



Round baler

Ultima CF 155 (XC)

(from serial no.: 914 524)

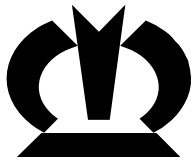
Order no.: 150 000 171 02 en



24.02.2015



Foreword



EC Declaration of Conformity



We

Maschinenfabrik Bernard Krone GmbH

Heinrich-Krone-Str. 10, D-48480 Spelle

hereby declare as manufacturer of the product named below, on our sole responsibility, that the

machine: **Krone Round Baler**

type / types: **Ultima CF155 (XC)**

to which this declaration refers is in compliance with the relevant provisions of

EC Directive 2006/42/EC (Machinery) and EC Directive 2004/108/EC (EMC)

The signing Managing Director is authorised to compile the technical documents.

Spelle, Germany, 30.03.2012

Dr.-Ing. Josef Horstmann
(Managing Director Design & Development)

Year of manufacture:

Mach. no.:

**Dear customer,
Dear customer,**

You have now received the operating instructions for the KRONE product which you have purchased.

These operating instructions contain important information for the proper use and safe operation of the machine.

If these operating instructions should become wholly or partially unusable, you can obtain replacement operating instructions for your machine by stating the number given overleaf.



1 Foreword

Dear Customer!

By purchasing the round baler, you have acquired a quality product from KRONE.

We are grateful for the confidence you have invested in us in buying this machine.

It is important to read the operating instructions very carefully before you start operating the machine to allow you to use the round baler to its full capacity.

The contents of this manual are laid out in such a way that you should be able to perform any task by following the instructions step by step. It contains extensive notes and information about maintenance, how to use the machine safely, secure working methods, special precautionary measures and available accessories. This information and these instructions are essential, important and useful for the operational safety, reliability and durability of the round baler.



Note

In the operating instructions which follow, the round baler will also be referred to as the "machine".

Please note:

The operating instructions are part of your machine.

Only operate this machine after you have been trained to do so and according to these instructions.

It is essential to observe the safety instructions!

It is also necessary to observe the relevant accident prevention regulations and other generally recognised regulations concerning safety, occupational health and road traffic.

All information, illustrations and technical data in these operating instructions 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.

Should you for any reason not be able to use these operating instructions either wholly or partially, you can receive a replacement set of operating instructions for your machine by quoting the number supplied overleaf.

We hope that you will be satisfied with your KRONE machine.

Maschinenfabrik Bernard Krone GmbH

Spelle



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3 To this Document

3.1 Validity

These operating instructions are valid for round baler:

Ultima CF 155 XC

3.2 Target group of this document

This document is intended for the farmer and for other users who have no agricultural training but who have been instructed in the use of the machine.

3.3 How to use this document

Table of contents/headers:

The table of contents, as well as the headers in these instructions, are used for quick navigation in the chapters.

Index:

You can use the index to find specific information on the required subject via keywords which are in alphabetical order. The index is on the last page of these instructions.

Cross-references:

Cross-references to another place in the operating instructions or to another document are in the text and specify the chapter and subchapter or section. The name of the subchapter or section is in quotation marks.

Example:

Check that all screws on the machine are tight, see chapter Maintenance, "Tightening torques for hexagonal head screws".

The subchapter or the section can be found via an entry in the table of contents and in the index.

3.4 Information on Direction

Information on direction in this document such as front, rear, right and left always applies in the direction of travel.

Directional information in these operating instructions, such as front, rear, right and left, applies in the direction of travel of the machine.

Orientation information concerning a diagram of a machine detail refers to the diagram itself and is not relative to the direction of travel.

To this Document

3.5 Identifying Symbols in the Operating Instructions

The safety instructions contained in this manual which could result in personal injury if not followed are identified by the general danger sign:

3.6 Identification of the hazard warnings

Danger!



DANGER! - Type and source of the hazard!

Effect: Danger to life or serious injuries.

- Measures for hazard prevention

Warning !



WARNING! - Type and source of the hazard!

Effect: Injuries, serious material damage.

- Measures for hazard prevention

Caution!



CAUTION! - Type and source of the hazard!

Effect: Property damage

- Measures for risk prevention.
-

General function instructions are indicated as follows:

Note!



Note - Type and source of the note

Effect: Economic advantage of the machine

- Actions to be taken
-

Instructions which are attached to the machine need to be followed and kept fully legible.

4 Safety

4.1 Purpose of Use

The round balers type Ultima CF155 (XC) with integrated wrapping machine are non-stop pick-up balers. They cut, compress and tie agricultural crops into round bales which are then wrapped in film or, when required, are even deposited without a film wrapping. Permitted crops are cut crops, e.g. grass, hay or straw. These operations run fully automatically while the machine is moving.

The round balers are fitted with a rotating chopping system as standard.



WARNING! – Intake and baling of pressing material not mentioned!

Effect: Damage to the machine

Collecting and baling materials that are not cited here is permitted only in agreement with the manufacturer. The basic requirements in any case are swath form loading of the crops and automatic intake by the Pick-up as it passes over them.

4.2 Intended use

The round baler is built exclusively for customary use in agricultural work (intended use).

Unauthorised modifications to the machine may have a negative effect on the machine characteristics or safe and reliable use of the machine or may interfere with proper operation. Unauthorised modifications shall therefore release the manufacturer of any liability for consequential damage.

4.3 Service life of the machine

- The service life of this machine strongly depends on proper use and maintenance as well as the operating conditions.
- Permanent operational readiness as well as long service life of the machine can be achieved by observing the instructions and notes of these operating instructions.
- After each season of use, the machine must be checked thoroughly for wear and other damage.
- Damaged and worn parts must be replaced before placing the machine into service again.
- After the machine has been used for five years, carry out full technical inspection of the machine. According to the results of this inspection, a decision concerning the possibility of reuse of the machine should be taken.
- Theoretically, the service life of this machine is unlimited as all worn or damaged parts can be replaced.

Safety

4.4 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.

4.4.1 Importance of the operating instructions

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

Only the procedures indicated in the operating instructions are reliable. If the operating instructions are not followed, people may be seriously injured or killed.

- Before using the machine for the first time, read and follow all the "Basic safety instructions" in the chapter Safety.
- Before working, also read and observe the respective sections in the operating instructions.
- Retain the operating instructions and ensure that they are always available.
- Hand over the operating instructions to subsequent users.

4.4.2 Personnel qualification

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.



4.4.3 Children in danger

Children cannot assess danger and behave unpredictably. As a result, children are especially at risk.

- Keep children away from the machine.
- Keep children away from consumables.
- Especially before starting up and moving the machine, ensure that there are no children in the danger zone.

4.4.4 Connect the machine to the tractor

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

- When connecting front attachments or trailers, follow all operating instructions:
 - The operating instructions for the tractor
 - The operating instructions for the machine
 - The operating instructions for the universal shaft
- Follow the coupling instructions, see chapter on starting up "Connect the machine to the tractor".
- Note the modified driving behaviour of the combination.

4.4.5 Structural changes to the machine

Structural changes and enhancements may impair the functionality and operational safety of the machine. As a result, people may be seriously injured or killed.

- Have structural changes and enhancements performed by an authorised service centre only.

4.4.6 Additional equipment and spare parts

Additional equipment and spare parts, which do not comply with the requirements of the manufacturer, may impair the operational safety of the machine and cause accidents.

- To ensure operational safety, use original or standard parts which comply with the requirements of the manufacturer. If in doubt, have parts verified by the dealer or manufacturer.

4.4.7 Workstations and passengers

Control of the moving machine

The moving machine requires the driver to react quickly at any time. Otherwise, the machine may move in an uncontrolled manner and seriously injure or kill people.

- Start the engine from the driver's seat only.
- Never leave the driver's seat while the machine is moving.
- Never climb in or out of the machine while it is moving.

Passengers

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

- Never let people ride on the machine.

Safety

4.4.8 Operational safety: Technically perfect condition

Operation only when the machine has been started up correctly

If the machine is not started up correctly according to these operating instructions, the operational safety of the machine is not ensured. As a result, accidents may occur and people may be seriously injured or killed.

- Do not use the machine unless it has been started up correctly, see chapter Start-up.

Technically perfect condition of the machine

Improper maintenance and adjustment may affect the operational safety of the machine and cause accidents. As a result, people may be seriously injured or killed.

- Perform all maintenance and adjustment work according to the chapters Maintenance and Adjustment.
- Before performing any maintenance or adjustment work, shut down and safeguard the machine, see chapter Safety "Shutting down and safeguarding the machine".

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
- Hydraulic system
- Tyres
- Universal shaft

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

- Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".
- Immediately eliminate potential causes of damage, for example heavy soiling, or tighten slack screws.
- Determine the cause of damage according to these operating instructions, see chapter Malfunctions – Cause and remedy.
- If possible, repair the damage according to these operating instructions.
- In the 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 injured or killed. Observance of the following technical limit values is particularly important for safety:

- Permitted gross weight
- Maximum axle loads
- Maximum payloads
- Maximum trailer load
- Maximum bearing load
- Maximum transport height
- Maximum speed
- Observe limit values, see chapter Description of machine, "Technical data".

4.4.9 Danger zones**Danger zones on the tractor and the machine**

The area around the tractor and the machine is a danger zone.

There are the following hazards in this danger zone:

- The tractor and the machine may start moving or rolling away and run over people.
- If the power lifter is unintentionally actuated, the machine may make hazardous movements.
- Defective or insecurely attached electrical cables may cause fatal electric shocks.
- Defective or insecurely attached hydraulic or pneumatic lines may become detached and flail around. Hydraulic oil may escape under high pressure and cause serious injuries to the skin or face.
- Clothing may become caught and wrapped around an exposed PTO shaft or a damaged or incorrectly installed universal shaft.
- When the drive is switched on, machine parts may rotate or swivel.
- Hydraulically raised machine parts may descend unnoticed and slowly.

If the danger zone is not observed, people may be seriously injured or killed.

- Keep people away from the danger zone of the tractor and the machine.
- Do not switch on the drives and engine until there is nobody in the danger zone.

The safety clearance is:

- 3 metres on either side of the machine.
- 5 metres behind the machine.
- Before working in front of and behind the tractor and in the danger zone of the machine: •
Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine". This also applies to brief inspection work. Many serious accidents in front of and behind the tractor and the machine occur due to negligence and running machines.
- Consider the information in all relevant operating instructions.
 - The operating instructions for the tractor
 - The operating instructions for the machine
 - The operating instructions for the universal shaft

Safety

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 machine movements:

- Before starting all work between the tractor and machine: • Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine". This also applies to brief inspection work. Many serious accidents occur due to negligence and running machines.
- If the power lifter has to be actuated, keep all people away from the area of movement of the power lifter.

Danger zone when drive switched on

When the drive is switched on, there is a danger to life from rotating and swivelling machine parts. There must be nobody in the danger zone of the machine.

- Before starting the machine, direct all people out of the danger zone of the machine.
- If a hazardous situation arises, switch off drives and diesel engine immediately.

Danger zone of the P.T.O. shaft

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

Before engaging the PTO shaft:

- Make sure that all safety devices are fitted and in the protection position.
- Ensure that the selected speed and direction of rotation of the PTO shaft match the permitted speed and direction of rotation of the machine.
- Ensure that nobody is in the danger zone of the PTO shaft or the universal shaft.
- If the angles are too large, switch off the PTO shaft. The machine may be damaged. Parts may be flung out and cause injury to persons.
- If the PTO shaft is not required, switch off the PTO shaft.

Danger zone universal shaft

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

- Ensure that the universal shaft guards are attached and functional.
- Ensure that nobody is in the danger zone of the PTO shaft or the universal shaft.
- Provide the section tube and universal shaft guards with adequate cover.
- Allow the universal shaft locks to engage.
- Attach the chains to prevent the universal shaft guards from rotating with the shaft.
- Follow the operating instructions for the universal shaft.

Risk of injury due to machine parts that continue to run

After switching off the drives, the following machine parts continue to run:

- Universal shaft
- Drive chains
- Pick-up
- Net rolls
- Floor conveyor
- Wrapper

If machine parts continue to run, persons may be seriously injured or killed.

- Stop and secure the machine, refer to chapter Safety “Stopping and Securing the Machine”.
- Only touch machine parts when they are at a standstill.

4.4.10 Keeping safety devices functional

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

- Replace damaged safety devices.
- Re-install all removed safety devices and all other parts and move them into protective position before starting up the machine.
- If it is doubtful whether all safety devices have been correctly installed and are functional, have a service centre check them.

4.4.11 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 is for example:

- Work gloves
- Safety boots
- Protective clothing
- Breathing protection
- Hearing protection
- Face and eye 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.

Safety

Wear suitable clothing

Loose clothing increases the risk of it becoming caught or wrapped around rotating parts and of it becoming caught on protruding parts. As a result, people may be seriously injured or killed.

- Wear tight-fitting clothing.
- Never wear rings, chains or other items of jewellery.
- Cover long hair with a hairnet.
- Wear sturdy shoes or protective work boots.

4.4.12 Safety signs on the machine

Safety stickers on the machine warn of hazards in danger areas and are an important component of the safety equipment of the machine. Missing safety stickers increase the risk of serious and fatal injuries.

- Clean dirty safety stickers.
- After cleaning, always check that safety stickers are complete and legible.
- Immediately replace missing, damaged and unrecognisable safety stickers.
- Provide spare parts with the designated safety stickers.

Description, explanation and order numbers of the safety stickers, see chapter Safety, "Safety stickers on the machine".

4.4.13 Traffic safety

Dangers when driving on roads and in fields

The attached or coupled work machine changes the handling characteristics of the tractor. The handling characteristics are also dependent on the operational state, the filling or loading and on the ground condition. If the driver does not consider changed handling characteristics, he may cause accidents.

- Observe procedures for driving on roads and in fields, see chapter "Driving and transportation".

Prepare the machine for road travel

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

- Before travelling on the road, always prepare the machine for road travel, see chapter Driving and transportation, "Preparations for road travel".

Danger of overturning

The machine may overturn when driving on slopes. As a result, accidents may occur and people may be seriously injured or killed. The risk of overturning depends on many factors.

- Observe procedures for driving, see chapter Driving and transportation.

4.4.14 Parking the machine safely

The parked machine may overturn. People may be crushed and killed.

- Park the machine on a stable and even surface.
- Before adjusting, repairing, servicing or cleaning the machine, ensure that it is securely positioned. If in doubt, support the machine.
- In the chapter Driving and transportation note the section "Parking the machine".

Unattended parking

Adults and children are at risk from an inadequately secured and unattended parked machine with or without a connected front attachment or trailer.

- Before leaving the machine: Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".

4.4.15 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.

For the requirements of fuels, see chapter Description of machine, "Consumables".

Protection of the environment and disposal

Consumables such as diesel fuel, brake fluid, antifreeze and lubricants may damage the environment and the health of people.

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

4.4.16 Dangers associated with the operational environment

Danger of fire

Combustible materials can accumulate in the machine due to operation or animals such as rodents or nesting birds. The danger of soiling applies in particular when working in dry or turbulent conditions.

Dust, soiling and harvest residues can ignite on hot parts and cause fires that can seriously injure or kill persons.

- Check and clean the machine every day before using it for the first time.
- Regularly check and clean the machine during the working day.
- Keep the fire extinguisher ready to use at all times.

Safety

4.4.17 Sources of danger on the machine

Noise may damage your health

When working continuously with the machine, health may be damaged, such as hardness of hearing, deafness or tinnitus. When the machine is used at high speed, the noise level also increases.

- Before starting up the combination of tractor and 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. In doing so, consider the sound pressure level, see chapter Description of machine, "Technical Data".
- Specify rules for the use of hearing protection and for the working time.
- During operation, keep the windows and doors of the cabin closed.
- Remove the hearing protection when travelling on the road.

Liquids under pressure

The following liquids are under high pressure:

- Hydraulic oil

Liquids under high pressure may penetrate the body through the skin and cause serious injuries.

- If a damaged pressure system is suspected, immediately contact a qualified service centre.
- Never search for leaks with bare hands. Even a pin-sized hole may cause serious 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. Danger of infection!

Hot liquids

Risk of burns and scalding from hot liquids!

- When draining hot consumables, wear protective gloves.
- If required, leave liquids and machine parts to cool down before performing repair, maintenance and cleaning work.

A damaged compressed air system may damage your health

Damaged compressed air hoses in the compressed air system may cause hoses to tear off. Flailing hoses may cause serious injuries.

- If it is suspected that the compressed air system is damaged, immediately contact a service centre.

4.4.18 Dangers associated with certain activities: Climbing up and down

Climbing up and down safely

People who behave carelessly when climbing up and down may fall off the ladder. People, who climb onto the machine without using the designated ladders, may slip, fall and seriously injure themselves.

Dirt as well as operating fluids and lubricants may cause you to lose your footing.

- Always keep the steps and platforms clean and in a proper condition to prevent people from losing their footing.
- Never climb up and down while the machine is moving.
- Face the machine when climbing up and down.
- When climbing up and down, maintain a three-point contact with the steps and hand rails (always two hands and one foot or two feet and one hand on the machine).
- When climbing up and down, never use the controls as handles. Inadvertent activation of the controls may cause functions to be unintentionally actuated which could be hazardous.
- When climbing down, never jump off the machine.
- Climb up and down using only the steps and platforms designated in these operating instructions, see chapter Description of machine, "Ladders".

4.4.19 Dangers associated with certain activities: Work on the machine

Work on the machine only when it has been shut down

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

- Before performing any work on the machine, such as making adjustments, cleaning, preparing for road travel, preparing for work, servicing or rectifying malfunctions, shut down and safeguard the machine, see chapter Safety "Shutting down and safeguarding the machine".

Maintenance and repair work

Incorrect maintenance and repair work will endanger operational safety. As a result, accidents may occur and people may be seriously injured or killed.

- Only perform work which is described in these operating instructions. Before performing any work, shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".
- All other maintenance and repair work may be performed by a qualified service centre only.

Raised machine and machine parts

The raised machine may accidentally drop, roll away or overturn and crush or kill people.

- Do not stand under the raised machine. First put the machine down.
- Before performing any work under the machine, securely support the machine, see chapter Safety "Securely supporting the raised machine and machine parts".
- Before performing any work on or under raised machine parts, lower the machine parts or secure them mechanically with rigid safety supports or with a hydraulic shut-off device to prevent them from dropping.

Safety

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 injured or killed.

- Before performing welding work on the machine, obtain the consent of KRONE customer service and, if required, identify alternatives.
- Have welding work performed by experienced technicians only.

4.4.20 Dangers associated with certain activities: Working on wheels and tyres

Fitting/removing wheels and tyres

Improper fitting or removal will endanger 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 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 wheel rims, never exceed the maximum permitted pressure specified by the tyre manufacturers, otherwise the tyre or even the wheel rim may explode.
- When fitting the wheels, tighten the wheel nuts to the stipulated torque, see chapter Maintenance "Tyres".

4.4.21 Behaviour in hazardous situations and when accidents occur

Neglected or incorrect procedures in hazardous situations may obstruct or prevent the rescue of people in danger. Difficult rescue conditions will impair the chances of helping and healing the injured.

- In principle: Switch off the machine.
- Gain an overview of the hazardous situation and identify the cause of the hazard.
- Safeguard the accident location.
- Rescue people from the danger zone.
- Withdraw from the danger zone and do not enter again.
- Alert rescue teams and, if possible, fetch help.
- Take immediate life-saving measures.

4.5 Safety routines

4.5.1 Stopping and securing the machine

**WARNING!****Crush hazard due to movement of the machine or machine parts!**

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

- Before leaving the machine: Shut down and secure the machine.

To park the machine securely:

- Park the machine on a stable and even surface.
- Switch off the drives and wait until coasting parts have come to a standstill.
- Switch off the tractor engine, remove the ignition key and take it with you.
- Use the parking brakes to secure the machine and tractor from rolling away.

4.5.2 Supporting lifted machine and machine parts securely

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

If the machine is not supported securely, the machine or machine parts may roll, fall or drop. As a result, people may be seriously injured or killed.

- Before working on or under raised components: Securely support machine or machine parts.

To securely support the machine or machine parts:

- Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".
- Before performing any work on or under raised machine parts, lower the machine parts or secure them mechanically with rigid safety supports (e.g. support stand, crane) or with a hydraulic shut-off device (e.g. stop cock) to prevent them from dropping.
- Never support the machine or machine parts with materials which can buckle.
- Never support the machine or machine parts with hollow blocks or bricks. Hollow blocks or bricks may break under continuous load.
- Never work under the machine or machine parts which are held up by a car jack.

Safety

4.5.3 Coupling the machine safely



WARNING!

Risk of injury when coupling the machine

The machine or machine parts may move unintentionally while the machine is coupled to the tractor. As a result, people may be seriously injured or killed.

- When coupling the machine, perform the following steps:
- Never stand between the tractor and the machine while coupling the machine to the tractor.
- Depressurise the tractor hydraulics.
- Switch off the electronic systems.
- Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".
- Only couple the hydraulic hoses if the hydraulic systems on the tractor and the machine are depressurised.
- Couple the compressed air braking system, depending on the version of the machine.
- Couple the hydraulic brake, depending on the version of the machine.
- Couple and secure the universal shaft.
- Connect the lighting cable.
- Connect the power cable.
- Connect the terminal.

4.5.4 Uncoupling the machine safely



WARNING!

Risk of injury when uncoupling the machine

The machine or machine parts may move unintentionally while the machine is being uncoupled. As a result, people may be seriously injured or killed.

- When uncoupling the machine, perform the following steps:
- Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".
- Lower the support jack.
- Depressurise the tractor hydraulics.
- Switch off the electronic systems.
- Only uncouple the hydraulic hoses if the hydraulic systems on the tractor and the machine are depressurised.
- Uncouple the compressed air brake, depending on the version of the machine.
- Uncouple the hydraulic brake, depending on the version of the machine.
- Disconnect the lighting cable from the tractor.
- Disconnect the power cable from the tractor.
- Uncouple the universal shaft and place it on the holder provided.
- Never stand between the tractor and the machine when uncoupling the machine from the tractor.

4.5.5 Preparing the machine for repair, maintenance and adjustment work

**WARNING!****Risk of injury during repair, maintenance and adjustment work on the machine.**

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

If the machine is not supported securely, the machine or machine parts may roll, fall or drop. As a result, people may be seriously injured or killed.

- Before starting repair, maintenance and adjustment work, perform the following steps:

- Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".
- The raised machine or machine parts must be securely supported, see chapter Safety "Securely supporting the raised machine and machine parts".

4.5.6 Starting the machine safely

**WARNING!****Risk of injury when starting up the machine**

If the machine has not been safely placed in operation, the machine or machine parts may move unintentionally. As a result, people may be seriously injured or killed.

- Before starting up the machine, ensure that the following prerequisites are met:

- The hydraulic lines are connected.
- The compressed air brake is coupled (depending on equipment).
- The hydraulic brake is connected (depending on equipment).
- The universal shaft is coupled and secured.
- The lighting system is connected.
- The terminal is connected.
- The safety chain is attached (not stipulated in all countries).
- All safety equipment is in place, is proper condition, and in the protective position.
- The PTO speed of 540 rpm is not exceeded.
- The universal shaft prescribed by the manufacturer is used.
- The hoses, cables and ropes are laid so that they do not scrape, come under tension or become jammed or come in contact with other parts (such as the tractor tyres).
- The parking brake is released.
- Machine parts of the tractor do not come into contact with parts of the machine (especially when turning).
- There are no persons in the machine danger zone.

Safety

4.6 Position of the Adhesive Safety Stickers on the Machine



WARNING!

Danger of injury on machine parts if danger zones have not been marked when warning pictograms are missing, damaged or illegible.

Danger of injury due to dangerous parts and other residual risks as users or third parties enter the danger area or reach into it as they are not aware of the danger.

- Immediately replace damaged or illegible labels.
- Following repair work, always attach appropriate adhesive safety labels to all the replaced, modified or repaired components.
- Never clean areas carrying an adhesive safety label using a high-pressure cleaner.

Familiarise yourself with the statement of the warning pictograms. The adjacent text and the selected location on the machine provide information on the special danger spots on the machine.

4.7 Introduction

The KRONE round baler is equipped with all safety devices (protective devices). However, it is not possible to eliminate all potential hazards on this machine as this would impair its full functional capability. Hazard warnings are attached to the machine in the relevant areas to warn against any dangers. The safety instructions are provided in the form of so-called warning pictograms. Important information on the position of these safety signs and what they mean is given below!

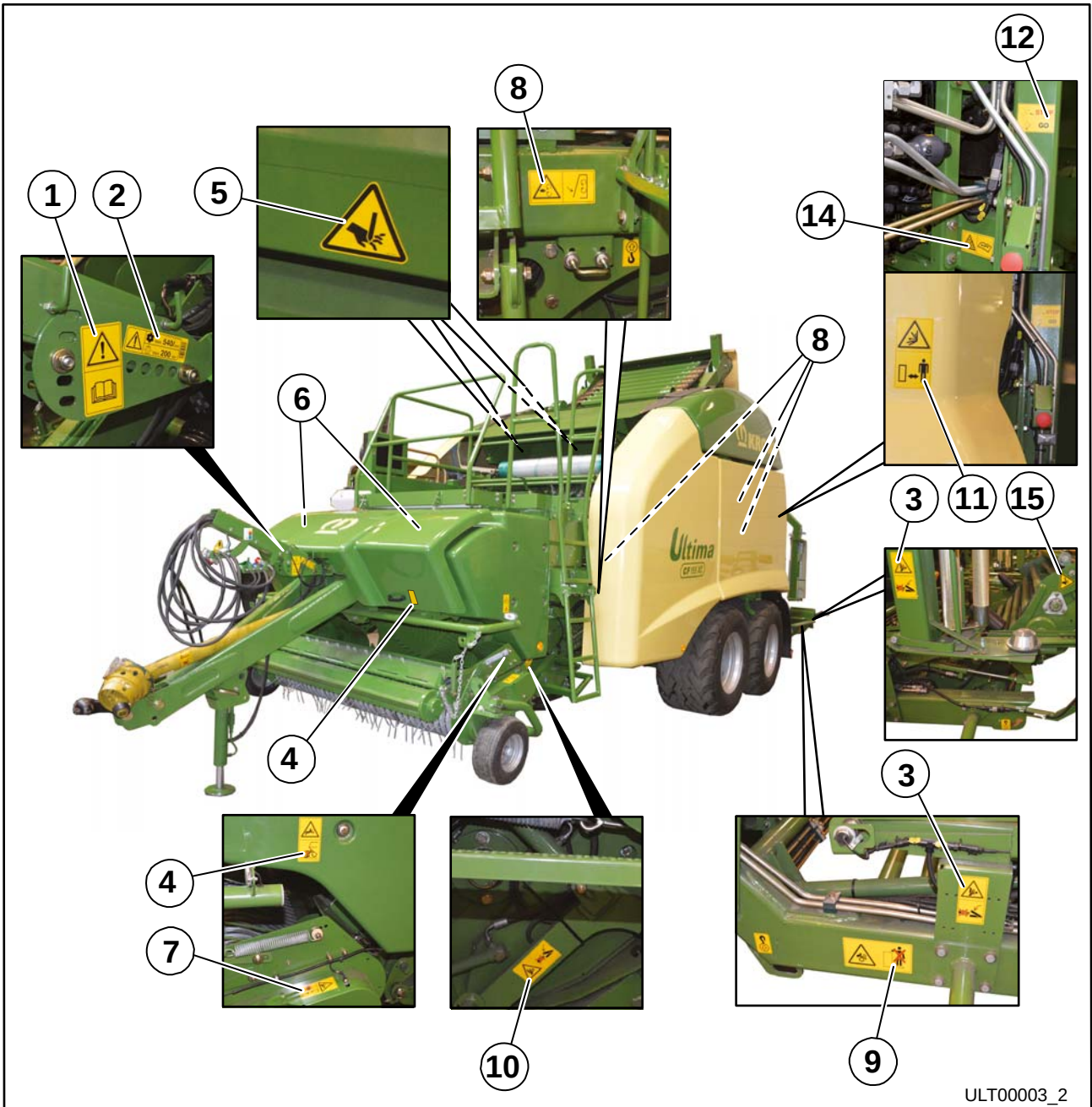


Fig. 1

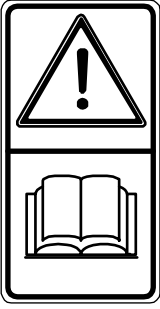
Safety



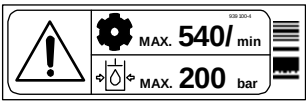
ULT00004_2

Fig. 2

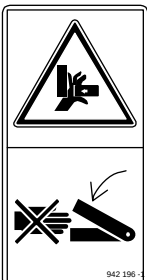
1) Order no. 939 471 1 (1x)

	Danger due to incorrect operation and lack of knowledge 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. Before starting up the machine, read and follow the operating instructions and safety instructions.
---	---

2) Order no. 939 100 4 (1x)

	Danger if the maximum permitted PTO speed or the maximum permitted operating pressure is exceeded. If the maximum permitted PTO speed is exceed, parts of the machine may be destroyed or forcibly ejected. If the maximum permitted operating pressure is exceeded, hydraulic parts may be damaged. As a result, people may be receive serious or life threatening injuries. - Observe the permitted PTO speed. - Observe the permitted operating pressure.
---	--

3) Order no. 942 196 1 (4x)

	Danger due to crushing or shearing Risk of injury due to crushing or shearing points on moving machine parts. While parts are moving, never reach into areas where there is a risk of being crushed.
---	---

4) Order No. 939 407 1 (4x)

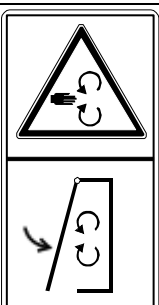
	Danger due to rotating pick-up. There is a danger of being drawn in if you approach the danger zone and if you use your hands or feet to clear clogging. Before working on the pick-up, switch off the PTO shaft and the engine.
---	---

Safety

5) Order No. 939 125 1 (3x) H = 100 mm

	Danger from sharp blades. There is a risk of cuts when reaching into the danger zone of the blades. • Wear cut-resistant gloves.
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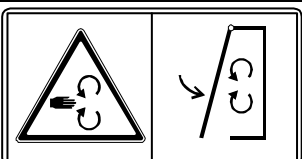
6) Order No. 27 010 614 0 (2x)

	Danger from rotating machine parts When the machine is running, there is a risk of injury from rotating machine parts. • Before start-up, move guards in the protective position.
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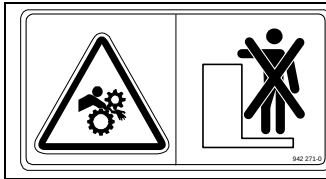
7) Order No. 939 520 1 (2x)

	Danger due to rotating auger. There is a danger of becoming caught or wrapped around the rotating auger. • Never reach into the rotating auger. • Keep a sufficient distance from moving machine parts.
--	--

8) Order No. 942 002 4 (8x)

	Danger due to rotating machine parts. When the machine is running, there is a risk of injury due to rotating machine parts. • Before starting up, move the guards into their protective position.
---	---

9) Order No. 942 271 0 (2x)

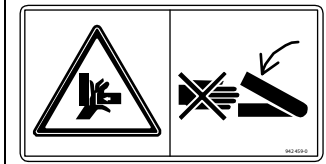


Danger from rotating machine parts.

When getting on the machine while the PTO shaft is running, there is a danger of being pulled in due to rotating machine parts.

- Switch off PTO shaft and engine before getting on the machine.

10) Order No. 942 459 0 (2x)



Danger due to crushing or shearing

Risk of injury due to crushing or shearing points on moving machine parts.

- While parts are moving, never reach into areas where there is a risk of being crushed.

11) Order No. 942 235 0 (2x)

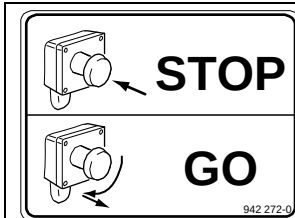


Danger from shock

The swivelling movement of the machine may cause danger to life.

- Make sure that there is no one in the swivel range of the machine.
- Keep distance to moving machine parts.

12) Order No. 942 272 0 (1x)



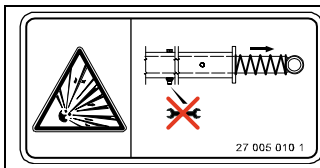
Danger from rotating machine parts.

Rotating machine parts in the range of movement of the wrapping device represent a risk of injury.

- Actuate quick stop button in order to interrupt all wrapping device functions.

Safety

13) Order no. 27 005 010 1 (2x)

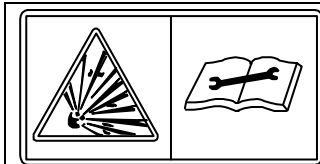


Danger from energised spring

Risk of injury due to ejected machine parts.

- Never unscrew screw connection.

14) Order no. 939 529 0 (1x)



Danger due to high-pressure liquid.

The accumulator is under gas and oil pressure. If the accumulator is not removed or repaired properly, there is a risk of injury.

- Before removing and repairing the accumulator, follow the information in the operating instructions.
- The accumulator may be removed and repaired by a service centre only.

15) Order No. 27 007 502 0 (2x) H = 70 mm



Danger from sharp blades.

There is a risk of cuts when reaching into the danger zone of the blades.

- Wear cut-resistant gloves.

4.7.1 Re-Ordering the Adhesive Safety and Information Labels



Note

Every adhesive safety and information label is assigned an order number and can be ordered directly from the manufacturer or from an authorized dealer (see Section "Contact").

4.7.2 Affixing the Adhesive Safety and Information Labels



Note - Affixing an adhesive label

Effect: Adhesion of the label

- The surface for affixing the adhesive label must be clean and free of dirt, oil and grease.



4.7.3 Contact

Maschinenfabrik Bernard Krone GmbH
Heinrich-Krone-Strasse 10
D-48480 Spelle (Germany)

Telephone: + 49 (0) 59 77/935-0 (Head Office)
Fax.: + 49 (0) 59 77/935-339 (Head Office)
Fax.: + 49 (0) 59 77/935-239 (Spare parts - domestic)
Fax.: + 49 (0) 59 77/935-359 (Spare parts - export)
Email: info.ldm@krone.de

4.7.4 Contact for KRONE NORTHAMERICA

4985 Outland Center Drive 102
Phone: + (001) 901 842-6011
Fax: + (001) 901 842-6016
Internet: www.krone-northamerica.com
Email: lcourts@krone-na.com



Safety

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4.8 Safety Equipment

4.8.1 Safety equipment on the bale wrapper



WARNING! - Unexpected movement of components due to defective safety equipment!

Effect: Danger to life, risk of a serious accident or damage to the machine

- Machine must not be started without functioning safety equipment.

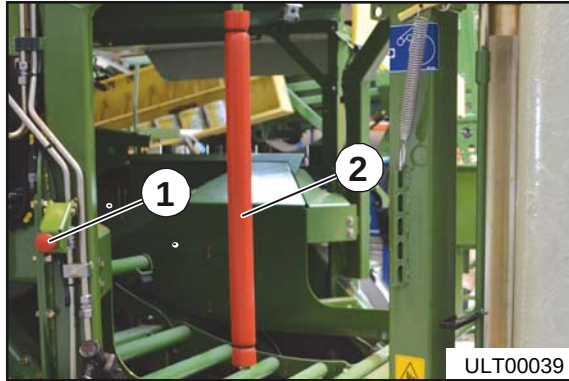


Fig. 3

1) Quick-stop switch on right/left

2) Safety loop on right/left

Function of the safety equipment

- The quick-stop switches are used to interrupt the running wrapping cycle in case of danger. Quick-stop switches must be released after they have been pressed.
- The safety loops are used to stop the wrapping arm during wrapping. If a moving safety loop strikes an obstacle, the wrapping arm stops.

Function test of the safety equipment



Note

STOP

If an alarm message is displayed on the terminal when testing the function of the safety equipment, the function is provided. If an alarm message is not displayed, check and repair the safety equipment.

Check daily that the safety equipment on the bale wrapper functions.

- Switch on the terminal.
- Press the right quick-stop switch (1) and check whether an alarm message is displayed on the terminal. Acknowledge the error on the terminal.
- Press the left quick-stop switch (1) and check whether an alarm message is displayed on the terminal. Acknowledge the error on the terminal.
- Push the right safety loop (2) in the direction of the pre-stretching rollers and check whether an alarm message is displayed on the terminal. Acknowledge the error on the terminal.
- Push the left safety loop (2) in the direction of the pre-stretching rollers and check whether an alarm message is displayed on the terminal. Acknowledge the error on the terminal.

Alarm messages see Section "KRONE ISOBUS Terminal".

Safety

4.9

Side guards



WARNING!

Danger to life, serious injuries or severe damage to machine due to unintentional opening of the side guards.

- After closing the side guards, check whether the locks are engaged.

Opening rear side guards



Fig. 4

- To open the rear side guard (1) on the right or left, pull the locking hook (2) and press the side guard upwards using the handle (3).

Closing rear side guards

- Pull the side guard (1) downwards using the handle (3) and press until the locking hook (2) engages.

Opening front side guards

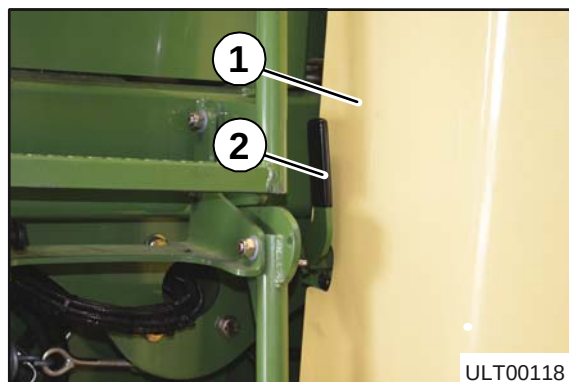


Fig. 5

- To open the front side guard (1) on the left, pull the locking hook (2) and open the side guard.

Closing front side guard on the left

- Pull the side guard (1) downwards using the handle (2) and press until the lock engages.

4.9.1 Ladder



WARNING!

Danger of injury when climbing or descending.

Persons who behave carelessly when getting on and off the machine may fall down from the ladder. Persons getting on the machine without using the ladders intended for that purpose may slip or fall or they may get hurt seriously. Dirt as well as operating fluids and lubricants may impair surefootedness and stability.

- Just use ladders intended for this purpose.
- Always keep ladder steps and platforms clean and in proper condition so that you can step and stay safely.
- Do not get on and off when the machine is moving.
- Always get on and off with the face towards the machine.
- When getting on and off, ensure three-point contact with steps and handrails (both hands and one foot are in contact with the machine or both feet and one hand).
- When getting on and off the machine, never use control elements as a handle. An accidental activation of control elements may cause functions to be activated unintentionally. This holds a danger.
- When getting off the machine, never jump.

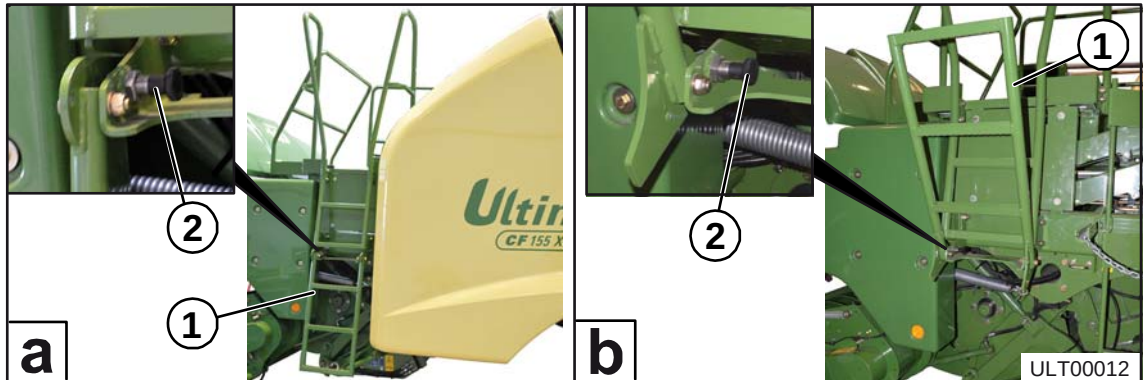


Fig. 6

a) folded down

b) folded up

Safety



WARNING! – Ladders not folded down!

Effect: Danger to life, serious injuries or serious damage to the machine.

- When travelling on the road or working in the field, fold down the ladders (a) und check whether the locking pin (2) is engaged.

There is a ladder (1) on the left front side of the machine.

The ladders (1) must be folded down (a) for the following activities:

- Ascending the platform
- Descending the platform
- Road travel
- Field work

Ladder (1) folded down:

- Pull the locking lever (2), fold down the ladders and release the locking lever (2) (automatically engages).

For different maintenance work, e.g. changing blades, the ladders (1) must be folded up (b).

Folding up ladder (1):

- Pull the locking lever (2), fold up the ladders and release the locking lever (2) (automatically engages).



Note

Check whether the lock of the ladders is engaged properly in each position. Do not use the ladder unless it is engaged in the ascent / descent position.

4.9.2 Parking brake

**WARNING!****Unexpected movement of the machine!**

The machine may move unintentionally if the parking brake is not activated when parking the machine. Thus there is a risk of serious injuries or death.

- Always apply the parking brake when the tractor is left or the machine is switched off.



Fig. 7

The crank (1) of the parking brake is located on the left rear side of the machine under the quick-stop switch.

The parking brake is used to secure the machine from rolling away accidentally, especially when the machine is disconnected from the tractor.

Set the parking brake:

- Turn the crank clockwise until the resistance grows noticeably greater.

Release the parking brake:

- Turn the crank anti-clockwise until the brake cable is slightly slack.

**Note**

To prevent the machine from rolling away, use the wheel chocks in addition to the parking brake.

Safety

4.9.3 Parking Support

The parking support ensures that the machine is stable when it is not hitched to the tractor.

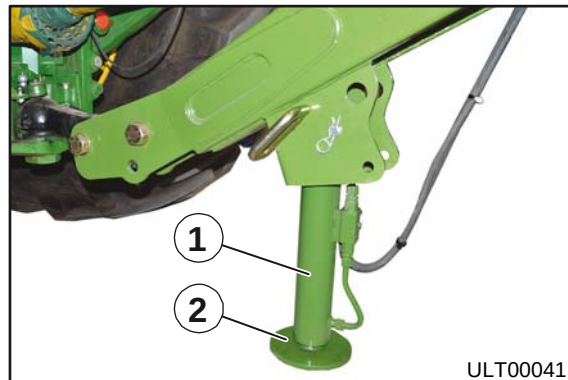
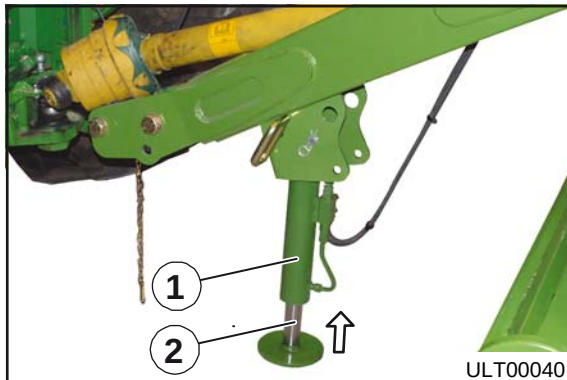


Fig. 8

Folding in parking support (1)

Prerequisite:

The machine is hooked onto the tractor.

- Retract the parking jack (2) via the control unit of the tractor.

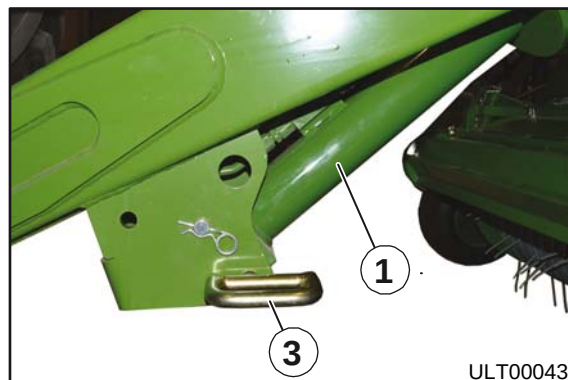
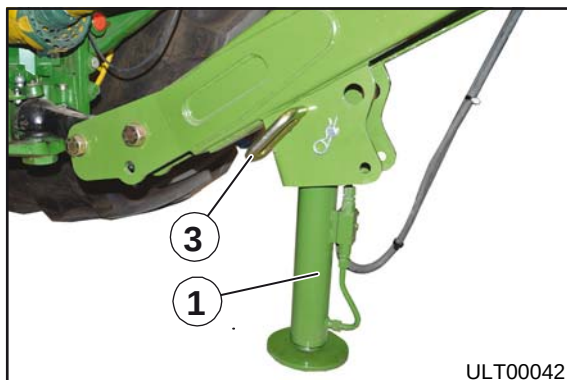


Fig. 9

- Pull the split pin on the locking bolt (3) and remove the locking bolt.
- Mechanically fold up the parking support (1) and secure in this position with the locking bolt (3) and split pin.

Folding out parking support (1)

Prerequisite:

- The machine is hooked onto the tractor.

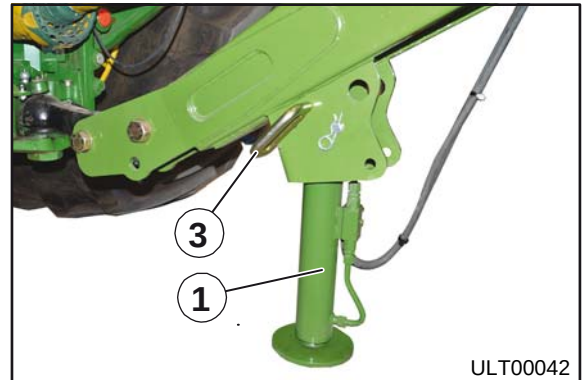
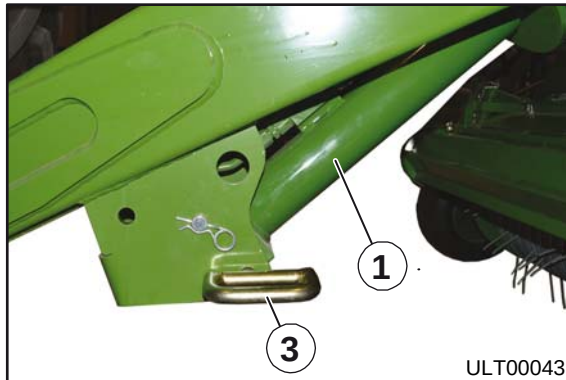


Fig. 10

- Pull the split pin on the locking bolt (3) and remove the locking bolt.
- Mechanically fold down the parking support (1) and secure in this position with the locking bolt (3) and split pin.

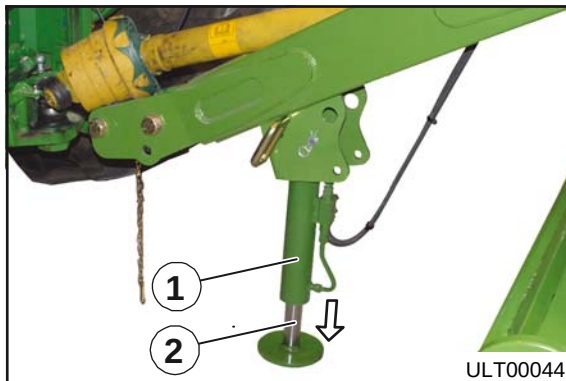


Fig. 11

- Extend the parking jack (2) via the control unit of the tractor.


Note

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

Safety

4.9.4 Wheel chocks

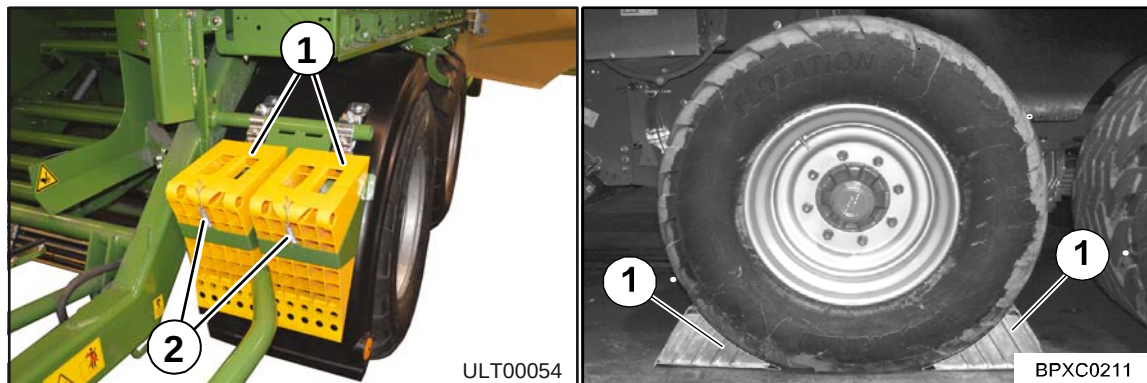


Fig. 12

The wheel chocks (1) are kept in a holder on the right behind the mudguard. They are each held in position by a spring (2).

- To prevent the uncoupled machine from rolling away, place the wheel chock (1) in front of and behind the same wheel on the front axle.

4.9.5 Rollers on the Wrapping Table



WARNING!

Risk of injury due to moving rollers on the wrapping table!

There is an increased risk of accident when entering the yellow painted (moveable) rollers of the wrapping table.

- For repair, maintenance and cleaning jobs as well as when remedy malfunctions, only step on the areas of the wrapping table painted in green.

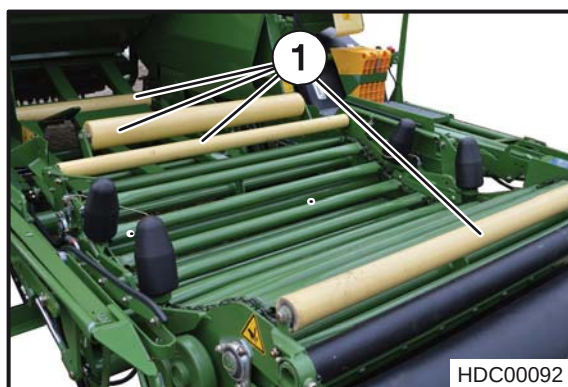


Fig. 13

- When performing work on the wrapping table, do not walk on the yellow painted (1) movable rollers (1).

4.9.6 Stop Points



WARNING!

Danger from falling loads!

- Never step or stay under suspended loads!
- Maintain an adequate safety distance from suspended loads.
- Before transportation, compare load capacity of slings and cranes and choose transportation equipment with a sufficient degree of safety and lifting capacity.
- Prevent strong impacts and make sure that the machine does not become wedged!

The machine features 12 stop points which are identified by the following stickers.

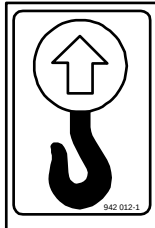


Fig. 14

To lift the machine, use these stop points only.

Lifting

- Use a lifting device with a minimum load-bearing capacity (depending on the permitted gross weight of the machine) (see chapter Introduction "Identification").
- Close the tailgate.
- Swivel parking support (parking jack) into transport position.
- Raise the pick-up.
- Ensure that all safety devices are locked.
- Attach the lifting tackle of the lifting device to the stop points on the machine.



ATTENTION!

Damage to the machine

- Check the attachment area before attaching the lifting tackle to prevent damage to adjacent components.

Safety

4.9.7 Stop cocks hydraulic system

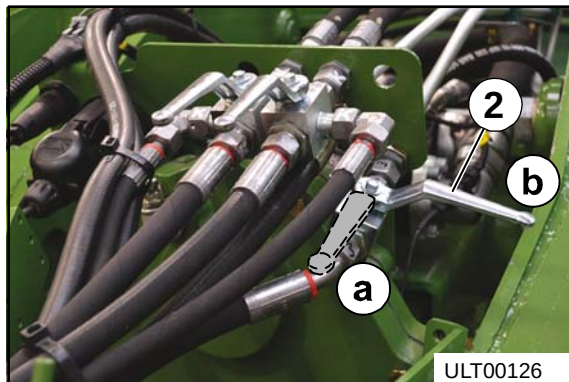


Fig. 15

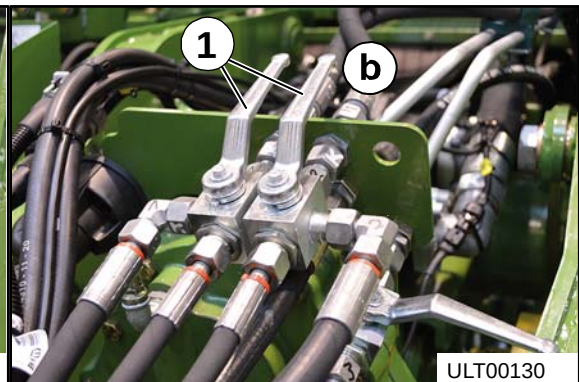
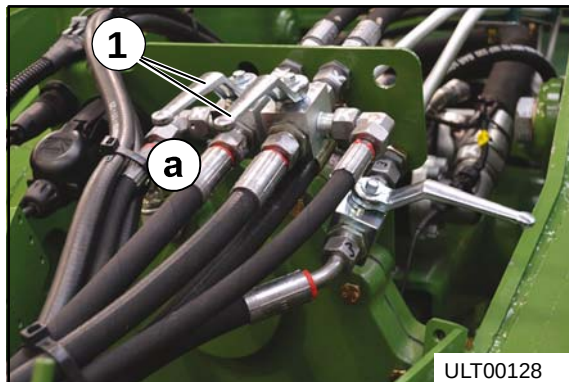


Fig. 16

The stop cocks (1) and (2) on the hydraulic lines are used to regulate the inflow of hydraulic oil:

- Stop cock in direction lengthwise to the hose line - hydraulic oil supply open
- Stop cock in direction transverse to the hose line - hydraulic oil supply interrupted

4.9.8 Throttle valve

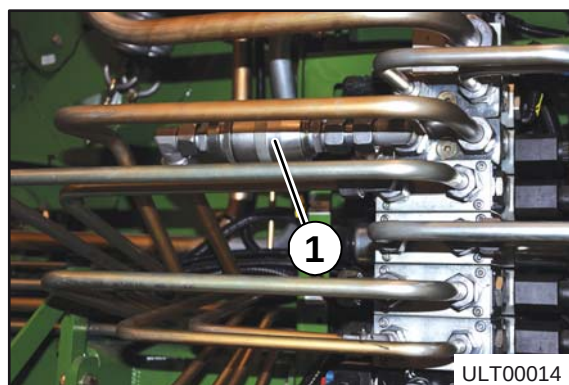


Fig. 17

The valve block with throttle valve (1) is located rear left on the machine.

The throttle valve (1) is used to change the closing speed of the tailgate.

- To change the inflow of hydraulic oil, turn on the throttle valve (1).

The more hydraulic oil flows through the line, the faster the tailgate closes.

When opening the tailgate, the throttle valve is without function.

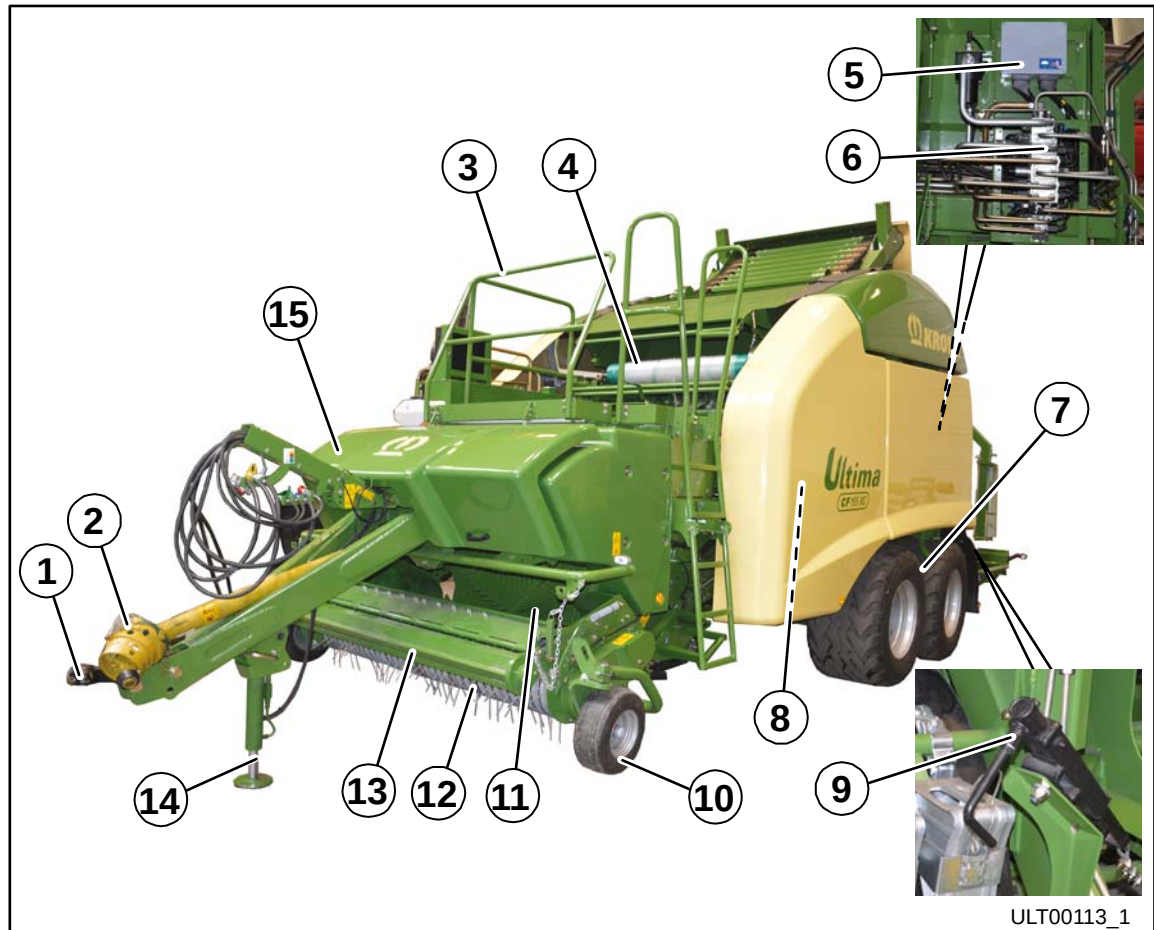
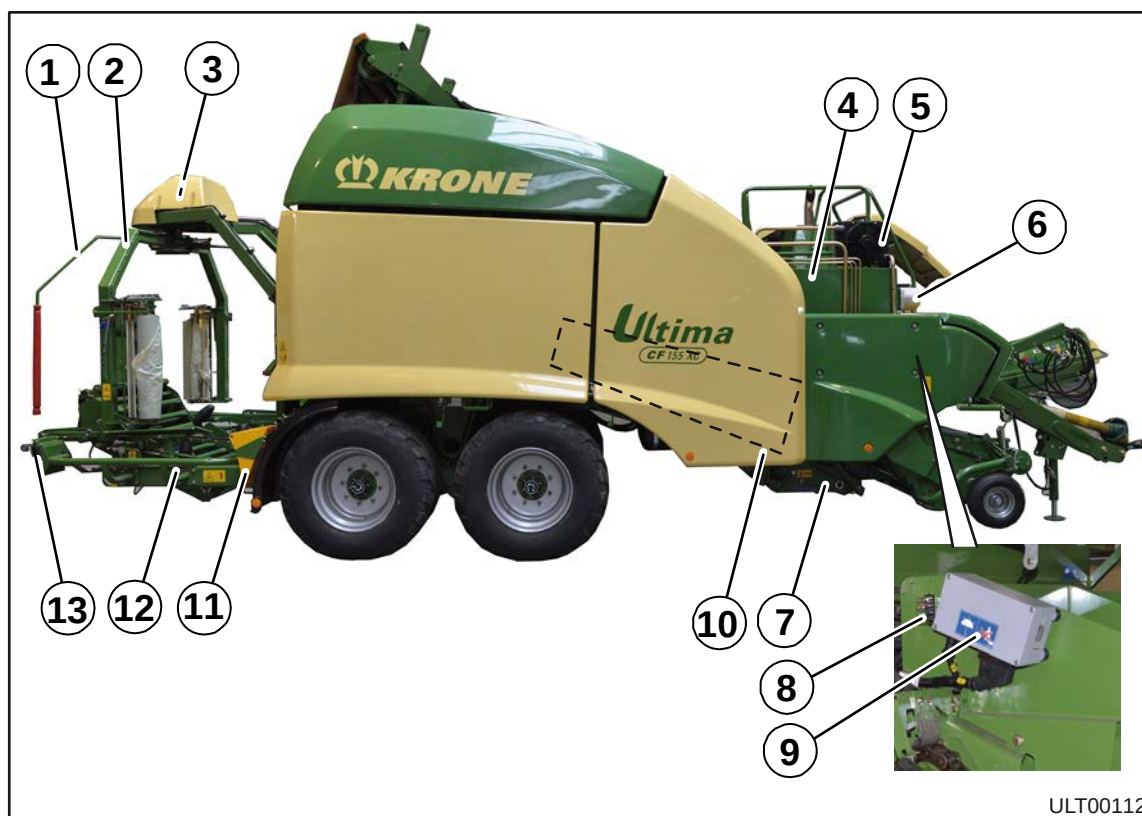
5 Machine Description**5.1 Machine overview****5.1.1 Overview of machine left side**

Fig. 18

Item	Designation
1	Towing ring
2	Wide-angle universal shaft
3	Safety railing
4	Net wrapping
5	Job computer 1
6	Control valve block 1
7	Tandem aggregate self-steering axle
8	Control valve block 2
9	Crank for parking brake
10	Guide wheel pick-up
11	Cutting system
12	Pick-up
13	Roller crop guide
14	Parking jack
15	Front cover hood

Machine Description

5.1.2 Overview of machine right side



ULT00112

Fig. 19

Item	Designation
1	Safety loop
2	Wrapping arm
3	Valve block 3
4	Hydraulic tank
5	Oil cooler
6	Tank for chain lubrication system
7	Blades
8	Fuses
9	Job computer 2
10	Pre-compression chamber
11	Wheel Chocks
12	Wrapping table
13	Lighting equipment

5.1.3 Overview of the standard components

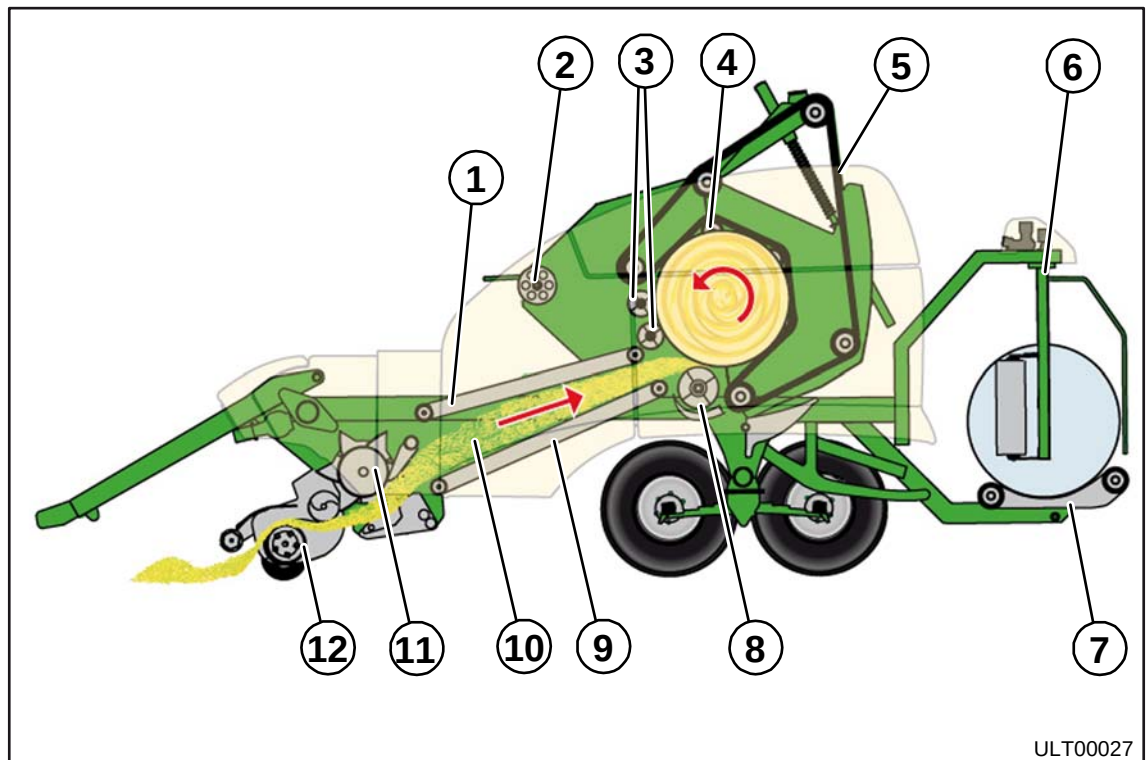


Fig. 20

Item	Designation
1	Upper conveyor belt
2	Net roll
3	Net rollers
4	Bale chamber
5	Floor conveyor
6	Wrap system
7	Wrapping table
8	Starter roller
9	Lower conveyor belt
10	Pre-compression chamber
11	Cutting rotor
12	Active pick-up

Machine Description

5.1.4 Function

Prerequisites when starting

- The bale chamber is empty.
- There is a completely wrapped bale or no bale on the wrapping table.

Mode of operation

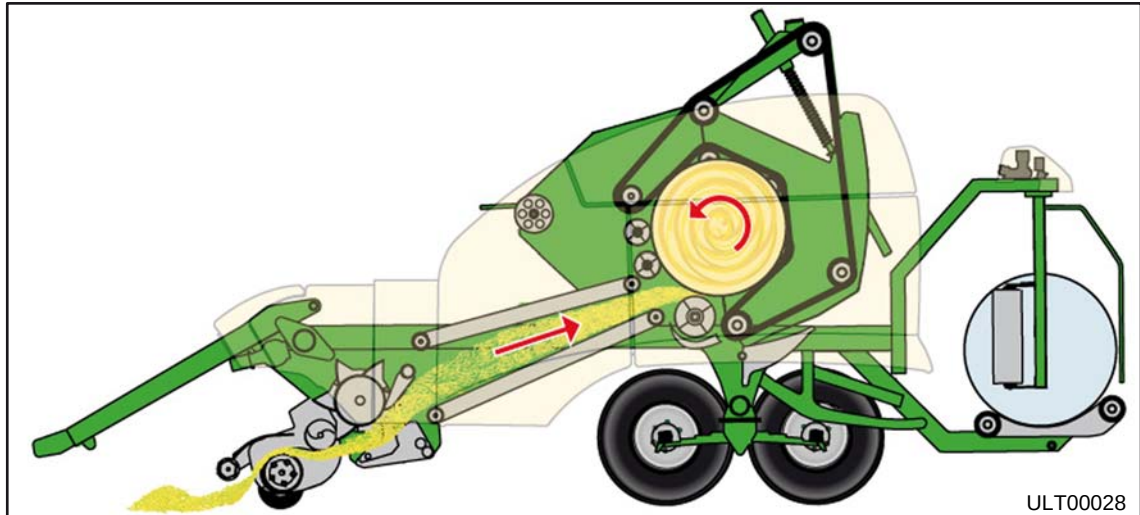


Fig. 21

The active pick-up picks up the crops as it runs over the swath.

The crops enter the bale chamber via the cutting rotor and the conveyor belts of the pre-compression chamber where they are wrapped into a round bale.

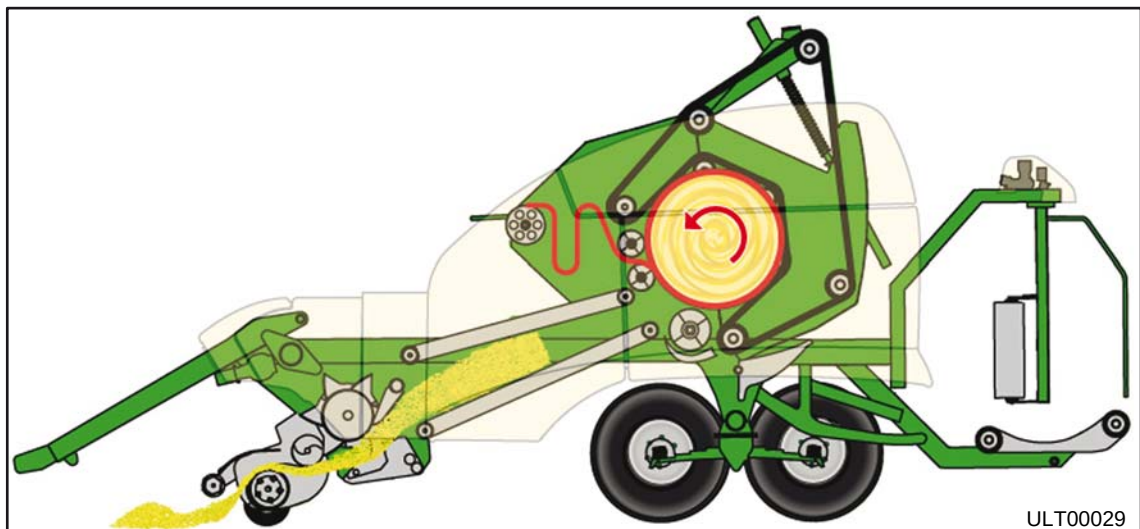


Fig. 22

When the bale has reached the preselected strength, the net wrapping is actuated and the crop flow to the bale chamber is interrupted. If there is a bale on the wrapping table, it is deposited in the field.

When the net wrapping is actuated, the conveyor belts run briefly against the direction of travel and convey the crops in the direction of the cutting rotor. The cutting rotor starts compressing the crops in the pre-compression chamber.

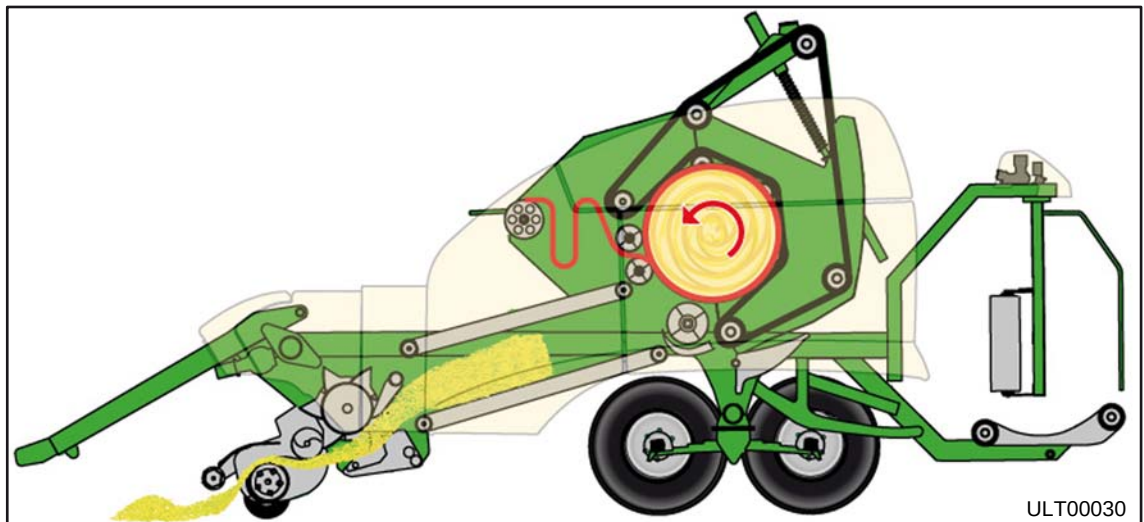


Fig. 23

Depending on the set crops, the lower conveyor belt drops to enlarge the pre-compression chamber.

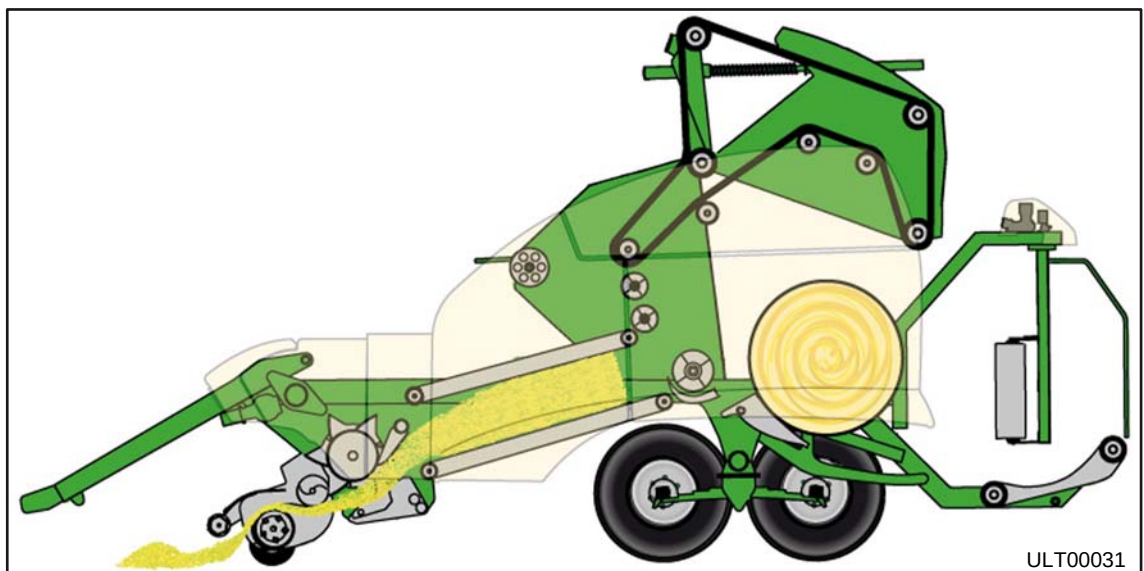


Fig. 24

The cutting rotor conveys the compressed crops in the direction of the bale chamber.

Depending on the crops, the conveyor belts run slowly for support.

When net wrapping is complete, the tailgate opens, the bale rolls by gravitational force onto the wrapping table and the tailgate closes.

The bale is now wrapped with film

Machine Description

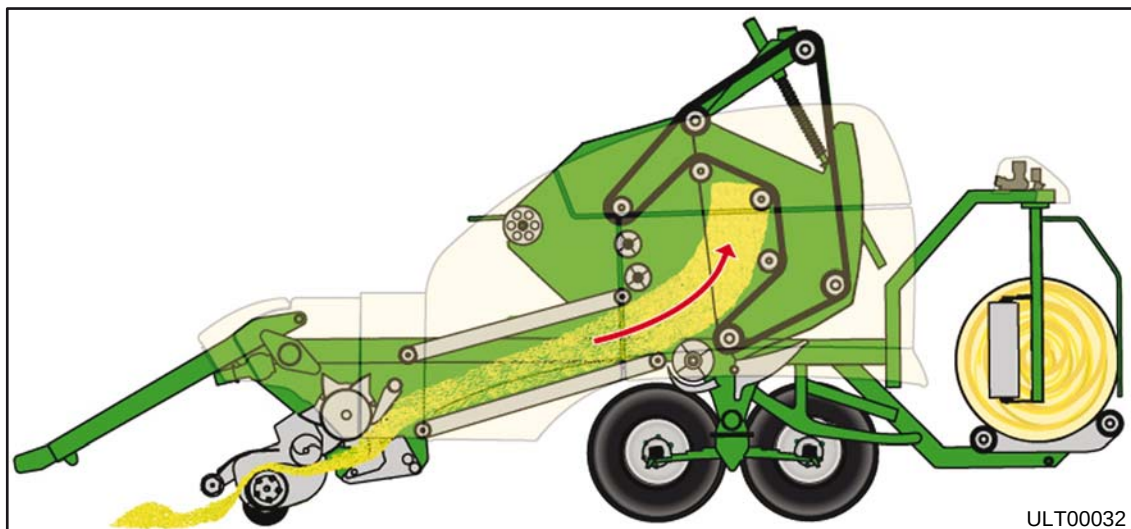


Fig. 25

When the bale chamber is closed, the starter roller moves downwards, the crops, which have been collected and compressed in the pre-compression chamber, enter the bale chamber via the conveyor belts. The bale chamber rotates the crops and maintains the existing density. When the pre-compression chamber is empty, the lower conveyor belt and the starter roller move upwards. The incoming crops are conveyed into the bale chamber via the pre-compression chamber until the next bale has reached the preselected firmness.

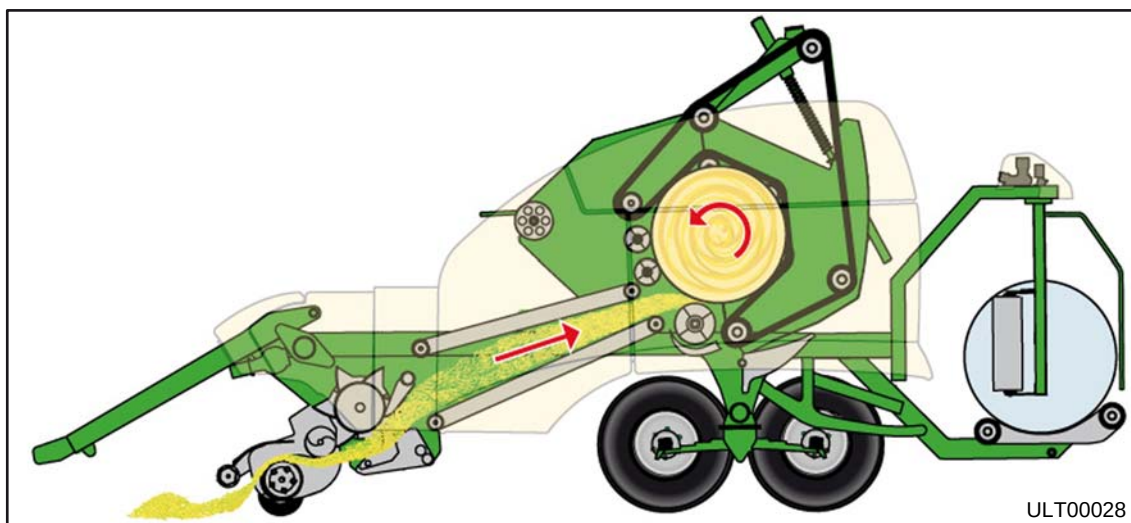


Fig. 26

The bale on the wrapping table is completely wrapped and deposited in the field before the tailgate opens and the next bale is rolled onto the wrapping table.

5.2

Identification Plate

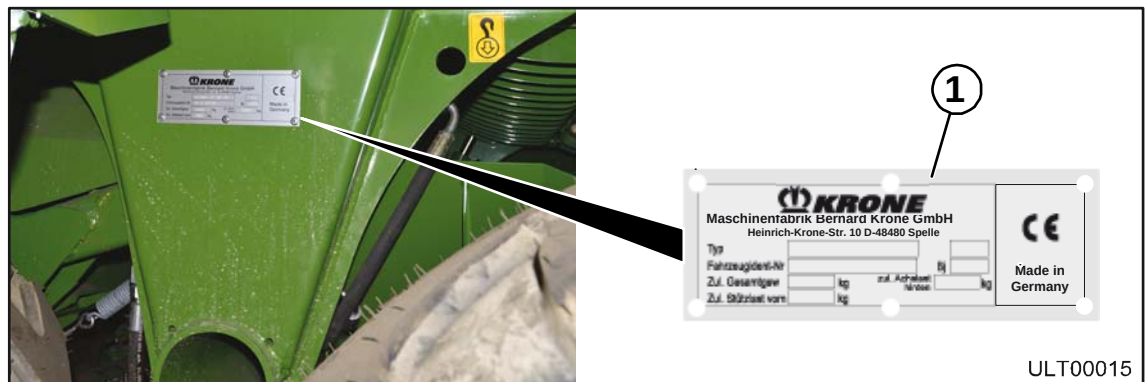


Fig. 27

The machine data is on a rating plate (1). It is located on the right side of the machine between the wheels on the frame.



Machine Description

5.3 Technical data

All information, illustrations and technical data in these operating instructions 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.

		Ultima CF 155 (XC)
Axle		Tandem axle (axle base 1245 mm)
Permissible weights		See information on the type plate
Pick-up width		2150 mm
Width approx.		3000 mm
Track width		2350
Tyres (tandem axle with follow-up steering)		620/40 - R 22.5
Length approx.		9000 mm
Height approx.		3900 mm
Bale dimensions	Diameter approx.	1250 - 1500 mm
	Width approx.	1200 mm
Recommended power consumption		132 kW (180 HP)
Drive speed (PTO shaft)		540 rpm
Maximum permissible operating pressure of hydraulic system		200 bar
Max. oil temperature		80°C
Hydraulic flow rate		180 l/min
Electrical supply	Lighting equipment	12 volt, 7-pin plug
	Operation	12 volt, 3-pin plug
Net	Max. width	1300 mm
	Sleeve length	1250 - 1350 mm
	Sleeve diameter	ø 75 - 80 mm
	Roll diameter	max. 310 mm (3600 m roller)
Film	Width	2 x 750 mm
	Pre-stretching	50% or 70%
	Sleeve diameter	ø 75 - 80 mm
	Roll diameter	max. 260 mm
Cam-type clutch		Cutting system
Cam-type clutch		Bale chamber
Shortest blade distance approx.		42 mm
Number of tine rows of the pick-up		5
Cutting rotor		26 blades



5.4 Filling Quantities and Lubrication Designations for Gearboxes

	Filling quantity	Refined oils Brand name	Bio-degradable lubricants Brand name
Main gearbox	0.7 l	SAE90	On request
Gearbox hydraulic pump	0.8 l	SAE90	
Gearbox on the wrapping arm	1.6 l	Fluid gear grease GFO 35 (permanently lubricated with grease)	
Gearbox wrapping table	0.25 l	Fluid gear grease GFO 35	

Hydraulic connections	
With steering axle design	1 x single-action control unit
With pick-up design	1 x single-action control unit
With articulated drawbar or support jack	1 x double-action control unit

Commissioning

6 Commissioning



WARNING!

Risk of accident or damage to the machine due to an incorrect initial operation!

Only an authorized service technician is permitted to carry out the initial operation.



WARNING!

If the basic safety instructions are not followed, people may be seriously injured or killed.

- To avoid accidents, the basic safety instructions in the chapter Safety must have been read and followed, see chapter Safety "Basic safety instructions".



WARNING!

If the safety routines are not adhered to, people may be seriously injured or killed.

- To avoid accidents, the safety routines in the chapter Safety must be read and followed, see chapter Safety "Safety routines".



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 and wheel chocks.

**6.1 Before initial start-up**

- When the machine has been completely assembled, check the tyre pressure; if required top up (see chapter Maintenance "Tyre pressure")

For reasons related to transport, the machine is delivered without the universal shaft attached. Before initial start-up, the machine must be completely assembled and adjusted to the tractor type.

- When the machine has been completely assembled, check the tyre pressure; if required top up (see chapter Maintenance "Tyre pressure")

The following parts are included with delivery:

Part	Storage location
Universal shaft	On the wrapping table
Support for operation unit	In the storage compartments left and right of the drawbar
Operation unit	
Power supply on the tractor	
Bag with small parts	
Extension cable	
Ring spanner 13	
Can of spray paint	
Hose clamp for universal shaft	

Commissioning

6.2 Removing the transport holding down tensiing device



Note

If the clamping arms of the machine were pulled down and attached for transportation with the tensioning system (not all truck types), the tensioning system must be removed before the machine is started up.

Removing the tensioning device from the right and left sides of the machine:



DANGER! – The tensioning rocker and the attached tensioning device are under pressure!

Effect: Injuries or damage to the machine.

- No one is permitted inside the danger zone.

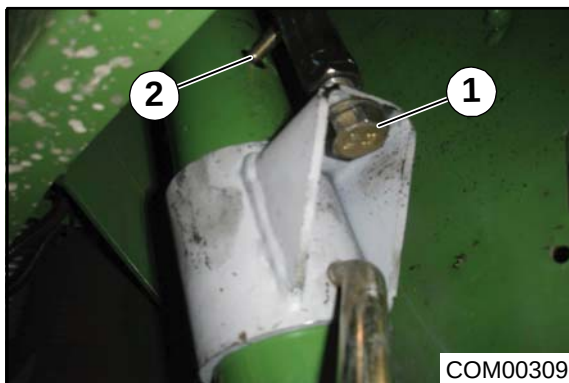


Fig. 28



ATTENTION!

The floor conveyor is tensioned by loosening the screws (1).

- Keep out of the danger zone!

- Remove the screw (2) by slightly tightening or loosening the screw (1).
- Loosen the screws 1 (on left and right) equally on both sides and remove.

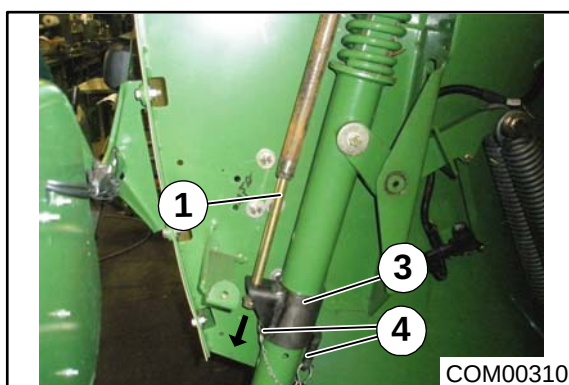


Fig. 29

- Remove the cotter pin and bolt (4) and remove the slip-on bushing (3) downwards. Re-attach the bolt (4) and secure with the cotter pin.

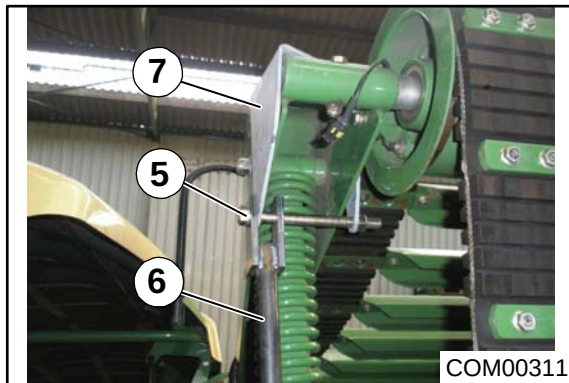


Fig. 30

- Remove the screw connection (5).
- Remove the connecting tube (6) and link (7).

**Note**

Dispose of all removed parts properly.
Reuse is not permitted!

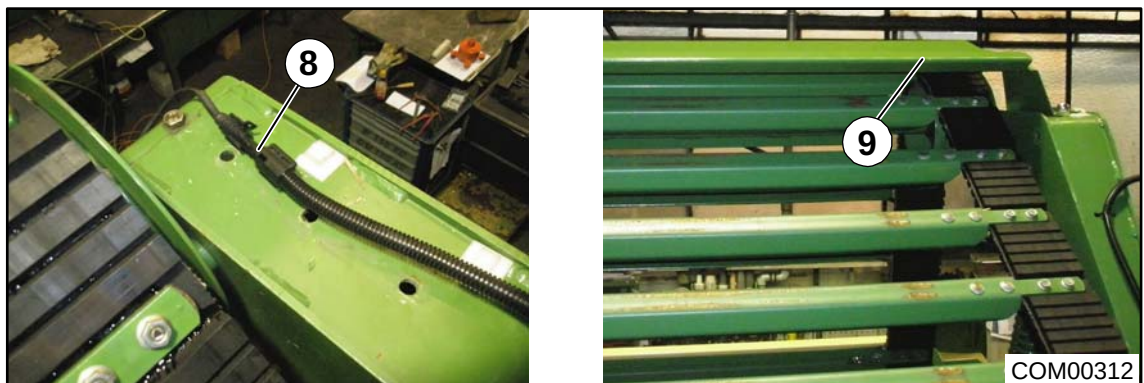


Fig. 31

- Connect the plug connection (8) for the sensor on the left side of the machine.
- Mount the supplied plate (9) on the upper deflection roller of the belt.

Commissioning

6.3 Adjusting the drawbar height



Note

Before aligning the machine and adapting the height of the drawbar, the tyre pressure must be checked and adapted to the value for the existing tyre type which is recommended in the tyre air pressure table (refer to chapter entitled "Maintenance"), if necessary.

6.3.1 Checking the drawbar height

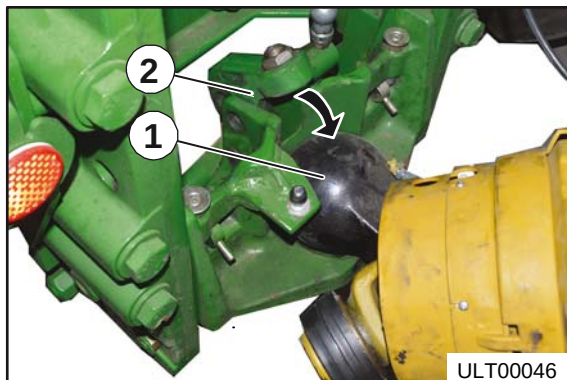


Fig. 32

- Hook the towing ring (1) of the machine into the hitch coupling (2) of the tractor and secure.

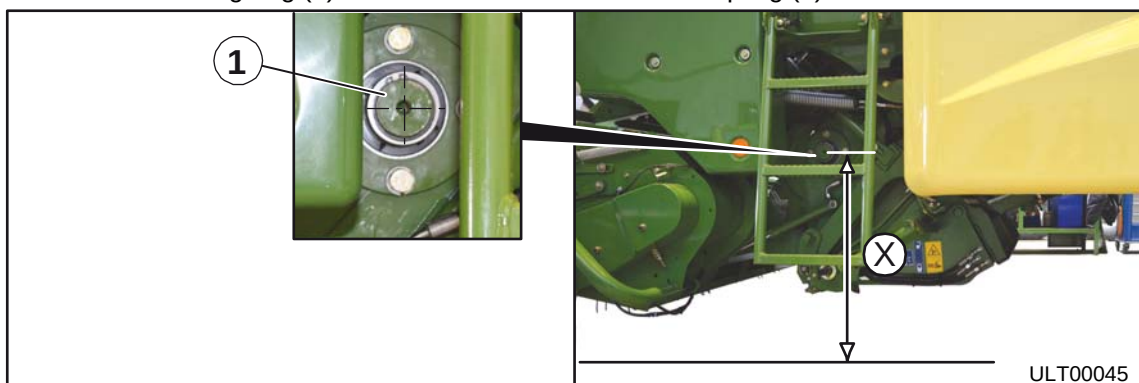


Fig. 33

- Measure dimension **X** between the centre of the rotor (1) and ground.

When hitched up, the dimension between the centre of the rotor (1) and ground must be **X = 880 mm**.

If dimension **X** is not 880 mm, adjust the drawbar height of the machine to the tractor used.

6.3.2 Adjusting height of the drawbar to the tractor

- Using a spirit level, align the machine horizontally. The frame is used as a reference edge to align the machine.

Retracting the drawbar to the basic position

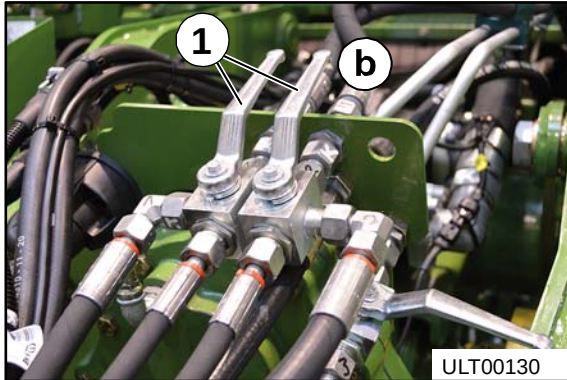


Fig. 34

Prerequisite:

To actuate the articulated drawbar, the stop cocks (1) must be in position (b).

- If required, move the stop cocks backwards to position (b).
- Depressurise hydraulic cylinder (1) on right/left via the control unit.
- Hang the machine from a crane or front loader using suitable lifting tackle (see chap. "Stop points"). Use the identified stop points only.

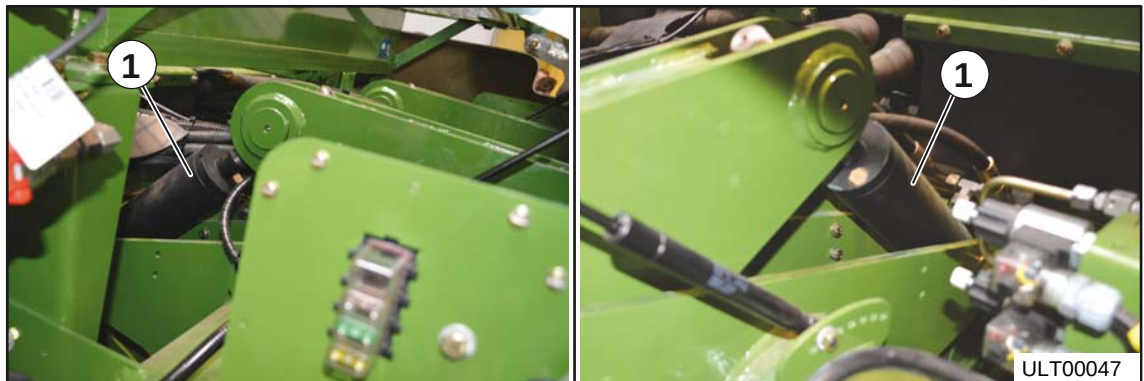


Fig. 35

6.4 Installing connection cable between machine and tractor

- Depressurise hydraulic cylinder (1) on right/left via the control unit.
- Hang the machine from a crane or front loader using suitable lifting tackle (see chap. "Stop points"). Use the identified stop points only.



Commissioning

Fig. 36

- Remove the front cover grille (2) from the platform.



Note

Adjust both lifting cylinders equally.

- Loosen the anti-twist lock (3) using the hexagonal head screw (4).
- Turn the threaded spindle (5) of the lifting cylinders until the required drawbar height is reached.
- Tighten the anti-twist lock using the hexagonal head screw (4).
- Put on the cover grille (2).
- Detach the lifting tackle from the machine.



Note

To prevent the cables and lines between machine and tractor from being subject to tension during operation, install the connection cables with the articulated drawbar raised.

- Before starting up the machine, check that the cables and lines cannot be crushed or damaged during operation.
- Carefully attach cables and lines to suitable points.

6.5 PTO shaft

6.5.1 Length adjustment

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".

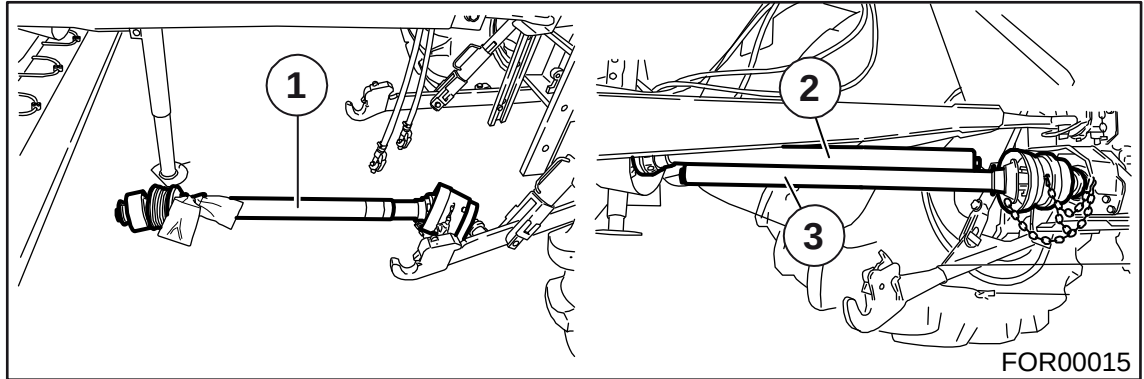


Fig. 37

To adapt the length of the universal shaft, hitch the machine onto the tractor. The shortest position of the universal shaft is reached in close cornering.

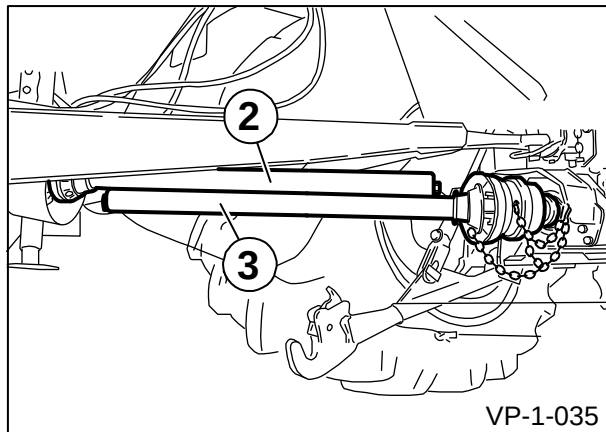


Fig.38

The length of the PTO shaft (1) must be adjusted.

- Disassemble the PTO shaft.
- Install each half (1) and (2) on the tractor and machine side respectively.
- Check the special section tubes and guard tubes.
- Shorten special section tubes and guard tubes to an extent that the PTO shaft can move freely in the shortest operating position.
- For additional operating instructions refer to the operating instructions of the PTO shaft manufacturer.

Commissioning

6.5.2 Mounting the PTO shaft on the machine side

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".



Note

When attaching the universal shaft, ensure that the wide-angle joint is attached to the tractor side.

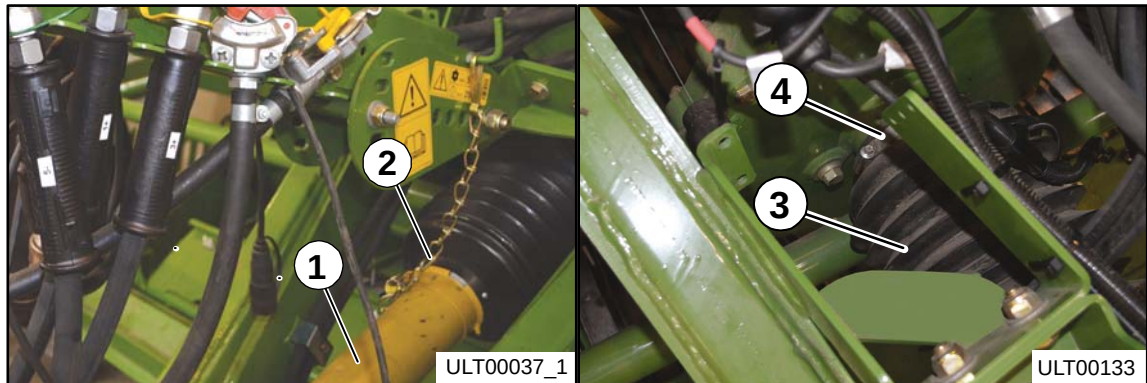


Fig. 39

- Push on the universal shaft (1) on the machine side until the protection mechanism locks into place or the universal shaft can be screwed together (see supplied operating instructions of the universal shaft manufacturer).
- Hook on the retaining chain (2) of the universal shaft guard (3) on the machine side.
- Attach the universal shaft guard to the gearbox using a hose clamp (4).

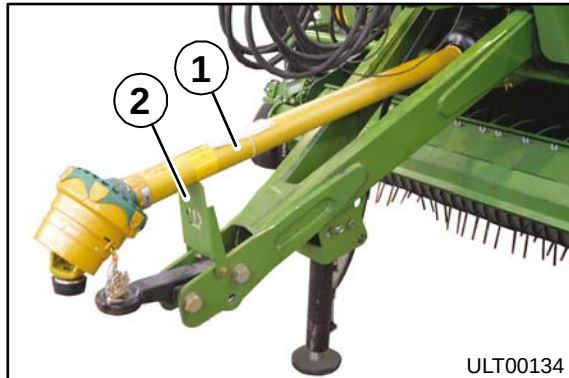


Fig. 40

- Fold up the universal shaft support (2) and lower the universal shaft (1) on it.

7

Start-up



WARNING!

If the basic safety instructions are not followed, people may be seriously injured or killed.

- To avoid accidents, the basic safety instructions in the chapter Safety must have been read and followed, see chapter Safety "Basic safety instructions".



WARNING!

If the safety routines are not adhered to, people may be seriously injured or killed.

- To avoid accidents, the safety routines in the chapter Safety must be read and followed, see chapter Safety "Safety routines".

Start-up

7.1 Mounting onto the Tractor

The machine is equipped with a ball-head attachment K 80 (1) as standard. A hitch coupling (export only) is available depending on the specific requirement.

- Hitch and secure the machine according to regulations on the hitch coupling of the tractor.

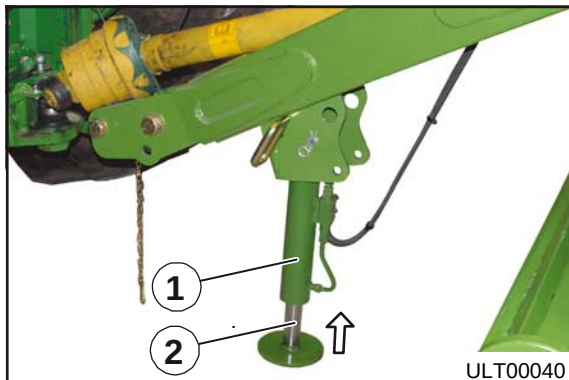


Fig. 41

Folding in parking support (1)

Prerequisite:

The machine is hooked onto the tractor.

- Retract the parking jack (2) via the control unit of the tractor.

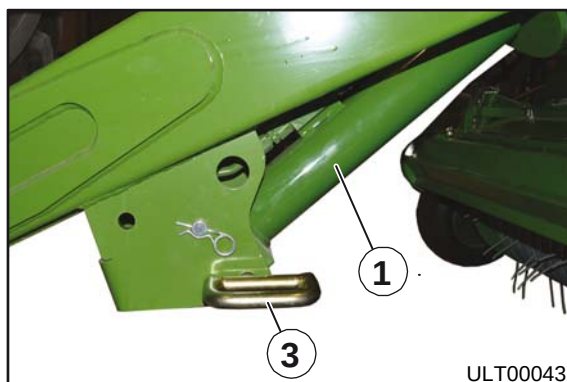
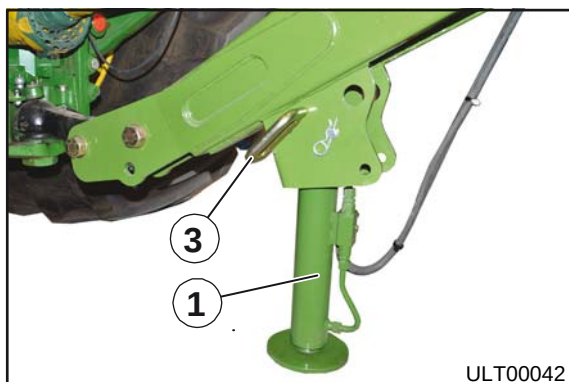


Fig. 42

- Pull the split pin on the locking bolt (3) and remove the locking bolt.
- Mechanically fold up the parking support (1) and secure in this position with the locking bolt (3) and split pin.

7.2 Hydraulics

7.2.1 Special Safety Instructions



Warning ! - Connection of the hydraulic line

Effect: severe injuries due to penetration of hydraulic oil under the skin.

- When connecting the hydraulic hoses to the hydraulic system of the tractor, the system must be relieved of the pressure on either side.
- Due to the risk of injury when searching for leaks, always use suitable tools and wear protective goggles.
- Seek medical help immediately should injuries occur! Danger of infection.
- Depressurise prior to uncoupling the hydraulic hoses and working on the hydraulic system!
- Check the hydraulic hose lines at regular intervals and replace them if damaged or worn! The replacement hoses must fulfil the technical requirements set by the equipment manufacturer.



WARNING! – Hydraulic hose lines are subject to ageing

Effect: Danger to life or serious injuries

The characteristics of the lines change depending on pressure, heat load and the effect of UV rays.

The date of manufacture appears on the hydraulic hoses. This way the age can be ascertained quickly.

By law the hydraulic lines must be replaced after six years.

Use original spare parts when replacing hydraulic hoses!



Caution! - Soiling of the hydraulic system

Effect: Damages to the machine

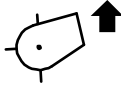
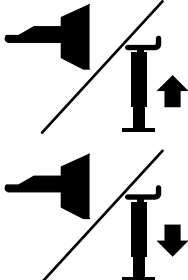
- When connecting the quick couplings, ensure that these are clean and dry.
- Note chafing areas or points of contact.

Start-up

7.2.2 Hydraulically controlled machine functions

To perform the following hydraulic functions, the tractor requires:

- 2 single-acting control units
- 1 double-acting control unit

Control	Function
Single-action control unit (red 1+) 	Locking / releasing steering axle • Pressure (red 1+): • Locking steering axle • Float position (red 1+): • Releasing steering axle
Single-acting control unit (yellow 3+) 	Raising/lowering the pick-up • Pressure (yellow 3+): Raise pick-up • Float position (yellow 3+): Lower pick-up
Double-acting control unit (green 5+ / green 5-) 	Raising/lowering the articulated drawbar or parking jack (depending on preselected setting on control unit) • Pressure (green 5+): Raise articulated drawbar or parking jack • Pressure (green 5-): Lower articulated drawbar or parking jack



7.2.3 Connecting the hydraulic lines



Note

Connect hydraulic hoses correctly.

- The hydraulic hoses are marked with numbers and coloured dust caps.
-

- Set the single-action control units of the tractor to float position.
 - Turn off the tractor and secure it against the possibility of rolling back.
 - Connect the hydraulic coupling (red 1+) of the machine to a single-action control unit of the tractor.
 - Connect the hydraulic coupling (yellow 3+) on the machine to a single-acting control unit on the tractor.
 - Connect the hydraulic couplings (green 5+ / green 5-) on the machine to a double-acting control unit on the tractor.
-



Note

For further information about connecting the hydraulic lines, refer to the tractor operating instructions.

Start-up

7.3 Install the PTO shaft

**Warning! - Rotating universal shaft!**

Effect: Danger to life or serious injuries

- Before pushing the universal shaft onto the PTO shaft of the tractor, switch off PTO shaft, turn off the engine and pull out the ignition key.
- Secure tractor and machine against unintentional rolling.

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".

**Caution! - Changing the tractor**

Effect: Damage to the machine

When using the machine for the first time and whenever changing the tractor Check PTO shaft for the correct length. If the length of the PTO shaft does not match the tractor, always observe the chapter entitled "Adjusting the length of the PTO shaft".

**Caution! - Swivel range of the PTO shaft**

Effect: Damage to the tractor or the machine

- Check the swivel range and clearance of the PTO shaft!

Preparation

- Clean and grease the PTO shaft connections of the tractor.
- Lubricate the universal shaft profiles.

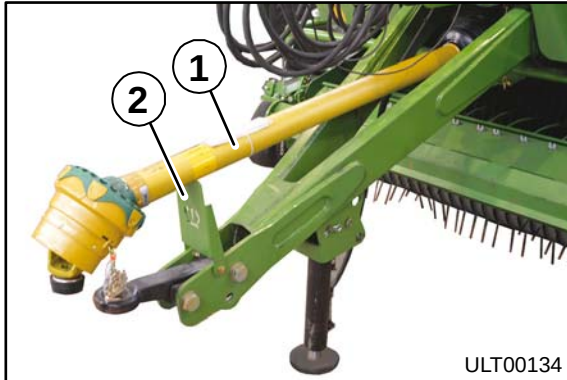
Tractor side:


Fig. 43

- Remove the universal shaft (1) from the universal shaft bracket (2) on the drawbar.

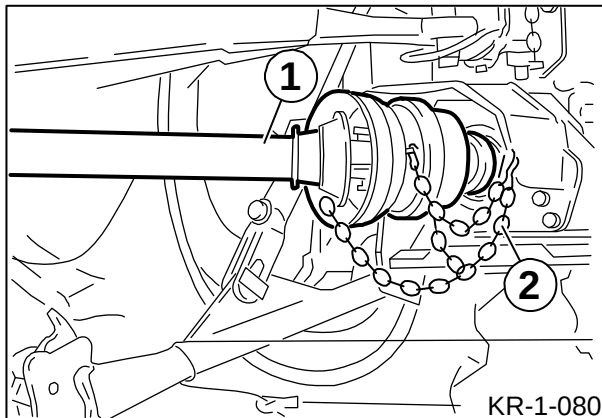


Fig. 44

- Push the universal shaft (1) onto the tractor PTO shaft and secure.
- Attach the safety chain (2) to lock the universal shaft guard.
- Fold down the universal shaft bracket (2).


ATTENTION! - Universal shaft not correctly attached.

Effect: Damage to the universal shaft or to the machine

- Ensure that the safety device of the universal shaft is locked into place after installation.
- Use only the universal shaft supplied by the factory.

Start-up

7.4 Compressed Air Connections for the Compressed Air Brake



WARNING!

Danger to life due to failure of the brake system or unexpected movement of the machine.

Pneumatic lines that become detached or worn through pneumatic lines will cause the brake system to fail. Thus there is a risk of serious injuries or death.

- Lay the pneumatic lines so that they do not rub or tension. Furthermore they should not be jammed or touch other parts (e.g. tractor tyres).

The machine may move unintentionally if the order of the pneumatic lines is interchanged when connecting them. Thus there is a risk of serious injuries or death.

- Connect the yellow coupling head first.
- Then connect the red coupling head.
- After having connected the quick couplings, check that they fit perfectly.

The machine can optionally be equipped with a dual-line compressed air braking system. The coupling heads are connected to the machine for attachment of the reservoir (red) and brake line (yellow) of the tractor.

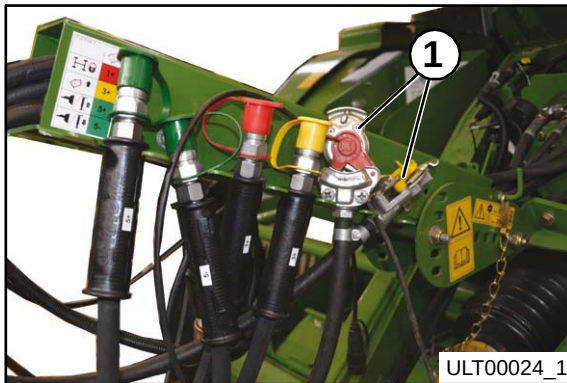


Fig. 45

Insert the coloured compressed air hose couplings (1) into the correspondingly coloured couplings on the tractor.

- Remove the compressed air hoses (1) from the retainer on the machine.
- First connect the compressed air hose with the yellow coupling head, then the compressed air hose with the red coupling head.



Note

Disconnect the compressed air hoses in reverse order.



WARNING!

Risk of accident due to insufficient brake force.

- For road travel, driving is permitted in position (2) "Full load" only.
- In the "Half load" or "Zero load" position, the braking effect can be adapted (reduced), e.g. when working on wet meadows.

7.5 Electrical connections

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".

The machine requires a voltage source for supplying power to the on-board computer and lighting.

A socket for installation on the tractor is part of the scope of supply.



Fig. 46

Socket (1):

7 pin socket for connection cable between terminal and machine.

Socket (2):

2-pin socket for power cable between machine and permanent tractor socket (direct battery connection for continuous current required).

Socket (3):

7-pin standard socket for lighting.

Restoring the electrical connections

- Connect the supplied socket to the 12 V battery of the tractor.
- Plug in and secure the connection cables in the corresponding sockets (1), (2) and (3) on the machine.



Note

The permanent socket (12V) (DIN 9680) supplied is protected by a 25-amp fuse. If the power supply cable is connected to an existing permanent socket (DIN 9680) on the tractor, that socket must also be protected by a 25-amp fuse.



Note

Extension cables for the terminal can be ordered under the following spare part numbers:

- 303 174 0 (2500 mm length)
- 302 959 0 (5000 mm length).

Start-up

7.5.1 Connecting the terminal (on tractors without ISOBUS system)

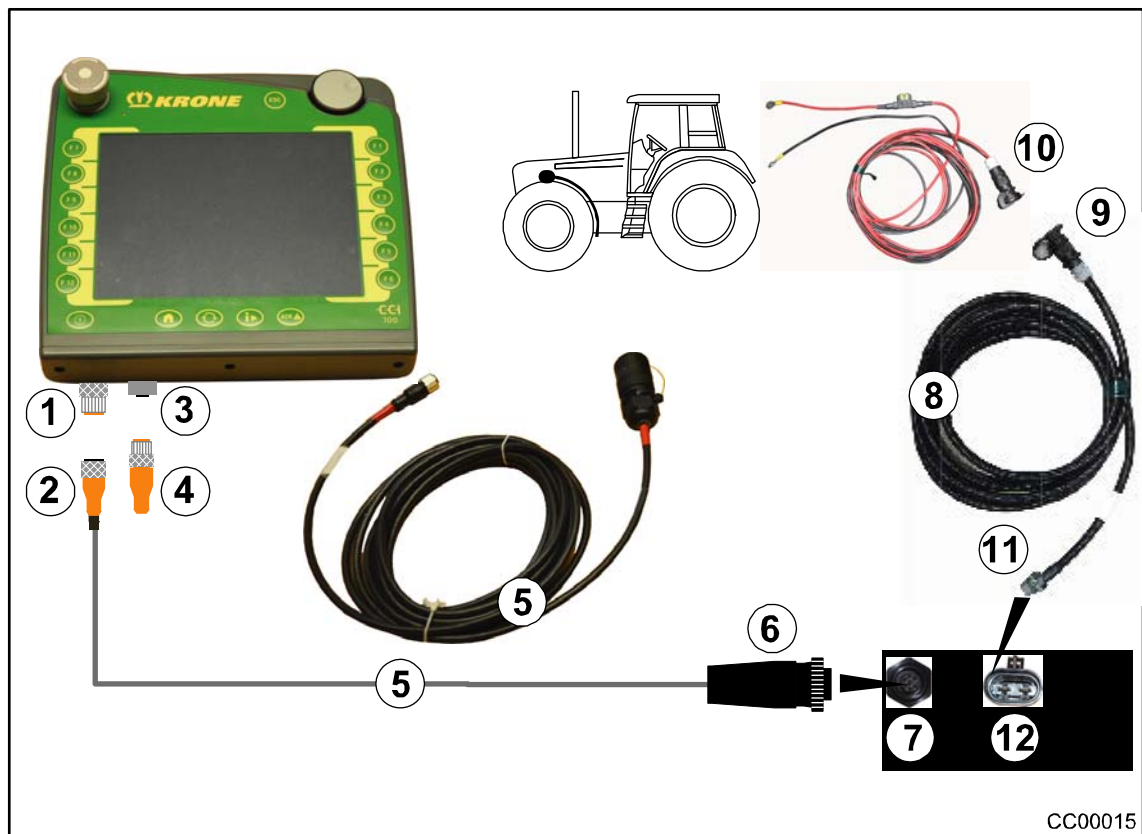


Fig. 47

Connection terminal to machine



Note

The connection of terminal to machine takes place via a provided cable set (5) (article no. 20 081 224 0).

- Connect plug (2) of cable set (5) with socket (1) (CAN1-IN) of the terminal
- Connect plug (6) (7-pole) of cable set (5) with socket (7) (7-pole) of the machine
- Connect connector plug (4) (article no. 00 302 300 0 included in scope of delivery) with socket (3) (CAN1-OUT) of the terminal

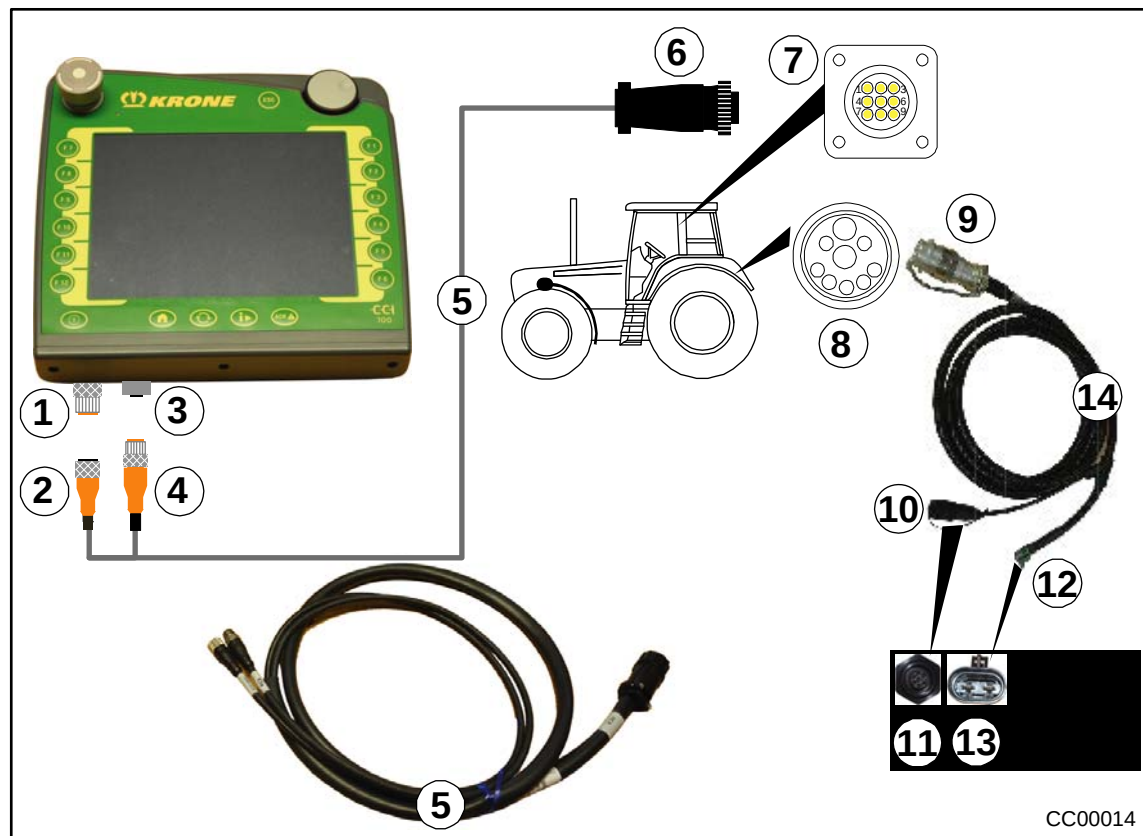
Connection tractor to machine



Note

The connection of tractor to machine takes place via a provided power cable (8) (article no. 20 080 601 0).

- Connect plug (9) of power cable (8) with continuous current socket (10) of the tractor
- Connect plug (11) (2-pole) of power cable (8) with socket (12) (2-pole) of the machine

7.5.2
Connecting the Terminal (on tractors with integrated ISOBUS system)

Fig. 48
Connection terminal to tractor

Note

The terminal is connected to the tractor via a special cable set (5) which can be ordered by stating the KRONE article no. 20 081 223 0.

- Connect plug (2) of cable set (5) with socket (1) (CAN1-IN) of the terminal.
- Connect plug (4) of cable set (5) with socket (3) (CAN1-out) of the terminal.
- Connect ISO plug (6) (9-pole) of cable set (5) with the ISO socket (7) (9-pole) located in the tractor cabin.

Connection tractor to machine

Note

The tractor is connected to the machine via cable set (14) which can be ordered by stating KRONE article no. 20 080 384 0.

- Connect ISO-plug (9) (9-pole) of cable set (14) with the outer ISO socket (8) (9-pole) on tractor side.
- Connect plug (10) (7-pole) of cable set (14) with socket (11) (7-pole) of the machine.
- Connect plug (12) (2-pole) of cable set (14) with socket (13) (2-pole) of the machine.

Start-up

7.5.3 Working floodlights

The working floodlights and the lighting under the guards are switched on and off via the terminal. The activated state is indicated on the display.

Switching the working floodlight on

Press the function key for .

Switching the working floodlight off

Press the function key for .

7.6 Net brake

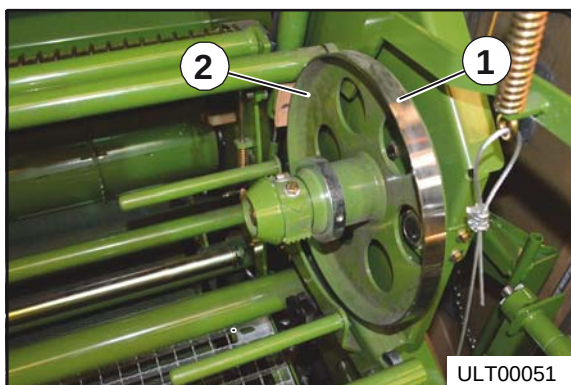


Fig. 49

- Before starting up for the first time, neatly remove the film from the brake surface (1) of the net brake disc (2).

7.7 Running-in Period

The time during which the first 100 round bales are formed may be considered the running-in period. (i. e. until the colour on the bale chamber walls is ground off).



Note

The machine is designed for the specified bale diameters and firmness levels. Wrapping bales of excess size or increased bale pressure too frequently will result in increased wear and may result in premature damage to the machine (floor conveyor and drive).

7.7.1.1 Cam-type Clutch Engaging

If the cam-type clutch engages (slips through) during the baling process, proceed as follows:

- Turn off the PTO shaft
- Allow the PTO to run at idle until the cam-type clutch has engaged
- Allow the PTO to run at nominal speed

7.8 Wrapping table

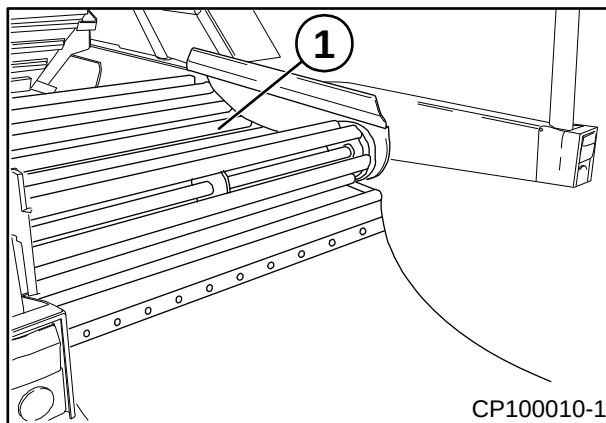


Fig. 50

- If the wrapping table (1) was used as a transfer table e.g. in straw (without film wrapper), the straw remnants must be removed before it is used in silage (with film wrapper).

Start-up

7.9 Using the bale cloth

The bale cloth protects the film on the wrapped bale from damage when the bale is put down on the ground.

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".

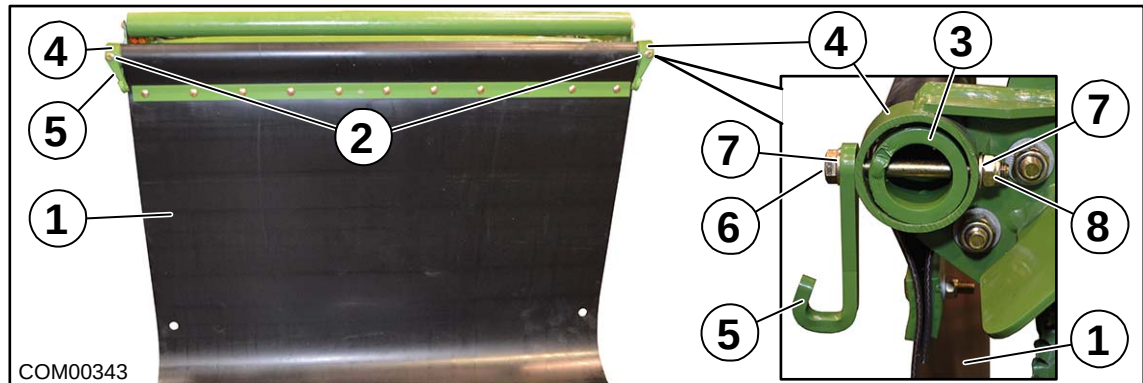


Fig. 51

Removing the bale cloth (1) when used without film wrapper:

- Remove the screw connections (2) on the right and left.
- Pull the support tube (3) out of the holders (4) and bale cloth.
- Store the support tube and bale cloth in a dry and clean location.

Fitting the bale cloth (1) when used with film wrapper:

- Guide the support tube (3) through the holders (4) and bale cloth.
- Attach the support tube and the hooks (5) on the right and left with hexagonal head screw (6), washers (7) and locknut (8).

8 Driving and Transport**WARNING!**

If the basic safety instructions are not followed, people may be seriously injured or killed.

- To avoid accidents, the basic safety instructions in the chapter Safety must have been read and followed, see chapter Safety "Basic safety instructions".

**WARNING!**

If the safety routines are not adhered to, people may be seriously injured or killed.

- To avoid accidents, the safety routines in the chapter Safety must be read and followed, see chapter Safety "Safety routines".

**WARNING!**

There is a risk of accidents if the control valves on the tractor are not locked.

If the control valves are not locked, machine components may be activated unintentionally. This can result in serious accidents.

- To prevent functions being triggered accidentally, the control valves on the tractor must be switched to neutral and locked during road transport journeys.

**WARNING!**

Danger when cornering with a machine hitched

When cornering, the hitched machine swings out further than the tractor. This can lead to accidents.

- Take the greater swivel range into account.
- When turning, take account of people, oncoming traffic and obstacles.

Driving and Transport

8.1 Preparations for road travel

The following tasks must be performed on the machine and tractor before road travel:

- Raise the pick-up.
- Push in blades, secure and raise blade base.
- Move parking support into transport position.
- Check the lighting system.
- Attach rubber cloth.
- Release parking brake.
- Fold down ladder.
- Close side guards.

Raising the pick-up

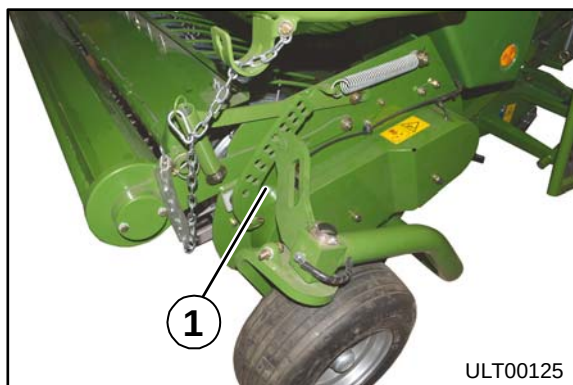


Fig. 52

- Raise pick-up (1) via the control valve of the tractor.

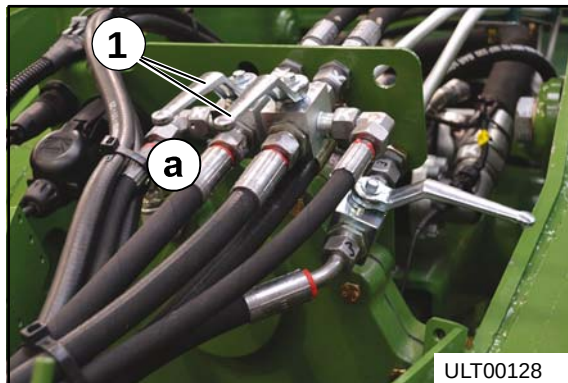
Moving parking support into transport position

Fig. 53

Prerequisite:

To actuate the parking support, the stop cocks (1) must be in position (a).

- If required, move the stop cocks forwards to position (a).

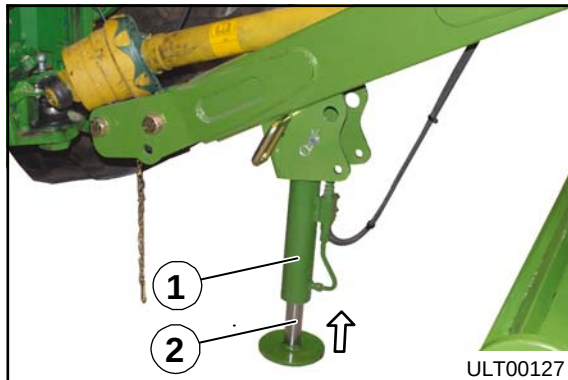


Fig. 54

Folding in parking support (1)**Prerequisite:**

The machine is hooked onto the tractor.

- Retract the parking jack (2) via the control unit of the tractor.

Driving and Transport

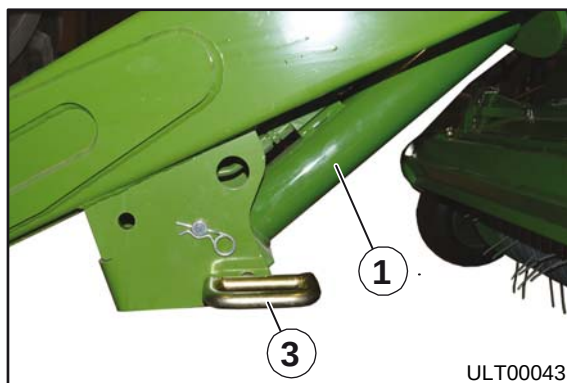
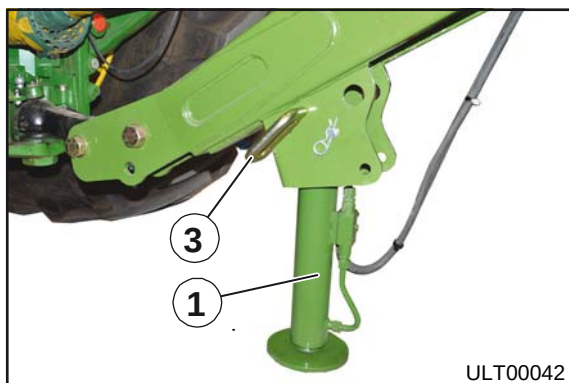


Fig. 55

- Pull the split pin on the locking bolt (3) and remove the locking bolt.
- Mechanically fold up the parking support (1) and secure in this position with the locking bolt (3) and split pin.

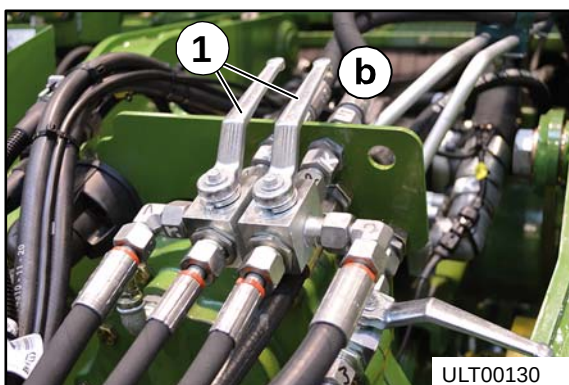


Fig. 56

- Move the stop cocks (1) backwards to position (b).

Checking the lighting system



Fig. 57

- Connect the lighting system to the tractor electrical system.
- Check the function of the tail lights (2) and rear reflectors (1) and clean them
- The same applies to the yellow reflectors located on the sides of the machine and the front white side lights

Attaching the bale cloth

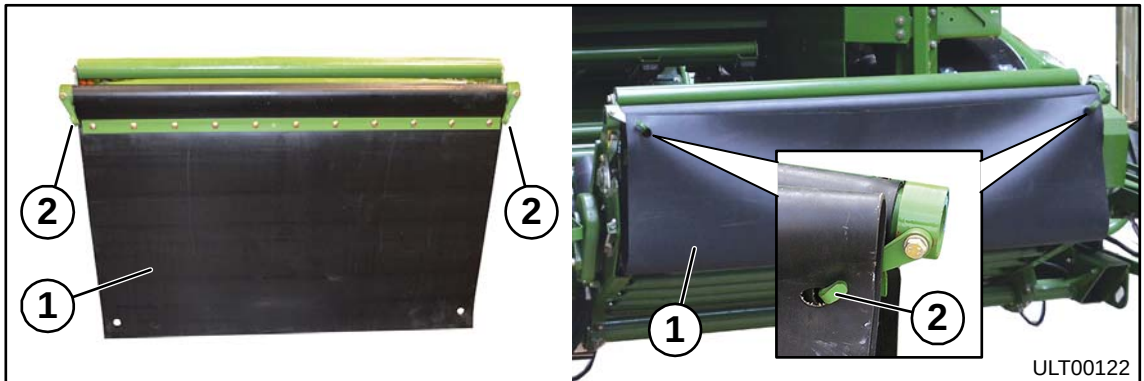


Fig. 58

- Attach the bale cloth (1) to the side hooks (2) so that it does not touch the ground.

Driving and Transport

Releasing the parking brake



Fig. 59

Release the parking brake:

- Turn the crank anti-clockwise until the brake cable is slightly slack.

Folding down the ladder

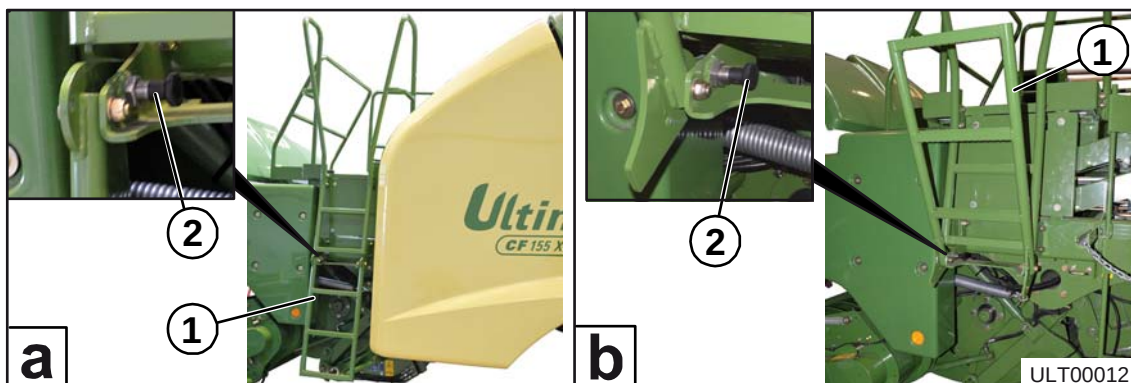


Fig. 60

Ladder (1) folded down:

- Pull the locking lever (2), fold down the ladders and release the locking lever (2) (automatically engages).



Note

Check whether the lock of the ladders is engaged properly in each position. Do not use the ladder unless it is engaged in the ascent / descent position.

8.2

Parking



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 and wheel chocks.

Securing the machine against rolling away

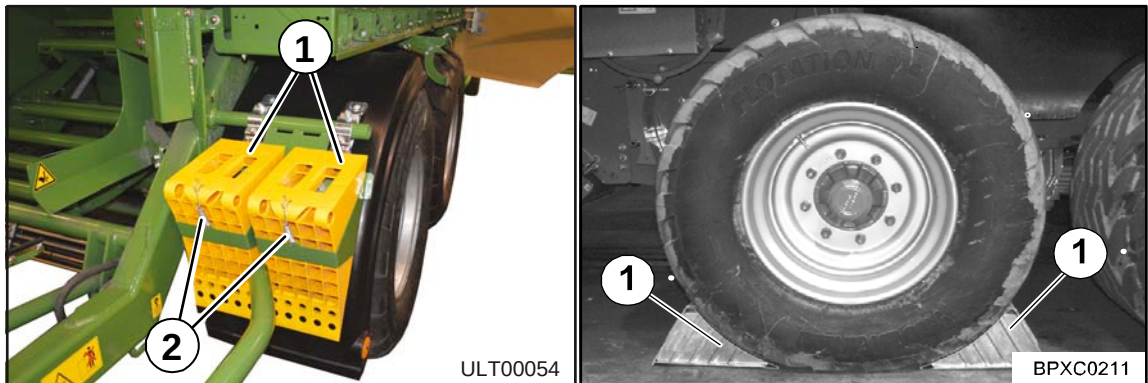


Fig. 61

The wheel chocks (1) are kept in a holder on the right behind the mudguard. They are each held in position by a spring (2).

- Unhook the spring (2) from the wheel chocks (1) and take the wheel chocks out of the retainer.
- To prevent the disconnected machine from rolling back, lay wheel chocks (1) in front of and behind the same wheel.



Note

On machines with coaster/steering axle, make sure that a wheel on the front axle is secured.



Note

If the machine has a guided coast-down tandem axle (optional), it must be secured with wheel chocks on the front axle to prevent it from rolling away.

Driving and Transport

Applying the parking brake



Fig. 62

Set the parking brake:

- Turn the crank clockwise until the resistance grows noticeably greater.

8.2.1 Placing the machine on the parking support

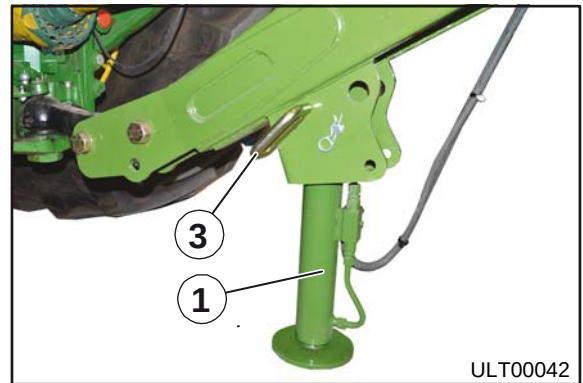
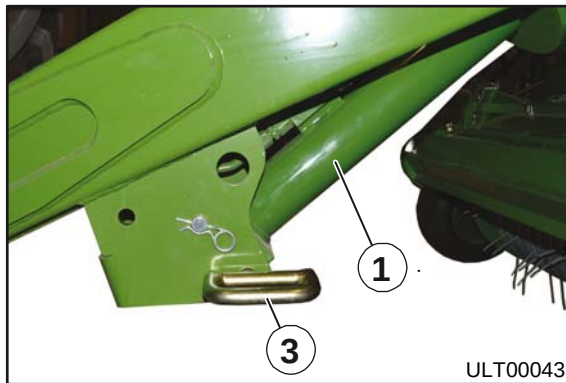


Fig. 63

- Pull the split pin on the locking bolt (3) and remove the locking bolt.
- Mechanically fold down the parking support (1) and secure in this position with the locking bolt (3) and split pin.

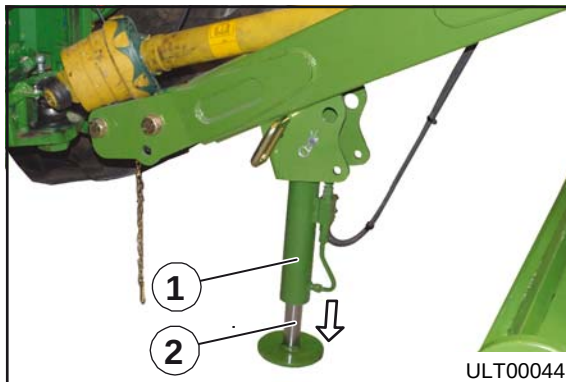


Fig. 64

- Extend the parking jack (2) via the control unit of the tractor.



Note

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

Driving and Transport

8.2.2 Disconnecting the PTO shaft from the tractor

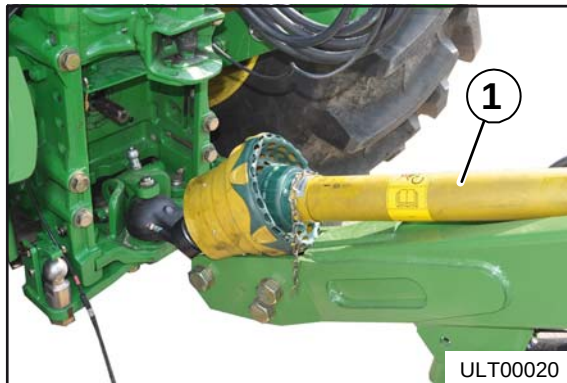


Fig. 65

- Disconnect the PTO shaft (1) on the tractor side.

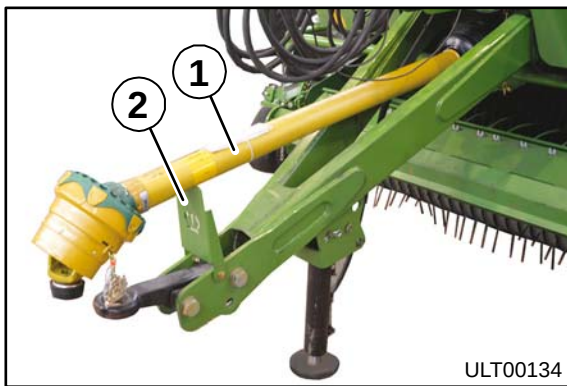


Fig. 66

- Fold up the universal shaft support (2) and lower the universal shaft (1) on it.

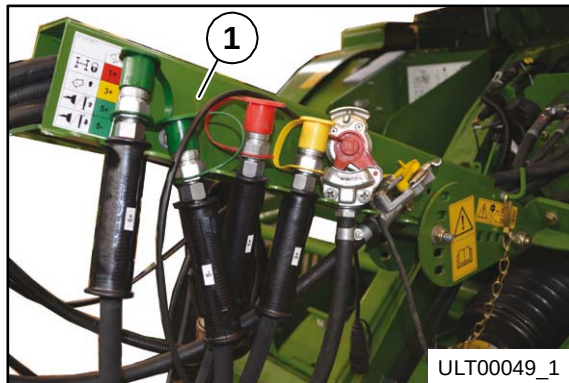
8.2.3 Disconnecting the supply lines

Fig. 67

- Detach the hydraulic and compressed air hoses from the tractor and place in the holder (1) on the drawbar.

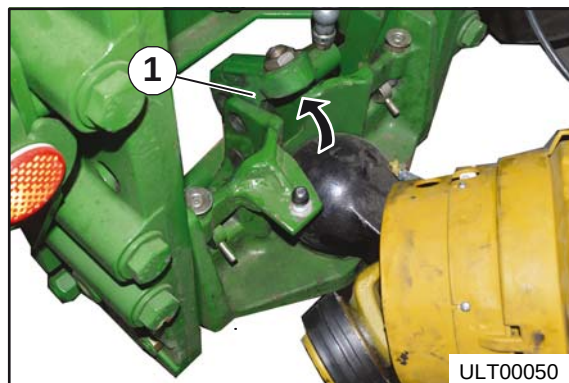
8.2.4 Uncoupling the machine

Fig. 68

- Release the hitch coupling (1).
- Slowly move the tractor forwards.

Driving and Transport

8.3 Handling the self-steering axle

Before reversing, move coaster/steering axle to a straight position and lock.



Note

On the coaster/steering axle, the rear wheels are turned in by friction between the wheels and the soil. In critical driving situations (e.g. driving over a bunker silo, reversing or driving on slopes) where a straight line cannot be maintained, the wheels must be prevented from turning in by locking the locking cylinder.

Critical driving situations could include:

- driving on steep slopes
- driving on soil that is not solid enough
- driving fast and straight ahead at speeds in excess of 30 km/h

Locking the self-steering axle

- Lock the self-steering axle using the tractor hydraulics.

8.3.1 Moving the machine without hydraulic connections

In order to be able to move the machine even when the hydraulic lines are not connected, the locking cylinder of the coaster/steering axle must be supplied with pressure before disconnection and the steered wheels aligned by driving straight ahead.

9 KRONE ISOBUS Terminal



Note

In the operating instructions which follow, the terminal will also be referred to as the "control unit".



Caution! - Protect Control Unit.

Effect: Damage to the control unit

- The control unit must be protected against water.
- If the machine is not used for an extended period of time (for example during the winter), the control unit 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 control unit. Overvoltage can damage the control unit.



Fig. 69

The electronic equipment of the machine consists essentially of the job computer (1), the terminal (3) as well as the control and function elements.

The job computer (1) is located on the rear left of the machine under the side hood.

KRONE ISOBUS Terminal

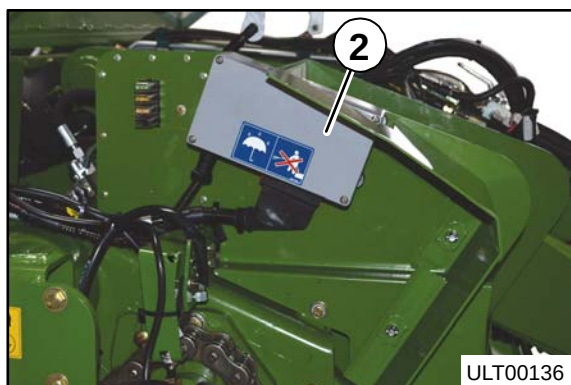


Fig. 70

An extension job computer (2) is located on the front right of the machine under the front cover hood.

Functions of the job computer:

- Control of the actuators installed on the machine
- Sensor/actuator diagnostics
- Bale counter
- Transfer of alarm messages

The control unit (3) communicates information to the driver and performs settings to operate the machine. This information is received and further processed by the job computers.

9.1 Installing the terminal into cabin



Note

Please mind the terminal operating instructions included with delivery for the installation of the terminal into the tractor cabin.

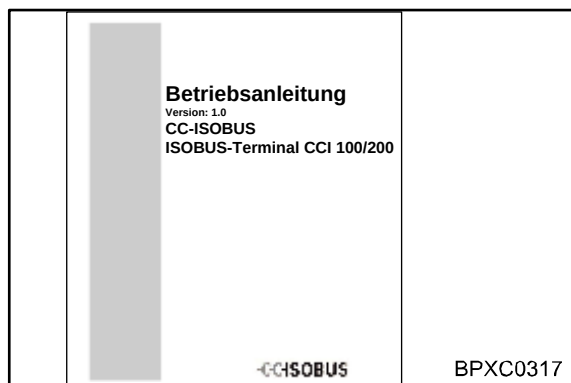


Fig. 71

9.2
ISOBUS Short Cut Button

DANGER! – risk of injury by running machine!

Your machine supports the ISOBUS short cut button.

- By actuation of the ISOBUS short cut button (1) the machine functions are switched off in order to be able to initiate a secure condition of the machine in hazardous situations. Process oriented procedures perform to the end. Therefore, machine parts continue to run after actuating the ISOBUS short cut button. This can lead to injuries
- The ISOBUS short cut button does in no case interfere with tractor functions, i.e. neither universal shaft functions nor hydraulic functions will be affected in any way! Therefore, the machine can continue to run after actuating the ISOBUS short cut button. This can lead to injuries

When actuating the ISOBUS short cut button (1) of the terminal which is of the pushbutton design, a stop command is sent onto the ISOBUS. This command will be evaluated by your connected ISOBUS- machine, in order to initiate the accordant automatic actions in hazardous situations if necessary.

If the ISOBUS short cut button is actuated, the accordant alarm mask will be shown in the display:

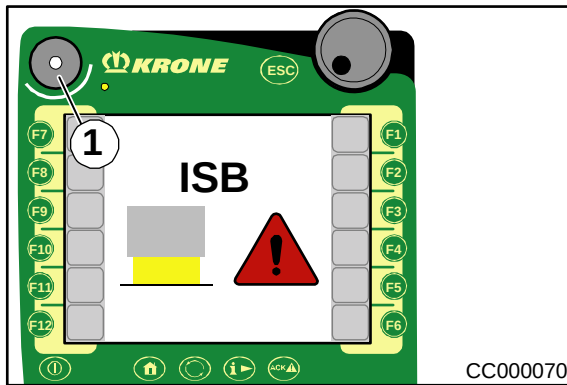


Fig. 72

The functions listed in the following are blocked by the job computer on the machine side.

- All functions of the machine are stopped.

KRONE ISOBUS Terminal

If the ISOBUS short cut button is deactivated again, the following message will appear in the display:

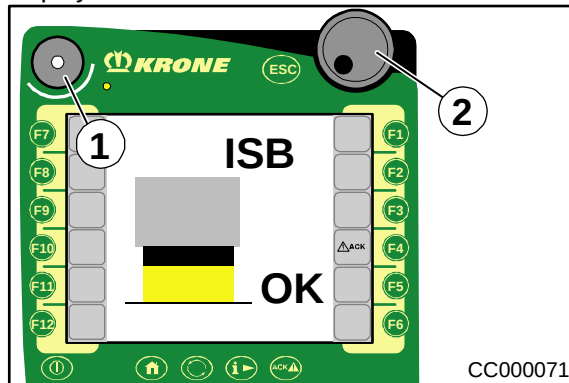


Fig. 73

The alarm mask is exited by actuating the function key . It is only now that all functions of the machine are available again.

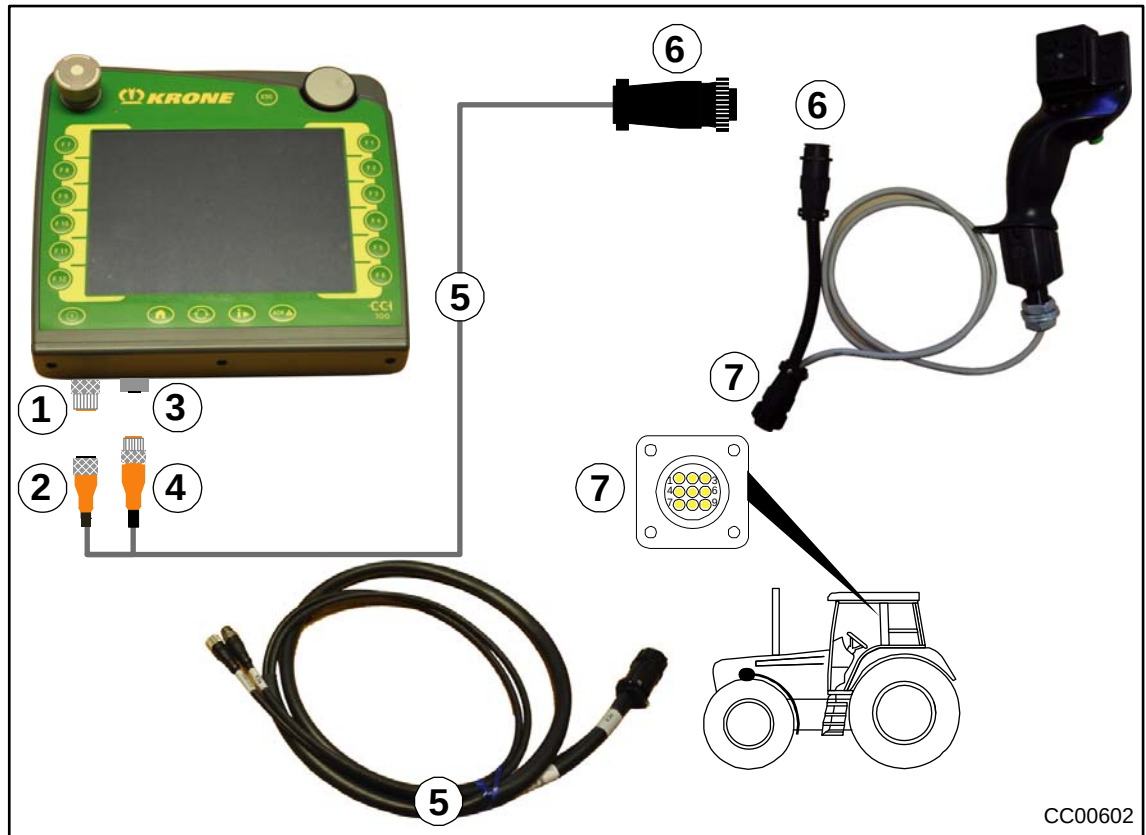
9.2.1
Connecting the Multi-Function Lever to the CCI Terminal (on Tractors with an Integrated ISOBUS System)


Fig. 74


Note

The connection of terminal to tractor is made via a special cable set (5) which can be ordered by stating the KRONE article no. 20 081 223 0.

- Connect plug (2) of cable set (5) with socket (1) (CAN1-IN) of the terminal
- Connect plug (4) of cable set (5) with socket (3) (CAN1-OUT) of the terminal
- Connect ISO plug (6) (9-pole) of cable set (5) with the ISO socket (6) (9-pole) of the multi-function lever
- Connect ISO plug (7) (9-pole) of multi-function lever with ISO socket (7) (9-pole) located in the tractor cabin

9.2.2 Connecting the Multi-Function Lever to the CCI Terminal (on tractors without ISOBUS system)



The terminal is connected to the multi-function lever via a special cable set (9) which can be ordered by stating the Krone product no. 20 081 676 0.

- Connect plug (2) of cable set (9) with the socket (1) (CAN1-IN) of the terminal
- Connect socket (3) of cable set (9) with the plug (4) of the cable set (5)
- Connect ISO plug (8) (9-pole) of cable set (9) with the ISO socket (7) (9-pole) of the multi-function lever
- Connect plug (6) (7-pole) of cable set (5) with the socket (7) (7-pole) of the machine



9.2.3 Switching the terminal on / off when the machine is not connected



Fig. 76



Note

Before switching the terminal on for the first time make sure that the connections on the device are fastened right and securely.

By pressing and holding (for approx. 2 sec.) the key (1)  (ON/OFF) the terminal will be switched on or off.



Note

For further information on the functioning of the ISOBUS terminal CCI refer to the terminal operating instructions included with delivery.

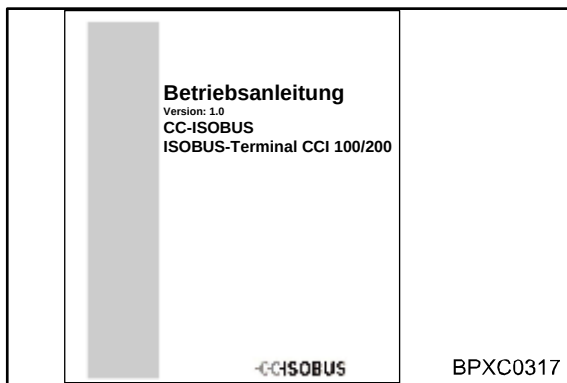


Fig. 77

KRONE ISOBUS Terminal

9.2.4 Switching the terminal on / off when the machine is connected

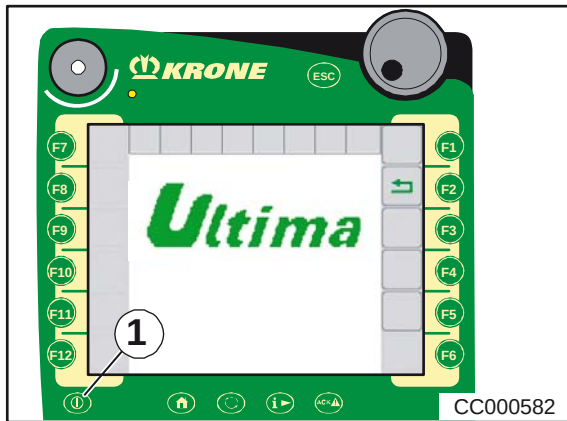


Fig. 78



Note

Before switching the terminal on for the first time make sure that the connections on the device are fastened right and securely.

By pressing and holding (for approx. 2 sec.) the key (1)  (ON/OFF) the terminal will be switched on or off.



Note - Prior to first use

When switching on for the first time the configuration of the specific menu of the machine is uploaded into the terminal. The loading may take a few minutes. The configuration will be saved on the memory of the terminal.



Note

For further information on the functioning of the ISOBUS terminal CCI refer to the terminal operating instructions included with delivery.

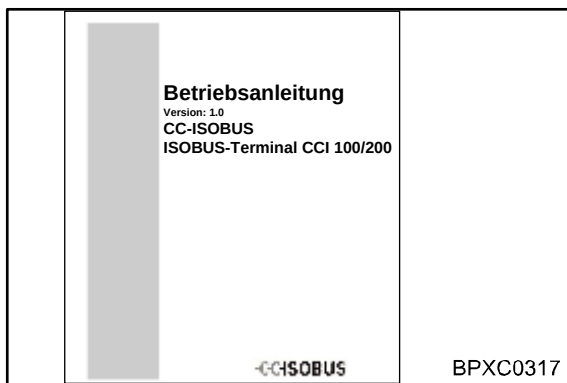
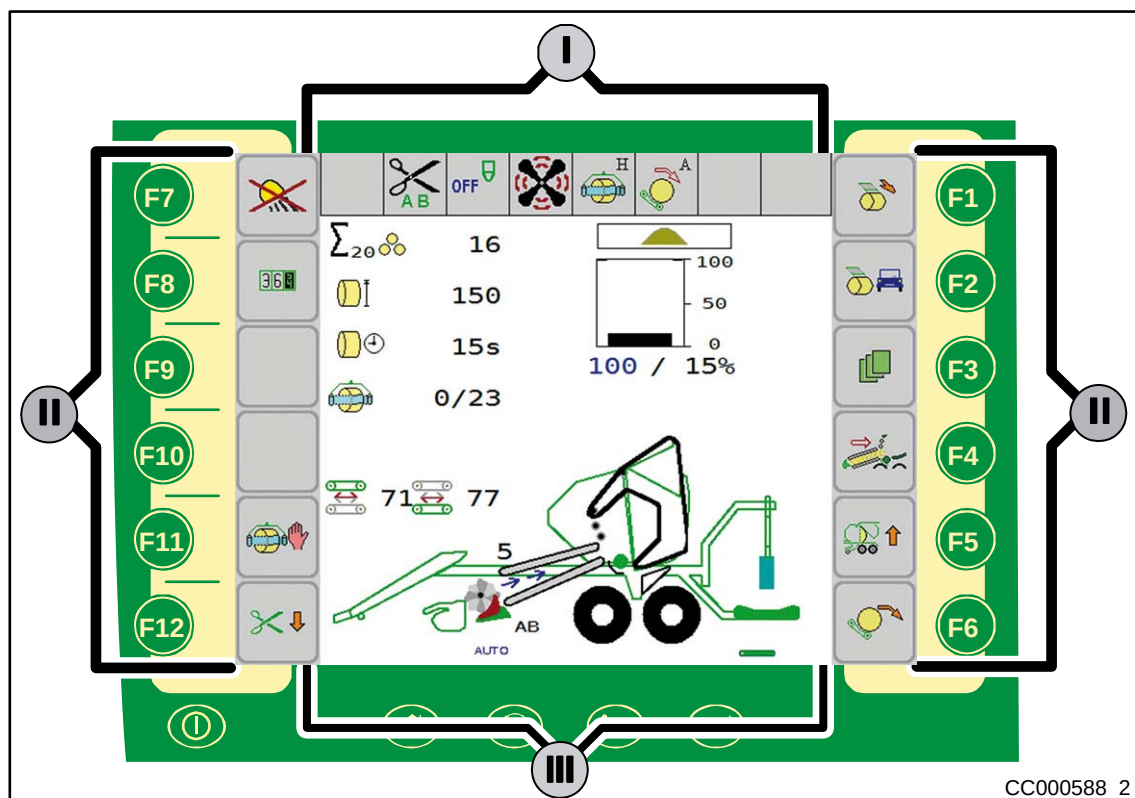


Fig. 79

- The "start-up screen" is shown in the display after the loading process. The terminal is now ready for operation.
- By pressing the function key  the basic screen appears.

9.3
Status line

Fig. 80
Status line (I)

Current states of the machine (depending on how it is equipped) are shown in the top line of the display:

Graphic	Meaning	Information
	Alarm message is pending	
	Blade group A swivelled in	
	Blade group B swivelled in	
	Blade groups A and B swivelled in	
	No blade group swivelled in	
	Working floodlight OFF	– "Automatic working floodlight" mode if the tractor control unit (T-ECU) provides data for the lighting.
	Working floodlight ON	
	Working floodlight OFF	
	Working floodlight ON	

KRONE ISOBUS Terminal

Graphic	Meaning	Information
	"Manual" set-down mode	
	"Automatic" set-down mode	– The bale is automatically deposited when tying starts. – Double stacking during transfer mode without wrapping. – The bales are deposited in pairs.
		
	"Number of wrapping films" correction is set	
	Fan cleaning	
	Fan cooling	
	Transfer / wrapper mode "Manual with wrapping"	
	Transfer / wrapper mode "Automatic with wrapping"	
	Transfer / wrapper mode "Manual without wrapping"	
	Transfer / wrapper mode "Automatic without wrapping"	
	Silage agents off	
	Silage agents on	

9.4

Function keys

Various machine functions can be activated via the function keys F1 to F12. Each function is represented by a certain symbol.

Pressing a given function key (F1 to F12) activates or deactivates a function on the display as shown in the adjacent image.

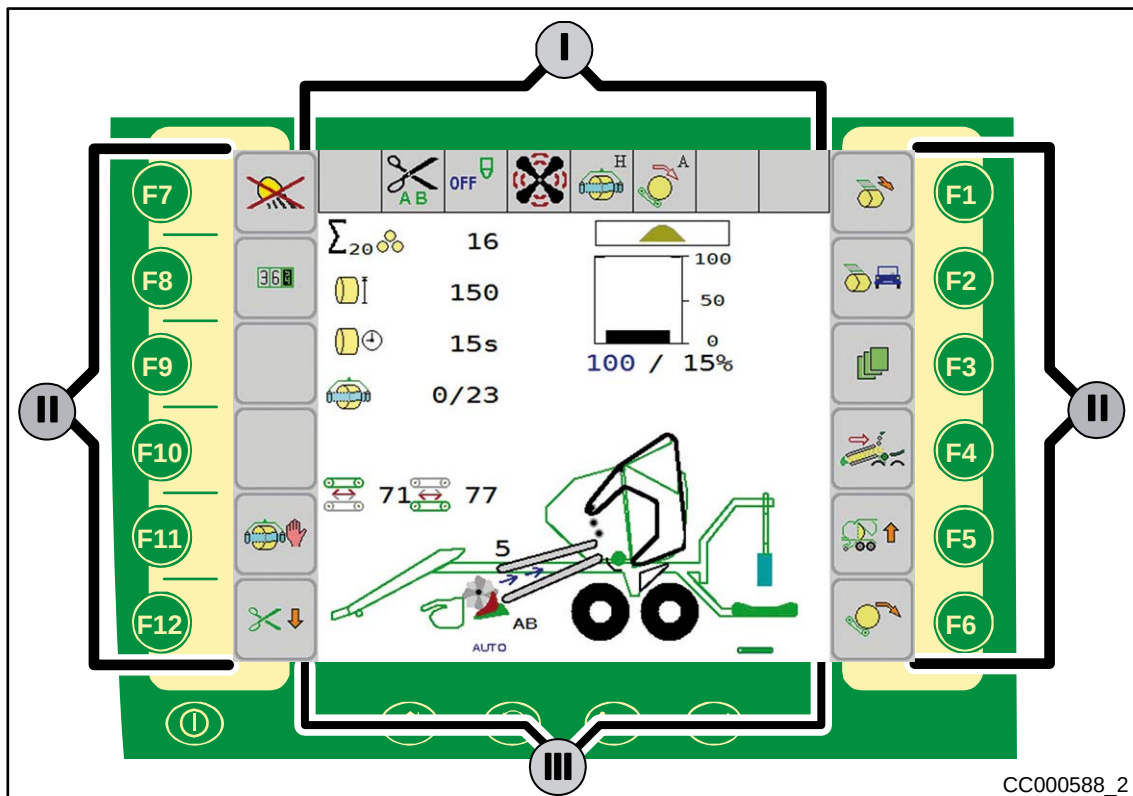


Fig. 81

KRONE ISOBUS Terminal

Description of the graphics (III) for the function keys (F1 to F6)

Graphic	Description	Information
	Start net tying	Tying process is triggered.
	Tying mode (net) manual triggering	The active tying mode is displayed.
	Tying mode (net) automatic triggering	
	Bring up the menu level of the machine	
	Stop pre-compression chamber (is only displayed when working processes operate in the pre-compression chamber)	Multiple assignment of function key
	Start to empty the pre-compression chamber: when the filling of the bale chamber is below 30%.	
	Start to charge the pre-compression chamber: when the filling of bale chamber exceeds 30%.	
	Start/ continue wrapping process	Multiple assignment of function key
	Status display: Wrapping process active	
	Start/continue bale transfer (there is no bale on the wrapping table)	
	Status display: Wrapping bale is active	
	Start setting down bales manually	
	Status display: Setting down bales is active	

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KRONE ISOBUS Terminal

Description of the graphics (III) for the function keys (F7 to F12)

Graphic	Description	Information
	Working floodlight ON	The active status is displayed.
	Working floodlight OFF	
	Open the customer counter menu	
	Release holding arms	Do not run function unless film tear detected or film roll is empty
	End of function loosen holding arms. When the holding arms have been released, entry into the road travel image is suppressed.	
	Select the main menu Manual operation	
	Raise blades	Multiple assignment of the function key: The current status of the blades is displayed.
	Lower blades	
	Stop blades	

9.5 Displays in the main window

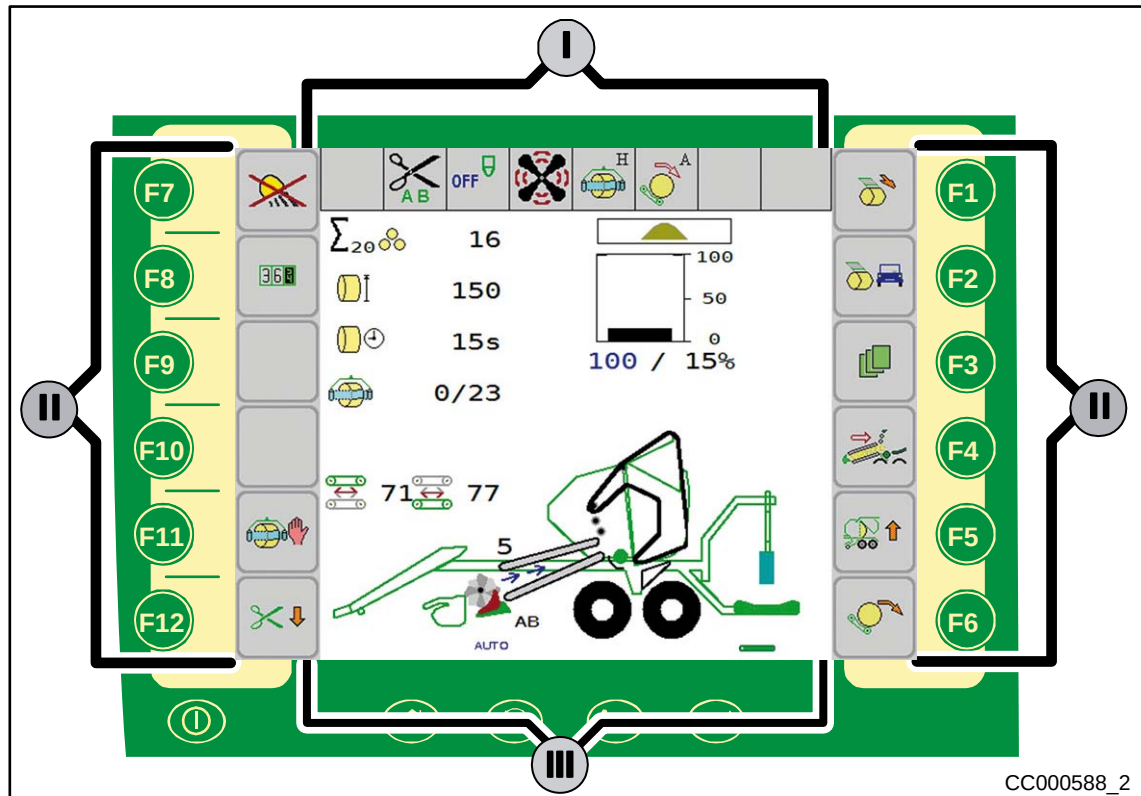


Fig. 83

Displays on the main window (III) (depending on the machine configuration)

Graphic	Description
	activated customer counter
	set bale diameter
	Wrapping progress
	Bale cycle time
	Speed conveyor belt at top (m/min)
	Speed conveyor belt at bottom (m/min)

KRONE ISOBUS Terminal

Display tying analysis

Graphic	Description
	Bale firmness reached
2N 	Net is fed
3N 	Net has not been tied
4N 	Net tying process is active
5N 	Net tying process has been stopped
6N 	Net tying has been cut off
7N 	Net tying has not been cut off
8N 	Net tying process has finished
0%-100%	Tying progress

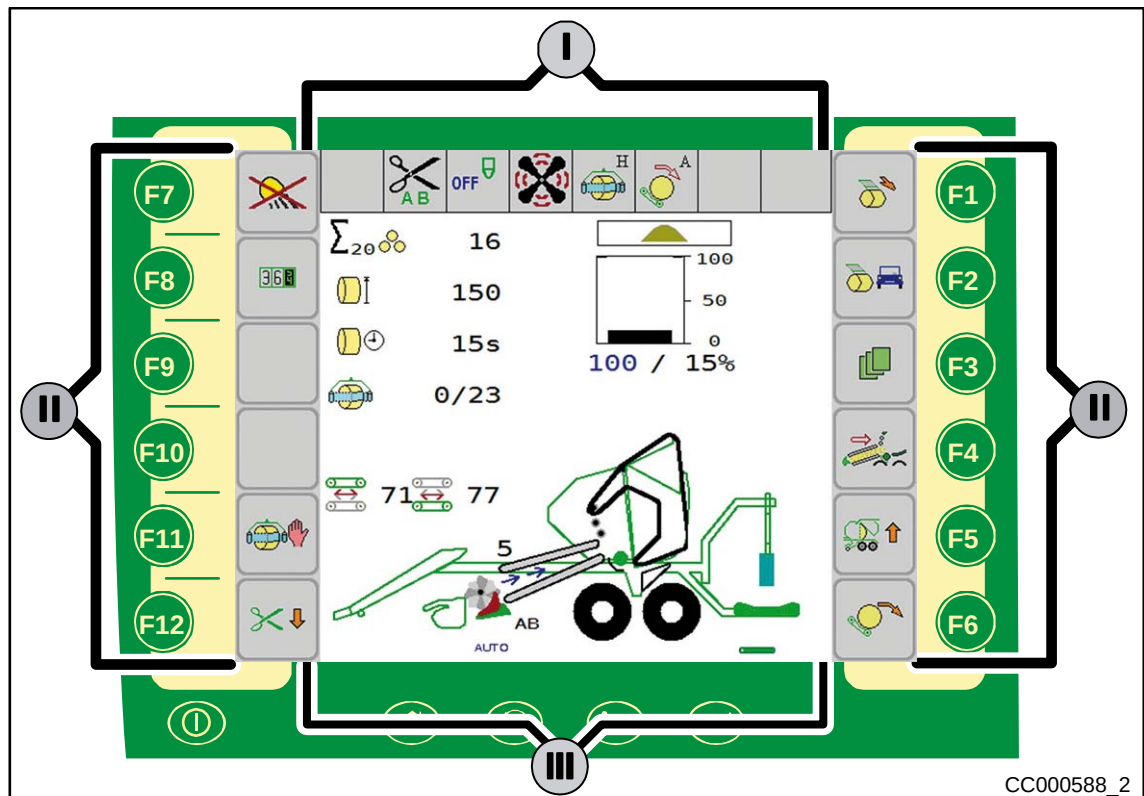
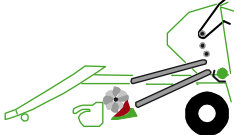
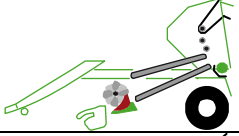
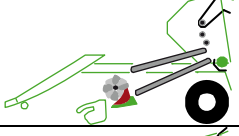
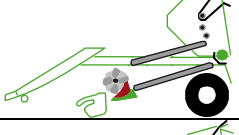
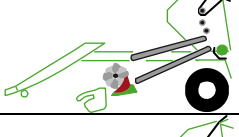
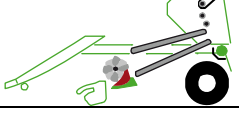
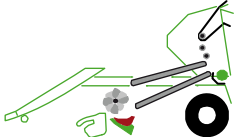
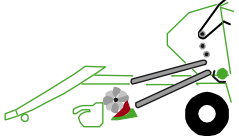
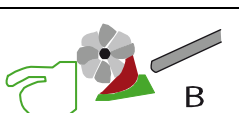
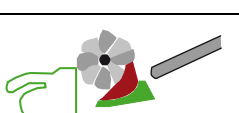
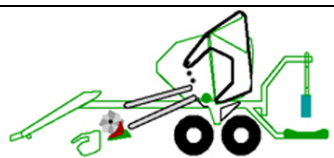
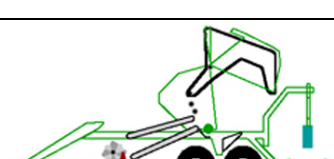
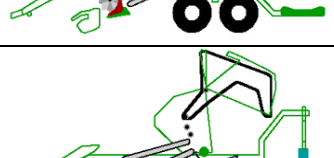


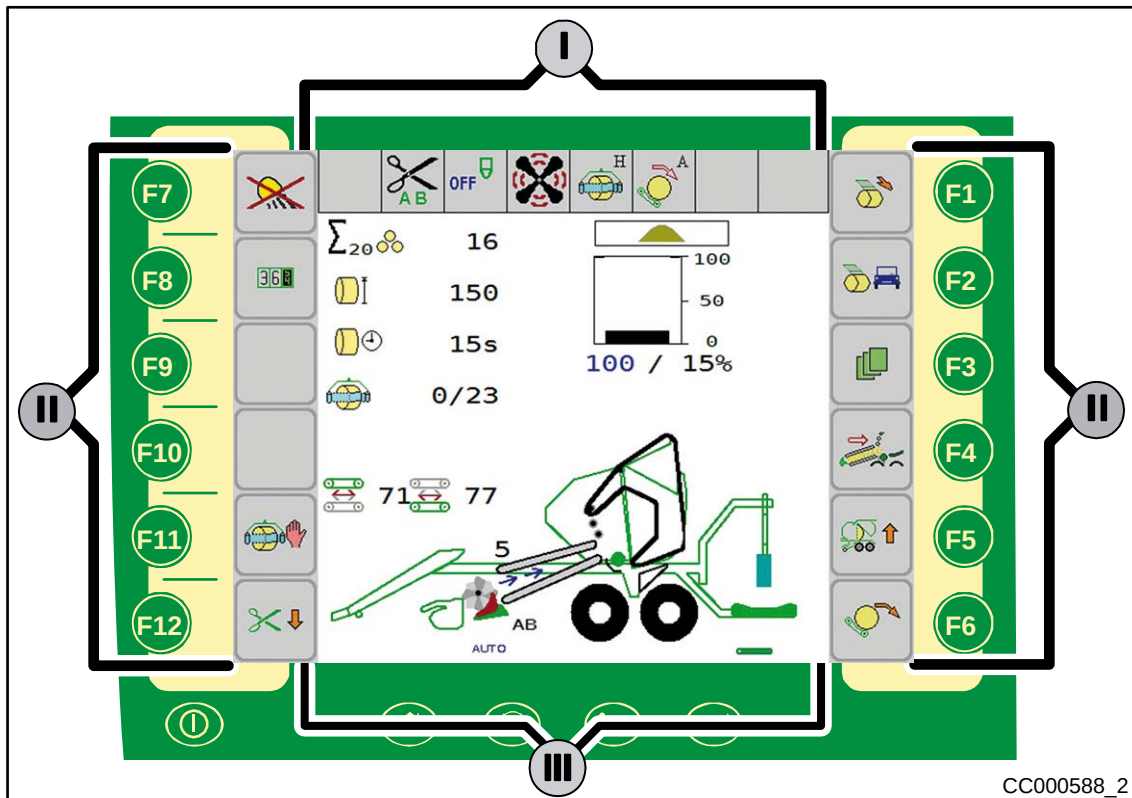
Fig. 84

Display wrapper analysis

Graphic	Description
	Pick-up at top
	Pick-up at bottom
	Conveyor belt at top
	Conveyor belt at bottom
	Starter roller at top
	Starter roller at bottom

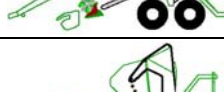
KRONE ISOBUS Terminal

Graphic	Description
	Blade base not closed
	Blade base closed
	Blade A/B active
	Blade A active
	Blade B active
	Blade inactive
AUTO	Automatic overload feed drive active
	Bale chamber closed
	Bale chamber open
	Transfer flap actuated
	Transfer flap not actuated



CC000588_2

Fig. 85

Graphic	Description
	Wrapping arm not in zero position
	Wrapping table at rear
	Wrapping table in centre
	Wrapping table at front
	Bale on wrapping table

KRONE ISOBUS Terminal

Graphic	Description
	Holding arms closed
	Holding arms open
	Holding arms unclear
	Holding arms released

9.6

General Displays

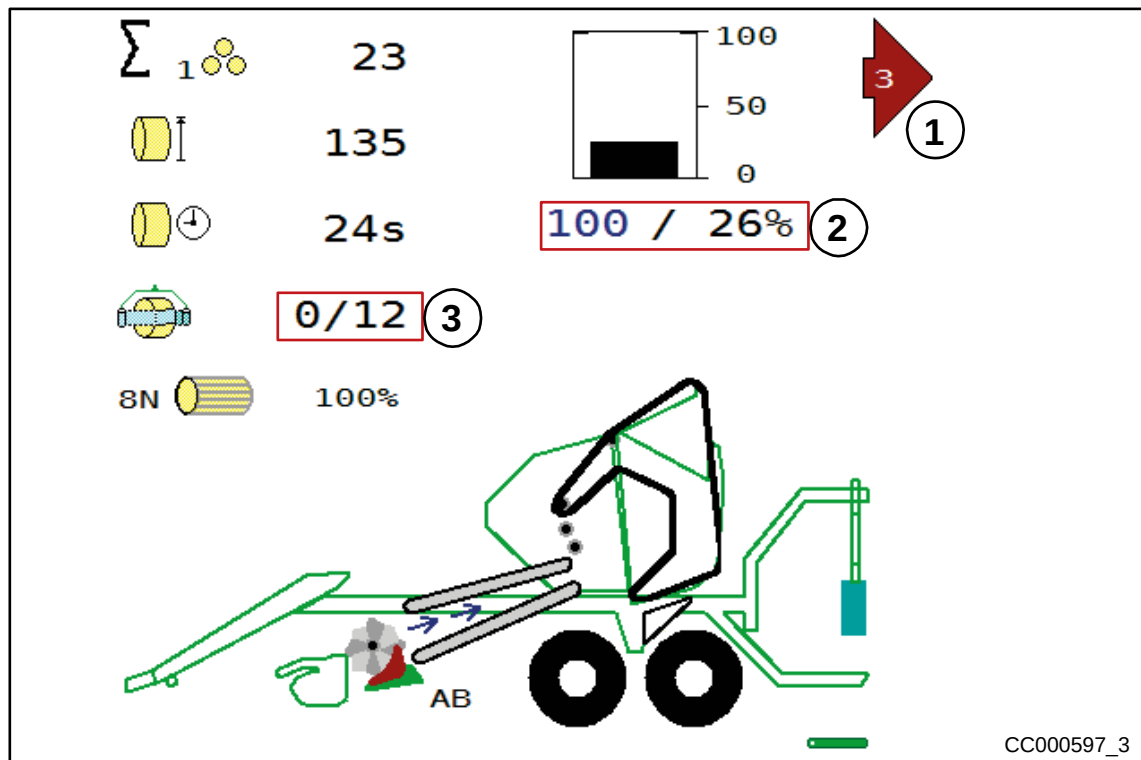


Fig. 86

- (1) Display of direction of travel
- (2) Display of target bale firmness / actual bale firmness
- (3) Display of target wrappings / actual wrappings

**Note**

If the indications for the direction of motion are too strong or too weak, they can still be adjusted (see menu "Sensitivity of direction display").

Only for Comprima CF155XC**Direction of travel window**

Arrows (1) left/right from the display. The arrows (1) have three different sizes, numbered with 1-3.

They show the driver to which side he must correct the direction and how far when driving over a swath, to ensure the bale chamber is filled evenly.

In case the direction of travel is not corrected in the subsequent period, the displayed arrow starts flashing and an acoustic signal can be heard (also refer to chapter KRONE ISOBUS terminal "Acoustic Notes")

**Note**

If an even filling is reached, all signals expire.

KRONE ISOBUS Terminal

9.6.1 Setting the bale firmness

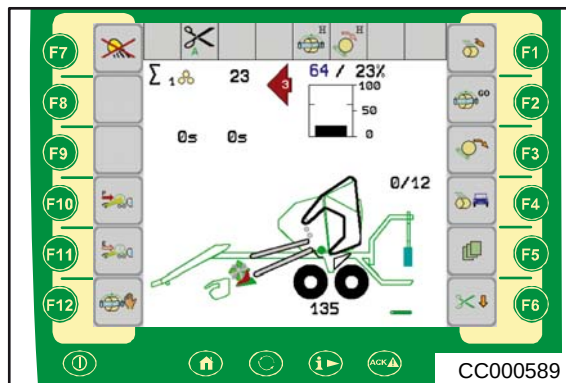


Fig. 87

The value above the bar display and the height of the bar show the current actual bale firmness as a %. The value of the bar display and the mark on the bar display show the setpoint bale firmness as a %.

The bale firmness is specified by the user on the home screen.

- You can use the scroll wheel to select the required value (The selection box is highlighted in colour)
- Press the scroll wheel to jump to the selection box (The selection box is highlighted in colour)
- Turning the scroll wheel increases or reduces the value
- Press the scroll wheel to apply the setting and exit the selection box

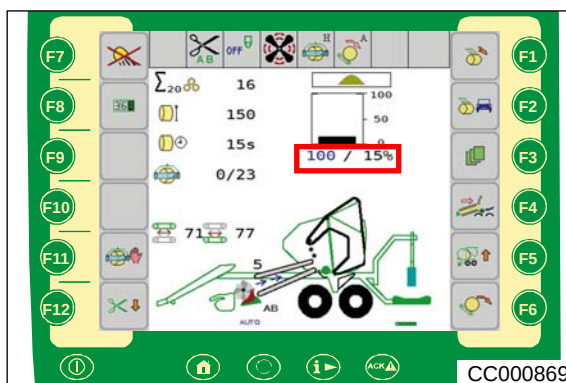


Fig. 88

A further possibility to set the bale firmness is to use the touch sensitive blue numbers in the terminal:

- To open the input window to perform the setting of bale firmness, tip the numbers on the terminal and enter the numerical value for firmness in the input window.

9.7
Messages
Information message

The information message will appear only, if the main operation display has been set. The message will disappear automatically, when the cause for the information message has been removed.

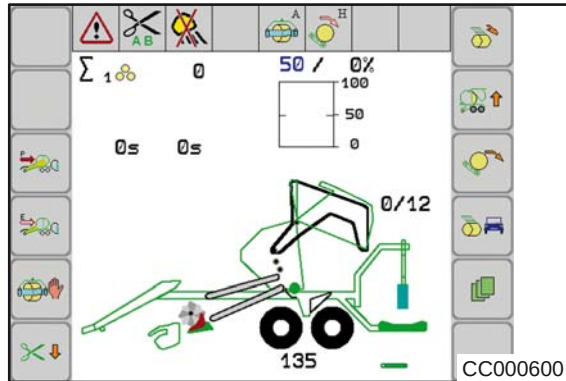


Fig. 89

The softkeys in the lower line continue to be active whilst the information message is displayed.

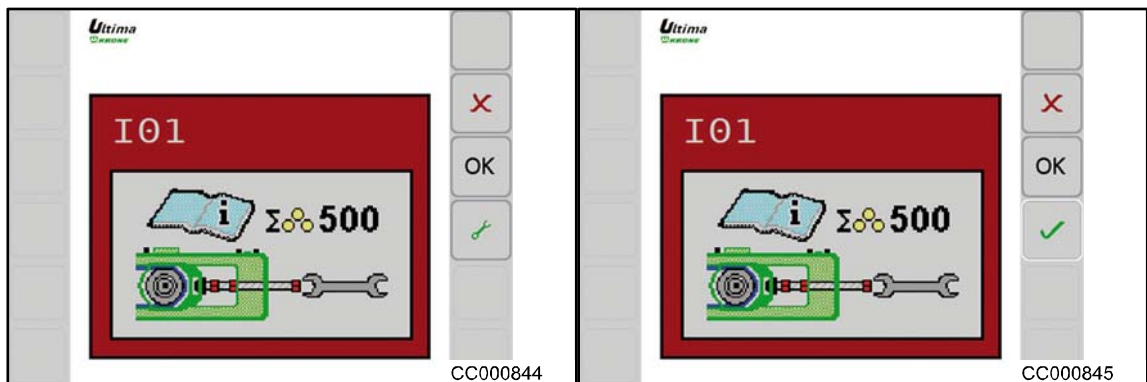


Fig. 90

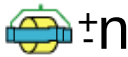
The information message is displayed if there is a fault on the conveyor belts.

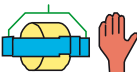
- Check the conveyor belts for clockwise/anti-clockwise movement and tension; adjust if required (see chap. Settings "Adjusting conveyor belts").
- Press the function keys **X** or **OK**.
The message goes out, but appears again cyclically on the display.
- When the conveyor belts have been checked/adjusted, press the function key  until the acoustic signal sounds and the function key symbol switches to .

KRONE ISOBUS Terminal

9.8 Menu Level

9.8.1 Brief overview

Main menu	Sub-menu	Sub-menu	Designation
1 			Settings
	1-1 		Feed drive setting
	1-2 		Pre-compression chamber setting
	1-3 		Baler setting
		1-3-2 	Bale diameter/force of pressure
		1-3-3 	Number of net wrappings
		1-3-4 	Sensitivity of direction display
	1-4 		Wrapper setting
		1-4-1 	Number of layers
		1-4-2 	Number of film wrappings
		1-4-3 	Type of operation for wrapper
		1-4-4 	Type of operation wrapping table
		1-4-6 	Film tear control

Main menu	Sub-menu	Sub-menu	Designation
1 			
	1-8 		Central lubrication
	1-9 		Silage agent (optional)
2 			Counter
	2-1 $\sum_n$ 		Customer counter
	2-2 $\sum_{all}$ 		Total counter
3 			Manual operation
4 			Service
	4-2 		Manual sensor test
	4-4 		Manual actuator test
5 			Info
6 			Technician

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Main menu	Sub-menu	Sub-menu	Designation
7 			ISOBUS
	7-1 		Virtual terminal (VT)
		7-1-1 	Select day/night display lighting
		7-1-4 	Switch to different terminal
	7-4 		ISOBUS diagnostics
		7-4-2 	"Auxiliary" function (AUX) diagnostics

9.8.2 Calling up the menu level

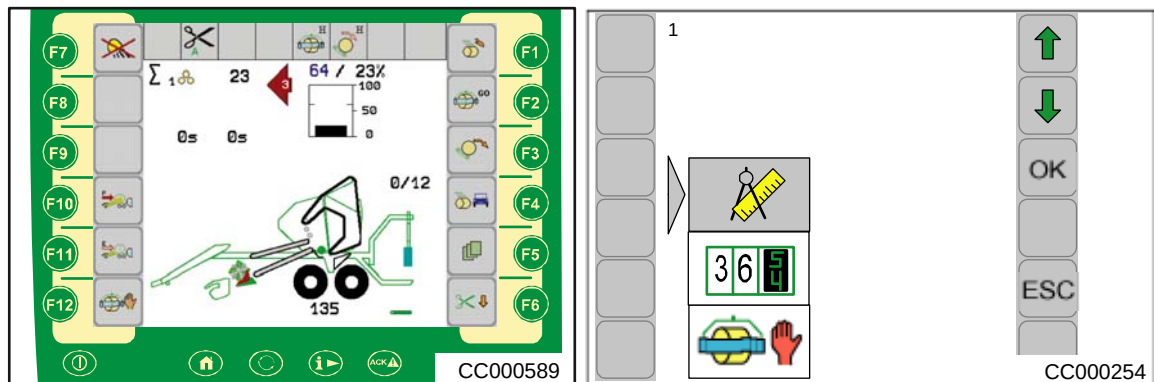


Fig. 91

By pressing the function key  in the main window you get into the menu level of the machine.

The menu level is shown in the display.

The menu level is divided into 7 main menus:

	main menu 1 "Settings"
	main menu 2 "Counters"
	main menu 3 "Manual operation"
	main menu 4 "Service"
	main menu 5 "Info"
	main menu 6 "Fitter"
	main menu 7 "ISOBUS"

Select the desired main menu by pressing the function key  or . The selected symbol is highlighted in grey.

- Pressing the function key **OK** brings up the menu level of the main menu that is selected.
- Pressing the function key **ESC** closes the called up menu.
- Pressing the function key **ESC** and holding it down brings up the basic screen.

KRONE ISOBUS Terminal

9.9

Hauptmenü 1 Einstellungen

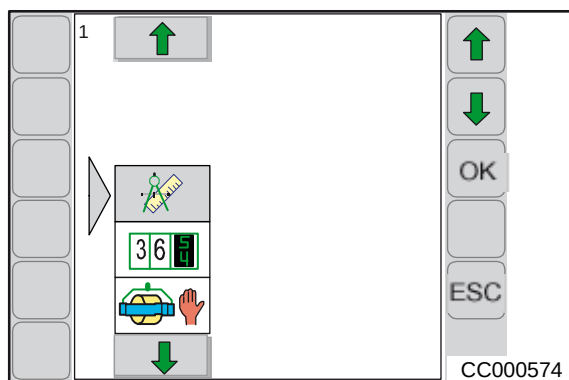


Abb. 92

- Durch Drücken der Funktionstaste  aus dem Grundbild heraus die Menüebene aufrufen.
- Durch Drücken der Funktionstaste  bzw.  das Hauptmenü 1  anwählen, das Symbol wird grau unterlegt.
- Funktionstaste **OK** drücken

Das Display zeigt die Menüebene 1 „Einstellungen“ an. Die Menüebene 1 „Einstellungen“ ist je nach Ausstattung der Maschine in bis zu 5 Menüs unterteilt:



Menü 1-1 Einstellung Einzug



Menü 1-2 Einstellung Vorpresskammer



Menü 1-3 Einstellung Presse



Menü 1-4 Einstellung Wrapper

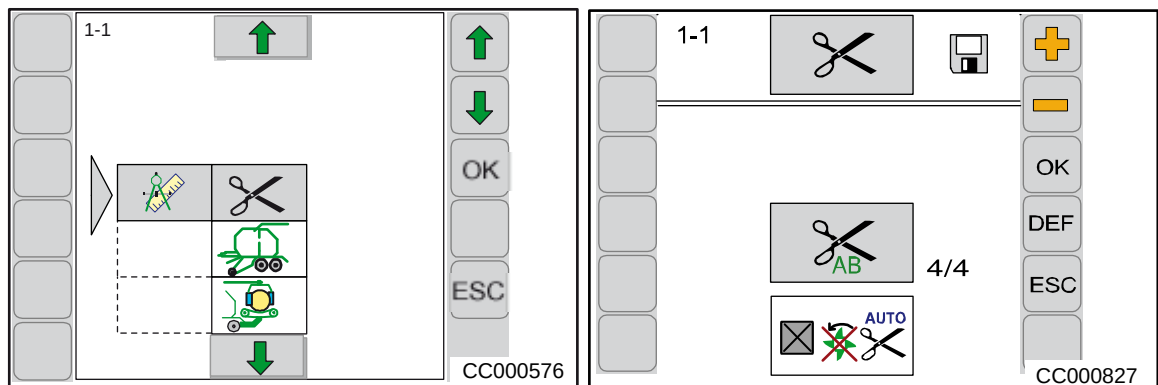
9.10
Menu 1-1 Setting Intake


Fig. 93

Calling the menu

Main menu 1 "Settings" is called.

- Select menu 1-1  by pressing function key  or , the symbol is highlighted in grey.
- Press function key **OK**.

The display shows menu 1-1 "Setting Intake".

In menu 1-1 "Setting Intake", you can select between four selection possibilities concerning activation or deactivation of blade groups.


Note

In case blade selection has been changed, the blade cassette must be lowered once in the basic screen by means of function key   and after that it must be closed by means of function key  . The current status of the blade control shafts is displayed in basic screen.

	Blade group A selected	13 blades
	Blade groups A and B selected	26 blades
	Blade group B selected	13 blades
	No blade group selected	No blade

KRONE ISOBUS Terminal

Automatic overload intake

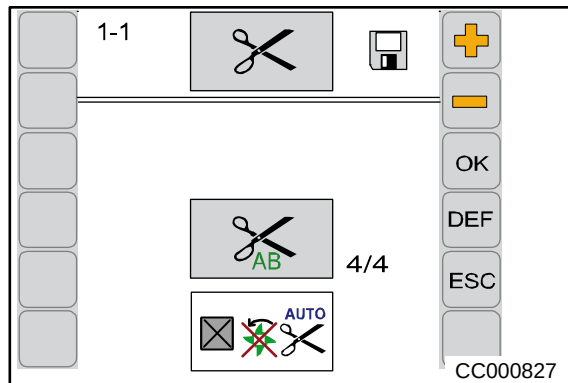


Fig. 94

Icon	Meaning	Information
	Automatic overload deactivated	
	Automatic overload activated	If there is a difference in speed between PTO shaft and cutting rotor, the cutting system coupling is switched off and the blade cassette is lowered with time delay.



Note

When switching off the PTO shaft, the coupling of cutting system is switched on automatically again.



Note

In case the cutting system is blocked, complete the downstream processes (wrap bale, wrapping process, setting down bale), then switch off PTO shaft in order to remedy the blockage.

Note from practical experience:

Switch on the automatic function of the cutting system. If there is a blockage in the cutting system, the drive of the cutting system switches off automatically. Stop tractor and observe the machine. Let the PTO shaft run until all other functions (e.g. net tying, bale transfer, wrapping arm) are terminated. Then switch PTO shaft off and on again. The drive for cutting system is

now active again. Press function key   to close blade cassette. Continue to work.

9.1 Menu 1-2 Pre-compression chamber setting

In this menu the speed of the belt is adjusted to the crops in the pre-compression chamber. If the parameter (selection windows 1-5) is adjusted, the speed of the conveyor belt changes. While the crops are stored temporarily, the pre-compression chamber moves downwards. This time is automatically saved.

The smaller the parameter is set, the greater the force of pressure of the pre-compression chamber.

Parameter	Crops
1	Straw dry / brittle (rotary combine harvester). Straw greatly expanded
2	Straw/hay
3	Haylage
4	Silage
5	Silage wet / sugary

Information on setting:

- Keep the parameter as small as possible.
- When crops accumulate in the area of the bale transfer, set the parameter smaller.
- If blockages occur in the cutting system while tying the net or transferring the bale, set the parameter to a higher value.

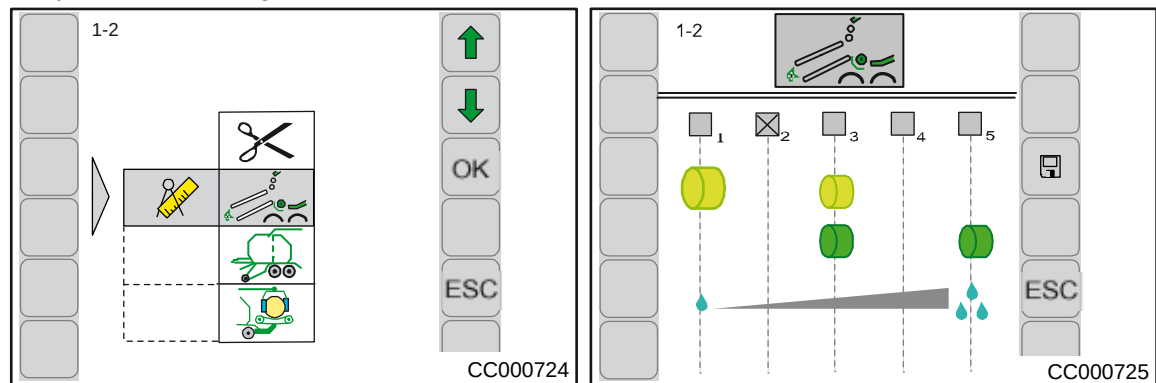
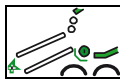


Fig. 95

Opening the menu

Main menu 1 Settings is opened.

- Press the  or  function key to select menu 1-2 ; the symbol is displayed with a grey background.
- Press the **OK** function key.

The display shows menu 1-2 "Pre-compression chamber setting".

Setting the parameters:

- Tap the required selection window on the display.

KRONE ISOBUS Terminal

9.1 Menu 1-3 Baler setting

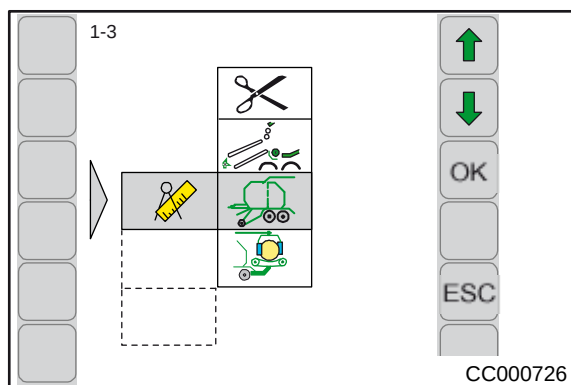


Fig. 96

Opening the menu

Main menu 1 Settings is opened.

- Press the  or  function key to select menu 1-3 ; the symbol is displayed with a grey background.
- Press the **OK** function key.

The display shows menu 1-3 Baler setting.

The  icon in the top line indicates that the displayed status is saved.

Menu 1-3 Baler setting is divided into the following menus depending on the type of machine and the machine equipment:

-  Menu 1-3-2 Bale diameter
-  Menu 1-3-3 Number of net wrappings
-  Menu 1-3-4 Sensitivity of direction display

9.1

Menu 1-3-2 Bale diameter

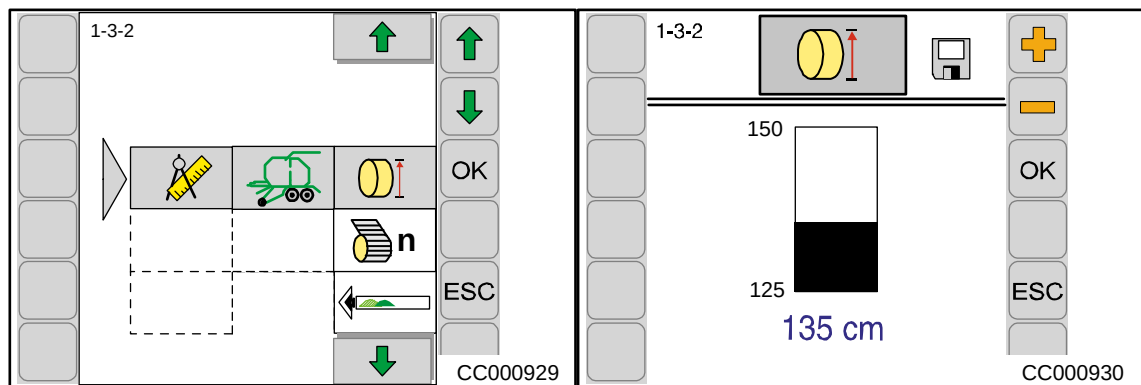


Fig. 97

Opening the menu

Menu 1-3 "Baler setting" is opened.

- Press the  or  function key to select menu 1-3-2 ; the symbol is displayed with a grey background.
- Press the **OK** function key.

The display shows menu 1-3-2 Bale diameter.

The  icon in the top line indicates that the displayed status is saved.

Adjusting the bale diameter

- Press the  or  function key to adjust the bale diameter mechanically set on the machine; the  symbol on the upper line disappears.
- Press the **OK** function key; the set bale diameter is saved, the  symbol appears on the upper line.
- Press the **ESC** function key to close the open menu.
- Press and hold down the **ESC** function key to open the home screen.

KRONE ISOBUS Terminal

9.1.1 Menu 1-3-3 Number net winds

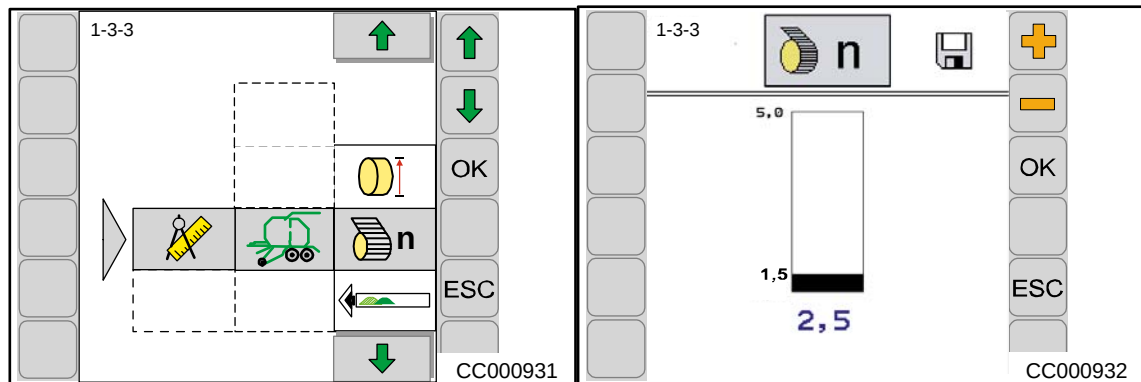


Fig. 98

Displaying the menu

The main menu 1-3 "Settings" is active.

- You can select menu 1-3-3  by pressing function key  or . The symbol is highlighted in grey.
- Press function key **OK**.

The display shows menu 1-3-3 "Number of net winds".

The symbol  in the upper line indicates that the displayed status is saved.

Setting the number of net winds

The number of net wrappings is indicated in revolutions (e.g. 7n).

- Set the desired number of net winds with function key  or . The symbol in the top line disappears .
- Press function key **OK**, the adjusted status is saved, the symbol  in the upper line appears.
- Pressing the function key **ESC** closes the called up menu.
- Pressing the function key longer **ESC** and holding it down brings up the basic screen.

9.1.2 Menu 1-3-4 Sensitivity of direction display

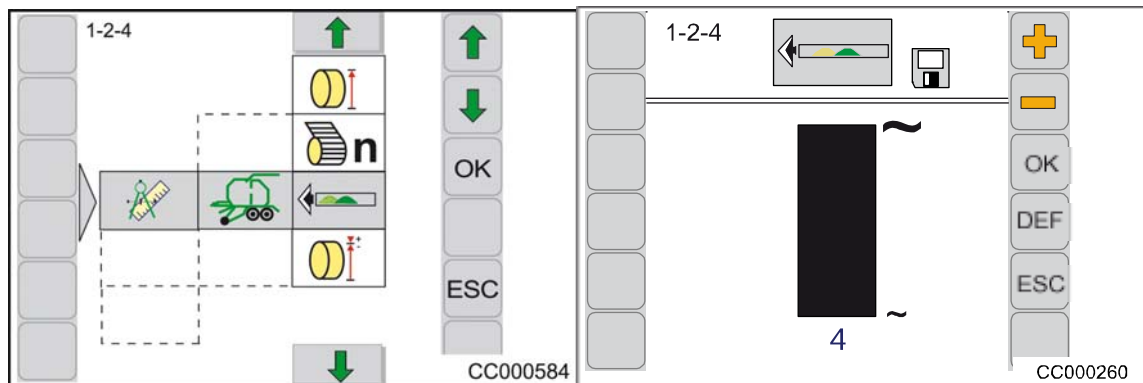


Fig. 99

Setting the sensitivity of the direction display

Opening the menu

Menu 1-3 "Baler setting" is opened.

- Press the  or  function key to select menu 1-3-4 ; the symbol is displayed with a grey background.
- Press the **OK** function key

The display shows menu 1-3-4 Sensitivity of direction display.

The progress bar indicates the set sensitivity. The higher the bar, the greater the sensitivity of direction display. The  icon in the top line indicates that the displayed value is saved.

Setting and saving the sensitivity of direction display

The higher the sensitivity of direction display is set, the stronger the motion indication in the form of arrows (1) .

- Press the  or  function key to adjust the sensitivity; the  symbol on the upper line disappears.
- Press the **OK** function key; the set sensitivity is saved, the  symbol appears on the upper line.
- Press the **ESC** function key to close the open menu.
- Press and hold down the **ESC** function key to open the home screen.



Note

If an even filling is reached, all signals expire.

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9.1 Menu 1-4 Wrapper setting

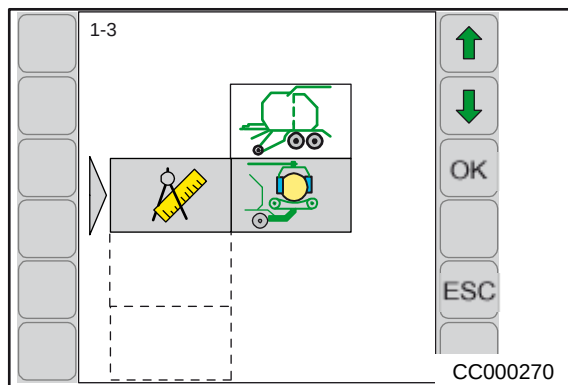


Fig. 100

Opening the menu

Main menu 1 Settings is opened.

- Press the  or  function key to select menu 1-4 ; the symbol is displayed with a grey background.
- Press the **OK** function key.

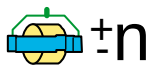
The display shows menu 1-4 Wrapper setting.

The  icon in the top line indicates that the displayed status is saved.

Menu 1-4 Wrapper setting is divided into the following menus depending on the type of machine and the machine equipment:



Menu 1-4-1 Number of layers



Menu 1-4-2 Number of wrappings



Menu 1-4-3 Type of operation for wrapper



Menu 1-4-4 Type of operation for wrapping table



Menu 1-4-6 Film tear control

9.1.1 Menu 1-4-1 Number of layers

This menu is used to set the number of layers to be wrapped around the ready bale.

Possible settings:

- 4 layers
- 6 layers
- 8 layers
- 10 layers

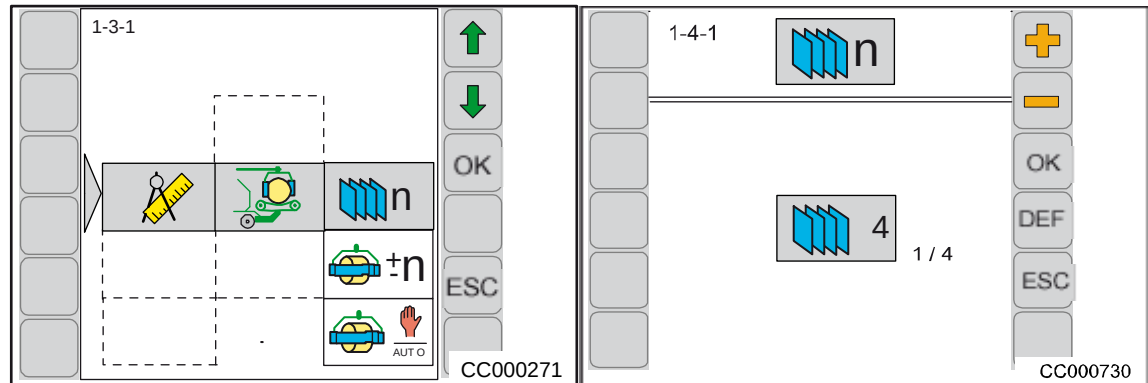


Fig. 101

Opening the menu

Menu 1-4 Wrapper setting is opened.

- Press the  or  function key to select menu 1-4-1  n; the symbol is displayed with a grey background.
- Press the **OK** function key.

The display shows menu 1-4-1 Number of layers.

Adjusting the number of layers

The time delay is shown in seconds.

- Press the  or  function key to set the required number of layers; the  symbol on the upper line disappears.
- Press the **OK** function key.

The  icon in the top line indicates that the displayed value is saved.

- Use the DEF softkey to reset the type of operation to the factory setting.
- Press the **ESC** function key to close the open menu.
- Press and hold down the **ESC** function key to open the home screen.

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9.1.1 Menu 1-4-2 Number of film wrappings

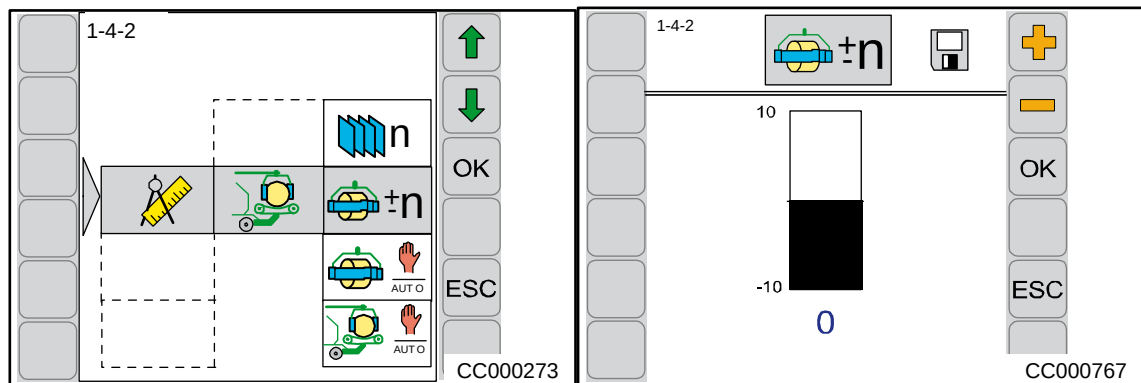


Fig. 102

Opening the menu

Menu 1-4 Wrapper setting is opened.

- Press the  or  function key to select menu 1-4-2  $\pm n$; the symbol is displayed with a grey background.
 - Press the **OK** function key.
- The display shows menu 1-4-2 Number of film wrappings.

Adjusting the number of film wrappings



Note

The number of film wrappings is used to set by how many wrappings the actual number of wrappings is to differ from the specified number of wrappings.

- A positive value corresponds to more revolutions.
- A negative value corresponds to fewer revolutions
- Press the  or  function key to set the required number of layers; the  symbol on the upper line disappears.
- Press the **OK** function key.

The  icon in the top line indicates that the displayed value is saved.

- Press the **ESC** function key to close the open menu.
- Press and hold down the **ESC** function key to open the home screen.

9.1.1 Menu 1-4-3 Type of operation for wrapper

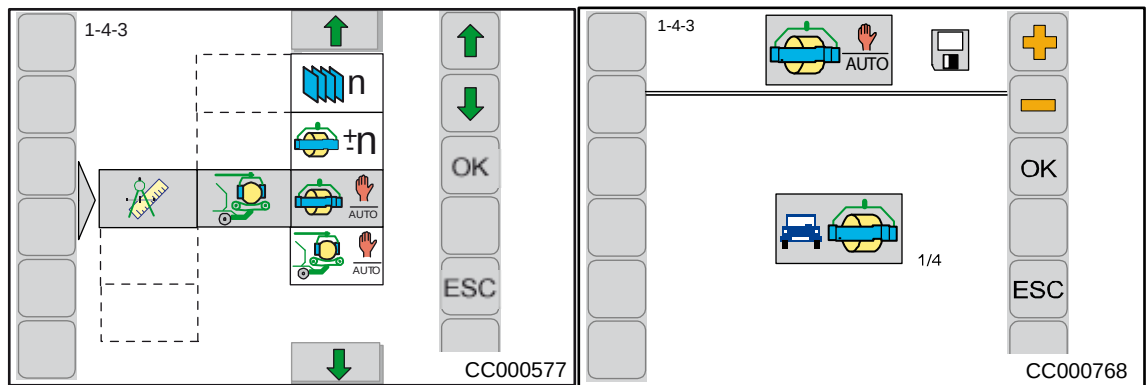


Fig. 103

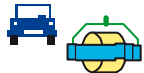
Opening the menu

Menu 1-4 Wrapper setting is opened.

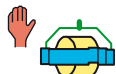
- Press the  or  function key to select menu 1-4-3   **AUTO**; the symbol is displayed with a grey background.
- Press the **OK** function key.

The display shows menu 1-4-3 Type of operation for wrapper.

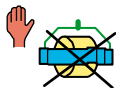
The current status is displayed as a symbol



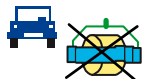
Automatic start of transfer with wrapping



Manual start of transfer with wrapping



Manual start of transfer without wrapping



Automatic start of transfer without wrapping

Change and save status

- Press the  or  function key to set the required number of layers; the  symbol on the upper line disappears.
- Press the **OK** function key.

The  icon in the top line indicates that the displayed value is saved.

- Use the DEF softkey to reset the type of operation to the factory setting.
- Press the **ESC** function key to close the open menu.
- Press and hold down the **ESC** function key to open the home screen.

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9.1.1 Menu 1-4-4 Type of operation for wrapping table

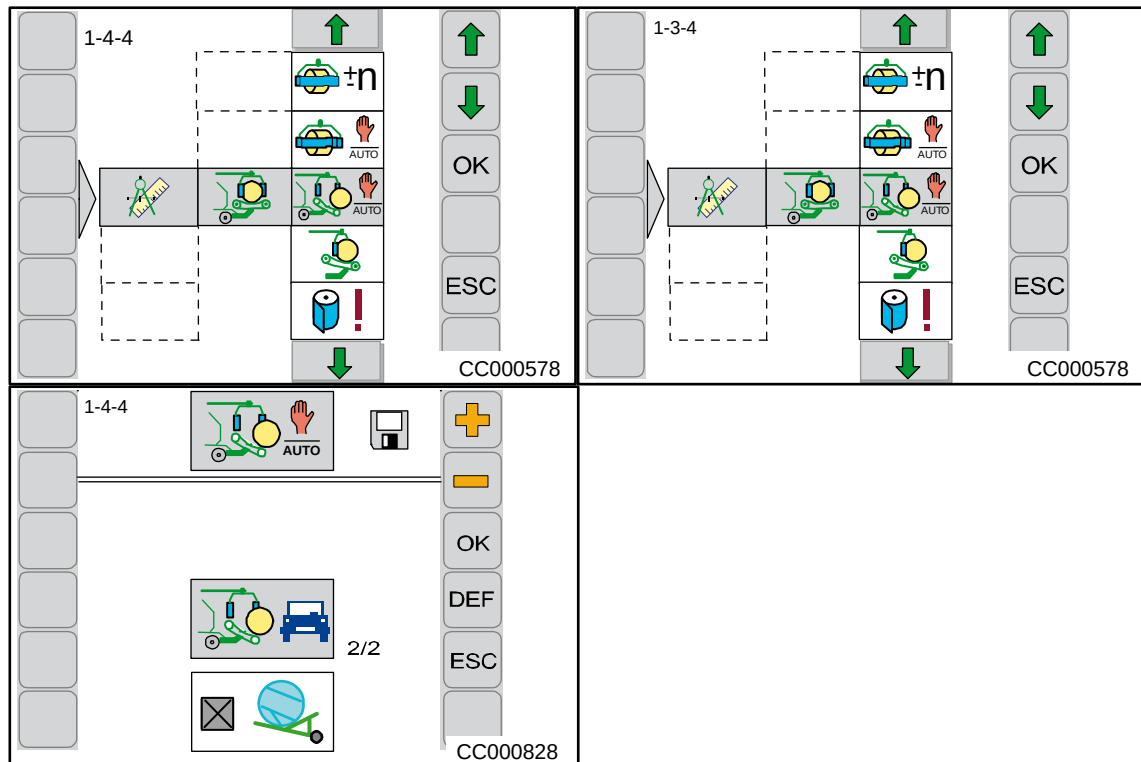


Fig. 104

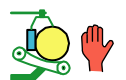
Opening the menu

Menu 1-4 Wrapper setting is opened.

- Press the  or  function key to select menu 1-4-4 ; the symbol is displayed with a grey background.
- Press the **OK** function key.

The display shows menu 1-4-4 Type of operation for wrapping table.

The current status is displayed as a symbol

-  Manual mode
-  Selection of automatic mode with wrapping or
-  double stacking without wrapping

Change and save status

- Press the  or  function key to set the required number of layers; the  symbol on the upper line disappears.
- Press the **OK** function key.

The  icon in the top line indicates that the displayed value is saved.

- Use the DEF softkey to reset the type of operation to the factory setting.
- Press the **ESC** function key to close the open menu.
- Press and hold down the **ESC** function key to open the home screen.

Bale Lifting Device

The bale lifting device parameter only visible with type of operation for wrapper "Automatic start of transfer with wrapping"   or "Manual start of transfer with wrapping"  .

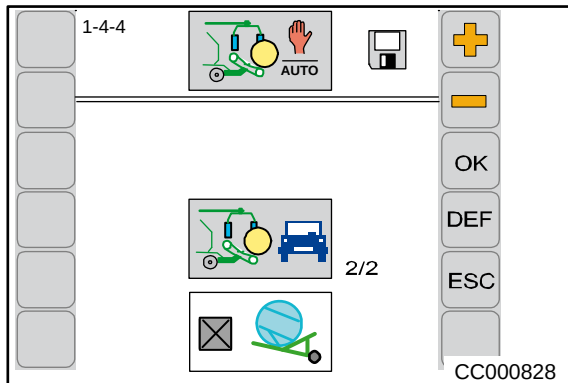


Fig. 105

Symbol	Meaning	Information
	Bale lifting device parameter deactivated	– Normal function of the wrapping table
	Bale lifting device parameter activated	– To set down bales, the wrapping table stops briefly in the set-down position so that the bale can roll off the bale lifting device.

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9.1.1 Menu 1-4-6 Film tear control

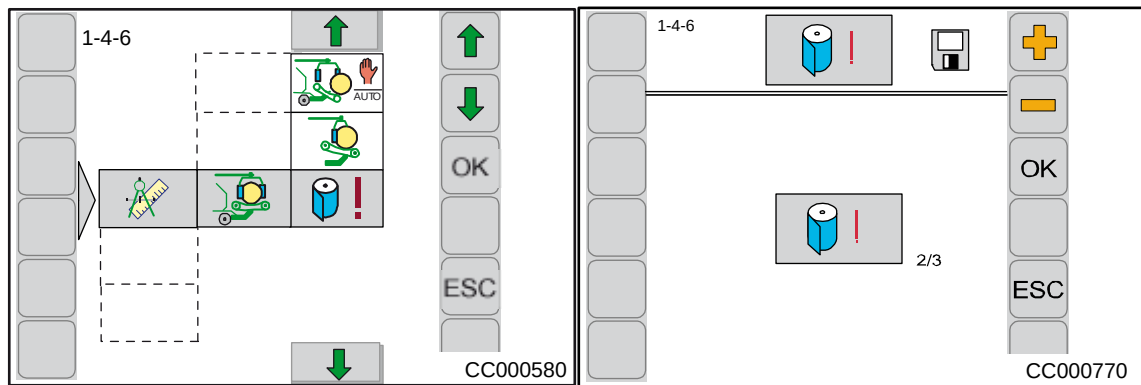


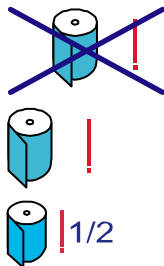
Fig. 106

Opening the menu

Menu 1-4 Wrapper setting is opened.

- Press the  or  function key to select menu 1-4-6 ; the symbol is displayed with a grey background.
 - Press the **OK** function key.
- The display shows menu 1-4-6 Film tear control.

The current status is displayed as a symbol



No film tear control

Stop when film tear

Allow one-sided film tear



Note

"Allow one-sided film tear" means that the wrapping process continues with the changed values after a one-sided film tear. The nominal speed must be observed for a one-sided film tear (540 rpm).

The "one-sided film tear" message appears after the wrapping process is complete.

Change and save status

- Press the  or  function key to set the required status; the symbol  on the upper line disappears.
- Press the **OK** function key.

The  icon in the top line indicates that the displayed value is saved.

- Use the DEF softkey to reset the film tear control to the factory setting.
- Press the **ESC** function key to close the open menu.
- Press and hold down the **ESC** function key to open the home screen.

9.2

Main menu 2 Counters

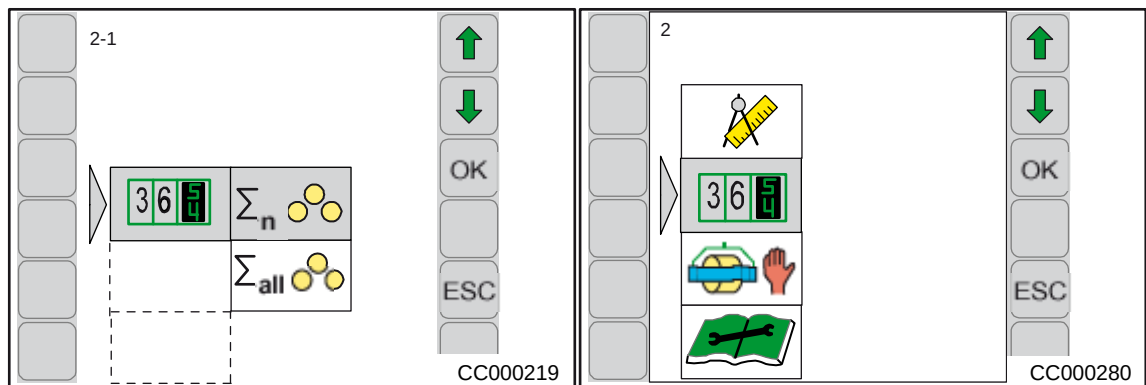


Fig. 107

Calling the main menu

- By pressing the function key  in the basic screen you get into the menu level of the machine.
- You can select main menu 2 () by pressing the function key  or . The symbol is highlighted in grey.
- Press function key **OK**.

The display shows menu level 2 "Counters".

Menu level 2 "Counters" is divided into two menus:

Σ_n  = Menu 2-1 "Customer counter"

Σ_{all}  = Menu 2-2 "Total counters"

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9.2.1 Menu 2-1 Customer counter

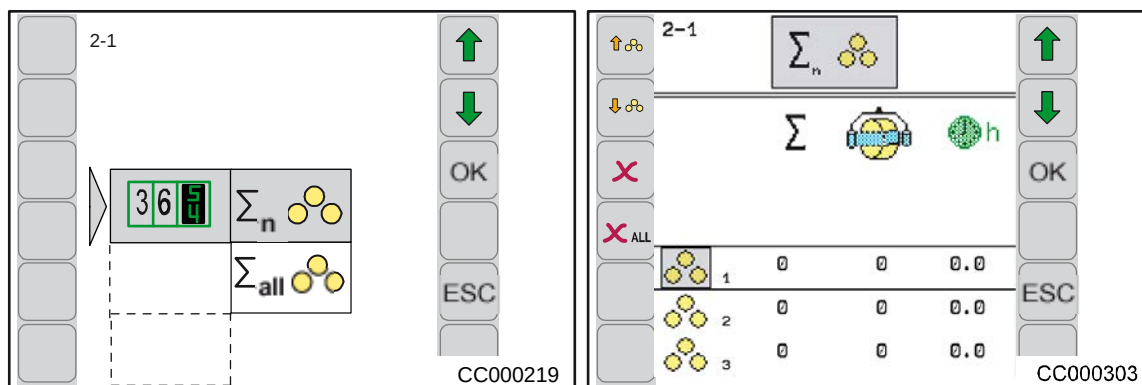


Fig. 108

Displaying the menu

Main menu 2 "Counters" is displayed

- You can select menu 2-1  by pressing function key  or . The symbol is shown in reverse colours.
- Press function key **OK**.

The display shows menu 2-1 "Customer counter".

Meaning of the symbols:

-  = Total number of bales
-  = active customer counter (1 - 20)
-  = Operating hours counter (counts only when P.T.O. shaft is running)

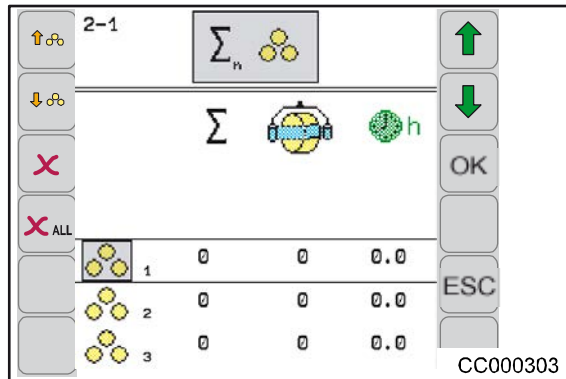
Activating customer counters


Fig. 109

- Press function key  or  to select the desired customer counter and activate by pressing the function key **OK**. The desired customer counter (in this case customer counter 1) is displayed inversely.

Changing the number of bales

- Press function key  or  to select the desired customer counter (the customer counter must not be activated)
- Increase the number of bales by pressing the function key .
- Reduce the number of bales by pressing the function key .

Deleting the customer counter

- Press function key  or  to select the desired customer counter (the customer counter must not be activated)
- By pressing the function key  the selected customer counter is set to zero.
- Pressing the function key **ESC** closes the called up menu.
- Pressing the function key **ESC** and holding it down brings up the basic screen.

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9.2.2 Menu 2-2 Total bale counter

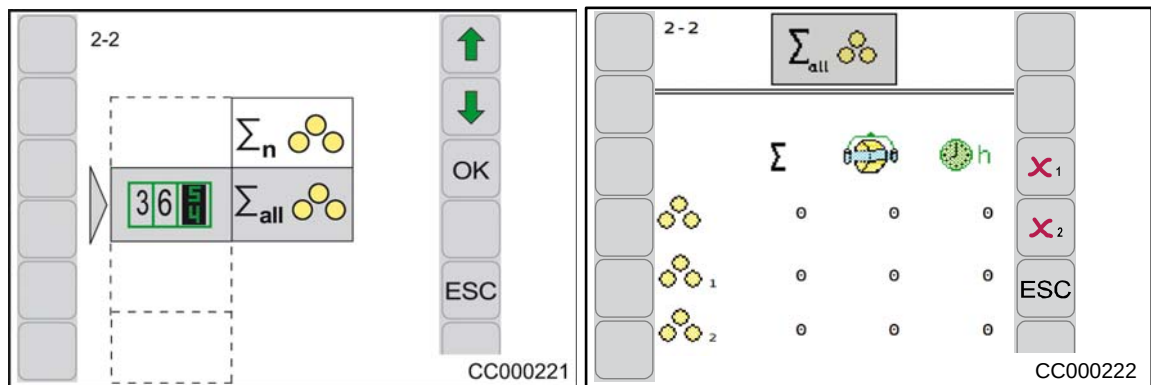


Fig. 110

Calling the menu

Main menu 2 "Counters" is displayed

- You can select menu 2-2 Σ_{all} by pressing function key $\uparrow$ or $\downarrow$. the symbol is highlighted in grey.
- Press function key **OK**.

The display shows menu 2-2 "Total bale counter". The total number of bales is the sum of all bales pressed. They are not assigned to any customer counter.

Meaning of the icons:

-  = Bale counters (cannot be deleted)
-  = Operating hours counter (counts only when P.T.O. shaft is running)
-  = Season counter 1 (can be deleted)
-  = Season counter 2 (can be deleted)

Deleting season counter 1 or daily counter 2

- Pressing the function key **X1** sets season counter 1 to zero.
- Pressing the function key **X2** sets season counter 2 to zero.
- Pressing the function key **ESC** closes the called up menu.
- Pressing the function key **ESC** and holding it down brings up the basic screen.

9.3

Main menu 3 Manual operation

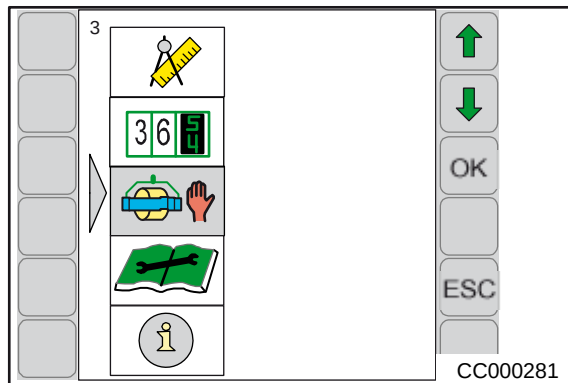


Fig. 111

Opening the menu

- Press the  function key to open the menu level from the home screen.
- Press the  or  function key to select main menu 3 ; the symbol is displayed with a grey background.
- Press the **OK** function key.

Menu level 3 "Manual operation" is divided into the following menus:

- Menu 3-1 "Manual operation pre-compression chamber" when bale chamber open
- Menu 3-2 "Manual operation bale chamber" when bale chamber open
- Menu 3-3 "Manual operation wrapper" when bale chamber closed

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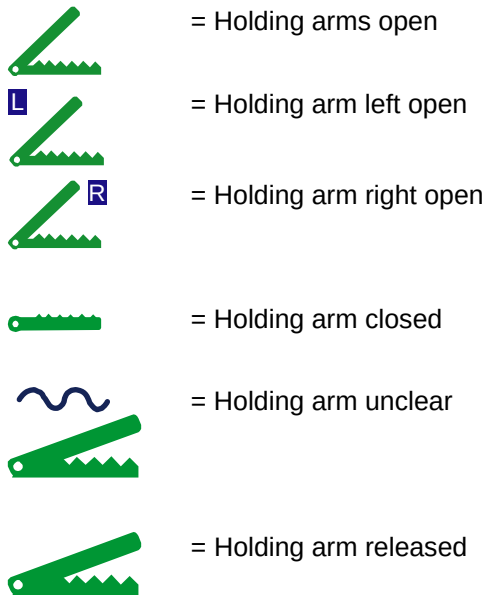
9.3.1 Status Messages



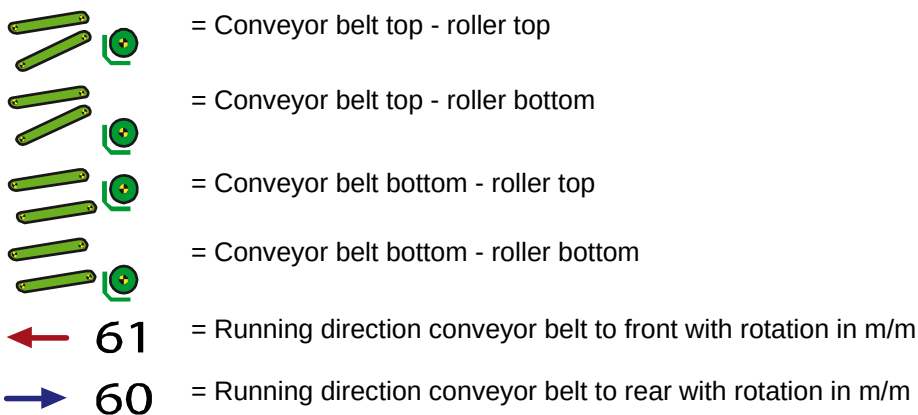
Note

The following status messages of the four displays apply to menu 3-1 "Manual Operation Pre-compression Chamber", 3-2 "Manual Operation Baler" for bale chamber open as well as to menu 3-3 "Manual Operation Wrapper" for bale chamber closed. They are not listed once again.

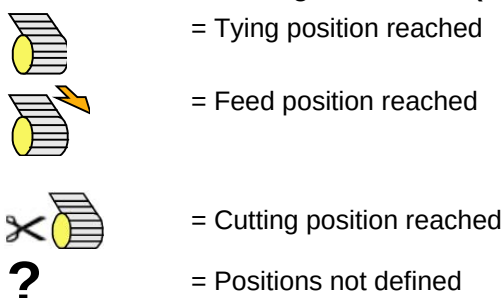
Possible status messages window 1 (holding arms):



Possible status messages window 1 (pre-compression chamber):



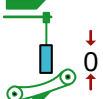
Possible status messages window 2 (net motor)



Possible status messages window 2 (blade cassette)

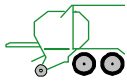
-  = Blade cassette closed, blade groups A and B active
-  = Blade cassette closed, blade group A active, blade group B not active
-  = Blade cassette closed, blade group A not active, blade group B active
-  = Blade cassette closed, blade group A not active, blade group B active
-  = Blade cassette open, blade groups A and B not active
-  = Blade cassette maintenance

Possible status messages window 3 (wrapping arms / wrapping table)

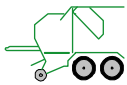
-  = Wrapping arm not in position, wrapping table forward, without bale
-  = Wrapping arm in position, wrapping table centre, without bale
-  = Wrapping arm not in position, wrapping table centre, without bale
-  = Wrapping arm in position, wrapping table forward, without bale
-  = Wrapping arm not in position, wrapping table centre, with bale
-  = Wrapping arm in position, wrapping table centre, with bale
-  = Wrapping arm not in position, wrapping table forward, with bale
-  = Wrapping arm in position, wrapping table forward, with bale

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Possible status messages window 4 (bale chamber)



= Bale chamber closed



= Bale chamber not closed

Possible status messages window 3 (drives)



525

= Speed of PTO shaft [rpm]



322

= Speed of cutting system [rpm]



116

= Speed of floor conveyor [m/min]

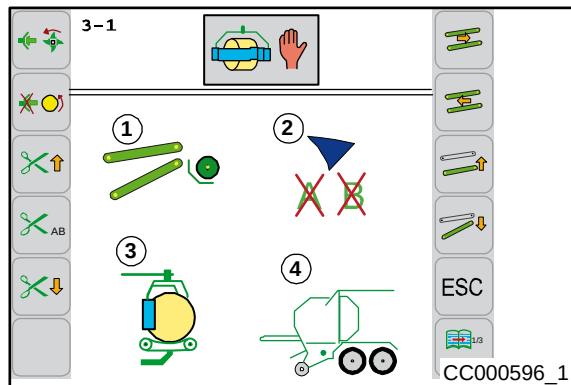
9.4
Manual Operation Pre-compression Chamber


Fig. 112

Calling the menu

Menu 3-1 "Manual Operation Pre-compression chamber" is called.

- The pages of the menu are called by actuating the  key.

Displays

- (1) = Conveyor belt and roller display
- (2) = Blade display
- (3) = Wrapping arm display
- (4) = Bale chamber display

For possible status messages, refer to chapter "Status Messages".

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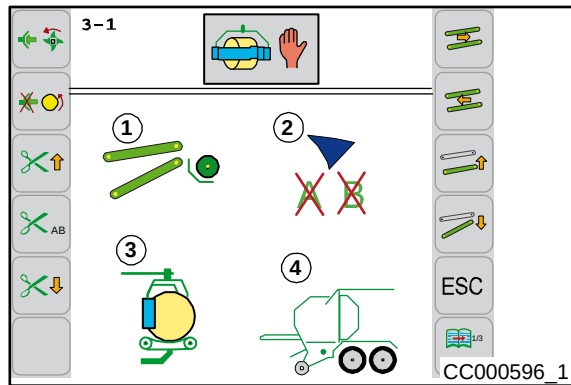


Fig. 113

9.4.1 Controlling conveyor belt speed

- Press the  softkey to set the conveyor belt speed forwards (for baling).
- Press the  softkey to set the conveyor belt speed backwards.

9.4.2 Raising/lowering conveyor belt

- Press the  softkey to raise the conveyor belt.
- Press the  softkey to lower the conveyor belt.

9.4.3 Connecting and disconnecting drive couplings



Note

Both couplings cannot be switched simultaneously.

- Press the   softkey to disconnect the cutting system coupling.



Note

Cutting system coupling and bale chamber coupling can be connected only when the PTO shaft is at a standstill.

- Press the   softkey to connect the cutting system coupling
- Press the   softkey to disconnect the bale chamber coupling.
- Press the   softkey to connect the bale chamber coupling

9.4.4 Raising/lowering the blade bar

- Press the   softkey to raise the blade bar
- Press the  ^{AB} softkey to select a blade group.
- Press the   softkey to lower the blade bar

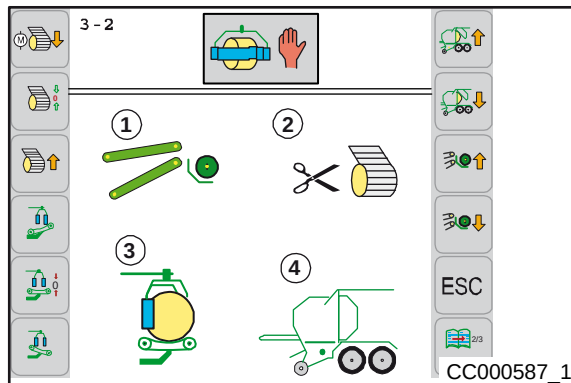
9.5
Manual Operation Bale Chamber


Fig. 114

Calling the menu

Menu 3-2 "Manual Operation Baler" is called.

- The pages of the menu are called by actuating the  key.

Displays

- (1) = Conveyor belt and roller display
- (2) = Net rocker arm display
- (3) = Wrapping arm display
- (4) = Bale chamber display

For possible status messages, refer to chapter "Status Messages".

9.5.1
Opening/closing the bale chamber

- Softkey  opens the bale chamber as long as the softkey is pressed or until the opened end position is reached.
- Softkey  closes the bale chamber as long as the softkey is pressed or until the closed end position is reached.

9.5.2
Raising/lowering the roller

- Press the  softkey to move the roller upwards.
- Press the  softkey to move the roller downwards.

9.5.3
Move manually to tying position

- Press the  softkey to move the cylinder to the feed position.
- Press the  softkey to move the cylinder to the cutting position.
- Press the  softkey to move the cylinder to the tying position.

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9.6 Manual operation wrapper

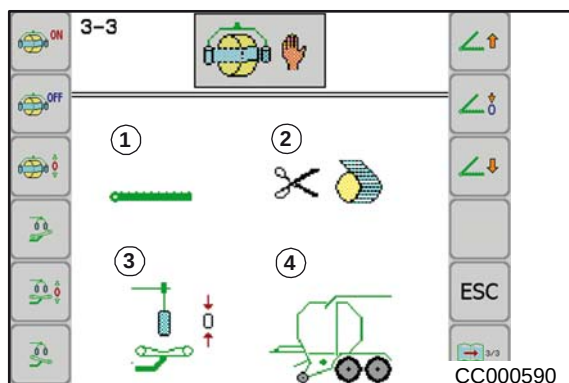


Fig. 115

Opening the menu

Menu 3-1 "Manual operation baler" is opened.

- Press the  key to open the pages of the menu.

Displays on the display

- (1) = Display holding arms
- (2) = Display net rocker arm
- (3) = Display wrapping arm
- (4) = Display bale chamber

Possible status messages see chapter "Status messages".

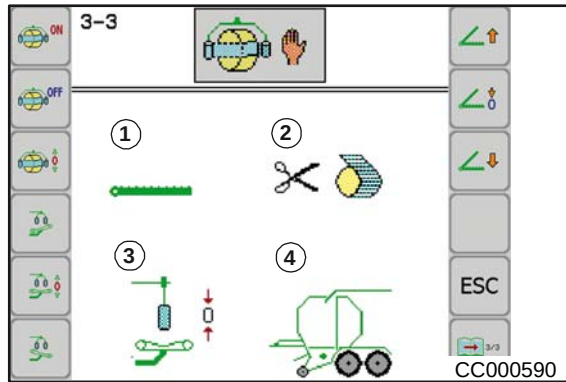
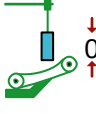


Fig. 116

9.6.1 Opening/closing the holding arms

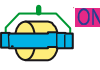
- Softkey  opens the holding arms as long as the softkey is pressed or until the opened end position is reached.
- Softkey  closes the holding arms as long as the softkey is pressed or until the closed end position is reached.
- Softkey  releases the holding arms.

9.6.2 Move swivel table by hand

- Softkey  moves the swivel table forward as long as the softkey is activated or until the forward end position is reached.
- Softkey  moves the swivel table back as long as the softkey is activated or until the rear end position is reached.
- Press softkey  and hold it down until swivel table has reached the zero position.
- Pressing the function key **ESC** closes the called up menu.
- Pressing the function key **ESC** and holding it down brings up the basic screen.

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9.6.3 Switching on/off wrapping arm

- Pressing the softkey  will switch the wrapping arm on. When the wrapping arm is turning, the display switches to .
- Pressing the softkey  will switch the wrapping arm off.

9.6.4 Moving wrapping arm to zero position

- Press the  softkey and hold it down until the wrapping arm has moved to the zero position.
- Press the **ESC** function key to close the open menu
The display shows menu level 3 "Manual operation".
- Press and hold down the **ESC** function key to open the home screen

9.7

Main menu 4 Service

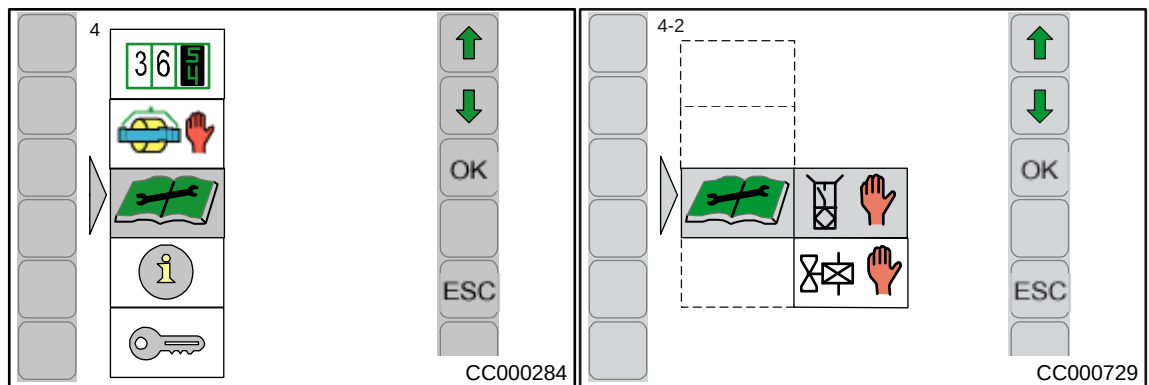


Fig. 117

Calling the main menu

- Press the  function key to open the menu level from the home screen.
 - Press the  or  function key to select main menu 4 ; the symbol is displayed with a grey background.
 - Press the **OK** function key
- The display shows menu level 4 "Service".

Menu level 4 "Service" is divided into three menus:



= Menu 4-2 "Manual sensor test"



= Menu 4-4 "Manual actuator test"

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9.7.1 Menu 4-2 "Manual sensor test"

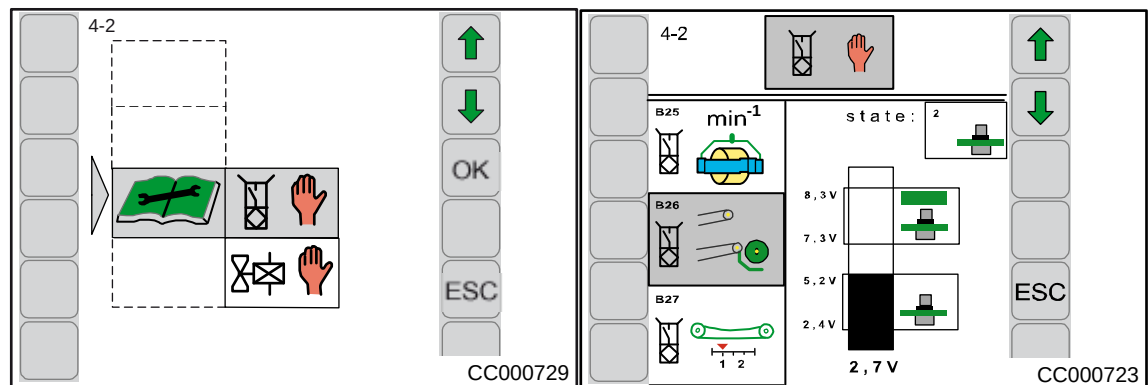


Fig. 118

In the manual sensor test, the sensors that are installed on the machine are checked for errors. In addition, the sensors can be correctly adjusted in the manual sensor test. There is no guarantee the machine is working correctly until after the sensors have been adjusted.



Caution!

The PTO shaft must not be turning during the sensor test.

Opening the menu

Main menu 4 'Service' is open.

- Press the  or  function key to select menu 4-2  ; the symbol is displayed with a grey background.
- Press the **OK** function key.

Selecting the sensor

- Press the  or  function key to select the sensor.

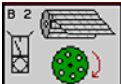
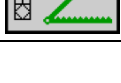
The selected sensor is displayed with a grey background and is tested.

Setting values:

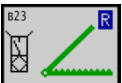
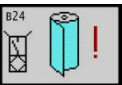
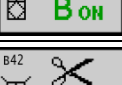
The minimum and maximum setting values with the sensor alive (metal in front of the sensor) are shown in the upper part of the bar display. The current setting value (actual value) is displayed under the bar display.

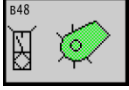
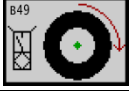
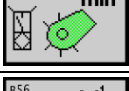
The distance from the sensor to the metal must be adjusted so that in the alive state the bar is in the upper mark. Next check whether the bar is in non-alive state in the lower marked area.

Diagnostics – Namur sensors
Possible sensors (depending on how the machine is equipped)

No.	Sensor symbol	Description
B01		Speed bale chamber
B02		Tying process active
B04		PTO shaft speed
B05		Slip of floor conveyor
B08		Check blade cassette top
B11		Locking bale chamber left
B12		Locking bale chamber right
B15		Bale ejector
B16		Bale detection wrapping table left
B17		Bale detection wrapping table right
B20		Zero position wrapping arm
B21		Position wrapping arm
B22		Holding arm left open

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No.	Sensor symbol	Description
B23		Holding arm right open
B24		Film tear monitoring
B25		Speed wrapping arm
B32		Speed pre-compression chamber
B33		Conveyor belt top
B34		Conveyor belt bottom
B35		Holding arm left closed
B36		Holding arm right closed
B37		Starter roller bottom
B38		Starter roller top
B40		Blade control shaft B inactive
B41		Blade control shaft B active
B42		Blade control shaft A inactive
B43		Blade control shaft A active
B45		Speed cutting system

No.	Sensor symbol	Description
B46		Oil temperature
B47		Blade cassette bottom
B48		Pick-up top
B49		Driving speed
B50		Bale detection wrapping table
B51		Baling pressure bale chamber left
B52		Baling pressure bale chamber right
B53		Central lubrication active
B54		Filter element conveyor belt
B55		Speed pick-up
B56		Slip conveyor belt top
B57		Slip conveyor belt bottom
B60		Filter element

State:


1 Alive (iron)



2 Not alive (no iron)



3 Broken cable



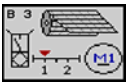
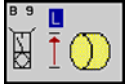
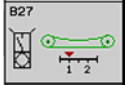
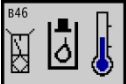
4 Short circuit

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Diagnostics – analogue sensors

Setting values:

The bar must be inside the marked area of the bar display.

No.	Sensor symbol	Description
B03		Position tying
B09		Filling display left
B10		Filling display right
B27		Position wrapping table
B46		Oil temperature

⁰ **OK**

Alive (iron)

⁷



Broken cable / short circuit

⁸ **ERROR**

Not alive (no iron)

B3 Setting position of net rocker arm:

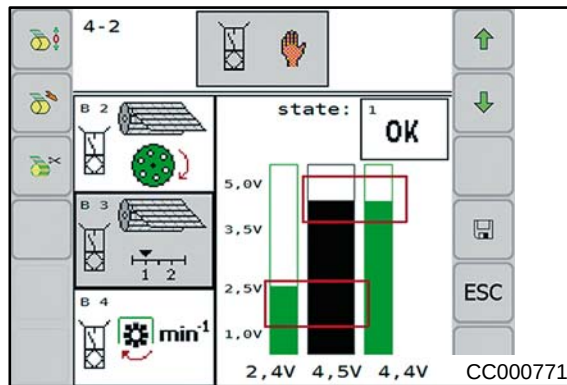


Fig. 119



Caution!

The feed and cutting position must be approached and saved.



Note

They can only be saved if the bar is in the lower or upper rectangle of the bar display.

Adjusting the feed position (see also "Adjusting the feed position" in the Operation chapter)



- Press the softkey until the rocker arm is positioned on the stop.

Storing a value:

- Press the function key **OK** until the symbol  appears briefly in the upper line.



Note

The value is stored when the right bar has accepted the value of the centre bar.

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Adjusting the cutting position (see also "Adjusting the cutting position" in the Operation chapter)

- Press the  softkey until the rocker arm audibly actuates the blade bar.

Storing a value:

- Press the function key **OK** until the  symbol appears briefly in the upper line.



Note

The value is stored when the left bar has accepted the value of the centre bar.

Approaching the engine tying position (see also "Checking the tying position" in the Operation chapter)

- Press the  softkey until the rocker arm has reached the engine tying position.
- Adjust the engine tying position mechanically.

Sensor B9/B10 Adjusting the bale firmness:

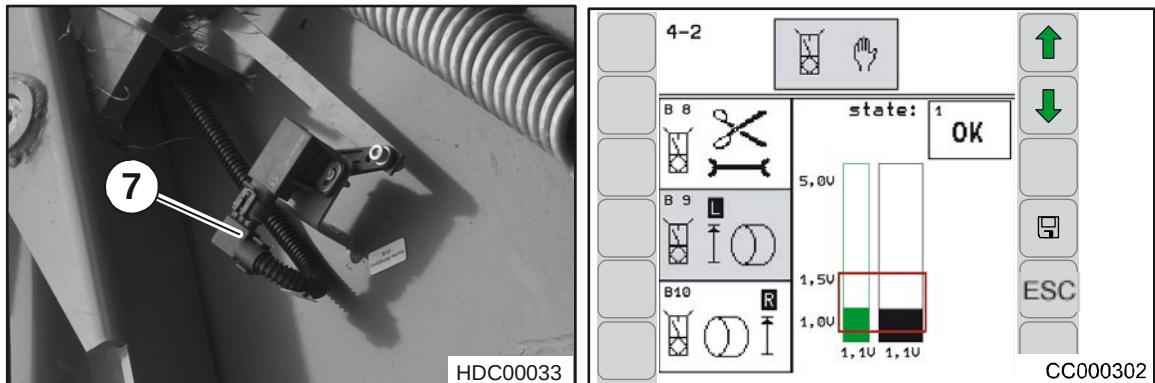


Fig. 120



Caution!

The bale chamber must be closed and empty.

If the bar (1) is not inside the rectangle (2) when the bale chamber is closed and emptied, adjust the sensor (7) mechanically:

- Loosen the sensor (7) and turn it in the oblong hole until the bar (1) is positioned inside the rectangle (2) on the bar display.



Note

An audio signal sounds if the bar (1) is inside the rectangle (2).

- Tighten the sensor (7).



Note

Saving is only possible if the bar (1) is inside the rectangle (2) in the bar display.

Storing a value:

- Press the **OK** function key

The  icon in the top line indicates that the displayed value is saved.

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B27 Wrapping table position

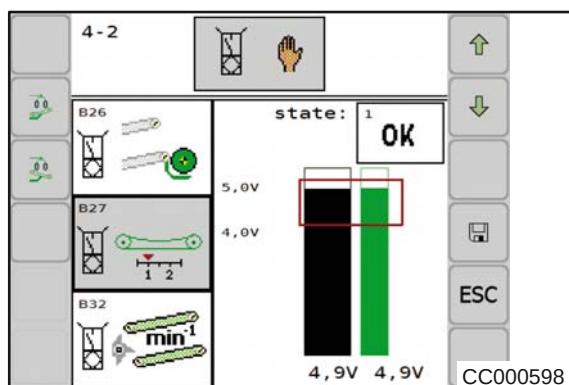


Fig. 121

- Press the  or  function key to move the wrapping table to the transfer position.

Saving value when the wrapping table is in the transfer position:

- Press the function key **OK** until the symbol  appears briefly in the upper line.



Note

Saving is only possible if the bar (1) is inside the rectangle (2) in the bar display.

Diagnostics – power supply voltage

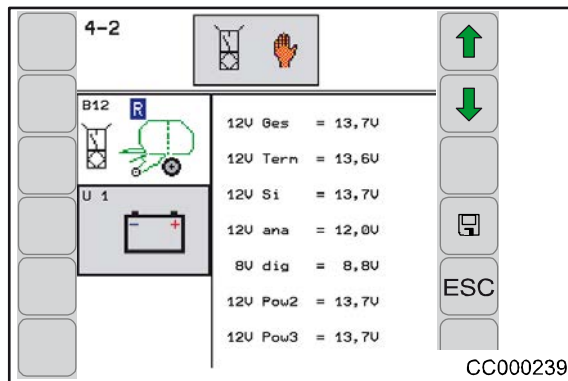
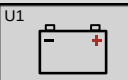


Fig. 122

No.	Sensor icon	Description
B1		power supply voltage

Nominal voltages:

12V Ges:	12 - 14,5 V
12V Ter:	12 - 14,5 V
SS_5V:	4,5 - 5,5 V
8V ana:	8,5 - 9,1 V
8V dig:	8,5 - 9,1 V
12V P2:	12 - 14,5 V

- Pressing the function key **ESC** closes the called up menu
The display shows menu level 4 "Service".
- Pressing the function key **ESC** and holding it down brings up the basic screen

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9.7.2 Actuator test



WARNING!

The functions are directly executed by energizing the actuators. As a result, machine parts may start to move unexpectedly, persons may be captured and seriously hurt.

- Switch off PTO shaft.
- Deactivate tractor hydraulics.
- Only persons familiar with the machine are permitted to perform the actuator test.
- The person performing the test must know the machine parts being actuated by controlling the actuators. If necessary, secure actuated machine components from unintentional lowering.
- Only perform the sensor test from a safe position outside the moving machine parts.
- Make sure that there is no one in the danger zone.

9.7.3 Menu 4-4 Manual actuator test

The actuator test is used to test the actuators installed on the machine. An actuator can only be tested if power is flowing through it. In the manual actuator test the actuator must therefore be controlled manually for a short time to be able to determine if there are any errors in the actuator system.



CAUTION! - Unexpected actions on the machine.

The P.T.O. shaft must not be turning during the actuator test. The tractor hydraulics must be deactivated.

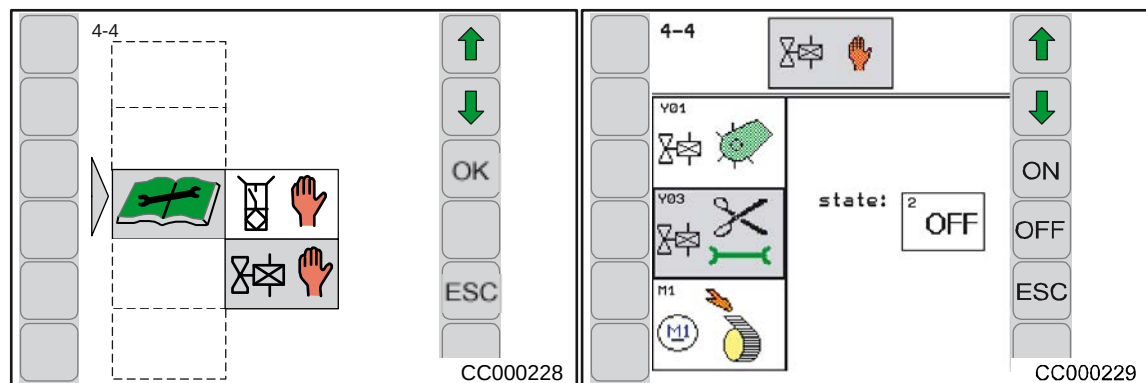


Fig. 123

Calling the menu

Main menu 4 "Service" is called.

- Pressing the function key  or  to select Menu 4-4 . The symbol is highlighted in grey.
- Pressing the function key **OK**

The display shows menu level 4-4 „Manual actuator test“

Selecting the actuator

- Pressing the function key  or  to select Actuator.
- The symbol is highlighted in grey.

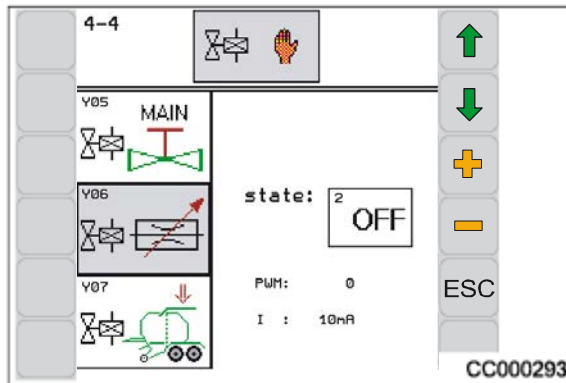
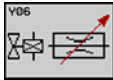
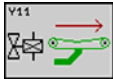
Y06 Wrapping arm control valve


Fig. 124

- Press the function button  to activate the control valve so that the flow rate increases.
 - Press the function button  to activate the control valve so that the flow rate reduces.
- The current electrical current is shown under the status display (if measured).

Possible control valves (depending on machine equipment)

No.	Sensor symbol	Description
Y06		Speed of wrapping arm
Y10		Wrapping table bale transfer
Y11		Wrapping table setting down bales
Y35		Speed of conveyor belt

State:

① ON Actuator on

② OFF Actuator off

③  General actuator error

④  No power supply; fuse is probably defective

- Pressing the function key **ESC** closes the called up menu
The display shows menu level 4 "Service".

- Pressing the function key **ESC** and holding it down brings up the basic screen

KRONE ISOBUS Terminal

Y07 Bale chamber valve closed

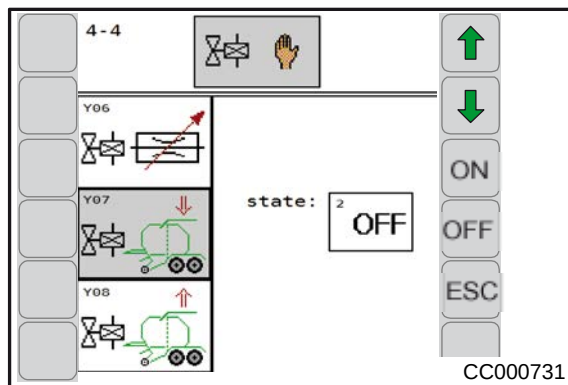


Fig. 125

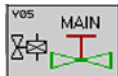
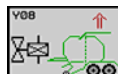
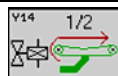
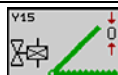
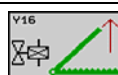
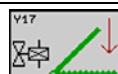
- Press the  or  function key to select the actuator.

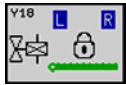
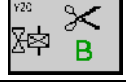
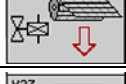
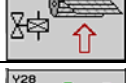
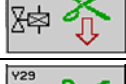
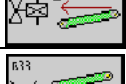
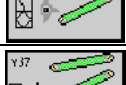
The selected actuator is displayed with a grey background.

Errors are only displayed if the actuator is turned on and a test is possible for the actuator (see the table called "Possible digital actuators"). As appropriate, the LED located directly on the actuator plug can be checked.

- Press the **ON** function key.

Possible valves (depending on machine equipment)

No.	Sensor symbol	Description
Y02		Cutting system coupling
Y05		Circulation valve block
Y07		Close the bale chamber
Y08		Open the bale chamber
Y09		Bale chamber coupling
Y14		Speed of wrapping table film tear
Y15		Holding arms float position
Y16		Open holding arms
Y17		Close holding arms

No.	Sensor symbol	Description
Y18		Lock holding arms
Y19		Wrapping arm brake
Y20		Blade shaft B
Y21		Blade shaft A
Y24		Raise starter roller
Y25		Lower starter roller
Y26		Lower net rocker arm
Y27		Raise net rocker arm
Y28		Lower blade base
Y29		Raise blade base
Y33		Central lubrication
Y34		Reverse conveyor belt
Y36		Raise conveyor belt
Y37		Lower conveyor belt
Y40		Silage agent system

State:

①

ON Actuator on

②

OFF Actuator off

③

 General actuator error

④

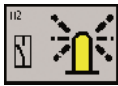
 No power supply; fuse is probably defective

- Pressing the function key **ESC** closes the called up menu
The display shows menu level 4 "Service".

- Pressing the function key **ESC** and holding it down brings up the basic screen

KRONE ISOBUS Terminal

Possible switches (depending on machine equipment)

No.	Sensor symbol	Description
H1		Work lighting
H2		Warning beacon (option)

- Pressing the function key **ESC** closes the called up menu
The display shows menu level 4 "Service".
- Pressing the function key **ESC** and holding it down brings up the basic screen

Possible engines (depending on machine equipment)

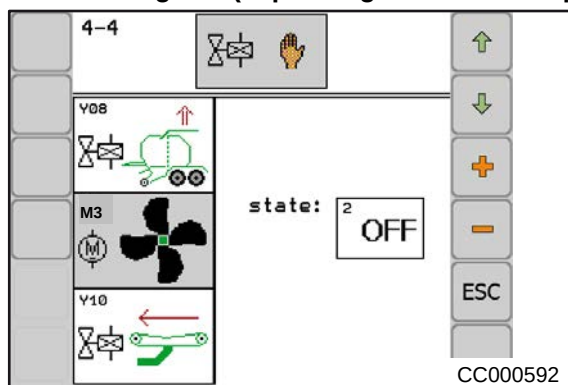


Fig. 126

- Press the  function key engine anti-clockwise movement, inching operation only.
- Press the  function key engine clockwise movement, inching operation only.

No.	Sensor symbol	Description
M3		Oil cooler fan

State:

① ON Actuator on

② OFF Actuator off

③  General actuator error

④  No power supply; fuse is probably defective

- Pressing the function key **ESC** closes the called up menu
The display shows menu level 4 "Service".
- Pressing the function key **ESC** and holding it down brings up the basic screen

9.8

Main menu 5 "Information"

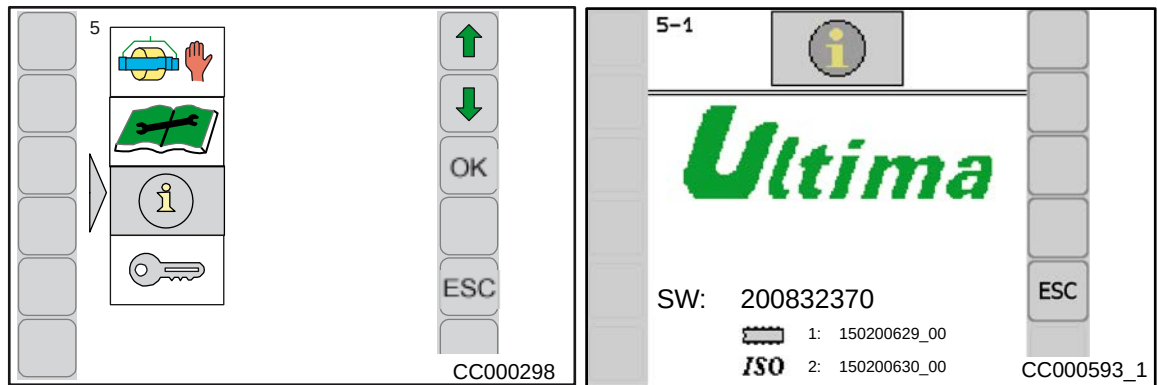


Fig. 127

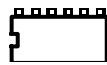
Calling the main menu

- Press the  function key to open the menu level from the home screen.
- Press the  or  function key to select the main menu 5 (); the symbol is displayed with a grey background.
- Press the **OK** function key.

The display shows menu 5 "Information".

Complete software version of the machine

SW = Complete software version of the machine



= Software of the job computer

ISO = ISO software version of the job computer

- Pressing the function key **ESC** closes the called up menu
The display shows menu level 5 "Info".
- Pressing the function key **ESC** and holding it down brings up the basic screen

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9.9 Main Menu 6 Technician

Calling the Main Menu

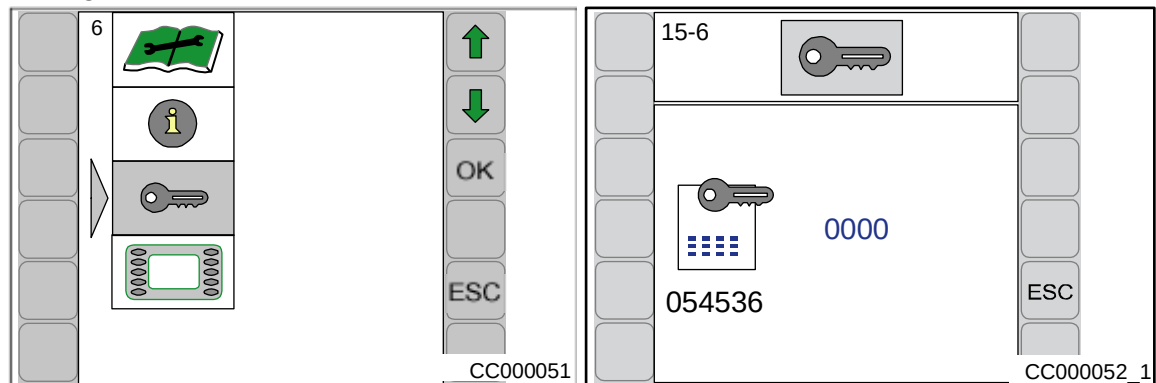


Fig. 128

- By pressing function key  in the basic screen you get into the menu level
- Select main menu 6  by pressing function key  or . The symbol is highlighted in grey.
- Press function key **OK**

Main menu 6 "Technician" is password-protected.
The display shows the password query.

9.10 Main Menu 7 ISOBUS

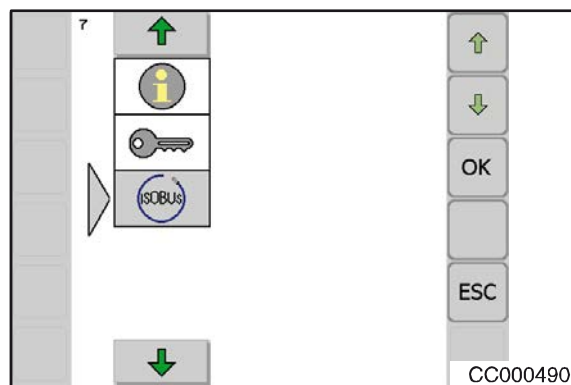


Fig. 129

Calling the Main Menu

- By pressing the function key  from the basic screen you get into the menu level of the machine
 - Select main menu 7 () by pressing function key  or , the symbol is highlighted in colours
 - Press function key **OK**
- The display shows menu level 7 "ISOBUS".

9.10.1 Menu 7-1 Virtual Terminal (VT)

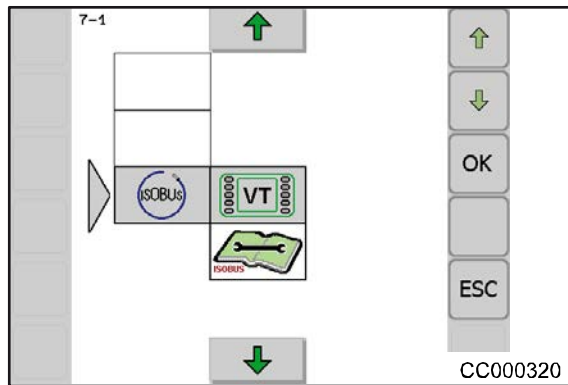


Fig. 130

Calling the Main Menu

Main menu 7 "ISOBUS" is called.

- Select menu 7-1 () by pressing function key  or , the symbol is highlighted in colours
- Press function key **OK**

The display shows menu level 7-1 "Virtual Terminal (VT)".

The menu "Virtual Terminal (VT)" is divided into the following menus:



= Menu 1-7-1 "Switching day-night lighting"



= Menu 1-7-4 „Switching to a further terminal“

- Pressing the function key **ESC** closes the called up menu
- Pressing the function key **ESC** and holding it down brings up the basic screen

KRONE ISOBUS Terminal

9.10.2 Menu 7-1-1 Select day/night display lighting

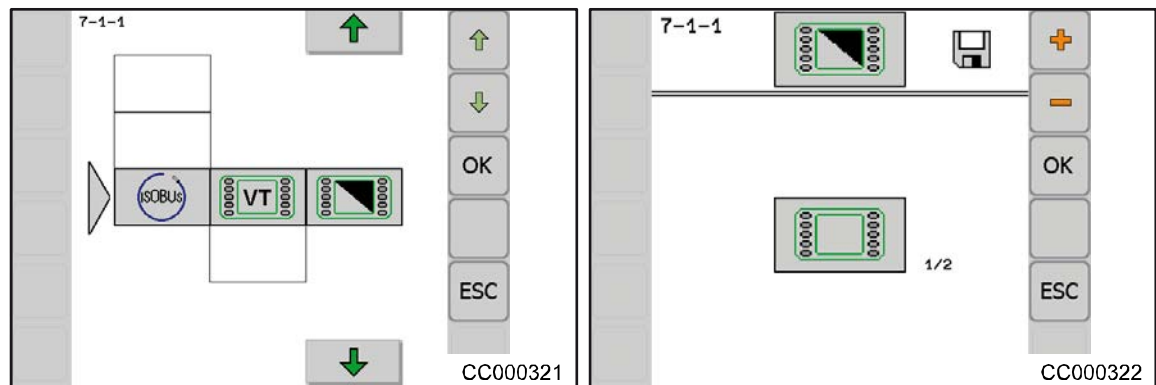


Fig. 131

The "Select day/night display lighting" menu can be used to adjust the brightness of the display. Menu 7-1 "Virtual terminal (VT)" is opened.

- Press the  or  function button to select menu 7-1-1 ; the icon is highlighted in colour
- Press the **OK** function button

The display shows the screen  1/2 "Day lighting" in menu 7-1-1 "Select day/night display lighting".

- Press the  ^{1/2} button to switch to the  ^{2/2} screen

The display shows the screen  2/2 "Night lighting" in menu 7-1-1 "Select day/night display lighting".



9.10.3 Menu 7-1-4 Switch to different terminal



Note

- Menu 7-1-4 only appears if several ISOBUS terminals are connected.
- Menu 7-1-4 can be used to switch to the next connected terminal (depending on how many terminals are connected).
- The first time you switch, the configuration of the machine is loaded to the next terminal. Loading may take a few minutes. The configuration is saved in the memory of the next terminal.



Note

The next time a call is made, the machine is no longer available in the previous terminal.



Note

When restarting, the system first attempts to start the last terminal used. If the last terminal used is no longer available, the restart is delayed as the system looks for a new terminal and loads the specific menus to that terminal. Loading may take a few minutes.

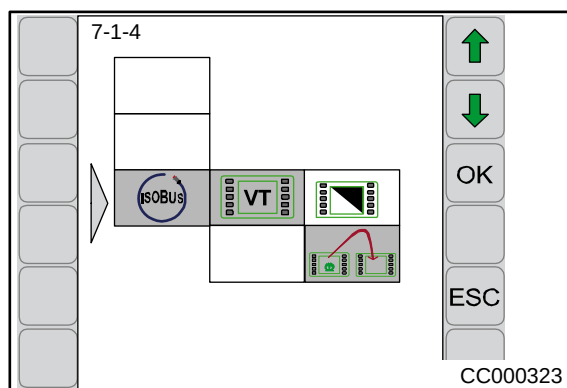


Fig. 132

Opening the menu

Main menu 7-1 "Virtual terminal (VT)" is opened.

- Press the or function button to select menu 7-1-4 (); the icon is highlighted in colour.
- Press the **OK** function button

The displays shows menu level 7-1-4 "Switch to different terminal".

Press the function key **OK** or () on the touch screen to switch to a different connected terminal.

- Pressing the **ESC** function button closes the open menu.
- Pressing and holding the **ESC** function button opens the home screen.

KRONE ISOBUS Terminal

9.11 Menu 7-4 ISOBUS Diagnostics

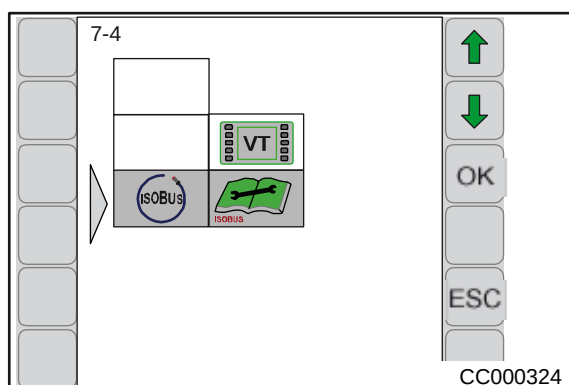


Fig. 133

Calling the Menu

Main menu 7 "ISOBUS" is called.

- Select menu 7-4  by pressing function key  or , the symbol is shown in reverse colours
 - Press function key **OK**
- The display shows menu 7-4 "ISOBUS diagnostics".

9.11.1 Menu 7-4-2 Diagnostics auxiliary (AUX)

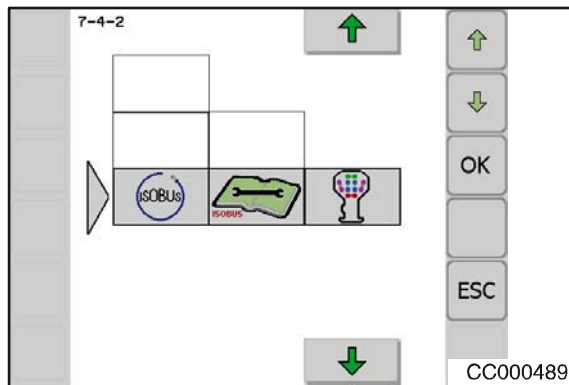


Fig. 134

Calling the Menu

Menu 7-4 "ISOBUS diagnostics" is called.

The menu 7-4-2 "Diagnostics Auxiliary Function" shows you with which key on the joystick the auxiliary function is carried out.

- Select menu 7-4-2  by pressing function key  or , the symbol is highlighted in colours
- Press function key **OK**

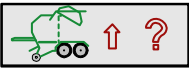
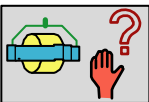
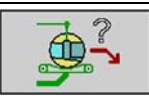
The display shows menu 7-4-2 "Diagnostics Auxiliary Functions".

When activating a function on the joystick, only the assigned symbol will appear in the display. The function itself is not performed.

- Pressing the function key **ESC** closes the called up menu
- Pressing the function key **ESC** and holding it down brings up the basic screen

KRONE ISOBUS Terminal

9.12 Messages

No.	Figure	Description
M01		Should the transfer really be started even though the tying system has not been actuated?
M02		- Should manual operation really be selected even though automatic functions (transfer, wrapping, putting down) are running? - Automatic functions will stop as soon as manual operation is selected
M03		Should the bale really be wrapped again? Caution! The film must be cut off before the second wrapping!
M04		Should the bale really be put down even though it has not been completely wrapped?

9.12.1 Prompt message bale chamber

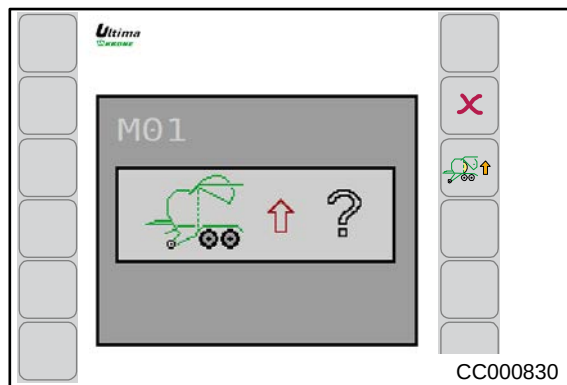
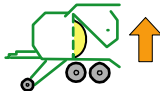


Fig. 135

The prompt message "M1" is displayed when the  function key is pressed, even though the tying process has not yet started or concluded.

- Pressing the  function key clears the prompt message. The transfer is not started.

- Press the  function key to start the transfer.



Note

If the bale chamber is opened, even though the bale has not been tied, this may cause the sequence to stop. Clean the transfer area before continuing work.

9.12.2 Prompt message "Starting manual operation"

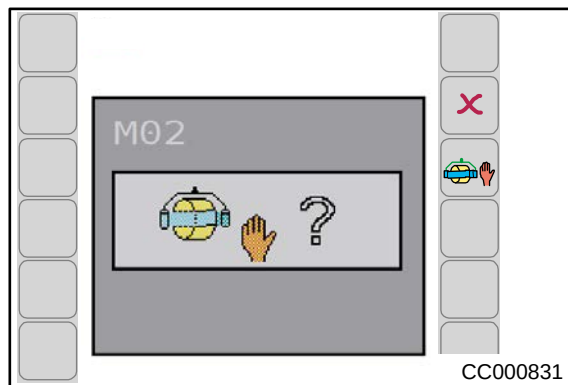


Fig. 136

The prompt message "M2" is displayed when the   function key is pressed while functions are run in automatic mode.

- Pressing the  function key clears the prompt message. Manual operation is not started.
 - Press the   function key to start manual operation.
- All automatic functions are cancelled. Any wraps of the wrapping arms are deleted.



ATTENTION!

Damage to machine parts due to non-adjusted settings of assemblies.
Before leaving manual operation, bring the machine to a defined state:

- Blade base closed
- Conveyor belts at top
- Starter roller at top
- Bale chamber closed
- Wrapping table in wrapping position
- Wrapping arm in zero position
- Holding arms closed

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9.12.3 Prompt message Repeat wrapping

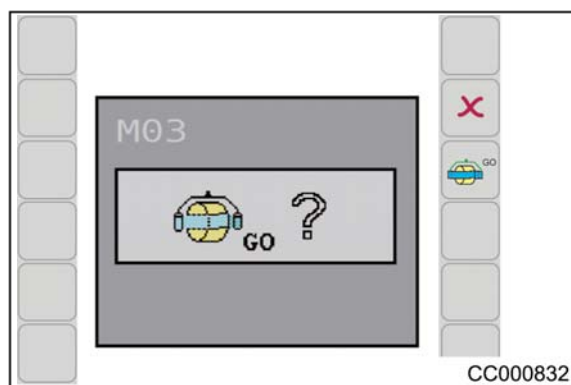


Fig. 137

Prompt message "M3" appears if the function key  is pressed again after wrapping to start a second wrapping process.

- Pressing the  function key clears the prompt message. The wrapping process is not stored.
- Press the function key  to start the second wrapping process. The bale is wrapped again.



Caution!

The film must be cut off before the second wrapping!

9.12.4 Prompt message Setting bale down

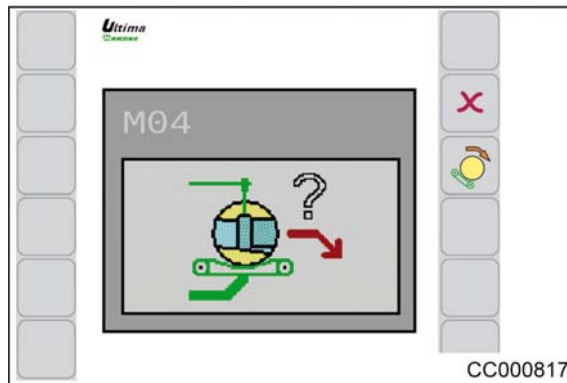


Fig. 138

The prompt message "M4" is displayed when the  function key is pressed, even though the bale has not yet been completely wrapped in film.

- Pressing the  function key clears the prompt message. The bale is not set down.

- By pressing the  function key, the incompletely wrapped bale is set down.

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9.12.5 Acoustic warnings

Interval	Description
	Interval with five short sounds of a horn The tying process is triggered.
	Interval with three longer sounds of a horn Despite display in the terminal, the direction of travel was not corrected (also refer to chapter KRONE ISOBUS terminal "General Displays").
	Continuous sound of a horn If the machine has a fault and an alarm message is displayed in the display at the same time (also refer to chapter KRONE ISOBUS terminal "Alarm Messages").

9.12.6 Alarm messages

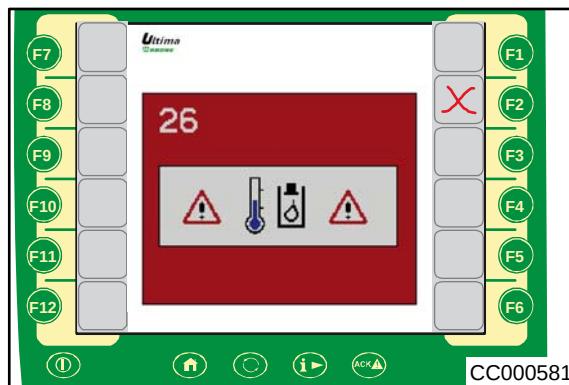


Fig. 139

Alarm message

If a fault occurs on the machine, an alarm message appears in the display and an acoustic signal sounds at the same time (continuous horn). Descriptions of the faults, their possible causes and how to resolve them are described in the "Alarm messages" chapter.



Note

All functions in the menu that is covered over are still active. The softkeys that are covered by the alarm message are disabled.

To reset the alarm:

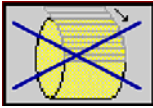
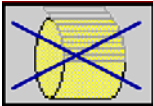
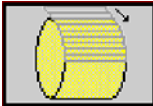
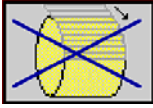
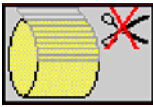
- Briefly press the  function key; the alarm is reset and the acoustic signal is stopped. If the fault occurs again, the alarm message will appear again.

To delete an alarm:

- Hold down the  key for the  softkey for 5 seconds; the acoustic signal stops immediately and the alarm is deleted.

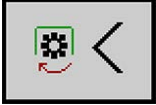
If the fault occurs again, no alarm message will appear. The alarm message does not appear when the fault occurs until after the control unit is turned off and back on.

9.12.7 Notes and alarm messages

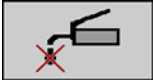
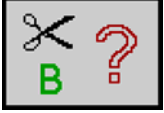
No.	Image	Possible cause	Remedy
5		In case of net – Net is not transported during the starting process. – The net roll is not inserted correctly into the reception device and / or the roll brake device is not set correctly. – Net is not inserted correctly into the wrapping device. – The net brake does not release correctly.	– Just use net rolls with prescribed dimensions. – Insert net roll according to operating instructions, set roll brake. – Pull the net out of wrapping device and insert it according to operating instructions. – Adjust the net brake according to operating instructions. – Check setting of sensor “Tying process is active”. – Check the axial play of the net brake. – Check/set sensor setting “Feed position”.
6		In case of net – Net tears off after starting process or during tying. – The blade cassette is fallen into the net. – Blade cassette is not engaged. – The setting of the roll brake is too strong. – Blade cassette is too low.	– Clear out dirt and residue on the blade cassette. – Check roll brake setting. – Check blade cassette setting. – Check whether the blade cassette engages / is tensioned when feeding.
7		In case of net – Net is tied during baling. – Net is too far in the channel.	– Increase the tension on the spring for net brake. – Check net overhang. – Check/set sensor setting “Tying start position” – Set the throttles to smaller flow capacity to extend the net rocker arm.
8		– Net is drawn in earlier even though the net rocker arm is not yet in the feed position.	– Increase the tension on the spring for net brake. – Check net overhang.
9		In case of net – Net is not cut off neatly. – Dull blade cassette – The blade cassette is not tensioned.	– Clear out dirt and residue on the blade cassette. – Replace blade cassette. – Set the cable to tighten the blade cassette. – Set the position of the rocker arm.

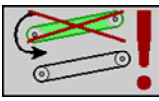
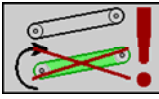
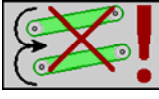
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No.	Image	Possible cause	Remedy
10		– The bale chamber has opened. – The bale chamber has been opened without tying.	– Check the lock hook of the bale chamber. – Check the setting of sensors “Bale chamber open left” and “Bale chamber open right”. Note: – The bale can be tied manually in menu 3 “Manual Operation”.  The machine cannot be damaged in this process.
11		– The safety equipment on the wrapping arm was triggered.	– Check the area of the wrapping arm for faults. – Check the position of the quick-stop switch. – Check the position of the safety bracket on both wrapping arms.
12		– Film used up. – Film torn.	– Insert new film. – Lubricate gearwheels of stretch rolls. – Set additional brake on stretch roll. – Tighten screws of the magnetic discs on stretch roll. – Reduce the acceleration of the wrapping arm. – Smooth the stretch rolls using abrasive cloths. – Change setting in menu 1-4-6.
13		– Wrapping arm is not in the zero position.	– Move the wrapping arm in manual operation to zero position. – Increase the braking time of the wrapping arm.
14		– Blade cassette is not closed. – Blade cassette is not closed and machine moves. – Check soiling of blade cassette.	– Close blade cassette via manual operation. – Close blade cassette before the machine is moved. – Check the setting of “Blade cassette monitoring” sensor. – Clean blade cassette.

No.	Image	Possible cause	Remedy
15		While the automatic functions (transfer, wrapping, setting down) were being performed, the universal shaft was switched off.	- The universal shaft must not be switched off until all automatic functions are completed. Restarting work, move machine to a defined state: - Close blade cassette - Move conveyor belts up - Move starter roller up - Close bale chamber - Move wrapping table to zero position - Move wrapping arm to zero position Close holding arms
16		- Floor conveyor / belt is slipping. - Very heavy or wet grass (e.g. clover grass).	- Use fewer blades. - Switch off / remove blades. - Reduce baling pressure. - Check the setting of "Net length" and "Slip" sensors.
18		One-sided film tear.	- Insert torn film again. - Insert new film roll. - Change the setting in menu 1-3-6.
19		- The bale on the wrapping table is not detected. - The time to transfer the bale is exceeded.	- Check / adjust signal wires on wrapping table. - Transfer bale to the wrapping table via manual operation. - Check the setting of "Bale on table left" and "Bale on table right" sensor. - Check alignment of ultrasonic sensor.
21		- Setpoint position of the wrapping table was not reached. - Operating time exceeded.	- Check the movement area of the wrapping table. - Check the setting of "Wrapping table position" sensor.
22		- Net length sensor set incorrectly - The bale chamber rotates but the sensor does not get any signals.	- Check the setting of "Net length" sensor. - Check whether the net roller turns freely.
24		Extremely uneven filling of bale chamber.	- Fill bale chamber more evenly. - Slow down at the end of the bale.
25			Check the setting of "Filling left" and "Filling right" sensors.

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No.	Image	Possible cause	Remedy
26		Maximum oil temperature (80°C) exceeded.	- Clean cooler. - Check the functionality of the fan. - Check the oil level. - Allow the oil to cool down.
27		- Pick-up does not rotate. - Pick-up coupling triggered.	- Raise pick-up. - Reduce universal shaft speed. - Switch off universal shaft. - Setting "Pick-up" sensor. Check speed.
28		- The central lubrication is not supplied with grease or is blocked. - The pump is defective.	- Add grease. - Clean the central lubrication. - Check the electrical system of the pump.
29		- Target position of conveyor belt was not reached. - Operating time exceeded.	- Check the range of movement of the conveyor belt. - Check the setting of sensors "Conveyor belt top" and "Conveyor belt bottom".
30		- Target position of starter roller was not reached. - Operating time exceeded.	- Check range of movement of starter roller. - Check the setting of sensors "Starter roller top" and "Starter roller bottom".
31		The PTO speed is too high.	- Reduce PTO speed, maximum 540 rpm. - Check PTO gearbox preselection on the tractor.
32		The position blade cassette top was not reached.	- Check range of movement of blade cassette. - Check setting of sensor "Blade cassette top".
33		Blade cassette position bottom was not reached.	- Check range of movement of blade cassette. - Check setting of sensor "Blade cassette bottom".
34		- Incorrect setting of sensors blade control system A. - Sensors "Blade A ON" and "Blade A OFF" same signal.	- Remove dirt in blade cassette. - Check mobility of blade control shaft. - Check setting of sensors blade control system A.
35		- Sensors blade control system B incorrectly set - Sensors "Blade B ON" and "Blade B OFF" same signal	- Remove dirt in blade cassette. - Check mobility of blade control shaft. - Check setting of sensors blade control system B.

No.	Image	Possible cause	Remedy
36		– Slip or standstill of upper conveyor belt – Blockage in pre-compression chamber – Conveyor belt tension too low	– Empty pre-compression chamber (refer to chapter “Removing Blockages in the Pre-compression Chamber”) – Adapt setting of pre-compression chamber (menu 1-2) to crop. – Retighten conveyor belts. – Check setting of sensor “Conveyor belt slip top”. – Check counter-clockwise rotation/clockwise rotation of conveyor belts and set, if necessary (refer to chapter Settings “Setting the Conveyor Belts”).
37		– Slip or standstill of bottom conveyor belt. – Blockage in the pre-compression chamber. – Conveyor belt tension too low.	– Empty pre-compression chamber (refer to chapter “Removing Blockages in the Pre-compression chamber”). – Adapt setting of pre-compression chamber (menu 1-2) to crop. – Retighten conveyor belts. – Setting sensor “Conveyor belt slip bottom”. – Check counter-clockwise rotation/clockwise rotation of conveyor belts and set, if necessary (refer to chapter Settings “Setting the Conveyor Belts”).
38		– Standstill of conveyor belt drive. – Blockage in the pre-compression chamber. – The conveyor belts run sluggishly.	– Empty pre-compression chamber (refer to chapter “Removing Blockages in the Pre-compression chamber”). – Remove dirt in the inside of conveyor belts. – Check setting of sensor “Conveyor belt speed”. – Check counter-clockwise rotation/clockwise rotation of conveyor belts and set, if necessary (refer to chapter Settings “Setting the Conveyor Belts”).
40		– Hydraulic filter of conveyor belt hydraulics is blocked. – The operating temperature of hydraulic oil is not yet reached. – Hydraulic filter of work hydraulics is blocked.	– Change filter elements.

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9.12.7.1 Alarm Message Timeout Transfer

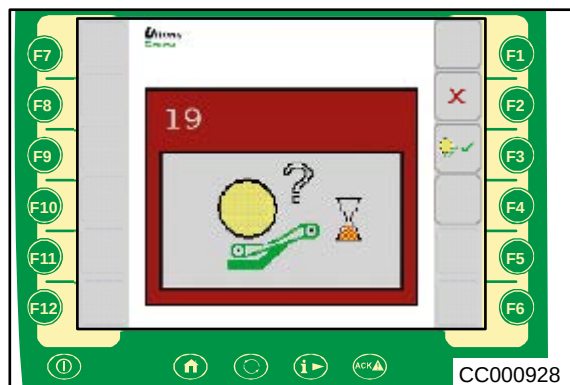
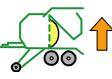


Fig. 140

Alarm message "19" appears when the transfer of the pressed bales cannot be completed within a prescribed time.

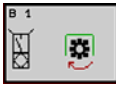
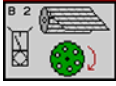
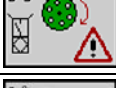
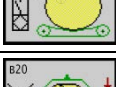
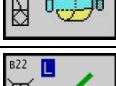
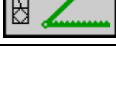
If the bale is not detected by the installed ultrasonic sensor, it is possible to confirm the status "Bale on wrapping table" manually.

- By pressing function key , the alarm message disappears and the basic screen appears. The status "Bale on wrapping table" is not confirmed.

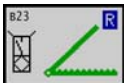
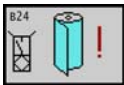
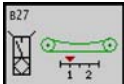
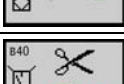
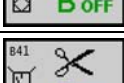
The alarm message can be called again by pressing  function key from the basic screen in case it has been acknowledged unintentionally.

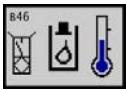
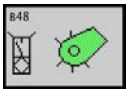
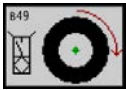
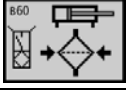
- Press function key  to confirm the status "Bale on wrapping table" manually. The alarm message disappears and the basic screen appears.
- Press  function key to start the wrapping process.

9.12.8 Physical messages

No.	Icon	Sensor	Possible cause	Remedy
101		Speed bale chamber	– Sensor or supply line defective.	– Perform sensor test. – Check sensor and supply line for damage.
102		Tying process active		
103		Position tying process		
104		PTO shaft speed		
105		Slip of floor conveyor		
108		Check blade cassette top		
109		Filling display left		
110		Filling display right		
111		Locking bale chamber left		
112		Locking bale chamber right		
115		Bale ejector		
116		Bale detection wrapping table left		
117		Bale detection wrapping table right		
120		Zero position wrapping arm		
121		Position wrapping arm		
122		Holding arm left open		

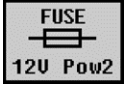
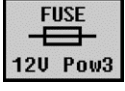
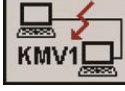
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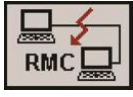
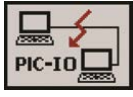
No.	Icon	Sensor	Possible cause	Remedy
123		Holding arm right open	– Sensor or supply line defective.	– Perform sensor test. – Check sensor and supply line for damage.
124		Film tear monitoring		
125		Speed wrapping arm		
127		Position wrapping table		
132		Speed pre-compression chamber		
133		Conveyor belt top		
134		Conveyor belt bottom		
135		Holding arm left closed		
136		Holding arm right closed		
137		Starter roller bottom		
138		Starter roller top		
140		Blade control shaft B inactive		
141		Blade control shaft B active		
142		Blade control shaft A inactive		
143		Blade control shaft A active		
145		Speed cutting system		

No.	Icon	Sensor	Possible cause	Remedy
146		Oil temperature	– Sensor or supply line defective.	– Perform sensor test. – Check sensor and supply line for damage.
147		Blade cassette bottom		
148		Pick-up top		
149		Driving speed		
150		Bale detection wrapping table		
151		Baling pressure bale chamber left		
152		Baling pressure bale chamber right		
153		Central lubrication active		
154		Filter element conveyor belt		
155		Speed pick-up		
156		Slip conveyor belt top		
157		Slip conveyor belt bottom		
160		Filter element		

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9.12.9 General Messages

No.	Image	Possible cause	Remedy
A01		– Fuse in job computer is defective – Short circuit on electrical outputs +12V2FU_L	– Check the connection for short circuit and replace the fuse
A02		– Fuse in job computer is defective – Short circuit on electrical outputs +12V3FU_L	– Check the connection for short circuit – The fuse resets itself after cooling down
A03		CAN ERROR – CAN connection between operation and machine was interrupted – Loose contact in the connection to operation	– Check CAN connection to operation
A04		EEPROM error – Job computer defective	– Replace job computer
A05		CAN ERROR – CAN connection between job computer and KRONE-IO job computer (integrated in the job computer) interrupted – CAN wiring defective – KRONE-IO computer inactive	– Check CAN wiring to KRONE-IO – Check wiring to KRONE-IO – Replace KRONE-IO
A11		CAN ERROR – The connection KRONE force measurement amplifier (KMV) to the job computer is interrupted (weight measurement) – CAN wiring defective – KRONE force measurement amplifier inactive	– Check wiring to KRONE force measurement amplifier – Replace KRONE force measurement amplifier
A14		Undervoltage – Tractor battery is defective – The alternator of the tractor is too low – 12V power supply is too low on tractor side or it is not connected correctly to the tractor battery	– Connect KRONE connection cable directly to the battery of the tractor – Check battery voltage – Check alternator of tractor
A15		Overvoltage – Alternator of tractor is defective	– Check alternator of tractor

No.	Image	Possible cause	Remedy
A16		Access to secured storage position 0 – Defect in job computer	– Restart job computer (interrupt power supply from tractor to machine) – Replace job computer
A17		Access to secured storage positions 0-6 – Defect in job computer	– Restart job computer (interrupt power supply from tractor to machine) – Replace job computer
A18		CAN ERROR – Connection from KRONE moisture measuring computer to job computer interrupted – CAN wiring defective – KRONE moisture measuring computer inactive	– Check wiring to KRONE moisture measuring computer – Replace KRONE moisture measuring computer
A19		CAN ERROR – Connection KRONE PIC-IO (job computer front right on the machine) to job computer is interrupted – CAN wiring defective – KRONE PIC-IO inactive	– Check wiring to KRONE PIC-IO – Replace KRONE PIC-IO

ISOBUS operation

10 ISOBUS operation

General aspects

The ISOBUS system is an internationally standardized communication system for agricultural machines and systems. The designation of the related series of standards is: ISO 11783. The agricultural ISOBUS system makes an information and data exchange between tractor and device of different manufacturers possible. To this end, both, the necessary plug connections and the signals are standardized which are necessary for the communication and command transmission. The system also enables the operation of machines with control units (terminal) which are already existent on the tractor or have been attached in the tractor cabin. The relevant details can be found in the technical documentation of the control unit or on the device itself.

Those KRONE machines which are ISOBUS equipped are adapted to this system.



Note

The KRONE ISOBUS systems pass the ISOBUS COMPATIBILITY TEST (DLG/VDMA) on a regular basis. The operation of this machine requires at least implementation level 3 of the ISOBUS system.



DANGER!

When using terminals and other control units which have not been delivered by KRONE mind that the user:

- has to take the responsibility for the use of KRONE machines when using the machine on control units (terminal / other control elements) which have not been delivered by KRONE
- must check the machine before operation on all machine functions, if they are performed as described in the enclosed operating instructions
- as possible, should only couple those systems to each other which have passed a DLG/VDMA test (so called ISOBUS COMPATIBILITY TEST) before
- has to follow the operating and safety instructions of the supplier of the ISOBUS control unit (e.g. terminal)
- must guarantee that the control elements and machine control systems fit together according to the IL (IL= Implementation Level; describes the compatibility status of the different software versions) (requirement: IL same or higher)

10.1 Mounting ISOBUS Terminal

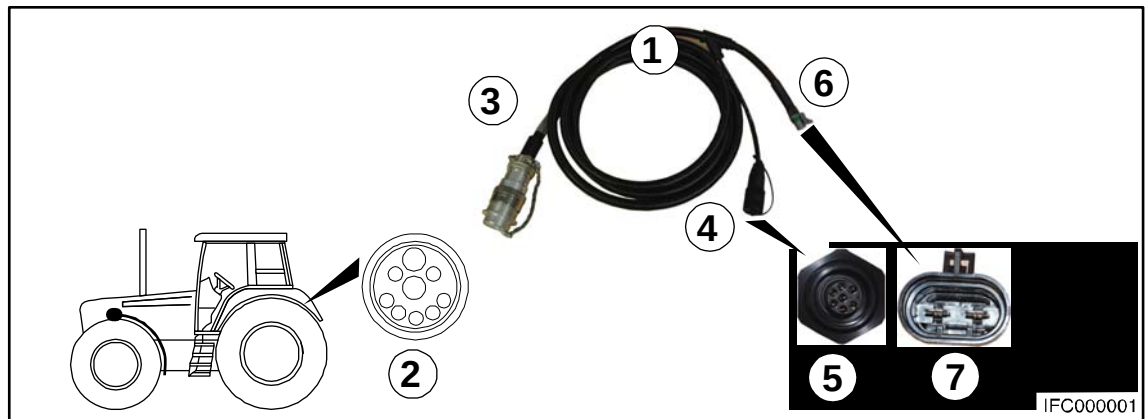


Fig. 141



CAUTION!

Failure of control unit.

When installing, make certain that the connection cables are not tight when cornering and that they do not touch the tractor wheels or any other parts of tractor or machine.

10.1.1 Connection Terminal to Tractor



Note

For further details on the attachment, consult the operating instructions of the ISOBUS terminal manufacturer.

10.1.2 Connection Tractor to Machine

- Connect ISO-plug (3) (9-pole) of cable set (1) with outer ISO-socket (2) (9-pole) on tractor side
- Connect plug (4) (7-pole) of cable set (1) with socket (5) (7-pole) of the machine
- Connect plug (6) (2-pole) of cable set (1) with socket (7) (2-pole) of the machine

ISOBUS operation

10.2 Differing functions to KRONE ISOBUS terminal CCI

Via the accessory unit, the ISOBUS control unit will provide information and control functions to the display of the ISOBUS terminal. Operation with an ISOBUS terminal is analogue to the KRONE ISOBUS terminal CCI. Prior to start-up, refer to the operating instructions for the method of operation of the KRONE ISOBUS terminal CCI.

A fundamental difference to the KRONE ISOBUS terminal CCI is the arrangement of the softkeys, which are determined by the selected ISOBUS terminal. Only the functions that differ from the KRONE ISOBUS terminal CCI are described in the following.



Note

The value for the "bale firmness", which is set via the scroll wheel for the KRONE ISOBUS - terminal CCI, is entered on the ISO terminal via the selection key specified by the ISO terminal (see the operating instructions of the ISO terminal manufacturer).



Note

Menu item 1-4 "Contrast" of the KRONE control cannot be called up on the ISOBUS terminal. A setting is performed directly via the ISOBUS terminal (if applicable) (refer to operating instructions of the ISOBUS terminal manufacturer).

If necessary, acoustic signals must be enabled from the terminal (refer to operating instructions of the ISOBUS terminal manufacturer).

10.3
Automatic working lights

If the tractor control unit (T-ECU) provides data for lighting, the working lights of the machine in "automatic working light mode" can be switched on-and off from the tractor. The working lights can also be operated manually.

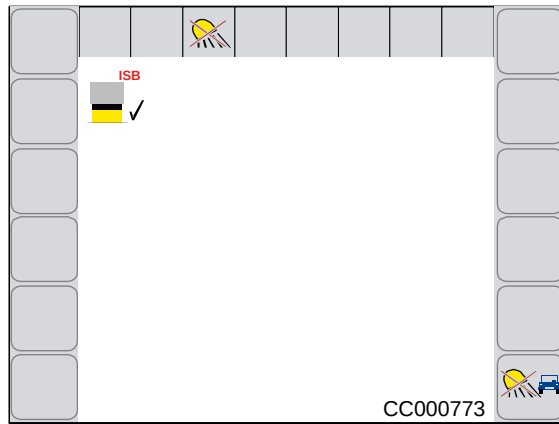


Fig. 142

Status line (I):



Working lights off (in manual mode)



Working lights on (in manual mode)



Working lights off (in automatic working light mode)



Working lights on (in automatic working light mode)

ISOBUS operation

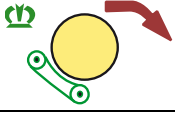
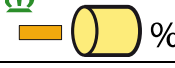
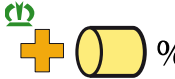
10.4 ISOBUS „Auxiliary“-function (AUX)



Note

There are terminals which support the additional function “auxiliary” (AUX). With this function, programmable keys of the peripheral equipment (e.g. multi-function levers ...) can be assigned with functions of the connected job computers. A programmable key can also be assigned with several different functions. If key assignments are saved, accordant menus will appear on the screen when switching on the terminal.

The following functions are available in the Auxiliary (AUX) menu:

Auxiliary functions (graphic display)	Function
	Put bale down
	Start tying
	Start tying auto/manual
	Raise blades
	Lower blades
	Reduce set filling
	Increase set filling

10.4.1 Example of joystick assignment for Fendt (default setting)



Note

For further guidelines, please refer to the operating instructions of the terminal being used.

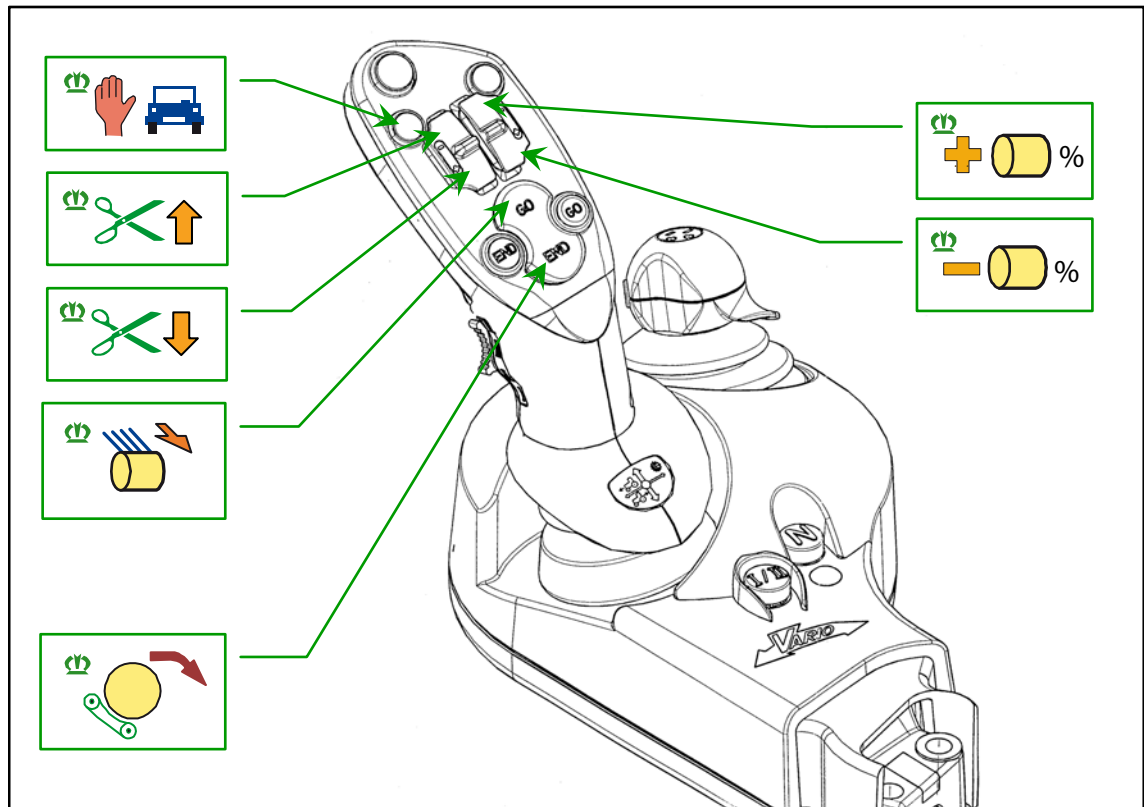


Fig. 143

ISOBUS operation

10.4.2 Recommended settings for a WTK multi-function lever (default setting)



Note

For further guidelines, please refer to the operating instructions of the terminal being used.

Switch (1) on the rear in upper position (LED (2) lights up red).

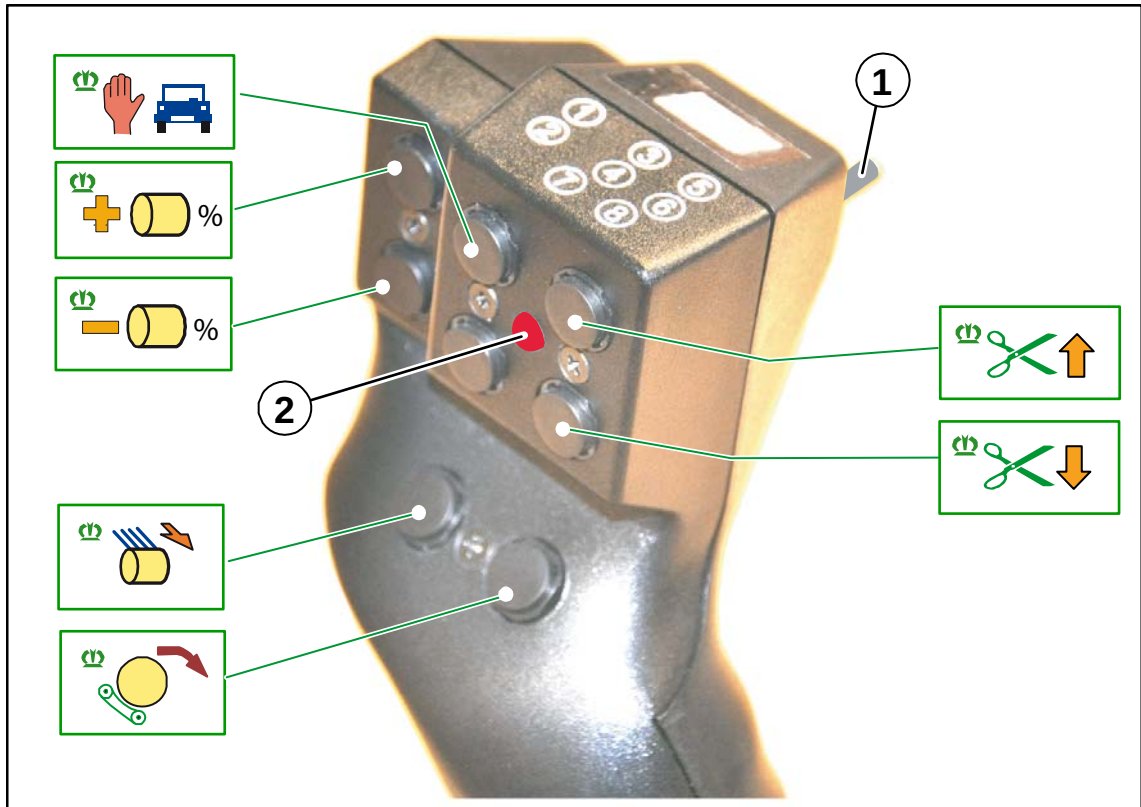


Fig. 144

11 Operation



WARNING!

If the basic safety instructions are not followed, people may be seriously injured or killed.

- To avoid accidents, the basic safety instructions in the chapter Safety must have been read and followed, see chapter Safety "Basic safety instructions".



WARNING!

If the safety routines are not adhered to, people may be seriously injured or killed.

- To avoid accidents, the safety routines in the chapter Safety must be read and followed, see chapter Safety "Safety routines".



WARNING!

Risk of injury from uncontrolled movement of round bales

- On slopes, only put down the round bales in manual mode (switch from automatic mode to manual mode, if necessary).
- On slopes, always lay down round bales in such a way that they cannot move on their own. On account of their weight and their cylindrical shape, they may cause severe accidents if they have once started moving.



WARNING!

Health risk from dust and dirt under certain application conditions!

If people remain in the danger zone of the machine or enter the danger zone during operation, there is an increased risk to the health of these people.

- When working on the machine, wear personal protective equipment to protect against dust and dirt.
- Ensure that there is nobody in the danger zone of the machine (safety distance: 3 m at the side, 5 m behind the machine).

If there are people in the danger zone:

- Stop the machine immediately.
- Switch off the PTO shaft.
- Instruct persons to leave the danger zone.
- Do not restart the machine until there is nobody in the danger zone.

Operation



WARNING!

Risk of injury to people or animals by the machine or machine parts!

If people or animals remain in the danger zone of the machine or enter the danger zone during operation, there is an increased risk to the health of these people.

- Do not start the machine until all safety devices have been fitted and are in sound condition.
- Ensure that there are no people or animals in the danger zone of the machine (safety distance: 3 m at the side, 5 m behind the machine).

If there are people or animals in the danger zone:

- Stop the machine immediately.
- Switch off the PTO shaft.
- Instruct persons to leave the danger zone.
- Do not restart the machine until there are no persons or animals in the danger zone.



WARNING!

Risk of burns on hot surfaces!

Unprotected body parts will be injured if they come into contact with hot magnetic coils on the control valves.

- Wait until the magnetic coils have cooled down.
- Wear suitable protective clothing.



CAUTION!

Risk of burns on hot surfaces!

During the baling process the side walls of the bale chamber may become very hot.

- When working in the area of the bale chamber, particular caution is required.
- Wear suitable protective clothing.

11.1 Adjustments Before Starting Work

Before starting work, make or check the following settings:

- Pick-up working height
- Position of the roller crop guide
- Switch the cutting system on or off
- Cutting length of the cutting system
- Define bale diameter
- Use additional driver guide rails
- Insert net
- Insert film
- Function of the chain lubrication system
- Initialise bale counter

The working steps required are described in chapters "Settings" and "Operation".

11.1.1 Detaching the bale cloth

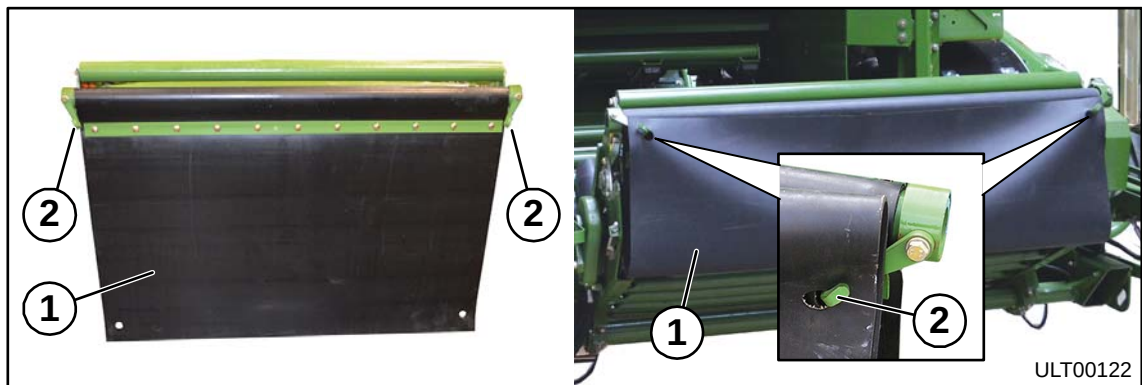


Fig. 145

- Remove the bale cloth (1) from the side hooks (2).

Operation

11.2 Travelling speed



Note

The recommended travelling speed is 5 - 12 km/h and must be adapted to local conditions in actual practice.

The travelling speed during use depends on the following factors:

- Type of crops
- Moisture content of the crops
- Height of swaths
- Ground conditions

The travelling speed affects the density of the bale. At a low travelling speed the crops remain longer in the bale chamber and the bales therefore have a greater density. The density of the bales is reduced proportionally to the increase in the travelling speed.

11.3 Filling the bale chamber

To obtain a consistent bale density inside the round bale, the pre-compression chamber and bale chamber must be filled evenly. The swath width is an important factor here.

The swath width is optimal if the swath has exactly the same width as the bale chamber.

If the swath is wider than this, distortion of the round bales may result. The round bale will be frayed on the sides and difficult to eject from the bale chamber.

If the swath is narrow, the bale chamber can be filled evenly only by driving onto the swath from alternate sides (left/right). Do not zigzag: drive long distances on the left and right side of the swath.

The volume of the pre-compression chamber is adjusted to the empty volume of the bale chamber. If the pre-compression chamber is overfilled, the bale chamber will also be overfilled.

The bale diameter which is reached can be read on the terminal monitor.

If the density of the bale is too high, the net may split. In this case increase the number of net layers or reduce the baling density.

Note from practical experience:

- To ensure that the core of the round bale is uniformly firm, fill pre-compression chamber evenly during net tying and bale transfer (left - right).



Note

Barrel-shaped round bales can cause damage to the floor conveyor. Distorted and thick round bales are detrimental to proper silage production.

11.3.1 Reducing the Pressure on the Side Walls of the Bale Chamber

For very critical forage and extremely hard bales, the bales can be given additional protection against turning as follows:

- In order to reduce the pressure on the side walls there should not be extreme driving to the right/left
- Reduce the number of the outer cutting blades or turn off the cutting system or remove the cutters

11.3.1.1 Assembly of Additional Tappet Strips on the Starter Roller

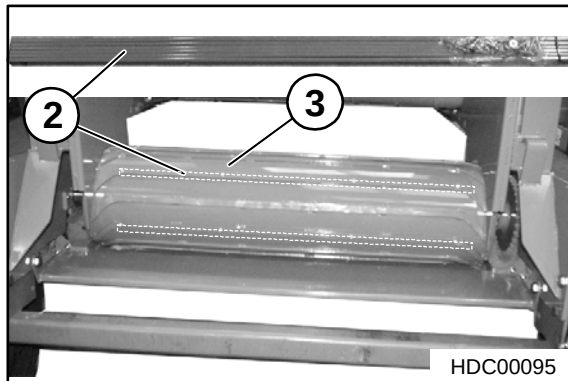


Fig. 146

To increase the rotational safety of the bale, mounting additional strips (2) on the starter roller is recommended.

Mount strips (2) on the starter roller inside the bale chamber:

- Open tailgate.
- Mount the six strips (2) on the starter roller and tighten by using countersunk screws (3).



Note

After having assembled additional driver guide rails, the distance between lower conveyor belt in its top position and starter roller must be set to 3-5 mm (refer to chapter Settings "Setting the Distance from Lower Conveyor Belt to Starter Roller").

The driver guide rails can be ordered from KRONE spare part storage by stating spare part number 200 667 630.

- Close the tailgate.

Operation

11.3.1.2 Assembly of Additional Slide Sheets in the Bale Chamber

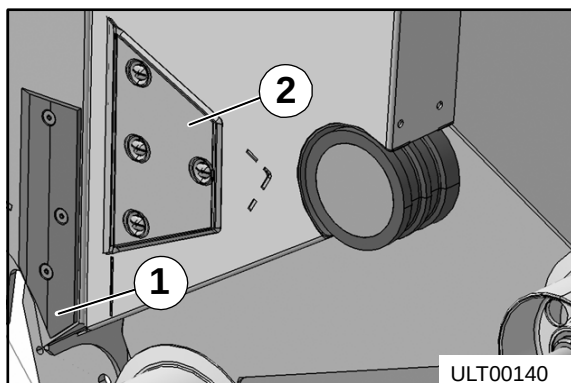


Fig. 147 View in case of closed bale chamber

If the finished bales do not fall out of the rear bale chamber, two slide sheets (1) can be mounted right and left in the front housing.

- Mount slide sheets (1) with enclosed screws on the insides of the bale chamber in the existing bore holes.
- In case the finished bales do still not fall out of the rear bale chamber after the slide sheets (1) have been mounted, remove contact sheets (2) right and left from the machine housing.

The kit “Slide sheets with screws” can be ordered in KRONE spare part storage under spare parts number 200 622 800.

11.4 Tying and depositing bales

- Start the baling and wrapping process (see chap. KRONE ISOBUS terminal CCI)
- Do not move too quickly over the swath.
- During the storage phase reduce the travelling speed if a great deal of net is used for large bale diameters.



ATTENTION!

Damage to the film when setting down the ready bales.

- While setting down a bale, do not travel faster than 10 km/h to avoid damaging the film due to the condition of the ground.
- Reduce the travelling speed on a stony subsoil.

- Check the ready bales for damage and, if required, re-wrap with film.



Note

If sheet is wrapped around the bale a second time, the sheet must first be cut off manually.

11.5 Overload protection

11.5.1 Drive Chain for Pick-up with Cam-type Clutch

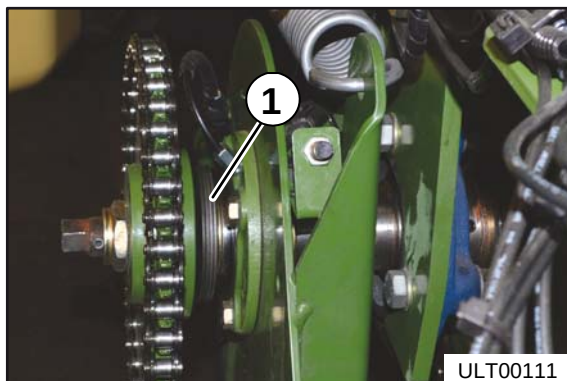


Fig. 148



ATTENTION!

Damage to the machine and loss of warranty

- Do not make any unauthorised changes to the cam-type clutch.

The drive has been fitted with a cam-type clutch (1) as a protection against overload. This clutch has been set at the factory and must not be adjusted without consultation with KRONE customer service.

Operation

11.6 Pick-up

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".



Note

Lift the Pick-up for driving in the headland or when driving backward!

11.7 Cutting system

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".

11.7.1 General aspects

The machine has a cutting system with a cutting rotor and fixed blades. Cutting helps to improve further processing of the round bales and to increase baling density. If there are blockages, the blades can be hydraulically swivelled out of the feed channel chamber from the tractor. The single blade locking device prevents the cutters from being damaged by foreign objects.

The cutting system can be switched off hydraulically.

11.7.2 Blade changing

Pre-condition:

- The cutting system (1) is located in the top position.
- The blades are closed.
- The pick-up is fully raised.

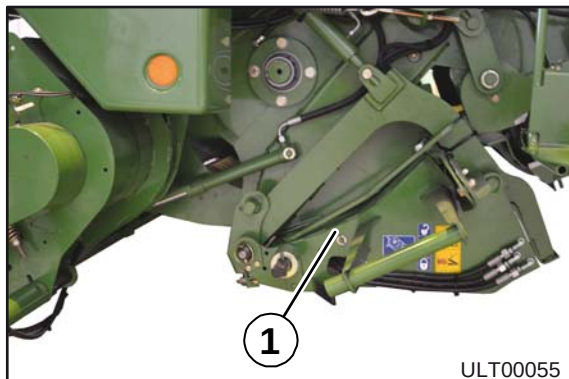


Fig. 149

- Activate the cutting system (1) via the terminal.



CAUTION! - Damage to the Machine!

- Before lowering the cutter base, always raise the Pick-up

Lowering the cutting system

Prerequisites:

- The PTO shaft on the tractor is switched on.
- The ladders are folded up and secured (see chap. "Special safety instructions").

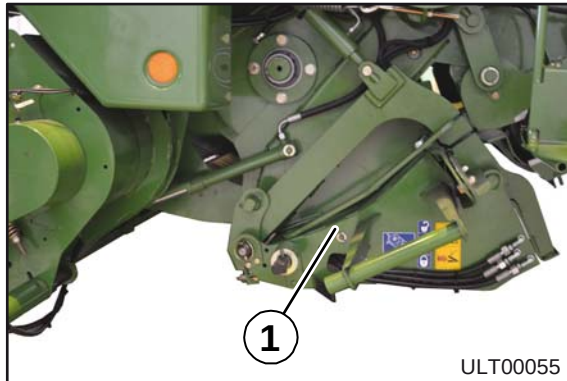


Fig. 150

- On the control unit display hold down the "Lower blade bar" softkey until the cutting system (1) has been completely lowered (see chap. "KRONE ISOBUS terminal CCI 100").
- Switch off the PTO shaft on the tractor.
- Remove the ignition key and switch off the electrical system on the control unit.
- Secure the tractor and machine against rolling away.
- Check whether all blades are in the zero position. If this is not the case, lightly tap the back of the blades with a tool (e.g. a hammer) to move the blades to the zero position.

Releasing the blades

- Apply the lever (3) and raise the transition plate.

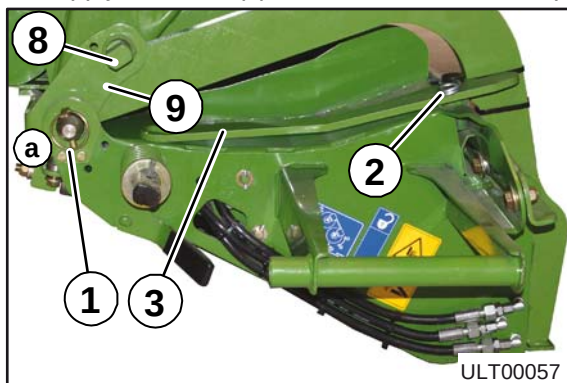


Fig. 151

- Pull the cotter pin (1) out of position (a).
- Remove the split pin (2) and place the lever (3) on the shaft (8).
- Raise the transition plate (9) and insert the split pin (1) into position (b).

Operation

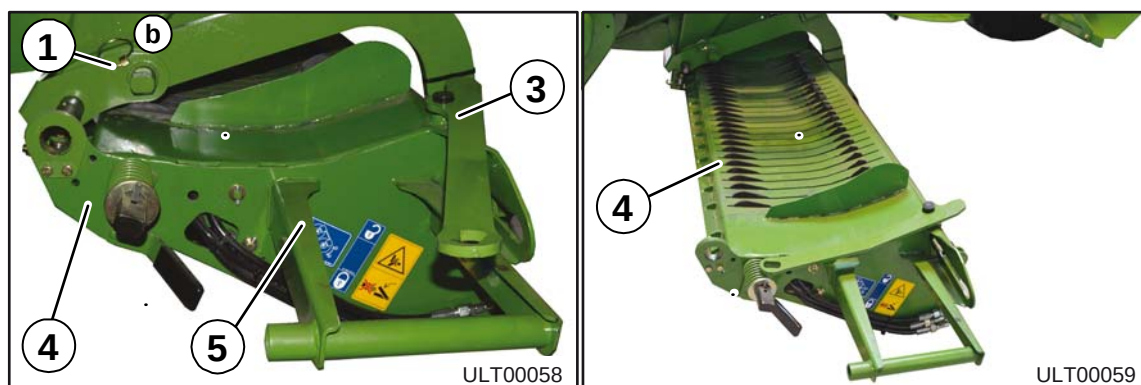


Fig. 152

- Put the lever (3) in the parking position and swivel it forwards.
- Pull the blades (4) slightly forwards using the lever (3) and the handle (5).
- Swivel back the lever (3) and pull the blades all the way out (4) using the handle (5).

Unlocking the blade shaft

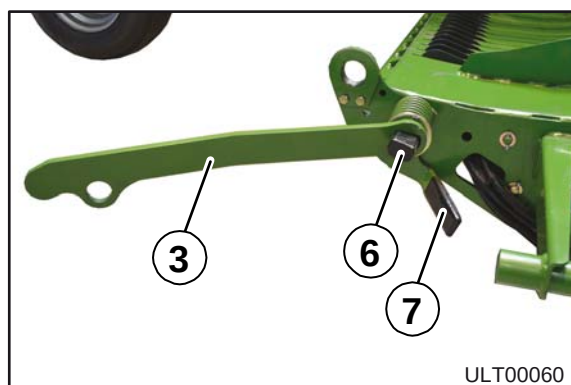


Fig. 153

- Place the lever (3) on the blade shaft (6) and press downwards. Simultaneously press lever (7) upwards to release the blade shaft.
- Remove the lever (3).

Changing the blade**CAUTION! - Blades fold back!**

The blades are pre-tensioned via spring force. Risk of injury!

Never press the blades into working position manually.

- Use a tool, for example a hammer.
- Always wear protective gloves.

**Caution! - Risk of injury**

Risk of injury on the blade in the blade bar!

- Always wear protective gloves.

Replacement blades can be ordered from the Krone spare parts warehouse quoting spare part number 20 064 301 0.

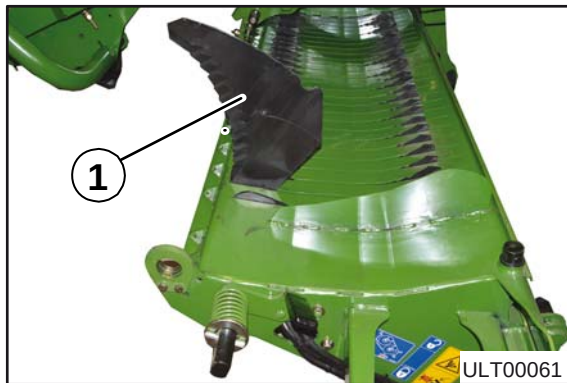


Fig. 154

- Remove the blades (1) individually.

**Note**

When inserting the blades (1), ensure that they are situated correctly on the blade shaft and in the centre of the slot.

- Install a new or ground blade (1).

**Note**

Check whether all blades (1) are aligned and correctly engaged before the blade base is started.

Operation

Locking the blade shaft

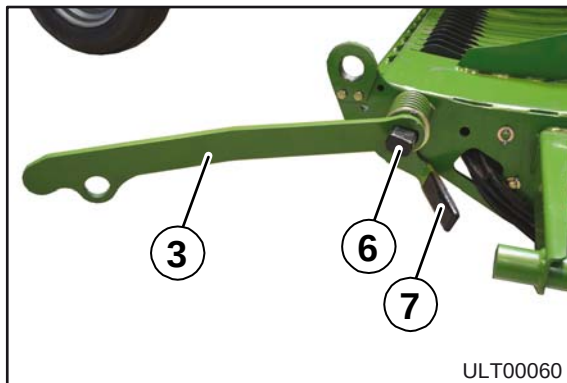


Fig. 155

- Place the lever (3) on the blade shaft (6) and press upwards. Simultaneously press lever (7) downwards to lock the blade shaft.
- Remove the lever (3).

Locking the blades

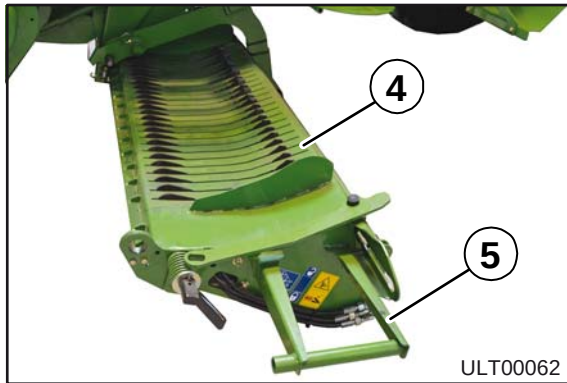


Fig. 156

- Push in the blades (4) using the handle (5).

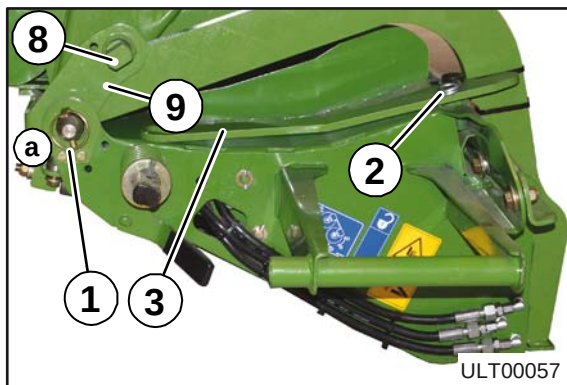


Fig. 157

- Secure the shaft with the cotter pin (1).
- Put on the lever (3) and secure with split pin (2).
- Move the blades upwards via the on-board hydraulic system.
- Check on the terminal display whether the blades are closed (see status messages "Main menu 3 Manual operation").
- If open blades are displayed, check whether all blades are swivelled up. If they have not, lightly tap any cutters that have not already swivelled up with a tool (for example a hammer) striking the back of the cutters to move them back to working position.



Note

If the cutting system is not connected for long periods, the cutting blades can be replaced with blind blades to prevent soiling of the slots on the blade base and wear to the blades.

The blind blades can be ordered from the KRONE spare parts department under part number 20 263 996 0.

Operation

11.8 Eliminating Blockages



ATTENTION! - Sharp components

Effect: risk of serious injury

When eliminating blockages, always wear safety gloves.

If blockage is caused by baling material or foreign bodies:

- To enlarge the passage to the cutting rotor, raise the pick-up.
- Eliminate the blockage.

If the blockage cannot be eliminated:

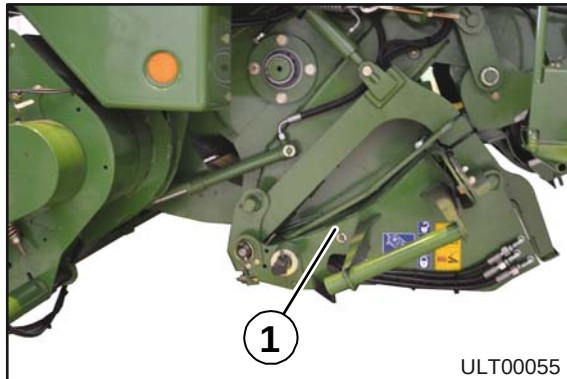


Fig. 158

- Set the hydraulic system of the blade base (1) on the tractor to "Lower".
- On the control unit display hold down the "Lower blade bar" softkey until the cutting system (1) has been completely lowered (see chap. "KRONE ISOBUS terminal CCI 100").
- Allow the machine to run.

An automatic function is also available for field operation (see menu 1-1 Feed drive setting "Automatic overload feed drive").

11.9 Setting the Bale Diameter

The tailgate must be closed and the bale chamber must be empty.
Adjust the bale diameter at the rear right and left of the machine.

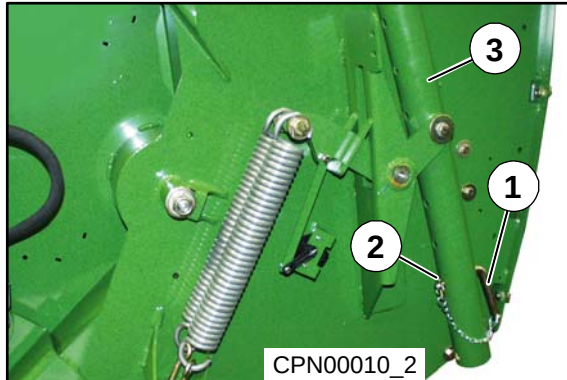


Fig. 159

Upper hole in spring tube = smallest bale diameter

Sixth hole from the top in the spring tube = largest bale diameter

- Detach the split pin (2) from the locking bolt (1) on the spring tube (3).
- Insert the locking bolt (1) into the desired bore on the spring tube (3) and secure with the split pin (2).

**Note**

The setting must be the same on both sides.

Operation

11.10 Net Wrapping

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".

11.10.1 Net wrapping parts

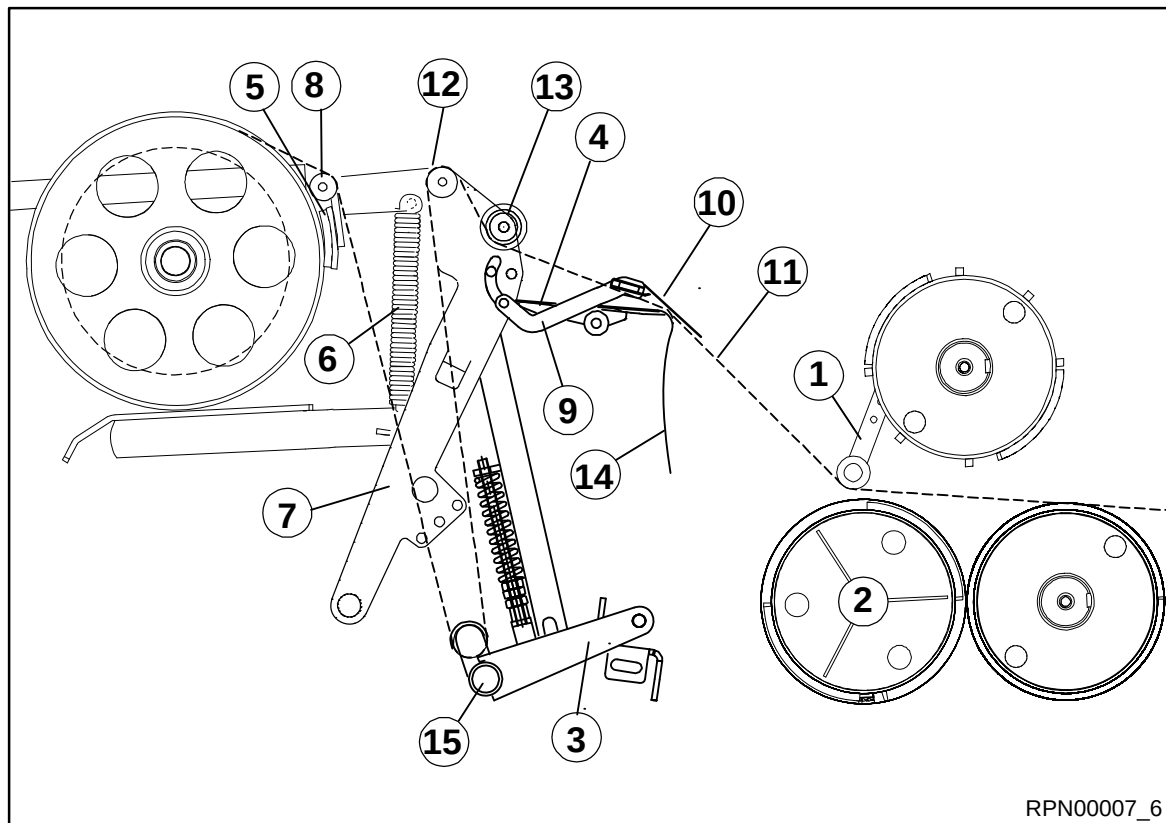


Fig. 160

- | | |
|--------------------|----------------------|
| 1 Blade bar | 9 Retaining clip |
| 2 Feed roller | 10 Synthetic cloth |
| 3 Net compensation | 11 Net |
| 4 Retaining plate | 12 Spreading bracket |
| 5 Net brake | 13 Spreading roller |
| 6 Net brake spring | 14 Plastic guide |
| 7 Net rocker arm | 15 Fixed cross tube |
| 8 Deflection shaft | |

11.10.2 Function of the Net Tying

The rocker arm (7) is used to lay the net onto the feed roller (2) and from this roller it is passed through the compression rollers to the bale. Then it is trailed by the bale. After the wrapping process is complete, the blade bar (1) is swung and cuts the net.

11.11 Inserting the Net Roll



ATTENTION! – Net and net wrapping contaminated with oil and grease

Effect: Machine damage and problems when unrolling the net.

- Net and components of the net wrapping must not be contaminated with oil or grease.



WARNING!

Risk of injury due to unexpected movement of a machine component.

- The net may only be inserted by one person.
- Make sure that there is no other person in the range of movement of the machine.

Prerequisites

- The tractor PTO shaft is switched off.
- The tractor engine is switched off.
- The ladders are folded down and secured.

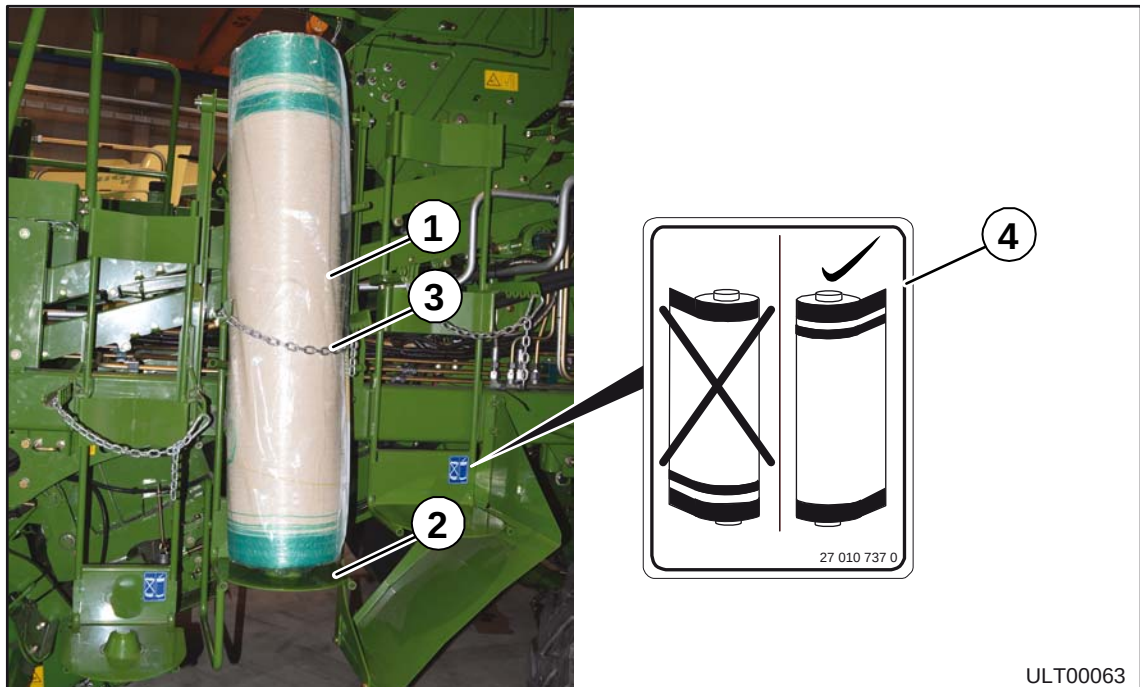


Fig. 161

- Place the net roll (1) as shown on the information label (4) in the loading device (2) to ensure that the start of the net roll can be pulled out from above.
- Secure the net roll (1) with the chain (3). Use the adjusting strip to adjust to the roll diameter.

Operation

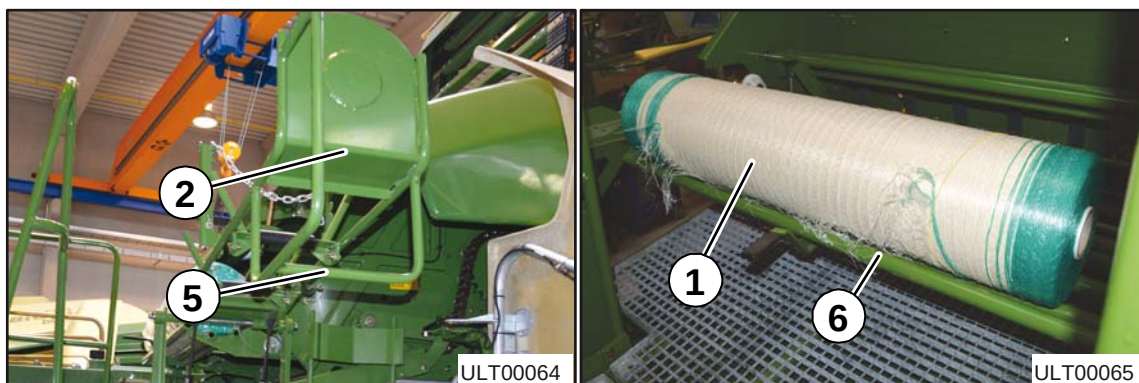


Fig. 162

- Fold up the loading device (2) as far as the locking point using the handle (5).
- Pull the net roll (1) onto the net roll tray (6) on the platform.

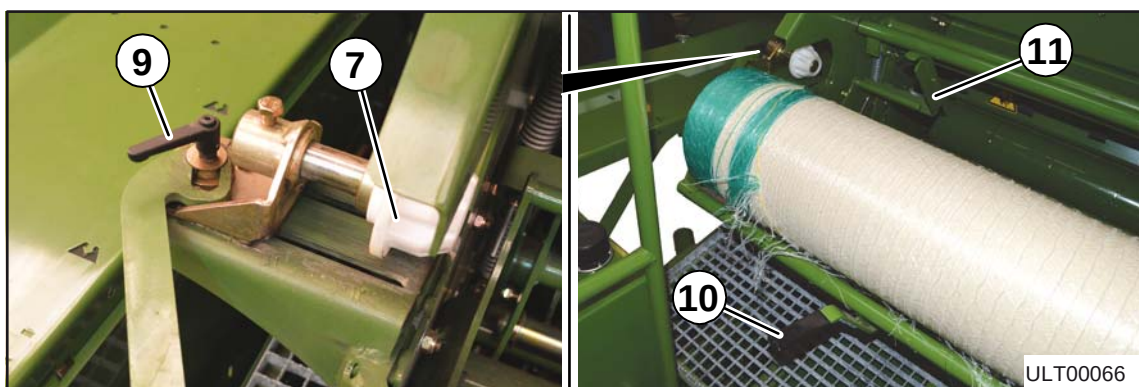


Fig. 163

- Release the locking lever (9) and push the roll holder (7) all the way to the left using the lever (10).

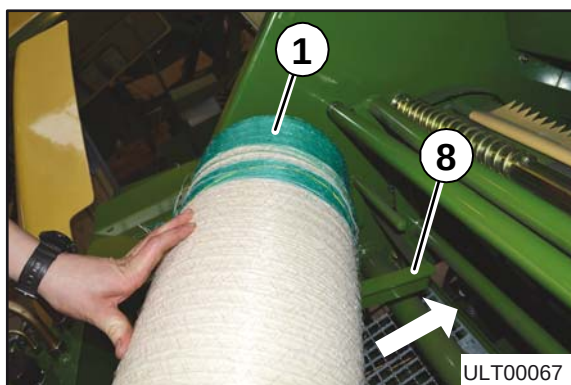


Fig. 164

- Push the net roll (1) into the clamping position by pressing down the clamping lever (8).

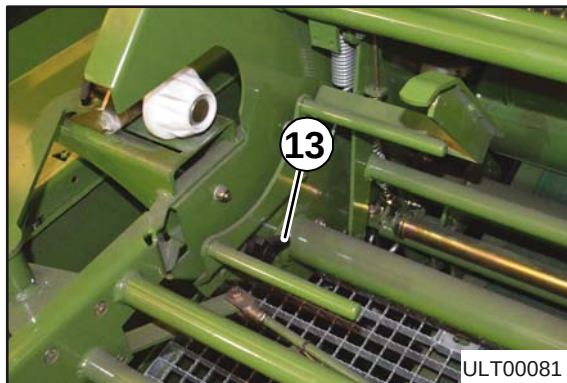


Fig. 165



Note

The star knob (13) can be used to adjust the clamping position to different net roll sizes.

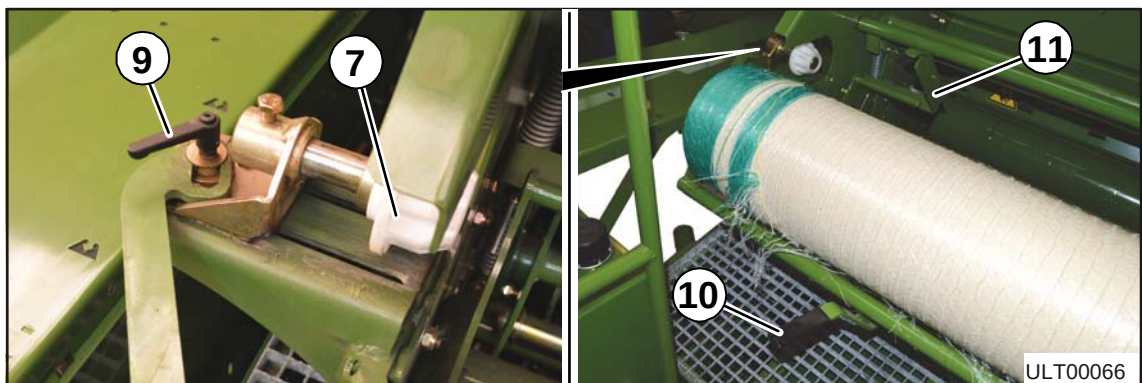


Fig. 166

- Release the locking lever (9) and push the roll holder (7) to the right into the cardboard sleeve using the lever (10).

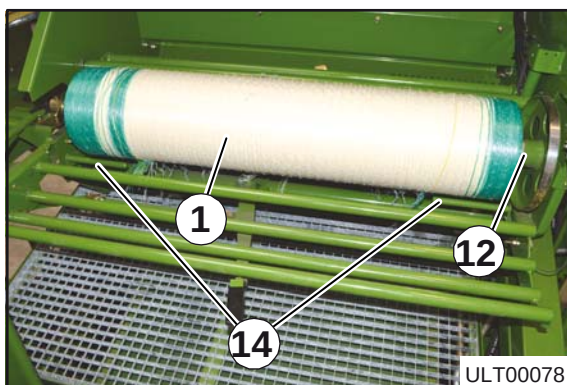


Fig. 167

- Check whether the net roll (1) is positioned securely on the roll holder (7) and the cardboard roll clamping (12). Otherwise re-adjust with the lever (10).
- Apply the locking lever (9).



Note

When the net roll has been inserted, it must not come into contact with the retaining bolt (14).

Operation

11.11.1 Centring the net roll

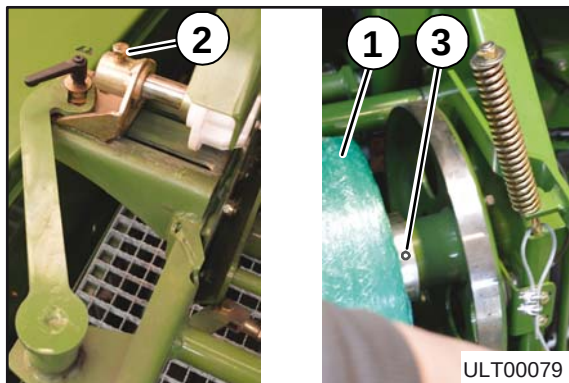


Fig. 168

Before threading in the net, centre the net roll (1) in the clamping position:

- Unscrew the hexagonal head screw (2) on the adjusting device and unscrew the grub screw (3) on the adjusting ring of the brake adjuster.
- Align the net roll (1) centred on the housing wall.
- Screw in the hexagonal head screw (2) and the grub screw (3).

11.11.2 Releasing the net brake

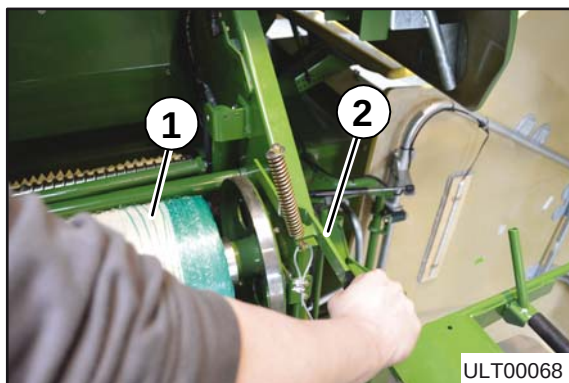


Fig. 169

The net (1) can only be unwound from the net roll when the brake (2) has been released.

- Press lever (1) downwards to release the brake (2).

11.11.3 Folding down the loading device

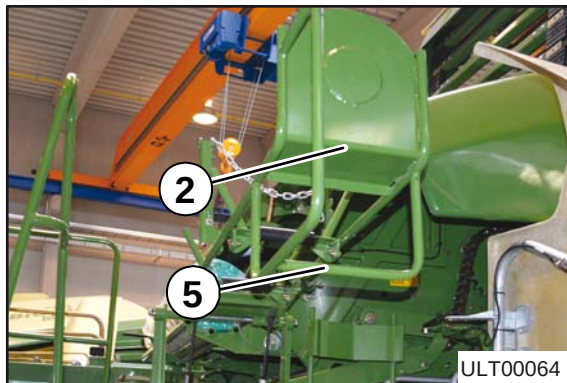


Fig. 170

- Briefly press up the loading device (2) using the handle (5), then pull down all the way.
- Briefly press up again, then fold down all the way.



WARNING! - Risk of Cuts Due to Sharp Cutters!

Serious injuries; especially to hands.

- Wear protective gloves when working in the area of the blades and the blade bar
- Wear also protective gloves when threading in or removing the net



CAUTION! – Contamination of the twine and tying mechanism by oil and grease

Effect: Machine damage and problems when unrolling twine

- The twine, twine tensioner and eyes must not be contaminated by oil or grease.
- The parts of the tying unit through which twine or net run must not be contaminated by oil or grease.

Operation

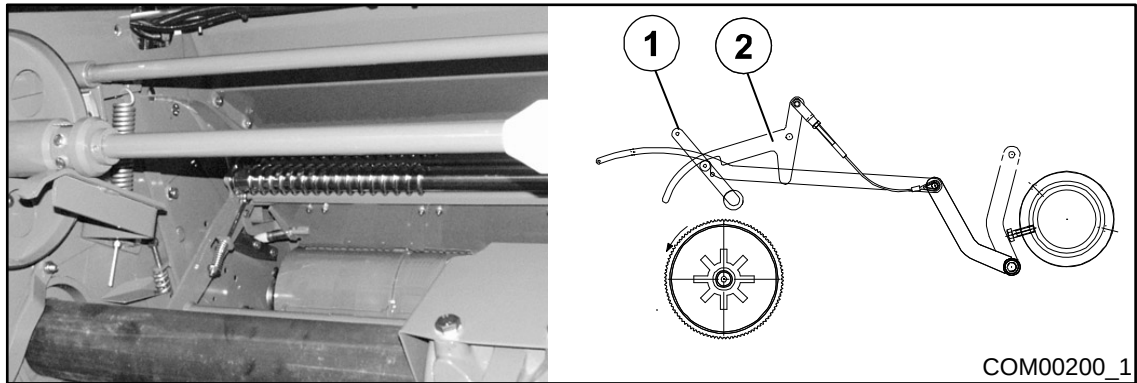


Fig. 171

- Before threading in the net, press the blade bar (1) back with your hand until the ratched mechanism (2) engages

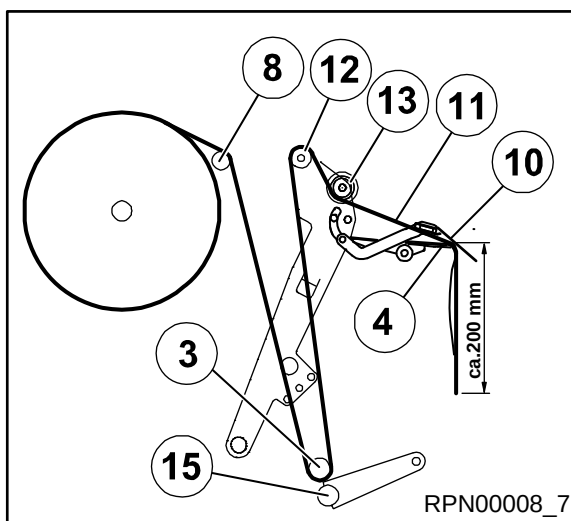


Fig. 172

- Guide the net (11) over the deflection shaft (8) under the net compensation (3)
- Place the net (11) further over the spreading bracket (12) and under the guide roller (13) round, over the retaining plate (4) and guide it under the synthetic cloth (10)



Note

To increase net tension (extend net further outward), the net can also be laid under the cross tube (15). The net must be stretched with no problems when doing this.
The net must be approx. 200 mm above the retaining plate (4).

- Swing the net roll mounting shaft back into its support



Note

After threading in, the net must be removed on a width of approx. 500 mm. Thus the tappets of the feed roller can pick up the net cleanly.

11.11.4 Setting of the Feed Position

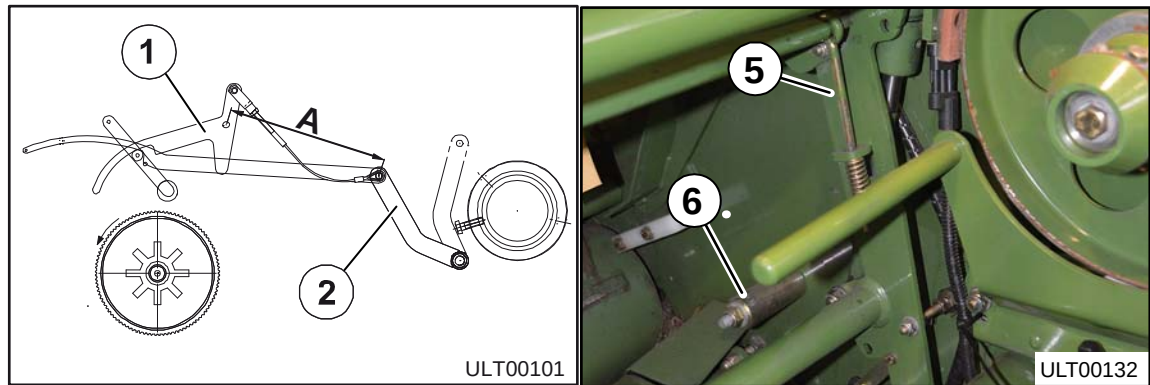


Fig. 173

The feed position is optimally set when the feeder plate (3), which has moved down as far as the rocker (5), is positioned on the bolt (6).

The distance between the pivot point of the ratchet mechanism (1) and the adjusting lever (2) should be approx. "A" = 285 mm.

If deviations occur, adjust dimension "A" via the terminal:

- Open menu "Manual sensor test" on the terminal.

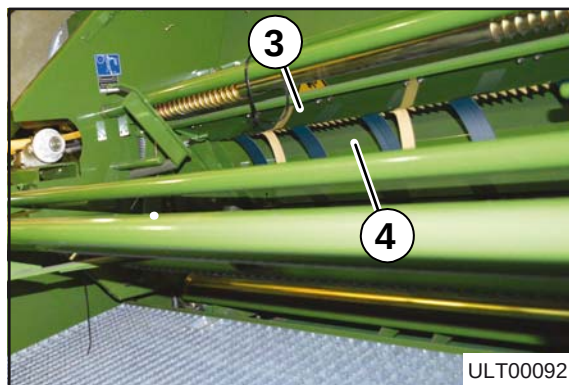


Fig. 174

- Move out engine via the control unit until the rocker (5) is positioned on the bolt (6). There may still be a small gap between the feeder plate (3) and conveyor roller (4).
- Save this feed position via the control unit.

Operation

11.11.5 Setting of the Tying Position

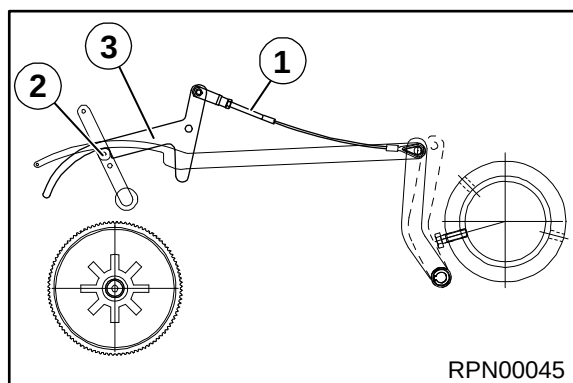


Fig. 175

- Call menu “Manual Sensor Test” in the operation terminal.
- Initiate tying position by pressing the corresponding key.
- The engine automatically approaches the tying position.



Note

Once the engine has reached the tying position, the cable (1) must not be tight and the roller (2) must be resting in front of the ratchet mechanism (3). If this is not the case, check the settings of the cut-off position and the feed position and adjust, if necessary.

11.11.6 Setting Cut-off Position

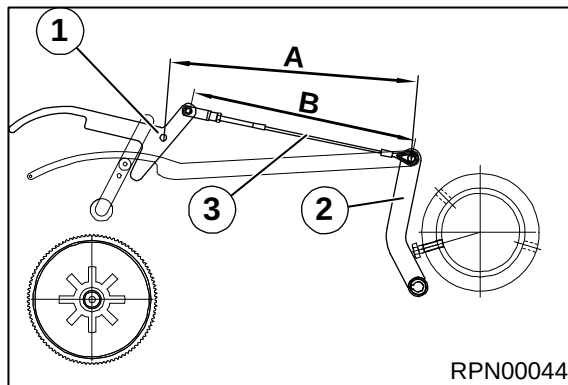


Fig. 176

The cutting position has been reached when the ratchet mechanism (1) is raised and dimension A between the ratchet mechanism (1) and the adjusting lever is (2) $A = 425 \text{ mm}$.

If deviations occur, adjust dimension "A" via the terminal:

- Open menu "Manual sensor test" on the terminal.
- Move in engine via the control unit until dimension A between the pivot point of the ratchet mechanism (1) and the adjusting lever (2) is $A = 425 \text{ mm}$.
When dimension $A = 425 \text{ mm}$ is reached, save the cutting position.
- Adjust the cable (3) to dimension $B = 385 \text{ mm}$.



Note

If the net is not cut off in practical use, dimension B must be reduced as far as possible until the net has been cut off.

11.11.7 Selecting the Number of Net Winds

The number of net winds is set on the KRONE ISOBUS terminal CCI 100.

The default bale size and the number of net winds are used to automatically determine the net length.

Operation

11.12 Bale Wrapper

11.12.1 Special Safety Instructions



WARNING! - During repair, maintenance, cleaning work or technical interventions on the machine, drive elements can start moving.

Effect: Risk of death, injuries or damage to the machine.

- Swivel wrapping table into zero position (see chap. KRONE ISOBUS Terminal "Manually moving wrapping table").
- Turn off the tractor engine, remove the ignition key and take it with you.
- Secure the machine and tractor against rolling.
- Turn off the PTO shaft.
- After repair, maintenance, cleaning work or technical interventions on the machine, replace all protective covers and safety devices correctly.
- Risk of injury when working on the cutting device. Do not touch the blades of the cutting device.
- When the machine is operating, there must be nobody in the swivel range of the film wrapping arm and the cutting device.



WARNING!

Risk of injury to people or animals by the machine or machine parts!

If people or animals remain in the danger zone of the machine or enter the danger zone during operation, there is an increased risk to the health of these people.

- Do not start the machine until all safety devices have been fitted and are in sound condition.
- Ensure that there are no people or animals in the danger zone of the machine (safety distance: 3 m at the side, 5 m behind the machine).

If there are people or animals in the danger zone:

- Stop the machine immediately.
- Switch off the PTO shaft.
- Instruct persons to leave the danger zone.
- Do not restart the machine until there are no persons or animals in the danger zone.



WARNING!

Risk of injury from the wrapping table!

If people enter the danger zone while the wrapping table is tilting, these people are at increased risk of injury.

- Do not perform repairs, maintenance and cleaning work or eliminate malfunctions unless the wrapping table is in the zero position.



Note

Do not wrap the bale when it rains or when the crop is wet, as this could lead to forage of minor quality.

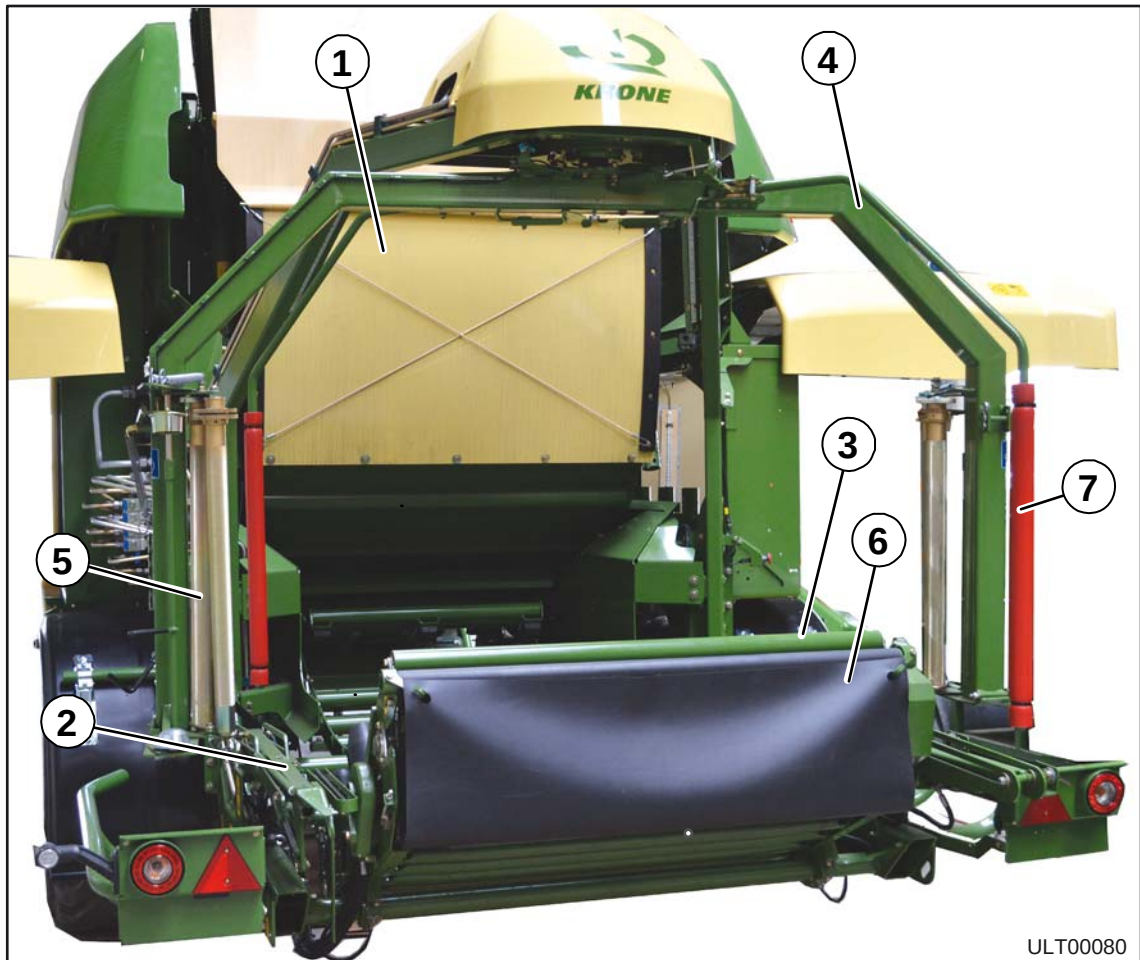
11.12.2 Components Bale Wrapper


Fig. 177

- 1 Tailgate
- 2 Retaining and cutting device
- 3 Wrapping table
- 4 Double wrapping arm
- 5 Film roll holder
- 6 Rubber cloth
- 7 Bail switch (safety equipment)

Operation

11.12.3 Function Bale Wrapper

When the net tying process is complete, the tailgate opens. The bale is transferred from the bale chamber to the wrapping table by gravity.



Note

Wrap bales on all sides with at least six layers of film. Every two layers of film must overlap by 50 %.

11.12.4 Store Bale

Store the bale on the face side. Eliminate sheet damage immediately with adhesive strips. The wrapped bales must be used within 12 months after wrapping.



Note

The storage area should not be in high grass, on hedges, fences, buildings or under trees.

Compacted bales with the recommended dry matter can be piled threefold, while loose compacted or too moist bales cannot be piled on top of each other.

A layer consisting of water permeable material which contains no sharp objects (for example sand) serves as top layer for all stored bales. An additional protection by bird protection belts or close meshed polypropylene silage nets is recommended.

Fence in the bearing area so that it cannot be reached by cattle.

Check the bale packs at regular intervals. Protect the bales against the infestation of bugs by using pesticides according to manufacturer's recommendations. The applicable environment regulations must be complied with.



Note

Chemicals like fertilizers, herbicides, mineral oils and solvents accelerate the decomposition of the sheet. Therefore it is essential to prevent that such chemicals soak on the sheet.



Note

We are unable to honour claims for damage due to spoiling during storage because numerous factors involved are beyond our control.

11.12.5 Inserting Sheet

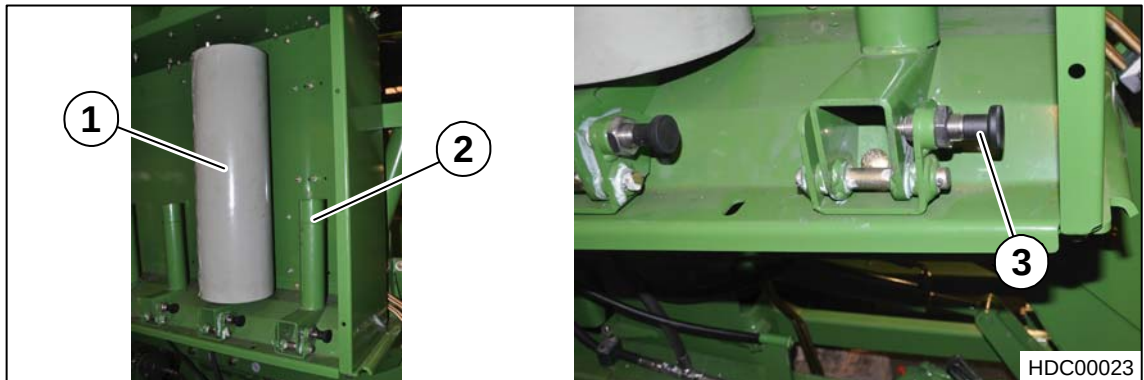


Fig. 178



Note

Up to 17 film rolls (1) can be stored in both film compartments on the right and left of the machine.

- Open side guard.
- Pull out the lever (3) and swivel the film roll holder (2) downwards.
- Release to lock the lever (3).
- Pull the film roll (1) out of the film roll holder.
- Pull out the lever (3) and swivel the empty film roll holder (2) upwards and release the lever (3).

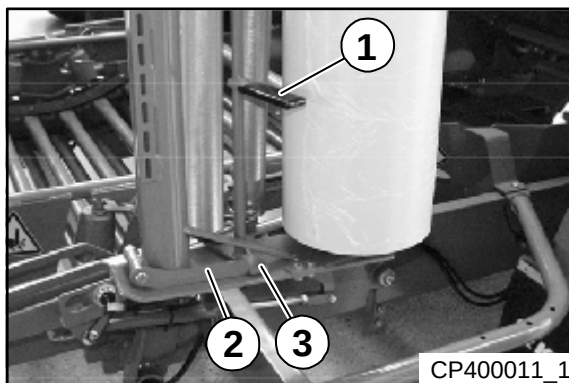


Fig. 179

- The film roll size is 750 mm.
- The maximum film roll diameter is 260 mm.

We recommend using quality brands, e.g. KRONE film or films approved by DLG.



Note

Perform the following work steps on both film roll holders, as the film roll holders must always have the same setting.

- To relieve the pre-stretching rollers, turn the lever (1) to the right until the locking lever (2) falls behind the guide at the bottom (3) and secures it.

Operation



WARNING!

Crush hazard when inserting the film roll.

Fingers may be crushed when inserting the film roll.

- When inserting the film roll, do not reach between roll and film roll holder of the machine.

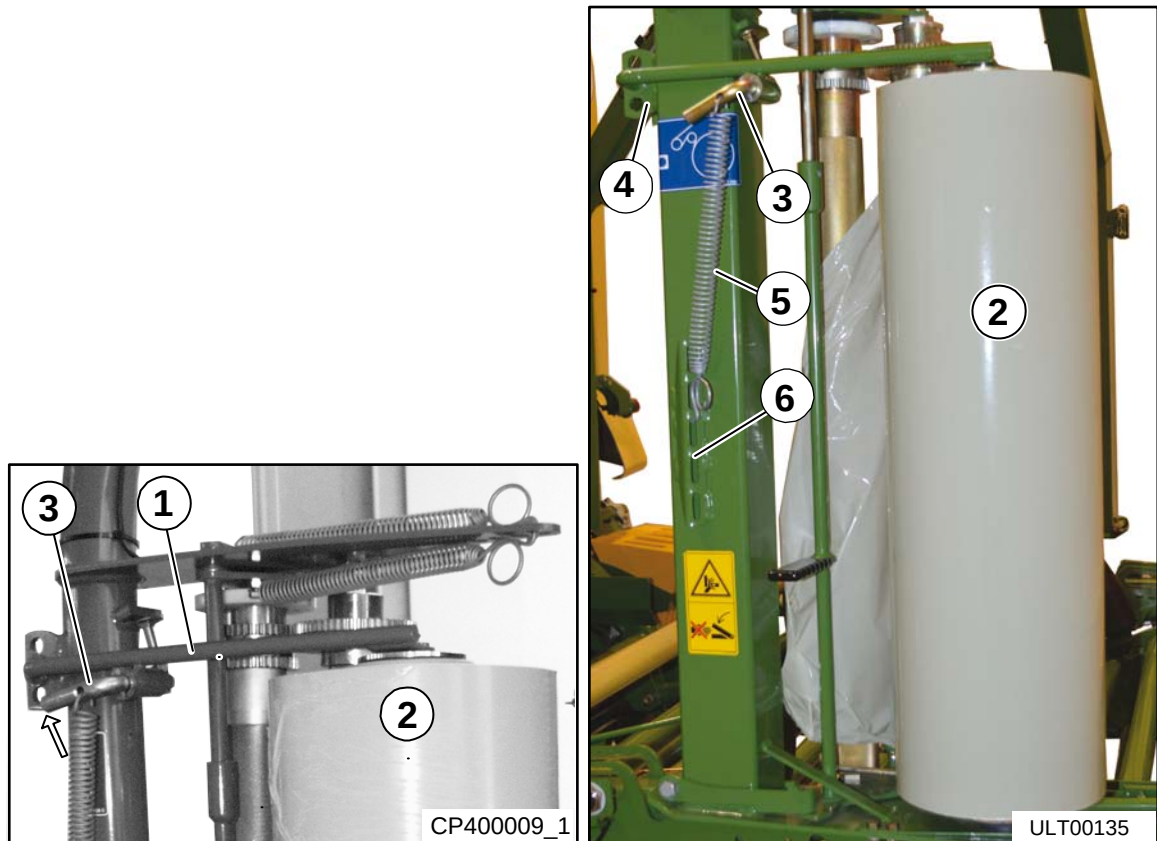


Fig. 180



Note

The film roll guide (1) must always run parallel to the upper end of the film roll (2). Therefore the roll guide (1) must be attached to different holes in the perforated bar (4) depending on the size of the roll.

- Release the film roll guide (1) by pressing the bolt (3) and fold upwards.
- Insert film roll (2) into the lower holder.
- Press the bolt (3) to insert the roll guide (1) into the film roll (2).

Hook the tension spring (5) into the perforated bar (7) in a way that the locking screw (8) is pressed against the flat iron (9).

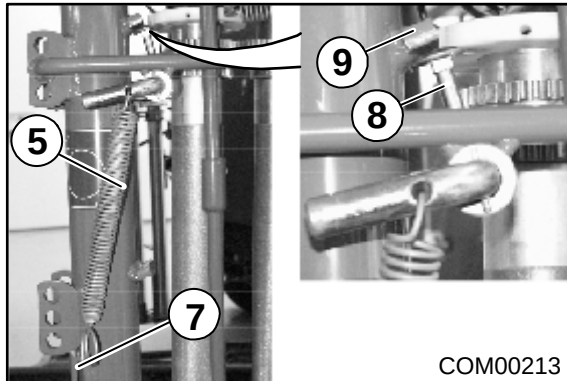


Fig. 181



DANGER! – Loss of the Sheet Roll!

Injuries or damage to the machine.

- After insertion of the sheet roll (2) secure it immediately by hooking the tension spring (5)
- Check if the locking bolt (8) is pressed tight to the flat iron (9) Only this guarantees the tight seating of the sheet roll.

After installing the sheet roll, make certain that

- the wrapping arm can rotate freely in all positions,
- the pre-stretching unit is lubricated well

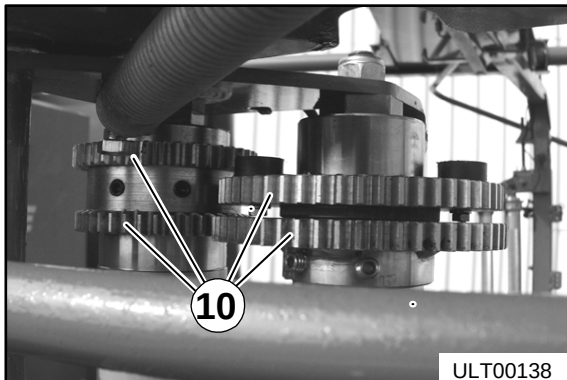


Fig. 182

- Generously lubricate the spur wheels (10) on the wrapping arm.

Operation

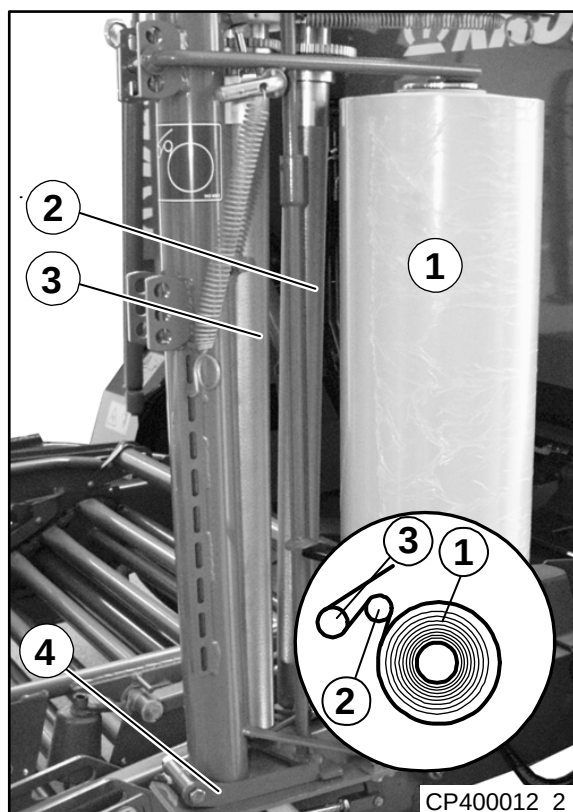


Fig. 183



WARNING! – Fingers Between the Section Rollers!

Effect: Jamming, crushing of fingers

- Do not push the fingers between the section rollers (2,3) as long as parts are moving there
- Do not push the fingers between the section rollers and the section roller mount

The following work steps must be performed on both sheet holders (both sheet holders must always have the same setting):

1. Guide the sheet of the sheet roll (1) around the forward section roller (2) to the forward section roller (3).
2. Tension the section rollers again by loosening the locking lever (4).

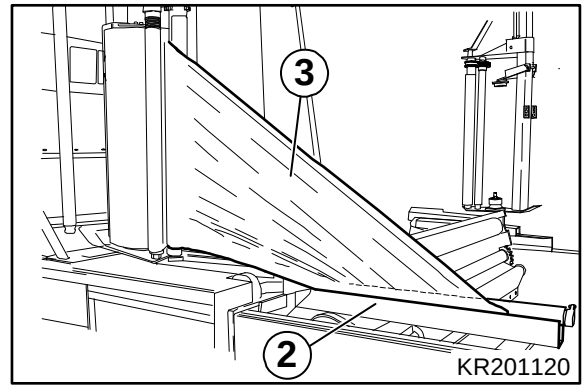


Fig. 184



Warning! – Crushing Hazard in the Sheet Clamping Device!

Effect: Jamming, crushing of fingers

- Do not work on the sheet clamping device (1) as long as parts are moving there

3. Open holding arm (2) (see Open Holding Arms / Close Holding Arms entitled in Chapter Operation Terminal).
4. Insert the starting end of the sheet in the clamping device.
5. Close the holding arm (2) (see Open / Close Holding Arms in Chapter entitled Operation Terminal).

After the first bale has been wrapped, the sheet holding arm (2) holds the sheet (3) in position.

When the film rolls are empty or a torn film is detected (display " " on the terminal):



- Release the holding arms on the terminal by pressing the " " key.
- When the roll is empty, insert new film roll (see chap. Operation "Inserting film roll").
- Manually raise the holding arms and insert film.



- Close the holding arms on the terminal by pressing the " " key.



Operation

11.12.6 Adjusting the Sheet Brake

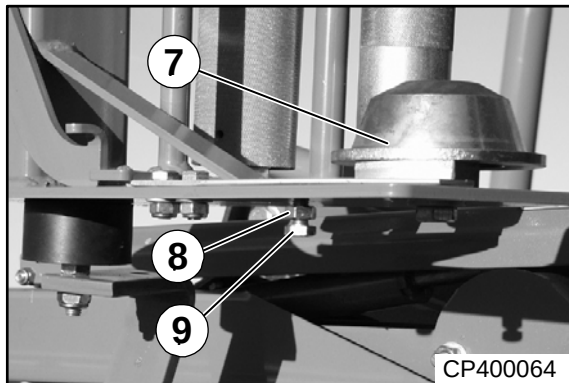


Fig. 185

The sheet brake (7) must be readjusted as follows if the sheet roll coasts down:

6. Unscrew the counter nut (8)
7. True up screw (9)
8. Tighten counter nut (8)

11.12.7 Setting the Pre-stretch of the Foil

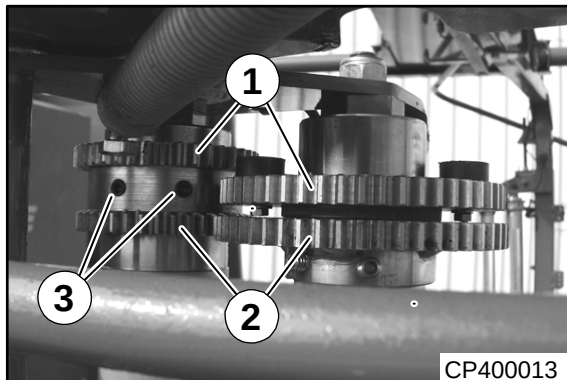


Fig. 186

By selecting the gear pairs (1 or 2) on the wrapping arm, pre-stretching can be adjusted between 50% and 70%.

- Upper gear pair (1) 50% pre-stretching
- Lower gear pair (2) 70% pre-stretching

Perform the following work steps on both film roll holders (both film roll holders must always have the same setting):

- Loosen set screws (3)
- Select corresponding gear pair (1 or 2) and secure with set screws (3).

Checking pre-stretching

Example with 70% pre-stretching

- Mark the film on the roll with 2 lines spaced 10 cm apart.
- Measure the distance between the two lines after the film has been wrapped around the bale. If the bale is stretched 70 %, the distance should now be about 17 cm.

The film is probably stretched too much if a significantly larger number of bales can be wrapped from one roll or if the film becomes too narrow crosswise.



Note

If the wrapping is overstretched, immediately stop and do not continue until the problem has been rectified.

The width of the stretched film, measured at the flat end of the bale and having an original width of 750 mm, should not be less than:

- 600 mm.

If the film is overstretched:

- Lubricate the spur wheels (1) and (2).
- Release the film brake (see chap. Operation "Adjusting film brake").

Operation

11.13 Removing blockages from the pre-compression chamber



Caution!

Damage to the machine when continuing work with blockages due to crops in the pre-compression chamber.

- If a blockage is established, stop the drive immediately.

Stop the tractor.
Perform the following work steps via the terminal:

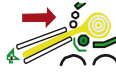
When filling the bale chamber **greater** than 30%:



- On the home screen press the function key "Start tying" and transfer the bale to the wrapping unit.

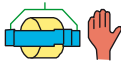
As the pre-compression chamber is automatically emptied when the bale chamber has closed, the blockage should be removed.

When filling the bale chamber **less** than 30%:



- On the home screen press the function key "Empty pre-compression chamber". The pre-compression chamber is automatically emptied, the blockage should be removed.

If the blockage is still there following this procedure:

- Press the  function key to open the main menu 3 "Manual operation".
- Open page 3-1 "Manual operation pre-compression chamber".
- Press the  softkey to lower the conveyor belt.
- Press the  softkey to move the roller downwards.
- Run conveyor belt alternately forwards  and backwards  until the blockage has been removed.
- Press the **ESC** function key to exit the main menu 3 "Manual operation".

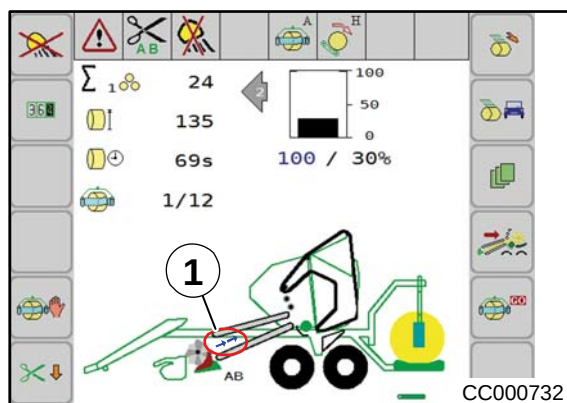


Fig. 187

- On the home screen check whether the conveyor belt is running (is indicated by arrows(1) in the pre-compression chamber).



If not, press the function key to start the conveyor belt.

12

Settings



WARNING!

If the basic safety instructions are not followed, people may be seriously injured or killed.

- To avoid accidents, the basic safety instructions in the chapter Safety must have been read and followed, see chapter Safety "Basic safety instructions".



WARNING!

If the safety routines are not adhered to, people may be seriously injured or killed.

- To avoid accidents, the safety routines in the chapter Safety must be read and followed, see chapter Safety "Safety routines".

12.1

Setting the Net Brake

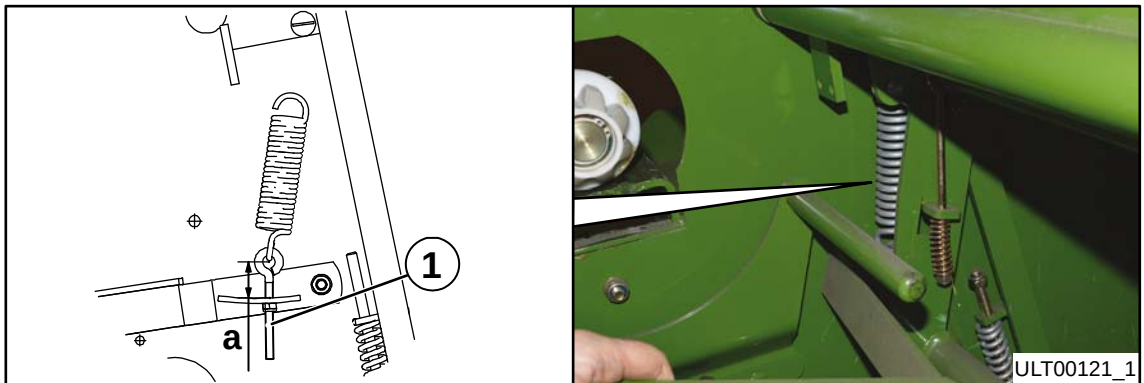


Fig. 188

- Set dimension "a" to 35 mm on the eyebolt (1) and tighten the self-locking nut.

Settings

12.1.1 Adjusting the spring of the net brake



Note

The net (1) can only be unwound from the net roll when the brake (2) has been released.

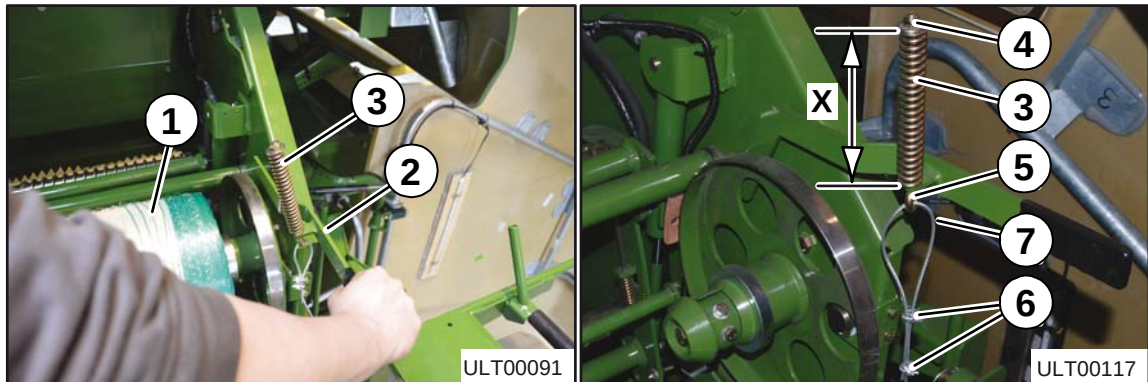


Fig. 189



Note

The stronger the tension of the spring (3), the lighter the net is pulled, however it pulls further towards the middle when starting.

The weaker the tension of the spring (3), the greater the net is pulled, however it remains further outwards when starting.

- Move the cylinder all the way downwards.
- Attach the locknut (4) flush with the end of the eyebolt (5).
- Attach the wire cable (7) with the wire cable clamps (6) so that it is under light tension.
- Tighten the locknut (4) until the brake adjuster can be turned by hand, but does not rotate freely. The dimension $x = 130 \text{ mm}$ is used as the auxiliary dimension.



Note

- If the net is pulled too far towards the middle during the tying phase, loosen the locknut (4) slightly.
- If the net is not pulled at the start of the tying phase, tighten the locknut (4) slightly.

12.2

Setting the Pretensioning Force

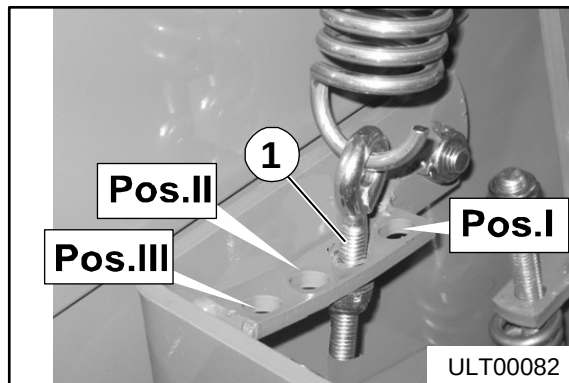


Fig. 190

If the net roll is smaller and the net tears shortly after it is drawn in, move the eye bolt (1) to the front into position II or III to reduce the pretensioning force:

- Dismount eye screw (1).
- Move eye bolt by one hole to the front (brake force is reduced if the net roll is smaller).
Pos. I = Higher brake force (in case of a smaller net roll)
Pos. II = Lower brake force (in case of a smaller net roll)
Pos. III = Lowest brake force (in case of a smaller net roll)
Mount eye screw (1).

If the problem has not been rectified:

- Further release net brake in position II and III (refer to chapter Settings "Releasing the Net Brake").

Settings

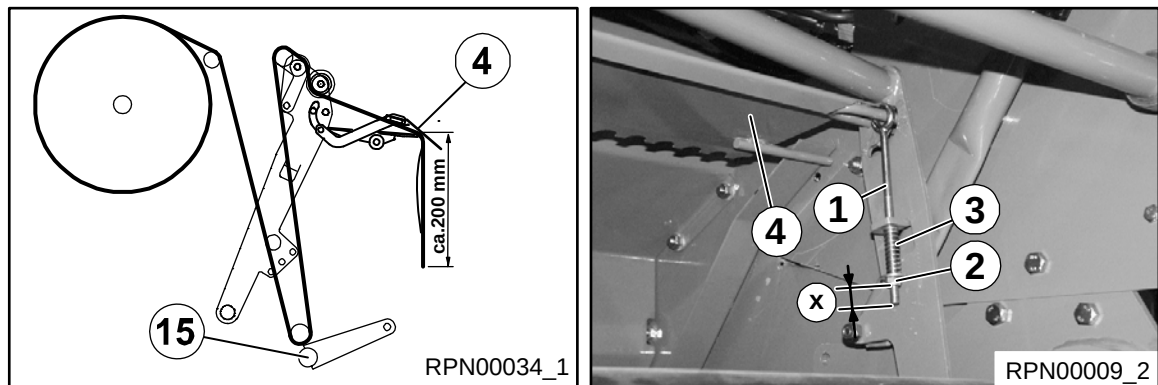


Fig. 191

Set the net brake so that the net hangs into the channel by approx. 200 mm over the retaining plate (4) after tying process.



Note

Always use a speed of 540 rpm for wrapping (same operating speed).



Note

In case the net still hangs more than 200 mm over the retaining plate (4) after the tying process, it must be placed under the cross tube (15) (this causes the net to be more decelerated and it wraps even wider around the bale).

Adjusting the retaining plate

To ensure that the net does not tear while the machine is working, the pressure of the retaining plate (2) can be set on the ring bolt (1) with nut (2) via spring (3).

When the spring (3) is closer:

The pressure of the retaining plate on the net becomes greater.

Max. setting:

$x = 10 \text{ mm}$

12.3 Adjusting net roller scraper

Prerequisites

- Side guards and assembly flaps are open.

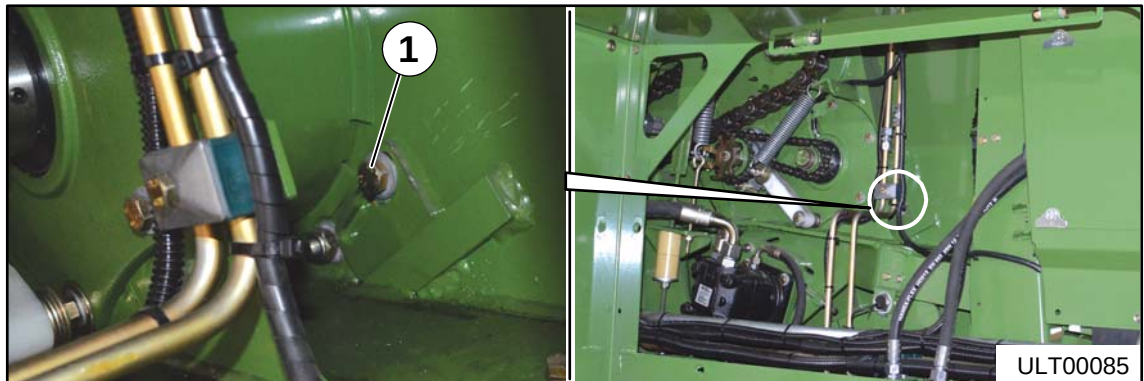


Fig. 192

- Loosen the nut (1) on the right and left.

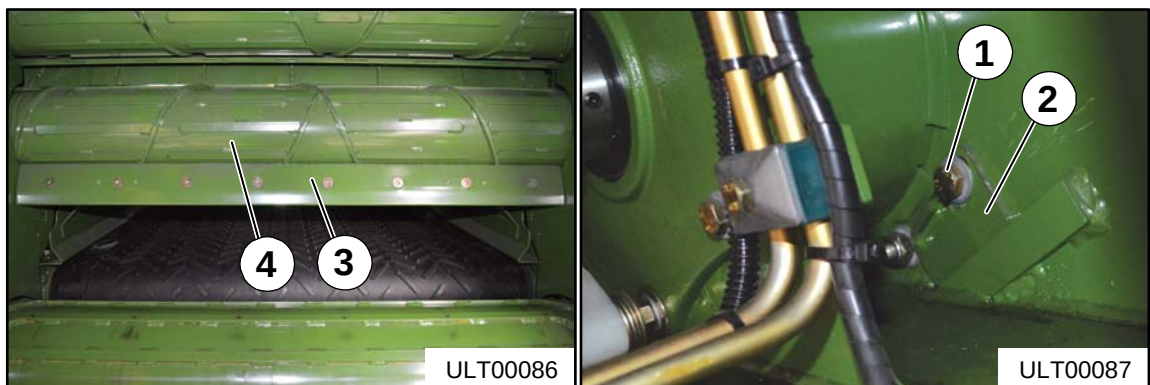


Fig. 193

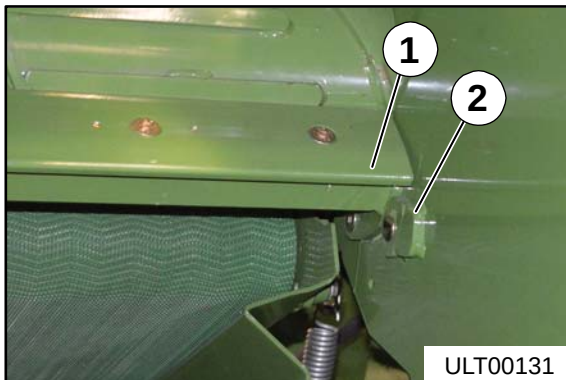


Fig. 194

- In the bale chamber move the scraper (3) against the net roller (4).
- Tighten the nuts (1) on the right/left hand-tight.
- Hammer the chocks (2) into the correct position and tighten the nut (1) on the right/left firmly.

Settings

12.4 Adjusting the conveyor belts



ATTENTION!

High wear and stiff movement when conveyor belts overtensioned.

- Do not overtension the conveyor belts.

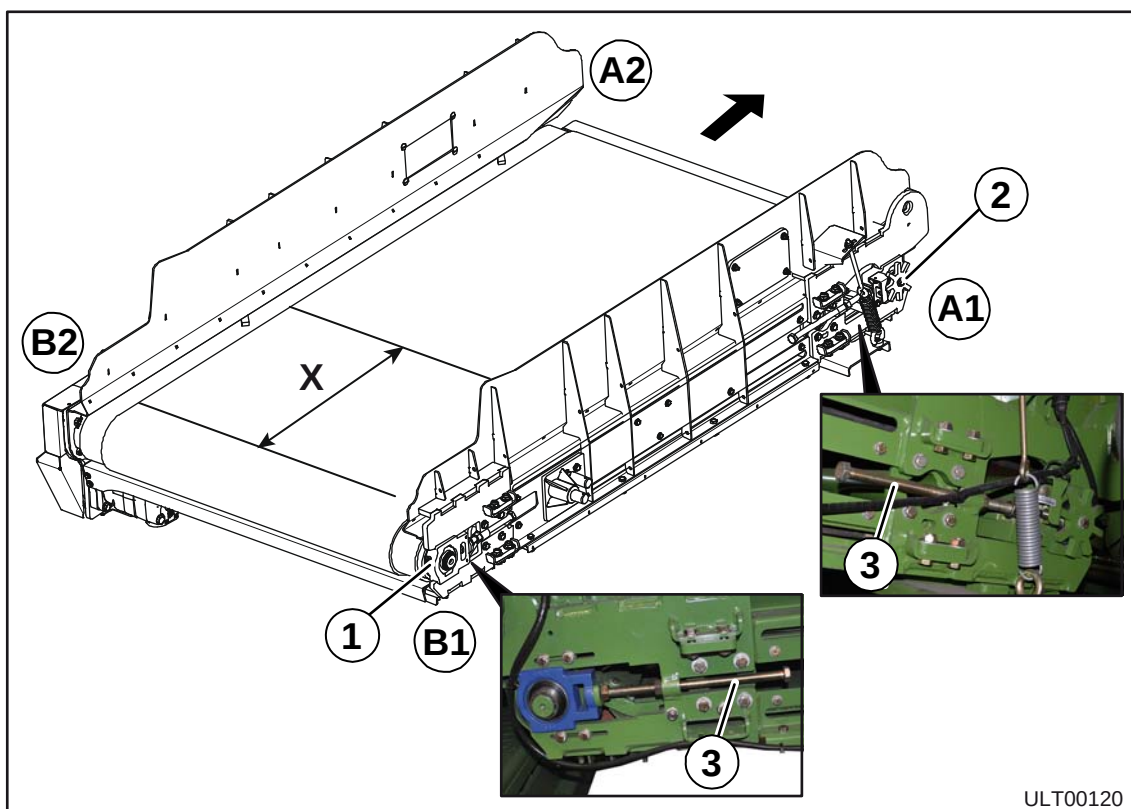


Note

Retension the conveyor belts after a running-in period of 50-100 pressed bales. After that only if slippage occurs.

Prerequisites

- Side guards and assembly flaps are open.



ULT00120

Fig. 195

The drive roller (1) can only be set on one side.

A1= front right / A2 = front left

The deflection roller (2) can be set on both sides.

B1= rear right / B2 = rear left

To set:

- Move the machine to the working position.
- Relieve the conveyor belt using the clamping bolts (3) on the left and right on the deflection roller.
- Mark the conveyor belt on the left and right at a distance of $X = 1000$ mm.
- Using the clamping bolts (3), tension the conveyor belt until the distance between the marks is $X = 1005 - 1007$ mm.
- Move the conveyor belt by hand through 2 or 3 revolutions (marks must be visible again)
- Check the marks ($x = 1005 - 1007$ mm); if required retension conveyor belt.
- Secure the setting via the counter nuts on the clamping bolts.
- Engage the PTO shaft and run **briefly**.
- Observe the movement of the conveyor belt from a safe distance.
- Switch off the PTO shaft and check/set the clockwise/anti-clockwise movement of the conveyor belt (see chap. Settings "Checking / correcting direction of movement").

12.4.1 Setting from Lower Conveyor Belt to Starter Roller

The distance between lower conveyor belt in top position and starter roller must be 2-5 mm.

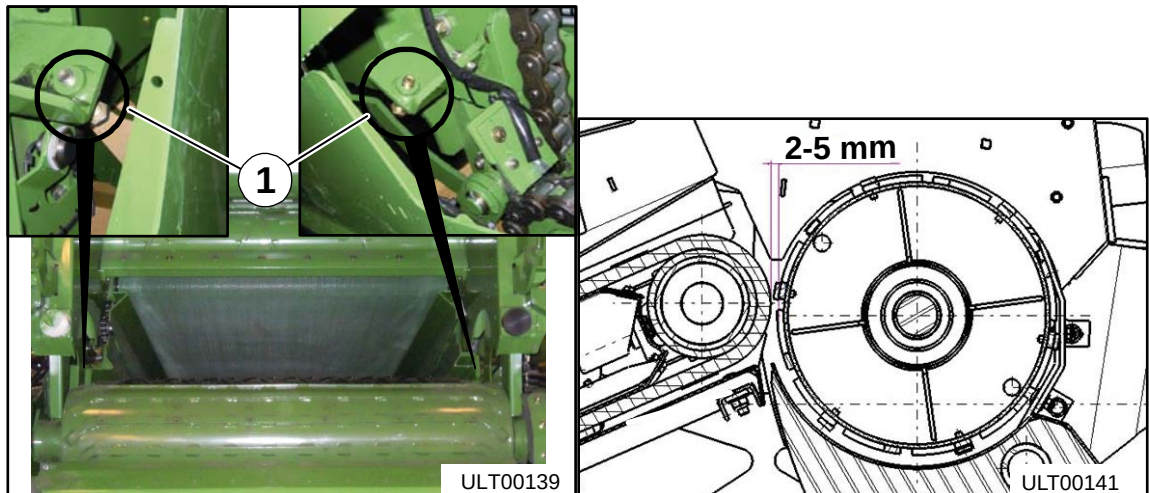


Fig. 196

- Move the machine to working position.
- Check whether the distance between lower conveyor belt at the top position and starter roller is 2-5 mm.

Setting:

- Set the distance on the left-hand and right-hand side of the belt to 2-5 mm using the stop screws (1).

Settings

12.4.2 Checking / correcting the direction of movement

Prerequisites

- PTO shaft is switched off.
- Tractor engine is switched off.
- Tractor is secured to prevent it from rolling away and the ignition key is removed and put in a safe place.
- Conveyor belt stops.



Note

Check the clockwise/anti-clockwise movement of the conveyor belts on a daily basis and, if required, adjust the clamping bolts to prevent the conveyor belts from becoming severely worn.

Adjustment

The conveyor belts have been optimally set when they are centred over the rollers.

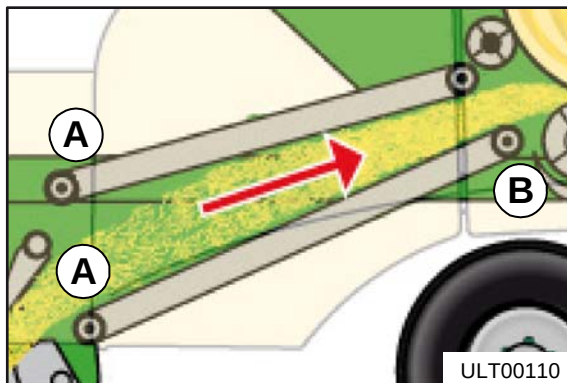


Fig. 197

The setting is made via the clamping bolts (3) (see Tensioning conveyor belts at top and bottom):

- Conveyor belt runs outwards over deflection roller (A): Tighten clamping bolt on the deflection roller.
- Conveyor belt runs inwards over deflection roller (A): Loosen clamping bolt on the deflection roller.
- Conveyor belt runs away on the drive roller (B): Retension the deflection roller (A).
- Conveyor belt runs outwards over drive roller (B): Tighten clamping bolt on the drive roller.
- Conveyor belt runs inwards over drive roller (B): Loosen clamping bolt on the drive roller.

When the conveyor belt has been set, the marks X must be between 1005 mm and 1008 mm (for marks see chap. Settings "Adjusting conveyor belts"). Provided the individual dimensions of the marks are not below 1005 mm or above 1008 mm, the tension of the conveyor belt is correct.



Note

- Do not adjust the conveyor belt while it is running. In each case only make small adjustments to the conveyor belt (turn the clamping bolts through 1 or 2 revolutions). Carry out a trial run after each adjustment and check the marks X.
- Adjustments may be made on one side only. If the tension is too high, relieve using the same clamping bolt. The conveyor belt must not be overtensioned.

12.5**Roller crop guide****WARNING!****Risk of injury if the machine is used without a roller crop guide!**

If the machine is operated without a roller crop guide, people can be seriously injured or killed.

- The roller crop guide is used for accident protection and must not be removed during operation.

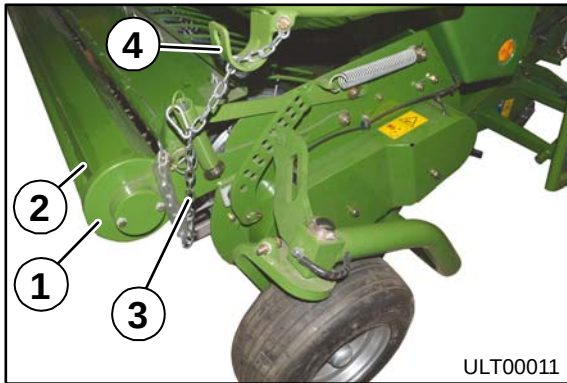


Fig. 198

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".

To ensure that the pick-up collects crops regularly, the holding-down device roller (2) must run directly over the swath.

The height of the roller crop guide (1) is adjusted with the retaining chains (3):

- Shorten or extend retaining chains (3) attached to the holders (4) on both sides of the machine.

**Note**

The setting must be the same on both sides of the roller crop guide.

Settings

12.6 Adjusting the baffle plate

The height of baffle sheet (1) must be set so that it does not touch the spring tines of the pick-up.

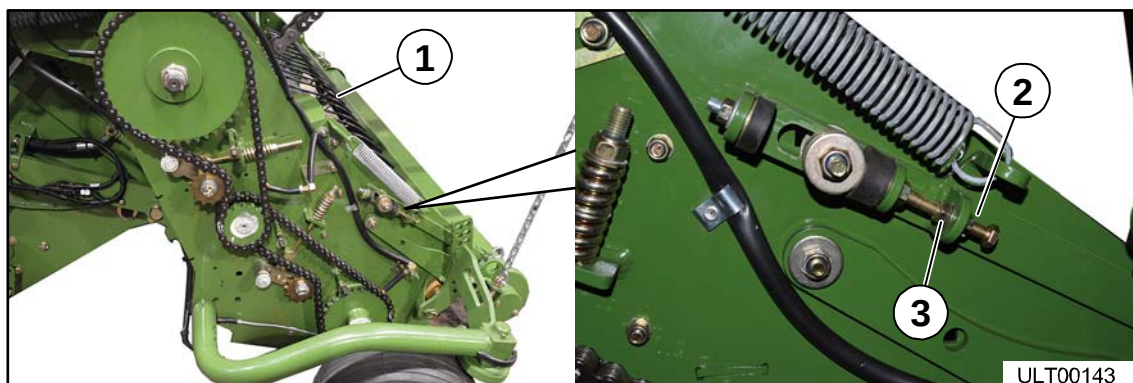


Fig. 199

Setting on left-hand and right-hand machine side:

- Loosen counter nut (2).
- Turn nut (3) until the corresponding position is reached.
- Tighten counter nut (2).

12.7 Pick-up

12.8 Default Setting (Working Height Setting)

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".



Note

Lift the Pick-up for driving in the headland or when driving backward!



Note

Do not perform setting and maintenance work on the pick-up only until the pick-up has been lowered onto the ground!



Note

When adjusting the pick-up, the drawbar height of the machine must be adjusted to the tractor (see chapter "Initial start-up").

The distance from the tines to the ground must be about 20 – 30 mm.

Adjust the pick-up working height according to the prevailing ground conditions.

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".

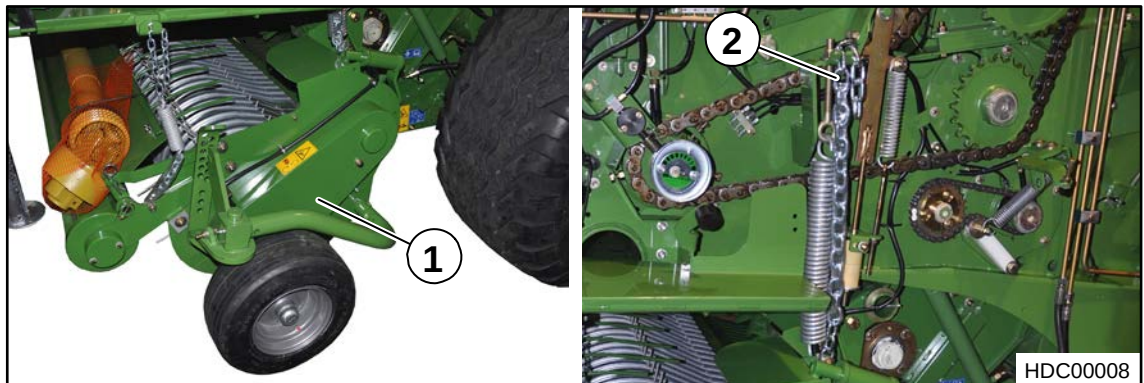


Fig. 200

The working height can be adjusted on the guide wheels (3) on either side of the pick-up. In order to carry out the adjustment, lift and secure the pick-up. Pull the spring cotter pin (2) and move the guide wheels into the desired position on the perforated bar (1). Secure the guide wheels in place with the spring cotter pin.



Note

Make certain that the guide wheels on either side of the pick-up are in the same position on the perforated bar.

Settings

12.8.1 Bearing Pressure Relief of the Pick-up

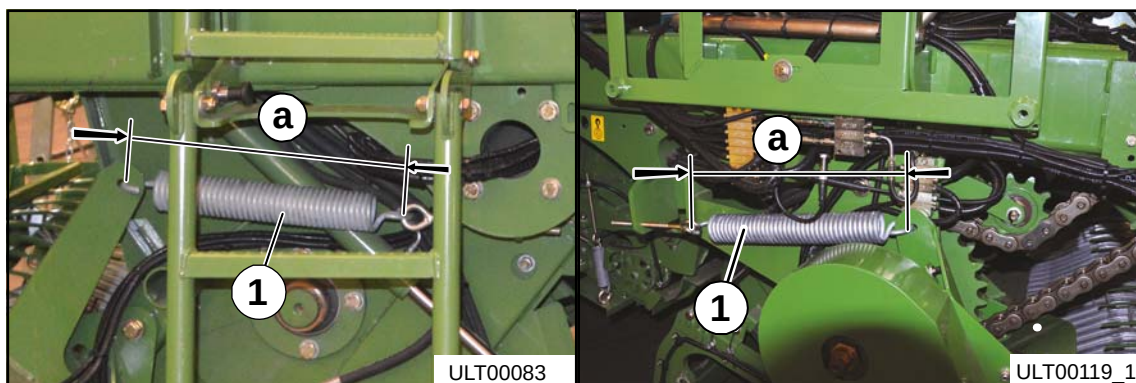


Fig. 201

The ground pressure relief takes place via spring (1) on right-hand and left-hand machine side. With raised pick-up, the length of spring under tension must be $a = 450 \text{ mm}$.



Note

The guide wheels must be relieved sufficiently.



Note

When used in straw, the pick-up should be set as high as possible off the ground.



Note

If the pick-up is attached higher, the height of the drawbar must be adjusted (see chap. Start-up "Height adjustment of the drawbar").

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Maintenance

13 Maintenance



WARNING!

If the basic safety instructions are not followed, people may be seriously injured or killed.

- To avoid accidents, the basic safety instructions in the chapter Safety must have been read and followed, see chapter Safety "Basic safety instructions".



WARNING!

If the safety routines are not adhered to, people may be seriously injured or killed.

- To avoid accidents, the safety routines in the chapter Safety must be read and followed, see chapter Safety "Safety routines".



WARNING! - When performing repair, maintenance or cleaning work on the machine, or in the case of technical intervention, drive elements may start moving.

Effect: Serious injuries or damage to the machine.

- Always make certain the wrapping table is in zero position before doing any repairs, maintenance or cleaning.



WARNING! - Risk of injury on the opened side guard!

Risk of injury of the head and the eyes in the area of the opened side guard.

- Consider the opened side guard when working in this area.



13.1 Test run.



Warning! - Using non-approved spare parts.

Effect: Danger to life, serious injuries or loss of warranty claims as well as exclusion of liability

- Use only authentic KRONE spare parts and accessories authorised by the manufacturer. The use of spare parts, accessories or additional equipment not manufactured, tested or approved by KRONE will exclude any liability for consequential damage.



Note

To ensure problem-free operation of the machine and to reduce wear and tear, specific maintenance and upkeep intervals must be observed. These include cleaning, greasing, lubricating and oiling parts and components.



ENVIRONMENT! - Disposal and storage of used lubricants and oil filters

Effect: Environmental damage

Store or dispose used oil and oil filters according to statutory provisions.



Environment! - Disposing of consumables and storage

Effect: Environmental damage

- Keep consumables in suitable containers according to statutory provisions.
 - Dispose of used consumables according to statutory provisions.
-

Maintenance

13.2 Position of the Sensors

Right-hand Side of the Machine

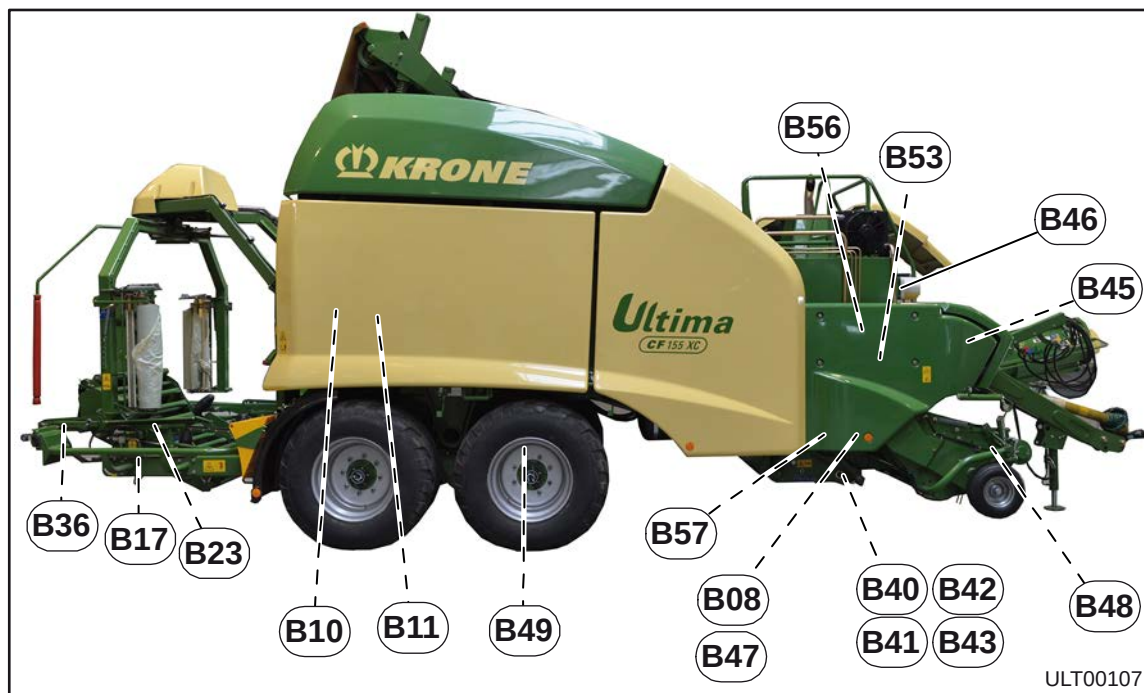
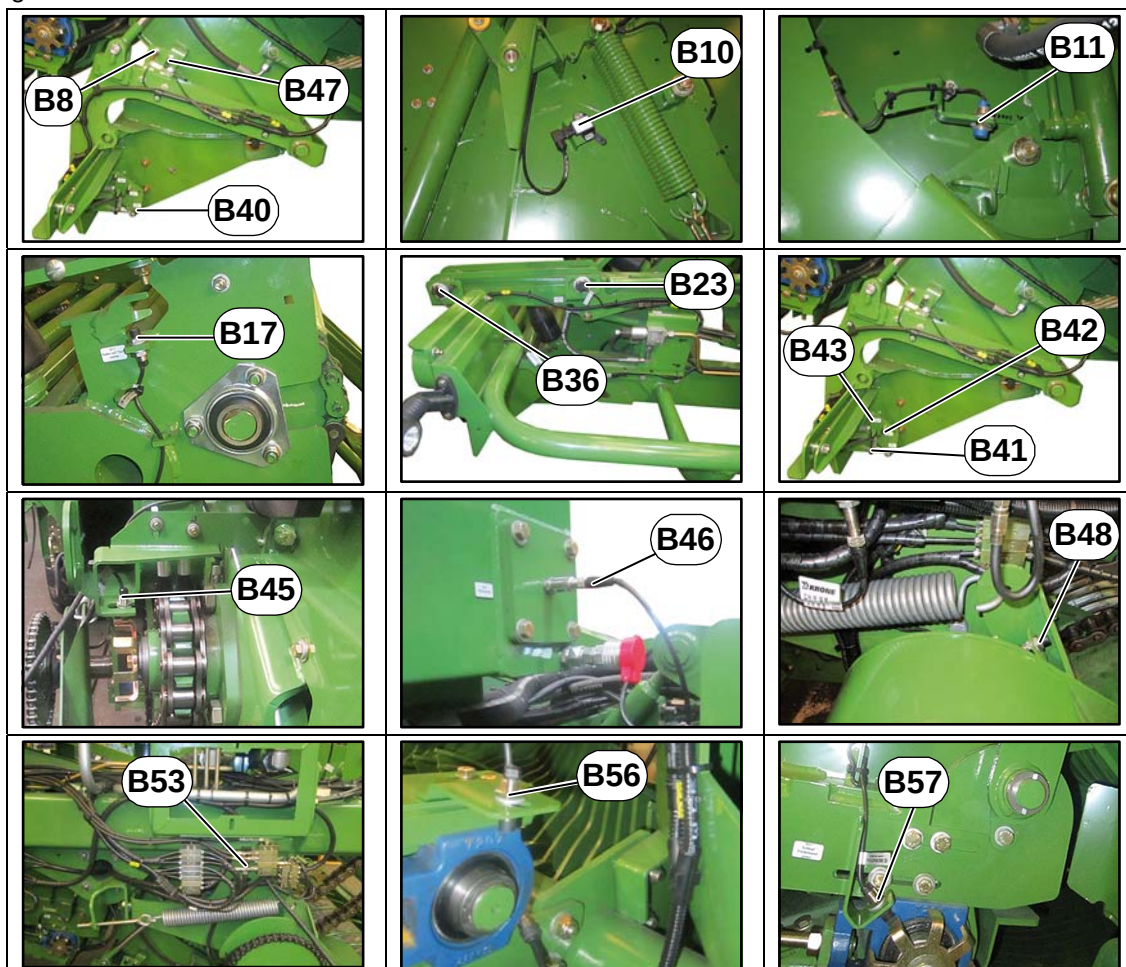


Fig. 202



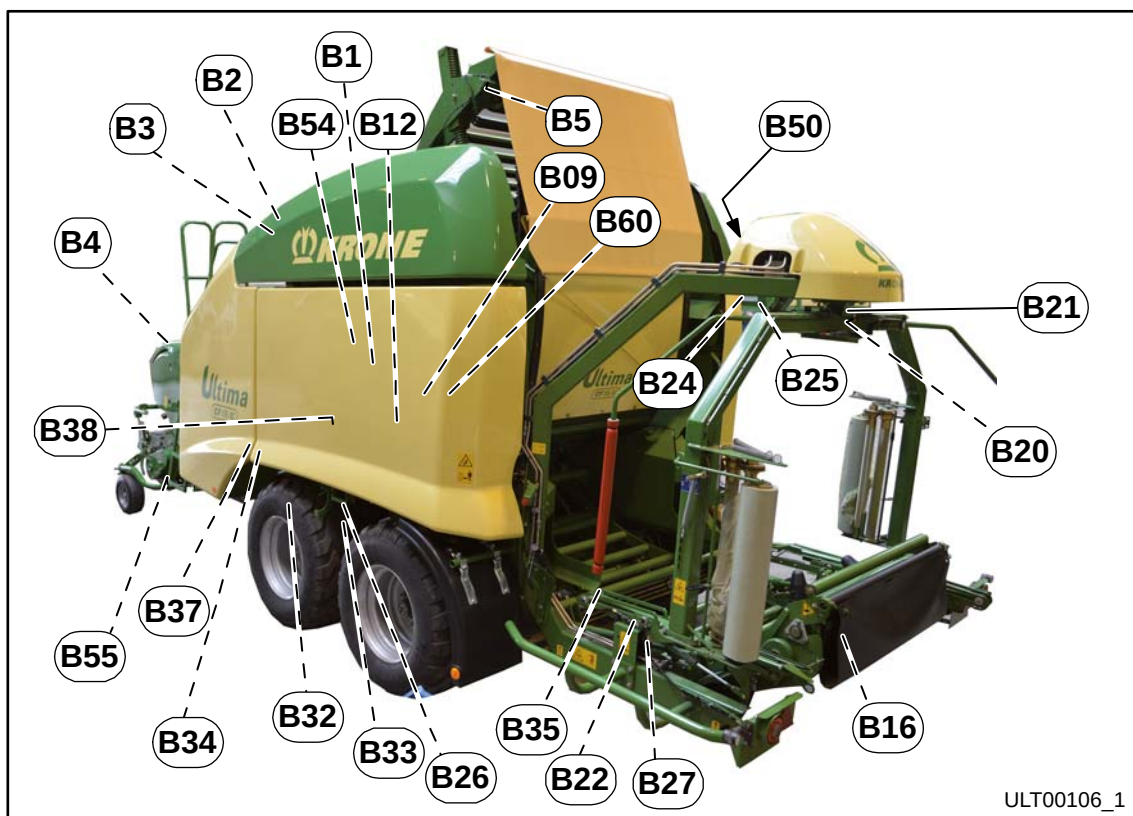


Maintenance

No.	Sensor Designation	No.	Sensor Designation
B8	Blade base position up	B43	A active
B10	Filling right	B45	Cutting system drive
B11	Bale chamber closed right	B46	Oil temperature sensor
B17	Bale on table right	B47	Blade base at bottom
B23	Holding arm right open	B48	Pick-up at top
B36	Holding arm right closed	B53	Central lubrication
B40	B not active	B56	Slip conveyor belt at top
B41	B active	B57	Slip conveyor belt at bottom
B42	A deactivated		

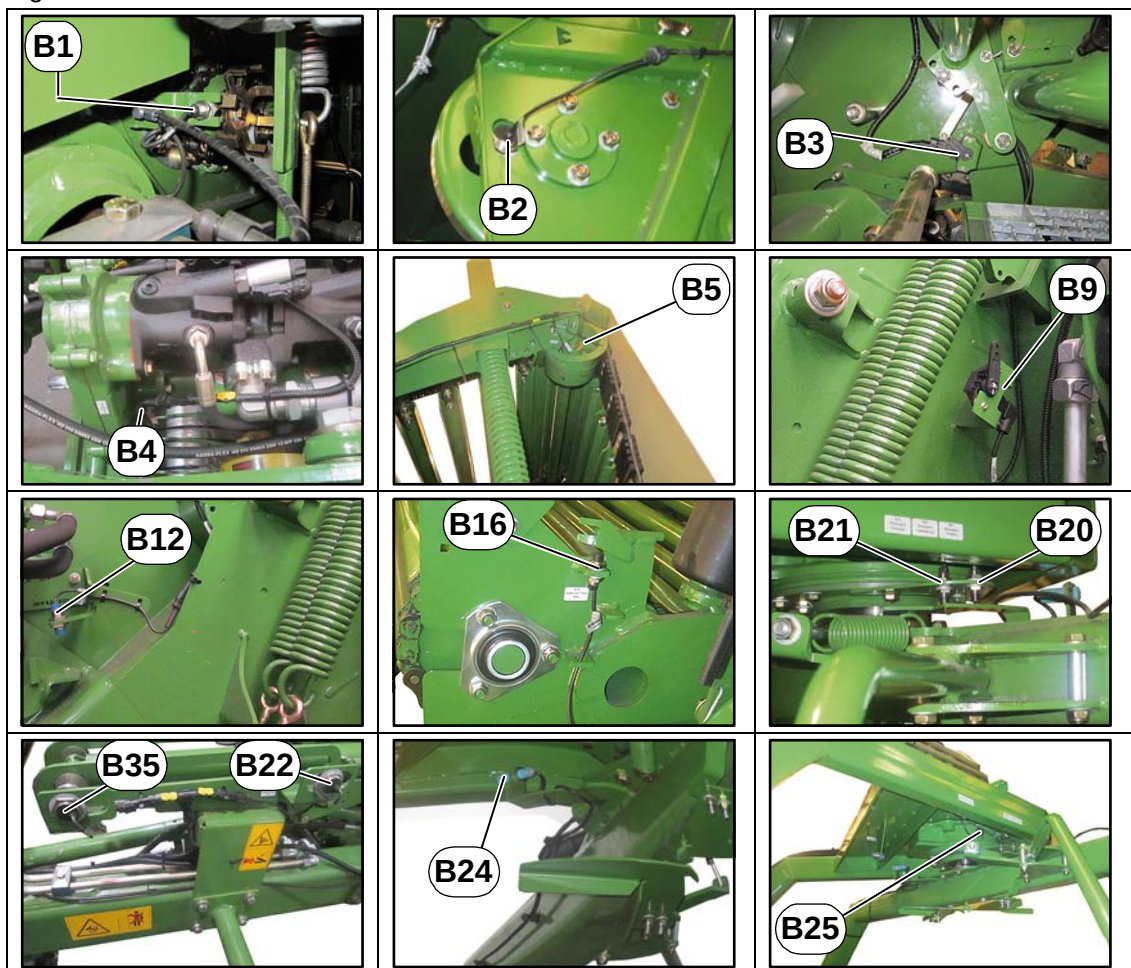
Maintenance

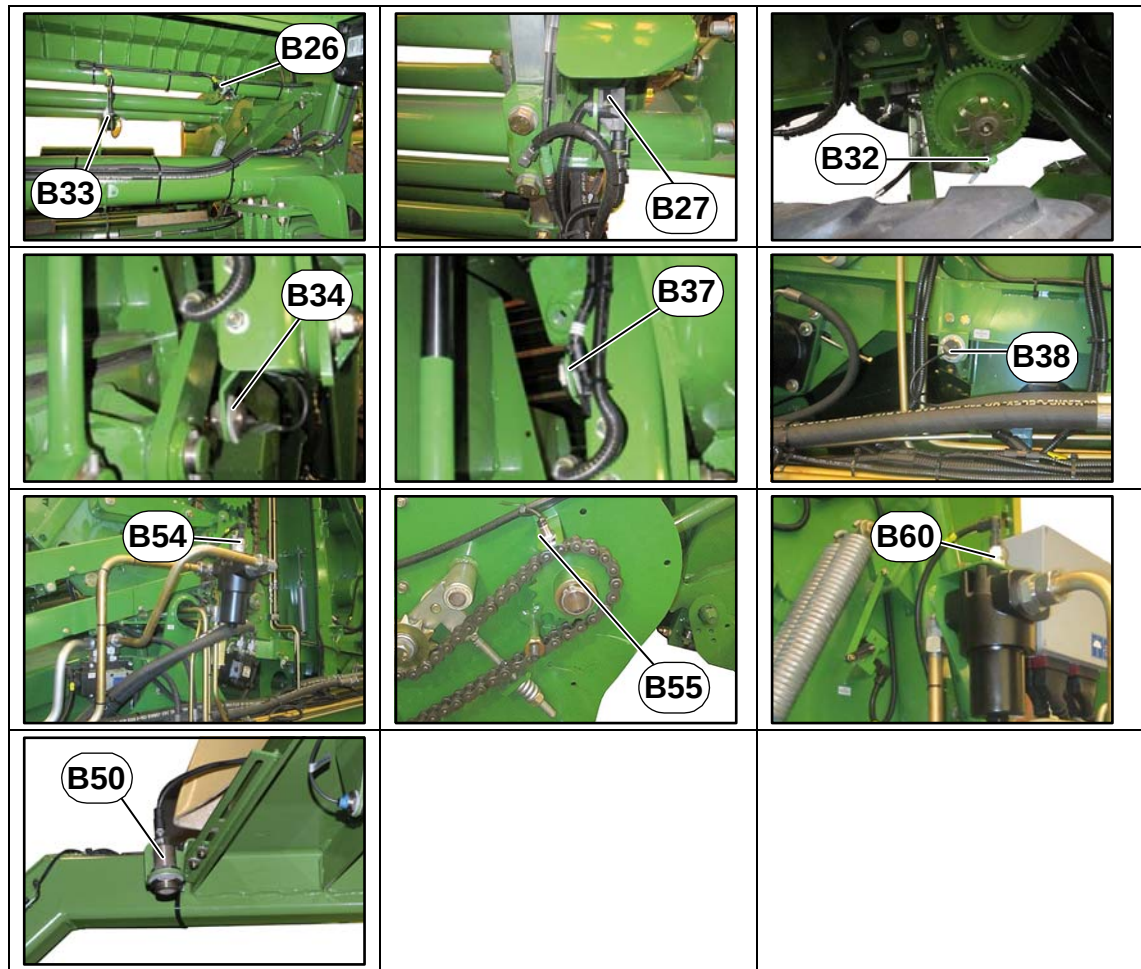
Left-hand Side of the Machine



ULT00106_1

Fig. 203





No.	Sensor designation	No.	Sensor designation
B1	Net length	B26	Starter roller bottom
B2	Net runs	B27	Position wrapping table
B3	Position net motor	B32	Conveyor belt speed
B4	PTO speed	B33	Transfer flap
B5	Slip	B34	Conveyor belt bottom
B9	Filling left	B35	Holding arm left closed
B12	Bale chamber closed left	B37	Conveyor belt top
B16	Bale on table left	B38	Starter roller top
B20	Wrapping arm zero position	B50	Ultrasonic sensor
B21	Position of wrapping arm	B54	Filter element conveyor belt
B22	Holding arm left open	B55	Pick-up speed
B24	Film tear	B60	Work hydraulics filter
B25	Wrapping arm speed		

Maintenance

13.2.1 Adjusting the Sensors

13.2.1.1 Namur sensor d = 12 mm

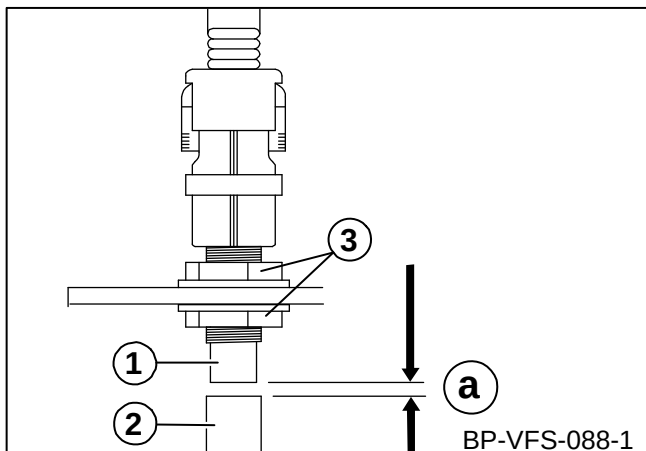


Figure 204

The dimension between the encoder (2) and the sensor (1) must be "a" = 2 mm .

Setting

- Loosen the nuts on either side of the sensor.
- Turn the nuts until dimension "a" = 2 mm is reached.
- Tighten the nuts again.

13.2.1.2 Namur sensor d = 18 mm

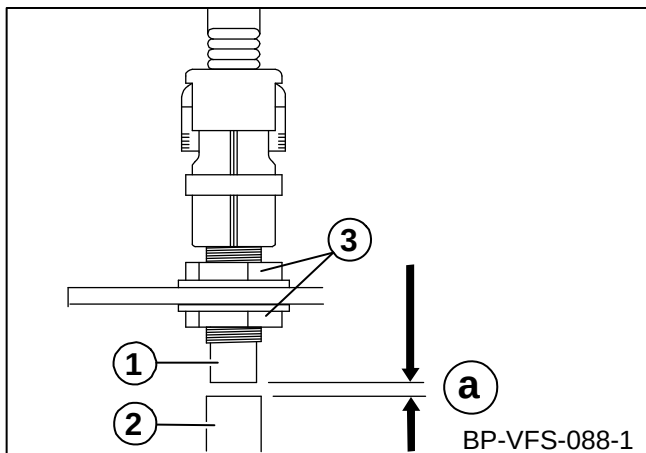


Fig. 205

The dimension between the encoder (2) and the sensor (1) must be "a" = 2 mm .

Setting

- Loosen the nuts on either side of the sensor.
- Turn the nuts until dimension "a" = 2 mm is reached.
- Tighten the nuts again.

13.2.1.3 Namur Sensor d = 30 mm

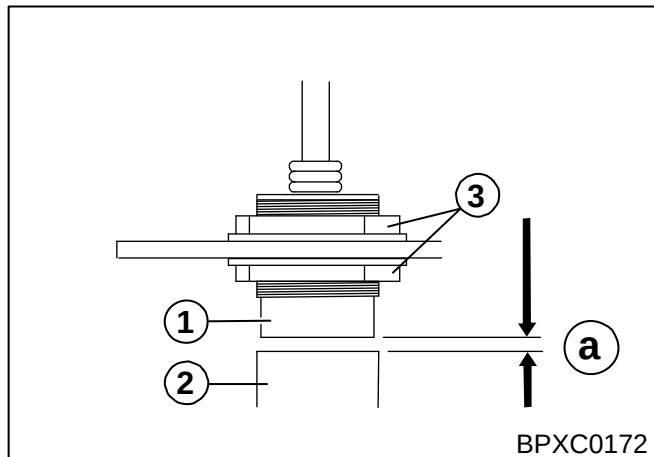


Fig. 206

The dimension between the encoder (2) and the sensor (1) must be "a" = 4 mm .



Note

The dimension must be set to 2 mm for sensor "Net runs" (B2).

Setting:

- Loosen the nuts on both sides of the sensor.
- Turn the nuts until dimension "a" = 4 mm is reached.
- Tighten the nuts again.

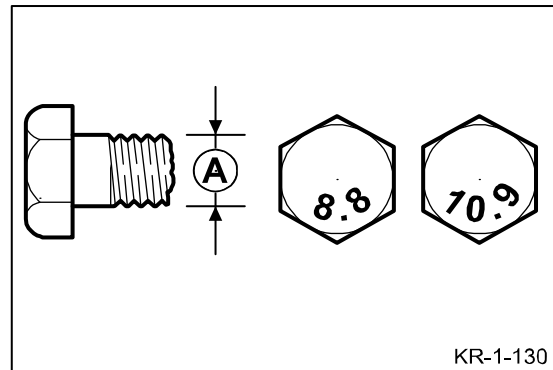
Maintenance

13.3 Tightening torques

Tightening torque M_A in Nm (unless otherwise indicated).

A Ø	5.6	6.8	8.8	10.9	12.9
	M_A (Nm)				
M 4		2.2	3	4.4	5.1
M 5		4.5	5.9	8.7	10
M 6		7.6	10	15	18
M 8		18	25	36	43
M 10	29	37	49	72	84
M12	42	64	85	125	145
M14		100	135	200	235
M14x1.5			145	215	255
M 16		160	210	310	365
M16x1.5			225	330	390
M 20			425	610	710
M 24			730	1050	1220
M 24x1.5	350				
M 24x2			800	1150	1350
M 27			1100	1550	1800
M 27x2			1150	1650	1950
M30			1450	2100	2450

A = Thread size
(the stability class can be seen on the head of the screw).



NOTE

The table above does not apply to countersunk screws with hexagonal socket in case the countersunk screw is tightened via hexagonal socket.



Note

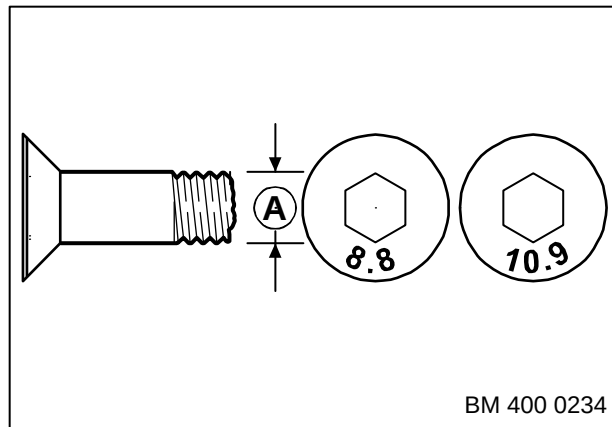
Regularly check that nuts and bolts are tightly in place (approx. every 50 hours) and tighten them if necessary.

13.4 Tightening torques (countersunk screws)

Tightening torque M_A in Nm (unless otherwise indicated).

A Ø	5.6	8.8	10.9	12.9
	M_A (Nm)			
M 4		2.5	3.5	4.1
M 5		4.7	7	8
M 6		8	12	15
M 8		20	29	35
M 10	23	39	58	67
M 12	34	68	100	116
M 14		108	160	188
M 16		168	248	292
M 20		340	488	568

A = thread size
(the stability class can be seen on the head of the screw).



NOTE

The table above does not apply to countersunk screws with hexagonal socket and metric thread which are tightened via hexagonal socket.



Note

Regularly check that nuts and bolts are tightly in place (approx. every 50 hours) and tighten them if necessary.



Maintenance

13.5 Maintenance table

Before the beginning of the season	
Hydraulic system	
Check oil level of hydraulic oil tank	
Brake	
Function test of brake	
Drain compressed air reservoir	
Have brake pads checked by specialist workshop	
Check slack adjuster (refer to chapter Maintenance "Setting the Brakes with Hydraulic Slack Adjuster")	
Check air filter for pipes	
Oil level check gearbox	
Gearbox wrapping table	
Gearbox main gearbox	
Tyres	
Check tyres visually for cuts and breaks and check the tyre pressure	
Screws / nuts	
Retighten all screws	

Once after 10 hours	
Hydraulic system	
Check hydraulic hoses	

Once after 50 hours	
Oil change gearbox	
Gearbox wrapping table	
Gearbox main gearbox	

Every 10 hours, at least once a day	
Oil level check gearbox	
	Gearbox wrapping table
	Gearbox main gearbox
Hydraulic system	
	Check oil level of hydraulic oil tank
Brake	
	Function test of brake
Conveyor belts	
	Check distance from lower conveyor belt to starter roller (refer to chapter Settings "Setting the distance from lower conveyor belt to starter roller")
General maintenance work	
	Clean the machine "completely"
Tyres	
	Check tyres visually for cuts and breaks and check the tyre pressure

Every 50 hours	
Screws / nuts	
	Retighten all screws
Tyres	
	Tighten wheel nuts, measure tyre pressure using the testing device
Brake	
	Drain compressed air reservoir

Every 250 hours	
Brake	
	Check slack adjuster (refer to chapter Maintenance "Setting the Brakes with Hydraulic Slack Adjuster")

Every two years	
Brake	
	Pneumatic brake cylinders

At the end of the season	
Oil change gearbox	
	Gearbox wrapping table
	Gearbox main gearbox
Hydraulic system	
	Hydraulic oil change
	Replace the filter element of high-pressure filter



Maintenance

Maintenance table according to bales produced

When the season begins, after approx. 5 bales	
Drive chains	
Check and set chain tension	
Conveyor belt	
Check and set clockwise rotation/counter-clockwise rotation	
Floor conveyor	
Check screws	

After first use	
Floor conveyor	
Check and set floor conveyor tension	

After the first 20 - 30 bales	
Conveyor belt	
Check and set clockwise rotation/counter-clockwise rotation	

After the first 150 bales	
Drive chains	
Check and set chain tension	
Conveyor belt	
Check and set clockwise rotation/counter-clockwise rotation	

After the first 500 bales	
Floor conveyor	
Check screws	

Every 1000 bales	
Floor conveyor	
Check and set floor conveyor tension	

Every 3000 bales	
Floor conveyor	
Check screws	

After every season	
Drive chains	
Check and set chain tension	
Conveyor belt	
Check and set clockwise rotation/counter-clockwise rotation	

13.6 Tandem Axle

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".

After the first few kilometres of driving, the transfer mechanisms and the brake linings of the brake drum will have adjusted. The play resulting from this must be compensated for.

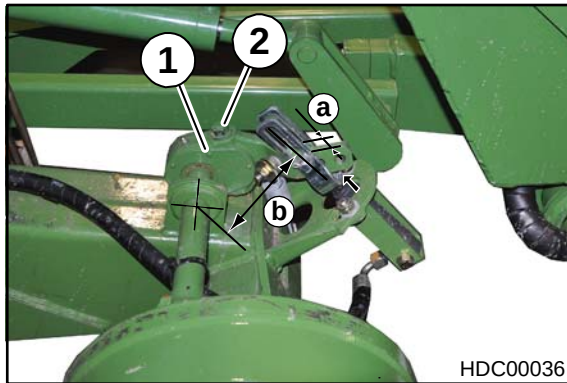
13.6.1 Setting of the Brakes with Hydraulic Linkage Setter

Fig. 207

- Check the linkage setter (1) every 200 operating hours.
- Activate the linkage setter (1) manually in the pressure direction. If the clear path (a) is max. 35mm, the setting of the linkage setter (1) must be modified.
- Readjust the linkage setter (1) by using an adjusting screw (2).
- Set the clear path (a) to 10 - 12 % of the connected brake lever length (b).
Example:
In case of a lever length of $b = 125 \text{ mm}$, the clear path must be 12 - 15 mm.

Maintenance

13.7 Tyres



Warning! - Tyre fitting incorrect

Effect: Injuries or damage to the machine

- Fitting tyres requires sufficient knowledge and the availability of proper tools!
- If tyres are not correctly fitted, it could explode when pumped up. This can cause serious injury. If you do not have sufficient experience of fitting tyres, have tyres fitted by the KRONE dealer or a qualified tyre specialist.
- When fitting tyres on the wheel rims, the maximum pressure given by the tyre manufacturer must not be exceeded. The tyre or even the wheel rim could explode and/or burst.
- If the tyre heels do not fit properly when the maximum permitted pressure is reached, let out the air, align tyres, lubricate the tyre heels and pump up the tyre again.
- Detailed information about how to fit tyres onto agricultural machinery can be obtained from the tyre manufacturers.

13.7.1 Checking and maintaining tyres

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".

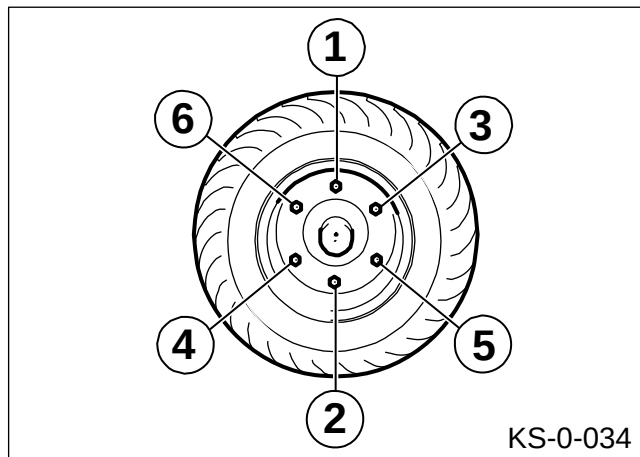


Fig. 208

When loosening and tightening the wheel nuts, observe the order indicated in the illustration. 10 operating hours after they have been mounted, check the wheel nuts and retighten them if necessary. After that, check them every 50 operating hours to make certain they are tight. Check the tyre pressure at regular intervals and refill if necessary. The tyre pressure depends on the size of the tyres. The values are listed in the table.

Tightening Torque

Threading	Key size in mm	Number of bolts per hub - pieces	Max. tightening torque	
			black	galvan.
M12 x 1.5	19	4/5	95 Nm	95 Nm
M14 x 1.5	22	5	125 Nm	125 Nm
M18 x 1.5	24	6	290 Nm	320 Nm
M20 x 1.5	27	8	380 Nm	420 Nm
M20 x 1,5	30	8	380 Nm	420 Nm
M22 x 1.5	32	8/10	510 Nm	560 Nm
M22 x 2	32	10	460 Nm	505 Nm

Maintenance

13.7.2 Tyre air pressure

Check the tyre pressure at regular intervals and refill if necessary. The tyre pressure depends on the size of the tyres. The values are listed in the table.

Tyre designation	Minimum pressure [bar] Vmax ≤ 10 km/h	Maximum pressure [bar] Vmax ≤ 60 km/h	Recommended tyre pressure** [bar] Vmax ≤ 40 km/h or in case of wet conditions
Guide wheels			
15 x 6.00- 6 10 PR		3.7	1.5
Tandem axle			
620/40 R 22.5 148 D	1.0	3.2	1.8

Before using wheels with tyre or rim dimensions other than those fitted at the time of delivery, consult KRONE customer service concerning the brake setting.

- *) This recommendation applies especially to the typical mixture of operation (field/road) at the maximum permitted machine speed.
If necessary, the tyre air pressure can be reduced to the minimum air pressure. However, the associated maximum speed must then be observed.
- **) In wet weather conditions the tyre pressure can be further reduced at a recommended speed of 40 km/h.

13.8 Oil Level Check and Oil Change on the Gearboxes

13.8.1 Oil Level Check and Oil Change Intervals (Gearboxes)



Note - oil level check and oil change (gearboxes) and lubricating the machine

Effect: Long expected service life of machine

- Oil change on all gearboxes after 30 to 50 operating hours and then after every season.
- Oil level check each time before using and no later than after about 500 pressed round bales.
- Compliance with the changing intervals is absolutely essential for bio-degradable oils because of ageing of the oils.

13.8.2 Main drive

The main drive (1) is located behind the drawbar in the front area of the machine.

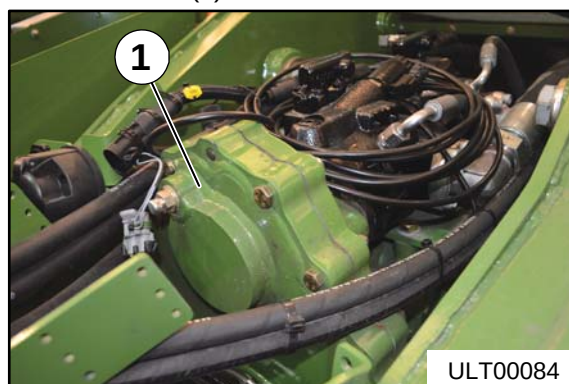


Fig. 209

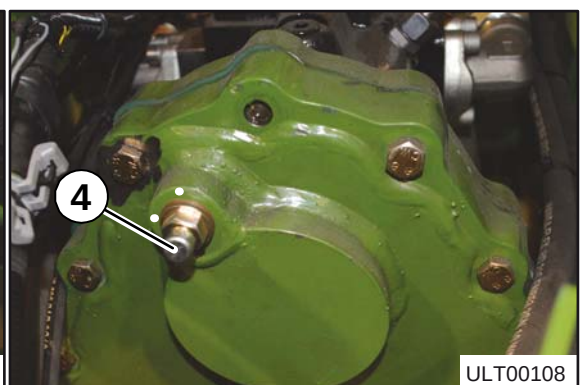
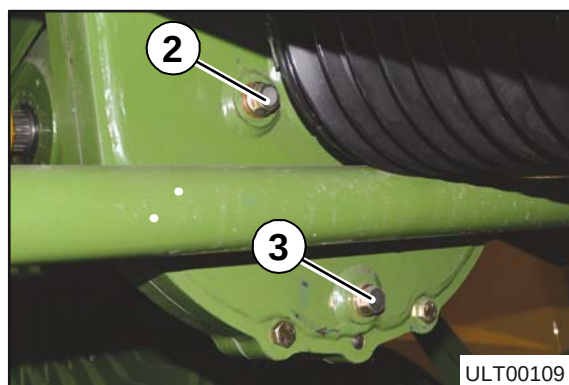


Fig. 210

2) Inspection glass

3) Drain screw

4) Filling screw / oil filling hole

The inspection glass (2) is located on the right next to the PTO shaft on the gearbox. The oil drain plug (3) is located on the bottom of the gearbox. The filling screw (4) is located on the top of the gearbox.

Maintenance



Note

Perform oil level check and change the oil while the machine is in a horizontal position!

Interval for oil level check and oil change: refer to chapter Maintenance "Maintenance Table"

Oil Quality / Amount of Oil: Refer to Chapter Technical Data "Lubricants"

Oil level check:

- Oil level to the centre of the viewing glass.

If the oil does not reach the centre of the viewing glass:

- Screw out filler plug.
- Top up oil via oil filling hole until the centre of the viewing glass is reached.
- Screw in filler plug and tighten it securely.

Oil change:

Collect escaping oil in a suitable container.

- Screw out filler plug.
- Screw out oil drain plug and drain the oil.
- Screw in oil drain plug and tighten it securely.
- Top up new oil via oil filling hole until the centre of the viewing glass is reached.
- Screw in filler plug and tighten it securely.



Note! - Do not mix different types of oil.

Effect: Damage to the machine

- Never mix different types of oil.
 - Before changing the type of oil, consult customer service. Never use engine oil.
-



Note

The used oil must be disposed of correctly

13.9 Wrapping table chain

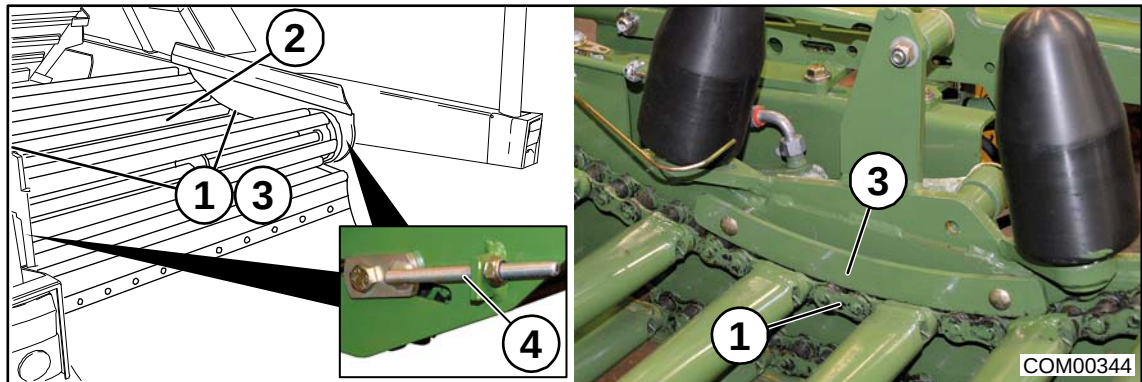


Fig. 211

The wrapping table chain (1) must be tensioned on both sides of the wrapping table (2) so that it is positioned on the chain guides (3).

- Always check the tension of the wrapping table chain before use.

If the wrapping table chain is positioned on the chain guides, the chain tension is correct.

If the wrapping table chain is not positioned on the chain guides:

- Retension the wrapping table chain using the chain tensioner (4).

13.10 Drive chains



WARNING! – Danger of entanglement in the drive chains!

Effect: Risk of injury caused by entanglement of loose long hair or loose clothing.

- After working on the chains, always reassemble or close the safety devices.



Note

When working on the drive chains, the tailgate must be closed and the bale chamber empty.

All drive chains are supplied with oil by a central chain lubrication system.

As the lubricating oil lines are not highly pressurised, it may occur that they jam. For this reason the lubricating oil lines must be checked for proper functionality daily before using.

The mode of operation of the central chain lubrication system is explained in the Chapter entitled "Settings".

Maintenance

13.10.1 Opening side guards and assembly flaps

The drive chains are not accessible until the side guards and assembly flaps have been opened.

- Open side guards (see chap. Safety equipment "Side guards").

Opening assembly flap

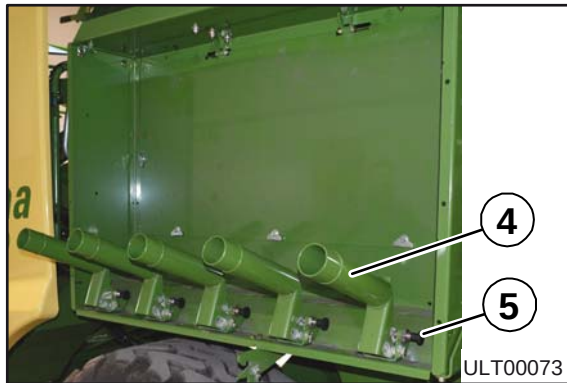


Fig. 212

Swivel all film roll holders (4) forwards:

- Pull out the interlocking button (5), swivel the film roll holder (4) forwards and engage the interlocking button (5).

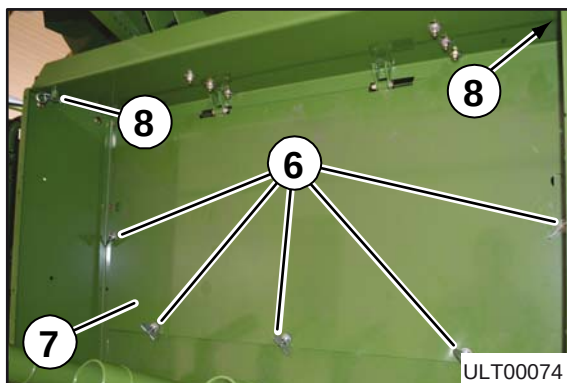


Fig. 213

- Unlock the knob (6) on the maintenance flap (7).
- Pull the spring cotter pin (8) out of the bolts on the right and left on the top of the twine box.

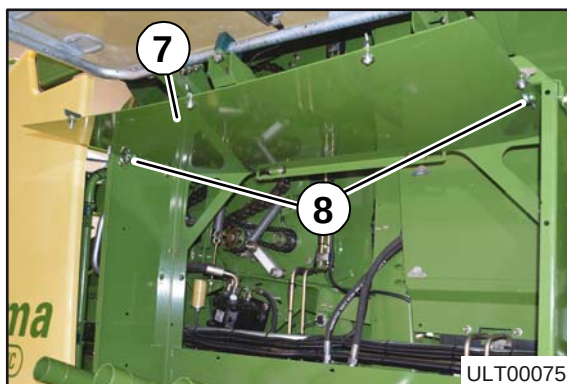


Fig. 214

- Fold up the maintenance flap (7) and secure position by inserting the spring cotter pins (8) into the bolts.

13.10.2 Tensioning the Drive Chains

Left-hand Side of the Machine

Drive chains main drive on left

Prerequisites

- Side guards and assembly flaps are open.

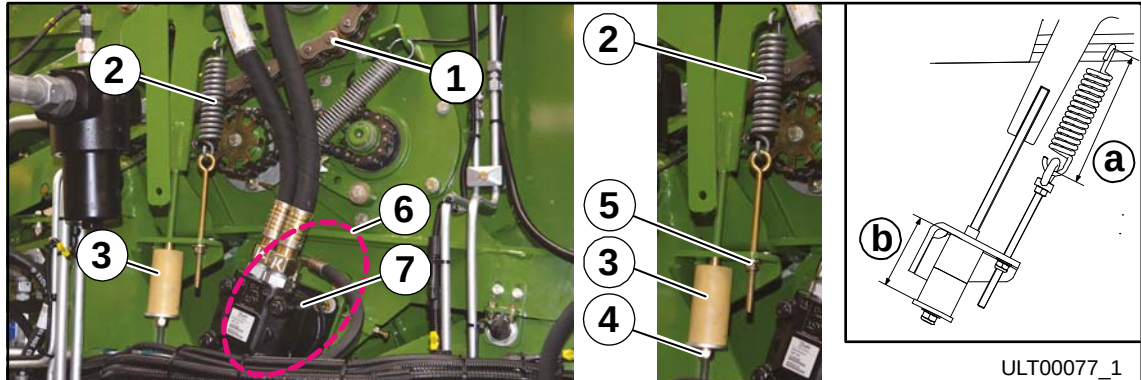


Fig. 215

The drive chain (1) is tensioned by the tension spring (2).

Checking the chain tension:

- Measure the distance (a). The distance (a) must be 180 mm from inside of eye to inside of eye.

Correcting the chain tension:

- Turn the nut (5) on the ring bolt until the dimension (a) = 180 mm.

Adjusting position of the bump stop (3):

- Turn the nut (4) on the threaded rod until the dimension (b) = 105 mm.

Tension drive chain (6) conveyor belt top:

- Loosen the four screws on engine (7).
- Turn engine as far as it will go in order to tension the drive chain.

Maintenance



WARNING! – Crush hazard!

Effect: Foot injuries.

- Lower pick-up to the ground.

Chain drive pick-up left

Prerequisites

- Guard is removed.

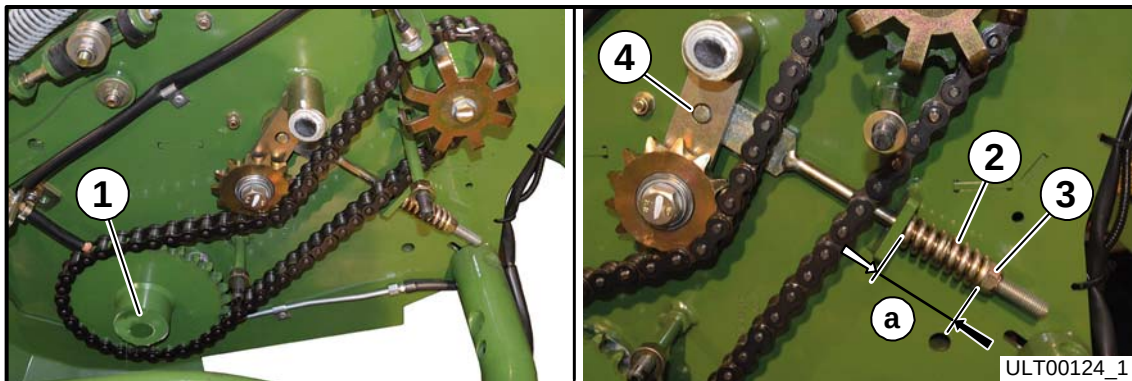


Fig. 216

The drive chain (1) is tensioned with clamping element (4).

Checking chain tension:

The length of spring under tension must be $a = 60$ mm.

Correcting chain tension:

- Increase or reduce the spring tension of the tension spring (2) by turning the nut (3) until dimension $a = 60$ mm is set.

Right-hand Side of the Machine

Chain drive at top right

Prerequisites

- Side guards and assembly flaps are open.

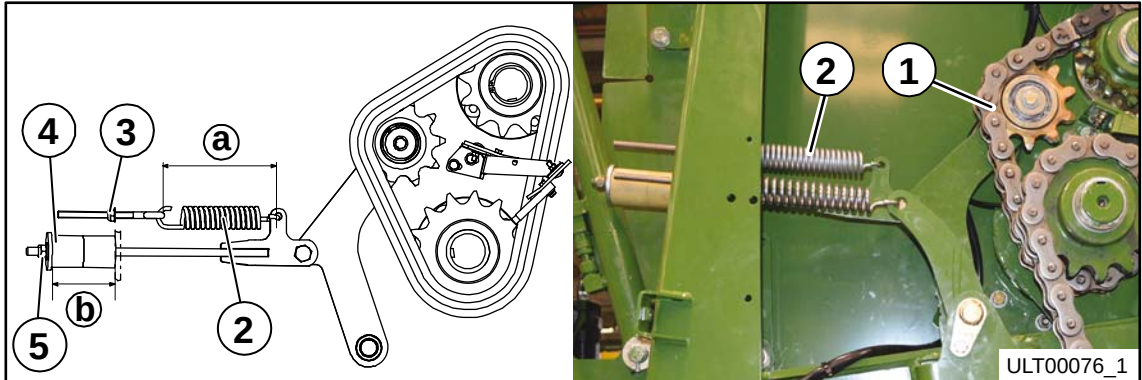


Fig. 217

The drive chain (1) is tensioned by a tension spring (2).

Checking the chain tension:

- Measure the distance (a). The distance (a) must be 180 mm from inside of eye to inside of eye.

Correcting the chain tension:

- Turn the nut (3) on the ring bolt until the dimension (a) = 180 mm.

Adjusting position of the bump stop (4):

- Turn the nut (5) on the threaded rod until the dimension (b) = 105 mm.

Chain drive in middle right

Prerequisites

- Side guards and assembly flaps are open.

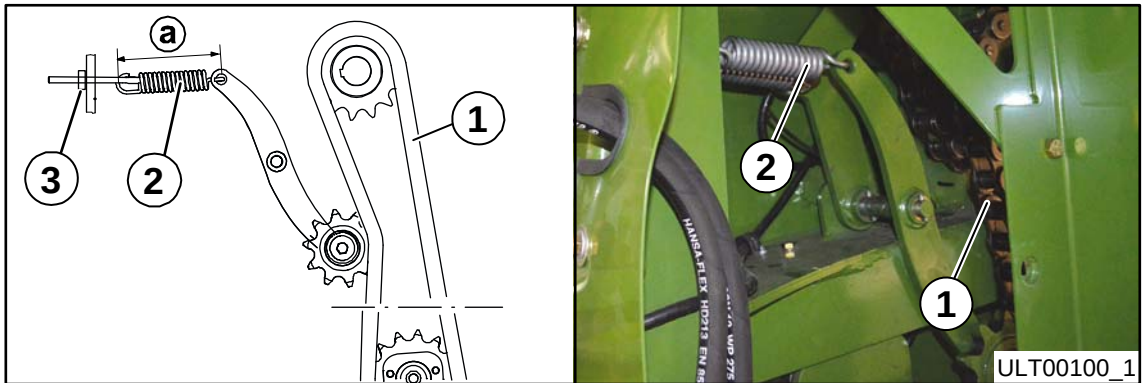


Fig. 218

The drive chain (1) is tensioned by a tension spring (2).

Checking the chain tension:

- Measure the distance (a). The distance (a) must be 180 mm from inside of eye to inside of eye.

Correcting the chain tension:

- Turn the nut (3) on the ring bolt until the dimension (a) = 180 mm.

Maintenance

Drive chain at bottom right

Prerequisites

- Side guards and assembly flaps are open.

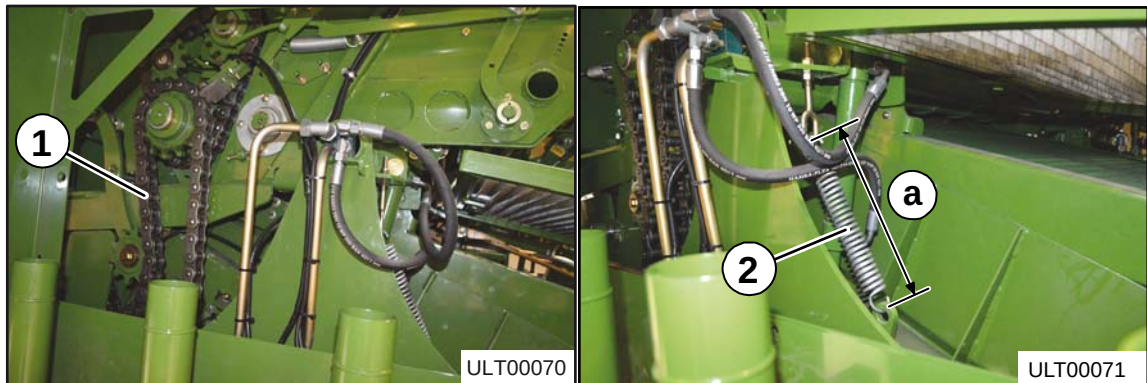


Fig. 219

The drive chain (1) is tensioned by the tension spring (2).

To check the chain tension, the starter roller must be at the top.

Checking the chain tension:

- Measure the distance (a). The distance (a) must be 265 mm from inside of eye to inside of eye.



WARNING! – Crush hazard!

Effect: Foot injuries.

- Lower pick-up to the ground.

Chain drive pick-up right

Prerequisites

- Guard is removed.

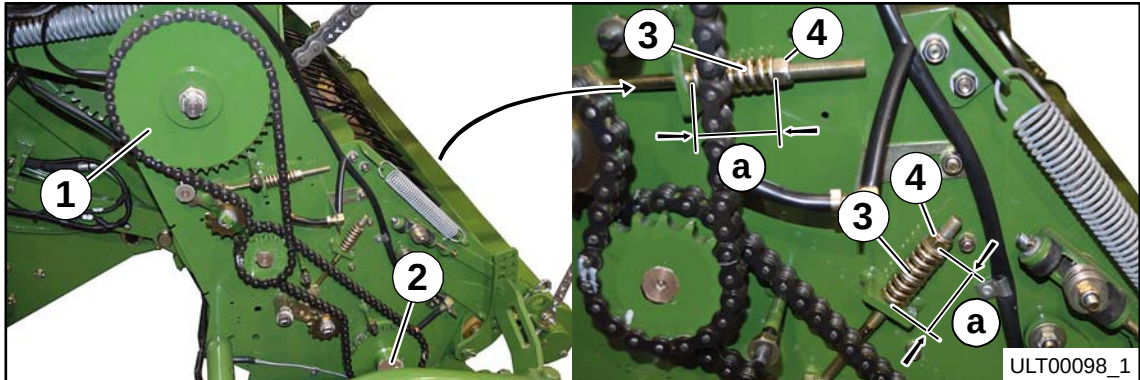


Fig. 220

The main drive of pick-up and the pick-up drive (2) are located on the pick-up on the right-hand side of the machine. The drive chains are tensioned with clamping elements (3).

Checking chain tension:

The length of spring under tension must be $a = 60 \text{ mm}$.

Correcting chain tension:

- Increase or reduce the spring tension of the compression spring (3) by turning the nut (4) until distance $a = \text{approx. } 60 \text{ mm}$ is set.

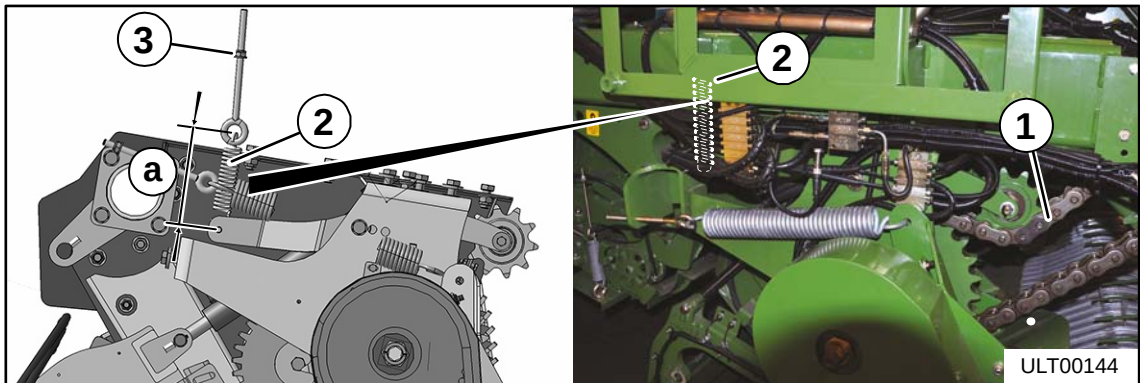


Fig. 221

The drive chain (1) of cutting roller drive is tensioned via tension spring (2).

Checking chain tension:

The length of spring under tension must be $a = \text{approx. } 180 \text{ mm}$.

Correcting the chain tension:

- Increase or reduce spring tension of tension spring (2) by turning nut (3) until distance $a = \text{approx. } 180 \text{ mm}$ is set.

Maintenance

13.11 Hydraulics



DANGER! – Risk of injury caused by hydraulic oil spraying out!

Effect: Danger to life, injuries or damage to the machine.

- Before working on the hydraulic system, reduce the pressure. Hydraulic oil escaping under high pressure can cause severe injuries. In the event of injuries, find a physician immediately. There is danger of infection.
- Work on the hydraulic system, especially on the pressure accumulators, must only be performed by trained and authorised personnel.
- The pressure accumulator must only be filled with the gas intended for it.



WARNING!

Risk of injury as a result of incorrect handling of liquids under high pressure.

Effect: Escaping high-pressure liquids can penetrate the skin and cause serious injury.

Repair work on the hydraulic system may only be performed by authorised KRONE professional workshops.

- Depressurise the system before disconnecting lines.
- When searching for leaks, use suitable aids and wear protective goggles.
- High-pressure liquid that is escaping from a small opening is virtually invisible. Therefore, you should use a piece of cardboard or something similar when searching for leaks. Protect your hands and body.
- If liquid penetrates the skin, consult a doctor immediately. The liquid must be removed from the body as quickly as possible. Danger of infection! Physicians who are not familiar with this area must consult appropriate information from a competent medical source.
- Check hydraulic hoses regularly and replace if there are any signs of damage or ageing! The replacement lines must comply with the requirements of the device manufacturer.
- Ensure that all line connections are tight before the pressure in the system builds up again.



WARNING! – Hydraulic hose lines are subject to ageing

Effect: Danger to life or serious injuries

The characteristics of the lines change depending on pressure, heat load and the effect of UV rays.

The date of manufacture appears on the hydraulic hoses. This way the age can be ascertained quickly.

By law the hydraulic lines must be replaced after six years.

Use original spare parts when replacing hydraulic hoses!

13.11.1 Adjusting the tension of the locking hook

Prerequisites

- Side guards and assembly flaps are open.

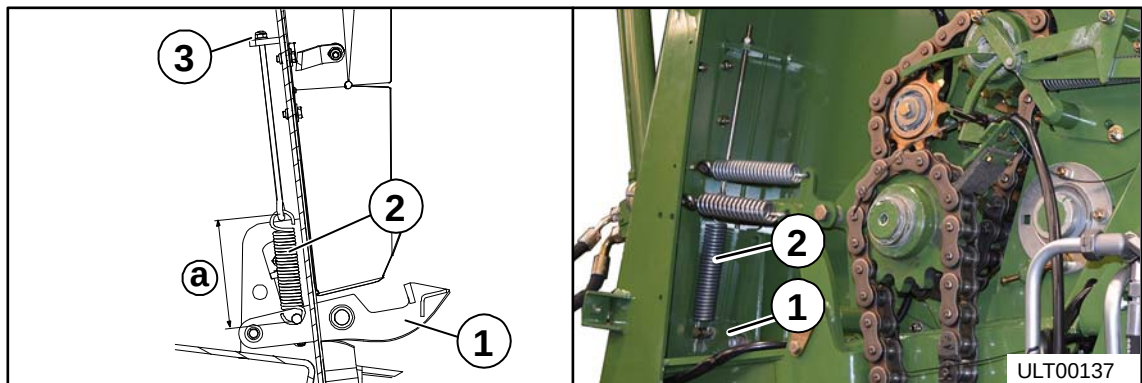


Fig. 222

The locking hook (1) is tensioned by the tension spring (2).

Checking the tension:

- Measure the distance (a). The distance (a) must be 220 mm from inside of eye to inside of eye.

Correcting the tension:

- Turn the nut (3) on the ring bolt until the dimension (a) = 220 mm.

Maintenance



Note

- When working on the hydraulic system, absolute cleanliness is essential
- Check the hydraulic oil level each time before placing the machine in operation
- Observe the intervals for replacing the hydraulic oil and hydraulic oil filter
- The used oil must be disposed of correctly

13.11.2 On-board Hydraulic System

The on-board hydraulic pump is driven directly by the PTO shaft via a gearbox. The hydraulic tank is located on the right front side of the machine. The hydraulic filters of the on-board hydraulic system and the control valves are located in the centre and on the rear left of the machine.



Fig. 223

Y1	Blade B	Y17	Close holding arm
Y2	Cutting system coupling	Y18	Lock holding arm
Y3	Blade A	Y19	Wrapper brake
Y4	Coupling bale chamber	Y21	Conveyor belt speed
Y5	Block circulation	Y22	Raise conveyor belt
Y6	Wrapping arm speed	Y23	Lower conveyor belt
Y7	Bale chamber closed	Y24	Raise starter roller
Y8	Bale chamber open	Y25	Lower starter roller
Y10	Wrapping table forwards	Y26	Insert net
Y11	Wrapping table backwards	Y27	Cut the net
	Conveyor belt direction		
Y13	backwards	Y28	Lower blade base
Y14	Wrapping table chain 1/2	Y29	Raise blade base
Y15	Loosen holding arms	Y33	Central lubrication
Y16	Open holding arm		

13.11.3 Emergency manual activation of electromagnetic valves

In the event the electrical system fails completely, the valves are equipped with an <<emergency manual activation>>.

Activation acts on the valves.

- Activate the valves (Y04 to Y17) by using a button



WARNING!

There is an increased risk of injury if you operate the machine using the emergency manual activation.

When the machine is operated using the emergency manual activation, functions are executed immediately without safety prompts. This means there is an increased risk of injury.

- Only persons who are familiar with the machine are permitted to perform an emergency manual activation.
- The person performing the test must know which machine parts are moved by controlling the valves.
- The manipulation of the valves must only be carried out from a safe position outside the range of the machine parts which are moved by the actuators.
- Make certain there are no persons, animals or objects in the danger zone.

Example of emergency manual activation

In order to execute a function in emergency manual activation, always press valve Y05 (valve block) and the corresponding valve for the function.

A sequence is described below using "Close holding arm" as an example.

Moving wrapping table forwards

- Press and hold down button on the valve (Y05) "valve block".
- Press and hold down button on the valve (Y17) "Close holding arm" until the holding arm is closed.

Maintenance

13.11.4 Hydraulic Tank



ENVIRONMENT! - Disposal and storage of used lubricants and oil filters

Effect: Environmental damage

Store or dispose used oil and oil filters according to statutory provisions.



Note

Check the hydraulic oil level when the hydraulic oil is at operating temperature.

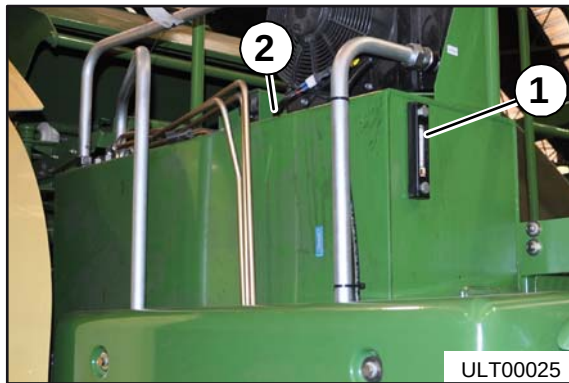


Fig. 224

To check the oil level:

Prerequisite

- The tailgate must be closed.

- Read the oil level on the inspection glass.

If the inspection glass shows a level of 3/4 or more, the oil level is correct.

If the inspection glass shows a level below 3/4:

- Clean the area around the filler neck.
- Top up the oil up to the 3/4 mark using the filler neck.

Oil Changing Interval:

- Every 500 operating hours
- At least after each season



Note

The types of oil must not be mixed! When changing, observe the VDMA guidelines!

Filling quantity and oil designation:

	Filling quantity	Designation/brand	Bio-degradable lubricants
Hydraulic tank	150 l	HLP ISO-VG 46 (initial equipment) HVLP ISO-VG 32/46 HEES 46 (rapidly bio-degradable)	On request

13.11.5 High-pressure filter

The filter takes up depositions of solid particles of the hydraulic system. The filtering of the hydraulic circuit serves as a prevention of damages on components of the circuit. The filter is equipped with an electrical contamination indicator. If the degree of contamination is too high, an appropriate error message appears in the display.



Note

The filter elements (1) must be changed when error message “39 Hydraulic filter work hydraulics” appears in the display.

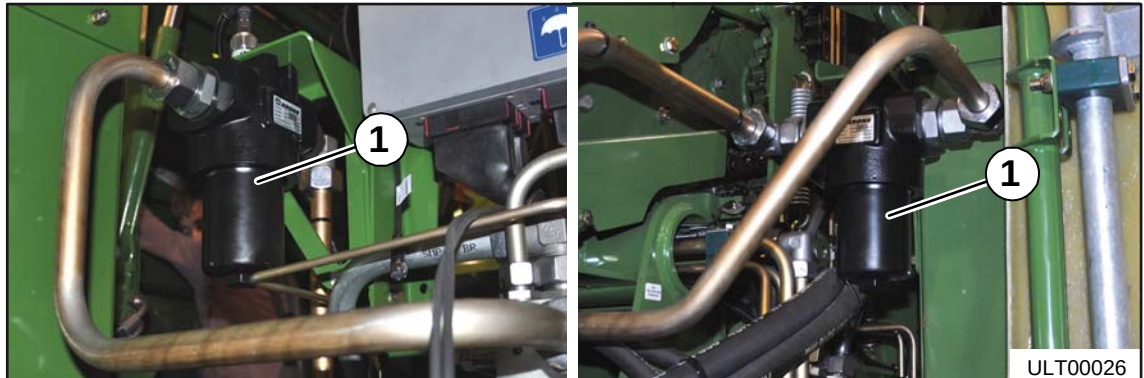


Fig. 225

The machine features two filters (1) which are located on the left side of the machine under the front and rear guard.

Maintenance

Replacing the Filter Element

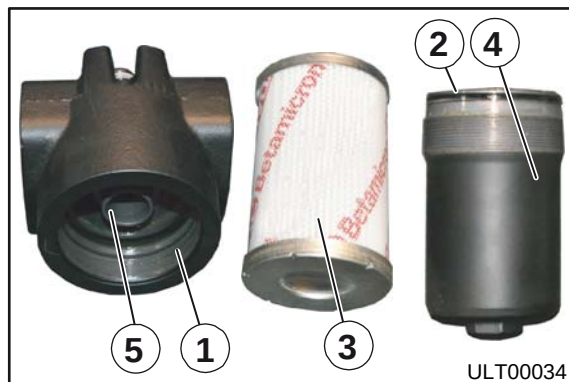


Fig. 226



ENVIRONMENT! - Disposal and storage of used lubricants and oil filters

Effect: Environmental damage

Store or dispose used oil and oil filters according to statutory provisions.

Collect escaping oil in a suitable container.

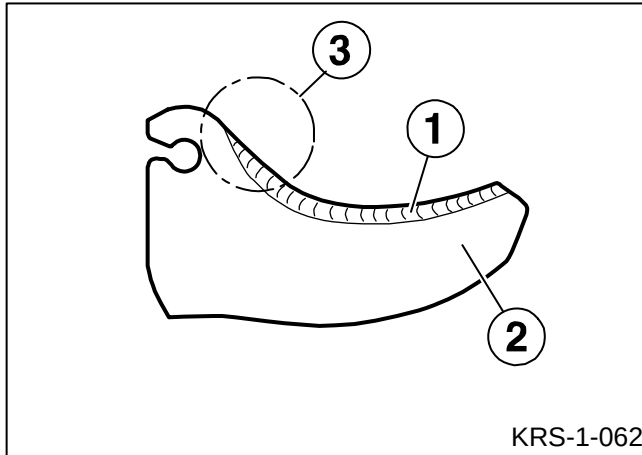
- Relieve all pressure from the hydraulic system.
- Unscrew the bottom part of the filter (4) from the top part of the filter (1), clean it and make certain that it is not damaged.
- Remove the filter element (3) and replace it by a new one with identical properties.
- Push a new filter element (3) onto the valve sleeve (5).
- Check the O-ring seal (2) and, if necessary, replace it by a new one with identical properties.
- Screw the bottom part of the filter (4) onto the top part of the filter until the stop is reached and turn it back one quarter of a revolution.
- Charge the hydraulic system with pressure and check it for leaks.

13.12
Grinding blades

Warning! - Grinding blades

Effect: Severe injuries to the eyes

- Always wear safety gloves and goggles when grinding the blades



KRS-1-062

Fig. 227:

Check the sharpness of the blades (2) daily. If necessary, grind the blades after they have been removed on the back of the cutting edge (1). Grind only the ungrooved side. When grinding, make certain no notches are made in area (3).


Note

- If at all possible, use the KRONE grinding device for grinding. The part no. for the blade holder for the KRONE blade grinding tool is 27 013 462 0.
- Do not allow the blades to overheat when grinding them. The cutting blades are too hot if you can see discolouration in them. Excessive heat reduces the service life of the cutting blades.
- The blades (2) must be checked before installation in area (3) (contact point with the stop bar) for deposits and thoroughly cleaned if required. Otherwise it may no longer be possible to swivel the blade bar in completely.

Replacement blades can be ordered from the Krone spare parts warehouse quoting spare part number 20 064 301 0.

Maintenance

13.13 Maintenance – brake system (special equipment)



WARNING!

If the basic safety instructions are not followed, people may be seriously injured or killed.

- To avoid accidents, the basic safety instructions in the chapter Safety must have been read and followed, see chapter Safety "Basic safety instructions".



WARNING!

If the safety routines are not adhered to, people may be seriously injured or killed.

- To avoid accidents, the safety routines in the chapter Safety must be read and followed, see chapter Safety "Safety routines".



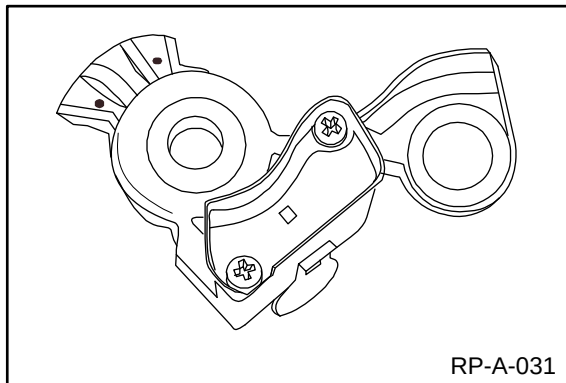
WARNING!

Risk of injury resulting from damage to the brake system

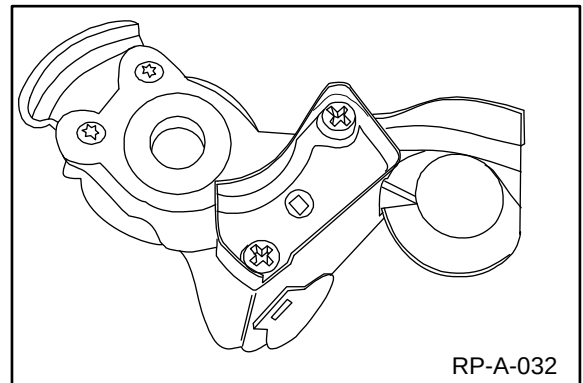
Damage to the brake system may impair the operational safety of the machine and cause accidents. As a result, people may be seriously injured or killed.

- Adjustment and repair work on the brake system must only be performed by authorised professional workshops or recognised brake services.
- Have the brakes checked regularly by a specialist workshop.
- Have damaged or worn brake hoses replaced immediately by a specialist workshop.
- Irregularities or malfunctions in the brake system must be rectified immediately by a specialist workshop.
- Only a machine with an intact brake system may be used for work in the field or for travelling on roads.
- No changes may be made to the brake system without the approval of KRONE.
- KRONE is not responsible for natural wear, defects caused by overload or changes made to the brake system.

13.13.1 Coupling heads (non-interchangeable)



"RESERVOIR" coupling head (**colour red**)



"BRAKE" coupling head (**colour yellow**)

Fig. 228

The coupling heads are installed in the dual-line compressed air braking system to connect the reservoir and brake line of the tractor with the machine.

- After uncoupling, close the cover or connect the coupling heads in the empty couplings provided for this purpose so that no dirt can get in them.
- Replace damaged sealing rings.
- Check whether the coupling heads lock into place and make certain there are no leaks.
- Replace faulty heads.

Maintenance

13.13.2 Air filter for pipelines

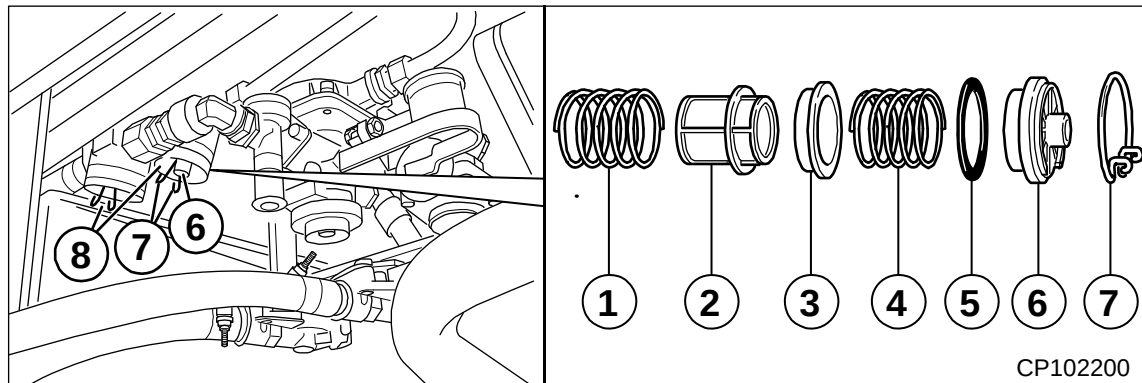


Fig. 229

(1) Spring

(4) Spring

(7) Clasp locking ring

(2) Filter

(5) Sealing ring

(3) Spacer

(6) Cover cap

The air filter (8) cleans the compressed air and protects the brake system from malfunctions.



Note

The brake system is ready for operation even when the filter insert is clogged in both directions of flow.

Removing the Filter Insert

- Press cover cap (6) and loosen the clasp locking ring (7)
- Remove the filter insert

Maintenance of the Air Filter

Clean the filter insert before the beginning of the season.

Installation of the filter insert

Installation is in reverse order to removal.



Note

Observe the correct sequence when assembling the filter insert.

13.13.3 Compressed-air reservoir

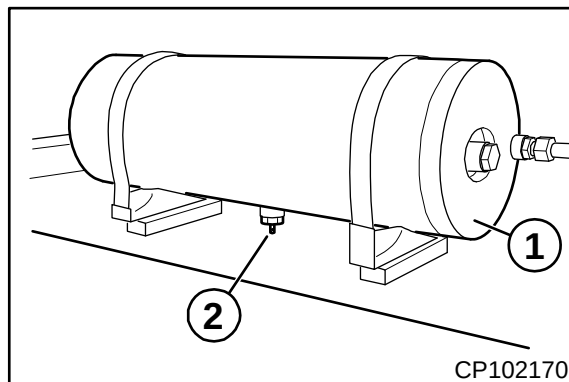


Fig. 230

The compressed air reservoir (1) stores the compressed air that is pumped by the compressor. Therefore condensation water may settle in the compressed air reservoir (1) during operation. The compressed-air reservoir must be emptied regularly. Specifically, it must be emptied:

- daily in winter (when being used),
- otherwise weekly and
- at least after 20 operating hours.

The drain valve (2) on the bottom of the compressed air reservoir (1) is used for draining.

- Switch off and secure the machine
- Open the drain valve and allow the condensation to run out
- Check the drain valve, clean it and screw it back in



Note

If the drain valve has a heavy accumulation of dirt or is leaking, it must be replaced by a new one.



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 the maintenance table, see chapter Maintenance Engine "Maintenance table".
- Have damaged or corroded compressed air reservoirs replaced immediately by a service centre.

Maintenance – lubrication

14 Maintenance – lubrication

14.1 Special Safety Instructions



Danger! - Maintenance, installation, repair and adjustment work, troubleshooting and fault resolution

Effect: Risk of death, injuries or damage to the machine.

The following general rules apply to all maintenance, assembly, repair and adjustment work:

- Switch off the PTO shaft.
- Turn off the engine, remove the ignition key and take it with you.
- Disconnect the 12 V power supply voltage.
- Secure the machine against rolling away with wheel chocks and by applying the parking brake.
- Only start the machine if all safety devices are fitted and in sound condition.
- If any hazardous situations arise, immediately turn off the PTO shaft and stop the machine.
- Never leave the machine running with no operating personnel on the tractor.
- Avoid skin contact with oils and greases.



Environment! - Disposing of consumables and storage

Effect: Environmental damage

- Keep consumables in suitable containers according to statutory provisions.
 - Dispose of used consumables according to statutory provisions.
-

14.2 Lubricants

14.3 General

All machines are equipped with automatic central lubrication.

Soft, supple NLGI Class 2 lithium soap greases in accordance with DIN 51825 should be used as lubricating greases. We recommend that you do not use lubricating greases with any other base material.



Note

Do not use greases containing graphite! There may be problems when different greases are mixed together!

Manufacturer	Lubricants based on mineral oil	Bio-lubricants
ARAL	Long-term grease H	On request
BP	Energrease LS-EP2	
DEA	Glissando EP2	
FINA	Marson EPL 2A	
Shell	Alvania Ep2	
ESSO	EGL 3144	

The lubrication points on the machine that are not supplied by central lubrication must be lubricated regularly. The position of the lubrication points and the lubrication intervals can be seen in the lubrication charts in the operating instructions. Remove the grease that comes out of the bearing points after lubrication.

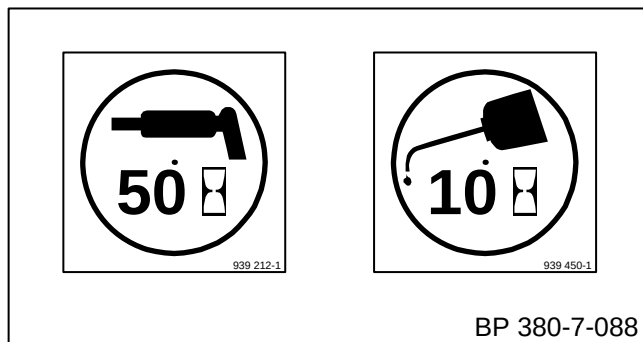


Fig. 231

Lubrication intervals:

10 h corresponds to about once a day

50 h corresponds to about once a week

200 h corresponds to about once a year

Maintenance – lubrication

14.4 Lubricating the PTO shaft

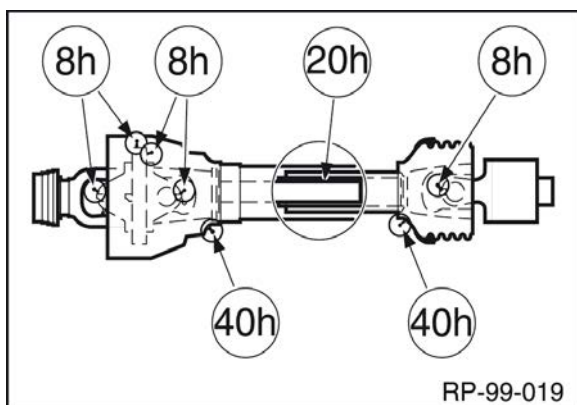


Fig. 232

Lubricate the PTO shafts at the intervals indicated in the drawing with a multi-purpose grease. Follow the operating instructions of the PTO shaft manufacturer.



Note

The instructions of the manufacturer must be observed with regard to the PTO shaft. (separate operating instructions)

14.5
WALTERSCHEID cam-type clutch K64/12 to K64/24, EK 64/22 to EK64/24

CAUTION!

If work has been performed by a specialist workshop that is not qualified, the machine may be damaged!

A qualified specialist workshop has the necessary expertise, qualification and tools for a correct execution of the required works.

- Always perform work by a qualified specialist workshop.

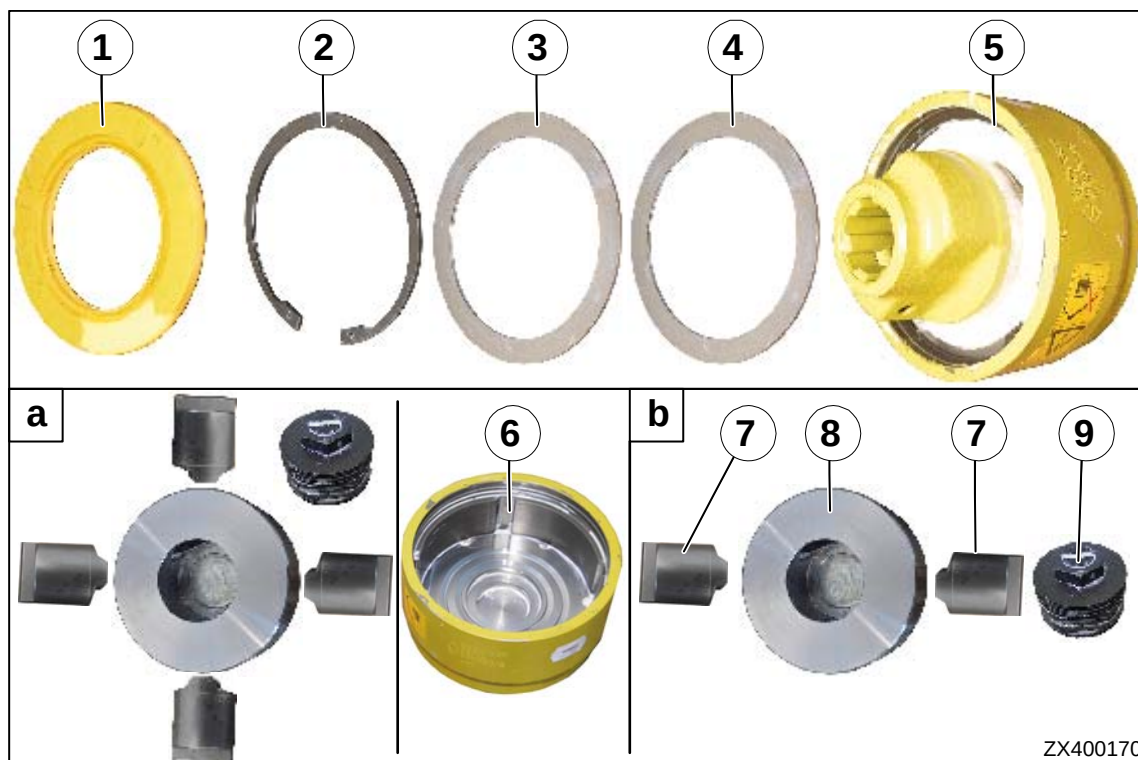


Fig. 233

a)	Version with 4 locking cams	b)	Version with 2 locking cams
1)	Seal ring	2)	Circlip
3)	Support disc	4)	Shim ring
5)	Coupling housing with hub	6)	Coupling housing
7)	Locking cam	8)	Hub
9)	Spring assembly		

Maintenance – lubrication

Maintenance interval: refer to chapter Maintenance “Maintenance Table”

Prerequisite:

- The machine is stopped and secured.
- The cam-type clutch is removed from the machine.

Decomposing cam-type clutch

- Prise the seal ring out of the coupling housing by using an auxiliary tool (e.g. screwdriver).
- Remove retaining ring.
- Remove support disc and shim rings.
- Remove hub from coupling housing.

Caution! Always observe the position of the bevelled edge on the locking cams when pulling out them.

- Remove the locking cams from the hub.
- Clean all parts.
- Grease all parts with Walterscheid grease by using a brush.

To grease, use Agraset 116 (order no. 304291) or Agraset 147 (order no.102966). The grease must be purchased from Walterscheid.

- Top up the deepening in the coupling housing with grease.

Assembling cam-type clutch

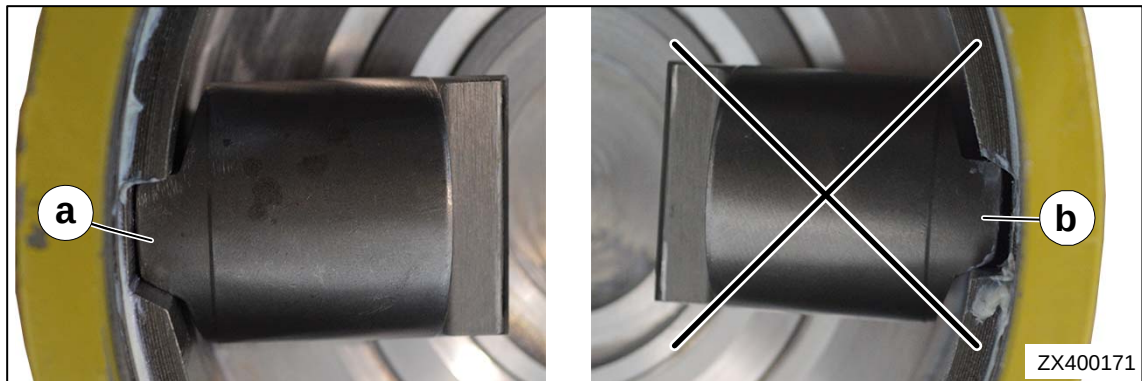


Fig. 234

Caution! Always observe the position of the bevelled edge on the locking cams when inserting the locking cams.

- Locking cam a) = right
- Locking cam b) = wrong
- Insert locking cams into hub.
- Insert the pre-assembled hub into the coupling housing.
- Insert shim rings and support disc and secure with retaining ring.
- Apply grease again on shim rings, support disc and retaining ring.
- Insert seal ring.

14.5.1 Automatic centralised lubrication system

Functional description of the BEKA-MAX grease central lubrication system

The BEKA-MAX grease central lubrication system is a progressive system. Progressive means that all lubrication points included in the central lubricating system are lubricated one after the other. Lubricating the lubrication points one after the other makes it very easy to monitor a progressive central lubrication system with an excess pressure valve. If a lubrication point does not take any grease from the distributor, the progressive distributor is blocked and a pressure of 280 bar /4060 PSI builds up in the central lubrication system. Grease emerging on the excess pressure valve of the pump element indicates a blockage.



Note

An error message will appear in the display.

Layout of the BEKA-MAX grease central lubrication system

An electrically driven EP-1 plunger pump pumps lubricant to the main progressive distributor. The task of this element is to distribute grease to the sub-progressive distributors at the correct ratio. The sub-progressive distributors then pump the grease to the individual lubrication points.

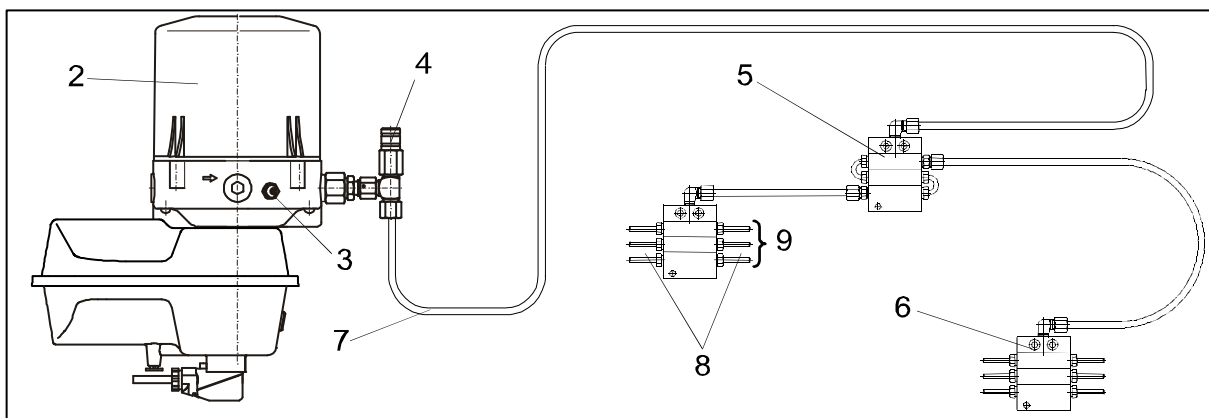


Fig. 235

- | | |
|---------------------------------|--------------------------------------|
| 2) See-through reservoir | 6) Auxiliary progressive distributor |
| 3) Filling nipple | 7) Main line |
| 4) Excess pressure valve | 8) Lubrication lines |
| 5) Main progressive distributor | 9) Lubrication points |

Description of the control unit

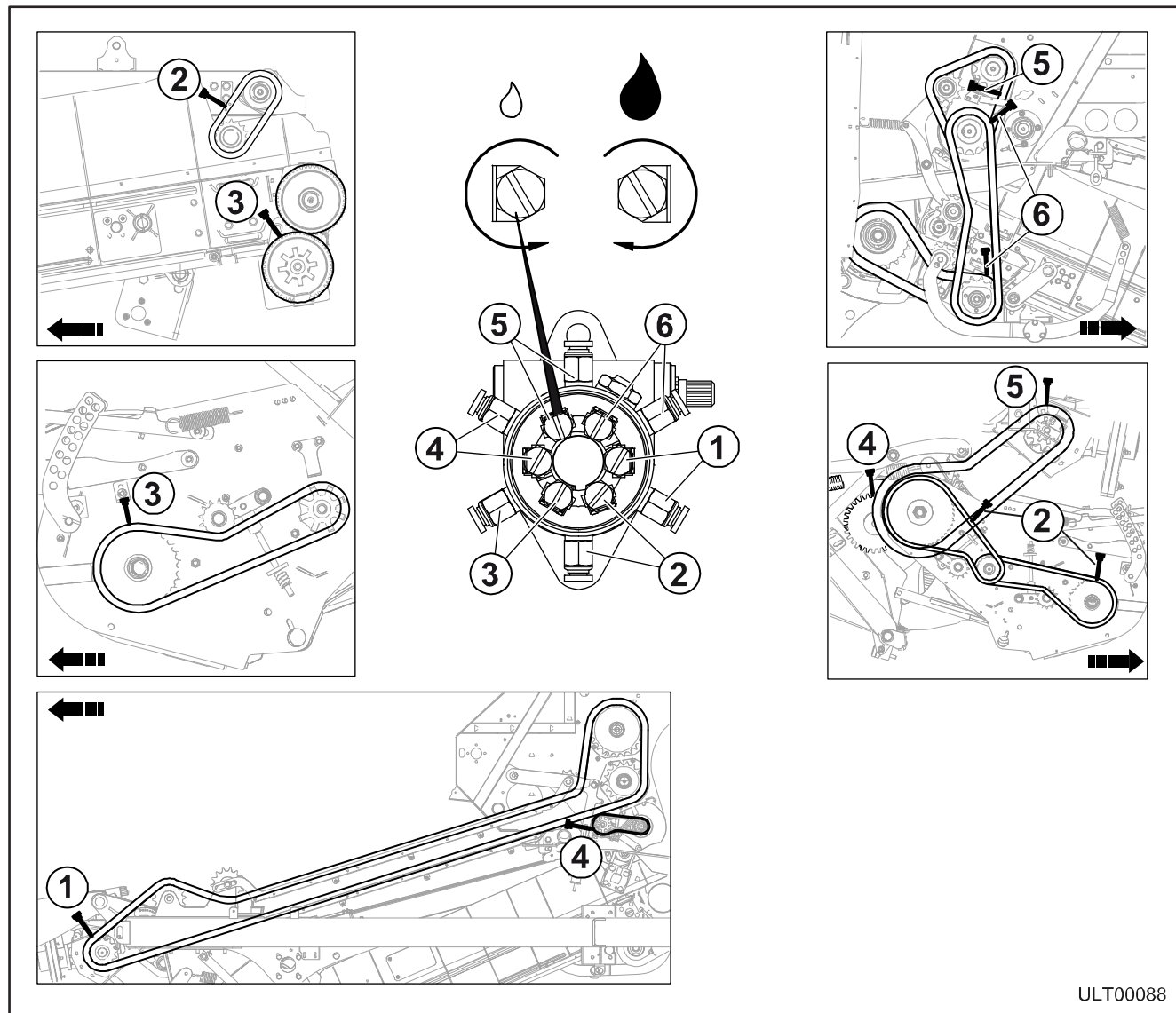
Lubricating and pause times are regulated by the control unit in the driver's cab of the tractor (refer to chapter Info-Center "Menu 1-5 central lubrication").

Maintenance – lubrication

14.6 Lubrication points

The following tables contain a list of lubrication points on the machine and the number of lubrication nipples.

14.6.1 Lubrication points via the central lubrication system



ULT00088

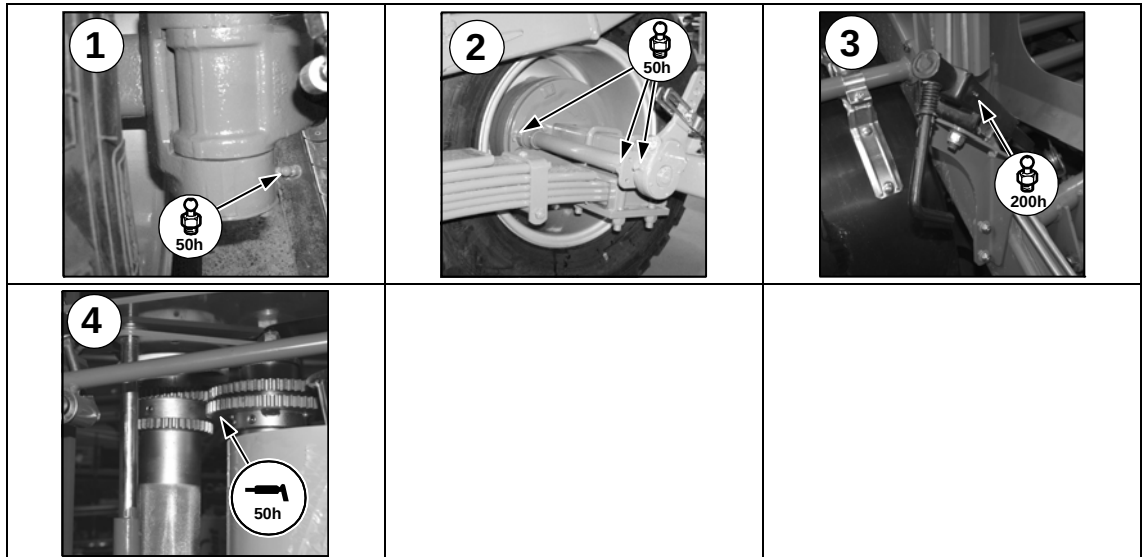
Fig. 236

Item	Lubrication point
1	Main Drive
2	Drive conveyor belt at top pick-up at top right
3	Spur wheels conveyor belt
4	Spur wheels on right
5	Chain drive at top right Chain drive in middle right
6	Drive shaft on right Chain drive at bottom right

14.6.2 Manual lubrication points on the machine



Fig. 237



Placing in Storage

15 Placing in Storage



WARNING!

If the basic safety instructions are not followed, people may be seriously injured or killed.

- To avoid accidents, the basic safety instructions in the chapter Safety must have been read and followed, see chapter Safety "Basic safety instructions".



WARNING!

If the safety routines are not adhered to, people may be seriously injured or killed.

- To avoid accidents, the safety routines in the chapter Safety must be read and followed, see chapter Safety "Safety routines".



15.1 At the End of the Harvest Season

Before placing the machine in winter storage, clean the inside and outside thoroughly with compressed air. If very dirty, clean with water. To do this, use a high-pressure cleaner. Do not aim a water jet directly at bearing positions.

After cleaning, lubricate all grease nipples. Do not wipe off any grease which comes out of the bearing positions. The hardened grease will provide additional protection against moisture.

Leave the central lubrication running until a ring of grease has formed in all lubrication points.

Remove the drive chains and wash them out in petroleum (do not use any other solvent). At the same time, check the chains and sprocket wheels for wear. Oil the chains after they are cleaned, mount them and place them under tension.

Lubricate the wrapping table chain.

Check all movable components such as deflection rollers, joints, tension rollers, etc. to make certain they move easily. If necessary remove, clean, grease and remount. If necessary, replace with new parts.

Use only original KRONE replacement parts.

Disassemble the universal shaft. Lubricate the inner tubes and the guard tube with grease.

Grease the lubrication points on the universal joint and grease on the bearing rings of the guard tube.

Park the machine in a dry location, but not in the vicinity of artificial fertilisers or livestock buildings. Touch up damaged paint and preserve all uncoated areas thoroughly with rust protection agent.



Caution!

The machine should only be placed on blocks with a suitable vehicle lifting device. Ensure that the jacked-up machine is securely positioned.

To relieve the tyres, jack up the machine. Protect the tyres against external influences such as oil, grease, direct sunlight, etc.

Perform the necessary repair tasks during the time immediately after the harvest season. Draw up a list of all replacement parts you will need. This will make it easier for your KRONE dealer to process your orders and you will be certain that your machine will be ready for use at the beginning of the next season.

Placing in Storage

15.2 Before the Start of the New Season



WARNING!

If the basic safety instructions are not followed, people may be seriously injured or killed.

- To avoid accidents, the basic safety instructions in the chapter Safety must have been read and followed, see chapter Safety "Basic safety instructions".



WARNING!

If the safety routines are not adhered to, people may be seriously injured or killed.

- To avoid accidents, the safety routines in the chapter Safety must be read and followed, see chapter Safety "Safety routines".
- Before placing the machine in service again, trigger a tying or wrapping process and run through it manually. As you do, check the functions of the starting devices of the tying or wrapping process.
- Grease all lubrication points and oil the chains. Wipe away grease that comes out of lubrication points.
- Check the oil level in the main drive gearbox and top up if necessary.
- Check hydraulic hoses and lines for leaks and replace them if necessary.
- Check all screws to make certain they are tight or retighten them if necessary.
- Check all electrical connection cables and the lighting. Repair or replace if necessary.
- Check the entire setting of the machine and correct if necessary.
- Check the operating functions.
- Re-read the operating instructions thoroughly.
- Check conveyor belt for clockwise/anti-clockwise movement.
- Check that the safety equipment on the bale wrapper functions (see chap. "Safety equipment").
- Top up central lubrication tanks for oil and grease.

15.2.1 Maintenance work before the beginning of the new season

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".

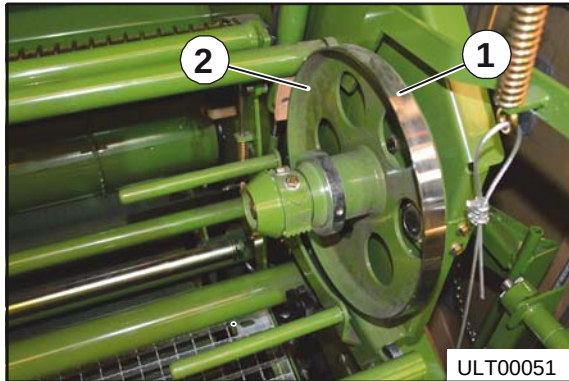


Fig. 238

- Clean the rust off the running surface (1) of the brake disc (2).

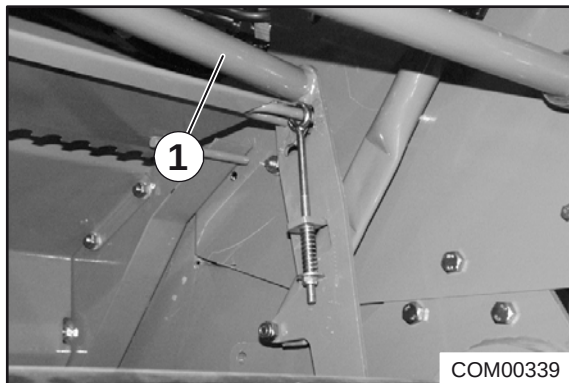


Fig. 239

- Remove the grill on the spreading bracket (1) (for net tying).

Malfunctions - Causes and Remedies

16 Malfunctions - Causes and Remedies



WARNING!

If the basic safety instructions are not followed, people may be seriously injured or killed.

- To avoid accidents, the basic safety instructions in the chapter Safety must have been read and followed, see chapter Safety "Basic safety instructions".



WARNING!

If the safety routines are not adhered to, people may be seriously injured or killed.

- To avoid accidents, the safety routines in the chapter Safety must be read and followed, see chapter Safety "Safety routines".



Malfunctions - Causes and Remedies

16.1 General malfunctions

Fault	Possible cause	Remedy
The pick-up cannot be lowered.	Hydraulic hose not connected.	Insert the hydraulic hose into the appropriate coupling.
	Stop cock for hydraulic system locked	Open stop cock for hydraulic system
Blockages in the feed area. If blockages occur, immediately stop and switch off PTO shaft. Manually eliminate blockages or activate automatic function.	Swaths are of uneven height or too large.	Divide the swaths.
	Travelling speed too high.	Reduce the travelling speed. Drive more slowly at the beginning of the baling process until crop has been picked up and is circulating in the bale chamber.
	Machine is not hitched horizontally.	Hook the machine in place higher on the front; adjust the height of the drawbar so that the transition from pick-up to channel is more even.
	The blades are blunt.	Grind the blades.
Short crop is badly transferred from the pick-up to the cutting rotor.	Machine is too low at the front.	Hitch the machine higher at the front; adjust the drawbar height so that the transfer from the pick-up to the channel is more even.
Crop is not carried up by the floor conveyor	Inner core of bale setting is too firm	Adjust the soft core or reduce the baling pressure.
In the case of barrel-shaped bales the wrapping material tears in the middle.	The bale chamber is unevenly filled.	Drive through the swath on alternating sides.
	Number of wraps is too low.	Increase the number of wraps.
	Net brake is too tight.	Release the net brake.
	The net spreader is too aggressive.	Adjust the spreader.
The bale is conically shaped.	The floor conveyor switches too late	Change the switching time
	Bale chamber is filled on one side.	Ensure even filling when baling, and drive more slowly particularly at the end of baling.
	Driving too quickly at the end of the baling process.	Drive more slowly at the end of the baling process.
	Twine or wrapping material torn.	Only use the specified quality of twine and wrapping material.
Left/right display too sensitive.	Number of wraps is not sufficient. Wrapping material tying detaching.	Adjust the twine tying device to a narrower tying distance or increase the number of wraps of wrapping material.
	The spring tubes on the belt tensioning device are running too heavily (see Adjusting the bale diameter chapter).	Lubricate the inner tube.

Malfunctions - Causes and Remedies

Fault	Possible cause	Remedy
Net immediately tears off again after starting or during wrapping.	Blade bar is lowered immediately after starting. Blade bar does not engage.	Remove impurities. Load the net roll as described in the operating instructions, adjust the roller brake.
	Roller brake is too powerful.	Check setting of the braking device (see chap. Settings "Adjusting the spring of the net brake" and "Adjusting the pretensioning force").
	Blade bar is too low.	Check the blade bar setting.
Net does not move during the starting process.	Net has incorrect dimensions.	Only use net rolls with the specified dimensions.
	Net rolls are not correctly inserted in the pick-up and / or the roll braking device is not set correctly.	Load the net roll as described in the operating instructions, adjust the roller brake.
	The net is not correctly inserted into the wrapping device.	Pull the net out of the wrapping device and reinsert as described in the operating instructions.
	Net brake does not release correctly.	Adjust net brake according to operating instructions. Check axial clearance of the net brake.
	Channel is clogged with straw.	Remove blockages (see chap. Operation "Removing blockages from the pre-compression chamber").
Net is not cleanly cut.	Blade bar is not completely lowered.	Remove impurities.
	Blunt blade bar	Replace the blade bar.
	Blade bar is not tensioned.	Adjust cable for tensioning the blade bar.
	Ratchet mechanism does not lift	Readjust the cable Adjust the rocker arm position.
Net does not reach to the outer edges of the bale.	Net is not correctly braked during the wrapping process.	Check setting of the braking device (see chap. Settings "Adjusting the spring of the net brake").
	Net has got caught on the cut-off blades.	Check the cut-off blade setting.
	Starter rollers of the wrapping device are bent.	Check the wrapping device and replace if required.
	Crop between spiral roller and scraper	Readjust the scraper.
	The net spreader is not working.	Turn the net spreader.
The tailgate cannot be closed.	Scraper of cutting roller or conveyor roller clogged.	Before the net is shot in, change the side in the swath again.
	Sand, stones, etc. have accumulated on the collection plate.	Clean the cover plate of the collection plate.



Malfuctions - Causes and Remedies

Fault	Possible cause	Remedy
The bale does not roll out of the bale chamber, or does so but slowly.	The sides are over-filled or the baling pressure is too high.	Do not move too much to the side.
Floor conveyor is bringing forage up with it.	Material is too brittle (for example straw)	1. Reduce speed. 2. Reduce the baling pressure. 3. Increase travelling speed. 4. Take out blade
Floor conveyor is slipping Belt is slipping	Very heavy grass with no structure (e.g. clover grass)	If the floor conveyor is slipping, use fewer blades, or turn off / remove blades and reduce the baling pressure. Check the setting of the "Net length" and "Slip" sensors.
Net splits when the bale is ready	Too few net layers Bale is too dense	Increase the number of net layers. Increase travelling speed. Reduce the baling pressure.
The lower or upper conveyor belt is slipping or has stopped.	Blockage in the pre-compression chamber. Conveyor belt tension too low.	Empty pre-compression chamber (see chap. Removing blockages from the pre-compression chamber). Adjust pre-compression chamber setting (Menu 1-2) to crops. Retension conveyor belts Setting of "Conveyor belt" sensor Remove deposits from the deflection rollers.
Conveyor belt drive has stopped.	Blockage in the pre-compression chamber. Conveyor belts are not running smoothly.	Empty pre-compression chamber (see chap. Removing blockages from the pre-compression chamber). Clean inside the conveyor belts. Check the setting of the "Conveyor belt speed" sensor.
Hydraulic oil becomes too hot	Filter blocked	Replace the filter element
	Oil quantity too low	Check oil level



Malfunctions - Causes and Remedies

16.2 Malfunctions on the central chain lubrication system

Fault	Possible cause	Remedy
Low oil consumption	Low pressure	Check that pump drive hose is secure and not leaking.
	Oil is too thick	Replace with recommended oil.
	System contaminated	Clean or replace all measuring valves.
Oil consumption too high	Main pipe torn	Repair or replace
	Oil too thin	- Drive with thicker oil. - Adjust oil quantities (see chap. Maintenance – Lubrication "Lubrication points via the central lubrication system").
Machine is dry	No pressure	Pump not running - Repair, adjust or replace. Main pipe torn - Repair or replace. System has no oil - Adjust oil quantities (see chap. Maintenance – Lubrication "Lubrication points via the central lubrication system"). - Vent the system (see chap. Central chain lubrication system)
	System blocked	Contamination: - Clean the system and clean or replace all measuring valves. Pipe jammed: - Repair or replace.



Malfuncions - Causes and Remedies

16.3 Malfunctions on the Wrapping Mechanism

Fault	Possible cause	Remedy
Film forms blisters (trapped air)	Brake force too low	Adjust brake (see chap. Operation "Adjusting film brake").
Wrapping process does not start	Signal wires on the wrapping table bent	Straighten signal wires.
Film is cut too early	Blade has been set too forcefully	Set blade less forcefully.
Film is not cut	Blade blunt	Grinding blades
Film tears	Stretch rollers too rough	Smooth stretch rollers with emery cloth.
	Additional brake too tight	Adjust brake
	Spur wheels of the pre-stretching rollers sluggish	Lubricate gear pairs of the pre-stretching rollers.

16.4 Error Messages of KRONE Operation Terminal

The error messages which appear in the display are described depending on how the machine is fitted in the Chapters entitled "KRONE ISOBUS terminal CCI 100" or "KRONE Operation Terminal Gamma".

Disposal of the machine

17 Disposal of the machine

17.1 Disposal of the machine

After the service life of the machine has expired, the individual components of the machine must be disposed of properly. The applicable country-specific, current waste disposal guidelines and the legal laws must be observed.

Metal parts

All metal parts must be brought to a metal recycling centre.

The components must be freed from operating fluids and lubricants (gear 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, gear 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

Electronic parts must be brought to a disposal point for electronic scrap.



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THE POWER OF GREEN

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