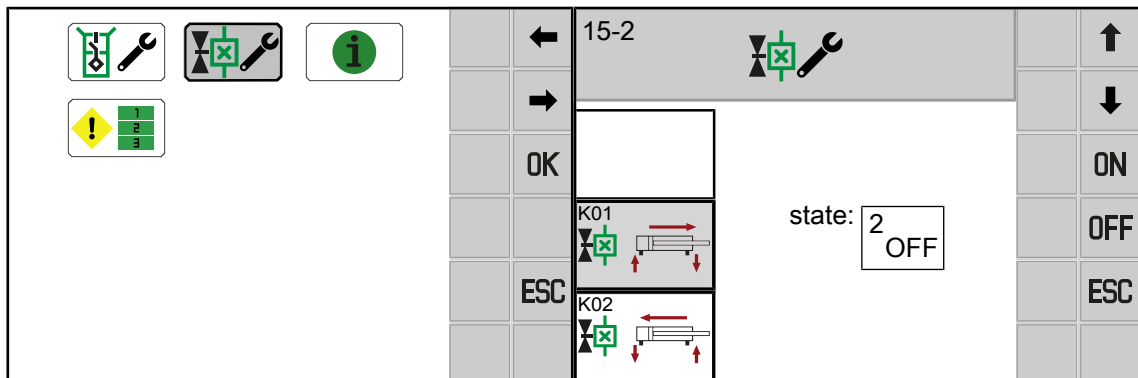
**WARNING**

**Risk of injury due to non-observance of safety instructions**

If the relevant safety routines are not observed, persons may be seriously injured or killed.

▶ The safety routines must be read and observed to avoid accidents, [see Page 29](#).

The actuator test is used to test the actuators installed on the machine. An actuator can only be tested when current is flowing through it. Therefore, in the "Actuator test" menu, the actuator must be controlled manually for a short time in order to determine possible errors in the actuator system.

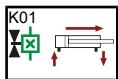
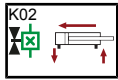
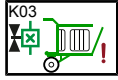
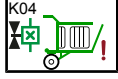


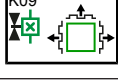

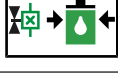





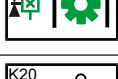
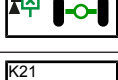
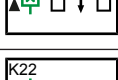



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- ▶ Observe the safety routine "Run actuator test", [see Page 31](#).
- ✓ Menu 15 "Settings" is called, [see Page 250](#).
- ▶ To open the menu, press .
- ➔ A message opens which refers to the operating instructions .
- ▶ Observe the safety routine "Run actuator test", [see Page 31](#).
- ▶ Confirm with **OK**.
- ➔ The display shows the "Actuator test" menu.



**Possible actuators (depending on how the machine is equipped)**

BMK	Actuator	Designation
K01		Pilot valve 1
K02		Pilot valve 2
K03		Bale chute piston surface
K04		Bale chute annular surface
K05		Bale ejector plunger surface
K06		Bale ejector annular surface
K09		Release baling flaps
K10		Pick-up drive
K11		Pressure limiting valve baling flaps
K12		Coupling feed rotor
K13		Safety valve feed rotor
K14		Triggering MultiBale 1 (entire bale)
K15		Triggering MultiBale 2 (MultiBale)
K16		Close feed rotor
K17		Starter aid
K20		Steering axle
K21		Twine boxes piston surface
K22		Twine boxes annular surface

BMK	Actuator	Designation
K26		Pressure limiting valve
K29		Cleaning 1
K30		Cleaning 2
K31		Central lubrication system
K32		Locking twine boxes
K41		Packer triggering
K70		Motor knotter triggering
A33M1		Silage additive pump
A33Q1		Valve switchover nozzle 1
BMK	Actuator	Designation
E1		Warning beacon rear
E2		Warning beacon right
E3		Pick-up lighting
E4		Working light rear left
E5		Working light rear right
E6/E7		E6= Knotter table lighting E7= Lower twine lighting
E8/E9		E8= Lighting twine box right E9= Lighting twine box left

**Possible status displays of the actuators**

Icon	Designation
1 <b>ON</b>	Actuator ON
2 <b>OFF</b>	Actuator OFF
3	General actuator error

**Diagnostics for digital actuators**

EQG000-019

Errors are only displayed if the actuator is turned on and a test for the actuator in question is available. The LED on the plug can also be checked directly on the actuator.

- ▶ Press **ON** to switch the actuator on.
- ▶ Press **OFF** to switch the actuator off.

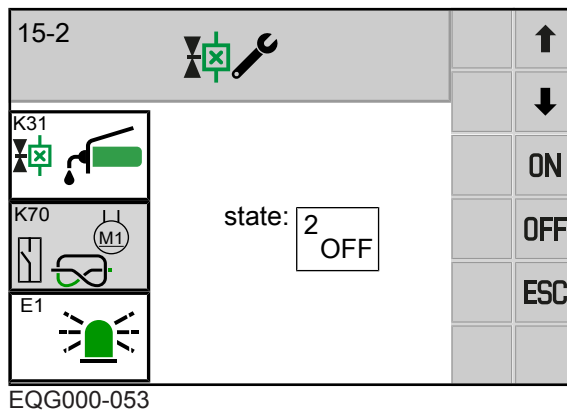
**Diagnostics for analogue actuators**

EQG000-020

A current (in mA) can be set with the PWM value (in parts per thousand).

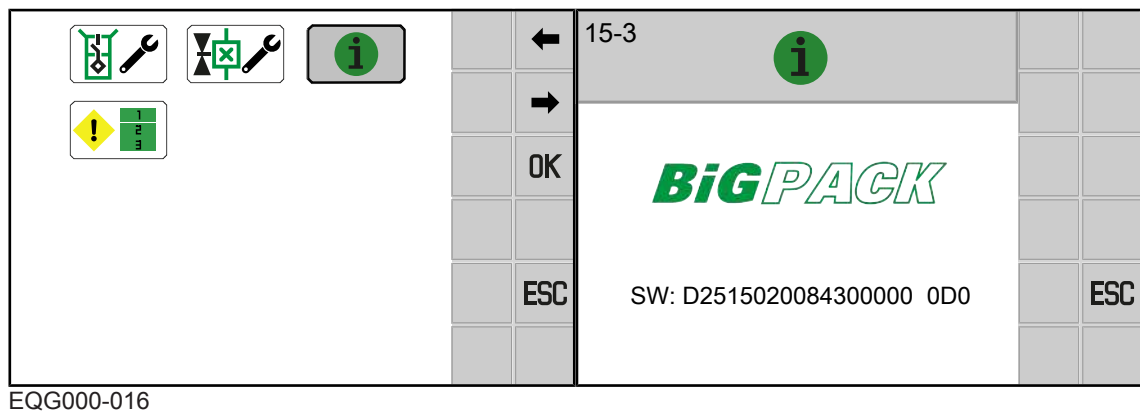
With a value of PWM = 500, the current should be between 500 mA and 3000 mA (depending on the valve that is used and the operating temperature).


**Diagnostics motors**



- ▶ Press **ON** to execute the function.
- ▶ Press **OFF** to execute the function.

**14.17.3 Menu 15-3 "Software info"**



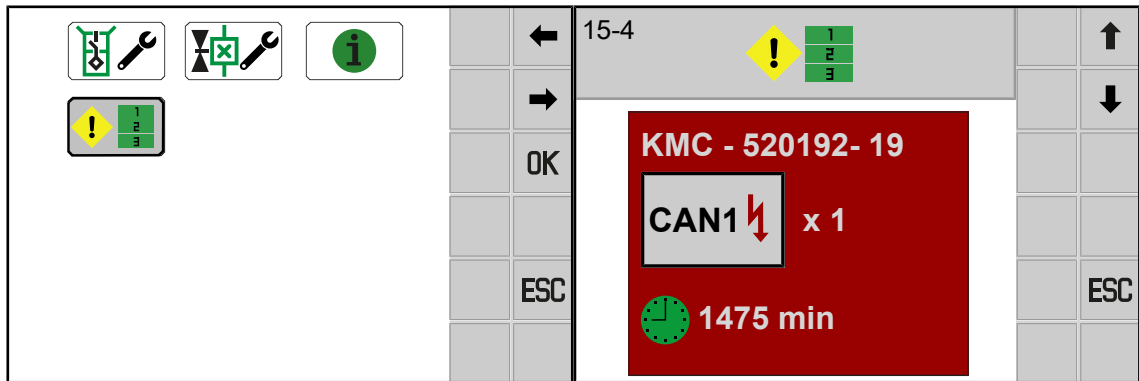
- ✓ Menu 15 "Settings" is called, [see Page 250](#).
- ▶ To open the menu, press .
- ➔ The display shows the "Software info" menu.

**Display area**

Icon	Designation
SW	Overall software version of the machine


**14.17.4 Menu 15-4 "Error list"**

All active and non-active errors are shown in this menu. The errors are shown with a number indicating how often the error occurred and the time on the operating hours counter when the error last occurred.







EQG000-060

✓ Menu 15 "Settings" is called, [see Page 250](#).

▶ To open the menu, press .

➔ The display shows menu "Error list".

### Display area


Icon	Designation	Explanation
	Active error	<ul style="list-style-type: none"> <li>Cannot be deleted</li> </ul>
	Non-active error	<ul style="list-style-type: none"> <li>Can be deleted</li> </ul>
(1)	Error number	<ul style="list-style-type: none"> <li>Meaning, cause and remedy of error message <a href="#">see Page 329</a>.</li> </ul>
(2)	Number	<ul style="list-style-type: none"> <li>How often the error has occurred.</li> </ul>
(3)	Operating hours counter time	<ul style="list-style-type: none"> <li>The time on the operating hours counter when the error last occurred.</li> </ul>
	Delete individual errors	<ul style="list-style-type: none"> <li>The selected error is deleted.</li> <li>Only non-active errors can be deleted.</li> </ul>
	Delete all errors	<ul style="list-style-type: none"> <li>All inactive errors are deleted.</li> </ul>

Recurring icons [see Page 205](#).

### Delete individual errors


Only non-active errors (highlighted grey) can be deleted.

▶ To select the error to be deleted, press  or .

▶ To delete the error, press .

### Delete all errors

Only non-active errors (highlighted grey) can be deleted.

- ▶ To delete all errors, press .

## 15 Driving and Transport

 **WARNING**

**Risk of injury due to non-observance of relevant safety notices**

If the relevant safety notices are not observed, persons may get seriously injured or killed.

- ▶ To avoid accidents, the basic safety instructions must be read and observed, [see Page 17](#).

 **WARNING**

**Risk of injury due to non-observance of safety instructions**

If the relevant safety routines are not observed, persons may be seriously injured or killed.

- ▶ The safety routines must be read and observed to avoid accidents, [see Page 29](#).

 **WARNING**

**Risk of accident when cornering with a hitched machine**

When cornering, the hitched machine swings out further than the tractor. This may result in accidents.

- ▶ Consider the larger swivel range.
- ▶ Consider people, oncoming traffic and obstacles when turning.

 **WARNING**

**Risk of accident caused by non-locked regulating valves of tractor**

When regulating valves are not locked, machine components could be activated unintentionally. This may result in serious accidents.

- ▶ To avoid that functions are triggered by mistake, the regulating valves of the tractor must be in neutral position when performing transport journeys on the road and must be locked.

 **WARNING**

**Risk of accident from open stop cocks**

Machine components could be moved unintentionally when stop cocks are open. This may result in serious accidents.

- ▶ In order to avoid that functions are triggered by mistake, the stop cock/s must be closed during transport/road travel.

 **WARNING**

**Dangers during road travel**

**For "Silage additives unit" version**

Depending on the additional equipment of the machine, it can happen that the admissible axle loads of the machine are exceeded when the silage additives tank is full. When the admissible axle loads are exceeded, there is a risk of endangering other road users when driving on public roads and the operating permit valid for the machine can become void.

- ▶ Prior to driving on a public road, ensure that the admissible axle loads for driving on public roads as specified by the national legislation are not exceeded when the silage additives tank is full.
- ▶ If the admissible axle loads are exceeded when the silage additives tank is full, ensure that the silage additives tank is emptied when you drive the vehicle on public roads.

**NOTICE**

**Dangers from an automatic anti-jack-knife brake system on the tractor**

In some cases, the braking behaviour of a machine connected to a tractor with continuously variable transmission that is equipped with an automatic anti-jack-knife brake system can negatively be influenced. If such an automatic anti-jack-knife brake system is activated for a longer period of time, e.g. on long downhill sections, it can overheat, which significantly reduces the braking performance of the machine brakes.

In addition, using an automatic anti-jack-knife brake system can lead to a significantly higher wear on the machine brakes.

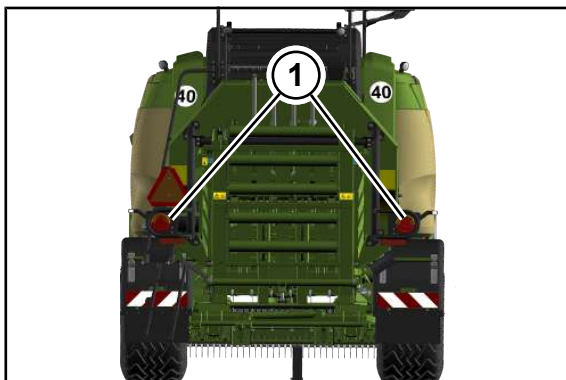
## 15.1 Preparing the machine for road travel

- ✓ All items listed in chapter "Start-up" have been fulfilled, [see Page 109](#).
- ✓ **For "Silage additives unit" version:** It is ensured that the admissible axle loads are not exceeded when the silage additives tank is full. Empty the silage additives tank if necessary, [see Page 321](#).
- ✓ The machine has been shut down and secured, [see Page 29](#).
- ✓ The twine box hoods are swivelled down, [see Page 131](#).
- ✓ The twine boxes are swivelled down and raised, [see Page 128](#).
- ✓ All guards are properly closed and locked.
- ✓ The ladder is folded up and locked, [see Page 158](#).
- ✓ The bale channel is empty, [see Page 151](#).
- ✓ The flywheel brake has been applied, [see Page 127](#).
- ✓ The pick-up has been lifted and secured via the stop cock, [see Page 148](#).
- ✓ The bale chute is lifted in transport position, [see Page 149](#).
- ✓ **For "Mechanical support jack" version** The support jack is in transport position, [see Page 156](#).
- ✓ **In "Hydraulic support jack" version:** The support jack is in transport position, [see Page 156](#).
- ✓ **For the "Self-steering axle" version:** The wheels of the self-steering axle are straight.
- ✓ **For the "Self-steering axle" version:** The self-steering axle is blocked, [see Page 193](#).
- ✓ **For the version with "safety chain":** The safety chain is mounted, [see Page 124](#).
- ✓ The parking brake has been released, [see Page 157](#).
- ✓ The control units on the tractor are in neutral position and locked.
- ✓ The brake is functioning properly.
- ✓ The road lighting has been connected, tested and is functioning properly, [see Page 116](#).



- ✓ Soiling and crop residue have been removed from the machine, in particular from the lighting and identification elements.
- ✓ The tyres have no cuts and breaks.
- ✓ The tyre pressure is correct, [see Page 77](#).
- ✓ The road travel screen is open, [see Page 190](#).

## 15.2 Testing road lighting



BPG000-032

- ✓ The road travel lighting is connected, [see Page 116](#).
- ▶ Check the road travel lighting (1) for function and to ensure it is clean.

## 15.3 Adjusting self-steering axle

### **INFO**

Observe the user instructions provided by the tractor manufacturer for parallel operation of the tractor control units! The locking cylinder of the self-steering axle must be connected before or at the same time as the other hydraulic supply elements of the machine!

### **INFO**

On the self-steering axle, the rear wheels are turned in by friction between the wheel and the ground. In critical driving situations when a straight line cannot be maintained, the self-steering axle must be locked.

Critical driving situations could include:

- ✓ Driving on steep slopes
- ✓ Driving on soft ground
- ✓ Driving in straight direction exceeding 30 km/h
- ✓ Reversing
- ▶ If at least one of these critical driving situation arises, the self-steering axle must always be locked, [see Page 266](#).

### **Positioning steered wheels in straight direction**

- ▶ Drive the tractor a short distance straight forward until the steered wheels are straight.




### **Reverse travel**

- ▶ Set the wheels of the self-steering axle straight ([see Page 265](#)) and lock the self-steering axle ([see Page 266](#)).




## Lock/release self-steering axle

### Operation of machine via LS (Load Sensing connection)


#### Lock

- ▶ Press .
  - ⇒ The icon flashes until the self-steering axle is locked.
- ➔ The display switches from  to .





#### Releasing

- ▶ Press .
  - ⇒ The icon flashes until the self-steering axle is released.
- ➔ The display switches from  to .




### Operation of machine without LS (Load-Sensing connection)

- ▶ Pressurise the control unit ().

#### Lock

- ▶ Press .
  - ⇒ The icon flashes until the self-steering axle is locked.
- ➔ The display switches from  to .
- ▶ Depressurise the control unit (.

#### Releasing

- ▶ Press .
  - ⇒ The icon flashes until the self-steering axle is released.
- ➔ The display switches from  to .

## 15.4 Releasing the compressed air brake for manoeuvring the machine

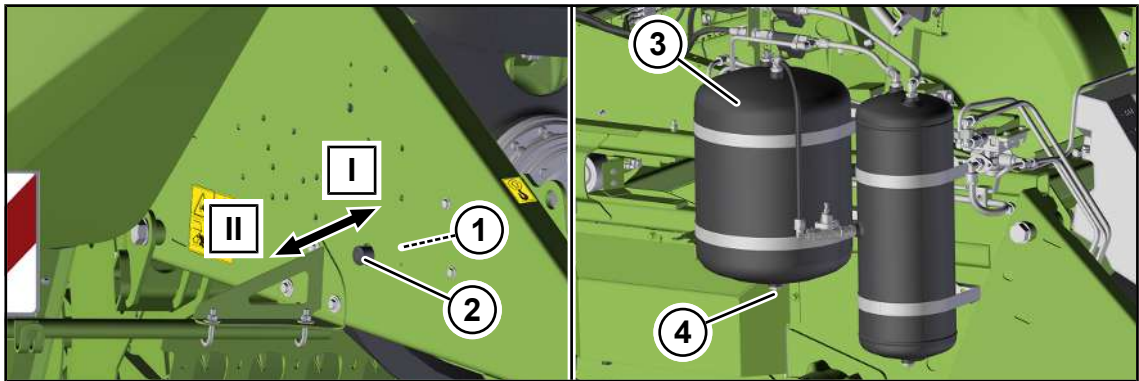
 **WARNING**

**There is a increased risk of injury when manoeuvring the machine without the compressed air brake system connected.**

A machine without a connected compressed air brake system loses its braking characteristics. People may be seriously injured or killed as a result.

Manoeuvring the machine in public road traffic without the compressed air brake system connected is prohibited.

- ▶ Never manoeuvre the machine in public traffic without the compressed air brake system connected.



BPG000-033

The release valve (1) for releasing the compressed-air brake sits at the front right of the drawbar.

- ✓ For “self-steering axle” version: The wheels are straight, [see Page 265](#).
- ✓ In “Self-steering axle” version: The self-steering axle is locked, [see Page 266](#).
- ▶ Shut down and safeguard the machine, [see Page 29](#).
- ▶ Disconnect the machine from the tractor, [see Page 268](#).
- ▶ Push the button (2) at the release valve (1) (position (I)) to release the compressed air brake.
- ➔ The compressed air brake is released and the machine can now be manoeuvred.
- ➔ If the compressed air brake is not released, discharge the residual pressure in the pressure vessel (3).

### Releasing the residual pressure

- ✓ A suitable container is available for escaping condensation water.
- ▶ In order to release the residual pressure, actuate the drain valve (4) until the pressure vessel (3) is depressurised.
- ➔ As soon as the hoses are again connected to a compressed air brake system, the button (2) is pushed back automatically into its initial position (II).

## 15.5 Releasing the hydraulic brake for manoeuvring the machine

- ✓ For “self-steering axle” version: The wheels are straight, [see Page 265](#).

- ✓ In **"Self-steering axle" version**: The self-steering axle is locked, [see Page 266](#).
- ▶ Shut down and safeguard the machine, [see Page 29](#).
- ▶ Disconnect the machine from the tractor, [see Page 268](#).
- ➔ The hydraulic brake is released and the machine can be manoeuvred.

## 15.6 Parking the machine

### **WARNING**

#### **Risk of injury due to the unsecured machine rolling away**

**If the machine is not secured against rolling away when it has been switched off, there is a risk of people being injured by the machine rolling away in an uncontrolled manner.**

- ▶ Secure the machine against rolling away with the parking brake ([see Page 157](#)) and wheel chocks ([see Page 159](#)).
  - ▶ Apply the flywheel brake at the machine, [see Page 127](#).
- ▶ Select a level, dry and adequately stable surface.
  - ▶ **For "hydraulic support jack" version**: Lower the support jack until the base plate rests on ground, [see Page 155](#).
  - ▶ Shut down and safeguard the machine, [see Page 29](#).
  - ▶ **For "mechanical support jack" version**: Lower the support jack until the base plate rests on ground, [see Page 155](#).
  - ▶ **For "Ball head drawbar eye 80" version**: Unlock the locking of the ball drawbar eye on tractor side.
  - ▶ Start the tractor engine.
  - ▶ **For "Ball head drawbar eye 80" version**: Lower the support jack until the ball head drawbar eye no longer rests on the ball head coupling of the tractor, [see Page 155](#).
  - ▶ Switch off the tractor engine, remove the ignition key and take it with you.
  - ▶ **For "drawbar eye" version**: Lower the support jack until the drawbar eye is positioned loosely in the hitching device of the tractor, [see Page 155](#).
  - ▶ Disconnect the universal shaft on the tractor side and place it on the designated holder.
  - ▶ Detach the lighting cable (power supply for the road travel lighting) from the side of the tractor and attach it to the hose support of the machine.
  - ▶ Detach the ISOBUS cable (power supply for the machine) from the side of the tractor and attach it to the hose support of the machine.
  - ▶ **In "hydraulic support jack" version**: Lock the stop cock on the support jack.
  - ▶ Disconnect the hydraulic hoses and attach them to the hose support of the machine.
  - ▶ **In "compressed air brake" version**: Disconnect the red and yellow coupling head and attach it to the hose support of the machine, [see Page 115](#).
  - ▶ **In "hydraulic brake (export)" version**: Disconnect the connection for the hydraulic brake and attach it to the hose support of the machine.
  - ▶ **In "hydraulic brake (export France)" version**: Loosen the safety chain on the tractor side.

- ▶ **For “drawbar eye” version:** Loosen the hitching device according to the operating instructions of the tractor manufacturer.
- ▶ Carefully drive the tractor away.
- ▶ Fit the safety device which prevents unauthorised use and keep the key in a safe place, [see Page 166](#).

## 15.7 Preparing the machine for shipment

 **WARNING**

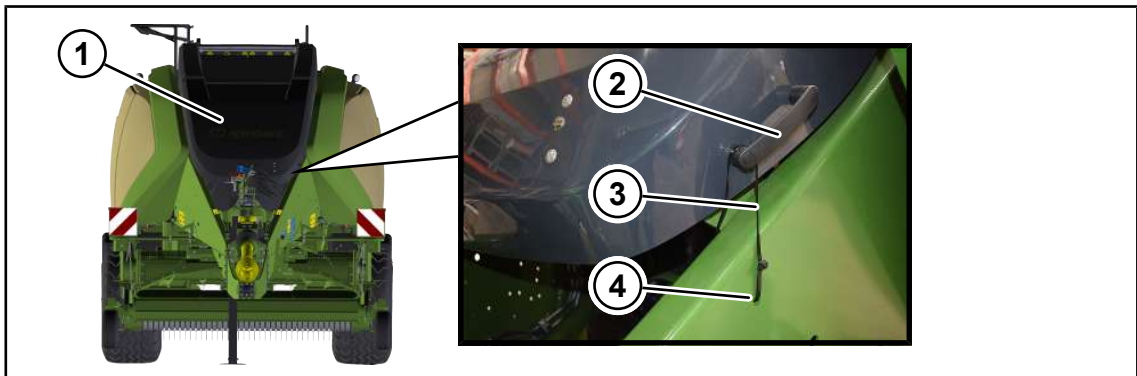
**Risk of accident due to unsecured machine parts**

If the machine is not secured properly for transportation on a lorry or train, the parts may come loose unintentionally due to the airstream. This may result in serious accidents or damage to the machine.

- ▶ Carry out the following measures to secure moving machine parts.

- ✓ The bale chute is lifted in transport position, [see Page 149](#).
- ✓ **For the "Self-steering axle" version:** The self-steering axle is blocked, [see Page 193](#).
- ✓ The pick-up has been lifted and secured via the stop cock, [see Page 148](#).
- ✓ All safety devices are locked.
- ✓ The machine is disconnected from the tractor, [see Page 268](#).
- ✓ **For "SMV emblem" version:** The SMV emblem is covered or removed, [see Page 50](#).

### 15.7.1 Securing the front hood

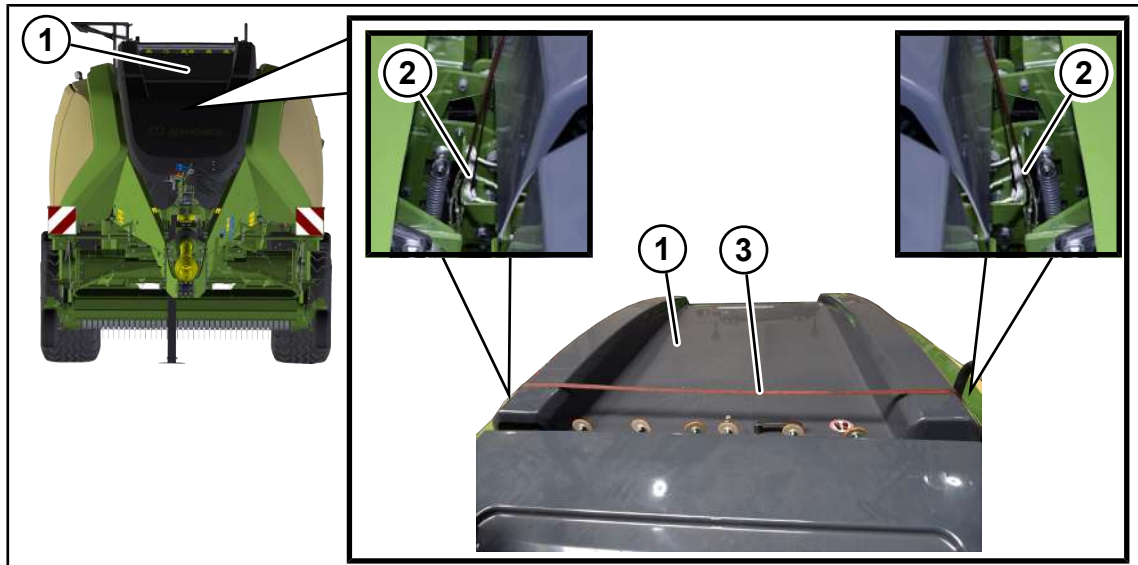


BP000-67

**Left side of machine**

- ▶ Close the front hood (1).
- ▶ To secure the front hood, wrap a cable tie (3) around the handle (2) and thread it through the borehole (3) in the drawbar beam.
- ▶ Tighten the cable tie (3).

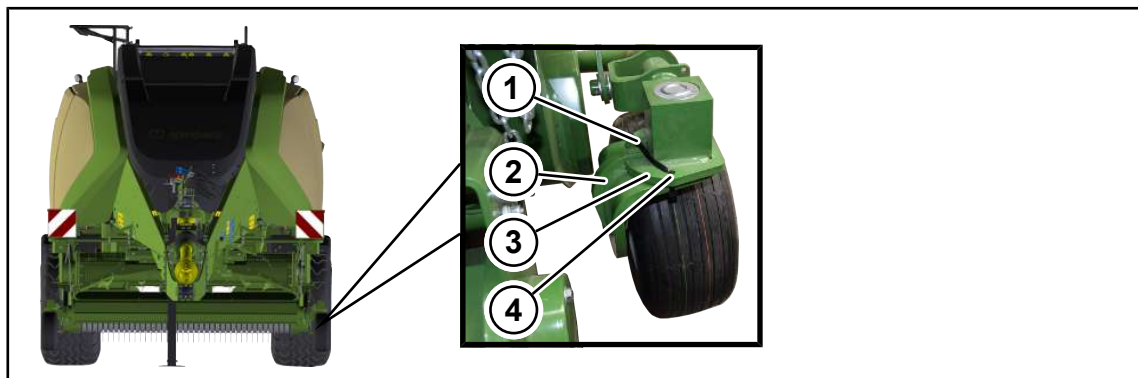
### 15.7.2 Securing the top hood



BP000-680

- ▶ Close the top hood (1).
- ▶ To secure the top hood (1), put a lashing strap (3) over the top hood (1) and thread it through the twine guide eyes (2) on the right and left sides of the machine.
- ▶ To avoid damaging the top hood (1), ensure that the lashing strap (3) is not too tight.

### 15.7.3 Securing the guide wheels of the pick-up



BPG000-135

#### Right and left machine side

- ✓ The pick-up has been lifted and secured via the stop cock, [see Page 148](#).
- ▶ Wrap a cable tie (1) around the stop (3), pull the cable tie through the borehole (4) in the stop (3) and route it further around the guide wheel bracket (2).
- ▶ Tighten the cable tie (1).
- ▶ Ensure that the guide wheels are secured.

### 15.7.4 Lifting the machine

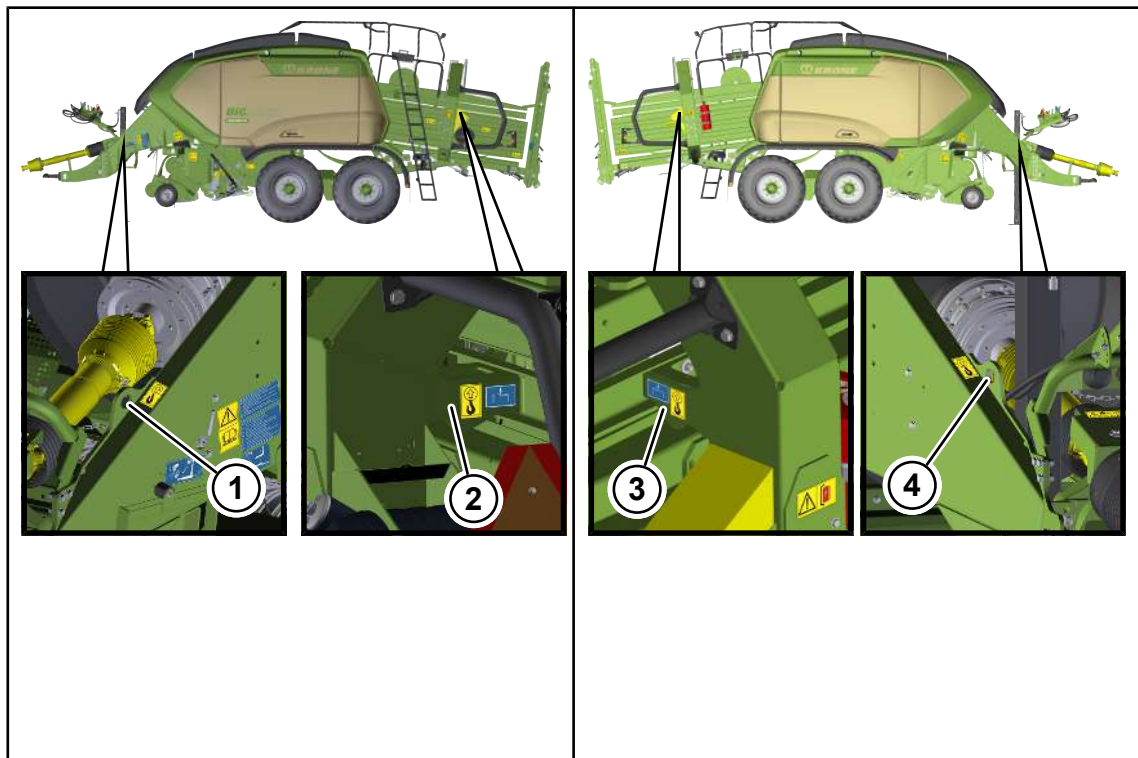
 **WARNING**

**Risk of injury due to raised machine**

There is danger to persons when the machine drops or parts swing without control. Only qualified personnel are allowed to perform this work.

- ▶ Use only permitted hoists and slings with a sufficient load-bearing capacity. For the weights [see Page 76](#).
- ▶ Note the information on the suspension points provided.
- ▶ Make sure the lifting means are properly secured.
- ▶ Never stay under the suspended machine.
- ▶ If work has to be performed under the machine, securely support the machine, [see Page 30](#).

#### Suspension points



BPG000-079

- |  |   |
|--|---|
| 1 Drawbar suspension point at front left | 3 Yoke suspension point on right          |
| 2 Yoke suspension point on left          | 4 Drawbar suspension point at front right |

- ▶ Use a hoist with a minimum lifting capacity (depending on the approved total weight of the machine), see machine rating plate, [see Page 59](#).

### 15.7.5 Lashing the machine

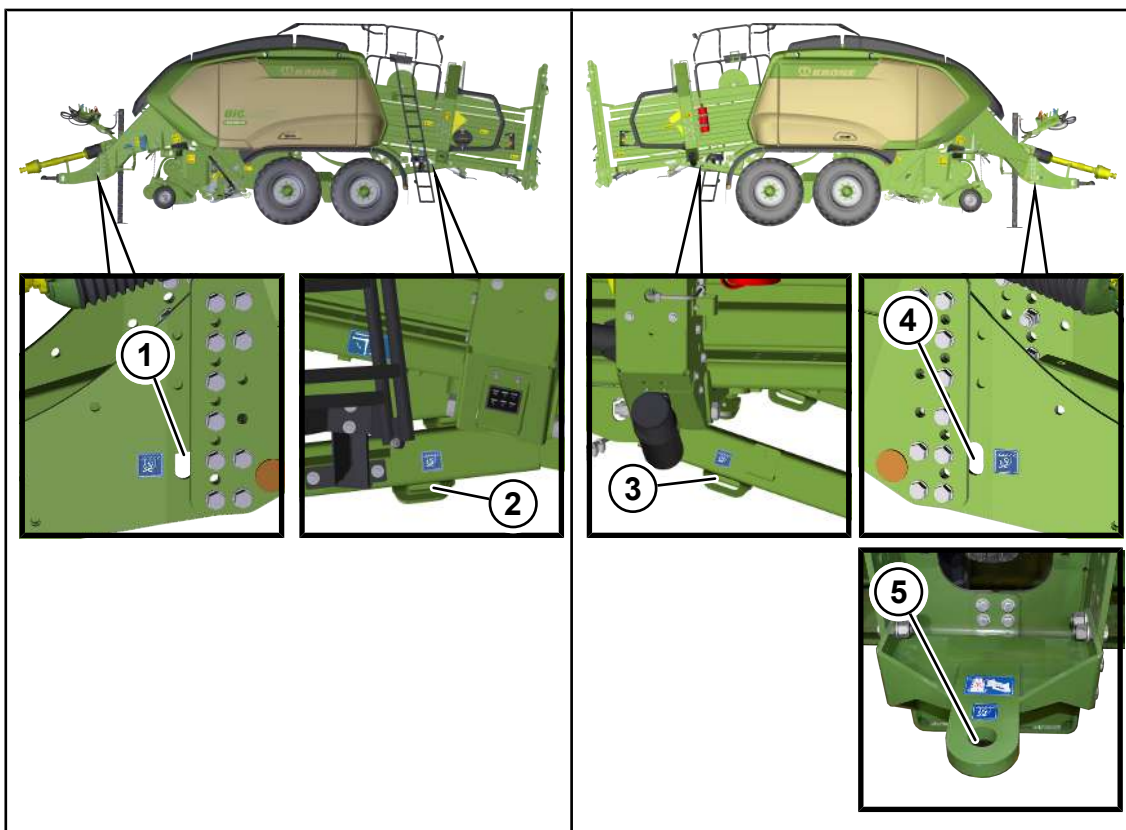
**WARNING**

**Danger to life caused by uncontrolled machine movement**

If the machine is not properly lashed for transportation by vehicle, the machine may move in an uncontrolled manner and endanger people.

- ▶ Before transporting the machine, secure it properly to the designated lashing points using suitable lashing material.

#### Lashing points on the machine



BPG000-078

- 1 Drawbar lashing point at front left
- 2 Cross-member lashing point rear left
- 3 Cross-member lashing point rear right
- 4 Drawbar lashing point front right
- 5 Transport drawbar eye (with delivery)



## 16 Settings

 **WARNING**

**Risk of injury due to non-observance of relevant safety notices**

If the relevant safety notices are not observed, persons may get seriously injured or killed.

- ▶ To avoid accidents, the basic safety instructions must be read and observed, [see Page 17](#).

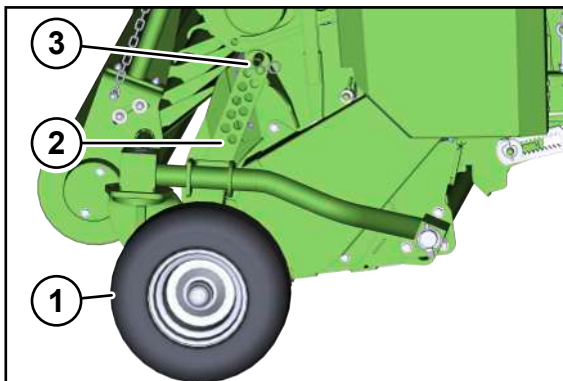
 **WARNING**

**Risk of injury due to non-observance of safety instructions**

If the relevant safety routines are not observed, persons may be seriously injured or killed.

- ▶ The safety routines must be read and observed to avoid accidents, [see Page 29](#).

### 16.1 Setting the working height of the pick-up



BPG000-035

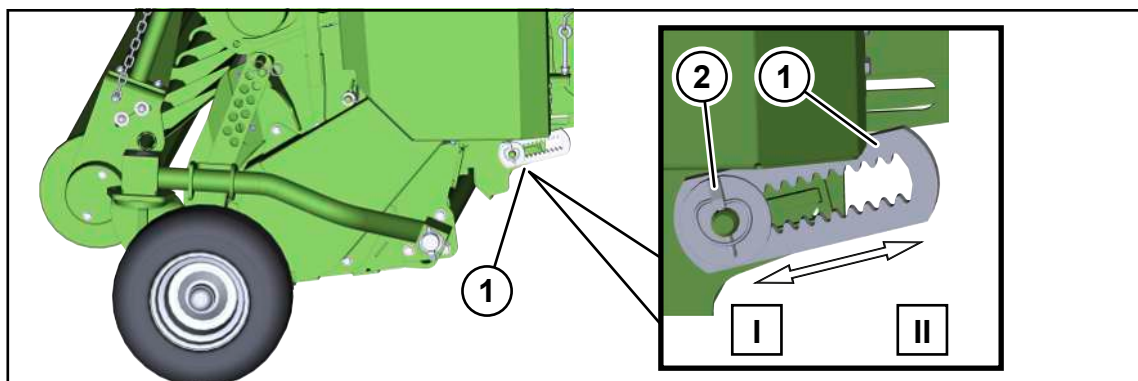
✓ The pick-up is raised into transport position, [see Page 148](#).

- ▶ Shut down and safeguard the machine, [see Page 29](#).

**WARNING! Risk of injury due to unintentional movement of the pick-up.** If the pick-up is not secured by the stop cock, the pick-up may move unintentionally. Thus, persons could be seriously injured.

- ▶ In order to secure the pick-up against unintentionally lowering, [see Page 148](#).
- ▶ Pull the spring cotter pin (2), move the guide wheel (3) via perforated bar (1) into the desired position and secure it with the spring cotter pin (2).
- ▶ Check if the guide wheels on both sides of the pick-up are in the same position on the perforated bar (1).
- ▶ In order to prevent damages at the guide wheels and an increased wear to the pivot point of the pick-up, limit the lowering of the pick-up by means of the depth limiters, [see Page 274](#).

### 16.1.1 Setting the depth limiter



BPG000-070


I Increasing the working height

II Reducing the working height


#### Limiting the lowering of the pick-up

- ✓ The machine is shut down and safeguarded, [see Page 29](#).
- ✓ The working height of the pick-up is set, [see Page 273](#).
- ✓ To secure the pick-up against unintentionally lowering, close the stop cock, [see Page 148](#).
- ▶ Remove the linch pin (2) and the disc.
- ▶ To protect the guide wheels and the pick-up from damage, push the depth limiter (1) as far as possible in the direction of position (I).
- ▶ Secure the depth limiter (1) with the disc and the linch pin (2).
- ▶ Check whether the depth limiters (1) are in the same position on both sides of the pick-up.

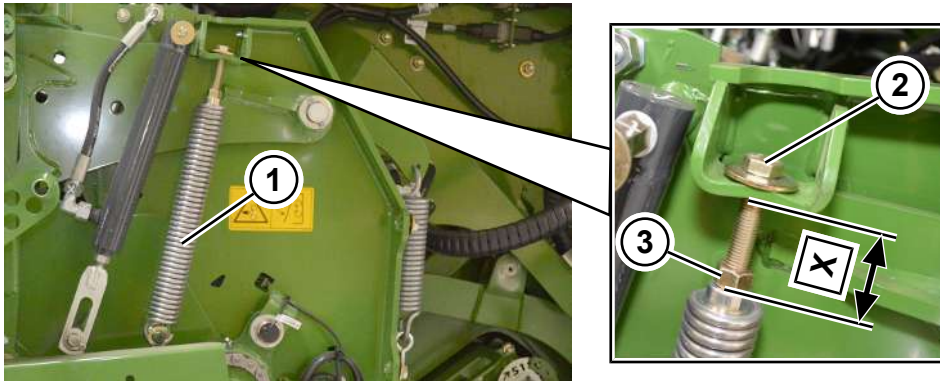
#### Crop collection without using guide wheels

- ✓ The machine is shut down and safeguarded, [see Page 29](#).
- ▶ Slightly raise the pick-up via the control unit ().
- ▶ Switch off the tractor engine, remove the ignition key and take it with you.

To secure the pick-up against lowering inadvertently, [see Page 148](#).

- ▶ Remove the linch pin (2) and the disc.
- ▶ Move the depth limiter (1) to adjust the height of the pick-up such that the guide wheels are not used.
- ▶ Secure the depth limiter (1) with the disc and the linch pin (2).
- ▶ Check whether the depth limiters on both sides of the pick-up are in the same position.
- ▶ Lock the stop cock, [see Page 148](#).
- ▶ To lower the pick-up, set the control unit () to float position.

## 16.2 Setting the bearing pressure of the guide wheels



BP000-445

The factory setting for pick-up is **X=50 mm**.

- ✓ The machine is shut down and safeguarded, *see Page 29*.
- ▶ Open the guard sheet of the pick-up.
- ▶ Loosen the counter nut (3).
- ▶ In order to reduce the bearing pressure, reduce dimension X via screw (2).
- ▶ In order to increase the bearing pressure, increase dimension X via screw (2).
- ▶ Tighten the counter nut (3).
- ▶ Set the dimension X for both springs (1) identically on the right and left machine side.
- ▶ Close the guard sheet of the pick-up.

## 16.3 Setting the crop press roller unit

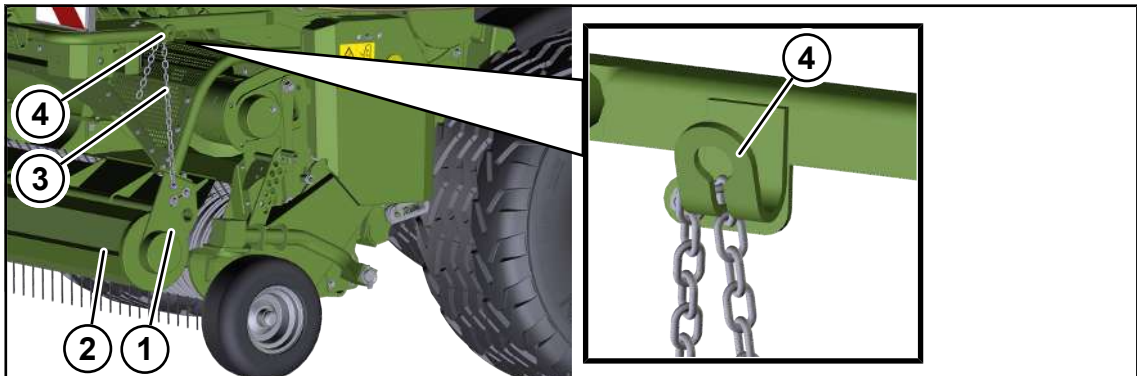
**WARNING**

**Risk of injury if the machine is used without a crop press roller unit**

The crop press roller unit is used for accident protection! If the machine is operated without a roller crop guide, people can be seriously injured or killed.

- ▶ Never operate the machine without a crop press roller unit.

### Setting the height of the crop press roller unit

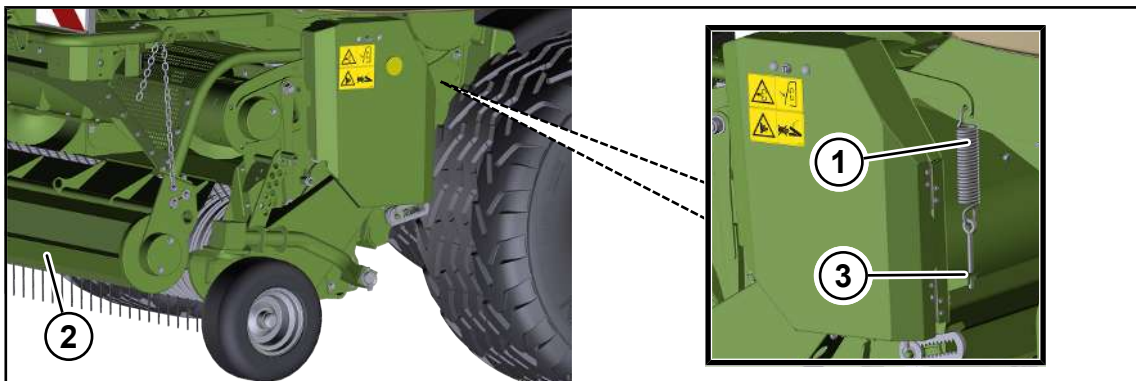


BPG000-036

Much crops:	Attach the chain to a shorter position.	The crop press roller unit has been raised higher.
Sparser crops:	Attach the chain to a longer position.	The crop press roller unit has been lowered into a deeper position.

- ✓ The machine is shut down and safeguarded, [see Page 29](#).
- ▶ Set the height of the crop press roller unit (1) so that the crop press roller (2) runs continuously above the swath.
- ▶ If there is plenty crop, attach the chain (3) to the holder (4) in a shorter position.
- ➔ The crop press roller unit has been raised higher.
- ▶ If there is sparser crop, attach the chain (3) to the holder (4) in a longer position.
- ➔ The crop press roller unit has been raised higher.
- ▶ Check if the chains (3) are attached to the holders (4) with the same length on both machine sides.

**Setting the bearing pressure of the crop press roller**



BPG000-068

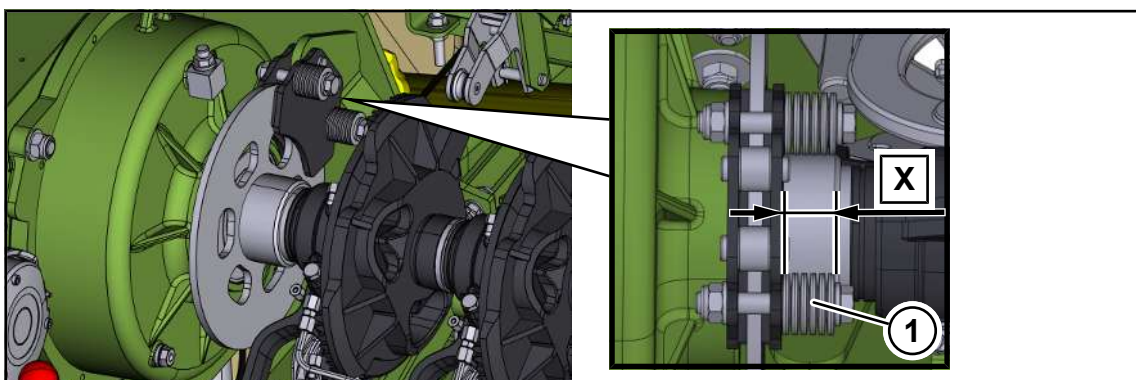
The spring (1) sets the bearing pressure of the crop press roller (2) to the swath.

Dry crops: Increase the bearing pressure.

Moist crops: Reduce the bearing pressure.

- ✓ The machine is shut down and safeguarded, [see Page 29](#).
- ▶ In order to increase the bearing pressure, loosen the nut (3).
- ▶ In order to increase the bearing pressure, loosen the nut (3).

**16.4 Setting the knotter shaft brake**



BPG000-052

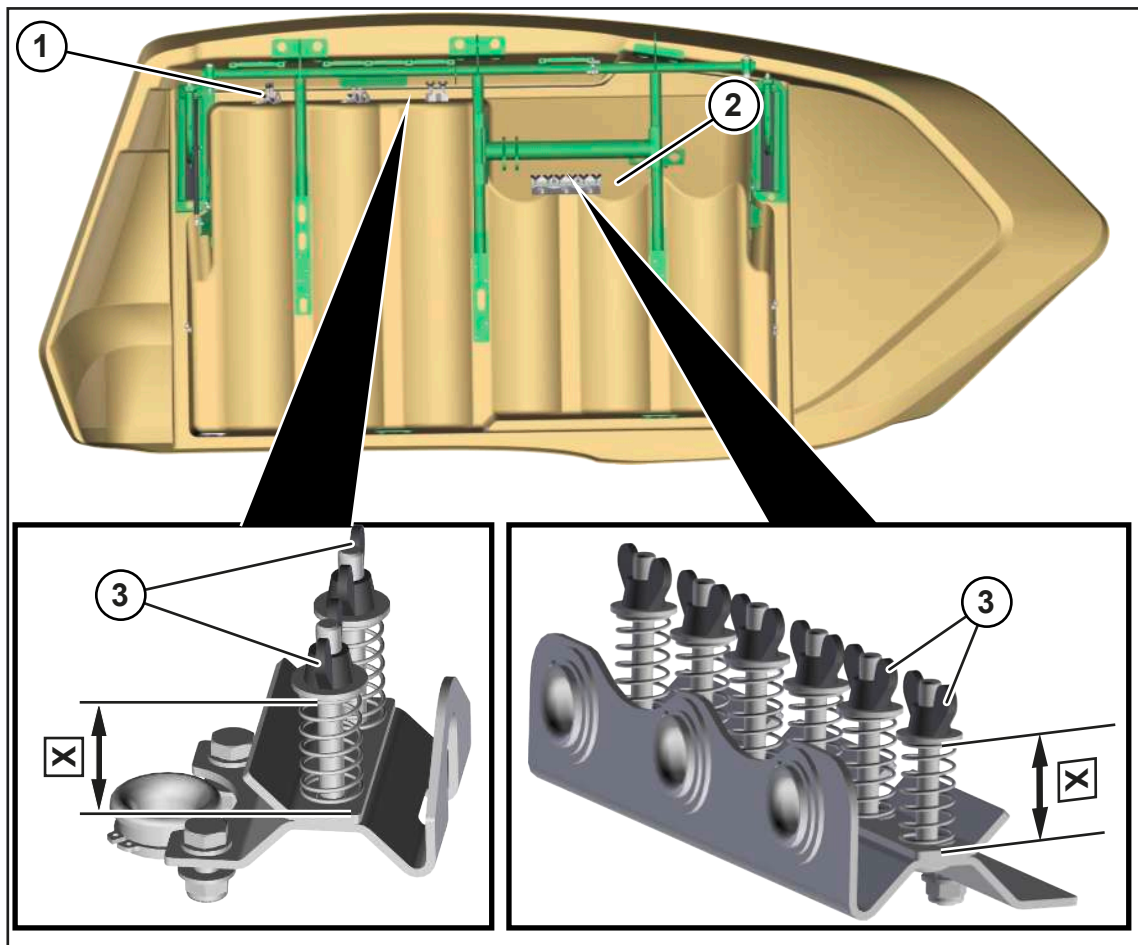
**INFO**
**The proper tying cycle is negatively influenced or impaired**

Changes to the knotter shaft brake influence the properties of the entire tying cycle of the machine. This may negatively influence or impair the tying cycle. To avoid malfunctions in the tying cycle, have the following adjustments/checks carried out by a KRONE service partner.

- ▶ Set the dimension X.
- ▶ After setting the knotter shaft brake, check by carrying out at least 5 tying cycles at 1000 rpm, [see Page 197](#).
- ▶ Check visually that the knotter shaft is in the rest position, [see Page 72](#).
- ▶ If the knotter shaft cannot be brought to the rest position, check/adjust the needle brake.

✓ The machine is shut down and safeguarded, [see Page 29](#).

- ▶ In **"Series" version**: The springs (1) have been preset at the factory to the dimension  $X=27\pm 1$  mm.
- ▶ In **"MultiBale" version**: The springs (1) have been preset at the factory to the dimension  $X=25\pm 1$  mm.

**16.5 Adjusting the twine brake at the twine box**


BPG000-055

The twine brakes (1, 2) sit behind the twine boxes.

The twine brakes (1) ensure that the lower twines are taut from the twine box up to the lower twine brakes.

The twine brakes (2) ensure that the upper twines are taut from the twine box up to the upper twine brakes.

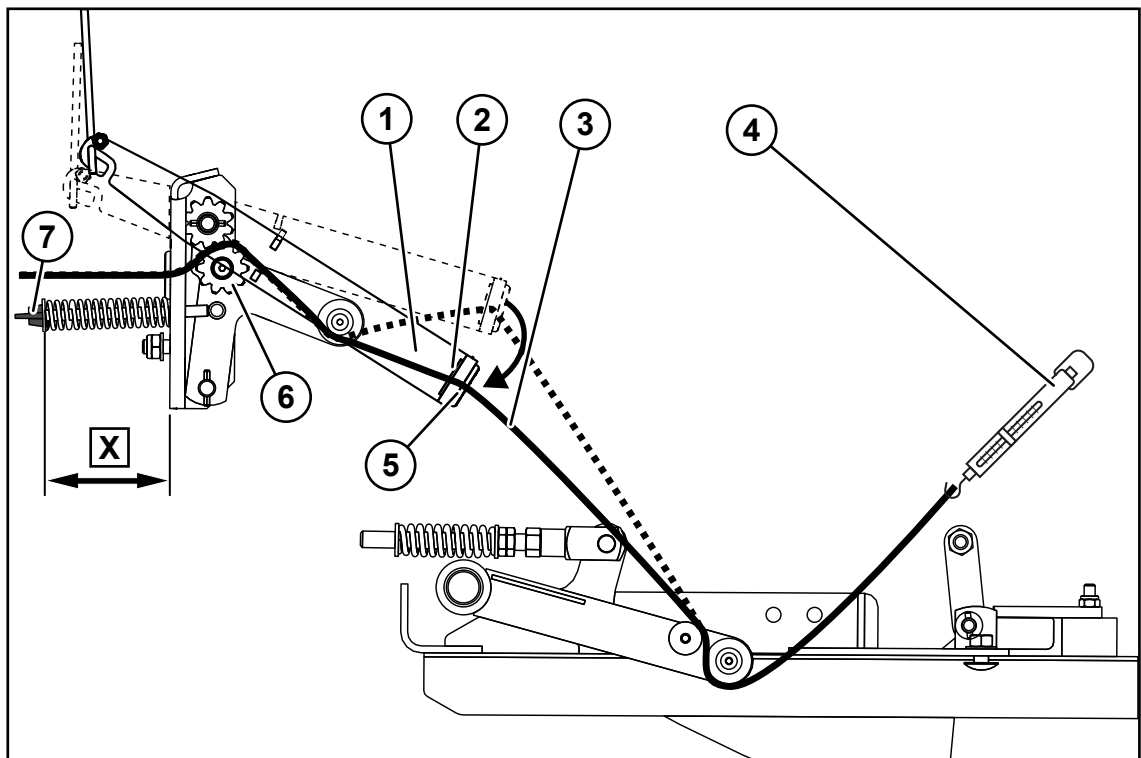
Adjust the tension of the twine brake only to a level where the upper twines or the lower twines are taut, but easy to pull.

Different types of twine may have different frictional properties. Consequently, check the tension of the twine strand when you change the type of twine.

Presetting: **Distance X=30–35 mm**

- ▶ In order to increase or reduce the tension, the distance X must be increased or reduced via the wing nut (3).

## 16.6 Checking/setting twine tension on upper twine



BP000-193

The twine tension depends on the selected tying twine, and must be checked. Too high a twine tension can cause knotter faults and put too much load on the parts involved.

The setting of the twine tension of the upper twine is optimal:

- if the twine brake (5) holds back the upper twine (3) up to a tensile force of **100 – 120 N**.
- if the tensioner arm (1) moves downwards against the spring force, guiding the upper twine (3) almost without deflection (5) through the eye (2) of the tensioner arm (1) before the upper twine (3) is pulled through the twine brakes (6).

The twine tension is adjusted via the distance X.

**Factory setting distance X=65 mm**

### Checking the twine tension

- ▶ Connect the upper twine (3) with a spring balance (4).
- ▶ Pull at the upper twine (3) and check the tensile force shown on the spring balance (4).
- ➔ The setting is correct if the tensile force is **100 – 120 N** just before the upper twine (3) slips through.
- ➔ The tensioning force of the spring must be reduced (increase distance X) if the tensile force is **>120 N** just before the upper twine (3) slips through.
- ➔ The tensioning force of the spring must be increased (reduce distance X) if the tensile force is **<100 N** just before the upper twine (3) slips through.
- ▶ Repeat this process for all upper twines (3).

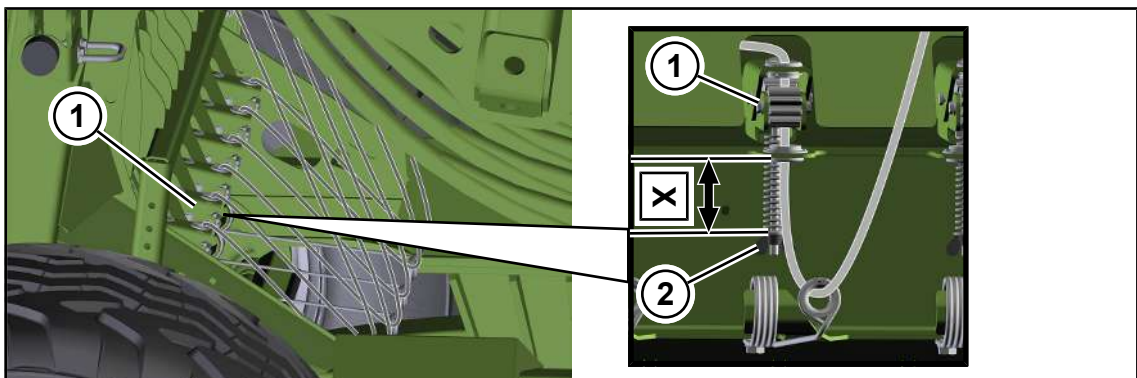
### Increasing the tensioning force

- ▶ Reduce the distance X via the wing nut (7).

### Reducing the tensioning force

- ▶ Increase the distance X via the wing nut (7).

## 16.7 Checking/setting twine tension on lower twine



BPG000-115

The twine brakes (1) for the lower twines are behind the packer under the bale channel. The twine tension depends on the selected twine and must be checked. A twine tension that is set too high may cause knotter errors and place too heavy load on the parts involved.

The factory setting applies for original KRONE twine with a running length of 100-130 m/kg.

If knotter errors occur when using twine with a different running length, the twine brake must be set. In order to set the twine brake, contact KRONE Customer Service.

**Factory setting dimension X=70 mm**

### Increasing tensioning force

- ▶ The dimension X must be reduced via wing nut (2).

### Reducing the tensioning force

- ▶ Increase the distance X via the wing nut (2).

## 17 Maintenance - General information

### **WARNING**

#### **Risk of injury due to non-observance of relevant safety notices**

If the relevant safety notices are not observed, persons may get seriously injured or killed.

- ▶ To avoid accidents, the basic safety instructions must be read and observed, [see Page 17](#).

### **WARNING**

#### **Risk of injury due to non-observance of safety instructions**

If the relevant safety routines are not observed, persons may be seriously injured or killed.

- ▶ The safety routines must be read and observed to avoid accidents, [see Page 29](#).

### **INFO**

If new components need to be ordered for maintenance, use only KRONE original spare parts.

## 17.1 Maintenance table

### 17.1.1 Maintenance – Before the season

<b>Checking oil level</b>	
Main gearbox	<a href="#">see Page 310</a>
Packer gearbox	<a href="#">see Page 311</a>
Transfer gearbox	<a href="#">see Page 312</a>
Gearbox pick-up top part	<a href="#">see Page 313</a>
Gearbox pick-up bottom part	<a href="#">see Page 314</a>
Compressor	<a href="#">see Page 318</a>
<b>Components</b>	
Lubricate the machine according to the lubrication chart	<a href="#">see Page 299</a>
Tighten screws/nuts on the machine	<a href="#">see Page 284</a>
Retightening wheel nuts	<a href="#">see Page 290</a>
Check tyre pressure	<a href="#">see Page 289</a>
Visually inspect tyres for cuts and breaks	<a href="#">see Page 289</a>
Vent friction disc clutch	<a href="#">see Page 293</a>
Retightening the screw connections on the drawbar eye	<a href="#">see Page 297</a>
Checking wear limit on drawbar eye 40	<a href="#">see Page 294</a>
Checking wear limit on drawbar eye 50	<a href="#">see Page 294</a>
Check wear limit on the ball drawbar eye 80	<a href="#">see Page 295</a>



<b>Components</b>	
Checking wear limit on the ball joint drawbar eye attachment category 3	<a href="#">see Page 295</a>
Checking wear limit on the ball joint drawbar eye attachment category 4	<a href="#">see Page 296</a>
Wear limit on the Cuna drawbar eye	<a href="#">see Page 296</a>
Change the filter element on the high-pressure filter	<a href="#">see Page 307</a>
Drain condensation water out of the compressed air tanks of the compressed air brake	<a href="#">see Page 291</a>
Retighten tensioning straps on the compressed air tank	<a href="#">see Page 292</a>
Drain the biodegradable frost protection agent from the silage additives tank.	<a href="#">see Page 321</a>
Cleaning the silage additives tank	<a href="#">see Page 322</a>
Rinse the silage additives unit with clear water.	<a href="#">see Page 323</a>
Have brake pads checked by KRONE service partner	
Checking/tensioning drive chains of the pick-up	<a href="#">see Page 288</a>
Checking the functionality of the central lubrication system	
Check the fire extinguishers	<a href="#">see Page 290</a>
Check the hydraulic hoses for leaks and, if necessary, have them replaced by a KRONE service partner.	<a href="#">see Page 305</a>
Check the electrical connection cables and, if necessary, have them repaired or changed by a KRONE service partner	
Manually actuate and end the tying process while observing the function of the knotters and the needles and, if required, have them adjusted by KRONE service partner	<ul style="list-style-type: none"> <li>• Manually actuate, <a href="#">see Page 159</a>.</li> <li>• Manually end, <a href="#">see Page 160</a>.</li> </ul>
Checking/setting all the machine settings	<a href="#">see Page 273</a>

### 17.1.2 Maintenance – After the season

<b>Components</b>	
Clean the machine	<a href="#">see Page 287</a>
Lubricate the machine according to the lubrication chart	<a href="#">see Page 299</a>
Lubricate the universal shaft	<a href="#">see Page 298</a>
Grease the threads of the setting screws	
Drain condensation water out of the compressed air tanks of the compressed air brake	<a href="#">see Page 291</a>

Components	
For "Silage additives unit" version: Fill the silage additives tank with biodegradable frost protection agent.	Operate the silage additives unit until it is ensured that frost protection agent emerges from the nozzles.
Cleaning drive chains	<a href="#">see Page 292</a>
Grease the uncoated piston rods of all hydraulic cylinders and insert as far as possible	
Lightly coat with oil all those lever joints and bearing positions which cannot be lubricated	
Touch up damaged paint and preserve uncoated areas with rust protection agent	
Check that all moveable components move freely. If required, dismount, clean, grease and remount.	
Park the machine in a weatherproof and dry location which is not in close proximity to corrosive substances	
Protect the tyres against external influences such as oil, grease or direct sunlight	

### 17.1.3 Maintenance - once after 10 hours

Components	
Retightening the screw connections on the drawbar eye	<a href="#">see Page 297</a>
Retightening wheel nuts	<a href="#">see Page 290</a>
Check tyre pressure	<a href="#">see Page 289</a>
Have the slack adjuster of the brake system checked by KRONE service partners	
Check the hydraulic hoses for leaks and, if necessary, have them replaced by a KRONE service partner.	<a href="#">see Page 305</a>

### 17.1.4 Maintenance - Once after 50 hours

Changing oil	
Main gearbox	<a href="#">see Page 310</a>
Packer gearbox	<a href="#">see Page 311</a>
Transfer gearbox	<a href="#">see Page 312</a>
Gearbox pick-up top part	<a href="#">see Page 313</a>
Gearbox pick-up bottom part	<a href="#">see Page 314</a>
Compressor	<a href="#">see Page 318</a>

### 17.1.5 Maintenance - Every 10 hours but at least once a day

Checking oil level	
Main gearbox	<a href="#">see Page 310</a>
Packer gearbox	<a href="#">see Page 311</a>
Transfer gearbox	<a href="#">see Page 312</a>
Gearbox pick-up top part	<a href="#">see Page 313</a>
Gearbox pick-up bottom part	<a href="#">see Page 314</a>
Compressor	<a href="#">see Page 318</a>
Components	
Clean the machine	<a href="#">see Page 287</a>
Clean/change filter element on the compressor	<a href="#">see Page 317</a>
Check function of the brake system	
Check the fire extinguishers	<a href="#">see Page 290</a>
Rinsing the silage additives unit	<a href="#">see Page 323</a>
Cleaning the filter of the silage additives unit	<a href="#">see Page 323</a>
Cleaning the nozzles of the silage additives unit	<a href="#">see Page 325</a>

### 17.1.6 Maintenance - Every 50 hours

Components	
Tighten screws/nuts on the machine	<a href="#">see Page 284</a>
Retightening the screw connections on the drawbar eye	<a href="#">see Page 297</a>
Retightening wheel nuts	<a href="#">see Page 290</a>
Check tyre pressure	<a href="#">see Page 289</a>
Drain condensation water out of the compressed air tanks of the compressed air brake	<a href="#">see Page 291</a>
Retighten tensioning straps on the compressed air tank	<a href="#">see Page 292</a>

### 17.1.7 Maintenance - Every 200 hours

Changing oil	
Main gearbox	<a href="#">see Page 310</a>
Packer gearbox	<a href="#">see Page 311</a>
Transfer gearbox	<a href="#">see Page 312</a>
Gearbox pick-up top part	<a href="#">see Page 313</a>
Gearbox pick-up bottom part	<a href="#">see Page 314</a>
Compressor	<a href="#">see Page 318</a>

Components	
Have the slack adjuster of the brake system checked by KRONE service partners	
Check the fire extinguishers	<i>see Page 290</i>

**17.1.8 Maintenance - every 2 years**

Components	
Have compressed-air tanks checked by KRONE service partner	
Have pneumatic brake cylinders serviced by KRONE service partner	

**17.2 Tightening torques**

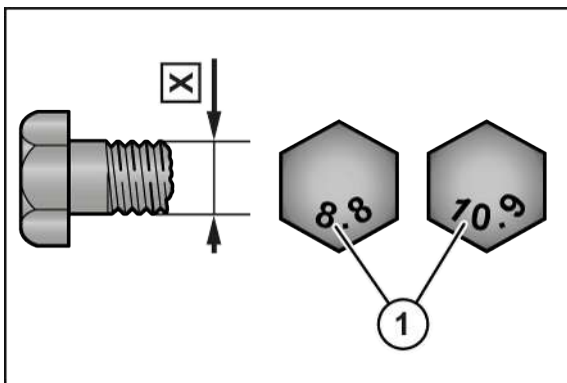
**Deviating tightening torques**

All screw connections must in general be tightened with the listed tightening torques following. Deviations from the tables are marked accordingly.

**Metric thread screws with control thread**

**INFO**

The table does not apply to countersunk screws with hexagon socket in case the countersunk screw is tightened via hexagon socket.



DV000-001

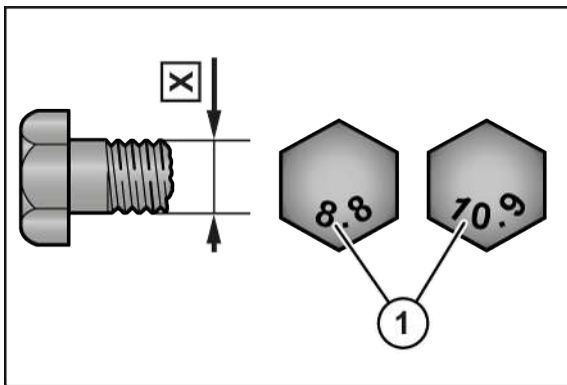
X Thread size

1 Strength class on screw head

X	Strength class			
	5.6	8.8	10.9	12.9
Tightening torque (Nm)				
M4		3.0	4.4	5.1
M5		5.9	8.7	10
M6		10	15	18
M8		25	36	43
M10	29	49	72	84
M12	42	85	125	145

X	Strength class			
	5.6	8.8	10.9	12.9
	Tightening torque (Nm)			
M14		135	200	235
M16		210	310	365
M20		425	610	710
M22		571	832	972
M24		730	1,050	1,220
M27		1,100	1,550	1,800
M30		1,450	2,100	2,450

### Metric thread screws with fine thread



DV000-001

X Thread size

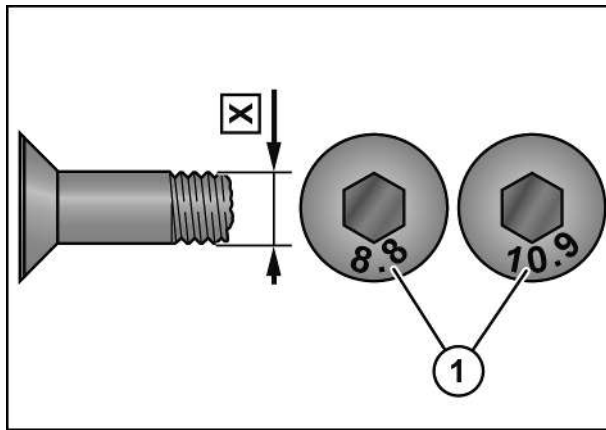
1 Strength class on screw head

X	Strength class			
	5.6	8.8	10.9	12.9
	Tightening torque (Nm)			
M12 x 1.5		88	130	152
M14 x 1.5		145	213	249
M16 x 1.5		222	327	382
M18 x 1.5		368	525	614
M20 x 1.5		465	662	775
M24 x 2		787	1,121	1,312
M27 x 2		1,148	1,635	1,914
M30 x 1.5		800	2,100	2,650

### Metric thread screws with countersunk head and hexagon socket

#### INFO

The table applies only to countersunk screws with hexagon socket and metric thread tightened via hexagon socket.



DV000-000

X Thread size

1 Strength class on screw head

X	Strength class			
	5.6	8.8	10.9	12.9
	Tightening torque (Nm)			
M4		2.5	3.5	4.1
M5		4.7	7	8
M6		8	12	15
M8		20	29	35
M10	23	39	58	67
M12	34	68	100	116
M14		108	160	188
M16		168	248	292
M20		340	488	568

**Locking screws on the gearboxes**

**INFO**

The tightening torques only apply to assembly of locking screws, viewing glasses, ventilation and breather filters and bleed valves in gearboxes with cast housings or aluminium or steel housings. The term “locking screw” includes the drain plug, the inspection screw as well as the ventilation and breather filters.

This table applies only to locking screws with external hexagon in connection with copper seal ring and for bleed valves made of brass with shaped seal ring.

Thread	Locking screw and sight glass with copper ring <sup>1</sup>		Bleed valve made of brass	
	Ventilation/breather filter made of steel		Ventilation/breather filter made of brass	
	Steel and cast	Aluminium	Steel and cast	Aluminium
	<b>Maximum tightening torque (Nm) (±10%)</b>			
M10x1			8	
M12x1.5			14	
G1/4"			14	
M14x1.5			16	

Thread	Locking screw and sight glass with copper ring <sup>1</sup>		Bleed valve made of brass	
	Ventilation/breather filter made of steel		Ventilation/breather filter made of brass	
	Steel and cast	Aluminium	Steel and cast	Aluminium
Maximum tightening torque (Nm) (±10%)				
M16x1.5	45	40	24	24
M18x1.5	50	45	30	30
M20x1.5			32	
G1/2"			32	
M22x1.5			35	
M24x1.5			60	
G3/4"			60	
M33x2			80	
G1"			80	
M42x1.5			100	
G1 1/4"			100	

<sup>1</sup> Always replace copper rings.

## 17.3 Cleaning the machine

### **WARNING**

#### **Eye damage caused by flying dirt particles!**

When cleaning the machine with compressed air or with high-pressure cleaner, the dirt particles are slung away at high speed. The dirt particles may hit the eyes and hurt them.

- ▶ Keep persons away from working range.
- ▶ When performing cleaning work with compressed air or with high-pressure cleaner, wear suitable working clothes (for example eye protection).

### **NOTICE**

#### **Machine damaged by water from a high-pressure cleaner**

Bearings and electric or electronic components can be damaged if you aim the water jet of a high-pressure cleaner directly at them during cleaning.

- ▶ Never direct the water jet of a high-pressure cleaner at bearings, electric/electronic components or safety labels.
- ▶ Replace missing, damaged and unrecognisable safety labels.

✓ The machine is shut down and safeguarded, [see Page 29](#).

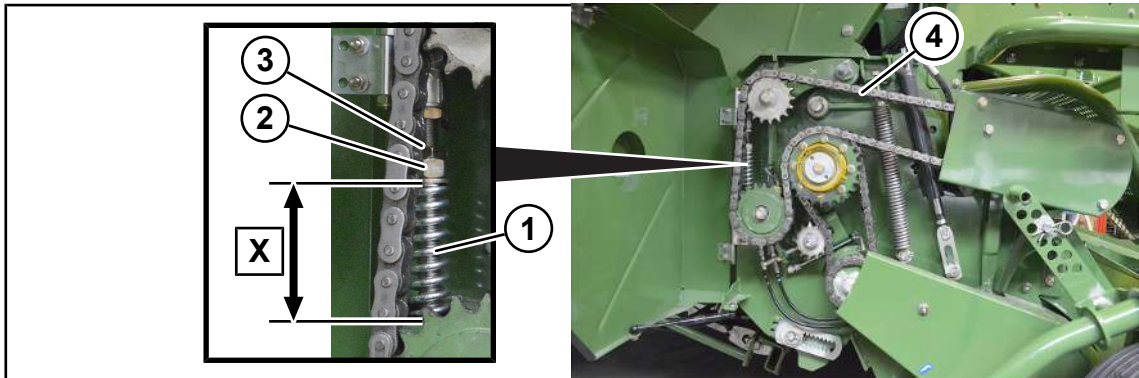
- ▶ Remove chaff and dust from the knotters, the packer control and the flywheel **after each use**.

Under very dry working conditions, the cleaning must be repeated several times a day.

- ▶ After the machine has been cleaned with water, lubricate all manually lubricated lubrication points, [see Page 299](#).
- ▶ After the machine has been cleaned with water, carry out a manual intermediate lubrication with the central lubrication unit, [see Page 217](#).

## 17.4 Checking/tensioning drive chains of the pick-up

### Feed roller



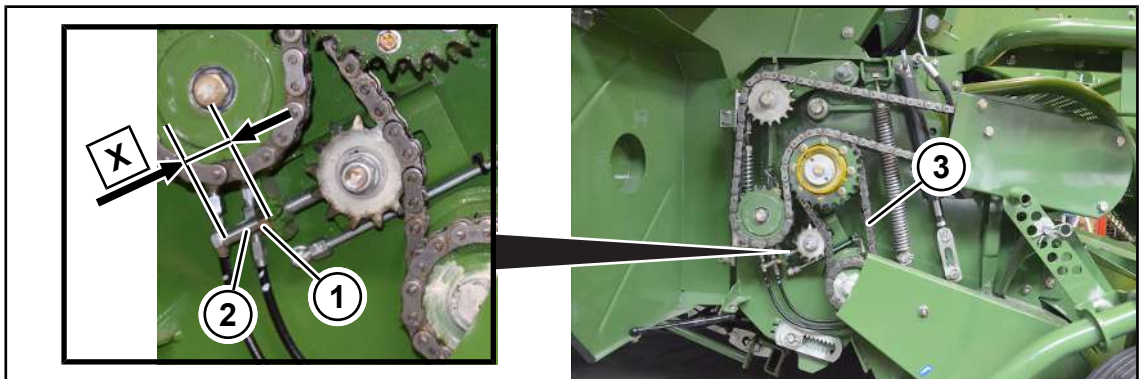
BP000-413

The drive chain of the feed roller (4) is located on the right machine side. In the factory, the spring (1) is preset to a dimension of **X=100 mm**.

- ✓ The machine is shut down and safeguarded, [see Page 29](#).
- ▶ Open the guard sheet on the right side of the machine.
- ▶ Loosen the counter nut (3).
- ▶ By tightening the nut (2), increase the tension of the spring (1).
- ▶ Secure the nut (2) with the counter nut (3).
- ▶ Close the guard sheet.

Shorten chains, which have become too long, by removing a chain link.

### Tine rotor and auger conveyor



BP000-414

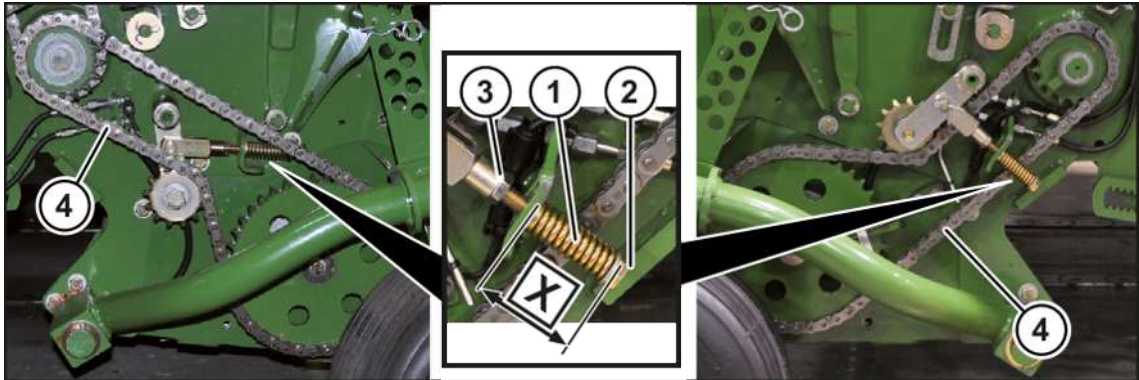
The drive chain of the tine rotor and the auger conveyor (3) is located on the right side of the machine. In the factory, the screw (1) is preset to a dimension of **X=50 mm**.

- ✓ The machine is shut down and safeguarded, [see Page 29](#).
- ▶ Open the guard sheet on the right-hand side of the machine.
- ▶ Loosen the counter nut (2).
- ▶ By screwing in the screw (1), increase the chain tension of the drive chain (3).
- ▶ Secure the screw (1) with the counter nut (2).
- ▶ Close the guard sheet.

Shorten too long chains by removing a chain link.



### Tine rotor



BP000-250

The chain drive of the tine rotor (4) is on the right and left machine side. The spring (1) is preset to a dimension of **X=60 mm**.

- ✓ The machine is shut down and safeguarded, [see Page 29](#).
- ▶ Open the guard sheet on the right side of the machine.
- ▶ Loosen the counter nut (3).
- ▶ By tightening the nut (2), increase the tension of the spring (1).
- ▶ Secure the nut (2) with the counter nut (3).
- ▶ Close the guard sheet.

Shorten chains, which have become too long, by removing a chain link.

## 17.5 Checking/maintaining tyres

- ✓ The machine has been shut down and secured, [see Page 29](#).

### Inspect the tyres visually

- ▶ Visually inspect tyres for cuts or breaks.
- ➔ If there are cuts or breaks in the tyres, have the tyres repaired or replaced by a KRONE service partner.

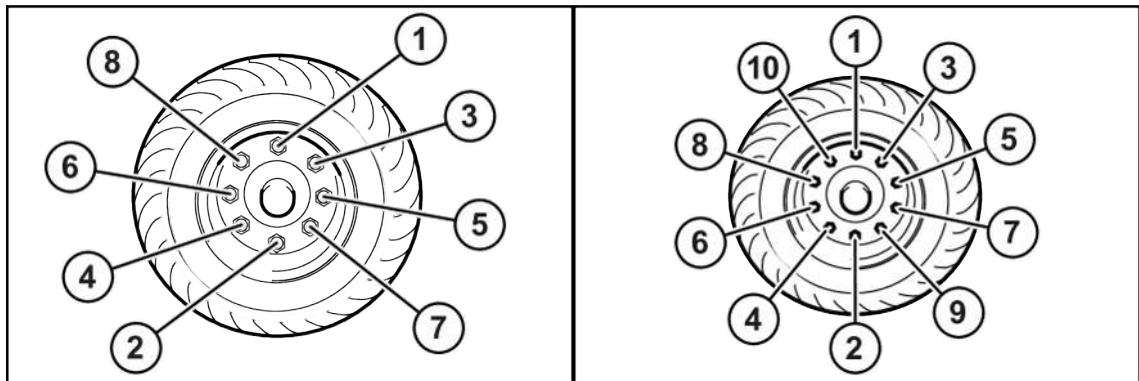
Maintenance intervals for visual inspection of the tyres, [see Page 280](#).

### Checking/adapting the tyre pressure

- ▶ Check the tyre pressure, [see Page 77](#).
- ➔ If the tyre pressure is too high, deflate air.
- ➔ If the tyre pressure is too low, increase the tyre pressure.

Check the maintenance intervals for tyre pressure, [see Page 280](#).

**Retighten wheel nuts**



DVG000-002

"8-hole rim" version

"10-hole rim" version

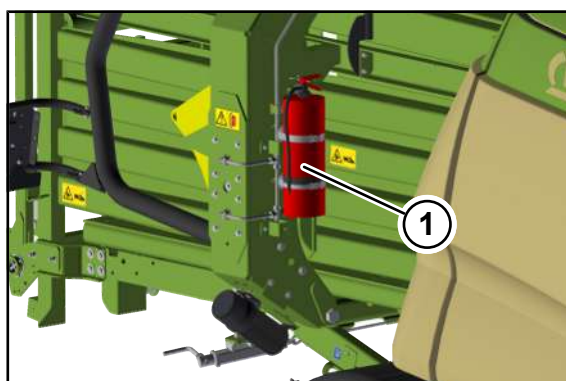
- ▶ Retighten the wheel nuts crosswise (as shown) with a torque wrench, tightening torque [see Page 290](#).

Maintenance intervals, [see Page 280](#).

**Tightening torque: wheel nuts**

Thread	Key size	Amount of bolts per hub	Maximum tightening torque	
			black	galvanised
M12x1.5	19 mm	4/5 units	95 Nm	95 Nm
M14x1.5	22 mm	5 units	125 Nm	125 Nm
M18x1.5	24 mm	6 units	290 Nm	320 Nm
M20x1.5	27 mm	8 units	380 Nm	420 Nm
M20x1.5	30 mm	8 units	380 Nm	420 Nm
M22x1.5	32 mm	8/10 units	510 Nm	560 Nm
M22x2	32 mm	10 units	460 Nm	505 Nm

**17.6 Checking the fire extinguisher**



BPG000-034

- ✓ The machine has been shut down and secured, [see Page 29](#).
- ▶ Ensure that the fire extinguisher (1) is mounted on the machine.
- ▶ Ensure that access to and view of the fire extinguisher (1) are not obstructed.
- ▶ Ensure that the fire extinguisher (1) is filled by weighing the fire extinguisher (1).

- ▶ Ensure that the seal on the extinguishing head and the security seal are neither defective nor missing.
- ▶ Ensure that the operating instructions on the type plate of the fire extinguisher (1) are legible and face outwards.
- ▶ Check the fire extinguisher for visible material damage, corrosion, leakage, a clogged hose and/or nozzle.
- ▶ Ensure that the pressure gauge pointer indicates the green area.

## 17.7 Drain condensation water from the compressed air tank

### **WARNING**

#### **Risk of injury from corroded or damaged compressed air reservoirs**

Damaged or corroded compressed air reservoirs may burst and cause serious injuries.

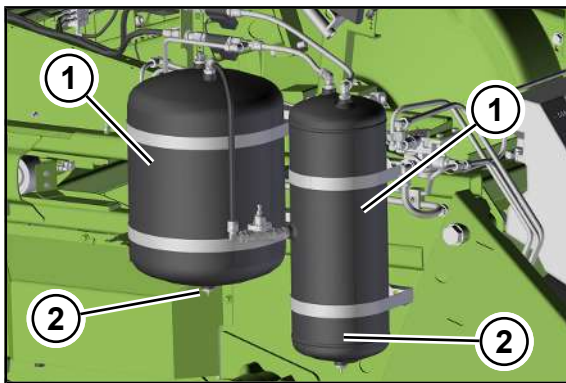
- ▶ Observe the inspection intervals according to maintenance table, [see Page 280](#).
- ▶ Have damaged or corroded compressed air reservoirs replaced immediately by a specialist workshop.

### **NOTICE**

#### **Damage to compressed air reservoir caused by water in the compressor unit**

Water in the compressor unit leads to corrosion which damages the compressed air reservoir.

- ▶ Check and clean drain valve according to maintenance table, [see Page 280](#).
- ▶ Immediately replace a defective drain valve.



DVG000-014

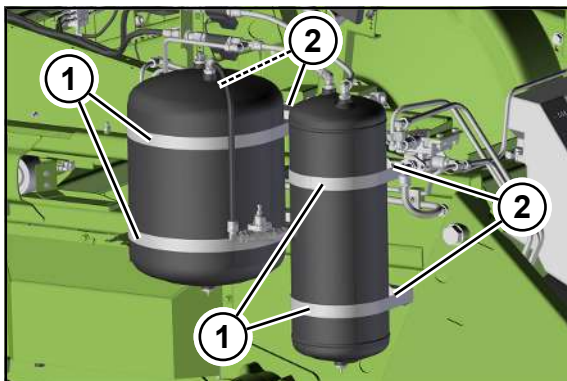
- ▶ Shut down and safeguard the machine, [see Page 29](#).

**WARNING! Risk of eye injury due to spurting condensation water! Wear suitable protective goggles.**

- ✓ A suitable container is available for escaping condensation water.
- ▶ Open the drain valve (2).
- ➔ Allow compressed air and condensation water to escape out of the compressed-air tank (1).
- ▶ Visually inspect the drain valve (2) to ensure that it is not defective or soiled.
- ➔ If the drain valve (2) is defective and is no longer sealed, immediately have the drain valve (2) replaced by a KRONE service partner.
- ➔ If the drain valve (2) is soiled, clean the drain valve (2).

## 17.8 Retighten tensioning straps at the compressed air tank

For an overview of the tightening torques, [see Page 284](#).



DVG000-015

- ▶ Shut down and safeguard the machine, [see Page 29](#).
- ▶ Check that the tensioning straps (1) are firmly attached.

If the compressed-air tank cannot be turned by hand, the tensioning straps (1) have been correctly set.

If the compressed-air tank can be turned by hand, the tensioning straps (1) must be retensioned.

- ▶ To tension the tensioning straps (1), tighten the nuts (2).

## 17.9 Cleaning drive chains

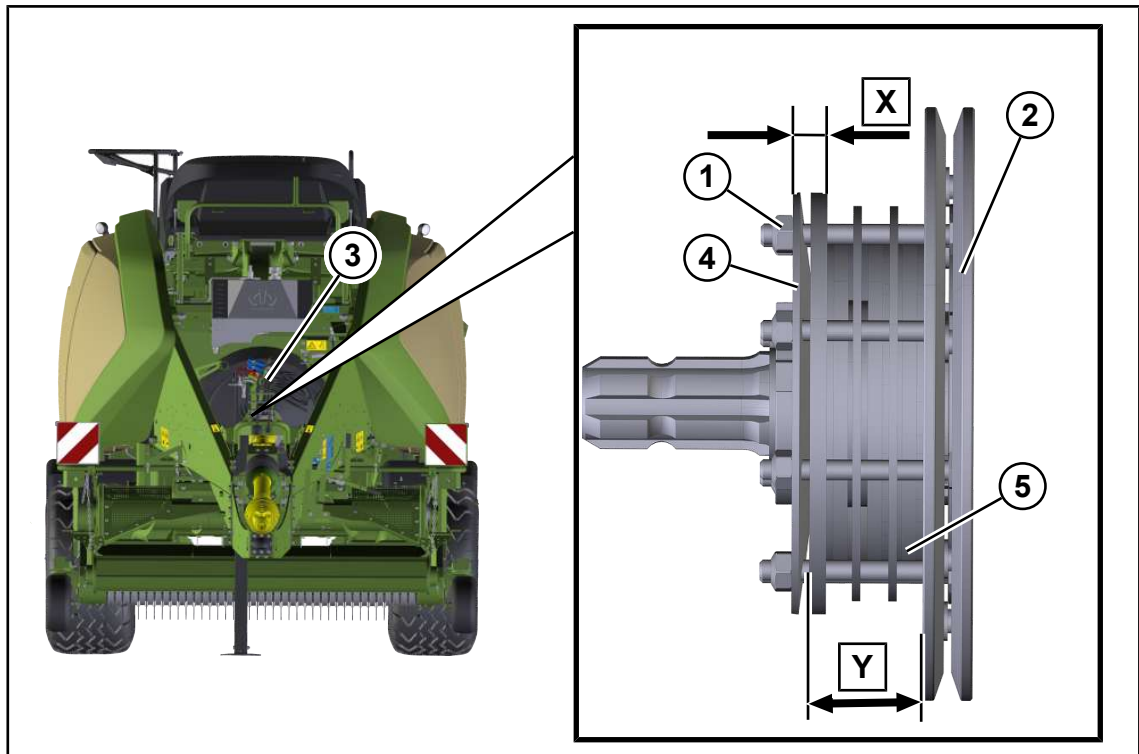
At the end of the season the machine drive chains must be cleaned.

- ✓ The machine has been shut down and secured, [see Page 29](#).
- ▶ Clean the drive chains with compressed air.
- ▶ Wet the cleaned drive chains with engine oil.
- ▶ Start up the machine to distribute the engine oil on all contact surfaces.

The drive chains must always be adequately wetted with engine oil.

- ▶ Shut down and safeguard the machine, [see Page 29](#).
- ▶ Check the drive chains and sprocket wheels for wear.
- ▶ Check that the drive chains are centred on the sprocket wheels.

## 17.10 Checking/venting friction disc clutch on the flywheel



BPG000-001

After an extended period of inactivity, the friction disc clutch linings (2) may stick to the friction surfaces. Before use, vent the friction disc clutch.

The friction disc clutch (2) is located on the flywheel (3).

✓ The machine is shut down and safeguarded, [see Page 29](#).

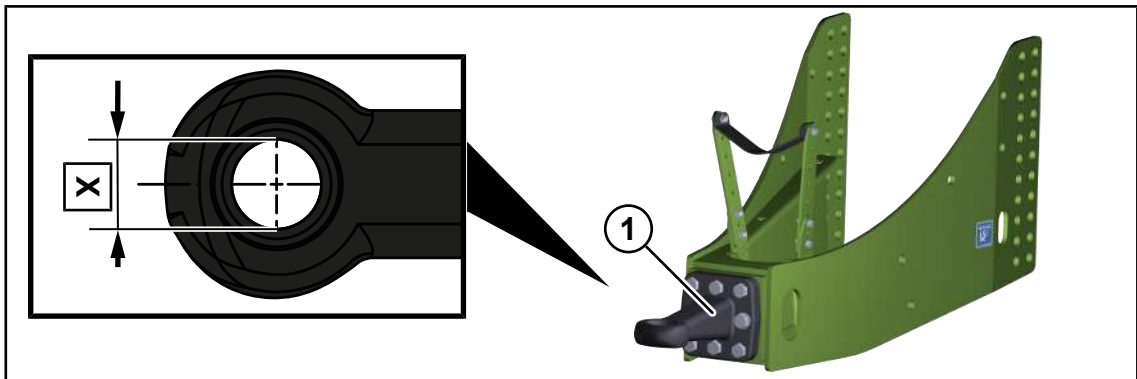
### Checking/replacing friction discs

- ▶ Check the friction discs (5) for uniform wear at 4 points on the circumference.
- ➔ When the wear limit (dimension  $Y < 50$  mm) has been reached, the friction discs must be replaced.

### Venting friction disc clutch

- ▶ Loosen the nuts (1) until the disc springs (4) have been relieved.
- ▶ Turn the universal shaft manually.
- ▶ Tighten the nuts (1) crosswise until the dimension is  $X = 16.6$  mm.

### 17.11 Checking wear limit on drawbar eye 40



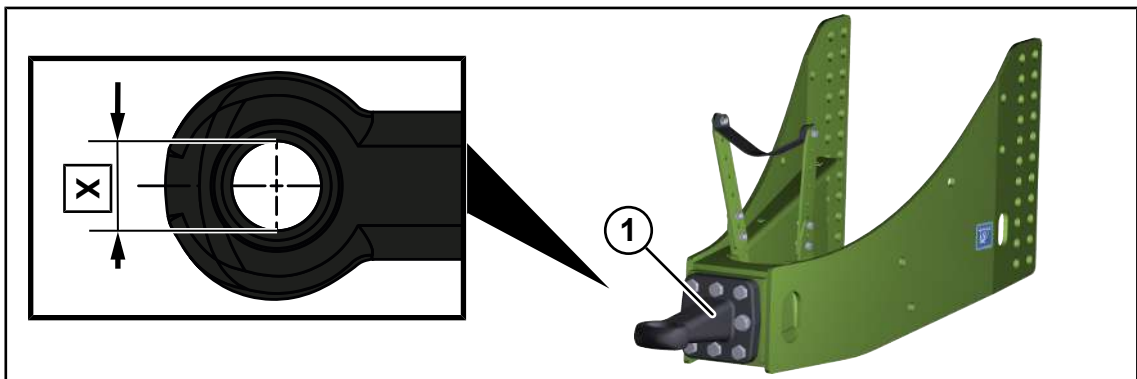
BP000-524

If the wear limit is exceeded (see table) and/or the ball drawbar eye is damaged, replace the drawbar eye (1).

Designation	Nominal dimension	Wear limit
Internal diameter of drawbar eye [X]	40 mm	41.5 mm

- ✓ The machine has been parked, [see Page 268](#).
- ▶ Determine the dimension X.
- ▶ If the wear limit (see table) dimension X is exceeded, the drawbar eye (1) must be replaced by a KRONE service partner.

### 17.12 Checking wear limit on drawbar eye 50



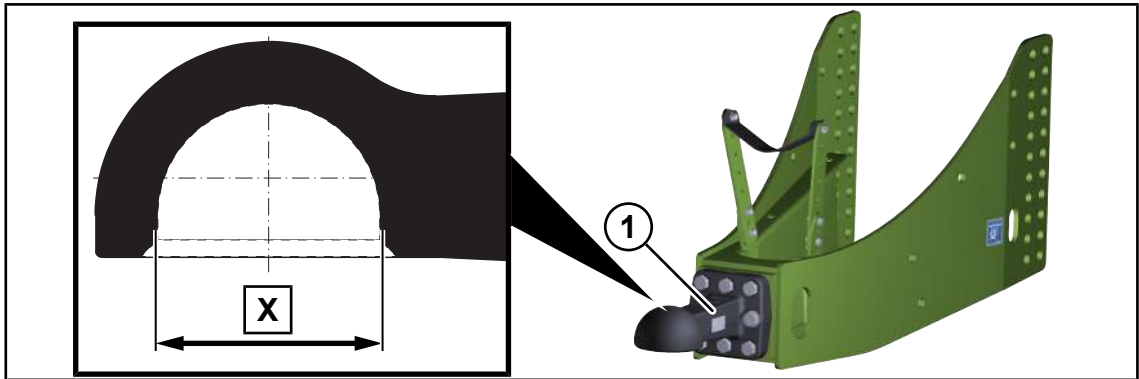
BP000-524

If the wear limit is exceeded (see table) and/or the ball drawbar eye is damaged, replace the drawbar eye (1).

Designation	Nominal dimension	Wear limit
Internal diameter of drawbar eye [X]	50 mm	53.3 mm

- ✓ The machine has been parked, [see Page 268](#).
- ▶ Determine the dimension X.
- ▶ If the wear limit (see table) dimension X is exceeded, the drawbar eye (1) must be replaced by a KRONE service partner.

### 17.13 Check wear limit on ball drawbar eye 80



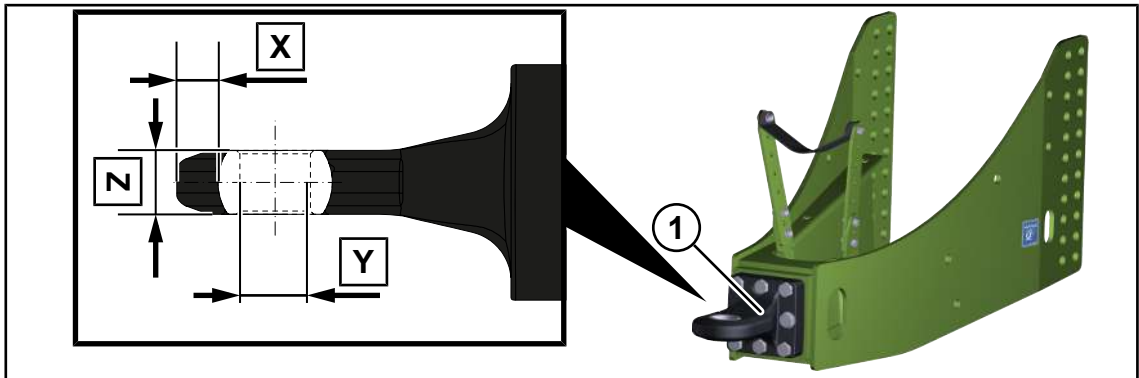
DVG000-003

If the wear limit is exceeded (see table) and/or the ball drawbar eye is damaged, replace the drawbar eye (1).

Designation	Nominal dimension	Wear limit
Diameter of ball socket [X]	80 mm	82 mm

- ✓ The machine has been parked, [see Page 268](#).
- ▶ Determine the dimension X.
- ▶ If the wear limit (see table) dimension X is exceeded, the drawbar eye (1) must be replaced by a KRONE service partner.

### 17.14 Checking wear limit on ball joint drawbar eye [attachment category 3]



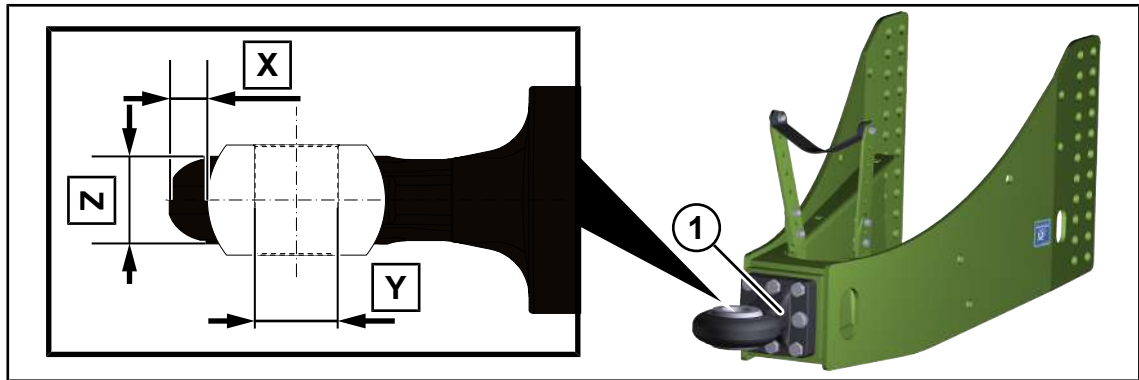
BP000-526

If the wear limit is exceeded (see table) and/or the ball drawbar eye is damaged, replace the drawbar eye (1).

Designation	Nominal dimension	Wear limit
Eye diameter [Y]	39.5 mm	40.2 mm
Ring height [Z]	38 mm	35.5 mm
Ring thickness [X]	25.5 mm	23.0 mm

- ✓ The machine has been parked, [see Page 268](#).
- ▶ Determine the dimensions X,Y,Z.
- ▶ If a wear limit (see table) dimension X,Y,Z is exceeded, the drawbar eye (1) must be replaced by a KRONE service partner.

### 17.15 Checking wear limit on ball joint drawbar eye [attachment category 4]



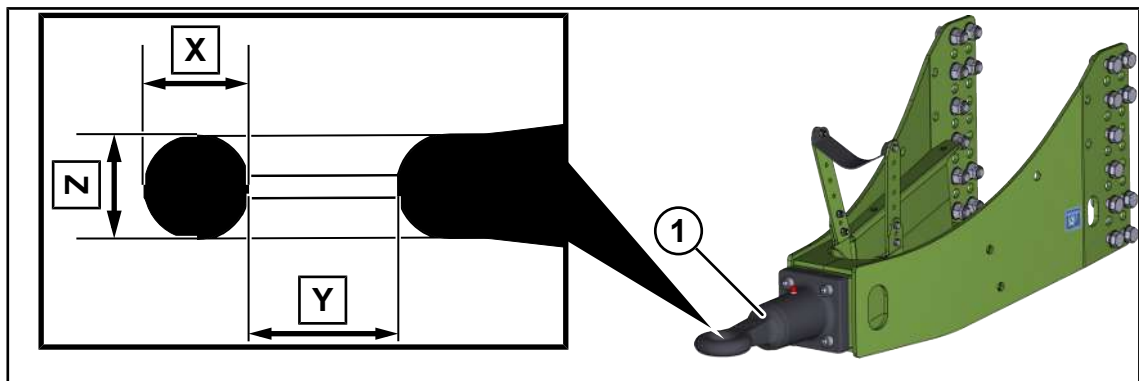
BP000-527

If the wear limit is exceeded (see table) and/or the ball drawbar eye is damaged, replace the drawbar eye (1).

Designation	Nominal dimension	Wear limit
Eye diameter [Y]	51 mm	53 mm
Ring height [Z]	54 mm	51.5 mm
Ring thickness [X]	25.5 mm	23.0 mm

- ✓ The machine has been parked, [see Page 268](#).
- ▶ Determine the dimensions X,Y,Z.
- ▶ If a wear limit (see table) dimension X,Y,Z is exceeded, the drawbar eye (1) must be replaced by a KRONE service partner.

### 17.16 Checking the wear limit on the Cuna drawbar eye



BP000-736

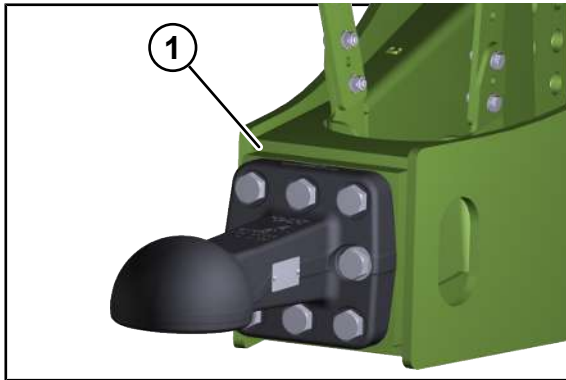
If the wear limit is exceeded (see table) and/or the ball drawbar eye is damaged, replace the drawbar eye (1).

Designation	Nominal dimension	Wear limit
Eye diameter [Y]	50 mm	52.5 mm
Ring height [Z]	35 mm	32.5 mm
Ring thickness [X]	35 mm	32.5 mm



- ✓ The machine has been parked, [see Page 268](#).
- ▶ Determine the dimensions X,Y,Z.
- ▶ If a wear limit (see table) dimension X,Y,Z is exceeded, the drawbar eye (1) must be replaced by a KRONE service partner.

### 17.17 Retightening the screw connections on the drawbar eye

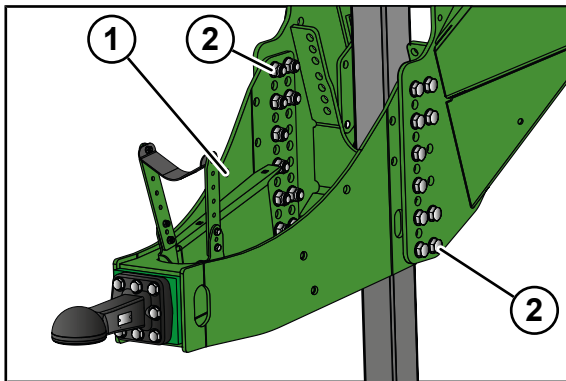


BP000-528

Retightening of the screw connections (1) on drawbar eyes is described by way of example using a ball drawbar eye. Retightening the screw connections on other drawbar eye types is the same.

- ✓ The machine has been parked, [see Page 268](#).
- ▶ Retighten the screw connections (1) crosswise using a torque wrench, tightening torque=300 Nm.
- ▶ Maintenance intervals, [see Page 280](#).

### 17.18 Retightening screw connections on the front part of the drawbar



BP000-529

- ✓ The machine has been parked, [see Page 268](#).
- ▶ Retighten the screw connections (2) using a torque wrench, tightening torque [see Page 284](#).
- ▶ Maintenance intervals, [see Page 280](#).

## 18 Maintenance - Lubrication

### **WARNING**

#### **Risk of injury due to non-observance of relevant safety notices**

If the relevant safety notices are not observed, persons may get seriously injured or killed.

- ▶ To avoid accidents, the basic safety instructions must be read and observed, [see Page 17](#).

### **WARNING**

#### **Risk of injury due to non-observance of safety instructions**

If the relevant safety routines are not observed, persons may be seriously injured or killed.

- ▶ The safety routines must be read and observed to avoid accidents, [see Page 29](#).

### **NOTICE**

#### **Environmental damage caused by consumables**

If consumables are not stored and disposed of properly, they may escape into the environment. As a result, the environment will be damaged, even by small quantities.

- ▶ Store the consumables in suitable containers according to the statutory provisions.
- ▶ Dispose of used consumables according to statutory provisions.

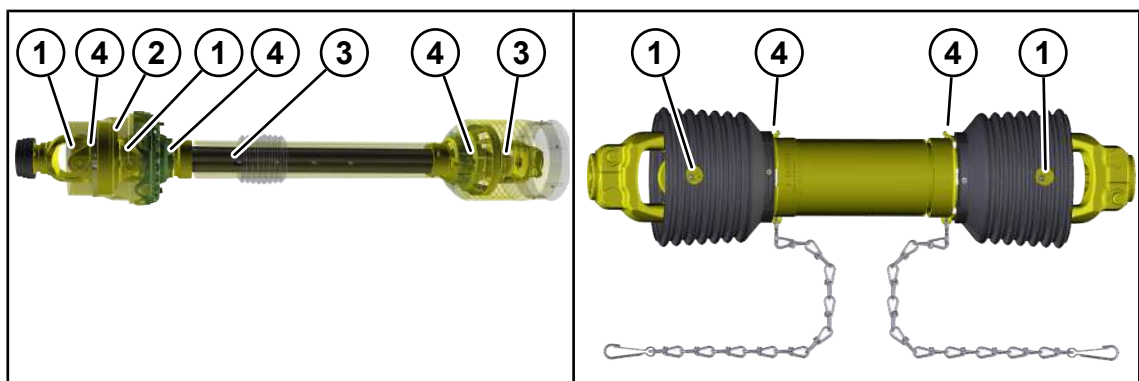
### **NOTICE**

#### **Damage to bearing points**

When using lubricating greases not approved and when mixing different lubricating greases, the lubricated parts may be damaged.

- ▶ Only use approved lubricating greases, [see Page 79](#).
- ▶ Do not use graphite-containing lubricating greases.
- ▶ Do not mix different lubricating greases.

## 18.1 Lubricating universal shaft



DVG000-001

Universal shaft main drive

Universal shaft flywheel

- ✓ The machine has been shut down and secured, [see Page 29](#).
- ▶ Observe operating instructions of the universal shaft manufacturer.
- ▶ Clean the universal shaft.
- ▶ Lubricate the universal shaft with multi-purpose grease at the intervals indicated in the table below.




 For a list of the lubricating greases to be used, [see Page 78](#).

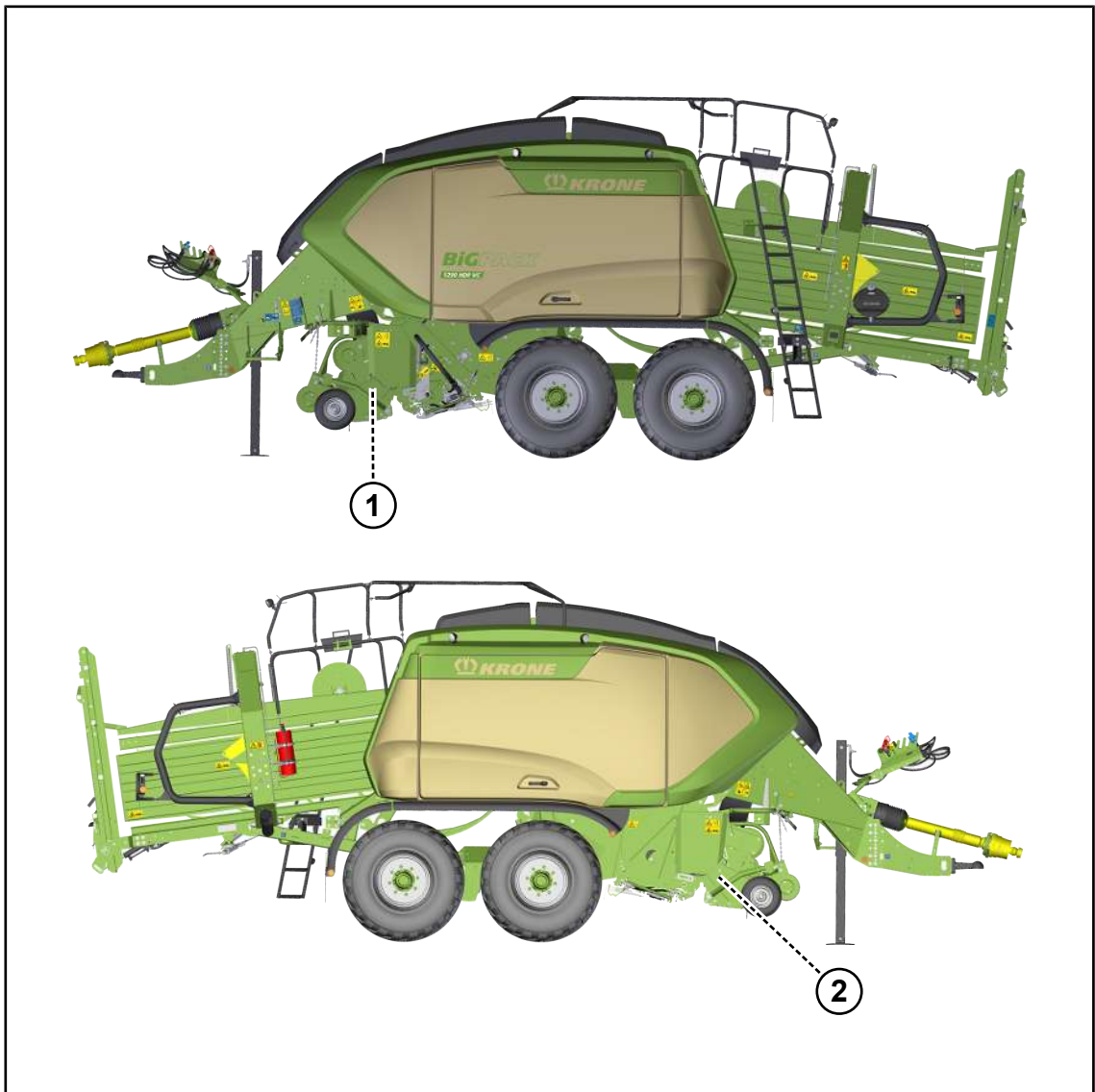
The following table provides information on lubrication quantity and interval per lubrication point.

Pos.	Lubricant quantity	Lubrication interval
(1)	26 g	50 hours
(2)	100 g	
(3)	32 g	
(4)	6 g	

## 18.2 Lubrication chart - machine

The information on maintenance intervals is based on average load of the machine. In case of an increased load and under extreme working conditions, the time periods must be reduced. The types of lubrication are marked by means of icons in the lubrication chart, refer to table.

Type of lubrication	Lubricant	Comment
Grease 	Multi-purpose grease	<ul style="list-style-type: none"> <li>▶ Apply two strokes of lubricating grease from the grease gun per grease nipple.</li> <li>▶ Remove excess lubricating grease at the grease nipple.</li> </ul>
Oils 	Plant-based oils, unless specified otherwise.	▶ Use the spray can to apply a thin, even layer of oil.
Oils 	Plant-based oils, unless specified otherwise.	▶ Apply the oil evenly.



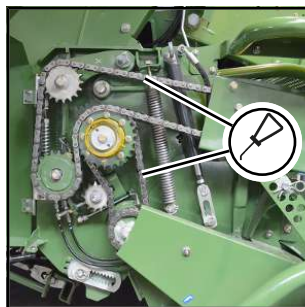
BP000-648

Every 10 operating hours

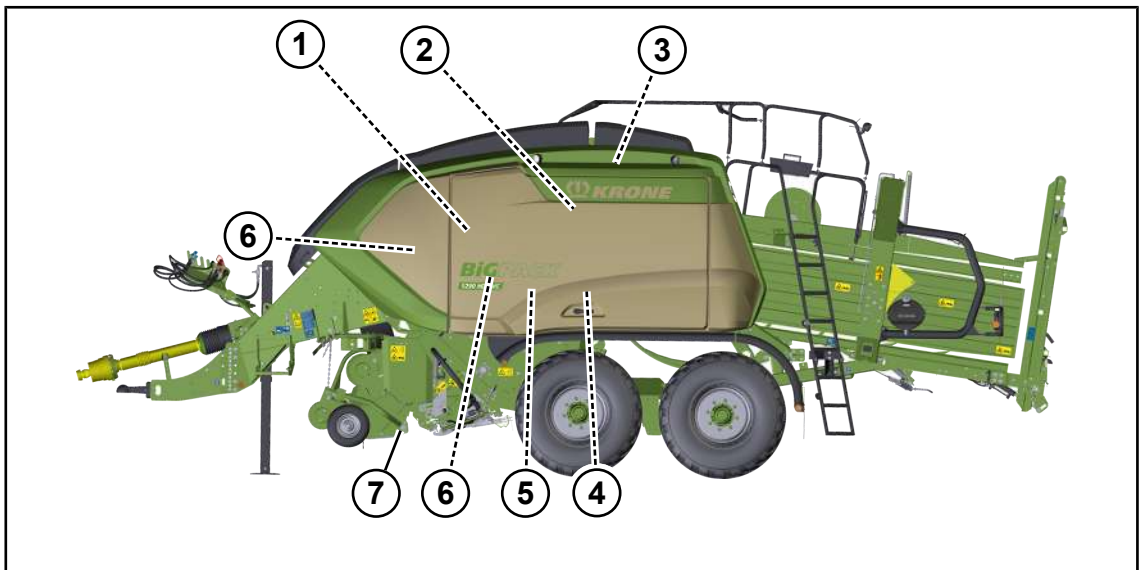
1)



2)



Left-hand machine side

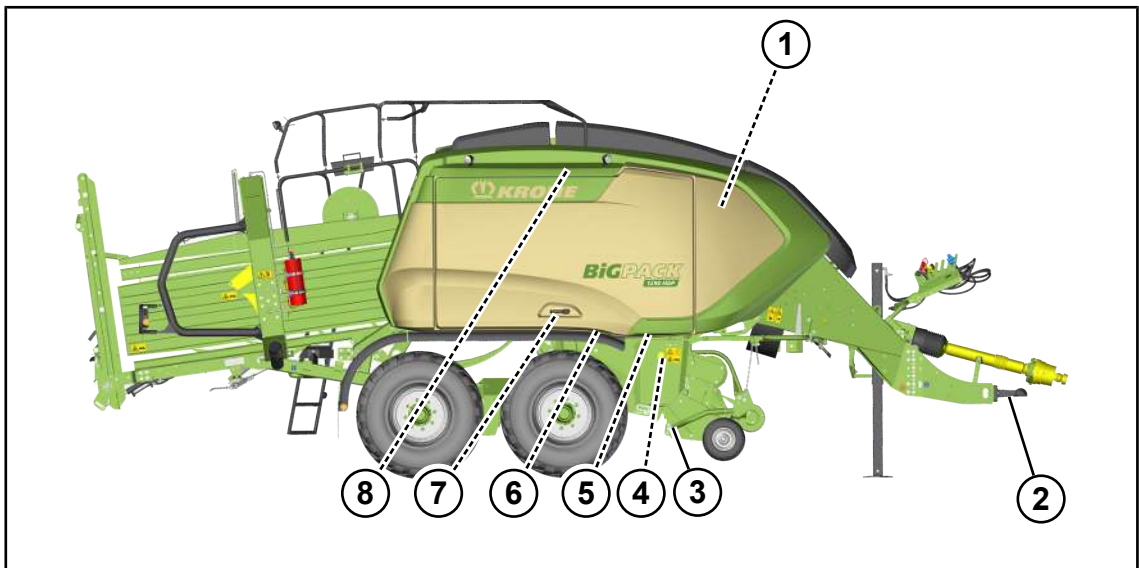


BPG000-136

Every 200 operating hours

<p>1)</p>	<p>2)</p>	
<p>3)</p>	<p>4)</p>	<p>5)</p>
<p>6)</p>	<p>7)</p>	<p>8)</p>

Right-hand machine side

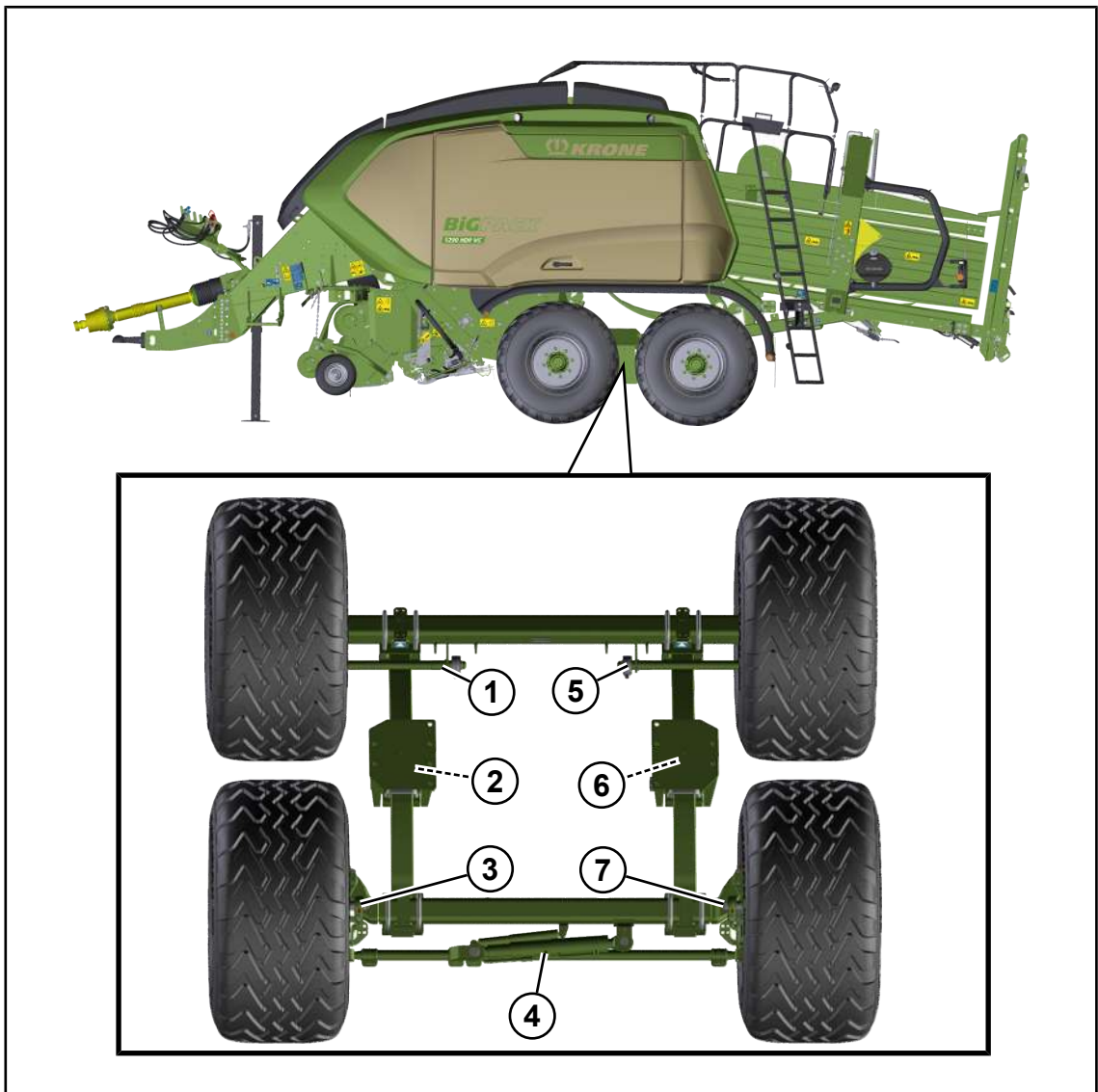


BP000-684

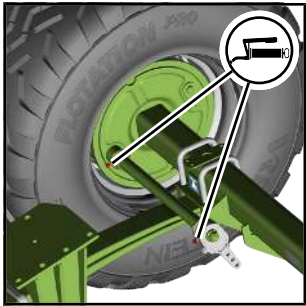
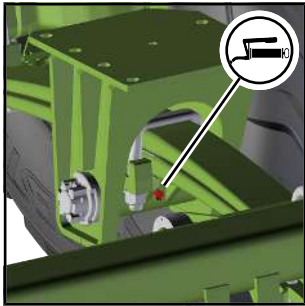

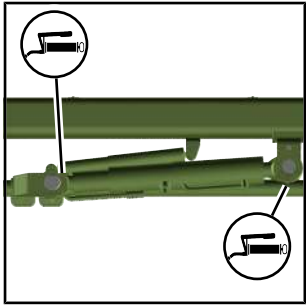
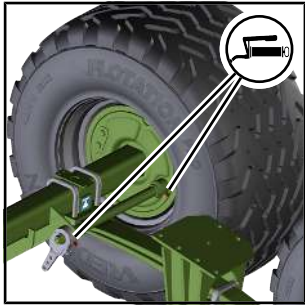
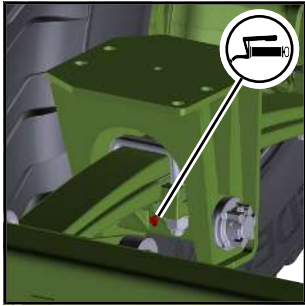
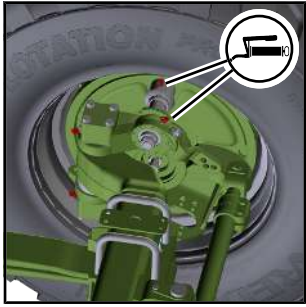
Every 200 operating hours

<p>1)</p>	<p>2)</p>	
<p>3)</p>	<p>4)</p>	<p>5)</p>
<p>6)</p>	<p>7)</p>	<p>8)</p>

Lubrication points at the tandem axle



BP000-649

Every 50 operating hours		
1) 	2) 	3) 
4) 	5) 	6) 
7) 		



## 19 Maintenance - Hydraulics

 **WARNING**

**Risk of injury due to non-observance of relevant safety notices**

If the relevant safety notices are not observed, persons may get seriously injured or killed.

- ▶ To avoid accidents, the basic safety instructions must be read and observed, [see Page 17](#).

 **WARNING**

**Risk of injury due to non-observance of safety instructions**

If the relevant safety routines are not observed, persons may be seriously injured or killed.

- ▶ The safety routines must be read and observed to avoid accidents, [see Page 29](#).

 **WARNING**

**Hydraulic hoses are subject to ageing**

Hydraulic hoses may wear depending on pressure, heat load and the effect of UV rays. People can be seriously injured or killed by damaged hydraulic hoses.

The date of manufacture appears on the hydraulic hoses. This way the age can be ascertained quickly.

Replacement of the hydraulic hoses is recommended after a lifetime of six years.

- ▶ Use original spare parts when replacing hoses.

**NOTICE**

**Damage to the machine due to soiling of the hydraulic system**

If foreign objects or liquids get into the hydraulic system, the hydraulic system may be severely damaged.

- ▶ Clean hydraulic connections and components before removal.
- ▶ Seal open hydraulic connections with protective caps.
- ▶ Ensure that foreign objects or liquids do not get into the hydraulic system.

**NOTICE**

**Storing and disposing of oils and used oil filters**

If oil and used oil filters are not stored and disposed of properly, the environment may be damaged.

- ▶ Store or dispose of used oil and oil filters according to statutory provisions.

### 19.1 Checking hydraulic hoses

Hydraulic hoses are subject to natural aging. This limits their service life. The recommended service life is 6 years, including a maximum storage time of 2 years. The date of manufacture is printed on the hydraulic hoses. When checking hydraulic hoses, the state-specific conditions (e.g., BGVU) must be observed.

### Performing a visual inspection

- ▶ Visually inspect all hydraulic hoses for damage and leaks and have them replaced by an authorised specialist if necessary.

## 19.2 Hydraulic oil

### NOTICE

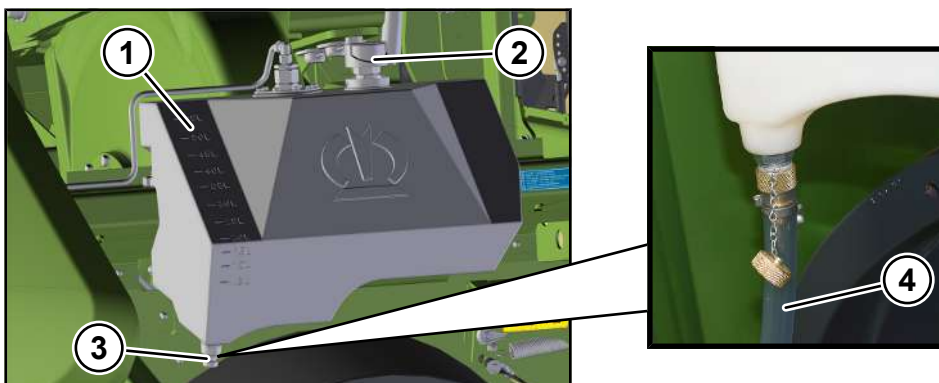
#### Damage to the hydraulic system caused by non approved hydraulic oils

If non-approved hydraulic oils or a mixture of different oils are used, the hydraulic system may be damaged.

- ▶ Never mix different types of oil.
- ▶ Never use engine oil.
- ▶ Use approved hydraulic oils only.

Filling quantities and types of oil, [see Page 78](#).

## 19.3 Hydraulic oil tank



BPG000-056

- ✓ The hydraulic cylinders of the baling flaps have been fully retracted.
- ✓ The machine is shut down and safeguarded, [see Page 29](#).

### Checking oil level and topping up oil

**NOTE! Risk of machine damage due to improperly performed oil level check, oil and filter element change! Follow the safety routine "Oil level check. Changing oil and filter elements safely", [see Page 30](#).**

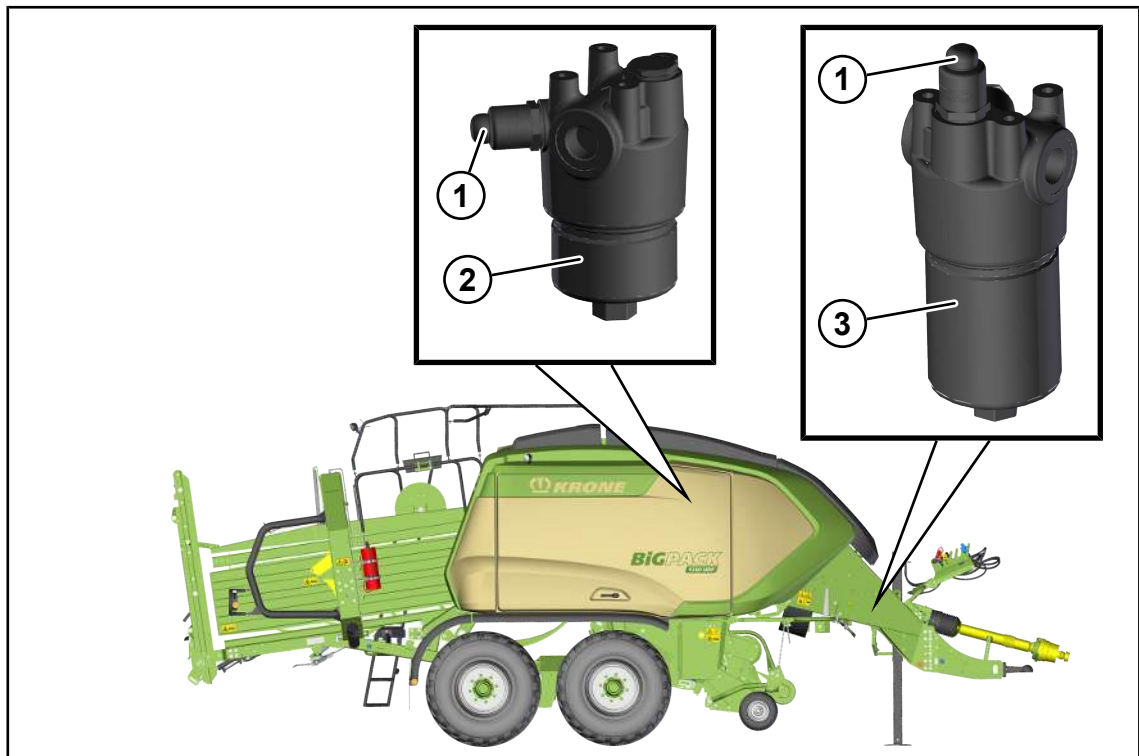
- ▶ Visually check the oil level via the scale on the hydraulic oil tank (1).
- ➔ In "cleaning fan" version: When the oil level is between 40 L and 45 L, the oil level is OK.
- ➔ In "cleaning fan" version: When the oil level is below 40 L, top up the oil.
- ➔ In "Knotter cleaning" version: When the oil level is between 20 L and 25 L, the oil level is OK.
- ➔ In "Knotter cleaning" version: Top up oil when the level is below 20 L.
- ▶ If the oil level is too low, dismount the ventilation/breather filter (2) and top up the oil via the opening.  
For a list of oils [see Page 79](#).
- ▶ Mount the ventilation/breather filter (2).

## Changing the oil

**NOTE! Risk of machine damage due to improperly performed oil level check, oil and filter element change! Follow the safety routine "Oil level check. Changing oil and filter elements safely", see Page 30.**

- ✓ A suitable container is available for escaping oil.
- ▶ Unscrew the ventilation/breather filter (2).
- ▶ Remove the drain plug (3).
- ▶ Screw the drain hose (4) on the drain sleeve and drain the oil.
- ▶ Dismount the drain hose (4).
- ▶ Mount the drain plug (3), tightening torque [see Page 286](#).
- ▶ Fill in new oil through the filling hole.
- ▶ Visually check the oil level at the scale on the hydraulic oil tank (1).
- ▶ Mount the ventilation/breather filter (2).

## 19.4 Changing high-pressure filter



BPG000-076

The high-pressure filter traps solid particles which have been separated out of the hydraulic system. The hydraulic circuit is filtered to prevent damage to the components of the circuit. The high-pressure filter is equipped with a contamination indicator (1) which informs visually about the degree of contamination of the high-pressure filter:

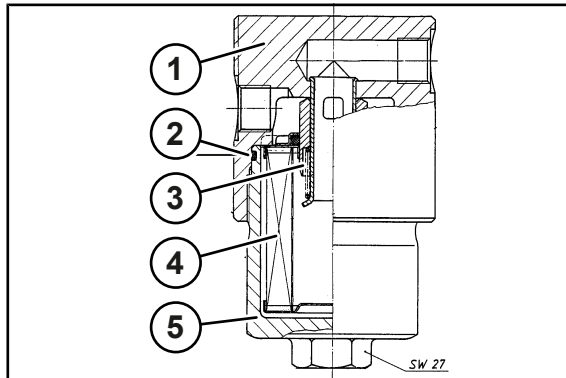
- Green: Degree of contamination low. The high-pressure filter is functional.
- Red: Degree of contamination high. The filter element of the high-pressure filter must be replaced.

When starting a working function in cold condition, the contamination indicator (1) can pop out. Wait until the operating temperature is reached before you press the contamination indicator (1) back in. The filter element must be replaced if the contamination indicator (1) pops out again.

The high-pressure filter (2) of the on-board hydraulic system sits at the front right, behind the twine box.

The high-pressure filter (3) of the working hydraulics sits in the front area of the drawbar.

### Changing the filter element



BP000-669

✓ A suitable container is available for escaping oil.

**NOTE! Risk of machine damage due to improperly performed oil level check, oil and filter element change! Follow the safety routine "Oil level check. Changing oil and filter elements safely", see Page 30.**

- ▶ Depressurise the hydraulic system.
- ▶ Unscrew the bottom part of the filter (5) from the top part of the filter (1).
- ▶ Remove the filter element (4).
- ▶ Inspect the bottom part of the filter (5) for damage, clean it and wet it with operating oil.
- ▶ Wet the new filter element (4), which has identical properties, with operating oil and push it onto the coupling lug (3).
- ▶ Check the O-ring seal (2) and, if required, replace it with a new O-ring seal which has identical properties.
- ▶ Wet the O-ring seal (2) with operating oil.
- ▶ Screw the bottom part of the filter (5) all the way onto the top part of the filter (1) and then unscrew it one quarter turn.
- ▶ Charge the hydraulic system with pressure and check it for leaks.
- ▶ **High-pressure filter (8) of the working hydraulics:** Bleed the control block.

## 20 Maintenance - Gearbox

**⚠ WARNING**

**Risk of injury due to non-observance of relevant safety notices**

If the relevant safety notices are not observed, persons may get seriously injured or killed.

- ▶ To avoid accidents, the basic safety instructions must be read and observed, [see Page 17](#).

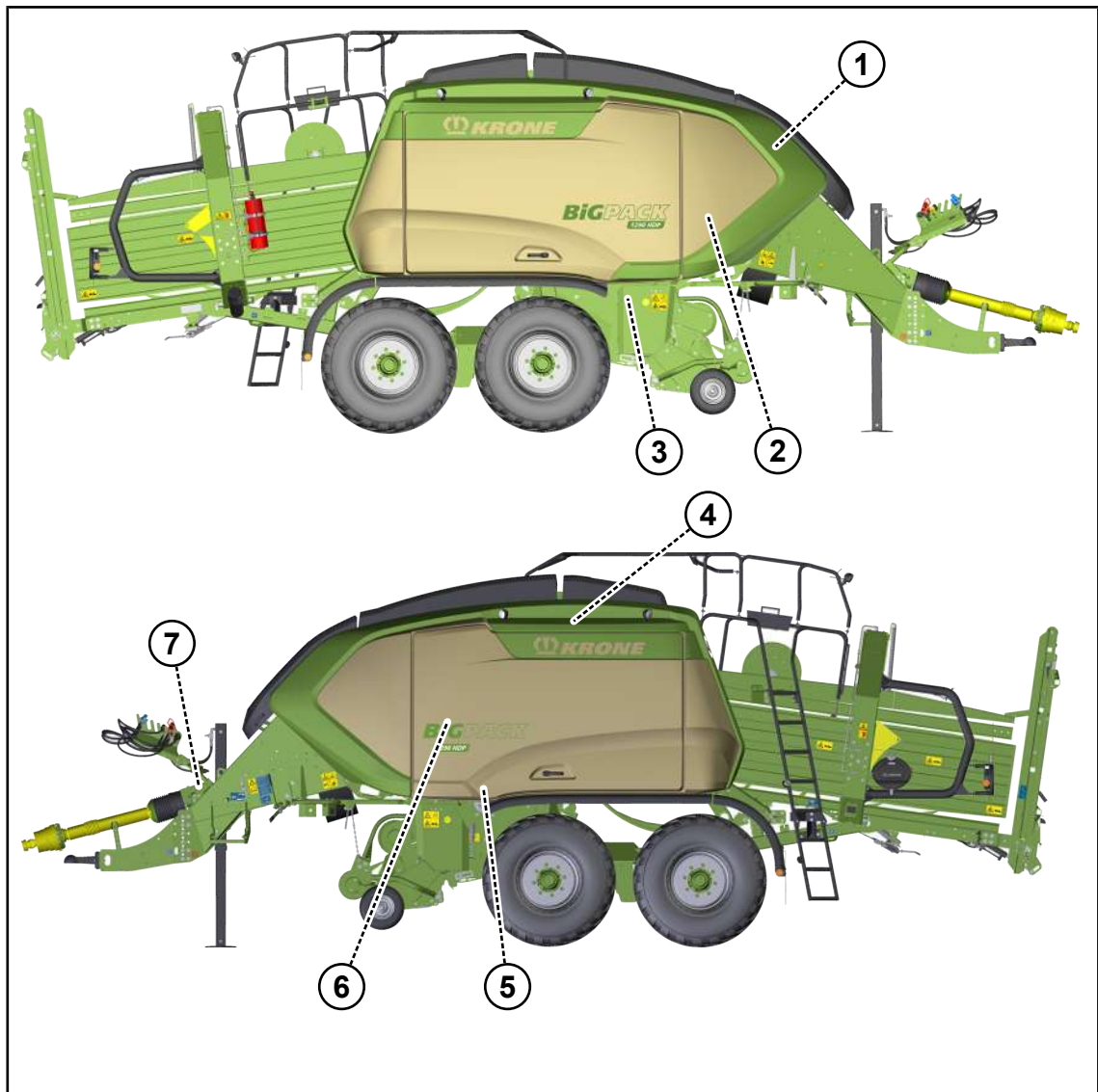
**⚠ WARNING**

**Risk of injury due to non-observance of safety instructions**

If the relevant safety routines are not observed, persons may be seriously injured or killed.

- ▶ The safety routines must be read and observed to avoid accidents, [see Page 29](#).

### 20.1 Overview of gearboxes



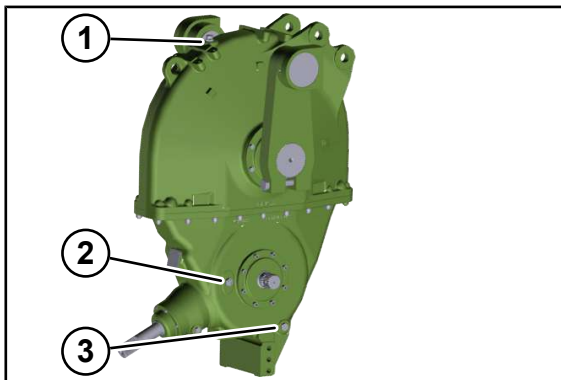
BPG000-122

- |   |  |   |  |
|---|--|---|--|
| 1 | Main gearbox , <a href="#">see Page 310</a>                | 5 | Packer gearbox , <a href="#">see Page 311</a>                                  |
| 2 | Gearbox pick-up upper part , <a href="#">see Page 313</a>  | 6 | Transfer gearbox , <a href="#">see Page 312</a>                                |
| 3 | Gearbox pick-up bottom part , <a href="#">see Page 314</a> | 7 | Gearbox starter aid , <a href="#">see Page 315</a><br>In "Starter aid" version |
| 4 | Knotter gearbox , <a href="#">see Page 314</a>             |   |  |

## 20.2 Main gearbox

### INFO

The oil level must be checked and changed with the machine in horizontal position. Use the lower edges of the cross-members as a reference edge.



BPG000-053

### Checking the oil level

**NOTE! Risk of machine damage due to improperly performed oil level check, oil and filter element change! Follow the safety routine "Oil level check. Changing oil and filter elements safely", [see Page 30](#).**

The oil level must reach the middle of the viewing glass (2).

If the oil does not reach the middle of the viewing glass (2):

- ▶ Remove the locking screw from the oil filling hole (1).
- ▶ Top up oil via oil filling hole (1) until the middle of the viewing glass (2) is reached.
- ▶ Screw the locking screw into the oil filling hole (1), tightening torque [see Page 286](#).

### Changing the oil

✓ A suitable container is available for escaping oil.

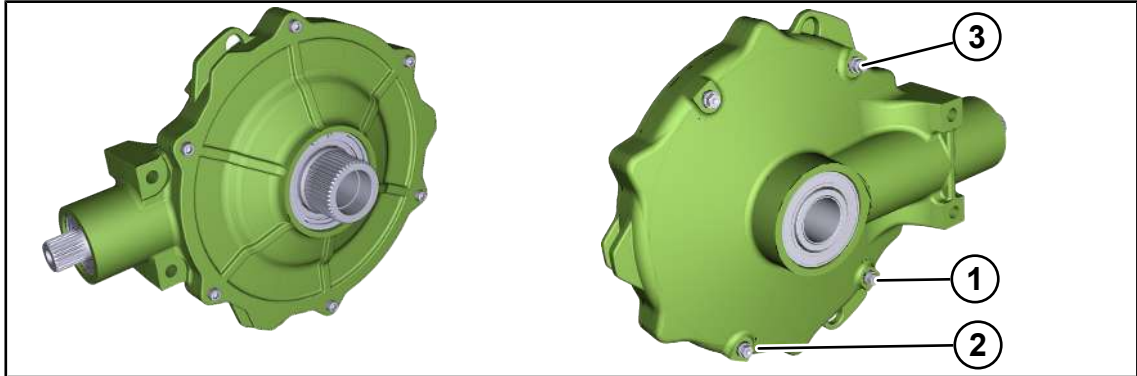
**NOTE! Risk of machine damage due to improperly performed oil level check, oil and filter element change! Follow the safety routine "Oil level check. Changing oil and filter elements safely", [see Page 30](#).**

- ▶ Remove the locking screw from the oil filling hole (1).
- ▶ Unscrew the drain plug (3) and drain the oil.
- ▶ Mount the drain plug (3), tightening torque [see Page 286](#).
- ▶ Refill with fresh oil via the oil filling hole (1) up to the middle of the inspection glass (2).
- ▶ Screw in the locking screw of the oil filling hole (1) and tighten it firmly, tightening torque [see Page 286](#).

## 20.3 Packer gearbox

### INFO

The oil level must be checked and changed with the machine in horizontal position. Use the lower edges of the cross-members as a reference edge.



BPG000-118

### Checking the oil level

**NOTE! Risk of machine damage due to improperly performed oil level check, oil and filter element change! Follow the safety routine "Oil level check. Changing oil and filter elements safely", see Page 30.**

- ▶ Remove the locking screw from the inspection hole (1).
  - ⇒ If the oil reaches the inspection hole (1):
- ▶ Mount the locking screw of the inspection hole (1); tightening torque [see Page 286](#).
  - ⇒ If the oil does not reach the inspection hole (1):
- ▶ Remove the locking screw from the filling hole (3).
- ▶ Refill with fresh oil up to the inspection hole (1) via the filling hole (3).
- ▶ Screw the locking screw into the inspection hole (1) and the locking screw into the filling hole (3), tightening torque [see Page 286](#).

### Changing the oil

- ✓ A suitable container is available for escaping oil.

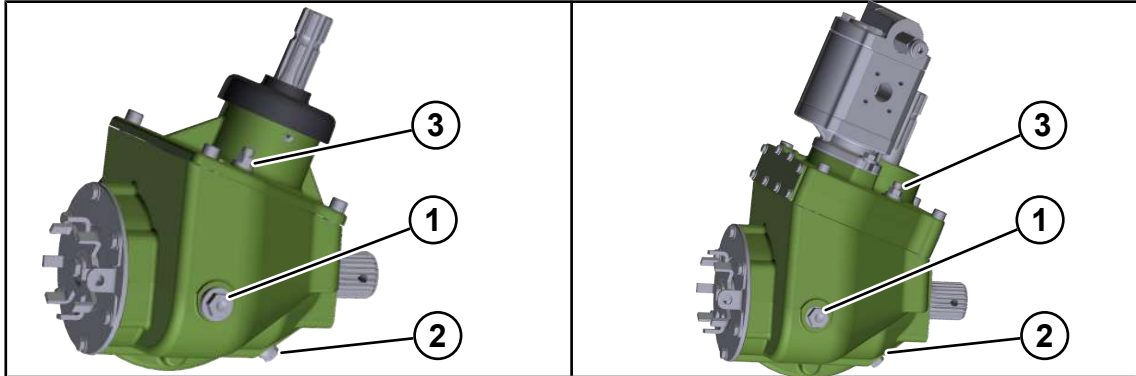
**NOTE! Risk of machine damage due to improperly performed oil level check, oil and filter element change! Follow the safety routine "Oil level check. Changing oil and filter elements safely", see Page 30.**

- ▶ Unscrew the locking screw of the inspection hole (1) and the locking screw of the filling hole (3).
- ▶ Unscrew the drain plug (2) and drain the oil.
- ▶ Mount the drain plug (2), tightening torque [see Page 286](#).
- ▶ Top up with fresh oil via the filling hole (3) up to the inspection hole (1).
- ▶ Screw the locking screw into the inspection hole (1) and the locking screw into the filling hole (3), tightening torque [see Page 286](#).

## 20.4 Transfer gearbox

### INFO

The oil level must be checked and changed with the machine in horizontal position. Use the lower edges of the cross-members as a reference edge.



BPG000-119

Transfer gearbox in "Knotter cleaning" version    Transfer gearbox, in "cleaning fan" version

### Checking the oil level

**NOTE! Risk of machine damage due to improperly performed oil level check, oil and filter element change! Follow the safety routine "Oil level check. Changing oil and filter elements safely", see Page 30.**

- ▶ Remove the locking screw from the inspection hole (1).
  - ⇒ If the oil reaches the inspection hole (1):
- ▶ Mount the locking screw of the inspection hole (1); tightening torque [see Page 286](#).
  - ⇒ If the oil does not reach the inspection hole (1):
- ▶ Remove the locking screw from the filling hole (3).
- ▶ Refill with fresh oil up to the inspection hole (1) via the filling hole (3).
- ▶ Screw the locking screw into the inspection hole (1) and the locking screw into the filling hole (3), tightening torque [see Page 286](#).

### Changing the oil

✓ A suitable container is available for escaping oil.

**NOTE! Risk of machine damage due to improperly performed oil level check, oil and filter element change! Follow the safety routine "Oil level check. Changing oil and filter elements safely", see Page 30.**

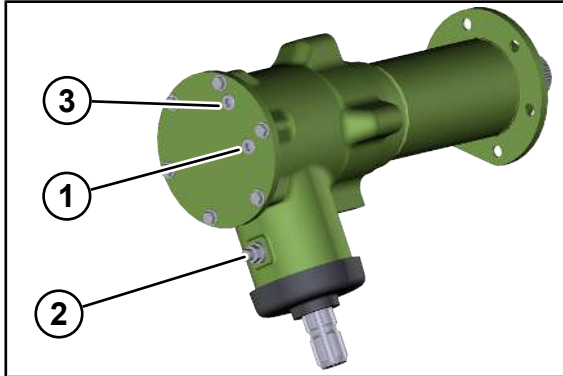
- ▶ Unscrew the locking screw of the inspection hole (1) and the locking screw of the filling hole (3).
- ▶ Unscrew the drain plug (2) and drain the oil.
- ▶ Mount the drain plug (2), tightening torque [see Page 286](#).
- ▶ Top up with fresh oil via the filling hole (3) up to the inspection hole (1).
- ▶ Screw the locking screw into the inspection hole (1) and the locking screw into the filling hole (3), tightening torque [see Page 286](#).



## 20.5 Gearbox pick-up top part

### INFO

The oil level must be checked and changed with the machine in horizontal position. Use the lower edges of the cross-members as a reference edge.



BPG000-061

### Checking the oil level

**NOTE! Risk of machine damage due to improperly performed oil level check, oil and filter element change! Follow the safety routine "Oil level check. Changing oil and filter elements safely", see Page 30.**

- ▶ Remove the locking screw from the inspection hole (1).
  - ⇒ If the oil reaches the inspection hole (1):
- ▶ Mount the locking screw of the inspection hole (1); tightening torque [see Page 286](#).
  - ⇒ If the oil does not reach the inspection hole (1):
- ▶ Remove the locking screw from the filling hole (3).
- ▶ Refill with fresh oil up to the inspection hole (1) via the filling hole (3).
- ▶ Screw the locking screw into the inspection hole (1) and the locking screw into the filling hole (3), tightening torque [see Page 286](#).

### Changing the oil

✓ A suitable container is available for escaping oil.

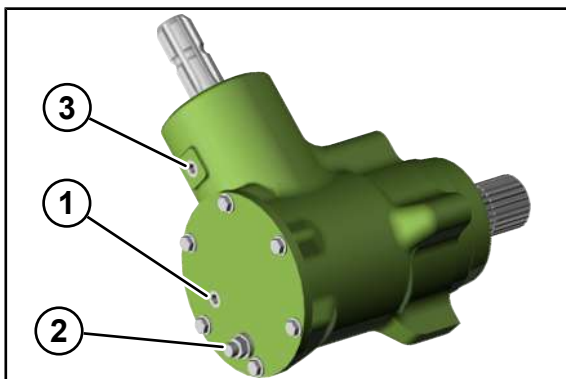
**NOTE! Risk of machine damage due to improperly performed oil level check, oil and filter element change! Follow the safety routine "Oil level check. Changing oil and filter elements safely", see Page 30.**

- ▶ Unscrew the locking screw of the inspection hole (1) and the locking screw of the filling hole (3).
- ▶ Unscrew the drain plug (2) and drain the oil.
- ▶ Mount the drain plug (2), tightening torque [see Page 286](#).
- ▶ Top up with fresh oil via the filling hole (3) up to the inspection hole (1).
- ▶ Screw the locking screw into the inspection hole (1) and the locking screw into the filling hole (3), tightening torque [see Page 286](#).

## 20.6 Gearbox pick-up bottom part

### INFO

The oil level must be checked and changed with the machine in horizontal position. Use the lower edges of the cross-members as a reference edge.



BPG000-062

### Checking the oil level

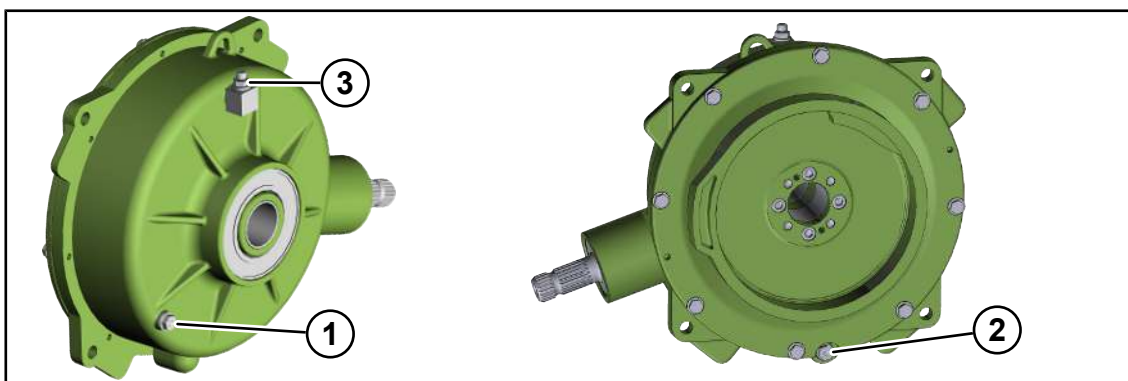
**NOTE! Risk of machine damage due to improperly performed oil level check, oil and filter element change! Follow the safety routine "Oil level check. Changing oil and filter elements safely", see Page 30.**

- ▶ Remove the locking screw from the inspection hole (1).
  - ⇒ If the oil reaches the inspection hole (1):
- ▶ Mount the locking screw of the inspection hole (1); tightening torque [see Page 286](#).
  - ⇒ If the oil does not reach the inspection hole (1):
- ▶ Remove the locking screw from the filling hole (3).
- ▶ Refill with fresh oil up to the inspection hole (1) via the filling hole (3).
- ▶ Screw the locking screw into the inspection hole (1) and the locking screw into the filling hole (3), tightening torque [see Page 286](#).

## 20.7 Knotter gearbox

### INFO

The oil level must be checked and changed with the machine in horizontal position. Use the lower edges of the cross-members as a reference edge.



BP000-682

### Checking the oil level

**NOTE! Risk of machine damage due to improperly performed oil level check, oil and filter element change! Follow the safety routine "Oil level check. Changing oil and filter elements safely", see Page 30.**

- ▶ Remove the locking screw from the inspection hole (1).
  - ⇒ If the oil reaches the inspection hole (1):
- ▶ Mount the locking screw of the inspection hole (1); tightening torque [see Page 286](#).
  - ⇒ If the oil does not reach the inspection hole (1):
- ▶ Remove the locking screw from the filling hole (3).
- ▶ Refill with fresh oil up to the inspection hole (1) via the filling hole (3).
- ▶ Screw the locking screw into the inspection hole (1) and the locking screw into the filling hole (3), tightening torque [see Page 286](#).

### Changing the oil

✓ A suitable container is available for escaping oil.

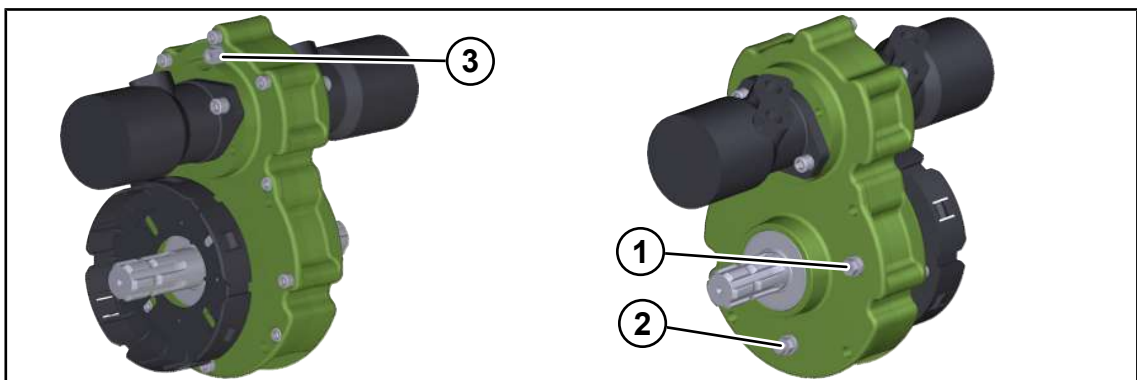
**NOTE! Risk of machine damage due to improperly performed oil level check, oil and filter element change! Follow the safety routine "Oil level check. Changing oil and filter elements safely", see Page 30.**

- ▶ Unscrew the locking screw of the inspection hole (1) and the locking screw of the filling hole (3).
- ▶ Unscrew the drain plug (2) and drain the oil.
- ▶ Mount the drain plug (2), tightening torque [see Page 286](#).
- ▶ Top up with fresh oil via the filling hole (3) up to the inspection hole (1).
- ▶ Screw the locking screw into the inspection hole (1) and the locking screw into the filling hole (3), tightening torque [see Page 286](#).

## 20.8 Gearbox starter aid

### INFO

The oil level must be checked and changed with the machine in horizontal position. Use the lower edges of the cross-members as a reference edge.



BPG000-123

### Checking the oil level

**NOTE! Risk of machine damage due to improperly performed oil level check, oil and filter element change! Follow the safety routine "Oil level check. Changing oil and filter elements safely", see Page 30.**

- ▶ Remove the locking screw from the inspection hole (1).
  - ⇒ If the oil reaches the inspection hole (1):
- ▶ Mount the locking screw of the inspection hole (1); tightening torque [see Page 286](#).
  - ⇒ If the oil does not reach the inspection hole (1):
- ▶ Remove the locking screw from the filling hole (3).
- ▶ Refill with fresh oil up to the inspection hole (1) via the filling hole (3).
- ▶ Screw the locking screw into the inspection hole (1) and the locking screw into the filling hole (3), tightening torque [see Page 286](#).

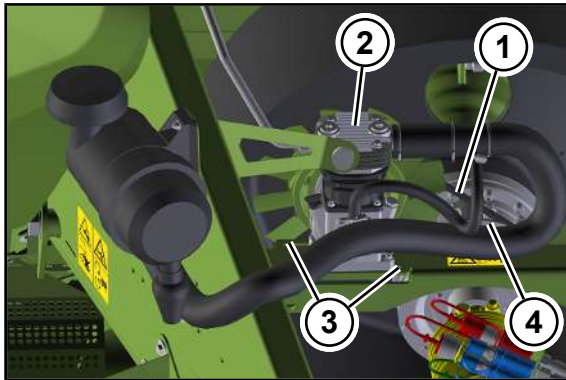
### Changing the oil

✓ A suitable container is available for escaping oil.

**NOTE! Risk of machine damage due to improperly performed oil level check, oil and filter element change! Follow the safety routine "Oil level check. Changing oil and filter elements safely", see Page 30.**

- ▶ Unscrew the locking screw of the inspection hole (1) and the locking screw of the filling hole (3).
- ▶ Unscrew the drain plug (2) and drain the oil.
- ▶ Mount the drain plug (2), tightening torque [see Page 286](#).
- ▶ Top up with fresh oil via the filling hole (3) up to the inspection hole (1).
- ▶ Screw the locking screw into the inspection hole (1) and the locking screw into the filling hole (3), tightening torque [see Page 286](#).

## 21 Maintenance - Compressor

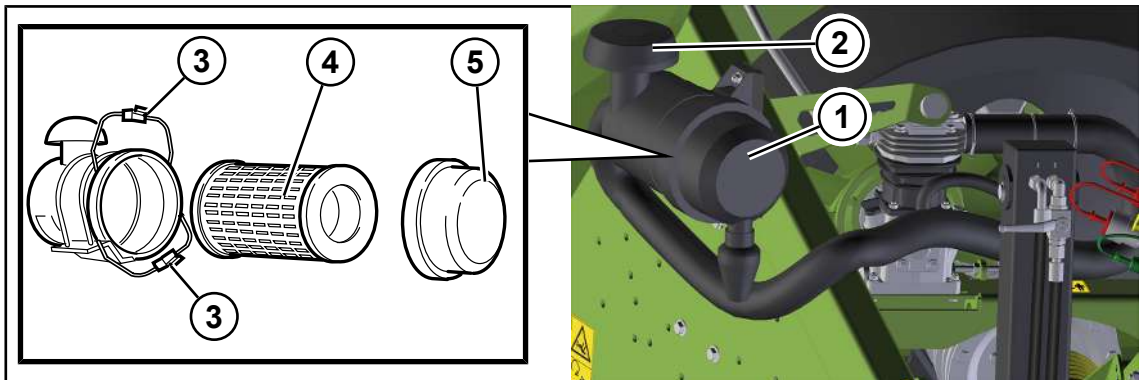


BPG000-124

The compressor (2) is located between the drawbar beams.

The compressor (2) is driven via a V-belt pulley (4) mounted on the flywheel and the V-belt (1). The tension on the V-belt (1) can be changed by moving the compressor (2) in the oblong holes (3).

### 21.1 Cleaning/changing the filter element at compressor



BPG000-125

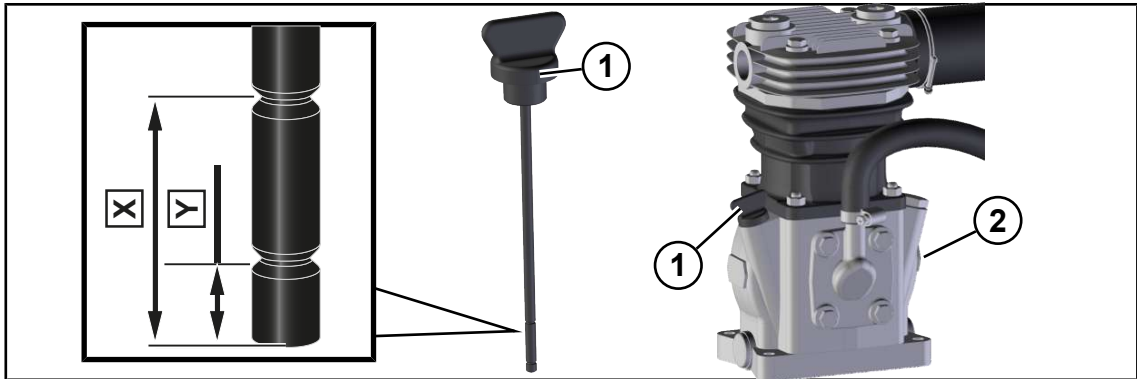
#### INFO

Clean the air filter (1) at least once a day or several times a day in case of high dust load. For heavy accumulations of dirt in the air filter, the intake manifold (2) can be attached directly to the cabin roof of the tractor using a retrofit kit (order No 00 287 363 \*).

- ▶ Shut down and safeguard the machine, [see Page 29](#).
- ▶ Observe the intervals for cleaning/changing the filter element, [see Page 280](#)
- ▶ Clean the area around the air filter (1) and make sure that no foreign bodies get into the air filter.
- ▶ Move the retaining bracket (3) on the air filter (1) up/down.
- ▶ Remove the cover (5).
- ▶ Remove the filter cartridge (4), knock out the dirt and blow it out from the inside to the outside with an air jet.
  - ⇒ Replace the filter cartridge (4) in case it is excessively soiled or damaged.
- ▶ Disassemble and tap out the cover (5).

- ▶ Install the filter cartridge (4).
- ▶ Attach the cover (5) to the air filter (1) and secure it with retaining brackets (3).
- ▶ Check visually that the cover (4) is sealed tightly with the air filter (1).

### 21.2 Checking oil level and changing oil at compressor



BPG000-126

#### Checking the oil level

**NOTE! Risk of machine damage due to improperly performed oil level check, oil and filter element change! Follow the safety routine "Oil level check. Changing oil and filter elements safely", see Page 30.**

- ▶ Thoroughly clean the area around the oil dipstick (1).
- ▶ Pull out the oil dipstick (1), clean and push in all the way. Use a lint-free cloth to clean the oil dipstick.
- ▶ Pull out the oil dipstick (1) and read off oil level.
  - ⇒ If the oil on the dipstick is below the Y marking:
    - ▶ Refill the oil via the filling hole of the oil dipstick (1).
    - ▶ Check the oil level.
  - ⇒ If the oil on the dipstick is between the markings X and Y:
    - ▶ Push in the oil dipstick (1).

#### Changing the oil

**NOTE! Risk of machine damage due to improperly performed oil level check, oil and filter element change! Follow the safety routine "Oil level check. Changing oil and filter elements safely", see Page 30.**

- ✓ A suitable container is available for escaping oil.
- ▶ Pull out the oil dipstick (1).
- ▶ Unscrew the drain plug (2) and drain the oil.
- ▶ Screw in the drain plug (2) and tighten it firmly.
- ▶ Fill in new oil through the filling hole of the oil dipstick (1).
- ▶ Check the oil level with the oil dipstick (1).

## 22 Maintenance – Silage additives unit

 **WARNING**

**Risk of injury due to silage additives**

If handled improperly, the chemicals used in the silage additives unit may cause damage to health.

- ▶ The silage additives unit may only be operated by persons who are familiar with these Operating Instructions and the safety data sheet of the manufacturer of the silage additives. The safety instructions issued by the silage additive manufacturer must be followed.
- ▶ The operator must be instructed in the safe handling of the chemicals used.

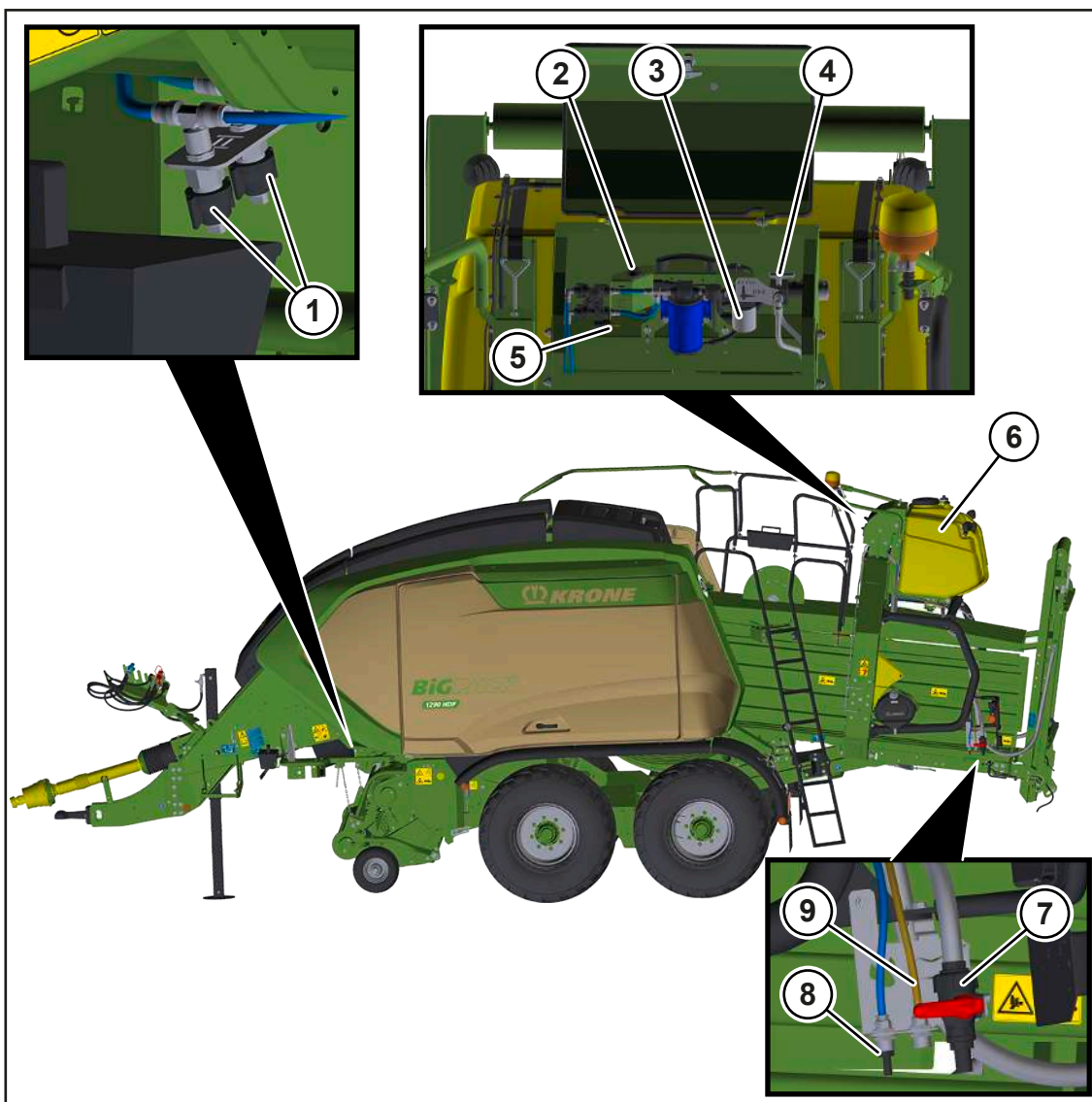
**NOTICE**

**Frost damage to the silage additives unit**

Water remaining in the silage additives unit can cause damage to the silage additives unit when it freezes.

- ▶ After the season, fill the silage additives tank with a biological, non-aggressive frost protection agent, and run the silage additives unit in "continuous operation" mode for 2 min at a pumping rate of 50%, [see Page 237](#).
- ▶ Before the season starts, empty the silage additives tank, fill it with clear water and run the silage additives unit in "continuous operation" mode for 10 min at a pumping rate of 75%, [see Page 237](#).

22.1 Overview of silage additives unit

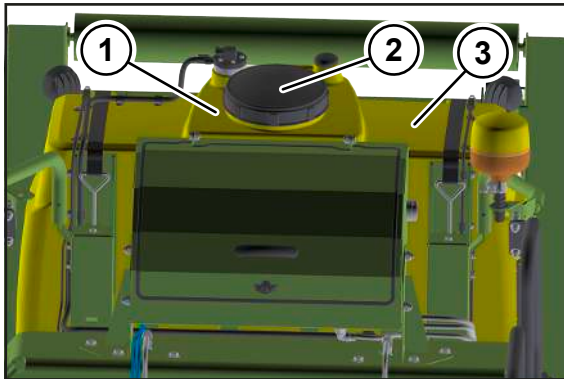


BPG000-155

Icon	Designation	Explanation
(1)	Nozzles	Right and left machine side
(2)	Momentary switch	
(3)	Filter of the silage additives unit	
(4)	Three-way stopcock	RUN= silaging FLUSH = rinsing
(5)	Compressed-air connection	Residual liquid can be removed from the silage additives unit through the compressed-air fitting.
(6)	Silage additives tank	
(7)	Two-way stopcock	To lock/loosen the drain hose.
(8)	pressure hose	To connect an external water connection.
(9)	Drip hose	



## 22.2 Filling the silage additives tank



BP000-820

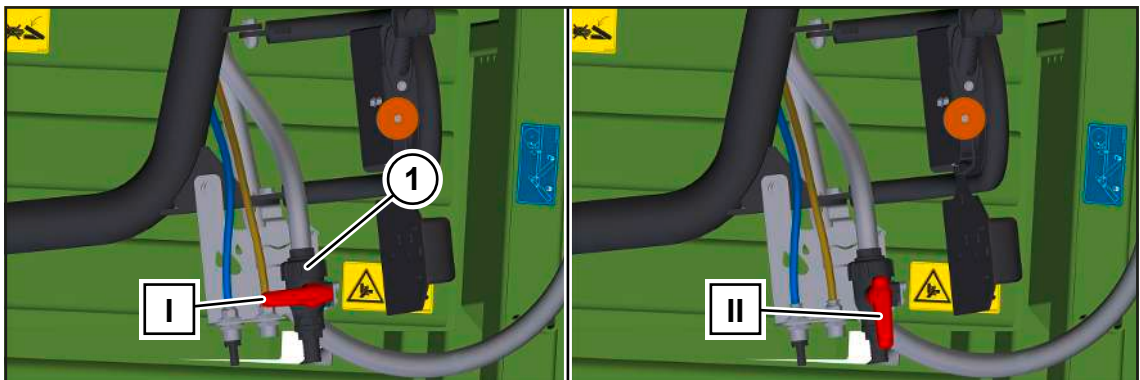
Filling quantity: [see Page 80](#)

- ✓ The machine has been shut down and secured, [see Page 29](#).
- ▶ Ensure that the two-way stopcock on the drain hose is closed, [see Page 321](#).
- ▶ Clean the area around the filler neck (1).
- ▶ Unscrew the cover (2).

**NOTE! Damage to the silage additives unit from using wrong silage additives. Fill the silage additives tank only with non-aggressive and non-corrosive silage additives.**

- ▶ Fill the silage additives tank (3) with silage additives that are **not** aggressive and **not** corrosive.
- ▶ Close the cover (2) tightly.

## 22.3 Emptying the silage additives tank



BP000-821

Position (I) = two-way stopcock closed

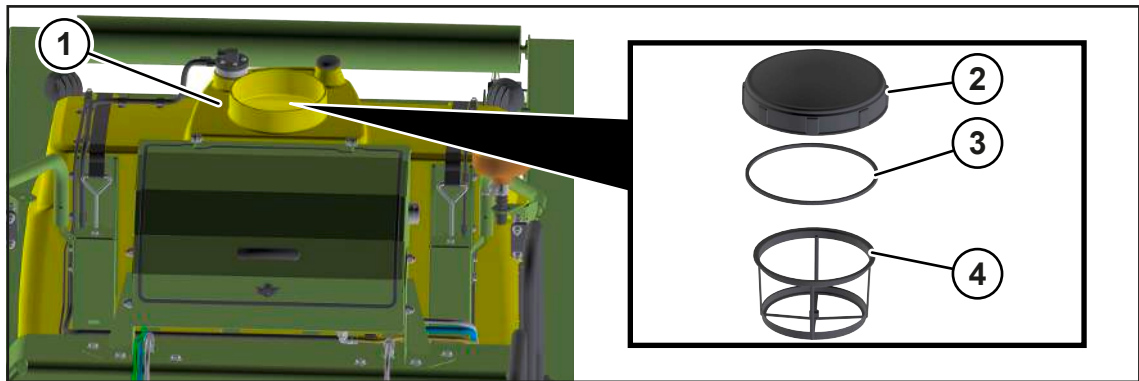
Position (II) = two-way stopcock released

- ✓ The machine has been shut down and secured, [see Page 29](#).
- ✓ A suitable container is available for escaping silage additives.

**NOTE! Risk of environmental damage from silage additives. The environment will be polluted if silage additives and rinsing water get into the soil or surface water. Dispose of silage additive residues and rinsing water properly.**

- ▶ Set the two-way stopcock (1) to position II.
- ➔ The silage additives run through a drain hose into the container provided.
- ▶ Once the silage additives tank is completely empty, turn the two-way stopcock (1) to position I.

## 22.4 Cleaning the silage additives tank



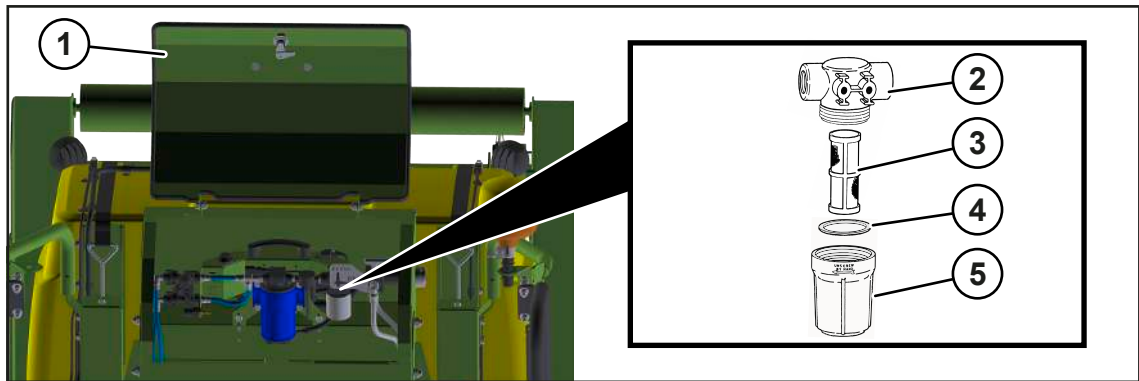
BP000-823

- ✓ The machine has been shut down and secured, [see Page 29](#).
- ✓ The silage additives tank is empty and the two-way stopcock at the drain hose is open. [see Page 321](#).
- ✓ A suitable container is available for escaping silage additives/water.

**NOTE! Risk of environmental damage from silage additives. The environment will be polluted if silage additives and rinsing water get into the soil or surface water. Dispose of silage additive residues and rinsing water properly.**

- ▶ Clean the area around the filler neck (1).
- ▶ Unscrew the cover (2).
- ▶ Remove the seal ring (3) and the filter element (4).
- ▶ Visually check to ensure that the seal ring (3) and the filter element (4) are not damaged.
  - ▶ Replace any damaged seal ring (3) or filter element (4).
  - ▶ Clean an undamaged filter element (4) with water.
- ▶ Clean the interior of the silage additives tank with a high-pressure cleaner.
- ➔ The silage additives/water run through a drain hose into the container provided.
- ▶ Insert the filter element (4) and the sealing ring (3) into the silage additives tank.
- ▶ Screw on the cover (2) and tighten it.
- ▶ Close the two-way stopcock at the drain hose, [see Page 321](#).

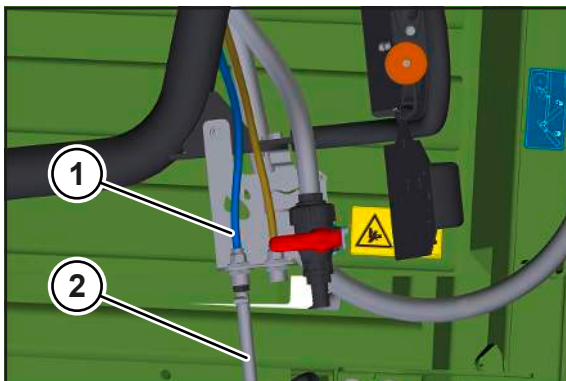
## 22.5 Cleaning the filter of the silage additives unit



BP000-822

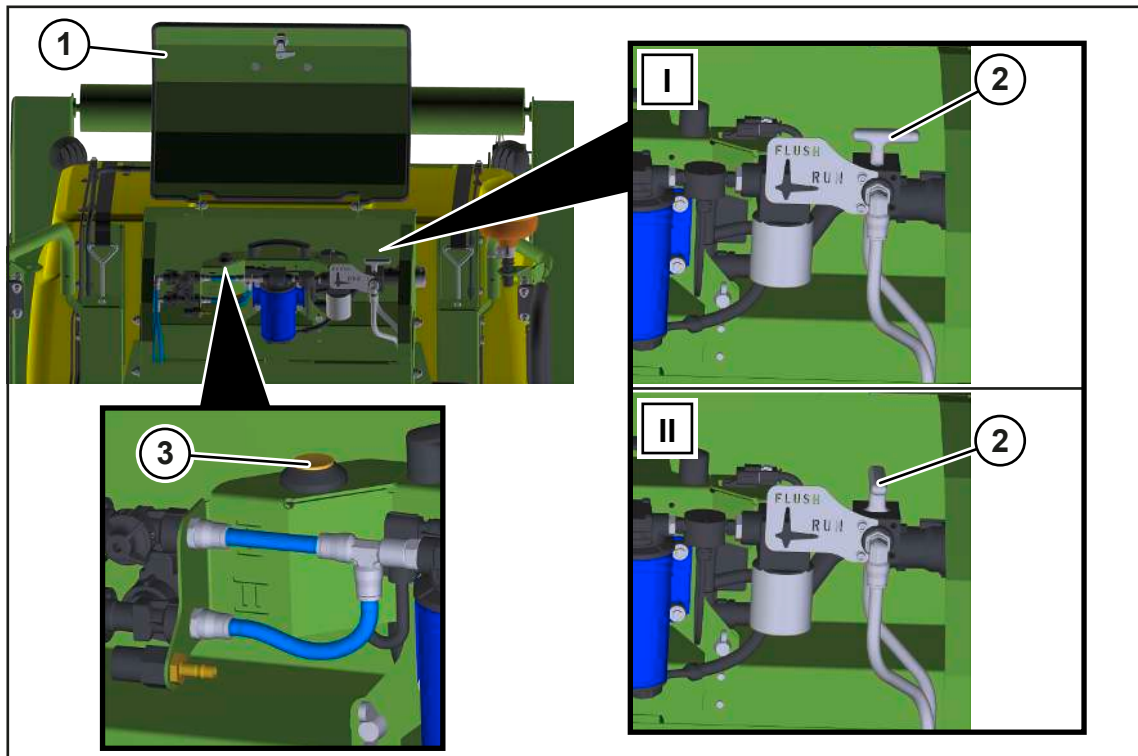
- ✓ The machine has been shut down and secured, [see Page 29](#).
- ✓ A suitable container is available for escaping silage additives.
- ▶ Open the cover (1).
- ▶ Unscrew the bottom part of the filter (5) from the top part of the filter (2).
- ▶ Remove the filter element (3).
- ▶ Visually check to ensure that the bottom of the filter (5) is not damaged.
  - ▶ Replace a defective bottom part of the filter (5).
  - ▶ Clean an undamaged bottom part of the filter (4) with water.
- ▶ Visually check to ensure that the filter element (3) is not damaged.
  - ▶ Replace a damaged filter element (3).
  - ▶ Clean an undamaged filter element (3) with water.
- ▶ Visually check to ensure that the seal ring (4) is not damaged.
  - ▶ Replace a damaged seal ring.
- ▶ Screw the bottom part of the filter (5) together with the seal ring (4) to the filter head part (2) until it hits the stop.

## 22.6 Rinsing the silage additives unit



BP000-824

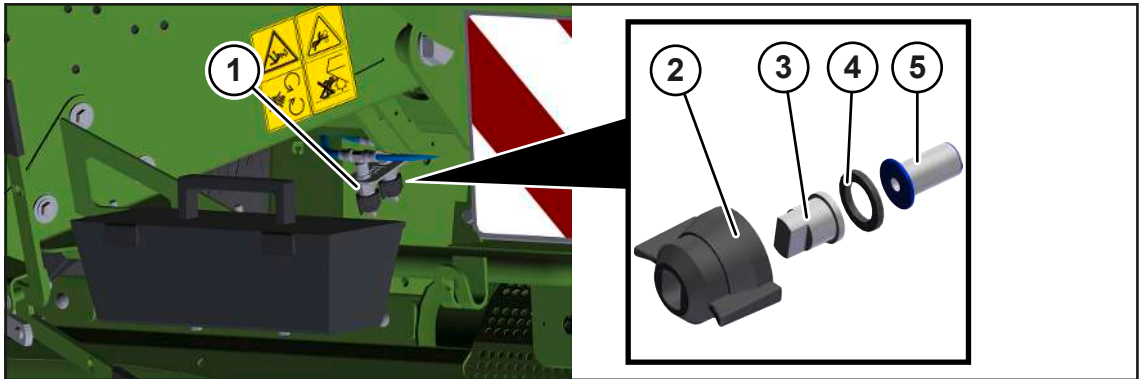
- ✓ The machine has been shut down and secured, [see Page 29](#).
- ▶ Connect an external water hose (2) to the pressure line (1).



BP000-825

- ▶ Open the cover (1).
- ▶ To be able to rinse the silage additives system, set the three-way stopcock (2) to position (II) "FLUSH".
- ▶ Open the external tap.
- ▶ Start the tractor engine.
- ▶ Press and hold the momentary switch (3) until clear water emerges from the nozzles.
- ➔ Alternatively, select "Silage additives dosing continuous operation" to rinse the silage additives unit, [see Page 237](#).
- ▶ To be able to silage later with the silage additives system, set the three-way stopcock (2) to position (I) "RUN".
- ▶ Disconnect the external water hose (2) from the pressure line (1).

## 22.7 Removing / cleaning the nozzle from the lubricant system

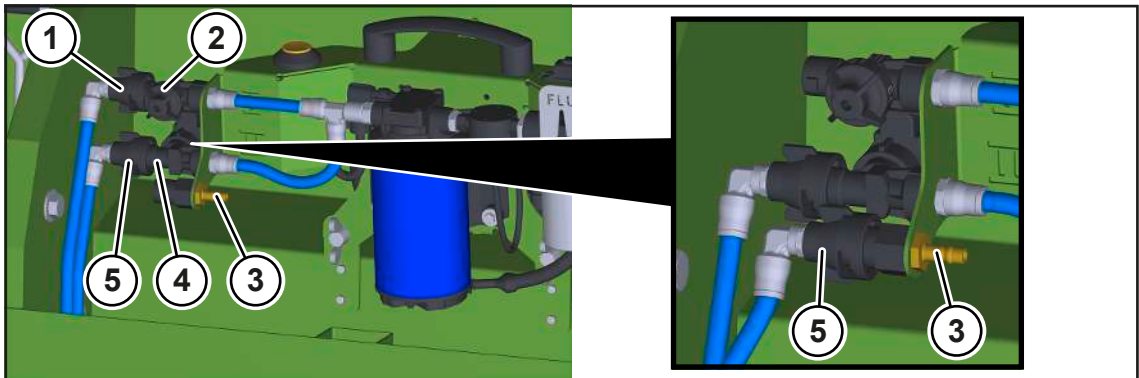


BP000-827

- ✓ The machine has been shut down and secured, [see Page 29](#).
- ▶ Loosen the cap (2).
- ▶ Remove nozzle (3), seal (4) and filter (5) from the nozzle support (1).
- ▶ Clean nozzle (3), seal (4) and filter (5).
- ▶ After cleaning, insert nozzle (3), seal (4) and filter (5) into the nozzle support (1), and secure them with the cap (2).
- ▶ Repeat this process for all nozzles on the right and left sides of the machine.

## 22.8 Removing the residual liquid from the silage additives unit

To remove the residual liquid from the lines (1, 5), you can connect the lines (1, 5) to the compressed-air connection (3).





BP000-829

- ✓ The silage additives unit was rinsed with water, [see Page 323](#).
- ✓ The machine has been shut down and secured, [see Page 29](#).
- ▶ Open the cover to the pump unit.
- ▶ Mount the line (1) to the compressed-air connection (3).
- ▶ Connect an external compressed-air connection to the compressed-air connection (3).
- ▶ Blow compressed air through the line (1) until no more residual liquid emerges from the nozzles.
- ▶ Once there is no more residual liquid coming out of the nozzles, mount the line (1) on the pressure connection (2).
- ▶ Mount the line (5) to the compressed-air connection (3).

- ▶ Blow compressed air through the line (5) until no more residual liquid emerges from the nozzles.
- ▶ Once there is no more residual liquid coming out of the nozzles, mount the line (5) on the pressure connection (4).
- ▶ Close the cover to the pump unit.


## 23 Malfunction, cause and remedy

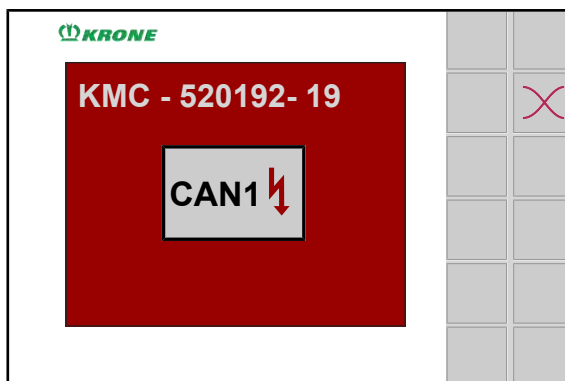
 <b>WARNING</b>
<p><b>Risk of injury due to non-observance of relevant safety notices</b></p> <p>If the relevant safety notices are not observed, persons may get seriously injured or killed.</p> <ul style="list-style-type: none"> <li>▶ To avoid accidents, the basic safety instructions must be read and observed, <a href="#">see Page 17.</a></li> </ul>

 <b>WARNING</b>
<p><b>Risk of injury due to non-observance of safety instructions</b></p> <p>If the relevant safety routines are not observed, persons may be seriously injured or killed.</p> <ul style="list-style-type: none"> <li>▶ The safety routines must be read and observed to avoid accidents, <a href="#">see Page 29.</a></li> </ul>

### 23.1 Malfunctions electrics/electronics

#### 23.1.1 Error Messages

 <b>WARNING</b>
<p><b>Risk of injury to persons and damage to machines if error messages are ignored</b></p> <p>If error messages are ignored and the fault is not rectified, there is a risk of injury to persons and/or severe damage to the machine.</p> <ul style="list-style-type: none"> <li>▶ Eliminate the disturbance when an error message is displayed; see Chapter "Error list" in the supplement to the operating instructions (software).</li> <li>▶ If the fault cannot be rectified, contact KRONE service partner.</li> </ul>





EQG000-034

The display shows an error message when a disturbance occurs on the machine. At the same time, an audible signal sounds (continuous horn signal). For a list of the error messages see Chapter "Error list" in the supplement to the operating instructions (software).


### Configuration of an error message

The error message is configured according to the following sample: e.g. error message

"520192-19 

520192	19	
SPN (Suspect Parameter Number) = error number	FMI = type of error, <a href="#">see Page 328</a>	Icon

### Acknowledging error message

- ▶ Note down the error message.
- ▶ Briefly press on .
- ➔ The acoustic signal stops and the error display is no longer indicated. The error message is displayed again if the fault occurs again.
- ▶ Eliminate the fault. See Chapter "Error list" in the supplement to the operating instructions "Error messages and parameters".

Acknowledged and still pending error messages can be displayed again via the "Error list" menu or the status line.

#### 23.1.1.1 Possible error types (FMI)

There are different types of errors which are shown under the term FMI (Failure Mode Identification) with an appropriate code.

FMI	Meaning
0	The upper limit value was greatly exceeded.
1	The lower limit value was far below the required one.
2	The data is not permitted.
3	There is an overvoltage or a short circuit to supply voltage.
4	There is an undervoltage or a short circuit to ground.
5	A cable is broken or amperage is too low.
6	There is a short circuit to ground or amperage is too low.
7	The mechanics do not respond or the expected result was not achieved.
8	The frequency is not permitted.
9	There is an abnormal update rate.
10	There is an abnormal rate of change.
11	The error cause is unknown.
12	There is an internal error.
13	The values of the calibration are outside the value range.
14	Particular instructions are required.
15	The upper limit value has been reached.
16	The upper limit value has been exceeded.

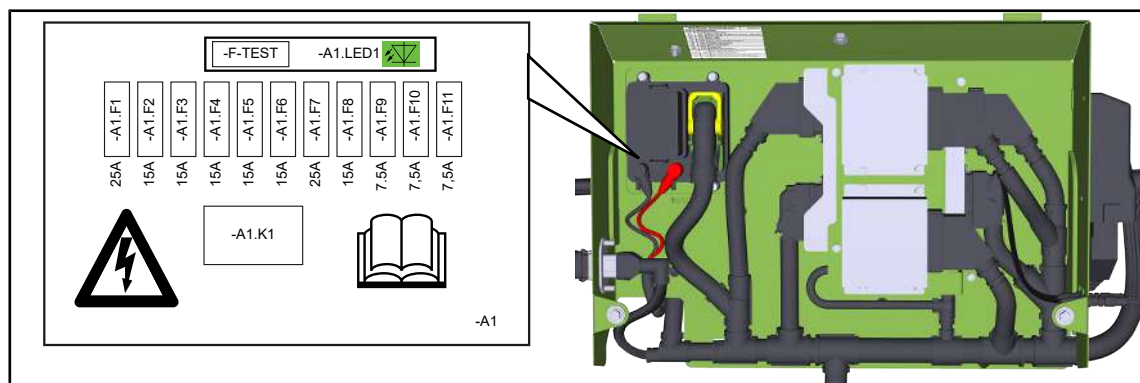


FMI	Meaning
17	The lower limit value has been reached.
18	The lower limit value has not been reached.
19	There is a CAN communication failure.
20	The data deviates upwards.
21	The data deviates downwards.
31	The condition has been fulfilled.

### 23.1.2 Overview of fuses

The "central electrical system circuit board" is in the distributor of the central electrical system, [see Page 52](#).

As indicated on the circuit diagram, the following fuses are on the circuit board:



BP000-885

BMK	Designation	BMK	Designation
A1.F1	KMC UB4 / UB6	A1.F7	KMC UB1 / UB5
A1.F2	silage additives unit	A1.F8	Reserve
A1.F3	KMC - UB2	A1.F9	ISOBUS extension
A1.F4	KMC - UB3	A1.F10	KMC, FMA1, ISOBUS Breakaway Connector
A1.F5	working lights	A1.F11	Moisture measurement, bale scales, silage additives unit, working lights
A1.F6	ISOBUS extension		

### 23.1.3 Remedying sensor/actuator error

Components must be repaired or replaced by a qualified specialist workshop only.

Before contacting the dealer, collect the following information about the error message:

- ▶ Note the error number and the respective FMI (*see Page 328*) that are shown on the display.
- ▶ Shut down and safeguard the machine, *see Page 29*.
- ▶ Check sensor/actuator externally for damage.
- ➔ If the sensor/actuator is damaged, replace the sensor/actuator.
- ➔ If the sensor/actuator is not damaged, continue with the next test step.
- ▶ Check connector cable and plug connection for damage and tightness.
- ➔ If the connector cable/plug connection is damaged, replace the connector cable/plug connection.
- ➔ If the sensor/actuator is not damaged, continue with the next test step.
- ▶ Perform an actuator test in case of an actuator error to identify the actuator status, *see Page 256*.
- ▶ If a sensor is defective, run a sensor test to identify the sensor status, *see Page 251*.

The more information the dealer has, the easier it is to eliminate the cause of the error.

## 23.2 Faults when picking up crops

**Malfunction:** Plunger/tying unit stops.

Possible cause	Remedy
The cam clutch in the flywheel is engaging again at a low speed.	<ul style="list-style-type: none"> <li>▶ Stop the tractor immediately.</li> <li>▶ Reduce the baling force.</li> <li>▶ Check the rotational speed of the universally-jointed drive shaft.</li> <li>▶ Pull the knotter needles out of the bale channel; if required replace the shear bolt in the knotter and needle drive.</li> </ul>

**Malfunction:** The knotter needles fall back.

Possible cause	Remedy
The knotter shaft brake is set too loose.	▶ Retighten the knotter shaft brake.

**Malfunction:** The big bales are not pressed densely enough.

Possible cause	Remedy
The force of pressure is too low.	▶ Increase the force of pressure.

**Malfunction:** The big bales are pressed too tight.

Possible cause	Remedy
The baling force is too high.	▶ Reduce the baling force.

**Disturbance:** The packer does not move.

Possible cause	Remedy
The cams of the cam clutch are pressed out of the groove.	<ul style="list-style-type: none"> <li>▶ Reduce the engine speed.</li> <li>▶ Shut down tractor and machine and remove the crop blockage, <i>see Page 331</i>.</li> <li>▶ Reduce the driving speed.</li> </ul>

**Disturbance:** The pick-up does not move.

Possible cause	Remedy
The cams of the star ratchet clutch are pressed out of the groove.	<ul style="list-style-type: none"> <li>▶ Shut down tractor and machine and remove the crop blockage, <a href="#">see Page 331</a>.</li> <li>▶ Reduce the driving speed.</li> <li>▶ Drive over the swath centre.</li> </ul>

**Malfunction:** The cutting rotor and the pick-up do not move.

Possible cause	Remedy
There is a crop blockage in the area of the cutting rotor.  The cam clutch in the drive train of the cutting rotor slips.	<ul style="list-style-type: none"> <li>▶ Reduce the driving speed and the engine speed.</li> <li>➡ The clutch engages again at a low rotational speed.</li> <li>▶ Swivel out blades.</li> <li>▶ The tractor and the machine must be shut off if the cutting rotor does not release itself, (<a href="#">see Page 29</a>, remove crop blockage, <a href="#">see Page 331</a>).</li> <li>▶ Reduce driving speed.</li> </ul>

**Disturbance:** The needle yoke does not move.

Possible cause	Remedy
The shear bolt of the connecting rod is broken.	<ul style="list-style-type: none"> <li>▶ Check whether the shear bolt is broken.</li> <li>▶ If required, replace the shear bolt (M10x60-12.9 DIN ISO EN 4014 ).</li> </ul>

**Disturbance:** The weighing device is not functioning properly.

Possible cause	Remedy
The sensor B22 "Bale on chute" has been misplaced due to excessive loads or the lowering of components.	▶ Have the sensor B22 "Bale on chute" adjusted by a KRONE service partner.

### 23.2.1 Removing crop blockages

- ▶ Wait until all moving components have come to a standstill.
- ▶ Shut down and safeguard the machine, [see Page 29](#).

**CAUTION! Risk of injury on sharp parts!** Always wear suitable protective gloves when removing crop blockages.

- ▶ Remove the crop blockage.

## 23.3 Malfunctions on the double knotter

**Malfunction (1):** Billhook tongue bends or breaks frequently

Possible cause	Remedy
<b>1.1</b>  The second knot gets stuck on the billhook tongue.	▶ See malfunction (2).

**Disturbance (2):** The knot gets stuck on the billhook.

Possible cause	Remedy
<p><b>2.1</b></p> <p>Worn or rough points on the billhook or bent billhooks or billhook tongue.</p>	<ul style="list-style-type: none"> <li>▶ Have the billhook replaced by a KRONE service partner.</li> </ul>
<p><b>2.2</b></p> <p>Not enough twine tension on the lower twine strand.</p>	<ul style="list-style-type: none"> <li>▶ Tighten the twine brake on the lower twine strand by approx. 1-2 turns of the wing nut, <a href="#">see Page 279</a>.</li> <li>▶ Remove any dirt deposits from all twine guide eyes, the twine brakes and the pendulum bracket.</li> <li>▶ Have broken springs, twine tension springs or worn-out twine guide eyes replaced by a KRONE service partner.</li> <li>▶ Have broken or worn-out brake wheels replaced by a KRONE service partner.</li> </ul>
<p><b>2.3</b></p> <p>Holding force of the twine re-tainer is too low.</p>	<ul style="list-style-type: none"> <li>▶ Have the retaining force of the twine holder checked/adjusted by a KRONE service partner. See manual for service technicians.</li> <li>▶ Degrease the twine retainer.</li> </ul>
<p><b>2.4</b></p> <p>The clamping effect on the billhook tongue is too high.</p>	<ul style="list-style-type: none"> <li>▶ Have the clamping effect on the billhook tongue checked/adjusted by a KRONE service partner. See manual for service technicians.</li> </ul>
<p><b>2.5</b></p> <p>Not enough twine tension on the upper twine strand.</p>	<ul style="list-style-type: none"> <li>▶ Tighten the twine brake on the upper twine strand by approx. 1-2 turns of the wing nut, <a href="#">see Page 278</a>.</li> <li>▶ Remove any dirt deposits from all twine guide eyes, the twine brakes and the pendulum bracket.</li> <li>▶ Have broken springs, twine tension springs or worn-out twine guide eyes replaced by a KRONE service partner.</li> <li>▶ Have broken or worn-out brake wheels replaced by a KRONE service partner.</li> <li>▶ Check the free travel of the upper tensioning arm.</li> </ul>
<p><b>2.6</b></p> <p>The blade lever is too far from the billhook.</p>	<ul style="list-style-type: none"> <li>▶ Have the blade lever checked/adjusted by a KRONE service partner.</li> </ul>
<p><b>2.7</b></p> <p>The blade lever has axial play.</p>	<ul style="list-style-type: none"> <li>▶ Have the axial play of the blade lever checked/adjusted by a KRONE service partner. See manual for service technicians.</li> </ul>
<p><b>2.8</b></p> <p>The scraper comb of the blade lever does not run over the centre of the billhook.</p>	<ul style="list-style-type: none"> <li>▶ Have the blade lever checked/adjusted by a KRONE service partner. See manual for service technicians.</li> <li>▶ Have the blade lever replaced by a KRONE service partner.</li> </ul>
<p><b>2.9</b></p> <p>The twine blade of the blade lever is blunt.</p>	<ul style="list-style-type: none"> <li>▶ Have the twine blade adjusted, sharpened or replaced by a KRONE service partner.</li> </ul>
<p><b>2.10</b></p> <p>The twine disc is too far at the front.</p>	<ul style="list-style-type: none"> <li>▶ Have the setting of the twine disc checked/adjusted by a KRONE service partner. See manual for service technicians.</li> </ul>

**Disturbance (3):** The first knot (closing knot) only exists in the upper twine strand.

Possible cause	Remedy
<b>3.1</b> The twine pusher did not catch the lower twine strand.	<ul style="list-style-type: none"> <li>▶ Have the twine pusher checked/adjusted by a KRONE service partner. See manual for service technicians.</li> <li>▶ Have the knotter needles adjusted by a KRONE service partner. See manual for service technicians.</li> </ul>

**Disturbance (4):** The twine winds around the billhook when knotting the first knot (closing knot).

Possible cause	Remedy
<b>4.1</b> The knotter needle does not reach the upper twine when trying to grab it on the left side.	<ul style="list-style-type: none"> <li>▶ Have the upper needle aligned by a KRONE service partner.</li> </ul>
<b>4.2</b> The twine disc engagement is late.	<ul style="list-style-type: none"> <li>▶ Have the twine disc adjusted by a KRONE service partner. See manual for service technicians.</li> <li>▶ Have the top dead centre of the knotter needle checked/adjusted by a KRONE service partner. See manual for service technicians.</li> </ul>

**Disturbance (5):** The first knot (closing knot) is not tied. The upper twine of the first knot runs from one bale to the next. Only 1 knot is tied in the lower twine strand.

Possible cause	Remedy
<b>5.1</b> The knotter needle does not reach the upper twine when trying to grab it on the right side:	<ul style="list-style-type: none"> <li>▶ Have the upper needle aligned by a KRONE service partner.</li> </ul>

**Disturbance (6):** The second knot (starting knot) is available on the lower twine strand only. No knot has been tied in the upper twine strand.

Possible cause	Remedy
<b>6.1</b> The twine pusher has been set too far away from the upper needle and cannot grip the upper twine strand.	<ul style="list-style-type: none"> <li>▶ Have the twine pusher checked/adjusted by a KRONE service partner. See manual for service technicians.</li> </ul>
<b>6.2</b> The spring of the upper tensioning arm is broken or has become unhooked.	<ul style="list-style-type: none"> <li>▶ Have a broken spring replaced by a KRONE service partner.</li> <li>▶ If the spring has become unhooked, hook the spring in.</li> </ul>
<b>6.3</b> The upper tensioning arm does not work properly.	<ul style="list-style-type: none"> <li>▶ Check the upper tensioning arm for free space from top to bottom and align if required.</li> <li>▶ If the central lubrication line is in the way, lay the central lubrication line differently.</li> </ul>

Possible cause	Remedy
<p><b>6.4</b></p> <p>The control of the upper needle is defective. The roll is not following the cam disc. The upper needle does not move down far enough.</p>	<ul style="list-style-type: none"> <li>▶ Have the roll on the control lever for the upper needle replaced by a KRONE service partner.</li> <li>▶ Ensure that the upper needle runs easily.</li> <li>▶ Check the spring on the control lever for the upper needle.</li> </ul>
<p><b>6.5</b></p> <p>Blockage of the upper twine run.</p>	<ul style="list-style-type: none"> <li>▶ Check the upper twine run from the knotter up to and including the twine roll in the twine box.</li> </ul>
<p><b>6.6</b></p> <p>The twine tension on the upper twine strand is too high.</p>	<ul style="list-style-type: none"> <li>▶ Reduce the tensioning force of the upper twine brake by approx. 1-2 turns of the wing nut, <a href="#">see Page 278</a>.</li> </ul>
<p><b>6.7</b></p> <p>The holding force of the twine retainer is too low.</p>	<ul style="list-style-type: none"> <li>▶ Have the retaining force of the twine holder adjusted by a KRONE service partner. See manual for service technicians.</li> <li>▶ Degrease the twine retainer.</li> </ul>

**Disturbance (7):** The second knot (starting knot) is available on the upper twine strand only. No knot has been tied in the lower twine strand.

Possible cause	Remedy
<p><b>7.1</b></p> <p>The lower twine tension springs do not work properly.</p>	<ul style="list-style-type: none"> <li>▶ Ensure free room for the lower twine tension springs.</li> <li>▶ Tighten the twine brake on the lower twine strand by approx. 1-2 turns of the wing nut, <a href="#">see Page 279</a>.</li> </ul>
<p><b>7.2</b></p> <p>There is not enough knotter needle overrun in the upper dead point.</p>	<ul style="list-style-type: none"> <li>▶ Have the knotter needle checked/adjusted by a KRONE service partner. See manual for service technicians.</li> </ul>
<p><b>7.3</b></p> <p>The twine pusher does not work accurately or is set incorrectly.</p>	<ul style="list-style-type: none"> <li>▶ Have the twine pusher checked/adjusted by a KRONE service partner. See manual for service technicians.</li> </ul>

**Disturbance (8):** The twine winds around the billhook when knotting the second knot (starting knot).

Possible cause	Remedy
<b>8.1</b> The upper tensioning arm does not work properly. Not enough twine tension on the upper twine strand.	<ul style="list-style-type: none"> <li>▶ Check the upper tensioning arms for easy running.</li> <li>▶ Tighten the twine brake on the upper twine strand by approx. 1-2 turns of the wing nut, <a href="#">see Page 278</a>.</li> </ul>
<b>8.2</b> Lower twine tension spring is broken or loose.	<ul style="list-style-type: none"> <li>▶ Have a broken lower twine tension spring replaced by a KRONE service partner.</li> <li>▶ If loose, tighten the lower twine tension spring.</li> </ul>
<b>8.3</b> Not enough twine tension on the lower twine strand.	<ul style="list-style-type: none"> <li>▶ Tighten the twine brake on the lower twine strand by approx. 1-2 turns of the wing nut, <a href="#">see Page 279</a>.</li> </ul>
<b>8.4</b> The twine disc engagement is late.	<ul style="list-style-type: none"> <li>▶ Have the twine disc checked/adjusted by a KRONE service partner. See manual for service technicians.</li> </ul>
<b>8.5</b> There is too much knotter needle overrun in the upper dead point.	<ul style="list-style-type: none"> <li>▶ Have the knotter needles checked/adjusted by a KRONE service partner. See manual for service technicians.</li> </ul>

**Disturbance (9):** There is no knot either in the upper or in the lower twine strand.

Possible cause	Remedy
<b>9.1</b> The twine pusher is not actuated.	<ul style="list-style-type: none"> <li>▶ Have the twine pusher mechanism checked/adjusted by a KRONE service partner. See manual for service technicians.</li> </ul>
<b>9.2</b> The billhook tongue is damaged.	<ul style="list-style-type: none"> <li>▶ Have the billhook tongue replaced by a KRONE service partner.</li> </ul>
<b>9.3</b> The tension of the billhook tongue is too low.	<ul style="list-style-type: none"> <li>▶ Have the clamping effect on the billhook adjusted by a KRONE service partner. See manual for service technicians.</li> </ul>
<b>9.4</b> The twine retainer spring is set too tight. or The twine strands are cut through in the twine retainer.	<ul style="list-style-type: none"> <li>▶ Have the twine holder checked/adjusted by a KRONE service partner. See manual for service technicians.</li> <li>▶ Remove accumulations of dirt or chaff from under the twine retainer springs.</li> </ul>
<b>9.5</b> The billhook is not turning.	<ul style="list-style-type: none"> <li>▶ Have the roll pin of the bevel gear on the billhook replaced by a KRONE service partner.</li> </ul>

**Disturbance (10):** Knot ends too short. As a result, the knot opens (usually the second knot).

Possible cause	Remedy
<b>10.1</b> The tension of the billhook tongue is too low.	▶ Have the clamping effect on the counter hook adjusted by a KRONE service partner. See manual for service technicians.
<b>10.2</b> The twine tension in the lower or upper twine strand is too low.	▶ Tighten the twine brake on the lower twine strand by approx. 1-2 turns of the wing nut, <a href="#">see Page 279</a> . ⇨ If the knot ends are still too short, tighten the twine brake on the upper twine strand by approx. 1-2 turns of the wing nut, <a href="#">see Page 278</a> .

**Disturbance (11):** The twine is no longer threaded through the knotter needle, but is tied to the last bale.

Possible cause	Remedy
<b>11.1</b> The twine tension spring is bent on the lower twine strand.	▶ Align the twine tension spring on the lower twine strand centrally to the twine brake and the knotter needle.

**Disturbance (12):** The shear bolt on the needle connecting rod breaks frequently. As a result the needle yoke stops.

Possible cause	Remedy
<b>12.1</b> Heavy wear of the twine guide eyes on the lower twine strand	▶ Replace worn twine guide eyes on the lower twine strand. ▶ Replace the shear bolt on the needle connecting rod.

## 23.4 Malfunctions in the central lubrication system

### NOTICE

#### Damage to the machine due to the use of incorrect and contaminated lubricants

Unauthorised or contaminated lubricants in the central lubrication unit will cause malfunctions in the central lubrication unit and damage the bearing positions.

- ▶ When working on the central lubrication unit, use clean and suitable tools.
- ▶ Use authorised lubricants only.
- ▶ Ensure that dirt or dirty lubricant cannot get into the central lubrication unit.

### NOTICE

#### Damage to the machine due to soiling of the central lubrication system

Even foreign body particles of the smallest size may block the central lubrication system. Thus, bearing points are no longer lubricated and the machine may be damaged considerably.

- ▶ Observe extreme cleanliness when loosening/connecting the threaded input connections on the distributors/pump.

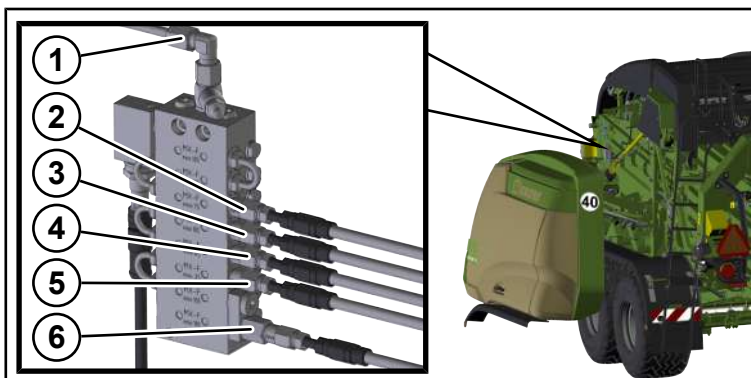


**Malfunction:** Blockage in the central lubrication system

Possible cause	Remedy
Blockage at pump, distributors or bearing points	<p>Proceed as follows to identify the blockage:</p> <p><b>1) Pump</b></p> <ul style="list-style-type: none"> <li>▶ Loosen the pump outlet and activate the pump.</li> <li>▶ If the pump is working properly, connect the pump outlet again.               <ul style="list-style-type: none"> <li>⇒ The pump works properly.</li> </ul> </li> </ul> <p><b>2) Main distributor</b></p> <ul style="list-style-type: none"> <li>▶ Let the pump work until the next blockage or until the next time the pressure rises inadmissibly.</li> <li>▶ Pressure must be present.</li> <li>▶ Loosen the threaded input connection on the main distributor.               <ul style="list-style-type: none"> <li>⇒ If the lubricant does not leak out of the supply line, the supply line is blocked and must be replaced.</li> <li>⇒ If lubricant leaks, check the outlet screw connection on the main distributor.</li> </ul> </li> <li>➔ Tighten the threaded input connection.</li> <li>▶ Loosen all outlet screw connections on the main distributor.               <ul style="list-style-type: none"> <li>⇒ The main distributor blocks and must be replaced if no lubricant leaks out of it.</li> <li>⇒ The supply line from where the lubricant leaks leads to the subdistributor which must be checked next.</li> </ul> </li> <li>▶ Tighten all outlet screw connections.</li> </ul> <p><b>3) Subdistributor</b></p> <ul style="list-style-type: none"> <li>▶ Loosen the threaded input connection on the subdistributor.               <ul style="list-style-type: none"> <li>⇒ If the lubricant does not leak out of the supply line, the supply line is blocked and must be replaced.</li> <li>⇒ If lubricant leaks, check the outlet screw connections on the subdistributor.</li> </ul> </li> <li>▶ Tighten the threaded input connection.</li> <li>▶ Loosen the outlet screw connection on the subdistributor.               <ul style="list-style-type: none"> <li>⇒ The main distributor blocks and must be replaced if no lubricant leaks out of it.</li> <li>⇒ The supply line from where the lubricant leaks leads to the blocked bearing point.</li> <li>⇒ Remove the blockage on the bearing.</li> <li>⇒ Tighten all outlet screw connections.</li> </ul> </li> </ul>

### 23.4.1 Distributor blocks of the central lubrication unit

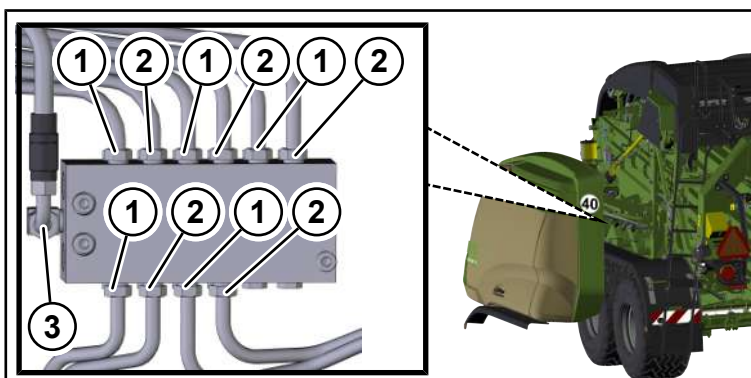
#### 23.4.1.1 Main distributor block



BPG000-158

Item	Designation
1	Electric pump
2	Packer distributor block, <a href="#">see Page 338</a>
3	Pick-up distributor block, <a href="#">see Page 339</a>
4	Knotter distributor block on right, <a href="#">see Page 342</a>
5	Knotter distributor block on left, <a href="#">see Page 342</a>
6	Plunger distributor block, <a href="#">see Page 343</a>

#### 23.4.1.2 Packer distributor block



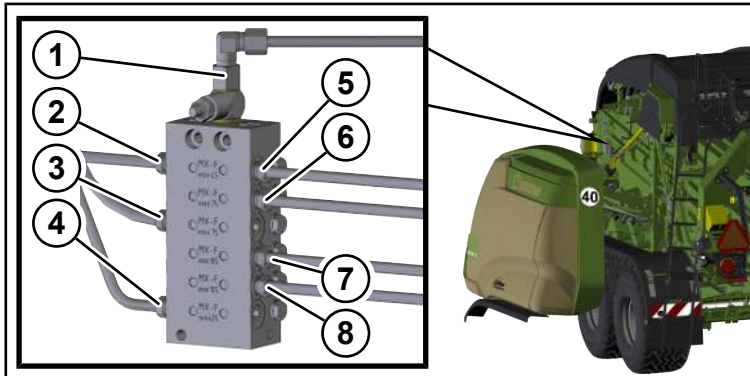
BP000-901

The packer distributor block is located on the drum disc of the packer behind the side wall of the packer tray.

Item	Designation
1	Large packer roll
2	Small packer roll
3	Main distributor block, <a href="#">see Page 338</a>

### 23.4.1.3 Pick-up distributor block

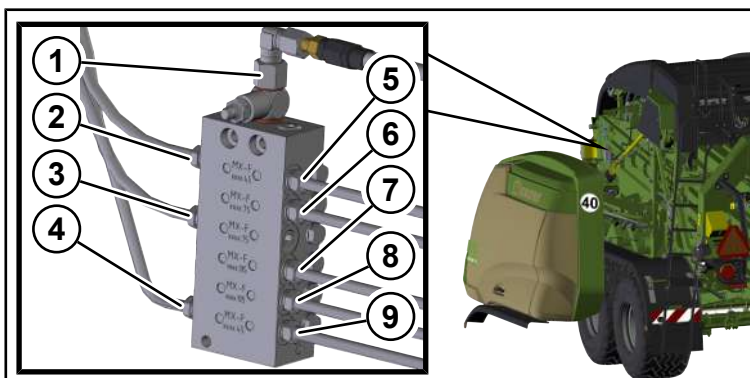
In "rigid tandem axle" version



BP000-902

Item	Designation
1	Main distributor block, <a href="#">see Page 338</a>
2	Pick-up pivot point on left
3	Pick-up chain on left
4	Drawbar eye
5	Pick-up pivot point on right
6	Pick-up chain on right
7	Feed roller
8	Drive chain on right

In "rigid tandem axle" version and "MultiBale" version

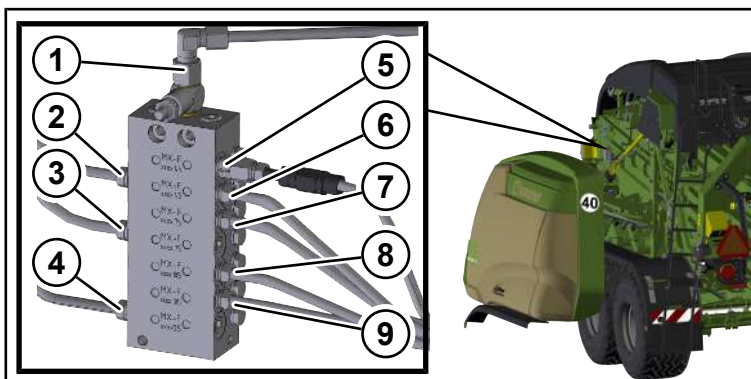


BP000-910

Item	Designation
1	Main distributor block, <a href="#">see Page 338</a>
2	Pick-up pivot point on left
3	Pick-up chain on left
4	Drawbar eye
5	Pick-up pivot point on right
6	Pick-up chain on right

Item	Designation
7	Feed roller
8	Drive chain on right
9	MultiBale distributor block, <i>see Page 341</i>

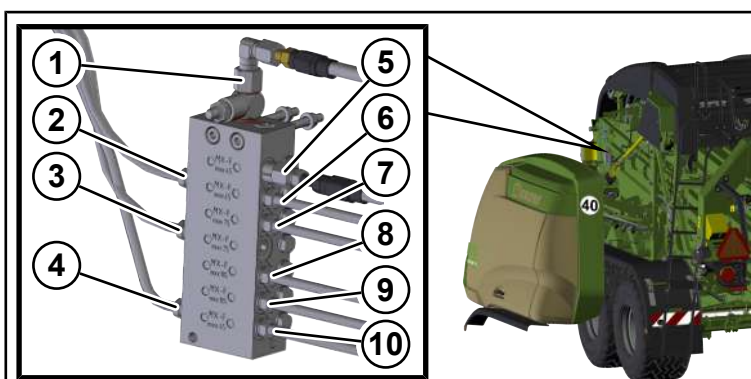
In "steered tandem axle" version



BP000-903

Item	Designation
1	Main distributor block, <i>see Page 338</i>
2	Pick-up pivot point on left
3	Pick-up chain on left
4	Drawbar eye
5	Steering axle distributor block, <i>see Page 341</i>
6	Pick-up pivot point on right
7	Pick-up chain on right
8	Feed roller
9	Drive chain on right

In "steered tandem axle" version and "MultiBale" version



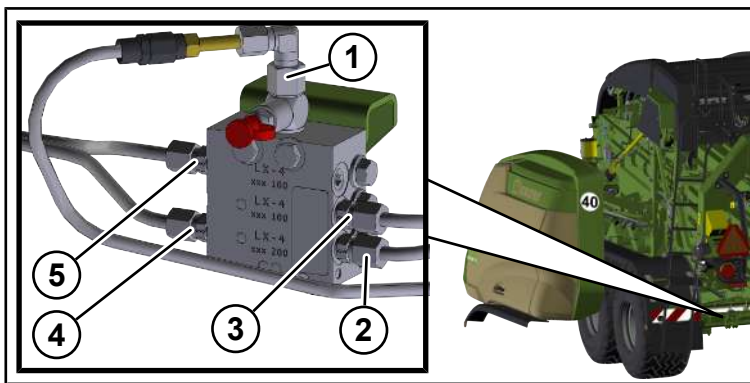
BP000-911

Item	Designation
1	Main distributor block, <i>see Page 338</i>
2	Pick-up pivot point on left
3	Pick-up chain on left

Item	Designation
4	Drawbar eye
5	Steering axle distributor block, <a href="#">see Page 341</a>
6	Pick-up pivot point on right
7	Pick-up chain on right
8	Feed roller
9	Drive chain on right
10	MultiBale distributor block, <a href="#">see Page 341</a>

### 23.4.1.4 Steering axle distributor block

In "steered tandem axle" version

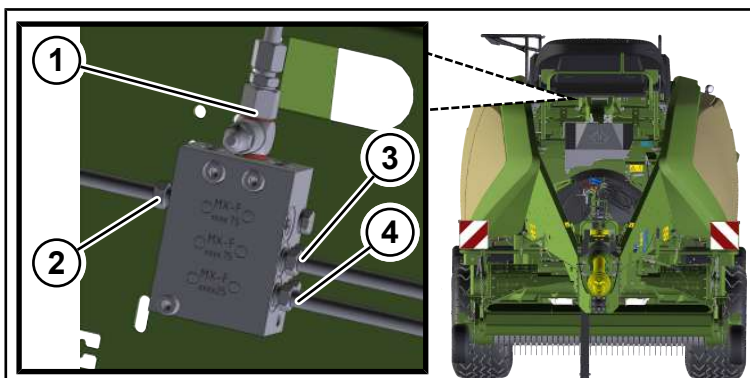


BP000-904

Item	Designation
1	Pick-up distributor block, <a href="#">see Page 339</a>
2	Steering knuckle at bottom left
3	Steering knuckle at top left
4	Steering knuckle at bottom right
5	Steering knuckle at top right

### 23.4.1.5 MultiBale distributor block

In "MultiBale" version

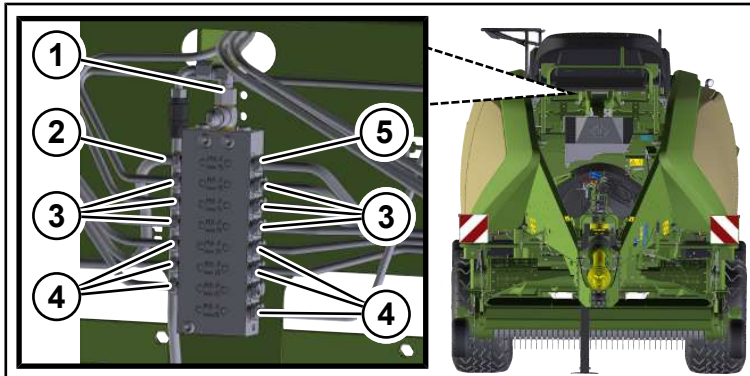


BP000-912

Item	Designation
1	Pick-up distributor block, <a href="#">see Page 339</a>
2	Needle yoke on right
3	Needle yoke on left
4	MultiBale lock

### 23.4.1.6 Knotter distributor block

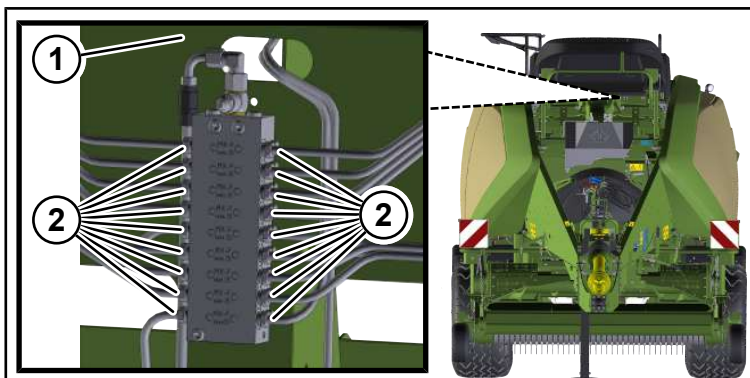
#### Distributor block on right



BP000-906

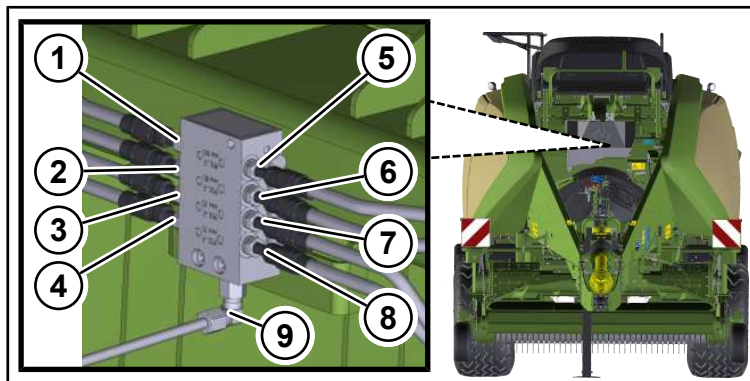
Item	Designation
1	Main distributor block, <a href="#">see Page 338</a>
2	Needle yoke on right
3	Knotter shaft
4	Knotter
5	Needle yoke on left

#### Distributor block on left



BP000-905

Item	Designation
1	Main distributor block, <a href="#">see Page 338</a>
2	Knotter

**23.4.1.7 Plunger distributor block**


BP000-907

Item	Designation
1	Roll at front left
2	Roll at rear left
3	Connecting rod at front left to the crank arm of the main gearbox
4	Left connecting rod pedestal bearing
5	Roll at front right
6	Roll at rear right
7	Connecting rod at front right to the crank arm of the main gearbox
8	Connecting rod on right pedestal bearing
9	Main distributor block, <a href="#">see Page 338</a>

**23.5 Car jack contact points**
**WARNING**
**Risk of accident or damage to the machine from improper application of the car jack at the car jacking point!**

Improper application of the car jack at the car jacking point can cause injuries or damage to the machine.

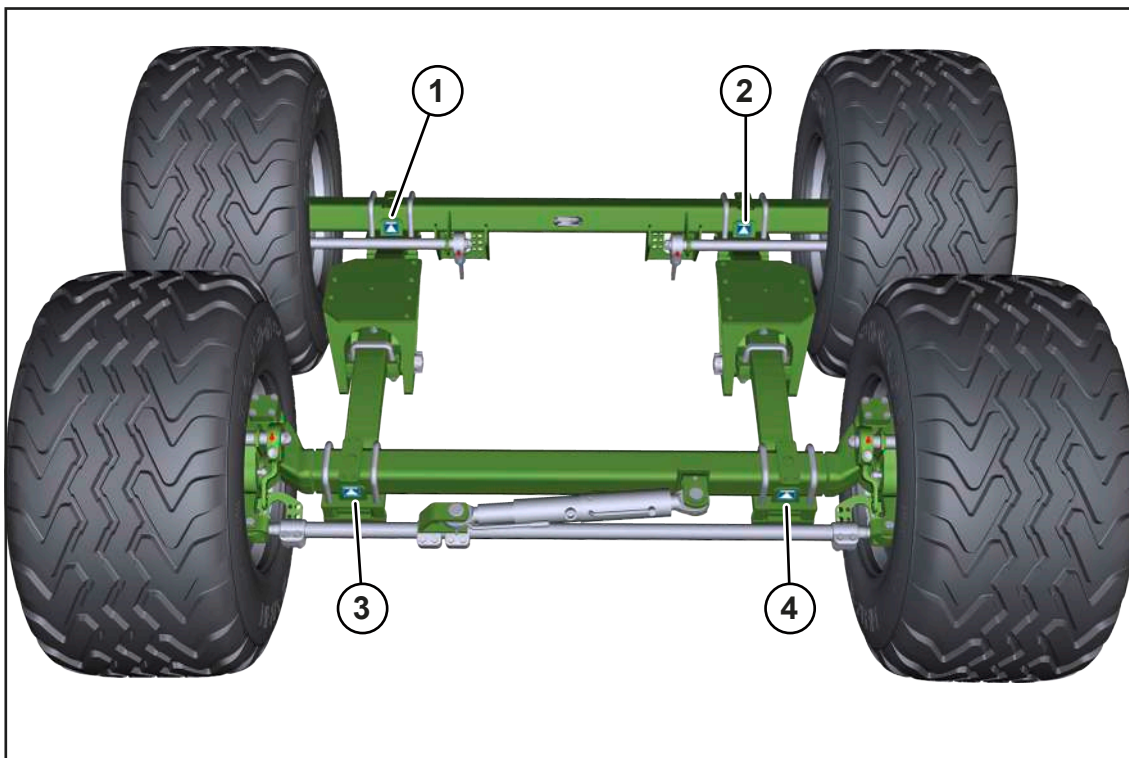
- ▶ Ensure that only qualified persons handle the car jack, [see Page 18](#).

**WARNING**
**Risk of injury due to raised machine**

There is danger to persons when the machine drops or parts swing without control. Only qualified personnel are allowed to perform this work.

- ▶ Use only permitted hoists and slings with a sufficient load-bearing capacity. For the weights [see Page 76](#).
- ▶ Note the information on the suspension points provided.
- ▶ Make sure the lifting means are properly secured.
- ▶ Never stay under the suspended machine.
- ▶ If work has to be performed under the machine, securely support the machine, [see Page 30](#).

The car jack contact points are located on the brake axles.



BPG000-151

- 1 Brake axle at front left
- 2 Brake axle at front right

- 3 Brake axle at rear left
- 4 Brake axle at rear right



## 24 Waste disposal

After the service life of the machine has expired, the individual components of the machine must be disposed of properly. The currently applicable country-specific waste disposal directives and the concerning valid laws must be observed.

### **Metal parts**

- All metal parts must be brought to a metal recycling centre.
- The parts must be freed from operating fluids and lubricants (gearbox oil, oil from hydraulic system, ...) before being scrapped.
- The operating fluids and lubricants must be brought separately to an environmentally friendly disposal point or recycling centre.

### **Operating fluids and lubricants**

- Operating fluids and lubricants (diesel fuel, coolant, gearbox oil, oil from hydraulic system, ...) must be brought to a disposal point for waste oil.

### **Synthetic materials**

- All synthetic materials must be brought to a recycling centre for synthetic materials.

### **Rubber**

- Rubber parts (hoses, tyres, ...) must be brought to a rubber recycling centre.

### **Electronic scrap**

- All electronic parts must be brought to a disposal point for electronic scrap.

## 25 Appendix

### 25.1 Hydraulic diagram – Working hydraulics








#### Legend for the following hydraulic diagram



- |   |   |   |                             |
|---|---|---|-----------------------------|
| 1 | Start-up device                         | 4 | "Hydraulic pick-up" version |
| 2 | "Multi-blade cutting system VC" version | 5 | "PreChop" version           |
| 3 | "Reversing unit" version                |   |                             |

#### Listing of the sensors/actuators for the following hydraulic diagram


The system screw on the control block must be completely screwed in or unscrewed depending on whether the machine is operated with or without Load Sensing, [see Page 113](#).

An overview of the position of the sensors, actuators and control units is provided in the circuit diagram.

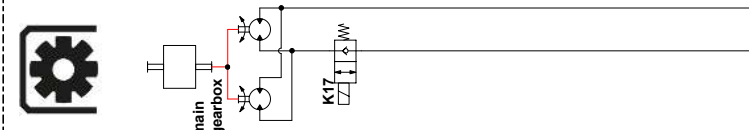
Icon	ECI	Designation
–	K01	Pilot valve 1
–	K02	Pilot valve 2
	K17	Starter aid
	B35	Position blade cassette
	K07	Blade cassette plunger surface
	K08	Blade cassette annular surface
	B32	Blade active
	B33	Blade inactive
	K27	Blades piston surface
	K28	Blades annular surface
	B61	Twine box transport position left
	K21	Twine boxes piston surface
	B62	Twine box transport position right
	K22	Twine boxes annular surface
	B65	Twine box locking left
	B66	Twine box locking right
	K32	Locking twine boxes
	B14	Bale ejector
	K05	Bale ejector plunger surface
	K06	Bale ejector annular surface
	B36	State of steering
	K20	Steering axle
	–	Hydraulic pick-up

Icon	ECI	Designation
	K10	Pick-up drive
	B23	Pick-up position
	–	PreChop

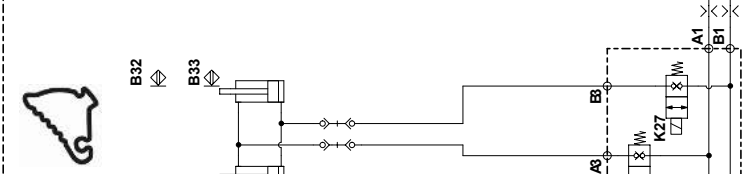
&gt;&gt;&gt;

 150102815\_00 2\_2 Arbeitshydraulik [▶ 348]

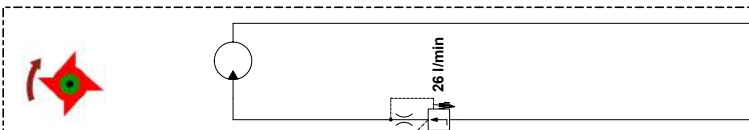
**1** Anlaufhilfe  
start-up aid



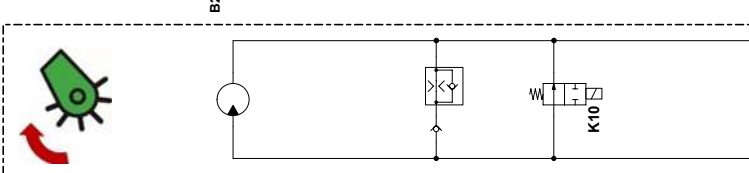
**2** VC



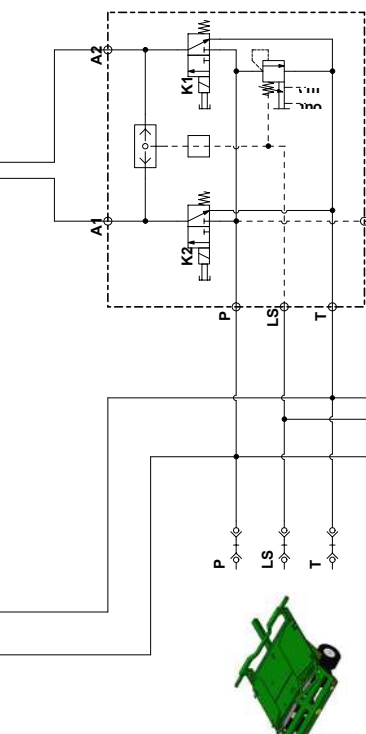
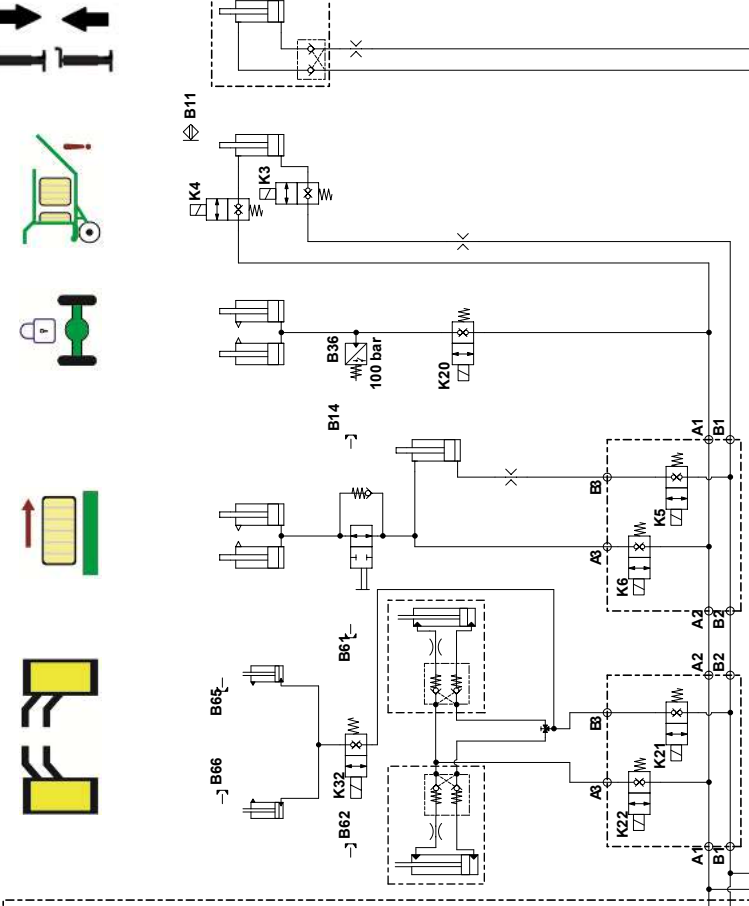
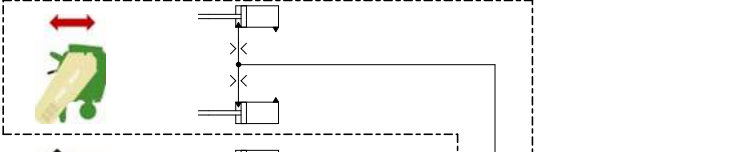
**3** Reversiereinheit  
reverse unit



**4** hydraulische PU  
hydraulic PU

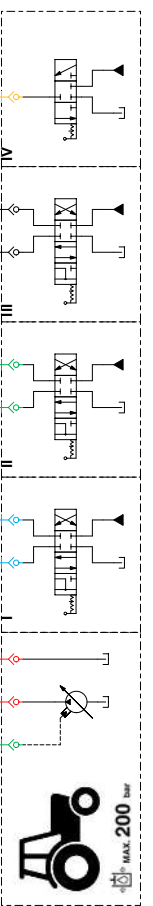


**5** PreChop



Connecting BC to BP026,  
read document '150102817'!

Funktion function	Richtung direction	K1	K2	K3	K4	K5	K6	K7	K8	K10	K17	K20	K21	K22	K23	K24	K25	K26	K27	K28	K29	K30	K31	K32	K33	
ON	↑	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
OFF	↓	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
ON	↔	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
OFF	↔	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
ON	↕	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
OFF	↕	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
ON	↖	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
OFF	↖	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
ON	↗	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
OFF	↗	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
ON	↘	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
OFF	↘	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
ON	↙	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
OFF	↙	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
ON	↕	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
OFF	↕	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*





## 25.2 Hydraulic diagram - on-board hydraulic system

### Legend for the following hydraulic diagram


- |   |  |   |                        |
|---|--|---|------------------------|
| 1 | "Multi-blade cutting system VariCut" version | 4 | Main gearbox           |
| 2 | Standard equipment                           | 5 | Cutting unit gearbox   |
| 3 | Bale channel                                 | 6 | "Cleaning fan" version |

### Listing of the sensors/actuators for the following hydraulic diagram

An overview of the position of the sensors, actuators and control units is provided in the circuit diagram.

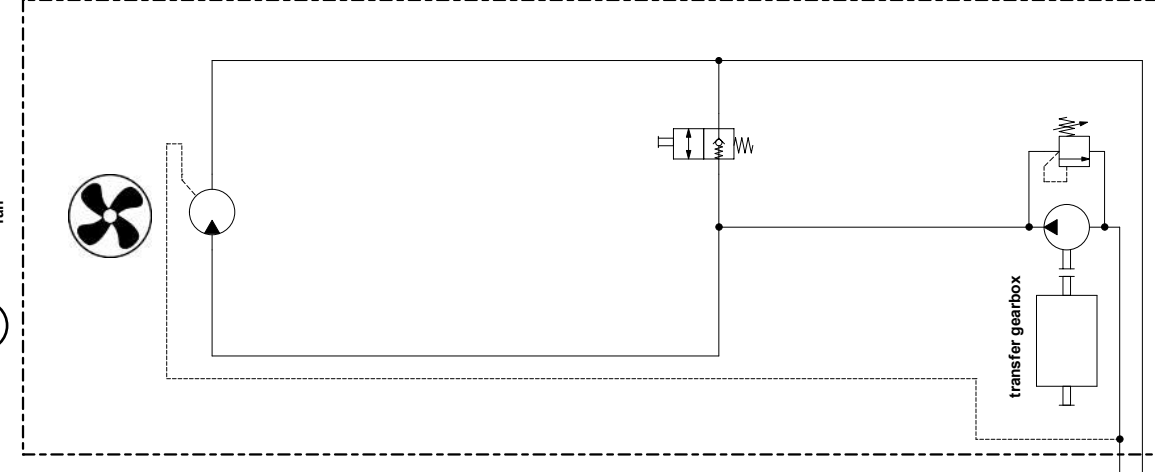
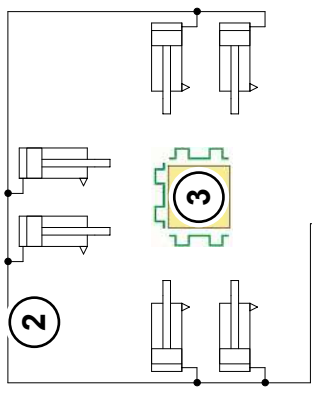
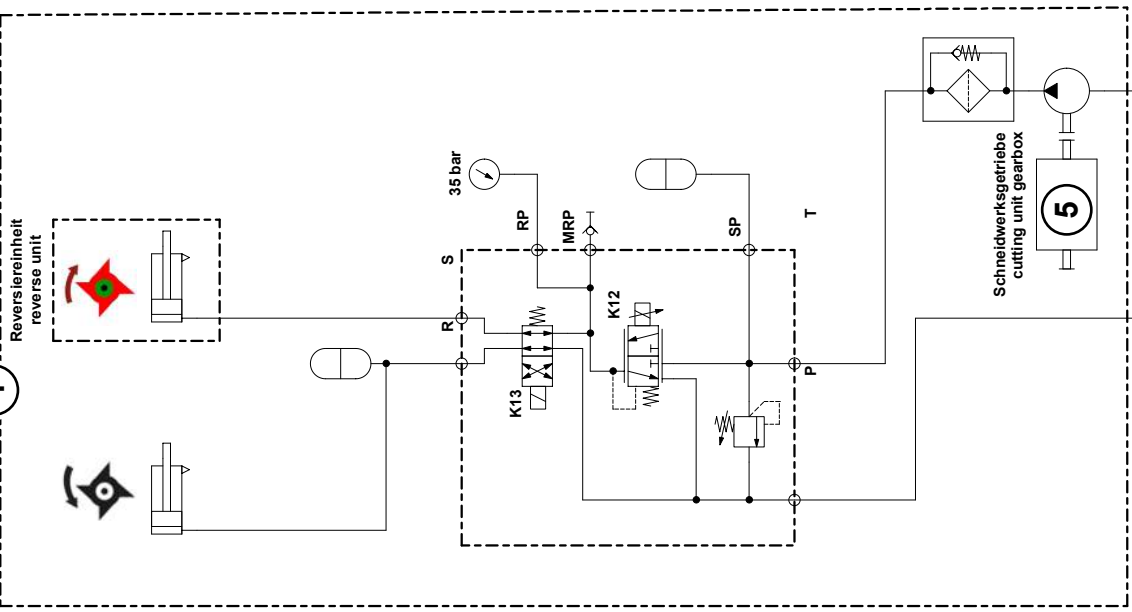
Icon	ECI	Designation
–	B17	Baling flap pressure
–	K09	Release baling flaps
–	K11	Pressure limiting valve baling flaps
–		
–	K12	Coupling feed rotor
–	K13	Safety valve feed rotor
	–	Cutting rotor
	–	Reversing unit

>>>

 150102815\_00 1\_2 Bordhydraulik [▶ 350]

1

VC



6

Reinigungsgebläse  
fan

Funktion function	Richtung direction	K9	K11	K12	K13
	ON			•	•
	OFF			Off	Off
	ON			•	Off
	OFF			Off	Off
	pressure hold	Off	•		
	open	•			

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## 27 Declaration of conformity



UKCA Declaration of Conformity



We

**KRONE Agriculture SE**

Heinrich-Krone-Straße 10, D-48480 Spelle

hereby declare, as manufacturer of the product named below, under our sole responsibility, that the

**Machine:** Large square baler  
**Series:** BP305-10

to which this declaration refers is in compliance with the following relevant provisions of:

- Supply of Machinery (Safety) Regulations 2008, 2008 No. 1597
- Radio Equipment Regulations 2017, 2017 No. 1206

The signing Managing Director is authorised to compile the technical documents.



**Jan Horstmann**  
(Managing Director, Design & Development)

Spelle, 04/08/2021

**Year of manufacture:****Machine no.:**

Importer and authorised representative:  
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Phoenix Avenue  
Micklefield, Leeds LS25 4DY



THE POWER OF GREEN

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