



## Exact forage harvester

**BiG X 600-3**

**BiG X 700-3**

**BiG X 770-3**

(from serial no.: 1 007 182)

Order no.: 150 000 744 04 us





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## To this Document

### 2 To this Document

#### 2.1 Validity

These operating instructions apply to the following machine types:

- Precision forage harvester BiG X 600-3
- Precision forage harvester BiG X 700-3
- Precision forage harvester BiG X 770-3

#### 2.2 Re-Ordering

If this document has become unusable in whole or in part, you can order a replacement, quoting the document number on the cover sheet. Contact data can be found in the chapter “Contact persons”.

The document can additionally be downloaded via the KRONE Media Center  
<http://www.mediathek.krone.de/>.

#### 2.3 Further applicable documents

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

Component designation	Manufacturer	Document type
Diesel engine	Liebherr	Operating Instructions
Diesel engine	Liebherr	Consumable regulations
Diesel engine	Liebherr	Maintenance booklet
Electrical system	KRONE	Circuit Diagram
Spare parts	KRONE	Spare parts list BIG X 600-3 BIG X 700-3 BIG X 770-3

#### 2.4 Target group of this document

This document aims at the operators of the machine fulfilling the minimum requirements of personnel qualification; refer to chapter entitled Safety “Personnel Qualification”.

**2.5 How to use this document****2.5.1 Directories and References****Table of contents/headers:**

The table of contents as well as the headers in this instruction are used for quick navigation in the chapters.

**Index directory:**

In the index directory, you can find information on the desired subject via catchwords which are in alphabetical order. The index directory can be found on the last page of this instruction.

**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 designation of subchapters or sections is presented in quotation marks.

**Example:**

Check that all screws on the machine are tight, refer to chapter Maintenance, "Tightening Torques".

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

**2.5.2 Direction Information**

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

**2.5.3 Term "Machine"**

Throughout the remainder of these operating instructions, the "exact forage harvester BiG X" will be referred to by the terms "machine" and "vehicle".

**2.5.4 Figures**

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

## To this Document

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### 2.5.5 Scope of Document

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

### 2.5.6 Means of representation

#### Icons in the text

In this document, the following means of representation are used:

#### Action step

A bullet point (•) designates an action step you have to perform, as for example:

- Set the left outside mirror.

#### Sequence of actions

Several bullet points (•) located in front of a sequence of action steps identify a sequence of actions to be performed step by step, as for example:

- Loosen counter nut.
- Set the screw.
- Tighten counter nut.















#### List

Dashes (-) identify lists such as, for example:

- Brakes
- Steering
- Lighting

### Symbols in figures

To visualize parts and actions steps, the following icons are used:

Icon	Explanation
	Reference sign for part
	Position of a part (e.g. move from pos. I to pos. II)
	Dimensions (e.g. B = width, H = height, L = length)
	Action step: Tighten screws with torque key with specified tightening torque
	Direction of motion
	Direction of travel
	opened
	closed
	enlargement of display detail
	Framings, dimension line, dimension line limitation, reference line for visible parts or visible mounting material
	Framings, dimension line, dimension line limitation, reference line for covered parts or covered mounting material
	Laying routes
	Left-hand machine side
	Right-hand machine side

## To this Document

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### Warning signs

Warning



#### **WARNING! - Type and source of hazard!**

Effect: Injuries, serious material damage.

- Measures for hazard prevention.

Caution



#### **CAUTION! - Type and source of hazard!**

Effect: Damage to property.

- Measures for risk prevention.

### Notes with information and recommendations

Note



#### **Note**

Effect: Economic benefit of the machine.

- Measures to be performed.

2.5.7 Conversion table

By means of the following table, metric units can be converted into US units.

Quantity	SI Units (Metric)		Factor	Inch-Pound Units	
	Unit Name	Abbreviation		Unit Name	Abbreviation
Area	hectare	ha	2.47105	acre	acres
Flow	liters per minute	L/min	0.2642	US gallon per minute	gpm
	cubic meter per hour	m <sup>3</sup> /h	4.4029		
Force	newton	N	0.2248	pound-force	lbf
Length	millimeter	mm	0.03937	inch	in.
	meter	m	3.2808	foot	ft.
Power	kilowatt	kW	1.3410	horsepower	hp
Pressure	kilopascal	kPa	0.1450	pound per square inch	psi
	megapascal	MPa	145.0377		
	bar (non-SI)	bar	14.5038		
Torque	newton meter	Nm	0.7376	pound-foot or foot-pound	ft·lbf
			8.8507	pound-inch or inch-pound	in·lbf
Temperature	degree Celsius	°C	°C×1.8+32	degree Fahrenheit	°F
Velocity	meter per minute	m/min	3.2808	foot per minute	ft/min
	meter per second	m/s	3.2808	foot per second	ft/s
	kilometer per hour	km/h	0.6215	miles per hour	mph
Volume	liter	L	0.2642	US gallon	US gal.
	milliliter	ml	0.0338	US ounce	US oz.
	cubic centimeter	cm <sup>3</sup>	0.0610	cubic inch	in <sup>3</sup>
Weight	kilogram	kg	2.2046	pound	lbs

### 3 Safety

#### 3.1 Intended use

This machine is a forage harvester and is used to forage crops. The crops designated for the intended use of this machine is in conjunction with

- a maize header for harvested thin-stemmed crops,
- a direct cutting system for mown stalk and leaf crops,
- a pick-up on the ground for lying, mown stalk and leaf crops,
- a front attachment for smallwood crops from cut groves.

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

- all safety equipment is available according to the operating instructions and is in the protective position,
- all safety instructions in the operating instructions, see chapter Safety, "Basic safety instructions", have been observed and complied with.

The machine may be used only by people who satisfy the personnel qualification requirements designated by the machine manufacturer. These requirements are described in the chapter Safety "Personnel qualifications".

These operating instructions are a component of the machine and must therefore be at hand when the machine is in use. The machine may be operated only when the operator has received training and in compliance with these operating instructions. If the machine is used for applications which are not described in these operating instructions, this may result in serious injuries or death and damage to the machine and other property.

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

Intended use also includes observance of the operating, maintenance and repair conditions specified by the manufacturer.



### 3.2 Improper use

Any use beyond intended use (as described above) is regarded as improper use and is therefore misuse according to the Machinery Directive. The user, and not the manufacturer, is liable for any resulting damage.

Such misuse is for example:

- Using the machine when stationary
- Processing of crops which are outside the intended use of the machine, see chapter Safety, "Intended use"
- Transportation of people
- Transportation of crops
- Exceeding the permitted technical gross weight
- Non-compliance with the warnings on the machine and in the operating instructions
- Use of areas and rooms as a workstation or maintenance station which are not described as such in the operating instructions
- Performing setting, cleaning, repair and maintenance work contrary to the information in the operating instructions
- Performing troubleshooting, setting, cleaning, repair and maintenance work while the drives are running
- Performing setting, cleaning, repair and maintenance work by personnel who do not have the proper training
- Unauthorised modifications to the machine
- Attachment of unauthorised or unapproved additional equipment
- Use of spare parts which are not KRONE original spare parts

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

### 3.3 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.

### **3.4 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.

#### **3.4.1 Importance of the operating instructions**

The operating instructions are an important document and a part of the machine. They are aimed at the user and contain safety-relevant information.

Only the procedures indicated in the operating instructions are reliable. If the operating instructions are not observed, 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 Safety chapter.
- Before working, also read and observe the respective sections in the operating instructions.
- Keep the operating instructions ready to hand for the user of the machine.
- Hand over the operating instructions to subsequent users.

#### **3.4.2 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.

#### **3.4.3 Personnel qualification of the technicians**

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

- Qualified professional, with relevant training.
- Capable of assembling the (partially) disassembled machine according to the assembly instructions provided by the manufacturer.
- Capable of extending, modifying or repairing the function of the machine according to the relevant instructions provided by the manufacturer.
- Ability to perform the work safely according to these instructions.
- Understands the mode of operation of the work to be performed and the machine and is able to identify and avoid the hazards associated with the work.
- Has read these instructions and is able to apply the information in these instructions accordingly.

### 3.4.4 Children in danger

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

- Children are especially at risk when climbing up and down the machine.
- Children cannot be adequately secured on the self-propelled harvester.
- Vibrations can be particularly harmful to children's bodies.
- Children may cause the machine to make hazardous movements.
- Never take children on the self-propelled harvester.
- 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.

### 3.4.5 Connecting front attachments or trailers

When the machine is connected incorrectly to a forage harvester, dangers are caused which could lead to severe accidents.

- Observe all operating instructions when connecting:
  - The operating instructions of the machine
  - The operating instructions of the forage harvester
  - The operating instructions of universal shaft
- Follow the coupling instructions, see chapter Initial Operation, “Adjusting the Machine to Forage Harvester” and chapter Initial Operation “Attaching to the Forage Harvester”.
- Observe the changed driving behaviour of the combination.

### 3.4.6 Structural changes to the machine

Structural changes and enhancements may impair the functionality and operational safety of the machine. Thus there is a risk of serious injuries or death.  
Structural changes and enhancements are not permitted.

**3.4.7 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 parts or standard parts which correspond to the requirements of the manufacturer.

**3.4.8 Workstations on the Machine****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.

**On-board instructors when machine is working (passenger seat)**

On-board instructors may fall and be injured due to movements of the machine.

- Instructors are only allowed to ride on the passenger seat.
- The passenger seat must only be used to instruct the driver during field operation.

### 3.4.9 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:

- Maximum permitted total weight
  - Maximum permitted axle loads
  - Maximum permitted trailer load
  - Maximum permitted drawbar load
  - Maximum permitted transport height and width
  - Maximum permitted speed
- Observe limit values, see chapter "Technical data".

**3.4.10 Danger zones****Danger zones of the machine**

The area around the machine is a danger zone.

There are the following hazards in this danger zone:

- The self-propelled harvester and the front attachment / the trailer may start moving or rolling away and run over people.
- If the lifting unit 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, rotating 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 monitored by the driver, people may be seriously injured or killed.

- Keep people away from the danger zone of the machine, front attachment / trailer.
- Do not switch on the drives and engine until there is nobody in the danger zone.
- Before working in front of and behind the self-propelled harvester and in the danger zone of the machine: Shut down and safeguard the machine, see chapter "Shutting down and safeguarding the machine". This also applies to brief inspection work. Many serious accidents in front of and behind the self-propelled harvester and the front attachment / trailer occur due to negligence and with the engine running and the machine rolling away or unsecured.
- Consider the information in all relevant operating instructions.
  - The operating instructions for the machine
  - The operating instructions for the front attachment
  - The operating instructions for the trailer
  - The operating instructions for the universal shaft

### **Danger zone between precision forage harvester and header**

People staying between precision forage harvester and header could be seriously hurt or killed caused by precision forage harvester rolling away, carelessness or machine movements.

- Before working between precision forage harvester and header: Shut down and safeguard the machine, see chapter Safety, "Shutting Down and Safeguarding the Machine". This also applies to brief inspection work.
- If the lifting unit has to be actuated, keep all people away from the range of movement of the header.

### **Danger zone because objects may shoot out**

Crops and foreign bodies may shoot out and injure or kill people.

- Before starting the machine, instruct all persons to leave the danger zone of the machine.
- If people are in the danger zone of the machine, switch off drives and diesel engine immediately.

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

When the drive is switched on, there is a danger to life caused by rotating 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 hazardous situations arise, switch off drives immediately and instruct people to leave the danger zone.

### **Danger zone quick coupler**

People may be caught, pulled in or seriously injured by quick coupler and driven parts.

Before switching on the quick coupler:

- Mount all safety devices and move them to protective position.
- Ensure that nobody is in the danger zone of the machine or the universal shaft.
- Switch off the drives if they are not necessary.



**Danger zone due to coasting machine parts**

When the drives have been switched off, the following machine parts will coast:

- Universal shaft
- Header
- Feed drive rollers
- Chopping drum
- Corn conditioner
- Discharge accelerator
- Drive belts

As long as the machine parts are coasting, an alarm sounds.

On machines with a built-in main drive brake, an alarm only sounds if the drives have not come to a standstill 10 seconds after switching off.

When machine parts are coasting, people may be seriously injured or killed.

- Wait until the coastdown alarm stops sounding.
- Do not touch machine parts until they have come to a standstill.

**3.4.11 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.
- Remount dismounted safety devices and all other parts before start-up and move them to protective position.
- If it is doubtful whether all safety devices have been correctly installed and are functional, have a service centre check them.

### 3.4.12 Personal Protective Equipment

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

Personal protective equipment is for example:

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

#### **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.

### 3.4.13 Safety signs on the machine

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

- Clean soiled safety labels.
- Make sure every time after cleaning the safety labels that they are complete and legible.
- Replace missing, damaged and unrecognisable safety labels immediately.
- Provide spare parts with intended safety labels.

Description, explanations and order numbers of the safety labels, see chapter Safety, "Warning labels on the machine".

### 3.4.14 **Traffic safety**

#### **Dangers for road travel**

If the machine exceeds the maximum dimensions and weights specified by national law and is not correctly lit when travelling on public roads, other road users may be endangered.

- Before driving on roads, ensure that the maximum permitted dimensions, weights and axle, drawbar and trailer loads are not exceeded which apply to driving on public roads according to national law.
- Before driving on roads, switch on the lighting and ensure that it functions properly.
- Before driving on roads, close all stop cocks for the hydraulic supply to the machine between the tractor and the machine.
- Before driving on roads, move the tractor control units into the neutral position and lock.

#### **Dangers when driving on roads and in fields**

The self-propelled harvester has special handling characteristics which also depend on the operational state and on the ground. 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.

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

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

- Before driving on roads, prepare the machine for road travel, refer to chapter Driving and Transport, "Preparations for Road Travel".

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

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

- Do not work and drive on a slope unless the ground of the slope is flat and the adhesion of the tyres to the ground is ensured.
- Turn the machine at low speed. Turn in a large arc.
- Avoid driving across a slope because the centre of gravity of the machine will be changed by loading weight and by executing machine functions.
- Avoid jerky steering movements on a slope.
- When driving up and down a slope, always align the header uphill and keep it as close as possible to the ground.
- Do not move the machine from working position to transport position or from transport position to working position as long as the machine is being used across a slope.
- Do not park the machine on slopes.
- Observe procedures for operating the machine on slopes, see chapter Operation "Field mode on the slope".

#### **Dangers when cornering with pulled trailer**

When cornering, the trailer swivels out stronger than the self-propelled machine. This may result in accidents.

- Consider the larger swivel range.
- Note persons, oncoming traffic and obstacles when performing a turn.

### 3.4.15 **Parking the machine safely**

An incorrectly parked and insufficiently safeguarded machine may be hazardous to people, especially children, and may start moving or overturn in an uncontrolled manner. People may be crushed and killed.

- Park the machine on firm, horizontal and level ground.

## Safety

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- Before adjusting, repairing, servicing and cleaning the machine, ensure that it is securely positioned.
- In the chapter "Driving and Transport", observe the section "Parking the Machine".
- Before parking: Shut down and safeguard the machine.

### **Unattended parking**

Adults and especially children are at risk from an inadequately secured and unattended parked machine.

- Before leaving the machine: Shutdown and safeguard the machine, refer to chapter Safety "Shutting Down and Safeguarding the Machine".

### 3.4.16 Consumables

#### **Unsuitable consumables**

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

- Use consumables only which correspond to the requirements of the manufacturer.

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

#### **Fuel is harmful**

Fuels are carcinogenic. If fuel is swallowed or fuel vapours inhaled, the fuel may cause organ damage.

- Do not inhale the vapours.
- Do not swallow the fuel.
- To prevent skin damage, avoid skin contact with the fuel.
- Wear suitable protective gloves and goggles.

#### **Environmental protection and disposal**

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

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

### 3.4.17 Chemicals

#### **Keep cabin free of chemicals**

Harmful and aggressive chemicals will pollute the air in the cabin. Harmful and aggressive reactive substances are for example:

- Solvents
- Fuels
- Oils and greases
- Detergents
- Acids

These chemicals may stick to clothing and enter the cabin in this way. Gases and liquids may escape even from closed tanks. The chemicals may impair health and the ability to concentrate. As a result, accidents could be caused.

Electrical components could be damaged, for example control units and plug connections. This may result in fire and accidents caused by malfunctions, system failures or short circuits.

- Keep the cabin interior clean.
- Do not store or transport any harmful or aggressive chemicals in the cabin.
- Before entering the cabin, remove clothing which may be contaminated with harmful and aggressive chemicals.
- Before entering the cabin, remove soil and other substances from shoes or boots. The soil may be contaminated with chemicals.

### 3.4.18 Dangers associated with the operational environment

#### **Danger of fire**

To reduce the risk of fire, regularly check the machine for crop or dirt deposits and clean as required.

In very dry operating conditions, when crop or dust is being swirled up, the accumulation of grass, crop and other deposits may increase. To ensure that the machine functions perfectly and to reduce the risk of fire, all accumulations must be removed.

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

#### **Life-threatening electric shock from overhead lines**

The machine may reach the height of overhead lines with the spout. This may cause voltage to flash over to the machine and cause a fatal electric shock or a fire.

- When folding the spout in and out, keep an adequate distance from electric overhead lines.
- Never fold the spout in or out near pylons and overhead lines.
- When the spout is folded out, keep an adequate distance from electric overhead lines.
- To avoid a potential electric shock caused by voltage flashover, never exit from or climb into the machine under overhead lines.

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

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

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

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

- Avoid simultaneous contact with machine and ground.
- Jump away from the machine. Jump into a safe standing position. Do not touch the machine from the outside.
- Move away from the machine with very small steps. In doing so, make sure that your feet are close to one another.

### 3.4.19 Sources of danger on the machine

#### Noise may damage your health

The noise development of the machine during operation may cause health damage such as hardness of hearing, deafness or tinnitus. When using the machine at high rotational speed, the noise level also increases.

- Before starting up the machine, estimate the risk caused by noise. Depending on the ambient conditions, working hours and the working and operating conditions of the machine, specify and use suitable hearing protection. In doing so, consider sound pressure level, see chapter Technical Data, "Airborne noise emission".
- Specify rules for the use of hearing protection and for the working time.
- During operation keep windows and doors of the cabin closed.
- Remove hearing protection for road travel.

#### Vibrations may damage your health

Vibrations generated by the combination of the self-propelled harvester and front attachment may seriously damage your health and have long-term consequences. The type of work and the connected devices, working hours, speeds, tyre pressure and ground conditions also affect the loads.

- Observe the maintenance intervals for the seat, see chapter Maintenance of basic machine, "Maintenance table".
- Adjust the driver's seat to the operator, see chapter "Adjusting driver's seat".

#### Liquids under high pressure

The following liquids are under high pressure:

- Hydraulic oil
- Diesel fuel
- Engine coolant
- Refrigerant for the air conditioning system

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

- If there is a suspicion that the hydraulic system is damaged, shut down and safeguard the machine and contact a qualified service centre.
- When searching for leaks, use suitable aids, e.g. a piece of cardboard, to avoid the risk of injury.
- Never search for leaks with bare hands. Even a very pin-sized hole may lead to serious injuries.
- Keep body and face away from leaks. Risk of infection!
- If liquid penetrates the body, immediately consult a doctor. The liquid must be removed from the body as quickly as possible.



**Hot liquids**

If hot liquids are drained, people may burn and/or scald themselves.

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

**Damaged compressor unit**

Damaged compressed air hoses of compressor unit may tear off. Flailing hoses may hurt people seriously.

- If it is suspected that the compressor unit is damaged, immediately contact a specialist workshop.
- Shut down and safeguard the machine, refer to chapter “Shutting Down and Safeguarding the Machine”.

**Toxic exhaust gases**

Exhaust gases may seriously damage your health or be fatal.

- While the engine is running, provide adequate ventilation to prevent prolonged exposure to exhaust gases.
- Do not leave the engine running in a closed room unless there is a suitable exhaust gas extraction system.

**Hot surfaces**

The following parts may become hot during operation and people may be burnt when touching them:

- Engine
  - Exhaust system
  - Cooling hoses
  - Hydraulic system
  - Wheel hub gearbox
  - Distributor and intermediate gearbox
  - Intermediate gear of drive pump
- 
- Keep sufficient distance from hot surfaces.
  - Allow machine parts to cool down and wear protective gloves.

### 3.4.20 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".

### 3.4.21 Dangers associated with certain activities: Work on the machine

#### **Work on the machine only when it has been shut down**

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

- Prior to all repair and maintenance work, setting and cleaning work on the machine, shut down and safeguard it, refer to 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 machines and machine parts**

Raised machine and raised machine parts may accidentally drop or overturn. People may be seriously injured or killed as a result.

- Do not stay under the raised machine or raised machine parts which are not supported, refer to chapter "Securely Supporting Raised Machine and Machine Parts".
- Before performing any work on raised machines or machine parts, lower the machine or machine parts.
- Before performing any work on or under raised machines or machine parts, secure the machine or machine parts from dropping by using rigid safety supports or hydraulic shut-off device or by supporting them.

**Danger associated with welding work**

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

- Never perform welding work on the following components:
  - Engine
  - Gearbox
  - Components of the hydraulics
  - Components of the electronics
  - Chassis or supporting components
  - Running gear
- Before carrying out welding work on the machine, obtain the consent of KRONE customer service and, if required, identify alternatives.
- Disconnect header from the forage harvester before carrying out welding work. Observe operating instructions of header.

### 3.4.22 Dangers associated with certain activities: Checking and charging batteries

If the battery is handled incorrectly, e.g. inadvertent connection of the battery poles to a metal object, excessive charging in conjunction with a spark, the battery may explode. People may be injured or burnt by the explosion or burnt by spraying battery acid.

- Use a suitable voltmeter to check the state of the battery.
- Only charge the battery in well-ventilated spaces with opened battery compartment cover.
- To charge the battery, follow the operating instructions, refer to chapter Maintenance Electrics "Battery".
- Keep fire, sparks and naked flames clear of the battery.
- To prevent acid from leaking, transport the battery in the installation position only.

### 3.4.23 Dangers associated with certain activities: Working on wheels and tyres

Improper assembly or disassembly of wheels and tyres may 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 KRONE. The tyre or even the wheel rim could explode and/or burst, see chapter "Technical Data".
- When fitting the wheels, tighten the wheel nuts to the stipulated torque, see chapter Maintenance, "Tyres".

### 3.4.24 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.

### 3.5 Safety routines

#### 3.5.1 Stopping and securing the machine

 **WARNING**

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

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

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

To park the machine safely:

- Park the machine on a stable, paved and even surface.
- Switch off drives and wait until trailing parts have come to a complete standstill.
- Apply the parking brake.
- Switch off the engine, remove the ignition key and take it with you.
- Switch off the main battery switch.
- Secure the machine against the possibility of rolling back by using wheel chocks and parking brake.

#### 3.5.2 Supporting lifted machine and machine parts securely

 **WARNING**

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

If the machine is not securely supported, the machine or machine parts may roll, fall or sag. Thus there is a risk of crushing or death.

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

In order to securely support the machine or machine parts:

- Shut down and safeguard the machine, refer to "Shutting down and Safeguarding the Machine".
- Securely support the raised machine or machine parts.
- Never support the raised machine or machine parts with materials which may give way.
- Never use hollow blocks or bricks to support the machine or machine parts. Hollow blocks and bricks may break in case of permanent load.
- Never work under the machine or machine parts that are held up by a car jack.

### 3.5.3 Safely checking the oil level and changing the oil and filter element

**WARNING!****Perform oil level check, oil change and filter element change safely!**

If oil level check, oil change and filter element change are not performed safely, the operational safety of the machine may be affected. This may result in accidents.

- Perform oil level check, oil change and filter element change safely.

In order to perform oil level check, oil change and filter element change safely:

- Lower raised machine parts or secure them against falling, refer to chapter Safety, "Securely Supporting Raised Machine and Machine Parts".
- Shut down and safeguard the machine, refer to chapter Safety, "Shutting Down and Safeguarding the Machine".
- Observe the intervals for oil level check, oil change and filter element change, refer to chapter Maintenance, "Maintenance Table".
- Use only oil qualities/quantities mentioned in the consumables table, refer to chapter Technical Data, "Consumables".
- Clean the area around the parts (for example gearbox, high-pressure filter) and make sure that foreign bodies do not get into the parts or the hydraulic system.
- Check existing seal rings for damage and replace them, if necessary.
- Collect escaping oil or waste oil in a container provided for that purpose and dispose of it properly, refer to chapter Safety, "Consumables".

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# Safety

## 3.6 Safety stickers on the machine

## 3.7 Position and meaning of the safety stickers on the machine

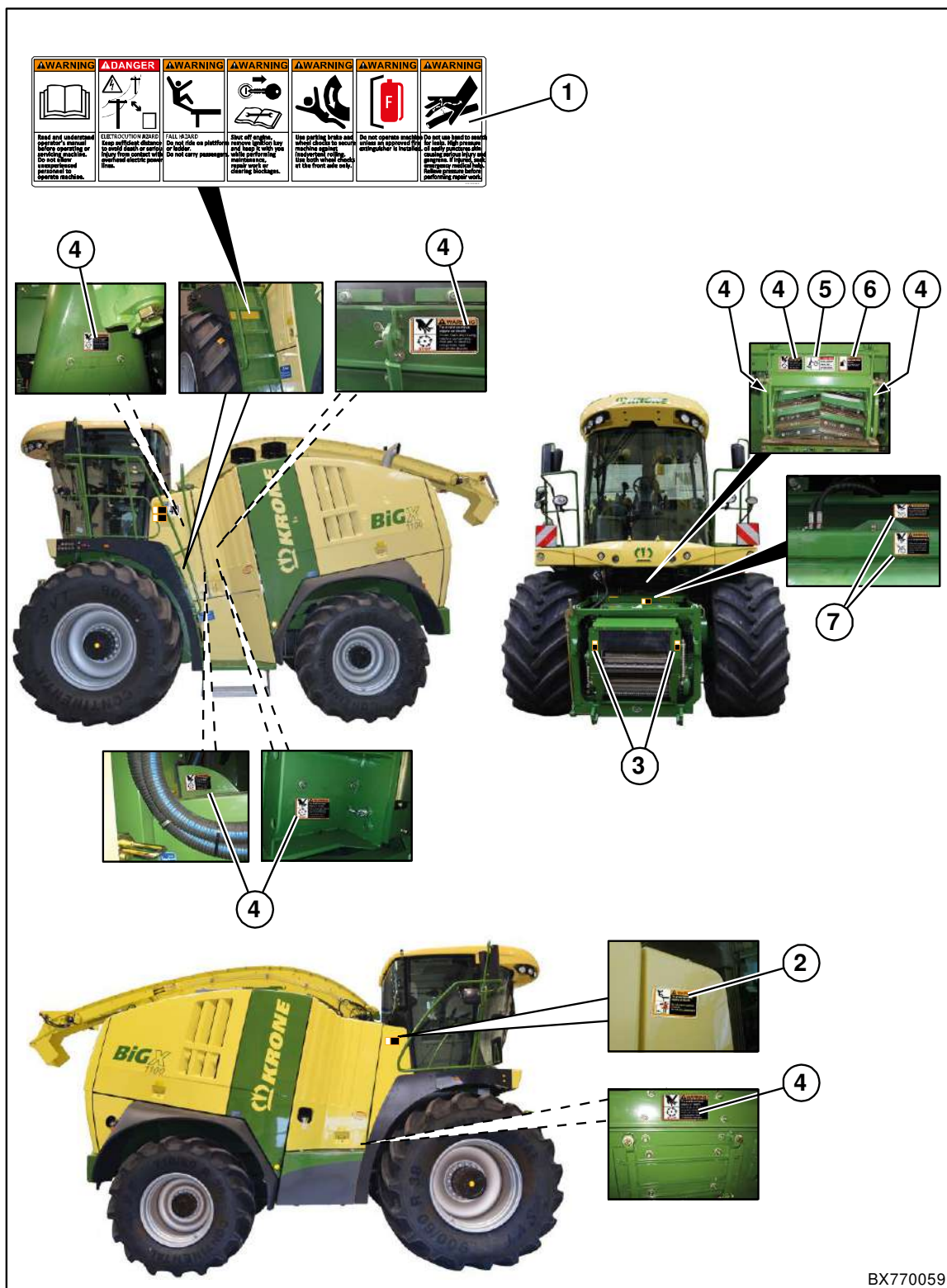




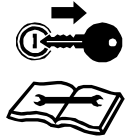

Fig. 1

BX770059



1) Order no. 27 022 558 0 (1x)

This label contains the following warning:

<p><b>⚠ WARNING</b></p>  <p>Read and understand operator's manual before operating or servicing machine. Do not allow unexperienced personnel to operate machine.</p>	<p><b>CAUTION!</b>  <b>To avoid serious injury or death.</b></p> <ul style="list-style-type: none"> <li>- Read and understand the operator's manual before operating equipment.</li> <li>- Lower the implement, stop the tractor engine and remove the key before leaving the operator's platform.</li> <li>- Keep all shields and guards in place.</li> <li>- Keep hands, feet and clothing away from moving parts.</li> <li>- Keep riders off the machine.</li> <li>- Make certain everyone is clear of the machine before starting the tractor engine and starting.</li> <li>- Do not allow an unqualified operator to run equipment.</li> <li>- Do not operate equipment in transport position.</li> <li>- Never lubricate, adjust, unclog or service the equipment with the tractor engine running.</li> <li>- Wait for all movement to stop before opening the shield or servicing the machine.</li> <li>- Never work underneath equipment without securely supporting it.</li> </ul>
<p><b>⚠ WARNING</b></p>  <p>FALL HAZARD  Do not ride on platform or ladder.  Do not carry passengers.</p>	<p><b>WARNING</b>  <b>To avoid serious injury or death.</b></p> <ul style="list-style-type: none"> <li>- Do not ride on the platform or ladder.</li> <li>- Do not carry passengers.</li> </ul>
<p><b>⚠ WARNING</b></p>  <p>Shut off engine, remove ignition key and keep it with you while performing maintenance, repair work or clearing blockages.</p>	<p><b>WARNING</b>  <b>To avoid serious injury or death</b></p> <p>Shut off the engine and remove the ignition key and keep it with you while before performing maintenance, repair work or clearing blockages.</p>
<p><b>⚠ WARNING</b></p>  <p>Use parking brake and wheel chocks to secure machine against inadvertent rolling. Use both wheel chocks at the front axle only.</p>	<p><b>WARNING</b>  <b>To avoid serious injury or death</b></p> <ul style="list-style-type: none"> <li>- Use the parking brake and wheel chocks to secure the machine against inadvertent rolling.</li> <li>- Use both wheel chocks at the front axle only.</li> </ul>

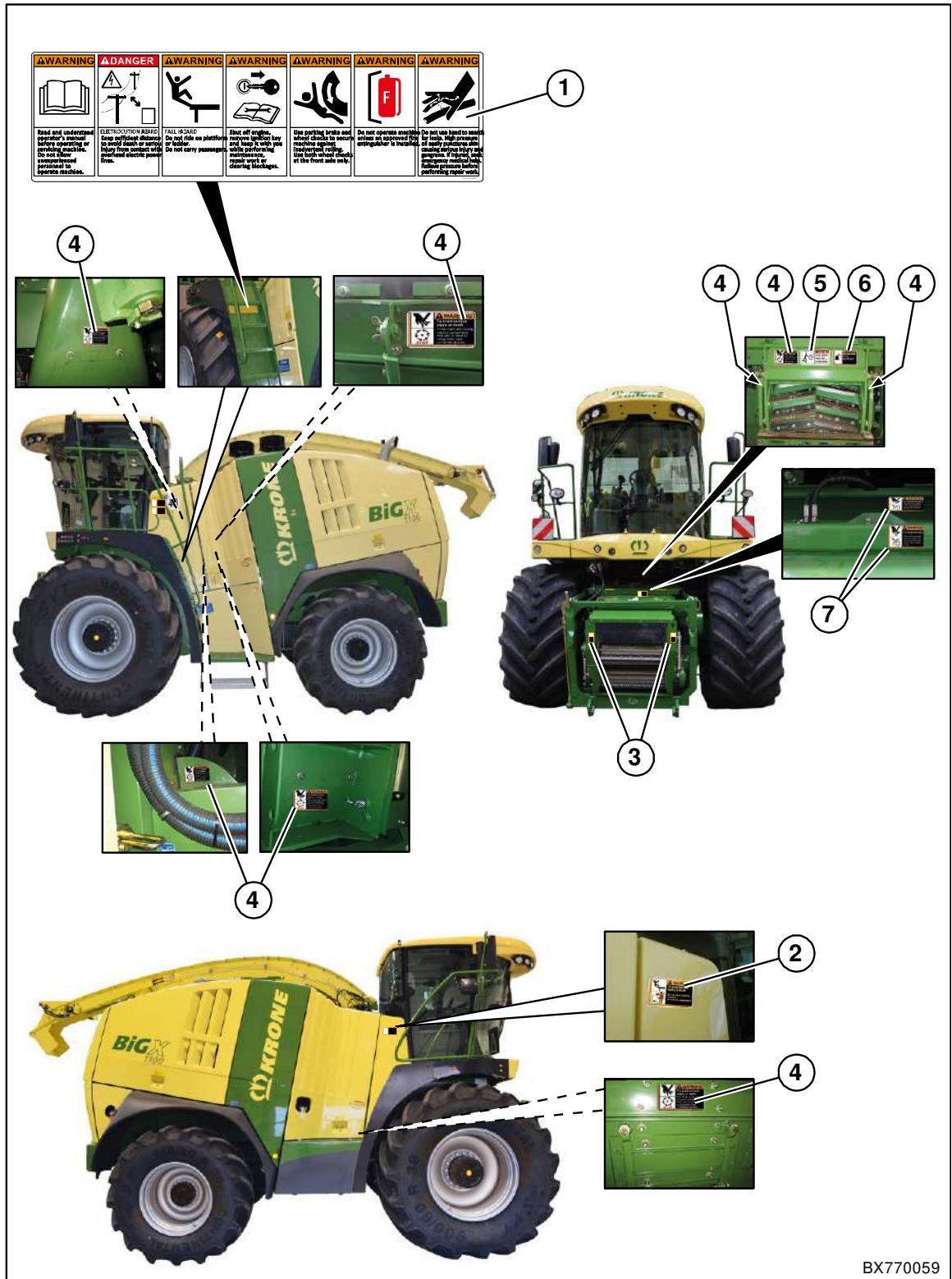
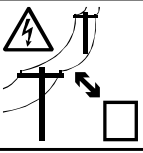




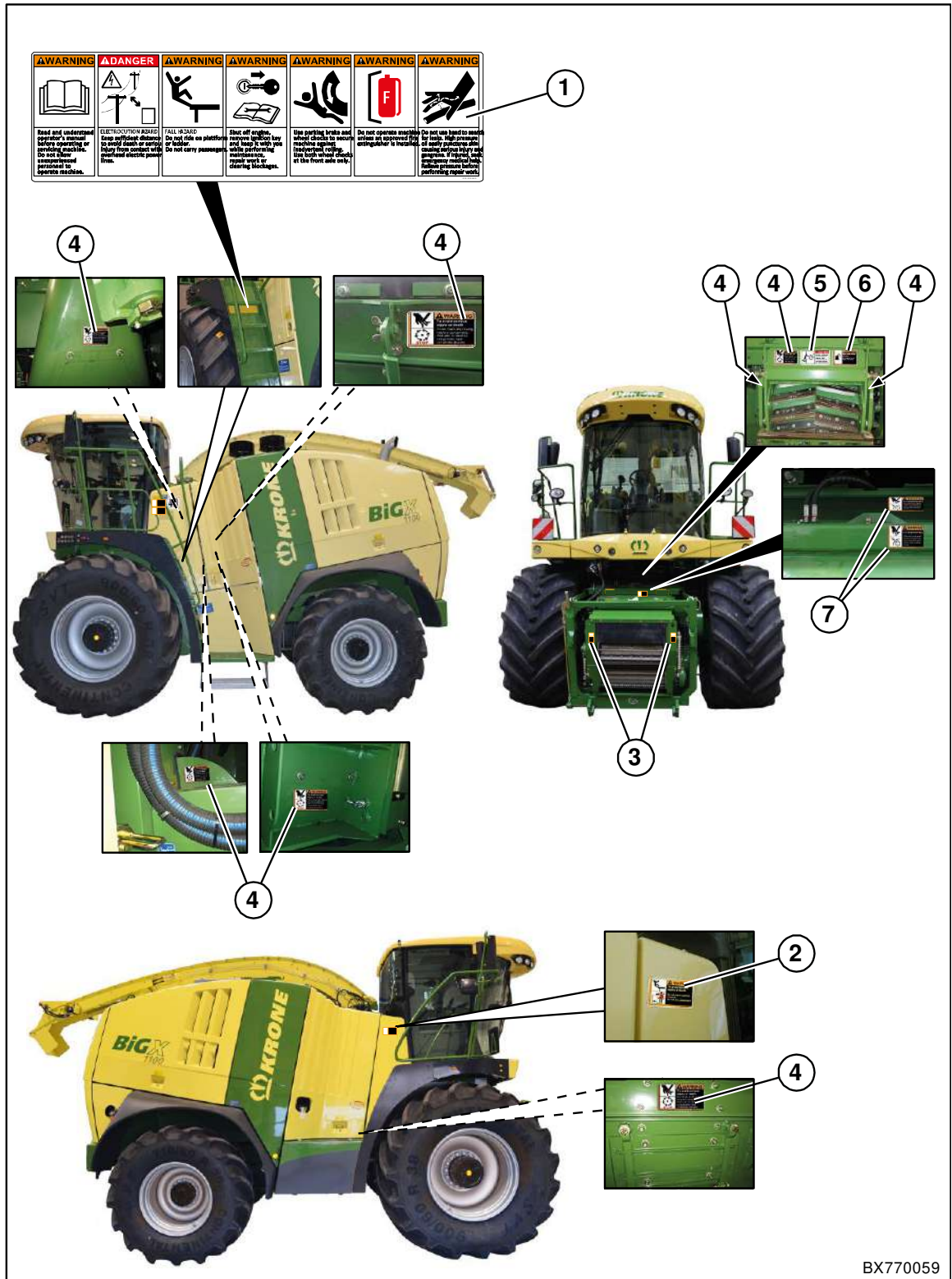
Fig. 2

BX770059

<p><b>⚠ DANGER</b></p>  <p><b>ELECTROCUTION HAZARD</b> Keep sufficient distance to avoid death or serious injury from contact with overhead electric power lines.</p>	<p><b>DANGER</b> To avoid injury or death, do not contact overhead electric power lines.</p>
--	--

<p><b>⚠ WARNING</b></p>  <p>Do not operate machine unless an approved fire extinguisher is installed.</p>	<p><b>WARNING</b> Do not operate the machine unless an approved fire extinguisher is installed.</p>
--	---


<p><b>⚠ WARNING</b></p>  <p>Do not use hand to search for leaks. High pressure oil easily punctures skin causing serious injury and gangrene. If injured, seek emergency medical help. Relieve pressure before performing repair work.</p>	<p><b>WARNING</b> <b>High pressure oil easily punctures skin. Causing serious injury, gangrene or death</b></p> <ul style="list-style-type: none"> <li>• If injured, seek emergency medical help.</li> <li>• Immediate surgery is required to remove oil.</li> <li>• Do not use finger or skin to check for leaks.</li> <li>• Lower load or relieve hydraulic pressure before loosening fittings.</li> </ul>
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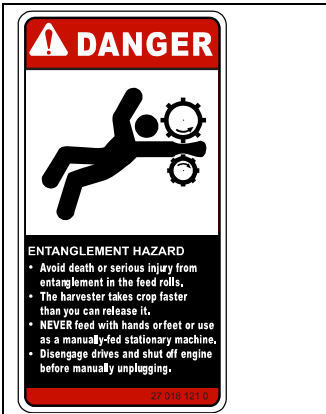
BX770059

Fig. 3


2) Order No. 27 014 824 0 (1x)

	<p><b>WARNING</b>  <b>To avoid serious injury or death.</b></p> <ul style="list-style-type: none"> <li>- Do not ride on platform or ladder.</li> <li>- Do not carry passengers.</li> </ul>
---	--


3) Order no. 27 018 121 0 (2x)

	<p><b>DANGER</b>          Avoid death or serious injury from entanglement in the feed rolls. The harvester takes crop faster than you can release it. NEVER feed with hands or feet or use as a manually-fed stationary machine. Disengage drives and shut off engine before manually unplugging.</p>
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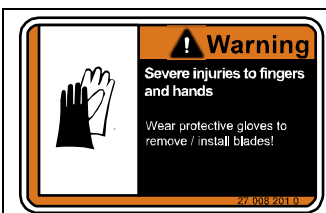
4) Order no. 27 014 829 0 (8x)

	<p><b>WARNING</b>  <b>To avoid serious injury or death.</b></p> <ul style="list-style-type: none"> <li>- Do not touch any moving machine components.</li> <li>- Wait until all machine components have completely stopped.</li> </ul>
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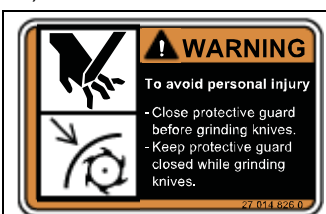
5) Order no. 27 018 120 0 (1x)

	<p><b>DANGER</b>          Rotating knives can cause serious injury or death. Never operate engine with feedroll housing open.</p>
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6) Order No. 27 008 201 0 (1x)

	<p><b>WARNING</b>  <b>Severe injuries of fingers and hands.</b>          Wear protective gloves to remove/ install blades.</p>
---	--

7) Order No. 27 014 826 0 (2x)

	<p><b>WARNING</b>  <b>To avoid personal injury.</b></p> <ul style="list-style-type: none"> <li>- Close protective guard before grinding knives.</li> <li>- Keep protective guard closed while grinding knives.</li> </ul>
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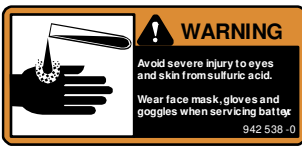




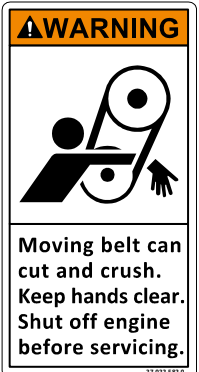
BX770060

Fig. 4


8) Order No. 942 538 0 (1x)

	<p><b>WARNING</b>  <b>Avoid severe injury to eyes and skin from sulfuric acid.</b>  Wear face mask, gloves and goggles when servicing battery.</p>
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9) Order No. 27 022 582 0 (2x)

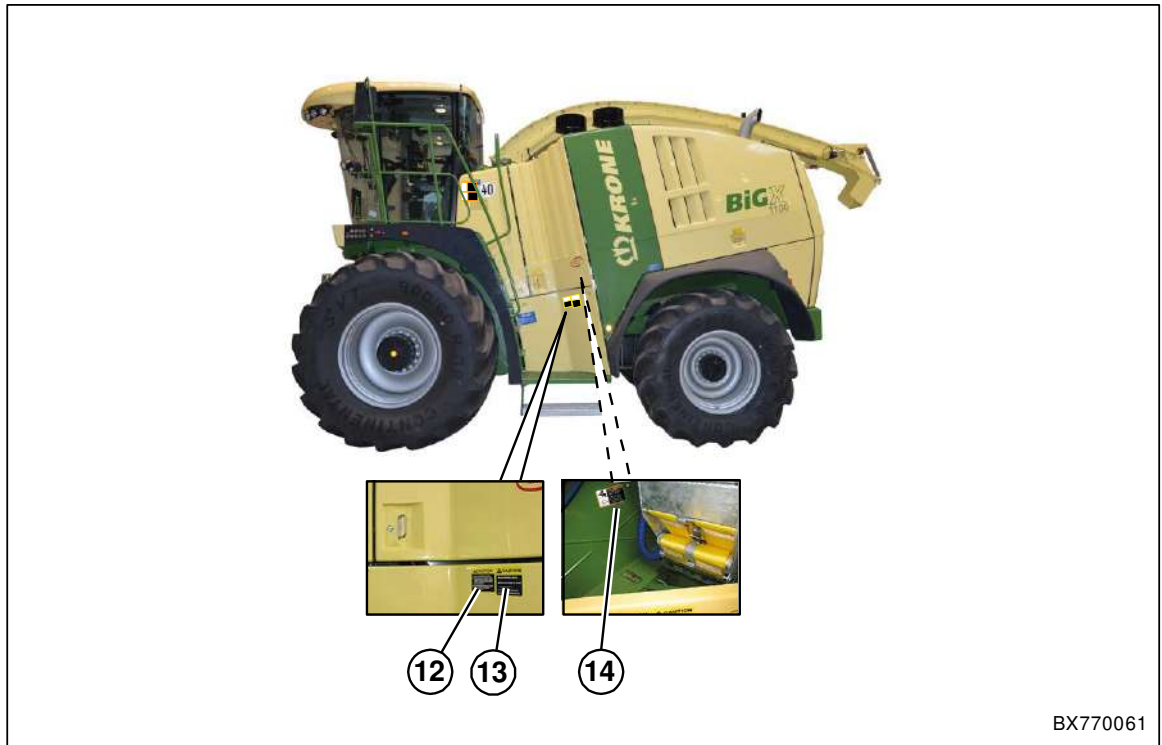
	<p><b>WARNING</b>  <b>Moving belt can cut and crush.</b>  <b>Keep hands clear.</b>  <b>Shut off the engine before servicing.</b></p>
---	--

10) Order No. 27 014 825 0 (2x)

	<p><b>WARNING</b>  <b>Hot surfaces</b></p> <ul style="list-style-type: none"> <li>- Keep sufficient distance from hot surfaces.</li> <li>- Allow to cool before servicing.</li> </ul>
--	---

11) Order no. 942 546 0 (2x)

	<p><b>WARNING</b>  <b>Avoid bodily injuries from rotating engine fan.</b>  Keep hands out of fan discharge area when engine is running.</p>
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BX770061


Fig. 5




12) Order No. 942 551 0 (1x)

 <p><b>CAUTION</b></p> <p>1. Keep all shields in place. 2. Disengage and shut off all engine and/or motor power before servicing or unclogging machine. 3. Keep hand, feet and clothing away from power-driven parts.</p> <p style="text-align: right; font-size: small;">942 551-0</p>	<p><b>CAUTION</b></p> <ol style="list-style-type: none"> <li>1. Keep all shields in place.</li> <li>2. Disengage and shut off all engine and/or motor power before servicing or unclogging machine.</li> <li>3. Keep hand, feet and clothing away from power-driven parts.</li> </ol>
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13) Order No. 942 552 0 (1x)

 <p><b>CAUTION</b></p> <p><b>Avoid bodily injury.</b></p> <p>Before searching for metal:</p> <ol style="list-style-type: none"> <li>1. Disengage all drives.</li> <li>2. Shut off engine. Remove key.</li> <li>3. Wait until all parts stop moving.</li> </ol> <p style="text-align: right; font-size: small;">942 552-0</p>	<p><b>CAUTION</b></p> <p><b>Avoid bodily injury.</b></p> <p>Before searching for metal:</p> <ol style="list-style-type: none"> <li>1. Disengage all drives.</li> <li>2. Shut off engine. Remove key.</li> <li>3. Wait until all parts stop moving.</li> </ol>
---	---

14) Order No. 27 014 828 0 (1x)

 <p><b>WARNING</b></p> <p>To avoid serious injury or death</p> <p>Wheels must be chocked to secure machine against unintended rolling.</p> <p style="text-align: right; font-size: small;">27 014 828-0</p>	<p><b>WARNING</b></p> <p><b>To avoid serious injury or death</b></p> <p>Wheels must be chocked to secure machine against unintended rolling.</p>
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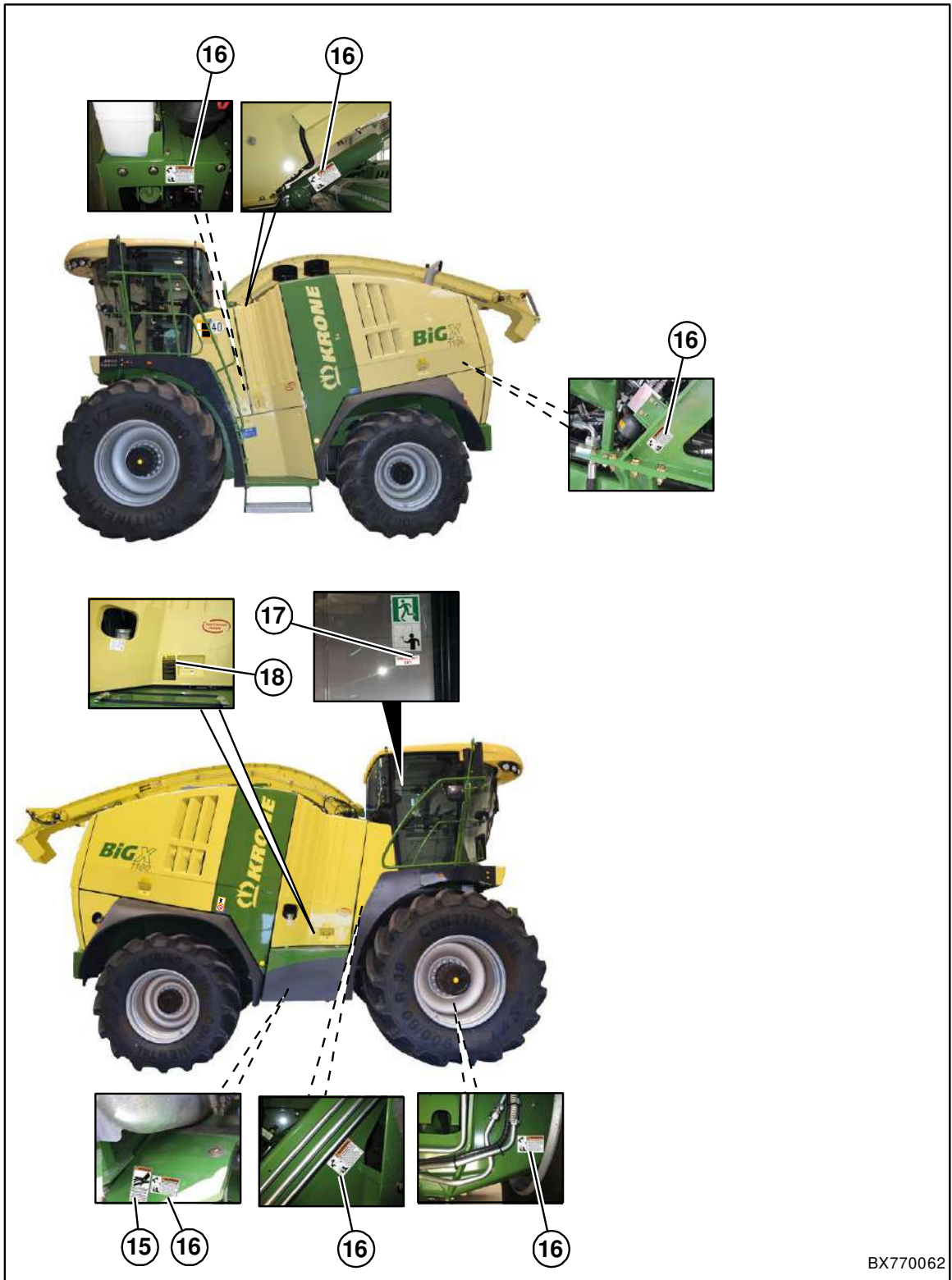




Fig. 6

BX770062

15) Order no. 27 018 052 0 (1x)

	<p><b>WARNING</b>  <b>High pressure oil easily punctures skin. Causing serious injury, gangrene or death</b></p> <ul style="list-style-type: none"> <li>• If injured, seek emergency medical help.</li> <li>• Immediate surgery is required to remove oil.</li> <li>• Do not use finger or skin to check for leaks.</li> <li>• Lower load or relieve hydraulic pressure before loosening fittings.</li> </ul>
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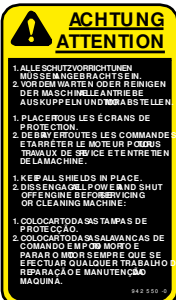
16) Order no. 27 018 009 0 (6x)

	<p><b>WARNING</b>  <b>High pressure oil can cause severe injury</b></p> <ul style="list-style-type: none"> <li>• Hydraulic accumulators contain oil and gas under high pressure.</li> <li>• Relieve pressure before servicing hydraulic system.</li> <li>• Hydraulic accumulators may be removed and repaired by a qualified workshop only.</li> </ul>
---	--

17) Order No. 27 007 573 0 (1x)

<p><b>EMERGENCY EXIT</b></p> <p>1. Pull top handle down          2. Push window out</p>	<p><b>EMERGENCY EXIT</b></p> <ol style="list-style-type: none"> <li>1. Pull top handle down.</li> <li>2. Push window out.</li> </ol>
---	--

18) Order No. 942 550 0 (1x)

	<p><b>ATTENTION</b></p> <ol style="list-style-type: none"> <li>1. Keep all shields in place.</li> <li>2. Disengage all power and shut off engine before servicing or cleaning machine.</li> </ol>
---	---



## Safety

### 3.7.1 Reordering the safety stickers

**NOTE**

Every safety sticker is provided with an order number and can be ordered directly from the manufacturer or from the authorised dealer, see chapter Safety "Contact".

### 3.7.2 Attaching the safety stickers

**NOTE**

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

### 3.7.3 Contact for KRONE NORTHAMERICA

<b>Mailing address</b>	<b>Physical address</b>
Krone North America, Inc. P.O. Box 18880 Memphis, TN 38181-0880 USA	Krone North America, Inc. 3363 Miac Cove Memphis, TN 38118 USA
Phone	+1 901 842-6011
Fax	+1 901 842-6016
E-mail	info@krone-northamerica.com
Internet	www.krone-northamerica.com

### 3.8 Safety Equipment

#### 3.8.1 Ladder

#### WARNING

##### **Risk of injury when climbing up and down.**

Careless behaviour when climbing up and down can result in people falling from the ladder. Persons climbing onto the machine outside the designated ladders can slip, fall and seriously injure themselves. Dirt as well as consumables and lubricants can impair one's footing and stability.

- Use the designated ladders only.
- 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 operating elements as handles. Inadvertent actuation of operating elements can lead to accidental actuation of functions that pose a danger.
- When climbing down, never jump off the machine.



Fig. 7

- To safely climb up to the cabin and back down again, tread only on the steps of the ladder (3). When doing so, use the handrails (3).
- To safely climb onto the top of the machine and back down again, use the step (2) and the right handrail.

3.8.2 Main battery switch

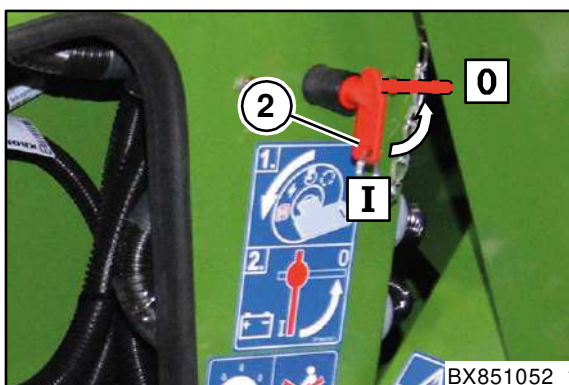


Fig. 8

Position I	Position 0
The circuit is closed.	The circuit is interrupted.

The main battery switch (2) is located on the left side of the machine behind the cover beside the battery compartment.

The main battery switch (2) is used to switch on or interrupt the machine's power supply.

After using the machine, in emergencies and for repairs, interrupt the circuit.

To protect the machine's electronics, do not actuate the main battery switch until the ignition key is in the "STOP" position.

- To interrupt the circuit, turn the main battery switch (2) to position "0".

If the ignition key can no longer be reached during an emergency, the main battery switch can also be actuated when the ignition key is not in the "STOP" position.

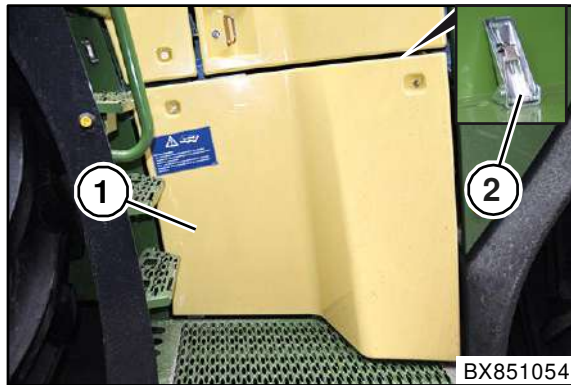


Abb. 9

The battery compartment is located on the left-hand machine side behind the cover (1).

### Opening the battery compartment

Pre-condition:

- The side flap at the front left is open.
- Open the lock (2) on both sides.
- Unhook and remove the cover (1) including the battery cover.

### 3.8.3 Seat switch in the driver's seat

There is a seat switch in the driver's seat. This seat switch is used to query whether the driver's seat is occupied.

When the driver stands up from the driver's seat, the feed drive and the front attachment are switched off after 7 s and cannot be switched on again while the driver's seat remains unoccupied.

When the driver's seat is occupied again, the feed drive and the front attachment can be switched on again.

### 3.8.4 Fire extinguisher

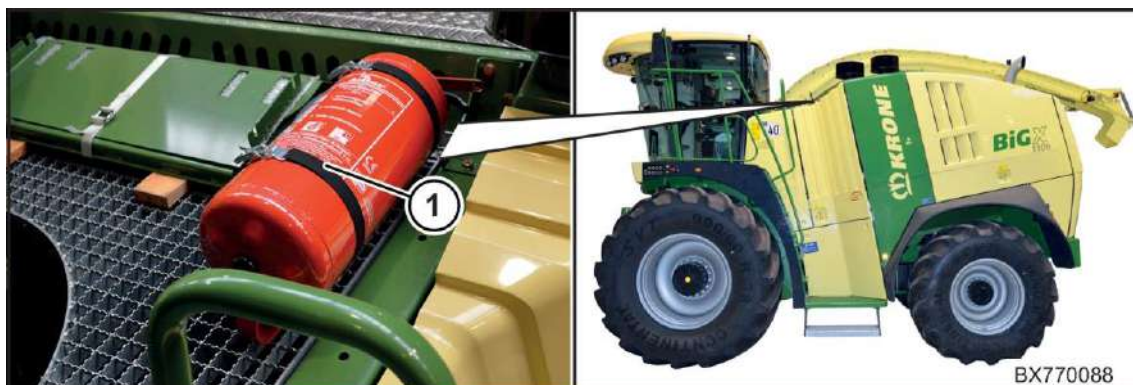


Fig. 10

**The machine must not be operated without an on-board fire extinguisher which contains at least 6 kg of extinguishing agent. The manufacturer recommends a powder fire extinguisher for fire classes A, B and C.**

The support (1) for the fire extinguisher is located in the direction of travel at top left of the machine and can be reached via the ladder and platform.

- Before starting up the machine, ensure that the fire extinguisher is operational.

Have the fire extinguisher registered. This is the only way to ensure that maintenance is carried out in good time (according to EN 3 every two years at the latest) and can be verified.

- Before starting up the machine, check that the fire extinguisher is attached and ready for use, **see page 620**.
- Follow the operating instructions for the fire extinguisher and consult the website of the fire extinguisher manufacturer.
- Check fire extinguisher for external damage. In the event of anomalies, inform a responsible maintenance company.

The inspection intervals in other countries may be different. In this case, the stipulated inspection intervals of the country of operation apply.

- Observe the provisions of the corresponding countries.



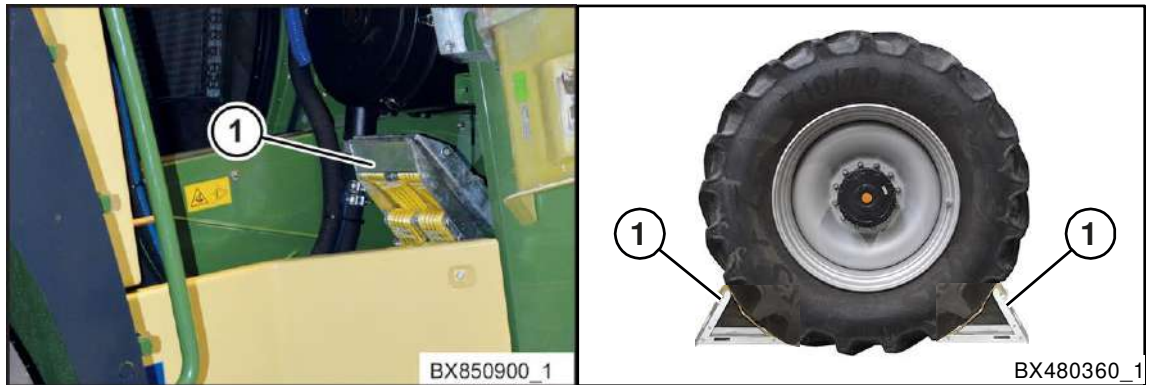
**3.8.5 Wheel chocks**

Fig. 11

The machine is equipped with two wheel chocks (1) which are located at the front left behind the side hood.

- Ensure that the wheel chocks are always carried on the machine.

When parking the machine, always secure it from rolling away using both wheel chocks.

- Shut down and safeguard the machine.
- Fully open the wheel chocks and place them tightly against the front and back of the wheels to prevent the machine from rolling away.

3.8.6 Emergency exit

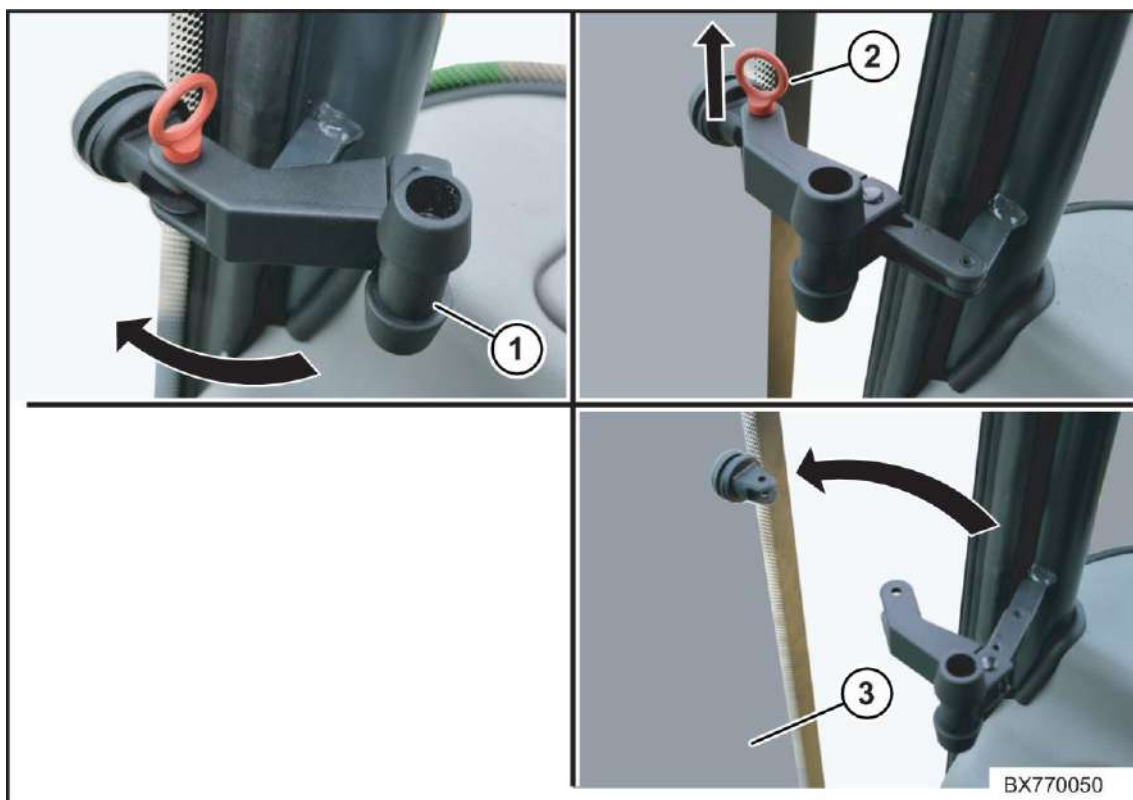


Fig. 12

In case of an emergency, the side window on the RH side in the direction of travel, next to the driver's seat, can be opened as an exit door.

To exit the machine in an emergency:

- Swivel the lever (1) forward until it reaches the locking point.
- Pull out the safety pin (2).
- Open the side window (3) completely.

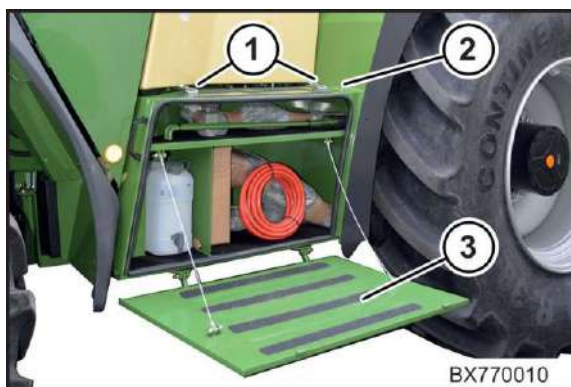


Fig. 13

- Climb through the emergency exit over the right-hand platform using the handrail and step onto the tool box (2).
- Open the locks (1) on the tool box and fold down the cover (3).
- Exit the machine through the cover (3).

If the optional silage tank is installed on the right mudguard, the right side window cannot be used as an emergency exit.

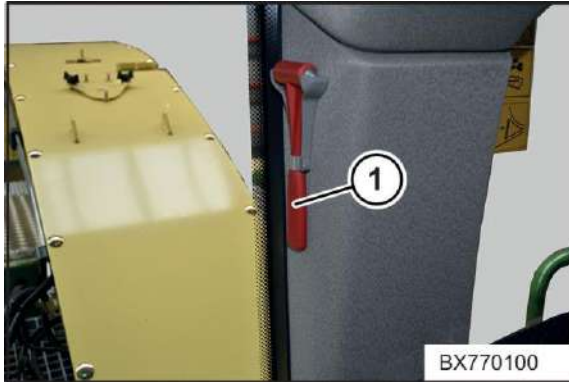


Fig. 14

- In case of danger, strike a cabin window with an emergency hammer (1) stored in the cabin.
- If possible, use the ladder on the left side of the machine to exit the machine safely.

### 3.8.7 Instantaneous stop switch in the cab



Fig. 15:

The instantaneous stop switch in the cab (1) stops the working functions of the machine, the diesel engine continues running.

To actuate the instantaneous stop switch:

- Press the instantaneous stop switch (1) until it engages.

To re-activate the machine after the instantaneous stop switch has been pressed:

- Move the depressed instantaneous stop switch (1) to its initial position by turning it slightly in a clockwise direction.

### 3.8.8 Quick-Stop Switch Grinding Control Unit

The instantaneous stop switch for the grinding control unit is located at the front right outside the cabin.

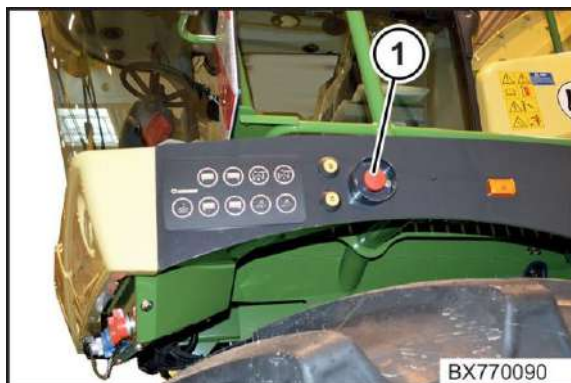


Fig. 16:

The instantaneous stop switch on the grinding control unit (1) stops the working functions of the machine, the diesel engine and the travelling gear continue running.

To actuate the instantaneous stop switch:

- Press the instantaneous stop switch (1) until it engages.

To re-activate the machine after the instantaneous stop switch has been pressed:

- Move the depressed instantaneous stop switch (1) to its initial position by turning it slightly in a clockwise direction.

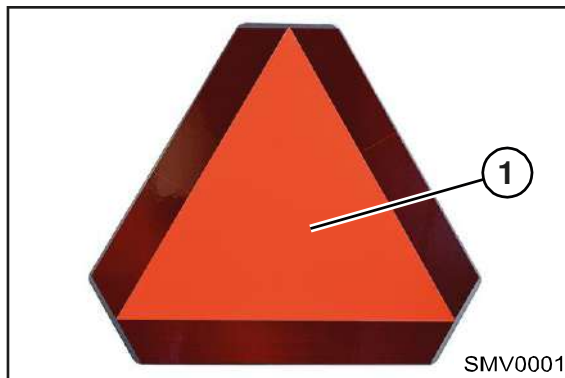
**3.8.9****SMV Emblem**

Fig. 17

The SMV emblem (Slow-Moving Vehicle) (1) is attached to slow-moving machines or vehicles travelling on public highways at a speed less than 40 km/h (25 mph).

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

When driving the machine on public highways, the SMV emblem must be mounted.

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

### 4 Data memory

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

- Operating states of system components (e.g. filling levels)
- Status messages of the machine and its single components (e.g. number of revolutions of wheel, wheel speed, retardation of movements, lateral acceleration)
- Malfunctions and defects in important system components (e.g. light and brakes)
- Reactions of machine in special driving situations (e.g. actuation of airbag, installing stability control systems)
- Ambient conditions (e.g. temperature)

These data are exclusively of a technical nature. They are used to detect and remedy errors as well as to optimize machine functions. There is no possibility to create motion profiles on driven routes from these data.

If services are occupied (e.g. repair services, service processes, warranty cases, quality assurance), this technical information can be read by employees of service network (including manufacturer) from the event and error data memory by means of special diagnostic units. There you receive further information, if necessary. After the error has been remedied, the information in the error storage is either deleted or overwritten continuously.

When using the machine, situations are possible in which these technical data in connection with other information (accident protocol, damage to the machine, testimonies etc.) could become transferable to people - if applicable in consultation with an expert.

Additional functions regulated by a contractual agreement with the customer (e.g. remote maintenance) permit the transmission of certain machine data from the machine.

5 Machine Description

5.1 Machine overview

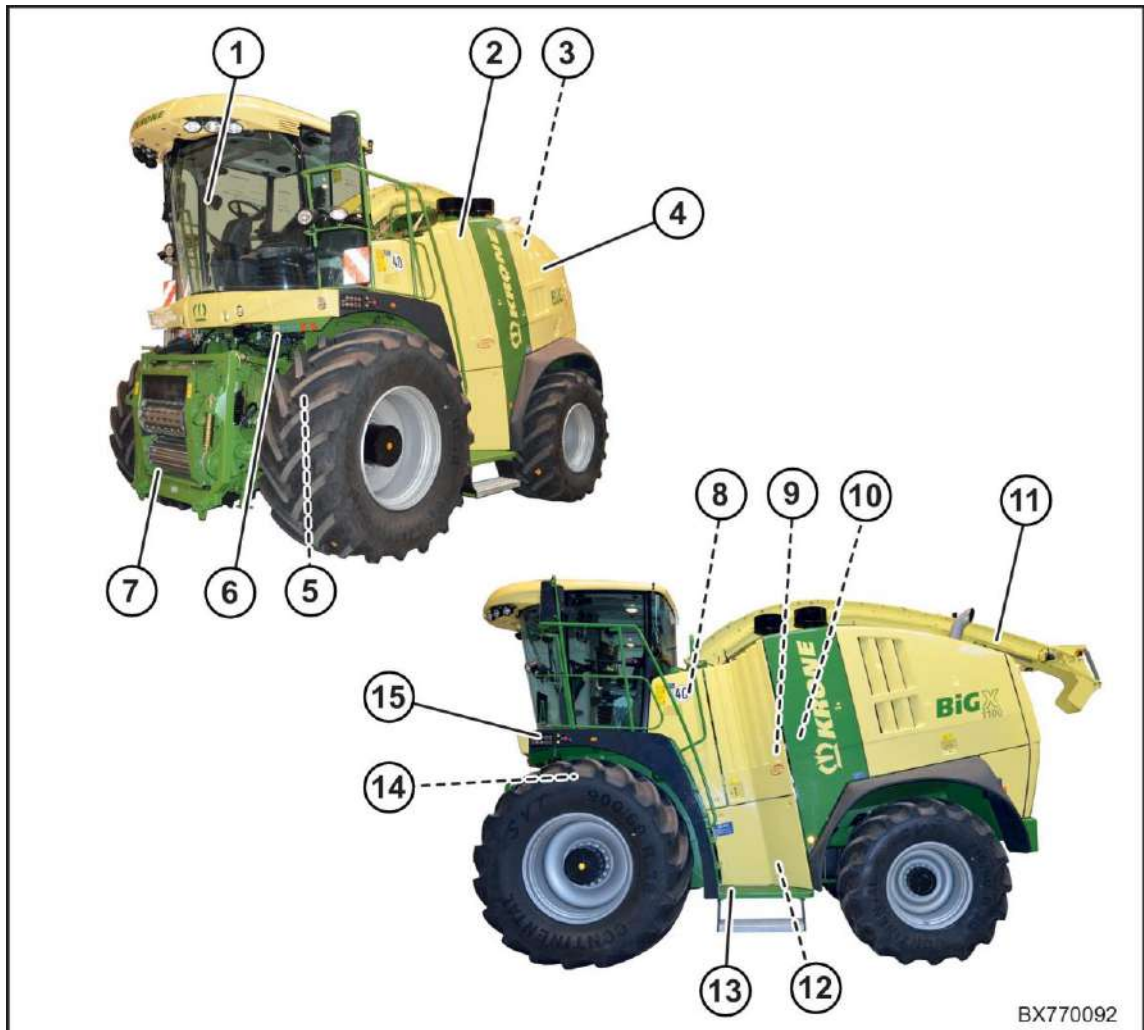
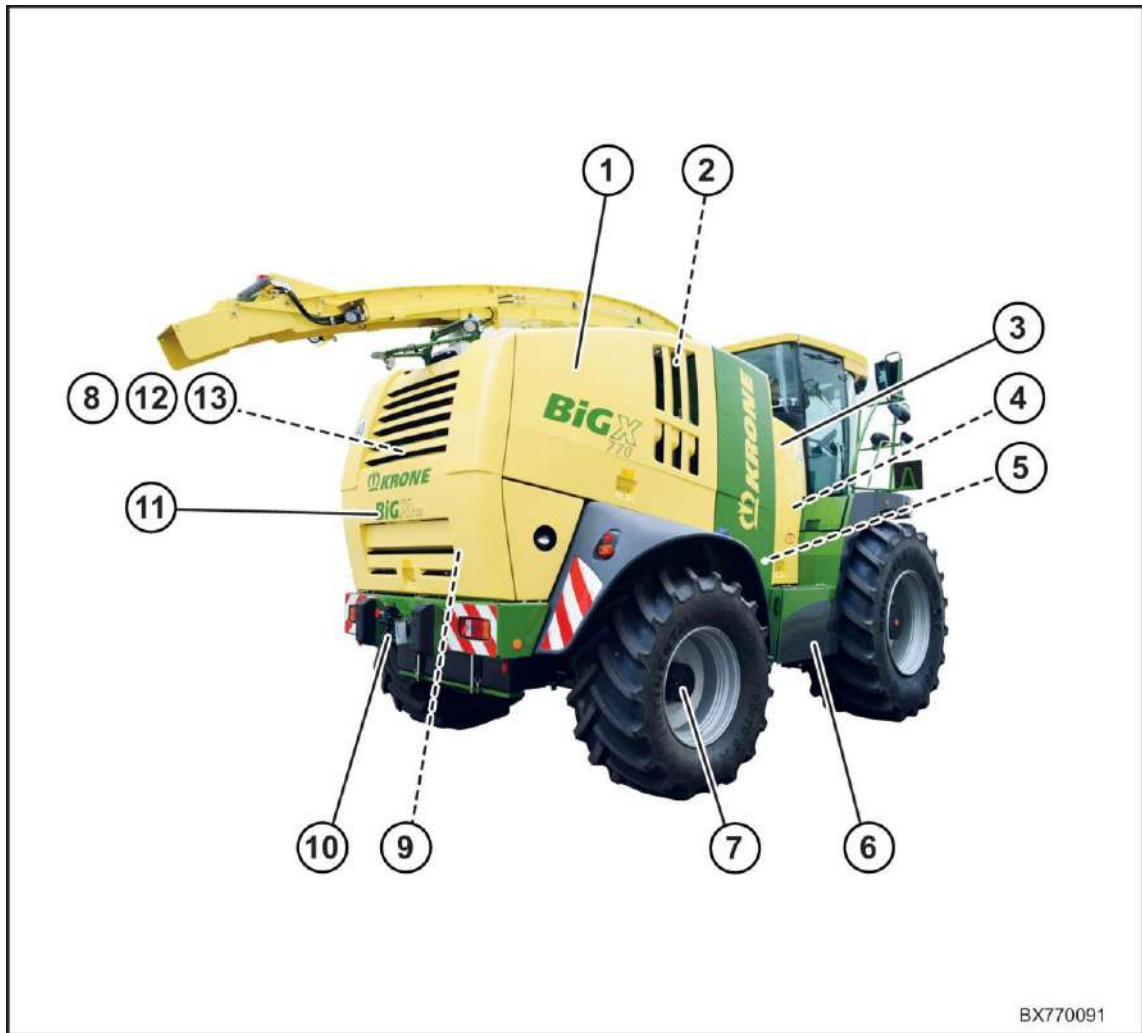


Fig. 18

Item	Component
1	Cabin with control console
2	Front left side flap
3	Hydraulic oil tank
4	Left side flap
5	Components for crop flow
6	Connection console for front attachments
7	Intake
8	Central lubrication system

Item	Component
9	Air filter
10	Cooler
11	Spout
12	Battery compartment with batteries
13	Left ladder
14	Grinding device
15	Grinding control unit with instantaneous stop switch





BX770091

Fig. 19

Item	Component
1	Right side flap
2	Coolant compensation tank
3	Front right side flap
4	Working hydraulics block
5	Fuel tank
6	Tool box with cover. Folded out, it is used as a step for an emergency exit and for filling the optional silage tank.
7	Wheel hub gearbox

Item	Component
8	Traction drive pump
9	Rear ladder
10	Trailer coupling
11	Tailgate
12	Engine
13	Intake/front attachment pump



5.1.1 Overview of crop flow

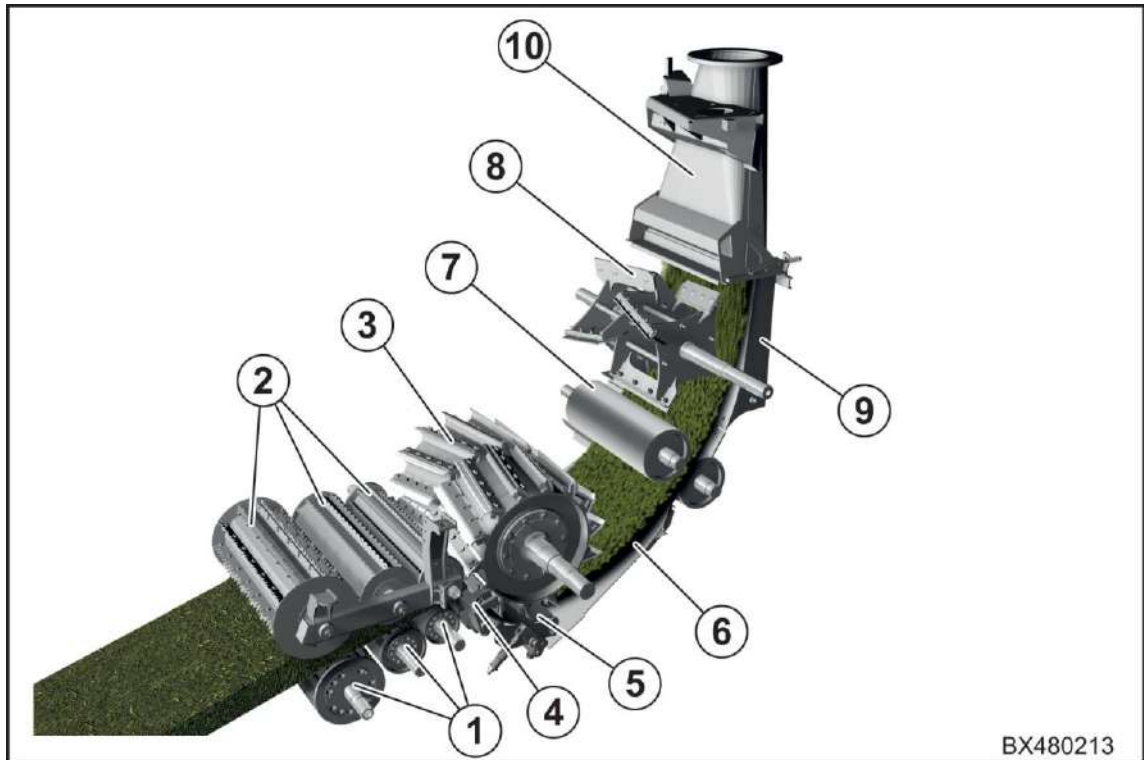


Fig. 20

Item	Component
1	Feed drive rollers, bottom
3	Chopping drum
5	Drum base
7	Corn conditioner/grass chute (not shown)
9	Rear wall discharge accelerator

Item	Component
2	Feed drive rollers, top
4	Counterblade
6	Transfer shaft
8	Discharge accelerator
10	Channel support

## Machine Description

### Overview of main valve block

The main valve block is located behind the front side flap on the right side of the machine.

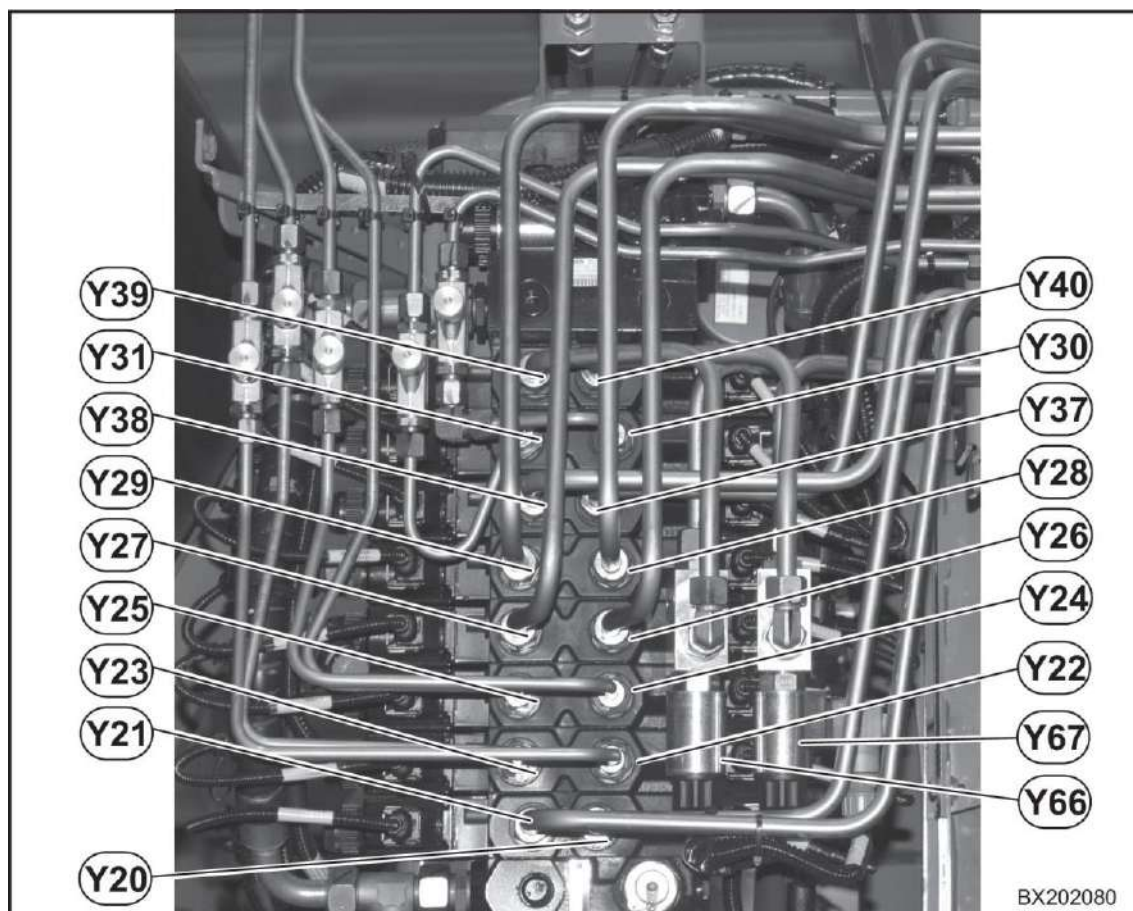


Fig. 21

Valve	Function	Valve	Function
Y20	Turn spout "left"	Y29	Extend supporting wheels/lower plant divider
Y21	Turn spout "right"	Y30	Grinding device "Cylinder in"
Y22	"Lift" discharge chute flap	Y31	Grinding device "Cylinder out"
Y23	"Lower" discharge chute flap	Y37	Pendulum frame "rotate left"
Y24	"Raise" upper discharge chute	Y38	Pendulum frame "rotate right"
Y25	"Lower" upper discharge chute	Y39	Auto steering left
Y26	Fold in front attachment "transport position"	Y40	Auto steering right
Y27	Fold out front attachment "working position"	Y66	Lock steering on left
Y28	Retract supporting wheels/raise plant divider	Y67	Lock steering on right

5.2 Identification Plate

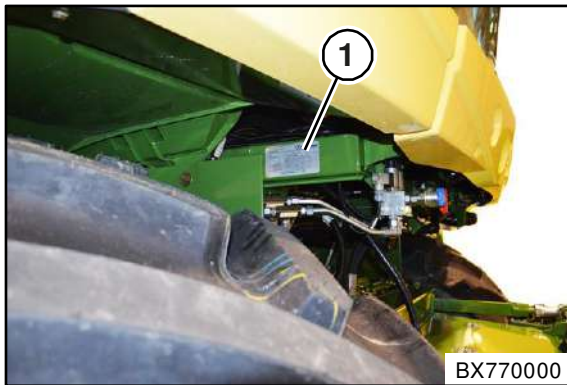


Fig. 22  
The machine data is specified on the type plate (1), which is located on right front side of the machine.

5.3 Information Required for Questions and Orders

Type/ trade name	
Vehicle identification number (VIN) machine number	



**NOTE**

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

When asking questions concerning the machine or ordering spare parts, be sure to provide type designation, vehicle ID number and the year of manufacture. To ensure that these data are always available, we recommend that you enter them in the fields above.



**NOTE**

Original KRONE spare parts and accessories authorised by the manufacturer help to ensure safety. The use of spare parts, accessories or additional equipment not manufactured, tested or approved by KRONE will exclude any liability for consequential damage.



## Machine Description

### 5.3.1 Contact for KRONE NORTHAMERICA

<b>Mailing address</b> Krone North America, Inc. P.O. Box 18880 Memphis, TN 38181-0880 USA	<b>Physical address</b> Krone North America, Inc. 3363 Miac Cove Memphis, TN 38118 USA
Phone	+1 901 842-6011
Fax	+1 901 842-6016
E-mail	info@krone-northamerica.com
Internet	www.krone-northamerica.com

### 5.4 Description of foraging process

#### Grass mode with pick-up

To use grass mode, the forage harvester must be fitted with a suitable header, approved by the manufacturer, and the crop must lay cut in a swath.

The header picks up the crop from the field and conveys it in front of the intake in the middle of the forage harvester.

The intake of forage harvester draws in the crop with its rollers, compresses it and transports it to the chopper unit.

The chopper unit chops up the crop with the blades on its rotating chopping drum and conveys it through the grass channel to the discharge accelerator.

The discharge accelerator accelerates the crop to such an extent that they are conveyed at high speed through the spout and out of the forage harvester, e.g. into a trailer pulled next to the forage harvester.

#### Maize mode

To use the forage harvester in maize mode, it must be fitted with maize header approved by the manufacturer.

The maize header uses its cutting system to cut the crops and conveys them in front of the intake of the forage harvester in the middle of the vehicle.

The intake of forage harvester draws in the crops with its rollers, compresses them and transports them to the chopper unit.

The chopper unit chops up the crops with the blades on its rotating chopping drum and conveys them through the grass channel to the discharge accelerator.

The corn conditioner strikes the grains in the crops using two profiled rollers and conveys the crops into the discharge accelerator.

The discharge accelerator accelerates the crops to such an extent that they are conveyed at high speed through the spout and out of the forage harvester, e.g. into a trailer pulled next to the forage harvester.

### 5.5 Picking up the crops

The crops are picked up by front-mounted front attachments which can be changed for the corresponding application depending on the season.

All front attachments approved by the manufacturer, see page 96.

#### – "EasyFlow" pick-up



Fig. 23

The pick-up (1) driven by the machine picks cut, stem-like crops in the swath off the ground and conveys them with an auger conveyor to the intake unit of the machine.

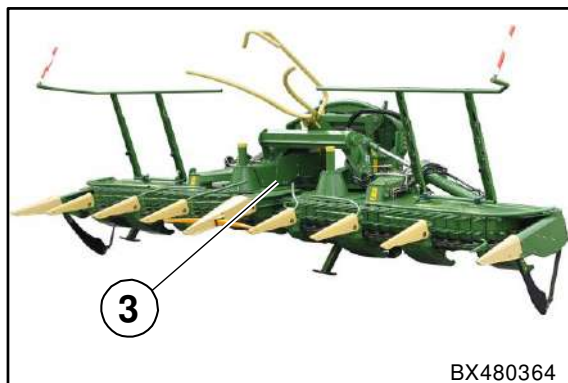


Fig. 24

- The maize front attachments "EasyCollect" 450-2, 600-2 and 750-2 (3) are in two parts and have a right and left frame. The frames are folded up once for transport (both outriggers are vertical).

### 5.6 Feed drive

The feed drive compresses the crops and conveys them to the chopper unit.

The feed drive consists of a housing with six rollers. The lower three rollers are permanently mounted in the housing and the upper roller pack is spring-mounted. The spring force allows the upper rollers to exert a defined prebaling pressure on the crops.

#### Drive

The lower intake rollers are powered by the hydrostatic drive by means of a cardan shaft. From there, the drive energy is distributed via the lower and upper roller gearboxes, which drive the upper rollers.

The stepless speed adjustment of the feed drive, which can be performed from the cab, enables the chop length to be adjusted steplessly and manually.



Fig. 25

#### Metal detection

The front lower roller is equipped with metal detection system that reacts to magnetisable steel. For this reason, the front upper and the front lower rollers are made of stainless steel.

If a material passes through the magnetic field which triggers metal detection, the front attachment drive is switched off and the intake is stopped by the quick stop function.

## 5.7 Cutting Drum Unit

In the chopper unit the crops are cut to a set chop length.

### Design

The chopping drum unit consists of a cutting drum housing in which the chopping drum is mounted.

The chopping drum is a closed cylindrical body, on which the chopping blades are arranged in a V-shape. Each chopping blade is screwed to the chopping drum with three hexagon head screws.



Fig. 26

### Drum base

The base of the chopper unit can be adjusted to optimise the crop flow and is spring-mounted so that it can move downward when material accumulates in the crop flow.

### Cutting blades

The chopping blade (1) is available in two versions: Grass and maize blades, which differ in terms of blade geometry.

The chopping blades can be adjusted to the counterblade and replaced using the fastening screws.

### Counterblade

The counterblade (2) is available in two versions, which differ in terms of the type of overlay welding/geometry.

The counterblade can be adjusted with the grinding control unit at the front left of the machine.

### Cutting length

By means of the chopping drum, the crops are cut to a defined value.

The chop length depends on the number of cutting blades on the chopping drum and the intake speed.

### VariLOC gearbox

Optionally, a VariLOC gearbox can be mounted on the machine to extend the possible cutting length range.

**The VariLOC gearbox is only approved for the chopping drums MaxFlow<sup>28</sup> und MaxFlow<sup>36</sup> with complete set of blades in the maize.**

### Grinding device

The grinding device grinds the chopping blades of the chopping drum using a grinding stone which is moved back and forth by the rotating chopping drum. The grinding stone is readjusted automatically with every grinding cycle.



### 5.8 Main drive brake

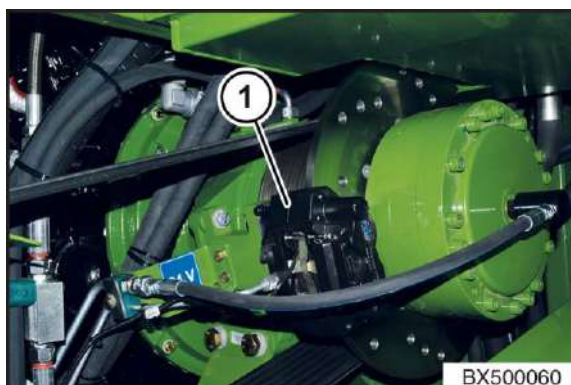


Fig. 27

To reduce the coast down time of the chopping drum, the main drive is equipped with a hydraulically controlled brake (1).

If the chopping drum is switched off in field mode, the engine brakes from full speed to the idle speed of 1100 rpm. After that, the main coupling is switched off.

Then the brake main drive is automatically activated and brakes the chopping drum to a complete stop in a short time.

After max. 10 sec. the entire crop flow stops.

### 5.9 Corn conditioner

The corn conditioner, which is installed in the crop flow for the maize crops, strikes the grains contained in the crops to improve the digestibility of the forage.

The corn conditioner features two toothed rollers which are driven by a power belt.

Both rollers can be used with 105, 123, 144 or with 166 teeth.

The rollers rotate at different speeds and the space between them can be adjusted from the terminal to obtain an optimum work result.

Optionally the corn conditioner can also be fitted with discs.

### 5.10 Discharge accelerator

The discharge accelerator accelerates the crops out of the corn conditioner or to the grass channel and conveys them further into the discharge chute.

The discharge accelerator rear is spring-mounted so that it can move backwards when material accumulates in the crop flow.

To optimise the discharge capacity or to reduce wear, the rear wall can be adjusted.



**5.11 Discharge chute**

The accelerated crops are conveyed out of the forage harvester via the discharge chute. The discharge bend can be rotated via a hydraulic motor and the discharge angle can be adjusted to obtain different discharge widths of the crops.

**5.12 Travelling gear**

The traction drive is fully hydraulic and is driven by hydraulic motors with wheel motors on the front wheels (optionally: on all four wheels).

In road mode the traction drive steplessly reaches speed ranges from 0 to 40 km/h, backwards from 0 to 14 km/h.

In field mode speeds can also be adjusted steplessly forwards from 0 to 25 km/h and backwards from 0 to 14 km/h.

In field mode a traction control system ("Traction Control") is active.

The traction control system can be adjusted in two stages.

TC II allows increased slip. This setting is usually used in maize mode to ensure sufficient propulsion even under difficult conditions.

TC I allows only little slip (spinning wheels). This setting is usually used in grass mode to protect the sward.

The selection of the traction control system stage does not depend on the mode (grass/maize) set on the terminal.

**5.13 Central lubrication system**

The central lubrication system supplies selected lubrication points cyclically with an adjustable amount of lubricant.

**5.14 System Settings**

The working units, drive and power transmission components are monitored by sensors. Malfunctions are displayed on the terminal.

The working units, drive and power transmission components can be calibrated from the terminal.

## Machine Description

### 5.15 On-board power supply voltage

The wiring system consists of two voltage levels.  
The diesel engine components are primarily operated with 24 V.  
For further details, refer to the circuit diagram.

### 5.16 Silage additive system (option)

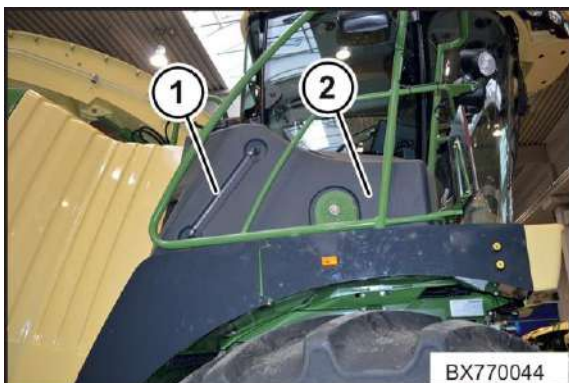


Fig. 28

The silage additive system consisting of the silage additives tank (2) including a pump unit for rough dosing of silage additives is mounted on the right mudguard of the machine.  
Dosing can take place via nozzles or a flow sensor.  
The fill level can be read from the filling level indicator (1) on the tank or in the info centre.  
The system is controlled from the info centre.

## 5.17

## Ladders and flaps

 **WARNING****Risk of injury when climbing up and down.**

Careless behaviour when climbing up and down can result in people falling from the ladder. Persons climbing onto the machine outside the designated ladders can slip, fall and seriously injure themselves. Dirt as well as consumables and lubricants can impair one's footing and stability.

- Use the designated ladders only.
- 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 operating elements as handles. Inadvertent actuation of operating elements can lead to accidental actuation of functions that pose a danger.
- When climbing down, never jump off the machine.

## Machine Description

### 5.17.1 Ladder to the cab

#### **WARNING**

##### **Risk of injury due to falling from a great height!**

The ladder allows operators to climb to heights from which a fall could lead to severe to fatal injuries.

- Do not climb up or down the ladder while the machine is moving.
- It is impermissible to carry passengers on ladder steps or platforms.
- Always keep the ladder clean. In particular, make sure that it is free of deposits of grease or other slippery substances.



Fig. 29

To reach the cab safely:

- Climb on to the machine via the ladder (1) and the platforms (2) only, using the hand rails (3).

5.17.2 Opening the cabin door



Fig. 30

To open the cab door from outside:

- Use the door key to unlock the door lock (1); press in the button (2) and open the door.

To open the cab door from inside:

- Lift the door opening lever (3) and open the door.

### 5.17.3 Opening and closing flaps

 **WARNING**

**Risk of injury from moving parts!**

If the flaps for the engine compartment and crop flow are opened while the diesel engine is running, people may be injured by moving machine parts.

- Do not open the flaps until the diesel engine is at a standstill.
- Ensure that the flaps are closed when starting the diesel engine.

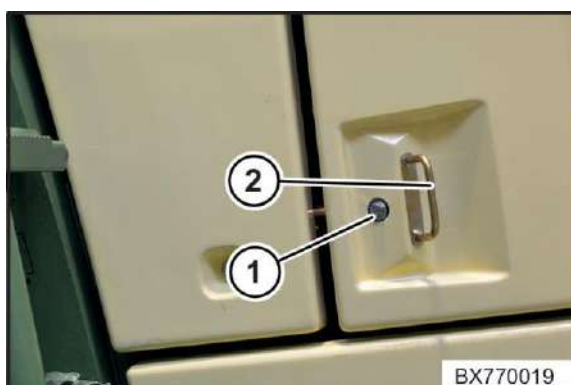


Fig. 31

**Opening the flap:**

- Use an open-jawed spanner or ring spanner (NW 13) or a screwdriver to unlock the flap lock (1) by turning to the left.
- Open the flap using the handle (2).

**Closing the flap:**

- Close the flap by pressing closed (without tools).

#### 5.17.4 Right side flap



Fig. 32:  
The right side of the engine compartment is located under the right side flap.

#### 5.17.5 Left side flap



Fig. 33:  
The left side of the engine compartment is located under the left side flap.

#### 5.17.6 Tailgate engine compartment



Fig. 34:  
Access the rear part of the engine compartment via the tailgate:  
Open the flap (1).  
• Fold down the ladder (2).



## Machine Description

### 5.17.7 Front right side flap



Fig. 35:

To access the hydraulic block behind the open front right side flap:

- Open the lock (2) of the tool box (1) and fold down the lid (3).
- Use the lid and top of the tool box as steps.

Do not use the step when the tool box is swivelled open.

### 5.17.8 Front left side flap

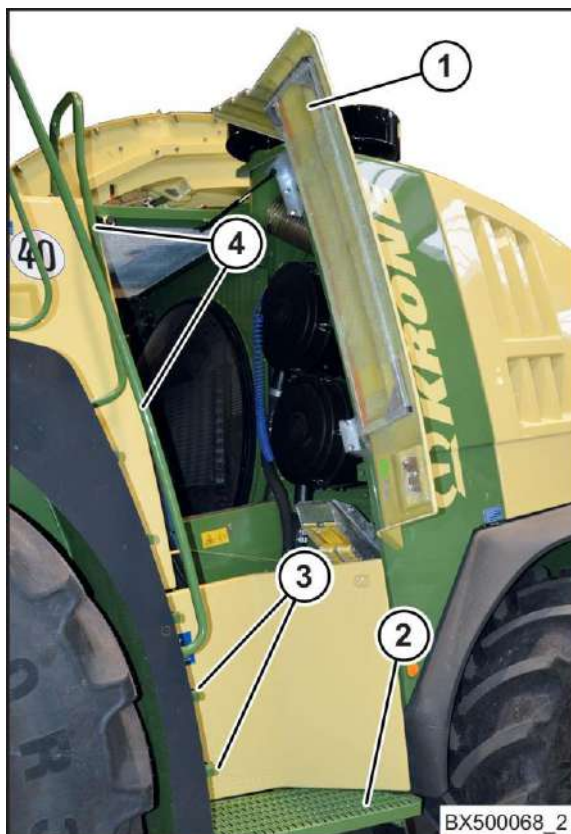


Fig. 36:

To access the cooler compartment containing the coolers and air filters:

- Open the front left side flap (1).
- Enter the cooler compartment via the steps (3) on the ladder and the standing area (2). Use the handrails (4).



6 Technical Data

6.1 Technical Data of the Machine

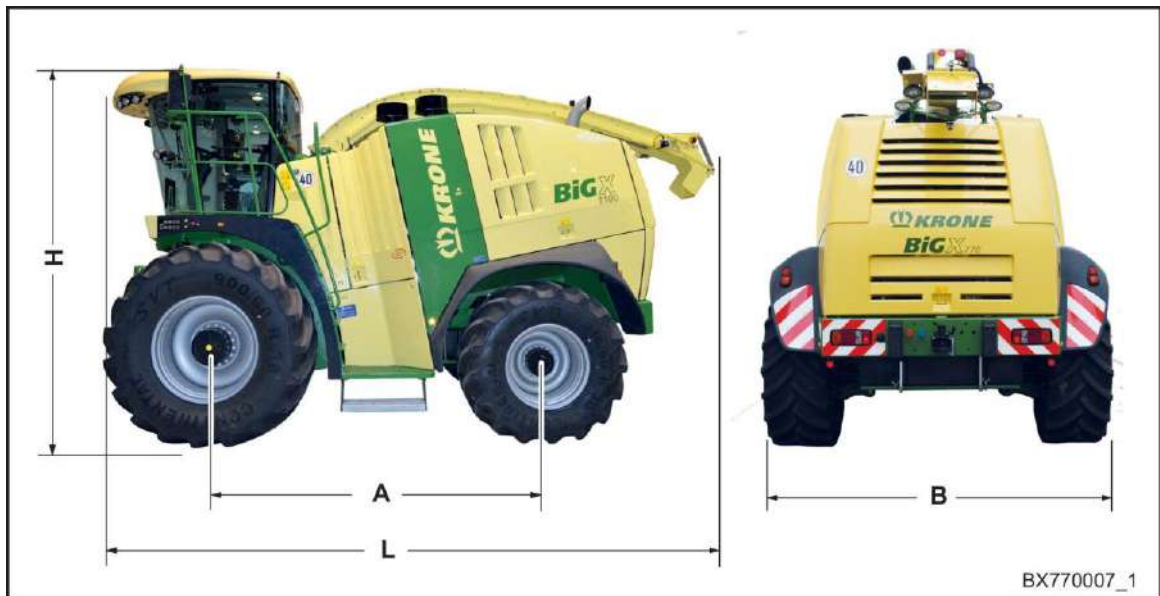


Fig. 37

Machine dimensions	
Length (L)	8335-9440 mm
Width (B)	3000-3920 mm
Height (H)	3915-3980 mm
Centre distance (A)	3250 mm
Centre distance front axle-additional axle (not shown)*	1060 mm

- \* for 3-axle machines
- The width and height are dependent on the tires fitted.
- The length depends on the machine type, the front attachment and spout used.

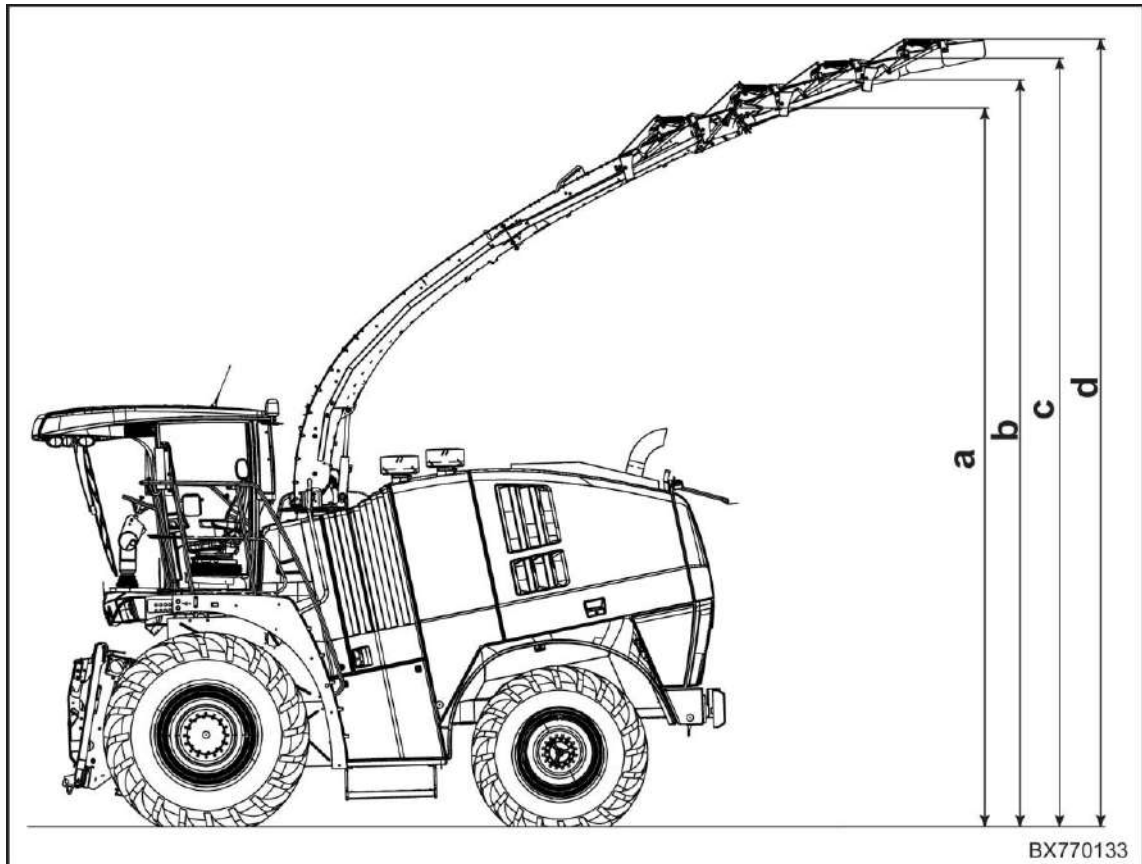


Fig. 38

Max. working height of the machine		
<b>a</b>	Spout 8 rows	6668 +50 mm
<b>b</b>	Spout 10 rows	6928 +50 mm
<b>c</b>	Spout 12 rows	7126 +50 mm
<b>d</b>	Spout 14 rows	7305 +50 mm

Lashing points

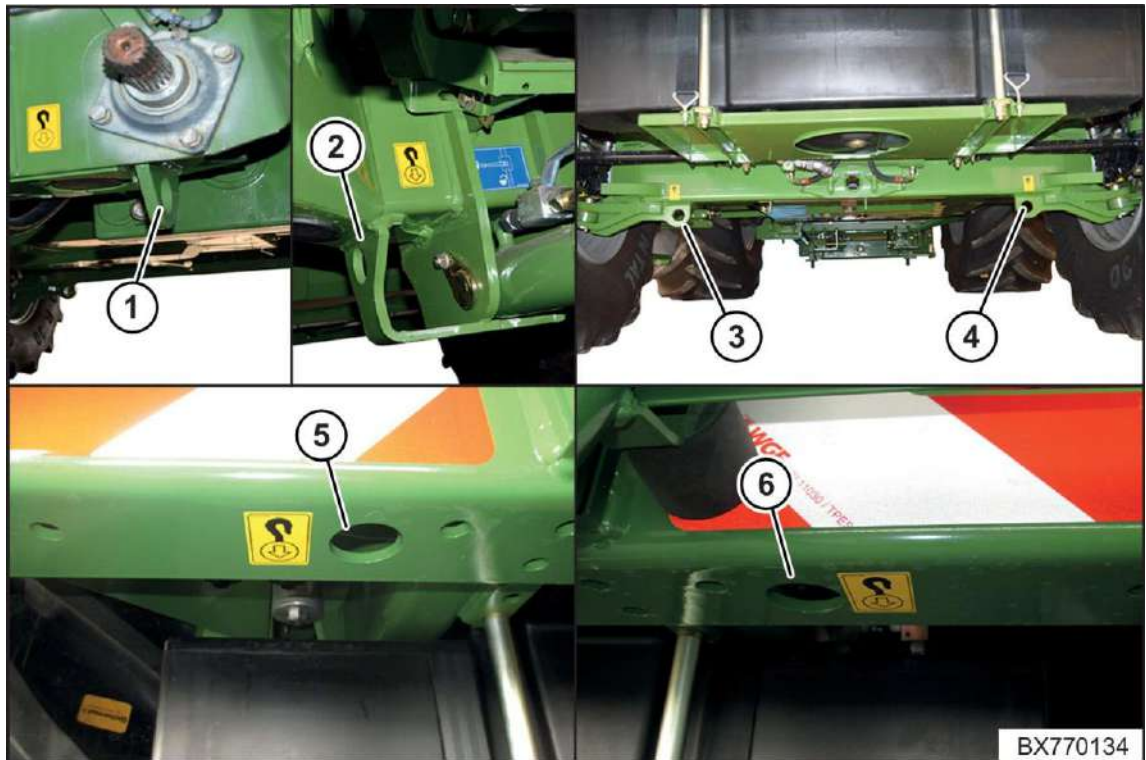


Fig. 39

To connect lashing equipment, appropriate lashing points are available on the axles and bumper of the machine.

Item	Explanation
1	Front axle left
2	Front axle right
3	rear axle, left side
4	Rear axle right
5	Bumper left
6	Bumper right

## Technical Data

Engine data	BiG X 600-3
Manufacturer	Liebherr
Type of engine	D9508 A7
Design	V-8
Emissions level	TIER 3
Displaced volume	16.16 l
Engine performance (ECE R120)	568 kW (772 HP)
Max. continuous chopping output X-Power	441 kW (600 HP)
Cooling system	Liquid cooling
Diesel injection process	Common rail injection

Engine data	BiG X 700-3
Manufacturer	Liebherr
Type of engine	D9508 A7
Design	V-8
Emissions level	TIER 3
Displaced volume	16.16 l
Engine performance (ECE R120)	568 kW (772 HP)
Max. continuous chopping output X-Power	492 kW (669 HP)
Cooling system	Liquid cooling
Diesel injection process	Common rail injection

Engine data	BiG X 770-3
Manufacturer	Liebherr
Type of engine	D9508 A7
Design	V-8
Emissions level	TIER 3
Displaced volume	16.16 l
Engine performance (ECE R120)	568 kW (772 HP)
Max. continuous chopping output X-Power	552 kW (750 HP)
Max. continuous chopping output Eco Power	404 kW (550 HP)
Cooling system	Liquid cooling
Diesel injection process	Common rail injection



Travelling gear	
Type	Hydrostatic drive with axial piston adjusting motor with wheel motor
Forward speed in field mode	0-25 km/h
Forward speed in road mode	0-40 km/h
Suspension	Hydropneumatic
All-Wheel Drive	Standard equipment
Traction control system	Standard equipment

Tyres	Equipment	Tyre dimensions
Front axle	Standard*	650/75 R32
	Option*	710/70 R42
	Option*	800/65 R32
	Option*	800/70 R38
	Option*	900/60 R32
	Option*	900/60 R38
Rear axle	Standard*	540/65 R30
	Option*	600/70 R28
	Option*	620/70 R30
	Option*	710/60 R30

\* Restricted use depending on harvesting work

**Tyre pressure for model with 2 axles**

Reference values for tyre pressure:

Tyre type	[km/h]	EasyFlow or solo machine	XDisc *	EasyCollect / XCollect				Max. permitted tyre pressure	Axle
				6000/ 600-2/ 603/ 600-3	7500/ 753/ 750-2/ 750-3	903/ 900-3	9000 */ 1053 *		
		[bar]	[bar]	[bar]	[bar]	[bar]	[bar]		
710/75 R42	40	1.2	1.2	2.0	2.0	2.0	1.2	Front axle	
	10	1.0	1.0	1.1	1.1	1.2	1.2		
800/65 R32	40	1.6	1.6	2.6	2.6	2.6	1.6		
	10	1.0	1.3	1.4	1.4	1.4	1.6		
800/70 R38	40	1.0	1.0	1.4	1.4	1.4	1.0		
	10	1.0	1.0	1.0	1.0	1.0	1.0		
900/60 R32	40	1.3	1.3	2.0	2.0	2.0	1.3		
	10	1.0	1.1	1.2	1.2	1.2	1.4		
900/60 R38	40	1.0	1.0	1.5	1.5	1.5	1.0		
	10	1.0	1.0	1.0	1.0	1.0	1.1		
600/70 R28 (Mitas)	40	1.8	1.8	2.4	2.6	2.8	1.8		
	10	1.0	1.0	1.4	1.4	1.8	1.8		
600/70 R28 (Michelin)	40	1.8	1.8	2.4	/	/	/		
	10	1.2	1.2	1.6	1.6	1.8	1.8		
620/70 R30	40	1.4	1.4	1.7	1.8	2.0	1.4		
	10	1.0	1.0	1.3	1.4	1.4	1.4		
710/60 R30	40	1.4	1.4	1.8	2.0	2.4	1.4		
	10	1.0	1.0	1.2	1.2	1.4	1.4		

\* Road travel without EasyCollect 9000/ 1053/ XDisc

**Tyre pressure for model with 3 axles**

Reference values for tyre pressure:

Tyre type	[km/h]	EasyCollect / XCollect			Max. permitted tyre pressure	Axle	
		6000/ 600-2/ 603/ 600-3	7500/ 753/ 750-2/ 750-3	903/ 900-3			
		[bar]	[bar]	[bar]	[bar]		
710/75 R42	40	1.4	1.6	1.8	2.4	Front axle	
	10	1.1	1.1	1.2			
800/65 R32	40	2.0	2.2	2.3	3.2		
	10	1.4	1.4	1.4			
800/70 R38	40	1.1	1.2	1.2	2.4		
	10	1.0	1.0	1.0			
900/60 R32	40	1.5	1.6	1.7	2.4		
	10	1.2	1.2	1.2			
900/60 R38	40	1.2	1.3	1.4	1.6		
	10	1.0	1.0	1.0			
600/70 R28 (Mitas)	40	1.4	2.2	2.4	2.8	Rear axle	
	10	1.4	1.4	1.8			
600/70 R28 (Michelin)	40	1.6	2.2	2.4	2.4		
	10	1.6	1.6	1.8			
620/70 R30	40	1.2	1.6	1.8	2.4		
	10	1.3	1.4	1.4			
710/60 R30	40	1.2	1.8	1.8	2.4		
	10	1.2	1.2	1.4			
180/70 R8	40	10	10	10	10		Additional axle
	10	10	10	10			

## Technical Data

Wheel nuts	
Tightening torque front axle	510 Nm
Tightening torque rear axle	270 Nm

Tow coupling	
permitted D-value	82 kN
permitted drawbar load at the coupling point	max. 2,000 kg <sup>1,2</sup>
max. trailing load (braked)	11,000 kg
Permitted drawbar eyes	DIN11026,11034,74053

<sup>1</sup> Observe maximum permitted rear axle load!

<sup>2</sup> When installing an additives tank at the rear of the machine, observe the maximum permitted drawbar load and the maximum permitted rear axle load!

Tow coupling for Italy	
permitted drawbar load at the coupling point	max. 1,500 kg <sup>1,2</sup>
max. trailing load (unbraked)	6,000 kg
Permitted drawbar eyes	E, E2, E3

<sup>1</sup> Observe maximum permitted rear axle load!

<sup>2</sup> When installing an additives tank at the rear of the machine, observe the maximum permitted drawbar load and the maximum permitted rear axle load!

Electrical system	
Output of the alternators	24 V/180 A
	12 V/270 A
Output of the starter	7 V
Number of batteries	3
Battery voltage	12 V each
Battery capacity	150 Ah

### Vibration values

The determined values are below the values required according to the EU Vibration Directive 2002/44/EC.

- The vibration values for hand-arm vibrations are below 2.5 m/s<sup>2</sup>.
- Concerning whole body vibrations the action value of 0.5 m/s<sup>2</sup> is not exceeded.

Airborne noise emission	
Emissions value (sound pressure level)	76.7 dB(A) <sup>1</sup>
Measurement device	Bruel & Kjaer, Type 2236
Accuracy class	2
Measurement uncertainty (according to DIN EN ISO 11201)	4 dB

<sup>1</sup> value measured with forage harvester BiG X 770-3 in combination with header XCollect 900-3





Maximum permitted speed <sup>1</sup>	
Technically permitted maximum speed	40 km/h

<sup>1</sup> The maximum permitted speed may be restricted by legal requirements in the country of use.

## Technical Data

<b>Chopper unit</b>					
Drum width / drum diameter	800 mm/660 mm				
Blade arrangement	V-shaped				
Number of blades	20	28	36	40	48
Chopping length range	5-29 mm	4-21 mm	3-17 mm	2.5-15 mm	2-12 mm
Cuts per minute	12,500	17,500	22,500	25,500	30,000
Stepless drum adjustment / suspension of the drum base	Standard				
<b>With VariLOC gearbox</b>					
Chopping length range in gearbox position II (transmission 1:1.5)	–	10 mm-30 mm	10 mm-24 mm	–	–
Chopping length range in gearbox position I (transmission 1:1)	–	4 mm-21 mm	3 mm-17 mm	–	–

<b>Discharge accelerator</b>	
Diameter / width / number of discharge scoops	560 mm / 480 mm / 6
Discharge scoop arrangement	V-shaped
Speed	1,980 rpm
Stepless setting of the rear wall / suspension of the rear wall	Standard

<b>Spout</b>	
Angel of rotation	210°
Overload height	6,000 mm
Dimensions cross-section	340 mm x 320 mm

<b>Corn conditioner</b>		
105 teeth	Roller at front with 105 teeth: Standard profile / chrome-plated saw tooth profile	Option
	Roller at rear with 105 teeth: Standard profile / chrome-plated saw tooth profile	
123 teeth	Roller at front with 123 teeth: Standard profile / chrome-plated saw tooth profile	Option
	Roller at rear with 123 teeth: Standard profile / chrome-plated saw tooth profile	
144 teeth	Roller at front with 144 teeth: Standard profile / chrome-plated saw tooth profile	Option
	Roller at rear with 144 teeth: Standard profile / chrome-plated saw tooth profile	
166 teeth	Roller at front with 166 teeth: Standard profile / chrome-plated saw tooth profile	Option
	Roller at rear with 166 teeth: Standard profile / chrome-plated saw tooth profile	
105/123 teeth	Roller at front with 105 teeth: Standard profile / chrome-plated saw tooth profile	Option
	Roller at rear with 123 teeth: Standard profile / chrome-plated saw tooth profile	
Speed difference	20 %	Standard
	30 %, 40 %	Option
Space adjustment from the cabin and coupling to central lubrication system		Standard
Roller diameter / roller distance	250 mm / 0.5 - 10 mm	
Corn conditioner with discs	Disc diameter: 265 mm	Option



## Technical Data

### 6.1.1 Authorised Headers

Header type	Version
Maize header	EasyCollect 600-2
	EasyCollect 750-2
	EasyCollect 600-3
	EasyCollect 750-3
	EasyCollect 900-3
	EasyCollect 1050-3
	EasyCollect 603
	EasyCollect 753
	EasyCollect 903
	EasyCollect 1053
	EasyCollect 6000
	EasyCollect 7500
	EasyCollect 9000
	BV301-10 (XCollect 600-3)
	BV301-20 (XCollect 750-3)
	BV301-30 (XCollect 900-3)
Pick-up	EasyFlow 300 S
	EasyFlow 380 S
	EasyFlow 300
	EasyFlow 380
	EasyFlow 3001
	EasyFlow 3800
	EasyFlow 3801
Direct cut header	XDisc 620



**NOTE**

Header pick-up EasyFlow 380 S is not authorized to use in all countries.



**NOTE**

For part of the front attachments listed, a transportation trailer is available. The regional legal regulations must be observed when a transportation trailer is used.

**6.1.2 Total Weights and Axle Loads**

Depending on the type of machine, whether an additional axle is used and the front attachment used, the front axle load allows the following to be derived:

- the rear axle load
- the total weight
- the number of basic weights and additional plates required.

**NOTE**

For information on the permissible front axle load, please refer to the report issued by TÜV of your machine

**NOTE**

Additional ballasting with basic weights and additional plates requires a change to the vehicle papers.

## Technical Data

### BiG X 600-3 / 700-3 / 770-3 (2 axles)

#### Ballasting on a front axle load of 11500 kg

	Without header/ With EasyFlow 300
Permitted axle load at rear	8250 kg
Permitted total weight	18000 kg
Number of basic weights	—
Number of additional plates	—

#### Ballasting on a front axle load of 12000 kg

	Without header/ With EasyFlow 300	With EasyCollect	
		EC 600-2	EC 600-3
Permitted axle load at rear	Refer to table "Ballasting on a front axle load of 11500 kg"	9300 kg	10500 kg
Permitted total weight		21250 kg	22500 kg
Number of basic weights		1	1
Number of additional plates		7	15

	With EasyCollect
	EC 6000
Permitted axle load at rear	10000 kg
Permitted total weight	22000 kg
Number of basic weights	1
Number of additional plates	9

**Ballasting on a front axle load of 12500 kg**

	<b>Without header/ With EasyFlow 300</b>
Permitted axle load at rear	Refer to table "Ballasting on a front axle load of 11500 kg"
Permitted total weight	
Number of basic weights	
Number of additional plates	

	<b>With EasyCollect</b>			
	<b>EC 600-2</b>	<b>EC 750-2</b>	<b>EC 600-3</b>	<b>EC 6000</b>
Permitted axle load at rear	8250 kg	9,300 kg	9,000 kg	8250 kg
Permitted total weight	20500 kg	21,800 kg	21,500 kg	20850 kg
Number of basic weights	1	1	1	1
Number of additional plates	0	8	8	0

	<b>With EasyCollect</b>			
	<b>EC 7500</b>	<b>EC 603</b>	<b>BV301-10/ EC 603 S</b>	<b>BV301-20 EC 753 S</b>
Permitted axle load at rear	10000 kg	9,000 kg	9,200 kg	10000 kg
Permitted total weight	22500 kg	21,500 kg	22,000 kg	22600 kg
Number of basic weights	1	1	1	1
Number of additional plates	11	6	9	14

**Ballasting on a front axle load of 12650 kg**

	<b>Without header/ With EasyFlow 300</b>
Permitted axle load at rear	Refer to table "Ballasting on a front axle load of 11500 kg"
Permitted total weight	
Number of basic weights	
Number of additional plates	

	<b>With EasyCollect</b>			
	<b>EC 600-2</b>	<b>EC 750-2</b>	<b>EC 750-3</b>	<b>EC 753</b>
Permitted axle load at rear	8250 kg	9,300 kg	10,000 kg	10000 kg
Permitted total weight	20500 kg	21,800 kg	22,650 kg	22650 kg
Number of basic weights	1	1	1	1
Number of additional plates	0	8	14	14

	<b>With EasyCollect</b>		
	<b>EC 7500</b>	<b>EC 603</b>	<b>EC 6000</b>
Permitted axle load at rear	10000 kg	9,000 kg	8250 kg
Permitted total weight	22500 kg	21,500 kg	20900 kg
Number of basic weights	1	1	1
Number of additional plates	11	6	0



**Ballasting on a front axle load of 13000 kg**

	<b>Without header/ With EasyFlow 300</b>
Permitted axle load at rear	Refer to table "Ballasting on a front axle load of 11500 kg"
Permitted total weight	
Number of basic weights	
Number of additional plates	

	<b>With EasyCollect</b>			
	<b>EC 753</b>	<b>EC 903</b>	<b>900-3</b>	<b>750-3</b>
Permitted axle load at rear	9300 kg	10,000 kg	10,000 kg	9300 kg
Permitted total weight	22200 kg	23000 kg	23000	22300
Number of basic weights	1	1	1	1
Number of additional plates	9	14	15	10

	<b>With EasyCollect</b>		
	<b>EC 750-2</b>	<b>EC 7500</b>	<b>600-3</b>
Permitted axle load at rear	8250 kg	9,000 kg	8250 kg
Permitted total weight	21000 kg	22,000 kg	21000 kg
Number of basic weights	1	1	1
Number of additional plates	2	7	0


**NOTE**

Ex works, the additional axle is set so that it transfers 2300 kg (additional axle load) of the total weight of the machine to the road.  
 When using certain front attachments (see the table below and/or the type plate), it is necessary to increase the value to 2500 or 2750 kg in order to achieve specific front axle loads.  
 For details of the settings, refer to the documentation in the retrofit kit for the additional axle.



## Technical Data

### BiG X 600-3 / 700-3 / 770-3 (3 axles)

#### Ballasting on a front axle load of 11500 kg

	Without header/ With EasyFlow 300	With EasyCollect		
		EC 600-2	EC 750-2	EC 6000
Permitted axle load at rear	8250 kg	8,250 kg	8,250 kg	8250 kg
Permitted axle load additional axle	—	2,300 kg	2,300 kg	2300 kg
Permitted total weight	18000 kg	21,000 kg	22,000 kg	21000 kg
Number of basic weights	0	1	1	1
Number of additional plates	0	0	4	1

	With EasyCollect			
	EC 7500	EC 603	EC 753	EC 900-3
Permitted axle load at rear	9000 kg	8,250 kg	9,000 kg	9000 kg
Permitted axle load additional axle	2300 kg	2,300 kg	2,300 kg	2750 kg
Permitted total weight	22500 kg	21,000 kg	22,500 kg	23000 kg
Number of basic weights	1	1	1	1
Number of additional plates	8	0	11	11

	With EasyCollect			
	EC 903	EC600-3	BV301-10/ EC 603 S	BV301-20/ EC 753 S
Permitted axle load at rear	9000 kg	8,250 kg	8,000 kg	8000 kg
Permitted axle load additional axle	2750 kg	2,300 kg	2,300 kg	2600 kg
Permitted total weight	23000 kg	21,000 kg	21,500 kg	21800 kg
Number of basic weights	1	1	1	1
Number of additional plates	10	0	8	8

	With EasyCollect
	EC 750-3
Permitted axle load at rear	9000 kg
Permitted axle load additional axle	2300 kg
Permitted total weight	22500 kg
Number of basic weights	1
Number of additional plates	11

**Ballasting on a front axle load of 12000 kg**

	Without header/ With EasyFlow 300	With EasyCollect		
		EC 750-2	EC 7500	EC 900-3
Permitted axle load at rear	Refer to table "Ballasting on a front axle load of 11500 kg"	8250 kg	8,250 kg	9000 kg
Permitted axle load additional axle		2300 kg	2,300 kg	2300 kg
Permitted total weight		21000 kg	22,000 kg	23000 kg
Number of basic weights		1	1	1
Number of additional plates		0	3	13

	With EasyCollect			
	EC 753	EC 903	EC 750-3	BV301-30/ EC 903 S
Permitted axle load at rear	8250 kg	9,000 kg	8,250 kg	9100 kg
Permitted axle load additional axle	2300 kg	2,300 kg	2,300 kg	2600 kg
Permitted total weight	22000 kg	23,000 kg	22,000 kg	23700 kg
Number of basic weights	1	1	1	1
Number of additional plates	3	11	3	18

**Ballasting on a front axle load of 12500 kg**

	Without header/ With EasyFlow 300	With EasyCollect		
		EC 903	BV301-30/ EC 903 S	EC 900-3
Permitted axle load at rear	Refer to table "Ballasting on a front axle load of 11500 kg"	8250 kg	8,000 kg	8250 kg
Permitted axle load additional axle		2300 kg	2,600 kg	2300 kg
Permitted total weight		22500 kg	23,200 kg	23000 kg
Number of basic weights		1	1	1
Number of additional plates		6	12	7

**6.1.3 Technical data of the air conditioning system**

Part	
Evaporator	Refrigerating capacity* 5,200 W
Heater	Heating capacity 4,000 W
Fan	910 m³/h free blowing
Voltage	24 V
Power consumption	8.6 A

\* measured at +30°C ambient temperature (manufacturer's data)

### 6.2 Consumables

Designation	Filling quantity	Specification	Initial filling ex works
Fuel tank	960 l	<ul style="list-style-type: none"> <li>European Standard EN 590 DIN EN 590 (Germany)</li> <li>ASTM D 975 No. 1 D (USA)</li> <li>BS 2869 Part 1 Class A 1 (Great Britain)</li> </ul>	Diesel fuel
Additional fuel tank (optional)	330 l		Is not filled ex works.
Diesel engine (engine oil)		Chevron Texaco URSA TDX, Fuchs Titan Cargo MC, Shell Rimula R6M, Total Rubia Tir 8600	Fuchs Titan Cargo MC 10W-40
Engine coolant tank	98 l	Mix frost protection agent and water as a percentage in the ratio 50:50.	BASF Glysantin G40
Hydraulic oil tank	150 l	Hydraulic oil HLP 46	SRS Wiolan HS 46
Gear of engine output	12.5 l	Gear oil Renolin Unisyn CLP 220 ISO viscosity class (220)	
Transfer gearbox	8.5 l	Gear oil Renolin Unisyn CLP 220 ISO viscosity class (220)	
Angular gearbox	0.5 l	Gear oil API-GL4-SAE90	
Roller gearbox at bottom left	3.0 l	Gear oil API-GL4-SAE90	
Upper right roller gearbox	2.95 l	Gear oil API-GL4-SAE90	
Auger gearbox spout	1.5 l	Gear oil Mobil Glygoyle 460	
Wheel hub gearbox in the front	3.0 l	Gear oil Shell Spirax S4 CX 50	
Rear wheel hub gearbox	1.5 l	Gear oil Shell Spirax S4 CX 50	
VariLOC gearbox	3.3 l	Gear oil PAO Renolin Unisyn CLP 220	
Central lubrication (grease)	12 kg	NLGI class 2	EP 2
Air conditioning (refrigerant)	1500 g	R134a	
Air conditioning (oil)	215 cm <sup>3</sup>	PAG	
Silage additive tank (optional)	300 l		Is not filled ex works.

The filling quantities of the gearboxes are guide values. The correct values occur by changing the oil/checking the oil level, see chapter Maintenance – Gearboxes.

The following oil types may be used for the hydraulic oil tank

List of mineral oils of quality class HLP (HM) and environmentally friendly HEPG pressure fluids that decompose quickly.

ISO viscosity class	HEPG VG 46	HLP VG 46
Manufacturer		
ADDINOL		Hydraulic oil HLP 46
AGIP		OSO 46
ARAL	BAF 46Vitam	Aral Vitam GF 46
ASEOL	Aqua VG 46	
AVIA	Avia Hydrosynth 46	AVILUB RSL 46 Avia Fluid ZAD 46
BECHEM	Hydrostar UWF 46	
BP	Biohyd PEG 46	Energol HLP 46
CASTROL		HYSPIN AWS 46
COFRAN		Cofraline extra 46 S
DEA	Econa PG 46	Astron HLP 46
ELF		ELFOLNA 46 ELFOLNA DS 46
ENGEN		Engen TQH 20/46
ESSO	Hydraulic oil PGK 46	NUTO H 46
FINA	Hydraulic oil D3031.46	HYDRAN 46
FRAGOL	Hydraulic TR 46	
FUCHS	Renolin PGE 46	RENOLIN MR 15, VG 46, B15 VG 46
Houghton	Syntolubric 46	
KLÜBER		LAMORA HLP 46
KUWAIT		Q8 Haydn 46, Q8 Holst 46 Hydraulics S46
LIQUI MOLY		HLP 46 ISO
Mobil		Mobil DTE 25 Mobil Hydraulic Oil Medium
SHELL	Fluid BD 46	Shell Tellus oil 46 Shell Hydrol DO 46
SRS		WIOLAN HS 46 WIOLAN HX 4
Stuart Theunissen	Hydrocor E46 ISOCOR E46	Cofraline extra 46 S
TOTAL		Azolla ZS 46
TRIBOL		Tribol 772 Tribol ET 1140-46 Tribol 943 AW 46
VALVOLINE	Ultrasyn PG 46	
VERKOL		Vesta HLP 46

**Lubricant types NLGI class 2**

Manufacturer	Type designation	Saponification	Minimum conveying temperature [°C]
AGIP	Autol Top 2000	Spec. Ca	-10
ARAL	Long-term grease H	Li	-25
BECHEM	High-Lub L4742	Li	-20
BP	Energrease LS EP 9346	Li	-25
	Energrease LS-EP2	Li	-20
CASTROL	Spheerol EP L2	Li	-20
ESSO	Exxon multi-purpose grease	Li	-20
ELF	ELF Multi 2	Li	-20
FINA	EP multi-purpose grease	Li	-20
FUCHS	LZR 2	Li	-25
KROON OIL	Lithec Grease	Li	-10
MOBIL	Mobilux EP 2	Li	-15
Mobilgrease	MB 2	Li	-20
MOGUL	LV 1 EP	Li	-25
ÖMV	ÖMV Signum M283	Li/Ca	-25
OPTIMOL	Olit EP 2	Li	-25
SHELL	Retinax EP L2	Li	-20
TEXACO	Multifak EP2	Li	-15
TOTAL	Multis EP2	Li	-20
Zeller & Gmelin	Divinol multi-purpose grease 2	Li	-20
<b>Lubrication greases with fast bio-degradable times</b>			
ARAL	BAB EP 2	Li/Ca	-20
AVIA	Syntogrease	Li	-25
BECHEM	UWS VE 42	Li/Ca	-25
DEA	Dolon E EP2	Li/Ca	-20
FINA	Biological EP S2	Li/Ca	-25
FUCHS	Plantogel 0120S	Li	-25
LUBRITECH	Stabyl Eco EP2	Li/Ca	-20
ÖMV	ÖMV ecodur EP2	Ca	-25
TEXACO	Starfak 2	Ca	-20
Zeller & Gmelin	Divinol E2	Li	-25

Table 1

7 Control and Display Elements



Fig. 40

Item	Control
1	Automatic climate control operation unit (Climatronic)
2	Roof Panel Switch Group
3	Camera monitoring system (optional)
4	Driver's seat with operating elements
5	Info centre

Item	Component
6	Operation console
7	Control lever
8	Steering column
9	Service brake

## 7.1 Roof Panel



Fig. 41

Item	Control
1	Automatic climate control operation unit (Climatronic)
2	Roof Panel Switch Group
3	Interior lamp
4	Air nozzle
5	ISO compartment for radio
6	Spotlight on control lever



7.1.1 Roof Panel Switch Group

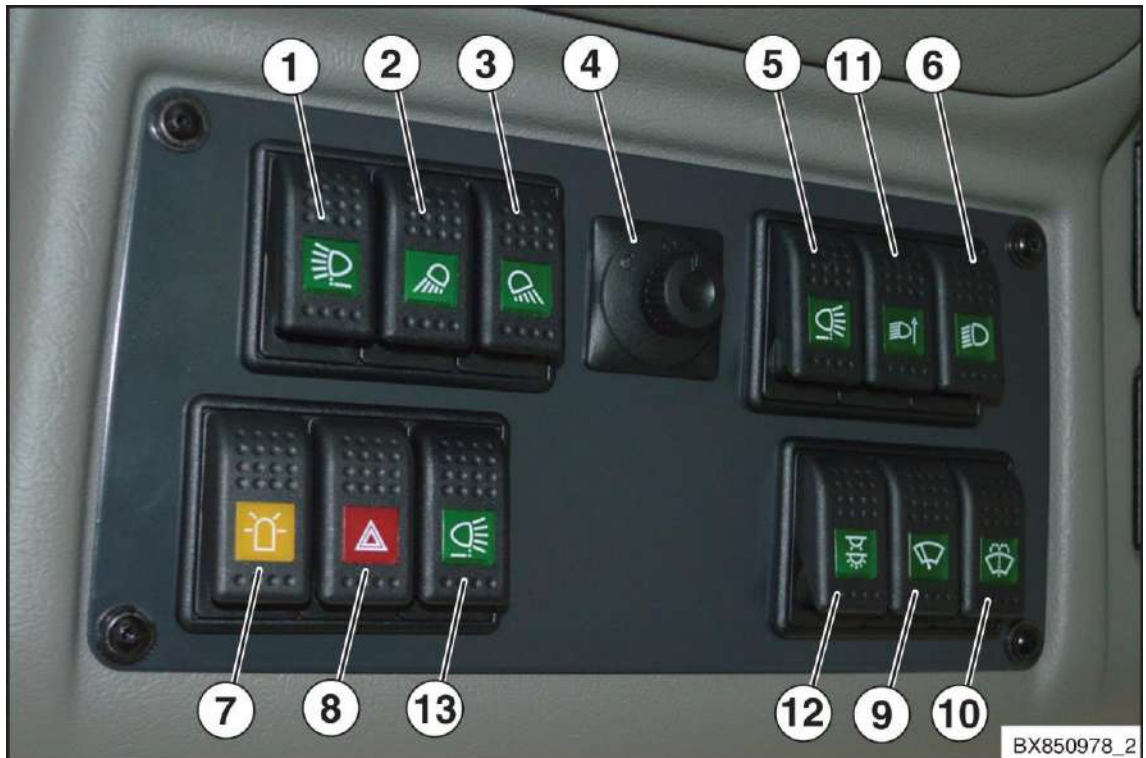


Fig. 42

Item	Control
1	Working light on cabin roof
2	Front guard working light
3	Working light on cabin platform/rear wheel light
4	Mirror adjustment (right rear view mirror only)
5	Working light on rear
6	parking light/dipped beam
7	Warning beacons
8	Hazard lights
9	Wind shield wiper
10	Windscreen washer
11	Switching between driving headlights on the railings and driving headlights on the lamp carrier for the high/dipped beam
12	Spotlight on control lever (brightness can be controlled)
13	Working light spout

## Control and Display Elements

### 7.2 Lighting

#### 7.2.1 Direction indicator, hazard lights and brake light



##### **NOTE**

In road traffic the change of travelling direction is indicated by a flashing light.

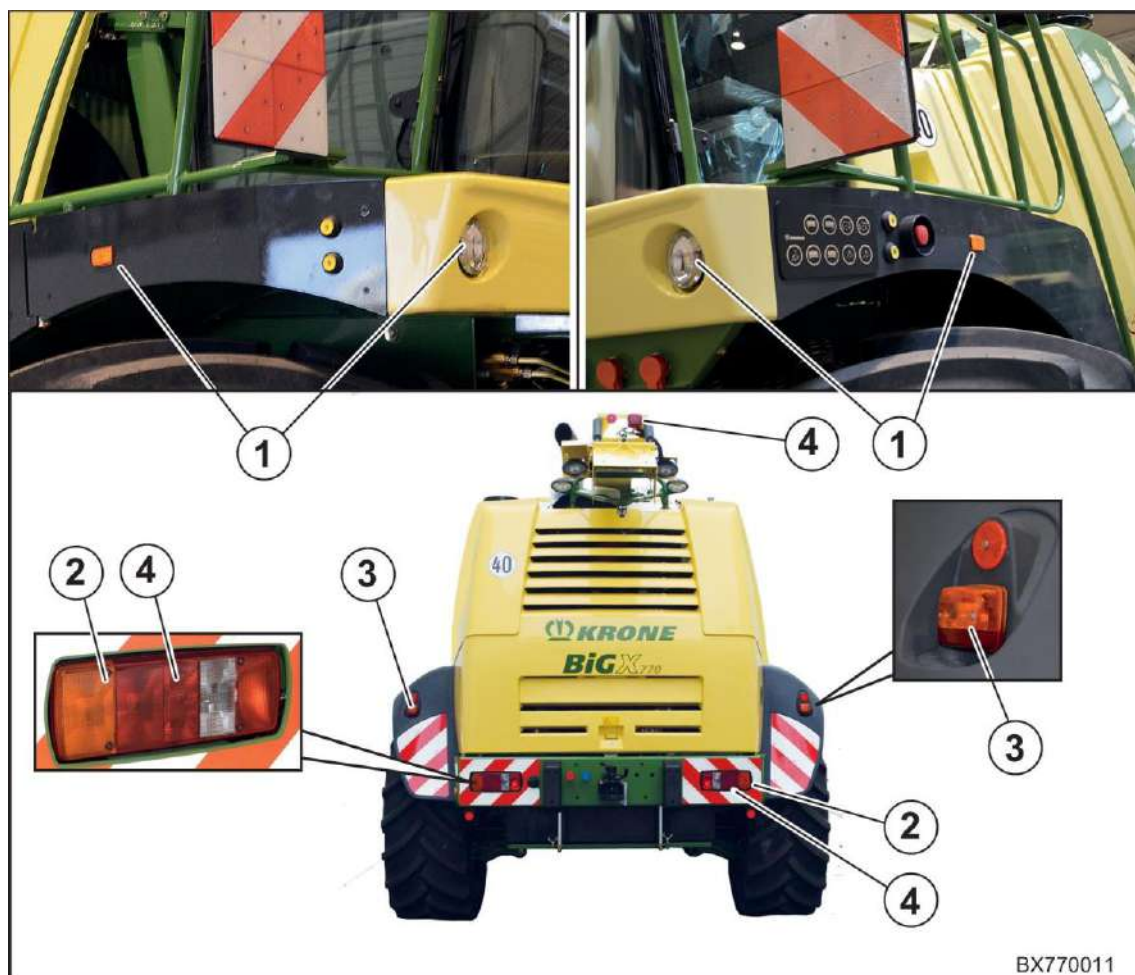


Fig. 43

##### **Switching on the direction indicator**

- Actuate the direction indicator on the steering wheel; the flashing lights (1, 2, 3) will flash on one side (right/left).

##### **Brake light**

The brake lamps (4) light up if:

- the foot brake is pressed when the ignition is switched on,
- the machine is decelerated using the multi-function lever.

### Hazard lights

If the hazard lights have been switched on, all flashing lights (1, 2, 3) will flash at the same time.

### Switching on the hazard warning flasher

The switch (1) for the hazard warning flasher is located in roof panel switch group.



Fig. 44

- To switch on the hazard lights, press the switch (1).  
The red pilot lamp in the switch (1) will start flashing.

### 7.2.2 Side light/dipped beam

The switch for the parking light and the dipped beam is located in the roof panel switch group.



Fig. 45

The switch (1) can be switched to three positions:

- I Off
- II Parking light
- III Dipped beam

- To switch on the parking light or dipped beam, move switch (1) to the corresponding position.

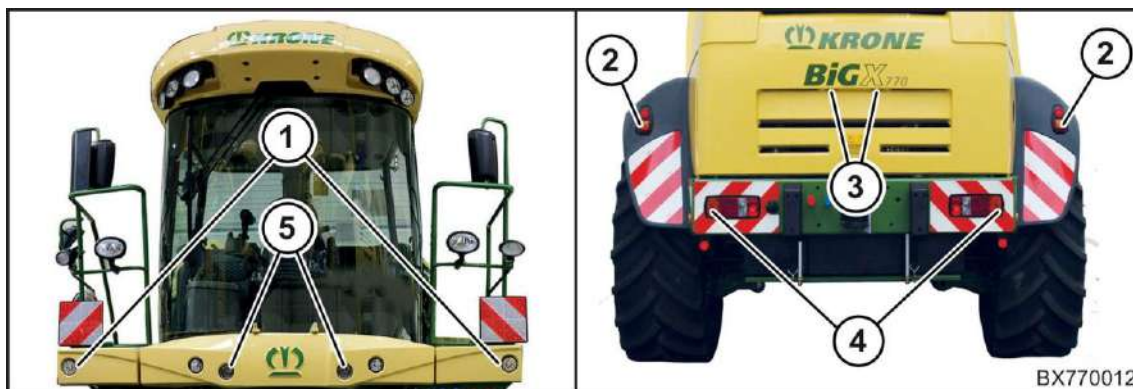


Fig. 46

When the parking light is switched on, the following light up:

Item	Designation	Explanation
1	Front side marker lamps	In specific countries, side marker lamps are mounted on both sides of the platform for certain tyre sizes.
2	Lateral side marker lamps	
3	Number plate illumination	
4	Clearance lamp at the rear	

The following light up in addition when the dipped beam is switched on:

Item	Designation	Explanation
5	Driving headlights	The dipped beam cannot be switched on until the ignition has been switched on.

### 7.2.3 Working floodlights

The switches for the working lights are located in the roof panel switch group.

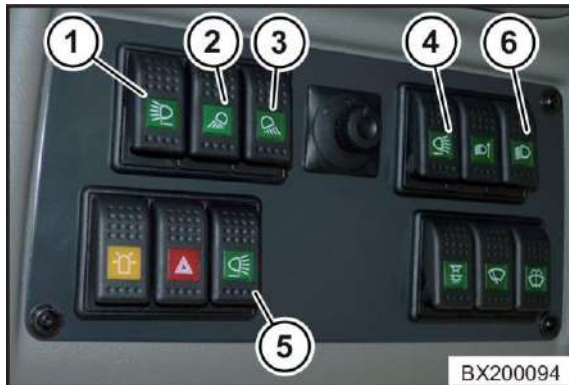


Fig. 47

Item	Designation
1	Switch working light for cabin roof
2	Switch working light for front guard
3	Switch working light for cabin platform
4	Switch working light for rear
5	Switch working light spout

Prerequisite for releasing the working light:

- The dipped beam must be switched on.  
To do this, press the switch (6).
- To switch on a working light, press the corresponding switch.

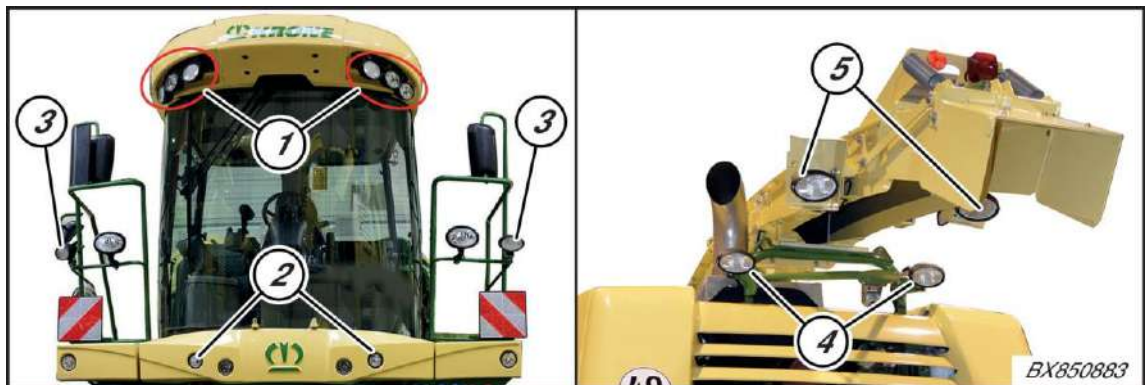


Fig. 48

Item	Designation	Explanation
1	Working light on cabin roof	
2	Front guard working light	
3	Cab platform working light	The working lights on the cabin platform can be directed by hand.
4	Working light on rear	
5	Working light spout	



### 7.2.4 Reversing lights



Fig. 49

The reversing lights (1) light up when reversing, and an acoustic warning signal sounds at the same time.

### 7.2.5 Ladder lighting

optional



Fig. 50

- To turn on the ladder lighting (2) press button (1).  
The ladder lighting turns off automatically after a short time.

### 7.2.6 Warning beacons

The switch (1) for the warning beacons is located in the roof panel switch group.



Fig. 51

Item	Designation	Explanation
1	Warning beacons	– In some countries the allround lights must be switched on in road traffic.

- To switch on the warning beacons, press the switch (1).



Fig. 52

Item	Designation
1	Warning beacons

### 7.2.7 Interior lighting/reading lamp

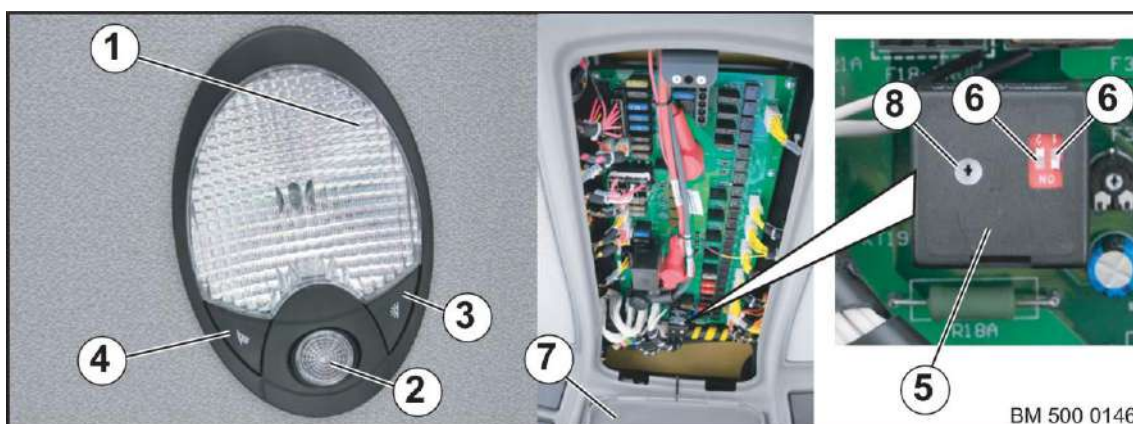


Fig. 53

The interior lighting (1) and the reading lamp (2) are located on the cab roof.

Item	Designation	Explanation
3	On/Off switch	Switches the interior lighting (1) on and off.
4	On/Off switch	Switches the lighting for the reading lamp (2) on or off.

After ignition stage II is switched off, the interior lighting will stay on for the amount of time set on time relay.

The time for switch-off delay can be adjusted with the time relay (5):

- Open the cover (7) on the cab roof
- Move switch (6) S1 and S2 to the desired position (see table)

S1	S2	(s)
Off	Off	110...900
On	On	14...110
On	Off	2.5 14
Off	On	0...2.5

Use a screwdriver to make fine adjustments to the rotary potentiometer (8) of the time relay (5) that controls the switch-off delay (amount of time) to match time intervals  $t$  (s).



**7.2.8 Spotlight on control lever**

The switch for lighting the multi-function lever is located in the roof panel switch group.



Fig. 54

The switch (1) can be switched to three positions:

- I 30% brightness
- II Off
- III 100% brightness

- To change the brightness of the multi-function lever, turn the switch (1) to the corresponding position.



Fig. 55

Item	Designation
1	Spotlight on control lever

**7.2.9 Coming Home function**

To ensure that the operator can leave the machine safely, some lights and the optional ladder lighting are illuminated for a short time after the machine has been switched off.

## Control and Display Elements

### 7.3 Climatronic / heating

#### 7.3.1 Control and display elements

The Climatronic is the control unit for the air conditioning and heating systems which the driver can operate via the Climatronic control unit.

► **NOTE**

If the electrical power supply to the control unit is interrupted, the control unit automatically performs a self test after power is restored. After the self test is complete, the last setting to be saved appears.



Fig. 56

### Functions of the keys

Item	Control	Explanation
1	Air conditioning key	Switches air conditioning on/off
2	Plus key	In automatic mode: increases the value for the required cab temperature
		In manual mode: increases the rotational speed of the evaporator fan
3	Minus key	In automatic mode: reduces the value for the required cabin temperature
		In manual mode: reduces the rotational speed of the evaporator fan
4	Control unit on/off key	Switches the control unit on/off
5	Switch key for operating mode	Switches the evaporator fan speed automatic/manual
6	REHEAT key	Switches REHEAT mode (demoisturising the cab air) on/off
7	Switch key for temperature units	Switches the temperature unit °Celsius/°Fahrenheit (key covered)

### Indications of the display

Item	Control	Explanation
8	REHEAT mode icon	Is indicated in REHEAT mode
9	Air conditioning symbol	Is indicated in air conditioning mode
10	Fully automatic mode symbol	Is indicated in fully automatic mode
11	Bar symbol for evaporator fan speed	Indicates the evaporator fan speed in manual mode
12	Manual fan mode symbol	Is indicated in manual fan mode
13	Numeric display	Indicates the setpoint value of the cab temperature or the error code
14	Temperature unit	Indicates the temperature unit of the setpoint value of the cab temperature in °C or °F
15	Symbol for the cab	Indicates the air flow in the cab in REHEAT mode

## Control and Display Elements

### 7.3.2 Operation

### 7.3.3 Switching on the system

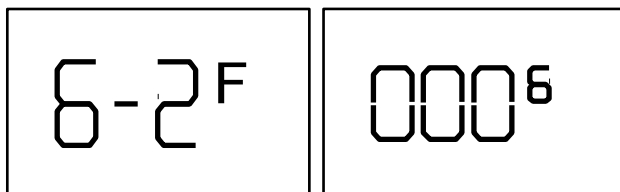


Fig. 57



Press the key

#### NOTE

After the system is switched on, the control unit performs a self-test and the software version is displayed for approx. 5 sec.

Then the operating hours of the air conditioning system are displayed for 5 s (e.g. 6 operating hours).

Then the last saved setting appears in the display.

### 7.3.4 Setting the Desired Cab Temperature

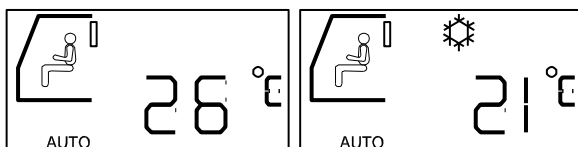



Fig. 58

The set cab temperature is shown in °C, for example 26°C. The control unit is in Automatic mode.

To lower the desired cab temperature to 21°C, for example, press the  key until the desired value appears in the display. (press key 5 x)

### 7.3.5 Switch air conditioning On / Off

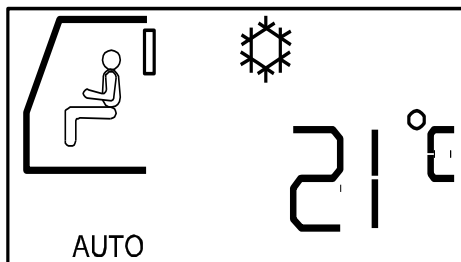






Fig. 59

You can switch on the air conditioning with the  key.

Air conditioning is now turned on; icon  indicates air conditioning.

**The compressor is turned on by the control unit if necessary.**

Pressing the  key again turns off air conditioning (compressor is deactivated). The  icon disappears.

### 7.3.6 Switching REHEAT mode on/off

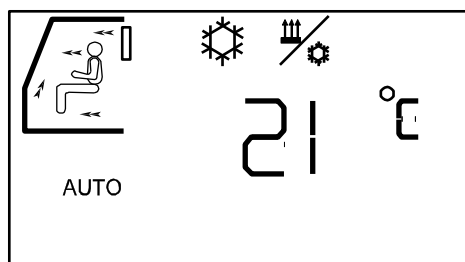




Fig. 60

REHEAT mode = (demoisturising the cab air)

**Switching on REHEAT mode:**

- Press the  key

The symbol  (REHEAT mode on) is indicated on the display.




**NOTE**


In REHEAT mode,

- the compressor is switched on permanently to vent the cab air.
- the evaporator speed can still be adjusted manually.
- the control unit switches on the heating as required to prevent the cab temperature from changing.

REHEAT mode is automatically limited to 60 minutes.

**Switching off REHEAT mode:**

- Press the  key.

REHEAT mode has been switched on. The  symbol is no longer displayed.

7.3.7 Manually setting the evaporator fan speed

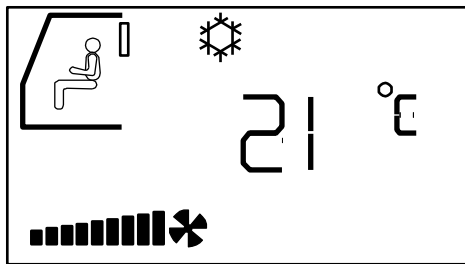






Fig. 61

Switch on manual evaporator fan speed with the  key.  
 The manual setting for fan speed is now active. The currently set fan speed appears in bar display  (full bar display = 100%). The **AUTO** icon no longer appears.




Fan  flashes for 5 s. During this time the fan speed can be increased with the  key

or lowered with the  key in increments of 10%.



**NOTE**

The lowest adjustable fan speed is 30% (three bars are displayed).

If the  key is pressed twice, AUTO mode is re-activated, the **Auto** symbol is displayed, the  and  symbols are no longer displayed.

## Control and Display Elements

### 7.3.8 Switching the Temperature Display to ° Fahrenheit

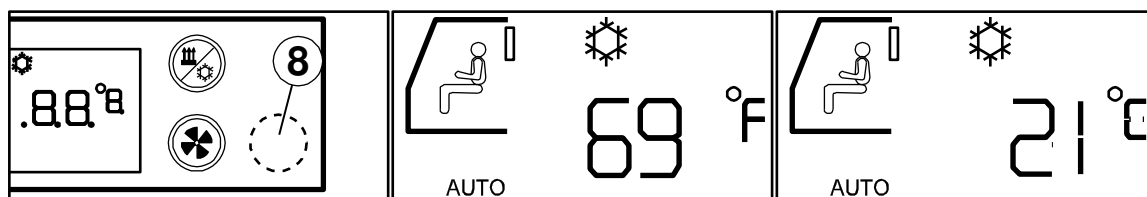


Fig. 62

The current set-point temperature is shown in ° Celsius.

Press and hold the covered key (8) and press the



key as well. The display switches to ° Fahrenheit.

The current set-point temperature is shown in ° Fahrenheit.



Pressing the (8) key and key again switches the display back to ° Celsius.

### 7.3.9 Malfunctions indicated on the display

#### Error code (F0)

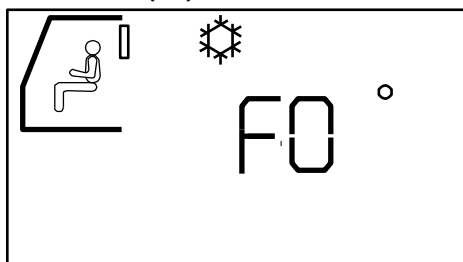


Fig. 63

Error in room temperature sensor is indicated by flashing indicator (F0).

#### **NOTE**

The control unit has recorded an error in the room temperature sensor. Controller is no longer ready for operation.

#### **Cause of sensor fault:**

Short circuit or interruption in the sensor line, plug connection on the sensor or control unit, temperature sensor defective. The controller will not be ready for operation again until the error is eliminated. Then the sensor fault no longer appears.

#### **NOTE**

If a sensor fault occurs, the controller continues working with the setting which was valid before the fault was recorded.



### Error code (F1)

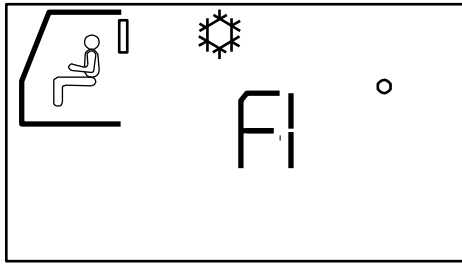


Fig. 64

Error in blow-out temperature sensor is indicated by flashing indicator (F1).



#### **NOTE**

The control unit has recorded an error in the blow-out temperature sensor. The controller is no longer ready for operation.

#### **Cause of sensor fault:**

Short circuit or interruption in the sensor line, plug connection on the sensor or control unit, temperature sensor defective. The controller will not be ready for operation again until the error is eliminated. Then the sensor fault no longer appears.



#### **NOTE**

If a sensor fault occurs, the controller continues working with the setting which was valid before the fault was recorded.

### 7.4 Air comfort seat

 **WARNING**

**Danger to life due to brief distraction of the driver!**

If the driver adjusts the driver's seat while driving, he cannot pay adequate attention to his driving and endangers people as a result.

- The driver's seat must not be adjusted until the machine is at a standstill.

 **WARNING**

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

If the control lever does not move freely in all directions, not all functions of the control lever can be implemented. It may then not be possible to respond quickly and correctly to hazardous situations.

- After adjusting the comfort seat, the right armrest and the steering column, check whether the control lever can move freely in all directions.
- If the control lever does not move freely in all directions, adjust the setting.

 **WARNING**

**Risk of injury due to incorrectly adjusted driver's seat!**

If the driver's seat is not adjusted individually to the driver, the driver may damage his health due to bad posture while working.

- Before starting up the machine, adjust the driver's seat ergonomically and individually to the driver.

 **WARNING**

**Risk of injury due to uncontrolled movement of the machine!**

If the vibration damper has been set too softly, the seat may hit the floor when driving on a bad road and contact with the controls is no longer guaranteed. It may then not be possible to respond quickly and correctly to hazardous situations.

- Always set the vibration damper of the comfort seat tightly enough to prevent the seat from hitting the floor even when driving on a bad road.

7.4.1 ACTIVO design (optional)



Fig. 65

Pos.	Part
1	Air comfort seat ACTIVO
3	Seat angle adjustment
5	Horizontal suspension ON / OFF
7	Adjustment of the backrest
9	Seat heating and climate control ON / OFF
11	Cover cap of armrest adjustment
13	Lumbar support setting bottom

Pos.	Part
2	Seat depth adjustment
4	Longitudinal adjustment
6	Weight and height adjustment
8	Left armrest
10	Headrest
12	Vibration damper adjustment
14	Lumbar support setting top

## Control and Display Elements

The air-cushioned comfort seat (1) can be individually adapted to the requirements of the driver.

### Seat depth adjustment

- Pull the right key (2) up and at the same time bring the sitting surface into the required position by pushing forward and backward.

### Seat angle adjustment

- Pull the left key (3) up and at the same time set the angle of the sitting surface by increasing or decreasing the pressure on the seat surface.

### Longitudinal adjustment

- Pull the locking lever (4) up, and push the driver's seat (1) forward or backward into the requested position. Permit the locking lever (4) to snap into place; after locking, the driver's seat must not be movable into any other position.

### Horizontal suspension

The shock load in direction of travel through the driver's seat (1) is cushioned better by the horizontal suspension.

- Swing the lever (5) to the front - the horizontal suspension is active; swing the lever (5) back – the horizontal suspension is switched off.

### Set the Vibration Damper



Fig. 66

The oscillating behaviour of the driver's seat can be adapted ideally to each driving situation via the adjustable vibration damper.

The lever (12) for the setting of the oscillating behaviour has three settings:

Pos	Explanation
I	Soft damping
II	Middle damping
III	Hard damping

To set the vibration damper:

- Turn lever (12) to the desired damping level and release it.

Damping level II is the default setting recommended by the manufacturer at average driver's weight.

The damping behaviour can be coordinated between the damping levels by two additional setting positions each.

### Weight adjustment

The weight adjustment is made automatically when the driver sits down on the seat. There is no need to additionally actuate the handle.

### Height adjustment

The height can be adjusted continuously by means of a hydraulic system. In order to prevent damage, actuate the compressor for a maximum of 1 minute.

- Pull the lever (6) upwards completely (position I) to move the driver's seat (1) up. Press the lever (6) down completely (position II) to move the driver's seat (1) down. When the upper or lower end position of the height adjustment mechanism is reached, the height will be adjusted automatically in order to ensure a minimum spring travel.

### Adjustment of the backrest

- Pull the locking lever (7) up to set the inclination of the backrest. Permit the locking lever (7) to snap into place – after locking, the backrest must not move into a different position any more.

### Lumbar support



Fig. 67

The lumbar support can be used to adapt the intensity of the swell of the backrest individually so that the spine is supported and back stress is relieved.

To adapt the intensity of the swell in the upper area of the backrest cushion:

- Press „+“ or „-“ on switch (14) until the desired setting is reached.

To adapt the intensity of the swell in the lower area of the backrest cushion:

- Press „+“ or „-“ on switch (13) until the desired setting is reached.

### Seat heating and seat climate control



Fig. 68

Heating and climate control of the seat are switched with switch (9).

The switch has three positions:

Pos.	Explanation
0	Seat heating and seat climate control OFF
I	Seat climate control ON (seat heating OFF)
II	Seat heating ON (climate control of the seat OFF)

The seat surface can be vented via seat climate control so that a cool and dry seating is enabled.

To switch on seat climate control:

- Move switch (9) to position I.

The left lamp shows the operation of the seat climate control.

To switch on seat heating:

- Move switch (9) to position II.

The right lamp indicates the operation of the seat heating.

### Headrest

Set the headrest in such a way that the upper edges of the head and the headrest are on the same height, if possible.

- Adjust the height of the headrest (10) by pulling out and pressing down across the noticeable snaps.

### Setting the left armrest

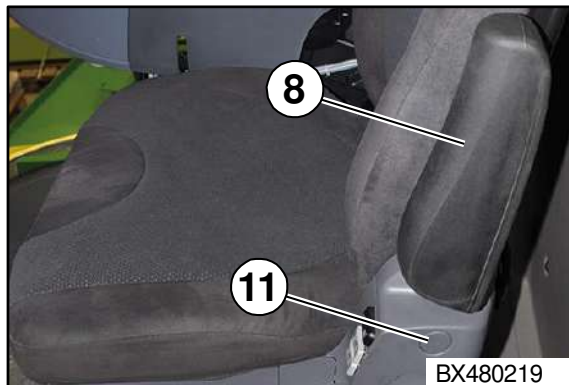


Fig. 69

- Tilt the armrest (8) up or down as requested.
- Remove the cover cap (11) to adjust the height of the armrest.
- Undo the hexagon nut; move the armrest into the requested position and tighten the hexagon nut again. Press the cover cap (11) onto the hexagon nut again.

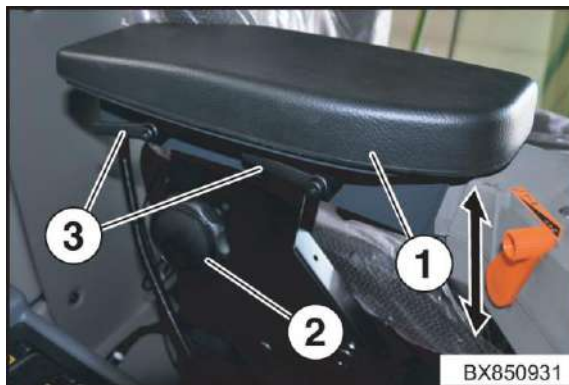


Fig. 70

The right armrest (1) and the control lever are one unit.

To adjust the right armrest:

- Loosen the clamping screw (2); move the armrest (1) to the required height and tighten the clamping screw (2).
- Press the lever (3) to adjust the angle and height of the right armrest.

The right armrest remains at the set height.

### 7.5 Verstellbare Lüfterdüsen

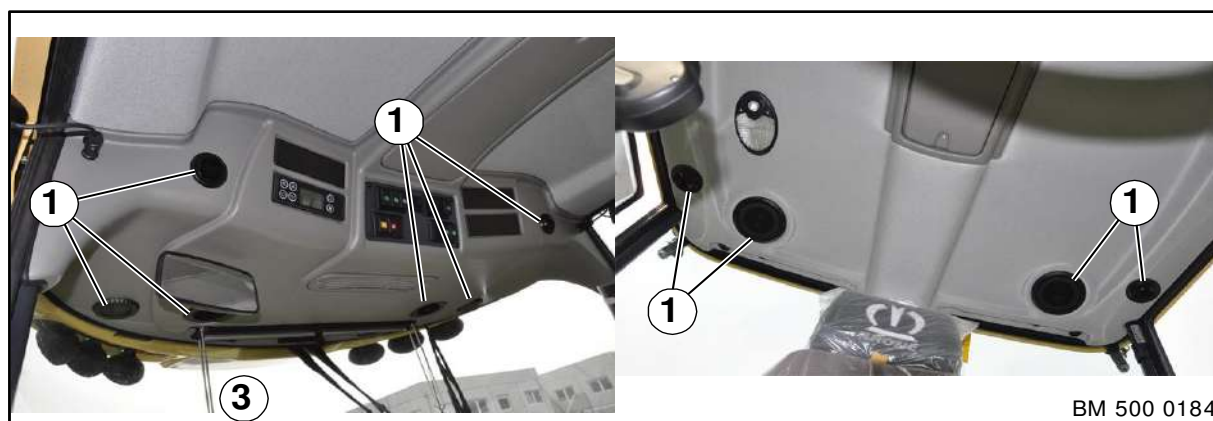


Abb. 71

Lüfterdüsen (1), verstellbar



**HINWEIS**

Lüfterdüsen so einstellen, dass das Beschlagen der Scheiben vermieden wird.



7.6 Operation console



Fig. 72

Item	Control
1	Membrane keyboard
2	Quick-stop switch
3	Indicator lamps
4	Cigarette lighter
5	Ignition lock
6	Release switch

## Control and Display Elements

### 7.6.1 Switches and control lamps

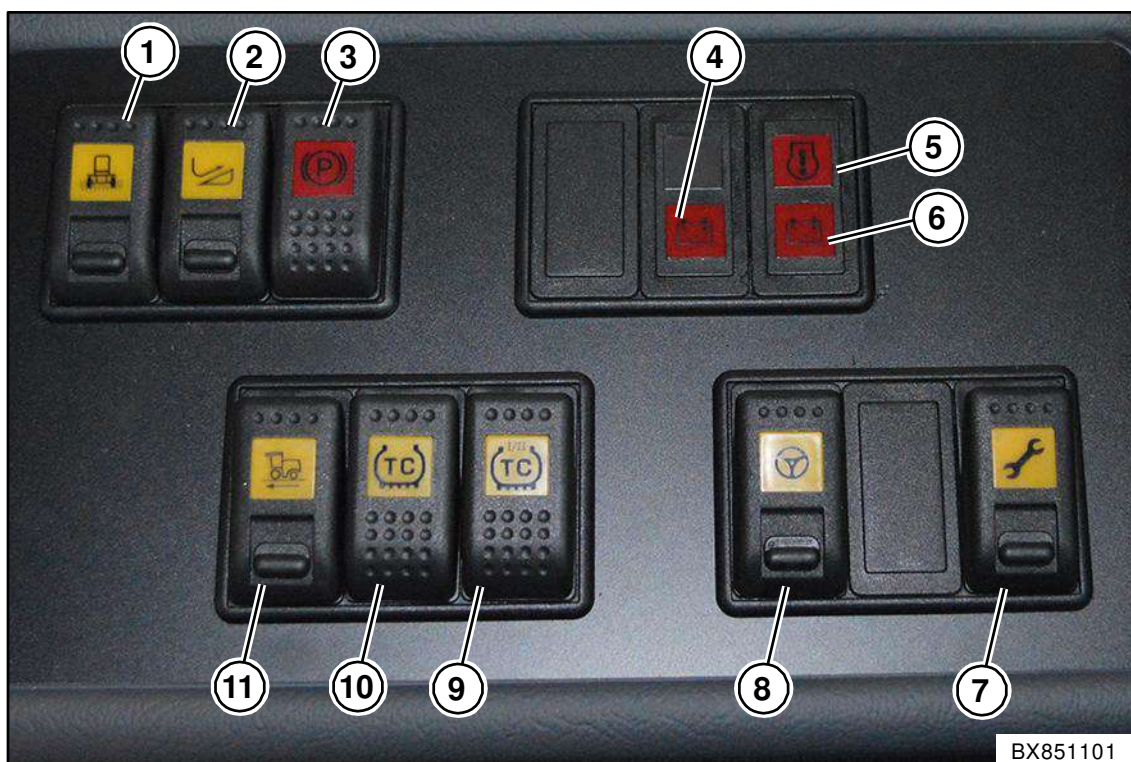


Fig. 73

Item	Control	Explanation
1	Release switch road/field	Switches between road mode and field mode.
2	Release switch intake/header	Releases the drive for intake rollers/header.
3	Parking brake switch	Engages the parking brake or releases it again.
4	Charging warning light 12 V battery	Lights up if the 12 V battery is not charged.
5	Engine failure warning light	Lights up if the engine is malfunctioning.
6	Charging warning light 24 V battery	Lights up if the 24 V battery is not charged.
7	Release switch maintenance	Releases maintenance mode of the machine. Activates the grinding control unit.
8	Release switch automatic steering system	Releases the automatic steering system.
9	Switch TC I/II sensitivity (switching grass/maize)	Sets the sensitivity of the traction control system.
10	Switch TC (traction control system)	Switches the traction control system on and off.
11	Traction drive release switch	Releases the traction drive.

### Actuating the release switch

Every release switch (1) is assigned different functions in position I (initial position) and position II (pressed).

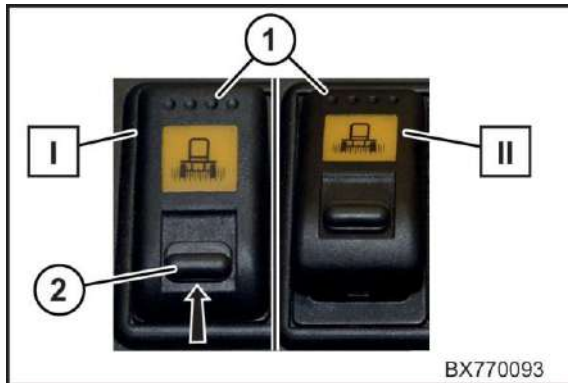


Fig. 74 Example

The release switches (1) are locked against unintentional actuation.

- To unlock the release switch (1), push the lock (2) forwards and switch the release switch (1) to the other position.
- Release the lock (2) to lock the release switch (1) in this position.

### 7.6.2 Functions of the release switches and keys

#### "Road/field" release switch

The release switch "road/field" must be in position "I" road mode when the machine travels on the road.

This ensures that only the travelling gear, steering and brakes are activated.

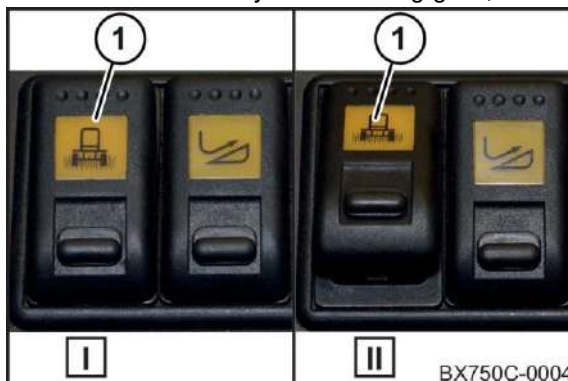


Fig. 75

I Road mode

II Field mode

### Release switch "Intake/front attachment"

Actuating the "feed drive/front attachment" release switch releases the feed drive rollers and the corresponding attachment.

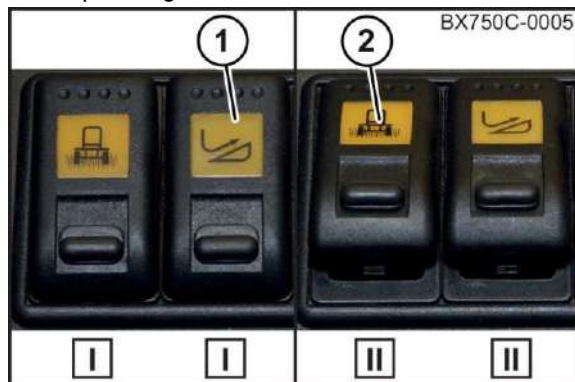


Fig. 76

Prerequisite for switching on the feed drive/front attachment:

- The release switch road/field (2) is set to field mode (II).

I Feed drive/front attachment off

II Feed drive/front attachment on

### "Parking brake" key

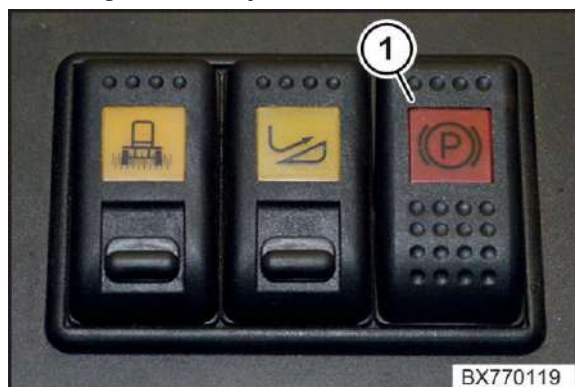



Fig. 77

- To manually apply or release the parking brake, press the key "Parking brake" (1) repeatedly.

The status of the parking brake is shown in the display (drive data information section):

- The parking brake is engaged if the icon  appears in the display.

#### **NOTE**

The parking brake is released if the brake pedal and the parking brake momentary switch are actuated simultaneously.

Automatic actuation of the parking brake:

- The parking brake is automatically applied if the driver's seat is not occupied.
- The parking brake is automatically applied when the diesel engine is switched off.
- The parking brake is automatically released when the machine starts.



### "Travelling gear" release switch

Actuate the release switch "traction drive" to release traction drive. The machine can only be moved with the help of the multi-function lever following the release.

When the travelling gear is switched on, the maintenance functions for manual operation on the left platform are not released.

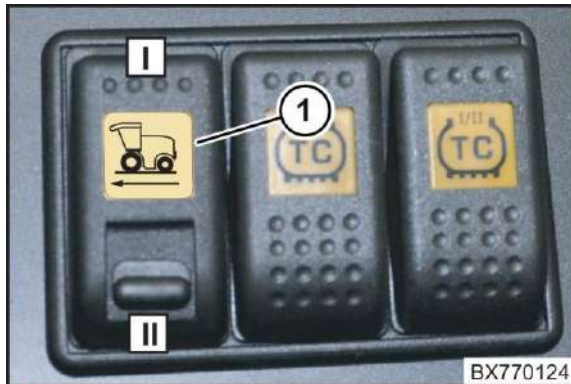


Fig. 78

I Travelling gear on

II Travelling gear off

### Traction control system switch

Traction control is a connectable traction control system which can be adjusted in two stages.

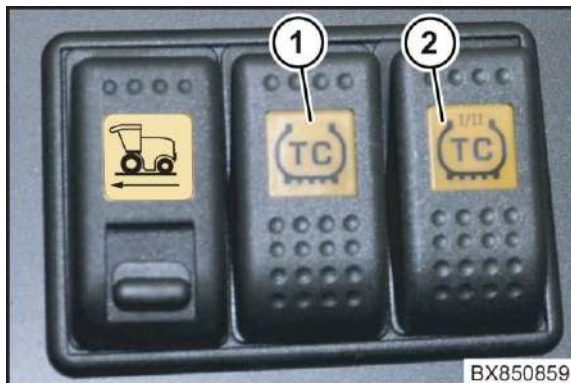


Fig. 79

- Pressing the TC switch (1) repeatedly switches the traction control system off or on.
- Pressing the "TC I/II" button (2) repeatedly allows you to switch between the sensitivity levels.

The status of the traction control system is shown in the display see page 173

### Release switch "automatic steering system"

For the selected mode, the automatic steering system guides the machine along the row of plants with the help of the row tracer at the maize header. If there are short gaps in the maize crop, the autopilot keeps the machine driving straight ahead.

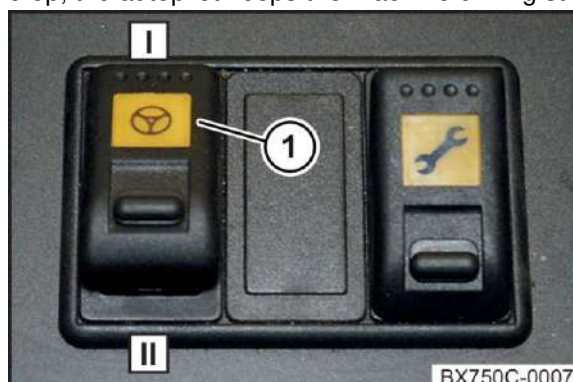


Fig. 80

Prerequisite for switching on the automatic steering system:

- The release switch road/field is set to field mode.
- The release switch traction drive is switched on.

- I automatic steering system switched on
- II automatic steering system switched off

### "Maintenance" release switch

Actuating the maintenance release switch (1) releases all maintenance functions of the grinding control unit on the left platform.

Prerequisites for releasing the maintenance operating mode:

- The release switch road/field is set to field mode.
- The release switch traction drive is switched off.

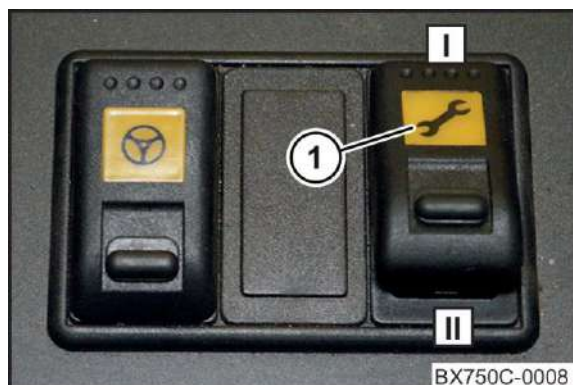


Fig. 81

- I Maintenance on
- II Maintenance off

## 7.6.3 membrane keyboard

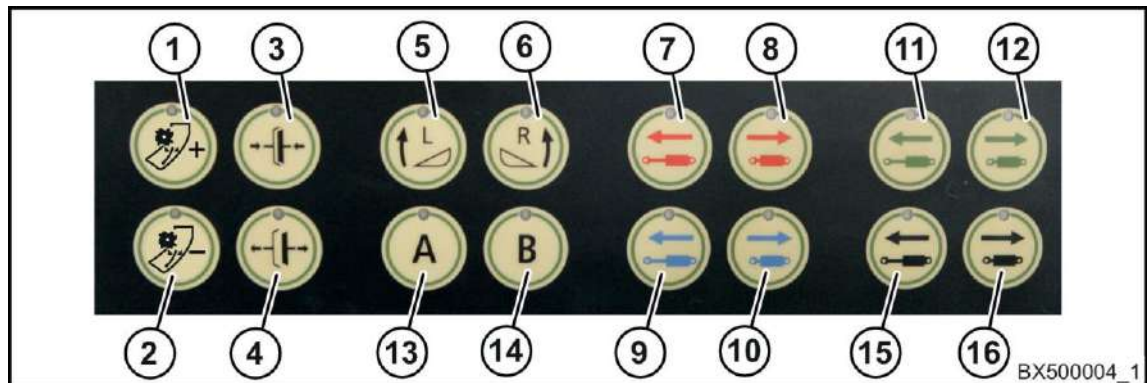


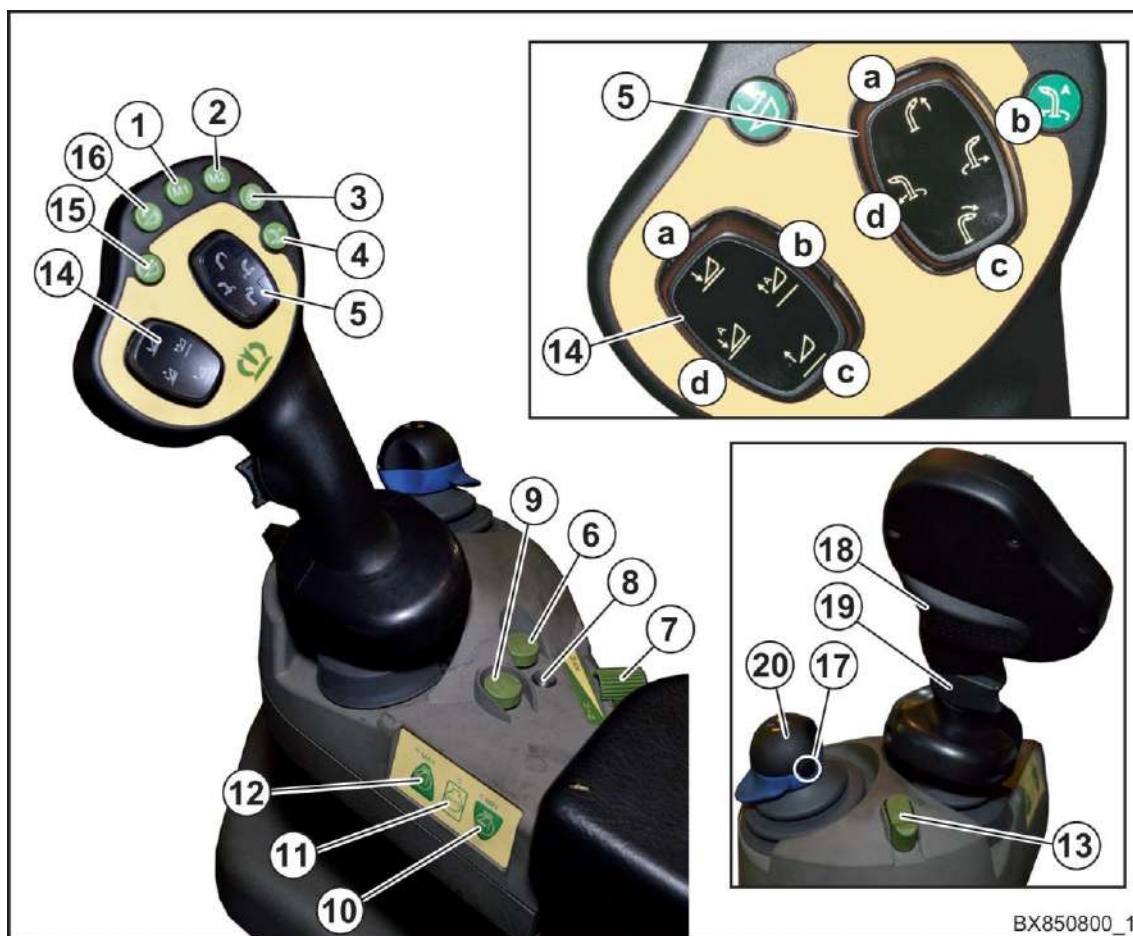
Fig. 82

Pos.	Operating element	Explanation
1	“Rear wall of discharge accelerator +” key	Moves the rear wall of discharge accelerator into the crop flow. The discharge distance of the spout increases.
2	“Rear wall of discharge accelerator -” key	Moves the rear wall of discharge accelerator out of the crop flow. The discharge distance of the spout reduces.
3	“Main coupling on” key	Switches the main coupling on.
4	“Main coupling off” key	Switches the main coupling off.
5	“Pendulum frame left” key	Swivels up the pendulum frame to the left
6	“Pendulum frame right” key	Swivels up the pendulum frame to the right
7	“Hydraulic circuit 1” keys	In case of maize header: Folds in the maize header. In case of pick-up: Raises the crop press roller unit.
8		In case of maize header: Folds out the maize header. In case of pick-up: Lowers the crop press roller unit.
<b>Press the keys (7) and (8) simultaneously to depressurise hydraulic circuits 1 and 2.</b>		
9	“Hydraulic circuit 2” keys	In case of maize header: Raises the plant divider./ In case of pick-up: Swivels in the guide wheels.
10		In case of maize header: Lowers the plant divider./ In case of pick-up: Swivels out the guide wheels.
<b>Press the keys (9) and (10) simultaneously to depressurise hydraulic circuit 1.</b>		
11	“Auxiliary hydraulics I-A” key	Raise hitch attachment, hopper (optional)
12	“Auxiliary hydraulics I-B” key	Lower hitch attachment, hopper (optional)
13	“A” key	For additional control (optional)
14	“B” key	For additional control (optional)
15	“Auxiliary hydraulics II-A” key	Raise hitch attachment, hopper (optional)
16	“Auxiliary hydraulics II-B” key	Lower hitch attachment, hopper (optional)

## Control and Display Elements

### 7.7 Control lever

The control lever is used to make important settings and issue commands for road and field mode of the machine.



BX850800\_1

Fig. 83



Item	Explanation
1	Memory keys (M1)
2	Memory keys (M2)
3	Activating/deactivating the automatic steering system
4	<ul style="list-style-type: none"> <li>• Mirror spout (with main coupling switched on)</li> <li>• Move spout to transport position (with main coupling switched off)</li> </ul>
5a	Ejector flap open
5b	Turn spout clockwise.
5c	Ejector flap shut
5d	Turn spout anticlockwise.
6	Memory key for adjusting process lifting gear
7	Slide controller for rotating speed of spout
8	Indicator lamp – traction drive on
9	Inoperative
10	Reduce the engine speed.
11	Switch from rated speed to idle speed and vice versa.
12	Engine speed increase.
13	Switching diesel engine operating mode (optional) (PowerSplit)
14a	Lowering lifting unit manually.
14b	Raising the lifting unit automatically, saving height.
14c	Raising lifting unit manually.
14d	Lowering the lifting unit automatically, saving height.
15	Switching the feed drive/front attachment on and off.
16	Reverse feed drive/front attachment.
17	Save the chopping length. Folding the spout extension in/out.
18	Traction drive activation key.
19	Selector switch acceleration ramp
20	Cross actuating lever



Fig. 84

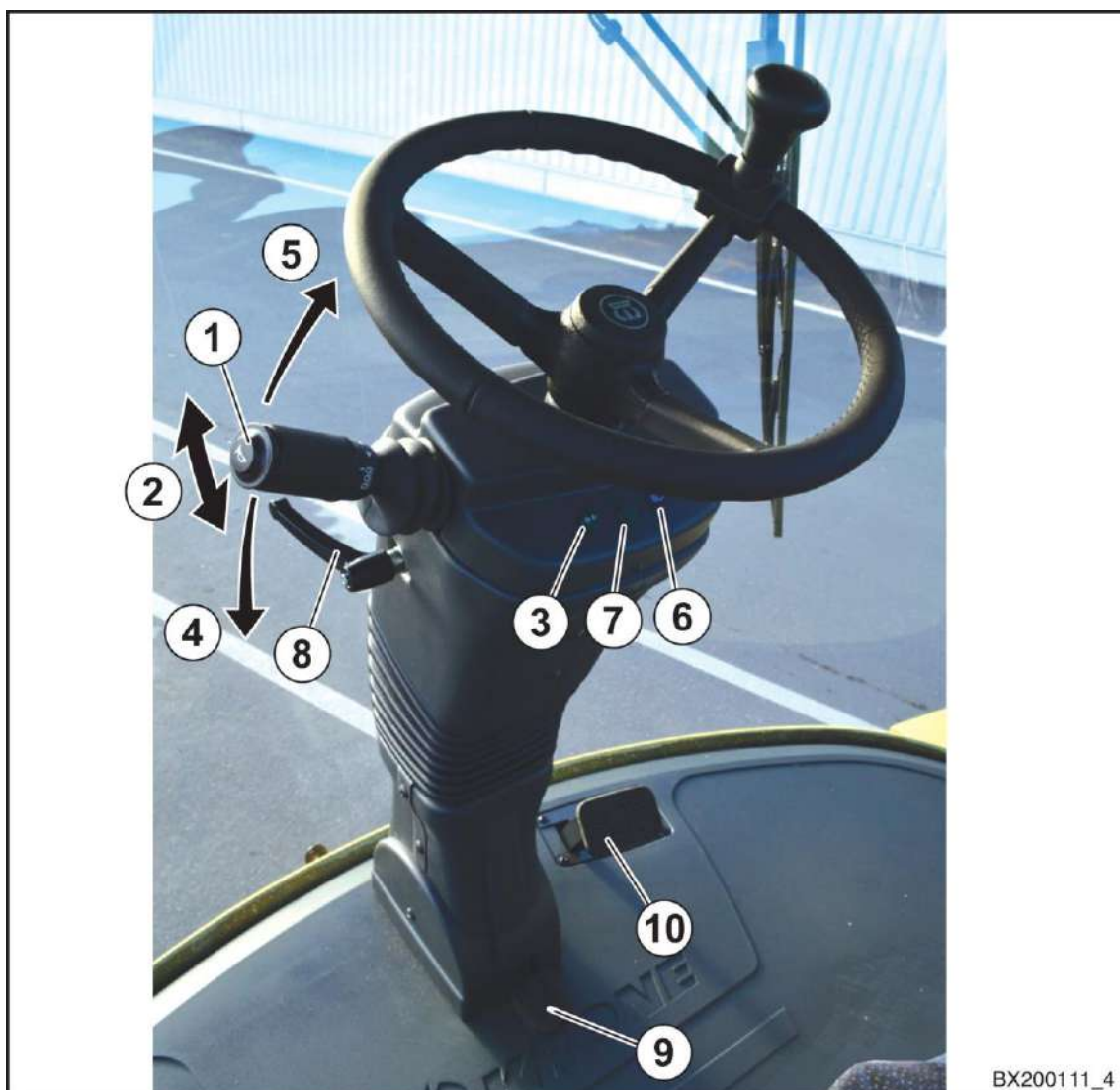
Pos.	Explanation
A	<ul style="list-style-type: none"> <li>Acceleration (during forward travel)</li> <li>Deceleration (during reverse travel)</li> <li>Start travelling gear with activation key pressed (18)</li> </ul>
B	Control lever in central position
C	<ul style="list-style-type: none"> <li>Acceleration (during reverse travel)</li> <li>Deceleration (during forward travel)</li> <li>Start travelling gear with activation key pressed (18)</li> </ul>
D	<ul style="list-style-type: none"> <li>Deceleration to 0 km/h</li> <li>Fast reversing with the activation key (18) pressed (in Field mode only)</li> </ul>
E	Control lever in central position
F	Switch on cruise control (during forward travel only) Saving the current speed for cruise control: <ul style="list-style-type: none"> <li>Press the activation key (18) and press the multi-function lever in the direction F.</li> </ul> Activating the "ConstantPower" (option) load limit control: <ul style="list-style-type: none"> <li>In field mode, tap the multi-function lever 2 x briefly to the right.</li> </ul>
G	Calling up chop length value 1. <ul style="list-style-type: none"> <li>Press the button (17) and move the cross actuating lever to the left (G) to save the chop length set in the info centre.</li> </ul>
H	Cross actuating lever central position
J	Calling up chop length value 2 <ul style="list-style-type: none"> <li>Press the button (17) and move the cross actuating lever to the right (J) to save the chop length set in the info centre.</li> </ul>
K	Lower the spout <ul style="list-style-type: none"> <li>If a 14-row spout extension is present: Press button (17) and move the cross actuating lever forward (K); the spout extension folds in and the spout is lowered.</li> </ul>
L	Cross actuating lever central position
M	Lift spout <ul style="list-style-type: none"> <li>If a 12 or 14-row spout extension is present: Press button (17) and move the cross actuating lever backward (M); the spout extension folds out and the spout is raised.</li> </ul>



### **NOTE**

When the discharge chute flap is raised, the discharge chute extension folds in after a delay of approx. 2 seconds, as the discharge chute flap is automatically lowered beforehand. While the discharge chute extension is being folded in or out, the spout flap cannot be actuated.

## 7.8 Steering column and foot pedals



BX200111\_4

Fig. 85

Item	Control
1	Button for horn
2	Indicator Switches
3	Indicator lamp for direction indicator
4	Full beam
5	Headlamp flasher

Item	Component
6	Full beam warning light
7	Pilot lamp – trailer function
8	Release lever for horizontal and vertical steering column adjustment
9	Release lever for horizontal steering column adjustment
10	Service brake

### 7.8.1 Steering column adjustment

The steering column can be adjusted 3-fold

- Tilt adjustment around the lower pivot point (a).
- Tilt adjustment around the upper pivot point (b).
- Height adjustment of the steering wheel (c).



Fig. 86

#### **Adjusting the inclination of the steering column around the lower pivot point (a)**

- Actuate the release pedal (1) and move the steering column (3) to the required position.
- To lock the steering column (3), release the release pedal (1).

#### **Adjusting the height of the steering wheel (c) and the inclination of the steering column around the upper pivot point (b)**

- Release the release lever (2) and move the steering column (3) to the required position.
- To lock the steering column (3), lock the release lever (2).

### 7.8.2 Full beam

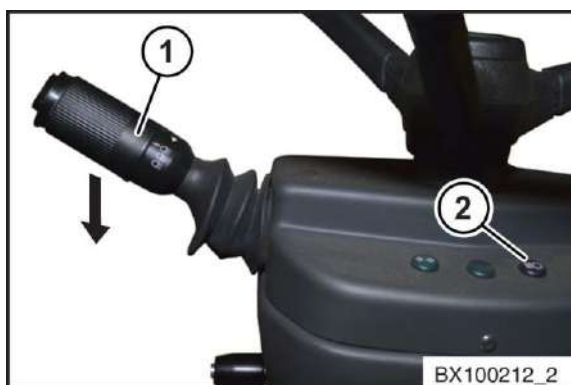


Fig. 87

#### **NOTE**

Full beam does not function until the dipped beam has been switched off.  
If a vehicle is approaching, switch off full beam to prevent dazzling the driver.

To switch on full beam:

- Press the steering column switch (1) downwards.

The steering column switch locks in this position and full beam is switched on.

To switch off full beam:

- Move the steering column switch (1) to the neutral position.

When full beam is switched on, the blue indicator lamp for full beam (2) lights up.

### 7.8.3 Headlamp flasher



Fig. 88

- To activate the headlamp flasher, pull the steering column switch (1) briefly upwards.

As long as the steering column switch is pulled, the full beam and the blue full beam control lamp (2) light up.

### 7.8.4 Horn



Fig. 89

To actuate the horn:

- Press the push-button (1) for the horn on the steering column switch. As long as the push-button is pressed, the horn sounds.

### 7.8.5 Direction indicator

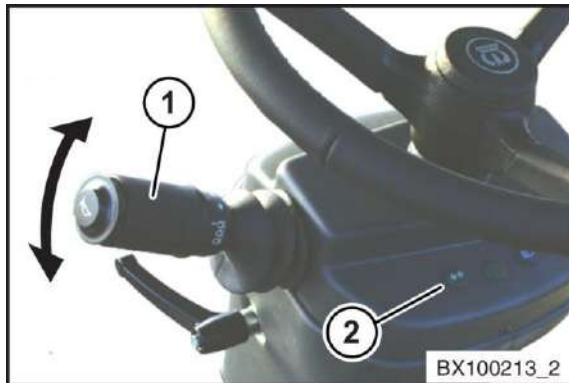


Fig. 90

To switch on the direction indicator on the right:

- Move the steering column switch (1) forwards. The direction indicator on the right is switched on.

To switch on the direction indicator on the left:

- Move the steering column switch (1) backwards. The direction indicator on the left is switched on.

The direction indicator is switched off when the steering wheel is turned.

To switch off the direction indicator when the steering wheel is not turned:

- Move the steering column switch (1) in the opposite direction.

The direction indicator lamp (2) lights up when the indicators have been switched on.

### 7.8.6 Service brake



Fig. 91

The machine brakes if the brake pedal (1) is activated. The braking effect is increased as increased pressure is applied on the brake pedal.

### 7.8.7 Trailer Brake

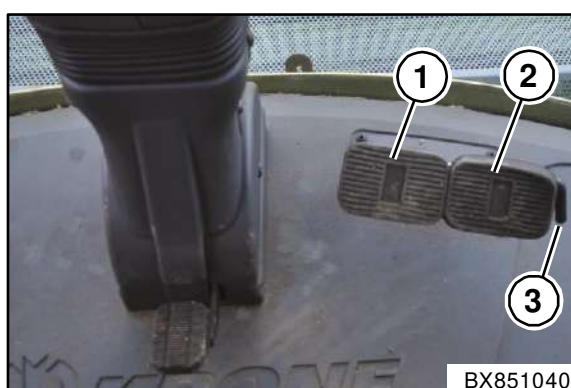


Fig. 92

The optionally installed trailer brake (two-line brake) is only intended for the operation with trailer.

Pos.	Explanation
1	Service brake machine
2	Service brake trailer
3	Connecting bolt for brake pedals

The both brake pedals are connected with each other by a connecting bolt (3). To be able to brake the trailer separately (only permitted in field mode), the connection of the both brake pedals can be disconnected via connecting bolt (3).



### 7.9 Monitor for camera monitoring system (optional)

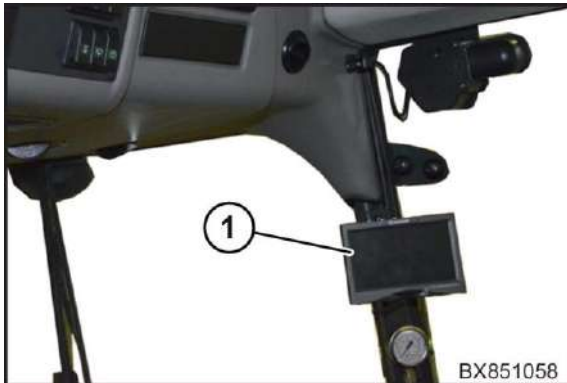


Fig. 93

- Manually adjust the monitor (1) for the camera monitoring system so that the road and the working area at the side and behind the machine are in full view.

### 7.9.1 Drawer for first-aid kit/operating instructions

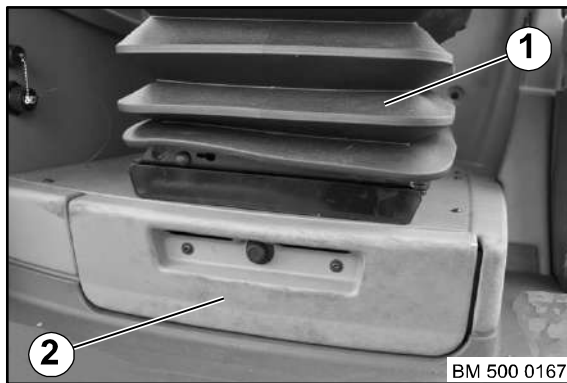


Fig.94

The drawer (2) for the first-aid kit and the operating instructions is located below the front of the driver's seat (1).

### 7.10 Guide's seat

**⚠ WARNING**

**Danger to life due to brief distraction of the driver!**

The driver may be distracted by a second person in the cab, possibly causing him not to pay adequate attention to his driving and to endanger people as a result.

- The passenger seat may only be used while the driver is being instructed.
- While the machine is being operated, there must be no other person in the cab or on the machine except the driver, unless the driver is being instructed.



Fig.95

- Before use fold down the guide's seat surface (1).

### 7.11 cooling box



Fig. 96

The cooler (1) is located under the guide's seat (2) in the cab.

The cooler can be connected to the 12-V socket (3) on the right next to the passenger seat with the 12-V plug (4).

7.12 Ignition lock



Fig. 97

The ignition lock (1) has four positions:

Position	Explanation
0 (STOP)	<ul style="list-style-type: none"> <li>The ignition is off</li> <li>The circuit is interrupted.</li> </ul>
I	The circuit for the electronics is switched on.
II	The ignition is switched on
III	Start position

### 7.13 Cigarette lighter / 12 volt socket



Fig. 98

 **CAUTION**

**Risk of burns from the hot cigarette lighter!**

During operation the cigarette lighter generates such high temperatures that it may cause burns if it is held in the depressed position.

- Never hold the cigarette lighter when it is in the depressed position.
- Hold the hot cigarette lighter by the handle only.

The 12 volt socket (1) can be used to connect consumers of 12 V and a maximum of 10 A. If the diesel engine is not running, this will discharge the battery. Use the prescribed plugs when using additional equipment.

Operating the cigarette lighter:

- Press in the cigarette lighter (2).

Once the necessary temperature is reached, the insert jumps back automatically.

### 7.14 Socket and USB connection

#### 7.14.1 OBD diagnostic socket

**NOTE**

Exclusively for the use of authorised technicians from KRONE for engine diagnostics purposes.



Fig. 99

The OBD diagnostic socket (2) is located in the cabin behind the guide's seat under the pocket (2).

### 7.14.2 CAN diagnostic socket, USB connection and ISOBUS socket

The CAN diagnostic socket (1) and the USB connection (2) are located on the right beside the driver's seat in the operation console.

The ISOBUS diagnostic socket (3) is located on the right beside the guide's seat.



Fig. 100

#### NOTICE

The CAN diagnostics socket and the ISOBUS socket must only be used by authorised technicians who use devices approved by KRONE company.

The CAN diagnostic socket (1) is used to perform diagnostic work and software updates.  
It is possible to connect a printer.

The following actions can be performed via the USB connection (2):

- Transfer of customer data from the info centre to a laptop. see page 213

### 7.15 Outside mirrors

**⚠ WARNING**

**Danger to life of persons next to and behind the machine due to impaired view of the driver!**

If the outside mirror has not been set correctly, the driver does not have a proper view around the machine, possibly placing people in danger when the machine is being driven.

- Before driving the machine, adjust the outside mirror so that the rear area is fully visible to the driver from the driver's seat.

#### 7.15.1 Left Outside Mirror

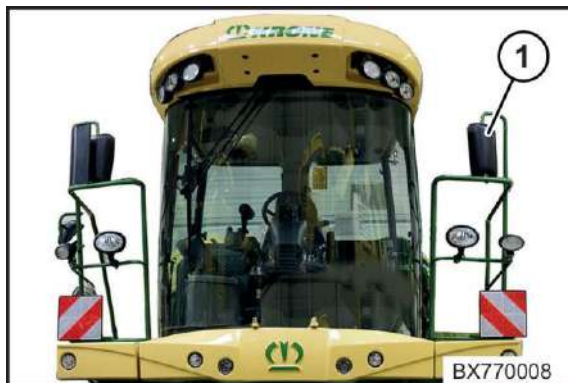


Fig. 101

- Adjust the left outside mirror (1) manually.

#### 7.15.2 Right outside mirror and anti-collision mirror



Fig. 102

##### 7.15.2.1 Setting the right outside mirror

The right outside mirror (1) is electrically adjustable. The switch (3) is located in the roof panel.

- Turn the switch (3) to the right (arrow to the right).
- Press the switch (3) up, down and to the side until the outside mirror (1) is set correctly.
- Manually set the anti-collision mirror (2) in such a way that the ground area next to the right front wheel can be checked prior to starting.

### 7.16 Inside mirror



Fig. 103:

- Manually set the interior mirror according to the operation requirements.

### 7.17 Sun blind

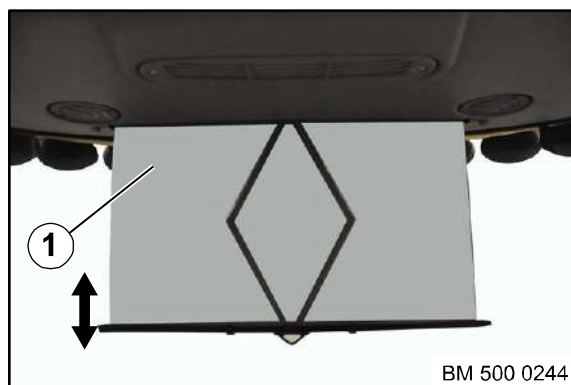


Fig. 104

Adjust the sun blind according to requirements.



### 7.18 Wind shield wiper

The switch (1) for the wind shield wiper is located in the roof panel switch group.



Fig. 105

It can be switched to three positions:

- I Off
- II Interval
- III Continuous operation

### 7.19 Washer system – windshield



Fig. 106

The rocker switch (1) for the windshield washer system is located in the roof panel.

#### Switching on the windshield washer system

- Press switch (1).

## Control and Display Elements

### 7.20 Radio installation



Fig. 107

The ISO slot for installing the radio (1) is located in the roof panel.  
See circuit diagram for information about the connections.

#### NOTE

Telephones and radio equipment not connected to the outside antenna may lead to functional troubles in the vehicle's electronic system, thus jeopardising the operational safety of the vehicle.

### 7.21 Manual operation on the left platform

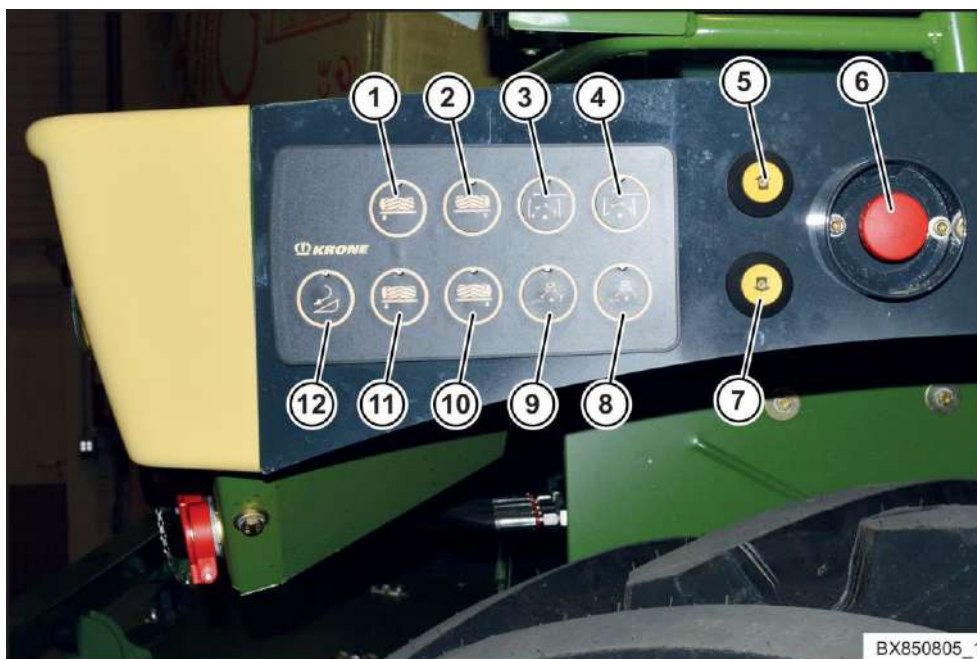


Fig. 108

Item	Control	Explanation
1	"Right counterblade towards" key	Moves the right counterblade towards the chopping drum.
2	"Left counterblade towards" key	Moves the left counterblade towards the chopping drum.
3	"Close grinding flap" key	The grinding flap closes.
4	"Open grinding flap" key	The grinding flap opens.
5	"Raise lifting unit" key	Raises the lifting unit (manual).
6	Quick-stop switch	Stops the working functions of the machine. The diesel engine and the travelling gear continue running.
7	"Lower lifting unit" key	Lowers the lifting unit (manual).
8	"Move grinding stone manually" key	Moves the grinding stone.
9	"Automatic grinding operation" key	Starts an automatic grinding process.
10	"Left counterblade away" key	Moves the left counterblade away from the chopping drum.
11	"Right counterblade away" key	Moves the right counterblade away from the chopping drum.
12	"Reversing feed drive/front attachment" key	Reverses the feed drive/front attachment

To activate manual operation:

- Switch on the diesel engine.
- Release switch road/field in field mode
- Switch off the release switch traction drive.
- Switch on the maintenance release switch.
- Switch on the main coupling.

### 7.22 Trailer coupling

#### CAUTION

##### Damage to the tow coupling and the components of the drive!

If stuck vehicles are retrieved using the tow coupling or are towed over prolonged distances, components on the machine may be damaged.

- Tow the machine using the trailer coupling at maximum 8 km/h and for not longer than 45 min.
- Do not use the trailer coupling to retrieve the stuck machine.
- Do not use the trailer coupling to tow other vehicles.
- Do not use the trailer coupling to retrieve stuck vehicles.

#### NOTE

The trailer coupling may be used on the highway for the transportation of braked cutting system transporters or braked empty trailers only.

During operation observe the permitted bearing load and the permitted rear axle load of the machine.

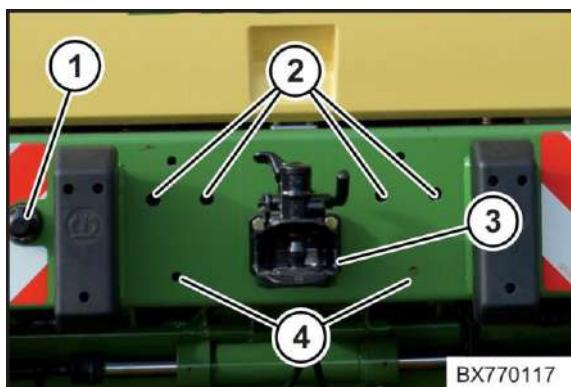


Fig. 109






Item	Designation
1	12 volt socket for lighting
2	Auxiliary hydraulics (optional)
3	Trailer coupling
4	Compressed air connections for two-line brake (optional)

8 Info centre "EasyTouch"

8.1 Overview



Fig. 110

Item	Designation
1	Display
2	Keys  1 to  8
3	Incremental encoder
4	Menu button 
5	Keys  A to  D

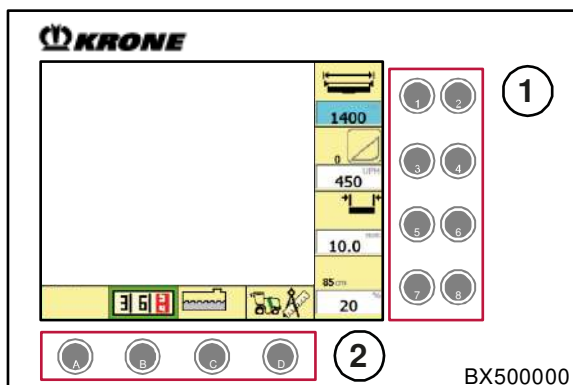


Fig. 111

The Info Centre informs you about the current actions and the current operating condition of the machine. You can use the Info Centre to make settings for the machine and start or stop functions.

Its main components are:

### Keys 1-8 (1)

You can use keys 1-8 to make settings shown in the information area (IV). For the assignment of the keys, see the graphic.

If there is no display next to a key, it has no function.

### Keys A-D (2)

You can use keys A-D to make general machine settings shown in the information area (V). For the assignment of the keys, see the graphic.

If there is no display next to a key, it has no function.

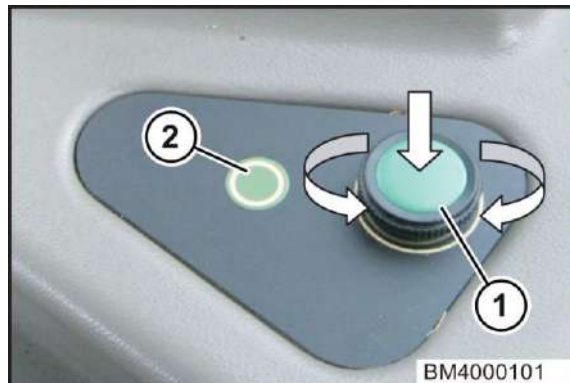


Fig. 112

#### **Incremental encoder (1)**

The incremental encoder can be turned and inched to the left/right. Operation of the incremental encoder is interpreted differently depending on the display/mode.

##### **In the main menu:**

- To scroll up/down the menu, turn the incremental encoder to the left/right.
- To switch to the selected menu, actuate the incremental encoder.

##### **In any menu (diagnostics):**

- To mark an input field, turn the incremental encoder to the left/right (the input field is highlighted in "blue").
- To switch to input mode, actuate the incremental encoder (the input field is highlighted in "yellow").

##### **In input mode:**

- To reduce/increase the particular value, turn the incremental encoder to the left/right.
- To accept the set value and leave input mode, actuate the incremental encoder.

#### **Menu key (2)**

Actuation of the menu key is interpreted differently depending on the display/mode.

- Switch to the main menu (main level) by pressing the menu key on the working screen.
- Switch to the level above by pressing the menu key in the main menu.
- Switch to the working screen by pressing the menu key on the main level.
- Switch to the working screen by pressing holding down the menu key in any menu (input mode not active) for longer than 3 seconds.
- By pressing the menu key in input mode, discard the change to the value and leave input mode.

8.2 Information Section

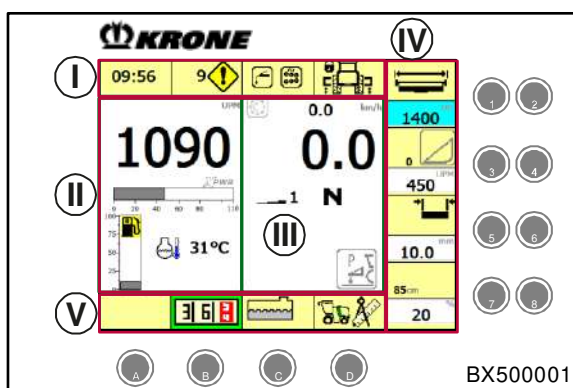


Fig. 113

After the ignition is switched on, the working screen appears in the display.

The display is divided into the following information sections:

Information Section	Designation
I	Status line
II	Engine data
III	Drive data
IV	Settings
V	General Machine Settings



8.2.1 Status line

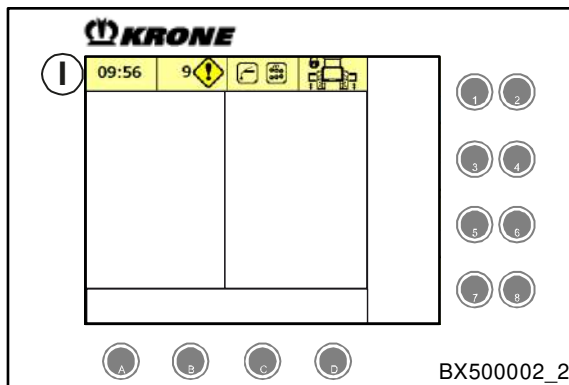









Fig. 114

Status line (1) displays the current operating states and general information for the machine. With the help of the incremental encoder, one of the following types of information can be assigned to the left field of the status line:

- Time, fuel consumption, acreage, fuel per area, moisture of the crops, fuel per tonnage, chopping drum speed.

The other fields of the status line display current operating states of the machine:

Icon	Designation	Explanation
	Current errors	An error has occurred and is currently pending. – The number of currently pending errors is indicated in front of the icon.
	Status display of the central lubrication system	The central lubrication is active (lubricating).
		The central lubrication system is faulty. – Error correction, see page 746.
		The central lubrication is inactive
	Status display of the blowing device	The blowing device is active
		The blowing device is faulty.
		The blowing device is inactive.

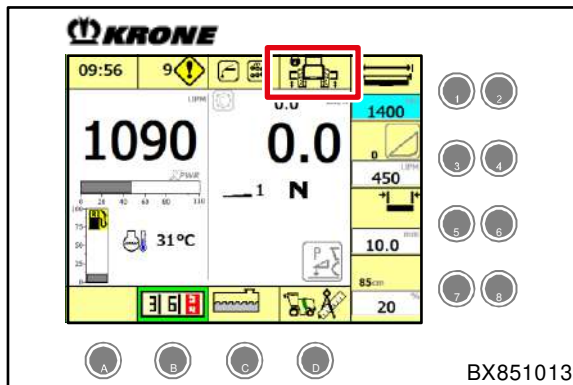










Fig. 115  
 Statuses of the pendulum frame

Icon	Position of pendulum frame	Status of pendulum frame	Explanation
	Horizontal	Free	The pendulum frame can be Actuated.
	Raised to the right	Free	The pendulum frame can be Actuated.
	Raised to the left	Free	The pendulum frame can be Actuated.
	Unknown		The "Pendulum frame position" sensor is faulty
	Horizontal	Locked	
	Raised to the right	Locked	
	Raised to the left	Locked	
	Unknown		The "Pendulum frame position" sensor is faulty.

### 8.2.2 Engine data information section

The current engine data is displayed in the engine data information section (II).

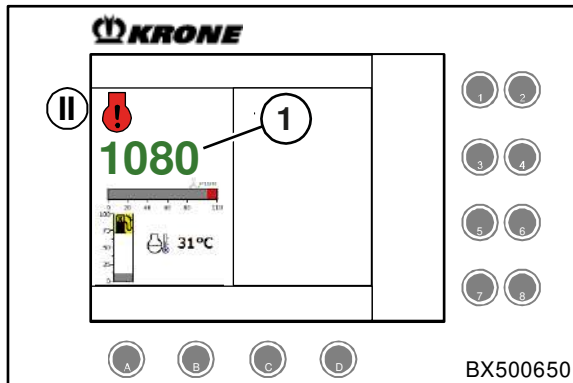


Fig. 116

#### Engine speed (1)

Road mode: 1000 - 1700 min<sup>-1</sup>

Field mode: 1100 – 1950 min<sup>-1</sup>

#### Coloured display of the engine speed (1) in field mode

##### Black

- The diesel engine is not within its optimum working rotational speed range above 1800 min<sup>-1</sup>.

##### Green

- The diesel engine is within its optimum working rotational speed range between 1700 min<sup>-1</sup> and 1800 min<sup>-1</sup>.

##### Red

- The diesel engine is within a critical working rotational speed range below 1700 min<sup>-1</sup>.

The diesel engine must be unloaded immediately.

General engine data

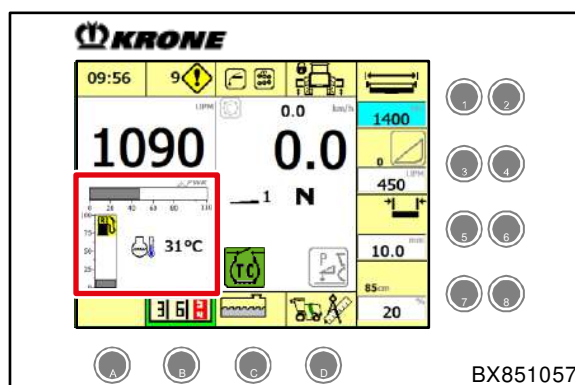
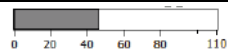








Fig. 117

Icon	Designation	Explanation
	Engine load as %	
	Engine warning light	Severe engine fault! <ul style="list-style-type: none"> <li>– Bring the machine to a standstill immediately and switch off the diesel engine.</li> <li>– Notify your KRONE dealer or the KRONE customer service department.</li> </ul>
	Engine warning light	Minor engine fault! <ul style="list-style-type: none"> <li>– Visit a qualified service centre as soon as possible.</li> </ul>
	Coolant temperature display.	The coolant temperature is in the normal range.
	Coolant temperature display highlighted in yellow	The coolant temperature has reached the critical range. <ul style="list-style-type: none"> <li>– Bring the machine to a standstill.</li> <li>– Allow the diesel engine to run at idle speed until the temperature returns to the normal range.</li> <li>– Clean the cooler and cooler compartment.</li> <li>– Check the coolant level.</li> </ul>
	Diesel fuel level	The bar display indicates the current filling level of the fuel tank.
	Diesel fuel reserve display	– Appears when the tank contains less than 10 per cent of the diesel fuel.

### 8.2.3 Drive data information section

The drive data information section (III) displays values and the current status of the traction drive, automatic steering system and lifting unit control.

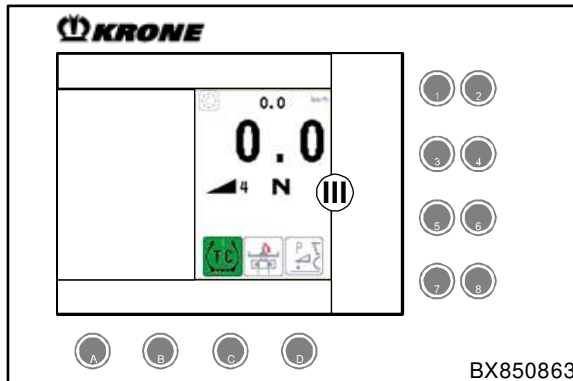




Fig. 118

#### Cruise control

Icon	Explanation
	Cruise control active The number after the icon is the stored cruise control speed in km/h.
	Cruise control inactive

#### Load limit control

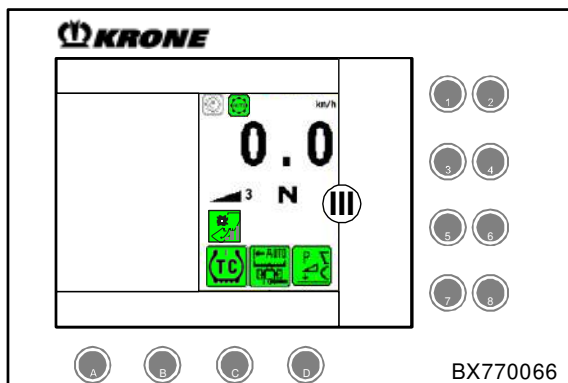




Fig. 119

Icon	Explanation
	Load limit control active The driving speed is automatically adjusted to the speed reduction of the engine.
	Load limit control inactive





#### Driving speed

Road mode: 0 - 40 km/h




Field mode: 0 - 25 km/h

### Acceleration ramp

The greater the run-up time of the diesel engine, the flatter the acceleration ramp.










Icon	Explanation
 1	Low acceleration.
 2	
 3	
 4	

### Direction of travel

Icon	Explanation
	Forward travel
	Neutral (standstill)
	Reverse travel

**Electric discharge distance adjustment (optional)**

To operate the electric discharge distance adjustment, see page 582.

Icon	Explanation
	<p>The electric discharge distance adjustment is active. Level I (low discharge capacity) is approached.</p>
	<p>The electric discharge distance adjustment is active. Level II (medium discharge capacity) is approached.</p>
	<p>The electric discharge distance adjustment is active. Level III (maximum discharge capacity) is approached.</p>
	<p>The electric discharge distance adjustment is inactive. The current position is Level I.</p>
	<p>The electric discharge distance adjustment is inactive. The current position is Level II.</p>
	<p>The electric discharge distance adjustment is inactive. The current position is Level III.</p>
	<p>Error, the position Level I could not be approached. The current position is unknown.</p>
	<p>Error, the position Level II could not be approached. The current position is unknown.</p>
	<p>Error, the position Level III could not be approached. The current position is unknown.</p>

## Status displays

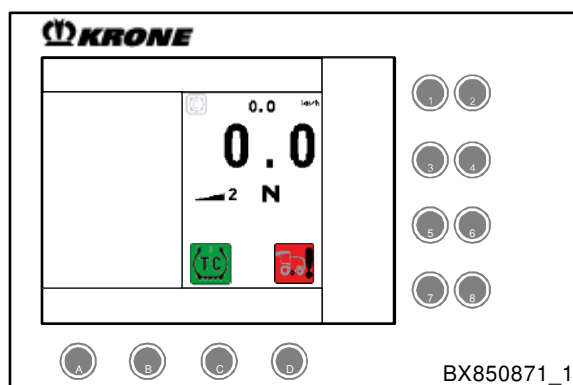






Fig. 120

Icon	Explanation
	Error on additional axle
	Parking brake is applied
	No pressure on the trailer brake, The error message 2214 is shown on the working screen.
	Emergency mode Allows the driver to drive the vehicle out of the danger zone at reduced driving speed even if there are serious drive problems.

## Quick-stop switch

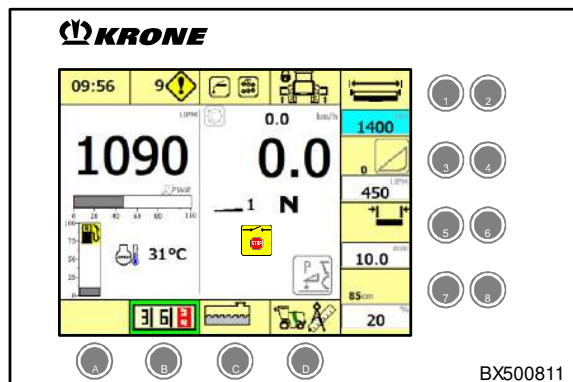










Fig. 121

Icon	Explanation
	Quick-stop switch has been activated on the console.
	Quick-stop switch has been activated on the manual control unit (platform).
	Both quick-stop switches on the manual control unit (platform) and the console are activated.


















**Traction control system Traction Control (TC)**

Icon	Explanation
	<p>Traction Control TC I (maize) active The traction control system is currently active to prevent the wheels from spinning.</p>
	<p>Traction Control TC I (maize) ready for operation The traction control system is switched on. All wheels are currently synchronised, and regulation is not necessary.</p>
	<p>Traction Control TC II (grass) active The traction control system is currently active to prevent the wheels from spinning.</p>
	<p>Traction Control TC II (grass) ready for operation The traction control system is switched on. All wheels are currently synchronised, and regulation is not necessary.</p>
	<p>Traction Control TC off</p>







**automatic steering system (optional, only in maize field mode)**

If one of the following displays appears in white, the automatic steering system for this function is ready (inactive).

Icon	Status	Explanation
	Automatic steering system active (outer tip).	The row tracer left is evaluated.
		The row tracer right is evaluated.
		Both row tracers are evaluated
		The row tracer left is evaluated (depending on the position of the spout).
		The row tracer right is evaluated (depending on the position of the spout).
		The row tracer left is mirrored and evaluated (depending on the position of the spout)
		The row tracer right is mirrored and evaluated (depending on the position of the spout)
	Automatic steering system active (central tip)	The row tracer right is evaluated.
		The row tracer left is evaluated.
		The row tracer central tip right and left are evaluated.
		The row tracer central tip left is evaluated (depending on the position of the spout).
		The row tracer central tip right is evaluated, (depending on the position of the spout).
		The row tracer central tip left is mirrored and evaluated (depending on the position of the spout).
		The row tracer central tip right is mirrored and evaluated (depending on the position of the spout).
	ISO bus	The machine is controlled by means of ISO bus steering commands.

**Lifting gear control (only in field mode)**

Setting the control type, see page 567.

Icon	Explanation
	Lifting unit ground pressure control active
	Lifting unit ground pressure control ready
	Lifting unit distance control active
	Lifting unit distance control ready
	Lifting unit position control active
	Lifting unit position control ready

## 8.2.4 Settings information section

### 8.2.4.1 Menu field working width

The settings information section (IV) displays the current working width in the Working width menu field.

The working width setting is needed to calculate the area.

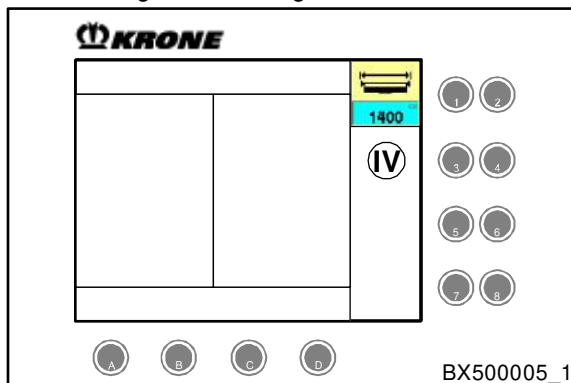







Fig. 122

Icon	Designation	Explanation
	Grass mode (pick-up)	If grass mode is set, the icon and the set width (swathed width) in cm or inch are displayed.
	Maize mode (EasyCollect)	If maize mode is set, the icon and the set number of rows with the resulting working width in cm or inch are displayed.
	Direct cutting system (XDisc)	If the direct cutting system is set, the icon and the set width in cm or inch are displayed.

### Temporary change to the working width

If the entire working width of the front attachment is not used, the working width must be adjusted in the terminal. Only then can the acreage counter correctly calculate the area.

- To reduce the working width, press the  key.
- To increase the working width, press the  key. You can only increase the value up to the pre-set maximum width.

Alternatively, you can also make the setting with the incremental encoder, see page 163.

### NOTE

If you press the key "Raise lifting unit automatically" on the multi-function lever, the pre-set working width is reset, see page 183.

8.2.4.2 Menu Area Header

The header menu area displays the status and the set setpoint speed of the header in the settings information section (IV).

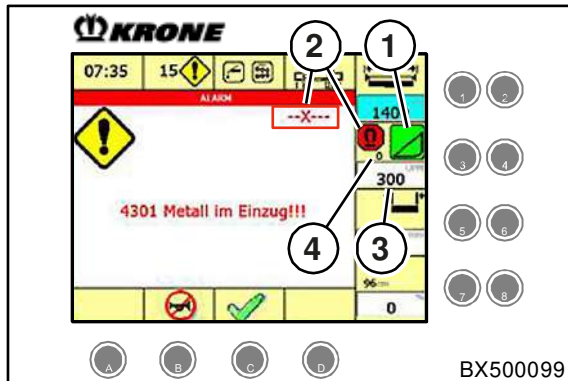













Fig. 123

Status (1)

Icon	Designation	Explanation
	Header error	An error has occurred.
	Header inactive	The switching-on conditions are not met.
	Header ready	All switching-on conditions are met. The header can be switched on via the key on the control lever (reverse first, then switch "forward" on).
	Header forward active	The header turns forward.
	Header reverse active	The header turns backward (reverses).

Foreign object detection (2)

Icon	Designation
	An error has occurred in metal detection and RockProtect
Metal detection	
	Metal detection is deactivated.
	Metal detected in intake.
--X---	Indicates the position of the metal in the intake: x-----: Metal in direction of travel left -X----- --X---- ---X--- ----X-- -----x: Metal in direction of travel right
	An error has occurred in metal detection.
RockProtect (option)	
	A rock was detected in the intake.
	An error has occurred in RockProtect.

### Setting the setpoint speed (3)

The setpoint speed must be adjusted to the operating and harvesting conditions in order to guarantee optimum crop flow.

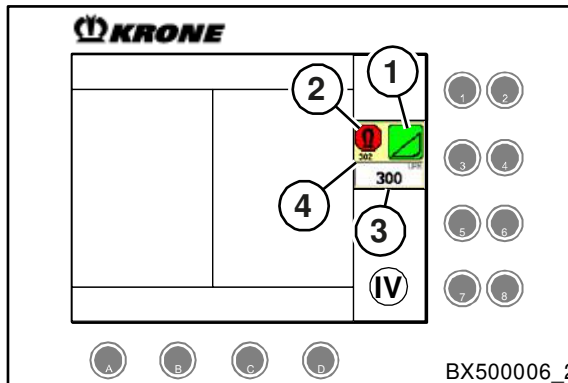




Fig. 124

- To reduce the setpoint speed, press the  key.
- To increase the setpoint speed, press the  key.

Alternatively, you can also make the setting with the incremental encoder, see page 163.

► **NOTE**

In maize mode, the setpoint speed is reduced to 400 rpm after each restart, if it was set higher beforehand.

The current actual speed (4) of the front attachment is displayed.

## 8.2.4.3 Intake menu area

The chop length is determined by the speed of the intake rollers and the number of blades that are used.

The settings information section (IV) displays the current chop length and the status of the maturity level detection in the intake menu area.

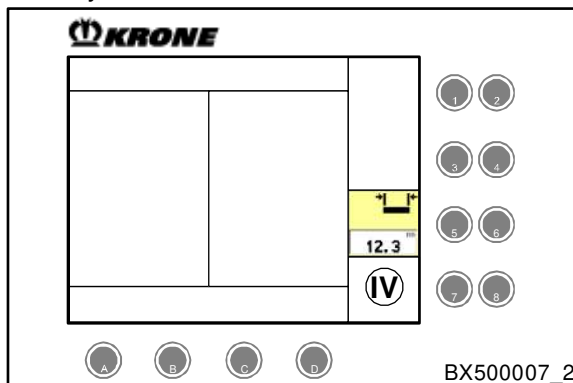







Fig. 125

### Displaying the chop length

Icon	Designation	Explanation
	Chop length	Shows the current chop length in mm or inch.
	Maturity level detection active	If maturity level detection (AutoScan) is activated, the optimum chop length is automatically calculated and set, see page 199.
	Maturity level detection inactive	The chop length is not automatically adjusted.



**Adjusting the chop length**

- To reduce the chop length, press the  key.
- To increase the chop length, press the  key.

Alternatively, you can also make the setting with the incremental encoder, see page 163.

Two different chop lengths (value 1/value 2) can be saved and retrieved via the control lever, see page 577.

Depending on the set number of blades, the chop length can be set in different areas, see page 85. The chop length double at half set of blades.

**NOTICE**

As soon as the chop length is manually adjusted or a saved value is retrieved via the control lever, the automatic adjustment of the chop length becomes inactive depending on the degree of maturity.

8.2.4.4 Lifting unit menu area

In field mode, the current control type status of the lifting unit is displayed in the drive data information section (III). The actual height of the lifting unit and the corresponding setpoint pressure or setpoint height are displayed in the settings information section (IV) in the Lifting unit menu area.

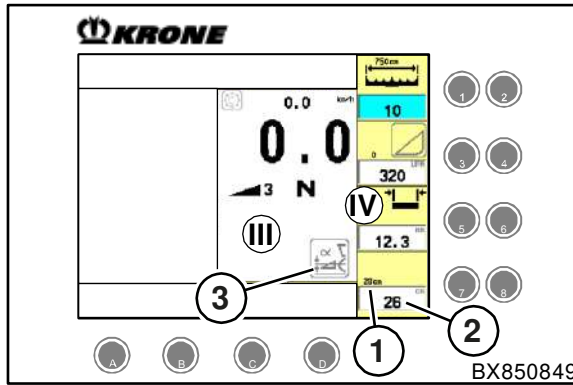




Fig. 126

Show

Item	Designation	Explanation
(1)	Actual height of the lifting unit in cm or inch.	If the lifting unit distance control is active, the actual height is hidden.
(2)	Setpoint pressure in percent	<b>For lifting unit ground pressure control</b> Setpoint pressure is percentage of the front attachment's dead weight. It is adjustable between -6% (front attachment sways above the ground) up to max. 70% (front attachment presses on to the ground with 70% of its dead weight).
	Setpoint height in cm or inch	<b>For lifting unit position control</b>
	Setpoint height in percent	<b>For lifting unit distance control</b> Setpoint height in % of the control path of the sliding skid sensors. Can be set between 10-90%.
(3)	Status displays of the lifting unit control types	<ul style="list-style-type: none"> <li>Status displays, see page 175.</li> </ul>

Changing the setpoint pressure or setpoint height (2)

- To reduce the setpoint value, press the  key.
- To increase the setpoint value, press the  key.

Alternatively, you can also make the setting with the incremental encoder, see page 163.



**NOTE**

The setpoint pressure and/or setpoint height can also be stored using the multi-function lever, see page 567. If the setpoint value is changed using the keys on the terminal, the value is saved directly, which means that there is no need to save using the multi-function lever.

## 8.2.5 General machine settings information section

### 8.2.5.1 Memory keys

On delivery, the keys M1 and M2 on the multi-function lever are not assigned any functions.

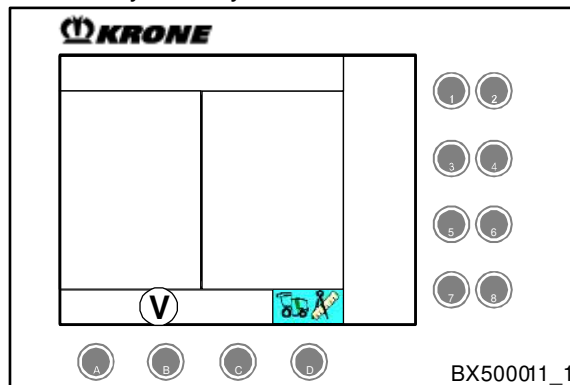



Fig. 127

- To call up the "Memory keys" mask, press the  key in the working screen. Menu item 1-10 can also be used to call up the mask, see page 251.

The following functions can be assigned to the memory keys:

- Raise/lower plant divider (only in maize) / holding-down clamp (only in grass)
- Increase/reduce working width
- Call up stored chop lengths 1 or 2
- Increase/reduce front attachment speed
- Turn pendulum frame left/right
- Extend and/or retract the rear wall of discharge accelerator to reduce and/or increase the discharge distance.

Assigning occupancy of memory keys

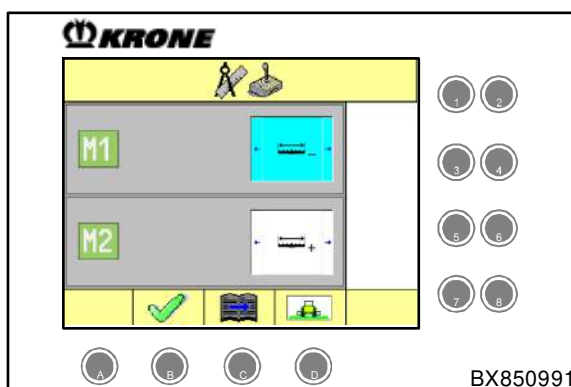



Fig. 128

- You can use the incremental encoder to choose M1 and/or M2 choose, the selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- Turn the incremental encoder to set the desired function.
- Press the incremental encoder to accept the setting and to exit the selection box.
- Press the  key to approve the setting.

After the start

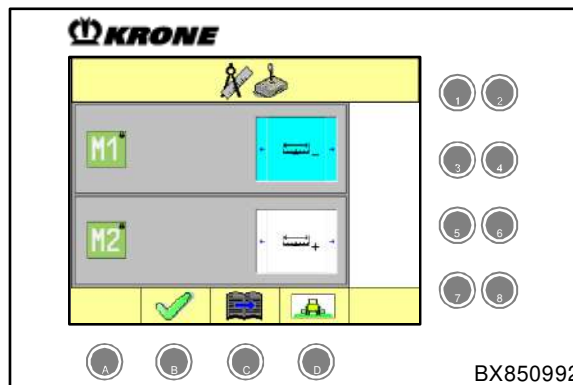



Fig. 129

The setting mask appears each time the machine is started and displays the occupancy of keys M1 and M2.




- Press the key  to release the setting. The lock icon turns off. Only then can the corresponding function be executed using the memory keys on the multi-function lever.
- If no release is performed, the memory keys are not functioning.

If you wish to change an assignment, you can re-assign the keys as described above.

**If there is no driver activity in the menu level for approx. 20 seconds, the menu level closes automatically and returns to the working screen.**

**The memory keys are not enabled and the memory keys are not working.**

**Exiting the settings mask**

- Press the  key to call up the working screen.
- Press the  key to jump to the next page of the machine settings information section.
- Press the  key on the incremental encoder to return to the previous menu level.

## 8.2.5.2 Grass pick-up mode

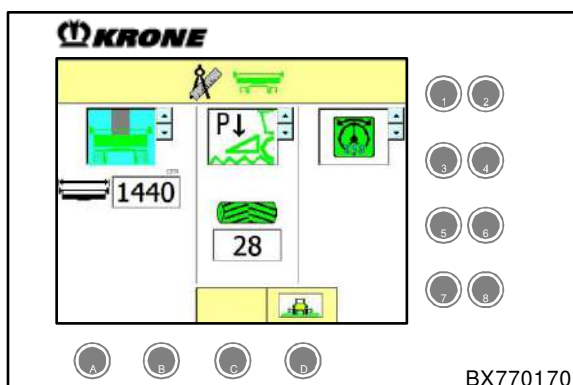





Fig. 130

- You can use the incremental encoder to choose the operating mode setting. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- Turn the incremental encoder to set the required grass pick-up mode .
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.

### Setting the grass pick-up working width

The working width corresponds to the swathed width.

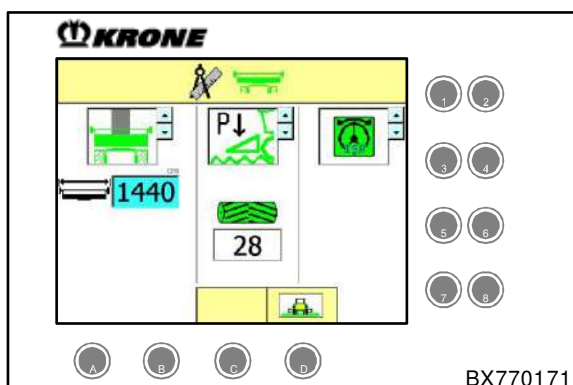




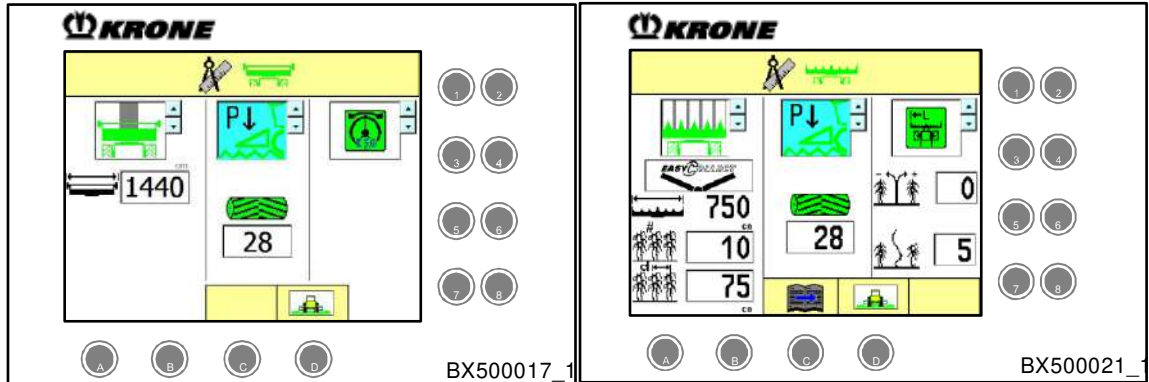
Fig. 131

- You can use the incremental encoder to choose the working width setting. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to set the required working width.
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.

**To adjust the lifting gear control**

Three lifting unit controls, see page 567, can be selected:



- Lifting unit ground pressure control
- Lifting unit distance control
- Lifting unit position control



Grass mode

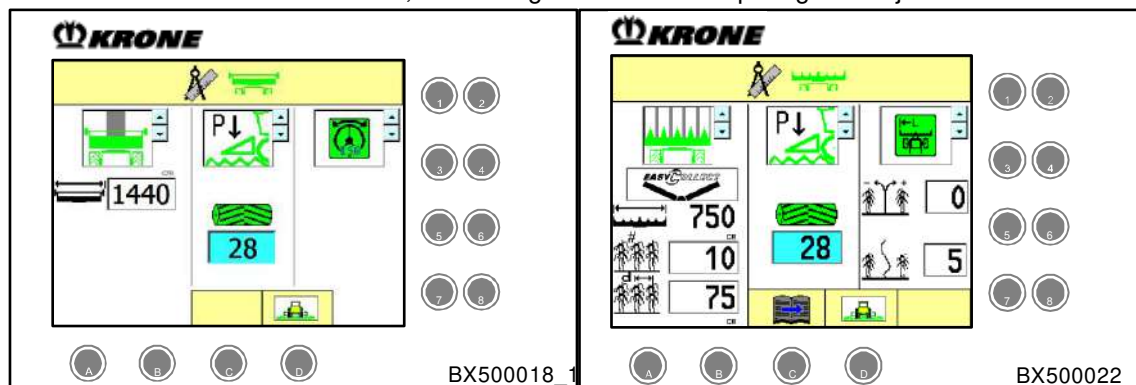
Maize mode

Fig. 132

- You can use the incremental encoder to choose the lifting unit control setting. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to set the required lifting unit control.
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.

## Setting the number of blades



After changing the number of blades, see page 707, the current number of blades must be set. When the number of blades is set, the setting area for the chop length is adjusted.



Grass mode

Maize mode

Fig. 133

- You can use the incremental encoder to choose the number of blades setting. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to set the required number of blades.
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.



Setting the automatic steering system

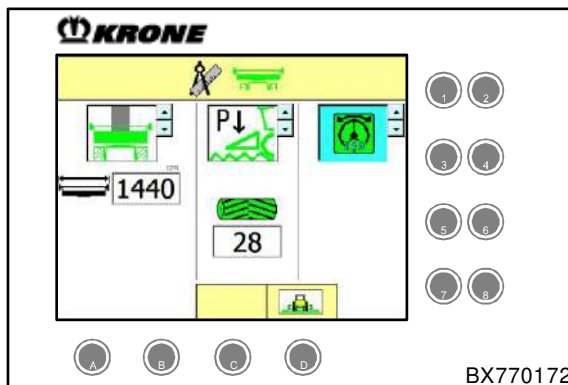






Fig. 134

Icon	Designation	Explanation
	automatic steering system inactive	The automatic steering system is inactive or not fitted.
	automatic steering system active	The automatic steering system is active. The machine is activated by the ISO bus.

- You can use the incremental encoder to choose the automatic steering system setting. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- Use the incremental encoder for setting the automatic steering system.
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.

## 8.2.5.3 Maize header

To set the operating mode of the maize header

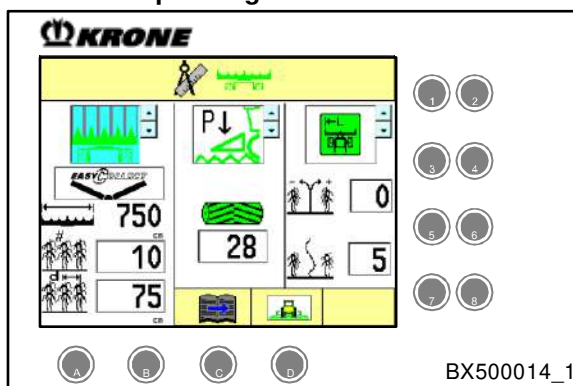









Fig. 135

- You can use the incremental encoder to choose the operating mode setting. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to set the required maize header mode .
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.

### Setting the header type

The following header types can be set:

Icon	Explanation
	KRONE EasyCollect, two-part
	KRONE EasyCollect, three-part
	KRONE XCollect, three-part
	Not a KRONE product

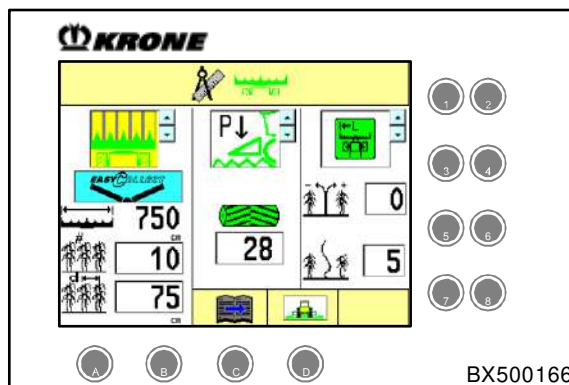




Fig. 136

- Use the incremental encoder to select the header type setting. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- Use the incremental encoder to set the header type.
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.

Setting the maize header working width

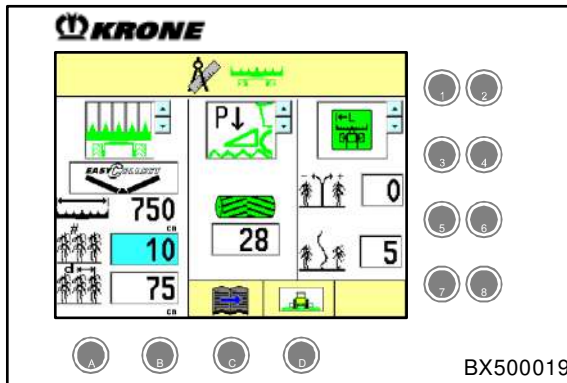


Fig. 137

- You can use the incremental encoder to choose the setting for the number of rows. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to set the desired number of rows.
- Press the incremental encoder to accept the setting and to exit the selection box.

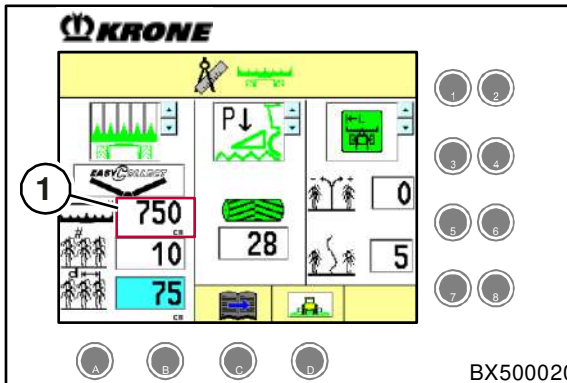




Fig. 138

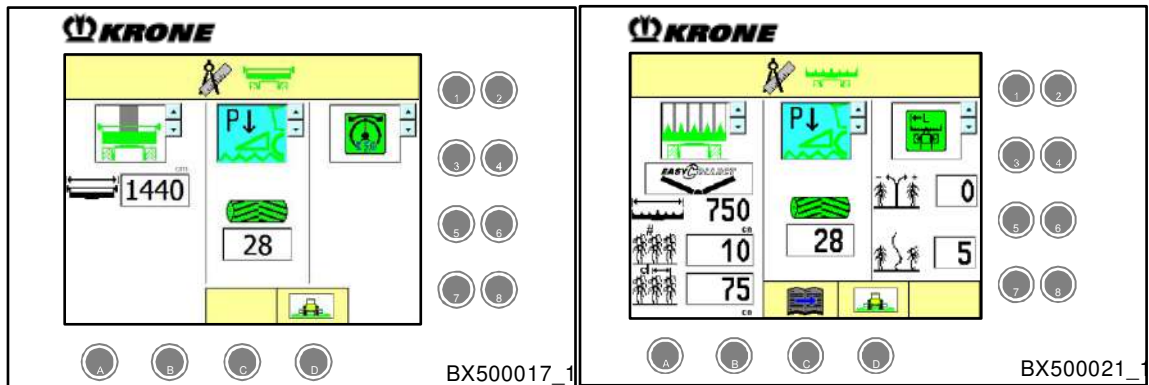
- You can use the incremental encoder to choose the row spacing setting. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- Use the incremental encoder to adjust the desired number of row spacing.
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.

**NOTE**  
 The resulting working width is calculated from the row distance and the number of rows directly and the result is displayed (1).

**To adjust the lifting gear control**

Three lifting unit controls, see page 567, can be selected:



- Lifting unit ground pressure control
- Lifting unit distance control
- Lifting unit position control



Grass mode

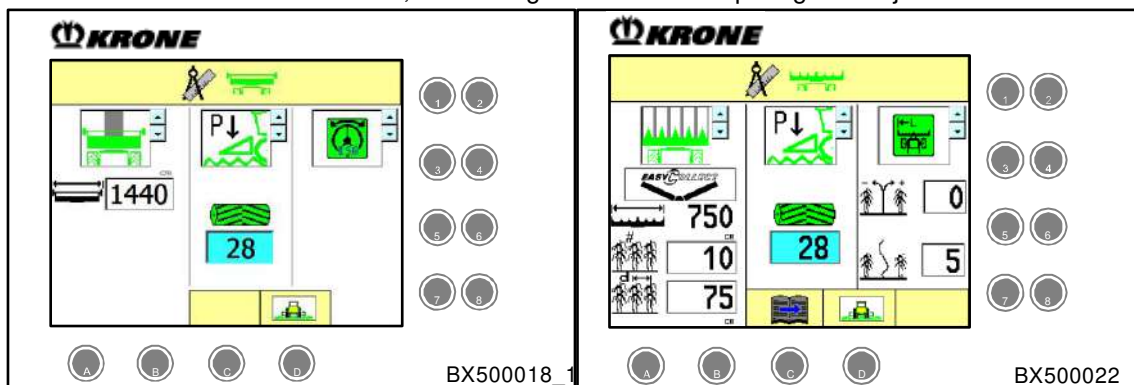
Maize mode

Fig. 139

- You can use the incremental encoder to choose the lifting unit control setting. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to set the required lifting unit control.
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.

## Setting the number of blades



After changing the number of blades, see page 707, the current number of blades must be set. When the number of blades is set, the setting area for the chop length is adjusted.



Grass mode

Maize mode

Fig. 140

- You can use the incremental encoder to choose the number of blades setting. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to set the required number of blades.
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.

### Select the row tracer for the automatic steering system

This mode determines which row tracer on the maize header will be evaluated for control of the automatic steering system.

- For the row tracer outer tip, always activate the left or right. The recommendation is always the side towards the crop, specifically for harvesting.
- For the row tracer central tip, always activate both, regardless of whether you are harvesting or in the crop.
- Row tracer depending on the spout: The row tracer is selected automatically according to the position of the spout. If the number of rows on the front attachment matches that of the maize drill, we recommend setting the reflected evaluation. If not, we recommend evaluating the same side.

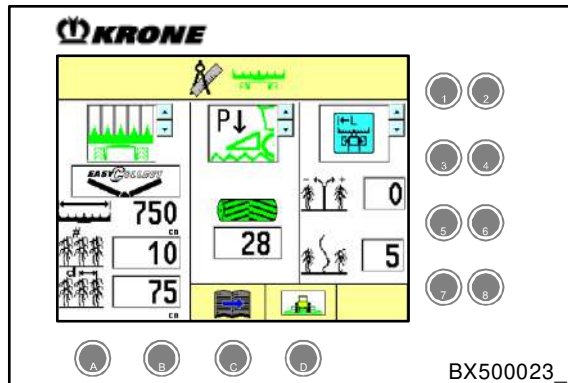

















Fig. 141

## Info centre "EasyTouch"

If one of the following displays appears in white, the automatic steering system for this function is ready (inactive).



Icon	Status	Explanation
	Automatic steering system active (outer tip).	The row tracer left is evaluated.
		The row tracer right is evaluated.
		Both row tracers are evaluated
		The row tracer left is evaluated (depending on the position of the spout).
		The row tracer right is evaluated (depending on the position of the spout).
		The row tracer left is mirrored and evaluated (depending on the position of the spout)
		The row tracer right is mirrored and evaluated (depending on the position of the spout)
	Automatic steering system active (central tip)	The row tracer right is evaluated.
		The row tracer left is evaluated.
		The row tracer central tip right and left are evaluated.
		The row tracer central tip left is evaluated (depending on the position of the spout).
		The row tracer central tip right is evaluated, (depending on the position of the spout).
		The row tracer central tip left is mirrored and evaluated (depending on the position of the spout).
		The row tracer central tip right is mirrored and evaluated (depending on the position of the spout).
	ISO bus	The machine is controlled by means of ISO bus steering commands.

### NOTE

In "Row tracer automatic" and "Row tracer mirrored automatic" mode, if the upper discharge chute is not swivelled out, the "Upper discharge chute left" position is used as the basis.



**Setting the row tracer**

- You can use the incremental encoder to choose the row tracer setting. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to set the desired mode.
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.

**Setting the centre adjustment with the row tracer**

The centre adjustment can be used to adjust the side distance from the machine to the crop edge queried by the row tracer.

To reduce the side distance, you must set a negative value.

To increase the side distance, you must set a positive value.

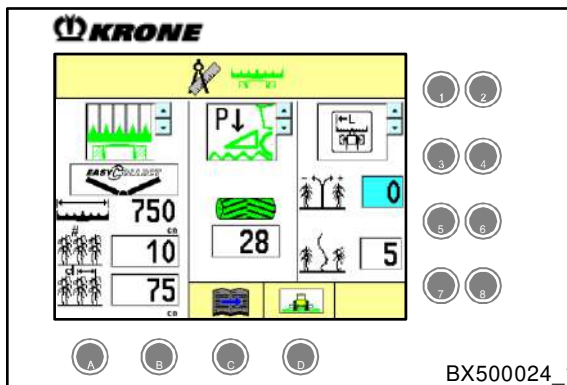




Fig. 142

- You can use the incremental encoder to choose the centre adjustment setting. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to set the desired distance.
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.

### Setting the response sensitivity of the row tracer

The response sensitivity can be used to set the response (inertia) of the control system for the row tracer.

With an even crop edge, slow driving speed and dry ground conditions, a low (slower) response sensitivity can be set.

With an uneven crop edge, faster driving speed and moist ground conditions, a higher (faster) response sensitivity should be set.

The setting can be changed during operation.

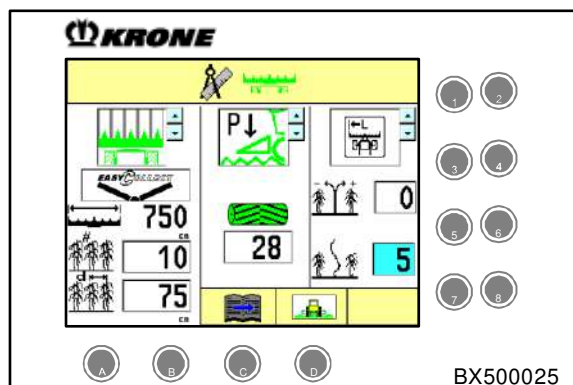




Fig. 143

Setting range from 1 to 10:

- 1 slow
- 10 fast

- You can use the incremental encoder to choose the response sensitivity setting. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to set the desired value.
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.

**Automatic setting of the chop length by maturity level detection (AutoScan)**

The system uses the AutoScan sensor to detect the degree of maturity of the maize plant. The AutoScan control electronics calculate the optimum cutting length of the maize plant from the previously entered minimum and maximum chopping length and control the speed of the pre-compression rollers accordingly.

The chop length is not further enlarged above a degree of maturity of approx. 66% and is not further reduced below 33%, as a higher or lower value is unlikely in practice.

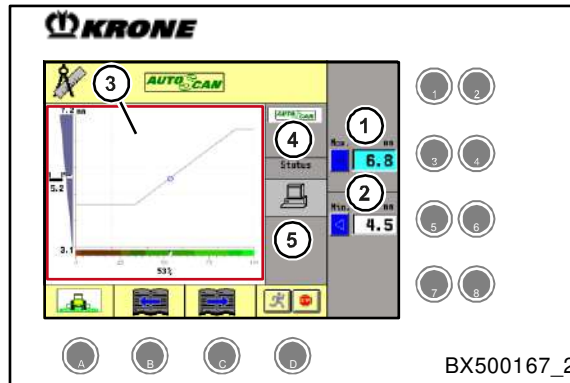










Fig. 144




Item/Icon	Explanation
1	Enter the maximum chop length that is to be automatically actuated. The value can also be entered using the keys  (to reduce the set value) and  (to enlarge the set value).
2	Enter the minimum chop length that is to be automatically actuated. The value can also be entered using the keys  (to reduce the set value) and  (to enlarge the set value).
3	Graphical representation of the settings.
4	Setting as to whether the "AutoScan" degree of maturity sensor is present (only effective after a restart).
	– Degree of maturity sensor present
	– Degree of maturity sensor not present
5	Status of automatic chop length adjustment
	– Automatic adjustment of the chop length active. The AutoScan sensor adopts the chop length setting in the specified area.
	– Manual adjustment of chop length active.

### Switching on maturity level detection

- Set whether the degree of maturity sensor is present or not.
- Set the maximum (1) and minimum (2) chop length.

The values for the minimum and maximum chop length are checked for plausibility. For example, if the maximum value is set to 4.6 mm and the minimum value is set to 4.7 mm, the minimum value is automatically set to 4.5 mm.

- Press the  key to switch the automatic chop length adjustment on or off.

Icon	Explanation
	Automatic operation switched on/active
	Automatic operation switched off/inactive
	Setting not possible (AutoScan not connected)



### NOTE

If automatic operation is active in the working screen, the chop length manually set or if a stored chop length is called up using the control lever, automatic adjustment (AutoScan) is deactivated.

If the AutoScan does not detect the degree of maturity correctly, it can be adjusted in expert mode, see "Graphical representation of AutoScan sensor settings in expert mode".

**Graphical representation of AutoScan sensor settings in expert mode**

The ex-works default values for minimum and maximum degree of maturity can only be changed in expert mode. By changing the percentage values, you are influencing the ability of the AutoScan to detect colour.

- To switch to expert mode, set parameter 34020 to the value 1 in the menu "AutoScan".

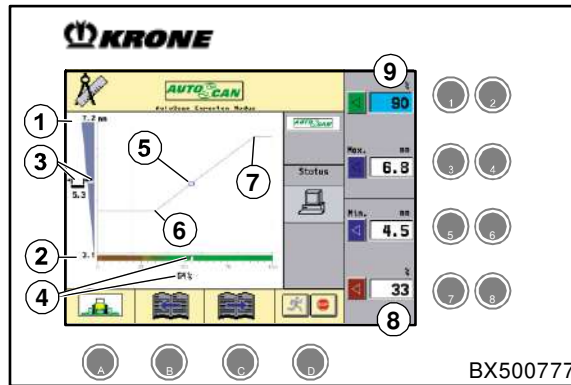










Fig. 145

Item	Explanation
1	Theoretical maximum chop length at 100% degree of maturity. However, the chop length is not further increased above approx. 66% degree of maturity as a degree of maturity greater than 66% is unlikely to occur in practice.
2	Theoretical minimum chop length at 0% degree of maturity. However, the chop length is not further reduced below approx. 33% degree of maturity as a degree of maturity below approx. 33% is unlikely to occur in practice.
3	Current chop length
4	Currently determined degree of maturity. If the display remains at 50%, the sensor does not detect a valid maturity.
5	The current position on the characteristic curve within the working range.
6	The minimum chop length set by the user, which can be changed using the  and  keys. The associated degree of maturity (8) can be changed using the  and  keys or the incremental encoder.
7	The maximum chop length specified by the user, which can be changed using the  and  keys. The associated degree of maturity (9) can be changed using the  and  keys or the incremental encoder.

## 8.2.5.4 Direct cut header

Set the operating mode to direct cutting system

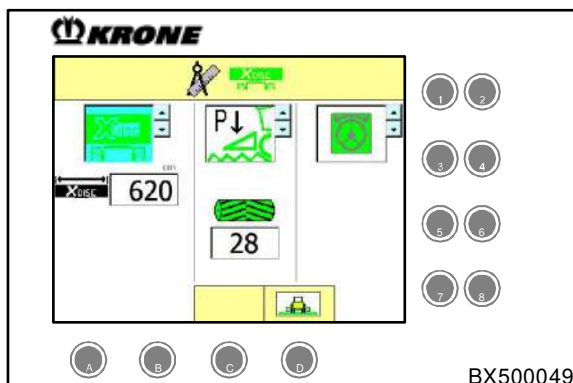






Fig. 146

- You can use the incremental encoder to choose the operating mode setting. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to set the operating mode of the direct cutting system  system .
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.

Arbeitsbreite Direktschneidwerk einstellen

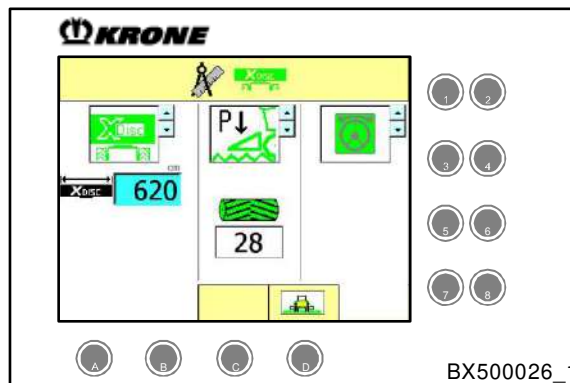




Abb. 147

- Mit dem Inkrementalgeber die Einstellung Arbeitsbreite anwählen. Das Auswahlfeld wird farblich hervorgehoben.
- Den Inkrementalgeber drücken, um in das Auswahlfeld zu springen.
- Mit dem Inkrementalgeber die gewünschte Arbeitsbreite einstellen.
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.

**Setting the lifting unit control for the direct cutting system**

The direct cutting system is always operated using the "ground pressure control" control type, which can be used to achieve an optimum cutting profile.

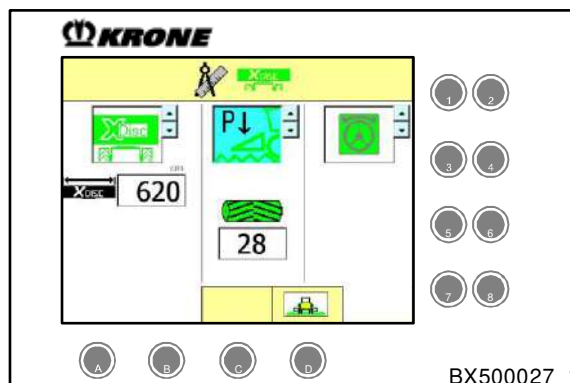




Fig. 148

- You can use the incremental encoder to choose the lifting unit control setting. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to set the required lifting unit control.
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.

### Setting the number of blades for the direct cutting system

After changing the number of blades, see page 707, the current number of blades must be set. When the number of blades is set, the setting area for the chop length is adjusted.

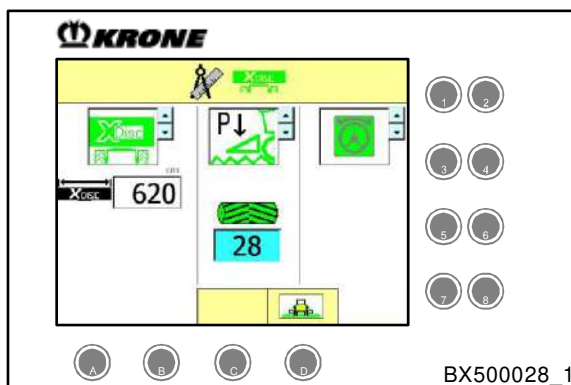




Fig. 149

- You can use the incremental encoder to choose the number of blades setting. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to set the required number of blades.
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.



Setting the automatic steering system

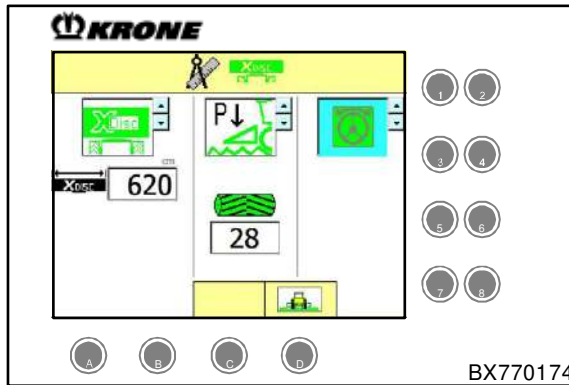






Fig. 150

Icon	Designation	Explanation
	Automatic steering system inactive	The automatic steering system is inactive or not fitted.
	Automatic steering system active	The automatic steering system is active. The machine is activated by the ISO bus.

- You can use the incremental encoder to choose the automatic steering system setting. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- Use the incremental encoder for setting the automatic steering system.
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.

Protection for wild animals information mask

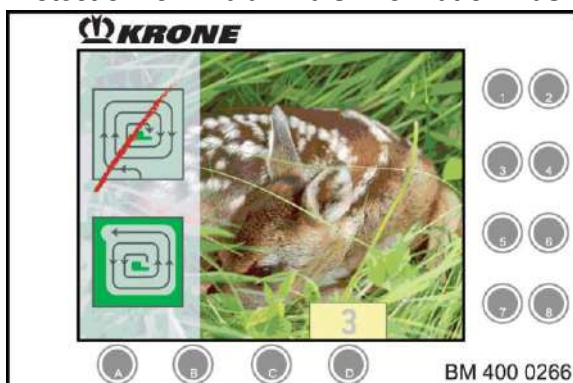


Fig. 151

If the XDisc operating mode is set, an information screen regarding the correct mowing behaviour appears briefly in the display when you start the front attachment.

If a field is mowed from the outside inwards, animals are slowly driven from the safe edge sections into the middle of the field, making it more difficult or impossible for them to flee.

A remedy for this situation is provided by the mowing method that involves mowing the area from the "inside out". In this case, you drive straight into the middle of the plot without mowing the outer edge, and then mow anticlockwise from the "inside out". This allows animals to escape from the field unharmed by following their natural instinct to flee.

8.2.5.5 Customer Data Counter

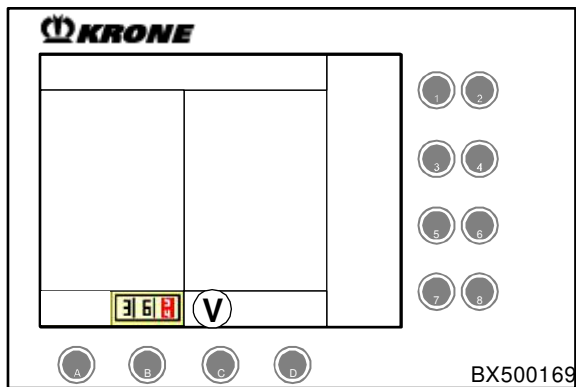


Fig. 152

- Press the **B** key below **364** to call up the customer counter.  
**364** is displayed green if a customer counter is active.

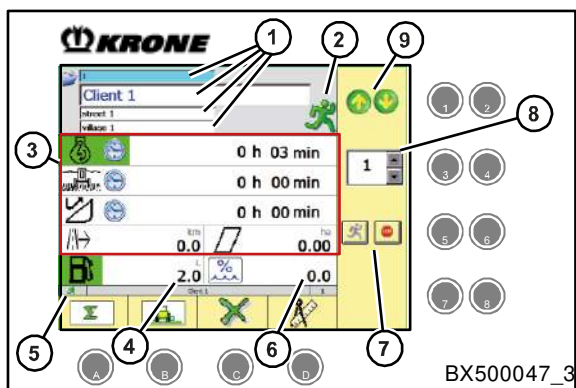






















Fig. 153

Pos.	Icon	Designation	Explanation
1		Customer data record	Enter the customer data
2		Counter switched off	The customer counter was stopped.
		Counter switched on	The currently displayed counter is activated.
		Counter inactive	Another counter as the displayed counter is activated.
3	An active counter is highlighted in colour		
		Operating hours counter (h)	Active if the diesel engine is running.
		Drum hours counter (h)	Active if the chopping drum is switched on.
		Working hours counter (h)	Active if the header is switched on.
		Mileometer (km)	Active during road travel and field mode.
		Surface counter (ha)	Active if the lifting unit has reached its working position.
4		Fuel consumption measurement (l) (optional)	Can be deleted using the  key
5		Status of the counter	The line displays which customer counter and which cultivated area is activated.
6		Additional counter	Can be set using the  key.
7		Switching on the counter	Use the  key to switch on the counter.
		Switching off the counter	Use the  key to switch off the counter.
8		Freely usable numerical input field	For example, to assign multiple cultivated areas to the customer data record.
9		Select customer counter	Select the next customer data record by using the  key.
		Select customer counter	Use the  key to select the previous customer record.

### Modifying and/or creating a customer data record

A total of 30 customer records can be created.

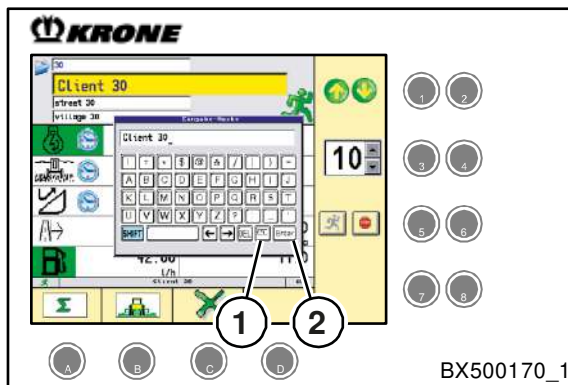




Fig. 154

- To modify or create a customer record, select the corresponding customer data record using the  and  keys.
- You can use the incremental encoder to choose the required input field (name, street, domicile). The input field is highlighted in colour.
- Press the incremental encoder to open the alphanumeric input field.
- Use the incremental encoder to enter and/or change the customer data record.
- Press the incremental encoder to accept the alphanumeric value.
- To save the customer data record, use the incremental encoder to select and press the "Enter" field (2).

#### NOTE

Selecting the "ESC" symbol (1) and confirming causes the program to exit the input field without saving the entries or changes.

Selecting the "Enter" symbol (2) and confirming causes the program to accept and save the entry or change.

- To exit the settings mask, press the  key or the  key on the incremental encoder.

Activating the additional counter

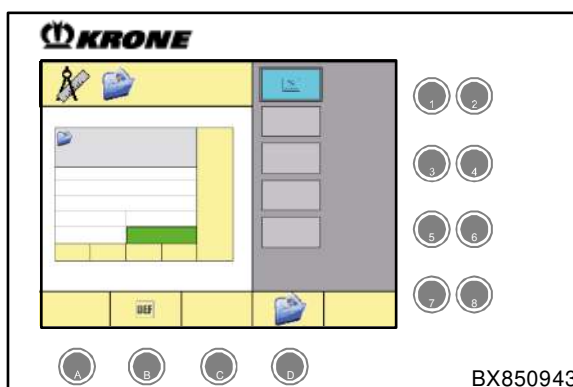

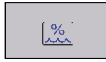


Fig. 155

- Press the  key to call up the additional counter.
- You can use the incremental encoder to select the required additional counter.
- Press the incremental encoder to confirm your selection.

Icon	Meaning	Explanation
	Moisture measurement	The moisture value (%) averaged over the activation duration of the counter is automatically listed as the final point on the printing from the printer. The graphical icon for the moisture on this printout is "% ~~~".

Selecting/deleting the area(s) of a customer counter

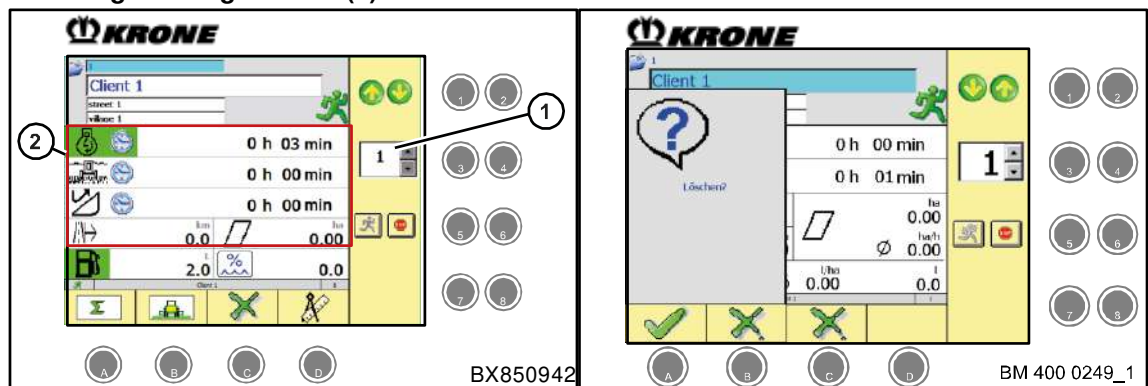




Fig. 156

Up to 10 areas can be assigned to every customer counter (1). However, only one area can be selected. All counters shown under (2) are assigned to the selected area.

Either single or all areas of a customer counter can be deleted. When the area is deleted, all counters shown under (2) are reset to zero.









**Assigning or selecting the area for a customer record**

The selection of the right customer record is a prerequisite for this.

- Press  or  key until the area appears in the input field (1).

**Deleting individual areas of a customer counter**

The prerequisite is that the correct customer data record is selected.

- Press the  or  keys until the area to be deleted appears in the input field (1).
- To delete the area, press the  key below the softkey  and the information message "Delete?" appears).
- To confirm the deletion, press the  key below the softkey .
- To cancel the deletion, press the  key below the softkey .











**NOTE**

Repeat deletion of the counters for each previously created cultivated area as necessary.

## Deleting all areas of a customer counter

A prerequisite for this is that the right customer record is selected.

- Press  or  key until the sigma sign ( $\Sigma$ ) appears in the input field (1).
- To delete all areas, press  key under the softkey , an information message "Delete all areas?" appears.
- Press  key under the softkey  to confirm the deletion process.
- Press  key under the softkey  to cancel the deletion process.

## Switching the counter on or off

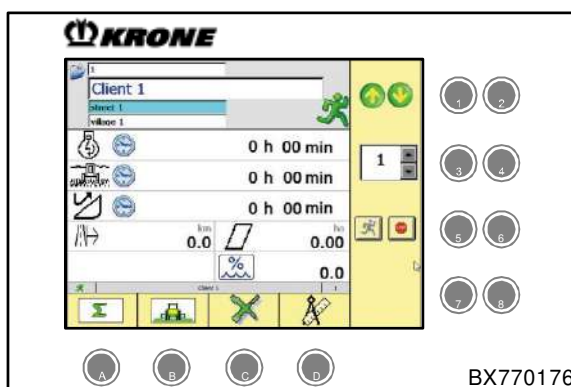







Fig. 157

- The required customer data record and area are selected.

- Use the  and  keys to turn the counter on  and off .
- Activating the  key brings up the working screen.



### Exporting the customer counter

To use the customer data records for other evaluations, you can save them to a USB flash drive.

- Insert the USB flash drive into the USB connection on the operation console, see page 154.

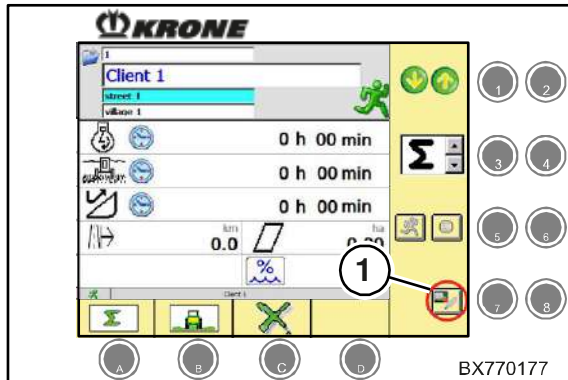





Fig. 158

Once the terminal has recognised the USB flash drive, the icon (1) is displayed in the customer counter.

- Press the  key to export all customer counters (30 customers with ten areas each) completely to the USB flash drive.

The file on the USB flash drive is called "...\_CClientCounter.csv" and can be opened e. g. with "Excel".

### Switching to general counters (machine data counters)

- Pressing the  key below  softkey brings up the "Counters and machine data" menu.

#### NOTE

You can print out all customer records or selected ones with the aid of a printer (option). For additional information, see page 422.

### 8.2.5.6 Silage additives unit

In field mode, the Settings info area (V) displays the setting for the silage additives unit (1).

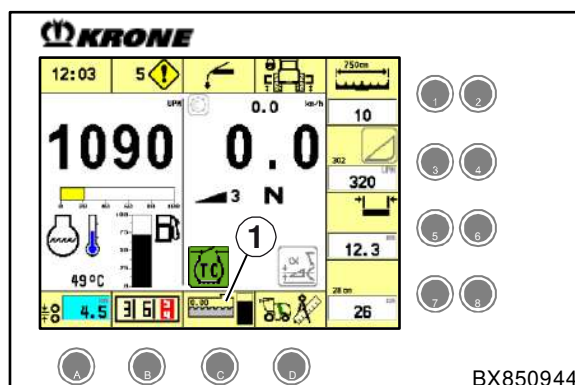


Fig. 159

#### Automatic mode

Prerequisites:

- Diesel engine switched on
- Release switch road/field in field mode
- Release switch traction drive switched on
- Release switch intake/header switched on
- Main coupling switched on
- Intake/header switched on
- Vehicle moves forwards
- Lifting unit in working position

#### Continuous operation

Prerequisite:

- Release switch road/field in field mode




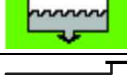

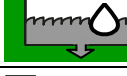


#### Crop flow cleaning headland:

To ensure that "Crop flow cleaning headland" functions, the lifting unit must have been moved beforehand into the working position and the machine moved forwards.

Additional prerequisites:

- Diesel engine switched on
- Release switch road/field in field mode
- Release switch traction drive switched on
- Release switch intake/header switched on
- Main coupling switched on
- Intake/header switched on
- Vehicle moves forwards
- Lifting unit in headland position

Possible status displays (1)

Icon	Designation
	Automatic mode switched on, silage additives unit active
	Automatic mode switched on, silage additives unit inactive
	Silage additives unit deactivated
	Continuous operation switched on, silage additives unit continuously active
	Crop flow cleaning headland, silage additives unit inactive
	Crop flow cleaning headland, silage additives unit active
	Filling level indicator of the silage additives unit (optional)
0.0	Flow rate in L/t or USA: gal/t (in continuous operation: L/min or USA: gal/min)
	Set flow rate is not reached

Display of unfulfilled switching-on conditions

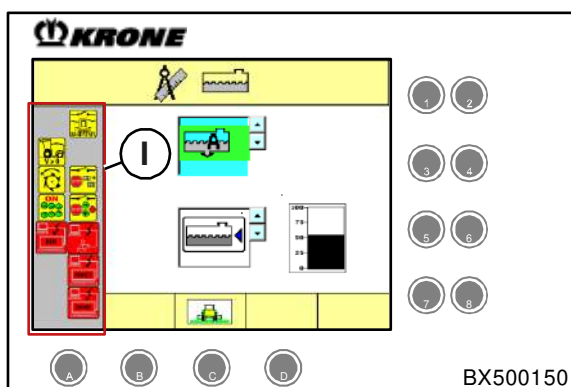










Fig. 160

The menu field (I) displays unfulfilled conditions that must be fulfilled for setting the silage fodder addition. An appropriate remedy must be found.

Icon	Meaning
	Lower lifting unit
	Vehicle must drive
	Switch on main coupling
	Switch on feed drive
	Turn the travelling gear release switch on or off
	Switch the maintenance release switch on or off
	Unlock stop switch on CUC.
	Unlock manual operation stop switch.

Displaying possible disturbances

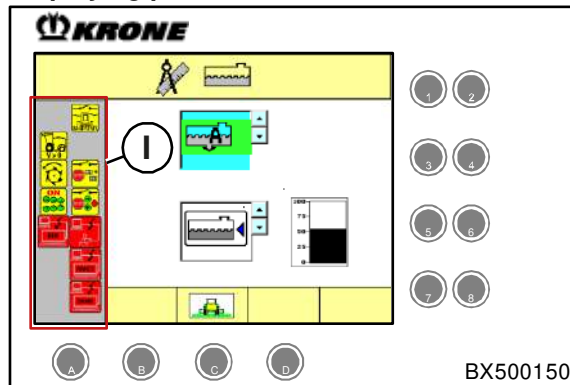








Fig. 161

The faults listed below may appear in menu field (I):

	Error CAN* to CUC (CUC= Control Unit Console)
	Error CAN* to DIOM
	Error CAN* to multi-function lever
	Error CAN* to KMC2 (KMC = KRONE Machine Controller)
	Error CAN* to KMC3 (KMC = KRONE Machine Controller)
	Error CAN* to metal detection

\*) CAN = Controller Area Network

Setting internal silage additives unit

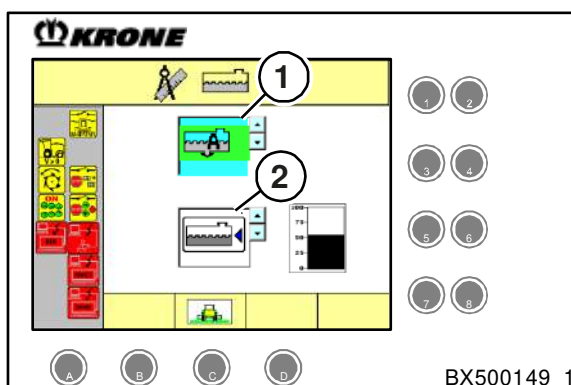

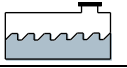

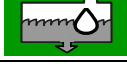
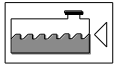
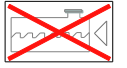




Fig. 162

Setting options for internal silage additives unit (1)


Icon	Designation
	Automatic mode active
	Silage additives unit deactivated
	Continuous operation active
	Crop flow cleaning headland active

Activating / deactivating the filling level indicator of the silage additives unit (optional) (2)


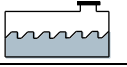

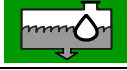
Icon	Designation
	Filling level indicator for silage fodder addition activated
	Filling level indicator for silage fodder addition deactivated



- Use the incremental encoder to select the silage additives unit setting. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- Use the incremental encoder to set the required setting.
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.

### Setting external silage additives unit

- To access the settings of the external silage additives unit, press the  key.


### Setting options for the external silage additives unit

Icon	Designation
	Automatic mode active
	External silage additives unit deactivated
	Continuous operation active
	Crop flow cleaning headland active

- Use the incremental encoder to select the silage additives unit setting. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- Use the incremental encoder to set the required setting.
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.

## 8.2.5.7 Setting the corn conditioner distance

If one of the modes maize header or XDisc is set, the info area settings (V) in the display shows

the  icon and the current actual value of the corn conditioner distance.

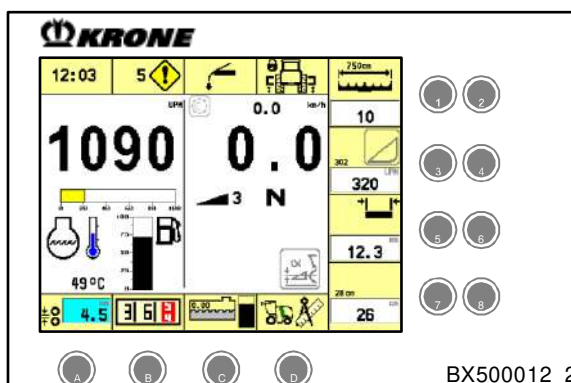


Fig. 163

Prerequisites:

– The corn conditioner has been calibrated prior to the setting, see page 290.

- You can use the incremental encoder to choose the corn conditioner setting. The selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to set the distance.

The currently set target distance is approached automatically.

- Press the incremental encoder to accept the setting and to exit the selection box.

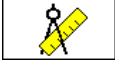
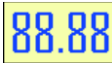

















- To exit the settings mask, press the  key or the  key on the incremental encoder.


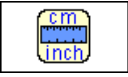







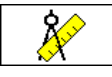







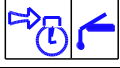

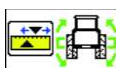






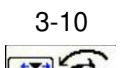

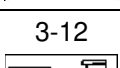
8.3
















Menu level



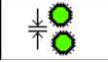







Short Overview

Main menu	Menu	Menu	Designation
<p>1</p> 			Settings
	<p>1-1</p> 		Parameter
		<p>1-1-1</p> 	Intake
		<p>1-1-2</p> 	Header
		<p>1-1-3</p> 	Spout
		<p>1-1-4</p> 	Grinding Device
		<p>1-1-5</p> 	Counterblade
		<p>1-1-8</p> 	EasyFlow
		<p>1-1-9</p> 	EasyCollect
		<p>1-1-10</p> 	XDisc
		<p>1-1-11</p> 	Metal Detection
		<p>1-1-12</p> 	Diesel Engine
		<p>1-1-13</p> 	Traction Drive
		<p>1-1-14</p> 	Automatic Steering System
		<p>1-1-15</p> 	Work
		<p>1-1-17</p> 	Control Lever
		<p>1-1-20</p> 	AutoScan
		<p>1-1-21</p> 	RockProtect (option)
		<p>1-1-25</p> 	Moisture Measurement

Main menu	Menu	Menu	Designation
	1-2 		Setting Machine
	1-3 		Units
	1-4 		Diesel Engine PowerSplit
	1-5 		Language
	1-7 		Display
	1-7-1 		Setting Background Colour
	1-7-2 		Beeper
	1-7-4 		Direction of Rotation
	1-7-5 		Configuring Status Line
			Settings
	1-8 		Date/Time
	1-9 		Owner's Address
	1-10 		Memory Keys
2 			Counters

Main menu	Menu	Menu	Designation
3 			Maintenance
	3-1 		Central Lubrication
	3-2 		Grinding/Counterblade
	3-3 		Calibrating Pendulum Frame
	3-4 		Calibrating Automatic Steering System
	3-5 		Calibrating Spout
	3-6 		Calibrating Corn Conditioner
	3-7 		Calibrating Intake/Header
	3-8 		Calibrating Travel Path
	3-9 		RockProtect (optional)
	3-10 		Calibrating Main Coupling
	3-11 		Maintenance Additional Axle (optional)
	3-12 		Automatic Calibration Lifting Unit

Main menu	Menu	Menu	Designation
4 			Service
	4-1 		Diagnostics
		4-1-1 	Intake
		4-1-2 	Header
		4-1-3 	CAN Bus
		4-1-4 	Spout
		4-1-5 	Lifting Unit
		4-1-6 	Traction Drive
		4-1-7 	Metal Detection
		4-1-8 	Diesel Engine
		4-1-9 	Automatic Steering System (option)
		4-1-10 	AutoScan Maturity Level Detection (option)
		4-1-11 	Electronics
		4-1-12 	Work
		4-1-13 	Grinding

Main menu	Menu	Menu	Designation
			Service
	4-1-14		Counterblade
	4-1-15		Corn Conditioner
	4-1-16		Control Lever
	4-1-17		Control Unit Console
	4-1-18		Manual Operation
	4-1-19		Terminal
	4-1-20		RockProtect (option)
	4-1-21		Moisture Measurement (option)
5 			Working Screen

## 8.3.1 Access a menu level

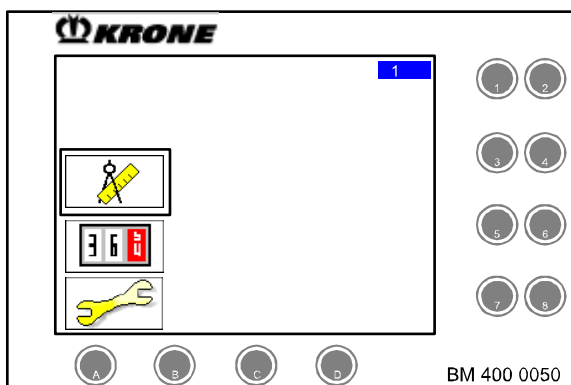









Fig. 164

- Press the  key beside the incremental encoder to call up the menu level. The display indicates the menu level.

The menu level is divided into five main menus:

Icon	Designation
	Main Menu 1 "Settings"
	Main menu 2 "Counters"
	Main Menu 3 "Maintenance"
	Main menu 4 "Service"
	Main menu 5 "Working screen"

- Press the  key beside the incremental encoder to exit the menu level called up.

**If there is no driver activity in the menu level for approx. 20 seconds, the menu level closes automatically and returns to the working screen.**

8.4 Main menu 1 Settings

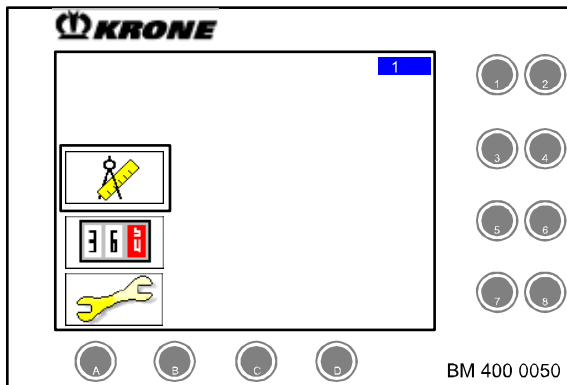


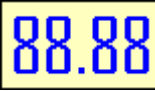




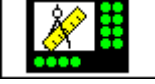



Fig. 165

The main menu level is active.

- You can use the incremental encoder to choose main menu 1.
- Press the incremental encoder.

The display shows menu level 1 Settings.

The main menu, Settings, is divided into the following menus:

Icon	Designation
	Menu 1-1 Parameters
	Menu 1-2 Machine setting
	Menu 1-3 Units
	Menu 1-4 Diesel engine PowerSplit (option)
	Menu 1-5 Language
	Menu 1-7 Display
	Menu 1-8 Date/time
	Menu 1-9 Owner's address
	Menu 1-10 Memory keys

## 8.4.1 Menu 1-1 Parameters

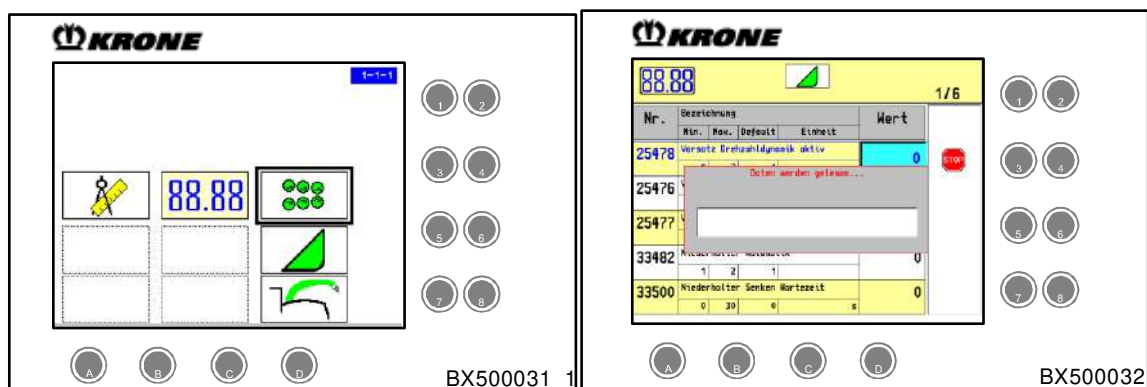


Fig. 166

Main menu 1 Settings is opened.

- You can use the incremental encoder to choose menu 1-1 Parameters.
- Press the incremental encoder.


















The display indicates the menu level Parameters.

- You can use the incremental encoder to choose the desired menu.
- Press the incremental encoder.

The display shows the parameters of the selected menu.



The menu is divided into the following sub-menus:

Icon	Designation
	Menu 1-1-1 Feed Drive
	Menu 1-1-2 Front attachment
	Menu 1-1-3 Upper Discharge Chute
	Menu 1-1-4 Grinding device
	Menu 1-1-5 Counterblade
	Menu 1-1-8 EasyFlow
	Menu 1-1-9 EasyCollect
	Menu 1-1-10 XDisc
	Menu 1-1-11 Metal Detection
	Menu 1-1-12 Diesel Engine
	Menu 1-1-13 Travelling gear
	Menu 1-1-14 Automatic steering system
	Menu 1-1-15 Work
	Menu 1-1-17 Multi-function lever
	Menu 1-1-20 Autoscan
	Menu 1-1-21 RockProtect (option)
	Menu 1-1-25 Humidity measurement

## 8.4.1.1 Entering parameters

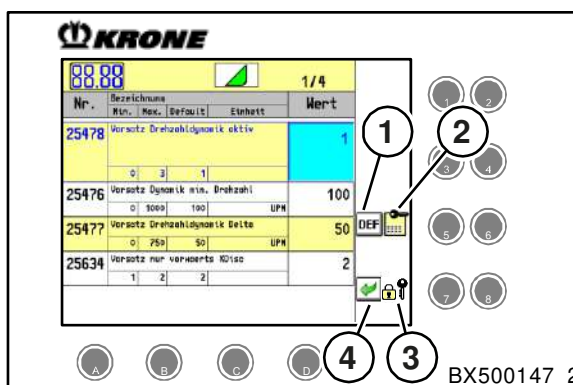






Fig. 167

Item	Explanation
1	Press the  key to reset all parameters of the selected menu to the basic setting.
2	Press the  key to call up the technician level (password-protected).
3	Press the  key to call up the control panel for optional components, this can only be done by KRONE customer service.
4	Press the  key to go back to the previous mask.

- You can use the incremental encoder to select the required parameter, the selection box is highlighted in colour.



### NOTE

Only input fields highlighted in light blue can be changed. If a parameter value of 99999 and grey font are displayed, the associated control system is not in operation.

- Press the incremental encoder to jump to the selection box.

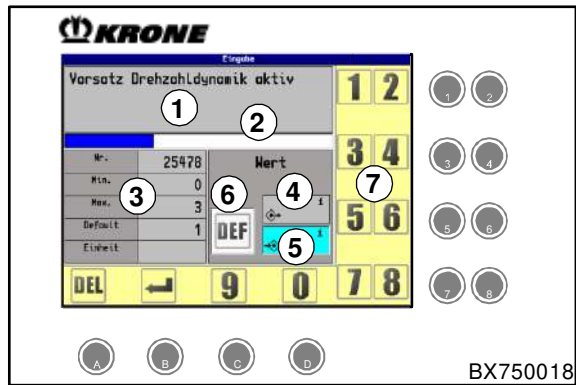


Fig. 168

The mask for parameter entry appears with the following displays:

Item	Explanation
1	Shows the designation of the selected parameter.
2	Visual display of the possible range of the parameter value.
3	Parameter data: (from top to bottom): Parameter number, min. value, max. value, basic setting value, unit.
4	Actual value of the parameter.
5	Setpoint value of the parameter
6	Reset the parameter to the basic setting

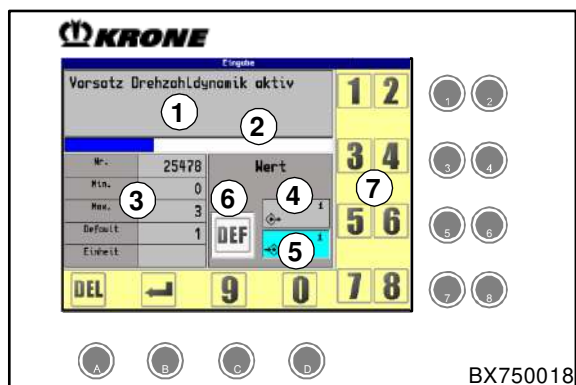





Fig. 169

- Enter the new setpoint value in the input field (5) using the incremental encoder or keyboard (7).
- Press the  key to delete the setpoint value.
- Press the  key to accept the modified value and/or to exit the parameter input mask.
- Press the  key beside the incremental encoder to jump back one menu level.



### **NOTE**

For additional information on the individual parameters, refer to the see page 760.

## 8.4.2 Menu 1-2 Machine setting



### **NOTE**

Menu 1-2 "Machine setting" can be selected from the working screen and is described in the chapter "General machine settings".

8.4.3 Menu 1-3 Units

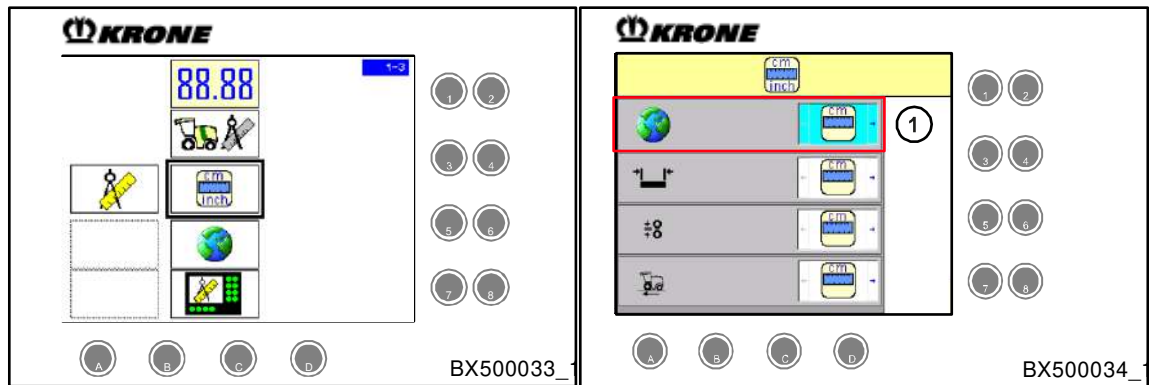




Fig. 170

Main menu 1 Settings is opened.

- Use the incremental encoder to select menu 1-3 Units.
- Press the incremental encoder.

The display shows 4 selection windows in which the measuring unit for various measured values can be converted.

The metric or imperial unit system can be selected in the menu:

Icon	Designation
	Metric unit system
	Imperial unit system

Global settings in the selection window (1)

Measured value	Unit	
	Metric	Imperial
Area	ha	acres
route	km	miles
Fuel consumption	l	gal
Height of lifting unit	cm	inch
Working width	cm	inch

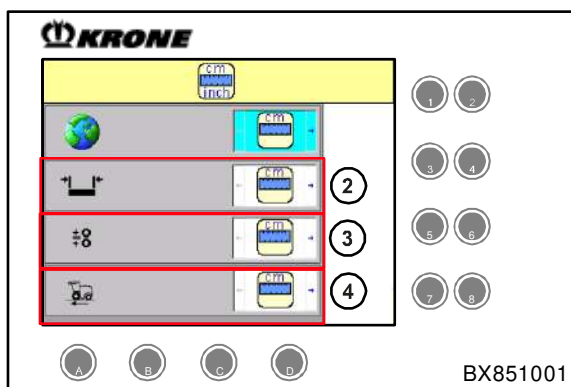




Fig. 171

Item	Explanation
2	Setting the chop length unit
3	Setting the unit for the gap distance from the corn conditioner
4	Setting the unit for the speed display

### Carrying out the setting

- You can use the incremental encoder to select the required selection window, the selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to select the required setting.
- Press the incremental encoder to accept the setting and to exit the selection box.
- To exit the settings mask, press the  key or the  key on the incremental encoder.

### 8.4.4 Menu 1-4 PowerSplit (Option)

The PowerSplit is used to increase efficiency. The continuous engine output is adjusted to the operating conditions thereby helping to optimise fuel consumption.

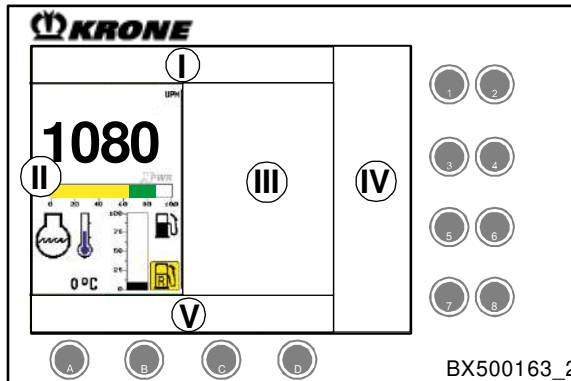





Fig. 172

The current PowerSplit mode is displayed in area (II)

Icon	Designation
	Diesel engine in max. power operation, in challenging operating conditions.
	Diesel engine with reduced output, in favourable operating conditions.
	Diesel engine with large reserves of torque at full output (only BiG X 700/770 Europe). Used during heavily fluctuating and extreme operating conditions.



**NOTE**

For additional information on the individual parameters, refer to the see page 760.

Setting the PowerSplit

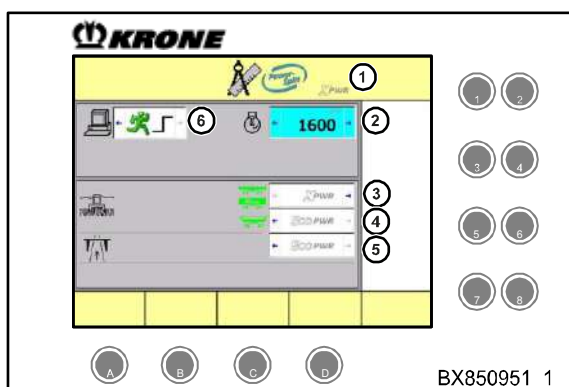


Fig. 173




The main menu 1 Settings has been opened.

- You can use the incremental encoder to select menu 1-4 PowerSplit.
- Press the incremental encoder.

The display shows the "PowerSplit" menu level.

Item	Designation
1	Current power mode
2	Diesel engine speed at which it the engine should automatically switch from ECOPower to XPower.
3	Initial setting for XDisc and maize mode
4	Initial setting for grass mode
5	Initial setting for road mode
6	Activate/deactivate setting for automatic switch between ECOPower and XPower and the switching process.



Status displays

Icon	Explanation
	Automatic switching is active and takes place abruptly.
	Automatic switching is active and takes place continuously.
	Automatic switching is inactive



**Automatic switch between ECO Power and X Power**

Automatic switching only takes place from Eco-Power to X-Power and vice versa. Switching to Tri-Power must always be performed manually. The type of switching from Eco-Power to X-Power can be performed using two levels:

Icon	Designation
	Switching is performed abruptly at a set rotational speed
	Switching is continuous and starts approx. 100 rpm before the set rotational speed

Automatic is only active if the setpoint diesel engine speed is above 1900 rpm. If the diesel engine speed briefly falls below the setpoint and Eco-Power mode is active, then the automatic mode is reactivated automatically.

X-Power always switches back to ECO Power mode abruptly as soon as the engine is relieved to the necessary extent.

If Tri-Power mode was manually selected, the automatic mode is only ready to operate and no longer intervenes.

### Manual switching between ECO Power, X Power and TRI Power

TRI Power mode cannot be pre-set and can only be accessed if you switch modes manually. The manual switching from X Power - TRI Power -ECO Power takes place in sequence and is only possible if the diesel engine is not overloaded.



Fig. 174

The characteristic curves are selected by means of the switch (1) on the multi-function lever. Each time the switch is actuated, the next available mode is activated.

- Machine is in X-Power mode:
  - ECO-Power > TRI-Power > X-Power.
- The machine is in ECO-Power mode:
  - X-Power > TRI-Power > ECO-Power.

The current operating mode is displayed in the working screen.

8.4.5 Menu 1-5 "Language"

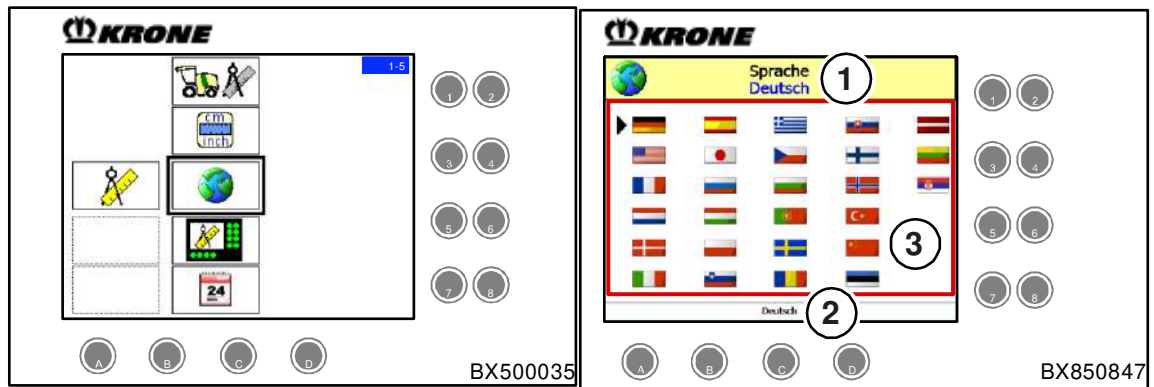


Fig. 175

Main menu 1 "Settings" is opened.

- You can use the incremental encoder to select menu 1-5 "Language".
- Press the incremental encoder.

The display shows the current set language (1), the selected language (2) and the selection of all available languages (3).

Item	Explanation
1	Currently set language
2	Currently selected language (identified by a small triangle)
3	Selection of all available languages

**Carrying out the setting**

- You can use the incremental encoder to select the required selection window, the selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to select the required setting.
- Press the incremental encoder to accept the setting and to exit the selection box.



**NOTE**  
The selected language will be active after the machine is restarted (ignition off and on again).

8.4.6 Menu 1-7 "Display"

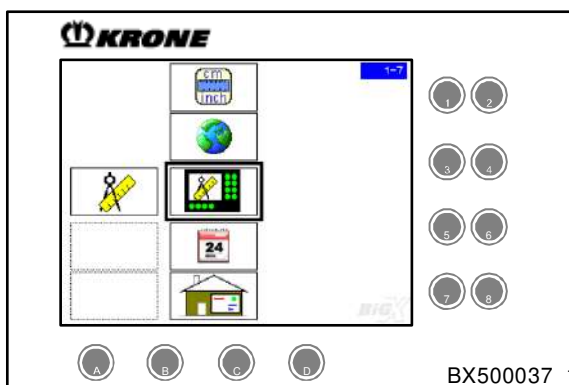






Fig. 176

Main menu 1 "Settings" is opened.

- You can use the incremental encoder to select menu 1-7 "Display".
- Press the incremental encoder.

The display shows menu level 1-7 "Display".

The "Display" menu is divided into the following menus:

Icon	Designation
	Menu 1-7-1 "Day/night mode"
	Menu 1-7-2 "Beeper"
	Menu 1-7-4 "Direction of Rotation"
	Menu 1-7-5 "Setting the fields in the working screen"

8.4.7 Menu 1-7-1 "Day/night mode"

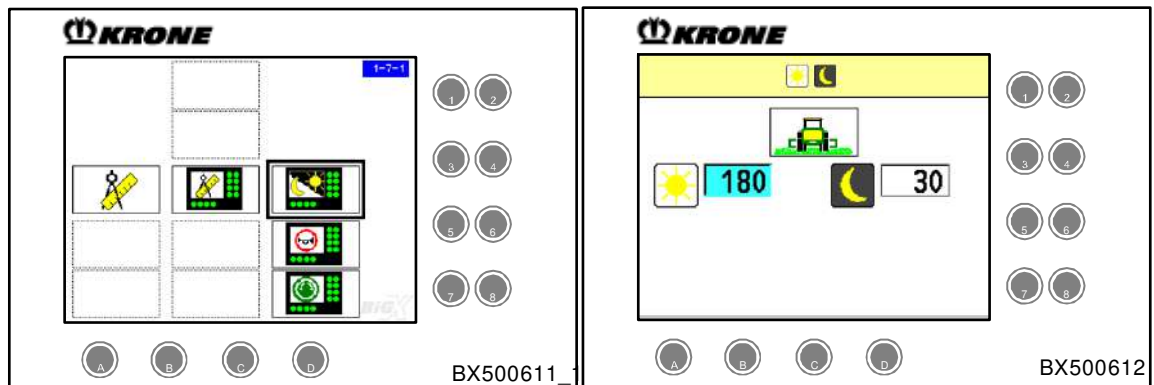


Fig. 177

In menu 1-7-1 "Day/night mode", you can set the brightness of the display.

When driving at night, the display should be dimmed so that the driver is not dazzled.

Menu 1-7 "Display" is active.

- You can use the incremental encoder to select menu 1-7-1 "Day/night mode".
- Press the incremental encoder.

The display shows the settings for day and night.



= Day design



= Night design



The value after the icons indicates the set brightness value.

The higher the value, the brighter the display.

**Carrying out the setting**

- You can use the incremental encoder to select the required selection window, the selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to select the required setting.
- Press the incremental encoder to accept the setting and to exit the selection box.

## 8.4.8 Menu 1-7-2 Beeper

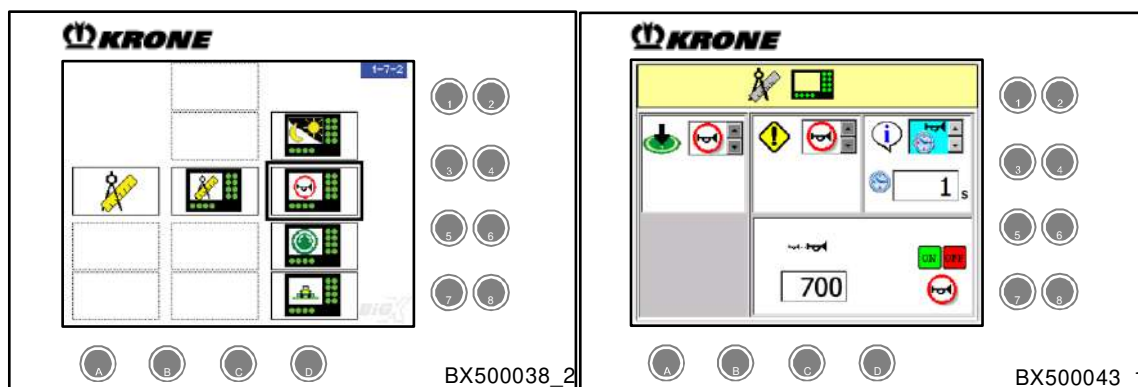


Fig. 178

In this menu, you can set the signal tone (beeper) for the error messages, information messages and for pressing a key.

Menu 1-7 "Display" is active.

- You can use the incremental encoder to select menu 1-7-2 "Beeper".
- Press the incremental encoder.

The display indicates the beeper settings.

Icon	Designation
	Setting the signal tone when a key is pressed.
	Setting the signal tone for error messages.
	Setting the signal tone for information messages.

### Possible settings

Icon	Explanation
	The beeper is inactive.
	The beeper is active.
	The beeper is active, with reduced volume.
	The duration of the signal tone is limited and is specified in seconds.
	Setting the volume
	To test the beeper, you can switch it on using the  key and switch it off using the  key.

### **Carrying out the setting**

- You can use the incremental encoder to select the required selection window, the selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to select the required setting.
- Press the incremental encoder to accept the setting and to exit the selection box.

## 8.4.9 Menu 1-7-4 Direction of Rotation

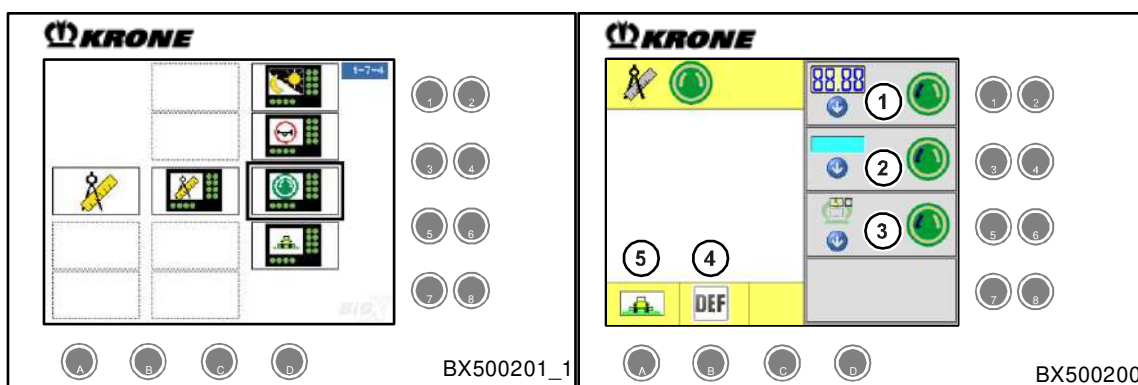


Fig. 179

In this menu, the direction of rotation of the incremental encoder for scrolling purposes can be changed. The incremental encoder is set at the factory so that it is rotated anticlockwise

to scroll down and clockwise to scroll up (recognisable by the blue arrow).

Menu 1-7 Display is active.

- You can use the incremental encoder to select menu 1-7-4 Direction of rotation.
- Press the incremental encoder.

The display shows menu 1-7-4.

For the following displays, the direction of rotation of the incremental encoder can be changed:

Icon	Meaning
	"Scrolling down" in the parameter list
	Press the key  direction of rotation anticlockwise.
	Press the key  direction of rotation clockwise
	"Reduce values" in input fields
	Press the key  direction of rotation clockwise
	Press the key  direction of rotation clockwise
	"Scrolling down" in menus
	Press the key  direction of rotation clockwise
	Press the key  direction of rotation clockwise

- Press the key under to call up the working screen.
- Press the key under to apply the basic setting values.



8.4.10 Menu 1-7-5 Configure status line

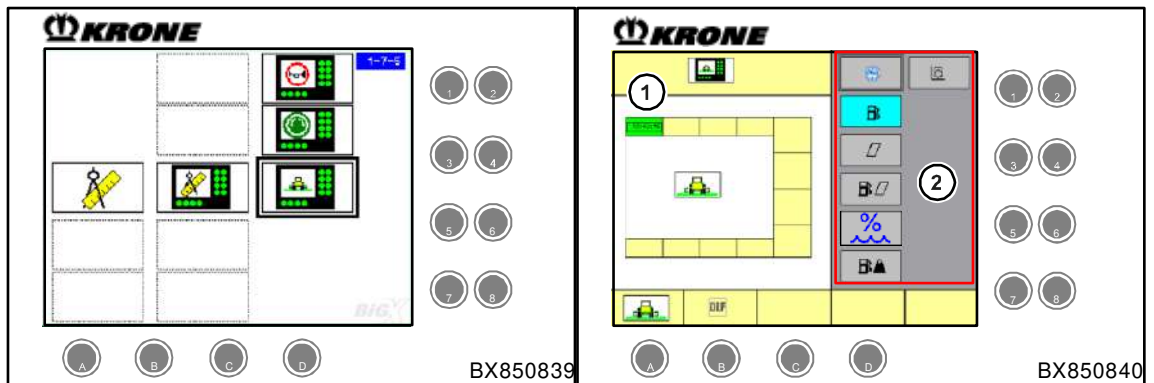


Fig. 180






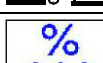

The first field (1) of the status display for the working screens "Road travel / Field mode" can be adjusted individually in this menu.

Menu 1-7 Display is active.




- You can use the incremental encoder to select menu 1-7-5 Configure status line.
- Press the incremental encoder.

The selection options of the displays (2) for the first field (1) of the status line are shown.

**Possible displays (2)**

Icon	Explanation
	Current time/date
	Current fuel consumption
	Chopping drum speed
	Acreage
	Current fuel consumption with reference to the surface
	Moisture value of the crop measured by the NIR sensor (option).
	Current fuel consumption with reference to the crop yield. Only possible in conjunction with CropControl yield recording (option).

**To change the display for the status line:**

- You can use the incremental encoder to select the desired display (the display is highlighted in colour)
- Press the incremental encoder to accept the selected display.
- Press the key  under  to call up the working screen.
- Press the key  to reset the display to the default setting (time).

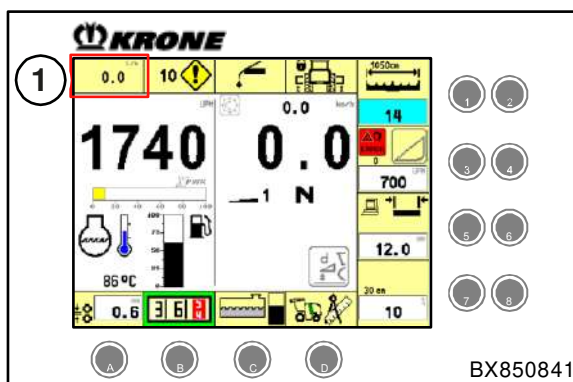


Fig. 181

The newly selected display (1) appears in the working screens "Road mode / Field mode".

#### 8.4.10.1 NIR sensor for moisture measurement (option)

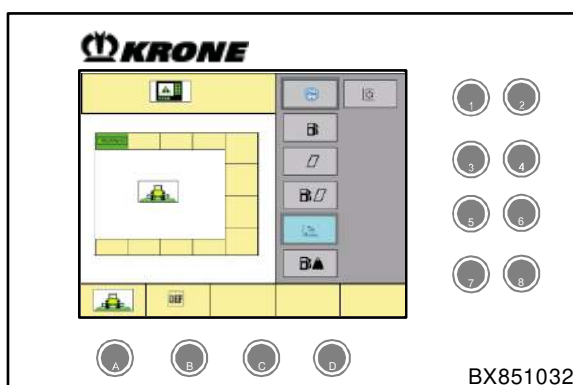


Fig. 182

The NIR sensor determines the moisture content of the crop, which can then be used to determine the DS content. The data can be assigned to the harvested area in the customer counter. The NIR moisture sensor is only approved for use in grass and maize.

- Before working on stony ground, it may be necessary to remove the NIR sensor, see page 479.
- If the NIR sensor is removed, it must be deactivated. To do this, set the parameter 34019 "Moisture measurement type" to the value "0" (no sensor) in the menu 1-1-25 "Moisture measurement".



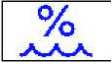
**NOTE**

The glass cover of the NIR sensor can be damaged by stones in the chopping crops. In the event of damage due to stone chipping, all entitlements under the warranty are invalidated!



**INFO**

To obtain more precise measurement values, carry out basic calibration before the start of the season. In this case, the machine is calibrated once for the crops maize and grass. Please contact your dealer at least 5 working days before you commence operation to arrange an appointment.

- Menu 1-7-5 "Configure status line" is active.
- You can use the incremental encoder to select the display , the input field is highlighted in colour.
- Press the incremental encoder to confirm your selection.

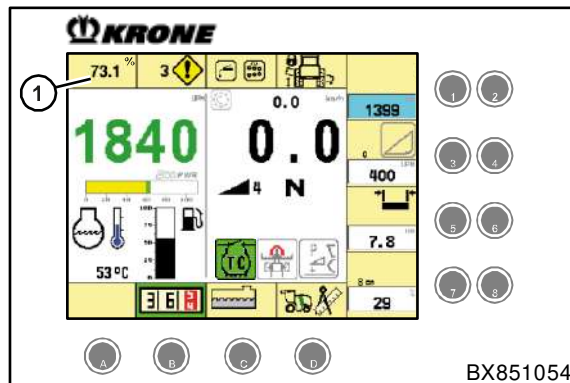


Fig. 183

If the NIR sensor is active, the working screen displays the current moisture value (1) of the crop.

To ensure that the NIR sensor provides correct values, you must set the type of crop.

- Select menu 1-1-25 "Moisture measurement".
- Set the parameter 30044 "Type of crop". Value 16 = Maize, Value 32 = Grass, Value 0 = User-defined.

The NIR sensor is active if the following conditions are fulfilled:

- After being installed for the first time, the NIR sensor is released by a technician.
- The NIR sensor is activated. To do this, set the parameter 34019 "Moisture measurement type" to the value "2" (NIR sensor) in the menu 1-1-25 "Moisture measurement".
- The machine is in the XPower operating mode (optimum measurement results are only obtained in this mode).
- The spout should ideally be fully raised to optimise the function of the NIR sensor.
- The release switch maintenance is switched off.
- The main coupling is switched on.
- The feed drive/front attachment is switched on.
- The lifting unit is in working position.
- The setpoint engine rotational speed is greater than 1500 rpm (fixed value, cannot be changed).
- The machine load is greater than 60%.

Automatic NIR sensor calibration

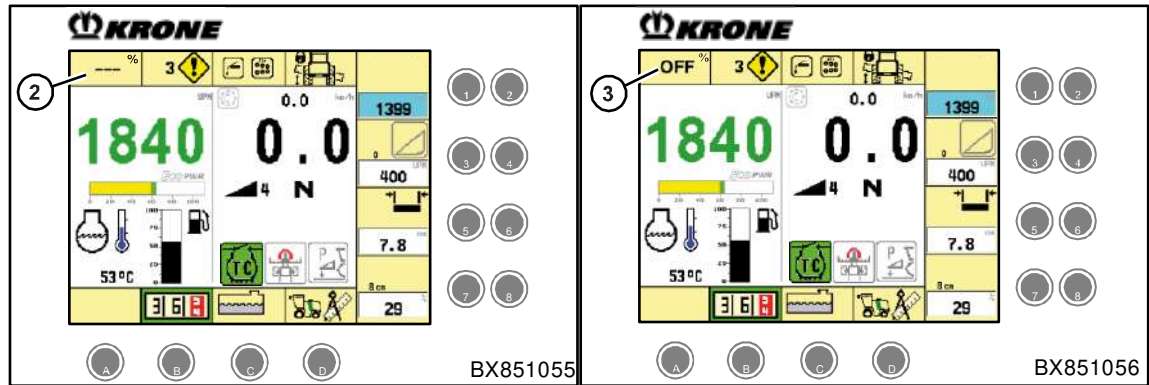


Fig. 184

The NIR sensor performs automatic calibration if the following conditions are fulfilled:

- At least 10 hours of sensor operation have elapsed since the last calibration of the NIR sensor.
- The maintenance release switch is switched on or the field mode release switch is switched off, see page 134.
- The setpoint engine rotational speed is 800 rpm or higher (fixed value, cannot be changed).

The calibration is cancelled once the "NIR sensor active" condition is met again.

Possible status displays

Item	Icon	Explanation
2	---	An impermissible measured value or a measured value outside the measuring range was determined.
3	OFF	The NIR sensor is not active, or one/several conditions are not fulfilled.

## 8.4.11

## Menu 1-8 Date/time

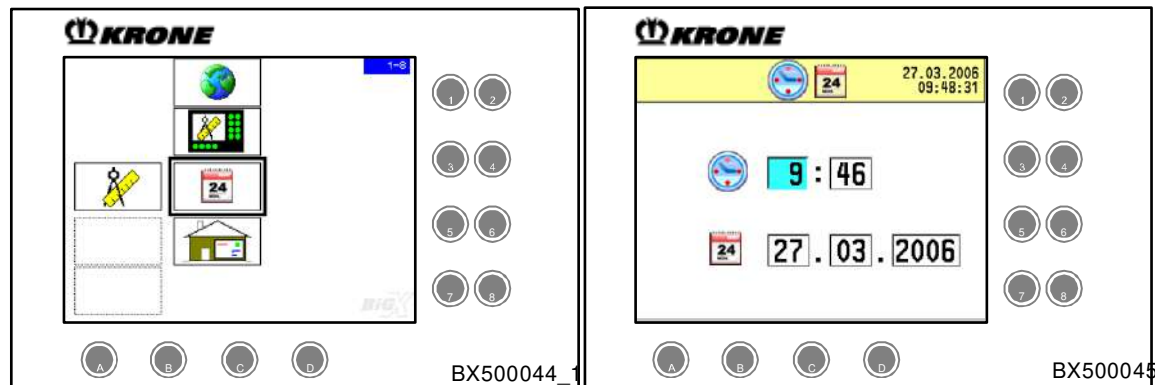


Fig. 185

Main menu 1 Settings is opened.

- You can use the incremental encoder to select menu 1-8 "Date/time".
- Press the incremental encoder.

The display shows the date and the time.

**Carrying out the setting**

- You can use the incremental encoder to select the required selection window, the selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to select the required setting.
- Press the incremental encoder to accept the setting and to exit the selection box.

8.4.12 Menu 1-9 Owner's address

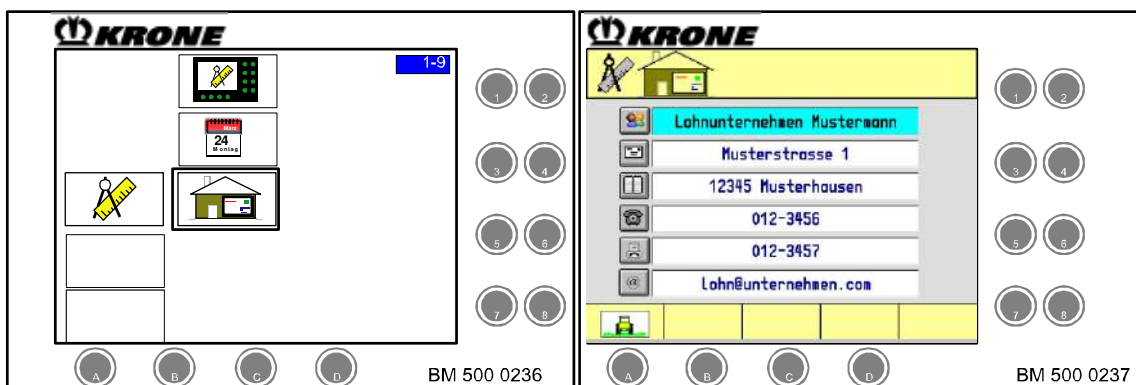


Fig. 186

Main menu 1 Settings is opened.

- You can use the incremental encoder to select menu 1-9 Owner's address.
- Press the incremental encoder.

**NOTE**

A maximum of 30 characters per input field can be entered. The information is used for every printout on the CAN printer, see page 422. If a row contains no characters (and no spaces), then the row is omitted from the printout.

**Carrying out the setting**

- You can use the incremental encoder to select the required selection window, the selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to select the required setting.
- Press the incremental encoder to accept the setting and to exit the selection box.

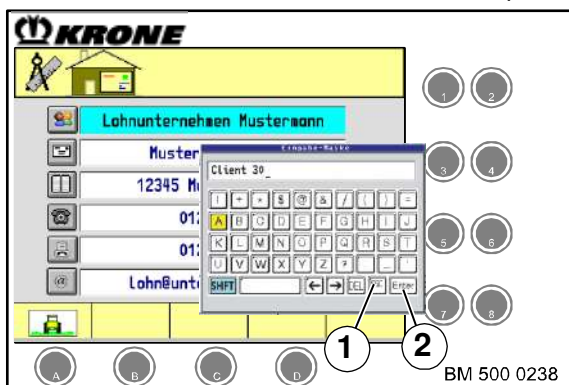


Fig. 187

**NOTE**

Select and confirm the "ESC" symbol (1) to exit the input field without saving the entries or changes. By selecting and confirming the "Enter" symbol (2), the entry or change is accepted and saved

- Press the key under to call up the working screen

## 8.4.13 Menu 1-10 Memory keys

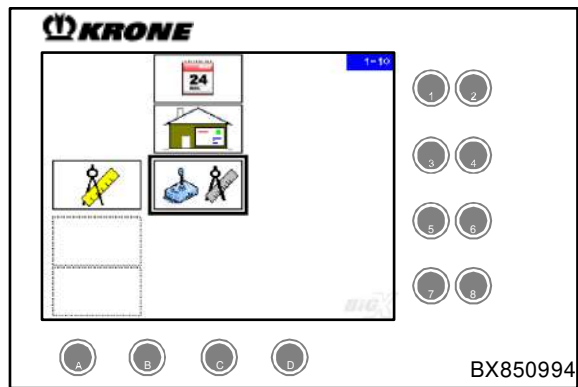


Fig. 188

Main menu 1 Settings is opened.

- You can use the incremental encoder to select menu 1-10 Memory keys.
- Press the incremental encoder.

Further procedure, see page 183.

8.5 Main menu 2 Counters

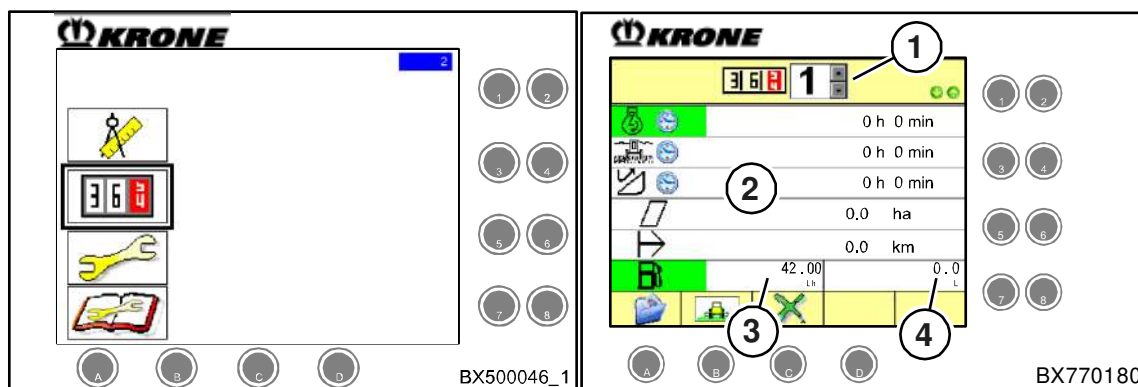









Fig. 189

The main menu level is active.

- You can use the incremental encoder to select the main menu 2 Counters.
- Press the incremental encoder.

The display shows the "Counter" menu.

Item	Icon	Designation	Explanation
Counter levels			
1	$\Sigma$	Total counters	The total counter counts the different types of machine data and cannot be deleted.
	1	Day counter 1	The day counters count the different types of machine data and can be deleted. They can be used individually, e.g., as season counters.
	2	Day counter 2	
	3	Day counter 3	
Counter (active counters are highlighted colour)			
2		operating hour counter (h)	Active if the diesel engine is running.
		drum hours counter (h)	Active if the chopping drum is switched on.
		working hours counter (h)	Active if the front attachment is switched on.
		surface counter (ha)	Active if the lifting unit has reached the working position.
		Mileometer	Active during road and field modes
3		Fuel consumption measurement (l) (optional)	Measures fuel consumption, can be deleted using the key  .
4	0.0 	Current average consumption (l/h)	



### 8.5.1 Deleting the day counter

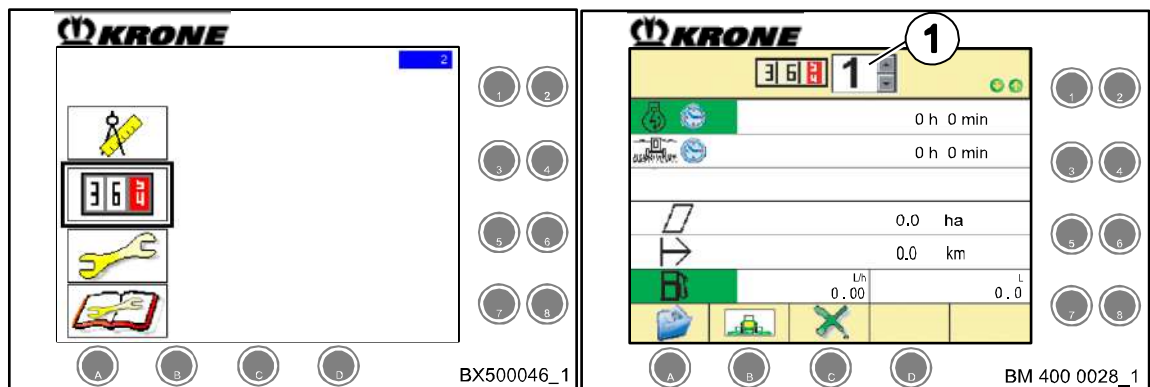











Fig. 190

The day counters 1 to 3 can be deleted in this menu.



The main menu level is active.

- You can use the incremental encoder to select the main menu 2 Counters.
- Press the incremental encoder.

The display shows various counters.

- Press the key  for  or  for  to choose the day counter (1) to be deleted.
- Press the key  under  to delete all counters for the selected day counter.
- Press the  key beside the incremental encoder to go back one menu level.
- Press the key  under  to call up the working screen.

### 8.5.2 Switching to Customer DataCounters

- Press the  key below the  softkey to open the "Customer data counter" menu.

**For additional information, see page 207.**

8.6 Main Menu 3 Maintenance

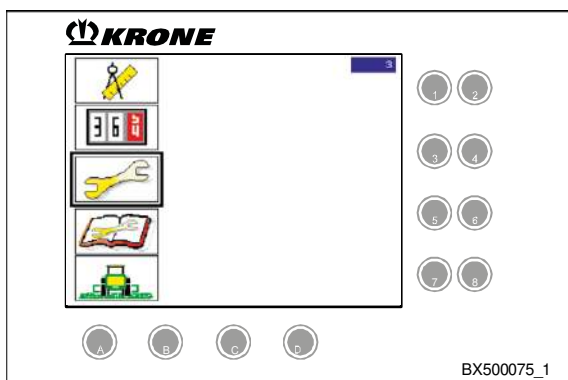


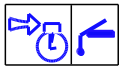

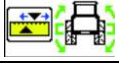









Fig. 191

The main menu level is active.

- Select main menu 3 with the incremental encoder.
- Press incremental encoder.

The display shows menu level 3 Maintenance.

The Maintenance main menu is divided into the following menus:

Icon	Designation
	Menu 3-1 Central Lubrication/Cleaning
	Menu 3-2 Grinding/Counterblade
	Menu 3-3 Calibration Pendulum Frame
	Menu 3-4 Calibration Autopilot
	Menu 3-5 Calibration Spout
	Menu 3-6 Calibration Corn Conditioner
	Menu 3-7 Calibration Intake/Header
	Menu 3-8 Calibration Travel Path
	Menu 3-9 RockProtect (Optional)
	Menu 3-10 Calibration Main Coupling
	Menu 3-11 Maintenance Additional Axle (Optional)
	Menu 3-12 Automatic Calibration Lifting Unit



**NOTICE**

If the maintenance release switch is actuated in the working screen, the "Maintenance" main menu appears automatically.

8.6.1 Unfulfilled switching-on conditions and CAN bus disturbances

Depending on the selected diagnostics menu, non-fulfilled switching-on conditions and errors are displayed in the terminal. There is a difference between:

- non-fulfilled switching-on conditions (yellow)
- CANBUS errors (red)

Overview of non-fulfilled switching-on conditions

Symbol	Description	Symbol	Description
	Diesel engine speed is not at 1950 rpm		Lifting unit is too low / is not low enough
	Diesel engine has not been started		Spout not parked
	Diesel engine not off		Spout not up
	Idle speed of diesel engine 1100 rpm is not reached		Intake OFF / not OFF
	Vehicle speed incorrect		Intake ON / not ON
	Switch the "autopilot" release switch on or off		Cutting drum running / not running
	Switch the "intake/header" release switch on or off		Cutting drum stopped / not stopped
	Switch the "traction drive" release switch on or off		Pendulum frame is not horizontal
	Switch the "road/field" release switch on or off		Grinding flap closed
	Switch the "parking brake" release switch on or off		Grinding flap open
	Seat switch (no one on the driver's seat)		Header not folded out
	"Quick stop console" switch on or off		Header not folded in
	"Quick stop manual operation" switch on or off		Header off/not off
	Open or close door		Header on/not on
	Switch the "maintenance" release switch on or off		Grass mode is not set
	Main coupling on/off		Maize mode is not set
	Lifting unit too high/not high enough		XDisc mode is not set

Table 2

Overview of possible CANBUS errors














Symbol	Description	Symbol	Description
	Error CAN to ADM 1/MFR		Error CAN to control lever
	Error CAN to ADM 2 (only double engine)		Error CAN to KMC2
	Error CAN to autopilot		Error CAN to KMC3
	Error CAN to CUC		Error CAN to metal detection
	Error CAN to DIOM		Error CAN to maturity level detection
	Error CAN to EMR		Error CAN to DRC
	Error CAN to manual operation		

Table 3

The switching-on conditions must be met in order for the diagnostic execution and the errors must be eliminated.

An appropriate remedy must be found otherwise supply voltages are not available, sensors return no values and actuators cannot be switched on.

8.6.2 Menu 3-1 Central lubrication/cleaning

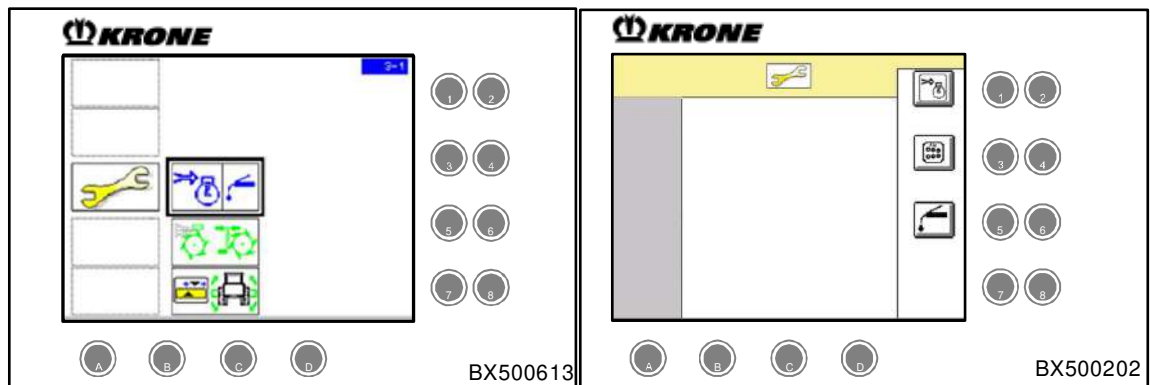


Fig. 192

Main menu 3 Maintenance is active.

- You can use the incremental encoder to select menu 3-1 Central lubrication/cleaning.
- Press the incremental encoder.

The display shows the menu level Central lubrication/cleaning.

- Press the key **1** to trigger the "Engine compartment cleaning" function (option). The engine compartment is cleaned for as long as the function is switched on and compressed air is available.
- Press the key **2** to switch off the "Engine compartment cleaning" function.
- Press the **3** key to trigger the "Intake cleaning". The intake unit is cleaned for as long as the function is switched on and compressed air is available.
- Press the key **4** to switch off the "Intake cleaning" function.
- Press the **5** key to trigger the "Intermediate lubrication" function. Central lubrication is switched on and passes through a complete lubrication cycle.

**Displaying unfulfilled switching-on conditions and disturbances, see page 255.**

8.6.3 Menu 3-2 Grind/Counterblade

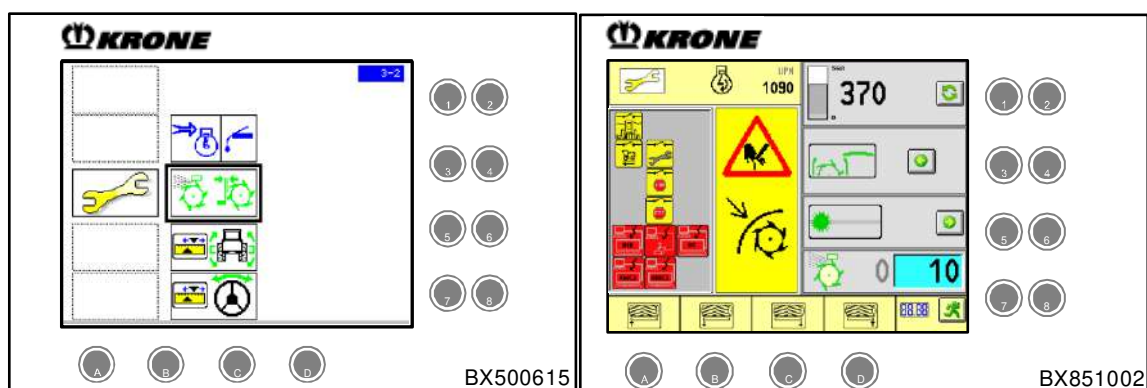


Fig. 193

Main menu 3 Maintenance is active.

- You can use the incremental encoder to select menu 3-2 Grinding/counterblade.
- Press the incremental encoder.

The display shows the menu level Grinding/counterblade.

The display shows warning messages that draw attention to the special hazards associated with grinding the chopping blades.

 **WARNING**

**Risk of injury due to failure to observe warnings on the display!**

Risk of injury due to hazardous components and other residual risks if users or third parties enter or reach into the danger zone because they are unaware of a risk.

- Ensure that everyone who works with or on the machine familiarises themselves with the meaning of the warnings and observes them.

**Displaying unfulfilled switching-on conditions and disturbances, see page 255.**

Status displays for grinding operation

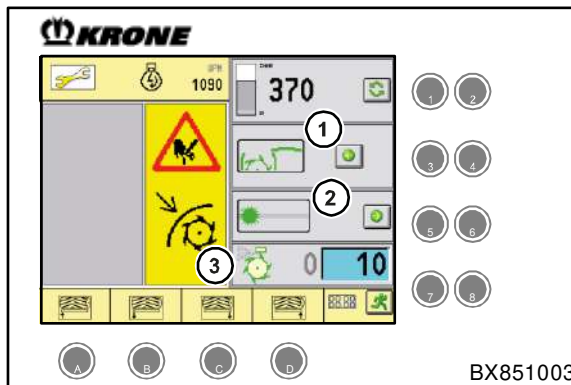



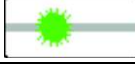

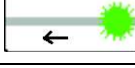
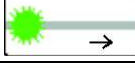
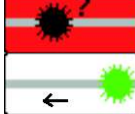


Fig. 194

Status displays for the grinding flap (1)


Icon	Explanation
	Grinding flap is closed.
	Grinding flap is open.

Status of the grinding stone (2)

Icon	Explanation
	Grinding stone is on the left.
	Grinding stone is in centre.
	Grinding stone is on the right
	Grinding stone is moving to the left
	Grinding stone is moving to the right
	Grinding stone position unknown. Both grinding stone sensors are attenuated/sensor is defective - ERROR

\* The display with the arrow appears in different positions that indicate the direction of movement of the grinding stone.

Status of grinding operation (3)

Icon	Explanation
	1st number = current grinding cycle, 2nd number = number of setpoint grinding cycles

One grinding cycle corresponds to a double stroke of the grinding stone (1 x left/1 x right).

## Status of remaining grinding cycles up to grinding stone readjustment

After approx. 560 grinding cycles, the grinding stone must be readjusted or replaced. Once this number is reached, the information message "Readjust grinding stone" is displayed.

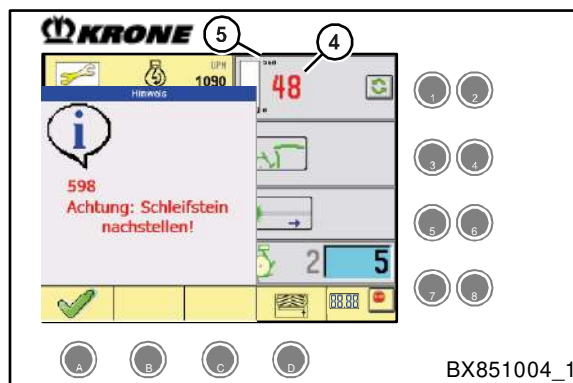



Fig. 195




Item	Explanation
4	Counter "Remaining grinding cycles up to grinding stone readjustment"
5	Maximum number of grinding cycles per grinding stone.

- Press the  key to set the counter (4) "Remaining grinding cycles up to grinding stone readjustment" to the maximum number of grinding cycles.



### NOTE

If the number of remaining grinding cycles falls below 10% of the maximum number of grinding cycles, the display of remaining grinding cycles is highlighted in red. The information message 598 "Readjust grinding stone" appears

- Use the  key under  to hide the message.
- To set the counter (4) "Remaining grinding cycles up to grinding stone readjustment" to the maximum number of grinding cycles, press the  key.



Resetting the question dialogue (6)

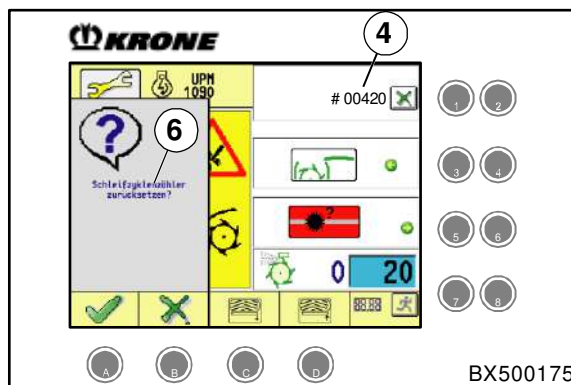







Fig. 196

- Press the  key to open the question dialogue (6) in the display. The display shows the question dialogue "Reset grinding cycle counter?"
- Press the  key under  to reset the total of all grinding cycles to the maximum value.
- Press the  key under  if you do not want to reset the grinding cycle counter.

**NOTE**

Readjust or replace the grinding stone after resetting the error message, see page 686. Then reset the counter to prevent the grinding stone from being arrested.

Status displays of the counterblade motors (data as seen in the direction of travel)

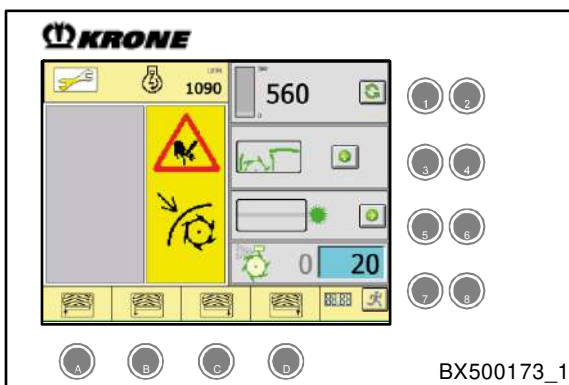














Fig. 197

Status displays when the counterblade is moved using manual operation

Icon	Explanation
	Approach counterblade on the right active.
	Approach counterblade on the right inactive.
	Moving away from counterblade on the right active.
	Moving away from counterblade on the right inactive.
	Counterblade right cable break.
	Counterblade right short circuit.
	Approach counterblade on the left active.
	Approach counterblade on the left inactive.
	Moving away from counterblade on the left active.
	Moving away from counterblade on the left inactive.
	Counterblade left cable break.
	Counterblade left cable break.



**NOTE**

Using the manual operation on the platform, the grind can also be started and the counterblade adjusted.


**Changing the number of grinding cycles**




**Carrying out the setting**

- You can use the incremental encoder to select the required selection window, the selection box is highlighted in colour.
- Press the incremental encoder to jump to the selection box.
- You can use the incremental encoder to select the required setting.
- Press the incremental encoder to accept the setting and to exit the selection box.

**Start/stop grinding operation**

Prerequisites, see page 682.

- Press the  key to start and stop grinding operation.

Icon	Explanation
	Stop grinding operation.
	Start grinding operation.
	Grinding operation is not possible.

8.6.4 Menu 3-3 Calibration of absolute lifting unit height

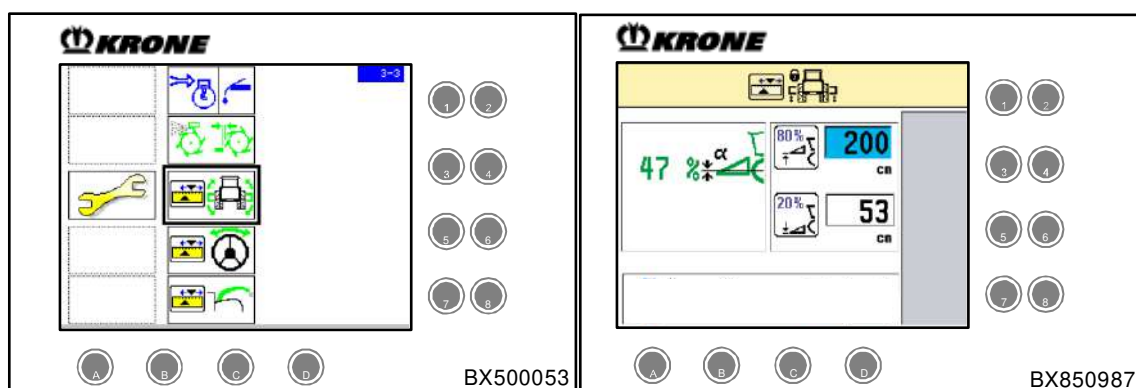





Fig. 198

Main menu 3 Maintenance is active.

- Using the incremental encoder, choose menu 3-3 Calibration of absolute lifting unit height.
- Press the incremental encoder.

The display shows the menu level Calibration of absolute lifting unit height.

Displays on the display:

Icon	Designation
	Displaying the current lifting height in %.
	Display of the current saved absolute height of the lifting unit at 80 %.
	Display of the current saved absolute height of the lifting unit at 20 %

The absolute lifting unit height must be calibrated if

- the "KMC3" control unit was replaced,
- the terminal was replaced,
- the lifting unit control was replaced,
- valves on the valve block "working hydraulics" were replaced,
- sensors (B25, B47, B48, B49, B50, B55, ) were replaced,
- if the front attachment was replaced.

**Displaying unfulfilled switching-on conditions and disturbances, see page 255.**

**⚠ WARNING****Risk of injury due to unexpected movement of parts!**

During the calibration process, there is a risk of injury for persons who stay in the area of lifting gear, front attachment and discharge chute.

- Make certain no one remains in the swivel range or in the range of movement of lifting gear, front attachment and discharge chute during the calibration process.

**8.6.4.1 Calibration of sensors at lifting unit**

**The following manual calibration is preferable to automatic calibration of the lifting unit, see page 302.**

## Prerequisites

- The lifting unit is adjusted.
- The release switch field mode is switched on.
- The release switch traction drive is switched off.
- The front attachment is mounted.
- The pendulum frame is aligned straight ahead.
- The machine is on a level surface.
- The release switch maintenance is switched off.
- The pick-up/maize header/XDisc operating mode is set according to the mounted front attachment.
- The front attachment (maize header folded out) is horizontally aligned on level ground.

### Adjusting the lifting unit

The following switching-on conditions must be satisfied to adjust the lifting unit.

- The diesel engine is at idle speed.
- The release switch field mode is switched off.
- The release switch traction drive is switched off.
- The release switch maintenance is switched off.
- The header has been attached.
- The pendulum frame is horizontal.
- The operating mode is set according to the front attachment.
- All lifting unit sensors are set and calibrated.
- The machine is on a level surface.

### Execution

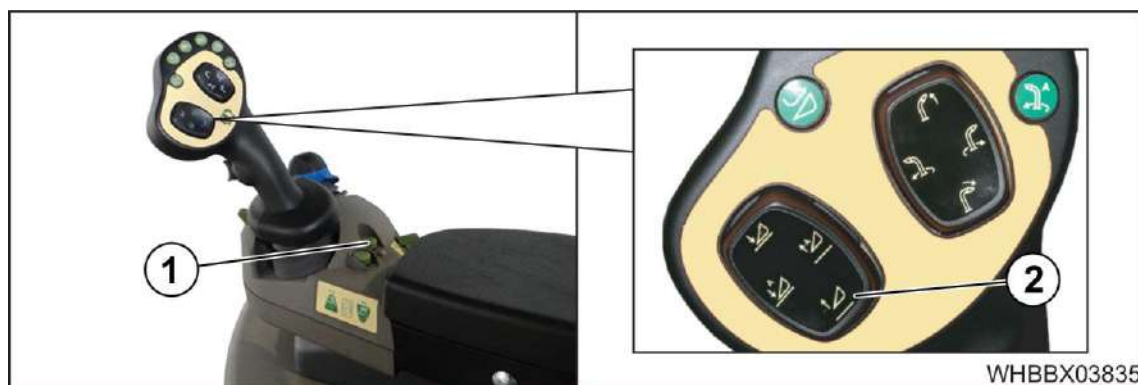


Fig. 199

### Adjusting process 3 "upper height" - calibration of the upper height of the lifting unit

- Press the "Raise lifting unit" key (2) and memory key for "Lifting unit adjusting process" (1) and hold down simultaneously for approx. 7 seconds.
  - ➔ After successful adjustment the message "Lifting unit control adjusting process 3 OK" appears in the status line of the terminal.

### Adjusting process 2 "Front attachment weight" - calibration of lifting unit pressure

- Hold down the "Lower lifting unit" (2) key and lower the lifting unit until the sliding skids of the EasyCollect ground contour are positioned on the ground. The header must not touch the ground.
- Release the key (2).
- Hold down the memory key for "Lifting unit adjusting process (1)" for approx. 7 seconds.
  - After successful adjustment the message "Lifting unit control adjusting process 2 OK" appears in the status line of the terminal.

### NOTE

If the front attachment weight is calibrated at an incorrect lifting unit height, malfunctions may occur during lifting unit control.

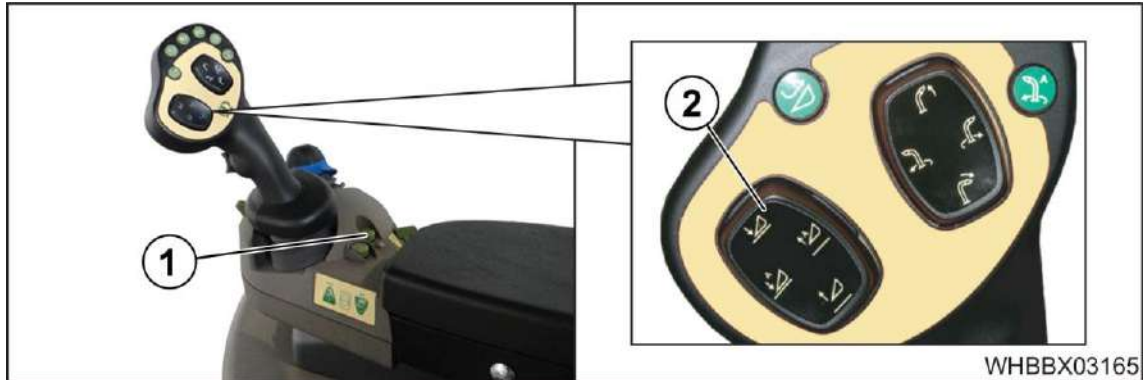

**Adjusting process 1 "lower height" - calibration of the lower height of the lifting unit**

Fig. 200

- Press the "Lower lifting unit" key (2) and memory key for "Lifting unit adjusting process" (1) and hold down simultaneously for approx. 7 seconds. The lifting unit is lowered all the way.
  - After successful adjustment, the message "Lifting unit control adjusting process 1 OK" appears in the status line of the terminal.

**Checking actual ground pressure**

- Select menu 4-1-5, display 4 "Calibration values".
- Move the lifting unit up and down at least twice.
- Leave the lifting unit in a suspended position (no contact with ground) and read off the "actual ground pressure" value next to the  symbol.

**NOTE**

The "actual ground pressure" value must have a negative percentage value. If the percentage value is positive, the adjusting process 2 must be repeated.

### 8.6.4.2 Calibrating the absolute cutting height

Calibration of the absolute cutting height is required to ensure the absolute cutting height can be indicated in the info centre.

The calibration values are stored separately for Pick-up, XDisc and maize header.

To calibrate the absolute cutting height, the sensors at the lifting unit must be calibrated in advance, see page 302.

#### Measuring the lifting height

##### Pick-up

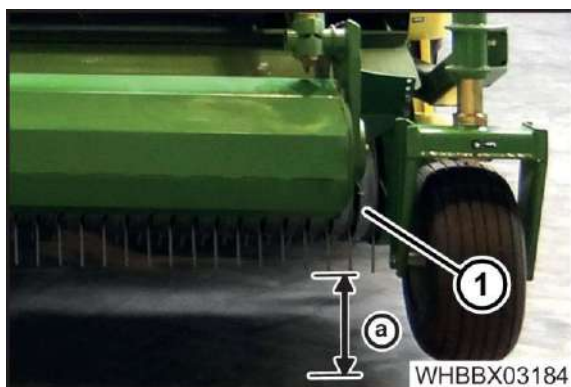


Fig. 201

- Measure the distance "a" between the ground and the lowest point of a spring tine.

##### Maize header EasyCollect

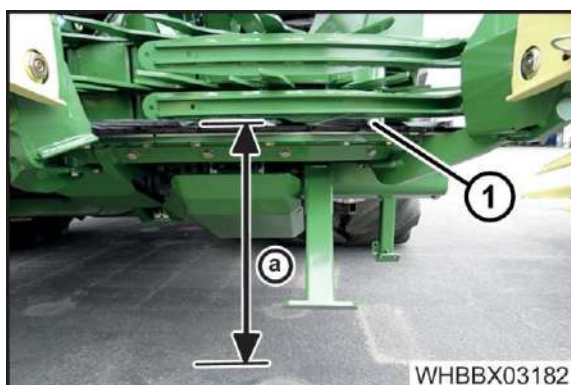


Fig. 202

- Measure the distance (a) between the ground and the cutter blade.

##### XDisc

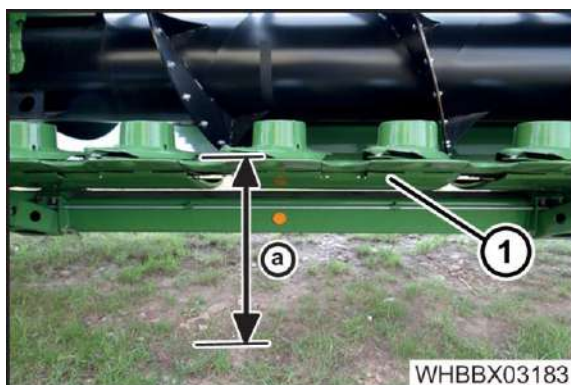


Fig. 203

- Measure the distance "a" between the ground and the blade.



Calibrating the upper lifting unit height

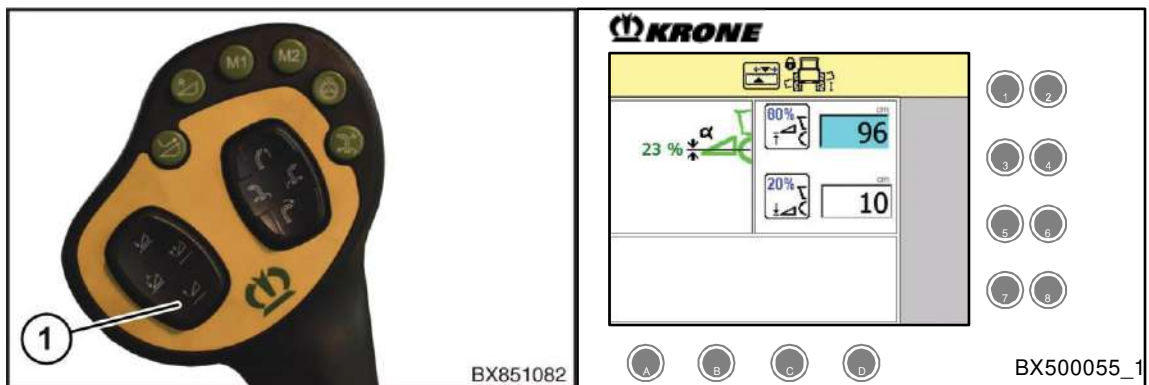




Fig. 204

- Press the "Raise lifting unit" key (1) on the multi-function lever until the display shows a value of "80 %" beside the  icon.
- Using the incremental encoder, choose the setting  "Saved absolute height of the lifting unit at 80 %". The input field is highlighted in colour.
- Press the incremental encoder to jump to the input field.
- Set the distance "a" measured using the incremental encoder (see "Measuring the lifting height").
- Press the incremental encoder to accept the setting and to exit the selection box.

Calibrating the lower lifting unit height

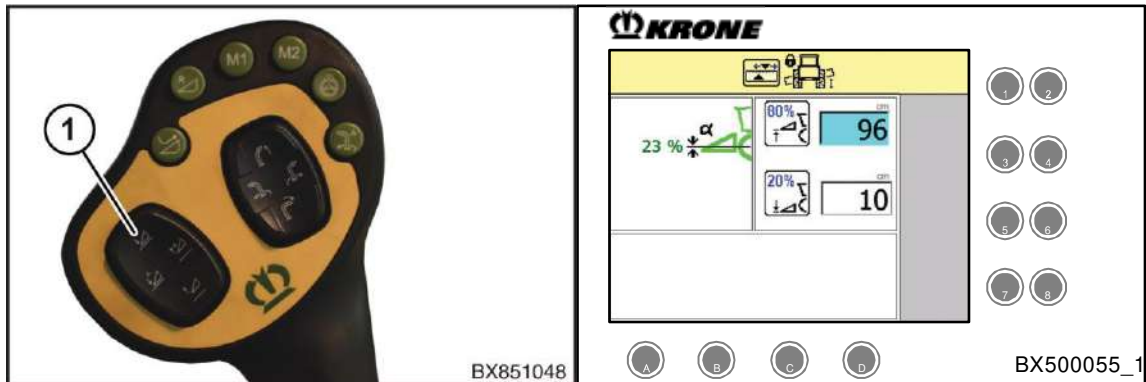




Fig. 205

- Press the "Lower lifting unit" key (1) on the multi-function lever until the display shows a value of "20 %" beside the  icon.
- Using the incremental encoder, choose the setting  "Saved absolute height of the lifting unit at 80 %". The input field is highlighted in colour.
- Press the incremental encoder to jump to the input field.
- Set the distance "a" measured using the incremental encoder (see "Measuring the lifting height").
- Press the incremental encoder to accept the setting and to exit the selection box.

## 8.6.5 Calibrating the automatic steering system

**⚠ WARNING****Risk of injury due to unexpected movement of parts!**

During the calibration process, there is a risk of injury for persons who stay in the area of lifting gear, front attachment and discharge chute.

- Make certain no one remains in the swivel range or in the range of movement of lifting gear, front attachment and discharge chute during the calibration process.

**NOTE**

To guarantee trouble-free operation, calibrate the automatic steering system before using it for the first time.

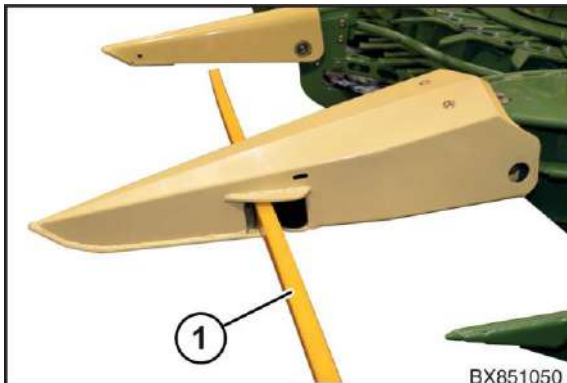


Fig. 206

**Prerequisites:**


- The EasyCollect maize header with row tracer (1) is mounted.
- The release switch road/field is switched to field mode.
- The release switch traction drive is switched on.
- The release switch maintenance is switched off.
- The seat switch is actuated (driver seated).
- The switches quick-stop console and manual operation are not actuated.
- The machine is on a level surface.

If one of these conditions is not fulfilled, the right side of the screen will display a corresponding message.

**Displaying unfulfilled switching-on conditions and disturbances, see page 255.**

After exchanging the sensors and actuators, the ISOBUS steering system must be recalibrated.  
Observe the sequence below to perform calibration:

- Calibrate the steer angle.
- Calibrate the row tracers.
- Calibrate the steering (valves) (automatic or manual).
- Enter the turning circle.

**The calibrated values are checked for plausibility. If a value is outside the valid range, the error message  appears beside the calibrated value. The value cannot be saved.**

- Start the engine and switch on the release switch "automatic steering system".
- Drive the machine at a speed of 0.7 km/h.

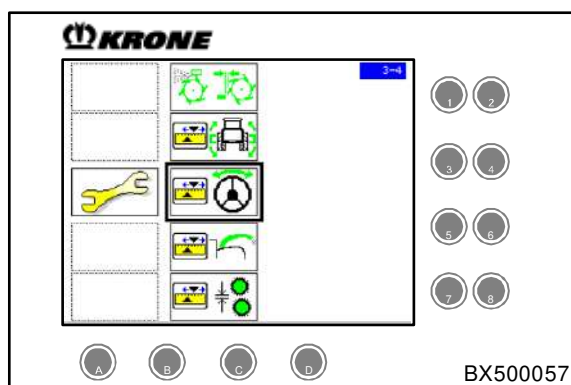


Fig. 207

The main menu 3 Maintenance is open

- Using the incremental encoder, choose the menu Calibration of automatic steering system.
- Press the incremental encoder.

The display shows the menu Calibration of automatic steering system.

Display with outer tip

Display with central tip

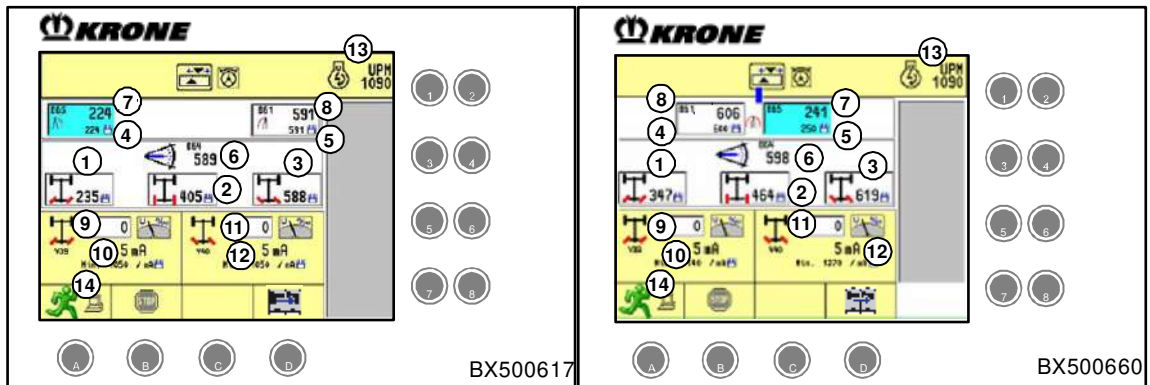


Fig. 208

Item	Meaning
1	Saved value, maximum steering angle, left
2	Saved value, straight-ahead driving
3	Saved value, maximum steering angle, right
4	Saved value, minimum row tracer, left
5	Saved value, minimum row tracer, right
6	actual value of steering angle sensor
7	Actual value of row tracer left
8	Actual value of row tracer right
9	Setpoint value, voltage or pulse duty factor in 0.01% steering angle left
10	Saved value, minimum current steering angle, left
11	Setpoint value, voltage or pulse duty factor in 0.01% steering angle right
12	Saved value, minimum current steering angle, right
13	Actual value engine speed
14	Automatic calibration of the minimum valve flows for steering left/right

8.6.5.1 Calibrating the steering angle sensor

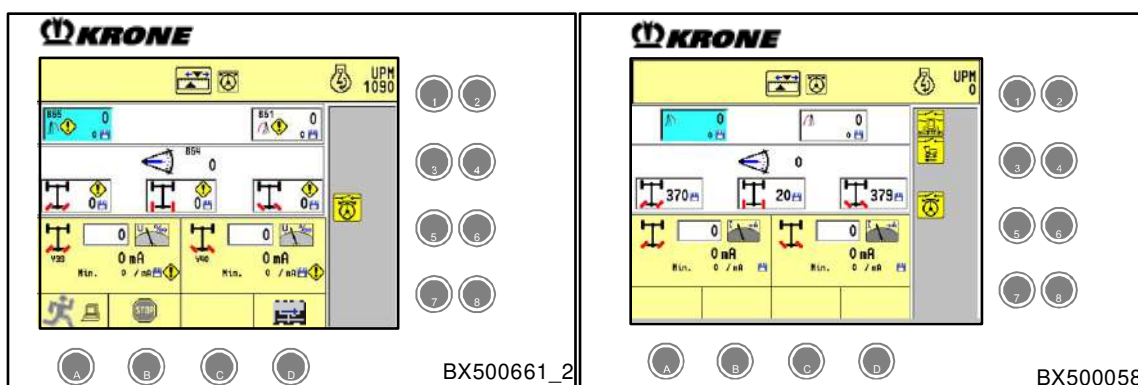


Fig. 209

The steer angle must be calibrated if:

- a new front attachment was mounted,
- control units (KMC 2, autopilot) were replaced,
- sensors B63 (steering wheel pressure), B64 (inclination registration, steering axle) were replaced,
- actuators Y39, Y40, Y66, Y67 of the steering were replaced.

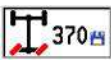
**Calibrate steer angle left max.**

At left lock, the value of the steering angle sensor must be approx. 220.

If the value is lower, the steering angle sensor must be readjusted.


If the value is higher, check whether the steering angle sensor is correctly mounted.

If the notches of the steering angle sensor point in the direction of the plug, the steering angle sensor is correctly mounted.

- Move the steering axle to the max. left position (move it to the left until the steering axle has gone as far as it can).
- Use the incremental encoder  to choose <Saved value, maximum steering angle, left>. The input field is highlighted in colour.
- Press the incremental encoder to jump to the input field.
- Press the incremental encoder 2 times to save the current actual value of the steering angle sensor and to exit the input field.
- The actual value or the saved value should be 220. If it is not, readjust the sensor.

### Calibrating the steering angle for straight-ahead driving

When driving straight ahead, the value for the steering angle sensor for straight-ahead driving should be 400 +/- 10. If the value is not within this range, the steering angle sensor must be readjusted.

- Move the steering axle to the centre position (move it until the steering is set to straight-ahead driving).
- Using the incremental encoder  to choose <Saved value, straight-ahead driving>. The input field is highlighted in colour.
- Press the incremental encoder to jump to the input field.
- Press the incremental encoder 2 times to save the current actual value of the steering angle sensor and to exit the input field.
- The actual value or the saved value should be 400 +/- 10. If it is not, readjust the sensor.

### Calibrate steer angle right max.

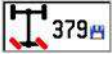
At right lock, the value of the steering angle sensor must be approx. 630.

If the value is lower, the steering angle sensor must be readjusted.

If the value is higher, check whether the steering angle sensor is correctly mounted.

If the notches of the steering angle sensor point in the direction of the plug, the steering angle sensor is correctly mounted.

- Move the steering axle to the max. right position (move it until the steering has gone as far as it can)

- Use the incremental encoder  to choose <Saved value, maximum steering angle, right>. The input field is highlighted in colour.
- Press the incremental encoder to jump to the input field.
- Press the incremental encoder 2 times to save the current actual value of the steering angle sensor and to exit the input field.
- The actual value or the saved value should be 630. If it is not, readjust the sensor.

#### NOTE

If the steering angle sensor is readjusted during the calibration process, you must begin the calibration again from the start.

## 8.6.5.2 Row tracer calibration

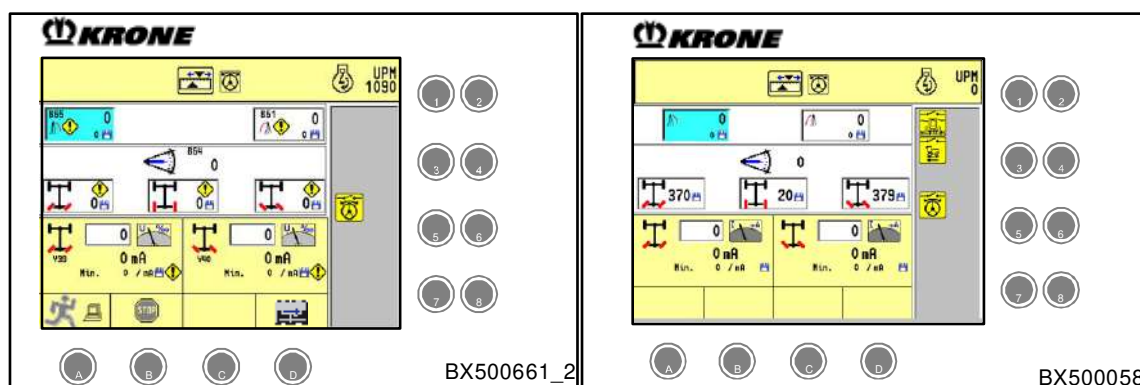


Fig. 210

The row tracers must be calibrated if the sensors B61, B65, B66 of the row tracers have been replaced.

The row tracers in the central tip or the outer tips can be chosen.

- In the mask "Parameter", group automatic steering system, choose the parameter 34016 "automatic steering system row tracers in central tip":
  - 0 = Outer tip
  - 1 = Central tip

### Calibrating row tracers with steel bracket

- In menu 1-1-14, set parameter 26025 in the group automatic steering system "Flexible row tracer fitted" to the value 0.

Prerequisites:

- The row tracers are in the basic position and are not actuated.



### **NOTE**

Both row tracer right/left are calibrated on a once-off basis.



### Calibrating row tracer outer tip left/central tip right (1)

When the row tracer "Outer tip left/central tip right" is activated, the sensor value is increased.

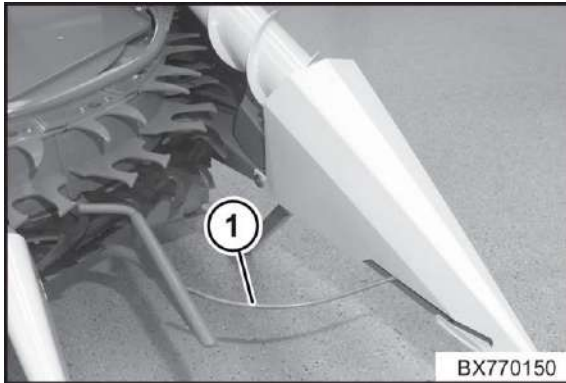
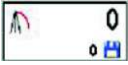
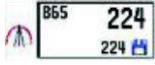


Fig. 211

- Using the incremental encoder, choose the setting  0 or  224 <row tracer left>, the input field is highlighted in colour.
- Press the incremental encoder to jump to the input field.
- Press the incremental encoder 2 times to save the current actual value of the row tracer left and to exit the input field.
- The actual value must be in the range of  $265 \pm 50$ . If necessary, readjust the sensor.
- If the row tracer actuated up to the end stop, the actual value must be in the range of 515-635.

### Calibrating row tracer outer tip right/central tip left (2)

When the row tracer "Outer tip right/central tip left" is activated, the sensor value is reduced.

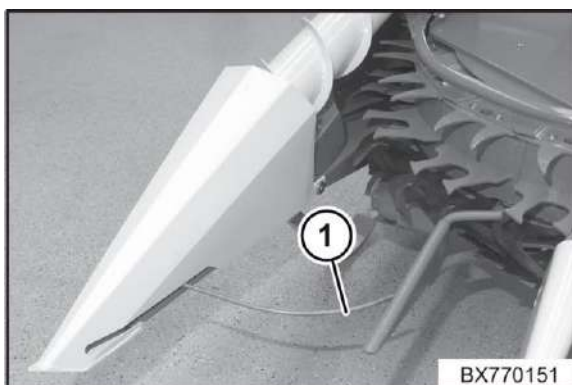




Fig. 212

- Using the incremental encoder, choose the setting  or  <row tracer right>, the input field is highlighted in colour.
- Press the incremental encoder to jump to the input field.
- Press the incremental encoder 2 times to save the current actual value of the row tracer right and to exit the input field.
- The actual value must be in the range of  $590 \pm 50$ . If necessary, readjust the sensor.
- If the row tracer actuated up to the end stop, the actual value must be in the range of 220-340.

### 8.6.5.3 Calibrating flexible row tracers

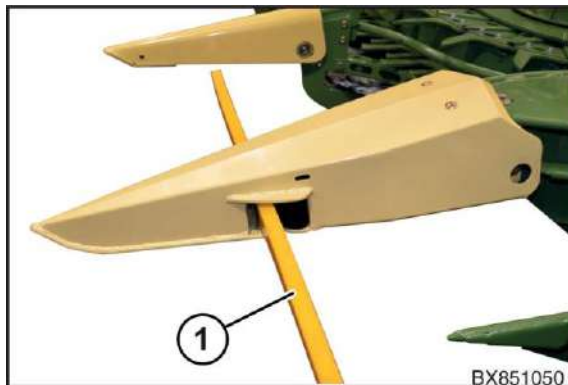


Fig. 213

**Prerequisites:**

- The machine is on a level surface.
- The row tracers can vibrate freely without striking an obstacle.

**Calibrating row tracers:**

- In menu 1-1-14, set parameter 26025 in the group autopilot "Flexible row tracer fitted" to the value 1.
- Recalibrate the value for the rest position of the row tracers, right see page 277, left see page 278

The following approximate values are determined during the calibration of the flexible row tracer (1 for sensor in zero position (momentary switch not actuated)):

**Row tracers in new condition**

Sensor "row registration B66": 50 +/- 10

**Row tracers in used condition**

Sensor "row registration B66": 40 - 120

**As a check:**

The following approximate values are determined during the calibration of the flexible row tracer for sensor in maximum position:

Sensor "row registration right B66": 450 +/- 10

Sensor "row registration left B66": 450 +/- 10



**NOTE**

After replacing the sensor and after harvesting an area measuring approx. 100 ha, the automatic steering system must be recalibrated.

## 8.6.5.4 Calibration of valves for steering left/right (manual)

Display with outer row tracer

Display with row tracer central tip

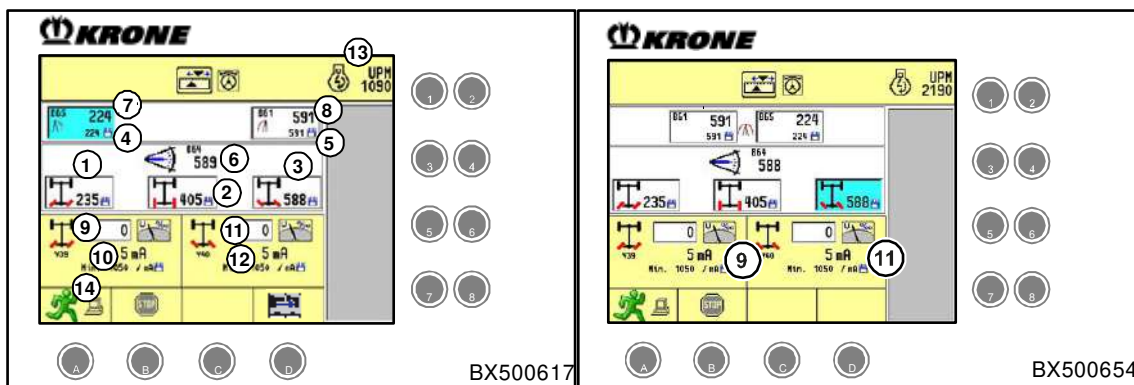


Fig. 214

Prerequisites:


- The machine is on a level surface.
- The row tracers can vibrate freely without striking an obstacle.
- Machine drives at least 0.7km/h
- Diesel engine = idling speed.
- Release switch road/field is set to field mode.
- Release switch automatic steering system is switched on.
- Release switch traction drive is switched on.
- Release switch maintenance is switched off.
- Seat switch actuated (driver seated).
- Switch quick-stop console is not actuated.
- Switch quick-stop manual operation is not actuated.
- Hydraulic oil is at operating temperature.
- Steering axle is in centre position (steer until steering points straight ahead).
- The machine is on a level surface.

**Calibration of minimum current for valve, steering to the left**


- Using the incremental encoder, choose <left valve current value> (9), the input field is highlighted in colour.
- Press the incremental encoder to jump to the input field.
- With the incremental encoder, increase the current setpoint value (in increments of 0.01%) of the valve until the steering just starts to move. Then reduce the setpoint value (in increments of 0.01%), until the steering just stops moving.
- Press the incremental encoder 2 times to save the current that is currently displayed and to exit the input field.



The saved minimum current value for the left valve is updated.


- Press the  key beside the incremental encoder to cancel the operation.

**Calibrating the minimum current for valve, steering to the right**

- Move the steering axle to the straight-ahead position.
- Using the incremental encoder, choose  "right valve current value" (11), the input field is highlighted in colour.
- Press the incremental encoder to jump to the input field.
- With the incremental encoder, increase the current setpoint value (in increments of 0.01%) of the valve until the steering just starts to move. Then reduce the setpoint value (in increments of 0.01%), until the steering just stops moving.
- Press the incremental encoder 2 times to save the current that is currently displayed and to exit the input field.



The saved minimum current value for the right valve is updated.

- Press the  key beside the incremental encoder to cancel the operation.

## 8.6.5.5 Calibration of valves for steering left/right (automatic)

During automatic calibration, the system records and saves the valve flows.

Calibration is interrupted as soon as the steering wheel is moved or the driver gets up off the seat.

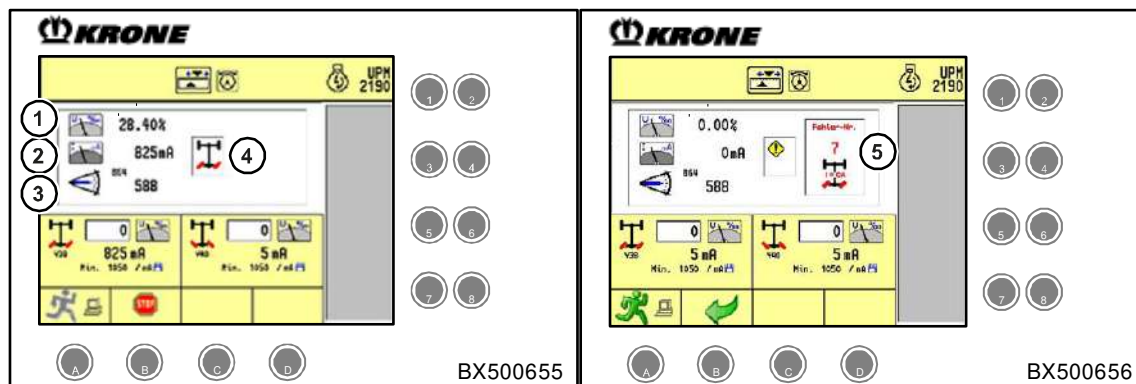







Fig. 215



Prerequisites:

- The steering angle sensor is correctly calibrated, see page 274.

- Press the  key to start the automatic calibration process. A new window is shown.







Item	Meaning
1	Momentary PWM pulse duty factor. Voltage as % at which the particular coil is actuated.
2	Current currently flowing through the corresponding coil.
3	Current value of steering angle sensor B64.
4	Status of the calibration:  Valve Y39 "Steering left" is calibrated.  Valve Y40 "Steering right" is calibrated.  Calibration successful and values are saved.  Calibration is stopped.
5	If an error has occurred, the display shows the corresponding error number.




The valves are then immediately actuated automatically. The steering axle moves accordingly.

- Press the  key to cancel the operation.
- Once calibration is stopped, press the  key to switch to the previous view.

If an error occurs during calibration, the calibration process will be interrupted and the corresponding error will be displayed.

**Calibrating Steering Error List Automatically**

No. Icon	Meaning	Cause/Remedy
<p>1</p> 	<p>The value of steering angle sensor B64 is less than the calibrated value "Steering all the way to the left"</p>	<p>Recalibrate steering angle sensor B64.</p>
<p>2</p> 	<p>The value of steering angle sensor B64 is greater than the calibrated value "Steering all the way to the right"</p>	<p>Recalibrate steering angle sensor B64.</p>
<p>3</p> 	<p>Valve Y39 "Steering left" has been actuated. Then the value of steering angle sensor B64 must also reduce. However, the sensor value increased.</p>	<ul style="list-style-type: none"> <li>• Valves Y39 and Y40 reversed. Left is actuated but the steering turns right.</li> <li>• Parameter 26027 "Valves reversed" is set incorrectly.</li> <li>• Steering angle sensor B64 is mounted incorrectly.</li> <li>• Wrong sensor as steering angle sensor B64.</li> </ul>
<p>4</p> 	<p>Valve Y40 "Steering right" has been actuated. Then the value of steer angle sensor must also increase. However, the sensor value reduced.</p>	<ul style="list-style-type: none"> <li>• Valves Y39 and Y40 reversed. Right is actuated but the steering turns left.</li> <li>• Parameter 26027 "Valves reversed" is set incorrectly.</li> <li>• Steering angle sensor B64 is mounted incorrectly.</li> <li>• Wrong sensor as steering angle sensor B64.</li> </ul>
<p>5</p> 	<p>Although valve Y39 "Steering left" is actuated, no change is detected on steering angle sensor B64.</p>	<ul style="list-style-type: none"> <li>• The minimum current that was previously determined automatically is not correct. repeat calibration.</li> <li>• Steering angle sensor B64 faulty.</li> <li>• Steering angle sensor B64 or linkage on steering angle sensor mounted incorrectly.</li> <li>• Hydraulics faulty.</li> <li>• Hydraulic valve Y39 "Steering left" faulty.</li> </ul>
<p>6</p> 	<p>Although valve Y40 "Steering right" is actuated, no change is detected on steering angle sensor B64.</p>	<ul style="list-style-type: none"> <li>• The minimum current that was previously determined automatically is not correct. repeat calibration.</li> <li>• Steering angle sensor B64 faulty.</li> <li>• Steering angle sensor B64 or linkage on steering angle sensor mounted incorrectly.</li> <li>• Hydraulics faulty.</li> <li>• Hydraulic valve Y40 "Steering right" faulty.</li> </ul>

No. Icon	Meaning	Cause/Remedy
7 and 9 	Cable break Y40 steering left valve	<ul style="list-style-type: none"> <li>• Cable break to valve Y39 "Steering Left".</li> <li>• Valve coil Y39 faulty.</li> <li>• Automatic steering system faulty.</li> </ul>
8 and 10 	Cable break Y39 steering right valve	<ul style="list-style-type: none"> <li>• Cable break to valve Y40 "Steering Right".</li> <li>• Valve coil Y40 faulty.</li> <li>• Automatic steering system faulty.</li> </ul>
11 	A pressure was detected at the pressure sensor B63 "Steering pressure".	<ul style="list-style-type: none"> <li>• Steering motion on the steering wheel.</li> <li>• Pressure sensor B63 faulty.</li> <li>• Automatic steering system faulty.</li> <li>• Hydraulics faulty.</li> </ul>



## 8.6.5.6 Turning circle calibration (only for ISOBUS steering system)

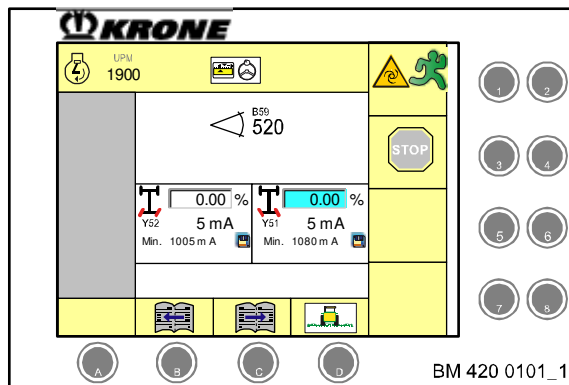




Fig. 216

- Move the machine onto a solid surface and turn the steering as far to the left as possible.
- To call up the menu "Set steering radius", press the key  under .

**Left turning circle**

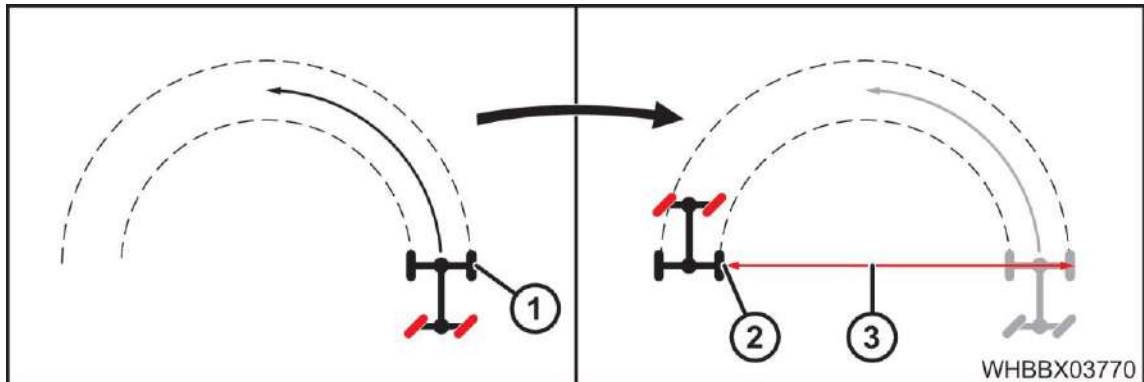


Fig. 217

- Mark a spot on the ground at the outer edge of the front right tyre (1).
- Drive semi circle at low speed and with the steering turned as far as possible.
- Measure the distance (3) between the outer edge of the front left tyre (2) and the previously marked point (1)
- Enter the value in the terminal in the input field "Left turning circle" and save it.

**Right turning circle**

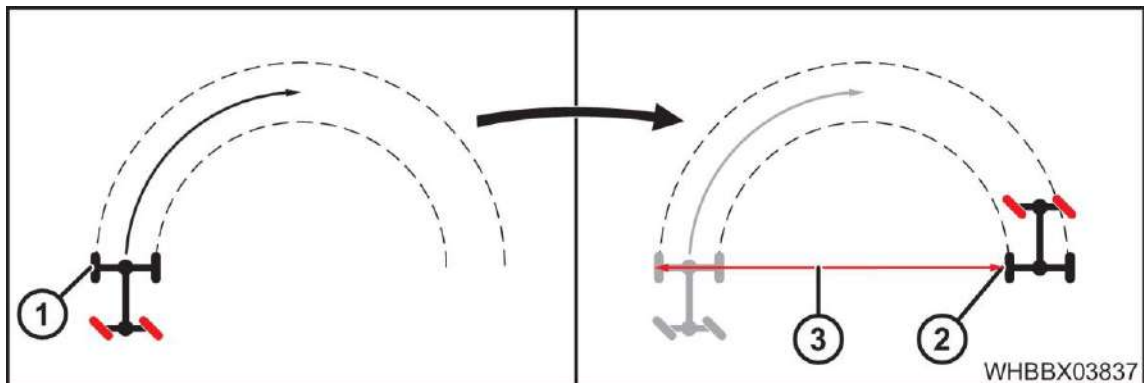


Fig. 218

- Mark a spot on the ground at the outer edge of the front left tyre (1).
- Drive semi circle at low speed and with the steering turned as far as possible.
- Measure the distance (3) between the outer edge of the front right tyre (2) and the previously marked point (1)
- Enter the value in the terminal in the input field "Right turning circle" and save it.

### 8.6.6 Menu 3-5 Calibration Spout

The calibration must be performed to determine the maximum final position left/right.

The spout must always be calibrated if:

- a new spout was mounted.
- the controlled final position is not reached.
- the KMC2 control unit was replaced.
- work was carried out on the drive train of the spout.

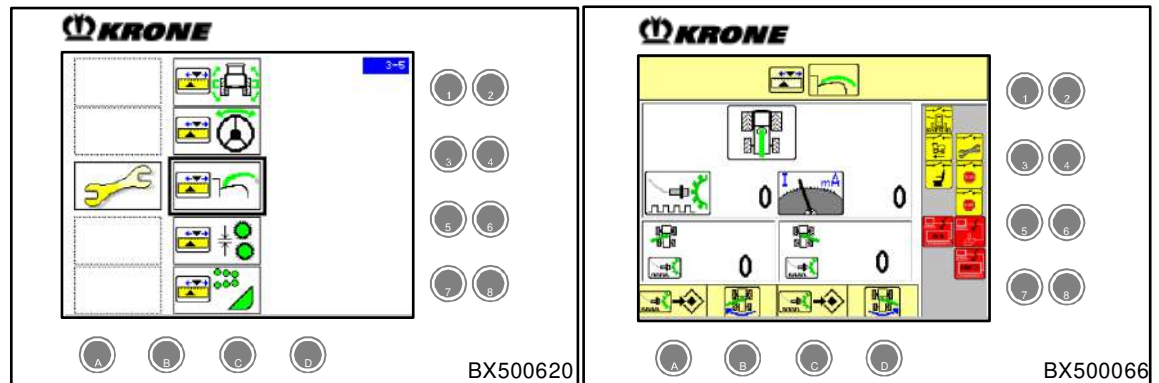


Fig. 219

Prerequisites:

- The spout is raised.
- Diesel engine speed = idle speed
- The "Road/field" release switch is switched to field mode.
- The traction drive release switch is switched off.
- The maintenance release switch is switched off.
- The seat switch is actuated (driver's seat is occupied).
- The "quick stop console" switch is not actuated or is switched off.
- The "quick stop manual operation" switch is not actuated or is switched off.
- The "spout bottom" position is unattenuated.

Main menu 3 "Maintenance" is active.

- Select the menu 3-5 "Calibration Spout" by using the incremental encoder.
- Press incremental encoder.

The display shows the "Calibration Spout" menu level.

**Displaying unfulfilled switching-on conditions and disturbances, see page 255.**

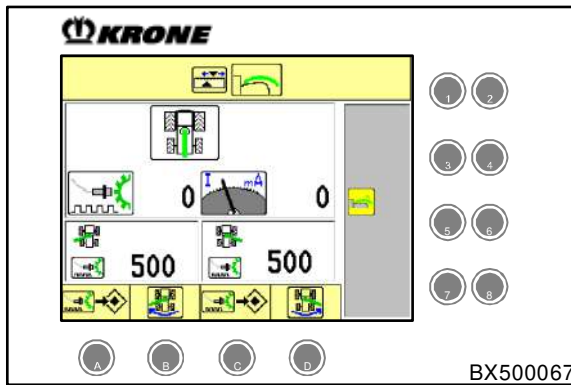







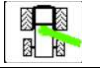

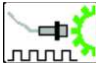
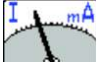

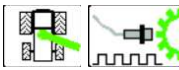


Fig. 220

**Status displays**

Icon	Explanation
	Upper discharge chute
	Lower discharge chute
	Position of lower discharge chute sensor, cable break.
	Position of lower discharge chute sensor, short circuit.
	Spout position unknown, sensor position bottom, may be defective.
	spout position left
	Spout central position
	Spout position right
	Spout position unknown, sensor position centre or faulty

**Mask description**

- The icon  indicates the current number of pulses for the current side.
- The icon  indicates the actual current of the valve from the spout for the current direction of rotation.
- The icon  indicates the stored number of max. pulses for left.
- The icon  indicates the stored number of max. pulses for right.




**NOTE**

The individual calibration processes are interrupted by manually operating the spout with the keys on the multi-function lever and when the driver leaves the driver's seat.




**Calibration of the minimum flows is performed automatically.**

**After each time the machine is restarted and the first time the spout is reversed, the flows are determined again. Therefore, we recommend carrying out the first reversing operation when the machine is warm and at a standstill.**

**Calibration of the maximum angular momentum for "position right"**

- Move the spout manually to the right to the end setting.
- The spout stops if the previously calibrated level of angular momentum for this side has been reached.
- If the spout is not at the stop, press the  key or the corresponding key on the multi-function lever to continue turning the spout up to the stop.
- To ensure that the spout does not continuously bump against the mechanical stop, turn back the spout slightly by pressing the  key.
- Press the  key to start the "angular momentum right" calibration.

**Calibration of the maximum angular momentum for "position left"**

- Move the spout manually to the left to the end setting.
- The spout stops if the previously calibrated level of angular momentum for this side has been reached.
- If the spout is not at the stop, press the  key or the corresponding key on the multi-function lever to continue turning the spout up to the stop.
- To ensure that the spout does not continuously bump against the mechanical stop, turn back the spout slightly by pressing the  key.
- Press the  key to start the "angular momentum left" calibration.

### 8.6.7 Menu 3-6 Corn conditioner calibration

The discharge chute must always be calibrated when

- a corn conditioner has been removed or installed again.
- the control unit KMC3 has been replaced.
- the actual roller distance deviates significantly from the target roller distance.

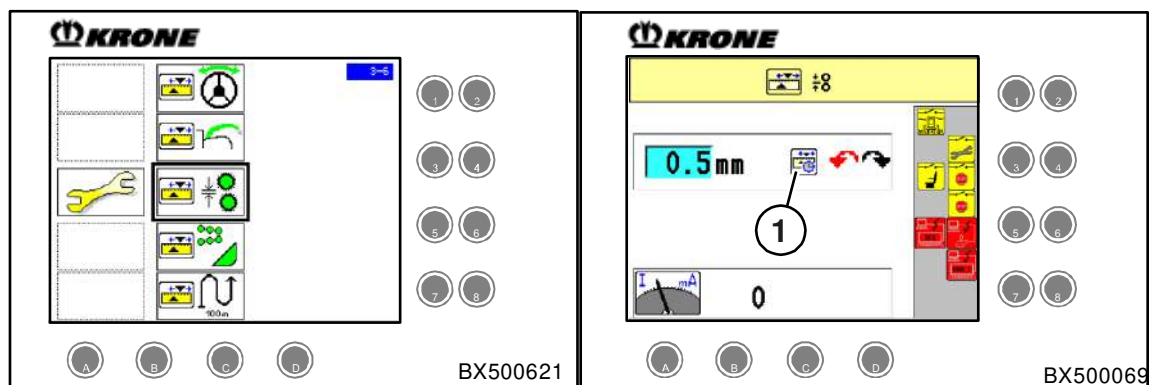


Fig. 221

Prerequisites:

- The diesel engine is switched off.
- The machine is prevented from rolling away.
- Release switch "road/field" is set to field mode.
- Release switch "traction drive" is switched off.
- Release switch "maintenance" is switched off.
- The seat switch is actuated (the driver's seat is occupied)
- Switch "quick-stop console" is not actuated = OFF
- Switch "quick-stop manual operation" is not actuated = OFF

Main menu 3 Maintenance is active.

- Using the incremental encoder, choose menu 3-6 Corn conditioner calibration.
- Press the incremental encoder.

The display shows the menu level Calibration of corn conditioner.

**Displaying unfulfilled switching-on conditions and disturbances, see page 255.**

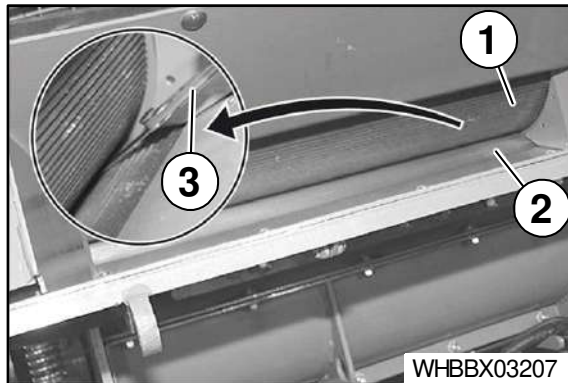








Fig. 222

The current power consumption of the corn conditioner is indicated by the icon . It is required for diagnostic purposes by the KRONE service technicians.

- The diesel engine is switched off.
- The machine is prevented from rolling away.
- Press the  key to reduce the roller distance to the minimum possible distance.
- Press the  key to maximise the roller distance.
- Swing out the corn conditioner, see page 453; to do so:
  - Loosen the screw connection for central lubrication.
  - Disconnect the plug connection of the adjusting motor.
  - Remove the kraftband of the corn conditioner.
  - Use the cable winch to fully lower the corn conditioner.
- Use a feeler gauge (3) to measure the exact distance between the rollers (1, 2) at the corn conditioner.
- Using the incremental encoder, choose the "distance" setting, the input field is highlighted in colour.
- Press the incremental encoder to jump to the input field.
- You can use the incremental encoder to set the measured distance.
- Press the incremental encoder to exit the input field.

The display (1) switches to  "Calibration process running" and  "Calibration process successfully completed".

- Press the menu button  to access the previous menu level.
- Install the corn conditioner, see page 471.

For corn conditioner with discs

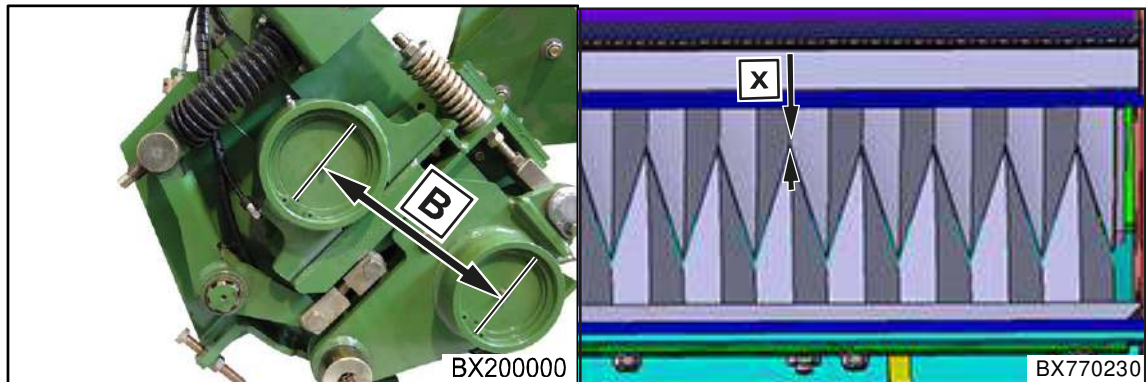
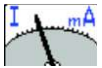







Fig. 223

The current power consumption of the corn conditioner is indicated by the icon . It is required for diagnostic purposes by the KRONE service technicians.

- The diesel engine is switched off.
- The machine is prevented from rolling away.
- Press the  key to reduce the roller distance to the minimum possible distance.
- Press the  key to maximise the roller distance.
- Swing out the corn conditioner, see page 453; to do so:
  - Loosen the screw connection for central lubrication.
  - Disconnect the plug connection of the adjusting motor.
  - Remove the kraftband of the corn conditioner.
  - Use the cable winch to fully lower the corn conditioner.
- Measure the distance B [mm] between the grease nipples of the left-hand bearing housing.
- The distance of the discs is  $X = B \text{ [mm]} - 200\text{mm}$ .
- Using the incremental encoder, choose the "distance" setting, the input field is highlighted in colour.
- Press the incremental encoder to jump to the input field.
- >Use the incremental encoder to set the calculated distance X.
- Press the incremental encoder to exit the input field.

The display (1) switches to  "Calibration process running" and  "Calibration process successfully completed".

- Press the menu button  to access the previous menu level.
- Install the corn conditioner, see page 471.



8.6.8 Menu 3-7 Calibration of feed drive/front attachment

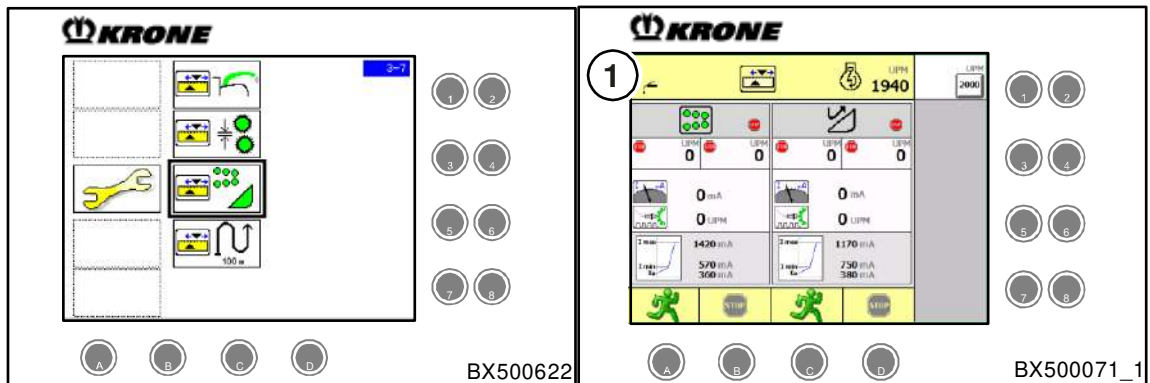





Fig. 224

Main menu 3 Maintenance is active.

- Use the incremental encoder to choose menu 3-7 Calibration of feed drive/front attachment.
- Press the incremental encoder.

The display shows the menu level Calibration of feed drive/front attachment.

**Status displays**

Icon	Explanation
	Central lubrication active (green)
	Error central lubrication (red)
	Central lubrication inactive (yellow)

Displaying unfulfilled switching-on conditions and disturbances, see page 255.

### 8.6.8.1 Calibrate feed drive/front attachment

The intake must always be calibrated if

- a new intake was mounted.
- the actual chop length deviates from the displayed chop length.
- the KMC2 control unit was replaced.
- if work was performed on components of the intake drive (pump, hydraulic motor or speed sensor).

The front attachment must always be calibrated if

- a new front attachment was mounted.
- the actual header speed deviates from the setpoint speed.
- the KMC2 control unit was replaced.
- if work was performed on components of the front attachment drive (pump, hydraulic motor or speed sensor).



#### **NOTE**

Always calibrate the intake and front attachment together.



#### **NOTE**

The intake should only be calibrated if the actual chop length differs from the displayed chop length.



#### **NOTE**

The front attachment should only be calibrated if the actual speed deviates significantly from the setpoint speed (on a once-off basis by fitter or after replacement of the job computer).

Prerequisites:

- Release switch road/field is switched to field mode
- Release switch traction drive is switched off
- Release switch "intake/header" is switched on
- Release switch maintenance is switched off
- Seat switch is actuated (the driver's seat is occupied).
- Diesel engine running at rated speed
- Lifting unit is in working position
- Main coupling is switched on

Starting the calibration process:

- Press the key to start calibration for the intake/front attachment.



**NOTE**

The intake/front attachment starts to rotate after a short time. The calibration process last for up to 120 seconds.

If the required data was not determined during this time, the calibration process is cancelled and must be repeated.

- Press the key to stop calibration for the intake/front attachment.

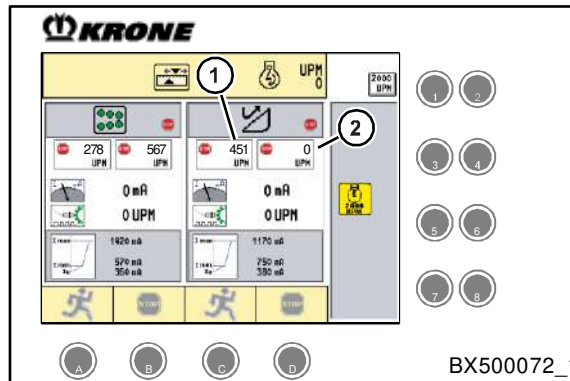


Fig. 225

- The display after the icon for the feed drive /front attachment shows the calibration status:

Icon	Explanation
	Calibration stopped/complete
	Calibration is running
	Calibration was successful
	Calibration was not successful

Displays on the display

Icon	Explanation
	Actual current through valve Y5 "feed drive forwards" in mA
	Current rotational speed of the feed drive

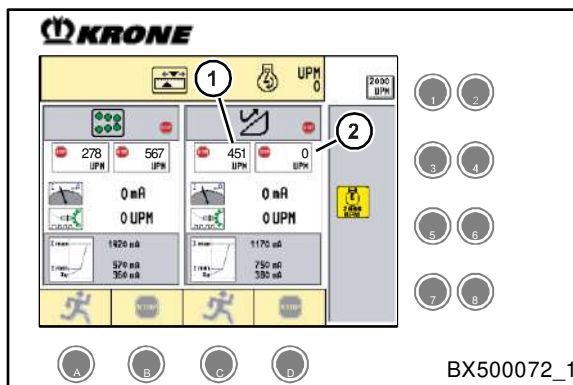
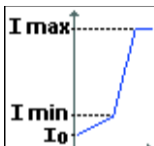


Fig. 226

The display shows the rotational speeds for the support values (1) and (2) of the calibration:

If calibration was successful, the status display switches to "STOP", the front attachment stops (power consumption and rotational speed are 0).

- The power consumption display is updated:

Icon	Explanation
	I 0 Power consumption when turning is started.
	I min Power consumption at minimum rotational speed.
	I max Power consumption at maximum rotational speed.

### 8.6.9 Menu 3-9 Calibration of RockProtect

The nominal value of the sensor is 2500 mV. This value may deviate slightly due to component tolerances.

The zero position of the sensor must always be calibrated if

- the sensitivity of the sensor is too strong or too weak.
- the sensor B76, KMC4 or cable harness/plug has been replaced.
- the saved value and the currently measured value deviate too greatly from each other.

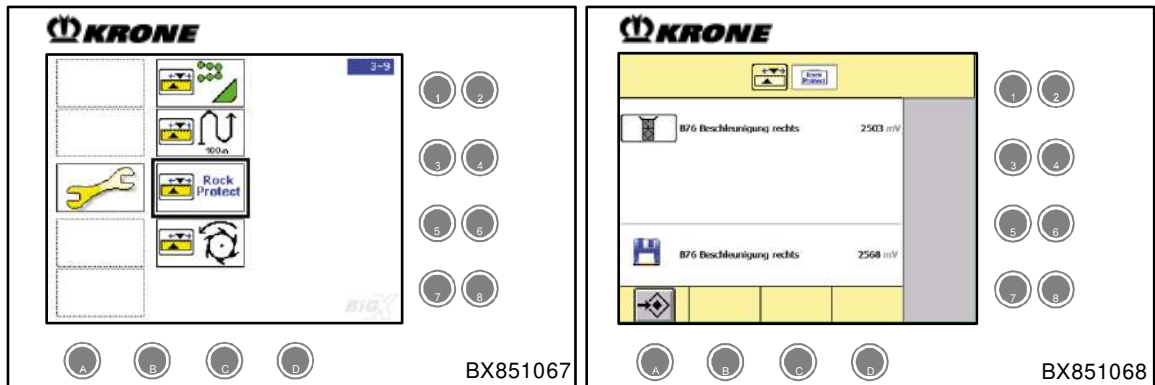


Fig. 227

Prerequisites:

- KMC2: There must be no error message from the CAN bus.
- KMC4: There must be no error message from the CAN bus.
- The machine is switched off.

Main menu 3 Maintenance is active.

- Using the incremental encoder, choose menu 3-9 "Calibration of RockProtect".
- Press the incremental encoder.

The display shows menu level Calibration of RockProtect.

- Press the  key under  to start the calibration.

The current voltage value is saved.

### 8.6.10 Menu 3-10 Calibration of main coupling

The main coupling must always be calibrated if

- it does not switch on "smoothly".
- the KMC3 control unit has been replaced.
- parts of the main coupling have been worked on.
- the valve Y12 "Main coupling" or its valve coil have been replaced.

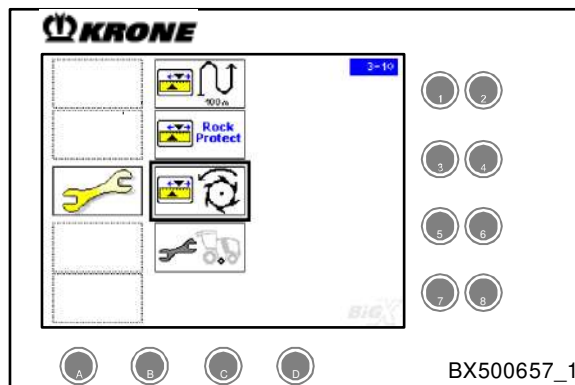


Fig. 228

Prerequisites:





- Quick-stop switch console is switched off.
- Quick-stop switch manual operation is switched off.
- Release switch traction drive is switched off.
- Release road/field is set to field mode.
- Release switch maintenance is switched off.
- The seat switch is actuated (the driver's seat is occupied).
- The door is closed.

Main menu 3 Maintenance is active.








- Using the incremental encoder, choose menu 3-10 "Calibration of main coupling".
- Press the incremental encoder.

The display shows menu level Calibration of main coupling.

**Status displays**

Icon	Explanation
	The calibration process has been stopped.
	The calibration process is currently running.
	A rotational speed was measured at the chopping drum. The current values were saved.
	The calibration process was concluded successfully.

**Displays on the display**

Icon	Explanation
	Actual current to the valve Y12 "Main coupling ON" in mA.
	Current rotational speed of the chopping drum in rpm.
	All conditions for automatic calibration of the main coupling have been fulfilled. <ul style="list-style-type: none"> <li>– The calibration can be started with the  key.</li> </ul>
	<ul style="list-style-type: none"> <li>– The calibration is currently running and can be stopped using the  key. No values are saved.</li> <li>– The calibration process cannot be started because e.g. one or more switching-on conditions have not been fulfilled.</li> </ul>
	The rotational speed of the diesel engine in rpm

Displaying unfulfilled switching-on conditions and disturbances, see page 255.

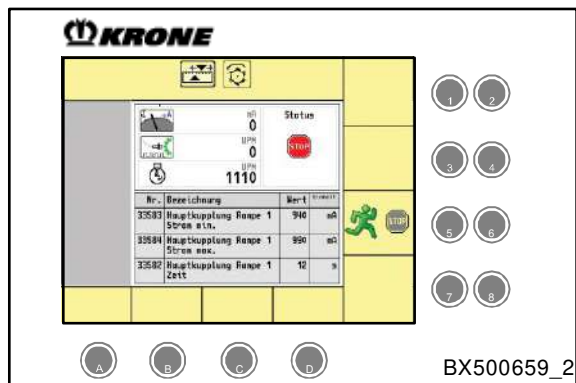




Fig. 229

If all switching-on conditions are fulfilled, the  icon is displayed.

- Press the  key to start the calibration.

If rotation of the chopping drum is detected, the min and max current for the cutting drum valve is calculated and automatically saved.

If no speed is detected on the chopping drum, the automatic calibration process is stopped at 1400 mA.

- Press the  key to stop the calibration.

### NOTE

If no current is measured, e.g. because of a cable break to the valve, the calibration process is automatically interrupted and an error message appears.



8.6.11 **Menu 3-11 Maintenance of additional axle (option)**

A manual function test of the additional axle can be performed in this menu. This must be performed after every installation.

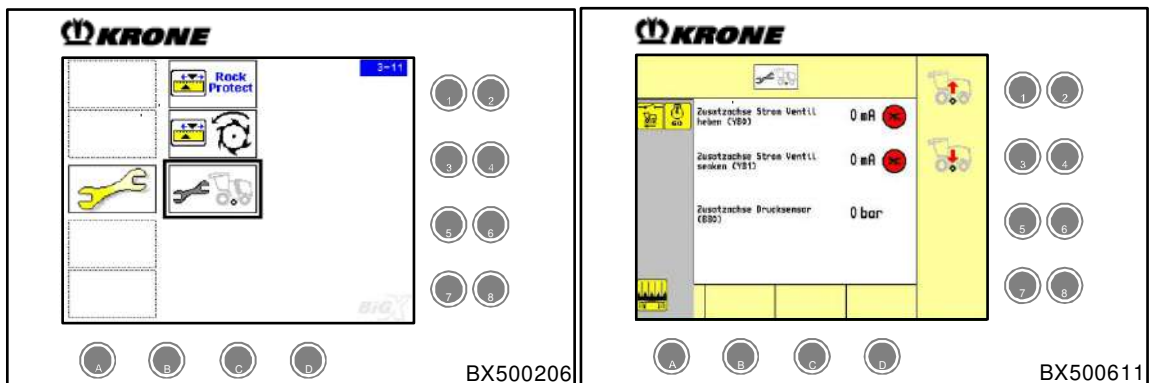


Fig. 230

Prerequisites:

- The diesel engine is running.
- The release switch traction drive is switched off
- The maize operating mode is set.





Main menu 3 Maintenance is active.

- Using the incremental encoder, choose menu 3-11 Maintenance of additional axle.
- Press the incremental encoder.

The display shows menu level Maintenance of additional axle.

**Displaying unfulfilled switching-on conditions and disturbances, see page 255.**

**Manually raising or lowering additional axle:**

- Press the  or  key to raise the additional axle.
- Press the  or  key to lower the additional axle.
- At the same time, check the set pressure at the pressure limiting valve on the additional axle (sensor B80).

Setpoint pressures at the pressure limiting valve on the additional axle:

Axle load	2.3 t	2.5 t	2.75 t
Setpoint pressure approx.	78 - 84 bar	88 - 94 bar	98 - 104 bar



**NOTE**

If the setpoint pressure specified in the table is not reached, contact your Krone dealer.

## 8.6.12 Menu 3-12 Automatic calibration of sensors at lifting unit

**⚠️ WARNUNG**

**Risk of injury due to unexpected movement of parts!**

During the calibration process, there is a risk of injury for persons who stay in the area of lifting gear, front attachment and discharge chute.

- Make certain no one remains in the swivel range or in the range of movement of lifting gear, front attachment and discharge chute during the calibration process.

Calibration prerequisites:

- Diesel engine speed = idle speed
- Release switch "road/field" is set to road mode.
- Release switch "traction drive" is switched off.
- Release switch "maintenance" is switched off.
- Switch "quick-stop console" is not actuated = OFF
- Switch "quick-stop manual operation" is not actuated = OFF
- The header has been folded out
- The seat switch is actuated (the driver's seat is occupied)
- The pendulum frame is horizontal.
- The machine is on a level surface.

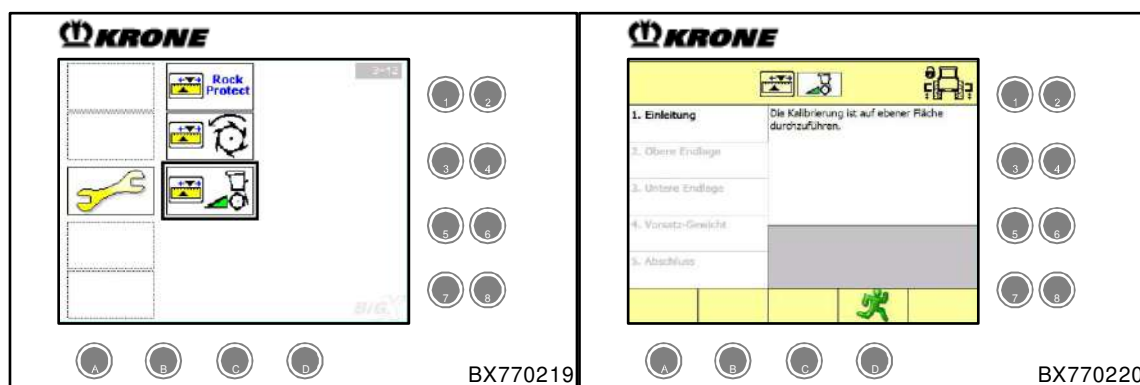


Fig. 231

Main menu 3 Maintenance is active.

- Using the incremental encoder, choose menu 3-12 Automatic calibration of lifting unit.
- Press the incremental encoder.

The display shows menu level Automatic calibration of lifting unit.

Alternatively, the lifting unit can be calibrated manually, see page 264.

- To start the calibration, press .

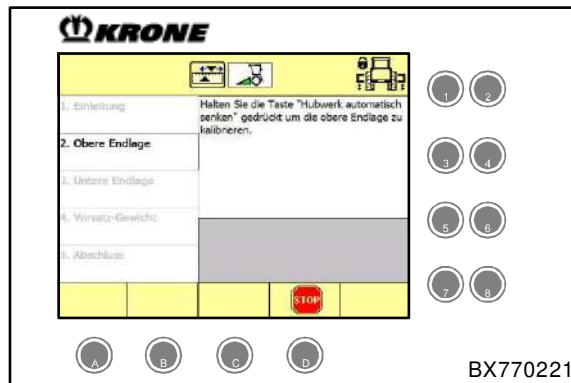


Fig. 232

- To carry out automatic calibration, press the "Lower lifting unit automatically" key on the control lever and hold it down, see page 140.

During calibration, the upper end position is first approached and then the lower end position. Then the header weight is determined.

- To interrupt automatic calibration before it is completed, release the "Lower lifting unit automatically" key on the control lever, see page 140

Alternatively, the lifting unit can be calibrated manually, see page 264.

8.7 Main menu 4 Service

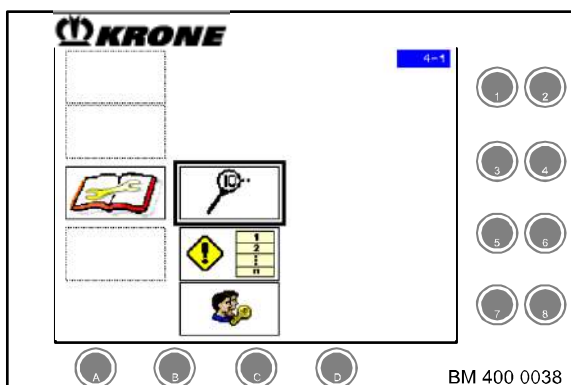




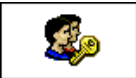

Fig. 233

The main menu level is active.

- You can use the incremental encoder to choose main menu 4.
- Press the incremental encoder.

The display shows menu level 4 Service.

The main menu, Service, is divided into the following menus:

Icon	Designation
	Menu 4-1 Diagnostics
	Menu 4-2 Error list
	Menu 4-3 Technician level (password-protected)
	Menu 4-4 Information

### 8.8 Menu 4-1 Diagnostics

Errors can be analysed and rectified with the help of the "Diagnostics" menu. The error descriptions in the appendix provide information as to which components could be affected. These can then be checked in the corresponding diagnostics menu.

The individual menus consist of a sensor and actuator test.

The sensor test displays the current measurement results from the sensors and actuators. These values are needed for further analysis of errors by the dealer.

The actuator test involves activating individual actuators directly to carry out an electrical check on their function.

**⚠ WARNING**

**Risk of injury from unexpected movement of components!**

During the actuator test conducted from the terminal or directly on the actuator, there is a risk due to unexpected movements of the machine or parts of the machine.

- Only allow qualified technicians to carry out work on the machine.
- Secure the actuated parts of the machine to prevent unexpected movements.
- During the actuator test, ensure that no persons remain within the range of the machine parts which are moved by the actuators.

The actuator test must only be performed from a safe position outside the area that is affected by machine parts moved by the actuators.



**NOTE**

In order to carry out an actuator test, you must ensure that all hydraulically moved parts are in their home/initial position.

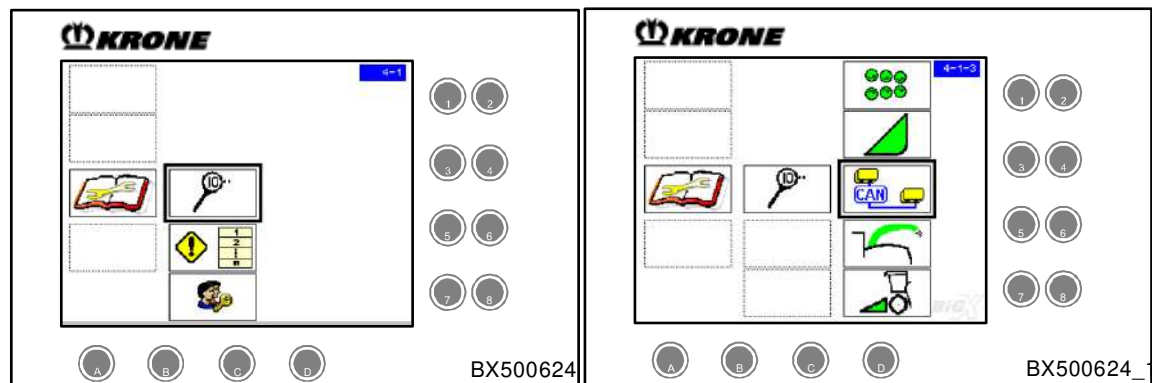


Fig. 234






















Main menu 4 Service is open.

- Using the incremental encoder, choose menu 4-1 Diagnostics.
- Press the incremental encoder.

The display shows the menu level Diagnostics.

## Info centre "EasyTouch"

The Diagnostics menu is divided into the following menus:

Icon	Designation
	Menu 4-1-1 Feed Drive
	Menu 4-1-2 Front attachment
	Menu 4-1-3 CAN bus
	Menu 4-1-4 Upper Discharge Chute
	Menu 4-1-5 Lifting Unit
	Menu 4-1-6 Travelling gear
	Menu 4-1-7 Metal Detection
	Menu 4-1-8 Diesel Engine
	Menu 4-1-9 Autopilot (option)
	Menu 4-1-10 Autoscan
	Menu 4-1-11 Electronics
	Menu 4-1-12 Work
	Menu 4-1-13 Grind
	Menu 4-1-14 Counterblade
	Menu 4-1-15 Corn Conditioner
	Menu 4-1-16 Joystick
	Menu 4-1-17 Control Unit Console
	Menu 4-1-18 Manual Operation
	Menu 4-1-19 Terminal
	Menu 4-1-20 RockProtect (option)
	Menu 4-1-21 Moisture measurement (option)

8.8.1 Unfulfilled switching-on conditions and CAN bus disturbances

Depending on the selected diagnostics menu, non-fulfilled switching-on conditions and errors are displayed in the terminal. There is a difference between:

- non-fulfilled switching-on conditions (yellow)
- CANBUS errors (red)

Overview of non-fulfilled switching-on conditions

Symbol	Description	Symbol	Description
	Diesel engine speed is not at 1950 rpm		Lifting unit is too low / is not low enough
	Diesel engine has not been started		Spout not parked
	Diesel engine not off		Spout not up
	Idle speed of diesel engine 1100 rpm is not reached		Intake OFF / not OFF
	Vehicle speed incorrect		Intake ON / not ON
	Switch the "autopilot" release switch on or off		Cutting drum running / not running
	Switch the "intake/header" release switch on or off		Cutting drum stopped / not stopped
	Switch the "traction drive" release switch on or off		Pendulum frame is not horizontal
	Switch the "road/field" release switch on or off		Grinding flap closed
	Switch the "parking brake" release switch on or off		Grinding flap open
	Seat switch (no one on the driver's seat)		Header not folded out
	"Quick stop console" switch on or off		Header not folded in
	"Quick stop manual operation" switch on or off		Header off/not off
	Open or close door		Header on/not on
	Switch the "maintenance" release switch on or off		Grass mode is not set
	Main coupling on/off		Maize mode is not set
	Lifting unit too high/not high enough		XDisc mode is not set

Table 4

Overview of possible CANBUS errors














Symbol	Description	Symbol	Description
	Error CAN to ADM 1/MFR		Error CAN to control lever
	Error CAN to ADM 2 (only double engine)		Error CAN to KMC2
	Error CAN to autopilot		Error CAN to KMC3
	Error CAN to CUC		Error CAN to metal detection
	Error CAN to DIOM		Error CAN to maturity level detection
	Error CAN to EMR		Error CAN to DRC
	Error CAN to manual operation		

Table 5

The switching-on conditions must be met in order for the diagnostic execution and the errors must be eliminated.

An appropriate remedy must be found otherwise supply voltages are not available, sensors return no values and actuators cannot be switched on.



8.8.1.1 General Status Displays Sensors/Actuators

The following status displays may appear during diagnostics of all sensors and actuators:

















Icon	Description	Icon	Description
	Error/implausible		Cable break
	Broken cable sensor		Short circuit
	Sensor attenuated		Actuator ON
	Sensor unattenuated		Actuator OFF
	Short circuit sensor		Actuator error
	Sensor OK		Wiring /Sensor defective
	Normal operation, Process active		Voltage value too large
	Process inactive		Stop requested

Table 6



**Note**

The status displays cable break and short circuit are not displayed for all actuators.

## 8.8.1.2 Menu 4-1-1 Diagnostics intake

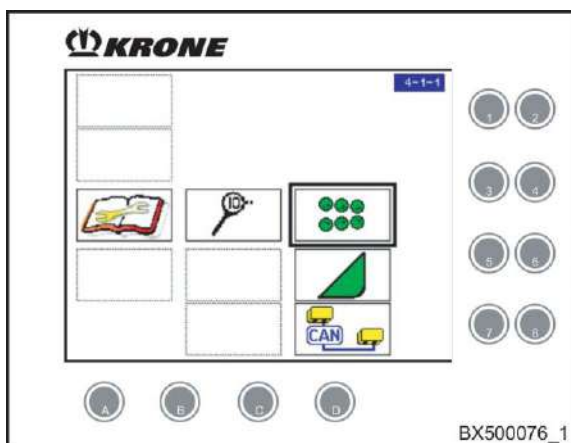


Fig. 235

- Select menu 4-1-1 "Intake".

The "Intake" diagnostics menu is divided into three displays:

- Display 1 "Sensor test"
- Displays 2 and 3 "Actuator test"

### Display 1 "Sensor test"

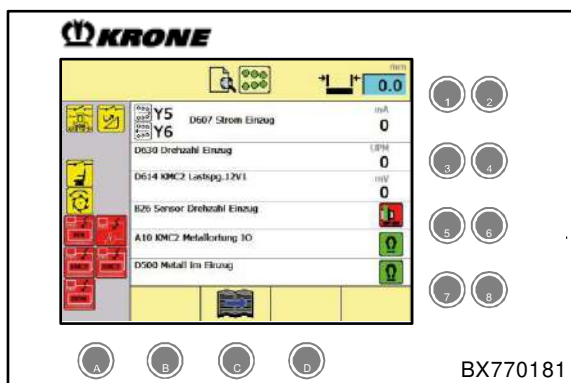


Fig. 236

Display 1 "Sensor test" shows the current measurement results of the sensors and actuators for the feed drive.

Screen description display 1 "Sensor test"






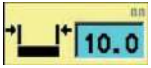
BMK	Screen display/icons/description
	 <b>Y5</b> D607 feed drive current . . . mA  <b>Y6</b>
Y5	Feed drive forwards
Y6	Feed drive backwards
	Current amperage in mA.
	D630 feed drive rotational speed . . . rpm
B26	Intake speed Current sensor value in rpm.
	D614 KMC2 load voltage 12V1 . . . mV
D614	Supply voltage +12V1 for the outputs of the KMC2 in mV.
	B26 sensor rotational speed feed drive 
B26	Status of sensor "feed drive rotational speed".
	A10 KMC2 metal detection OK 
Y35	Status of the "quick-stop valve", read in via the input of the KMC2.
	D500 metal at the intake 
Y35	Status of the "quick-stop valve", read in via the metal detection.
	
	Current setpoint chop length

Table 7

Status displays













Actuator status active	Actuator status inactive	Actuator status released	Actuator status Short-circuit	Description
				Feed drive forwards
				Feed drive backwards
				Horn
				Metal detection

Table 8

Display 2 "Actuator test"

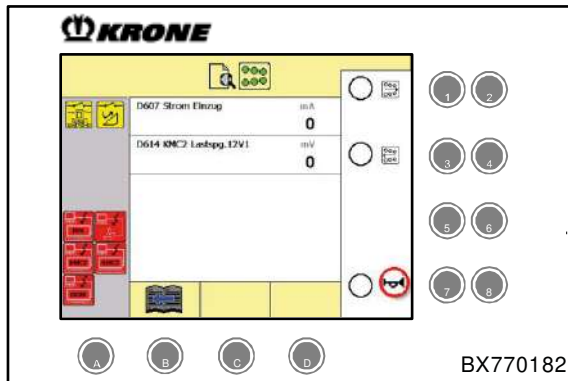


Fig. 237



On display 2 "Actuator test" the function of the actuators associated with the feed drive can be tested.










Mask description display 2 "Actuator test"

BMK	Screen display/icons/description
	D607 feed drive current . . . mA
Y5	Feed drive forwards
Y6	Feed drive backwards
	Current amperage in mA.

	D614 KMC2 load voltage 12V1 . . . mV
D614	Supply voltage +12V1 for the outputs of the KMC2 in mV.

Switching actuators on/off

If all switching-on conditions for the actuator test are fulfilled,  and  are displayed and the actuators displayed are released. These can be switched on and off using the numerical keys.

BMK	Icon	Description	Switch on actuator	Switch off actuator
Y5		Feed drive forwards		
Y6		Feed drive backwards		
H59		Horn		

## 8.8.1.3 Menu 4-1-2 Diagnostics front attachment

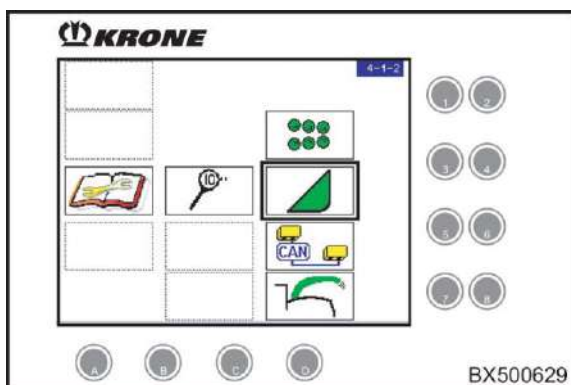


Fig. 238

- Select menu 4-1-2 "Front attachment".

The "Front attachment" diagnostics menu is divided into three displays:

- Display 1 "Sensor test"
- Displays 2 and 3 "Actuator test"

### Display 1 "Sensor test"

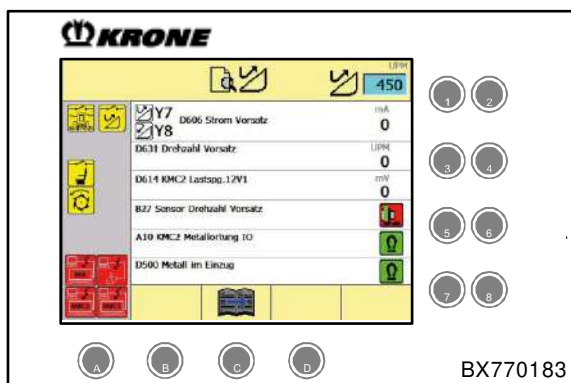





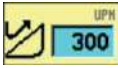












Fig. 239


Display 1 "Sensor test" indicates the current test results of the sensors and actuators for the front attachment.

Screen description display 1 "Sensor test"

BMK	Screen display/icons/description
	 <b>Y7</b>  <b>Y8</b> D606 front attachment current . . . mA
Y7	Front attachment forwards
Y8	Front attachment backwards Current amperage in mA.
	D631 front attachment speed . . . rpm
B27	Front attachment speed Current sensor value in rpm.
	D614 KMC2 load voltage 12V1 . . . mV
D614	Supply voltage +12V1 for the outputs of the KMC2 in mV.
	B27 speed sensor Header 
B27	Status of "Front attachment speed sensor".
	A10 KMC2 metal detection OK 
Y35	Status of the "quick-stop valve", read in via the input of the KMC2.
	D500 metal at the intake 
Y35	Status of the "quick-stop valve", read in via the metal detection.
	
	Current setpoint front attachment speed.


**Status displays**

Actuator status active	Actuator status inactive	Actuator status released	Actuator status Short-circuit	Description
				Front attachment forwards
				Front attachment backwards
				Metal detection

Status active	Description
	Headland position management error

**Headland position management**

Headland position management reduces the rotational speed of the intake unit and of the front

attachment above a specified lifting height. If the "headland position management error"  occurs, this means that the intake unit and the front attachment have come to a stop during the automatic rotational speed reduction. The error messages 2408 "Front attachment rotational speed disturbance" and/or 2407 "Feed drive rotational speed disturbance" appear on the terminal. In this case, carry out the following steps:

- Stop the machine.
- Stop the lifting unit.
- Check the front attachment and the intake unit for soiling and clean if required.



Display 2 "Actuator test"

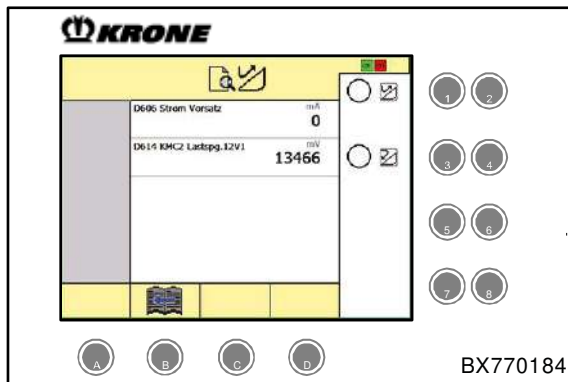




Fig. 240







On display 2 "Actuator test" the function of the actuators associated with the front attachment can be tested.

Mask description display 2 "Actuator test"

BMK	Screen display/icons/description
	D606 front attachment current . . . mA
Y7	Front attachment forwards
Y8	Front attachment backwards
	Current amperage in mA.
	D614 KMC2 load voltage 12V1 . . . mV
D614	Supply voltage +12V1 for the outputs of the KMC2 in mV.

Switching actuators on/off

If all switching-on conditions for the actuator test are fulfilled,  and  are displayed and the actuators displayed are released. These can be switched on and off using the numerical keys.

BMK	Icon	Description	Switch on actuator	Switch off actuator
Y7		Front attachment forwards		
Y8		Front attachment backwards		

8.8.1.4 Menu 4-1-3 CAN bus

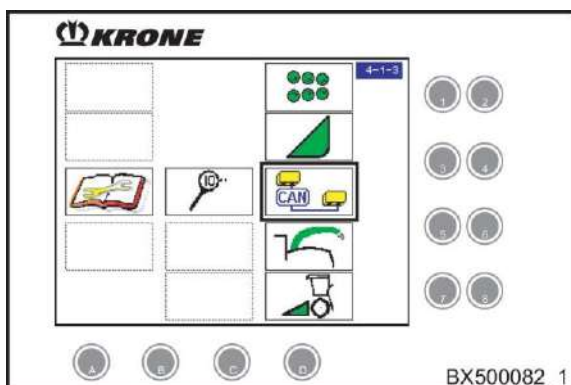


Fig. 241

- Select menu 4-1-3 "CAN Bus".

The "CAN Bus" diagnostics menu is divided into two displays:

- Display 1 "CAN bus participant"
- Display 2 "Terminating resistor CAN bus 2"

Display 1 "CAN Bus user"

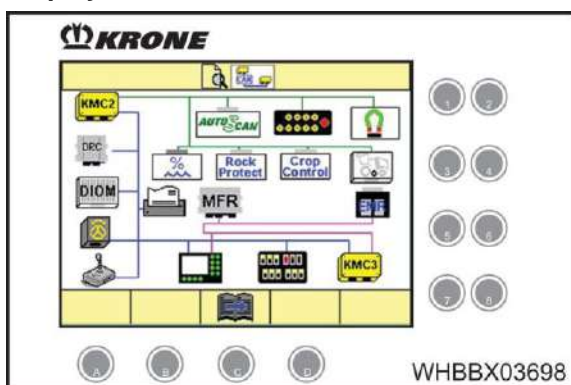


Fig. 242

Display 1 "CAN Bus user" shows the current connected control units (participants) at the CAN bus. In the event of an error, the relevant participants are shown in red with an exclamation mark. An error message is also displayed on the terminal.

► **NOTE**  
For error correction, contact your dealer or KRONE customer service.

Sample illustration of an error at the CAN bus:



KMC2 active



KMC2 inactive or disconnected from CAN bus

Display 2 "Terminating resistor CAN bus 2"

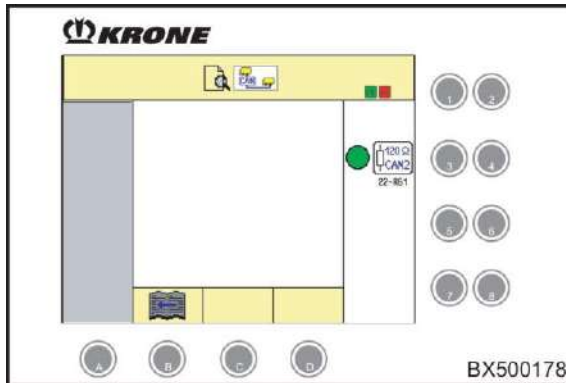


Fig. 243

In display 2 "Terminating resistor CAN bus 2", the relay to switch the terminating resistor installed in the CAN bus 2 can be switched on or off for extended diagnostics purposes. The terminating resistor is switched on automatically if there is no AutoScan sensor installed on the machine.

Mask description display 2 "terminating resistor CAN bus 2"




BMK	Mask display / symbols / description
	 22-R61
	Condition of terminating resistor CAN 2.

Table 9

Switching actuators on/off

If all switching conditions have been met for the actuator test,

the softkeys  and  are displayed and the displayed actuators are activated. They can be switched on and off via number keys.




BMK	Symbol	Description	Switch on the actuator	Switch off the actuator
R61		Terminating resistor CAN2		

Table 10

## 8.8.1.5 Menu 4-1-4 Diagnostics spout

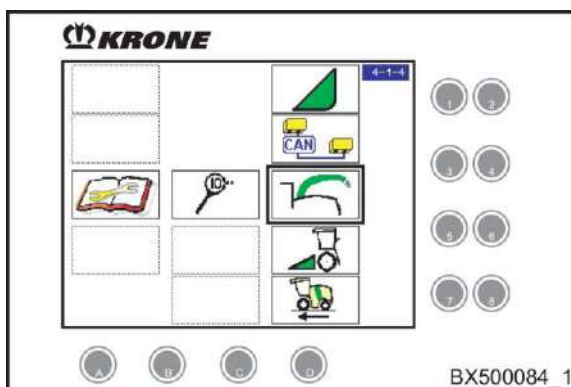


Fig. 244

- Select menu 4-1-4 "Discharge Chute".

The "Discharge Chute" diagnostics menu is divided into three pages:

- Display 1 "Sensor test"
- Displays 2 and 3 "Actuator test"

### Display 1 "Sensor test"

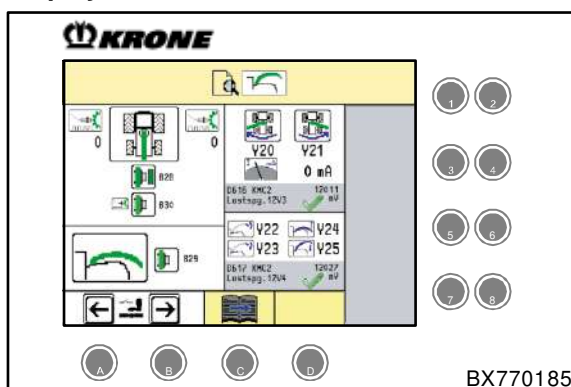













Fig. 245


Display 1 "Sensor test" shows the current statuses of the sensors and actuators for the spout. For diagnostics purposes, the spout must be actively actuated from the multi-function lever.

Screen description display 1 "Sensor test"





BMK	Screen display/icons/description
	 ...
B30	Angular momentum discharge chute Current sensor value in digits.
	 B28
B28	Status of sensor "position spout centre".
	 B30
B30	Status of sensor "angular momentum spout".
	 B29
B29	Status of sensor "position spout below".
	 Y20 Y21  ... mA
Y20	"turn spout left"
Y21	"turn spout right"
	Current amperage in mA.
	D616 KMC2 ... Load voltage 12V3  mV
D616	Supply voltage +12V3 for the outputs of the KMC2 in mV.


## Info centre "EasyTouch"

BMK	Screen display/icons/description			
		Y22		Y24
		Y23		Y25
	Status display of the valves.			

D617	KMC2	...
	Load voltage 12V4	 mV
D617	Supply voltage +12V4 for the outputs of the KMC2 in mV.	

### Status displays

BMK	Position left	Position centre	Position right	Position unknown	Description
B30					Angular momentum discharge chute

BMK	Position at top	Position at bottom	Description
B29			Position discharge chute at bottom

BMK	Cable break	Short-circuit	Unknown	Description
B29				Position discharge chute at bottom

Display 2 "Actuator test"

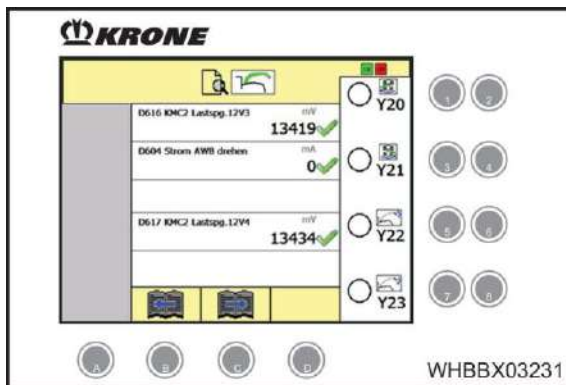







Fig. 246







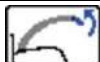





On display 2 "Actuator test" the function of the actuators associated with the spout can be tested.

Mask description display 2 "Actuator test"











BMK	Screen display/icons/description
	D616 KMC2 load voltage 12V3 <span style="float: right;">... mV</span> 
D616	Supply voltage +12V3 for the outputs of the KMC2 in mV.
	D604 current turn spout <span style="float: right;">... mA</span> 
Y20	Turn discharge chute left
Y21	Turn discharge chute right
	Current amperage in mA.
	D617 KMC2 load voltage 12V4 <span style="float: right;">... mV</span> 
D617	Supply voltage +12V4 for the outputs of the KMC2 in mV.

## Switching actuators on/off

If all switching-on conditions for the actuator test are fulfilled,  and  are displayed and the actuators displayed are released. These can be switched on and off using the numerical keys.

BMK	Icon	Description	Switch on actuator	Switch off actuator
Y20		Turn discharge chute left		
Y21		Turn discharge chute right		
Y22		Lift discharge chute flap		
Y23		Lower discharge chute flap		

## Status displays

Actuator status active	Actuator status inactive	Actuator status Error	Description
			Turn discharge chute left
			Turn discharge chute right
			Lift discharge chute flap
			Lower discharge chute flap



Display 3 "Actuator test"

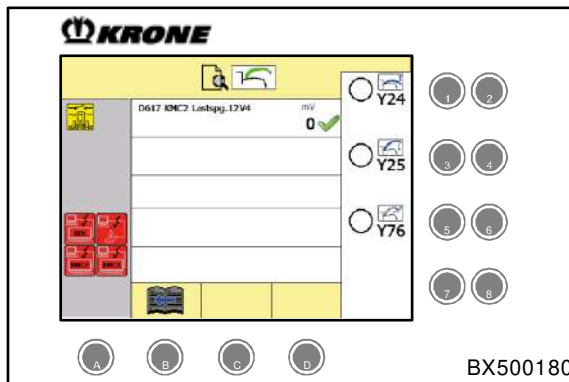




Fig. 247










On display 3 "Actuator test" the function of the actuators associated with the spout can be tested.

Mask description display 3 "Actuator test"







BMK	Screen display/icons/description
	D617 KMC2 . . . mV Load voltage 12V4
D617	Supply voltage +12V4 for the outputs of the KMC2 in mV.

Switching actuators on/off

If all switching-on conditions for the actuator test are fulfilled,  and  are displayed and the actuators displayed are released. These can be switched on and off using the numerical keys.

BMK	Icon	Description	Switch on actuator	Switch off actuator
Y24		Lift spout		
Y25		Lower spout		
Y76		Hinged discharge chute extension		

Status displays

Actuator status active	Actuator status inactive	Description
		Lift spout
		Lower spout
		Hinged discharge chute extension

8.8.1.6 Menu 4-1-5 Diagnostics lifting unit

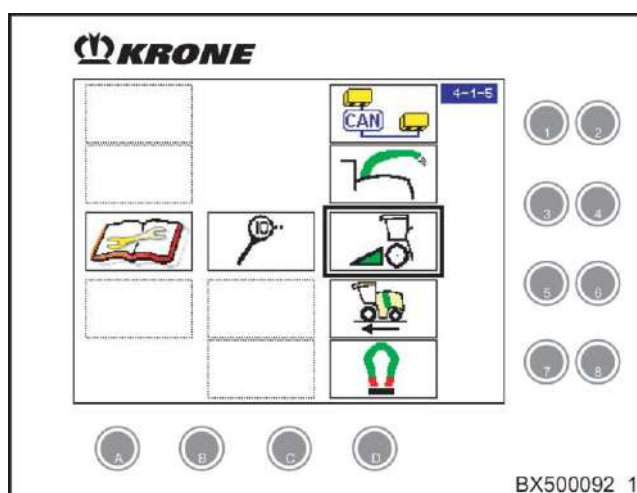


Fig. 248

- Select menu 4-1-5 "Lifting unit".

The "Lifting unit" diagnostics menu is divided into four displays:

- Display 1 "Sensor test"
- Displays 2 and 3 "Actuator test"
- Display 4 "Calibration values"

Display 1 "Sensor test"

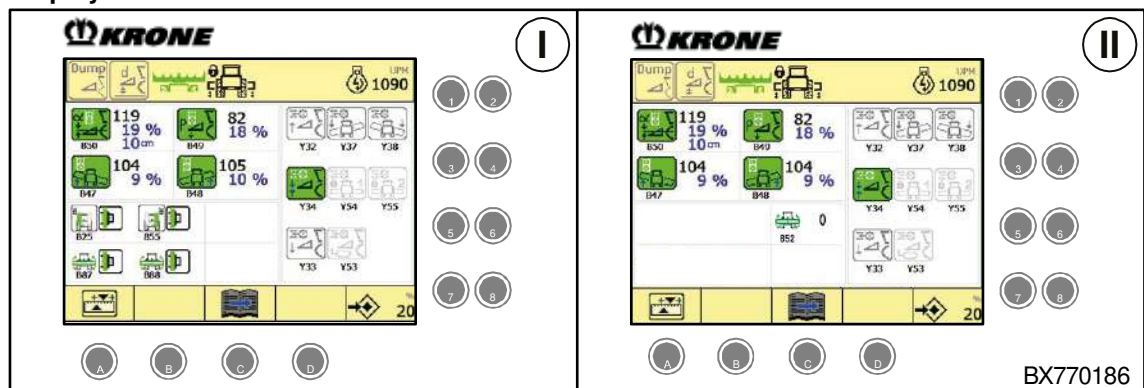


Fig. 249

I Two-part EasyCollect

II Three-part EasyCollect/XCollect

Display 1 "Sensor test" indicates the current test results of the sensors and actuators for the lifting unit.

Mask description display 1 "Sensor test"

BMK	Mask display/icons/description
	<p>Status display of the set functions and operating modes.</p>
	rpm ... Current diesel engine speed in rpm.
	... B47 ... % Ground contour left Current sensor value in digits and as %.
	... B48 ... % Ground contour right Current sensor value in digits and as %.
	... B49 ... % Lifting unit pressure Current sensor value in digits and as %.

Table 11

# Info centre "EasyTouch"




















BMK	Mask display/icons/description
	 ... ... % B50 ... cm
B50	Lifting unit position Current sensor value in digits, as % and in cm.
	    B25                      B55
B25 B55	Position of header on left (optional) Position of header on right (optional) Current status of the sensors.
	    B87                      B88
B87 B88	Position of pendulum frame at top left (optional) Position of pendulum frame at top right (optional) Current status of the sensors.
	 ... B52
B52	Transversal inclination of pendulum frame (optional) Current status or sensor value in digits.
	   Y32    Y37    Y38    Y34    Y54    Y55   Y33    Y53
	Status display of the valves.
	 ... ...
	Currently saved setpoint value of the lifting unit height in cm or as %.

Table 12

To switch to the "calibration values" display, press the  key under .

Status displays







Status Active	Status inactive	Description
		Distance mode
		Pressure mode
		Position mode

Table 13



EasyCollect	EasyFlow	XDisc	Description
			Set header

Table 14




Status Active	Status inactive	Status implausible	Description
			Dumping/active vibration damping

Table 15










Status Free	Status Locked	Description
		Position of pendulum frame at top right
		Position of pendulum frame horizontal
		Position of pendulum frame at top left
		Position of pendulum frame unknown
		Actuation of lifting unit control locked

Table 16

# Info centre "EasyTouch"









BMK	Status Active	Status error	Description
B47			Ground contour left
B48			Ground contour right
B49			Lifting unit pressure
B50			Lifting unit position

Table 17

































BMK	Actuator status Active	Actuator status inactive	Actuator status cable break	Actuator status short circuit	Description
Y32					Raise lifting unit
Y33					Lower lifting unit
Y34					Lifting unit accumulator
Y37					Turn pendulum frame on left
Y38					Turn pendulum frame on right
Y53					Storage switch grass/maize
Y54					Pendulum frame free 1
Y55					Pendulum frame free 2

Table 18

**Display 2 "Actuator test"**

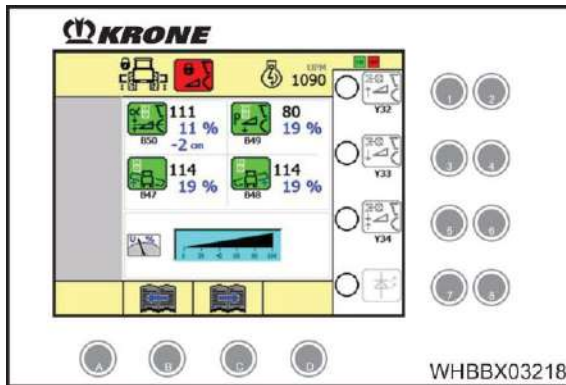


Fig. 250

On display 2 "Actuator test" the function of the actuators associated with the lifting unit can be tested.

**Mask description display 2 "Actuator test"**

Most of the icons are already described in display 1 "Sensor test". For this reason, only new icons are described below.

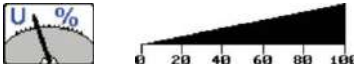



BMK	Screen display/icons/description
	
	<p>The pulse/pause ratio of the control signal to actuate the actuators can be adjusted via the incremental encoder.</p>
	
A9	<p>Checking the "operational readiness" LED on the lifting unit control.</p>

Table 19

## Switching actuators on/off

- Using the incremental encoder, set the value for the pulse/pause ratio at which the "Lift lifting unit" and "Lower lifting unit" valves are to be actuated.

If all switching-on conditions for the actuator test are fulfilled, the softkeys  and  are displayed and the actuators displayed are released. These can be switched on and off using the numerical keys.













BMK	Icon	Description	Switch on actuator	Switch off actuator
Y32		Raise lifting unit		
Y33		Lower lifting unit		
Y34		Lifting unit accumulator		
A9		"Operational readiness" LED on the lifting unit control.		

Table 20

## Status displays



Status Active	Status inactive	Description
		"Operational readiness" LED on the lifting unit control.

Table 21



Display 3 "Actuator test"

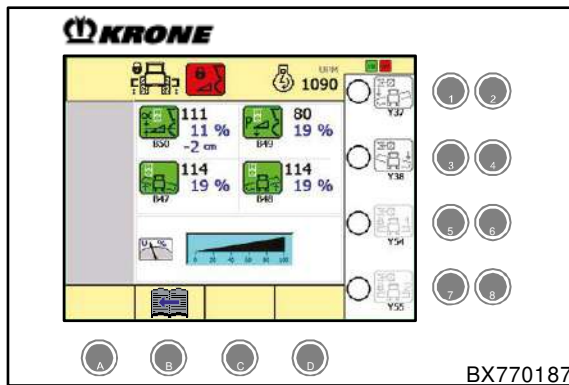


Fig. 251



On display 3 "Actuator test" the function of the actuators associated with the lifting unit can be tested.

**Mask description display 3 "Actuator test"**

The icons have already been described on display 1 "Sensor test" and display 2 "Actuator test". For this reason, no icons are described below.

**Switching actuators on/off**

- Using the incremental encoder, set the value for the pulse/pause ratio at which the "Lift lifting unit" and "Lower lifting unit" valves are to be actuated.

If all switching-on conditions for the actuator test are fulfilled,  and  are displayed and the actuators displayed are released. These can be switched on and off using the numerical keys.















BMK	Icon	Description	Switch on actuator	Switch off actuator
Y37		Turn pendulum frame left		
Y38		Turn pendulum frame right		
Y54		Pendulum frame free Valve 1		
Y55		Pendulum frame free Valve 2		

Table 22

Display 4 "Calibration values"

- On display 1 "Sensor test", press the  key under .

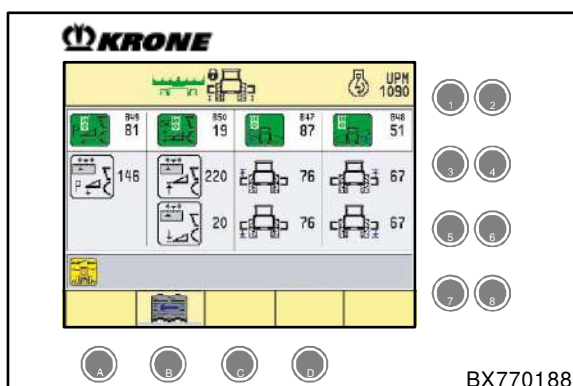


Fig. 252

Display 4 "Calibration values" clarifies the dependencies between sensor and calibration values.

Mask description display 4 "Calibration values"







BMK	Screen display/icons/description
	 ... B47 ... %
B47	Header contour left Current sensor value in digits and as %.
	 ...  ...
B47	Header contour left Currently calibrated sensor values in digits.
	 ... B48 ... %
B48	Header contour right Current sensor value in digits and as %.
	 ...  ...
B48	Header contour right Currently calibrated sensor values in digits.

Table 23






BMK	Screen display/icons/description
	 ... B49 ... %
B49	Lifting unit pressure Current sensor value in digits and as %.
	 ...
B49	Lifting unit pressure Currently calibrated sensor value in digits.
	 ... B50 ... % ... cm
B50	Position lifting unit Current sensor value in digits, as % and in cm.
	 ...  ...
B50	Position lifting unit Currently calibrated sensor values in digits.

Table 24

**Status displays**










Active	Inactive	Successful	Description
			Calibration position "at top"
			Calibration position "at bottom"
			Calibration lifting unit pressure

Table 25

## 8.8.1.7 Menu 4-1-6 Diagnostics travelling gear

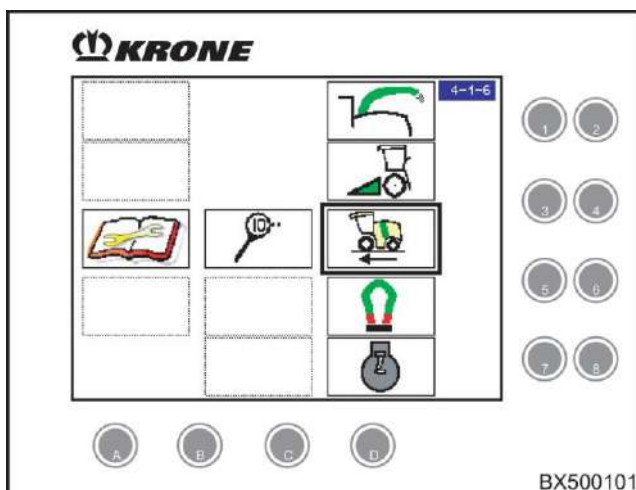


Fig. 253

- Select menu 4-1-6 "Travelling gear".

The "Travelling gear (Bosch)" diagnostics menu is divided into three displays:

- Display 1 "Sensor test"
- Display 2 "Sensor test additional axle" (for additional axle option only)
- Display 3 "Actuator test additional axle" (for additional axle option only)

### Display 1 "Sensor test"

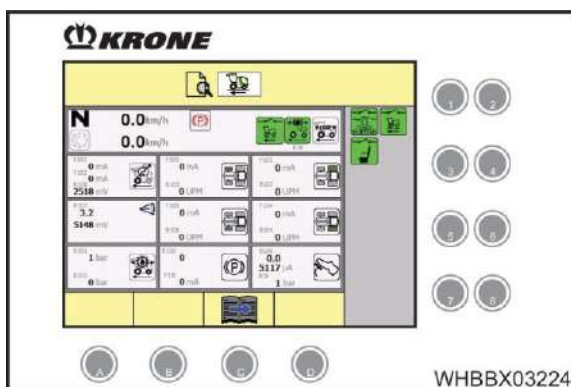


Fig. 254

Display 1 "Sensor test" indicates the current test results of the sensors and actuators for the travelling gear.

Screen description display 1 "Sensor test"







BMK	Screen display/icons/description
	 <span style="margin-left: 100px;">... km/h</span>
	Current direction of travel and speed display in km/h.
	 <span style="margin-left: 100px;">... km/h</span>
	Saved driving speed of the speed controller in km/h.
	
	Current status of the parking brake.
S3	 "Travelling gear" release switch Current status of the release switch.
B18	 B18 Brake tank pressure Current status of the sensor.
	
	Status display of the power limitation.
	Y101 ... mA Y102 ... mA B108 ... mV
Y101	Drive pump forwards
Y102	Drive pump backwards
B108	Pivoting angle pump Current amperage in mA and current sensor value in mV.

Table 26






BMK	Screen display/icons/description
Y105 ... mA B105 ... rpm	
Y105 B105	Adjusting motor at rear left Speed sensor wheel at rear left Current amperage in mA and current sensor value in rpm.
Y103 ... mA B103 ... rpm	
Y103 B103	Adjusting motor at front left Speed sensor wheel at front left Current amperage in mA and current sensor value in rpm.
B107 ... ... mV	
B107	Steering angle at rear left Current sensor value in digits and mV.
Y106 ... mA B106 ... rpm	
Y106 B106	Adjusting motor at rear right Speed sensor wheel at rear right Current amperage in mA and current sensor value in rpm.
Y104 ... mA B104 ... rpm	
Y104 B104	Adjusting motor at front right Speed sensor wheel at front right Current amperage in mA and current sensor value in rpm.

Table 27




BMK	Screen display/icons/description
	B101 ... bar  B102 ... bar
B101 B102	Pump pressure MA Pump pressure MB Current sensor values in bar.
	B110 ...  Y18 ... mA
B110 Y18	Parking brake pressure Parking brake Current sensor value in digits and current amperage in mA.
	B109 ...  ... $\mu$ A B16 ... bar
B109 B16	Brake pedal angle Service brake pressure Current sensor values in digits, $\mu$ A and bar.

Table 28

## Status displays




Forwards	Neutral (Standstill)	Backwards	Description
			Direction of travel

Table 29


Status active	Description
	<b>Emergency operation:</b> The travelling gear computer has detected a serious error. The machine has been switched to a mode which allows the machine to move at a reduced speed.

Table 30





Status active	Status inactive	Description
		Cruise control
		Power limitation

Table 31







Status active	Status ready	Status inactive	Description
			Traction control system Level I (maize mode)
			Traction control system Level II (grass mode)

Table 32

The icons in the lower part of the display (B16, B101 ... B110) are colour-coded according to status. The representation at sensor B16 is shown as an example below.





BMK	Status ok	Status Not OK	Status unauthorised	Status unknown	Description
B16					Service brake pressure

Table 33



Display 2 "Sensor test additional axle" (for "additional axle" option only)

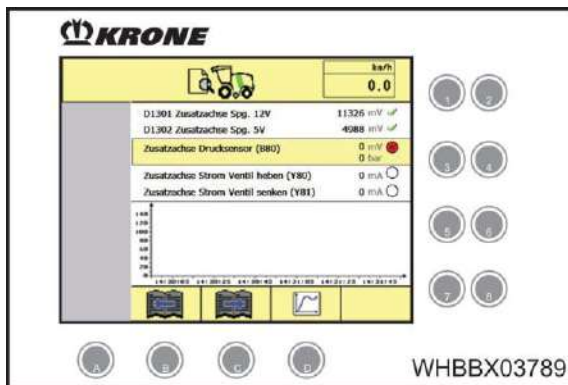







Fig. 255

Display 2 "Sensor test additional axle" indicates the current test results of the sensors and actuators of the "additional axle"

**Mask description display 2 "Sensor test additional axle"**

BMK	Screen display/icons/description
	km/h ...
	Current driving speed in km/h.
	D1301 additional axle volt. 12V ... mV 
D1301	Supply voltage of the control unit "additional axle" in mV.
	D1302 additional axle volt. 5V ... mV 
D1302	Supply voltage of the sensors in mV
	Additional axle pressure sensor (B80) ... mV  ... bar
B80	Additional axle pressure Current sensor value in mV and bar.
	Lift additional axle current valve (Y80) ... mA 
Y80	Lift additional axle Current amperage in mA.
	Lift additional axle current valve (Y81) ... mA 
Y81	Lower additional axle Current amperage in mA.

Display 3 "Actuator test additional axle" (for "additional axle" option only)

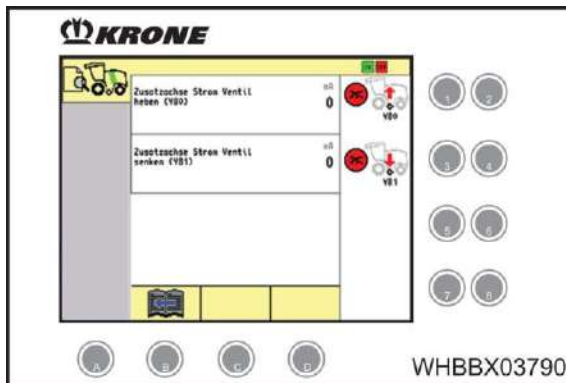




Fig. 256







The functions of the "additional axle" valves can be tested on display 3 "Actuator test additional axle"

**Mask description display 3 "Actuator test additional axle"**

BMK	Screen display/icons/description
	Additional axle current valve lift (Y80) mA ...
Y80	Lift additional axle Current amperage in mA.
	Additional axle current valve lower (Y81) mA ...
Y81	Lower additional axle Current amperage in mA.

**Switching actuators on/off**

If all switching-on conditions for the actuator test are fulfilled,  and  are displayed and the actuators displayed are released. These can be switched on and off using the numerical keys.

BMK	Icon	Description	Switch on actuator	Switch off actuator
Y80		Lift additional axle		
Y81		Lower additional axle		

## 8.8.1.8 Menu 4-1-7 Metal detection

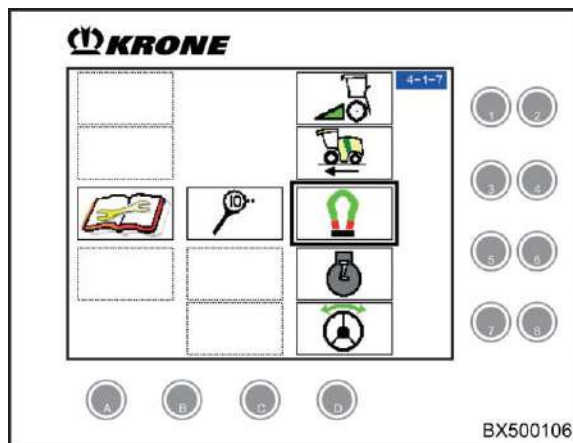


Figure 257

- Select Menu 4-1-7 "Metal Detection".

The "Metal Detection" diagnostics menu is divided into two displays:

- Display 1                      Sensor test/ actuator test
- Display 2                      Sensor test/ actuator test

Display 1 "Sensor and actuator test"

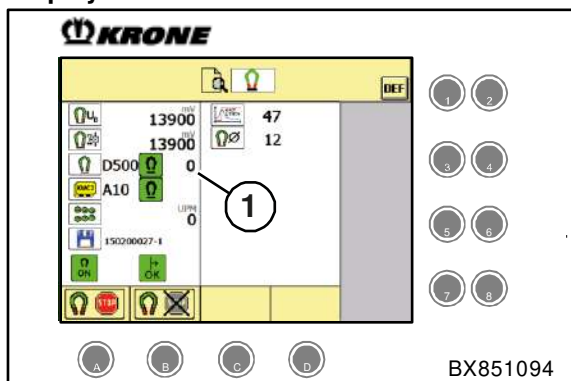













Fig. 258

Display 1 "Sensor and actuator test" shows the current measurement results for the sensors and actuators used for metal detection. Furthermore, the metal detection (the quick-stop valve) can be tested.

**Mask description display 1 "Sensor and actuator test"**





<b>CAUTION</b>
<p><b>Damage caused by deactivated "metal detection"!</b></p> <p>If the "metal detection" function has been deactivated by the stop lock "on", the machine may be damaged.</p> <ul style="list-style-type: none"> <li>Ensure that the stop lock is set to "off".</li> </ul>

If metal detection is deactivated, the working screen displays the  icon. It is essential to check the setting of the stop lock. If a fault occurs, contact KRONE customer service!





	mV	...
Supply voltage for metal detection in mV.		
	mV	...
Voltage present at the metal detection switching output in mV.		
	D500	
...	Status of the metal detection output with position information of the metal, if detected.	
	A10	
Status of the KMC2 input. (Also switched through the metal detection output)		
	rpm	...
B26	Intake speed Current sensor value in rpm.	
	...	
Software version of metal detection.		
	...	
Currently set disturbance threshold value.		
	...	
Currently set disturbance average value.		

## Switching actuators on/off






The test stop can be executed with a stationary and running feed drive/front attachment.

Icon	Description	Run function
	Execute test stop.	
	Cancel test stop and release metal detection.	

## Status displays

Status active	Status inactive	Description
		Metal detection (active = metal detected)
		Function "Metal detection"

Test stop	All the way to the left	All the way to the right	Description
0	1	6	D500 - metal position information

Status OK	Status faulty	Status cable break	Status short circuit	Status current > 10 A	Description
					Metal detection output

## 8.8.1.9 Menu 4-1-8 Diesel Engine

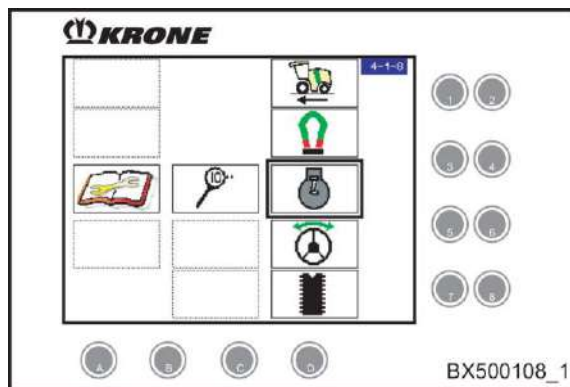


Fig. 259

- Select menu 4-1-8 "Diesel engine".

The "Diesel engine" diagnostics menu is divided into five displays:

- Displays 1 to 3                      Sensor test
- Display 4                              Hydrostatic fan
- Display 5                              Sensor test
- Display 6                              Service interval

Display 1 "Sensor test"

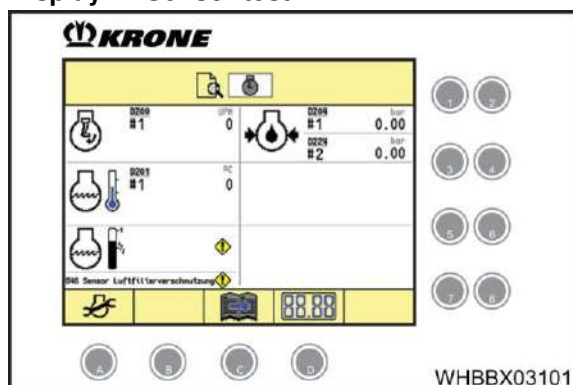








Fig. 260

Display 1 "Sensor test" shows the latest measurement results for the "diesel engine".

**Screen description display 1 "Sensor test"**

BMK	Screen display/icons/description		
		D200 #1	rpm ...
D200	Current engine speed in rpm.		
		D201 #1	°C ...
D201	Current coolant temperature in °C.		
		D204 #1 D224 #2	bar ... bar ...
D204	Current engine oil pressure in bar. Oil pressure		
			
B45	Current status of "coolant filling level" sensor.		
		B46 Air filter contamination sensor	
B46	Current status of "air filter contamination" sensor.		



Display 2 "Sensor test"

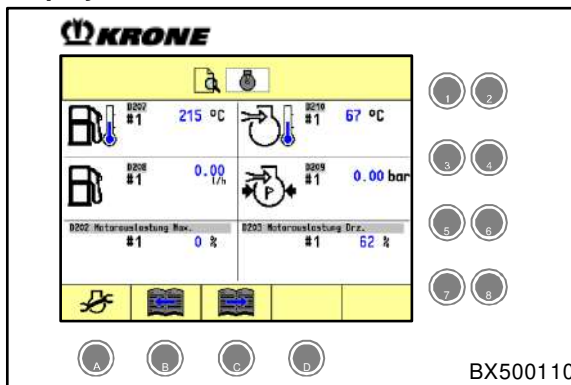






Fig. 261

Display 2 "Sensor test" shows the latest measurement results for the diesel engine.

**Mask description display 2 "Sensor test"**

BMK	Screen display/icons/description
	Max. engine load #1 ... %
D202	Current engine load referred to maximum engine power.
	Engine load rpm #1 ... %
D203	Current engine load referred to maximum engine power at current engine speed.
	 D207 °C #1 ...
D207	Current fuel temperature in °C.
	 D208 l/h #1 ...
D208	Current fuel consumption in litres per hour.
	 D209 bar #1 ...
D209	Current charge pressure in bar
	 D210 °C #1 ...
D210	Current charge air temperature in °C

Display 3 "Sensor test"

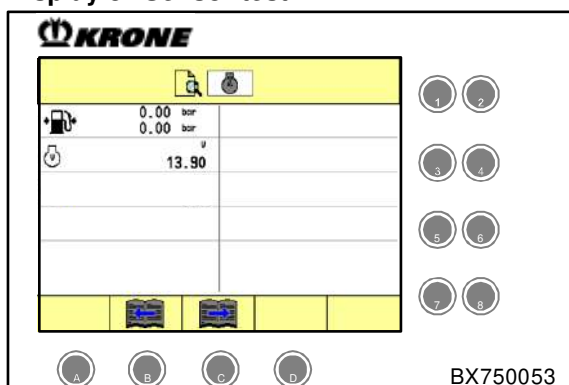




Fig. 262

Display 3 "Sensor test" shows the latest measurement results for the "diesel engine".

**Screen description display 3 "Sensor test"**

BMK	Screen display/icons/description
	 <div style="display: inline-block; vertical-align: middle; margin-left: 20px;"> <p>... bar</p> <p>... bar</p> </div>
B377	Fuel pressure (master)
B377S	Fuel pressure (slave)
	Current sensor values in bar.
	 <div style="display: inline-block; vertical-align: middle; margin-left: 20px;"> <p>V</p> <p>...</p> </div>
	Current supply voltage of "EDC Master" control unit in V.

Display 4 "Hydrostatic fan"

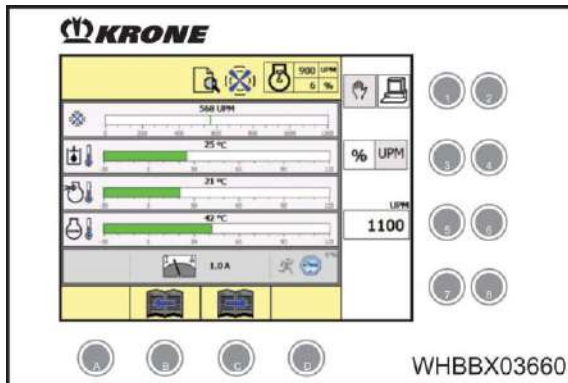


Fig. 263

Display 4 "Hydrostatic fan" shows the current measurement results of the fan system in connection with the diesel engine. If inappropriate temperature values occur, and possible faults need to be remedied, the fan speed can be varied for diagnostic purposes. Automatic fan adjustment is resumed when you exit the display.

Screen description - display 4 "Hydrostatic fan"

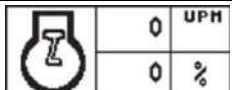
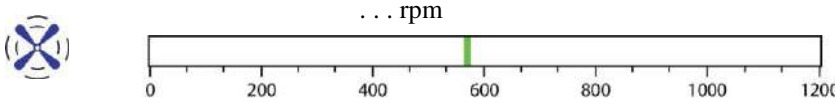
Ref.	Screen display/symbols/description
	
	Current diesel engine speed/duty in rpm/%.
	
	Current fan speed in rpm.

Table 34

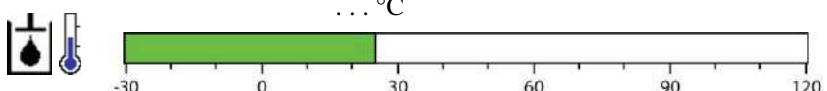
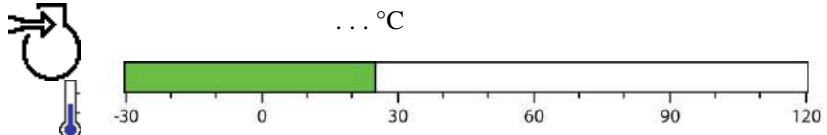
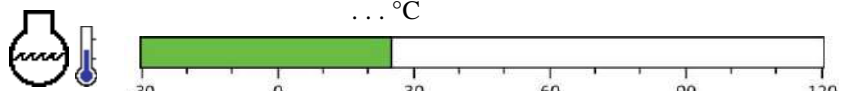






Ref.	Screen display/symbols/description
	
B85	Hydraulic oil temperature Current sensor value in °C.
	
B403	Charge air temperature Current sensor value in °C.
	
B124	Coolant temperature Current sensor value in °C.
	
Y82	Hydraulic fan control Current rating in A.
	
	<p>Current reference variable of fan control with relative speed input in %.</p> <ul style="list-style-type: none"> <li> = Wait position, fan rotating at minimum speed.</li> <li> = Control based on current hydraulic oil temperature.</li> <li> = Control based on current charge air temperature.</li> <li> = Control based on current coolant temperature.</li> </ul>

Table 35









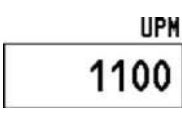


Symbol	Description	Key
	Activate manual mode	
	Activate automatic mode	
	Select desired fan speed input in %	
	Select desired fan speed input in rpm	
	Reduce fan speed in rpm/% (according to selection)	
	Increase fan speed in rpm/% (according to selection)	

Table 36

### Status displays

The colours of the displayed bars change according to the temperature/speed range. This ensures critical ranges are displayed.

Ref.	Description	Green	Yellow	Red
	Fan speed in rpm.	190 – 1100		0 – 190
B85	Hydraulic oil temperature in °C.	30 – 75	75 – 85	85 – 120
B403	Charge air temperature in °C.	30 – 75	75 – 85	85 – 120
B124	Coolant temperature in °C.	30 – 75	75 – 85	85 – 120

Table 37








Symbol	Description
	The fan is in automatic mode.
	The fan is in manual mode.
	Fault condition, fan rotating at maximum speed.
	Cleaning condition, fan rotates at maximum speed for a pre-set time (parameter 33759 "Cleaning phase duration"; parameter 33768 "Working phase duration").
	The diesel engine/fan is off.

Table 38

## Display 5 "Service interval"

- On display 1 "Sensor test" press the  key under .

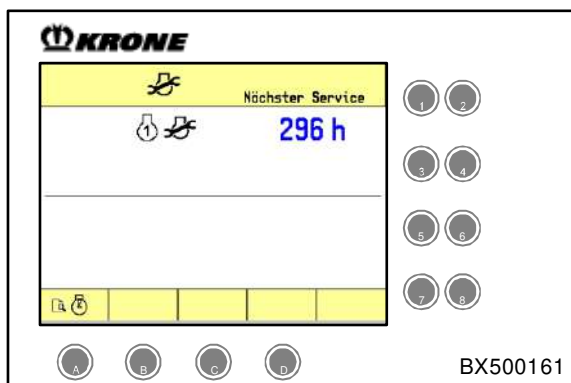


Fig. 264

Display 5 "Maintenance interval" shows the hours until the next maintenance interval.

### Screen description - display 5 "Service interval"

BMK	Screen display/icons/description
	<b>Nächster Service</b>
	<b>500 h</b>
	Number of hours until next scheduled maintenance.

Table 39

8.8.1.10 Menu 4-1-9 Automatic steering system

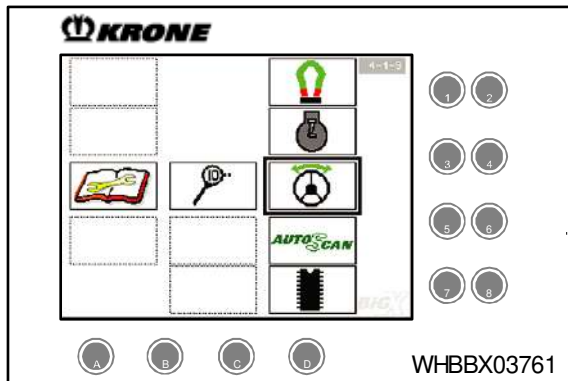


Fig. 265

- Select menu 4-1-9 "Autopilot".

The "Autopilot" diagnostics menu is divided into two displays:

- Display 1                      Sensor test
- Display 2                      Actuator test

Display 1 "Sensor test"

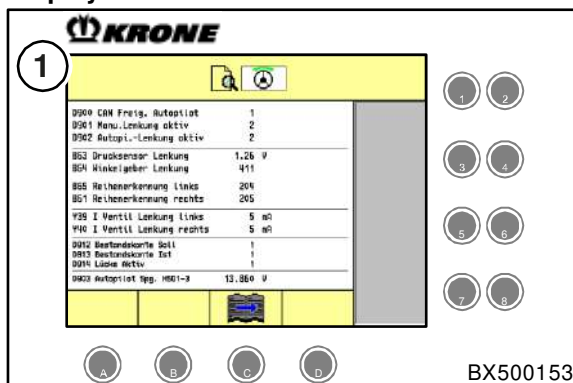


Fig. 266

Display 1 "Sensor test" shows the current measurement results of the sensors and actuators for the autopilot.

Screen description display 1 "Sensor test"

BMK	Screen display/icons/description
	D900 CAN release autopilot ...
D900	Status display as to whether all switching-on conditions for the automatic steering are fulfilled. 1: Fulfilled 2: Not fulfilled
	D901 Manu. steering active ...
D901	Status display as to whether the steering wheel is steered. 1: Steering motion detected 2: No steering motion detected
	D902 Autopi. steer. active ...
D902	Status display of automatic steering. 1: Active 2: Not ready 3: Ready for activation
	B63 Steering press. sens. ... V
B63	Steering pressure Current sensor value in V.
	B64 Steer. angle transm. ...
B64	Inclination registration, steering axle Current sensor value in digits.
	B65 Row detection left ...
B65	Inclination registration left Current sensor value in digits.
	B61 Row detection right ...
B61	Row registration right Current sensor value in digits.
	Y39 Current valve steering left ... mA
Y39	Steering to the left Current amperage in mA.

Table 40



BMK	Screen display/icons/description
	Y40 Current valve steering right . . . mA
Y40	Steering to the right Current amperage in mA.
	D912 Target crop edge . . .
D912	Current selected setpoint value mode "crop edge". 1) Left 2) Right 3: Both
	D913 Actual crop edge . . .
D913	Current selected actual value mode "crop edge". 1) Left 2) Right 3: Both
	D914 Gap active . . .
D914	Status display for gap detection. 0: None 1) Left 2) Right 3: Both
	D903 Autopilot voltage HS01-3 . . .
D903	Supply voltage HSO 1 for the autopilot outputs in mV.

Table 41

Display 2 "Actuator test"

Mask description display 2 "Sensor and actuator test"

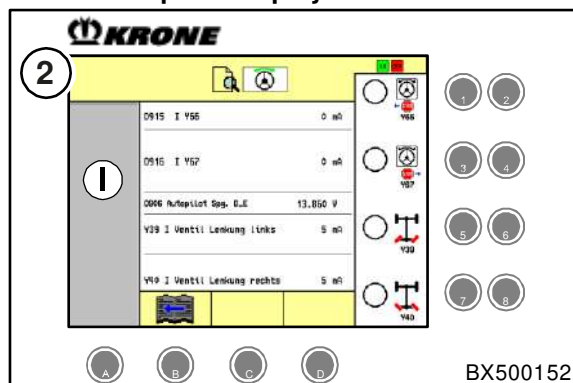
















Fig. 267

The display 2 "Sensor and actuator test" can be used to test the functions of the autopilot actuators.

BMK	Screen display/icons/description
	D915 Current Y66 . . . mA
Y66	Lock steering on left Current amperage in mA.
	D916 Current Y67 . . . mA
Y67	Lock steering on right Current amperage in mA.
	D906 Autopilot supply voltage . . . V
D906	Supply voltage of the control unit A5 in V.
	Y39 Current valve steering left . . . mA
Y39	Steering to the left Current amperage in mA.
	Y40 Current valve steering right . . . mA
Y40	Steering to the right Current amperage in mA.

Switching actuators on/off

If all switching-on conditions for the actuator test are fulfilled,  and  are displayed and the actuators displayed are released. These can be switched on and off using the numerical keys.

BMK	Icon	Description	Switch on actuator	Switch off actuator
Y66	 Y66	Lock steering on left		
Y67	 Y67	Lock steering on right		
Y39		Steering to the left		
Y40		Steering to the right		

8.8.1.11 Menu 4-1-10 Diagnostics AutoScan

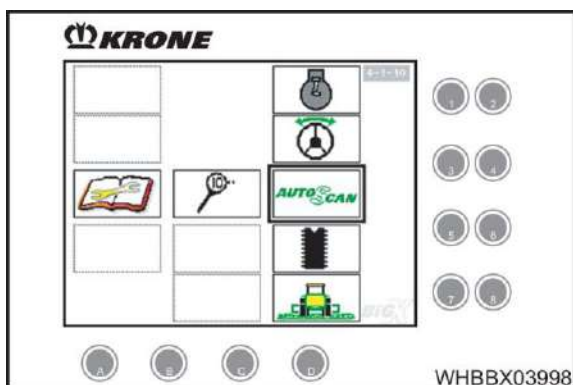


Fig. 268

- Select menu 4-1-10 "AutoScan".

The "AutoScan" diagnostics menu consists of a display:

- Display 1 "Sensor test"

Display 1 "Sensor test"

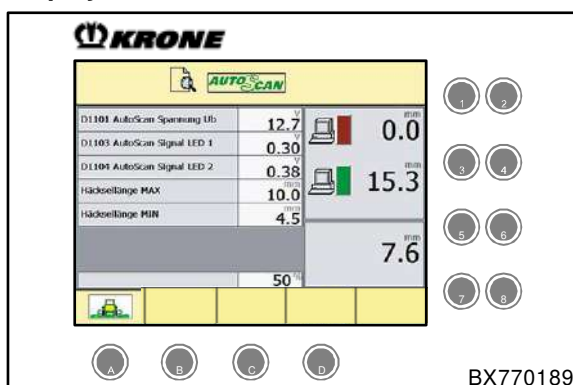




Fig. 269

Display 1 "Sensor test" shows the current voltages and settings for the "AutoScan" function.

Screen description display 1 "Sensor test"

BMK	Screen display/icons/description
	D1101 AutoScan voltage Ub V ...
D1101	Supply voltage of the sensor in V.
	D1103 AutoScan signal LED 1 V ...
D1103	Supply voltage of the signal LED 1 of the sensor in V.
	D1104 AutoScan signal LED 2 V ...
D1104	Supply voltage of the signal LED 2 of the sensor in V.
	chop length. MAX mm ...
	Current set maximum chop length in mm.
	chop length. MIN mm ...
	Current set minimum chop length in mm.
	... %
	Current degree of maturity in %.
	 mm ...
	Calculated chop length in millimetres for brown maize in mm.
	 mm ...
	Calculated chop length in millimetres for green maize in mm.
	mm ...
	Current chop length in mm.

8.8.1.12 Menu 4-1-11 Diagnostics electronics

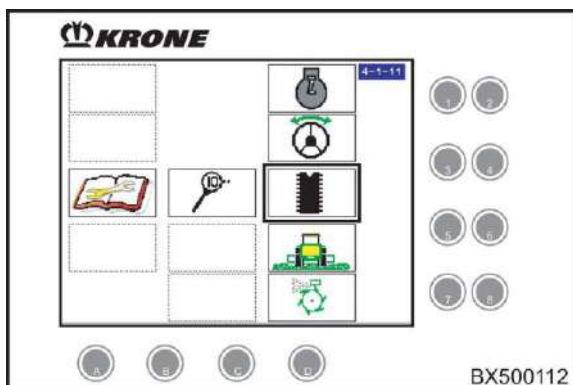


Fig. 270

- Select menu 4-1-11 "Electronics".

The "Electronics" diagnostics menu is divided into four displays:

- Display 1 "Sensor test KMC2"
- Display 2 "Sensor test KMC3"
- Display 3 "Sensor test DIOM"
- Display 4 "Autopilot sensor test"

Display 1 "Sensor test KMC2"

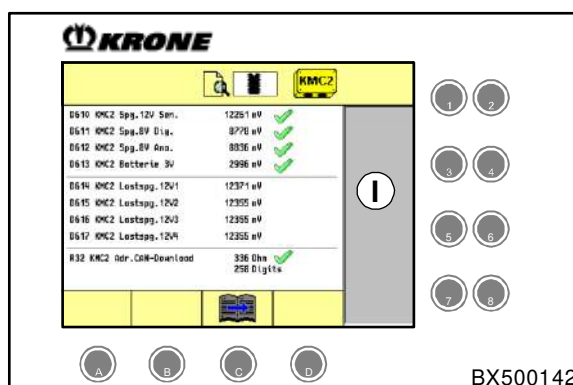







Fig. 271

The display 1 "Sensor test KMC2" can be used to check the input and output voltages at the control unit A2 "KMC2". Furthermore, the value of the terminating resistor fitted in the control unit can be checked.

Mask description display 1 "Sensor test KMC2"

BMK	Screen display/icons/description
	KMC2 volt.12V sen. . . . mV 
D610	Supply voltage 12 V for the sensors at the KMC2 in mV.
	KMC2 volt. 8V digit. . . . mV 
D611	Supply voltage 8 V (digital) for the outputs of the KMC2 in mV.

BMK	Screen display/icons/description
	KMC2 volt. 8V anal. . . . mV 
D612	Supply voltage 8 V (analogue) for the outputs of the KMC2 in mV.
	KMC2 Battery 3V . . . mV 
D613	Current voltage of the back-up battery of the KMC2 in mV (SETPOINT = 3 V).
	D614 KMC2 load voltage 12V1 . . . mV
D614	Supply voltage +12V1 for the outputs of the KMC2 in mV.
	D614 KMC2 load voltage 12V2 . . . mV
D615	Supply voltage +12V2 for the outputs of the KMC2 in mV.
	D614 KMC2 load voltage 12V3 . . . mV
D616	Supply voltage +12V3 for the outputs of the KMC2 in mV.
	D614 KMC2 load voltage 12V4 . . . mV
D617	Supply voltage +12V4 for the outputs of the KMC2 in mV.
	R163 KMC2 Adr. CAN download . . . Ohm  . . . Digits
R163	Resistance of the terminating resistor fitted in ohm and digits.

Display 2 "Sensor test KMC3"

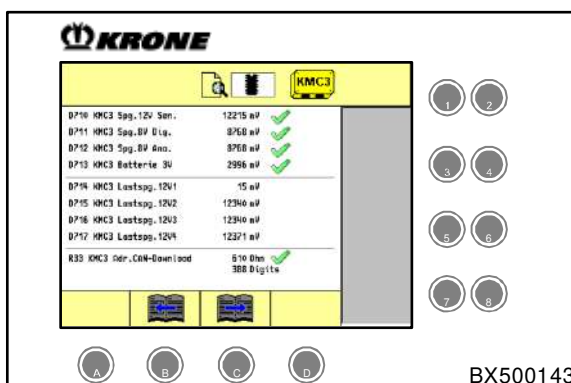







Fig. 272

The display 2 "Sensor test KMC3" can be used to check the input and output voltages at the control unit A3 "KMC3". Furthermore, the value of the terminating resistor fitted in the control unit can be checked.

Mask description display 2 "Sensor test KMC3"

BMK	Screen display/icons/description
	KMC3 volt. 12V sen. . . . mV 
D710	Supply voltage 12 V for the sensors at the KMC3 in mV.
	KMC3 volt. 8V digit. . . . mV 
D711	Supply voltage 8 V (digital) for the outputs of the KMC3 in mV.
	KMC3 volt. 8V anal. . . . mV 
D712	Supply voltage 8 V (analogue) for the outputs of the KMC3 in mV.
	KMC3 battery 3V . . . . mV 
D713	Current voltage of the back-up battery for the KMC3 in mV (SETPOINT = 3 V).
	D614 KMC3 load voltage 12V1 . . . . mV
D714	Supply voltage +12V1 for the outputs of the KMC3 in mV.
	D614 KMC3 load voltage 12V2 . . . . mV
D715	Supply voltage +12V2 for the outputs of the KMC3 in mV.
	D614 KMC3 load voltage 12V3 . . . . mV
D716	Supply voltage +12V3 for the outputs of the KMC3 in mV.



BMK	Screen display/icons/description
	D614 KMC3 load voltage 12V4 . . . mV
D717	Supply voltage +12V4 for the outputs of the KMC3 in mV.
	R164 KMC3 Adr. CAN download . . . Ohm  . . . Digits
R164	Resistance of the terminating resistor fitted in ohm and digits.

Display 3 "Sensor test DIOM"

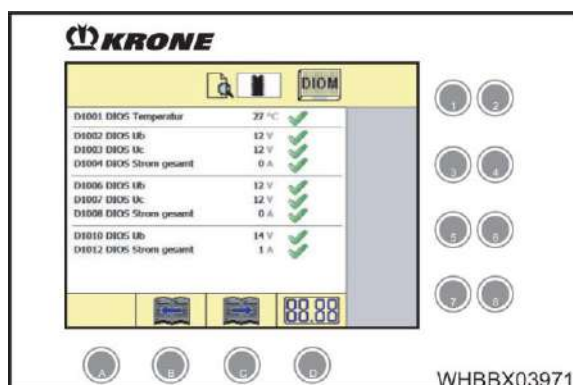


Fig. 273

In display 3 "Sensor test DIOM", the input and output voltages and currents present at control unit A6 "DIOM" can be checked.

Mask description display 3 "Sensor test DIOM"







Operating equipment designation	Mask display/symbols/description
	D1001 DIOS temperature ... °C 
D1001	Current temperature of DIOM in °C.
	D1002 DIOS Ub ... V 
D1002	Power supply voltage for outputs „DIG_OUT_1 ... DIG_OUT_4“ as well as „PWM_OUT_1 ... PWM_OUT_4“ of DIOM in volts.
	D1003 DIOS Uc ... V 
D1003	Power supply voltage for electronics of DIOM in volts.
	D1004 DIOS current total ... A 
D1004	Actual current intensity (sum) of outputs „DIG_OUT_1 ... DIG_OUT_4“ as well as „PWM_OUT_1 ... PWM_OUT_4“ of DIOM in A.
	D1006 DIOS Ub ... V 
D1006	Power supply voltage for outputs „DIG_OUT_5 ... DIG_OUT_8“ as well as „PWM_OUT_5 ... PWM_OUT_8“ of DIOM in volts.
	D1007 DIOS Uc ... V 
D1007	Power supply voltage for electronics of DIOM in volts.

Table 42




Operating equipment designation	Mask display/symbols/description	
	D1008 DIOS current total	... A 
D1008	Actual current intensity (sum) of outputs „DIG_OUT_5 ... DIG_OUT_8“ as well as „PWM_OUT_5 ... PWM_OUT_8“ of DIOM in A.	
	D1010 DIOS Ub	... V 
D1010	Power supply voltage for outputs „DIG_OUT_9 ... DIG_OUT_12“ as well as „PWM_OUT_9 ... PWM_OUT_12“ of DIOM in volts.	
	D1012 DIOS current total	... A 
D1007	Actual current intensity (sum) of outputs „DIG_OUT_9 ... DIG_OUT_12“ as well as „PWM_OUT_9 ... PWM_OUT_12“ of DIOM in A.	

Table 43

Display 4 "Sensor test Autopilot"

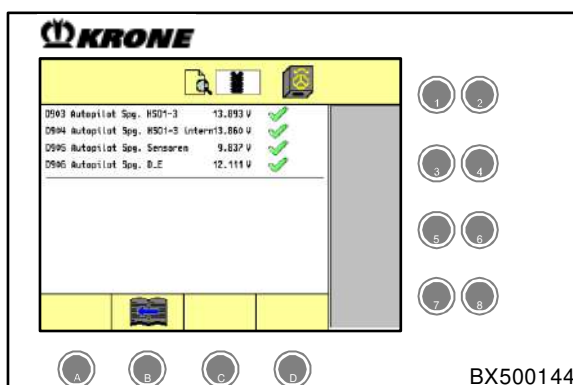






Fig. 274

The display 4 "Sensor test Autopilot" can be used to check the input and output voltages and currents at the control unit A5 "Autopilot".

Mask description display 4 "Sensor test Autopilot"

BMK	Screen display/icons/description		
	D903 Autopilot voltage HSO1-3	... V	
D903	Supply voltage HSO 1 for the outputs of the Autopilot in V. (SETPOINT = 12 V).		
	D904 autopilot volt. internal 10V	... V	
D904	Supply voltage for the outputs of the autopilot in V.		
	D905 Autopilot volt. sensors	... V	
D905	Supply voltage for the sensors at the autopilot in V. (SETPOINT = 10 V(for ISO bus), SETPOINT = 8.5 V (for standard))		
	D906 Autopilot volt. D_E	... V	
D906	Supply voltage of the autopilot in V. (SETPOINT = 12 V)		

8.8.1.13 Menu 4-1-12 Diagnostics work

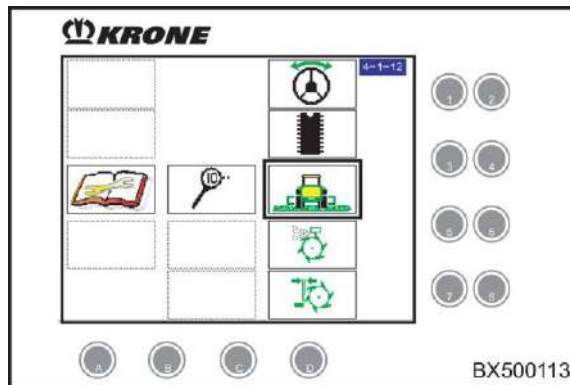


Fig. 275

- Select menu 4-1-12 "Work".

The "Work" diagnostics menu is divided into the following displays:

- Display 1 "Sensor test"
- Displays 2 - 6 "Actuator test"
- Display 7 "Sensor test"
- Display 8 Sensor test "Main drive brake"
- Display 9 Sensor test "Electrical discharge distance adjustment"

Display 1 "Sensor test"

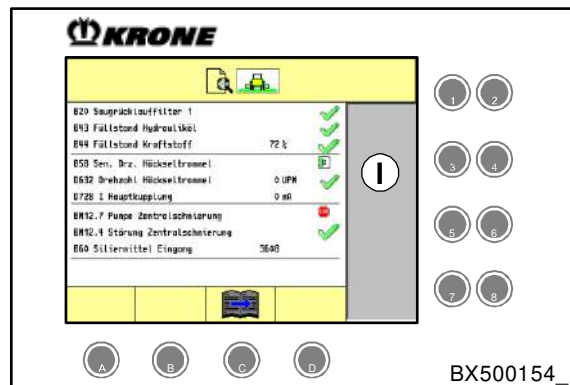









Fig. 276

Display 1 "Sensor test" indicates the current measurement results of the sensors and actuators for the work functions.

## Screen description display 1 "Sensor test"

BMK	Screen display/icons/description	
	B20 Return suction filter 1	
B20	Status of "Return suction filter" sensor.	
	B43 Hydraulic oil filling level	
B43	Status of "filling level, oil tank" sensor.	
	B44 Filling level fuel tank <span style="float: right;">... %</span>	
B44	Filling level fuel tank Current sensor value as %.	
	B58 sens. spd. chopping drum	
B58	Status of "Chopping drum speed" sensor.	
	D632 Chopping drum speed <span style="float: right;">... rpm</span>	
B58	Chopping drum speed Current sensor value in rpm.	
	D728 Main coupling current <span style="float: right;">... mA</span>	
Y12	Main coupling Current amperage in mA.	
	BM12.7 Central lubrication pump	
M12	Status of "Central lubrication pump" actuator.	
	BM12.4 Malfunction central lubrication	
M12	General malfunction display for the "Central lubrication pump" actuator.	
	B60 Silage additives input <span style="float: right;">...</span>	
B60.1	Filling level of additional tank	
	Current sensor value in mV. Current status of the sensor.	

Display 2 "Actuator test"

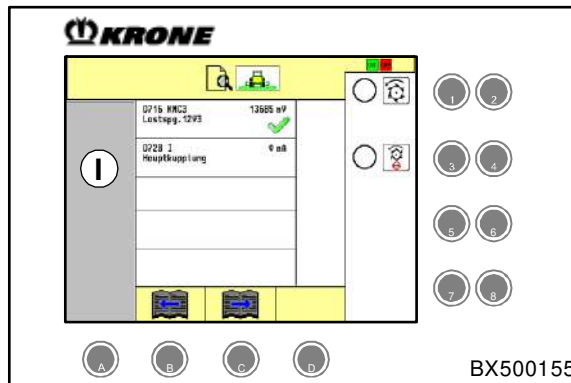





Fig. 277







The display 2 "Actuator test" can be used to test the actuators for the main coupling and the coastdown alarm.

**Mask description display 2 "Actuator test"**

BMK	Screen display/icons/description
	D716 KMC3 load voltage 12V3 <span style="float: right;">... mV</span> 
D716	Supply voltage +12V3 for the outputs of the KMC3 in mV.
	D728 Main coupling current <span style="float: right;">... mA</span>
Y12	Main coupling Current amperage in mA.

**Switching actuators on/off**

If all switching-on conditions for the actuator test are fulfilled,  and  are displayed and the actuators displayed are released. These can be switched on and off using the numerical keys.

BMK	Icon	Description	Switch on actuator	Switch off actuator
Y12		Main coupling		
H61		"Coastdown alarm" horn		

Display 3 "Actuator test"

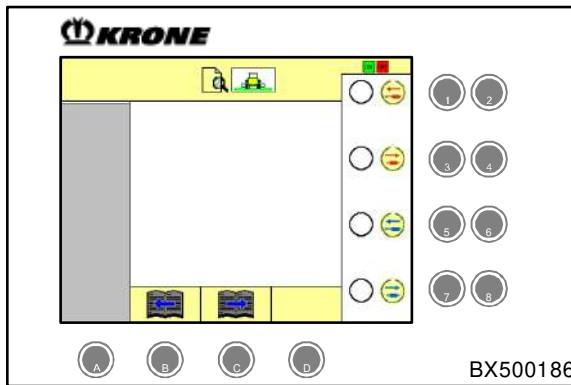
















Fig. 278

The display 3 "Actuator test" can be used to test the actuators for the front hydraulics. If impermissible values occur which require error correction, further information can be found in the "Work sensors" and "Work actuators" subsections.

Switching actuators on/off

If all switching-on conditions for the actuator test are fulfilled,  and  are displayed and the actuators displayed are released. These can be switched on and off using the numerical keys.

BMK	Icon	Description	Switch on actuator	Switch off actuator
Y26		Fold in front attachment, raise holding-down clamp		
Y27		Unfold front attachment lower holding-down clamp		
Y29		Extend supporting wheels Lower plant divider		
Y28		Retract supporting wheels Raise plant divider		



Display 4 "Actuator test"

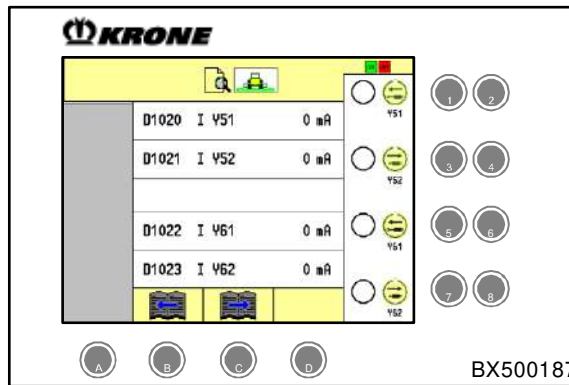




Fig. 279

The display 4 "Actuator test" can be used to test the actuators for the auxiliary hydraulics.

**Mask description display 4 "Actuator test"**

BMK	Screen display/icons/description
	D1020 Current Y51 . . . mA
Y51	Auxiliary hydraulics up (I A) Current amperage in mA.
	D1021 Current Y52 . . . mA
Y52	Auxiliary hydraulics down (I B) Current amperage in mA.
	D1022 Current Y61 . . . mA
Y61	Auxiliary hydraulics up (II A) Current amperage in mA.
	D1023 Current Y62 . . . mA
Y62	Auxiliary hydraulics down (II B) Current amperage in mA.

## Switching actuators on/off

If all switching-on conditions for the actuator test are fulfilled,  and  are displayed and the actuators displayed are released. These can be switched on and off using the numerical keys.













BMK	Icon	Description	Switch on actuator	Switch off actuator
Y51	 Y51	Auxiliary hydraulics up (I A)		
Y52	 Y52	Auxiliary hydraulics down (I B)		
Y61	 Y61	Auxiliary hydraulics up (II A)		
Y62	 Y62	Auxiliary hydraulics down (II B)		

Table 44

Display 5 "Actuator test"

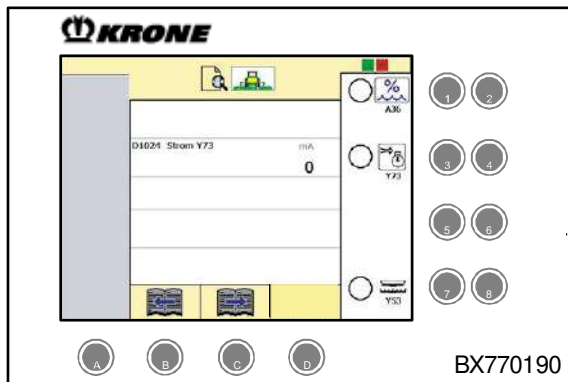




Fig. 280










The display 5 "Actuator test" can be used to test the actuators for the intake cleaning and the "Grass/Maize" storage switch. Furthermore, the signal for executing the moisture measurement can be tested.

**Mask description display 5 "Actuator test"**

BMK	Screen display/icons/description
	D1024 Current Y73 ... mA
Y73	Compressed air intake Current amperage in mA.

**Switching actuators on/off**

If all switching-on conditions for the actuator test are fulfilled,  and  are displayed and the actuators displayed are released. These can be switched on and off using the numerical keys.

BMK	Icon	Description	Switch on actuator	Switch off actuator
A36	 A36	Activate humidity measurement (LED in the lower right corner of the display on the HARVEST TEC operation unit is lit, if active)		
Y73	 Y73	Compressed air intake (optional)		
Y53	 Y53	Storage switch grass/maize		

Display 6 "Actuator test"

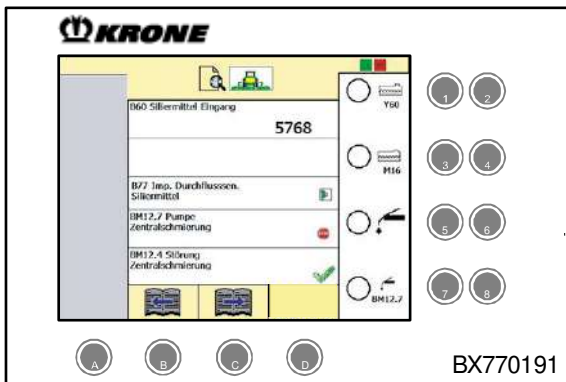







Fig. 281













The display 6 "Actuator test" can be used to test the actuators for the silage additive system and the central lubrication.

**Mask description display 6 "Actuator test"**

BMK	Screen display/icons/description
	B60 Silage additives input ...
B60.1	Filling level of additional tank (optional) Current sensor value in mV.
	B77 Imp. flow sens. silage additives 
B77	Status of the "Silage additives" flow sensor (optional)
	BM12.7 Central lubrication pump 
M12	Status of "Central lubrication pump" actuator.
	BM12.4 Malfunction central lubrication 
M12	General malfunction display for the "Central lubrication pump" actuator.

**Switching actuators on/off**

If all switching-on conditions for the actuator test are fulfilled,  and  are displayed and the actuators displayed are released. These can be switched on and off using the numerical keys.

BMK	Icon	Description	Switch on actuator	Switch off actuator
Y60	 Y60	Molasses add-on (optional)		
M16	 M16	Silage additives pump (optional)		
		Enable voltage for the central lubrication		
M12	 BM12.7	Intermediate lubrication is triggered		

Display 7 "Sensor test"

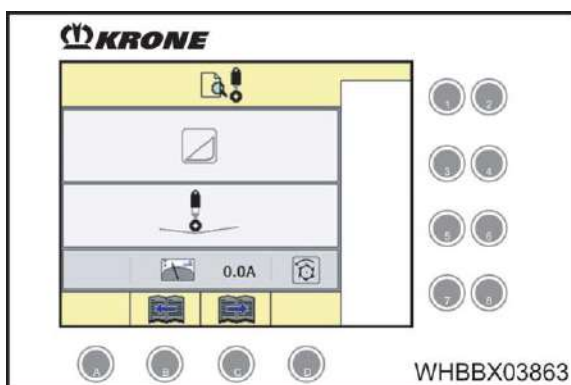






Fig. 282

The display 7 "Sensor test" can be used to test the clamping cylinder for the main belt.

**Screen description display 7 "Sensor test"**

BMK	Screen display/icons/description
	
	Current status "Intake/front attachment".
	
B92	Current status of the sensor "clamping cylinder main belt".
	 ... A
Y108	Tensioning roller main belt Current rating in A.
	
	Current status of the main coupling.

Status displays












Actuator status active	Actuator status inactive	Actuator status released	Actuator status Error	Description
				Intake/front attachment forwards
				Intake/front attachment backwards
				Intake/front attachment

Table 45





Status extended	Status retracted	Description
		Position of clamping cylinder main belt

Table 46

Status ON	Status OFF	Description
		Main coupling

Display 8 "Sensor test"

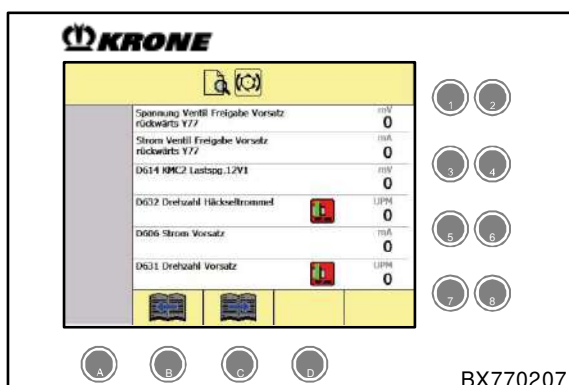




Fig. 283

Display 8 "Sensor test" shows the current measurement results of the sensors and actuators of the main drive brake.

Screen description display 8 "Sensor test"

BMK	Screen display/icons/description	
	<b>Voltage valve release front attachment backwards Y77</b>	<b>mV</b> ...
Y77	Release front attachment backwards Current voltage in mV.	
	<b>Valve release front attachment current backwards Y77</b>	<b>mA</b> ...
Y77	Release front attachment backwards Current amperage in mA.	
	<b>D614 KMC2 load voltage 12V1</b>	<b>... mV</b>
D614	Supply voltage +12V1 for the outputs of the KMC 2 in mV.	
	<b>D632 Chopping drum speed</b>	 <b>... rpm</b>
B58	Chopping drum speed Current sensor value in rpm.	
	<b>D606 front attachment current</b>	<b>... mA</b>
Y7	Front attachment forwards	
Y8	Front attachment backwards Current amperage in mA.	
	<b>D631 front attachment speed</b>	 <b>... rpm</b>
B27	Front attachment speed Current sensor value in rpm.	



Display 9 "Sensor test"

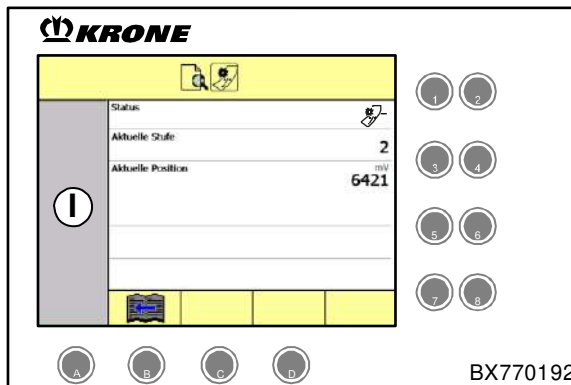



Fig. 284

The display 9 "Sensor test" can be used to test the electric discharge distance adjustment.






Screen description display 9 "Sensor test"

BMK	Screen display/icons/description
	<b>Status</b>
M17	Discharge accelerator rear wall Indicates the current status of the adjusting motor.

<b>Current stage</b> ...	
M17	Discharge accelerator rear wall Shows the current level (1-3) of the rear wall of discharge accelerator.

<b>Current position</b> ... mV	
M17	Discharge accelerator rear wall
	

Status displays

Icon	Explanation
	At rest, waiting for commands.
	The rear wall moves into the crop flow. The discharge distance increases.
	The rear wall moves out of the crop flow. The discharge distance reduces.
	Fault, no position reached.
	The rear wall of discharge accelerator is deactivated.

## 8.8.1.14 Menu 4-1-13 Diagnostics grind

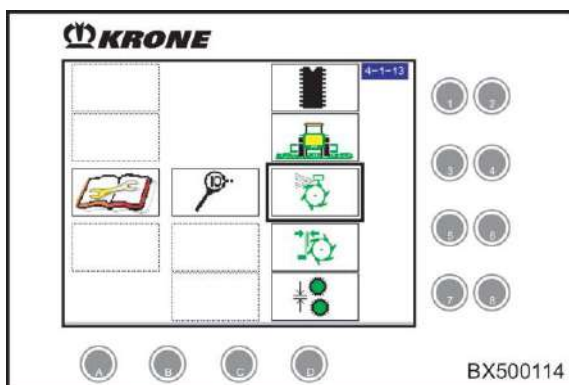


Fig. 285

- Select menu 4-1-13 "Grinding".

The "Grinding" diagnostics menu consists of a display:

- Display 1 "Sensor and actuator test"

### Display 1 "Sensor and actuator test"

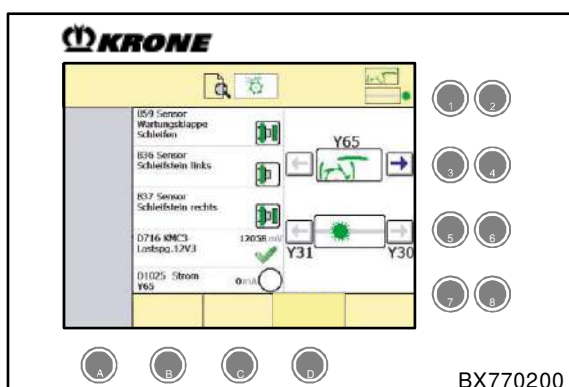






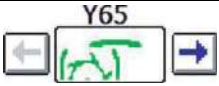
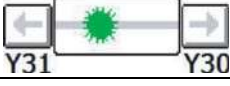








Fig. 286

Display 1 "Sensor and actuator test" shows the current statuses and measurement results of the sensors and actuators for "Grind". Furthermore, the function of the associated actuators can be tested.





## Mask description display 1 "Sensor and actuator test"


BMK	Screen display/icons/description
	
	Current status of the grinding flap.
	
	Current position of the grinding stone.
B59 sensor Maintenance flap Grinding	
B36 sensor Grinding stone left	
B37 sensor Grinding stone right	
	Current status of the sensors.
D716 KMC3 Load voltage 12V3	... mV
D716	Supply voltage +12V3 for the outputs of the KMC3 in mV.
D1025 current Y65	... mA 
Y65	Grinding flap closed Current amperage in mA.
	
Y65	Grinding flap closed Activation of the valve.
	
Y30	Grinding stone to the right
Y31	Grinding stone to the left Activation of the valves.

**Switching actuators on/off**

BMK	Description	Switch on actuator	Switch off actuator
Y65	Grinding flap closed		
Y31	Grinding stone to the left		
Y30	Grinding stone to the right		

**Status displays**

Grinding stone position			
left	Intermediate position	right	Error
			

Grinding flap position				
closed	Intermediate position	open	unknown	Error
				

8.8.1.15 Menu 4-1-14 Diagnostics counterblade

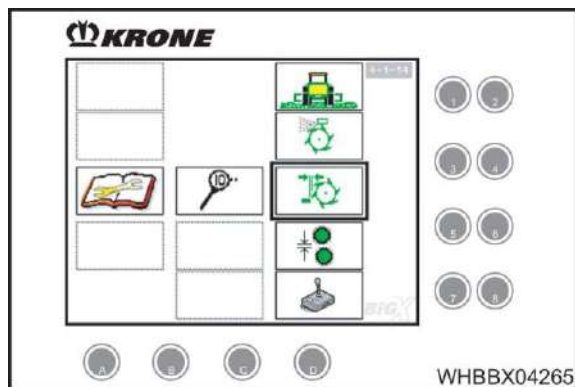


Fig.287

- Select menu 4-1-14 "Counterblade".

The "Counterblade" diagnostics menu consists of one display:

- Display 1 "Actuator test"

Display 1 "Actuator test"

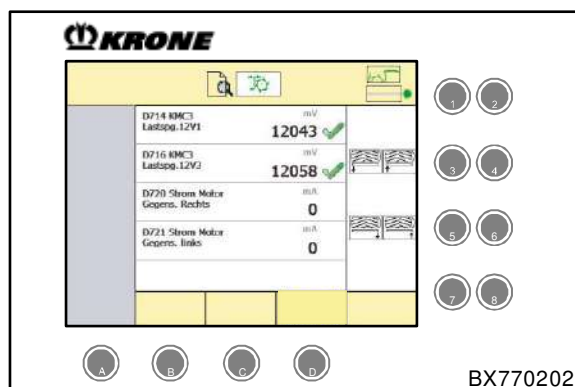




Fig. 288

Display 1 "Actuator test" shows the current measurement results of the actuators for "Counterblade". Furthermore, the function of the associated actuators can be tested.

Mask description display 1 "Actuator test"

<b>BMK</b>	<b>Screen display/icons/description</b>
	
	Current status of the grinding flap.
	
	Current position of the grinding stone.
	D714 KMC3 <span style="float: right;">... mV</span> Load voltage 12V1
D714	Supply voltage +12V1 for the outputs of the KMC3 in mV.
	D716 KMC3 <span style="float: right;">... mV</span> Load voltage 12V3
D716	Supply voltage +12V3 for the outputs of the KMC3 in mV.
	D720 current engine Counterblade on right <span style="float: right;">... mA</span>
M9	Counterblade on left Current amperage in mA.
	D721 current engine Counterblade on left <span style="float: right;">... mA</span>
M10	Counterblade on right Current amperage in mA.

**Switching actuators on/off**

- Adjust the counterblade carefully and evenly, left and right.
- After the actuator test, move counterblade away somewhat





Operating equipment designation	Description	Switch on the actuator
M9	Moving away counterblade left	
	Moving up counterblade left	
M10	Moving away counterblade right	
	Moving up counterblade right	

Table 47

**Status displays**





Grinding stone position			
Left	Intermediate position	Right	Error
			

Table 48






Grinding flap position				
Closed	Intermediate position	Open	Unknown	Error
				

Table 49













Operating equipment designation	Actuator status active	Actuator status inactive	Actuator status Short circuit	Actuator status Cable break	Description
M9					Moving up counterblade left
					Moving away counterblade left
M10					Moving up counterblade right
					Moving away counterblade right

Table 50

### 8.8.1.16 Menu 4-1-15 Diagnostics corn conditioner

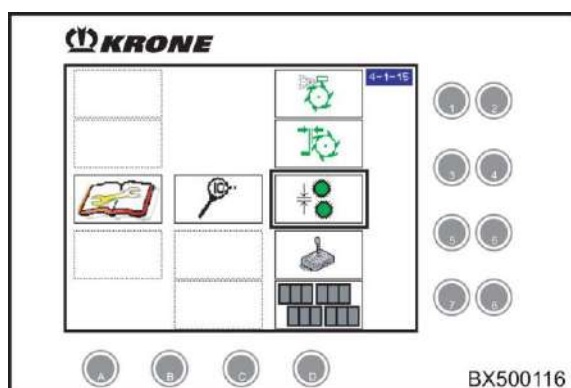


Fig. 289

- Select menu 4-1-15 "Corn Conditioner".

The "Corn Conditioner" diagnostics menu consists of one display:

- Display 1 "Actuator test"



Display 1 "Actuator test"

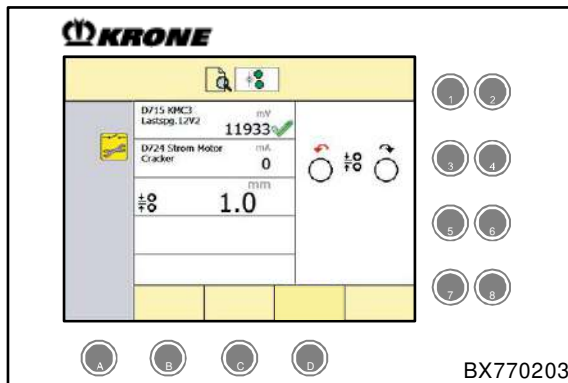


Fig. 290

The display 1 "Actuator test" can be used to test the actuator for adjusting the corn conditioner.

**Mask description display 1 "Actuator test"**





BMK	Screen display/icons/description
	D715 KMC3 mV Load voltage 12V2 ... 
D715	Supply voltage +12V2 for the outputs of the KMC3 in mV.
	D724 current engine mA Cracker ...
M11	Corn conditioner Current amperage in mA.
	 mm ...
M11	Current roller distance in mm.

Table 51

**Switching actuators on/off**

BMK	Description	Switching actuator on/off
M11	Reduce corn conditioner roller distance	
	Increase corn conditioner roller distance	

8.8.1.17 Menu 4-1-16 Diagnostics multi-function lever

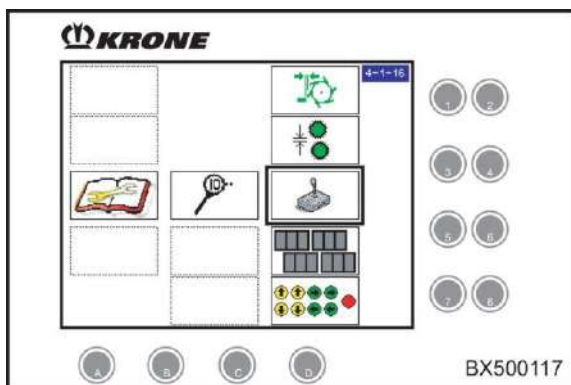


Fig. 291

- Select menu 4-1-16 "Control lever".

The diagnostics menu "Control lever" is divided into two displays:

- Displays 1 and 2 "Sensor test"

Display 1 "Sensor test"

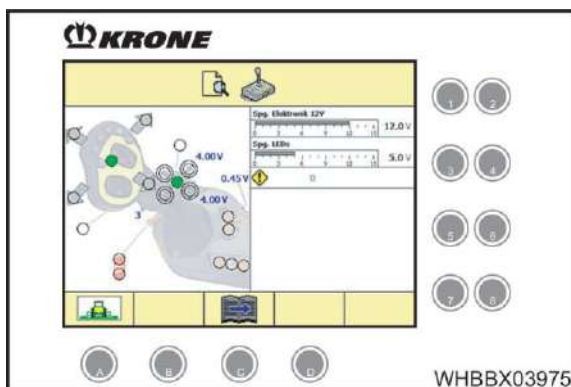


Fig. 292

The keys as well as the supply voltages of the control lever can be tested on display 1 "Sensor test".

Mask description display 1 "Sensor test"

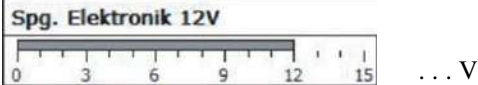
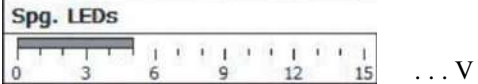




BMK	Mask display/symbols/description
	 <p>Spg. Elektronik 12V 0 3 6 9 12 15 ... V</p>
	Supply voltage of the control lever in V.
	 <p>Spg. LEDs 0 3 6 9 12 15 ... V</p>
	Internal supply voltage of the control lever in V.
	 <p>...</p>
	An internal error code can also be displayed following consultations with KRONE customer service.
	 <p>4.00V 4.00V</p>
	Current voltages for the axes of the joystick in V
	 <p>0.45V</p>
	Current voltage on the slide controller in V
	 <p>3</p>
	Currently set driving stage.

Table 52

**Error messages**















Symbol	Error number	Description
	113	Undervoltage 12 V
	114	Overvoltage 12 V
	115	Undervoltage 8 V
	116	Fault pushbutton voltage 12 V
	117	Fault voltage LEDs
	118	Fault voltage Outs
	119	Parameter error
	120	Flash CheckSum
	150	Key pressed / fault keyboard
	151	Overtemperature.
	152	Fault CAN bus
	153	Fault LIN bus
	154	EEPROM CheckSum
	155	Restart by Watchdog

Table 53

Display 2 "Sensor test"

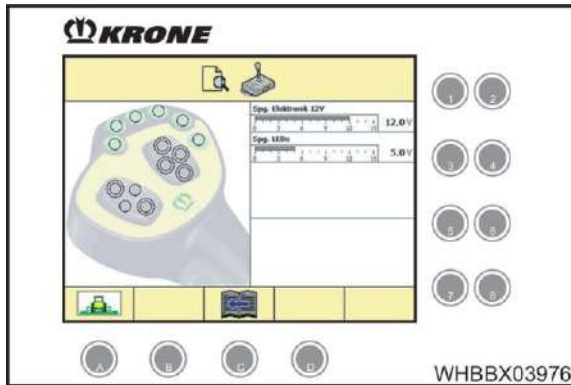


Fig. 293

The keys as well as the supply voltages of the control lever can be tested on display 2 "Sensor test".

Mask description display 2 "Sensor test"

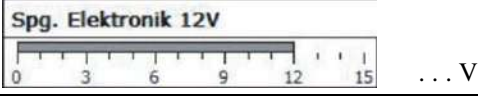
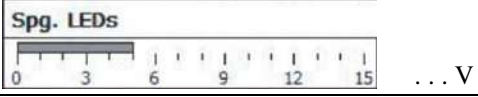
BMK	Mask display/symbols/description
	
	Supply voltage of the control lever in V.
	
	Internal supply voltage of the control lever in V.

Table 54

### 8.8.1.18 Menu 4-1-17 Diagnostics CUC

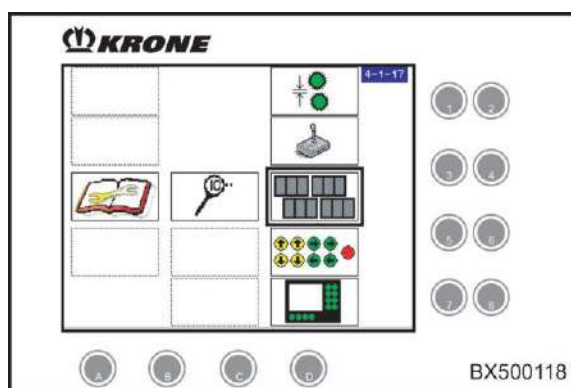


Fig. 294

- Select menu 4-1-17 "Control unit".

The diagnostics menu "Control unit" is divided into two displays:

- Displays 1 and 2 "Sensor test"

Display 1 "Sensor test"

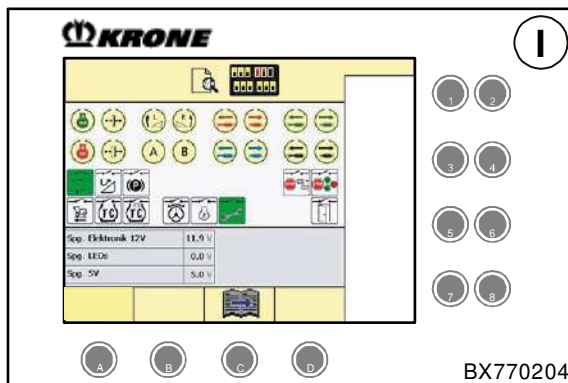


Fig. 295

The switches and keys as well as the supply voltages of the control unit console can be tested on display 1 "Sensor test".

**Mask description display 1 "Sensor test"**

BMK	Mask display/symbols/description
	Vlt. Electronics 12V ... V
	Supply voltage of the control unit in V.
	Vlt. LEDs ... V
	Input voltage for the day/night switchover in V.
	Vlt. 5V ... V
	Internal supply voltage of the control unit in V.

Table 55

**Status displays**

The symbols of the keys on the membrane keyboard and the release switches are highlighted in green when pressed. The display of release switch S1 "road/field" is shown below as an example.







BMK	Description	Status activated	Status not activated
S1	"Road/field" release switch		
S90	"Quick stop console" switch		
S91	"Quick stop manual operation" switch		

Table 56


Symbol	Description
	Fault diesel engine

Table 57

Display 2 "Sensor test"

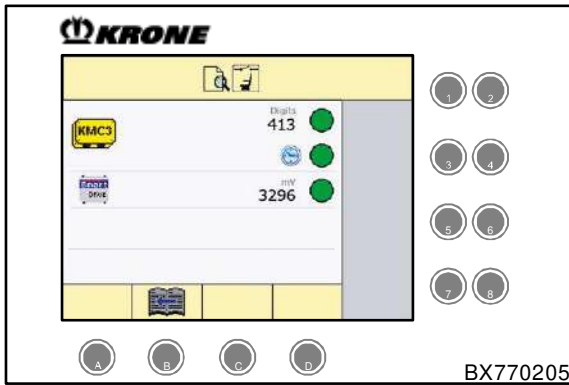








Fig. 296

The status of the seat switch can be checked on display 2 "Sensor test".

Mask description display 2 "Sensor test"

BMK	Screen display/icons/description
	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: right;">                     Digits ...                 </div> <div style="text-align: left;">      </div> </div>
	<p>Current voltage of the seat switch, read in from KMC3, in digits.                      The circle beside the digits indicates whether the driver is setting. (With a diagnosable seat switch, the status changes directly)                      The circle next to the clock indicates whether the time delay has already elapsed.</p>
	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: right;">                     mV ...                 </div> <div style="text-align: left;">  </div> </div>
	<p>Current voltage of the seat switch, read in from the travelling gear computer, in mV.                      Only available on machines manufactured since 2011 (diagnosable seat switch).</p>



8.8.1.19 Menu 4-1-18 Diagnostics manual operation

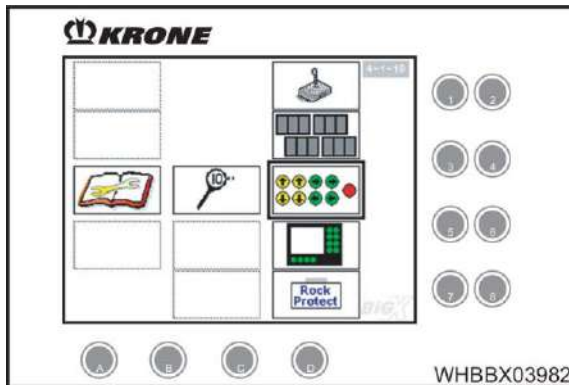


Fig. 297

- Select menu 4-1-18 "Manual control unit".

Display 1 "Sensor test"

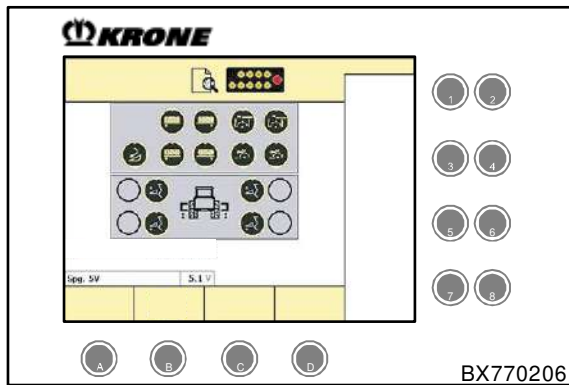


Fig. 298

The display 1 "Sensor test" can be used to check the keys and internal supply voltage for manual operation. If the keys are pressed, they are highlighted in colour.

Screen description display 1 "Sensor test"

BMK	Screen display/icons/description
	Volt. 5V . . . V
	Internal supply voltage of the manual control unit in V.

Table 58

## 8.8.1.20 Menu 4-1-19 Diagnostics terminal

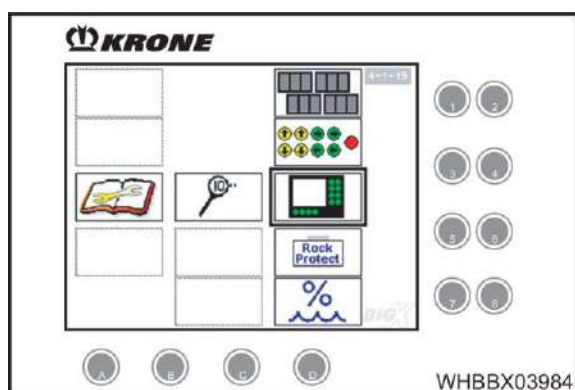


Fig. 299

- Select menu 4-1-19 "Terminal".

The "Terminal" diagnostics menu consists of a display:

- Display 1 "Sensor test"

Display 1 "Sensor test"

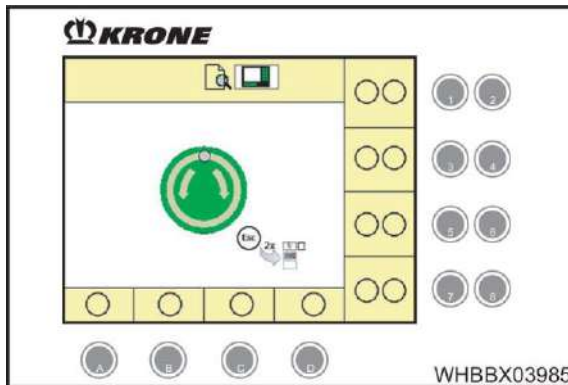



Fig. 300

In display 1 "Sensor test", the keys on the terminal and the incremental encoder can be checked.

Status displays

When activating the keys on the display or menu key  or the incremental encoder, the respective symbol is highlighted in green.




No rotation	Rotation left	Rotation right	Description
			Incremental encoder

Table 59

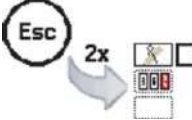
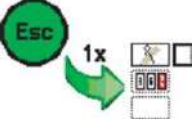
Status not actuated	Status actuated	Description
		Menu key

Table 60

- Press menu key  twice to bring up the main menu.

## 8.8.1.21 Menu 4-1-20 Diagnostics RockProtect

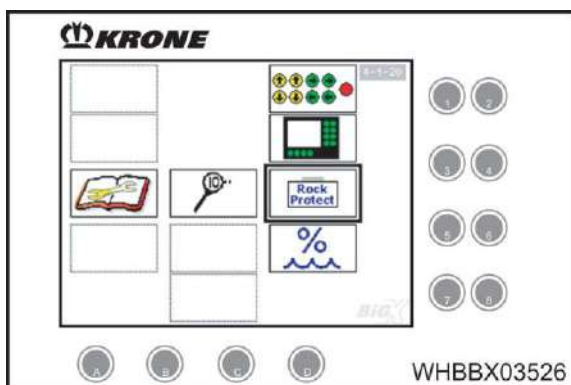


Fig. 301


- Select menu 4-1-20 "RockProtect".

The diagnostics menu "RockProtect" is divided into two displays:

- Display 1 "Sensor and actuator test"
- Display 2 "Actuator test"

### **CAUTION**

#### **Damage caused by deactivated "rock detection RockProtect"!**

If the "RockProtect" function has been deactivated by the stop lock , the machine may be damaged.

- Ensure that the stop lock is activated  .

Display 1 "Sensor and actuator test"

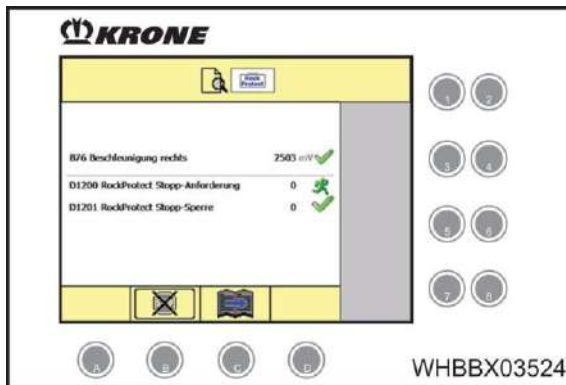





Fig. 302

The current measurement results of the sensors for the "RockProtect" function are indicated on display 1 "Sensor and actuator test".

**Mask description display 1 "Sensor and actuator test"**

BMK	Screen display/icons/description
	B76 acceleration on right ... mV 
B76	Acceleration sensor Current sensor value in mV.
	D1200 RockProtect stop request ... 
D1200	Status of the RockProtect, rock was detected/not detected.
	D1201 RockProtect stop lock ... 
D1201	Status of the "RockProtect" function.

If a fault occurs, please contact KRONE customer service!

## Switching actuators on/off



Symbol	Description	Run function
	Cancel stop and release intake.	

Table 61

## Status displays



Status Active	Status inactive	Description
		"RockProtect" function

Table 62

## Display 2 "Actuator test"

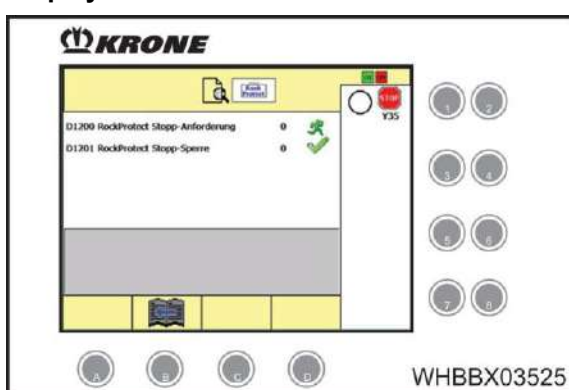




Fig. 303

Display 2 "Actuator test" shows the current measurement results of the actuators for the "RockProtect" function. Furthermore, the "RockProtect" (quick-stop valve) function can be tested.

### Mask description display 2 "Actuator test"

BMK	Screen display/icons/description
	D1200 RockProtect stop request ... 
D1200	Status of the RockProtect, rock was detected/not detected.
	D1201 RockProtect stop lock ... 
D1201	Status of the "RockProtect" function.

If a fault occurs, please contact KRONE customer service!

**Switching actuators on/off**



Symbol	Description	Run function
	Cancel stop and release intake.	

Table 63

**Status displays**



Status Active	Status inactive	Description
		"RockProtect" function

Table 64

8.8.1.22 Menu 4-1-21 Diagnostics moisture

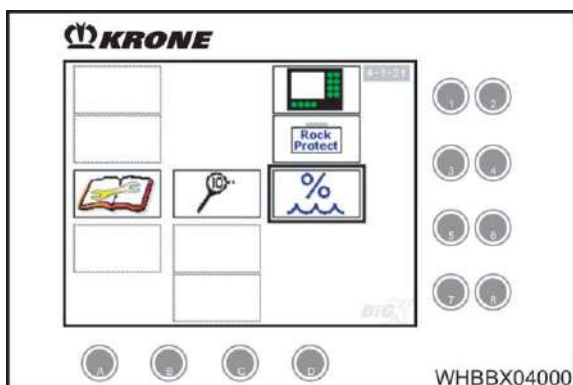


Fig. 304

- Select menu 4-1-21 "Moisture".

The "Moisture" diagnostics menu consists of a display:

- Display 1 "Sensor and actuator test"

**Display 1 "Sensor and actuator test"**

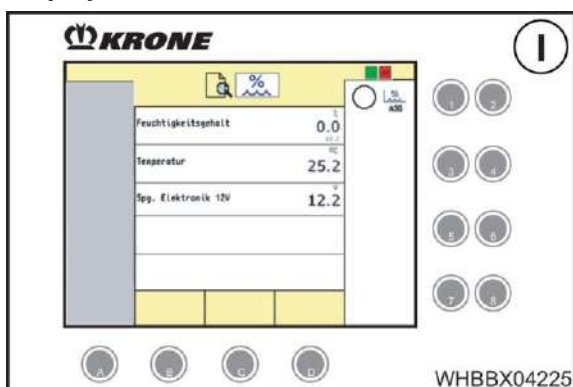


Fig. 305



Display 1 "Sensor and actuator test" shows the current voltages and measured values for the "moisture measurement" function.



**Mask description display 1 "Sensor and actuator test"**

BMK	Screen display/icons/description
	<div style="text-align: right;">%</div> Moisture content ... ...
	Current moisture content in %.
	<div style="text-align: right;">°C</div> Temperature ...
	Current internal temperature of the NIR sensor in ° C.
	<div style="text-align: right;">V</div> Volt. Electronics 12V ...
	Supply voltage of the sensor in V.

**Switching actuators on/off**

If all switching-on conditions for the actuator test are fulfilled,  and  are displayed and the actuators displayed are released. These can be switched on and off using the numerical keys.

8.9 Menu 4-2 Error List

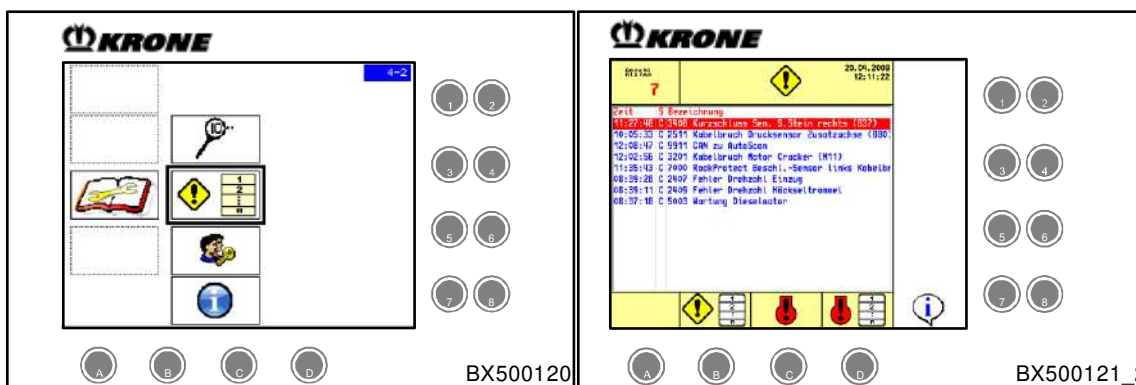


Fig. 306

The main menu level is active.

- Select main menu 4-2 by using the incremental encoder.
- Press incremental encoder.

The error list is displayed.

Icon	Explanation
	Current errors
	Error memory
	Current errors diesel engine
	Error memory diesel engine

**Current errors**

The display shows the error list with its current errors. The time, status, error number and designation are displayed.

**Status**

- C = Error has come
- G = Error has gone
- A = Error acknowledged

- The general information messages are displayed by pressing the key or for softkey

Error Storage

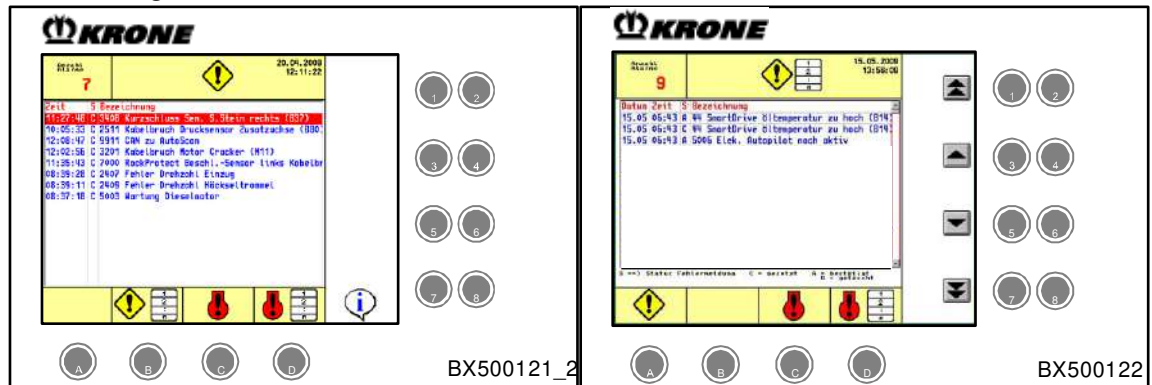


Fig. 307

- Press the key under to display the error storage. The error storage is chronologically arranged. The date, time, status, error numbers and designation are displayed.

Status

C = Error has come (Come)

G = Error has gone (Gone)

A = Error acknowledged

Menu control:

- = Activating the key allows you to scroll up.
- = Activating the key allows you to scroll up one line at a time.
- = Activating the key allows you to scroll down one line at a time.
- = Activating the key allows you to scroll down one page at a time.

Current diesel engine errors

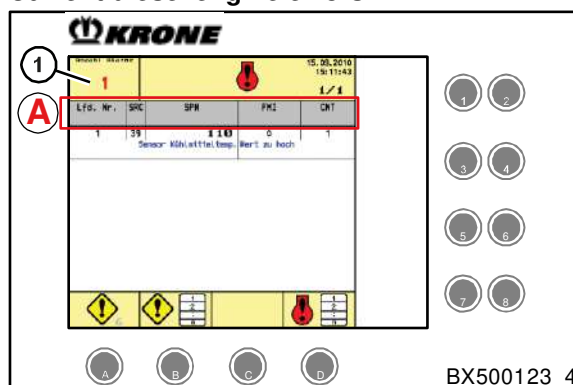




Fig. 308

- Press the  key under  to display the current diesel engine errors. The display shows the list of errors with the current diesel engine errors. The error codes are displayed with a sequential number. Menu field (1) indicates the number of alarms present.

Meaning of row A

Display	Explanation
Seq.	Sequential number
SRC	Source address: address from control unit to the error messages 0: EDC master 1: EDC slave 39: Engine Control Unit
SPN	Suspect Parameter Number: Identification of the error code
FMI	Failure Mode Identification: Identification of the error message
CNT	Counter: Recording the error frequency

Diesel engine error storage

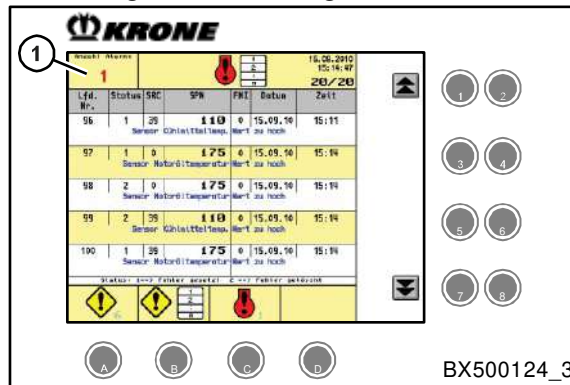


Fig. 309

- Press the key under to display the diesel engine error storage. The display shows the error storage (chronologically) of the diesel engine. The error codes, status, date and time are displayed with a sequential number. Menu field (1) indicates the number of alarms present.

Status

1 = Error set  
2 = Error deleted

- You can use the key down to the end of the list and the key to scroll up.
- To display current errors, use the key under .
- Pressing the menu button beside the incremental encoder takes you one menu level back.

Error list "Informative events" and error list "Service events"

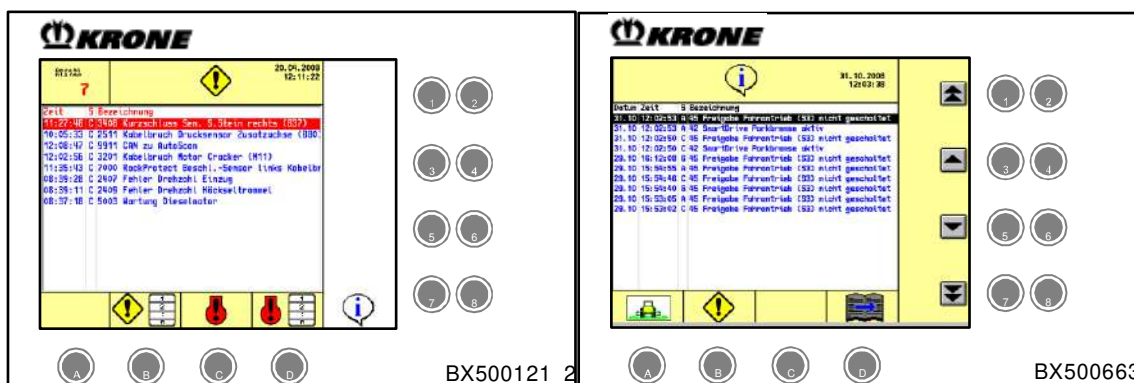


Fig. 310

Menu control:

- = Activating the key allows you to scroll up.
- = Activating the key allows you to scroll up one line at a time.
- = Activating the key allows you to scroll down one line at a time.
- = Activating the key allows you to scroll down one page at a time.

- Press the key under to call up the working screen.
- Press the key under to call up the list of current errors.
- Press the key to call up the "Informative events" menu.

The "Informative events" menu records the following messages:

- 3507 Diesel engine maintenance
- 3508 Air filter contamination
- 3509 Hydraulic oil filling level
- 4301 Metal in intake!
- 7016 Stone detected!
- 42 DRC parking brake active
- 45 Release switch traction drive (S3) not switched
- 3210 Lifting gear pressure too high during counterblade adjustment
- 3211 Lifting unit pressure low during counterblade adjustment.

- Press the key under to call up the "Service events" page.

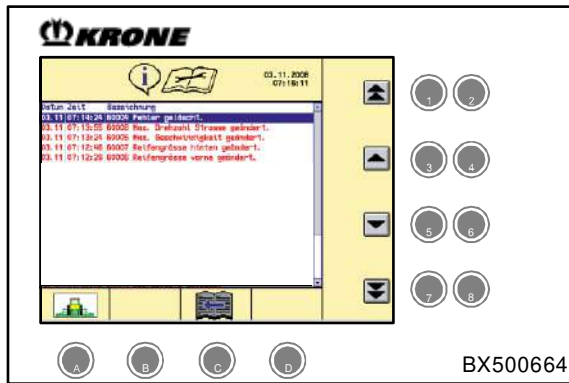


Fig. 311

### Error list "Service events"

The "Service events" menu contains the following events with the event time:

- 60000 Update completed
- 60001 Service performed for diesel engine 1
- 60002 Service performed for diesel engine 2
- 60003 Error list deleted
- 60004 Error deleted
- 60005 Max. speed changed
- 60006 Front tyre size changed
- 60007 Rear tyre size changed
- 60008 Max. road speed changed
- 60009 DRC software updated
- 60010 DRC parameter set updated
- 60011 ERR-INIT

- Press the  key under  to call up the "Informative events" page.

## 8.10 Menu 4-3 "Service level"

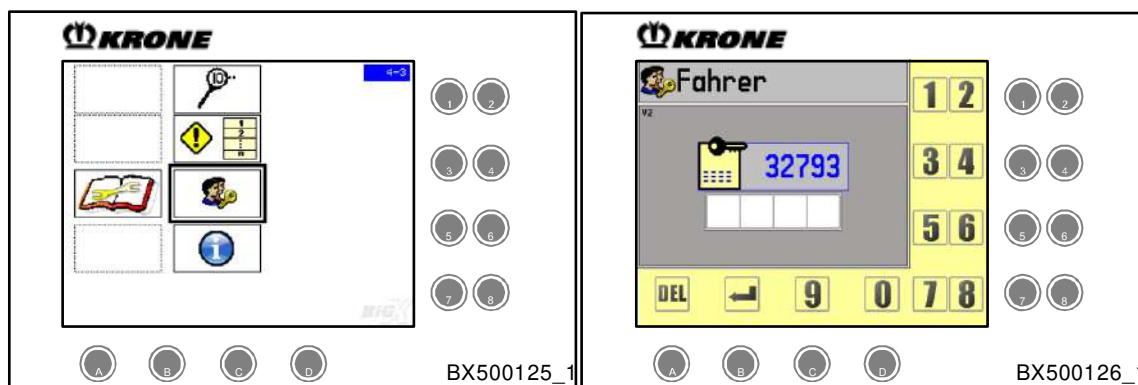


Fig. 312

The main menu level is active.

- Use the incremental encoder to choose menu 4-3 Service level.
- Press the incremental encoder.

The "Service level" is protected by a password and is accessible only to the KRONE Customer Service personnel.



8.11 Menu 4-4 Information

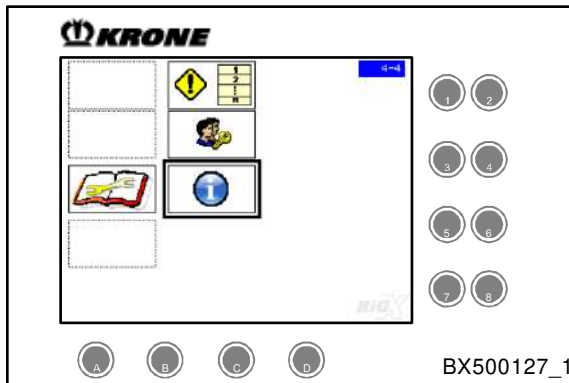





Fig. 313

The "Diagnostics" main menu is active.

- Use the incremental encoder to select menu 4-4 "Information".
- Press incremental encoder.

The display shows menu level 4-4 "Information".

The "Information" menu is divided into three menus:

Icon	Designation
	Menu 4-4-1 Control Lever
	Menu 4-4-2 Software
	Menu 4-4-3 Machine

8.11.1 Menu 4-4-1 Multi-function lever

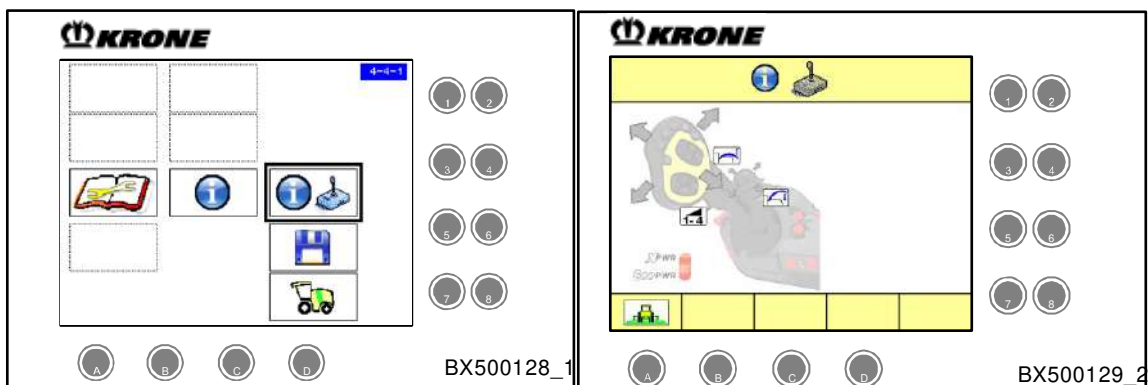


Fig. 314

Menu 4-4 Information is open.

- Using the incremental encoder, choose menu 4-4-1 Multi-function lever.
- Press the incremental encoder.

The display shows the "Multi-function lever information" menu.

## 8.11.2 Menu 4-4-2 Software

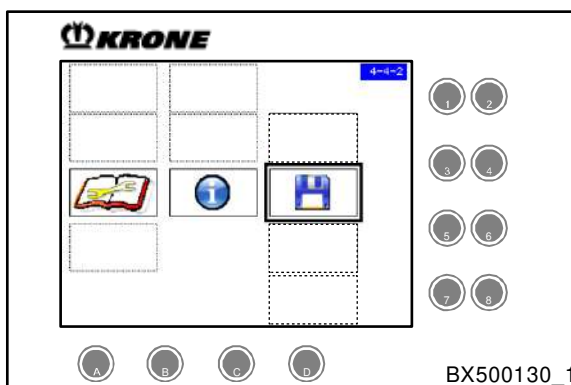


Fig. 315

Menu 4-4 Information is open.

- Using the incremental encoder, choose menu 4-4-2 Software.
- Press the incremental encoder.

The display shows the "Software" menu.

### Software page 1

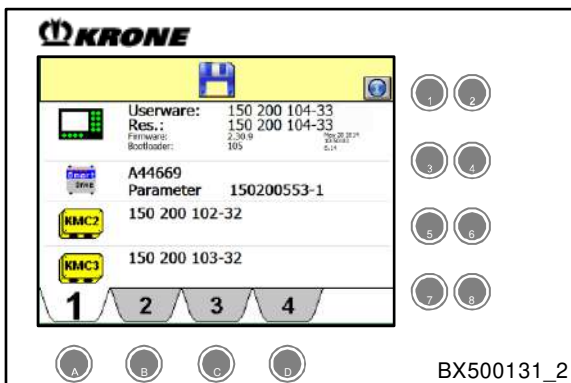


Fig. 316



Terminal

### NOTE

If the versions of resources and DLLs do not match for the terminal, the version numbers appear in red.



SmartDrive




KMC2



KMC3

### NOTE

If the KMC2 and KMC3 software is not designed for your machine type, the version numbers appear in red.

- Press the  key or turn the incremental encoder to display the second page.

Software page 2

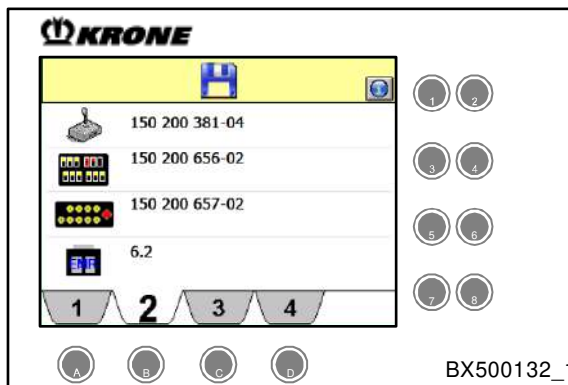
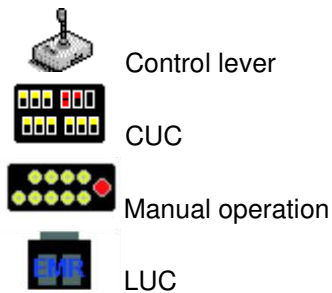



Fig. 317



- Press the  key or turn the incremental encoder to display the third page.

Software page 3

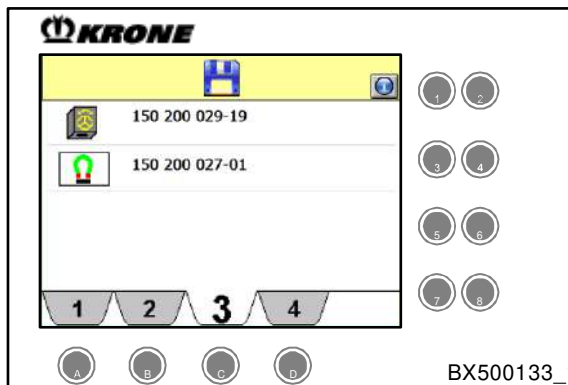
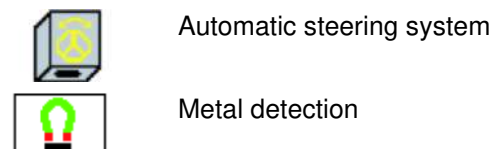



Fig. 318

Page 3



- Press the  key or turn the incremental encoder to display the fourth page.

Software page 4

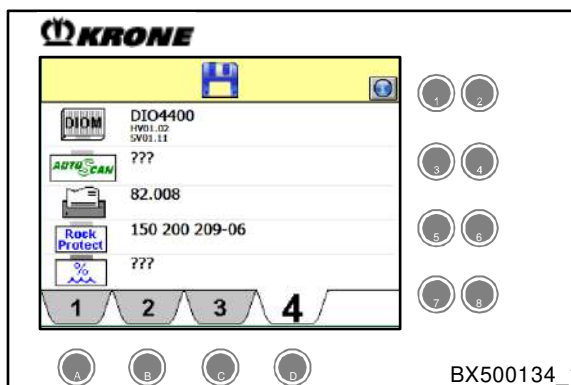










Fig. 319

	DIOM
	AutoScan (optional)
	RockProtect (optional)
	NIR sensor (optional)
	Printer (optional)

- Press the  key or turn the incremental encoder to display the first page.
- Press the  or  key to show or hide additional information on all pages.

## 8.11.3 Menu 4-4-3 machine

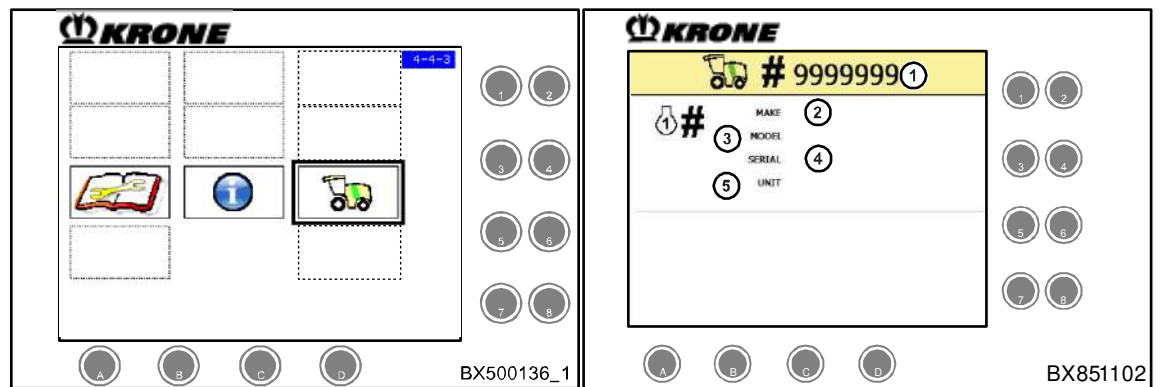


Fig. 320

The Information menu is open.

- Select menu 4-4-3 Machine with the incremental encoder.
- Press the incremental encoder.

The display shows the machine number of the machine.

## 8.11.4 Menu 4-4-8 Software package display

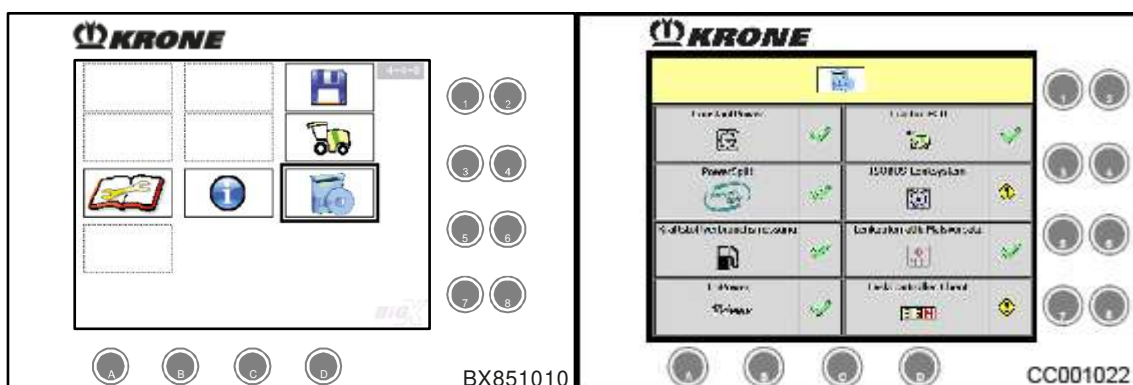


Fig. 321

The Information menu is open.

- Using the incremental encoder, choose menu 4-4-8 Software package display.
- Press the incremental encoder.

The display shows the software package:

Pos.	Meaning
1	BiG X FuelSave or BiG X FuelSave Advanced
2	BiG X ISOBUS ECU

Status displays:

Icon	Meaning
	Software is released.
	Software is not released.

## 8.12 Menu 5 Working screen

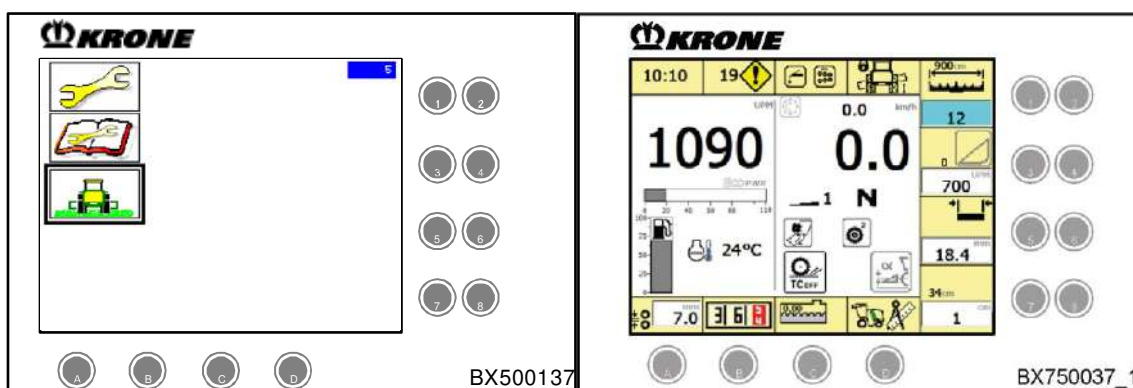


Fig. 322

The main menu is open.

- Using the incremental encoder, choose menu 5 "Machine".
- Press the incremental encoder.

The display shows the working screen.

8.12.1 Error Messages

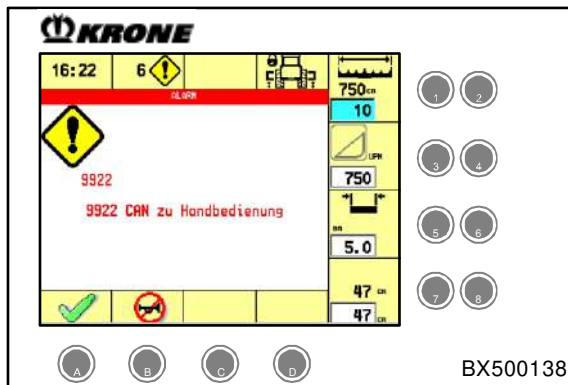


Fig. 323

If an error occurs on the machine, an error message appears in the display. The error message and error number are displayed.

- Press the  key under  to acknowledge the error message.

 **WARNING**

**Ignoring the error message can cause damage to the machine!**

The error message is only hidden. The error may still be present, see menu 4-2 Error list.

- Stop the machine.
- Rectify the error immediately.

- Press the  key under  for switching off the signal tone.

**NOTE**

List of error messages, error description, possible error reason and error correction, see page 761.

**NOTE**

Error messages for the diesel engine are also indicated by the lighting up of the engine warning

light .

Engine faults are not shown in the error list. If an engine fault occurs, always contact your KRONE dealer.

## 8.12.2 Instruction message

The instruction messages are included with an error number in the list of error messages in the appendix.

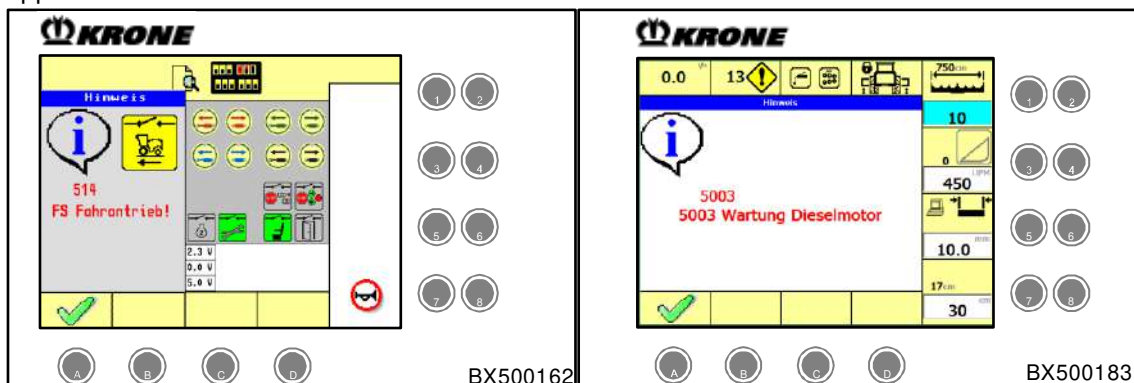




Fig. 324

If one or more conditions are not fulfilled when an action is executed, the display shows the corresponding instruction message. The error number and error message are displayed.

### Resetting instruction messages

Press the  key under  key to acknowledge the instruction message.

**Description, possible cause and remedy of the message, see page 761.**



### 8.12.3 Warning message

The warning messages are included with an error number in the list of error messages in the appendix.

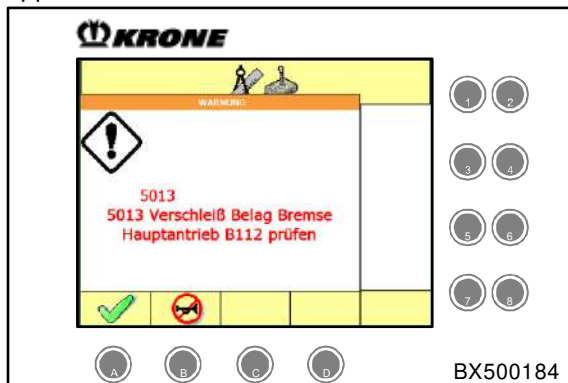




Fig. 325

If one or more conditions are not fulfilled when an action is executed, the corresponding warning message appears. The error number and error message are displayed.

#### Resetting warning messages

Press the  key under  to acknowledge the warning message.

- Press the  key under  for switching off the signal tone.

#### **NOTE**

The warning messages must be observed and checked, otherwise this may cause damage to the machine and malfunctions.

**Description, possible cause and remedy of the message**, see page 761.

## 8.13 Printing customer data

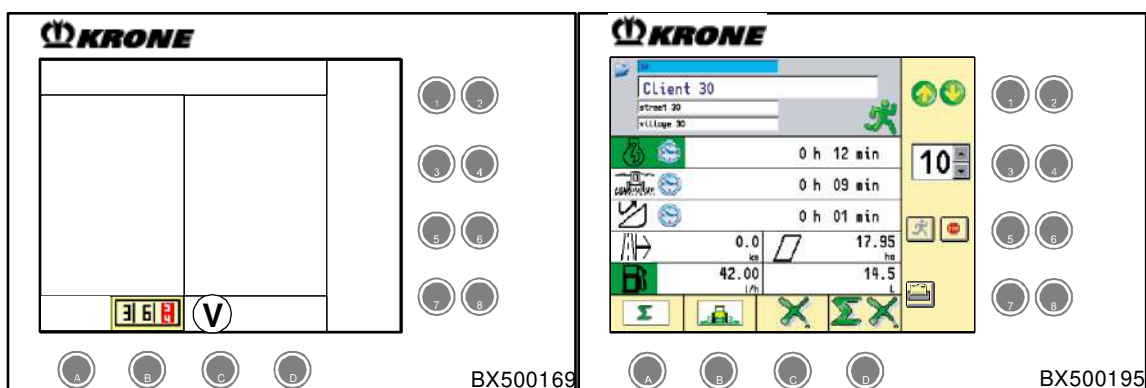









Fig. 326

Establishing a connection to the printer:



- Connect the printer via the diagnostics socket in the console in the cabin.
- Insert the paper as explained in the printer's operating instructions.


The printer is ready for operation.




**The information items listed below can be printed with the aid of the printer:**

Icon	Designation
	Customer record
	Operating hour counter (h)
	Drum hours counter (h)
	Working hours counter (h)
	Surface counter (ha)
	Kilometre counter (km)
	Fuel consumption (l)

### 8.13.1 Selecting the customer record

- Press the  key under  to switch to the Customer data counter menu.

The display shows the  icon. If there is no printer available, or no printer ready for operation, the icon does not appear.

- Press the  or  key to select the required customer record.
- Press the  key to call up the customer data print menu.

8.13.1.1 Print menu customer data

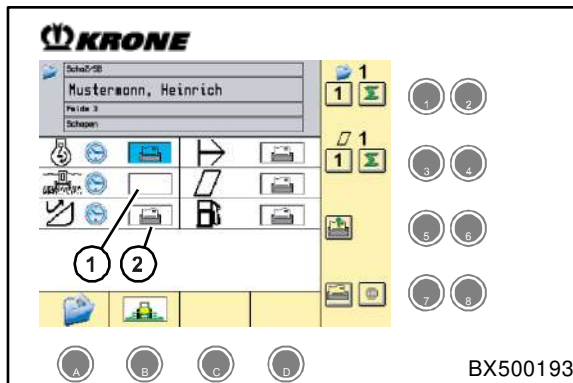








Fig. 327

Displays on the display

Item	Explanation
1	Counter will not be printed.
2	Counter is selected for printing.

Operating the menu:

- Press the  key to choose either the entered or last selected cultivated area counter in the customer data counter menu to be printed.
- Press the  key to choose all cultivated area counters of a customer data record to be printed.
- Press the  key to start the paper feed.
- Press the  key to stop the print job.
- Press the  key to switch to the "Customer data counter" menu.
- Press the  key to call up the working screen.
- Using the incremental encoder, choose the desired counter. The input field is highlighted in colour.
- Press the incremental encoder to jump to the input field.
- You can activate or deactivate the counter for printing with the incremental encoder.

**Printing the data of a customer record (example)**

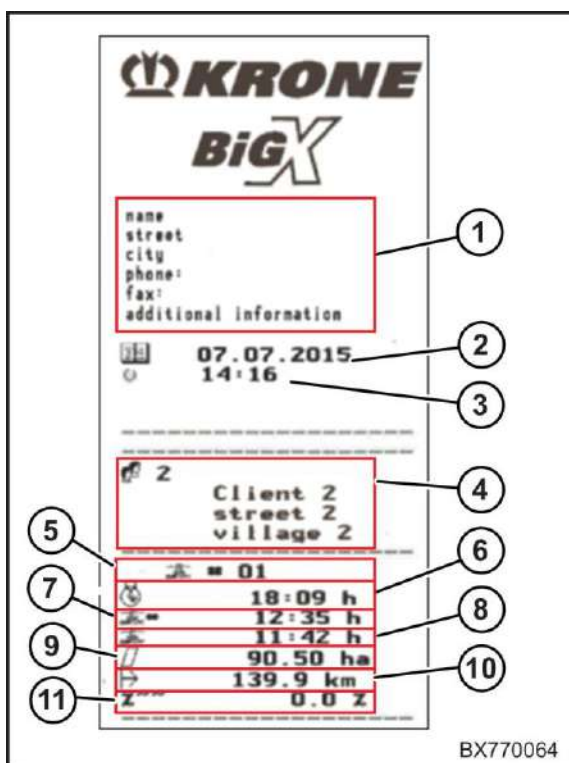






Fig. 328

Item	Explanation
1	Name and address of the machine operator/contractor (can be adapted in mask 1-9).
2	Date of printout
3	Time of printout
4	Name and address of customer
5	Field number
6	Diesel engine operating hours
7	Chopping drum operating hours
8	Working hours
9	Surface counter
10	Overall distance
11	Average moisture of the crops

Print a customer record:

- Press the  key to choose the customer record displayed for the pressure.
- Press the  key to start the printer.

Print all customer records:

- Press the  key to choose all customer records to be printed.
- Press the  key to start the printer.

Only counters for which the counter status is greater than zero are printed.

8.13.1.2 Printing cultivated area counter state/states

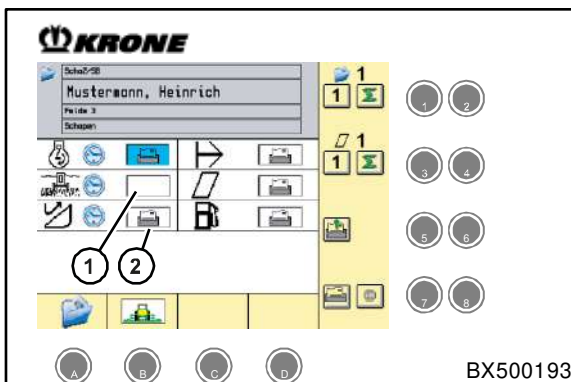









Fig. 329




- Press the  key to choose either the entered or last selected cultivated area counter in the customer data counter menu to be printed.
- Press the  key to start printing.
- Press the  key to choose all cultivated area counters of a customer data record to be printed.
- Press the  key to start printing.

**Printing all customer records and all cultivated area counter states**

- Press the  key.
- Press the  key to choose all cultivated area counters of a customer data record to be printed.
- Press the  key to start printing.

Only counters for which the counter status is greater than zero are printed.

**Error messages when printing**

Icon	Explanation/remedy
	No paper. • Insert paper and restart the print job.
	The printer buffer is full. • Switch the terminal off and on again. • Restart the print job.
	No CAN connection to the printer. • Check the cabling to the printer.

8.14 Accessing the constant power setting menu (optional)

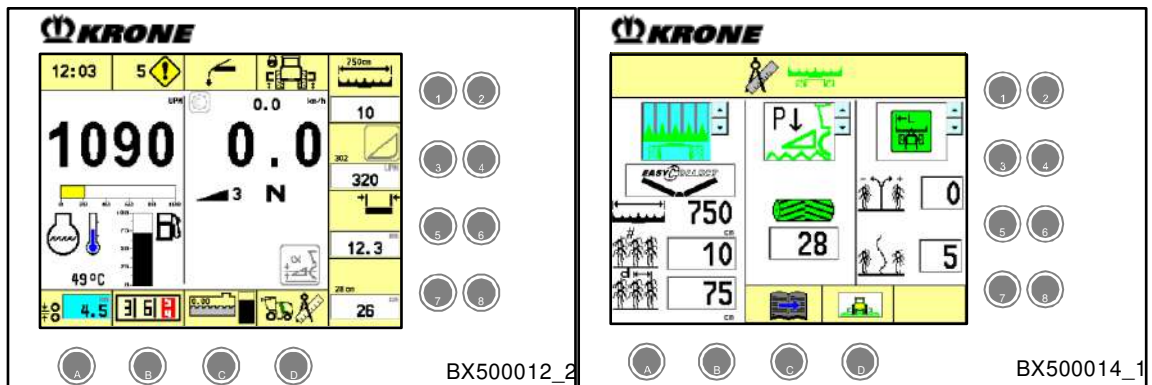





Fig. 330

- In the working screen, press the  key to switch to the memory keys/machine settings mask.
- Press the  key to call up the next constant power settings page.
- In maize mode, press the  key 2x as other settings are possible.

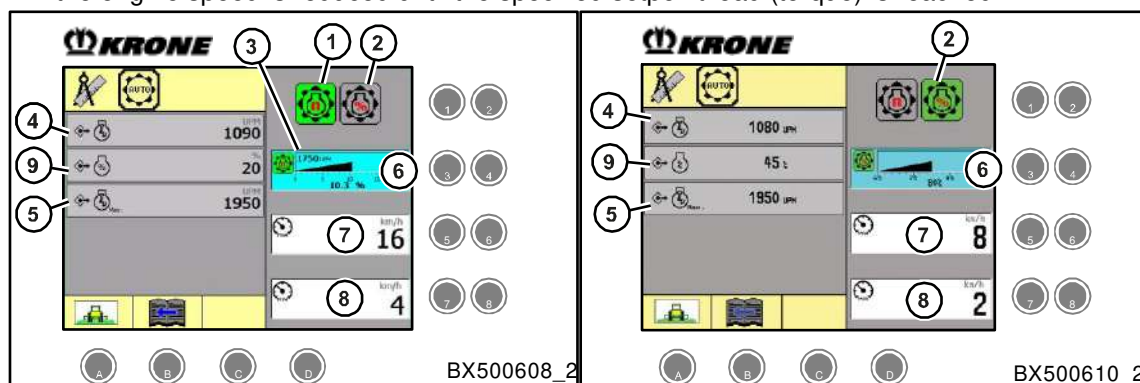
**NOTE**

The changes implemented in this menu are effective immediately.  
This makes it possible to adapt the machine to the specific circumstances for which it is used.

## 8.14.1 Entering the Degree of Speed Reduction

Speed reduction can be set dependent on speed and engine load.

- In the case of speed-dependent control, the driving speed is automatically adjusted so that the engine speed is reduced until the specified setpoint engine speed is reached. At a rated speed of 2,000 rpm and a specified speed reduction of 10%, the engine speed is restricted to 1,800 rpm.
- In the case of load-dependent control, the driving speed is automatically adjusted so that the engine speed is reduced until the specified setpoint load (torque) is reached.



Speed-dependent control

Load-dependent control

Fig. 331

Mask description:


Pos.	Explanation
1	Switching between speed-dependent control/load-dependent control (current setting)
2	Switching to control depending on engine load
3	Setpoint engine speed (only for speed-dependent control)
4	Actual speed diesel engine
5	Rated speed diesel engine
6	Setpoint engine speed/setpoint load
7	Maximum speed
8	Minimum speed
9	Actual engine load

Prerequisite:


- Machine stopped.



**Speed-dependent input:**

- Press the  key to select speed-dependent input (1).
- Select the input field for speed reduction (6) by using the incremental encoder. The input field is highlighted in colour.
- Press the incremental encoder to jump to the input field. The input field is highlighted in yellow.
- Turn the incremental encoder to the left or right to reduce or increase the degree of speed reduction from 3% – 20%.
- Press the incremental encoder to accept the setting and to exit the selection box.

**Engine load-dependent input:**

- Press the key  to select the engine load-dependent input (2).
- Using the incremental encoder, select the input field for the nominal load (6). The input field is highlighted in colour.
- Press the incremental encoder to jump to the input field. The input field is highlighted in yellow.
- Turn the incremental encoder to the left or right to reduce or increase the degree of speed reduction from 65% – 95%.
- Press the incremental encoder to accept the setting and to exit the selection box.

8.14.2 Setting the maximum speed

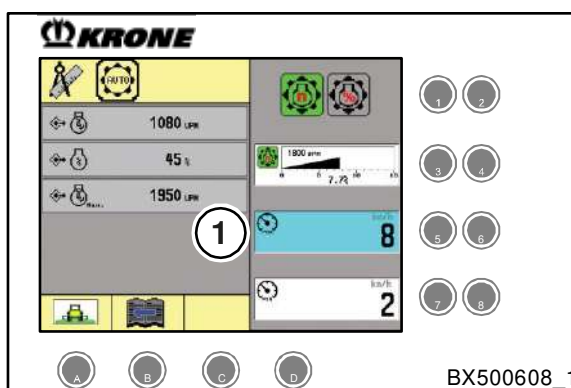


Fig. 332

- Using the incremental encoder, choose the input field for maximum speed (1). The input field is highlighted in colour.
- Press the incremental encoder to jump to the input field. The input field is highlighted in yellow.
- Turn the incremental encoder to the left or right to reduce or increase the maximum speed value.
- Press the incremental encoder to accept the setting and to exit the selection box.

The load limit control accelerates the traction drive to a maximum of this set speed, even if the setpoint speed reduction or setpoint load is not yet reached.

## 8.14.3 Setting the minimum speed

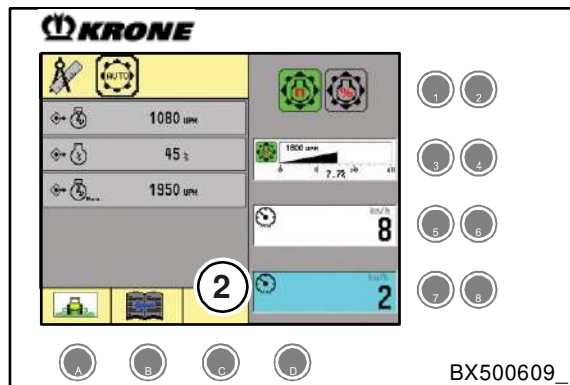


Fig. 333

- Using the incremental encoder, choose the input field for minimum speed (1). The input field is highlighted in colour.
- Press the incremental encoder to jump to the input field. The input field is highlighted in yellow.
- Turn the incremental encoder to the left or right to reduce or increase the minimum speed value.
- Press the incremental encoder to accept the setting and to exit the selection box.

The load limit control decelerates the traction drive to the saved minimum speed, even if the setpoint speed reduction or setpoint load has already been reached or exceeded.

### 8.15 Operation of the Internal Silage Additive System

The following prerequisites must be met for operating the silage agent system:

- Quick-stop switch console: OFF
- Quick-stop switch manual operation: OFF
- Switch the release switch road/field to field mode.

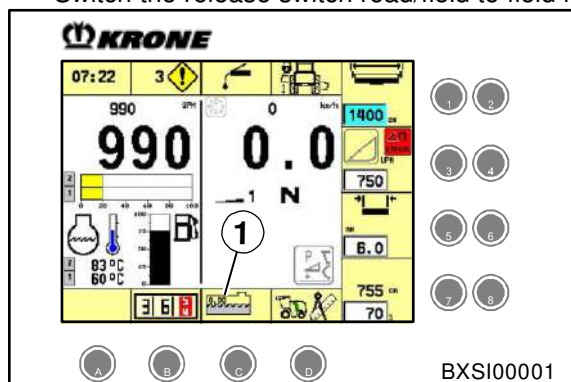


Fig. 334

If an internal silage agent system has been set, an additional display (1) is shown in the main screen. This additional display provides information on the current silage agent throughput rate in l/min.



#### Note

Prior to initial operation of the silage agent system, read these Operating Instructions carefully and observe the safety instructions for safe use.



#### CAUTION!

In case of abnormal handling, the chemicals used in the silage agent system can cause damage to health.

- The silage agent system may only be operated by persons who are familiar with these Operating Instructions and the silage agent manufacturer's safety data sheet. The safety instructions issued by the silage agent manufacturer must be observed.
- The operating personnel must be instructed in the safe handling of the chemicals used.

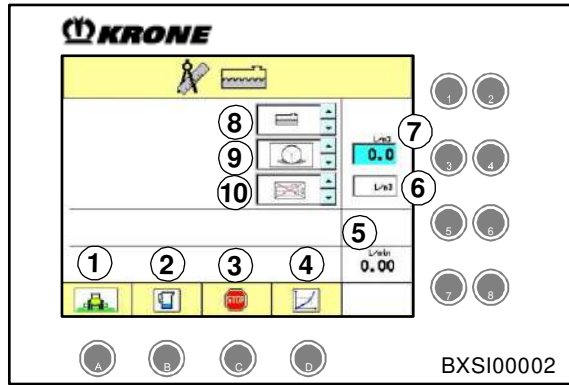







Fig. 335

- Press the Terminal button  in the main screen. The setting options available for the internal silage agent system are displayed:
- 1 Button : Finish the settings and call up the main screen
  - 2 Button : Calibrate the internal silage agent system
  - 3 Button : Cancel the currently executed function of the silage agent system
  - 4 Button : Record the characteristic line of the silage agent system
  - 5 Current silage agent throughput rate in L/min
  - 6 Unit of silage agent dosing
  - 7 Silage agent dosing
  - 8 Define the status of the silage agent system
  - 9 Define the flow sensor status
  - 10 Activate/deactivate the fill level indicator of the silage agent system (optional)

## 8.16 Calibration of the internal silage additives unit

The silage additives unit should be calibrated prior to each use in order to obtain maximum precision.



### Notice

Prior to every calibration, fill the silage additives unit with tanked silage additives up to the nozzle by manually controlling the silage additives pump in continuous operation.



### CAUTION!

If used improperly, the chemicals used in the silage additives unit may cause damage to health.

- The safety instructions issued by the silage additives manufacturer must be followed.

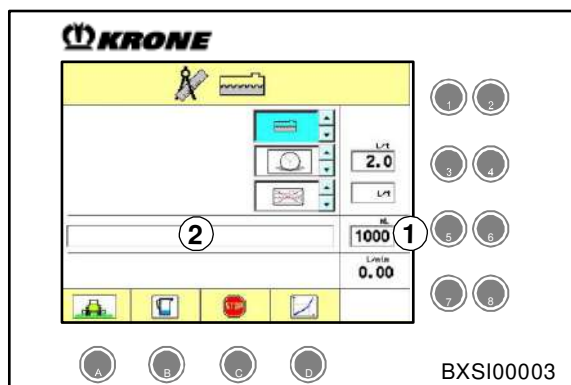










Fig. 336

- Switch off the silage additives unit by pressing the  () key.
- Remove the quick coupling from the hose of the silage additives unit.
- Switch on continuous operation (see chapter "Continuous operation") and leave switched on until liquid runs out of the quick coupling.
- Press the  () key to switch off the silage additives unit.
- During calibration, collect the liquid in a measuring cup (min. 2 litres).
- Start the calibration by pressing the  () key. Use a measuring cup to collect the liquid running out of the quick coupling. The calibration process stops automatically as soon as the progress bar (2) has reached 100%.
- In the displayed field (1) enter the silage additives quantity collected in the measuring cup in millimetres and confirm by pressing the rotary potentiometer. The calibration is now complete.



### Notice

The calibration can be cancelled at any time by pressing the  () key.

## 8.17 Recording the characteristic line

The characteristic line can be recorded with an existing flow sensor only.

The characteristic line must be recorded whenever there is a change to the silage additives unit (e.g. change to the injection point or nozzle) or silage additives, as the recording of the characteristic line specifies the minimum and maximum silage additives quantity which can be set on the terminal.

The quick coupling must not be opened while the characteristic line is being recorded.



### CAUTION!





If used improperly, the chemicals used in the silage additives unit may cause damage to health.

- The safety instructions issued by the silage agent manufacturer must be followed.





### Notice

Collect any silage additives which run out while the characteristic line is being recorded and dispose of them correctly.

1. Switch on continuous operation (see chapter "Continuous operation") until liquid runs out of the nozzle.
2. Press the  () key to switch off the silage additives unit.
3. Start recording the characteristic line by pressing the  () key.  
Characteristic line recording automatically ends after approx. 1-2 min.



### Notice

Characteristic line recording can be cancelled at any time by pressing the  () key.

8.17.1 Use

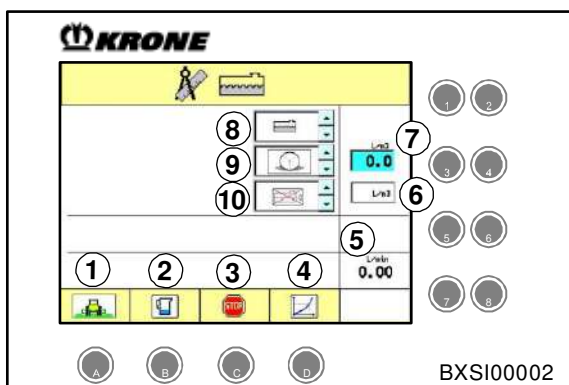
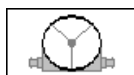


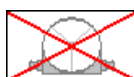
Fig. 337

The flow sensor monitors the flow of silage additives through the silage additives unit. If the flow sensor is not ready for use, it must be switched off in the settings of the silage additives unit (input field 9).

**Setting the flow sensor status:**



Flow sensor is present



Flow sensor is absent

If the flow sensor status is set to absent, a characteristic line of the last characteristic line recording is used to control the pump.



**Notice**

If the flow sensor status is set to absent, the silage additives unit cannot determine whether silage additives are actually being conveyed. In this case it must be ensured that a sufficient quantity of silage additives is available in order to prevent the pump from running dry (this may damage the pump).

**Setting silage additives unit mode (input field 8):**

The following states are possible:



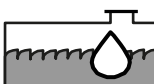
Silage additives unit deactivated



Continuous operation



Automatic mode



Crop flow cleaning headland



When operating the silage additives unit, check whether the mounted nozzle produces the required spray pattern and whether the material is wetted with the silage additives.

Colour coding	Dosing quantity
Blue nozzle	2.5 l/min (standard)
White nozzle	>2.5 l/min

8.17.2 Continuous operation

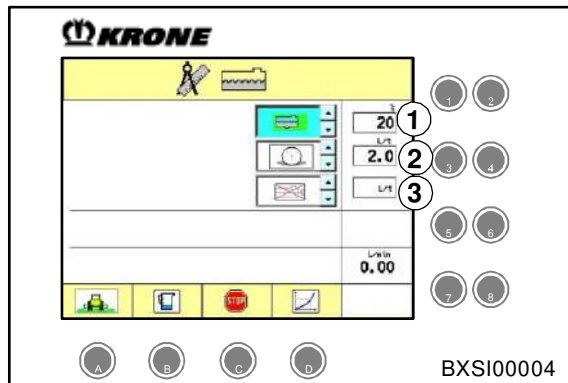


Fig. 338

In continuous operation, the throughput of the silage additives pump can be adjusted directly by means of a displayed input field (1). The dosing information (input fields 2 and 3) is not taken into account during continuous operation.

The flow sensor monitors the flow of silage additives through the silage additives unit. If the flow sensor is not ready for use, it must be switched off in the settings of the silage additives unit (input field 9).

## 8.17.3 Automatic mode

In Automatic mode, the silage additives is dosed depending on time or crop throughput (with CropControl only). Here, the pumping of silage additives is switched off when the machine is not chopping.

The active pumping of silage additives is indicated by a green background colour on the status display.



Automatic mode active. Silage additives pumping inactive.



Automatic mode active. Silage additives pumping active.

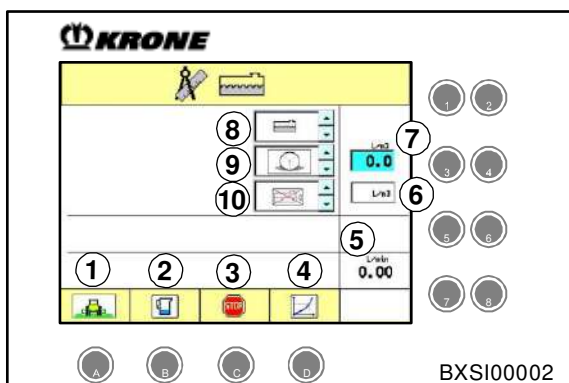


Fig. 339



In Automatic mode, the dosing of silage additives can be affected by adjusting input fields 6 and 7.

In input field 6 the unit can be set first, according to which the silage additives are to be dosed.

The following settings are possible:

- L/min      Dosing quantity per unit of time (litres per minute)
- L/t         Dosing quantity per unit of weight (litres per tonne) (with CropControl only)

The value in input field 7 combined with the unit in input field 6 results in the required dosing of the silage additives unit.

The actual throughput must therefore be set in input field 7. The setting in input field 7 can also be adjusted by pressing the  and  keys.



### Notice

The maximum throughput of the silage additives unit must not be exceeded.

### Conditions for the setting "dosing quantity per unit of weight"

- The setting "dosing quantity per unit of weight" is available for the "CropControl (yield recording)" version only.
- CropControl must have been calibrated.
- If the CropControl does not record and output any yield, no silage additives are being injected with this setting. If silage additives are nevertheless to be injected, the setting must be set to "dosing quantity per unit of time".

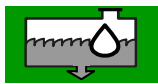
#### 8.17.4 Crop flow cleaning headland

"Crop flow cleaning headland" mode is used to prevent the crop flow plates from sticking due to crops which contain sugar. "Crop flow cleaning headland" mode is the most effective method of cleaning the crop flow plates, provided the "water injection" retrofit kit has been installed. If the "water injection" retrofit kit has not been installed, water will run out of the silage additives nozzle only and the plates in the crop flow will not be wetted with silage additives.

The active pumping of silage additives is indicated by a green background colour on the status display.



Crop flow cleaning headland active, water pumping inactive.



Crop flow cleaning headland active, water pumping active.

## 8.18 Error Messages

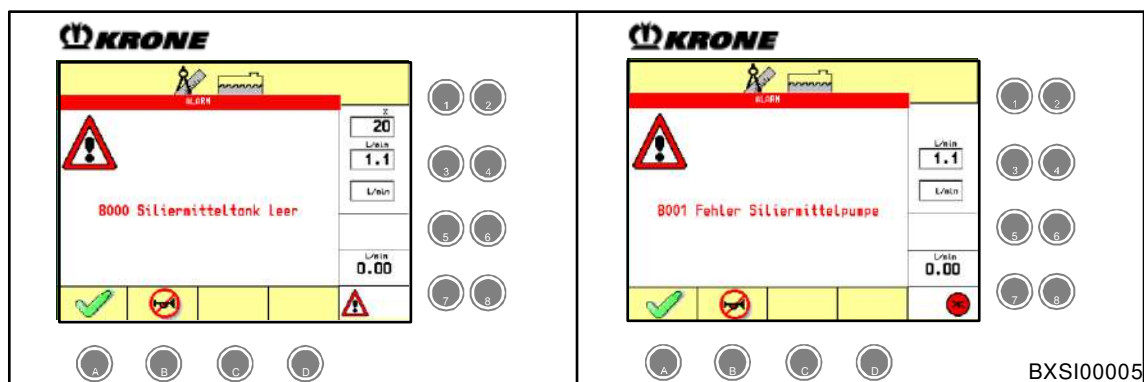


Fig. 340

The "8000 silage agent tank empty" error message can have the following causes:

- No silage agent in the tank
- The flow sensor is mechanically or electrically defective
- The electrical connections of the flow sensor are defective
- The pump mechanism of the silage agent pump is defective
- The intake pipe or the pump filter of the silage agent system is soiled
- The pressure pipe or the nozzle unit is soiled

The "8001 silage agent pump error" error message can have the following causes:

- Interruption of the pump electrics
- The cable harness towards the pump is damaged
- The power output of the job computer is overloaded and switched off
- Power supply failure (V2- KMC3)

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## 8.19

## Cleaning and Maintenance



**Danger! - When performing repair, maintenance or cleaning work on the machine , or in the case of technical intervention, drive elements may start moving.**

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

- Switch off the engine and remove the ignition key.
- Secure the machine against accidental start-up and against rolling!
- The cutter blades can continue to rotate after the drive has been switched off. Only approach the machine once the work tools have come to a complete standstill!
- After completing maintenance work reattach all safety devices properly.
- Avoid skin contact with oil and grease.
- Seek medical help immediately should injuries caused by oil escaping under pressure occur.

**CAUTION**

**Damage to the silage additives unit due to low outdoor temperatures.**

If there is any water left in the silage additives unit prior to it being stored for the winter, the unit is at danger of being damaged by frost.

- Fill the silage additives tank with a biological, non-aggressive frost protection agent prior to storing it for the winter and allow the silage additives unit to pump in "continuous operation" mode for 2 minutes with a dosing quantity of 50%.
- After the winter, before the season begins, fill the silage additives tank with clear water and allow the silage additives unit to pump in "continuous operation" mode for 10 minutes with a dosing quantity of 75%.

**The silage additives unit must be cleaned after each use, see page 637.**

**Notice**

The silage additives residue and the rinsing water must be disposed of properly (see instructions of the silage additives manufacturer in the separate operating instructions).

If the throughput is weak, the filter insert of the line filter and the nozzle filters must be cleaned, see page 637.

**CAUTION!**

Machine damage.

- Never clean the flow sensor with compressed air.

### 9 Commissioning

This chapter describes the assembly and set-up work on the machine which may be performed by qualified technicians only. The note "Personnel qualification of the qualified technicians" applies, see chapter Safety, "Basic safety notes".



#### **WARNING**

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

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

- Initial operation must only be carried out by authorised technicians.
- Read in full and follow the "Personnel qualification of the technicians", see chapter "Basic safety instructions".



#### **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".

#### 9.1 Checks before starting up the machine for the first time



#### **NOTE**

Compliance with the stipulated checks on the machine significantly increases the safety and the service life of the machine.

A machine with established defects must not be started.

- If it is established that the machine has defects, shut down the machine and eliminate these defects or have them eliminated by technicians.
- Before starting up the machine, carry out the inspections listed below and checks from the maintenance table "Every 10 hours, at least daily".

#### **General information:**

- Check the machine for leakages of oil, water, fuel and refrigerant.
- Check the machine for sagging and detached cables, plugs and hoses.
- Check the safety devices for damage and, if required, replace.
- Ensure that the front attachment has been correctly mounted and fitted with the corresponding safety devices.
- Ensure that the wheel chocks are at hand and ready to use.
- Ensure that the platforms, steps and standing spaces are clean and in a proper condition.

**Hydraulic system:**

- Check the hydraulic system for leaks.

**Cabin:**

- Check the function of the indicator lamps.
- Check the position of the outside and inside mirrors and the camera monitoring (optional). Set if necessary.
- Adjust the driver's seat and the steering column to the driver.
- Ensure that the emergency exit can be opened without obstruction.
- Ensure that the discs and outside mirrors are clean and that the wiper blades are in a good condition.

**Lighting/signage:**

- Check the function and setting of the lighting.
- When driving on public highways, ensure that the red and white warning panels to identify the machine have been mounted according to national law.

**Warning beacon and horn:**

- Check the function of the warning beacon and the horn.

### Service brake:

Check the function of the operating brake.

 <b>WARNING</b>
--

<p><b>Risk of injury due to defective operating brake!</b></p>
--

<p>If the operating brake has a restricted function, the machine cannot be brought to a standstill in time and people and material assets are at risk.</p>
--

- |  |
|--|
| <ul style="list-style-type: none"><li>• Before driving the machine, always check the operating brake and ensure that it functions.</li></ul> |
|--|

- Accelerate the machine to 5-10 km/h and press the brake pedal (1).

If the machine brakes, the operating brake is functioning correctly.

If the machine does not brake, stop driving the machine.

- Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".
- Have a technician check and repair the operating brake.

### Maize mode / grass mode

The machine is supplied with an installed corn conditioner. The power belt for the drive of the corn conditioner is not attached and can be found in the driver's cab. The grass channel is not installed and can be found on the roof of the machine.

- Adapt to the required field mode.



## 9.2 Mounting warning panels in the operating position



Fig. 341

If the warning panels (1) have been mounted in alignment with the machine for transportation, they must be located in operating position (a) before the machine is started up for the first time.

To adjust the position of the warning panels to the width of the tyres (2 settings are position):

- Loosen the screw connections (2).
- Determine the mounting position of the warning panels so that the distance from the outer edge of the machine to the outer edge of the warning panel does not exceed 100 mm.
- Secure the right/left warning panels in the operating position with the screw connection (2).

## Commissioning

### 9.3 Mounting fire extinguisher in the holder

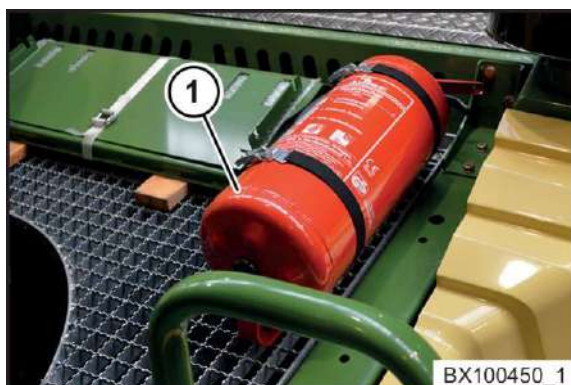


Fig. 342

- Shut down and safeguard the machine.
- Insert the fire extinguisher (1) into the support / holder at top left of the machine so that the operating instructions on the type plate are legible and point towards the outside.

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

- Adjust the length of the tensioning straps to the circumference of the fire extinguisher.
- To ensure that the closed tensioning straps are adequately tensioned, shorten the length of the tensioning straps by a few millimetres and close the fasteners.

If the fasteners can be closed with just an auxiliary tool (e.g. screwdriver) the setting is correct.

If the fasteners can be manually closed:

- Shorten the length of the tensioning straps until the fasteners can be closed with just an auxiliary tool (e.g. screwdriver).

### 9.4 Identification plate



Fig. 343

- Mount the front licence plate on both support brackets (1) on the front skirt (2) of the cab.
- Mount the rear licence plate in the designated indentation on the tailgate under the licence plate lighting (3).

**10 Start-up****10.1 Check before Start-up****NOTE**

Compliance with the stipulated checks on the machine significantly increases the safety and the service life of the machine.

A machine with established defects must not be started.

- If it is established that the machine has defects, shut down the machine and eliminate these defects or have them eliminated by technicians.

**General information:**

- Visual inspection of the machine:  
No liquid under the vehicle, no sagging or detached cables, plugs or hoses, etc.
- Check the safety devices for damage and, if required, replace.
- Check that the screws are tight.
- Ensure that the front attachment has been correctly mounted and fitted with the corresponding safety devices.
- Lubricate the machine.
- Ensure that the wheel chocks are at hand and ready to use.
- Ensure that the platforms, steps and standing spaces are clean and in a proper condition.
- Check the pre-cleaner for dirt and clean with compressed air if necessary.

**Engine/engine compartment:**

- Check that the engine compartment is clean.
- Check the engine oil level.
- Check the engine coolant level.
- Check the fuel level.

**Central lubrication system:**

- Check the central lubrication system.

## Start-up

---

### **Hydraulics:**

- Check hydraulic oil level.
- Check hydraulic system for leaks.

### **Gearbox:**

- Check the oil level of all gearboxes.

### **Drives:**

- Check drive belts.
- Clean the coupling journal on the machine and grease on the coupling surfaces by means of multi-purpose grease.

### **Tyres:**

- Check tyres for damage, cuts and breaks.
- Check tyre pressure.

### **Service brake:**

- Check the functionality of the service brake.

### **Cabin:**

- Check the functionality of the warning lights.
- Check the position of the mirrors and camera monitoring (optional).
- Set the driver's seat to the driver.
- Make sure that the emergency exit can be opened without problems.
- Make sure that the discs and outside mirrors are clean and that the wiper blades are in good condition.

### **Lighting/signage:**

- Check the functionality and the setting of the lighting.
- When driving on public highways, ensure that the red and white warning panels to identify the machine have been mounted according to national law.

### **Warning beacon and horn:**

- Check the functionality of warning beacon and horn.

### **Fire extinguisher:**

- Check that the fire extinguisher is attached and ready for use.

### **Maize mode / grass mode**

- Adapt to the required field mode.

**10.2 Silage additive system****10.2.1 Silage Additives Unit (internal)** **WARNING****Danger of injury due to silage additives!**

If handled improperly, the chemicals used in the silage additive system may damage health.

- The silage additive system may be operated only by persons who are familiar with these operating instructions and the safety data sheet of the silage additive manufacturer. The safety instructions issued by the silage additive manufacturer must be followed.
- The operating personnel must be instructed in the safe handling of the chemicals used.

**NOTE**

Before using the silage additive system for the first time, read these instructions carefully and follow the safety instructions for safe use

**NOTICE**

Prior to every flush or after prolonged shutdown, fill the silage additives unit with tanked silage additives up to the nozzle by manually controlling the silage additives pump in the permanent operation.

For operating and setting the silage additive system, see page 432.

## 10.2.2 Silage additive system (external)

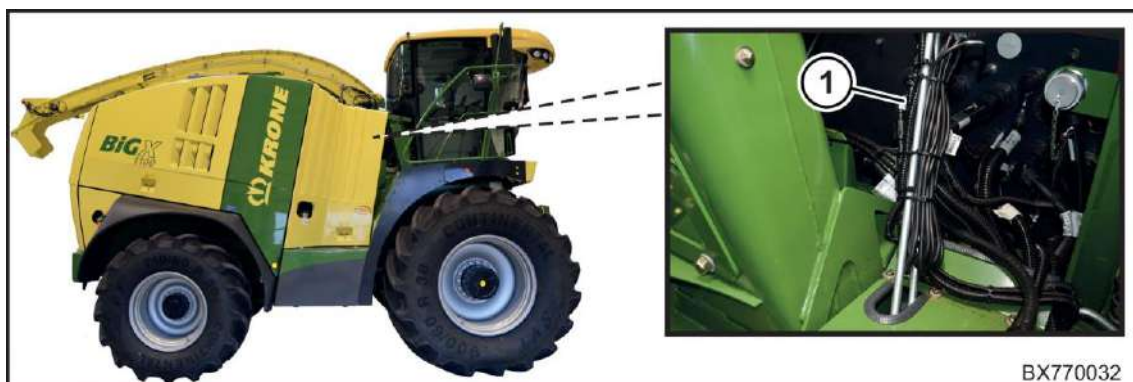


Abb. 344

There is an option to connect an external silage additive system. The electrical connection (1) for the silage additive system is located in the cooler compartment to the right beside the channel support. It is a 3-pin plug bearing the designation XY60.

No fixed location is stipulated for the silage additive system and the injection of silage additives. If the silage additive system is connected, it is controlled fully automatically via the electronics in the machine.

The right connector cable (material no.: 303-558-1, length approx. 3 m) is included with the machine.

### Connection assignment of the cables

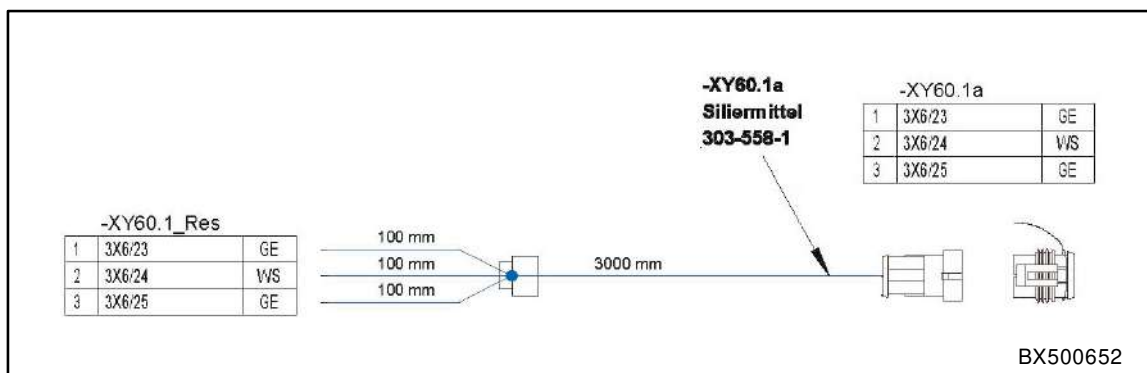


Fig. 345

XY 60 contact 1: +12 volts switched max. 15 amps through fuse 22-F74

XY60 contact 2: Ground

XY60 contact 3: +12 volts continuous voltage, max. 15 amps through fuse 22-F74

For operating and setting the silage additive system (external), see page 432.

**11 Start-up - Grass mode**

This chapter describes the conversion from maize mode to grass mode.

- Installing the grass channel, see page 458.
- Setting the rear wall of discharge accelerator "Grass mode", see page 594.
- Move the three-way stopcock to position "Grass"
- Replace the hydraulic cylinder of the pendulum frame with a tension spring (in reverse sequence), see page 485.
- Turning the conveyor bars on the pre-compression roller, see page 711.
- Grain capture sheets on the intake unit, see page 488dismounting grain capture sheets
- Replace the chopping blade (maize blade → grass blade), for chopping drum with 20, 28, 36 blades see page 694, for chopping drum with 40, 48 blades see page 701readjust and/or replace chopping blades for chopping drum with 40, 48 blades.
- Replace counterblade (special → standard), see page 708.
- Adapt the spout extension to the front attachment type, see page 496.
- Adapting additional weights to the front attachment type and setting tyre pressure, see page 515.
- Setting the rear axle suspension,
- Setting the machine settings in the terminal, see page 186.
  - operating mode Easy Flow
  - Front attachment type Easy Flow
  - Lifting unit mode
  - Number of blades of the chopping drum
- Calibration, see page 264.
  - Lifting unit
  - Pendulum frame/Cutting height

### 11.1 Operating the cable winch



#### **WARNING! – Risk of injury and damage to the machine due to the cable winch!**

Careless operation of the cable winch can result in injury and damage to the machine.

- Only connect the remote control when the cable winch is required.
- When working with the cable winch, always wear protective gloves.
- Each time before using the cable winch, check to make certain the mounting screws are securely seated on the winch attachment plate.
- Check the wire rope of the cable winch and the connecting cable of the remote control for damage prior to each and replace if necessary.
- When winding up the cable, make sure it is wound evenly on the drum.
- Always leave five revolutions on the winch drum for safety.

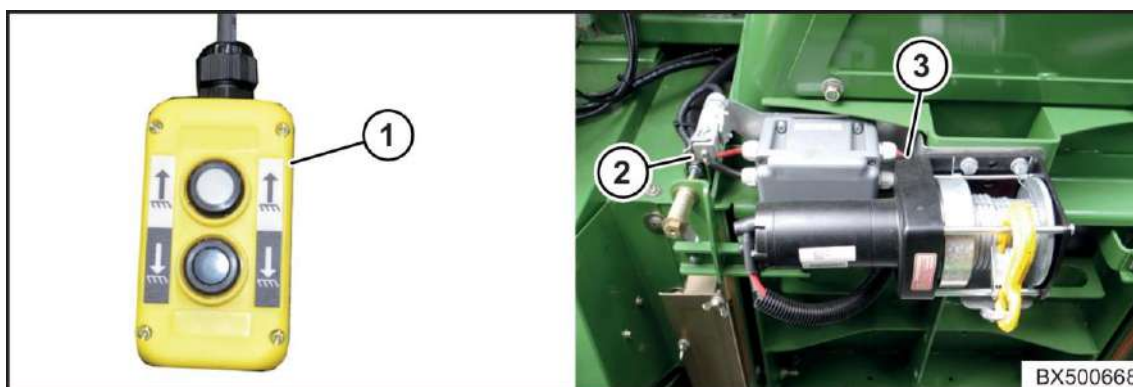


Fig. 346



#### **Note**

The remote control (1) can be found in the tool box upon delivery of the machine. After use, store the remote control in the drawer beneath the driver's seat to prevent unauthorised use.

- Connect the remote control (1) to the connection (2) relay housing of the cable winch (3).



Method of Operation of Remote Control

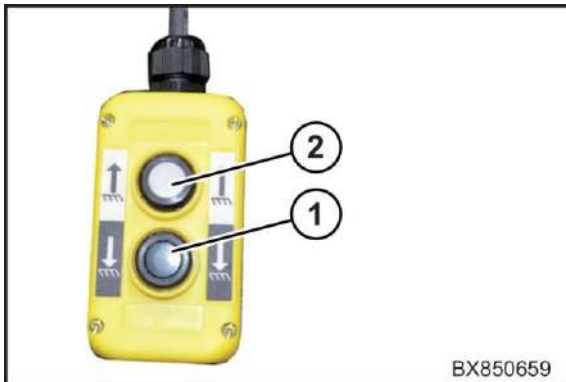


Fig. 347

Unwind the rope from the cable winch:

- Press the momentary switch (1).

Wind the rope onto the cable winch:

- Press the momentary switch (2).

11.2

Removing the corn conditioner

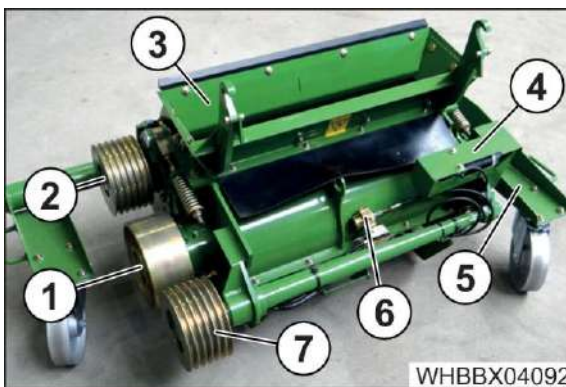


Fig. 348

Item	Component
1	Rear roller unit
2	Front roller unit
3	Channel
4	Adjusting motor

Item	Component
5	Corn conditioner mounting cart
6	Connection for central lubrication
7	Deflection roller



**NOTE**

Depending on the version, the corn conditioner has a weight of approx. 450 kg. Only transport with suitable slings.

## Start-up - Grass mode

### Prerequisites for installation and removal:

- Diesel engine is switched off.
- The side flap at the front right is open.
- The machine is shut down and safeguarded, see chapter Safety, "Shutting down and safeguarding the machine".



Fig. 349

- Undo the lock (1) and swivel open the tool box (2).
- Remove the protective lid (4) between the discharge accelerator housing and the tank cover.
- Make certain the discharge accelerator rear is secured on the left and right side by two spring locks (3).

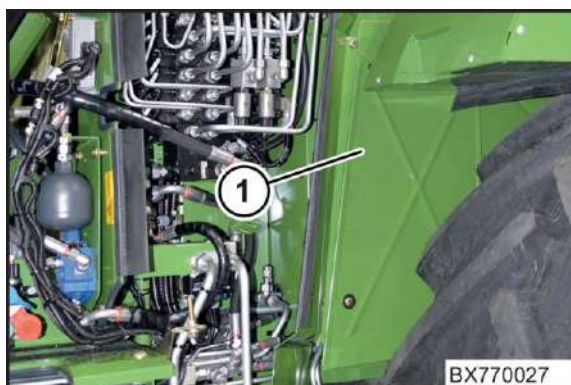


Fig. 350

- Dismount the screws of the service cap (1) on the right side of the machine and remove the service cap.

Removing the corn conditioner

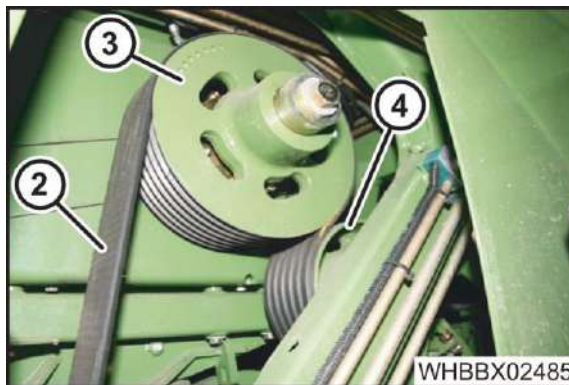


Fig. 351

- Relieve the power belt (2). To do this push the tension roll (4) back manually.
- Remove the power belt (2) from the belt pulley (3).

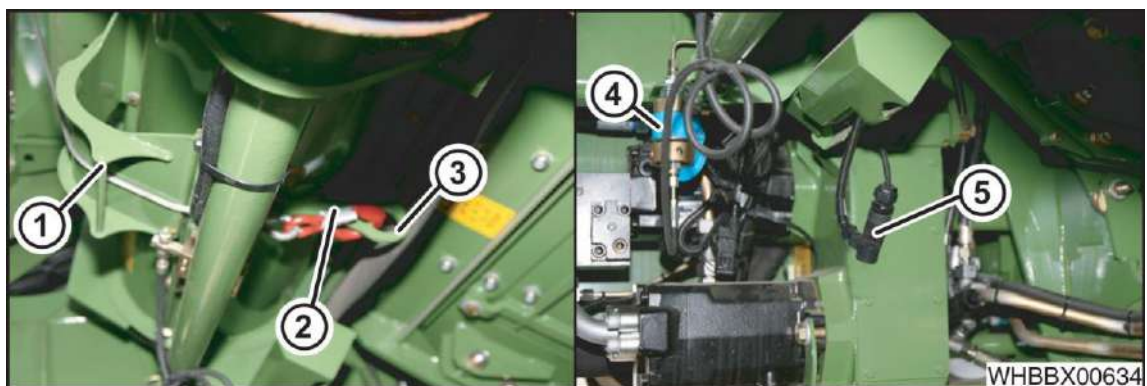


Fig. 352

- Move the cable winch hook (2) through the rope guide (1) and hook it in the corn conditioner (3).
- Pull up the rope with the cable winch until it is taut.
- Loosen the screw connection for central lubrication (4).
- Loosen the plug connection (5) of the adjusting motor.
- Fit a clean filler plug to guard the plug.

## Start-up - Grass mode



### WARNING! – Risk of injury due to suspended load!

There is a danger for persons due to falling load.

- Pay attention to sufficient carrying load of the hoist.
- Do not stay under the suspended load.

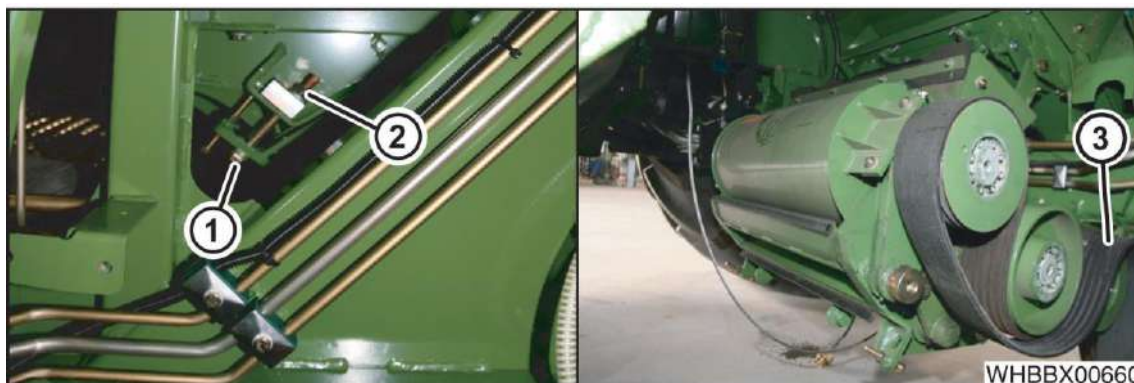


Fig. 353

- Loosen counter nut (2) (only right-hand side of machine).
- Unscrew the screws (1) on both sides of the corn conditioner.
- Lower the corn conditioner with the cable winch until it rests on the axle.
- Remove kraftband (3) from corn conditioner.



Fig. 354

- Hinge cable guide (1) on discharge accelerator rear wall and secure with screw (2). Make sure that the cable guide rests correctly on the frame.
- Insert the cable (3) into the rollers of the cable guide (1) as well as into the deviation point (5) on the channel.



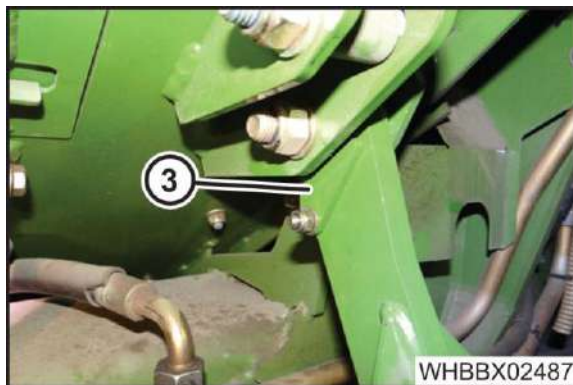


Fig. 355

- Dismount the safety plates (3) on both sides of the corn conditioner hooks.
- Pull corn conditioner up by using the cable winch until the hooks from the forage harvester holder are released.
- Lower corn conditioner with cable winch and place it securely on the installation carriage. Make certain no lubrication lines are crushed.
- Dismount the cable on the corn conditioner and push out the installation carriage to the right-hand side of the machine.

#### Close the stop cock for the corn conditioner tension roll

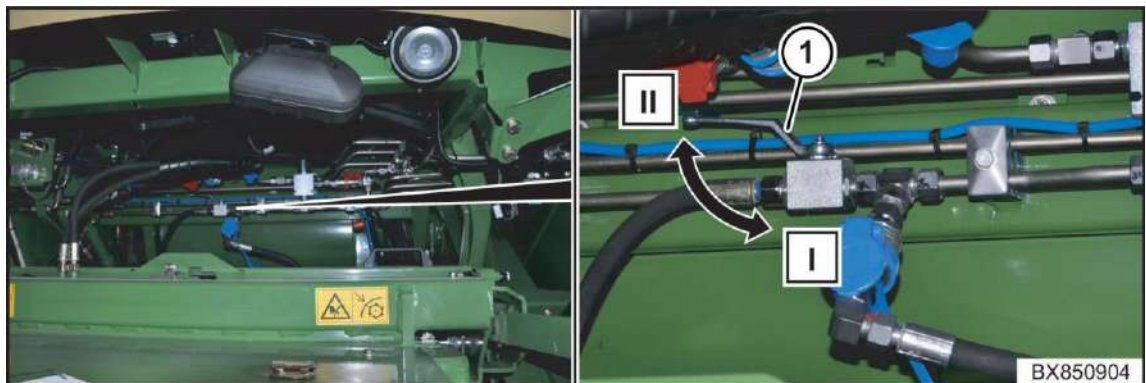


Fig. 356

The stop cock (1) for the corn conditioner tension roll must be in the position I (closed).

- If necessary, close the stop cock (1) (position I).

### 11.3 Installing the grass channel



**WARNING! – Risk of injury due to suspended load!**

There is a danger for persons due to falling load.

- Pay attention to sufficient carrying load of the hoist.
- Do not stay under the suspended load.

**Prerequisites for installation and removal:**

- Diesel engine is switched off.
- The side flap at the front right is open.
- The machine is shut down and safeguarded, see chapter Safety, "Shutting down and safeguarding the machine".



Fig. 357

- Undo the lock (1) and swivel open the tool box (2).
- Remove the protective lid (4) between the discharge accelerator housing and the tank cover.
- Make certain the discharge accelerator rear is secured on the left and right side by two spring locks (3).

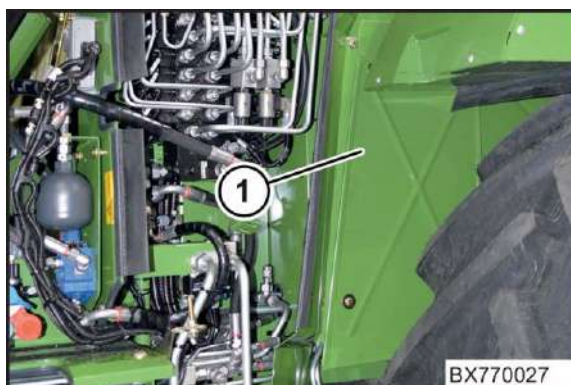


Fig. 358

- Dismount the screws of the service cap (1) on the right side of the machine and remove the service cap.

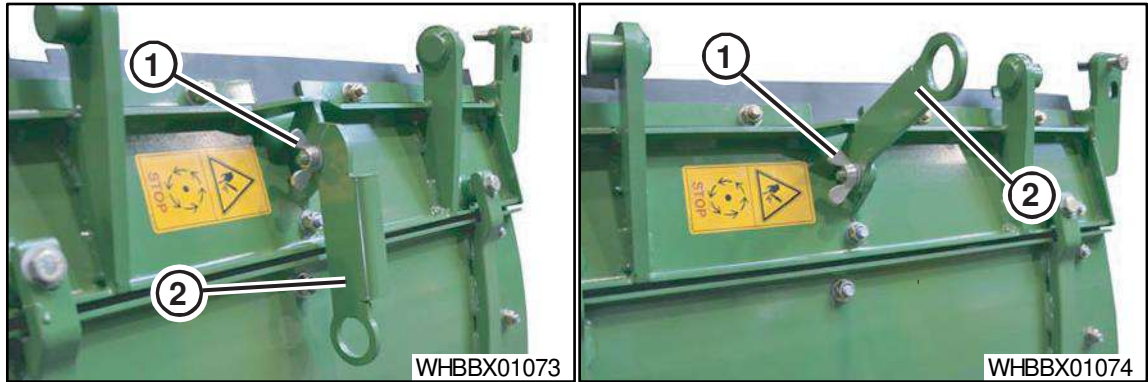


Fig. 359

**Depending on the actual design, the grass channel weighs approx. 30 kg.**

- Loosen the wing nut (1) at the crane splice (2) of the grass channel.
- Raise the crane splice (2) as far as possible and tighten the wing nut (1) to fix it into position.

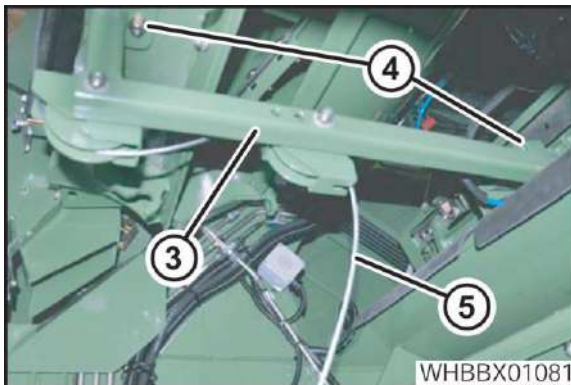


Fig. 360

- Position the cable roller guide (3) and use the screw connection (4) to screw it to the lower cross brace of the rear wall of discharge accelerator (right-hand borehole in the direction of travel).
- Unwind the rope from the cable winch.
- Guide the rope (5) around the deflection rollers.

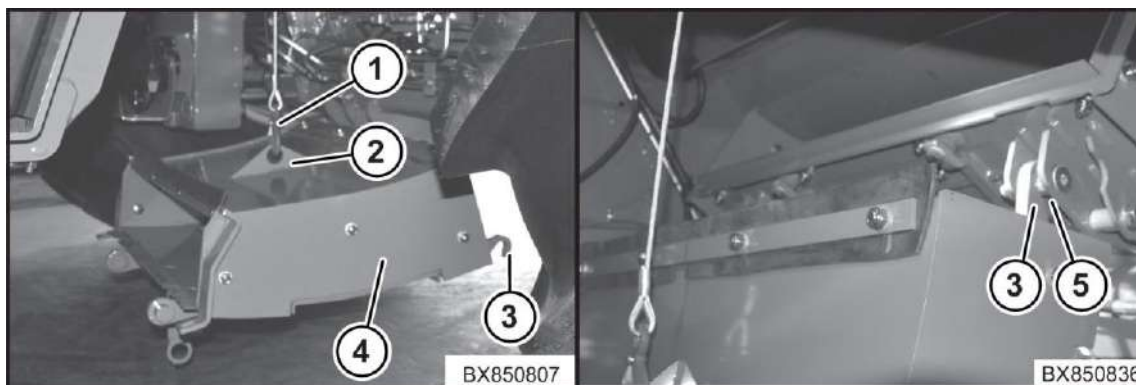


Fig. 361

- Place the grass channel (4) in the mounting position under the machine.
- Catch the hook (1) of the cable winch in the eye (2).
- Use the cable winch to raise the grass channel (4) until the retainer hooks (3) are approximately at the height of the receivers (5).
- Tilt the grass channel forward manually so that the retainer hooks (3) engage into the receivers (5).

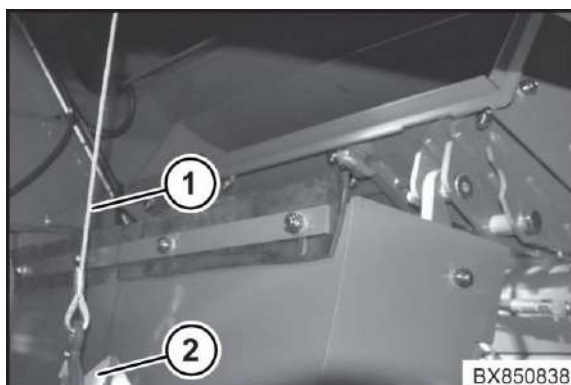


Fig. 362

- Unwind the rope (1) from the cable winch so that the grass channel hangs down.
- Release the hook on the rope (1) from the eye (2) on the grass channel.



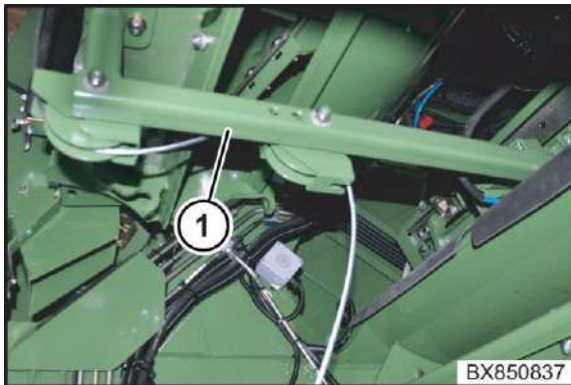


Fig. 363

- Dismount the deflection pulley (1).

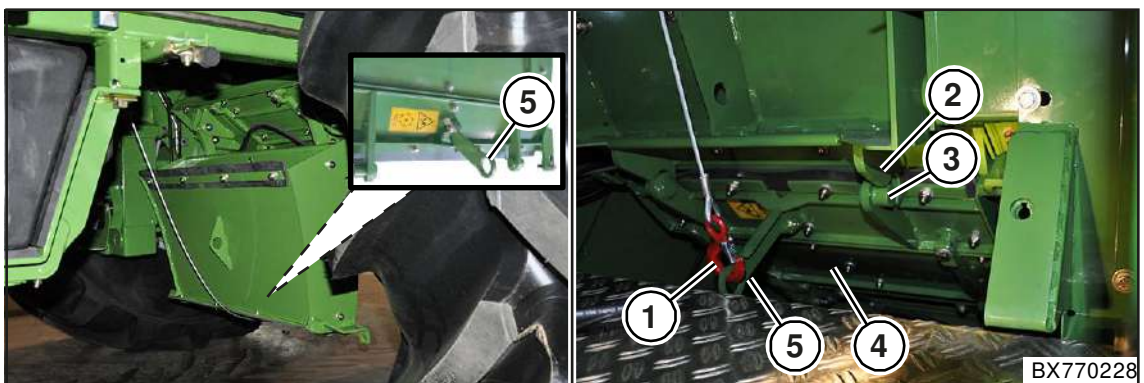


Fig. 364

- Catch the hook (1) of the cable winch into the crane splice (5).
- Raise the grass channel (4) with the help of the cable winch until the bolts (3) on the grass channel are introduced into the receivers (2) on the rear wall.

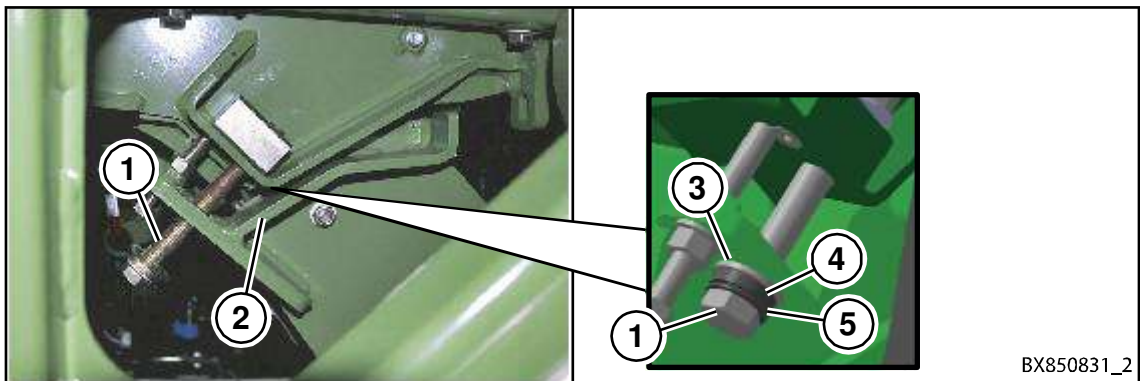


Fig. 365

- Pre-assemble the grass channel (2) on the frame on the left and right sides of the machine using 1 hexagon head screw (1), 1 conical washer (5), 1 ball socket (4) and 1 disc (3) on each side, starting on the right side of the machine.

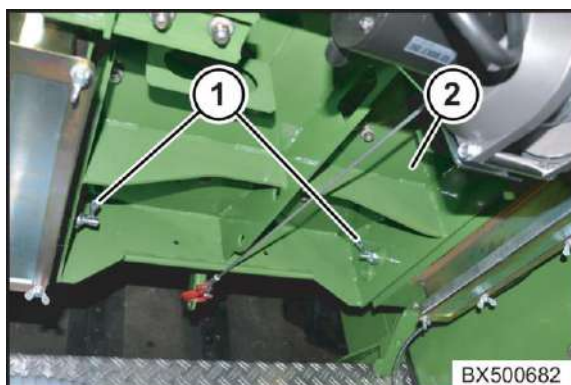


Fig. 366

- Actuate the spring lock (1) to release the lock on the rear wall (2).



**NOTICE**

The spring locks (1) must be released, otherwise the rear wall will not be flexible and crest lines may occur in the crop flow.

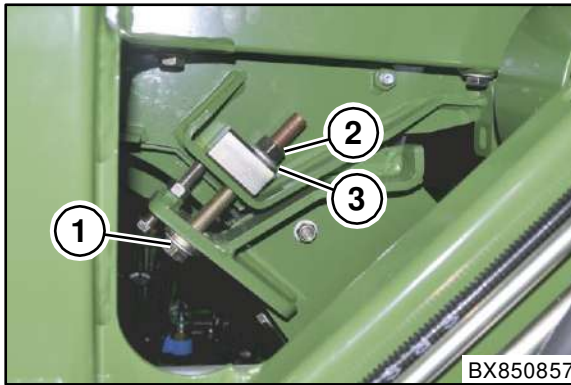


Fig. 367

- Tighten the screw connection (1) on both sides of the machine.
- Fit the disc (3) and the counter nut (2) on the right side of the machine.

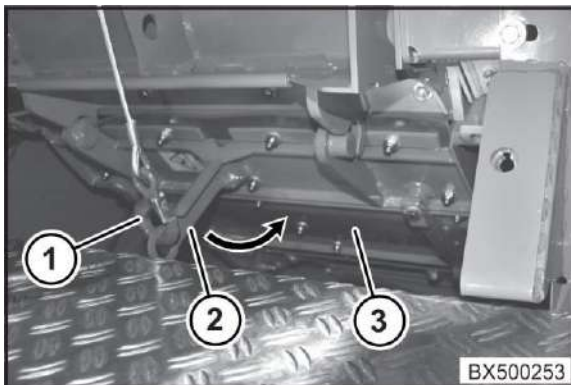


Fig. 368

- Loosen the hook (1) on the cable winch and retract the cable all the way.
- Loosen the wing nut on the crane splice (2) of the grass channel (3).
- Swivel the crane splice (2) all the way down and secure with the wing nut.
- Set the rear wall of discharge accelerator, see page 594.

### 12 Start-up - Maize mode

This chapter describes the conversion from grass mode to maize mode.

 **WARNING**

**Risk of injury from unexpected movement of the lifting unit!**

When working on the lifting unit or when opening/closing the stop cocks on the lifting cylinders, the lifting unit and the installed components may move unexpectedly. As a result, people may be injured.

- To secure the lifting unit from unintentionally lowering, close the stop cocks.
  - To reach the stop cocks safely, swivel open the tool box, go under the machine and actuate the stop cocks.
- 
- Install a corn conditioner, see page 471.
  - Setting the rear wall of the discharge accelerator rotor "maize", see page 594.
  - Move the three-way stopcock at the lifting unit to the "Maize" position.
  - Replace tension spring of the pendulum frame with a hydraulic cylinder, see page 485.
  - Turning the conveyor bars on the pre-compression roller, see page 711.
  - Mount the grain capture sheets on the intake unit, see page 488.
  - Replace the chopping blade (grass blade → maize blade), for chopping drum with 20, 28, 36 blades see page 694, for chopping drum with 40, 48 blades see page 701 readjust chopping blades and/or replace for chopping drum with 40, 48 blades.
  - Replace counterblade (standard → special), see page 708.
  - Adapt the spout extension to the front attachment type, see page 496.
  - Adapting additional weights to the front attachment type and setting tyre pressure, see page 515.
  - Setting the rear axle suspension.
  - Carry out machine settings in the terminal, see page 190.
    - Operating mode EasyCollect
    - Type of EasyCollect front attachment
    - Number of rows and row spacing
    - Lifting unit mode
    - Number of blades of the chopping drum
    - Operating mode and sensitivity of the automatic steering system
  - Calibration, see page 264.
    - Lifting unit
    - Corn conditioner
    - Pendulum frame/Cutting height

## 12.1

## Operating the cable winch

**WARNING! – Risk of injury and damage to the machine due to the cable winch!**

Careless operation of the cable winch can result in injury and damage to the machine.

- Only connect the remote control when the cable winch is required.
- When working with the cable winch, always wear protective gloves.
- Each time before using the cable winch, check to make certain the mounting screws are securely seated on the winch attachment plate.
- Check the wire rope of the cable winch and the connecting cable of the remote control for damage prior to each and replace if necessary.
- When winding up the cable, make sure it is wound evenly on the drum.
- Always leave five revolutions on the winch drum for safety.

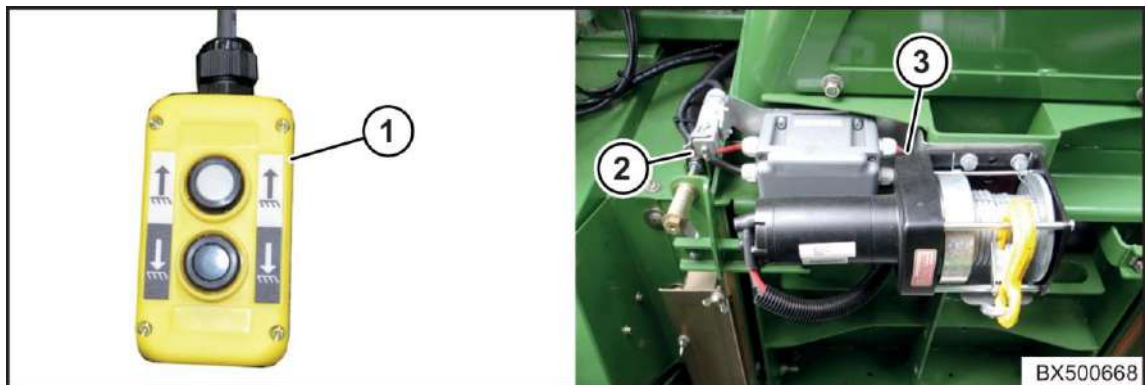


Fig. 369

**Note**

The remote control (1) can be found in the tool box upon delivery of the machine. After use, store the remote control in the drawer beneath the driver's seat to prevent unauthorised use.

- Connect the remote control (1) to the connection (2) relay housing of the cable winch (3).

### Method of Operation of Remote Control

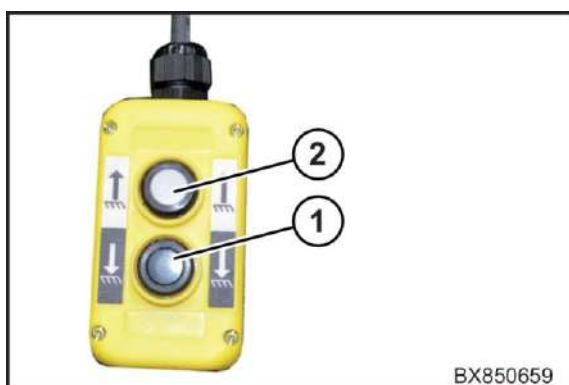


Fig. 370

Unwind the rope from the cable winch:

- Press the momentary switch (1).

Wind the rope onto the cable winch:

- Press the momentary switch (2).



12.2

Removing the grass channel



**WARNING! – Risk of injury due to suspended load!**

There is a danger for persons due to falling load.

- Pay attention to sufficient carrying load of the hoist.
- Do not stay under the suspended load.

**Prerequisites for installation and removal:**

- Diesel engine is switched off.
- The side flap at the front right is open.
- The machine is shut down and safeguarded, see chapter Safety, "Shutting down and safeguarding the machine".



Fig. 371

- Undo the lock (1) and swivel open the tool box (2).
- Remove the protective lid (4) between the discharge accelerator housing and the tank cover.
- Make certain the discharge accelerator rear is secured on the left and right side by two spring locks (3).

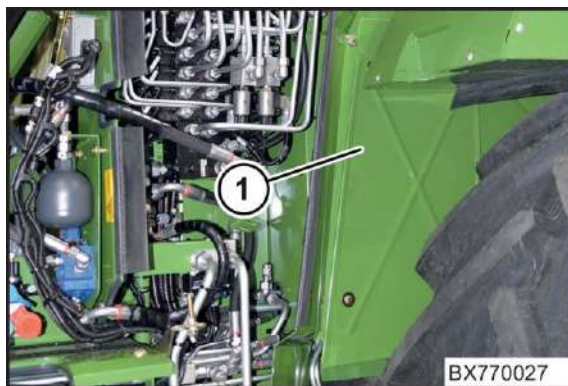


Fig. 372

- Dismount the screws of the service cap (1) on the right side of the machine and remove the service cap.

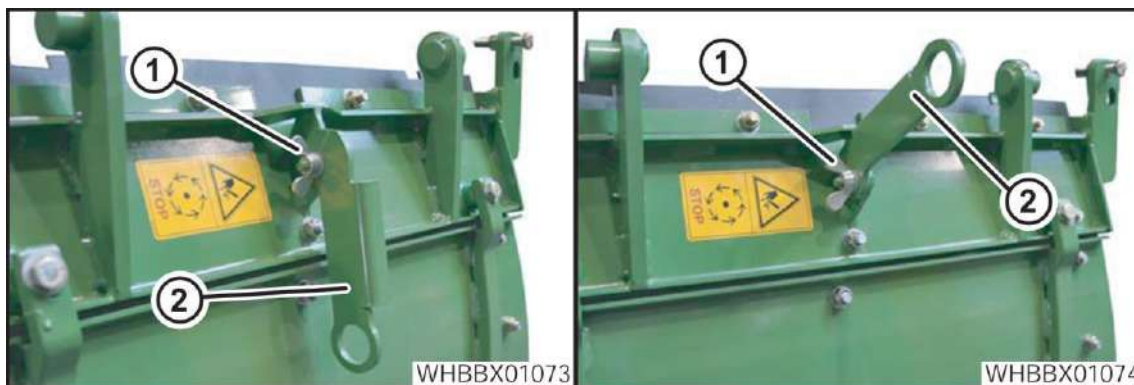


Fig. 373

**Depending on the actual design, the grass channel weighs approx. 30 kg.**

- Loosen the wing nut (1) at the crane splice (2) of the grass channel.
- Raise the crane splice (2) as far as possible and tighten the wing nut (1) to fix it into position.

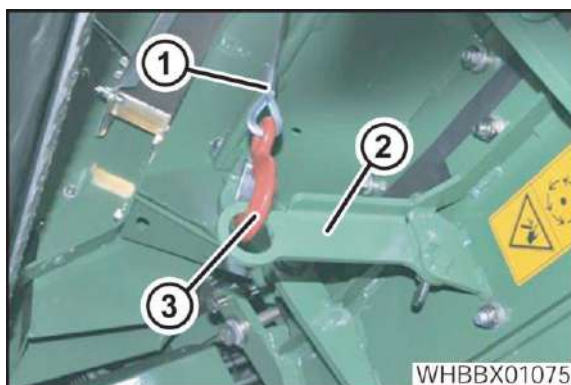


Fig. 374

- Unwind the rope (1) from the cable winch.
- Catch the hook (3) of the cable winch in the crane splice (2).
- Wind the rope onto the cable winch until it is taut.



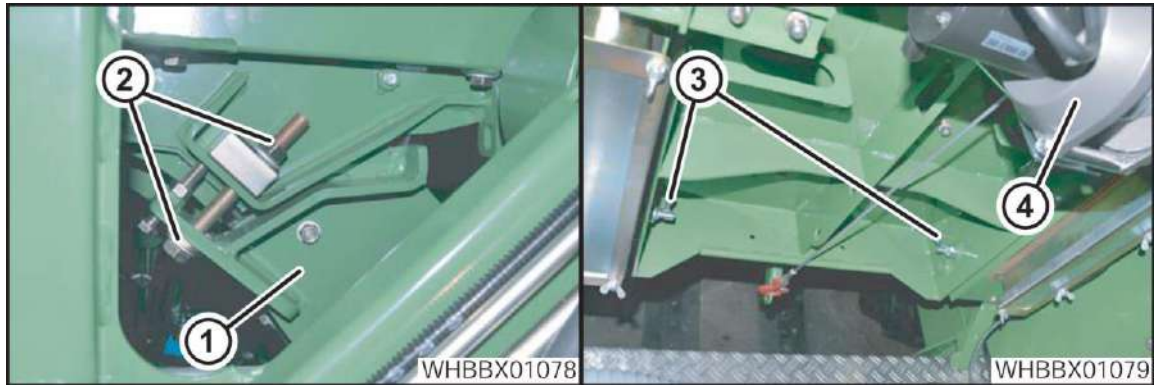


Fig. 375



**Notice**

The screw connection (2) on the left side on the grass channel must be dismounted first.

The screw connections (2) on the grass channel can be accessed from outside the cooler compartment.

- Dismount the screw connection (2) on the left side of the machine.
- Dismount the screw connection (2) on the right side of the machine.
- Slowly lower the grass channel using the cable winch (4) until the hole patterns in the rear wall and the boreholes in the discharge accelerator housing are vertically aligned. In doing so, the rear wall of the discharge accelerator may have to be manually pressed into the appropriate position.
- As soon as the corresponding boreholes are in alignment, the spring pressure causes the spring locks (3) to engage automatically. Check whether the spring locks are fully engaged.

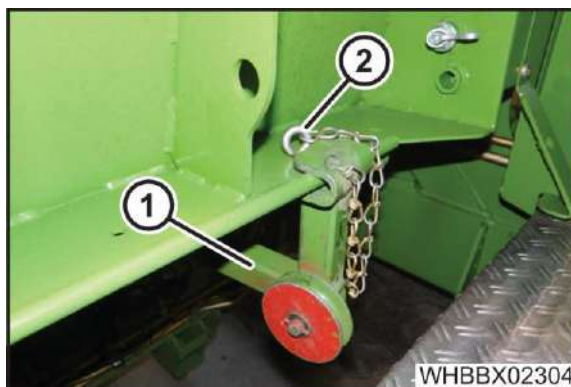


Fig. 376

- Mount the cable deflection (1) using the bolt (2).

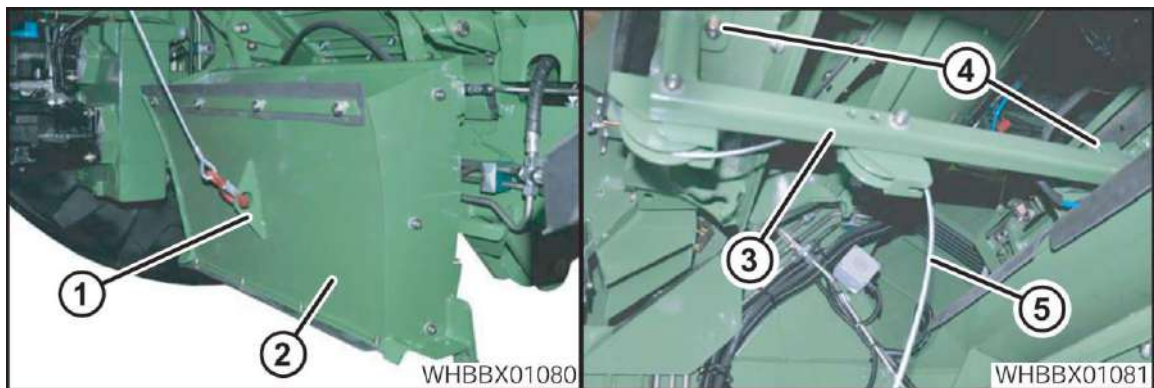


Fig. 377

- Fully lower the grass channel
- Position the cable roller guide (3) and use the screw connection (4) to screw it to the lower cross brace of the rear wall of the discharge accelerator (right borehole in the direction of travel)
- Unwind the cable from the cable winch
- Guide the cable (5) around the deflection rolls
- Remove the cable winch hook from the pivoted lever on the grass channel and hook it into the eye (1).

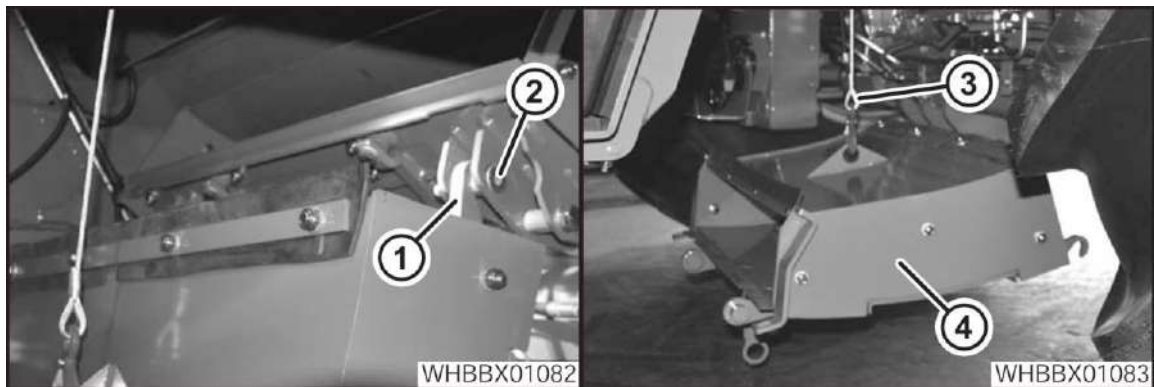


Fig. 378

- Raise the grass channel using the cable winch until the retainer hooks (1) on both sides of the grass channel loosen from the holding fixtures (2) on the transfer shaft
- Continue to lower the cable (3) until the grass channel (4) is on the ground
- Unhook the cable winch hook and pull out the grass channel to the side.
- Retract the cable fully, remove the cable deflection, store the remote control safely.

12.3 Installing the corn conditioner



Fig. 379

- Measure roller distance of corn conditioner for calibration before installation, see page 290.
- Make sure that the rear wall is secured by both spring locks (1) left and right.
- Push corn conditioner half way to the side under the forage harvester.
- Fit cable deflection (1) with bolt (2).
- Thread cable (3) into cable deflection (1).
- Guide the cable of cable winch behind the hook (5) along the corn conditioner channel to the front, between corn conditioner and transport wagon.

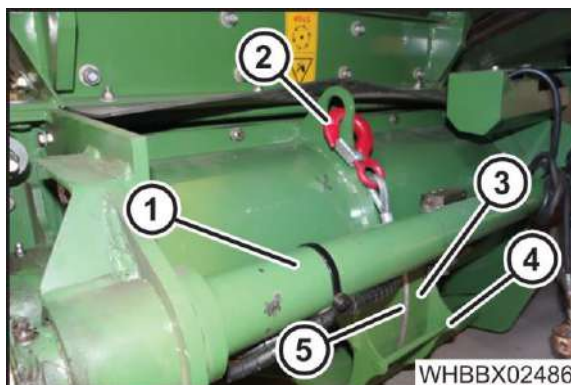


Fig. 380

**Do not lay the cable (5) outside over axle (1) or round bar (4).**

- Guide the cable (5) between cable guide (3) and round bar (4).
- Hook the hook (2) of cable winch into corn conditioner eye.

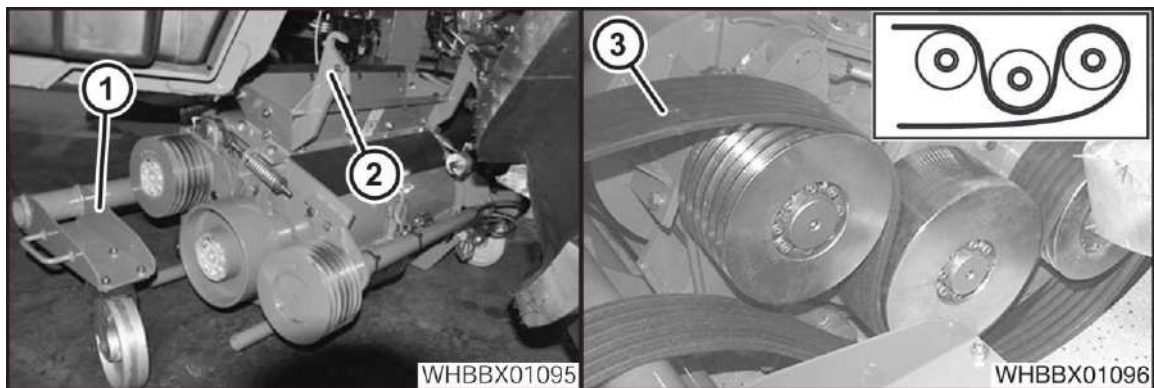


Fig. 381

- Put kraftband (3) in place as shown in the diagram.
- Push corn conditioner with transportation trailer (1) and fitted kraftband (3) under the forage harvester and align it so that the receiving hooks of the corn conditioner (2) are in front of the holders of forage harvester suspension.



**WARNING! – Risk of injury due to suspended load!**

There is a danger for persons due to falling load.

- Pay attention to sufficient carrying load of the hoist.
- Do not stay under the suspended load.

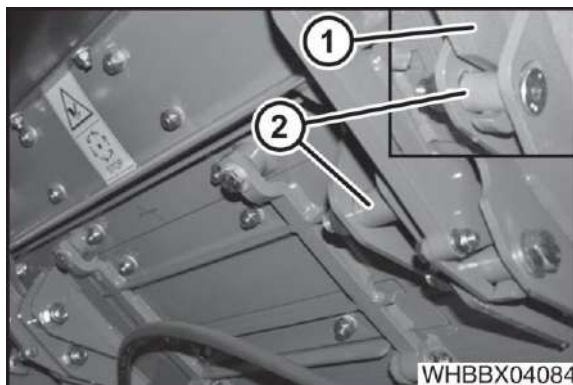


Fig. 382

**Depending on the design, the weight of the corn conditioner is approx. 450 kg.**

- Pull corn conditioner up by using the cable winch until the receiving hooks (1) on the corn conditioner are located further up than the holders (2) on the transfer shaft of the forage harvester.
- Push corn conditioner to the front until the receiving hooks (1) on the corn conditioner are located directly above the holders (2) on the transfer shaft of the forage harvester.



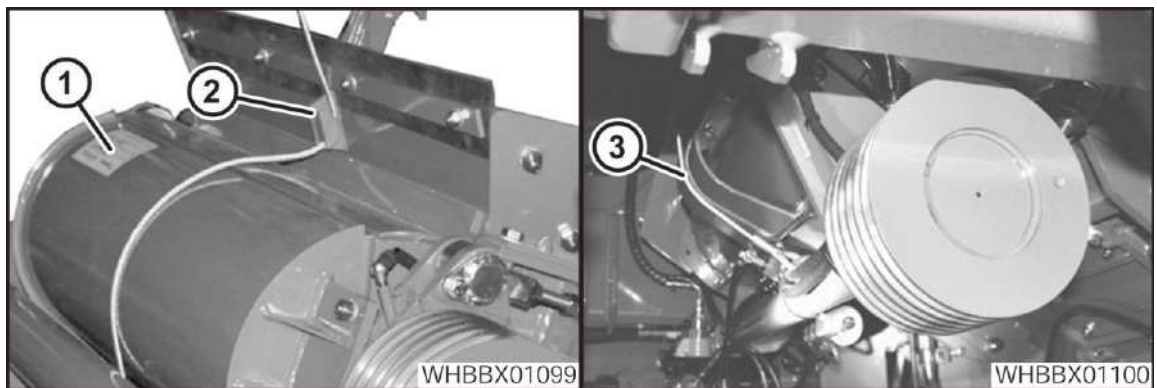


Fig. 383

- Lower corn conditioner until the cable (3) is loosely in the cable deflection.



**Note**

Make sure that the corn conditioner is hooked in correctly.



**WARNING! – Risk of injury due to suspended load!**

There is a danger for persons due to falling load.

- Pay attention to sufficient carrying load of the hoist.
- Do not stay under the suspended load.

- Unthread the cable (3) from the cable deflection and from the hook (2) on the channel of the corn conditioner (1).

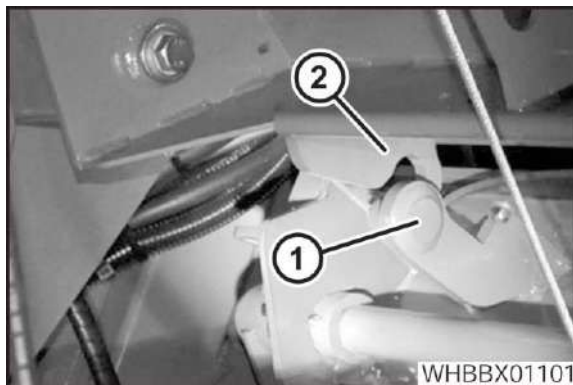


Fig. 384

- Raise the corn conditioner with the cable winch until the locating bolts (1) of the corn conditioner are located in the holding fixtures (2) of the rear wall of discharge accelerator.

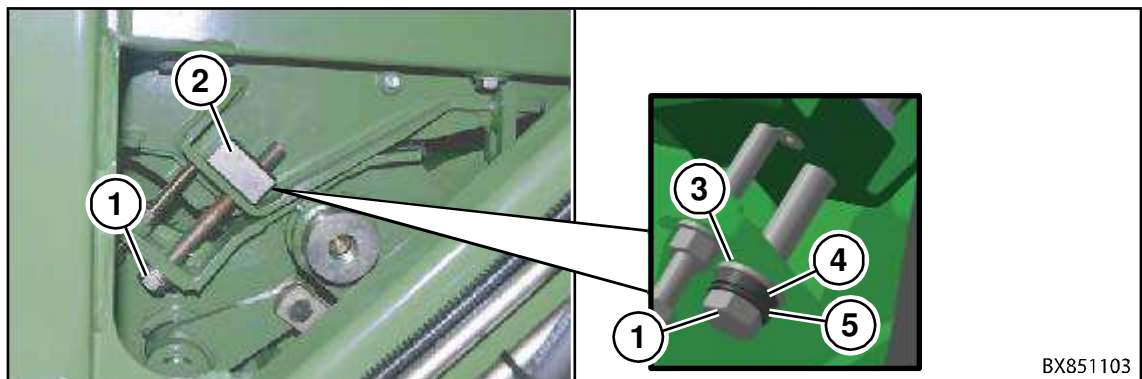


Fig. 385

## Start-up - Maize mode

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- Loosely mount the screw (1) with 1 conical washer (5), 1 ball socket (4) and 1 washer (3) on the left and right sides until the screw (1) completely fills the clamping block (2).

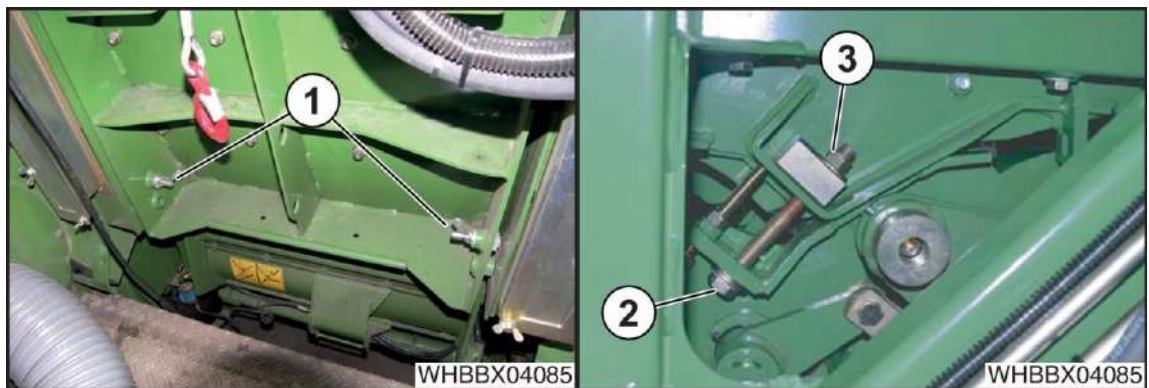


Fig. 386

- Loosen the lock on the rear wall of discharge accelerator (spring lock).



**Notice**

The corn conditioner must be aligned with the belt pulley of the discharge accelerator.

- Tighten the screw on both sides and secure on the right side of the machine (2) with the counter nut (3).
- Remove the transport wagon.
- Loosen the hook on the cable winch and retract the cable winch all the way.
- Remove the cable guide.

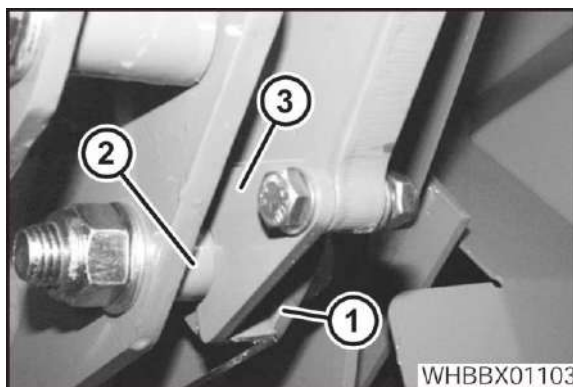


Fig. 387

- Secure the hook connection (1) (left/right) in the locating bolts (2) by fitting the safety sheets (3).
- Remove the remote control from the cable winch and store it in the drawer beneath the driver's seat to prevent unauthorised use.

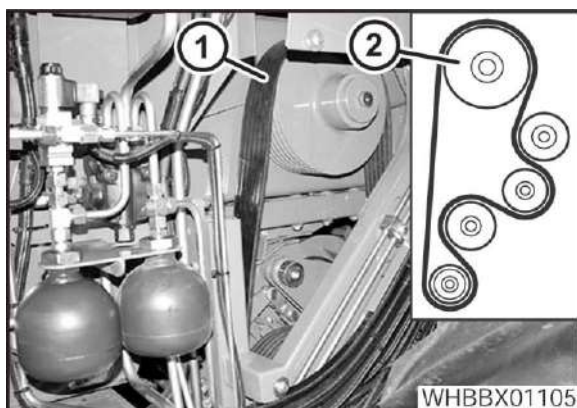


Fig. 388

- Place the belt (1) over the belt pulley (2); if required, manually press the tension roll back.

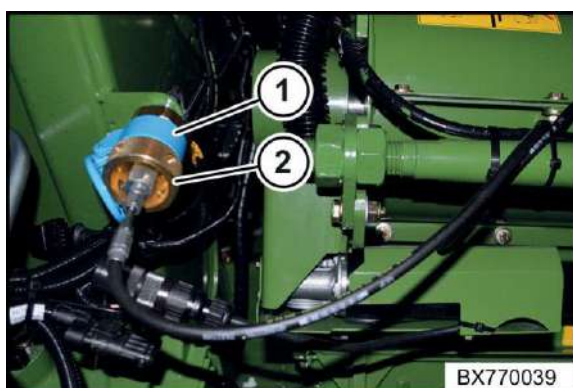


Fig. 389

- Connect the central lubrication plug (2) of the corn conditioner to the central lubrication coupling (1).

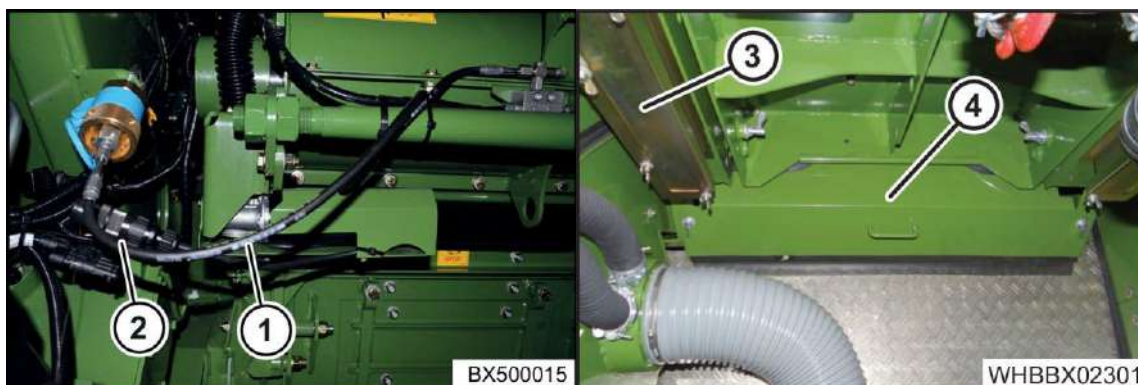


Fig. 390

**After removing the corn conditioner, place the protective caps back on the connections.**

- Connect the plug connection of the actuator (1) for the roller distance on the corn conditioner to the electrics on the machine (2).
- Check the crop flow settings, see page 600.
- Close and lock the protective cover (4).
- Loosen the wing nuts and completely open the cover sheets (3) of the ventilation slots.



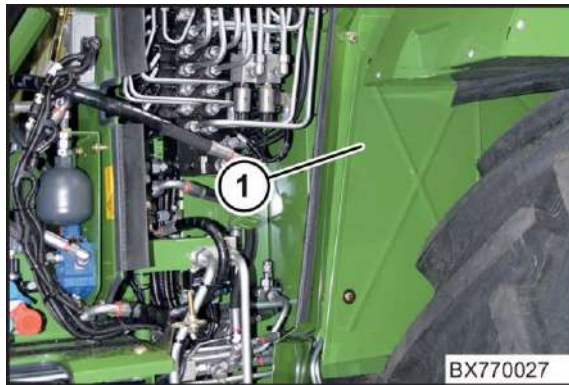


Fig. 391

- Secure the maintenance flap (1) on the right side of the machine with the screws.



Fig. 392

- Close the tool box (1) and flap for the cooler compartment on the right side.
- Close the side hood at front right.

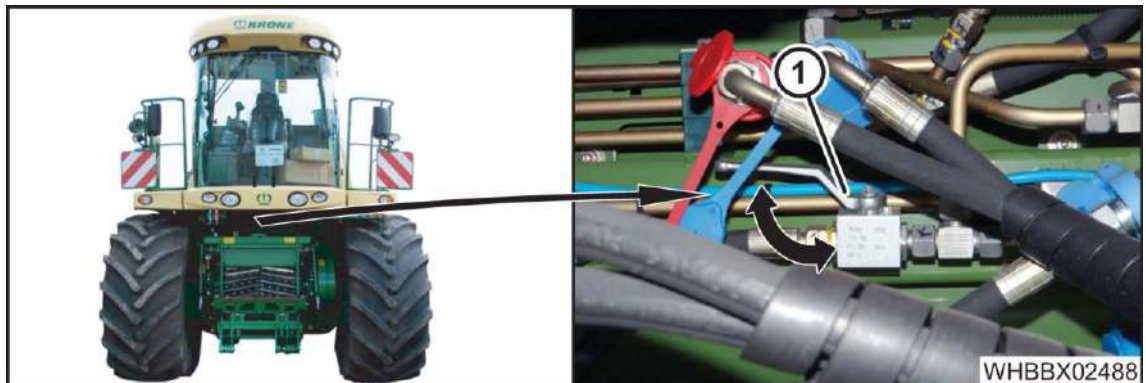


Fig. 393

- Check the position of the two-way stopcock (1).  
When the corn conditioner is mounted, the two-way stopcock must be opened.

Transverse position = closed

Open the stop cock for the corn conditioner tension roll

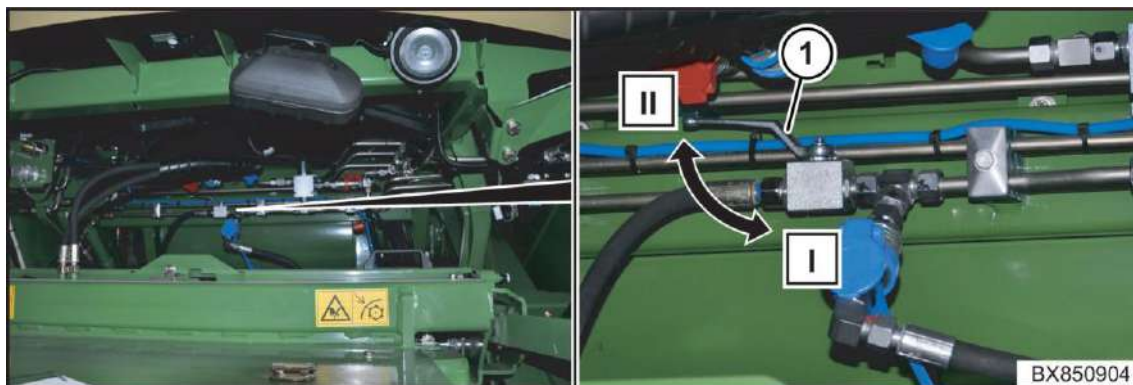


Fig. 394

The shut-off valve for the corn conditioner tensioning roller (1) must be in the position II (open).

- If necessary open the stop cock (1) (position II).

### 12.3.1 Removing/installing the NIR sensor for moisture measurement

#### Removing the NIR sensor

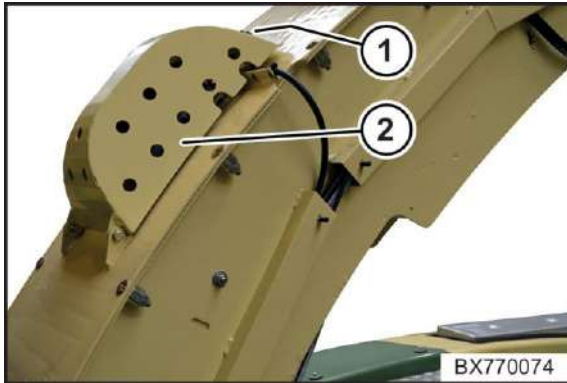


Fig. 395

- Unscrew the wing nuts (1) and remove with the disc.
- Open the protective lid (2) on the spout.

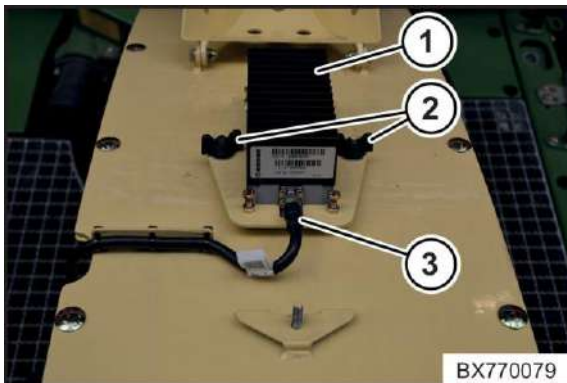


Fig. 396

- Loosen and disconnect the plug connection (3) of the connector cable for the NIR sensor (1).
- Unscrew the wing nuts (2) and remove with the discs.
- Remove the NIR sensor (1).

### Mounting the closing plate



#### **NOTE**

For operation without an NIR sensor, a closing plate must be mounted to guarantee the function of the machine.

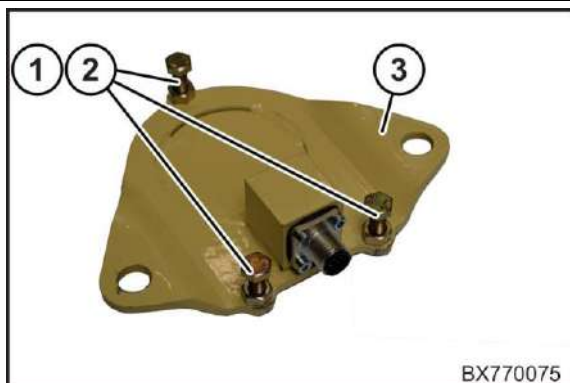


Fig. 397

- Loosely screw the screws (1) and nuts (2) onto the closing plate (3).

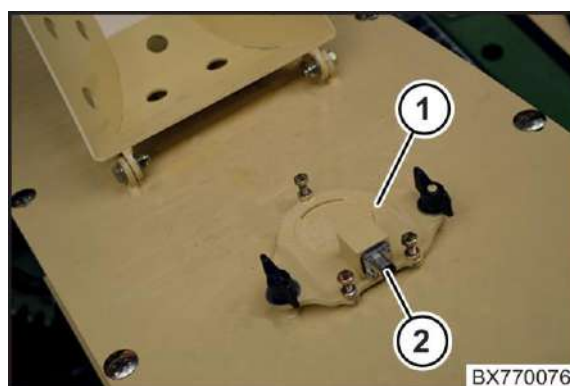


Fig. 398

- Place the closing plate (1) from above into the opening of the back plate in such a way that the connection (2) in the direction of travel of the machine points to the rear.



**NOTE**

To avoid damage to the rear window of the cabin, close and secure the protective lid on the NIR sensor before raising the spout.

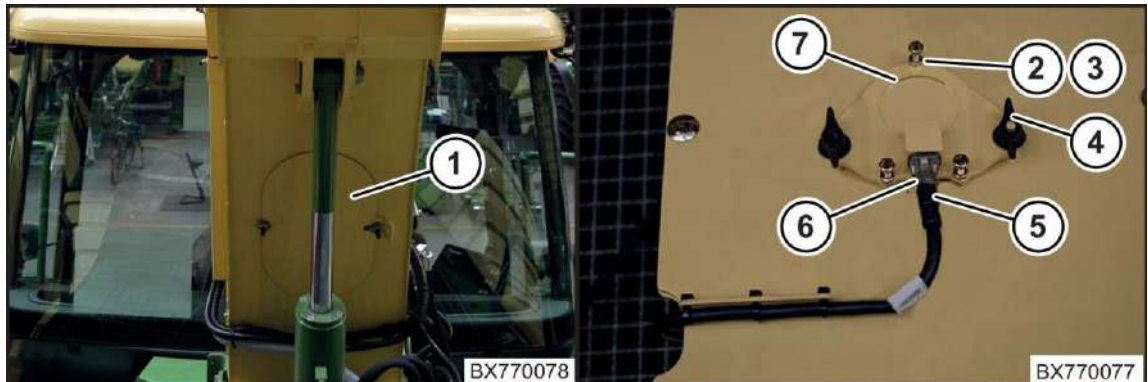


Fig. 399

- Raise the spout.
- Open the inspection flap (1) on the underside of the spout.
- Check whether the closing plate seals exactly flush with the underside of the back plate. If necessary, readjust using the screws (3).



**NOTE**

To avoid crest lines, the closing plate (1) must seal flush with the underside of the back plate.

- Lock the screws (3) with the nuts (2).
- Secure the closing plate (1) with the 2 wing nuts (4) and the discs.
- Close the inspection flap.
- Connect the bushing (5) of the connector cable to the connection (6) of the closing plate.

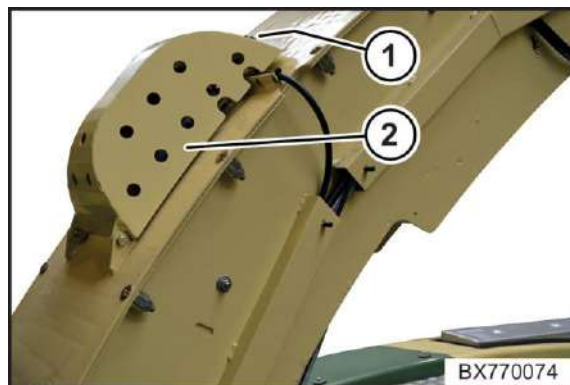


Fig. 400

- Close the protective lid (2) and secure using the wing nut (1) and disc.

### Installing the NIR sensor

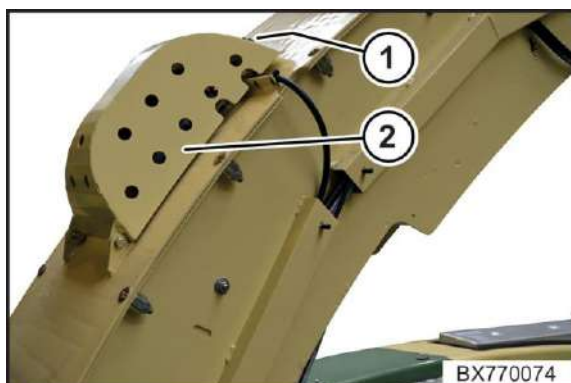


Fig. 401

- Loosen the wing nuts (1) and open the protective lid (2).

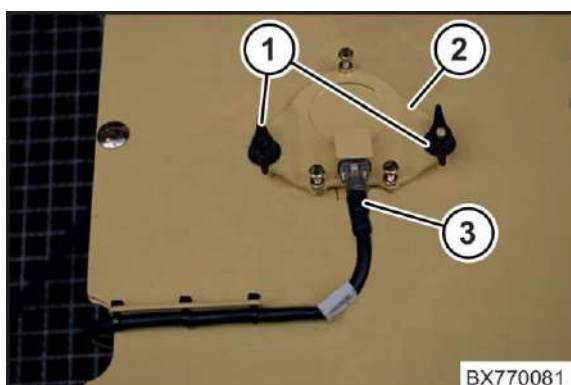


Fig. 402

- Loosen and disconnect the plug connection (3) of the connector cable on the closing plate (2).
- Unscrew the wing nuts (1) and remove the closing plate (2).

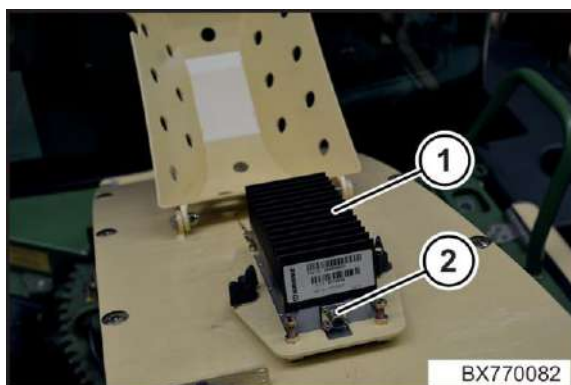


Fig. 403

- Insert the NIR sensor (1) from above into the opening of the back plate so that the electric connection (2) in the direction of travel of machine points to the rear (to the end of the spout).



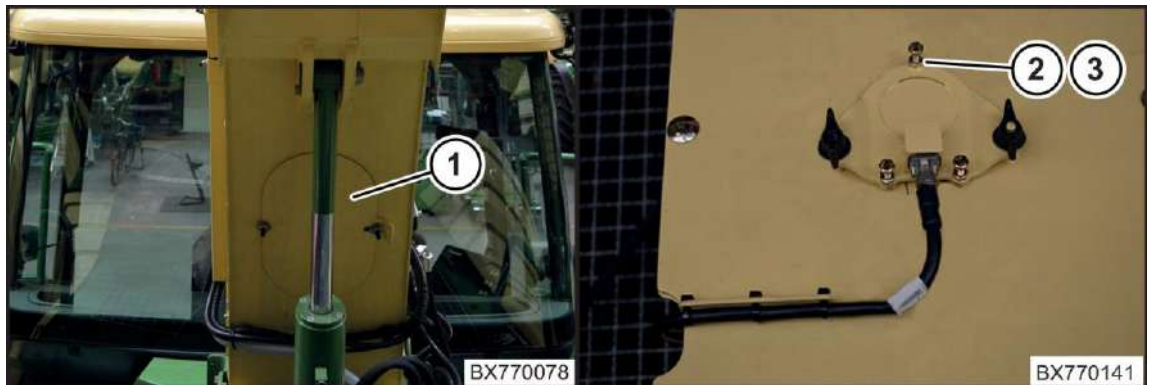


Fig. 404



**NOTE**

To avoid damage to the rear window of the cabin, close and secure the protective lid on the NIR sensor before raising the spout.

- Raise the spout.
- Open the inspection flap (1) on the underside of the spout.
- Check whether the NIR sensor seals exactly flush with the underside of the back plate. If necessary, readjust using the screws (3) and lock with the nuts (2).



**NOTE**

To avoid crest lines, the closing plate (1) must seal flush with the underside of the back plate.

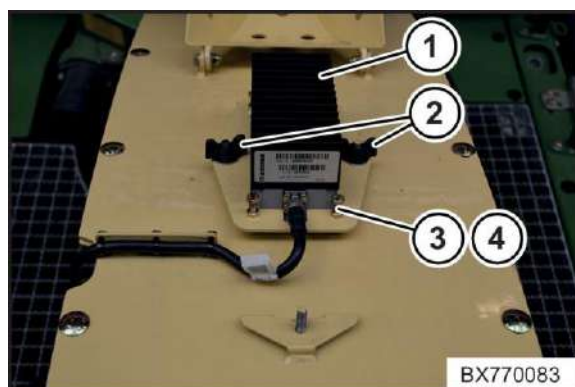


Fig. 405

- Lock the 4 screws (3) with the nuts (4) (tightening torque 3.5 Nm).
- Secure the NIR sensor (1) with the wing nuts (2) and the associated discs.

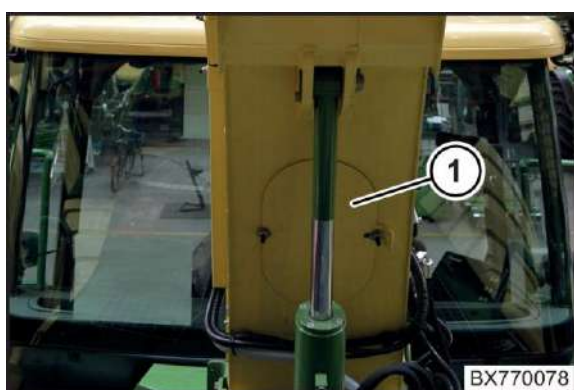


Fig. 406

- Close the inspection flap (1).



12.4 Converting the pendulum frame cylinder for maize mode

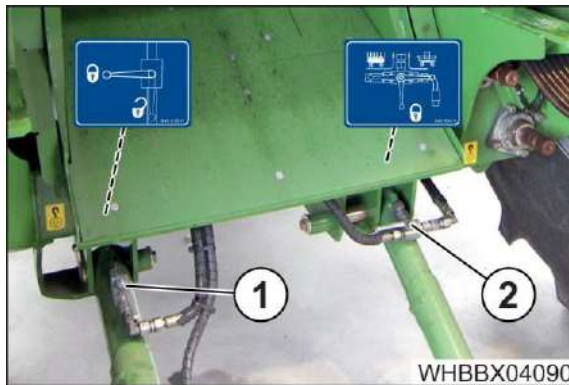


Fig. 407

- Move three-way stopcock (2) to "Maize" position, see information label.

**Replace the tension spring with the hydraulic cylinder**

Prerequisites:

- Front attachment has been removed.
- Diesel engine is switched off.

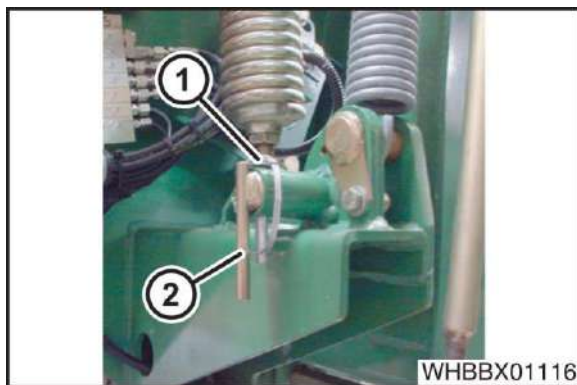


Fig. 408

- In order to lock the pendulum frame, remove the spring cotter pin (1), fully insert the bolt (2) and re-install the spring cotter pin (1)

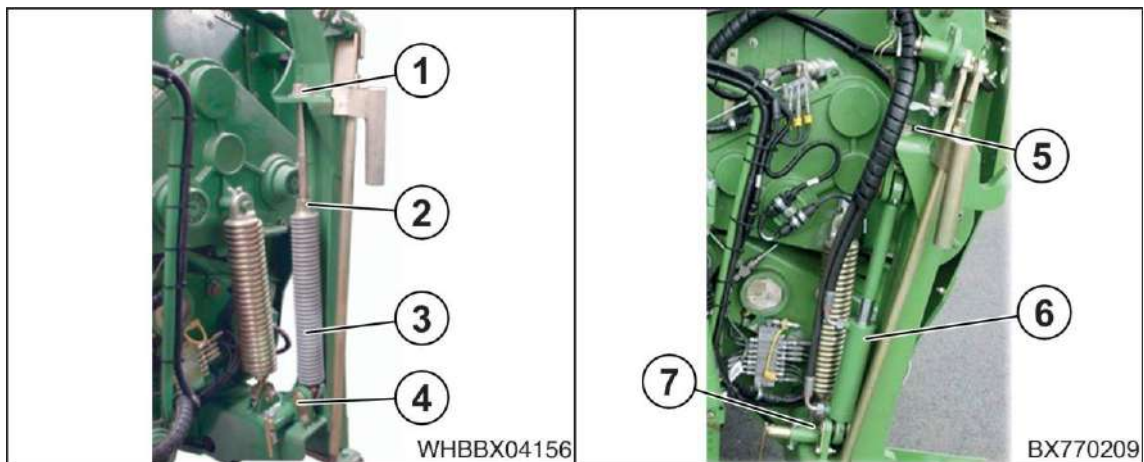


Fig. 409

- Loosen the counter nut (2) on the spindle (1)
- Remove spindle (1)
- Remove bolt (4) from the spring (3) and remove the spring
- Insert the hydraulic cylinder (6)
- Mount and secure the bolt (7) and the screw (5)



**Note**

After installing the front attachment, the pendulum frame must be unlocked.

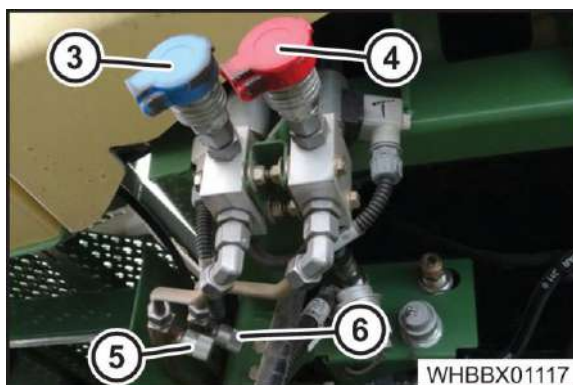


Fig. 410

- Connect the hydraulic cylinder of the pendulum frame to the hydraulic connections (3, 4) according to the colour-coded hydraulic plugs on the right-hand side of the machine, underneath the cabin



**Note**

The pendulum speed of the pendulum frame can be adjusted with the throttle valves (5, 6).

- Adjust throttle valves (5, 6) until the pendulum frame takes approx. 7 s to swivel from an end position to the next position (with EasyCollect attached).

12.5 Further conversion work

Turning the conveyor bars around



Fig. 411

The pre-compression roller (1) features conveyor bars which can be used on alternating sides. One of the sides of the conveyor bar is smooth, while the other is designed with teeth. Experience shows that the smooth side works well for use in grass silage while the toothed side works well with maize.

- Shut down and secure the machine, see page 41.
- Unscrew the fastening screws (3) on the conveyor bar (2).
- Turn the conveyor bar (2) and mount it, tightening torque M8 =17.5 Nm, M10=35 Nm



**Note**

The conveyor bars must be changed if the wear is so great that the conveyor bars are no longer higher than the crossbars on the pre-compression and feed roller.



**Note**

Because of metal detection, only fastening materials made of anti-magnetic steel may be used. Never punch the screws into the boreholes or use an impact screw driver to tighten them (magnetisation effect).

## Start-up - Maize mode

### Installing grain capture plates

- Remove the front attachment, see page 502.
- Fully lift the lifting unit



Fig. 412

- Close two-way stopcock (1) and three-way stopcock (2), see information label



Fig. 413

- Insert the front grain capture plate (1) and tighten the screws (2) on both sides

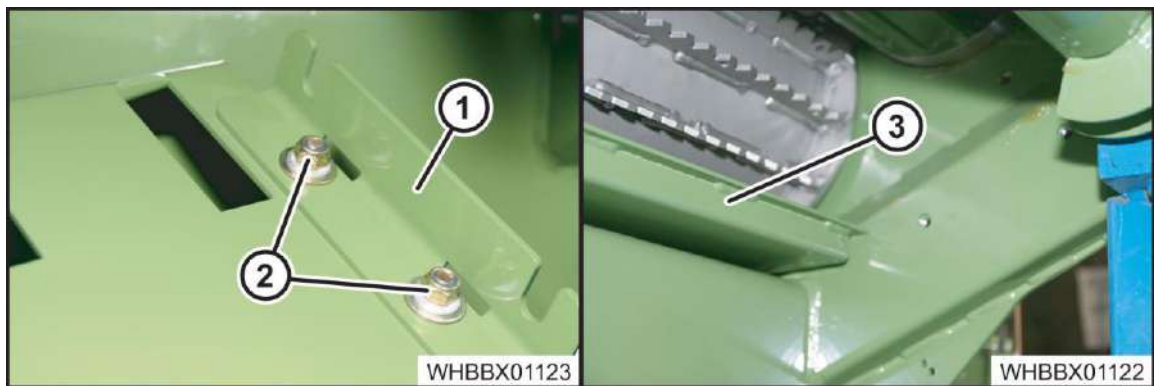


Fig. 414

- Loosely install the bracket (1) at the rear grain capture plate using the screws (2)
- Inserting the rear grain capture sheet (3). This plate must be located above the front grain capture sheet, with the bevelled side facing upwards, the slots facing the rear and the bracket facing downwards.

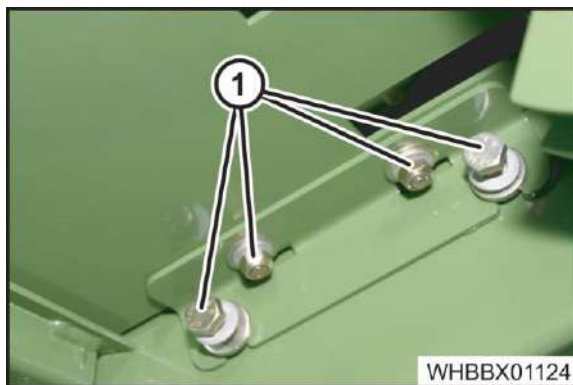


Fig. 415

- Insert the screws (1)
- Attaching the front attachment, see page 502.



### Cutting blade / Counterblade

- Replace the grass blade with the maize blade for chopping drum with 20, 28, 36 blades see page 694, for chopping drum with 40, 48 blades see page 701 readjust chopping blades and/or replace for chopping drum with 40, 48 blades.
- Replace the "standard" counterblade with the "special" counterblade, see page 708.

### Terminal

On the terminal, select the menu "General machine settings" and check or change the following settings.

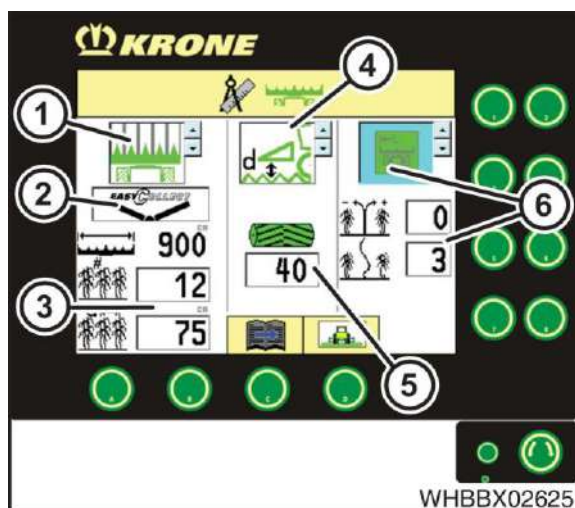


Fig. 416

- 1 Operating mode EasyCollect
- 2 Header type EasyCollect
- 3 Number of rows and row spacing
- 4 Lifting unit mode
- 5 Number of blades of the chopping drum
- 6 Operating mode and sensitivity of the autopilot

### Calibration

- Adjust the lifting unit,
- Calibrate the distance of the corn conditioner
- Calibration of the pendulum frame and the cutting height, see page 264.

### Discharge chute extension

Depending on the front attachment type, a corresponding discharge chute extension must be installed.

- Mount the spout extension, see page 496.

### Additional weights

Depending on the front attachment type, corresponding additional weights must be installed.

- Mount additional weights, see page 515.

## 13 Start-up – additional axle

### 13.1 Additional axle

The additional axle is required in order to reduce the axle load on the front axle. This is a prerequisite for obtaining the required approval for the machine in combination with the various front attachments (see the accompanying documents for the machine).

#### 13.1.1 Removing the additional axle

 **WARNING**

**Danger to life due to the unsecured machine rolling away, unexpected movement of the lifting unit and start-up of the machine!**

Cleaning, maintenance and maintenance work, as well as the rectification of malfunctions should only be carried out with the engine switched off, the drive switched off and the machine properly secured.

- Move the parking brake release switch to the "Applied" position.
- Move the release switch traction drive to the "off" position.
- Switch off the engine, remove the ignition key and take it with you.
- Secure the machine against rolling with wheel chocks.



**Note**

Park the machine on a level surface.



**NOTE**

- Park the machine on level ground.
- Lower the additional axle manually via the terminal until the wheels are not touching the ground at all.
- Switch off the machine and remove the ignition key.



Fig. 417

- Hook the cable winch (1) into the additional axle.
- Slightly raise the additional axle using the cable winch.

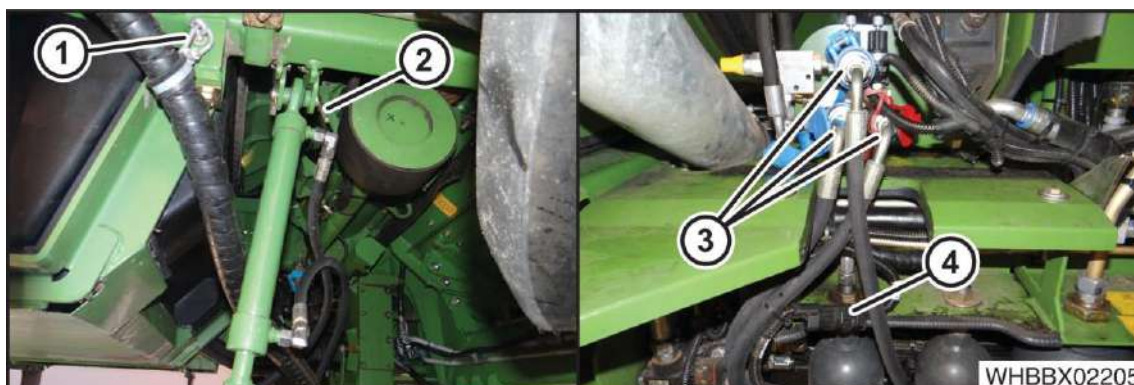


Fig. 418

- Dismount the upper bolt (2) of the hydraulic cylinder on both sides and put the hydraulic cylinder to one side
- Fully lower the additional axle using the cable winch and secure the wheels of the additional axle against rolling away
- Loosen the hook on the cable winch from the additional axle and retract the cable winch all the way
- Unhook the cable harness (1)
- Remove the hydraulic lines (3)
- Disconnect the plug of the sensor (4)

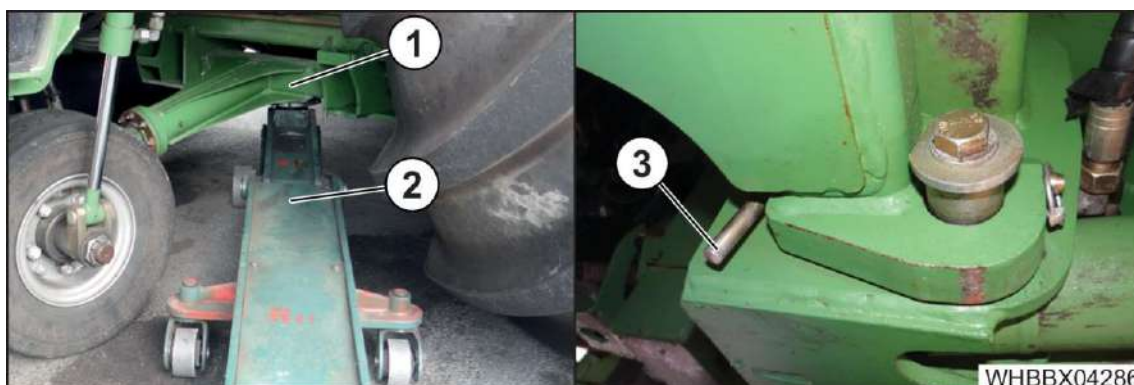


Fig. 419

**The complete additional axle weighs approx. 120 kg.**

- Slightly raise the additional axle (1) with the car jack (2)
- Dismount the front bolt (3) of the axle suspension on both sides
- Fully lower the additional axle onto wooden blocks
- Remove the car jack
- Check whether the additional axle is totally free and move the machine forwards



13.1.2 Installing the additional axle

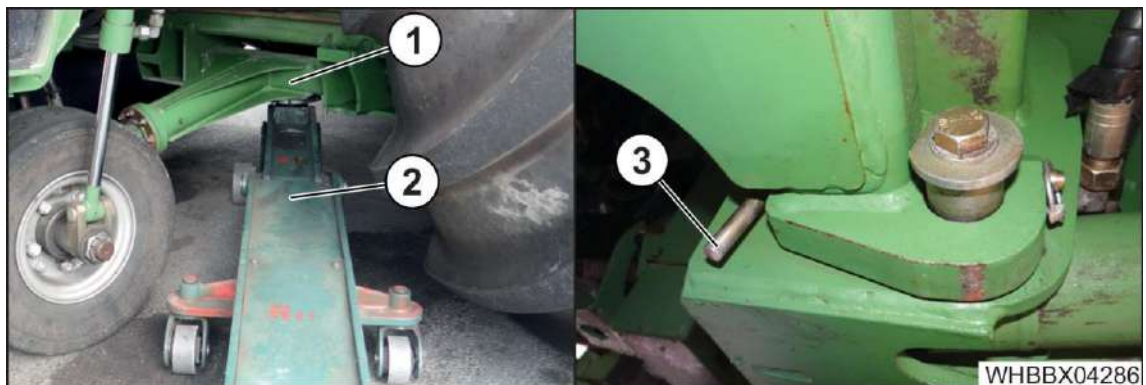


Fig. 420

- Reverse the machine and position it above the additional axle (1)
- Raise the additional axle (1) with a car jack (2)
- Install the front bolt (3) of the axle suspension on both sides

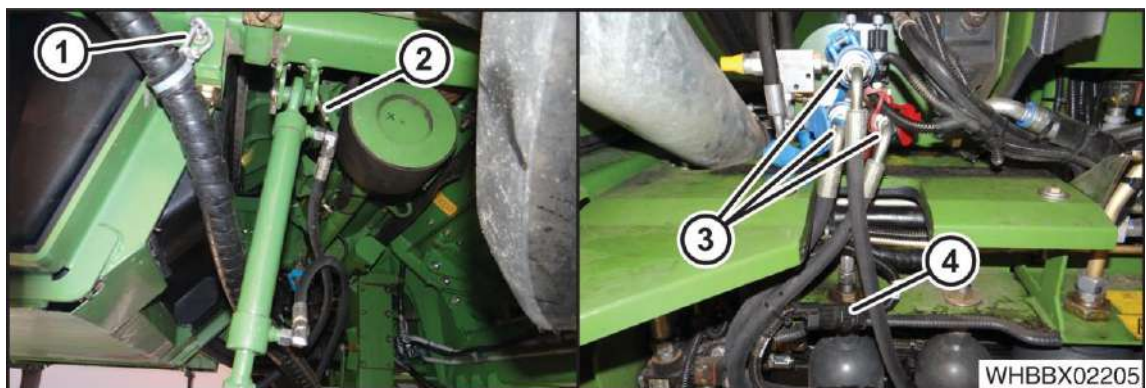


Fig. 421

- Hook the cable winch into the additional axle and raise it so that the upper bolts (2) of the hydraulic cylinder can be installed
- Unhook the cable winch and retract it all the way
- Hook in the cable harness (1)
- Install the hydraulic lines (3) (quick release)
- Connect the plug of the sensor (4)
- Check the function of the additional axle, see page 495.

## Start-up – additional axle

### 13.1.3 Setting the Pressure of the Additional Axle on the Pressure Limiting Valve



Fig. 422

- Read off the current pressure in menu 4-1-6 “Traction Drive Diagnostics”, display 2 “Sensor test additional axle”, see page 336.
- In the diagnostics the “Lower axle” function must be run until the axle is on the ground. On the display a pressure can be seen which is higher than the set pressure. If the pressure is not in the stipulated area after releasing the key or after ending the function, see page 97, must be adjusted.

In case of axle load	2.3 t	2.5 t	2.75 t
Setpoint pressure	78-84 bar	88-94 bar	98-104 bar

- Remove the cap (1).
- Loosen the counter nut and slowly turn the setting screw until the required pressure is set.
- Tighten counter nut and attach the cap (1).
- Perform function test of additional axle, refer to next page.

13.1.4 Function test additional axle

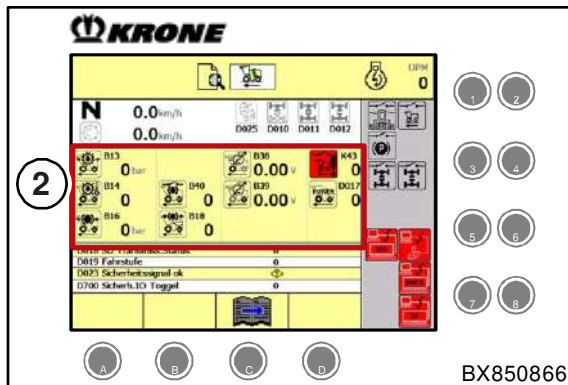



Fig. 423

- In the terminal, select menu 4-1-6 "Traction drive".
- Press the  key to call up page 2 "Sensor test additional axle" of the menu.
- Check all voltages in menu "Sensor test additional axle".
- Check whether the additional axle can be manually raised or lowered, see chapter 4 "Menu 3-11 "Maintenance of the additional axle" (option)".
- Check whether the additional axle can be automatically raised or lowered, see chapter 8 "Automatic function of the additional axle (option)".

### 14 Start-up – Spout extension

#### 14.1 Removing/attaching the spout extension/spout end piece

When you convert from grass mode to maize mode or vice versa, the length of the spout must be adapted to the front attachment.

 **WARNING**

**Risk of injury due to suspended load!**

There is a danger for persons due to falling load.

- Pay attention to sufficient carrying load of the hoist.
- Do not stay under the suspended load.
- If work has to be performed under the load, securely support the load.

 **WARNING**

**Risk of injury from escaping hydraulic oil!**

The hydraulic system operates at very high pressure. Escaping hydraulic oil will result in severe injuries to the skin, limbs and eyes. The oil can penetrate the skin and cause severe injuries to tissue and the bloodstream.

- When connecting the hydraulic hoses to the hydraulic system of the forage harvester, the system must be relieved of the pressure on either side.
- When searching for leaks, use suitable aids and wear safety goggles to prevent the risk of injury.
- Seek medical help immediately should injuries occur. Risk of infection!
- Before uncoupling the hoses and before performing work on the hydraulic system, depressurise the hydraulic system.
- Check the hydraulic hoses regularly and replace them if they are damaged or show signs of ageing! Replacement hoses must meet the technical requirements of the device manufacturer.

Prerequisites:

- The spout is located on the right side of the machine and is fully lowered.
- The hydraulic circuits of the machine are de-pressurised, see page 139.
- The parking brake is applied.
- The machine is secured against rolling away with wheel chocks.
- The machine is shut down and secured, see page 41.

### 14.1.1 Weights

The following table lists the weights of the spout end piece and the spout extensions:

Component	Weight
End piece 8-row	approx. 80 kg
Extension 10-row	approx. 112 kg
Extension 12-row	approx. 165 kg
Extension 14-row	approx. 180 kg



#### **NOTE**

Only transport the spout end piece and spout extensions with suitable slings.

### 14.1.2 Removing the spout extension (12- and 14-row)

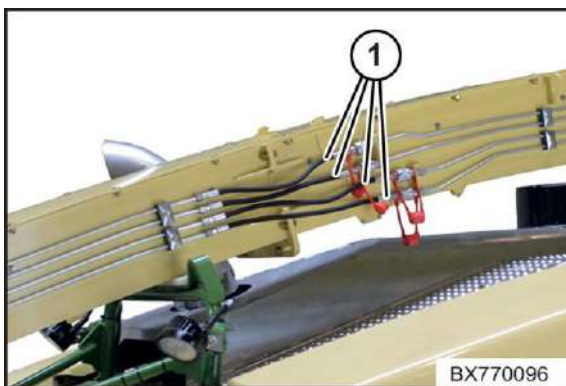


Fig. 424

- Disconnect the hydraulic hoses (1) from the hydraulic lines.
- Close the openings of the hydraulic hoses with the dust caps.

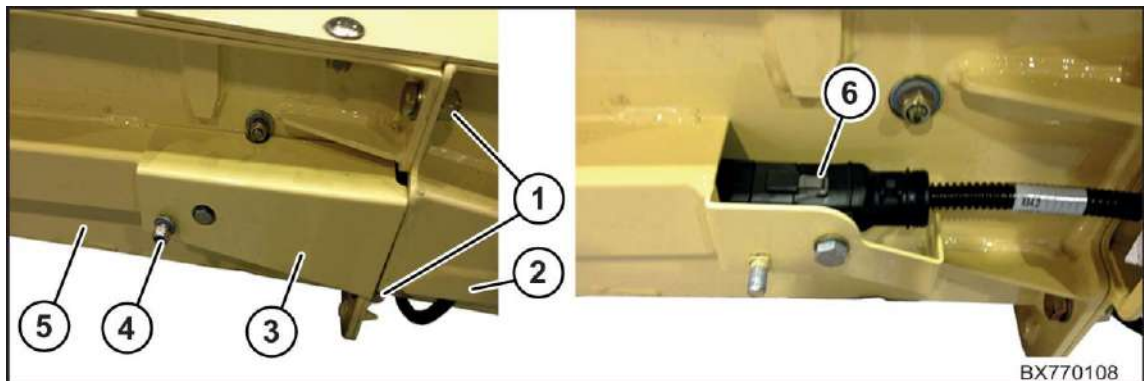


Fig. 425

- Use a suitable sling to secure the spout extension (2) from falling.
- Unscrew the nuts (4) and remove the cover (3).
- Disconnect the plug connection (6).
- Unscrew the screws (1) at the coupling point.
- Disconnect the spout extension (2) from the spout basic (5) set it down safely.

## Start-up – Spout extension

### 14.1.3 Attaching the spout extension (12- and 14-row)

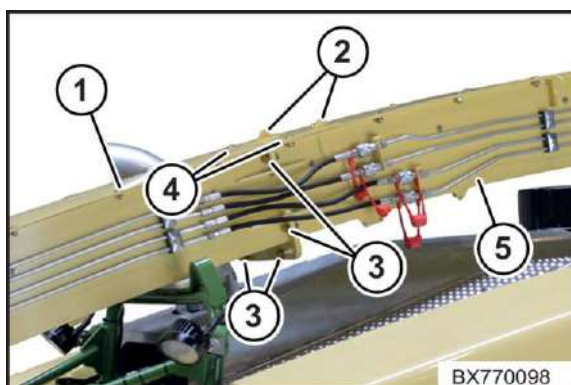


Fig. 426

- Pick up the spout extension (1) using a suitable sling.
- Hook the spout extension (1) into the receivers (2) of the spout basic (5).
- Secure the spout extension with the screws (3, 4) on the spout basic (5).

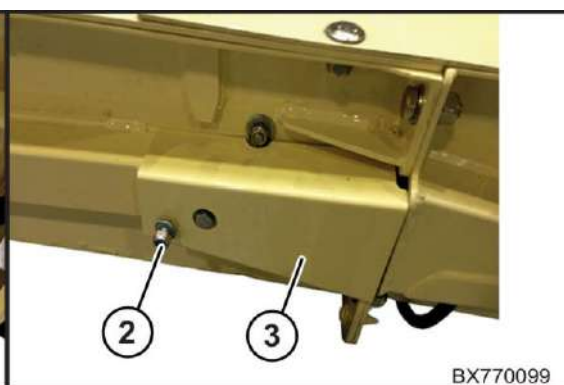
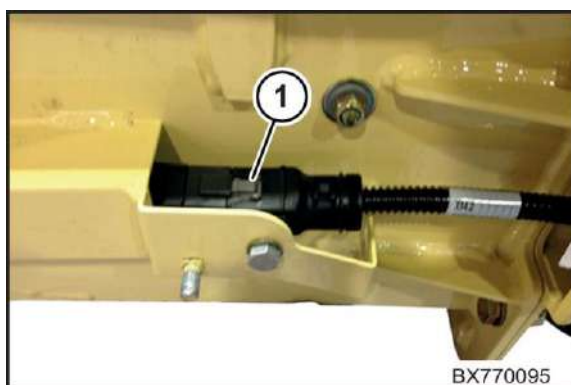


Fig. 427

- Establish the plug connection (1).
- Fit the cover (3) and attach with the nut (2).

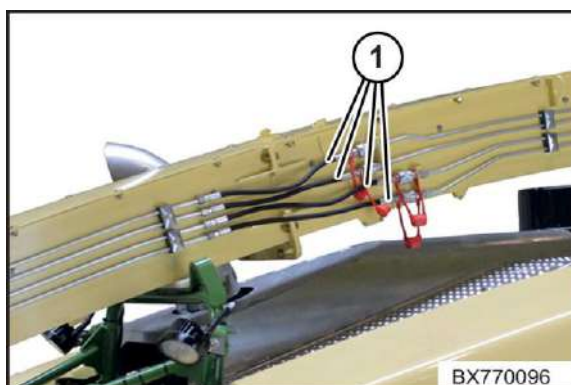


Fig. 428

- Connect the hydraulic hoses (1) to the hydraulic lines.



### 14.1.4 Attaching the spout end piece (8- and 10-row)

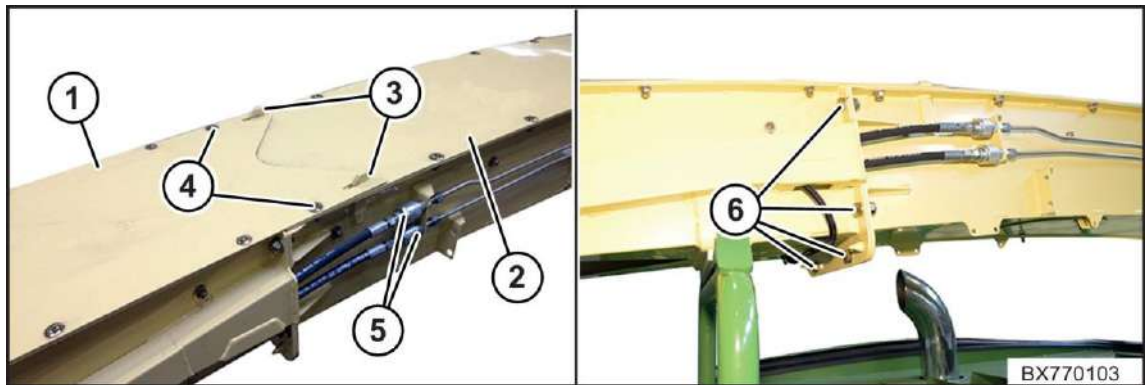


Fig. 429

- Pick up the spout end piece (1) using a suitable sling.
- Hook the spout end piece (1) into the receivers (3) of the spout basic (2).
- Secure the spout end piece (1) with the screws (4, 6) on the spout basic (2).
- Connect the hydraulic hoses (5) to the hydraulic lines.

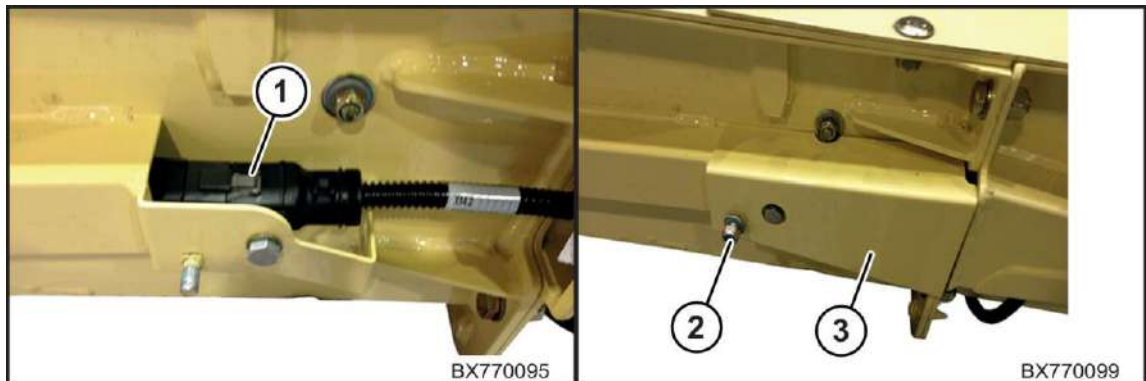


Fig. 430

- Establish the plug connection (1).
- Fit the cover (3) and attach with the nut (2).

## Start-up – Spout extension

### 14.1.5 Removing the spout end piece (8- and 10-row)

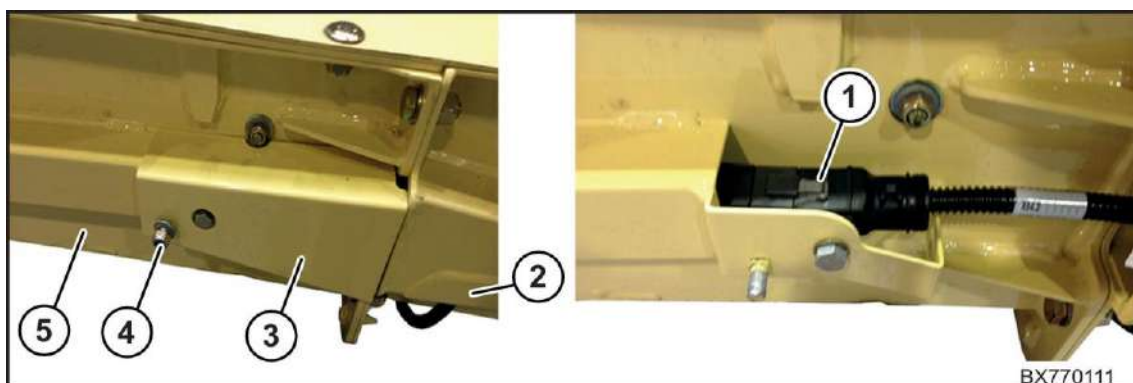


Fig. 431

Disconnect the spout end piece (2) and the spout basic (5):

- Use a suitable sling to secure the spout end piece (2) from falling.
- Unscrew the nuts (4) and remove the cover cap (3).
- Disconnect the plug connection (1).

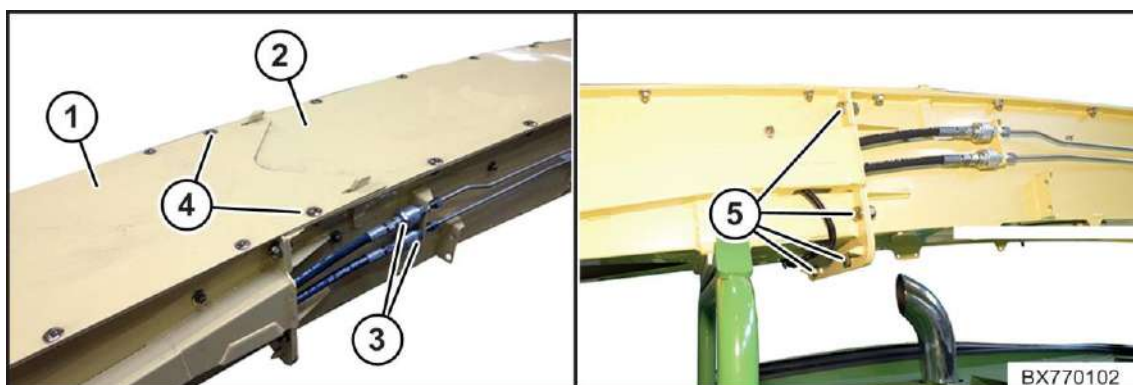


Fig. 432

- Disconnect the hydraulic hoses (3) from the hydraulic lines.
- Unscrew the screws (4, 5) at the coupling point.
- Separate the spout end piece (1) from the spout basic (2) set it down safely.



14.1.6 Setting the start-up safety mechanism

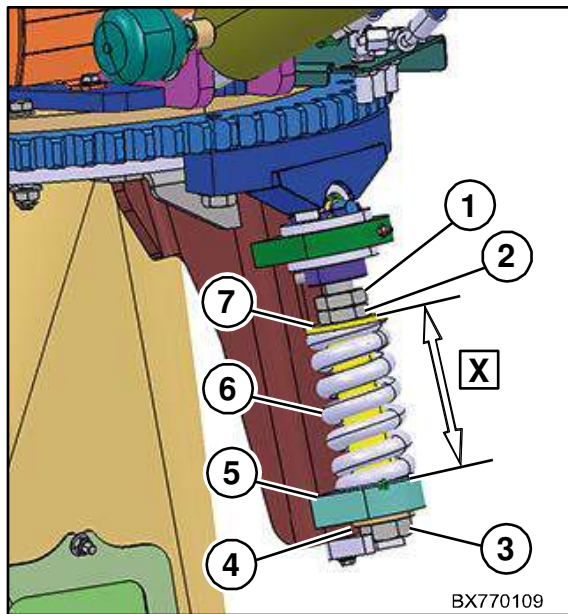


Fig. 433

The start-up safety mechanism must be set via the compression spring (6) to match the mounted spout extension. This prevents the forces on the spout from becoming too great if the start-up safety mechanism triggers.

The following table lists the setting values for the prestressing dimension X of the compression spring (6) depending on the spout extension:

Spout version	Prestressing dimension
8-row extension	124 mm
10-row extension	122 mm
12-row extension	120 mm
14-row extension	118 mm

The specified dimensions are guideline values and can be adjusted.

**Setting the prestressing dimension of the compression spring (6):**

- Loosen the counter nut (1).
- Continue turning the nut (2) until the required prestressing dimension X has been set. Measure the prestressing dimension X from the upper side of the pressure sleeve (7) to the support surface of the spring hanger (5).
- Tighten the counter nut (1).
- Check whether the disc (4) turns freely after making the setting.
- If this is not the case, set the axial play of the disc to 0-1 mm using the hexagon head screw (3).

### 15 Start-up – Attaching and removing the front attachment

 **WARNING**

**Risk of injury due to unexpected movement of the front attachment and moving components!**

There is an increased risk of injury when attaching and removing front attachments to or from the machine.

- Switch off the forage harvester engine, remove the ignition key and take it with you.
- Secure the machine against rolling away with wheel chocks.
- Wait until all machine parts have come to a complete stop.
- Ensure that there is nobody between the forage harvester and front attachment.
- Ensure that nobody reaches into the clearance between the front attachment and machine.
- Before working under or on the raised front attachment, support the front attachment securely.
- There must be nobody in the swivel range while the front attachment is being swivelled from the transport into the working position and vice versa.

Only those front attachments may be attached which have been type tested by the manufacturer and approved for use, see chapter Description of machine, "Technical data of the machine".

When operating the forage harvester with a front attachment, read and follow the operating instructions supplied with the front attachment before using it.

**Prerequisites for mounting and removing a header:**

- The header must be mounted and removed on a level load-bearing surface.
- There must be adequate room to manoeuvre the forage harvester.
- The lifting unit must be unlocked.

### 15.1 Adapting the adapter frame of the front attachment

The locating points of the different front attachments must be adapted to the locating points of the pendulum frame before they are installed for the first time.

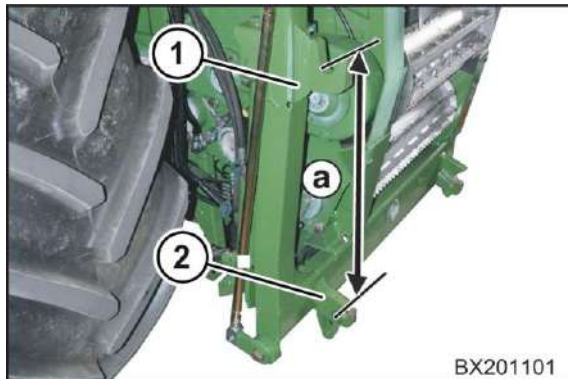


Fig. 434

- Measure the axle base "a" between holding claw (1) and locking hook (2) on the pendulum frame of the forage harvester.

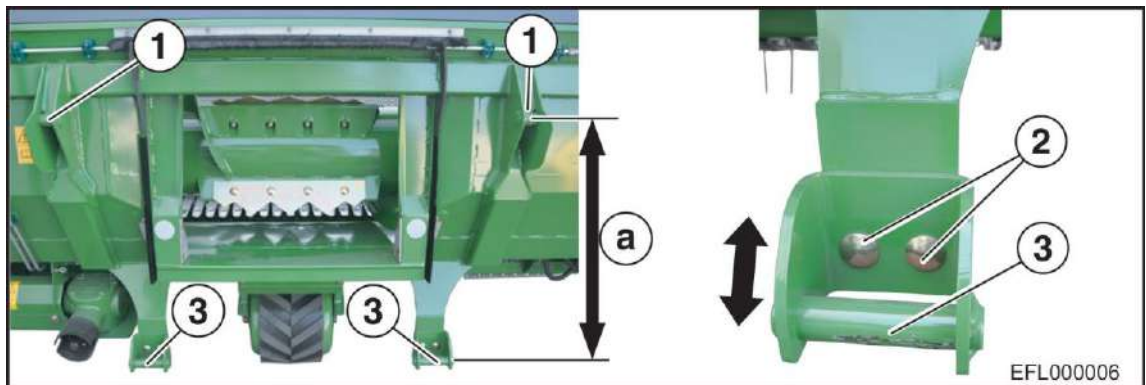


Fig. 435

- Measure the centre distance "a" between the locating bolts (1, 3) on the adapter frame on the front attachment.

The distance "a" on the pendulum frame and adapter frame must be set to the same dimension:

- Loosen the screw connections (2) on the right/left and shift the pendulum frame holders (3) to the correct distance.
- Tighten the screw connections (2).

## Start-up – Attaching and removing the front attachment

### 15.2 Preparing the pendulum frame for installation of the front attachment

The front attachment can only be attached to the pendulum frame when the holding claws are open.

The pendulum frame must also be locked so that it cannot swivel sideways when the front attachment is attached.

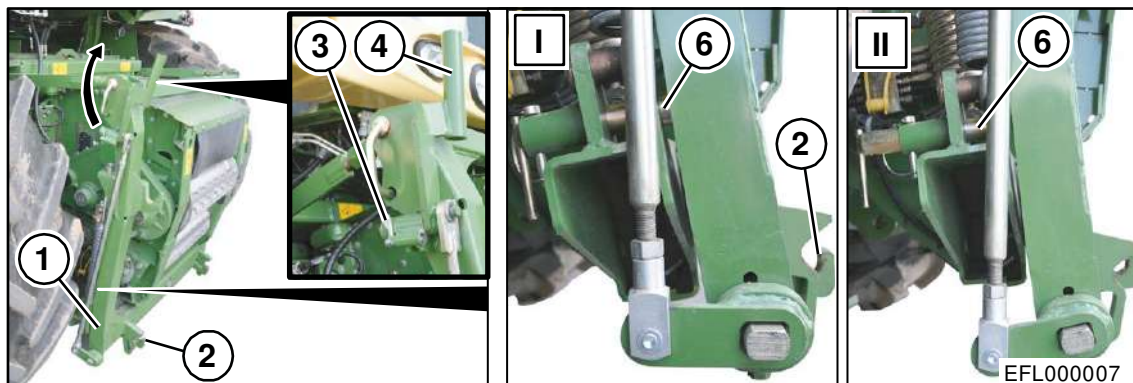


Fig. 436

- Lower the lifting unit (1) of the machine completely
- Align the pendulum frame (1) of the lifting unit horizontally, see page 139.
- The locking hooks (2) must be open. If necessary, open them with the locking lever (4).
- Press the spring-mounted bar (3) to release the locking lever of the spring-mounted bar (3) and swivel the lever upwards.
- To lock the pendulum frame, slide the bolt (6) into the borehole of the pendulum frame by means of a light rotating movement and secure it.

### 15.3 Mounting the front attachment



**NOTE**

Separate operating instructions for the respective front attachment are supplied, in which all relevant work steps and safety regulations are described in detail.

The procedure for mounting the front attachment is explained using the example of the EasyFlow 300.

The principle is identical for all KRONE front attachments.

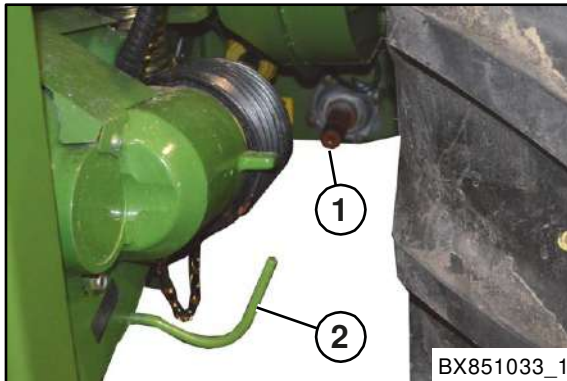


Fig. 437

- Place the cardan shaft supplied with the front attachment onto the PTO shaft (1) on the front left of the machine and secure with the slider pin.
- Place the cardan shaft onto the support / holder (2) provided.

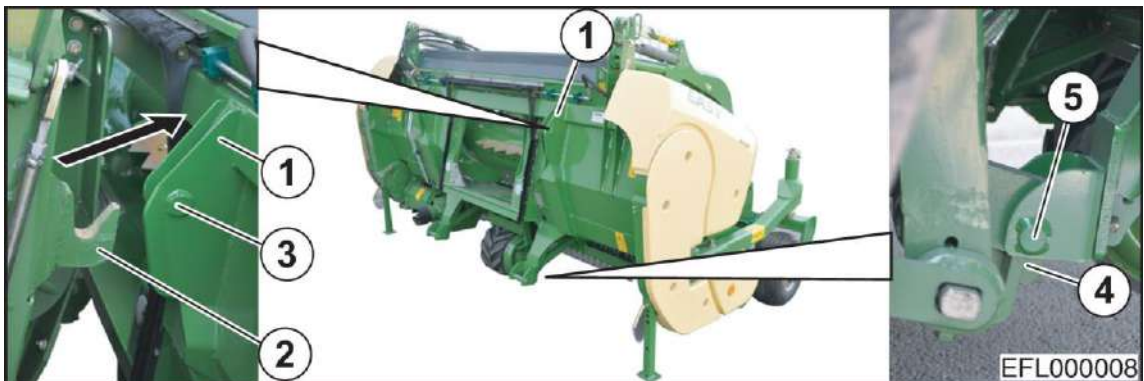


Fig. 438

- Approach the front attachment with the machine until the pendulum frame is positioned parallel in front of the adapter frame (1). The holding claws (2) must be below the locating surface of the locating bolts (3).
- Raise the lifting unit until the locking hooks (4) are resting in the pendulum frame holder (5) on the adapter frame.

## Start-up – Attaching and removing the front attachment

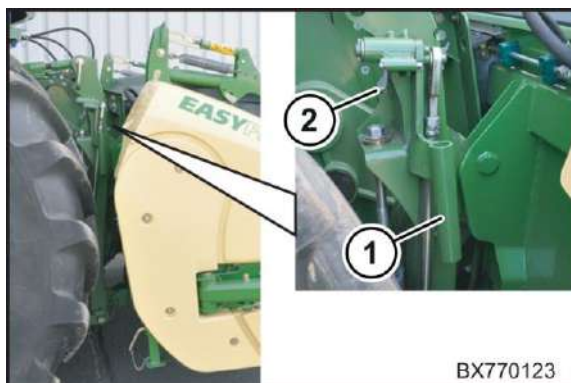


Fig. 439

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

**⚠ WARNING**

**Risk of injury from unexpected movement of the lifting unit!**

When working on the lifting unit or when opening/closing the stop cocks on the lifting cylinders, the lifting unit and the installed components may move unexpectedly. As a result, people may be injured.

- To secure the lifting unit from unintentionally lowering, close the stop cocks.
- To reach the stop cocks safely, swivel open the tool box, go under the machine and actuate the stop cocks.



Fig. 440

- Close the two-way stopcock (1) and three-way stopcock (2), see information label.



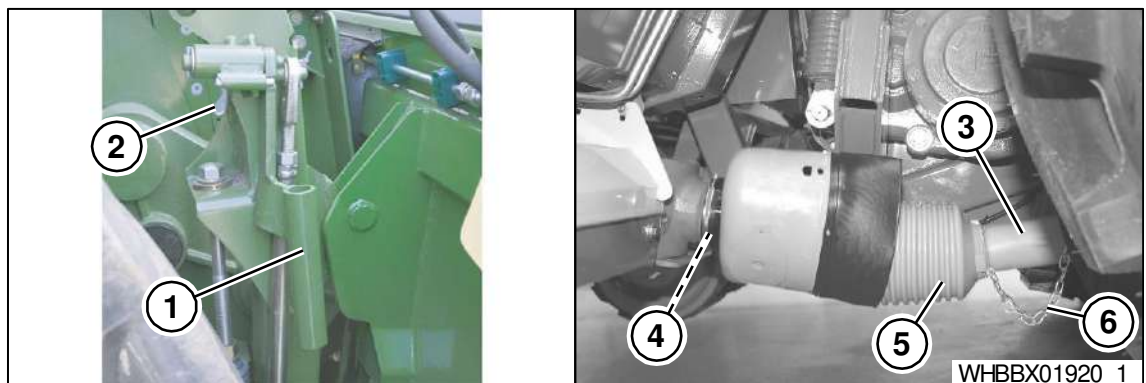


Fig. 441

- Ensure that the adapter frame is hooked correctly into the locating bolt and the locking hook on both sides.
- Swivel the locking lever (1) down and secure it with the spring lock (2).
- Slide the universal shaft (3) onto the drive journal (4) of the main gearbox until the retaining pin engages.
- Secure universal shaft guard (5) against turning using the supporting chain (6).

## Start-up – Attaching and removing the front attachment

### **WARNING**

#### **Risk of injury from escaping hydraulic oil.**

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

Before connecting the hydraulic hoses to the forage harvester hydraulics, the hydraulic system must be depressurised on both sides.

- Before uncoupling the hoses and before performing work on the hydraulic system, depressurise the hydraulic system.
- Check hydraulic hose lines regularly and replace if there are any signs of damage or ageing! The replacement lines must comply with the requirements of the device manufacturer.

### **WARNING**

#### **Risk of injury from unexpected movements of the front attachment!**

If the hydraulic hoses are interchanged when connecting them, the front attachment will not function correctly.

- Identify the hydraulic connections (hose marks).
- Check that the hose connections are fitted correctly.

### **CAUTION**

#### **Damage to the machine due to soiling or pinch points at the hydraulic system!**

If dirt gets into the hydraulic circuit or pinch points develop, the machine may be damaged or correct functioning impaired.

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



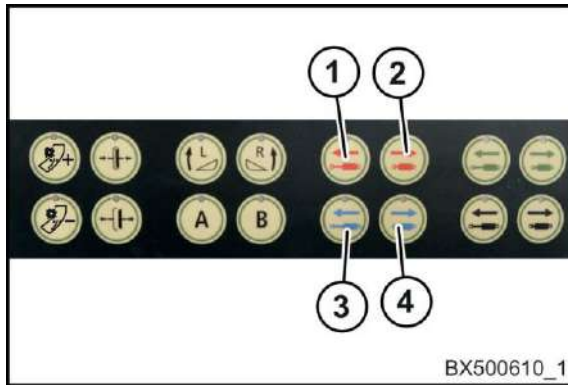


Fig. 442

- Turn the ignition key to position "II"
- Switch the release switch road/field to field mode.

Prior to connecting the hydraulic hoses, depressurise the system on both sides:

- Press the keys (1) and (2) (red) or the keys (3) and (4) (blue) simultaneously to depressurise both hydraulic circuits.

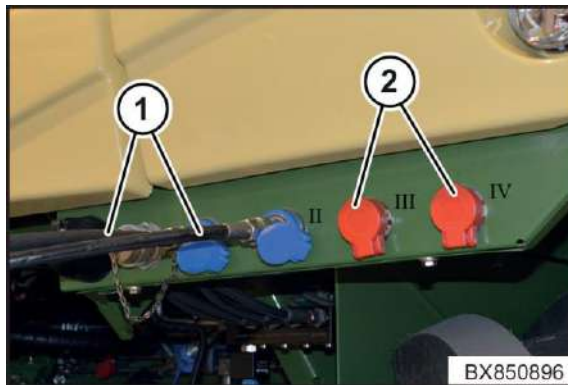


Fig. 443

- Connect the hydraulic hoses (1) to the plug-in connections provided for this purpose on the machine.
- Close any plug-in connections that are not required with dust caps (2).

## Start-up – Attaching and removing the front attachment

### Occupancy of the connections

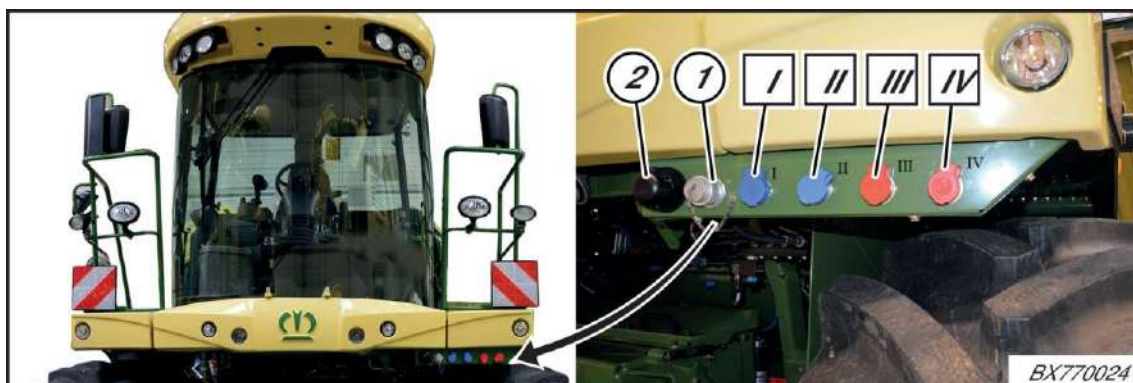


Fig. 444

The identification of hydraulic connections (I - IV) is also on the hydraulic hoses of the front attachment.

### Pick-up

- I Extend guide wheels
- II Retract guide wheels
- IV Roller crop guide

### Maize header

- I Raise plant divider
- II lower plant divider
- III Fold out the maize header
- IV Folding in the maize header

- 1 Maize header sensor connection
- 2 Lighting cable

- Connect the sensor system connector cable to the socket (1).
- Connect the lighting cable to the socket (2).

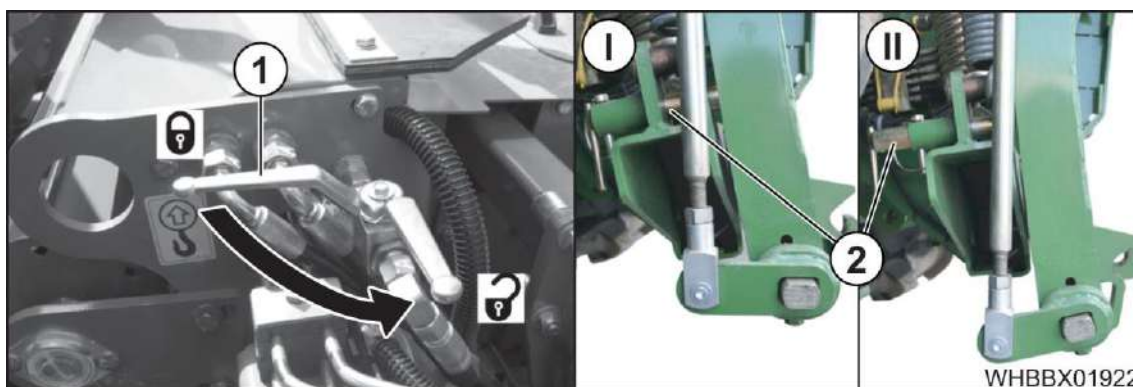


Fig. 445

For EasyCollect only:

- Open the stop cock (1) on the front attachment.
- Unlock the pendulum frame by moving the locking pin (2) from position "I" to position "II".

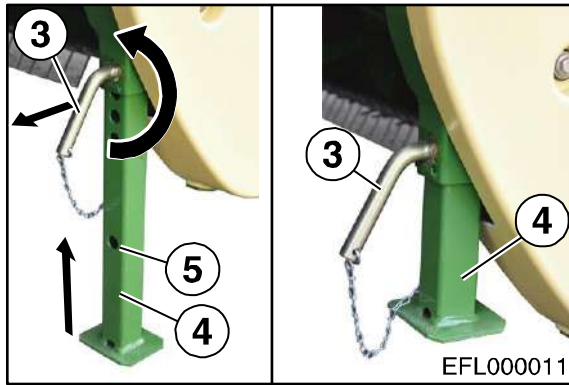


Fig. 446

- Swivel socket pin (3) of the parking supports (4) by 180° upward on both sides and pull them out.
- Push the parking supports (4) upward and secure them with socket pins (3) in bore hole (5). Lock socket pin (3) downward by a rotation of 180°.



Fig. 447

- Open two-way stopcock (1) and three-way stopcock (2), refer to information label.

## Start-up – Attaching and removing the front attachment

### 15.4 Removing EasyFlow

#### **WARNING**

##### **Risk of injury from movement of the front attachment!**

If people are in the area of the front attachment when it is being raised or lowered and folded in or out, there is a risk that these people may be caught and injured by the front attachment or the lifting unit.

- When the front attachment is moving, ensure that there is nobody in the area of the front attachment or the lifting unit.

#### **NOTE**

Separate operating instructions for the respective front attachment are supplied, in which all relevant work steps and safety regulations are described in detail.

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

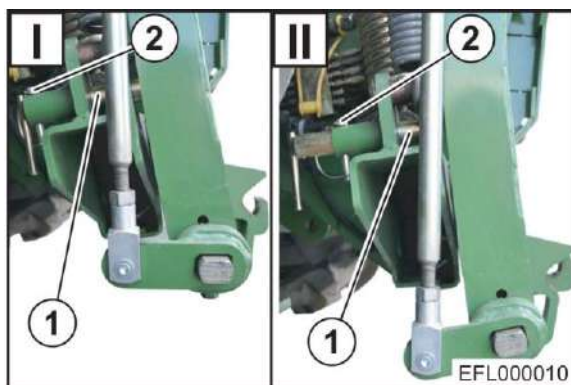


Fig. 448

- Lock the pendulum frame by moving the locking pin (1) from position "II" to position "I".

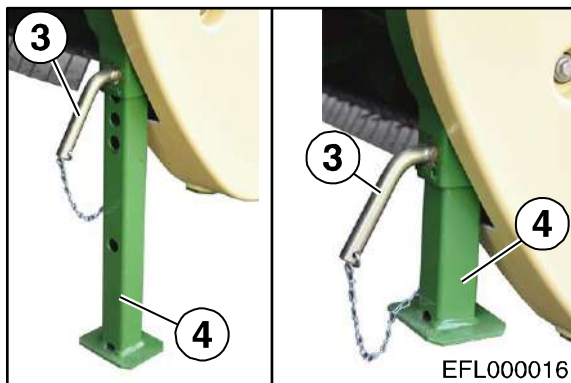


Fig. 449

- Unfold the supporting wheels and lower the Pick-up to the ground.
- Swivel socket pin (3) of the parking supports (4) by 180° upward on both sides and pull them out.
- Pull out the parking supports (4) and lock them with socket pins (3) in the fifth hole from below by a rotation of 180°.

#### **NOTE**

Always insert parking supports into the fifth hole from below.

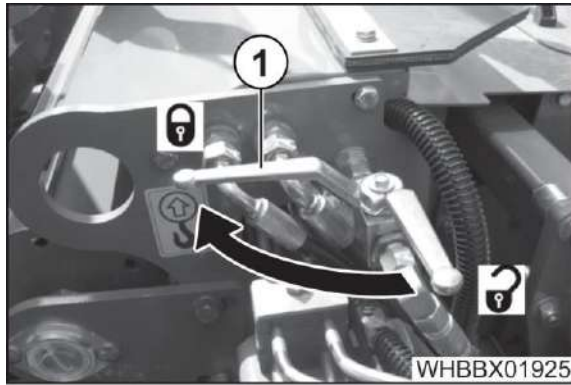


Fig. 450

For EasyCollect only:

- Close the stop cock (1) on the front attachment.
- Turn the ignition key to position "II"
- Switch the release switch road/field to field mode.

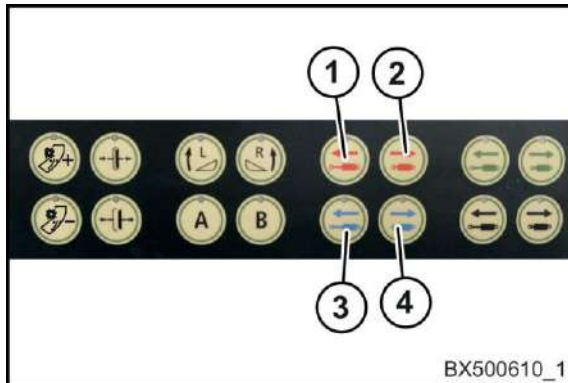


Fig. 451

Prior to connecting the hydraulic hoses, depressurise the system on both sides:

- Press the keys (1) and (2) (red) or the keys (3) and (4) (blue) simultaneously to depressurise both hydraulic circuits.

## Start-up – Attaching and removing the front attachment

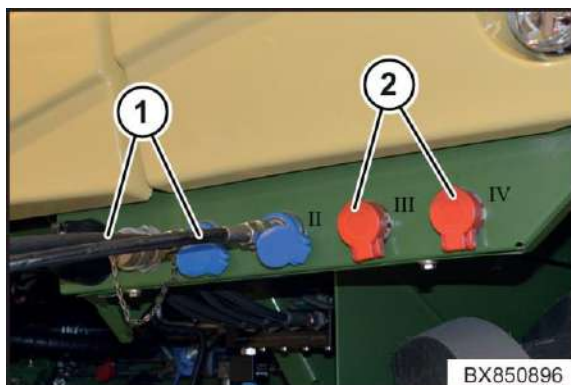


Fig. 452

- Detach the hydraulic lines (1) from the hydraulic couplings and seal using dust caps (2).

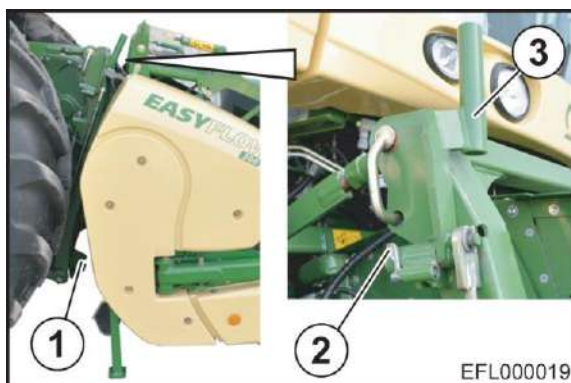


Fig. 453

- Opening the locking lever (1): Swivel the locking lever (3) upwards and secure with the spring lock (2)
- Lower the pendulum frame of the machine until the holding claws are below the locating bolts
- Retract the machine.

### 15.5 Switching off EasyFlow

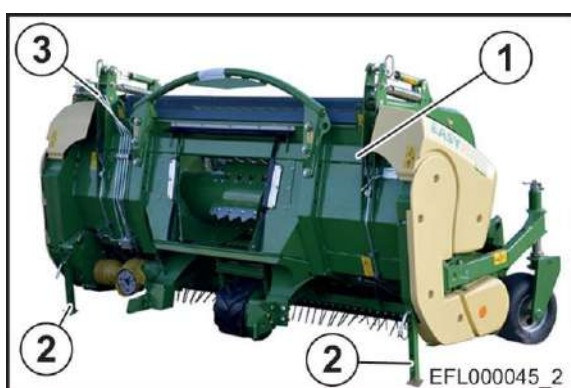


Fig. 454

- Set the grass header (1) down, with support jacks (2) extended, on a solid and level surface and in a dry and clean place.



#### **NOTE**

Always insert parking supports into the fifth hole from below.



### 16 Start-up – attaching the rear weight

**⚠ WARNING**

**Risk of injury due to unexpected movements when operating the machine!**

If the rear weight and the front-mounted EasyCollect front attachment are not coordinated with each other, there is a risk that the machine may overturn when braked or when driving on slopes.

- Do not drive the machine on the road or use it for work unless the rear weight, stipulated for the combination of machine and fitted front attachment, has been attached.

**⚠ WARNING**

**Risk of injury due to suspended load!**

There is a danger for persons due to falling load.

- Pay attention to sufficient carrying load of the hoist.
- Do not stay under the suspended load.
- If work has to be performed under the load, securely support the load.

**NOTE**

The rear weight must only be attached when operating the forage harvester with an EasyCollect front attachment.

**NOTE**

When driving with mounted rear weight and without attached header, the machine must only be moved at walking speed ( $\leq 10$  km/h).

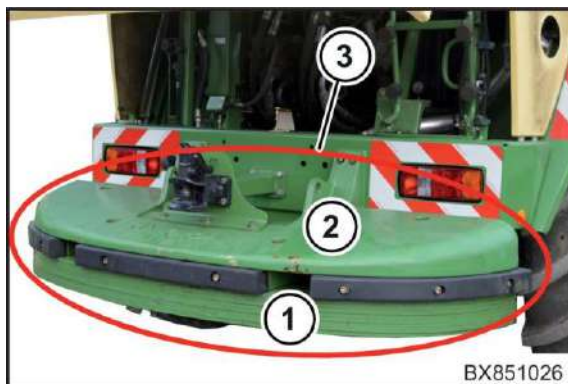


Fig. 455

The basic weight (2) and the additional plates (1) together form the rear weight (3) that must be attached to the machine. The additional plates are attached to the basic weight.

The number of basic weights and additional plates required depends on the machine type, the permissible front axle load and the front attachment type, see the chapter Description of machine, "Permissible total weights and axle loads".

## Start-up – attaching the rear weight

### Attaching the rear weight

For information on screw fastening material for assembly, refer to parts list in the accessories kit instructions of rear weight.

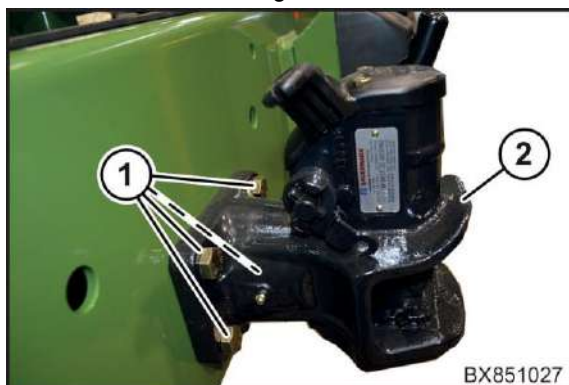


Fig. 456

- Unscrew the four screws (5) and remove the tow coupling (4).

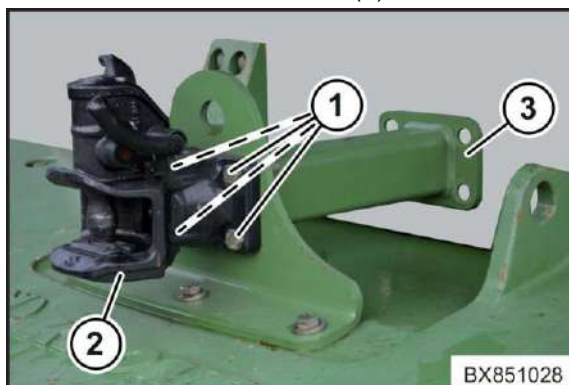


Fig. 457

- Mount the tow coupling (2) using the four screws provided (1) to the coupling carrier (3) of the rear weight.



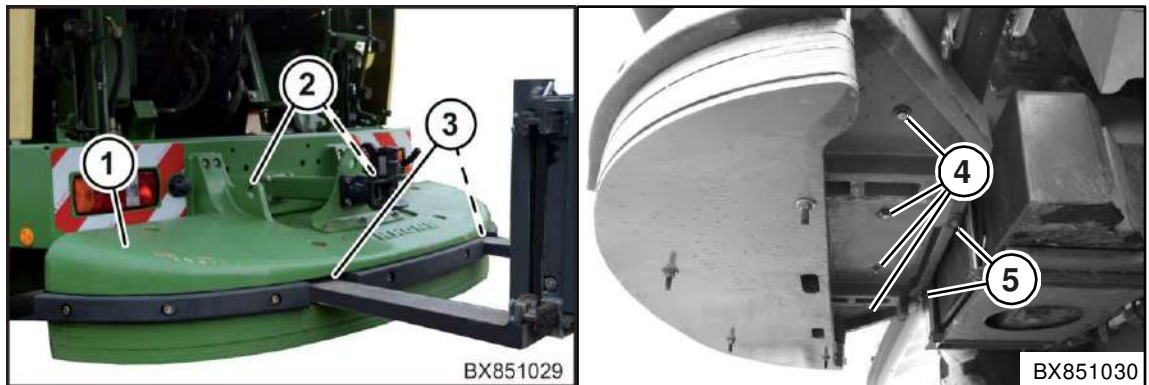


Fig. 458

- Using a suitable lifting device, attach the basic weight (1) to the rear bumper of the machine in such a way that the connecting screws can be mounted.

Use

- the openings for a forklift (3),
- the stop points for a lifting beam (2)

- Ensure that the lifting device chain hooks are correctly attached to the stop points.
- Mount the rear weight (1) using the screw fasteners (4) and (5) below the rear of the machine (for screw fastening material, see the parts list in the operating instructions for the front attachment).

**NOTE**

The suspension points (2) act as a mounting tool for attaching the rear weight to the machine. Improper use may damage them.

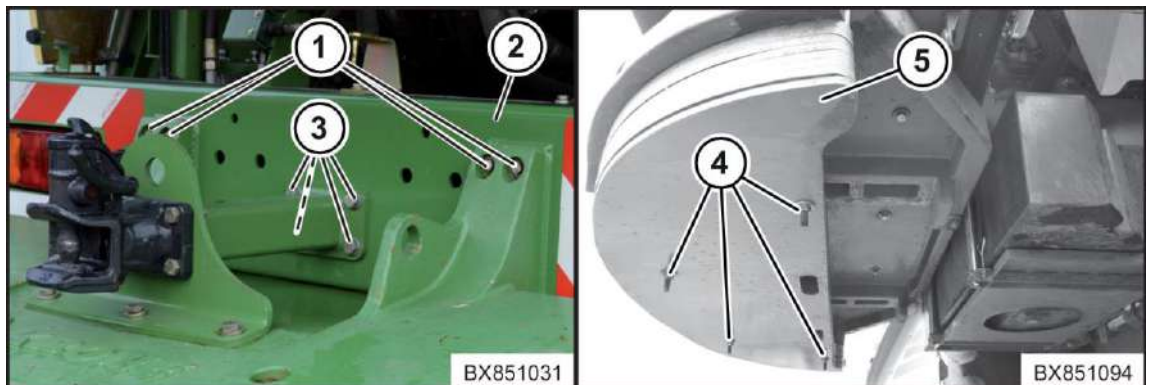


Fig. 459

- Mount the rear weight using the screw fasteners (1) and (3) to the bumper (2) of the machine (for screw fastening material, see the parts list in the operating instructions for the front attachment).
- Mount the additional weights (5) from below to the basic weight using the nuts (4) and washers.
- Measure the tyre pressure using a testing instrument and if required adjust to the stipulated values, see page 85.

### 17 Driving and Transport

 **WARNING**

**Risk of injury when driving on public highways!**

Due to the large dimensions of the machine, the unusual driving behaviour and the option of riding on the outside of the machine while it is being driven, the risk of accidents for machine personnel and third parties is increased.

- Swivel the front attachment into the transport position.
- Swivel the discharge chute into the transport position.
- When driving on public highways, observe the provisions of the Road Traffic Licensing Regulations (lighting, identification).
- Ensure that nobody is riding on the machine.
- Always adapt the driving speed of the machine on road and field to the given conditions.
- When driving down hills, on inclines or through obstacles, adjust driving behaviour to the ambient conditions.
- Note that the rear of the machine swings out when cornering.

## 17.1

## Starting the engine

 **WARNING****Risk of poisoning from toxic exhaust gases!**

If the forage harvester is operated in closed rooms without adequate ventilation, the pollutant load increases in the air.

- Never allow the engine to run in closed rooms without an extraction system.
- Provide the room with adequate ventilation.

 **WARNING****Risk of people being struck and crushed in the vicinity of the machine due to the movement of the forage harvester!**

When the forage harvester moves, people nearby are at risk of being run over and crushed by the forage harvester.

- Start the engine only from the driver's seat.
- Always ensure that there is nobody in the danger zone of the machine.
- Sound the horn.

 **WARNING****Risk of injury from engine noise while working!**

If the driver is not protected from the engine noise while working, his hearing will be permanently damaged.

- Ensure that the doors and windows of the cab are closed while working.

The following conditions must be met to start the engine:

- The main battery switch is closed.
- The parking brake is applied.
- The release switch traction drive is switched off.

### Starting the engine

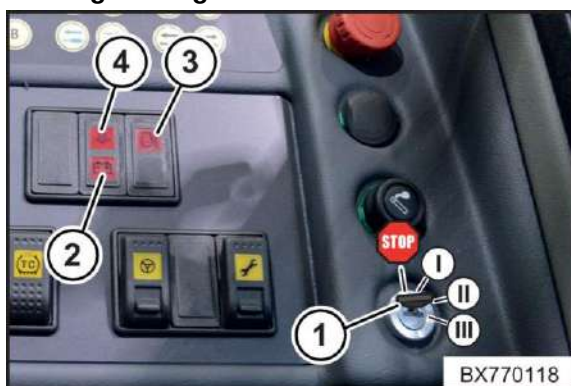


Fig. 460

- Turn the ignition key (1) to position III, the engine starts. Do not actuate the starter too briefly, but for no more than 20 seconds. Release the ignition key (1) immediately after the engine catches. The ignition key jumps back automatically to position II.

After the engine starts, the battery charging lamp (2) as well as the coolant temperature (3) and engine oil pressure (4) control lamps light up briefly.

- Check whether the control lamps go out.
- If not, switch off the engine immediately and rectify the disturbance or call KRONE customer service.

If the engine does not start within 20 seconds:

- Turn the ignition key to the "STOP" position.
- After a 1 minute delay repeat the starting process.

If the engine still does not start:

- Turn the ignition key to the "STOP" position.
- Eliminate the cause.

**For additional information, refer to the other applicable operating and service instructions of the engine manufacturer.**

## 17.1.1 Observing indicator lamps

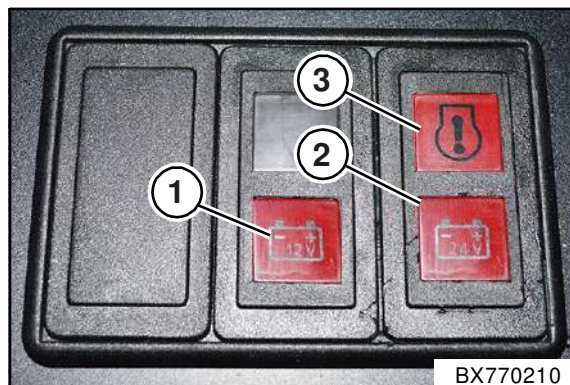


Fig. 461

**Charging warning light (12V), charging warning light (24V)**

The charging warning lights (1,2) light up when the ignition key is turned to ignition stages (I and II).

**Charging warning light (12V)**

The charging warning light goes out during the start process (12V).

When the engine has been started, the charging warning light (1) lights up for 2 seconds.

When the engine has been switched off, the charging warning light (1) lights up for 2 seconds.

**Charging warning light (24V)**

During the start process the charging warning light (24V) goes out and does not light up after the start process.

When the engine has been switched off, the charging warning light (2) does not light up.

**Engine failure warning light**

Engine failure warning light (3) lights up if the engine is malfunctioning.

**CAUTION****Damage to the diesel engine due to a malfunctioning engine!**

If the "Engine failure" warning light is lit, the engine may be damaged if it continues to be operated.

- Switch off the engine immediately.
- Rectify the malfunction.

### 17.2 Behaviour after the engine has stalled

#### **CAUTION**

##### **Engine will be damaged by the heat accumulation after the engine has stalled!**

If a warm engine stalls, the heat accumulation, caused by the lack of cooling, may damage the engine.

- If a warm engine stalls, restart the engine immediately.
- Allow the engine to run at idling speed for at least 2 minutes before finally turning it off.

#### **WARNING**

##### **Risk of injury due to exploding battery gas!**

The improper connection of external voltage sources using charging or jumper cables can cause damage to the electrical system and can lead to an explosion. Short circuiting or overloading the battery can cause the formation of highly explosive electrolytic gas. People can be seriously injured or killed as a result.

- To jump start the machine, pay particular attention to the correct voltage and polarity: connect the positive pole to the positive pole and the negative pole to the negative pole. Reversing the polarity will create a dangerous short circuit.
- When connecting a battery, always connect the negative pole last
- When disconnecting a battery, disconnect the negative pole first
- Avoid sparking, naked flames and hot or glowing objects in the vicinity of the batteries.
- Switch off charging devices when connecting to or disconnecting from a battery.

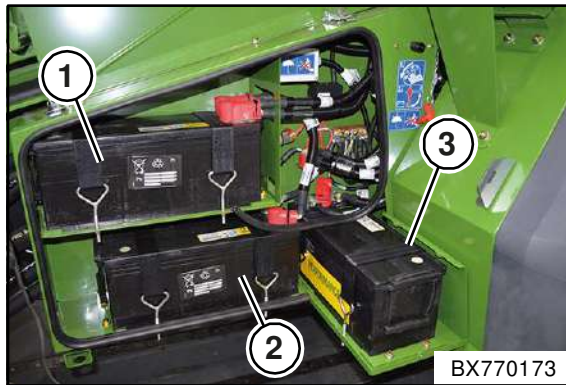


Fig. 462

Item	Designation
1	Battery 12 V
2	
3	

The machine has been fitted with three 12 V batteries. The batteries (1) and (2) are connected in series (voltage level 24 V). Loads of 12 V voltage level are supplied by the battery (3).

### 17.3 Jump starting the machine



#### CAUTION!

#### Damage to the machine by connecting the jump-start battery to the starter

If the jump-start battery for jump-starting the machine is connected to the starter, the starter and the battery will be damaged.

- Never connect the jump-start battery to the starter.



#### NOTICE

- When using jump start batteries with a voltage of 12 V, first connect the jump start batteries in series (24 V)
- When using a charging device (24V), which has a jump start function, it must be switched off before it is connected and disconnected.

#### Connecting jump start voltage source

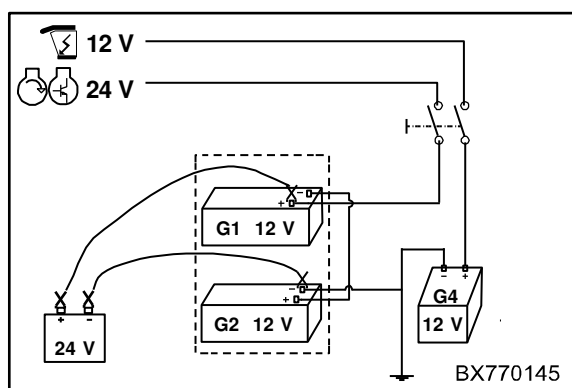


Fig. 463



#### NOTICE

Always connect the batteries of the machine last in order to avoid machine damage.

- Dismount the pole protection caps from the positive poles of the batteries.
- Connect the positive poles of the battery and the jump start voltage source in succession.
- Connect the negative terminals of the battery and the external start voltage source in succession.

#### Disconnecting jump start voltage source



#### NOTICE

Always disconnect the batteries of the machine first in order to avoid machine damage.

- Disconnect the negative poles of the battery and the jump start voltage source in succession.
- Disconnect the positive poles of the battery and the jump start voltage source in succession.
- Mount the pole protection caps on the positive poles of the batteries.



### 17.4 Starting up the machine

#### **WARNING**

##### **Danger to life due to moving forage harvester!**

People are at risk from the large moving forage harvester, unusual driving behaviour and the option of riding on the outside of the machine while it is being driven.

- Ensure that there is no second person riding on the outside of the forage harvester while it is being driven.
- Always adapt the driving speed of the machine on road and field to the given conditions.
- When driving down hills, on inclines or through obstacles, adjust driving behaviour to the ambient conditions.
- Note that the machine swings out when cornering.

### 17.4.1 General on Driving

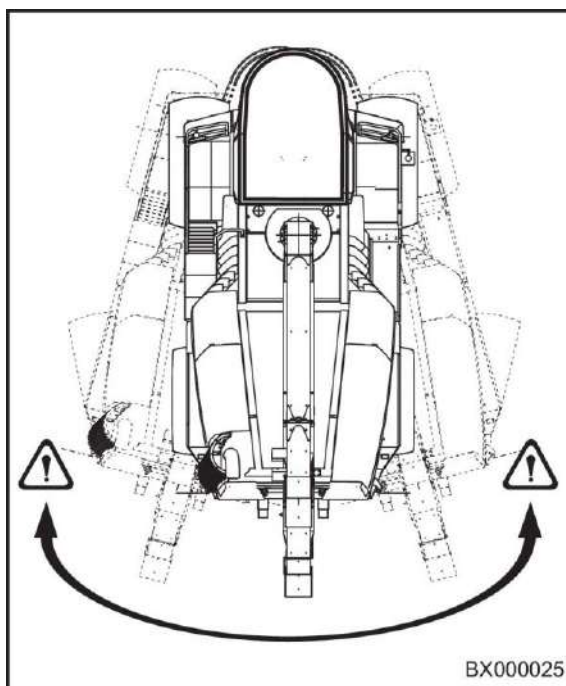


Fig. 464

Due to the size and to some extent the unusual driving behaviour of the machine, observe the following when driving:

- Handling the machine requires a certain amount of practice because of the rear steering.
- Driving behaviour on the road and in the field differs.
- Driving behaviour is influenced by the high centre of gravity of the machine, the attached front attachment and the terrain and ground conditions.
- If an error message is indicated on the terminal, immediately stop and eliminate the error. If this is not possible, inform KRONE customer service or a KRONE dealer.
- Adapt driving behaviour to the particular terrain and ground conditions.
- Extreme caution is required when working and turning on slopes.

#### **Emergency steering forces**

The steering also operates when the engine has stopped. However, considerably more force must be applied.

## Driving and Transport

### 17.4.2 Switching on road travel mode

Prerequisite for road travel of the machine:

- The engine has been started.
- The lifting unit is in transport position
- The release switch "road/field" is switched to road travel.
- The release switch "traction drive" is switched on.

### 17.4.3 Driving forwards

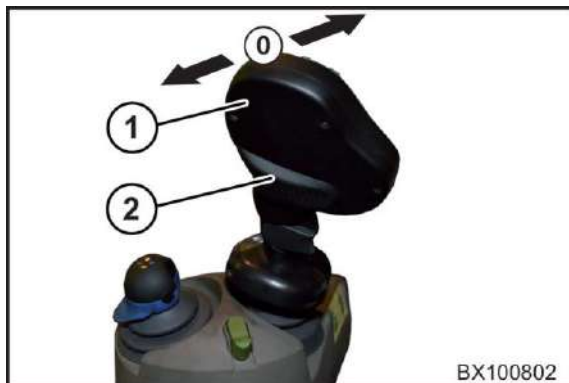


Fig. 465

#### Starting forwards from standstill

The parking brake is automatically released when the machine moves off.

- Press and hold the activation key for traction drive (2).
- Move the multi-function lever (1) forwards, the machine starts to move forwards and accelerates.
- If you release the multi-function lever (1), it returns automatically to the central position (0); the speed remains constant.
- If you move the multi-function lever (1) backwards while driving, the machine decelerates and is braked until it comes to a standstill.

## 17.4.4 Setting the acceleration behaviour

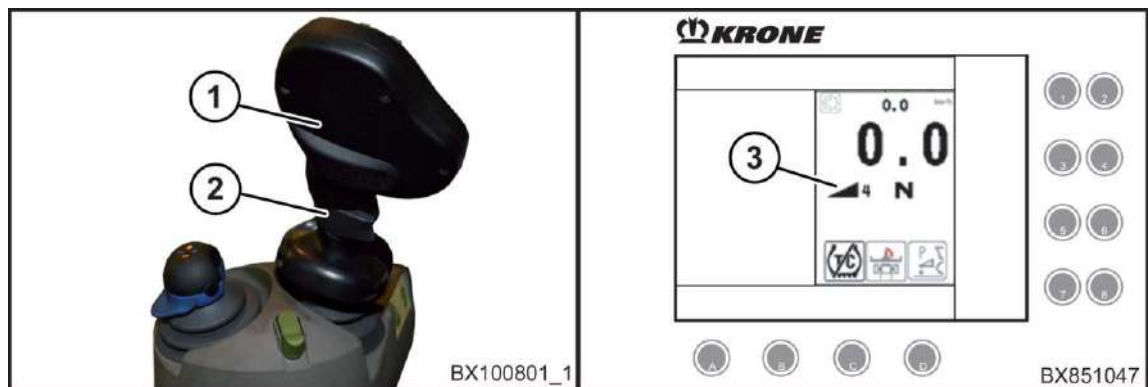


Fig. 466

Four different acceleration stages can be selected, even while driving, with the acceleration stage switch (2) attached to the multi-function lever (1).

If the multi-function lever (1) is actuated constantly in one direction and at a constant engine speed, the driving speed will increase slowest in acceleration stage I and fastest in acceleration stage IV.

- Switch to the required acceleration stage using the acceleration stage switch (2). The display shows the selected acceleration stage (3) working screen.

### 17.5 Reversing

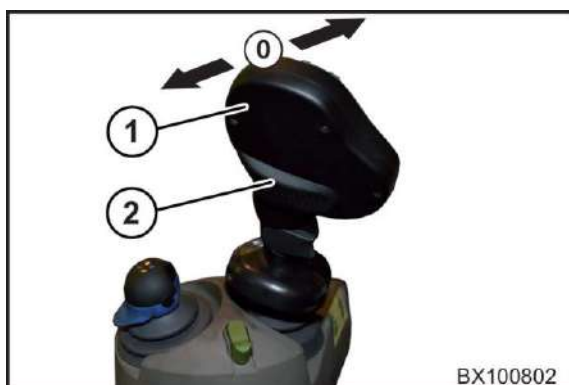


Fig. 467

#### Starting in reverse from standstill

► **NOTE**

An acoustic warning signal sounds when reversing.

The parking brake is automatically released when the machine moves off.

- Press and hold the activation key for traction drive (2).
- Move the multi-function lever (1) backwards; the machine starts to move in reverse and accelerates.
- If you release the multi-function lever (1), it returns automatically to the central position (0); the speed remains constant.
- If you move the multi-function lever (1) forwards while driving, the machine decelerates and is braked until it comes to a standstill.

### 17.6 Cruise control

The cruise control can be activated only when travelling forwards. When cruise control is activated, the machine is accelerated or decelerated with the set acceleration stage to the speed saved for operation with the cruise control.

#### 17.6.1 Saving speed for operation with cruise control

The speed is stored for the mode in which the machine is operating. A speed can be stored for road travel and field mode.

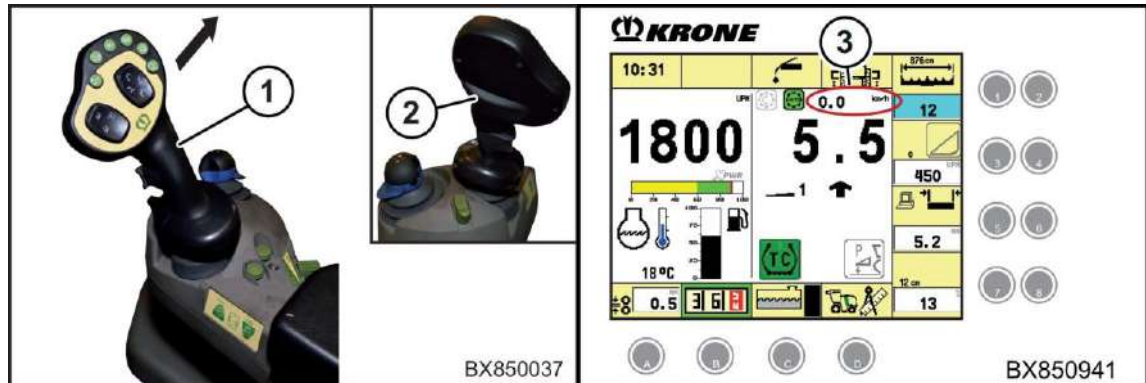


Fig. 468

- Accelerate the machine to the required speed.
- While driving, press and hold down the activation button for the travelling gear (2), move the multi-function lever (1) to the right and back to the central position.


The current driving speed is saved.

The display shows the stored speed (3) in the working screen.

### 17.6.2 Activating cruise control



Fig. 469

- While driving, push the multi-function lever (1) to the right without pressing the activation key. The saved speed is approached. The display shows the icon  with the value of the set speed.

### 17.6.3 Deactivating cruise control

Cruise control is deactivated by overriding the multi-function lever, actuating the operating brake or switching off the travelling gear.

If the operating mode ("road travel" / "field mode") is changed, the display switches to the value which is saved for the corresponding operating mode (road or field speed).

### 17.7 Stopping

The machine can be stopped either with the multi-function lever or with the foot brake.

#### 17.7.1 Stopping with the multi-function lever



Fig. 470

#### **Stopping from forward travel using the multi-function lever:**

To decelerate the machine while driving forwards using the multi-function lever:

- Pull the multi-function lever (1) backwards while driving.

The machine decelerates until it stops.



Fig. 471

#### **Stopping from reverse travel using the multi-function lever:**

To decelerate the machine while reversing using the multi-function lever:

- Push the multi-function lever (1) forwards while driving.

The machine decelerates until it stops.

### Quickly braking the machine using the multi-function lever



Fig. 472

- Move the multi-function lever (1) to the left while driving. The machine decelerates until it comes to a standstill.

### 17.7.2 Stopping with the foot brake

#### **WARNING**

##### **Risk of injury due to defective operating brake!**

If the operating brake has a restricted function, the machine cannot be brought to a standstill in time and people and material assets are at risk.

After panic braking:

- Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".
- Have the foot brake function checked by a technician.

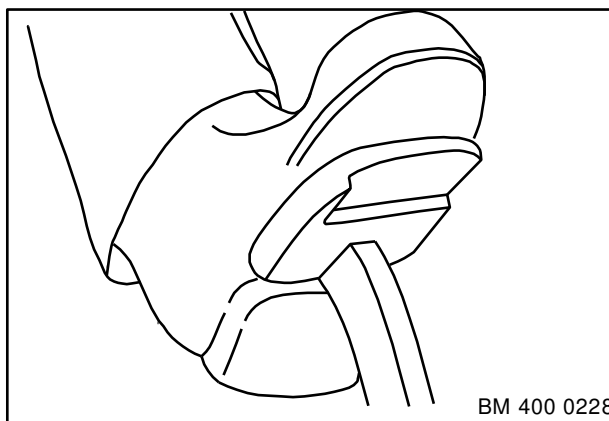


Fig. 473

##### **Brake the machine slightly:**

- Depress the foot brake slightly.

When the brake pedal is released, the machine continues moving at the reduced driving speed.

##### **Brake the machine strongly (braking to avoid accident):**

- Depress the foot brake forcefully.

The machine is stopped immediately.



## 17.8 Trailer Brake (Option)

 **WARNING**

**Danger to life or serious injuries caused by trailer colliding with machine if an emergency stop is made.**

If the machine is equipped with a trailer brake (option) for trailer operation, the brake pedals of service brake and trailer brake must always be connected for road travel.

- Before road travel, make sure that both brake pedals are connected.

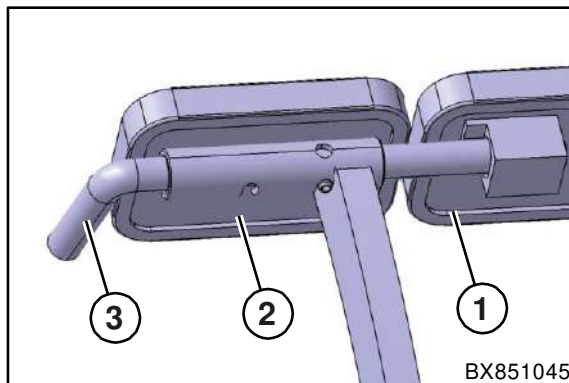


Fig. 474

**In road traffic**

Connecting the brake pedal of service brake (1) and trailer brake (2):

- Turn the connecting bolt (3) upwards, push it in all the way and let it engage by a downward rotation.

### 17.9 Applying the parking brake

#### **WARNING**

##### **Risk of injury due to the unsecured machine rolling away!**

If the unsecured machine starts moving, there is a risk of people being struck or run over.

- After pressing the "Parking brake" key or when exiting the machine, check the status of the parking brake in the display.



#### **NOTE**

If the "Parking brake" key is pressed while driving, the travelling gear is braked and, when the machine has stopped, the parking brake is applied.

The parking brake is automatically released or applied under certain operating conditions and can be manually actuated by pressing the "Parking brake" key, see page 136.

### 17.10 Switching off the engine

#### **CAUTION**


##### **Engine will be damaged by heat accumulation!**

If the engine is immediately switch off after operation under load, the heat accumulation, caused by the lack of cooling, may damage the engine.

- Leave the engine running for three minutes at a low idling speed before switching off the engine.



Fig. 475

- Brake the machine to a standstill.
- Actuate the key (2) to lower the front attachment fully to the ground.
- Turn the ignition key (1) anti-clockwise to the  position.
- Switch off all release switches.

### 17.11 Switching off the machine

#### **WARNING**

##### **Risk of injury due to the unsecured machine rolling away!**


If the machine is not secured against rolling away when it has been switched off, there is a risk of people being injured by the machine rolling away in an uncontrolled manner.

- Park the machine safely and secure it against rolling away.



Fig. 476

To park the machine safely and secure it against rolling away:

- Stop the machine on a level, solid surface.
- Actuate the key (2) to lower the front attachment fully to the ground.
- Use the multi-function lever to move the spout into the parking position.
- To cool down the engine, leave the engine running for three minutes at a low idling speed.
- Turn the ignition key (1) anti-clockwise to the  position, remove it and take it with you.
- Fit both wheel chocks.
- Switch off all release switches.

The parking brake is automatically applied if the machine is exited.

### 17.12 Preparations for road travel

Prepare the machine for road travel:

- The machine has been shut down and secured.
- Soiling and crop residue have been removed from the machine, in particular from the lighting and identification elements.
- When using an approved header, swivel the lifting unit with the header into the transport position, see chapter Driving and transportation, "Swivelling header into transport position".
- If a header for maize mode has been front-mounted: mount the guards and lighting on the header, see the operating instructions for the header.
- If a direct cut header is front-mounted: Set down the direct cut header on the transport wagon, hitch the transport wagon and swivel the intake into the transport position using the lifting unit.
- If no header is front-mounted: Swivel the intake into the transport position using the lifting unit.
- Ensure that the spout is in the transport position, see chapter Driving and transportation, "Swivelling spout into transport position".
- Ensure that the wheel chocks have been removed from the wheels and attached to the supports / holders on the machine.
- Ensure that the area around the machine can be seen; if required adjust the inner, outer and anti-collision mirrors.
- Ensure that there is no warning message on the display.
- Set the road/field release switch to the "Road travel" position.

#### 17.12.1 Transport position



Fig. 477

For road travel, the discharge chute (1) and the attached front attachment (2) must be in transport position.

- Move the front attachment (2) into the transport position, see the operating instructions for the front attachment.
- Move the discharge chute (1) into the transport position using the multi-function lever, see chapter Driving and transportation, "Swivelling discharge chute into transport position".
- When driving on roads without header, raise the lifting unit until the distance between the lower edge of the intake and the ground is 400 mm  $\pm$  100 mm.

### 17.12.2 Folding/raising the front attachment into the transport position

**⚠ WARNING**

**Risk of injury from movement of the front attachment!**

If people are in the area of the front attachment when it is being raised or lowered and folded in or out, there is a risk that these people may be caught and injured by the front attachment or the lifting unit.

- When the front attachment is moving, ensure that there is nobody in the area of the front attachment or the lifting unit.

**Prerequisites:**

- The driver's seat is occupied.
- The diesel engine has been started.
- The release switch road/field is in the "field mode" setting.
- There is nobody in the area of the front attachment.
- The plant divider is fully raised (3-part)/lowered (2-part).
- The maize header is folded in (3-part)/folded on (2-part)
- The guide wheels of the EasyFlow are folded in.
- The holding-down clamp of the EasyFlow is all the way down.
- The guard cloths right/left are mounted.

**NOTE**

EasyCollect 1053 and XDisc may only be transported with transportation trailers.

During folding/raising, the lifting unit must be in a defined position. There must be sufficient ground clearance and distance to the cabin roof. This position is approached automatically as soon as the keys for folding/raising are pressed.

**EasyFlow pick-up**

For the EasyFlow pick-up, the lifting unit height must be min. 40% and max. 70%.



Fig. 478

To raise the EasyFlow pick-up (3):

- Press and hold down the "Manually raising lifting unit" key (1) on the multi-function lever. The pick-up (3) is raised as long as the key is pressed.
- When driving on roads with pick-up, raise the pick-up until the distance between lower edge of pick-up and ground is 450 mm.

### EasyCollect

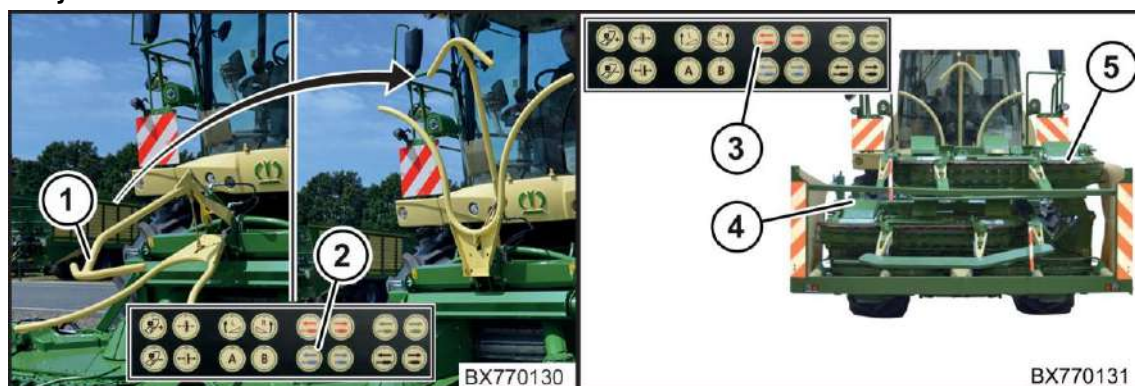


Fig. 479

To ensure that the maize header can be folded in, the plant divider must be swivelled up and the pendulum frame horizontally aligned:

- To move the plant divider (1) to the transport position, hold down the key "Swivel up plant divider" (2) on the membrane keypad until the plant divider is swivelled up.

#### Folding in maize header

When folding in, the lifting unit must have sufficient ground clearance. The distance to the cabin roof must be sufficient, as well. This position is approached automatically as soon as the key for folding in is pressed.

- Hold down the "Fold in maize header" (3) key on the membrane keypad until the side parts (4, 5) are fully folded in.

If the sensor system is defective, the warning message: "3415 Malfunction fold header!" will appear when attempting to fold in the maize header.

For emergency folding, also press the key (6) on the control lever, see page 140.

**Caution**, contact with cabin possible!"

### CAUTION

#### Damage to machine and maize header!

If the maize header is folded while the sensor system is defective, the cabin may collide with the maize header.

- Carefully observe the position and the movement path of the maize header to stop danger of collision when folding it in.

- To fold in the header when the sensor system is defective, simultaneously press the "Fold in header" (3) key of the membrane keypad and the key (6) on the control lever, see page 140.





Fig. 480

To raise the front attachment (3):

- Press and hold down the "Manually raising lifting unit" key (1) on the multi-function lever. The front attachment (3) is raised as long as the key is pressed.

Front-attachment-dependent lifting height for folded in maize header:

- For EC 600-3, EC 750-3, EC 900-3, EC 603, EC 753 and EC 903, set the lower edge of the front safety device on the front attachment to a height of 950 mm above the ground.
- For EC 600-2 and EC 6000, set the lower edge of the side skids on the front attachment to a height of 350 mm above the ground.
- For EC 750-2 and EC 7500, set the lower edge of the side skids on the front attachment to a height of 200 mm above the ground.

**The attachment heights for the front attachments are identical for 2-axle and 3-axle machines, irrespective of their permissible axle loads.**

During road travel, active vibration damping operates continuously which is also active if the operator button has not been pressed after the diesel engine has been switched on.

### 17.12.3 Swivelling the discharge chute into transport position

**⚠ WARNING**

**Crush hazard due to the moving discharge chute!**

People, who are near the drive sprocket of the discharge chute when the discharge chute is being swivelled, may be injured.

- When swivelling the discharge chute, ensure that there is nobody near the drive sprocket.

**NOTE**

The spout extension (optional) must be folded in for road travel according to the highway code.

Prerequisites:

- The driver's seat is occupied.
- The diesel engine has been started.
- The release switch road/field is in the "field mode" setting.
- The main coupling is off.

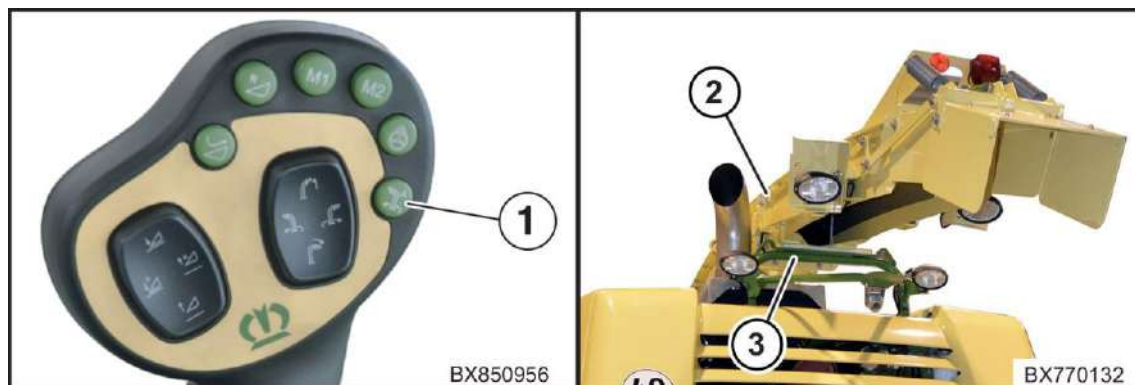


Fig. 481

- To swivel the spout to the transport position, press the key "Spout in transport position" (1). The discharge chute (2) moves automatically into the transport position.
- Visually check the exact parking position of the spout (2) on the spout holder (3).
- If the spout (2) does not rest centrally on the spout holder (3), raise the spout slightly and move it exactly into position using the keys on the multi-function lever.



## 17.13 Behaviour when driving downhill

**NOTE**

The permissible maximum speed of 40 km/h must also be observed when driving downhill!

On a steep incline, the driver has the option of reducing the driving speed using the multi-function lever or by actuating the service brake.

In this case, the multi-function lever should be used first, as it triggers purely hydrostatic braking.

The service brake initially uses hydrostatic braking but supplements this with mechanical braking.

If braking is effected using the brake pedal only, there is a risk of overheating.

## 17.14 Towing

 **WARNING****Impact and crush hazard due to an out-of-control machine!**

If the machine is towed over prolonged distances, there is a risk that the driver will lose control of the machine due to the increased steering and braking forces.

- Tow the machine out of the danger zone only and never tow over prolonged distances.
- Note that steering and braking forces are increased when the diesel engine is stationary.

**CAUTION****Damage to the machine due to incorrect operation!**

If the machine is not towed correctly, power transmission components or the diesel engine may be damaged.

- Do not tow the machine from the danger zone unless absolutely essential.
- Tow the machine by pushing it with the attached tow bar only.
- Tow the machine at maximum 8 km/h and for not longer than 45 min.

### Notes on towing

- Move the lifting unit, front attachment and spout into the transport position.
- The machine is shut down and secured, see page 41.
- Pull out the fuses F90 and F91 on the relay circuit board console, which sets the hydraulic motors for the traction drive in neutral position (no displacement).
- Switch the ignition to ignition stage II so that the flashing lights (hazard lights) and brake lamps will work.
- Manually release the parking brake, see page 543.
- Switch the release switch "road/field" into the road travel position.

Increased steering and braking forces must be applied with the engine switched off.



Fig. 482

- Mount the tow bar exclusively on the tow coupling (1).
- The machine may only be pushed.
- The maximum towing speed is 8 km/h.
- The maximum towing duration is 45 minutes.

### 17.14.1 Releasing the holding brake manually

Securing the machine against rolling away:

- Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".
- Place the wheel chocks on the right and left, in front of or behind (depending on slope) the wheels of the front axle.

#### Preparation



Fig. 483

- The parts set (1) consists of the pump lever and the connecting hose.
- The parts are stored in the lower right compartment of the tool box.

#### Release parking brake

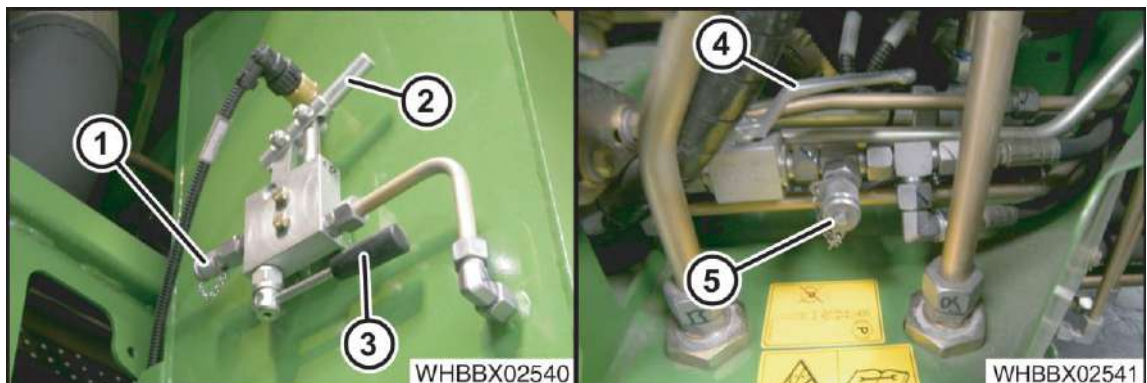


Fig. 484

- Connect the Minimesse hose from the tool box to the Minimesse connection (1).
- Open the lever (3).
- Close the stop cock (4) underneath the valve block.
- Operate the hand pump (2) until hydraulic oil escapes from the Minimesse hose free of bubbles.
- Connect the Minimesse hose to the Minimesse coupling (5).
- Operate the hand pump (2) until the parking brake is fully released.

### **After towing**

- To restore the function of the brake, open the stop cock (4) underneath the valve block.
- Drain the system pressure by opening the drain valve on the hand pump.
- Unscrew the connecting hose from the release connection (4) (right-hand machine side).
- Place a protective cap on the screw coupling.
- Replace the parts set (hand lever and connecting hose) in the support/holder in the tool box.

17.15 Preparing the machine for transport

**⚠ WARNING**

**Danger to life due to movements of the forage harvester!**

If the forage harvester is not properly lashed for transportation on a low loader, it may start moving or even fall off the low loader and endanger people.

- Before transportation on a low loader, secure the forage harvester at the designated lashing points using suitable lashing equipment.

Pre-condition

- The spout is in parking position.

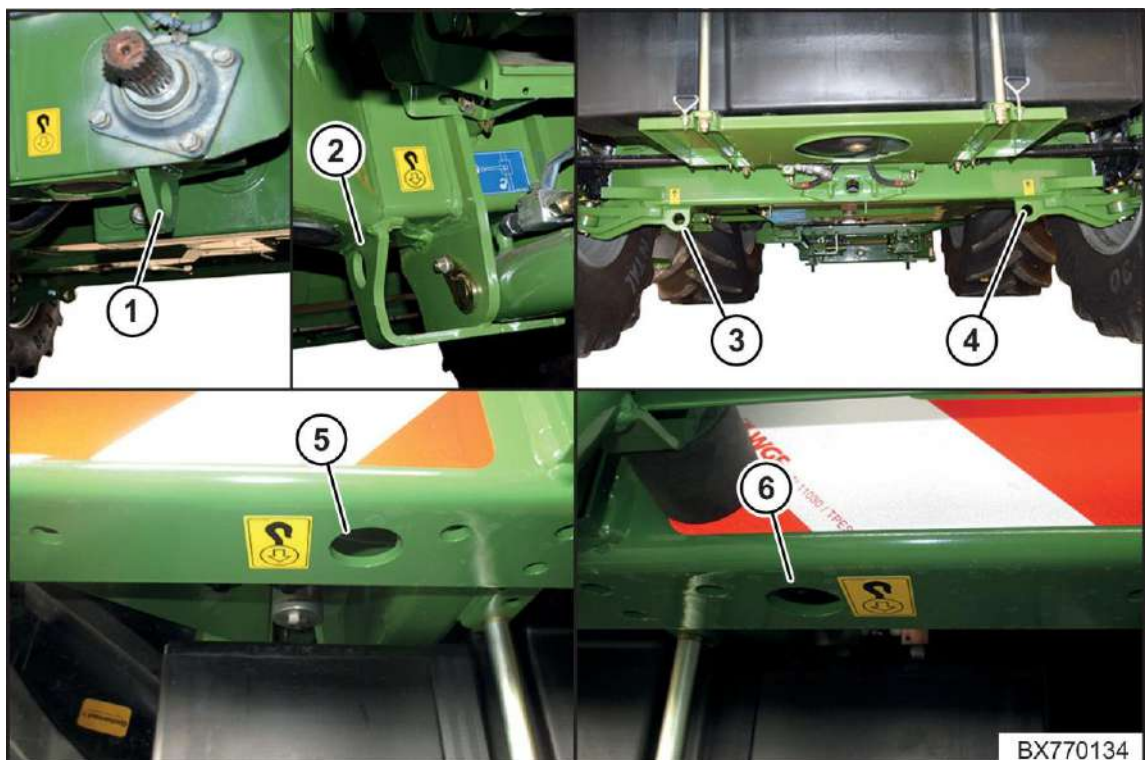


Fig. 485

To connect lashing equipment, appropriate lashing points are available on the axles and bumper of the machine.

Item	Explanation
1	Front axle left
2	Front axle right
3	rear axle, left side
4	Rear axle right
5	Bumper left
6	Bumper right

## 18 Operation

### 18.1 Raising and lowering the front attachment

**⚠ WARNING**

**Risk of injury from movement of the front attachment!**

If people are in the area of the front attachment when it is being raised or lowered and folded in or out, there is a risk that these people may be caught and injured by the front attachment or the lifting unit.

- When the front attachment is moving, ensure that there is nobody in the area of the front attachment or the lifting unit.

Prerequisites:

- The driver's seat is occupied.
- The diesel engine has been started.
- The main mode switch is in the "field mode" position.
- There is adequate space for folding in/out.



Fig. 486

To raise the front attachment (3):

- Press and hold down the "Manually raising lifting unit" key (1) on the multi-function lever. The front attachment (3) is raised as long as the key is pressed.

When the pick-up is attached, the maximum height which can be reached is the upper position of the lifting unit.

When the front attachment is folded in, the lifting height is limited to 60% of the maximum lifting height.

To lower the front attachment (3):

- Press and hold down the "Manually lowering lifting unit" key (2) on the multi-function lever. The front attachment (3) is lowered as long as the key is pressed.

Press the key on the multi-function lever to lower the front attachment slowly. Pressing harder will cause the front attachment to lower more quickly.

## 18.2 Aligning the pendulum frame

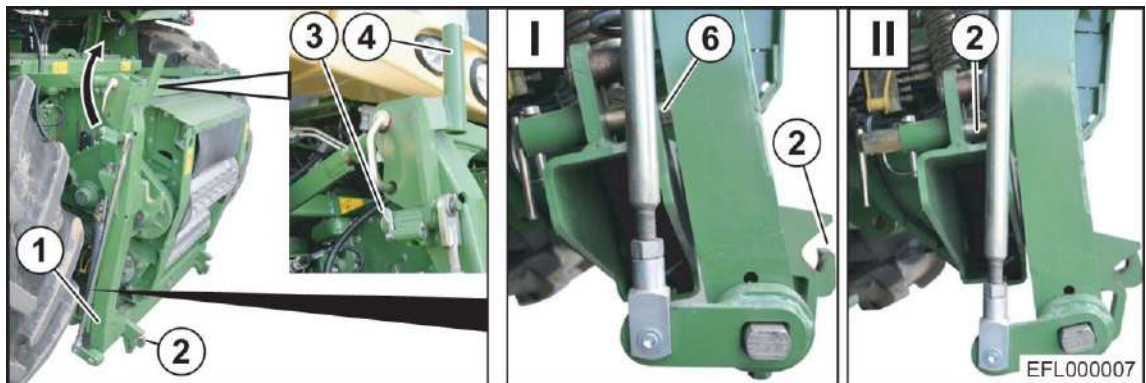


Fig. 487

- Lower the lifting unit (1) of the machine completely
- Align the pendulum frame (1) of the lifting unit horizontally.
- The locking hooks (2) must be open. If necessary, open them with the locking lever (4).
- To release the lock on the locking lever (3), press the spring lock (3).
- Swivel the locking lever (3) upwards.

**The pendulum frame (1) must be locked and the locking pin (6) must be in position I (locked).**



## 18.3 Operating the machine with a trailer

**⚠ WARNING**

**Risk of injury due to unauthorised trailer and incorrect connection!**

The risk of accidents is increased by unauthorised trailers and incorrect connection.

- Only connect trailer which has its own brake.
- Connect trailer to the trailer coupling only.

Observe the specifications in the operating instructions for the machine and trailer.

- When connecting and disconnecting a trailer, proceed particularly carefully and prudently.

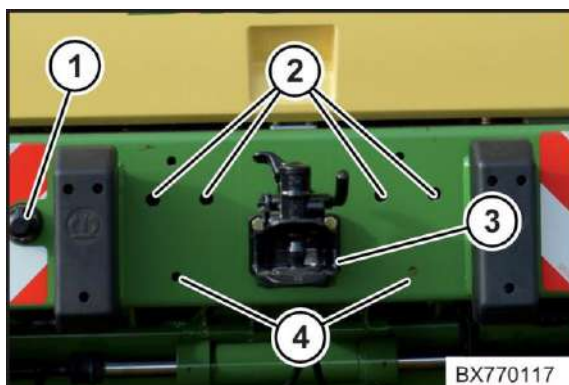


Fig. 488

Item	Designation
1	12 volt socket for lighting
2	Auxiliary hydraulics (optional)
3	Trailer coupling
4	Compressed air connections for two-line brake (optional)

The machine is equipped as standard with a tow coupling (3).

Only trailers which have their own brake system may be used.

- In road traffic, connect the lighting of the trailer to the power socket (1) and check that it functions.



18.3.1 Connecting trailer

**⚠ WARNING**

**Risk of injury due to non-roadworthy machine/trailer unit!**  
 If the support, axle and trailer loads are exceeded during operation, the machine/trailer unit is no longer roadworthy.

- When operating with the trailer, ensure that the permitted support, axle and trailer loads are not exceeded.

**⚠ WARNING**

**Risk of injury due to unexpected movements of machine and trailer!**  
 If there are people between the machine and trailer during the coupling process and if the uncoupled trailer moves in an uncontrolled manner, there is a risk of injury.

- When coupling, ensure that there is nobody between the machine and trailer.
- Secure the trailer against rolling away.

**⚠ WARNING**

**Risk of injury due to insecurely locked trailer!**  
 If the bolt (2) is not completely engaged, the trailer coupling is not locked and the trailer may become detached from the trailer coupling and endanger people.

- After making the connection, ensure that the bolt (2) is completely engaged.

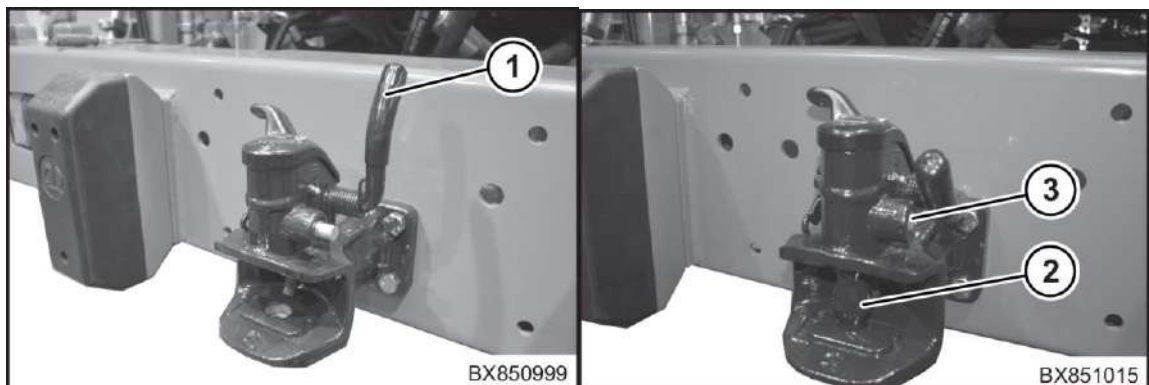


Fig. 489

To connect the trailer:

- Secure the trailer against rolling away.
- Adjust the towing ring of the trailer to the height of the trailer coupling.
- To open the trailer coupling, press the hand lever (1) upwards as far as the locking point.
- Clean the trailer coupling.
- Slowly reverse the machine until the towing ring engages in the trailer coupling.
- Check whether the control pin (3) locks flush with the surface of the housing.
- Connect the power supply plugs and check the lighting system of the trailer.

If the trailer has a supporting wheel:

- Raise the supporting wheel.

 **WARNING**

**Risk of injury due to incorrectly braked trailer!**

Worn, damaged or incorrectly connected compressed air couplings will degrade the braking performance of the trailer. This increase the braking distance of the machinery and puts people at risk.

- Make certain the couplings are working properly and there are no leaks.
- Replace defective rubber seals immediately.
- Make certain all compressed air connections are properly seated.
- Replace the coupling heads depending on frequency of coupling, but at least once a year.

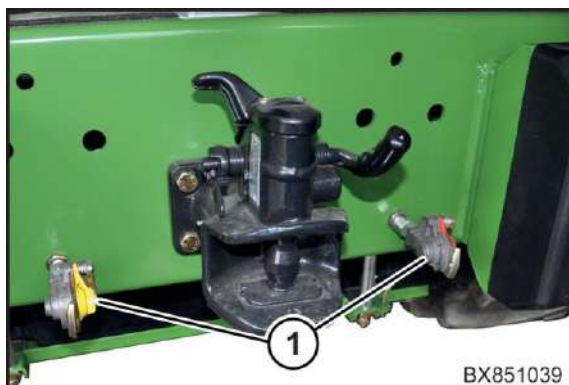


Fig. 490

- Connect the compressed air hoses to the connections (1) if a compressed air connection is available (optional).
- Connect the hoses to the auxiliary hydraulics (optional).

18.3.2 Connecting trailer for Italy

<b>⚠ WARNING</b>
<p><b>Risk of injury due to non-roadworthy machine/trailer unit!</b>          If the support, axle and trailer loads are exceeded during operation, the machine/trailer unit is no longer roadworthy.</p> <ul style="list-style-type: none"> <li>• When operating with the trailer, ensure that the permitted support, axle and trailer loads are not exceeded.</li> </ul>

<b>⚠ WARNING</b>
<p><b>Risk of injury due to unexpected movements of machine and trailer!</b>          If there are people between the machine and trailer during the coupling process and if the uncoupled trailer moves in an uncontrolled manner, there is a risk of injury.</p> <ul style="list-style-type: none"> <li>• When coupling, ensure that there is nobody between the machine and trailer.</li> <li>• Secure the trailer against rolling away.</li> </ul>

<b>⚠ WARNING</b>
<p><b>Risk of injury due to insecurely connected trailer!</b>          If the bolt (2) is not secured with the split pin, it may become detached from the trailer coupling and endanger people.</p> <ul style="list-style-type: none"> <li>• After making the connection, ensure that the bolt (2) and the split pin (1) are secure.</li> </ul>

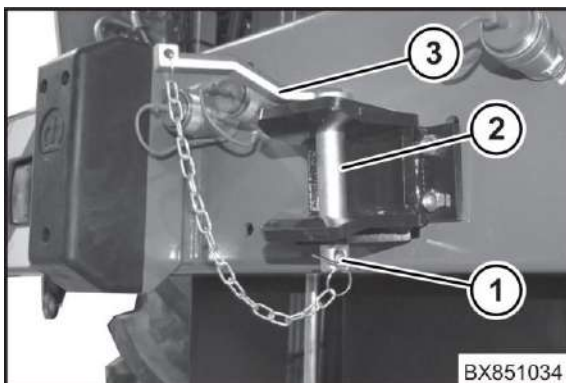


Fig. 491

To connect the trailer:

- Secure the trailer against rolling away.
- Adjust the towing ring of the trailer to the height of the trailer coupling.
- Pull the split pin (1) out of the bolt (2) and remove the pin with the handle (3) upwards out of the trailer coupling.
- Clean the trailer coupling.
- Slowly reverse the machine until the towing ring is located in the trailer coupling.
- Connect the towing ring and the trailer coupling to the bolt (2) and secure with the split pin (1).
- Connect the power supply plugs and check the lighting system.

If the trailer has a supporting wheel:

- Raise the supporting wheel.

 **WARNING**

**Risk of injury due to incorrectly braked trailer!**

Worn, damaged or incorrectly connected compressed air couplings will degrade the braking performance of the trailer. This increase the braking distance of the machinery and puts people at risk.

- Make certain the couplings are working properly and there are no leaks.
  - Replace defective rubber seals immediately.
  - Make certain all compressed air connections are properly seated.
  - Replace the coupling heads depending on frequency of coupling, but at least once a year.
- 
- Connect the compressed air hoses if a compressed air connection is available (optional).
  - Connect the hoses to the auxiliary hydraulics (optional).

## 18.3.3 Disconnecting trailer

 **WARNING****Risk of injury due to unexpected movements of machine and trailer!**

If there are people between the machine and trailer during the coupling process and if the uncoupled trailer moves in an uncontrolled manner, there is a risk of injury.

- When coupling, ensure that there is nobody between the machine and trailer.
- Secure the trailer against rolling away.

 **WARNING****Risk of injury to limbs due to plummeting locking pin!**

If the trigger lever (2) is actuated by hand, the locking pin will plummet abruptly and endanger the limbs of the operator.

- Do not lock the trailer coupling by hand by actuating the trigger lever (2).

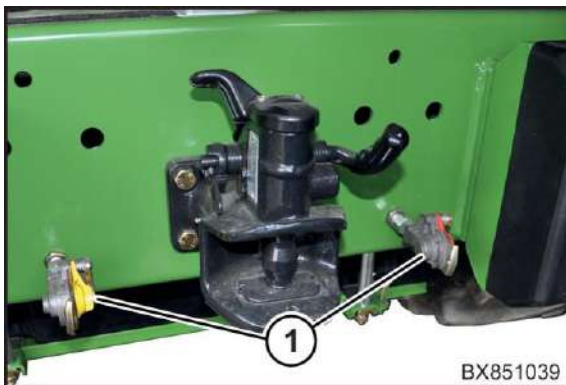


Fig. 492

- Secure the trailer against rolling away.
- Disconnect the compressed air hoses from the connections (1) if a compressed air connection is available (optional).
- Disconnect the hoses from for the auxiliary hydraulics (optional).
- Remove the power supply plugs.

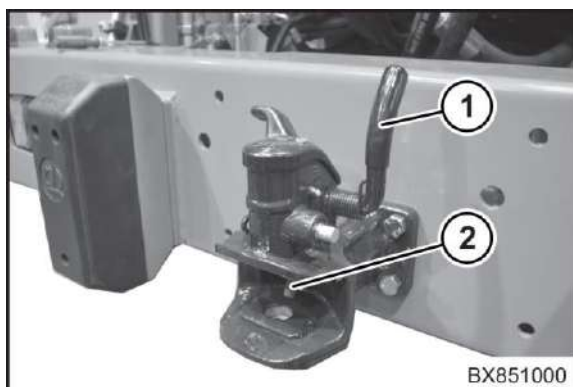


Fig. 493

If the trailer has a supporting wheel:

- Screw down the supporting wheel.

To disconnect the trailer:

- To open the trailer coupling, press the hand lever (1) upwards as far as the locking point.
- Slowly move the machine forwards until the towing ring is removed from the trailer coupling.

To protect the aperture of the locking pin from soiling:

- Lock the trailer coupling by pressing the hand lever (1) downwards.

## 18.3.4 Disconnecting trailer for Italy

 **WARNING****Risk of injury due to unexpected movements of machine and trailer!**

If there are people between the machine and trailer during the coupling process and if the uncoupled trailer moves in an uncontrolled manner, there is a risk of injury.

- When coupling, ensure that there is nobody between the machine and trailer.
- Secure the trailer against rolling away.

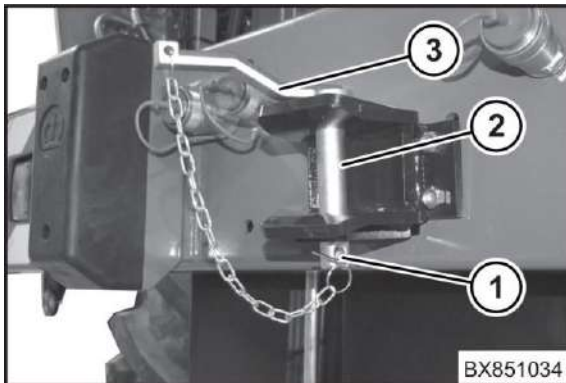


Fig. 494

- Secure the trailer against rolling away.
- Remove the power supply plugs.
- Disconnect the compressed air hoses if a compressed air connection is available (optional).
- Disconnect the hoses from for the auxiliary hydraulics (optional).

If the trailer has a supporting wheel:

- Screw down the supporting wheel.

To disconnect the trailer:

- Pull the split pin (1) out of the bolt (2) and remove the pin with the handle (3) upwards out of the trailer coupling.
- Slowly move the machine forwards until the towing ring is removed from the trailer coupling.
- Insert the bolt (2) into the trailer coupling and secure with the split pin (1).

### 18.4 Additional axle (optional)

The additional axle must be mounted to ensure that the permissible axle load is not exceeded, see page 493.

#### 18.4.1 Maize operating mode

##### Road mode

If the machine is stopped while driving forwards or restarted, the additional axle remains lowered. If the machine is reversed while driving on the road, the additional axle is raised

##### Field mode

The machine drives forwards or reverses in field mode, the additional axle is raised and remains raised.

#### 18.4.2 Grass mode

In "Grass" operating mode, control of the additional axle is not possible.

Diagnostics and maintenance of the additional axle is not possible. The automatic mode is also deactivated.

In the "Grass" operating mode, the additional axle must be manually moved to the upper end position, see page 301.

#### 18.4.3 XDisc mode

In "XDisc" mode, control of the additional axle is not possible.

Diagnostics and maintenance of the additional axle is not possible. The automatic mode is also deactivated.

In the "XDisc" operating mode, the additional axle must be manually moved to the upper end position, see page 301.



#### 18.4.4 Manual check of additional axle basic function

The manual check of the additional axle basic function, see chapter 4 "Menu 3-11 "Maintenance additional axle" (optional)", see page 301.

#### 18.4.5 Function test of additional axle automatic functions

##### Check automatic function "Lift additional axle":

Switching-on conditions:

- Operating mode = "Maize" (EasyCollect)
- Diesel engine = idling speed.
- Release switch "Road/field" = road mode.
- Release switch "traction drive" = ON

- Manually lower the additional axle all the way.
- Accelerate the machine slowly in the reverse direction. The additional axle must lift fully and automatically.
- Decelerate the machine to a standstill.
- Switch the release switch "road/field " to field mode.
- Manually lower the additional axle all the way.
- Slowly accelerate the machine in the forward direction. The additional axle must lift fully and automatically.

##### Check automatic function "Lower additional axle":

Switching-on conditions:

- Operating mode = "Maize" (EasyCollect)
- Release switch "Road/field" = road mode.

- Read off the value of the parameter 25498 "Lower additional axle speed" on the terminal.
- Manually lift the additional axle all the way.
- On the terminal select menu 4-1-6 "Sensor test additional axle".
- Switch on the release switch "traction drive".
- Accelerate the machine in the forward direction to a speed that is greater than the read off setting value (parameter 25498).  
The additional axle must lower automatically and an error message may not appear in the terminal.
- Decelerate the machine to a standstill.

If an error occurs during the check, the error message appears in the display with an error code.

**For the list of error messages, error descriptions, possible error reasons and error correction, refer to the appendix – Error messages, see page 761.**

### 18.5 Field mode

 **WARNING**

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

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

- Do not start the machine until all safety devices have been fitted and are in sound condition.
- 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 people enter 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.

**NOTE**

Special instructions on the use of the particular front attachment fitted can be found in the operating instructions for the front attachment.

Additional settings such as operating mode, working width, intake/front attachment, silage fodder addition, lifting unit, corn conditioner and customer data, see page 183.

Information about drive mode, see page 518.

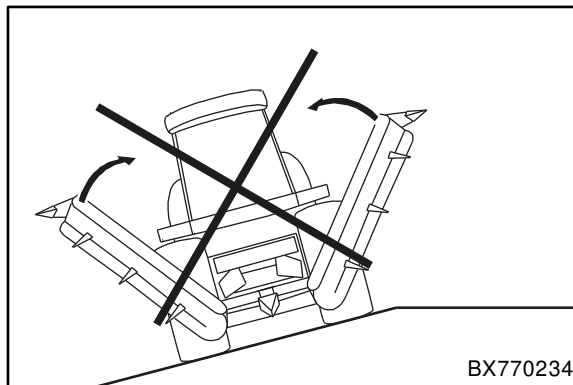
**18.5.1 Field mode on slopes**

Fig. 495

- When using the forage harvester with a maize header, do not bring the maize header from working position into transport position or from transport position into working position as long as the machine is at right angles to the slope.
- Before working on a slope, increase the tyre pressure in the front wheels by 0.5 bar more than indicated in the tyre pressure table, see chapter "Technical data".
- After working on the slope, set the tyre pressure to the values in the tyre pressure table, see chapter "Technical data".

### 18.5.2 Fast change of direction of travel (fast reversing)

**NOTE**

Fast reversing is possible only in the field mode.



Fig. 496

During fast reversing, the machine decelerates to a standstill and accelerates in the opposite direction to 70% of the previous driving speed.

To activate fast reversing:

- While driving, press and hold down the activation button for the travelling gear (2), move the multi-function lever (1) to the left and back to the central position.

### 18.5.3 Emergency switching of the chopping drum

The chopping drum can only be connected in field mode if the software has detected an intake unit at the machine.

The release takes place if:

- a metal sensor was detected on the CAN bus or
- a pressure was detected at the lifting unit or
- at least one sensor on the front attachment was detected free of errors.

If these conditions are not fulfilled, emergency switching of the main coupling is possible in maintenance mode.

**⚠ WARNING**

**Risk of injury from moving components of intake or front attachment!**

During emergency switching of the chopping drum, no person is permitted in the vicinity of the chopping drum and other components for crop flow.

- Ensure that there is nobody in the area of the front attachment, intake, chopping drum and other components for crop flow.

Executing emergency switching:

- Switch on the "maintenance" release switch.

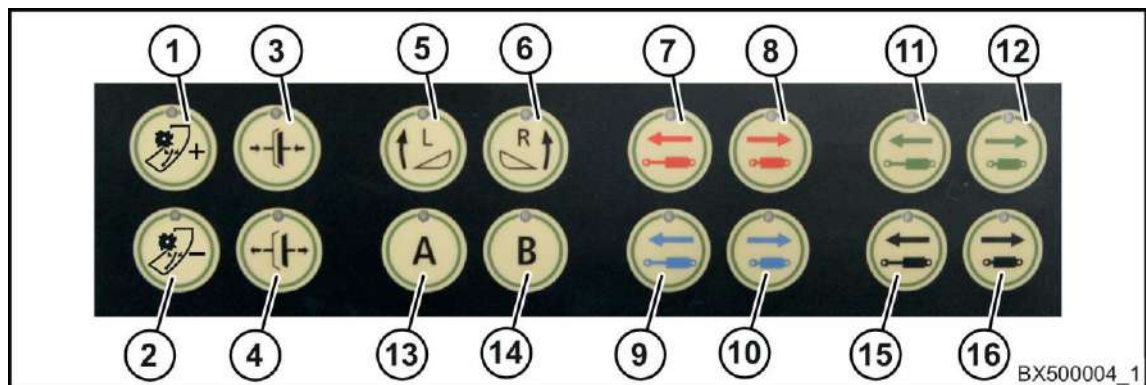


Fig. 497

- Press and hold the key (3) "Switch on main coupling" on the membrane keypad until message "575 drum prepared for connection" appears in the display.
- Then release the key (3).
- Then press the key (3) for min. 2 seconds within the next 5 seconds, and the chopping drum rotates.

**The coastdown alarm is triggered during the entire emergency switching process.**

### 18.5.4 Operating intake/front attachment

 **WARNING**

**Risk of injury from moving components of intake or front attachment!**

When switching on, during operation and when reversing the intake and front attachment, components move and endanger people.

- Ensure that there is nobody in the area of the front attachment, intake, cutting drum and other components for crop flow.

Setting:

- The setpoint speed of the front attachment, see page 177.
- The chop length, see page 181.

#### **Switching on intake/front attachment**

Prerequisites:

- The driver's seat is occupied.
- The engine has been started.
- The release switch road/field is in the "field mode" setting.
- The release switch "maintenance" is switched off.
- The release switch "intake/header" is switched on.
- The main coupling is switched on.
- The quick-stop switch console is not actuated
- The quick-stop switch manual operation is not actuated
- The actuator test in menu 4-1-1 must not be active.

**NOTE**

When the intake and front attachment are switched on for the first time, the feed drive rollers and the front attachment must be reversed by the driver to remove any soiling. Only then can the intake and front attachment be switched on.

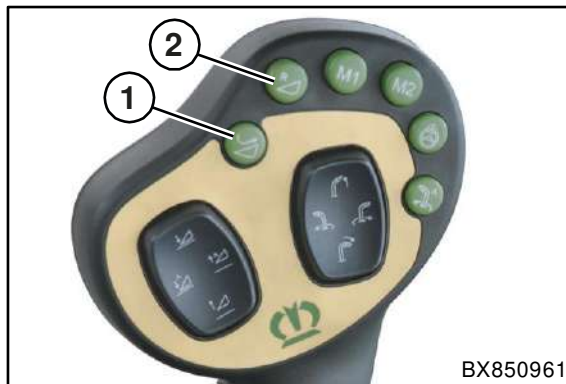


Fig. 498

To switch on the intake/front attachment:

- Press the "Reverse intake/front attachment" key (2) on the multi-function lever. Reverse the front attachment and the feed drive rollers.
- Press the "Intake/front attachment on/off" key (1) on the multi-function lever. The front attachment and the feed drive rollers are switched on.

**Switching off intake/front attachment:**

- Press the "Intake/front attachment on/off" key (1) on the multi-function lever. The front attachment and the feed drive rollers are switched off.

### Reverse the intake/front attachment with chopping drum switched on

To remove blockages and faults in the crop flow, which occur during operation, the intake and the front attachment can be reversed.

#### **WARNING**

#### **Risk of injury from moving components of intake or front attachment!**

When switching on, during operation and when reversing the intake and front attachment, components move and endanger people.

- Ensure that there is nobody in the area of the front attachment, intake, cutting drum and other components for crop flow.



Fig. 499

If a crop blockage is detected:

- Stop the machine and reverse a short distance.
- Raise the front attachment slightly.

To reverse the intake/front attachment from the driver's seat:

- Press and hold down the "Reverse intake/front attachment" key (2) on the multi-function lever.

The front attachment and the feed drive rollers will reverse for as long as the "Reverse intake/front attachment" key (2) is pressed.

The "Reverse intake/front attachment" key (2) on the multi-function lever can be pressed even when the intake/front attachment is switched on. Then the intake/front attachment must be switched on again.



**Reverse the intake/front attachment with chopping drum switched off**

For larger blockages, the intake/front attachment must be reversed with the chopping drum switched off. This prevents the drives from overloading. The main coupling can only be connected after the entire crop flow has been checked and any blockages have been cleared.

**Prerequisites:**

- The driver's seat is occupied.
- The engine has been started.
- The release switch road/field is in the "field mode" setting.
- The release switch "maintenance" is switched off.
- The release switch "intake/header" is switched on.
- The main coupling is switched off.
- The quick-stop switch console is not actuated
- The quick-stop switch manual operation is not actuated
- The actuator test in menu 4-1-1 must not be active.

To reverse the intake/front attachment from the driver's seat:

- Press and hold down the "Reverse intake/front attachment" key (2) on the multi-function lever.

The front attachment and the feed drive rollers will reverse for as long as the "Reverse intake/front attachment" key (2) is pressed.

The "Reverse intake/front attachment" key (2) on the multi-function lever can be pressed even when the intake/front attachment is switched on. Then the intake/front attachment must be switched on again.

### Switch on/reverse the intake/front attachment using manual operation

Prerequisites:

- The ignition is switched on.
- The release switch road/field is in the "field mode" setting.
- The release switch "maintenance" is switched off.
- The release switch "intake/header" is switched on.
- The release switch "traction drive" is switched off.
- The main coupling is switched on.
- The quick-stop switch console is not actuated.
- The quick-stop switch manual operation is not actuated.
- The actuator test in menu 4-1-1 must not be active.



Fig. 500

- Press and hold the key (1) to reverse the intake/front attachment.

#### 18.5.5 Metal Detection

When metal detection is triggered, intake/header stop instantaneously.

- Acknowledge the error message.
- Stop the machine and reverse a short distance.
- Raise the header slightly.
- Reverse intake/header.
- Shut down and safeguard the machine, see page 41.
- Remove the metal. The position of the metal can be seen in the error message, see page 177.

#### 18.5.6 RockProtect (Option)

If a large foreign object (e.g. rock) is detected in the intake, intake/header stop instantaneously.

- Reset the error message.
- Stop the machine and reverse a short distance.
- Raise the header slightly.
- Reverse intake/header.
- Shut down and safeguard the machine, see page 41.
- Remove the foreign object.

### 18.5.7 Lifting unit control

To optimise field mode, the position of the front attachment is regulated using the lifting unit on the machine. To ensure the best conditions for the respective application, one of the three following lifting unit controls are selected.

- Lifting unit position control  
When the lifting unit position control is active, the control sets the height of the front attachment to a constant value relative to the machine.
- Lifting unit ground pressure control  
When the lifting unit ground pressure control is active, the control adjusts the pressure of the front attachment on the ground to a constant value
- Lifting unit distance control (optional)  
If lifting unit distance control is activated, the control function continuously regulates the height of the front attachment relative to the ground by means of active pivoting.  
Lifting unit distance control can only be activated in conjunction with a mounted maize front attachment that is fitted with header contour sensors.

In field mode, the current lifting unit control is displayed in the drive data information section. The actual height of the lifting unit and the corresponding setpoint pressure/setpoint height are displayed in the settings information section in the lifting unit menu field.

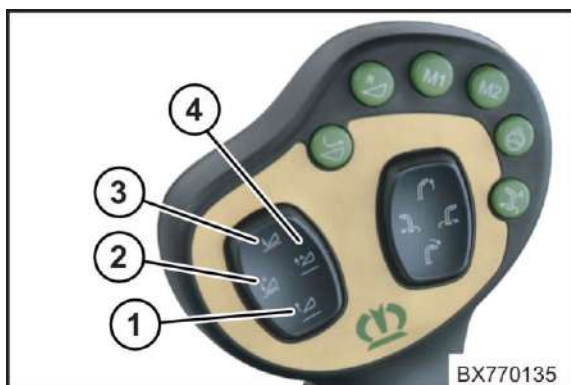


Fig. 501

### Settings for all lifting unit controls:

Pre-condition:

The required lifting unit control is set for:

- Grass/maize mode, see page 193
- With direct cutting system, see page 203

### Changing and saving the setpoint height (working height)/setpoint pressure on the multi-function lever

- Use the "Raise lifting unit manually" (1) or "Lower lifting unit manually" (3) to move to the new setpoint height/setpoint pressure.
- Press the "Raise lifting unit automatically" (2) key for approx. 3 seconds.

The new setpoint height/new setpoint pressure is saved.

The working screen of the info centre displays a corresponding information message, see page 182.

### Setting and saving the headland position on the multi-function lever

- Press the "Raise lifting unit" (2) or "Lower lifting unit" (1) button to move to the lifting height.
- Press the "Lower lifting unit automatically" key (4) for approx. 3 seconds.

The new lifting height is saved.

The working screen of the info centre displays a corresponding information message, see page 182.

### Raise the lifting unit to the set headland position

- Press the "Raise lifting unit automatically" key (4).

The lifting unit is raised to the set lifting height.

### Activating the set lifting unit control

- Press the "Lower lifting unit automatically" key (2)

The lifting unit is raised or lowered to the set setpoint height/setpoint pressure.

The working screen of the info centre displays the icon of the set lifting unit control along with the set setpoint height/setpoint pressure.

### Deactivating the set lifting unit control

The set lifting unit control is deactivated:

- If the lifting unit is manually controlled with buttons (1) and (2).
- If the diagnostic electronics detect an error.

18.5.8 Setting discharge chute



**NOTE**

The spout extension (optional) must also be manually folded in for road travel according to the highway code, see chapter Operating and display elements, "Multi-function lever".

The spout has been designed in such a way that it can be operated in trailer operation as well as with loading or forager trailers driving in parallel alongside on the left and right. The movements of the spout are controlled using operating elements on the multi-function lever and the cross actuating lever.

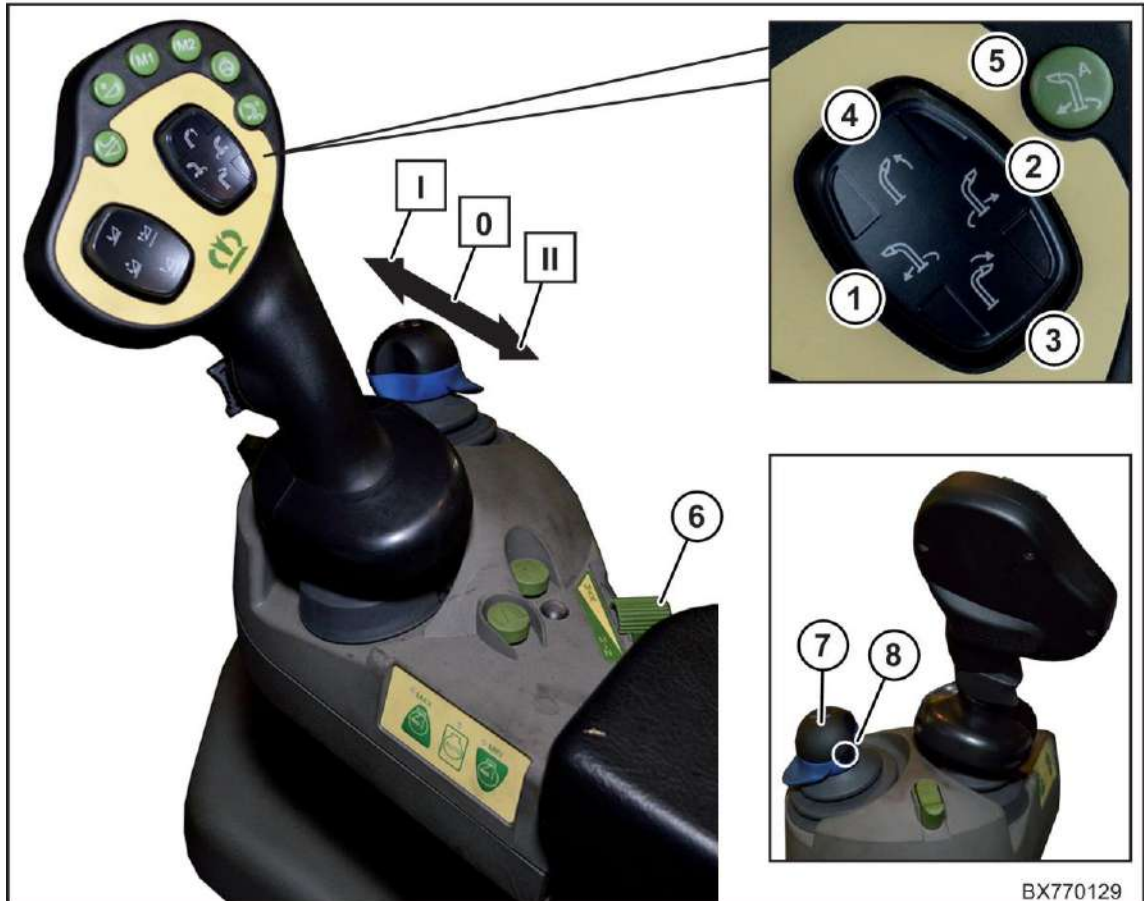


Fig. 502

Item	Designation	Explanation
1	Key "Turn spout"	Turns the spout to the right side.
2	Key "Turn spout"	Turns the spout to the left side.
3	"Discharge chute flap down" key	Lowers the spout flap.
4	"Discharge chute flap up" key	Raises the spout flap.
5	"Reversing/parking discharge chute" key	When the main coupling is switched on: reverses the position of the spout.
		When the main coupling is switched off: swivels the spout into transport position without folding in the spout extension.
6	Slide controller	Controls the rotating speed of the spout.
7	Cross actuating lever	Lowers the spout by moving to position I. Raises the spout by moving to position II.
8	Key cross actuating lever	For operating the folding spout extension in conjunction with the cross actuating lever.

### Manual operation device for the spout for 12 and 14 row spout extension using the cross actuating lever (7) and key (8)

#### Lowering the spout into transport position

- Press the key (8) and slide the cross actuating lever (7) forwards to position I. The spout extension folds in, the spout swivels down into the transport position.

If the spout is automatically lowered with a raised spout flap, the operation is delayed by several seconds because:

- the spout is first lowered,
- the spout flap is then aligned straight ahead
- the spout extension is then folded in.

#### Raising the spout to the working position

- Press the key (8) and slide the cross actuating lever (7) back to position II. The spout extension folds out, the spout swivels up into the working position.

The speed at which the spout extension folds in and out can be set via a throttle valve, see page 606.



#### **NOTE**

When the discharge chute flap is raised, the discharge chute extension folds in after a delay of approx. 2 seconds, as the discharge chute flap is automatically lowered beforehand. While the discharge chute extension is being folded in or out, the spout flap cannot be actuated.

### 18.5.9 Traction control system

The traction control system (TC) is used to prevent the wheelspin (slip) in specific situations. It can be set at two levels.

TC I allows increased slip. This setting is usually used in maize mode to ensure adequate forward drive even under difficult conditions.

TC II only allows limited slip. This setting is usually used in grass mode to protect the sward. Turning on the ignition automatically switches on the traction control system.

#### Activating the traction control system and setting the sensitivity level

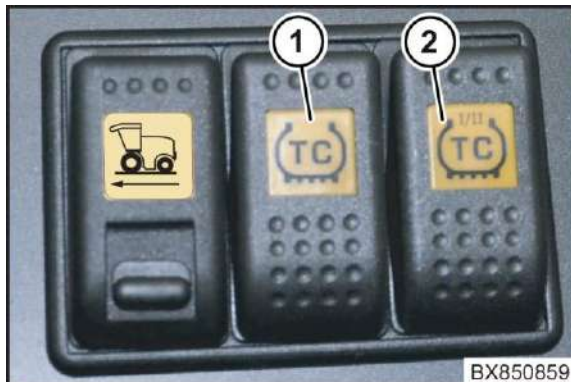


Fig. 503

- Repeatedly pressing the TC key (1) switches the traction control system off or on.
- Repeatedly pressing the "TC I/II" key (2) switches the sensitivity level.

The status of the traction control system is shown in the display, see page 173.

### 18.5.10 Automatic steering system

 **WARNING**

**Danger to life due to automatically controlled machine!**

The forage harvester with activated autopilot is automatically controlled and is monitored only by the driver while driving. This means that people near the machine and along the route of the machine are in danger.

- Use the autopilot in open country exclusively for automatically guiding the forage harvester on a row of thin-stemmed plants or with a GPS-based steering system.
- Do not use the machine with activated autopilot on public highways, in yard areas or near people.

 **WARNING**

**Danger to life due to automatically controlled machine!**

If the autopilot is incorrectly installed or if the components of the autopilot have been tampered with, people near the forage harvester, which has an activated autopilot, are in danger, as the machine may make unexpected movements.

- The autopilot may be installed by an authorised service centre only.
- Do not make any changes to the safety-relevant elements of the autopilot or to hydraulic, electrical or electronic components of the autopilot.

 **WARNING**

**Danger to life due to automatically controlled machine!**

Before starting up the autopilot, check that the controllable safety elements function.

- Check whether the autopilot switches off if the steering wheel is moved abruptly or if the driver leaves the driver's seat.

Visually check that the row tracers, steering angle sensor as well as the visible hoses and wiring are in full working order (i.e. free of mechanical damage and leaks).



 **WARNING****Danger to life due to automatically controlled machine!**

When working with the autopilot activated, the driver must act particularly carefully and prudently so that he can respond if people and material assets are at risk.

- Ensure that there is nobody within a radius of 50 m around the forage harvester.
- The driver must not leave the forage harvester cab while the autopilot is operating.
- While the autopilot is in operation, the driver must regularly check the direction in which the machine is moving and its travel path to be able to take over manual control of the forage harvester immediately in the event of a hazardous situation or if obstructions or interruptions come up in the vehicle's path.
- After using the autopilot and before leaving the field, the autopilot must always be switched off on the release switch autopilot.

The autopilot is an optional additional feature which automatically guides the forage harvester on a row of thin-stemmed plants.

The autopilot is available only in maize mode with mounted EasyCollect maize header and autopilot equipment (optional).

**Prerequisites:**

- The diesel engine is running.
- The driver's seat is occupied.
- Release switch "road/field" is set to field mode.
- Release switch "traction drive" is switched on.
- Release switch "Autopilot" is switched on.

During harvesting, preferably drive in the following modes:

- For front attachments with the row tracers in the outer tips in the "row tracer links or right" mode.
- For front attachments with the row tracer in the centre in the "both row tracers" mode.

Now, the following modes can be used:

- Both row tracers
- Row tracer automatic
- Row tracer mirrored, automatic

Setting row tracer mode, see page 195.

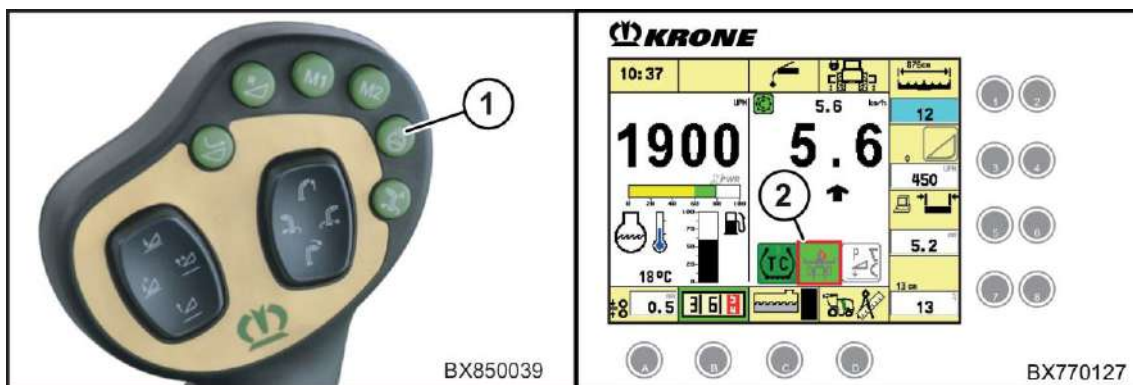


Fig. 504

**Activating the automatic steering system**

Prerequisites:

- The machine drives parallel to the rows of plants with at least 0.7km/h.
- The sensor bracket is located in the row of plants.

Activate:

- Press the "Automatic steering system" key (1) on the multi-function lever.
- In the display, the icon (2) shows the current status of the automatic steering system and a horn is sounded.

With the selected mode, the automatic steering system uses the row tracers on the maize header to guide the machine along the row of plants, see page 195.

**Deactivating the automatic steering system**

**⚠ WARNING**

**Danger to life due to uncontrolled machine!**

When the autopilot has been deactivated, the driver must take control of the machine again, otherwise the forage harvester is not controlled.

- After the autopilot has been deactivated, take control of the forage harvester with the steering wheel.

The automatic steering system is deactivated if:

- The steering wheel is moved.
- The driver's seat is vacated (by means of the seat switch contact).
- The automatic steering system (1) key on the multi-function lever is pressed again.
- The release switch "automatic steering system" is switched off.
- The release switch "traction drive" is switched off.
- The release switch "road/field" is switched to road mode.
- One of the two quick-stop momentary switches is pressed.
- An error occurs in system components of the automatic steering system.

**The deactivation of the autopilot is indicated by two horn sounds.**

18.5.11 **ConstantPower load limit control (optional)**

The ConstantPower load limit control controls the travelling speed of the machine depending on the diesel engine load and provides constant machine load at a lower fuel consumption. This means that the machine travels automatically quicker for a weaker crop and automatically slower for a stronger crop.

Load limit control is possible in field mode only.

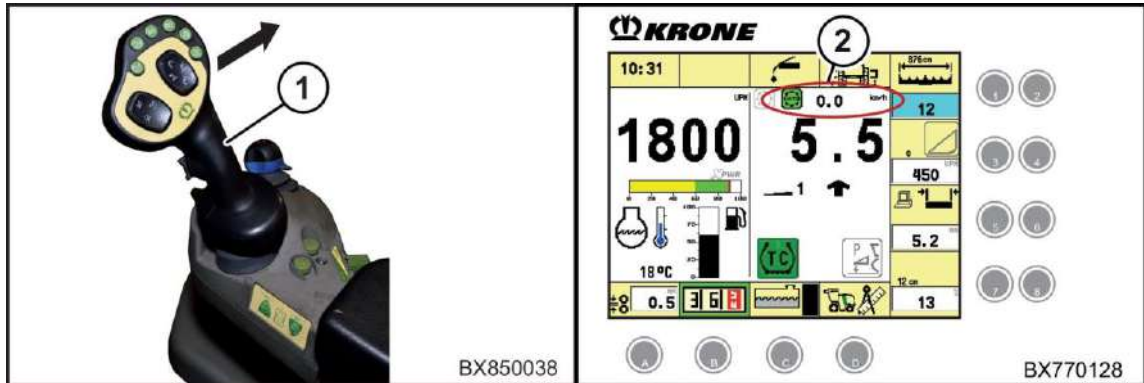


Fig. 505

**Activating the load limit control**

- To activate the load limit control, tap the multi-function lever (1) 2x briefly to the right. The green Symbol (2) on the display indicates that the load limit control is active and the driving speed is automatically adjusted to the speed reduction of the motor.

**Deactivating the load limit control**

The load limit control is deactivated by:

- Actuating the multi-function lever (accelerate/decelerate)
- Switching off the release switch "traction drive".
- Switching the release switch "road/field" to field mode.
- Pressing the brake pedal.
- Accessing cruise control (pressing the multi-function lever to the right again).

Constant Power settings, see page 427.

### 18.5.12 AutoScan (optional)

The AutoScan system regulates the chop length depending on the degree of maturity of the plants being harvested by the EasyCollect.

Using the AutoScan sensor in the central tip of the EasyCollect, the system detects the degree of maturity of the maize plants and calculates the optimum chop length of the maize plants based on the values input previously for the minimum and maximum chop length and controls the speed of the pre-compression rollers accordingly.

The AutoScan system is available for maize mode only.

The AutoScan system controls according to four specifications:

- The minimum chop length
- The maximum chop length
- The degree of maturity at which the automatic chop length adjustment starts.
- The degree of maturity at which the automatic chop length adjustment ends.

To call up the AutoScan system, refer to the info centre, see page 199.

18.5.13 Adjusting the chop length

Two chop lengths can be saved on the multi-function lever. These can be called up on the multi-function lever during operation.



Fig. 506

Save the chop length with the cross actuating lever

Item	Designation	Explanation
1	Memory key "M1"	Call up chop length 1 if the function is assigned to the M1 key, see page 183.
2	Memory key "M2"	Call up chop length 2 if the function is assigned to the M2 key, see page 183.
3	Cross actuating lever	Call up the chop length 1: move to position I. Call up the chop length 2: move to position II.
4	Key cross actuating lever	Press to save the chop lengths in conjunction with the cross actuating lever.

### **Saving two chop lengths**

Saving chop length 1:

- Press key (4) and move the cross actuating lever (3) to position I to save chop length 1 set in the info centre.

Saving chop length 2:

- Press key (4) and move the cross actuating lever (3) to position II to save chop length 2 set in the info centre.

**18.5.14 VariLOC gearbox (optional), switching between 2 gearbox positions**

It must be known in which position the VariLOC gearbox is.

If the position is not known, proceed as follows:

- Start the machine.
- Switch on the chopping drum and leave the diesel engine running at idle speed (1100 min<sup>-1</sup>).
- Open the menu 4-1-12 "Sensor test" and read the chopping drum speed.

Blade drum speed	Gearbox position
Approx. 660-760 rpm	Gearbox position I (transmission 1:1)
Approx. 440 – 506 rpm	Gearbox position II (transmission 1:1.5)

Table 65

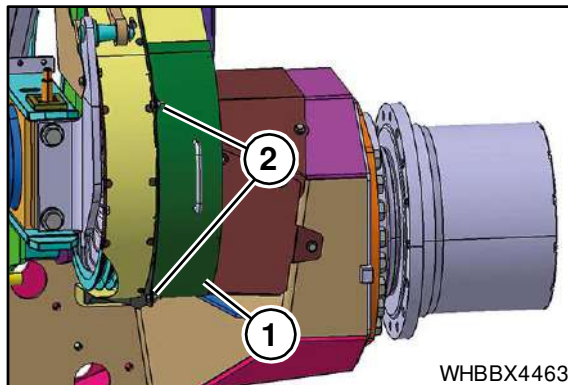


Fig. 507

- Slacken the kraftband of the main belt drive, see page 693.
- Remove the screw connections (2) and remove the belt guard (1).

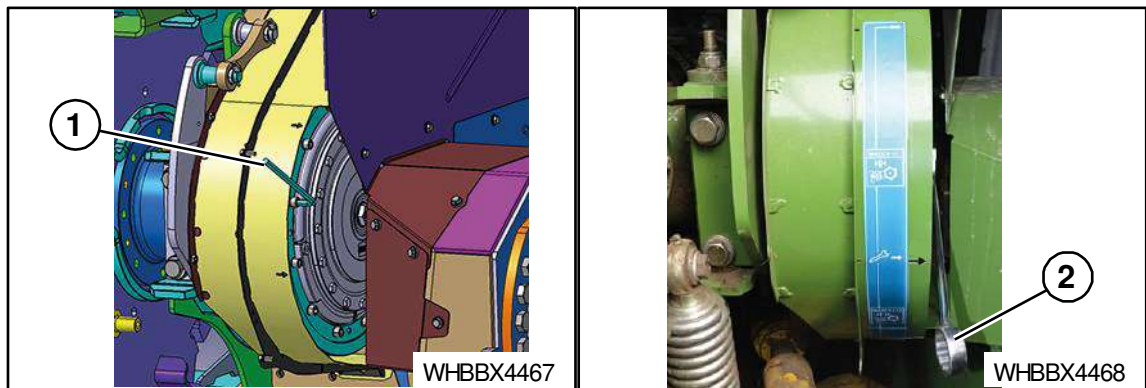


Fig. 508

- Place the hexagon wrench (1) on the gearbox.
- Place the wrench (WAF 36) (2) on the nut in the centre of the gearbox so that it is situated at the height of the middle arrow.
- If the position of the wrench is not in alignment with the arrow, turn the belt pulley using the hexagon wrench until the positions are in alignment.
- Lock the chopping drum, see page 701.



**NOTE**  
 Damage to the VariLOC gearbox due to incorrect operation  
 If the wrench (2) is re-attached during the adjustment or is moved with excessive force or if the gearbox is operated in the neutral position, the VariLOC gearbox may be damaged.

- Do not re-attach the wrench (2) during the adjustment.
- Do not move the wrench (2) with excessive force (maximum 60 Nm).
- Operate the gearbox only in gearbox stages I (transmission ratio 1:1) or II (transmission ratio 1:1.5).



Fig. 509

- Turn the wrench (2) into the required position until it is at the height of the arrow.  
 The coupling clicks into place.
- If the coupling does not click into place, turn the belt pulley using the hexagon wrench until the coupling clicks into place.

**Additional inspection**

- Move the wrench into the required position until resistance is felt.  
 If the wrench, when released, is pressed back by spring force, the coupling is correctly engaged.
- It must not be possible to turn the belt pulley with the hexagon wrench, as the chopping drum is locked.
- Remove the wrench (2) and the hexagon wrench.

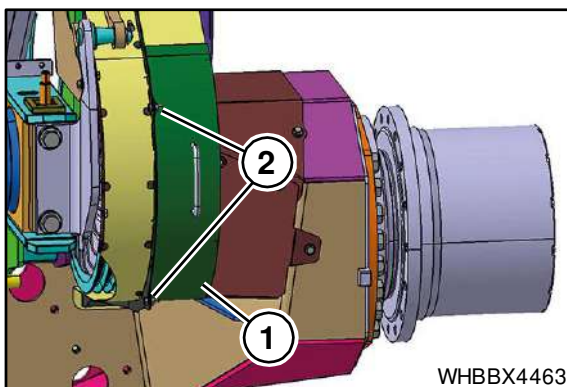


Fig. 510

- Attach the belt guard (1) and secure with the screw connections (2).
- Unlock the chopping drum, see page 701.
- Set parameters in the terminal, see page 581.



**Parameter setting Prerequisites:**

- The overall software version 20 085 163 3 is installed in the info centre of the machine.

The parameter 34025 must be reset after each changeover if the parameter is not set to 0 "Automatic detection", parameter setting, see page 230.

- Open the working menu 1-1-15 and set the parameter 34025 "Transmission cutting length range":

Individual parameter	Gearbox position	Transmission
0	Automatic detection of gearbox position	
1	Gearbox position I	Transmission 1:1
2	Gearbox position II	Transmission 1:1.5
3	No VariLOC gearbox installed	

Table 66

**Function test**

- To ensure that the gearbox setting and the parameter setting are compatible, compare the parameter setting with the chopping drum speed.

**Information message**

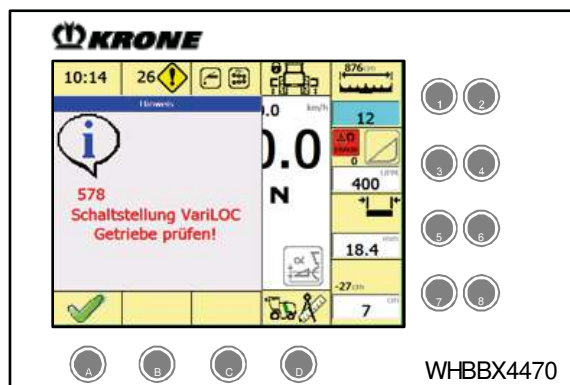


Fig. 511

If the gearbox setting and the parameter setting are not compatible, the information message 578 working screen appears:

- When the main coupling is switched on.
- When the grinding process is started.

**Remedy:**

- Adjust gearbox position or parameter accordingly.

## 18.5.15 Adjusting the electrically adjustable discharge accelerator rear (optional)

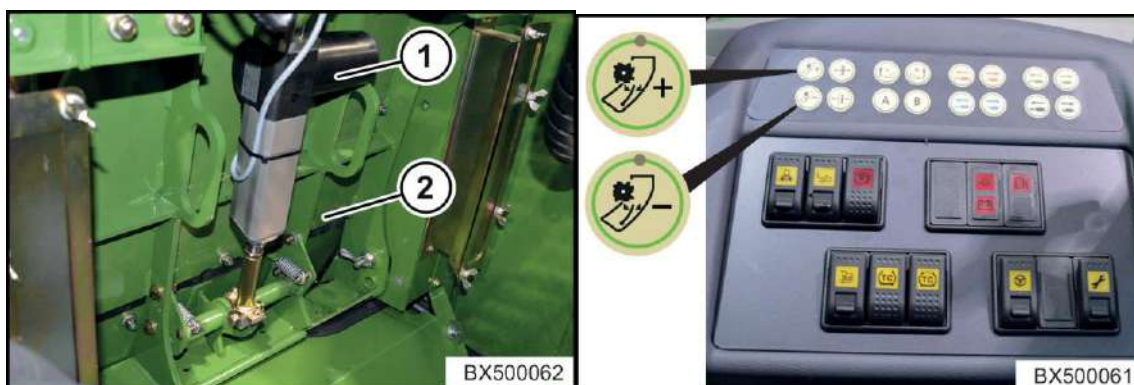




Fig. 512

The adjusting motor (1) is used to swivel a deflector sheet into the crop flow. The resulting deflection of the crop flow influences the discharge distance of the crops at the spout.

Step 1	Large distance to the discharge accelerator	= small discharge distance
Step 2	Medium distance to the discharge accelerator	= medium discharge distance
Step 3	Smallest distance to the discharge accelerator	= largest discharge distance

### Setting the discharge distance

- Press  to increase the discharge distance on the discharge chute incrementally.
- Press  to reduce the discharge distance on the discharge chute incrementally.

The selected level is displayed in menu 4-1-12 "Work", on the "Diagnostics rear wall of discharge accelerator" page and in the working screen.

18.5.16 Removing Crop Flow Blockages in the Area of the Crop Flow

<b>⚠ WARNING</b>
<p><b>Danger of injury due to unexpected movement of the machine and moving parts!</b>          There is an increased danger of injury when removing crop blockages.</p> <ul style="list-style-type: none"> <li>• Shut down and safeguard the machine, refer to chapter Safety “Shutting Down and Safeguarding the Machine”.</li> <li>• Ensure that no one approaches the machine as long as the follow-up alarm sounds.</li> </ul>

<b>⚠ WARNING</b>
<p><b>Risk of injury due to turning parts in the crop flow!</b>          After switching off the main drive, the chopping drum, the discharge accelerator and the corn conditioner may coast down to a stop. If this is the case, an acoustic follow-up alarm can be heard!</p> <ul style="list-style-type: none"> <li>• For all tasks and when eliminating malfunctions, always be absolutely certain to wait until the units have come to a complete stop.</li> </ul>

**Bringing the machine into a safe state**

- Stop the machine in case of blockage.



Fig. 513

- To switch off intake drive, press “Intake/header” (1) key.
- Move the machine back a little.
- Lower header to the ground.
- Switch off the engine, remove the ignition key in order to avoid unintended start.
- Inform all persons that the crop flow is blocked and the inner parts of the machine will continue to move as long as the follow-up alarm sounds.
- Wait until the follow-up alarm stops.

**The blockage in the crop flow must only be removed after the mentioned work steps have been performed and the follow-up alarm stops.**

### Reversing

Depending on the size of the blockage, the intake/front attachment can be reversed with the chopping drum switched on or off in order to remove part of the blockage.

For blockages located in the area of the intake/front attachment, it is possible to reverse with the chopping drum switched on, see page 564.

For bigger blockages, the intake/front attachment must be reversed with the chopping drum switched off to prevent overloading the drives. The main coupling can only be connected if the entire crop flow has been checked and any blockages have been removed, see page 565.

### Removing blockages

 <b>WARNING</b>
--

<b>Risk of injury due to sharp parts!</b>
---

When removing crop flow blockages, there is an increased risk of injury on the sharp parts of the crop flow.
--

- |  |
|--|
| <ul style="list-style-type: none"><li>• Always wear safety gloves when removing blockages.</li></ul> |
|--|

To remove the blockages in the crop flow, the maintenance openings in the transfer shaft/grass channel, in the channel support and in the spout can be opened.

#### Prerequisites:

- The upper side flap on the right-hand side of the machine is open.
- The tool box is unlocked and swivelled out.

**Removing crop blockages in the lower crop flow in grass mode**

Maintenance flaps in the transfer shaft/grass channel

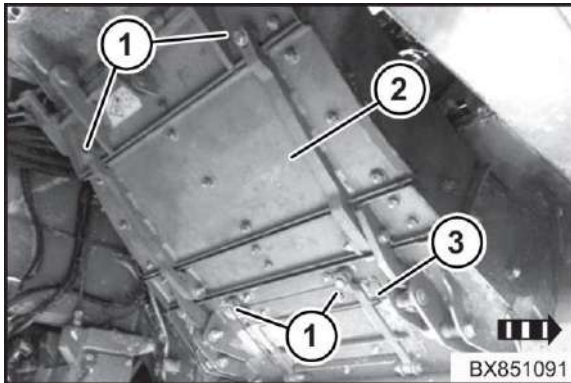


Fig. 514

- Unscrew the nuts (1) on the maintenance flaps (2) and (3).
- Fold down the maintenance flaps.
- Manually remove blocked crops from the crop flow channel.
- Completely remove built-up deposits on the inner walls of the crop flow channel using a suitable tool.
- Close the maintenance flaps (2) and (3) and screw on the nuts (1).
- Swivel in the tool box and close the side flap at the front right.

**Removing crop blockages in the lower crop flow in maize mode**

Maintenance flap transfer shaft

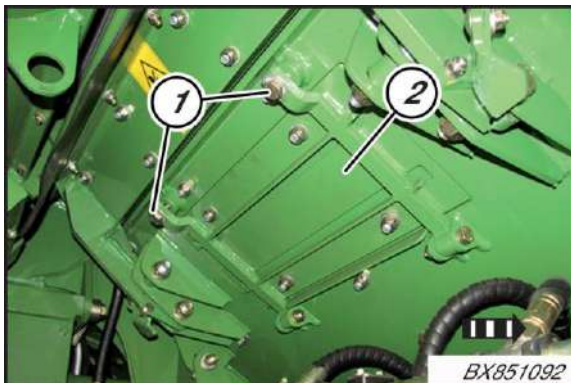


Fig. 515

- Unscrew the nuts (1) on the maintenance flap (2).
- Fold down the maintenance flap (2).
- Manually remove blocked crops from the crop flow channel.
- Completely remove built-up deposits on the inner walls of the crop flow channel using a suitable tool.
- Close the maintenance flap (2) and screw on the nuts (1).
- Swivel in the tool box and close the side flap at the front right.

### Removing crop flow blockages in the upper crop flow in case of maize mode and grass mode

Maintenance flap channel support

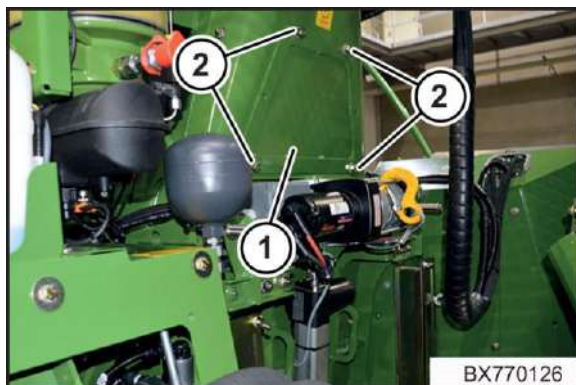


Fig. 516

- Unscrew the hexagon nuts (2).
- Remove the maintenance flap (1).
- When the maintenance work is complete, attach the maintenance flap (2) and secure with the hexagon nuts (2).

## Maintenance flaps in the spout

 **WARNING****Risk of injury due to falling from a great height!**

On the engine roof the operator is at a height from which a fall may cause serious injuries.

- Do not enter the engine roof until
  - the discharge chute is in the central position and has been fully raised,
  - the engine has been switched off, the ignition key removed and taken by the operator,
  - the machine has been secured against rolling away,
  - the engine roof is clean.

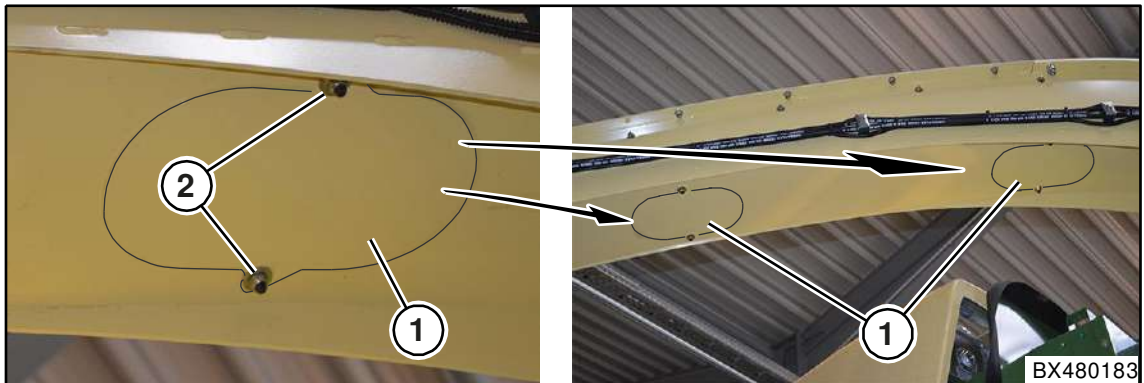


Fig. 517

- Swivel spout to the right and lower completely.
- Loosen the hexagonal nuts (2) and remove the covers (1) from the maintenance openings.
- When the maintenance work is complete, attach the covers (1) to the maintenance openings and secure with the hexagonal nuts (2).



## 18.5.17 Blowing device for intake unit and grinding device

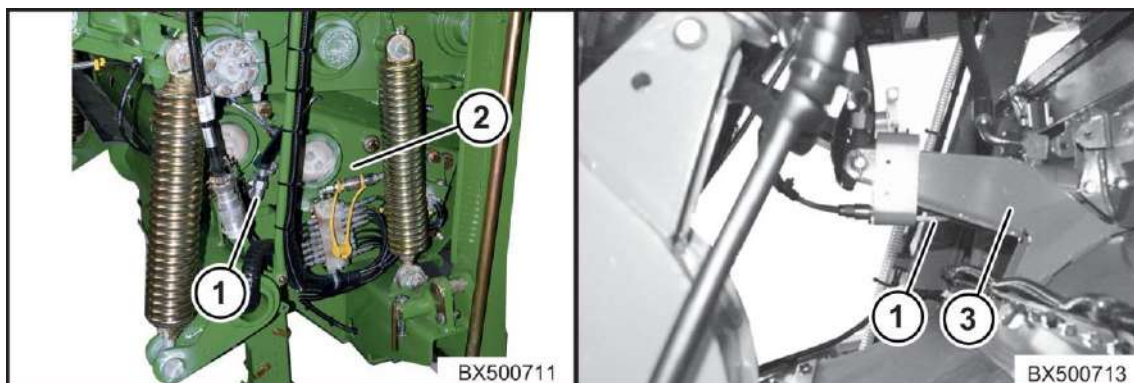



Fig. 518

The blowing device (1) cleans areas on the intake unit (2) and the grinding device (3). This increases the functional safety of the machine.

### Setting the blowing times

In menu 1-1 "Parameters" (driver level), in the sub-menu 1-1-15 "Work" , you can set the parameter 33651 (switch-off duration) and parameter 33652 (switch-on duration) for the cleaning blower.

Recommended settings:

- Parameter 33651 (switch-off duration) = 60 s.
- Parameter 33652 (switch-on duration) = 3 s.

### Function test

Switching-on conditions:

- The release switch "road/field" is switched on.
- The quick-stop switch must not be pressed.
- The lifting unit is in the working position.
- The machine is operating.

If the status line of the working screen displays the  icon, the blowing device is active.

- Check the set times.



## 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****Risk of injury from sharp cutting blades!**

When performing maintenance work on the chopping drum, there is a risk of the operators being injured by the sharp chopping blades and screw bars.

- When working on the chopping drum, work particularly carefully and prudently.
- Always wear work gloves when working on the chopping drum.
- Turn the chopping drum clockwise on the belt pulley only and, when the correct position is reached, lock with the locking bolt.

### 19.1 Optimising Crop Flow

#### How front attachment speed depends on chop length

If the front attachment speed is too low, it may be that the feed drive rollers are pulling the crops in clumps from the front attachment and the crop flow is being severed.

The front attachment speeds depend to a great extent on e.g.: Crops, driving speed, crop mass, degree of maturity of the crop. The speed should be set so that the crop flow is homogeneous.

If the speed of the EasyCollect is too high in maize mode, blockages will occur.

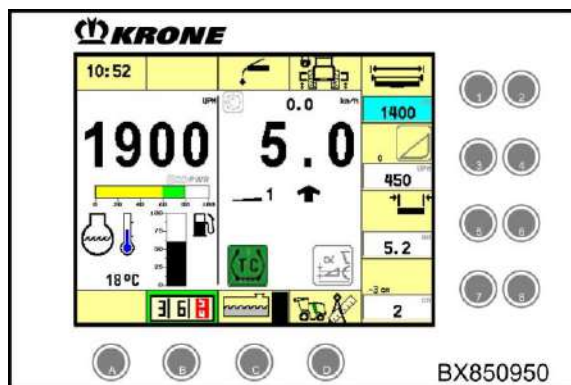


Fig. 519

#### Grass mode

- Guide value for the front attachment speed: 400 - 420 rpm

Depending on the application conditions, a front attachment speed of 300 rpm to 600 rpm may also be advisable.

#### Maize operating mode

- Guide value for the front attachment speed: 380 - 420 rpm

The front attachment speed should be set as low as possible.

#### XDisc mode

- Front attachment speed: 700 rpm

## 19.2 Optimising discharge capacity of the machine

### 19.2.1 Adjusting overhang of the cutting blades

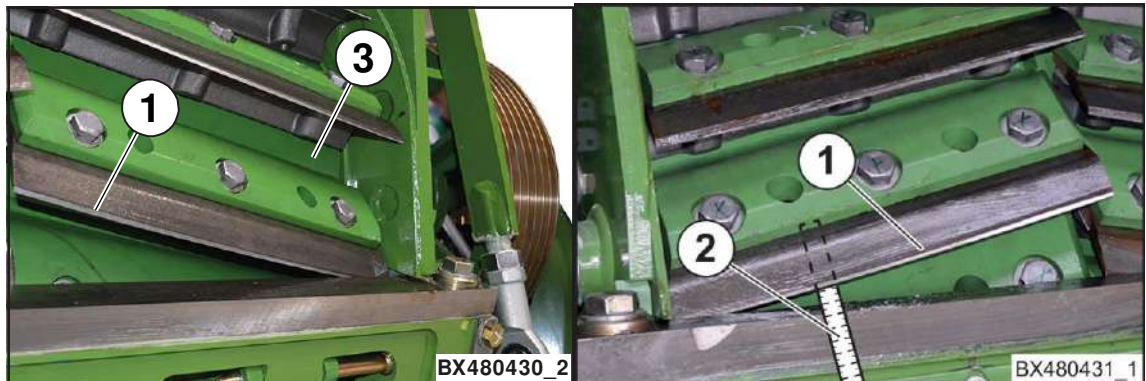


Fig. 520

The discharge capacity of the machine is determined by the chopping drum among other things. Depending on how far the chopping blade edge (1) extends beyond the chopping drum housing (3), there will be correspondingly more or less discharge capacity.

The maximum overhang of the chopping blade edge (1) relative to the chopping drum housing (3) is 89 mm (2).

During operation, the chopping blades close, thus becoming shorter. Wear leads to a drop in the volume beneath the chopping blades. The discharge capacity of the machine deteriorates due to this reduced volume.

- Move the chopping blades with the greatest possible overhang.
- Re-adjust the chopping blades frequently, see chapter Maintenance-Feed system, "Re-adjusting chopping blades".

### 19.2.2 Setting Drum Base



#### **NOTE**

An incorrectly set drum base will result in increased fuel consumption as well as an increased wear of machine components.

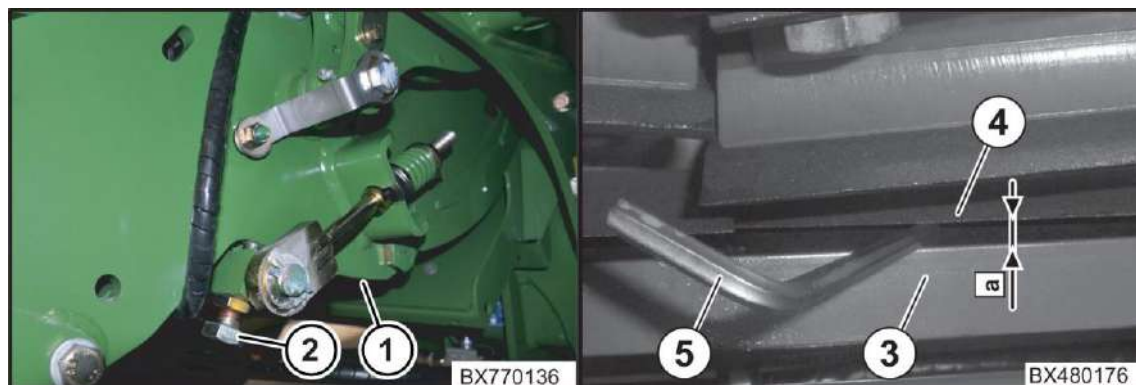


Fig. 521

Another way to improve the discharge capacity is to fine-tune the setting of the drum base (1) using the setting screw (2).

The drum base is adjusted in the factory.

- The distance from the blades (4) to the drum base at the rear (3) is  $a = 6-7$  mm.

The nature of the crop (for example, a dry crop) may require readjustment of the drum base.

#### **Measuring the distance between the drum base and blade**

Prerequisites:

- Lifting unit is fully raised.
- The machine is shut down and secured, see page 41.

Work steps:

- Walk under the machine.
- At the rear edge of the drum base (3), use a hexagon wrench (5) to check along the entire length that the distance to the blades (4) is the dimension  $a = 6-7$  mm.

## Setting the distance between the drum base and cutter

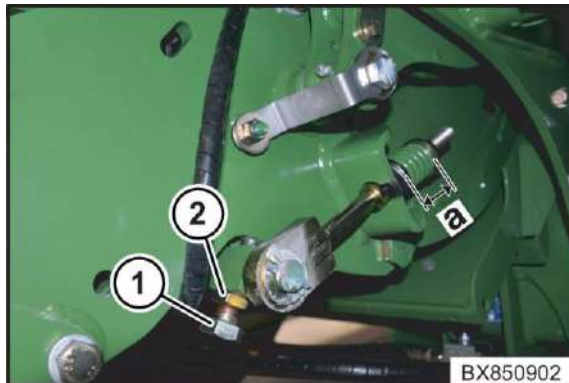


Fig. 522

**NOTE**

The drum base must be equally set on both sides.

**Reducing the gap dimension between the drum base and blades:**

- Release the counter nut (2).
- Unscrew the setting screw (1), which reduces the distance between the drum base and the drum.
- Tighten the counter nut (2).

**Increasing the gap dimension between the drum base and blades:**

- Release the counter nut (2).
- Screw in the setting screw (1), which increases the distance between the drum base and the drum.
- Tighten the counter nut (2).
- After setting the drum base, check the dimension "a" and set to 46 mm if required.

## Settings

### 19.2.3 Setting the Discharge Accelerator Rear Wall

- Remove the ignition key and secure the forage harvester against accidental start-up and against rolling away.
- Wait until all units have come to a complete stop

#### 19.2.3.1 Settings on the installed grass channel

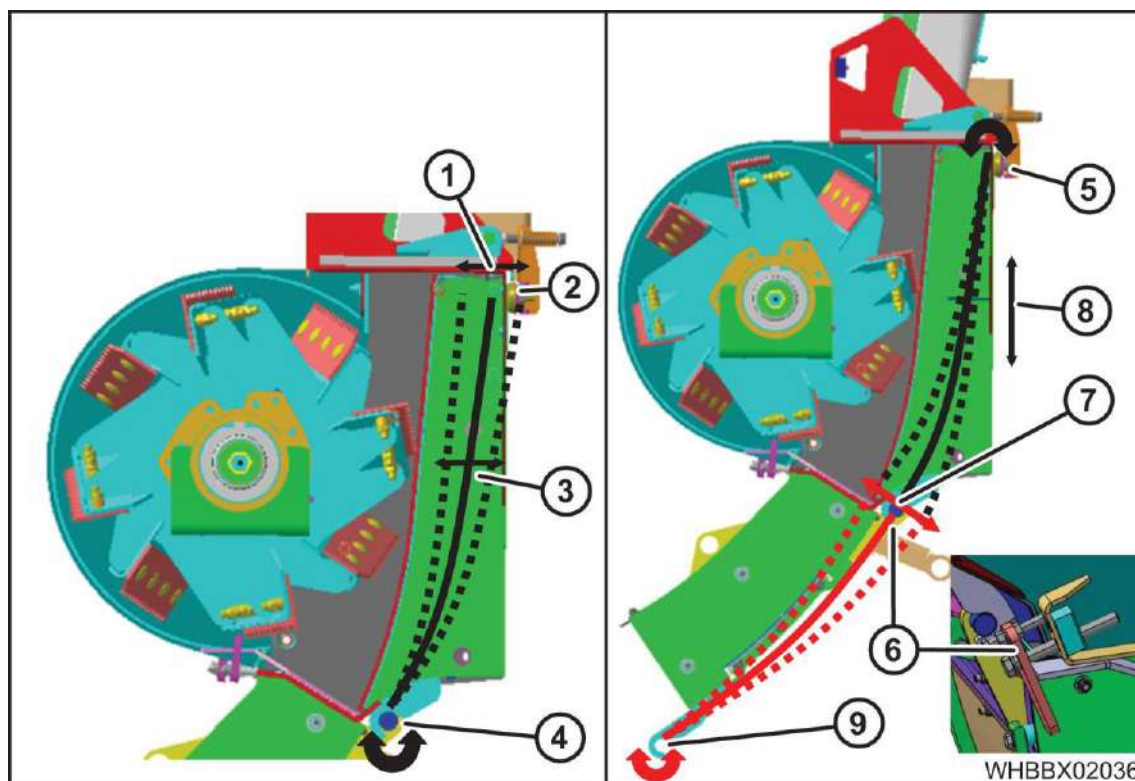


Fig. 523

- 1 Distance between rear wall to the channel support, adjustable via rubber buffer
- 2 Rubber buffer
- 3 Moving the rear wall when adjusting the rubber buffers
- 4 Hinge pin of the rear wall
- 5 Rear wall pivot on top above the rubber buffer
- 6 Adjusting setting screw grass channel
- 7 Movement of the rear wall and grass channel when adjusting the setting screws
- 8 Raising and lowering of the rear wall when adjusting the setting screws
- 9 Grass channel hinge pin on the transfer shaft

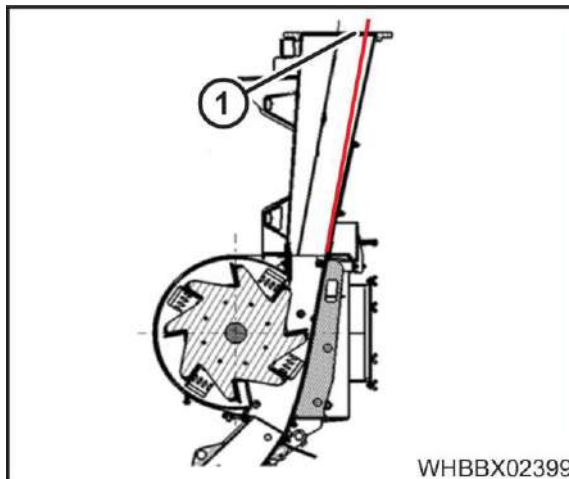


Fig. 524

**NOTE**

An incorrectly set distance between the discharge accelerator and the rear wall will result in increased fuel consumption and wear of machine components.

- The point of impact (1) of the chopping crops at the top of the channel support should be as far as possible behind the middle

**Setting the upper distance of the rear wall of discharge accelerator**

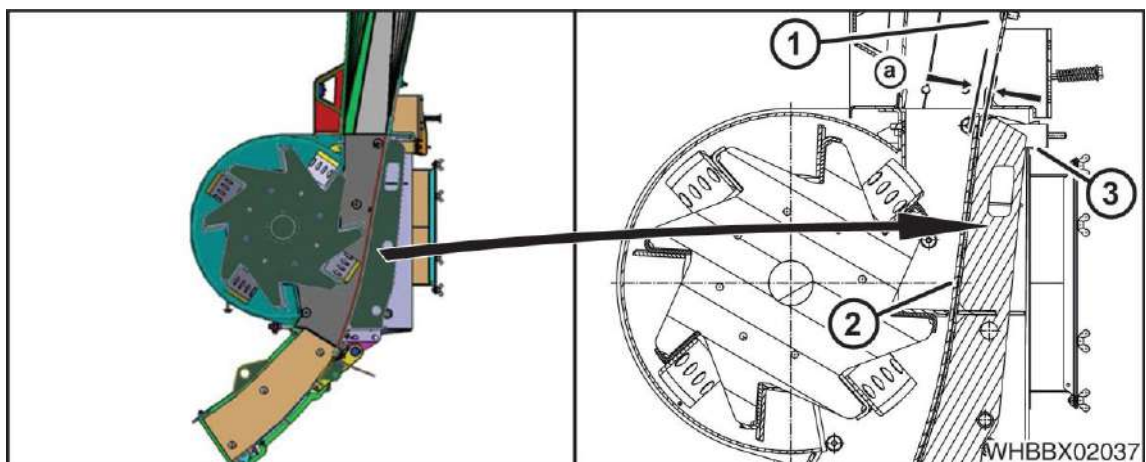


Fig. 525

- 1 Channel support
- 2 Wear plate on rear wall of discharge accelerator
- 3 Rubber buffer

- The rear wall of discharge accelerator should be set so that the distance (a) between the rear wall wear plate (2) and the channel support (1) is approx. 15 mm but min. 12 mm



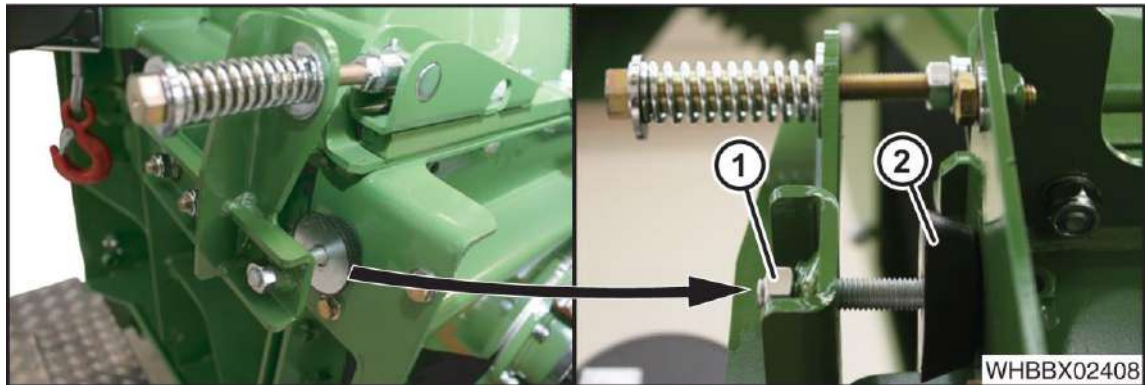


Fig. 526

- Loosen the nut (1)
- Set this distance with the two rubber buffers (2) left and right at the rear wall of discharge accelerator
- Ensure that the distance from the wear plate to the rotor of the discharge accelerator is as uniform as possible
- Readjustment using the left or right rubber buffer (2) may be necessary
- Tighten the nut (1)



Setting the lower distance of the rear wall of discharge accelerator

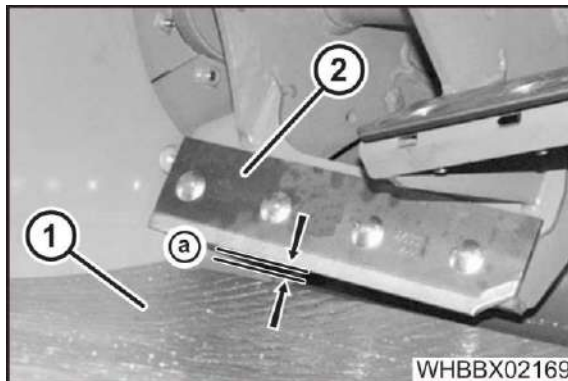


Fig. 527

- Check distance "a" between the rear wall (1) and discharge scoop (2) at the narrowest point between the discharge scoop and the rear wall

**NOTE**

Reducing or increasing the distance (a) between the discharge scoops (2) and the rear wall (1) may influence the discharge capacity depending on the crops.

**Default basic setting:**

- Dimension "a": 2 mm (grass) (minimum 1 mm)

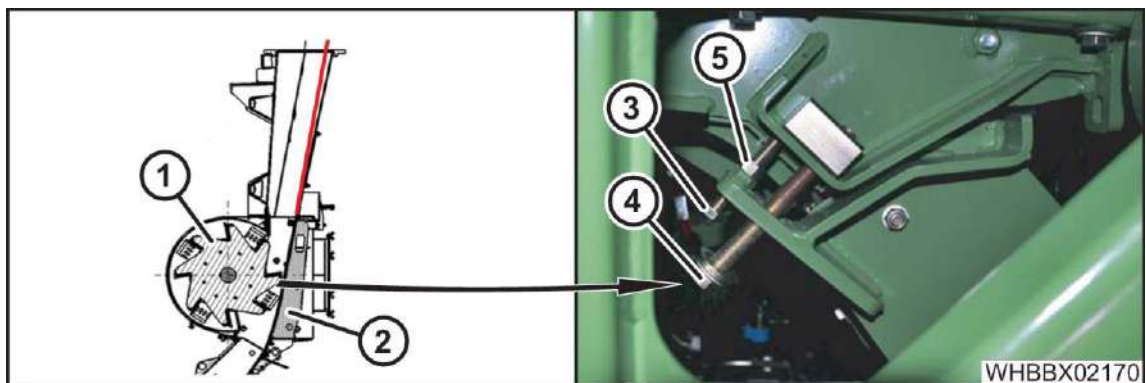


Fig. 528

**NOTE**

The setting must be uniform on both setting screws (3) right and left.

If necessary, set the distance as follows:

- Loosen the counter nut (5)
- Unscrew the stop screw (3)
- Set the distance from the rear wall (2) to the discharge accelerator (1) by means of screw (4)
- Readjust the stop screw (3)
- Tighten the counter nut (5)
- Tighten the screw (4)

Setting the spring force of the rear wall

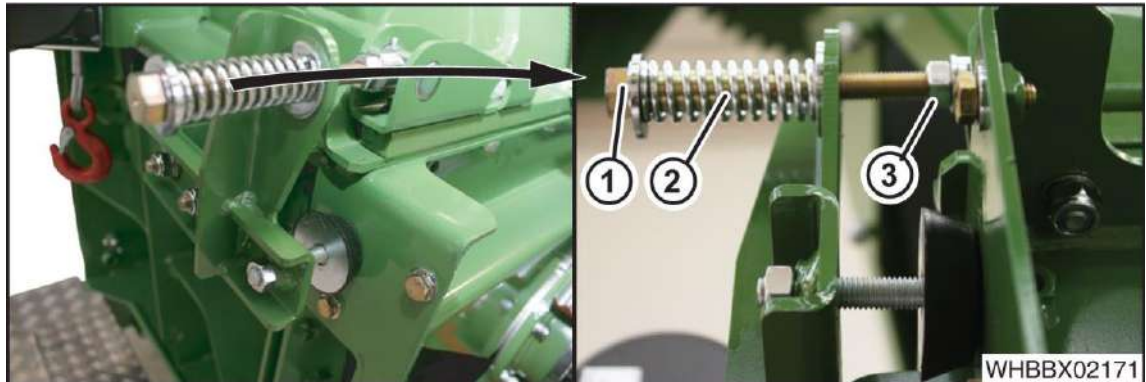


Fig. 529

- Loosen the nut (3)
- To reduce the spring force, slightly unscrew the hexagon head screws (1) on the rear wall - the spring (2) is relieved
- To increase the spring force, slightly tighten the hexagon head screws (1) on the rear wall - the spring (2) is tensioned
- Tighten the nut (3)

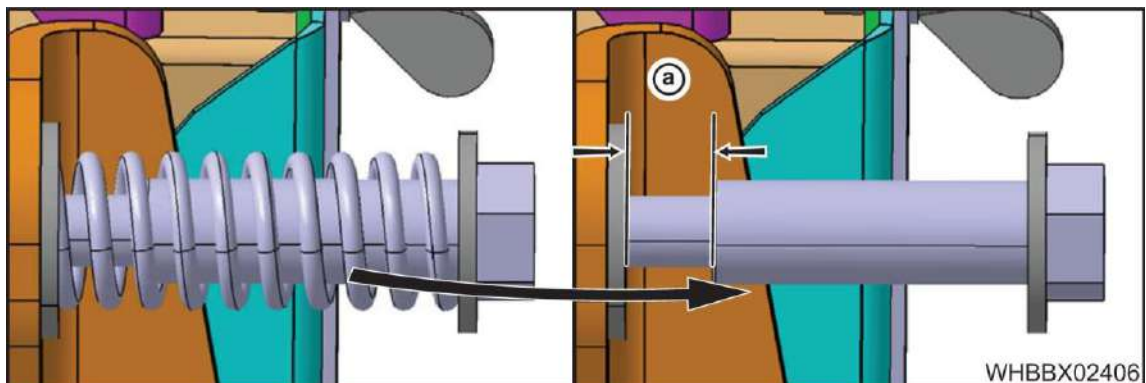


Fig. 530

- The pretension must be selected to achieve spring travel (a) of min. 10 mm and max. 12 mm.
- After carrying out the complete setting, check whether there is a stacking edge at the channel support with a fully sprung-back rear wall. If necessary, use the rubber buffer to correct the position of the rear wall, adjust the pre-load length of the springs and check the distance between the discharge scoops and the wear plate of the rear wall

**Checking the locating lug**

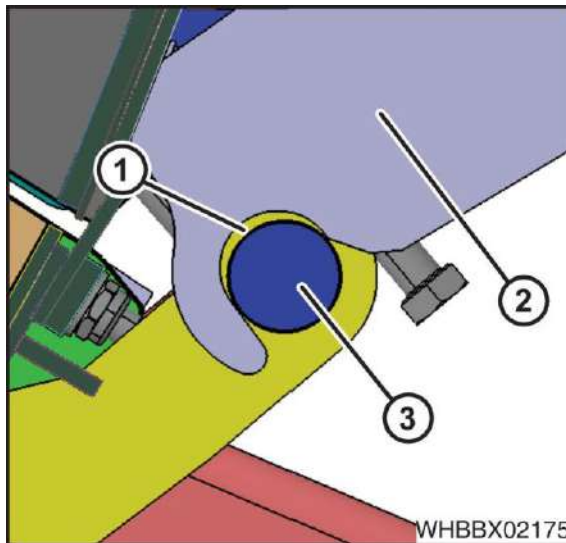


Fig. 531

- If the locating lug (2) of the rear wall of discharge accelerator is not resting exactly on the locating bolt (3) of the grass channel (1), the position of the grass channel must be set to the corresponding side.

**Setting the additional ventilation slots on the discharge accelerator for use with the grass channel**

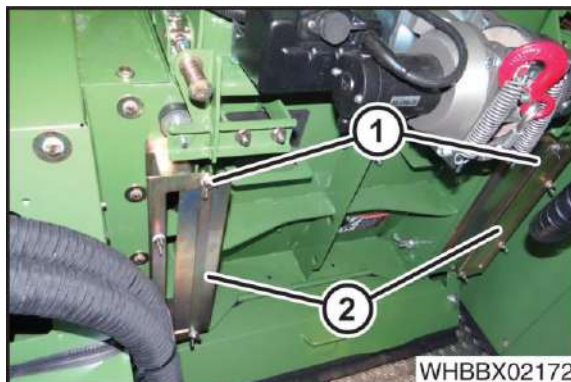


Fig. 532

**Factory basic setting for use with grass channel: completely closed**

- Max. 50% open left and right. (When the additional ventilation slots are wide open, too much air is directed against the flow of air in the chopping drum and the discharge capacity is reduced)

**Setting the additional ventilation slots:**

- Loosen the wing nuts (1)
- Pull the wear plate (2) to the centre to the required position
- Tighten the wing nuts (1)

### 19.2.3.2 Settings with an installed corn conditioner

#### Distance from stop discharge accelerator – corn conditioner

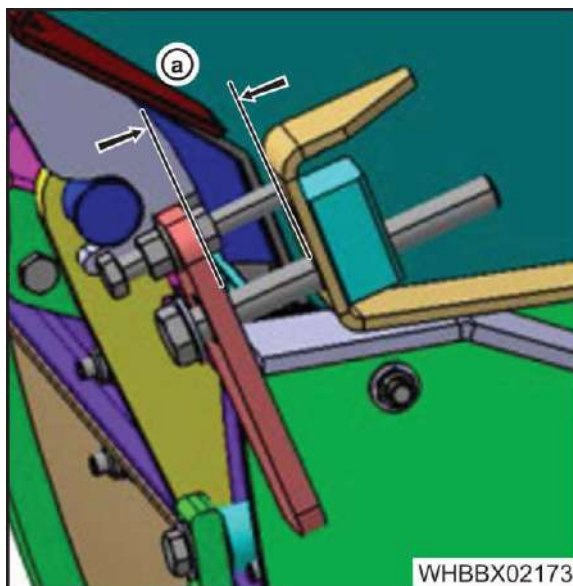


Fig. 533

- When installing the corn conditioner, set distance "a" between the stop on the discharge accelerator housing and the corn conditioner to a dimension of 60 mm

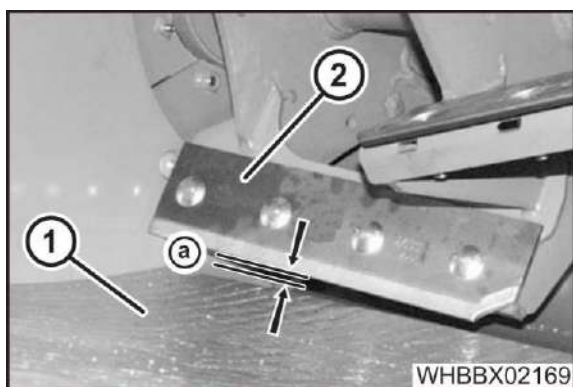


Fig. 534

- Distance "a": 5 mm (maize) (minimum 1 mm) between the rear wall (1) and discharge scoop (2) at the narrowest point between the discharge accelerator scoop and the rear wall

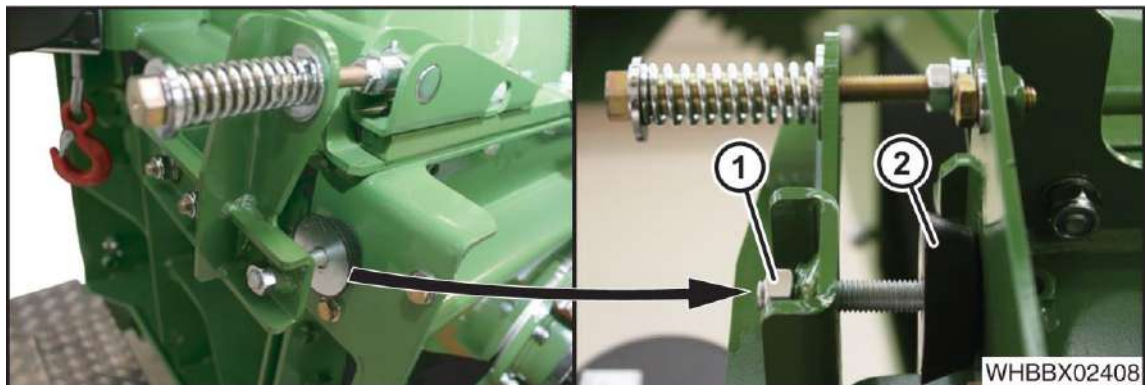


Fig. 535

- Loosen the nut (1)
- Set the distance of 5 mm (factory setting) with the two rubber buffers (2) left and right at the rear wall of discharge accelerator
- Ensure that the distance of the wear plate to the discharge scoops is as uniform as possible
- Readjustment using the left or right rubber buffer (2) may be necessary
- Tighten the nut (1)

**NOTE**

The transition corn conditioner – rear wall of discharge accelerator must be checked. There should not be a stacking edge, i.e. the deflector sheet of the corn conditioner must be higher than the rear wall of discharge accelerator. If this is not the case, a different deflector sheet must be fitted (repair kit: 150435086, spare part no. deflector sheet: 202265610).



Checking the belt distance in the corn conditioner

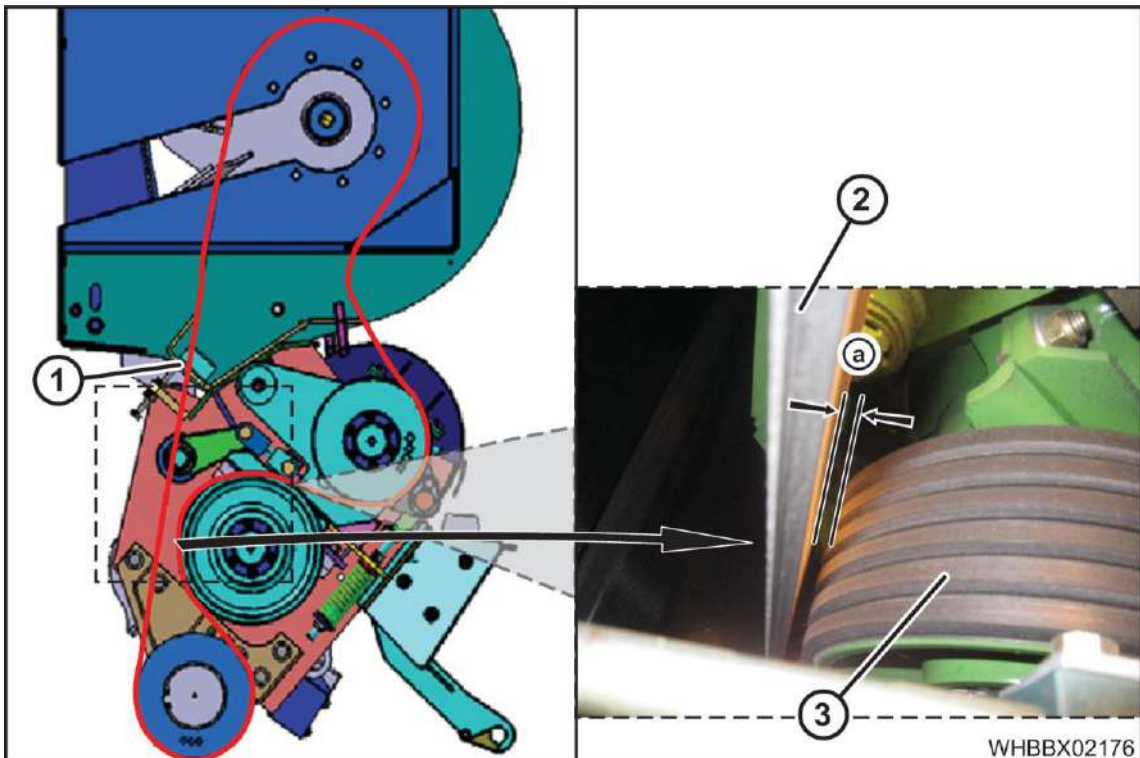


Fig. 536

- Check the distance between the belt pulley (3) and the belt (2)
- Dimension "a": min. 6 mm
- If dimension "a" is less than 6 mm, the corn conditioner must be pulled up higher in the crop flow (1)



**NOTE**

If the corn conditioner has been pulled up higher, check the distance between the rear wall of discharge accelerator and the discharge accelerator and correct using the rubber buffer if required.

Setting the spring force of the rear wall

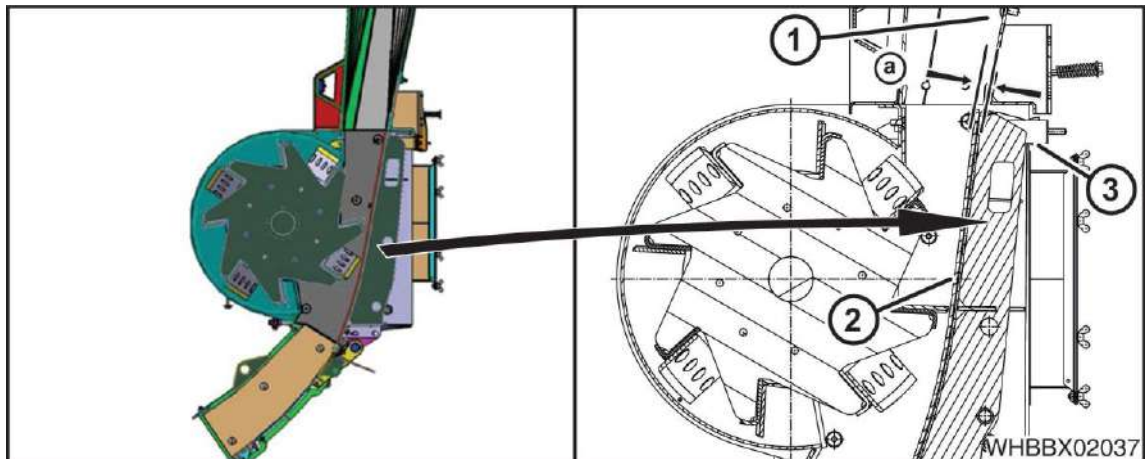


Fig. 537

- 1 Channel support
- 2 Wear plate on rear wall of discharge accelerator
- 3 Rubber buffer

- By setting the rear wall (2) to the rotor, you can derive the dimension (a) for the transition to the channel support (1)

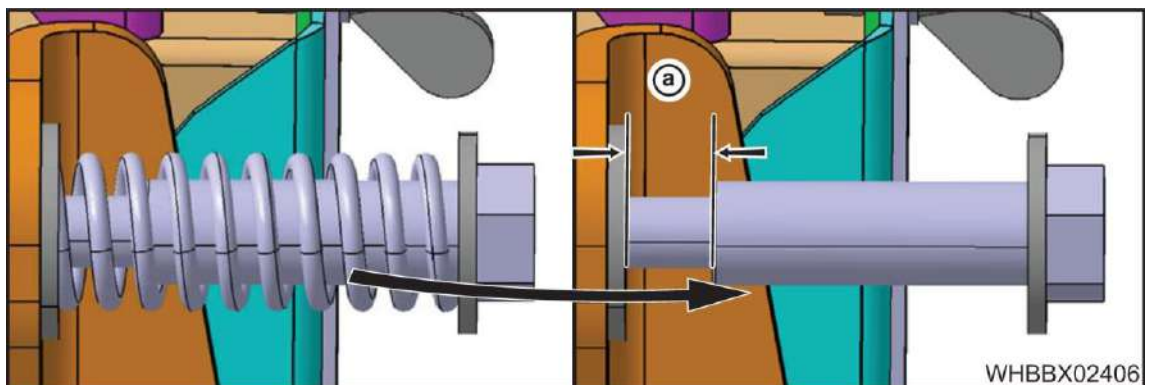


Fig. 538

- The pretension must be selected to achieve spring travel (a) of max. 10 mm.
- After carrying out the complete setting, check whether there is a stacking edge at the channel support with a fully sprung-back rear wall. If necessary, use the rubber buffer to correct the position of the rear wall, adjust the pre-load length of the springs and check the distance between the discharge scoops and the wear plate of the rear wall

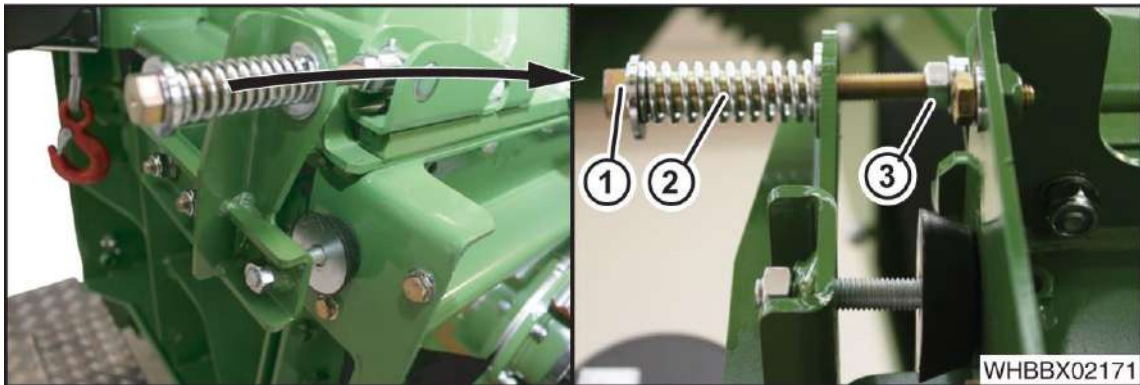


Fig. 539

- Loosen the nut (3)
- To reduce the spring force, slightly unscrew the hexagon head screws (1) on the rear wall - the spring (2) is relieved
- To increase the spring force, slightly tighten the hexagon head screws (1) on the rear wall - the spring (2) is tensioned
- Tighten the nut (3)

**Checking the locating lug**

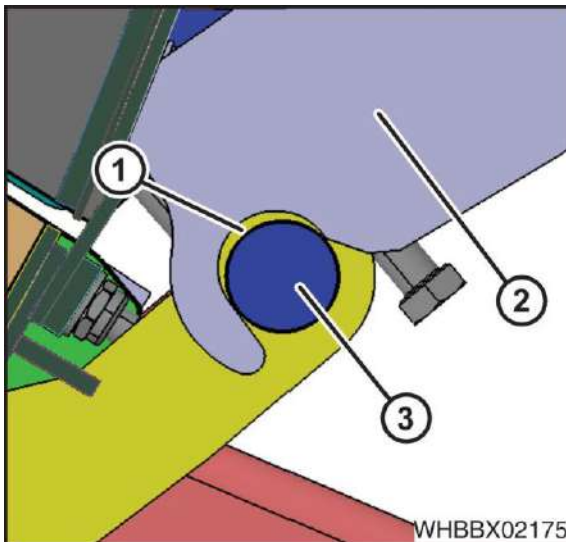


Fig. 540

- If the locating lug (2) of the rear wall of discharge accelerator is not resting exactly on the locating bolt (3) of the corn conditioner (1), the position of the corn conditioner must be set to the corresponding side.



### Setting the additional ventilation slots on the discharge accelerator for use with the corn conditioner

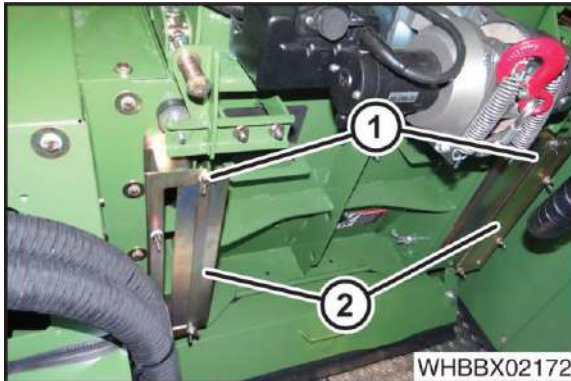


Fig. 541

- Factory basic setting for use with corn conditioner: completely open  
(With maize, no air travels upward through the corn conditioner to the discharge accelerator. If the opening of the additional ventilation slot is too small, insufficient air is supplied and the discharge capacity is reduced.)

#### Setting the additional ventilation slots:

- Loosen the wing nuts (1)
- Pull the wear plate (2) to the centre to the required position or remove it completely
- Tighten the wing nuts (1)

#### **NOTE**

If, in spite of this, the discharge capacity is still insufficient, an additional distance sheet can be installed between the wear plate and the rear wall of discharge accelerator. This changes the crop flow and the discharge capacity can increase.

## Settings

### 19.2.4 Setting the throttle valves

#### Adjustable throttle valves

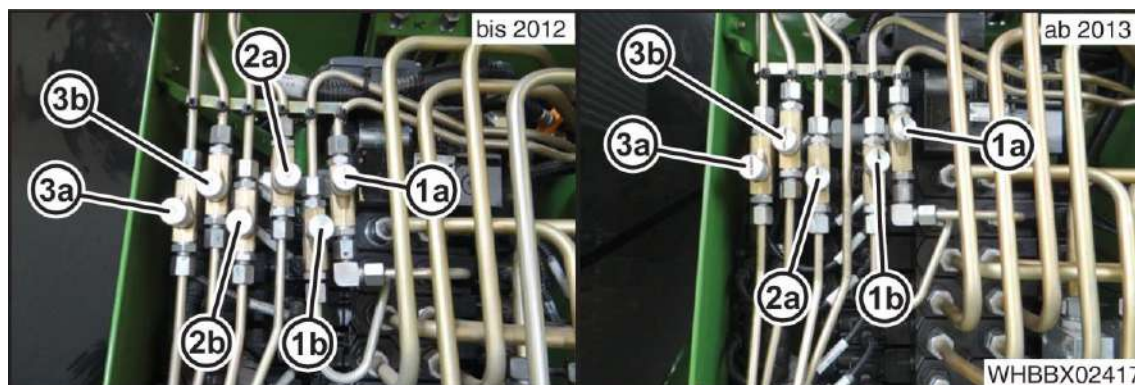


Fig. 542

Item	Valve	Item	Valve
1a	Throttle check valve grinding stone "left"	2b	"Lower" spout throttle valve
1b	Throttle check valve grinding stone "right"	2a	"Raise" throttle check valve spout flap
3a	"Raise" throttle valve spout	3b	"Lower" throttle check valve spout flap

The throttle valves are set according to the times specified in the table. The specification is the KRONE factory setting of the time in which the respective component starting from one end position must reach the other end position.

Function	Time	Note
Lift spout	9 s	
Lower spout	7 s	Up to and including year of manufacture 2012. From year of manufacture 2013 two throttle discs have also been integrated in the hydraulic cylinder.
Lift discharge chute flap	4 s	
Lower discharge chute flap	4 s	
Retract the grinding stone left	5 s	
Retract the grinding stone right	5 s	



#### **NOTE**

Only set throttle valves when the engine has reached operating temperature.

20 Maintenance

<b>⚠ WARNING</b>
<p>If the basic safety instructions are not followed, people may be seriously injured or killed.</p> <ul style="list-style-type: none"> <li>To avoid accidents, the basic safety instructions in the chapter Safety must have been read and followed, see chapter Safety "Basic safety instructions".</li> </ul>

20.1 Tightening torques

20.1.1 Metric Thread Screws with Control Thread

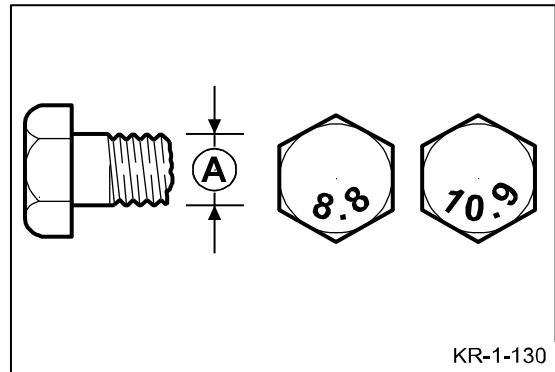


<p><b>NOTE</b></p> <p>The table does not apply to countersunk screws with hexagonal socket in case the countersunk screw is tightened by hexagonal socket.</p>
--

Tightening torque in Nm (unless otherwise stated)

A	Stability class			
	5,6	8,8	10,9	12,9
	Tightening torque (Nm)			
M4		3.0	4.4	5.1
M5		5.9	8.7	10
M6		10	15	18
M8		25	36	43
M10	29	49	72	84
M12	42	85	125	145
M14		135	200	235
M16		210	310	365
M20		425	610	710
M22		571	832	972
M24		730	1050	1220
M27		1100	1550	1800
M30		1450	2100	2450

A = thread size  
(stability class can be seen on screw head)



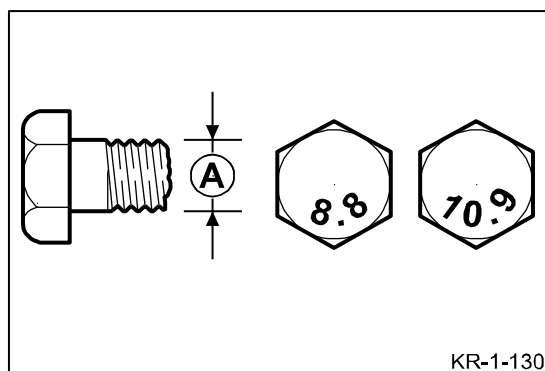
## Maintenance

### 20.1.2 Metric Thread Screws with Fine Thread

Tightening torque in Nm (unless otherwise stated)

A	Stability class			
	5.6	8.8	10.9	12.9
	Tightening torque (Nm)			
M12 x 1.5		88	130	152
M14 x 1.5		145	213	249
M16 x 1.5		222	327	382
M18 x 1.5		368	525	614
M20 x 1.5		465	662	775
M24 x 2		787	1121	1312
M27 x 2		1148	1635	1914
M30 x 1.5		800	2100	2650

A = thread size  
(stability class can be seen on screw head)



### 20.1.3 Metric Thread Screws with Countersunk Head and Hexagonal Socket



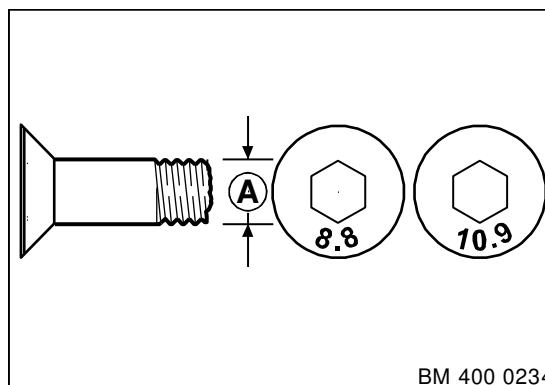
#### NOTE

The table applies only to countersunk screws with hexagonal socket and metric thread which are tightened by the hexagonal socket.

Tightening torque in Nm (unless otherwise stated)

A	Stability class			
	5,6	8,8	10,9	12,9
	Tightening torque (Nm)			
M4		2.5	3.5	4.1
M5		4.7	7	8
M6		8	12	15
M8		20	29	35
M10	23	39	58	67
M12	34	68	100	116
M14		108	160	188
M16		168	248	292
M20		340	488	568

A = thread size  
(stability class can be seen on screw head)



## 20.2

## Maintenance table

**NOTE**

Work on the engine not listed in this chapter may be performed only by a qualified service centre. Observe the maintenance and repair manuals and the specifications for consumables of the engine manufacturer.

A qualified service centre has the required technical knowledge, qualifications and tools to perform the required work on the engine in a proper manner. This applies in particular to safety-relevant work.

Always have the following work performed by a qualified service centre:

- Safety-relevant work
- Service and maintenance work
- Repair work
- Modifications as well as installations and conversions
- Working on electronic components

## Maintenance

<b>Once after 1 hour</b>
<b>Tyres</b>
Retighten wheel nuts on the front/rear wheels

Table 67

<b>Once after 4 hours</b>
<b>Drive belt</b>
Check belt tension of all drive belts

Table 68

<b>Once after 10 hours</b>
<b>Components for crop flow</b>
Retighten the fastening screws of the chopping blades
Retighten the fastening screws on the discharge scoops
<b>Retightening screws</b>
Check fastening screws of the steering cylinder
Check fastening screws of the track rod
<b>Central lubrication</b>
Check that the lines are firmly attached

Table 69

<b>6 times after every 10 hours</b>
<b>Tyres</b>
Retighten wheel nuts on the front/rear wheels

Table 70

<b>Once after 50 hours</b>
<b>Oil change in gearbox</b>
Wheel hub gearbox front/rear
Power take-off gear
<b>Engine</b>
Check the coolant hoses for leaks
<b>Fuel system (engine)</b>
Check fuel lines for leaks
Check that detachable connecting elements (screws, hose clamps, pipe connections, hoses) are tight and retighten if required
<b>Cooling system (engine)</b>
Check concentration of anti-freeze and anti-corrosion agent
Check the coolant hoses for leaks
Check that detachable connecting elements (screws, hose clamps, pipe connections, hoses) are tight and re-tighten if required

Table 71

<b>Once after 500 hours</b>
<b>Oil change in gearbox</b>
Wheel hub gearbox front/rear

Table 72

<b>Once after 1000 km</b>
<b>Rear axle for front wheel drive</b>
Check hub bearings for wear and play

Table 73

<b>Before the beginning of the season</b>
<b>Hydraulic system</b>
Check oil level of hydraulic oil tank
Check hydraulic hoses
<b>Brake</b>
Brake function test
<b>Oil level check gearbox</b>
Power take-off gear
Transfer gearbox
Roller gearbox at bottom left
Angular gearbox
Roller gearbox at top right
Auger gearbox spout
Wheel hub gearbox front/rear
VariLOC gearbox
<b>Components for crop flow</b>
Check corn conditioner (wear)
Check the conveyor bars of the pre-compression roller
Check tension springs of the intake unit.
Check counterblade (damage, wear)
Check chopping blades (damage, wear)
Check discharge scoops (damage, wear)
Check the scrapers of the discharge accelerator
Check grinding stone (damage)
<b>Engine</b>
Check engine for oil leaks
<b>Cooling system</b>
Check coolant level
Check coolant hoses for leaks
Clean/replace air filter
Check that detachable connecting elements (screws, hose clamps, pipe connections, hoses) are tight and re-tighten if required
<b>General maintenance work</b>
Check all wear plates
<b>Electrical system</b>
Clean battery
<b>Tyres</b>
Visually check tyres for cuts and breaks and check the tyre pressure

Table 74



<b>Every 10 hours, at least once a day</b>	
<b>Hydraulic system</b>	
Check oil level of hydraulic oil tank	
<b>Brake</b>	
Brake function test	
<b>Components for crop flow</b>	
Check counterblade (damage, wear)	
Check chopping blades (damage, wear)	
Check discharge scoops (damage, wear)	
Check grinding stone (damage)	
<b>Engine</b>	
Check coolant hoses for leaks	
Clean engine compartment	
Check engine oil level	
<b>Fuel system</b>	
Drain condensation water from the fuel prefilter with water separator	
Drain condensation water from the fuel filter (main filter)	By qualified specialist workshop only. See engine operating instructions, "Venting and Draining the Fuel System".
Check fuel level	
<b>Cooling system (engine)</b>	
Check coolant level	
Clean/replace air filter	
Clean cooler, cooler compartment and cooler screen	
<b>Cabin</b>	
Clean fresh air filter	
Top up windscreen washer system	
Check indicator lamps	
Check lighting function	
<b>Air conditioning / heating</b>	
Cleaning capacitor	
<b>Central lubrication</b>	
Check filling level of the reservoir	
<b>General maintenance work</b>	
Clean the machine "completely"	
Perform manual lubrication according to lubrication chart	
<b>Silage additives unit</b>	
Cleaning the silage additives unit	
<b>Tyres</b>	
Visually check tyres for cuts and breaks and check the tyre pressure	
<b>Rear axle for front wheel drive</b>	
Check hub covers for damage and that they are secure	

Table 75

<b>Weekly</b>
<b>Oil level check gearbox</b>
Wheel hub gearbox front/rear
<b>Tyres</b>
Measure tyre pressure with testing instrument
<b>Compressor unit</b>
Drain condensation water from compressed air storage tank
<b>Main drive brake</b>
Check brake pads for soiling; if required clean with high-pressure cleaner
<b>Wheel hub gearbox front/rear</b>
Visual inspection and noise check

Table 76

<b>Every 50 hours</b>
<b>Tyres</b>
Retighten wheel nuts on the front/rear wheels
<b>Oil level check gearbox</b>
Power take-off gear
Transfer gearbox
Roller gearbox at bottom left
Angular gearbox
Roller gearbox at top right
Auger gearbox spout
Wheel hub gearbox front/rear
VariLOC gearbox

Table 77

<b>Every 100 hours</b>
<b>Cabin</b>
Clean circulation filter
<b>Air conditioning/heating</b>
Check refrigerant condition and filling quantity (dryer)
<b>General maintenance work</b>
Perform manual lubrication according to lubrication chart

Table 78

<b>Every 250 hours</b>
<b>Drive belt</b>
Check main belt
Check screen drum belt
Check belts on the corn conditioner
<b>Components for crop flow</b>
Check scraper of flat roller (wear, distance dimension)
Check the scrapers of the discharge accelerator
<b>Retightening screws</b>
Check fastening screws of the steering cylinders
Check fastening screws of the track rod
<b>Air conditioning/heating</b>
Check collector
<b>General maintenance work</b>
Perform manual lubrication according to lubrication chart
Check wear plate of the tow coupling
Check coupling bolt of the tow coupling
Check that connecting jaw can turn
Check tow coupling Italy (option)

Table 79

<b>Every 500 hours</b>
<b>Hydraulic system</b>
Change hydraulic oil in the hydraulic oil tank
Change return suction filter
Change hydraulic oil filter (high-pressure filter) work hydraulics
<b>Brake</b>
Check function of the service brake
<b>Oil change in gearbox</b>
Wheel hub gearbox front/rear
<b>Cooling system (engine)</b>
Check concentration of anti-freeze and anti-corrosion agent
Check pipework in the air intake and charge air for leaks
Check the coolant hoses for leaks
Check that detachable connecting elements (screws, hose clamps, pipe connections, hoses) are tight
<b>Fuel system (engine)</b>
Drain condensation water from the fuel prefilter with water separator
Replace fuel prefilter with water separator
Check fuel lines for leaks
Check that detachable connecting elements (screws, hose clamps, pipe connections, hoses) are tight
<b>Cabin</b>
Replace fresh air filter
Replace circulation filter
Check functions of the driver's seat
<b>Electrical system</b>
Clean battery
<b>Drive belt</b>
Check belt tension of all drive belts
<b>Pulleys</b>
Check all pulleys
<b>General maintenance work</b>
Check the fire extinguishers
<b>Rear axle for front wheel drive</b>
Check hub covers for damage and that they are secure

Table 80

<b>Every 1000 hours, but at least after the season</b>
<b>Hydraulic system</b>
Change oil filter of gearbox oil cooling
<b>Oil change in gearbox</b>
Power take-off gear
Transfer gearbox
Roller gearbox at bottom left
Angular gearbox
Roller gearbox at top right
Auger gearbox spout
VariLOC gearbox
Wheel hub gearbox front/rear
<b>Engine</b>
Check all lines, hoses and electric cables for chafe marks
<b>Cooling system</b>
Clean/replace air filter
<b>Rear axle for front wheel drive</b>
Check hub bearings for wear and play
<b>Fuel system (engine)</b>
Change filter element of the fuel prefilter

Table 81

<b>Every 3 years</b>
<b>Cooling system</b>
Change coolant
Replace safety cartridge air filter

Table 82

<b>As required</b>	
<b>Hydraulic system</b>	
Change return suction filter	
Change hydraulic oil filter (high-pressure filter) work hydraulics	
<b>Brake</b>	
Check function of the service brake	
<b>Components for crop flow</b>	
Check corn conditioner (wear)	
Check the conveyor bars of the pre-compression roller	
Check tension springs of the intake unit.	
Check counterblade (damage, wear)	
Check chopping blades (damage, wear)	
Check discharge scoops (damage, wear)	
Check the scrapers of the discharge accelerator	
Check grinding stone (damage)	
<b>Engine</b>	
Clean cooler, cooler compartment and cooler screen	
Clean engine compartment	
<b>Fuel system (engine)</b>	
Drain condensation water from the fuel prefilter with water separator	
Bleed the fuel system	
Drain condensation water from fuel filter (on the engine side)	By qualified specialist workshop only. See engine operating instructions, "Venting and Draining the Fuel System".
<b>Cooling system (engine)</b>	
Check the coolant hoses for leaks	
Check that detachable connecting elements (screws, hose clamps, pipe connections, hoses) are tight and retighten if required	
Clean/replace air filter	
Replace safety cartridge air filter	
<b>Drive belt</b>	
Change main belt	
Change screen drum belt	
Replace corn conditioner belt	

Table 83

<b>As required</b>
<b>Cabin</b>
Top up windscreen washer system
Clean fresh air filter
Clean circulation filter
<b>Air conditioning/heating</b>
Cleaning capacitor
<b>Central lubrication</b>
Check filling level of the reservoir
<b>Electrical system</b>
Clean battery
General maintenance work
Check all wear plates
Check the fire extinguishers

Table 84

### 20.3 General maintenance work

#### 20.3.1 Fire extinguisher

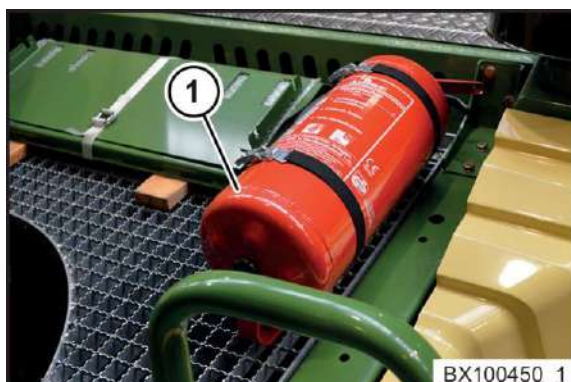


Fig. 543

- The machine has been shut down and safeguarded, see page 41.

Ensure that the fire extinguisher (1) is mounted on the machine.

- Ensure that access to and view of the fire extinguisher (1) are not obstructed.

Ensure that the fire extinguisher (1) has been filled by weighing the fire extinguisher (1).

- Visually check that the seal on the extinguishing head and the security seal are neither defective nor missing.
- Visually check that the operating instructions on the type plate of the fire extinguisher (1) are legible and point towards the outside.
- Check the fire extinguisher for visible material damage, corrosion, leaks, a clogged hose and/or nozzle.
- Ensure that the pressure gauge pointer indicates the green area.



**20.3.2 Cleaning the machine completely** **WARNING****Eye damage due to flying dirt particles!**

When performing cleaning work with compressed air, dirt particles are slung away at high speed.

- Keep people away from the working area.
- Wear appropriate work clothes (e.g. eye protection) when performing cleaning work with compressed air.

The machine must be cleaned to ensure reliable operation.

- Clean the machine – in particular the intake, the cutting drum, the radiator compartment and the radiator – with compressed air or a high-pressure cleaner.

To avoid damage to the machine, only carry out cleaning at low pressure and do not aim the water jet directly at the following components:

- Electrics/electronics (e.g. plug connections, control units)
- Seals
- Bearings
- Cabin
- Engine compartment

### 21 Maintenance – Basic Machine

#### 21.1 Windscreen washer system



Fig. 544

The reservoir (1) for the windscreen washer system is located in the cooler compartment.

#### **NOTE**

- To achieve a better cleaning effect under extreme crop and road conditions, add windscreen cleaner/anti-freeze.
- In winter drain the washer system or fill with special anti-freeze.


- Check the level of the windscreen washer system daily.

**If the cleaning fluid can be seen in the reservoir, the fluid level is correct.**

**If no cleaning fluid can be seen in the reservoir, refill:**

- Open the cover (2) and add cleaning fluid.
- Close the cover (2).

21.2 Maintenance - air conditioning system and heating

 <b>WARNING</b>
<p><b>Risk of injury from touching refrigerant!</b></p> <p>During repair, upkeep, maintenance and cleaning work on the refrigerant circuit, refrigerant may be emitted; refrigerant may be emitted in liquid or gaseous form and is hazardous to people and the environment. Take suitable protective measures (wear protective goggles and protective gloves).</p> <ul style="list-style-type: none"> <li>• Switch off the engine, remove the ignition key and take it with you.</li> <li>• Secure the machine against rolling away.</li> <li>• Repair, upkeep, maintenance and cleaning work may be carried out by authorised specialists only.</li> <li>• In the case of refrigerant burns, always seek medical attention. Bring the datasheet with you (see chapter "Refrigerant Data Sheet R 134a (excerpt)).</li> <li>• Provide adequate ventilation when working on the refrigerating system.</li> <li>• During filling or repair work, do not allow refrigerant to escape but dispose of in a recycling container.</li> <li>• Spare parts which are used must correspond to the technical requirements of the machine manufacturer. For this reason, use KRONE original spare parts only.</li> <li>• Extreme caution is advised when welding close to the air conditioning system.</li> </ul>

21.2.1 Components of the air conditioning system

Component	Explanation
compressor	On the engine on the right side at the back, driven via V-belt.
Capacitor	Behind the sieve drum, accessible from the right
drier/collector	Behind the sieve drum, bottom right.
Evaporator	in the cabin roof
pressure switch	On the dryer Switch off the air conditioning in the event of over or underpressure.
Expansion valve	At the evaporator inlet
Climatronic control panel	In the cab, roof panel.

### 21.2.2 Refrigerant

#### **CAUTION**

##### **Environmental damage due to chemicals!**

The air conditioning system is operated with refrigerant R134a (tetrafluorethane). This substance contains no chlorine atoms, and thus is not harmful to the ozone in the atmosphere of the world. Nonetheless, the refrigerant must not be drained; it must be collected at a recycling plant.

- Collect the refrigerant with a recycling plant.
- Thus do NOT separate the connecting pipes beforehand.
- Have all maintenance and repair work on the air conditioning system carried out only by your KRONE dealer with a suitable disposal and recycling equipment.

### 21.2.3 Collector / dryer

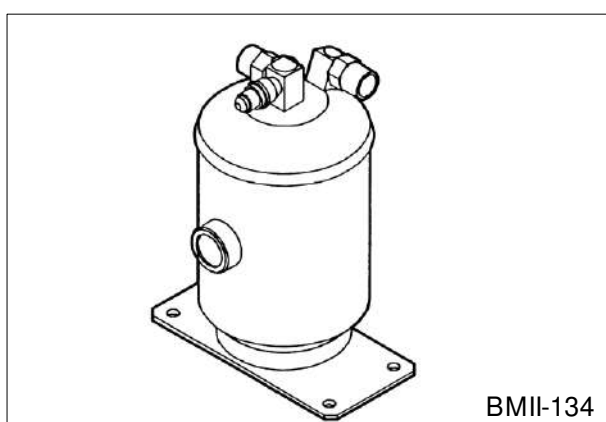


Fig. 545

Since the refrigerant collector is pressurised, it is subject to the pressurised container regulations during production and testing.

According to this regulation the pressurised tank is classified as test group II in accordance with the permissible overpressure  $p$  in bar, the volume  $l$  in litres and the pressure product  $p \times l$ .

According to Section 10 of the Pressurised Vessel Regulations these pressurised containers must be subjected to recurring tests by an expert in accordance with section 32. In this case the recurring tests consist, as a rule, of external inspections of the tank in use. In combination with the inspection the refrigerant collector must be subjected to a visual inspection twice a year.

Special attention shall be given to corrosion and mechanical damage. If the container is not in a correct state, for safety reasons it must be replaced to ensure sufficient protection to the user and third parties due to the hazard which may be caused in handling or operating pressurised containers.

#### **NOTE**

The ambient temperature must exceed the temperature set at the thermostat (generally +1° Celsius) for the compressor to switch on.

21.2.4 Filling Quantities of Consumables Air Conditioning System

For information on filling quantities of refrigerant and oil for refrigerant pump, refer to chapter Machine Description, “Consumables”.

21.2.5 Checking Refrigerant Condition and Filling Quantity

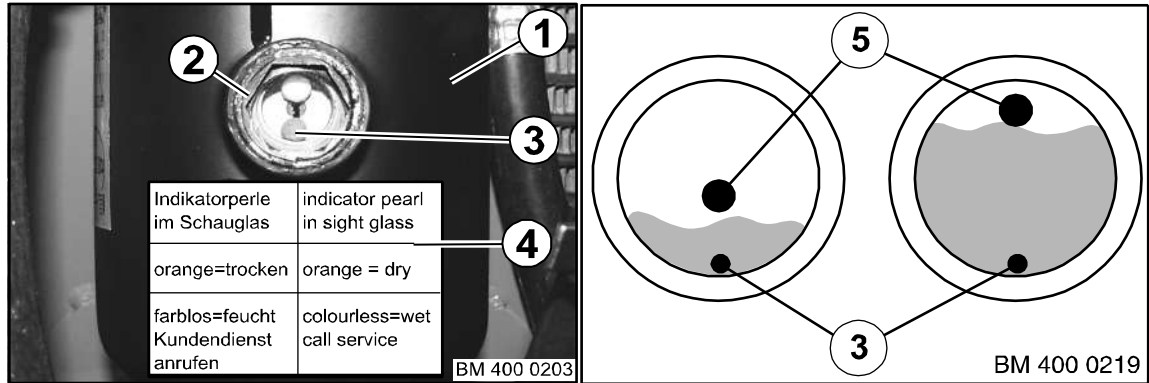


Fig. 546

**Checking the filling quantity**

The refrigerant quantity is checked on the viewing glass (2) via the white float ball (5).

**Interval for refrigerant level check : refer to chapter Maintenance - Basic Machine “Maintenance Table”.**

- Start the engine.
- Switch on the air conditioning system and set it to the highest action.

If the white float ball (5) is at the top, the refrigerant level is OK.

If the white float ball (5) is at the bottom, the refrigerant must be filled by a specialist workshop.

**Checking the refrigerant condition**

The refrigerant condition (moisture saturation) is checked on the viewing glass (2) by the orange indicator pearl (3)

**Check the interval for refrigerant condition: refer to chapter Maintenance-Basic Machine “Maintenance Table”.**

If the indicator perl (3) is orange, the refrigerant condition is OK.

If the indicator perl (3) has turned colourless, the dryer-receiver-unit must be changed by a specialist workshop.



**Note**

Observe the label (4) on the dryer (1).

### 21.2.6 Changing / cleaning the fresh air filter

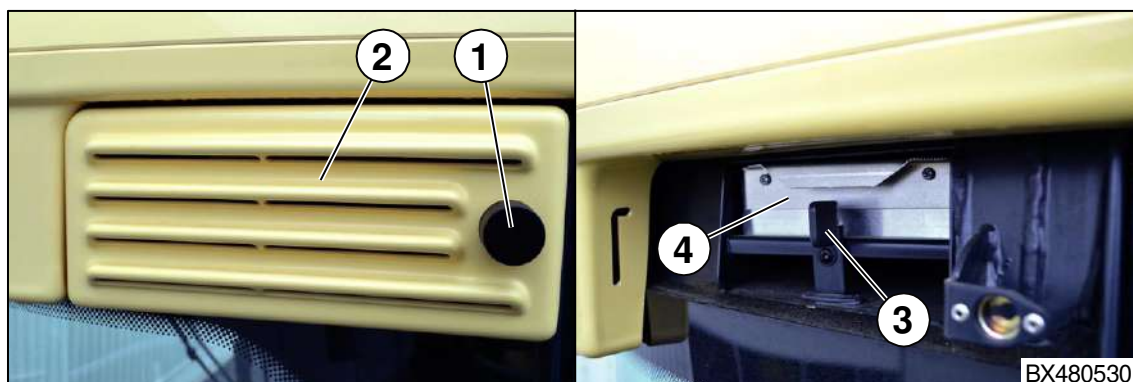


Fig. 547

#### NOTE

If filters are not properly maintained, the fresh air filter may become very soiled and it can no longer be guaranteed that adequate fresh air will flow into the cab.

A fresh air filter (4) in the form of a wedge filter cell is located in the upper cab area behind the gill screen (2) on the left hand side in direction of travel. The fresh air filter protects the driver in the cab against airborne contamination outside the cab. Always check the fresh air filter before starting to drive the machine.

- Open the closing device (1) by turning it 90° clockwise and remove the gill screen (2).
- To release the filter, move the locking lever (3) to the left.
- Pull out the fresh air filter (4), check for soiling and clean if required.

Shake out the fresh air filter (4); never use compressed air. If heavily soiled, replace the fresh air filter (4).

- Re-insert the fresh air filter (4).
- Lock the fresh air filter with the locking lever (3).
- Insert the gill screen (2) and close via the closing device (1).

21.2.7 Changing / cleaning the circulation filter

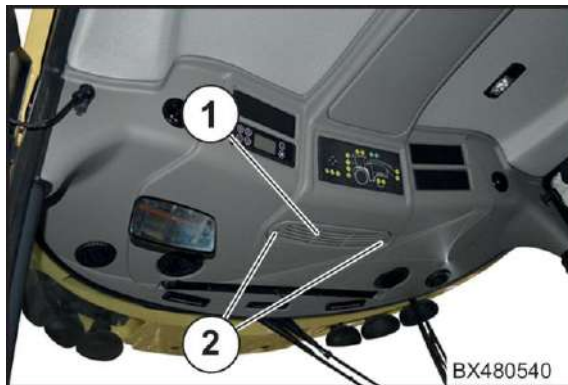


Abb. 548

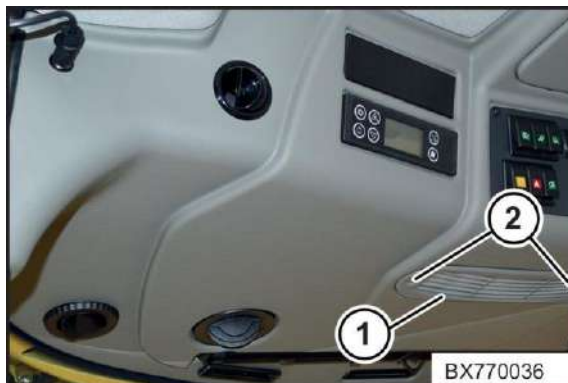


Fig. 549

- To clean the circulation filter, loosen the screws (2) and remove the gill screen (1) together with the filter element.
- Clean the filter element with compressed air or replace if required.
- Attach the gill screen (1) together with the filter element, ensuring that the filter element is correctly inserted.
- Press in the screws (2).



**NOTE**

If the filters are not adequately maintained, the circulation filter may become heavily soiled and cause a reduction in the output of the air conditioning system and the heating.

- To clean the circulation filter, loosen the screws (2) and remove the gill screen (1) together with the filter element.
- Clean the filter element with compressed air or replace if required.
- Attach the gill screen (1) together with the filter element, ensuring that the filter element is correctly inserted.
- Press in the screws (2).

### Clean evaporator filter

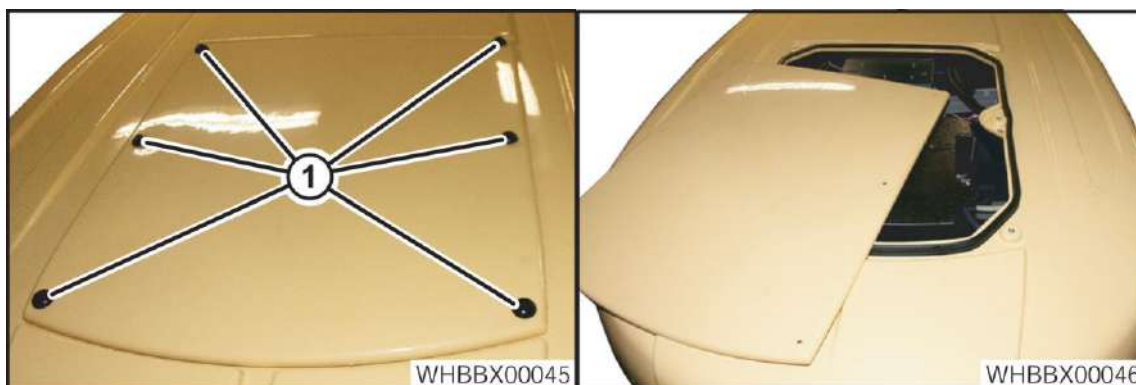


Fig. 550

- Unscrew the hexagonal socket head screws (1) and remove the service cover.

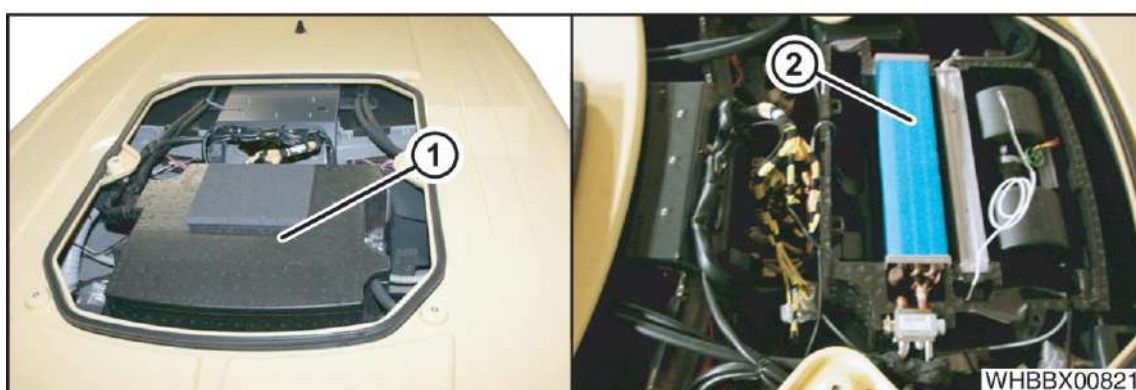


Fig. 551

- Remove the housing cover (1).
- Clean the filter (2) with compressed air.



21.3 Cleaning the Radiator and the Radiator Compartment

<b>CAUTION</b>
<p><b>Damage to the machine caused by water from a high-pressure washing device!</b>          If the water jet from a high-pressure cleaner is aimed directly at bearings and electrical/electronic components, these components may be damaged.</p> <ul style="list-style-type: none"> <li>• Do not aim the water jet from a high-pressure cleaner at bearings or electrical/electronic components.</li> </ul>

The right side flap is used to access the cooler, the maintenance flaps of the crop flow and the right side of the engine compartment:

- Open the flap (1) and enter the cooler compartment via the right ladder (2).
- To protect against the danger of fire, clean the dirt in the area of the engine compartment and radiator as well as the surrounding area once a day and wipe away oil residue if required
- If there is a lot of dust or the crop is very dry, clean the spots listed above more frequently

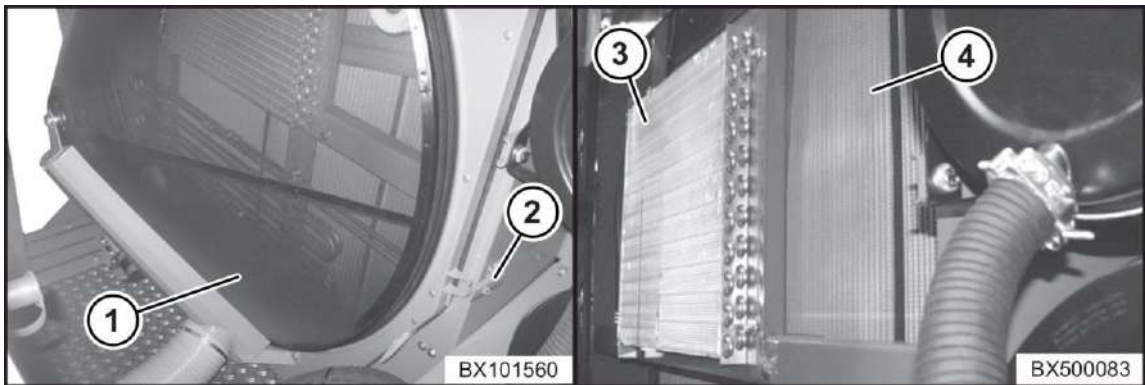


Fig. 552

- |                               |                           |
|-------------------------------|---------------------------|
| 1 Sieve drum                  | 2 Quick release fasteners |
| 3 Cooling fins on the coolers | 4 Capacitor               |

The water cooler, oil cooler, charging air cooler and capacitor are located behind the sieve drum in the engine compartment.

Preferably clean the radiator and the capacitor while the engine is cold.

- Undo the quick release fasteners on the sieve drum and open the sieve drum.
- Blow out the radiators with compressed air from the engine compartment in the direction of travel. Ensure that the blades are not damaged.
- Blow out the capacitor with compressed air from the radiator compartment against the direction of travel. Ensure that the blades are not damaged.
- Close the sieve drum and lock with the quick release fasteners.

### 21.4 Maintenance of brake (Bosch)

 **WARNING**

**Risk of injury due to an inoperable brake!**

People may be seriously injured or killed by an inoperable brake.

- Bring the machine to a complete stop.
- Switch off the engine, remove the ignition key and take it with you.
- Secure the machine against rolling using wheel chocks.
- Contact KRONE customer service.

**NOTE**

Also follow the operating instructions for the vehicle.

**Daily or when moving off**

- Check the function of the service brake each time before moving off. To do this, drive the vehicle on a level surface with max. torque against the activated service brake.
  - ➔ If the vehicle cannot be moved while the service brake is activated, the service brake is functioning properly.
  - ➔ If the vehicle can be moved even though the service brake is applied, the proper function of the service brake is no longer guaranteed.
- If the proper function of the service brake is not guaranteed, immediately shut down the vehicle and contact KRONE customer service.

**Checking within the limits of the national regulations**

- Check the function of the service brake on a regular basis in accordance with national regulations. This check can take place as part of a TÜV inspection of the vehicle, for example. In this case, have a brake deceleration measurement performed. The target value must match the vehicle specification.

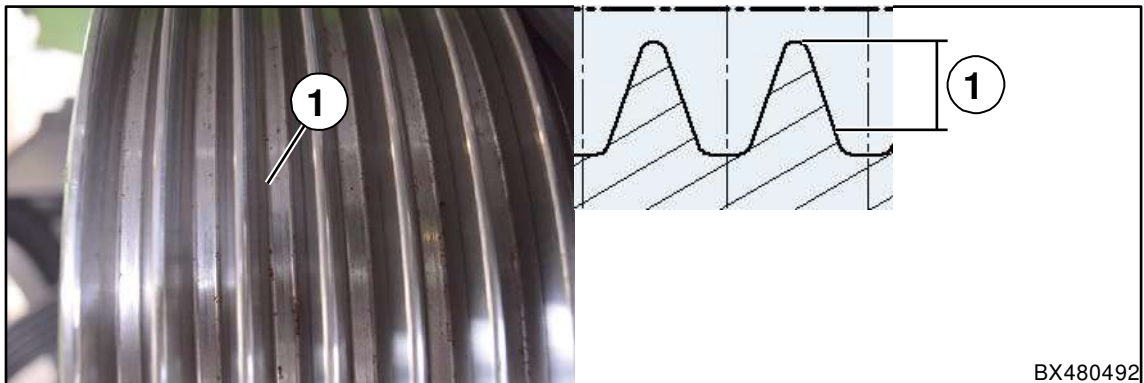
**After emergency braking**

Irrespective of the maintenance intervals, the brake must be completely inspected following emergency braking when the hydrostats have failed.

- To do this, carry out a visual inspection of the discs, springs and sealing elements while the multi-disc brake is dismantled. Contact KRONE customer service.

21.5 Belt drives

21.5.1 Checking the belt pulley



BX480492

Fig. 553



**NOTE**

If worn or soiled, the complete power transmission of the power belt and belt pulley is not guaranteed.



**NOTE**

In case of longer standstill times outdoors (e.g. outside the season), water can collect between the belt pulley and the power belt which could lead to heavy rust formation. In order to prevent this, it is recommended to dismount the power belt.

- Check the edges of the belt pulleys (1) for wear and replace if required.
- Check the belt pulley for damage and replace if required.
- Check the belt pulley for soiling (oil, grease) and clean if required.

21.5.2 Checking the power belt



BX480491

Fig. 554



**NOTE**

If worn or soiled, the complete power transmission of the power belt and belt pulley is not guaranteed.

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- Visually check the power belts on the inside (1) and outside (2) for wear and damage (e.g. tears, stones) and replace if required.
- Check the power belts for soiling (oil, grease) and clean or replace if required.

### 21.5.3 Sieve drum drive

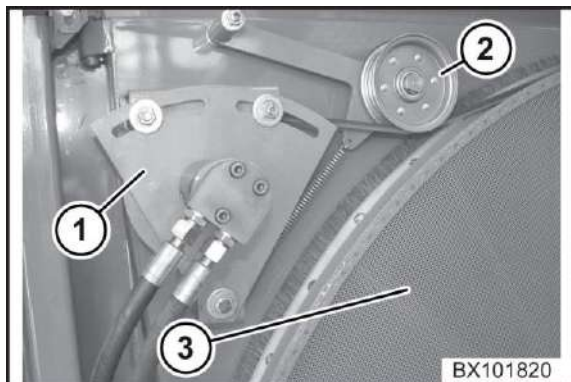


Fig. 555

- Check that the belt tension of the sieve drum drive over the spring-loaded tension roll (2) is still correctly set.

## 21.6 Tyres

## 21.6.1 Checking and maintaining tyres

 **WARNING****Risk of injury due to reduced driving stability!**

If the pressure of the tyres on the machine is too low, people are at risk due to reduced driving safety.

- Never operate the machine at the tyre pressure usual for transportation of the tyres.
- Keep the valve caps screwed on the valves to keep dirt out.
- Check the tyre pressure daily and correct if required.

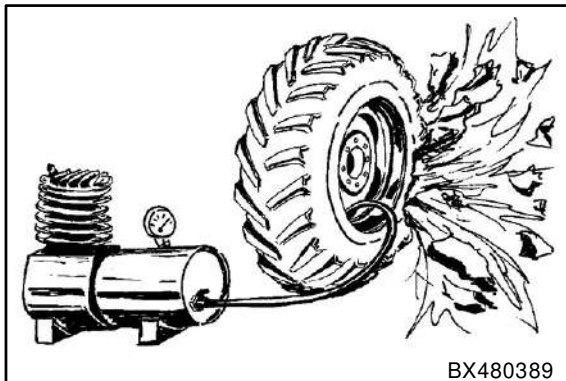


Fig. 556

Every day check the tyres for damage and obviously low pressure, as the service life of the tyres depends greatly on the air pressure.

- Immediately repair any cuts or breaks in the tyres or change the tyres.
- Do not expose tyres to oil, grease, fuel, or chemicals or leave them too long in the sunlight.
- Drive carefully; avoid driving over sharp stones or edges.
- Check the tyre pressure at least once a week using an accurate testing instrument and correct the air pressure if required, see chapter Description of machine, "Technical data of the machine".

### 21.6.2 Wheel mounting

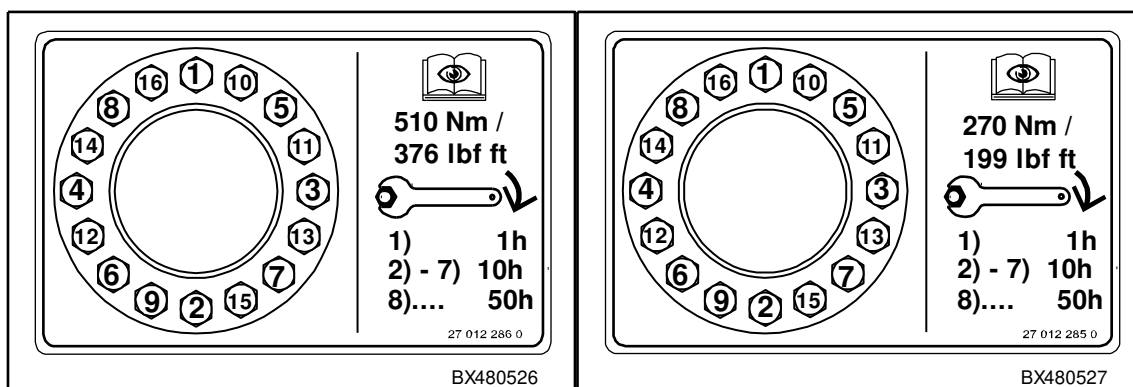


Fig. 557 Front axle

Rear axle

- Retighten the wheel mounting bolts in the illustrated sequence.
- Retighten the wheel mounting bolts on the front axle to 510 Nm.
- Retighten the wheel mounting bolts on the rear axle to 270 Nm.

The interval after which the wheel mounting bolts must be retightened:

- The 1st time after one operating hour
- The 2nd to the 7th time after every 10 operating hours
- Then every 50 operating hours

### 21.6.3 Running direction of the tyres



#### **NOTE**

If machines have front wheel drive only, the left and right tyres on the rear axle are deliberately interchanged for reasons of traction. (The left wheel is fitted on the right and the right wheel is fitted on the left.)

### 21.6.4 Changing the tyre size



#### **NOTE**

Before switching the tyre size when changing the tyres, check with KRONE customer service that the new tyre size is permitted for the vehicle.

21.7 Servicing the tow coupling

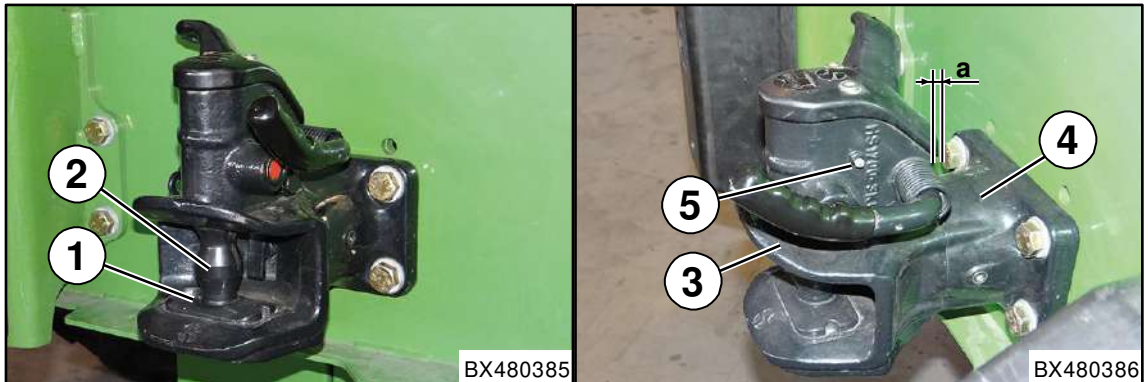


Fig. 558

Maintenance work on the trailer coupling:

- Check the thickness of the wearing plate (1).
- If the wearing plate is thinner than 6 mm:
- Have the wearing plate changed by a service centre.
- 
- Check the diameter of the coupling pin at the thickest point.
- If the diameter of the coupling pin is less than 37 mm:
- Have the coupling pin changed by a service centre.
- 
- Check the degree of wear of the coupling gap.
- If the coupling gap is worn by more than 1.5 mm or the gap (a) between the coupling jaw (3) and coupling carrier (4) is greater than 3 mm at any point:
- Replace the trailer coupling.



Fig. 559

- Check the turning capacity of the coupling jaw (3).
- If the coupling jaw (3) is stiff:
- Loosen the screw (5).
  - Lubricate the grease nipple (6).
  - Turn the coupling jaw (3) by one turn and tighten the screw (5) to a torque of 35 – 50 Nm.

### 21.7.1 Servicing the trailer coupling for Italy

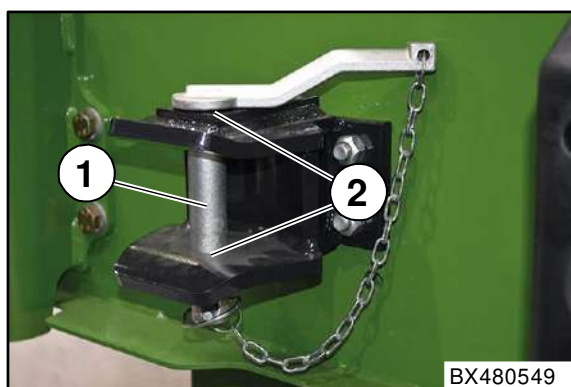


Fig. 560

Maintenance work on the trailer coupling for Italy:

- Check the diameter of the 30 mm coupling pin (1) at the thinnest point.  
If the diameter of the coupling pin is less than 28 mm:
  - Replace the coupling pin.
- Check the diameter of the bolt holders (2) in the trailer coupling.  
If the holes in the bolt holder (2) are larger than 32 mm (oval):
  - Replace the trailer coupling.



21.8 Cleaning the silage additives unit



**NOTE**  
The silage additive residue and the rinsing water must be disposed of properly (see information in the operating instructions of the silage additive manufacturer).

**CAUTION**

**Damage to the flow sensor due to incorrect cleaning.**  
If the flow sensor is cleaned with compressed air, components may be damaged.

- Do not clean flow sensor with compressed air.

**CAUTION**

**Damage to the silage additives unit due to low outdoor temperatures.**  
If there is any water left in the silage additives unit prior to it being stored for the winter, the unit is at danger of being damaged by frost.

- Fill the silage additives tank with a biological, non-aggressive frost protection agent prior to storing it for the winter and allow the silage additives unit to pump in "continuous operation" mode for 2 minutes with a dosing quantity of 50%.
- After the winter, before the season begins, fill the silage additives tank with clear water and allow the silage additives unit to pump in "continuous operation" mode for 10 minutes with a dosing quantity of 75%.

The silage additives unit must be cleaned after each use:

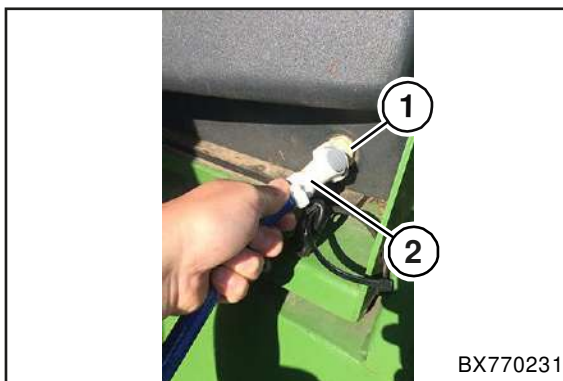


Fig. 561

- Take the rinsing hose (2) out of the storage compartment, connect it to the drainage nozzle (1) of the silage additives tank and drain the silage additives into a suitable container.

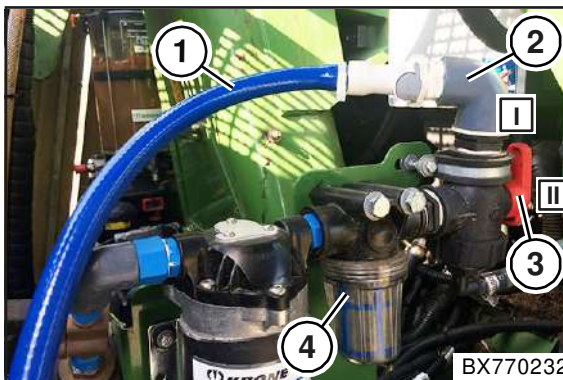


Fig. 562

- Provide a tank containing 10 L of fresh water.

## Maintenance – Basic Machine

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- Connect the rinsing hose (1) to the rinsing nozzle (2) of the silage additives unit and place the other end in the tank containing the water.
- Move the three-way stopcock (3) to position "I".
- Then pump the water out of the silage additives unit, see page 437
- After rinsing, move the three-way stopcock (3) to position "II".
- Remove the rinsing hose (1) from the rinsing nozzle (2) of the silage additives unit.
- see page 639.

For operating and setting the silage additive system, see page 432.

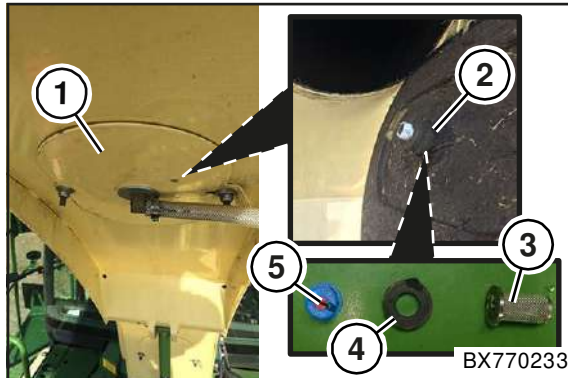


Fig. 563

- Open the maintenance flap (1) on the spout.
- Remove the union nut (2).
- Clean the nozzle (5), the seal (4) and the ball check valve filter (3) and re-attach with the union nut (2).
- Close and mount the maintenance flap (1).
- Calibrate the silage additives unit if required, see page 434.

### 21.9 Cable winch

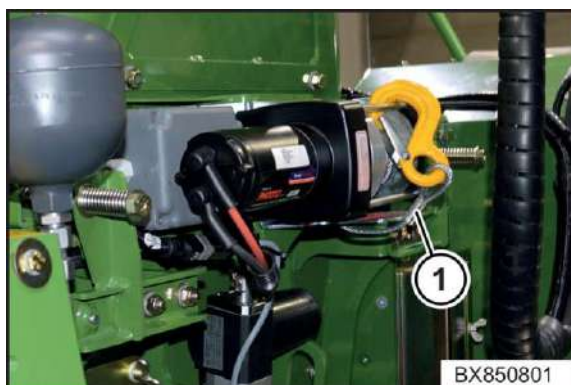


Fig. 564

- Check the rope of the cable winch
  - The rope must not be bent.
  - Check the rope pressure unit to ensure the rope is wound up correctly (windings next to each other).
  - Make sure no individual wires are broken.
  - Check the rope is attached to the hook correctly (terminal).
  - Make sure the hook is in correct working order (lock).
  - Make sure the fastening bolts of the cable winch are tight.
- If the rope on the cable winch shows signs of damage, have it replaced at an authorised service centre.

22

**Maintenance – Engine****NOTE**

Work on the engine not listed in this chapter may be performed only by a qualified service centre which has access to the Workshop Information System (WIS).

A qualified service centre has the required technical knowledge, qualifications and tools to perform the required work on the engine in a proper manner. This applies in particular to safety-relevant work.

Always have the following work performed by a qualified service centre:

- Safety-relevant work
- Service and maintenance work
- Repair work
- Modifications as well as installations and conversions
- Working on electronic components

**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".

### 22.1 Contamination in the engine compartment

 **WARNING**

**Risk of fire due to dirt deposits in the engine compartment!**

A mixture of dust, oil and plant residue inside the engine compartment is a source of fire and presents an increased fire hazard.

- Always keep the engine compartment clean.

### 22.2 Cleaning the Engine Compartment with Compressed Air

 **WARNING**

**Eye damaged caused by flying dirt particles!**

When cleaning with compressed air, dirt particles are ejected at high speed.

- Keep people away from the working area.
- Wear suitable work clothes when performing cleaning work with compressed air (e.g. eye protection).

When necessary, blow away the dirt and contamination and wipe off oil deposits.

### 22.3 Engine oil level

**CAUTION**

**Engine damage due to excessively low or high oil level!**

If the oil level is too low, the amount of oil in the engine is too low, the lubrication points in the engine are not adequately supplied and there is a risk of engine damage.

If the oil level is too high, the engine or the exhaust gas after-treatment system may be damaged

- Check oil level according to engine maintenance table, see chapter Maintenance-engine "Maintenance table-engine".
- Check oil level only when machine is in a horizontal position.
- Do not start the engine if the oil level is below the bottom mark (min. mark) of the oil dipstick.
- Drain or extract oil which has been topped up too much.

22.3.1 Checking Engine Oil Level



Fig. 565

**Check engine oil level**

Check the engine oil level 5 to 10 minutes after switching off the engine.  
Clean the oil dip stick with a lint-free cloth.

- Clean thoroughly around the oil dip stick.
- Pull out the oil dip stick, clean and push in completely.
- Pull out the oil dip stick and check the engine oil level.

If the engine oil level is indicated between the "min." and "max." marks, the engine oil level is correct.

- Push in the oil dip stick.
- If the engine oil level is indicated below the "min" mark, fill with engine oil.

**Filling with engine oil**

Do not refill with engine oil while the engine is hot.

- Remove the cover.
- Top up the engine oil via the oil filling pipe up to the "max." mark.
- Screw on the cover.
- Run the engine at a low idling speed for a short time and switch off the engine.
- After approx. 5 to 10 minutes check the oil level, see chapter Checking engine oil level.



**NOTE**

For further information, refer to the provided documents "Operating instructions" and "Fuel specification" of engine manufacturer, chapter Engine Oil.

## Maintenance – Engine

### 22.4 Fuel system

### 22.5 Refuelling

#### **CAUTION**

**If refuelling with unauthorised or contaminated fuel or with fuel which has a high sulphur content, the engine and the exhaust gas after-treatment system will be damaged.**

- Refuel only with standard, sulphur-free diesel fuel, diesel fuel EN 590.
- Do not refuel with contaminated fuel.
- See also the operating instructions of the engine manufacturer, chapter "Refuelling".

**The following fuels are not permitted:**

- Fuels containing more than 0.005% (50ppm) sulphur
- Marine diesel fuel
- Aviation turbine fuel
- Heating oil
- Fatty acid methyl ester FAME (bio-diesel fuels)

#### **NOTE**

To prevent the formation of condensation water and freezing in cold conditions, refuel daily at the end of operation.

#### **NOTE**

Observe the information in the following, supplied documents:

- Engine operating instructions, chapter "Refuelling".

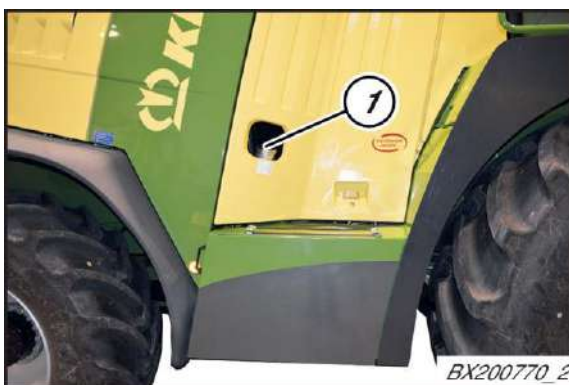


Fig. 566

Filling quantity: See chapter Description of machine "Consumables".

- Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".
- Clean around the filler neck (1).
- Unscrew the tank cap.
- Fill the fuel tank with fuel.
- Close the tank cap tight.



22.5.1

Changing filter element on the fuel prefilter with water separator – draining condensation

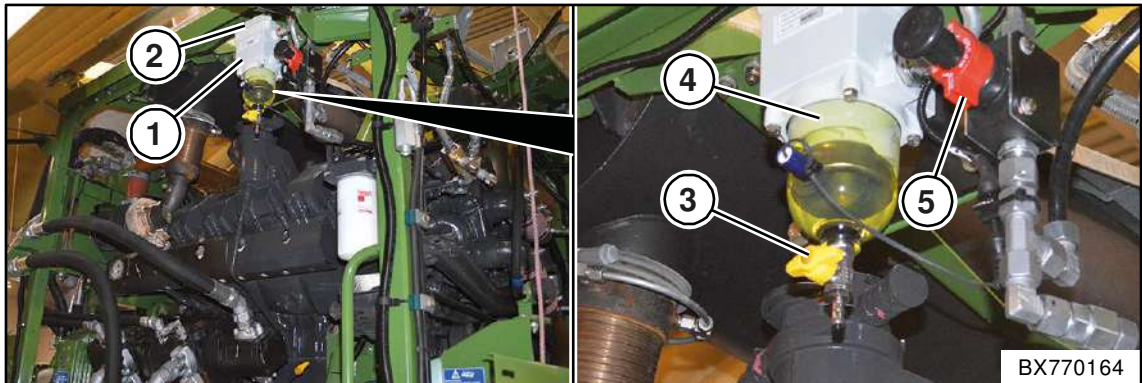


Fig. 567

**Change filter element of the fuel prefilter (1)**

- Close the shut-off valve on the hand pump (5).
- Open the bleed screw on the filter cover (2).
- Open the drain cock (3). Water and dirt flow out of the bowl (4). Leave the drain cock open until clean fuel flows out.
- Close the drain cock (3) and screw in the bleed screw (tightening torque = 6 Nm).
- Loosen screws on top of the filter cover crosswise in several moves. **Attention!** Follow the above procedure, otherwise the cover will be damaged.
- Remove the filter cover (2) and take out the spring cassette.
- Pull the filter element on the bracket out of the filter.
- Insert new filter element so that the sealing surface is at the bottom and the "Separ" lettering is at the front.
- Insert the spring cassette.
- Clean the cover seal and check for damage. Change if required.
- Attach the filter cover (2) and tighten screws crosswise (tightening torque = 8 Nm). **Attention!** Follow the above procedure, otherwise the cover will be damaged.
- Open the shut-off valve on the hand pump (5) and fill the fuel system using the hand pump.
- Vent the fuel system, see "Liebherr maintenance instructions".

**Drain condensation**

- Open the drain cock (3).
- Allow the collected water to drain into a suitable container.
- Close the drain cock (3).

**Back-flushing process**

**NOTE:** Only perform this step if there is no opportunity to replace the filter element. Replace the filter element as soon as possible.

- Open the bleed screw on the filter cover (2).
- Open the drain cock (3) by moving the relief valve to a vertical position.

The clean fuel, located on the filtered side of the filter element, flows back through the filter element and removes water droplets and fine dirt from the element.

- Vent the fuel system.
- Close the bleed screw (tightening torque = 6 Nm).

If the engine continues to run at lower power, repeat the process or change the filter element.

### 22.5.2 Replacing the fuel prefilter hand pump

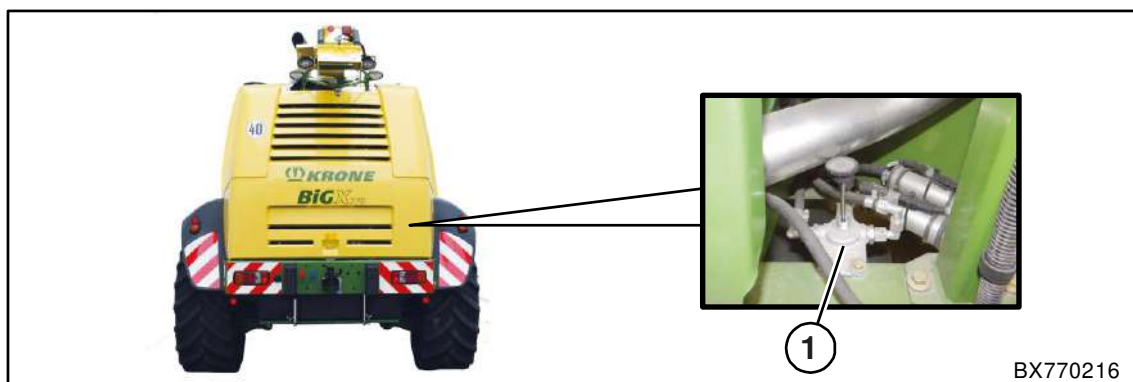


Fig. 568

Hand pump (1) with fuel prefilter is mounted at the machine.

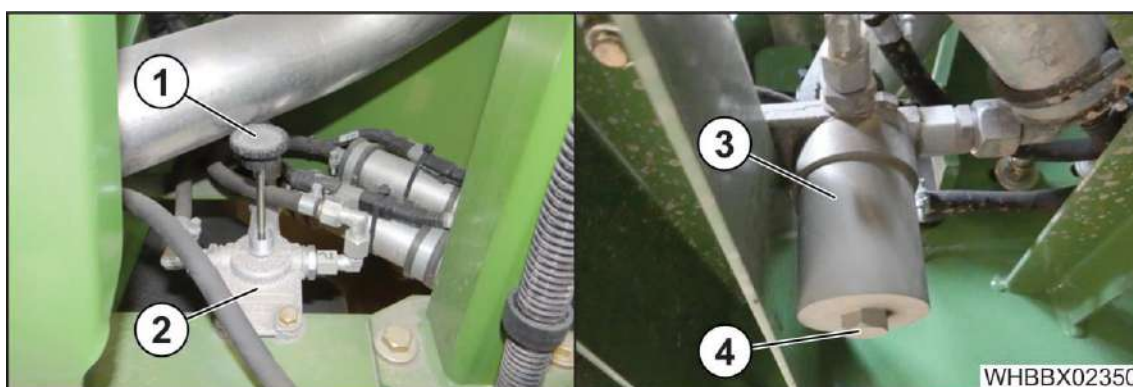


Fig. 569

#### Replacing the fuel prefilter

- Loosen the screw (4) at the bottom on the filter housing (3).
- Dismount the filter housing (3).
- Clean the filter housing (3) and the gauze filter, replace the gauze filter if it is heavily soiled or damaged.
- Check the seal ring for the filter housing and replace it if necessary.
- Wet the seal ring with fuel and insert it.
- Insert the gauze filter in the filter housing (3).
- Mount the filter housing (3) (tightening torque = 10 Nm).
- To vent, perform pump movements with the handwheel (1) until the overflow valve audibly opens.
- Screw the handwheel (1) in again.

#### **NOTE**

Following maintenance work, the handwheel (1) must always be screwed in. Otherwise the fuel supply is not guaranteed.

### 22.5.3 Replacing the fuel filter insert



Fig. 570

- Open the filler cap to prevent excess pressure in the fuel tank.
- Close the shut-off valve on the fuel pre-filter.
- Unscrew the fuel filter by using a strap wrench.
- Clean the sealing surface of the filter socket.
- Wet the seal of the new fuel filter with diesel and screw on the fuel filter.
- Tighten the fuel filter according to the imprinted instructions.
- Open the shut-off valve on the fuel pre-filter.
- Vent the fuel system.

### 22.5.4 Venting the fuel system

The fuel system may have to be vented,

- after the filter element on the fuel prefilter was changed.
- after prolonged shutdown of the machine.
- after filling the previously drained fuel system.

See also the "engine manufacturer's" operating instructions included with the delivery (chapter on venting the fuel system).

### 22.6 Maintenance cooling system (engine)

 **WARNING**

**Risk of fire from anti-freeze!**

If anti-freeze comes into contact with hot components in the warm engine compartment, it may ignite. There is a risk of fire and injuries.

- Leave the engine to cool down before filling with anti-freeze.
- Keep anti-freeze away from the filler neck.
- Before starting the engine, thoroughly clean components contaminated with anti-freeze.

 **WARNING**

**Danger of injury due to scalding!**

The engine cooling system is under pressure, especially when the engine is warm. If the cover is opened when the engine is warm, hot coolant may spray out. There is risk of injury.

- Leave the engine to cool down before opening the cover.
- When opening the cover, wear suitable gloves and goggles.
- To relieve the pressure, open the cover by a half turn.

#### 22.6.1 Coolant

 **NOTE**

The stipulated coolants are listed in the chap. "Technical data" Consumables!

The engine cooling system is filled ex works with corrosion-inhibiting frost protection agent/water. The coolant consists of 50% corrosion protection and frost protection agent and 50% water. The anti-freeze safety feature is guaranteed up to approx. -37°C.

Before the beginning of winter, always check the consistency of the anti-freeze.

If no coolant is available, then depending on the season, you should use a mixture of 50% ethylene glycol antifreeze/anti-corrosion agent and 50% clear, soft water. This mixture also offers corrosion protection and protection against freezing to -37°C.

 **NOTE**

Cooling system density additives may not be used.

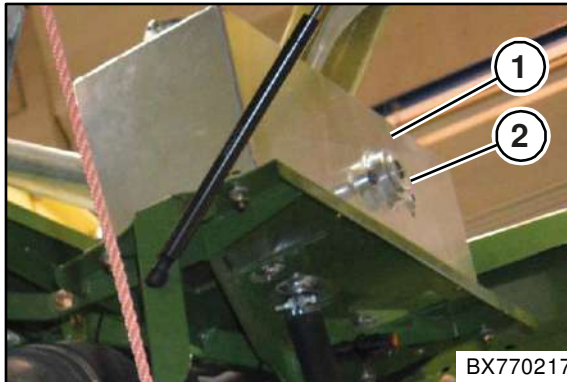
**Checking the coolant level**

Fig. 571

- Check the coolant level in the expansion reservoir (1) in the viewing pane (2).  
➔ The coolant level must reach up to the middle of the viewing pane (2); refill coolant if necessary.

**Refilling coolant**

Turn the cover (3) on the filler neck of the expansion reservoir (1) to the right catch point and allow residual pressure to escape slowly.

- Fully open the cover (3).
- Fill with coolant up to the middle of the viewing pane (2).
- Close the cover (3) on the filler neck of the expansion reservoir.
- Check the coolant level again after running the engine for a few minutes.

### Draining/Replacing coolant

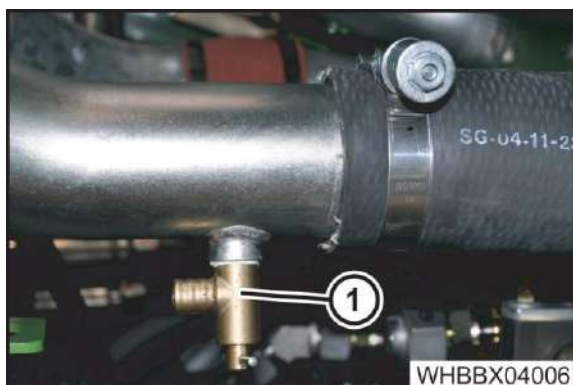


Fig. 572

**The drain screw (1) for the coolant is located on the coolant pipe on the right side behind the cooler.**

- Provide a suitable collecting vessel (approx. 100 litres).
- Open the cover on the filler neck of the expansion reservoir.
- Mount a hose onto the drain valve and place the other end in the collecting vessel.
- Open the drain screw (1) and drain the coolant.
- Close the drain screw (1).
- Dismount the hose from the drain valve.
- Close the cover on the filler neck of the expansion reservoir.



22.7

Checking the engine pipework

Checking the pipework of the cooling and heating system

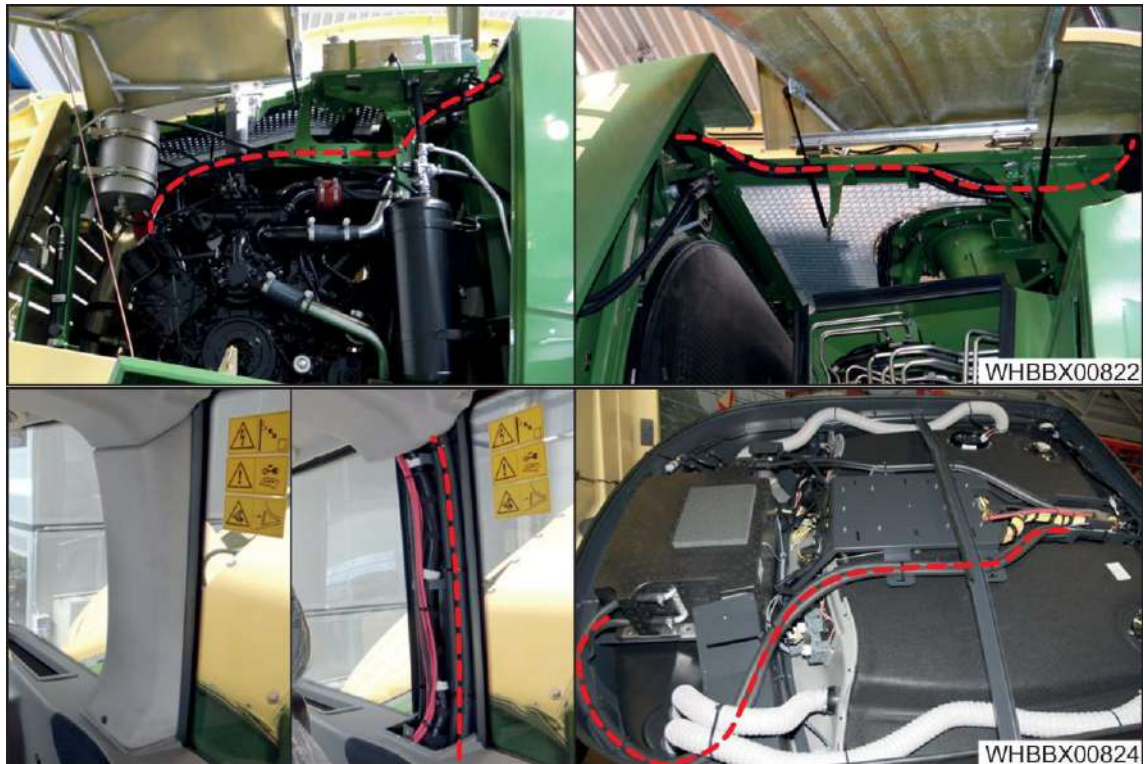


Fig. 573

- Check all hoses and hose connections for leaks and condition and replace, if required.

### Checking the pipework of the engine cooling system

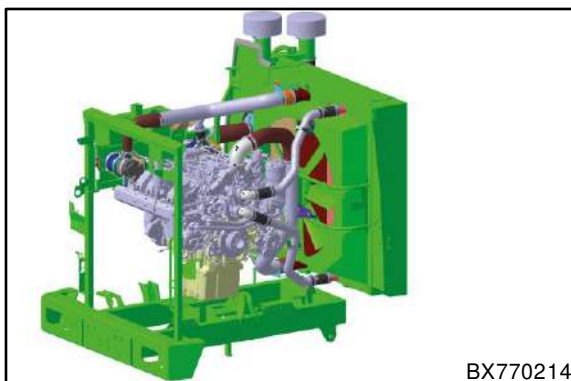


Fig. 574

- Replace all lines, hoses and collars for leaks and condition and replace if required.
- Mount the joint bolt hose clamps with a tightening torque of 6+1 Nm.

### Checking the pipework in the clean air and charge air

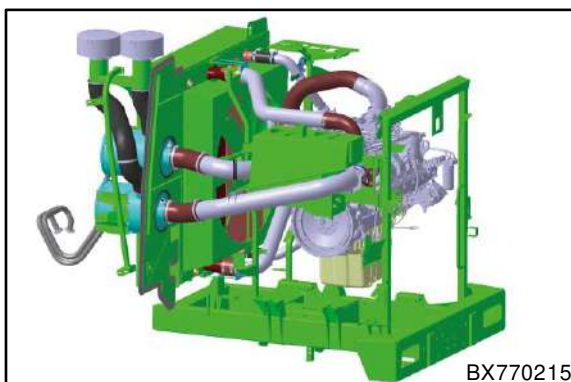


Fig. 575

- Replace all lines, hoses and collars for leaks and condition and replace if required.
- Mount the joint bolt hose clamps with a tightening torque of 10-12 Nm.



## 22.8 Air filter

**CAUTION**

If the machine is operated with a soiled or damaged air filter or safety cartridge, the engine may be damaged.

- Clean or replace the air filter and the safety cartridge according to the maintenance table, see chapter Maintenance – Engine "Maintenance table".
- Immediately replace a damaged air filter or a damaged safety cartridge.
- The safety cartridge must not be cleaned or re-used!

## 22.8.1.1 Cleaning air filter

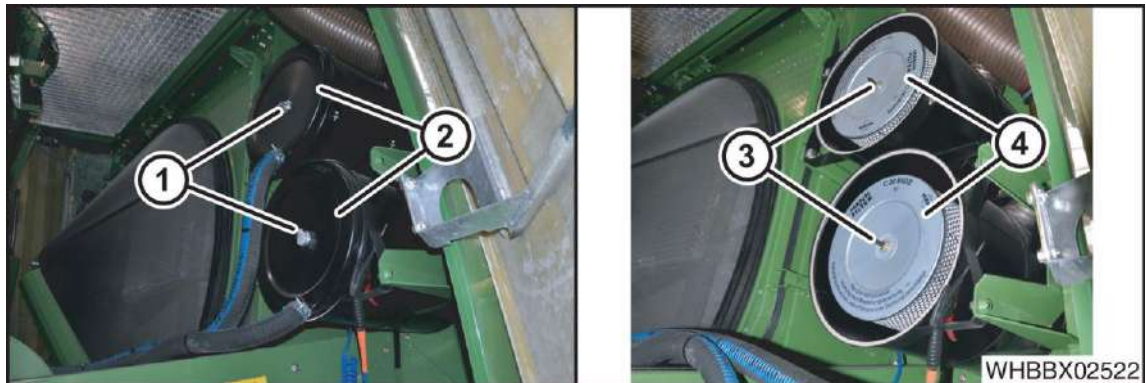


Fig. 576

- Unscrew the nut (1) and remove the cover (2).
- Unscrew the nut (3) and carefully remove the filter insert (4).
- Clean the interior area and the sealing surfaces of the filter housing.
- Blow out the filter insert with compressed air (max. 5 bar) from the inside to the outside.
- Replace excessively soiled or damaged filter inserts as well as filter inserts that were installed 4 or more years ago.
- Re-install the filter insert (4) and mount the nut (3).
- Install the cover (2) and mount the nut (1).

### 22.8.1.2 Replacing safety cartridge

**NOTE**

Safety cartridge must not be cleaned and used again.

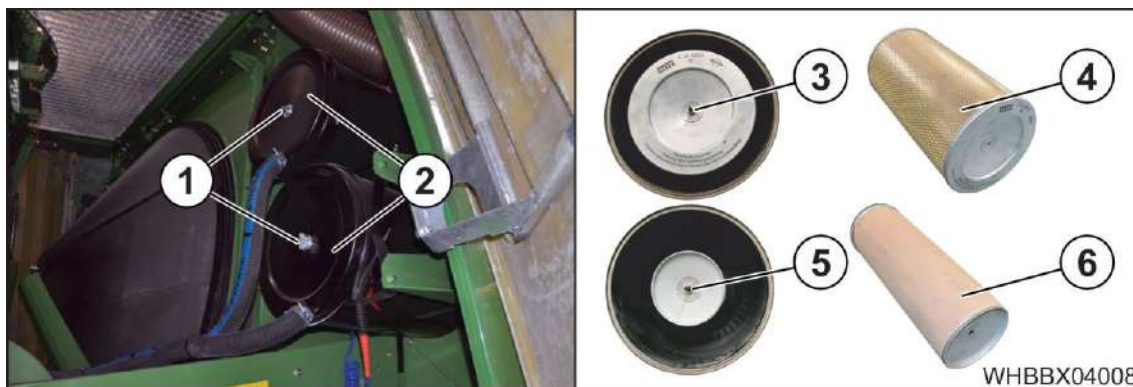


Fig. 577

- Unscrew the nut (1) and remove the cover (2).
- Unscrew the nut (3) and carefully remove the filter insert (4).
- Unscrew the nut (5) and carefully remove the safety cartridge (6).
- Clean the interior area and the sealing surfaces of the filter housing.
- Insert a new safety cartridge.
- Install the cleaned or new filter insert (4).
- Mount the cover (2) using nuts (1).

### 23 Maintenance – compressed air system

#### WARNING

##### **Risk of injury from escaping compressed air.**

The compressed air system is under high pressure. Escaping compressed air may seriously injure skin, limbs and eyes.

- Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".
- Relieve the pressure in the compressed air system.

#### 23.1 Compressed-air reservoir

#### WARNING

##### **Risk of injury from corroded or damaged compressed air reservoirs.**

Damaged or corroded pressure vessels 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.

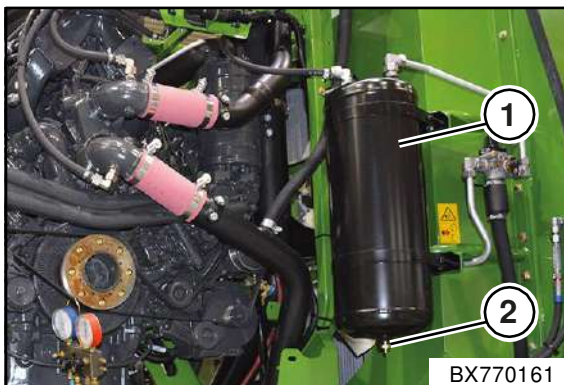


Fig. 578

Condensation forms in the compressed air storage tank (1). The condensation water can lead to malfunctions.

Drain condensation water

- Switch off diesel engine.
- Depressurise the compressed air storage tank (via a blow-out gun).
- Use the drain valve (2) to drain the condensation water collected in the compressed air storage tank (1) into a suitable container.

##### **Checking the compressed air reservoir**

Have the interior area of the compressed air reservoir checked in accordance with national requirements. A check is recommended at intervals of 2 years.

- Check the tensioning straps on the compressed air storage tank are secure. If necessary, tighten using the nuts.

## Maintenance – compressed air system

### 23.1.1 Checking the drain valve

- Switch off and secure the machine
- Open the drain valve and allow the condensation water to run out
- Check the drain valve, clean it and screw it in again

### 23.2 Cleaning the silencer

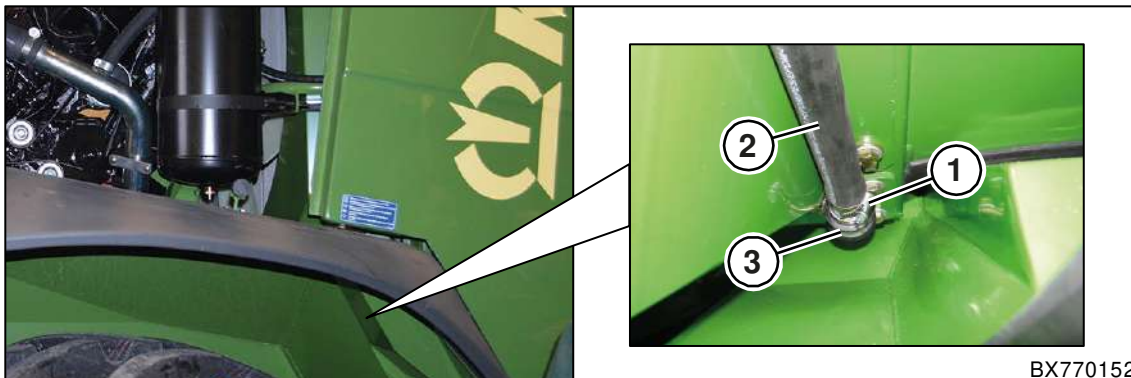


Fig. 579

- Loosen the tensioning strap (1)
- Pull out the hose (2) and the silencer (3).
- Clean the silencer.
- Insert the hose (2) and the silencer (3).
- Tighten the tensioning strap (1).

### 24 Maintenance – supply system

#### 24.1 Feed Attachment

##### 24.1.1 Remove the feed attachment with front attachment

The intake can be removed with the front attachment mounted; it must be folded down in the case of the 2-part EasyCollect.



#### **NOTE**





Install and remove the intake on a level surface with load bearing ground.  
Sufficient space must be available at the side for manoeuvring the machine.

- Place the intake with front attachment on the ground
- Switch off the engine

#### **Preparation**



Fig. 580

- Ignition on Level I, do not start diesel engine and press red momentary switch  and blue momentary switch  (2) simultaneously to depressurise the hydraulic lines of the front attachment.
- Press both momentary switches for the pendulum frame  and  (1) simultaneously to depressurise the hydraulic lines of the pendulum frame. This is necessary if a hydraulic cylinder is mounted (EasyCollect)
- Shut down and secure the machine, see page 41.

**⚠ WARNING**

**Risk of injury when working on the lifting unit!**

When working on the lifting unit or when opening/closing the stop cocks on the lifting cylinders, the lifting unit and attached components may perform unexpected movements. As a result, people may be injured.

- To secure the lifting unit from unintentionally lowering, close the stop cocks.
- To reach the stop cocks safely, swivel open the tool box, go under the machine and actuate the stop cocks.



Fig. 581

- Close two-way stopcock (1) and three-way stopcock (2), see information label.

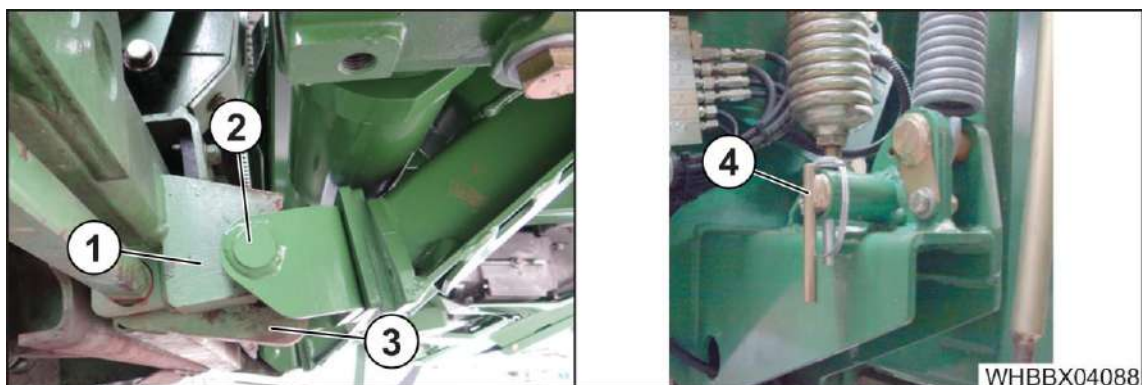


Fig. 582

- Check whether the pendulum frame holder (2) of the front attachment is located correctly in the holder (1) of the pendulum frame and the locking hook (3) is correctly closed.
- Lock the pendulum frame with bolt (4) and secure with spring locking pin.





Fig. 583



**NOTE**

The connections of the hydraulic lines are located at front left, optionally a cylinder can be installed for the pendulum frame, the connections (4) for this are located at front right. The system must be depressurised when removing the hydraulic lines (3, 4).

- Disconnect the hydraulic lines (3, 4) on the hydraulic couplings and close off with dust caps.
- Remove the lighting cable plug (2) and the connection line plug of the front attachment sensors (1) and close off with dust caps.

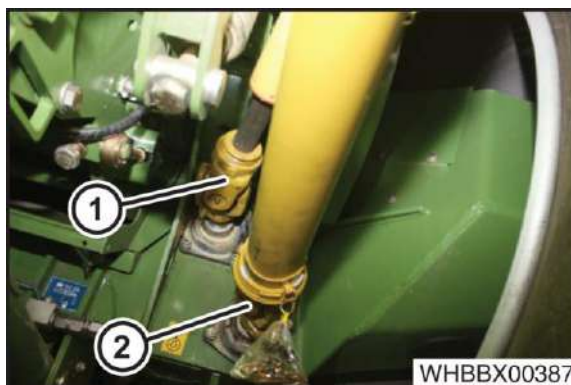


Fig. 584

- Pull off the universal shaft (2) for the front attachment drive
- Pull off the universal shaft (1) for the intake drive

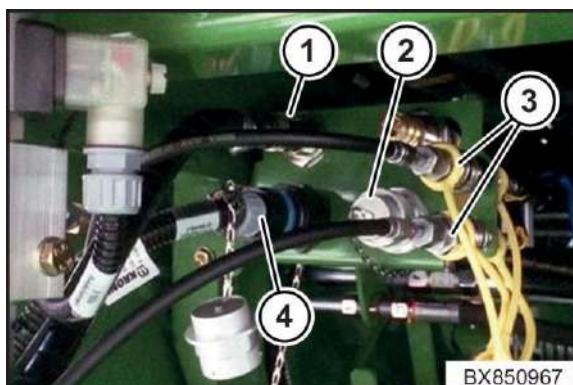


Fig. 585

- Pull off the compressed air line from the blowing device (1).
- Loosen the plug for the RockProtect and CropControl (2) options.
- Pull off the connection lines for the central lubrication (3).
- Pull off the connector cable to the chopping drum unit (4).



Fig. 586

- Pull off the plug (1) on the connector cable for the metal detection sensor and pendulum frame.
- Open the two-way stopcock and three-way stopcock.
- Start the engine.
- Move the traction drive release switch to position "off".
- Move the field release switch to position "on".





Fig. 587

- Loosen the coupling rods (2) by pulling the bolt (1). Use the keys (3) to relieve the coupling rods.
- Lower the lifting unit completely using the keys (3).
- Switch off the engine.

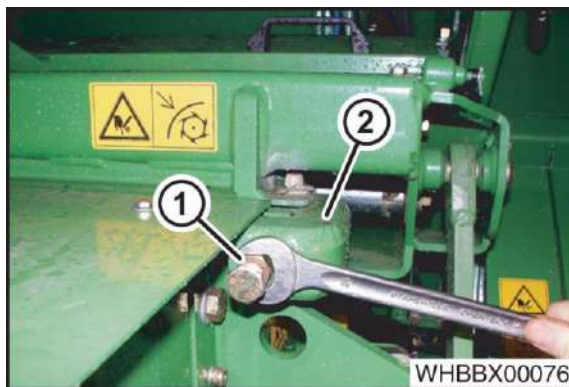


Fig. 588

- Loosen the counter nut (1) and screw of the interlocking claws (2) and open interlocking claws.
- Start the engine.
- Raise the lifting unit until the distance between the intake and chopping drum housing is approx. 200 mm.
- Switch off the engine.



Fig. 589

- Close two-way stopcock (3) and three-way stopcock (4), see information label.

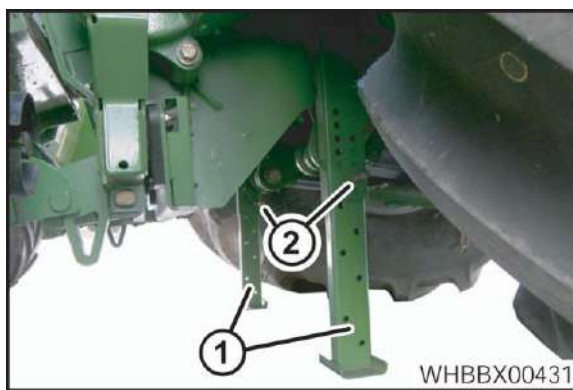


Fig. 590

- Dismount the spring locking pin (2) on the support jacks (1). Pull out the support jacks (1) down to the ground and secure with spring locking pins (2).

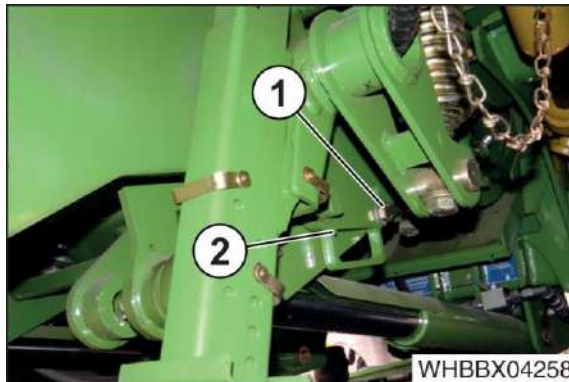


Fig. 591

- Unscrew the fastening screw (1) on the lock on the left-hand side of the machine.
- Open the lock (2).



Fig. 592

- Move three-way stopcock (2) to "Maize" position, see information label.
- Open the two-way stopcock (1), see the information label
- Start the engine.
- Continue lowering the lifting unit with the keys (3) until the intake is free.
- Switch the release switch traction drive to the "on" position.
- Carefully reverse the machine.
- Ensure that no lines or cables are trapped.

### 24.1.2 Attaching the feed attachment with front attachment



Fig. 593

- Move three-way stopcock (1) to "Maize" position, see information label



Fig. 594

- Check the locating points at the intake and the machine for contamination and clean them if necessary.
- Ensure that no lines or cables become jammed.
- Move the machine up to the intake.
- Raise the lifting unit using the keys (3) until the intake is correctly received by the retainer hooks of the chopping drum housing.
- Raise the lifting unit slightly until the support jacks are free.





Fig. 595

- Switch off the engine.
- Close two-way stopcock (1) and three-way stopcock (2), see information label.

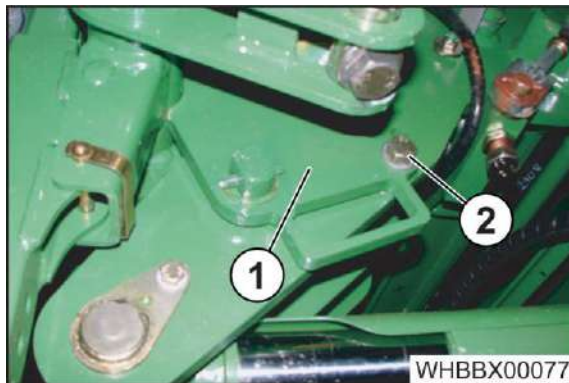


Fig. 596

- Close the lock (2) on the left side of the machine.
- Mount the screw (1).

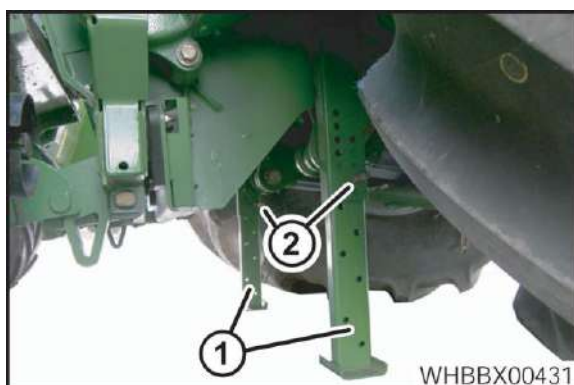


Fig. 597

- Push up the support jacks (1) of the intake and secure with spring locking pins (2) or unscrew the support jacks completely.



Fig. 598

- Open two-way stopcock (3) and three-way stopcock (4), see information label
- Start the engine.
- Move the traction drive release switch to position "off".
- Move the field release switch to position "on".

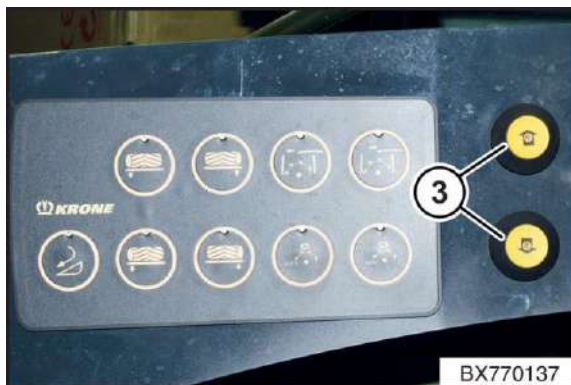


Fig. 599

- Lower the lifting unit completely using the keys (3).
- Ensure that no lines or cables become jammed.
- Switch off the engine.

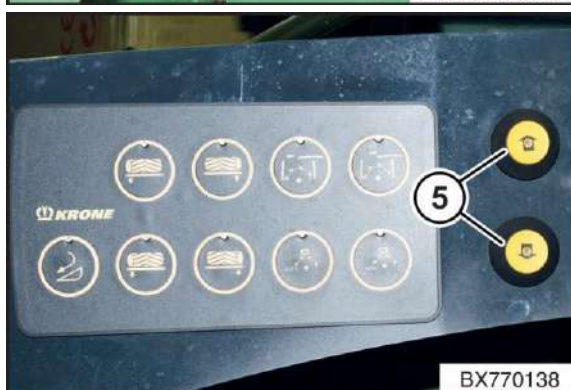
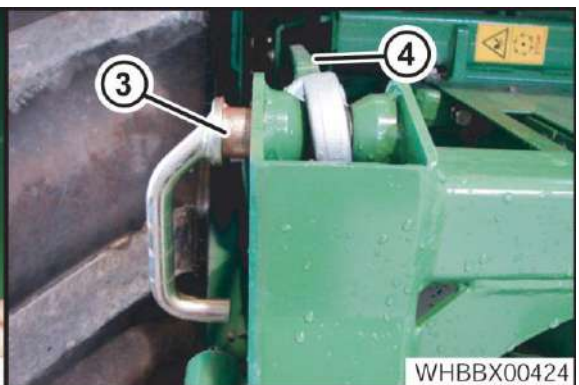
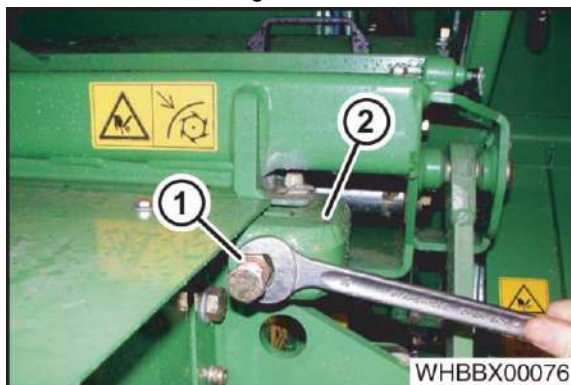


Fig. 600

- Close the interlocking claws (2). To prevent the screws from becoming loose during subsequent operation, the screws must be seated in the recesses in the frame.
- Tighten screws and secure with counter nut (1)
- Start the engine.
- Using the keys (5), move the lifting unit to the correct position
- Attach coupling rods (4) to the pendulum frame with bolts (3) and secure with linch pin.
- Switch off the engine.



Fig. 601

- Connect the hose of the compressed air line blowing device (1).
- Connect plug of the RockProtect and CropControl (2) options.
- Connect the connection lines to the central lubrication (3), ensuring that the lines are installed and attached correctly.
- Connect the connector cable to the chopping drum unit (4).



Fig. 602

► **NOTE**

The connections of the hydraulic lines are located at front left, optionally a cylinder can be installed for the pendulum frame, the connections (4) for this are located at front right. The system must be depressurised when removing the hydraulic lines (3, 4).

- Disconnect the hydraulic lines (3, 4) on the hydraulic couplings and close off with dust caps.
- Remove the lighting cable plug (2) and the connection line plug of the front attachment sensors (1) and close off with dust caps.



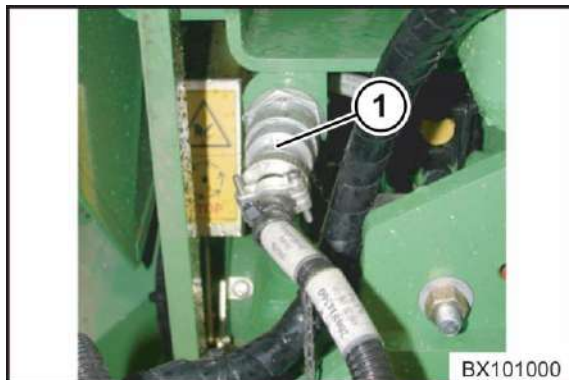


Fig. 603

- Connect the connector cable plug (1) for the metal detection sensor and pendulum frame.



Fig. 604

- Connect the universal shaft (1) for the intake drive.
- Connect the universal shaft (2) for the front attachment drive.
- Move the three-way stopcock (3) into the required working position.

### 24.1.3 Remove the feed attachment with installation cart

 **WARNING**

**Risk of injury when working on the lifting unit!**

When working on the lifting unit or when opening/closing the stop cocks on the lifting cylinders, the lifting unit and attached components may perform unexpected movements. As a result, people may be injured.

- To secure the lifting unit from unintentionally lowering, close the stop cocks.
- To reach the stop cocks safely, swivel open the tool box, go under the machine and actuate the stop cocks.

Prerequisites:

- The front attachment is removed, see the separate operating instructions for the front attachment.



Fig. 605

- Move three-way stopcock (1) to "Maize" position, see information label.
- Start the engine.
- Move the traction drive release switch to position "off".
- Move the field release switch to position "on".
- Move lifting unit all the way up.
- Switch off the engine.



Fig. 606

- Close two-way stopcock (1) and three-way stopcock (2), see information label.

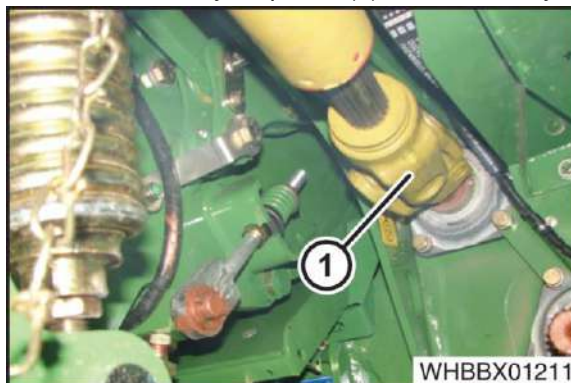


Fig. 607

- Remove universal shaft (1) for the drive of the intake.

**NOTE**

Parking jacks of the intake must be fitted and pushed in all the way.  
Depending on the tyre size, it may be necessary to adjust the support jacks.

- Open two-way stopcock and three-way stopcock, see information label.
- Start the engine.



Fig. 608

- Fold in the support jacks of the installation cart.
- Push the installation cart (1) under the intake.
- Lower the lifting unit using the keys (3).
- Hook the installation cart (1) into the header locking and lock

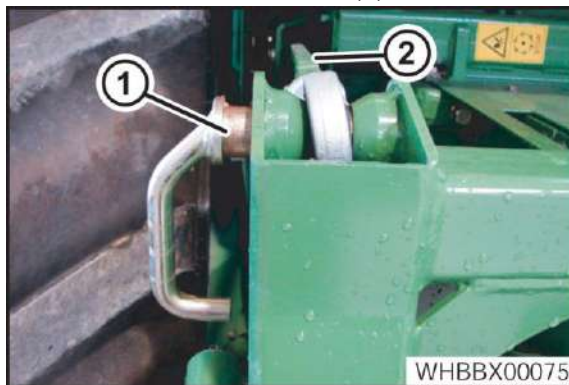


Fig. 609

- Loosen the coupling rods (2) by pulling the bolts (1), the Raise/lower lifting unit pushbuttons can be used to relieve the coupling rods.
- Lower the lifting unit completely.
- Switch off the engine.

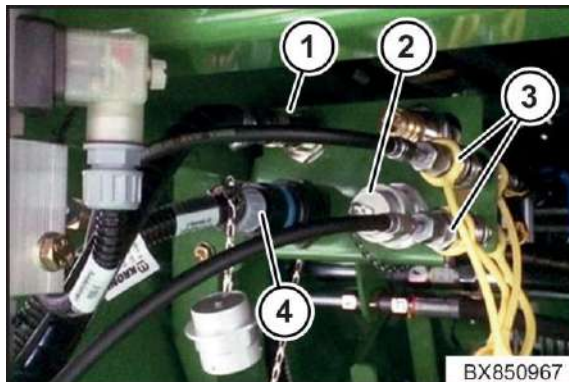


Fig. 610

- Pull off the compressed air line from the blowing device (1).
- Loosen the plug for the RockProtect and CropControl (2) options.
- Pull off the connection lines for the central lubrication (3).
- Pull off the connector cable to the chopping drum unit (4).

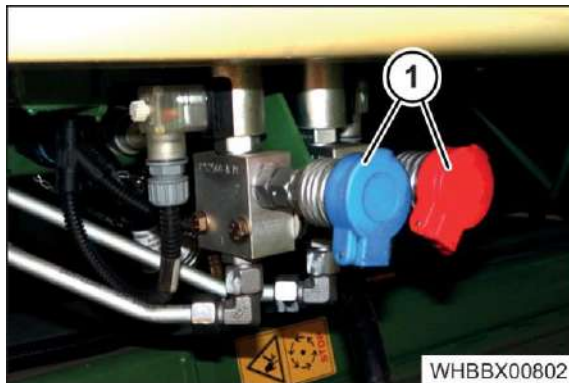


Fig. 611

► **NOTE**

Optionally a cylinder can be installed for the pendulum frame, the connections (1) for this are located at front right.

The system must be depressurised when removing the hydraulic lines.

- Disconnect the hydraulic lines (1) on the hydraulic couplings and close off with dust caps.



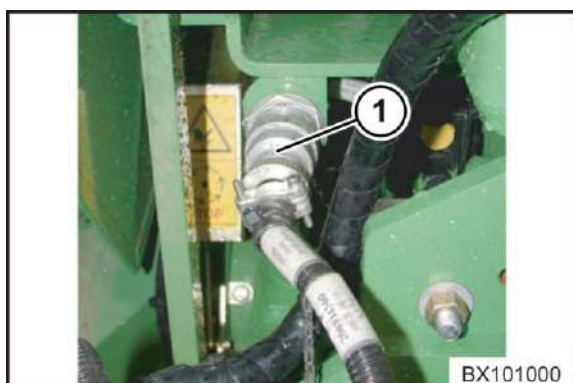


Fig. 612

- Pull off the plug (1) on the connector cable for the metal detection sensor and pendulum frame.

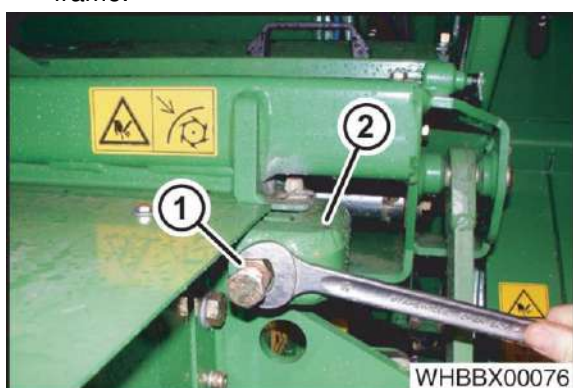


Fig. 613

- Loosen counter nut (1) and screw of the interlocking claws (2) and open interlocking claws.

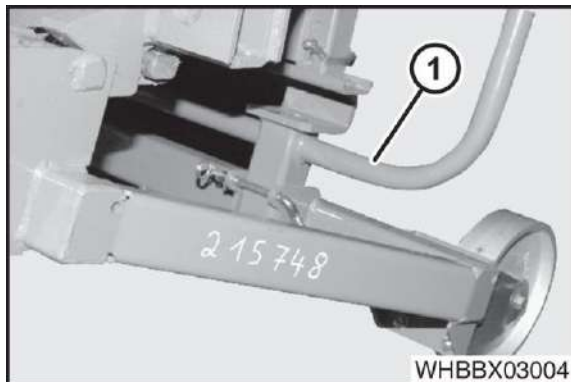


Fig. 614

- Start the engine
- Raise lifting unit and fold up and secure the supports of the installation cart (1)

**NOTE**

Depending on the tyre size, it may be necessary to adjust the parking jacks of the intake.

- Lower lifting unit until the supports of the intake are almost positioned on the installation cart.
- Switch off the engine.



Fig. 615

- Close two-way stopcock (1) and three-way stopcock (2), see information label.

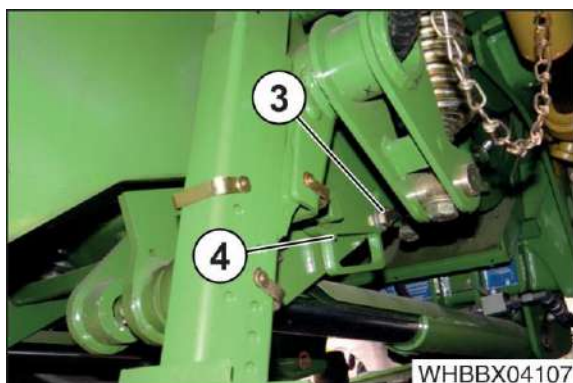


Fig. 616

- Unscrew the screw (3).
- Open the lock (4).
- Move three-way stopcock (2) to "Maize" position, see information label.
- Open two-way stopcock (1), see information label.
- Start the engine.
- Continue lowering the lifting unit until the intake is free.

► **NOTE**

Ensure that the parking jacks of the intake are positioned correctly on the supports of the installation cart.

- Pull the intake forwards.
- Ensure that no lines or cables are trapped.



24.1.4 Attaching the feed attachment with installation cart

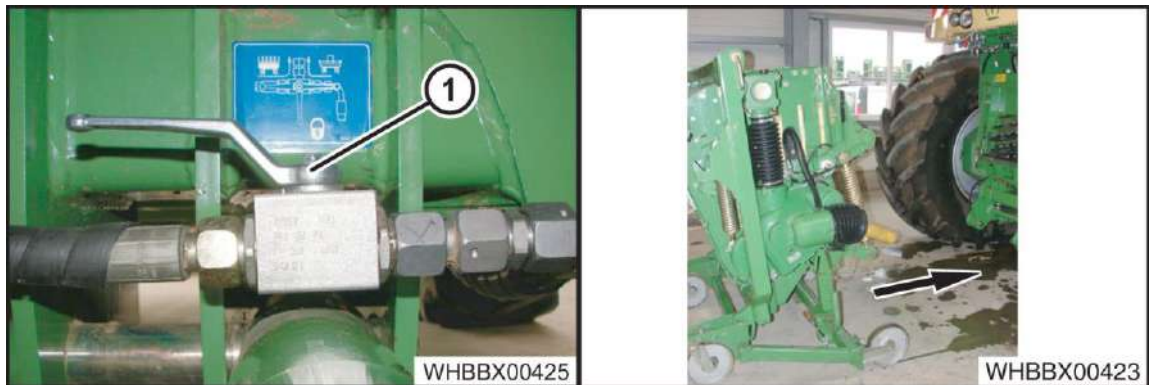


Fig. 617

- Move three-way stopcock (1) to "Maize" position, see information label.
- Start the engine.
- Move the traction drive release switch to position "off".
- Move the field release switch to position "on".

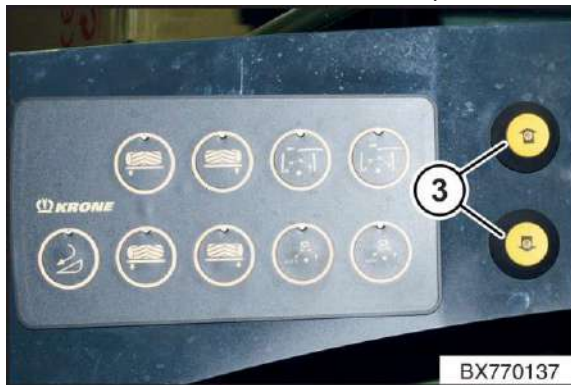


Fig. 618

- Move intake up to the machine and raise lifting unit using the keys (3) until the intake is correctly received by the holder of the cutting drum frame.
- Ensure that no lines or cables become trapped.
- Raise the lifting unit slightly until the support jacks are free.



Fig. 619

- Switch off the engine.
- Close two-way stopcock (1) and three-way stopcock (2), see information label.

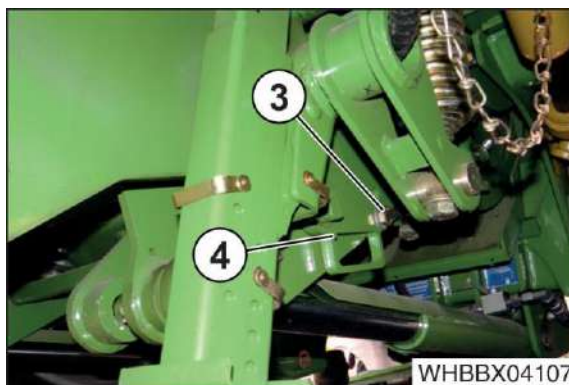


Fig. 620

- Switch the lock (4)
- Mount the screw (3)
- Fold in the supports on the installation cart if they have been adjusted.
- Fully insert the supports of the intake.
- Open two-way stopcock (1) and three-way stopcock (2), see information label.
- Start the engine
- Lower the lifting unit completely.
- Switch off the engine.

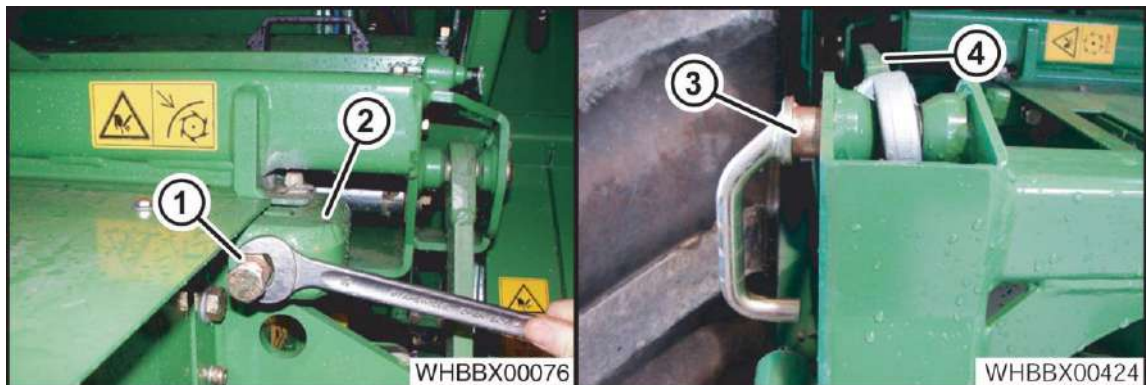


Fig. 621

- Close the interlocking claws (2).
- Tighten screws and secure with counter nut (1). To prevent the screws from becoming loose, the screws must be seated in the recesses in the frame.
- Attach coupling rods (4) to the pendulum frame with bolts (3) and secure with linch pin
- Take installation cart out of the lock and push away.



Fig. 622

- Connect the hose of the compressed air line blowing device (1).
- Connect plug of the RockProtect and CropControl (2) options.
- Connect the connection lines to the central lubrication (3), ensuring that the lines are installed and attached correctly. Ensure that the line for the chopping drum is connected at the top and the line for the intake is connected at the bottom.
- Connect the connector cable to the chopping drum unit (4).

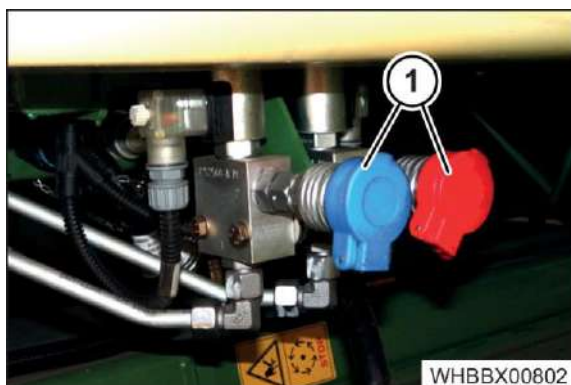


Fig. 623

- Connect the lines (1) of the pendulum frame (if installed).

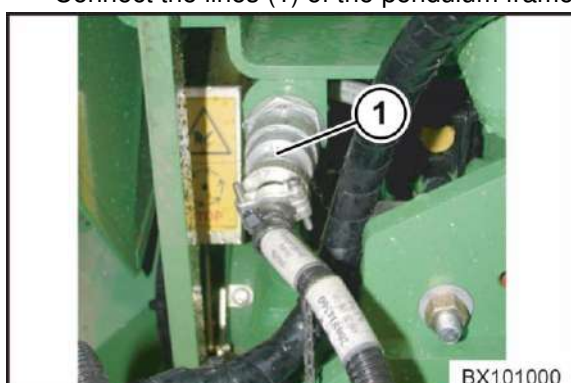


Fig. 624

- Connect the connector cable plug (1) for the metal detection sensor and pendulum frame.
- Start the engine.

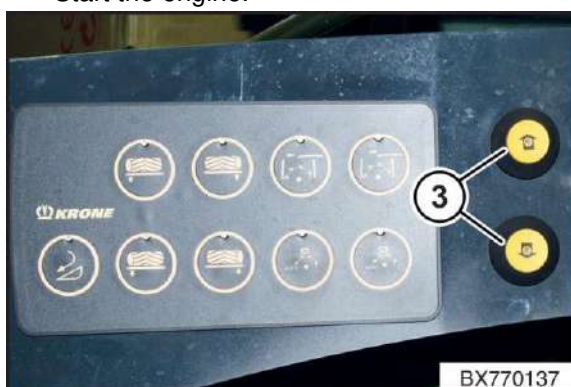


Fig. 625

- Using the keys (3), move the lifting unit to the top.
- Switch off the engine.





Fig. 626

- Close two-way stopcock (1) and three-way stopcock (2), see information label.

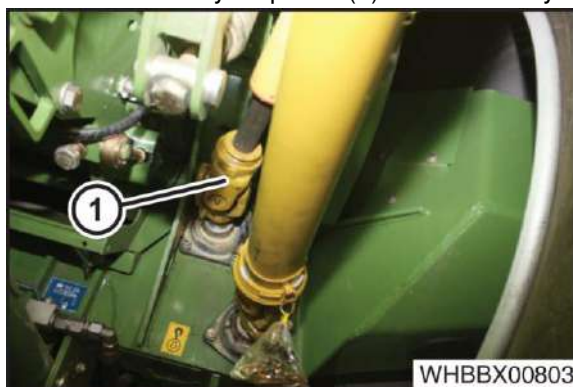


Fig. 627

- Connect universal shaft for the drive of the intake (1).



Fig. 628

- Move three-way stopcock (2) to the required position, see information label.
- Open two-way stopcock (1), see information label.

### 24.2 Grinding the cutting blade

 **WARNING**

**Risk of injury from exposed, rotating cutting drum!**

The cutting blades can be ground only when the cutting drum is rotating. During the grinding process not all rotating parts of the cutting drum and drive can be completely encased. This means there is an increased risk of injury.

- During the grinding process ensure that all other safety devices are in the protective position and that all maintenance openings are closed.
- During the grinding process the operator must be either on the driver's seat in the cab or in the area of the grinding control unit on the left next to the platform.
- During the grinding process ensure that nobody is in the area of the cutting drum or reaches into the rotating cutting blades.

 **WARNING**

**Risk of injury from sharp cutting blades!**

When performing maintenance work on the cutting drum, there is a risk of the operators being injured by the sharp cutting blades.

- When working on the cutting drum, work particularly carefully and prudently.
- Always wear work gloves when working on the cutting drum.

 **WARNING**

**Risk of fire due to deposits in the grinding channel!**

A mixture of dust, grass and chaff in the grinding channel is a source of fire and means an increased fire risk during the grinding process.

- Before grinding the cutting blades, check the automatic re-adjustment of the grinding stone and clean the grinding channel.

**CAUTION**

**Damage to the grinding stone due to water retention!**

The grinding stone must not become wet, as water retention in freezing temperatures will cause the grinding stone to break during the grinding process.

- Do not wet the grinding stone with water.
- Open the cover hood for maintenance work only, otherwise keep it closed.

Dull cutting blades and too great a distance between the cutting blade and the counterblade will result in an unnecessarily high power demand, poor chop quality and high wear on the cutting elements.

Therefore the worn cutting blades must be ground with the grinding device of the forage harvester and then the counterblade must be re-adjusted.

The frequency and the duration of the grinding process depend on the application conditions. In principle, short grinding intervals with a short grinding duration and corresponding counterblade adjustment are recommended.

- To ensure that the cutting blades for the maize operation achieve a very good self-sharpening effect, they must not be "fully ground", i.e. the blade should not be ground down to the cutting edge. This will cause the base material to wear more quickly than the coating and an aggressive cutting edge will be formed, the so-called "mouse tooth".
- On account of the application conditions, the self-sharpening effect of the cutting blades for grass operation is difficult to achieve, as is the case with the cutting blades for maize operation. The blades must therefore be "fully ground", i.e. the blade should be ground down to the cutting edge.

Before grinding the cutting blades, check the automatic re-adjustment of the grinding stone and clean the grinding channel.

### Preparing to grind using manual operation

Prerequisites:

- The machine is secured from rolling away with wheel chocks.
- The engine is started and is idling.
- The parking brake is applied.
- The main coupling is switched on.
- The release switch traction drive (2) is in the "off" position.
- The release switch road/field (1) is in the "field mode" position.



Fig. 629

The front attachment must be on the ground for the grinding process.

- Press the "Manually lower lifting unit" key (1) on the control lever until the front attachment is on the ground.

- Switch the maintenance release switch to the "on" position,

Main menu 3 "Maintenance" appears in the display of the info centre.

If the lifting unit is not resting completely on the ground, the information message "546 Lifting unit too high" appears.

### Adjusting the number of grinding cycles

(Factory setting 20)

See the info centre, menu 3-2 "Changing the number of grinding cycles", see page 263.



### Running the grinding process

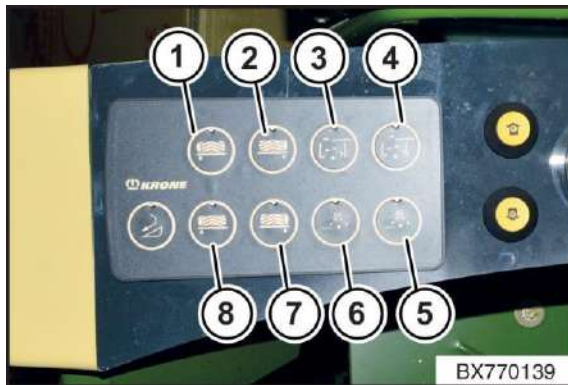


Fig. 630

- Activate the "Open grinding flap" key (4).  
The grinding flap opens.
- Activate the "Automatic grinding operation" key (6).  
The pre-set number of grinding cycles is performed. After the end of the grinding process, the grinding stone moves to its parking position (the right side of the grinding device).
- Activate the "Close grinding flap" key (3).  
The grinding flap closes.

### Readjusting the counterblade

When the grinding process is complete, the counterblade must be re-adjusted while the chopping drum is running.

- Very briefly press alternately the "Move counterblade right to chopping drum" key (1) and the "Move counterblade left to chopping drum" key (2).
- If there is a noise when readjusting one side (right/left) (blades striking the counterblade!), release the key immediately and very briefly press the appropriate key "Move counterblade away from chopping drum" (7 or 8).
- Follow the same procedure to block the counterblade on the other side.  
After you have readjusted the counterblade, the chopping drum must run without making any noise.
- Lift the front attachment.

#### **NOTE**

If there is no noise while the counterblade is being re-adjusted, the blades must be re-adjusted or worn blades and blades which can no longer be re-adjusted must be replaced, see chapter Maintenance, "Re-adjusting or replacing cutting blades".

### 24.3 Re-adjusting or replacing the grinding stone

 **WARNING**

**Risk of injury due to rotating cutting drum!**

If the flap of the grinding device is opened while the cutting drum is rotating, there is a risk of injury from the sharp, rotating cutting blades.

- Do not open the flap of the grinding device until the cutting drum has come to a standstill.

 **WARNING**

**Risk of fire due to deposits in the grinding channel!**

A mixture of dust, grass and chaff in the grinding channel is a source of fire and means an increased fire risk during the grinding process.

- Before grinding the cutting blades, check the automatic re-adjustment of the grinding stone and clean the grinding channel.

The grinding stone of the grinding device is automatically re-adjusted during the grinding process.

If automatic re-adjustment no longer occurs, the grinding stone must be re-adjusted.

The grinding stone can be re-adjusted 3 – 4 times, then the grinding stone must be replaced.

**NOTE**

Check the grinding stone for damage and wear and replace if required. These may cause the grinding stone to run noisily, resulting in an uneven grinding pattern.

**24.3.1 Checking the grinding stone**

Fig. 631

- Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".
- Open the flap (1) of the grinding device (2).
- Clean the grinding channel (1) (e.g. blow out with compressed air).
- Measure the visible thread length of the grinding device (dimension a).

If dimension a is  $\geq 5$  mm, the grinding stone setting is correct and the grinding process can be started.

- Close the flap of the grinding device again.

If dimension a  $< 5$  mm, the grinding stone must be re-adjusted or replaced, see chapter Maintenance-Supply system, "Re-adjusting or replacing the grinding stone".

### 24.3.2 Re-adjusting the grinding stone

#### **CAUTION**

##### **Damage to cutting drum and grinding device due to incorrect operation!**

If there is no free travel to the cutting drum when the grinding stone has been re-adjusted, there is a risk of collision between the grinding stone and cutting blade.

- After re-adjusting the grinding stone, check and observe dimension  $b - 2$  from the lower edge of the grinding stone to the lower edge of the grinding slide.

#### **CAUTION**

##### **Damage to the grinding device due to incorrect operation!**

If the detent pin is not removed again when the grinding stone has been re-adjusted, it will be damaged during the next automatic grinding process.

- After re-adjusting the grinding stone, always lift the detent pin and rotate it by 90°.

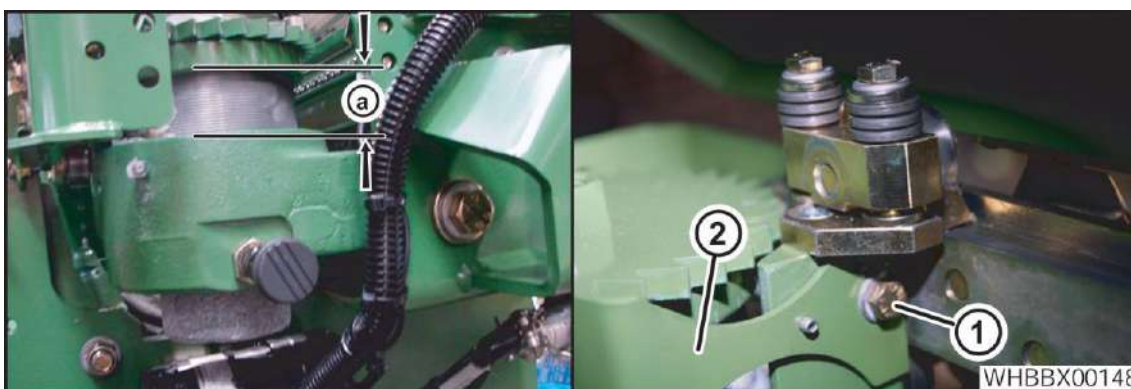


Fig. 632

- If dimension "a" is less than 5 mm, the grinding stone must be readjusted or replaced.

#### **NOTE**

If the dimension "a" is less than 5 mm and further grinding is performed, the ratchet wheel runs against the stop (fixed).

- Unscrew the screw (1).
- Remove the pawl (2).

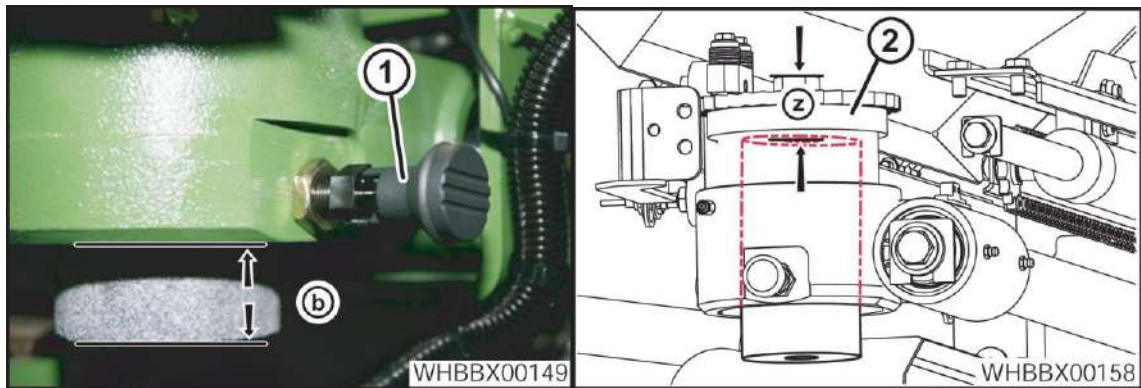


Fig. 633

- Determine the distance "b" from the lower edge of the grinding stone to the lower edge of the grinding slide.
- Allow the detent pin (1) to lock into place by turning it 90° degrees.
- Measure the distance "z" (upper edge of grinding stone to upper edge of hexagon nut on the ratchet wheel) through the nut.
- Turn back the ratchet wheel (2) until the detent pin (1) engages.
- Turn the ratchet wheel (2) further back until the detent pin (1) has completely engaged and the grinding stone adjustment is locked in place.
- Continue turning the ratchet wheel to loosen the grinding stone clamp.
- Press the grinding stone from above to the previously determined dimension "b" - 2 mm.
- Tension the grinding stone with the ratchet wheel (tightening torque 180 Nm).
- Check the dimension "b" (- 2 mm).
- Check whether the dimension "z" is less than 100 mm. If not, replace the grinding stone as it will not hold in the clamp.
- Mount the pawl.
- Reset the grinding cycle counter in the info centre.

**NOTE**

The grinding stone should always be higher than the chopping blade – risk of collision!

### 24.3.3 Replacing the grinding stone

If the grinding stone (1) is worn to such an extent that it can no longer be re-adjusted, the grinding stone must be replaced.

If the grinding stone (1) is replaced, the clamping rings (3) must also be replaced.

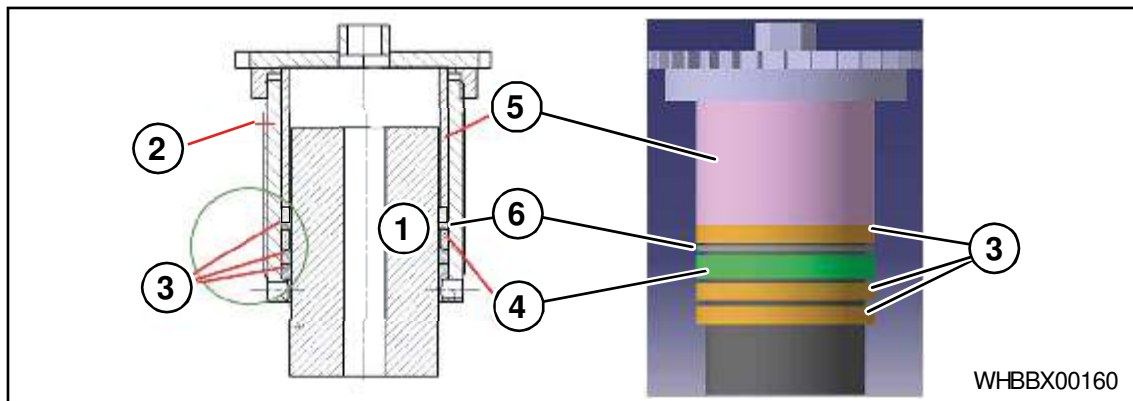


Fig. 634

- Whenever a grinding stone is changed, replace the clamping rings (3).

#### NOTICE

Every time a new grinding stone (1) is installed, make sure the parts are correctly arranged. The clamping rings (3), the intermediate ring (4), the sleeve (5) and the support disc (6) must be mounted as shown above.

The bevelled edges of the intermediate ring (4) and the sleeve (5) must point downwards.



Fig. 635

- Unscrew the screw (3).
- Remove the pawl (2).
- Determine dimension "b" from the lower edge of the grinding stone to the lower edge of the grinding slide.
- Allow the detent pin (4) to lock into place by turning it 90° degrees.
- Turn back the ratchet wheel (1) until the detent pin (4) engages.
- Turn ratchet wheel (1) further back until the detent pin (4) has completely engaged and the grinding stone adjustment is locked in place.
- To loosen the grinding stone clamp, continue turning the ratchet wheel (1).
- Remove the ratchet wheel (1).
- Push the grinding stone down and out and remove it.



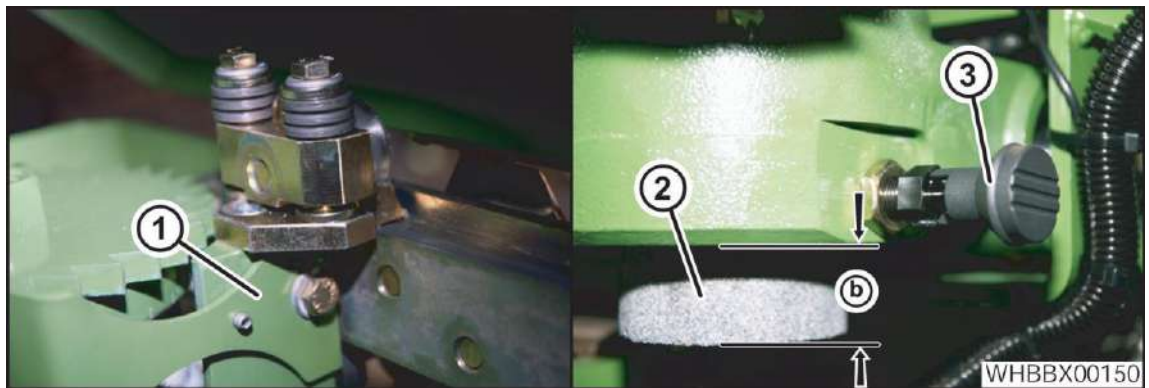


Fig. 636

- Insert the new grinding stone (2) with new clamping rings from above.
- Adjust the grinding stone to the previously determined dimension “b” - 2 mm.
- Tension the grinding stone by using the ratchet wheel (tightening torque 180 Nm).
- Pull out the detent pin (3), rotate it 90° and lock it in this position.
- Mount the adjustment sheet (1).
- Close the grinding unit flap protection.
- Check once again if the dimension “b” is - 2 mm.



**NOTICE**

The grinding stone should always be higher than the chopping blade – risk of collision!

- Reset the grinding cycle counter in the info centre.

### 24.4 Re-adjusting or changing the cutting blades

**⚠ WARNING**

**Risk of injury from sharp cutting blades!**

When performing maintenance work on the cutting drum, there is a risk of the operators being injured by the sharp cutting blades.

- When working on the cutting drum, work particularly carefully and prudently.
- Always wear work gloves when working on the cutting drum.
- Turn the cutting drum clockwise on the belt pulley only and, when the correct position is reached, lock with the locking bolt.

Prerequisites:

- The feed attachment is removed, see page 657.
- The machine is shut down and secured, see page 41.

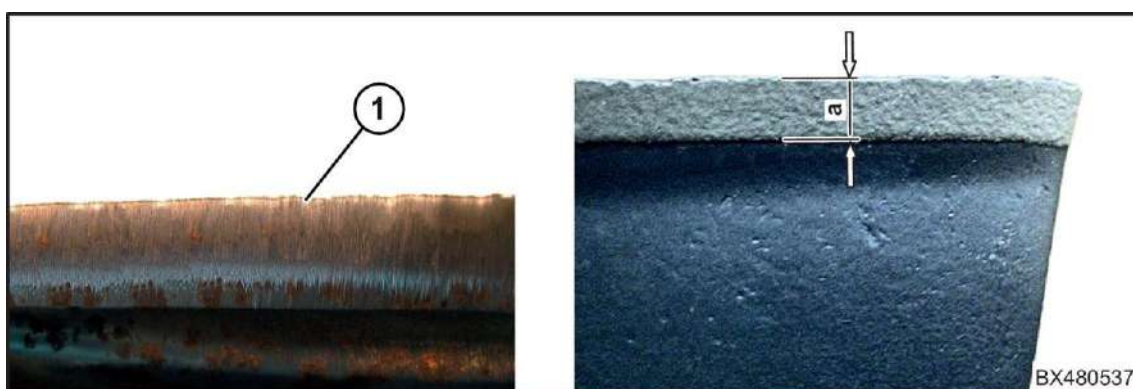


Abb. 637

Worn cutting blades may result in an unsatisfactory chop quality. To keep wear as low as possible, the cutting blades must be ground correctly and regularly and the distance between the counterblade and the cutting blades (cutting gap) must be adjusted correctly and regularly, see chapter Maintenance-Supply system, "Grinding cutting blades".

The cutting blades must be replaced if they can no longer be re-adjusted and the coating (a) under the cutting blade is worn. In the original state the coating "a"=19 mm.

The cutting drum operates particularly efficiently if the maximum cutting radius and conveying space can be used. Therefore the cutting blades should be re-adjusted if dimension "a" < 10-12 mm.



24.4.1 Rotating the chopping drum

**Relieving the power belt for the main belt drive**

To make the chopping drum easier to rotate, the power belt for the main belt drive must be relieved.

- Briefly start up the machine to fill the accumulator.
- Shut down and secure the machine, see page 41.

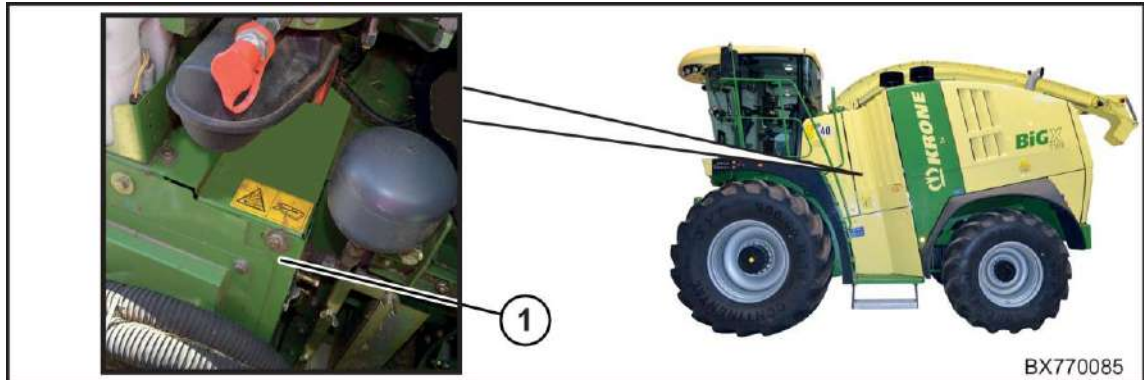


Fig. 638

The separating box (1) is located behind the side flap at the front left.

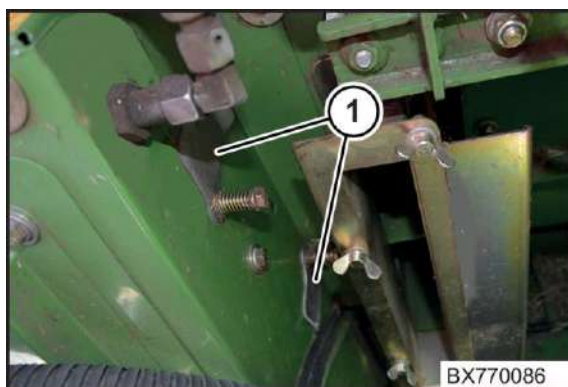


Fig. 639

- To expose the openings on the right in the separating box, rotate the two spring-loaded swivelling covers (1) away.
- Simultaneously actuate the valves in the openings with finger pressure. Press the upper block down and the lower valve block up.

The power belt is relieved and the chopping drum can be rotated.

- Close off the openings in the separating box with the swivelling covers.



**NOTE**

When you restart the machine, the power belt for the main belt drive is tensioned again.

Rotating chopping drum

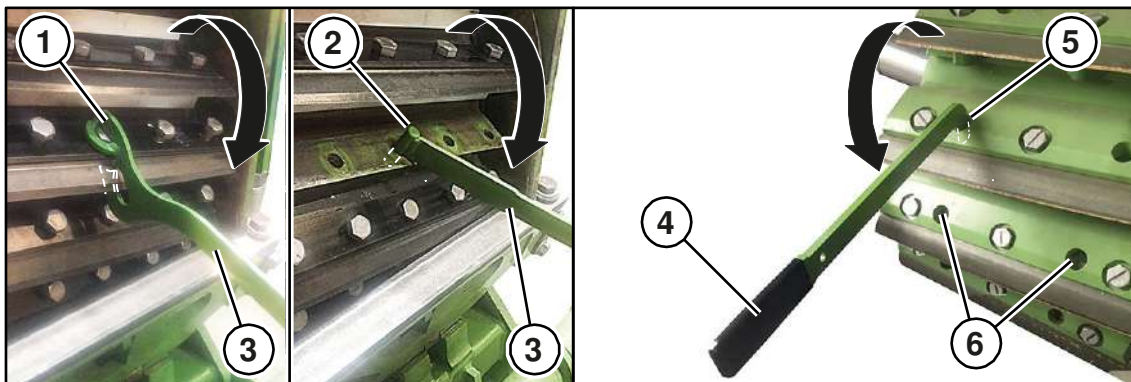


Fig. 640

The turning lever (3) for the chopping drum with 40, 48 blades has a holding fixture (1) at one end for the hexagon head screws which are used to attach the chopping blades. At the opposite end the turning lever (3) has a holding fixture (2) which fits into the boreholes of the blade carriers.

The turning lever (4) for the chopping drum with 20, 28, 36 blades has a holding fixture (5) at the end for the boreholes of the blade carriers.

- Turn the chopping drum clockwise using the turning levers (3, 4) only.

24.4.2 Re-adjusting or changing the chopping blades on chopping drums with 20, 28, 36 blades

Locking the cutting drum

The locking device is on the right side of the cutting drum.

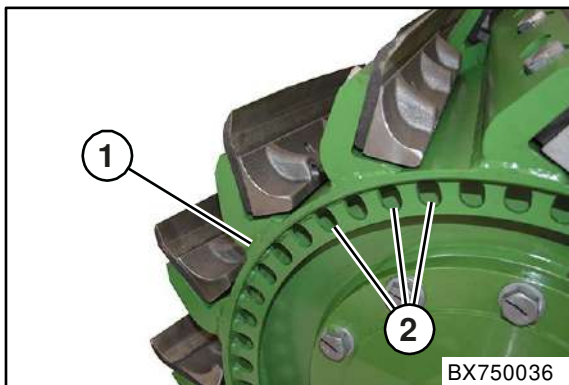


Fig. 641

The cutting drum (1) has a locking hole (2) for each working position.

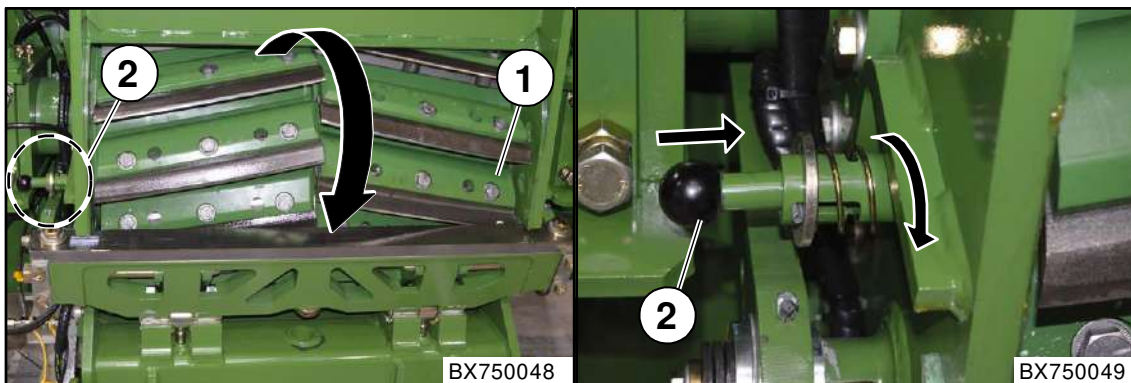


Fig. 642

- Rotate the chopping drum (1) to the desired working position.



## Maintenance – supply system

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- The lever (3) is located on the right-hand side above the connector plug for the intake unit, push it on the locking bolt (2).
- Pull out spring cotter pin (4).
- Push the locking bolt (2) all the way towards the chopping drum by using the lever (3) and rotate it one quarter turn clockwise.

### Readjusting the cutting blades

#### CAUTION

##### Damage to the machine due to screwing in defective screws!

If the old fastening bolts are screwed in after changing the cutting blades, there is a risk that these bolts may be damaged and fail during operation, possibly damaging the machine.

- Whenever blades are changed, use new screws to attach the cutting blades.

To sharpen the cutting blades with as few grinding cycles as possible, the cutting blades must be adjusted to the grinding device.

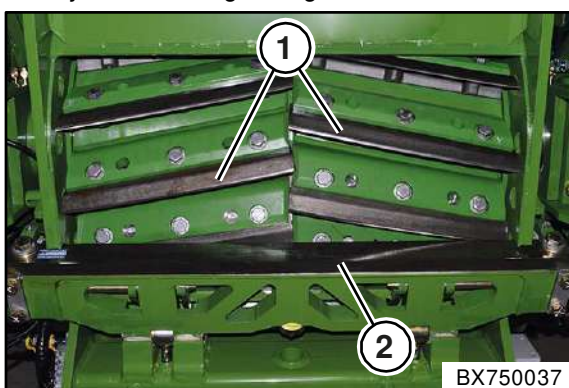


Fig. 643

- Grind the chopping blades (1) with the grinding device, see page 682.
- Using manual operation, set the counterblade (2) parallel to the ground area of the blade, see page 685.

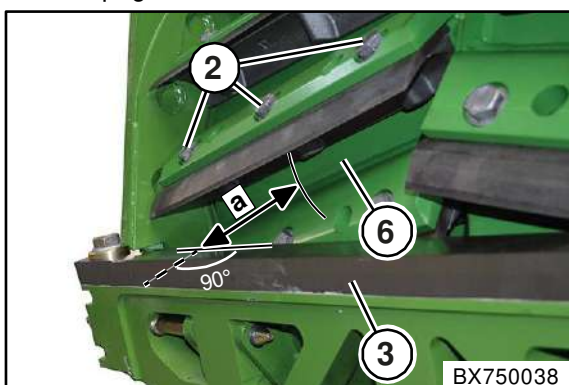


Fig. 644

- Measure the distance from the counterblade (3) to the drum shell (6) on the right and left side of the chopping drum.
- Determine the differential between the two measurements and taken into account in the following adjustment of the counterblade (3).
- Adjust the counterblade so that there is a maximum distance of  $a = 87-89$  mm between the counterblade (3) and the drum body (6).
- Unscrew all hexagonal head screws (2) on one blade.

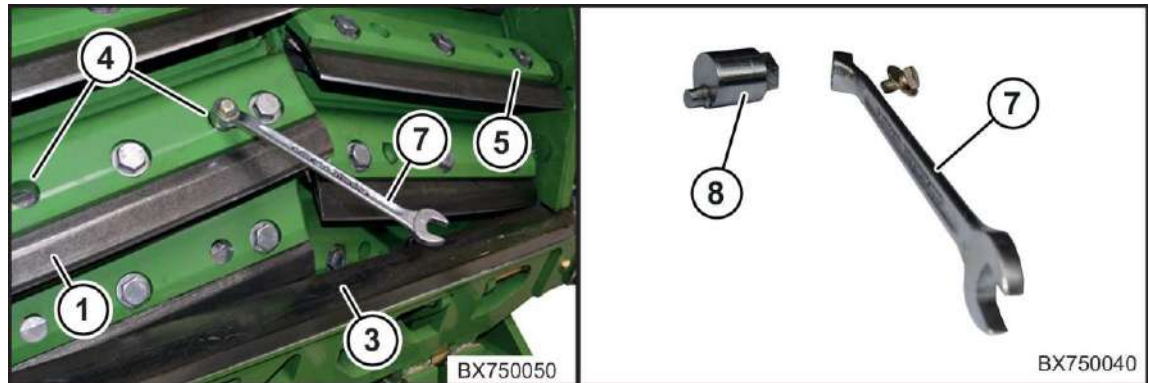


Fig. 645

- Re-adjust the blade (1) to the counterblade (3):
  - Screw on a 17 mm ring spanner (7) with a screw and disc on the eccentric (8).
  - Insert the eccentric into the borehole (4) of the blade carrier (5) and adjust the counterblade on both sides by turning the ring spanner until the distance dimension of 0.1 mm between the blade and counterblade is reached.
- Tighten all hexagonal head screws on the blade using a spanner (torque 280 Nm).
- Loosen the locking device on the chopping drum, rotate the chopping drum by one row of knives and lock again.
- Re-adjust the blades on the next row of knives.
- Continue in this manner until all rows of knives on the chopping drum have been re-adjusted evenly.
- Loosen the locking device on the chopping drum.
- Set the grinding stone so that there is a distance of 0.5 mm between the blade back and the grinding stone, see page 686.
- Move the counterblade (3) on both sides back slightly, evenly on the left and right.
- Attach the feed attachment, see page 657.
- Grind the chopping blades, see page 682.
- Block the counterblade, see page 685.



### Replacing the cutting blades

Worn and damaged cutting blades must be replaced.

#### CAUTION

##### Damage to the machine due to installation of dirty components!

If dirty cutting blades and screw-on strips are installed, there is a risk of the cutting blades becoming detached from the blade drum and damaging components of the machine.

- Clean all parts before installing them.

#### CAUTION

##### Damage to the machine due to screwing in defective screws!

If the old fastening bolts are screwed in after changing the cutting blades, there is a risk that these bolts may be damaged and fail during operation, possibly damaging the machine.

- Whenever blades are changed, use new screws to attach the cutting blades.

#### WARNING

##### Risk of injury due to sharp parts!

There is a danger of injury when working on the chopping drum as the edges of the screw-on strips are very sharp.

- Always wear safety gloves when working in the area of the screw-on strips.

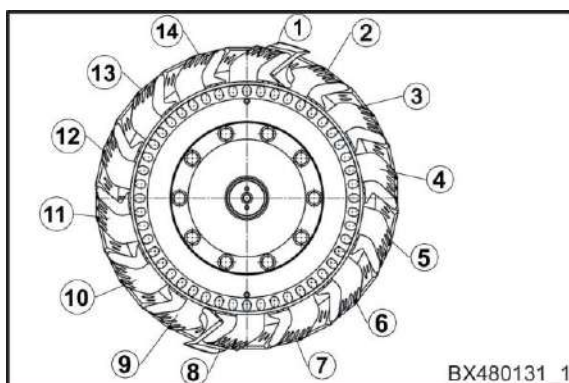


Fig. 646

#### NOTE

To avoid imbalances of the chopping drum:

- The chopping blades and screw-on strips must always be replaced in pairs. Replace both blades and both screw-on strips each which are located on the chopping drum offset by 180° (e.g. blade 1 and blade 6 in case of a chopping drum with 20 blades, Blade 1 and blade 8 in case of a chopping drum with 28 blades, Blade 1 and blade 10 in case of a chopping drum with 36 blades). The blades and screw-on strips which form a pair depend on the total number of blades.
- Mount a set of dismantled screw-on strips in the same order as before disassembly on the chopping drum again.

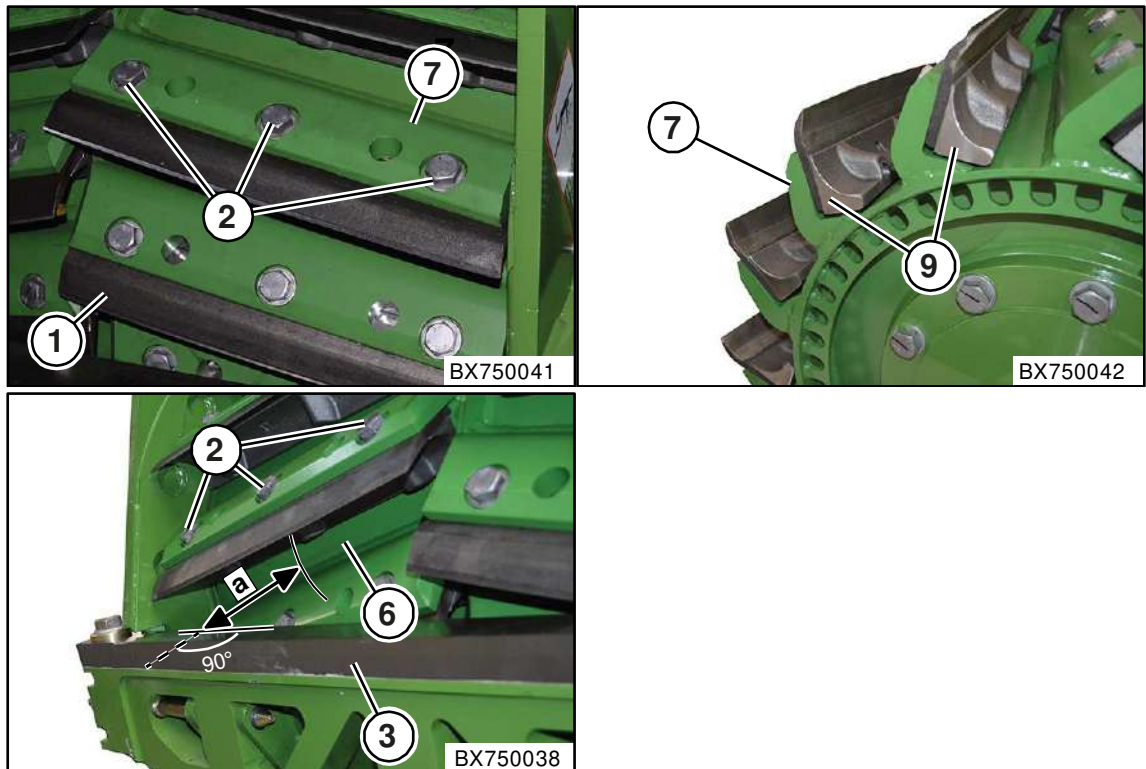


Fig. 647

To replace the chopping blade:

- Grind chopping blades (1), refer to chapter Operation “Grinding the Chopping Blades”.
- Block counterblade (3) via manual operation on the platform in parallel to the dimension  $a = 87 - 89$  mm to the drum shell (6), (dimension measured in parallel to the upper edge of the counterblades), refer to chapter Operation “Blocking the Counterblade”.
- Screw out hexagon head screws (2).
- Pull out chopping blade to the front.
- Clean blade carrier (7) and screw-on strip (9).
- Check screw-on strip (9) for damage and wear and replace it, if necessary.
- Loosen the locking device on the chopping drum, rotate the chopping drum by one row of knives and lock again.
- Re-adjust the blades on the next row of knives.
- Continue in this manner until all rows of knives on the chopping drum have been re-adjusted evenly.
- Loosen the locking device on the chopping drum.
- Set the grinding stone so that there is a distance of 0.5 mm between the blade back and the grinding stone, see page 686.
- Attach the feed attachment, see page 657.
- Grind the chopping blades, see page 682.
- Re-adjust the counterblade, see page 685.

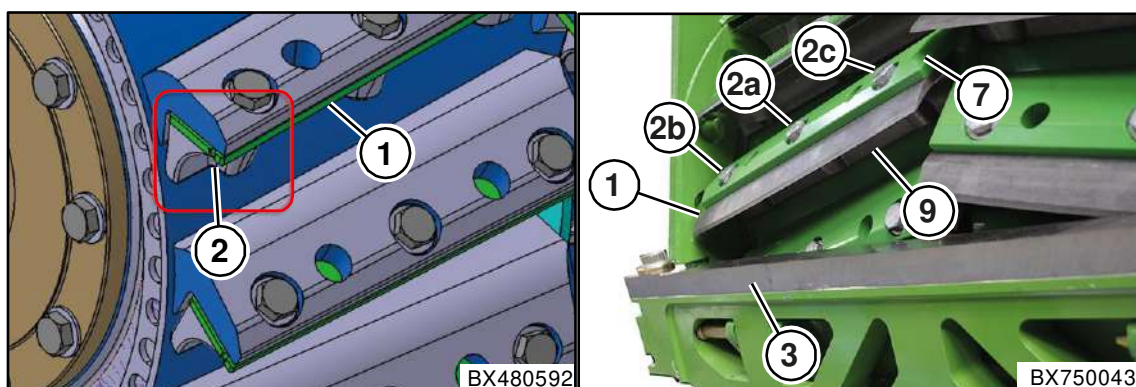


Fig. 648

- When inserting blind blades (1), mind the installation position, the notch (2) must be located outside and front, in the direction of travel. The further fastening is identical to the assembly of the chopping blades, as described below.
- Insert a new chopping blade with new screws (2).
- The centre screw (2a) must remain released.
- Screw a ring spanner (W/F 17) with screw and disc on the eccentric included with delivery. The eccentric is located in direction of travel left on the chopping drum housing, also refer to Maintenance - Feed System "Readjusting the Chopping Blade".
- Insert the eccentric in the bore hole of the blade carrier (7).
- Tighten the outer screws (2b, 2c) until the blade can be brought into position without play by turning the eccentric.
- Adjust the blade by moving the ring spanner. Set the distance from blade to counterblade (3) to a dimension of 0.1 mm.
- Tighten the screws in the sequence 2a, 2b, 2c (from inside to outside) with a torque of 280 Nm.
- Loosen the locking device on the chopping drum, rotate the chopping drum by one row of knives and lock again.
- Re-adjust the blades on the next row of knives.
- Continue in this manner until all rows of knives on the chopping drum have been re-adjusted evenly.
- Loosen the locking device on the chopping drum.
- Set the grinding stone so that there is a distance of 0.5 mm between the blade back and the grinding stone, see page 686.
- Attach the feed attachment, see page 657.
- Grind the chopping blades, see page 682.
- Re-adjust the counterblade, see page 685.



### 24.4.3 Re-adjusting or changing the chopping blades on chopping drums with 40, 48 blades

#### 24.4.3.1 Locking the chopping drum

The locking device is located on the right side of the chopping drum.

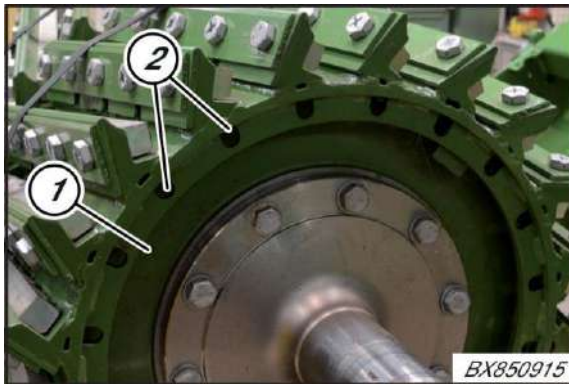


Fig. 649

The cutting drum (1) has a locking hole (2) for each working position.

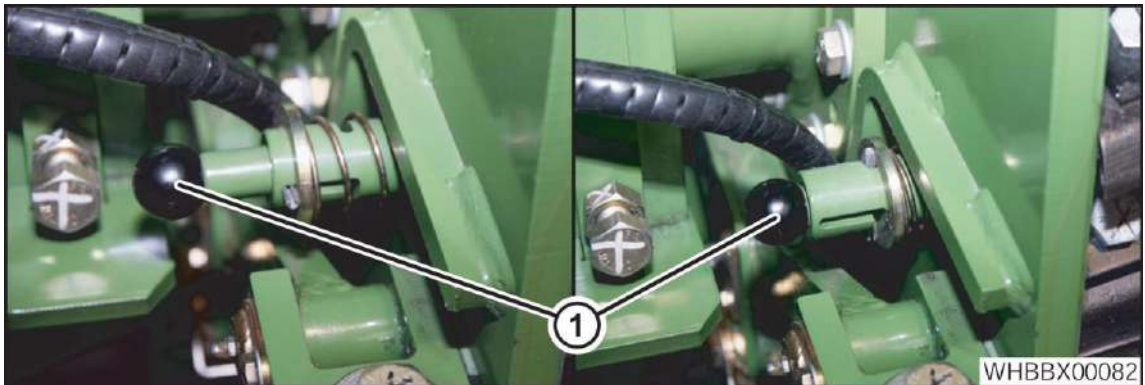


Fig. 650

- Rotate the chopping drum to the required working position.
- Slide the locking bolt (1) into the borehole on the chopping drum.
- Secure the position by turning the locking bolt with the clamping sleeve.

### 24.4.3.1 Readjusting the Cutting Blades

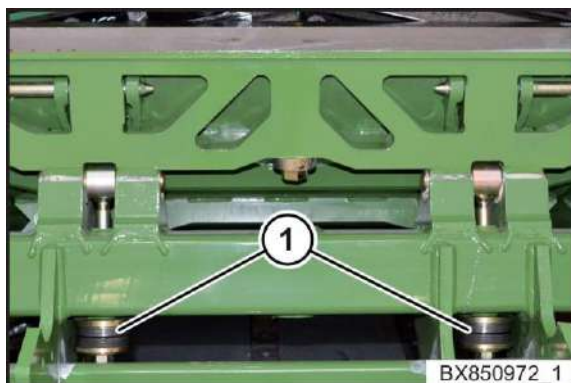


Fig. 651

- Loosen the spring assembly (1) to make the counterblade support tension-free. Then tighten the spring assembly again with a torque of 65-75 Nm.

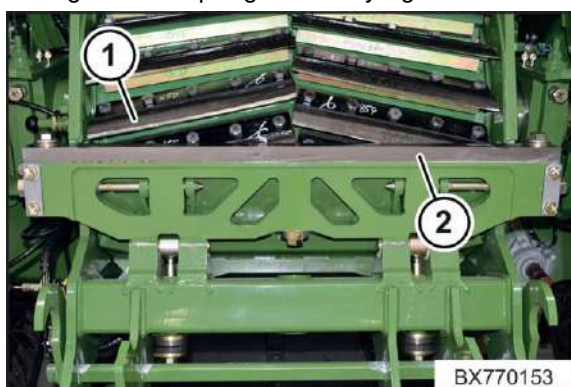


Fig. 652

To sharpen the cutting blades with as few grinding cycles as possible, the cutting blades must be adjusted to the grinding device.

- Grind the chopping blades (1) with the grinding device, see page 682.
- Using manual operation, set the counterblade (2) parallel to the ground area of the blade, see page 685.

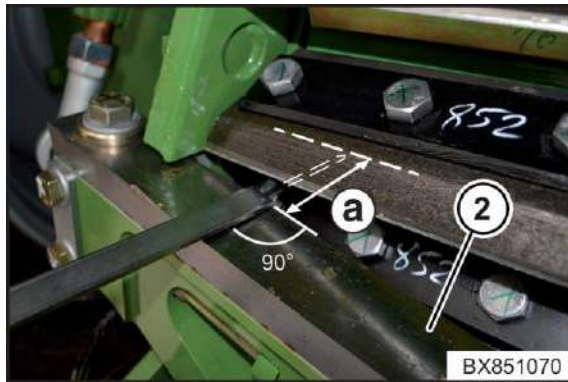


Fig. 653

- Measure the distance (a) from the counterblade (2) to the drum shell on the right and left side of the chopping drum.
- Determine the differential between the two measurements and taken into account in the following adjustment of the counterblade (2).
- Adjust the counterblade so that there is a maximum distance of  $a = 80-82$  mm between the counterblade (2) and the drum body.

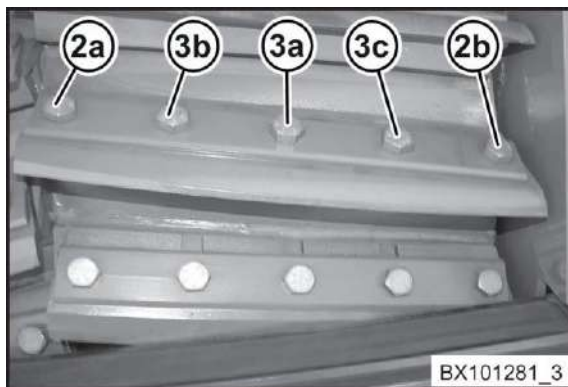


Fig. 654

- Tighten all hexagon head screws (2) using a torque wrench in the sequence 3a; 3b; 3c; 2a; 2b (tightening torque 280 Nm).
- Loosen the chopping drum locking mechanism, turn the chopping drum one row of knives further and lock again.
- Re-adjust the next row of knives.
- Continue in this manner until all rows of knives on the chopping drum have been re-adjusted evenly.
- Loosen the chopping drum locking mechanism.

**NOTE**

The grinding stone will be destroyed if it is not adjusted in line with the re-adjusted cutter blades.

- Set the grinding stone so that there is a distance of 0.5 mm between the blade back and the grinding stone, see page 686.
- Attach the feed attachment, see page 657.
- Grind the chopping blades, see page 682.
- Re-adjust the counterblade, see page 685.

### 24.4.3.2 Changing Cutting Blades

#### CAUTION

##### Damage to the machine due to installation of dirty components!

If dirty cutting blades and screw-on strips are installed, there is a risk of the cutting blades becoming detached from the blade drum and damaging components of the machine.

- Clean all parts before installing them.

#### CAUTION

##### Damage to the machine due to screwing in defective screws!

If the old fastening bolts are screwed in after changing the cutting blades, there is a risk that these bolts may be damaged and fail during operation, possibly damaging the machine.

- Whenever blades are changed, use new screws to attach the cutting blades.

#### WARNING

##### Risk of injury due to sharp parts!

There is a danger of injury when working on the chopping drum as the edges of the screw-on strips are very sharp.

- Always wear safety gloves when working in the area of the screw-on strips.

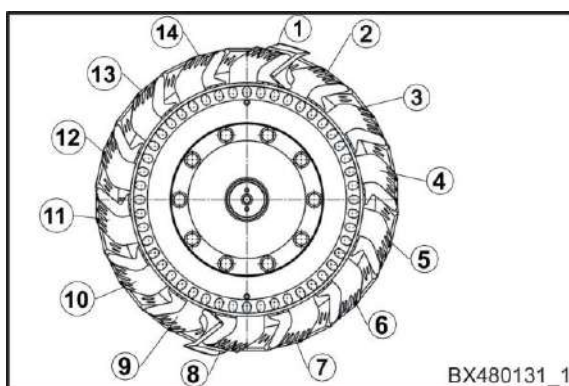


Fig. 655

#### NOTE

To avoid imbalances of the chopping drum:

- The chopping blades and screw-on strips must always be replaced in pairs.  
Replace both blades and both screw-on strips each which are located on the chopping drum offset by 180°  
(e.g. blade 1 and blade 6 in case of a chopping drum with 20 blades,  
Blade 1 and blade 8 in case of a chopping drum with 28 blades,  
Blade 1 and blade 10 in case of a chopping drum with 36 blades).  
The blades and screw-on strips which form a pair depend on the total number of blades.
- Mount a set of dismantled screw-on strips in the same order as before disassembly on the chopping drum again.

Removing the chopping blade

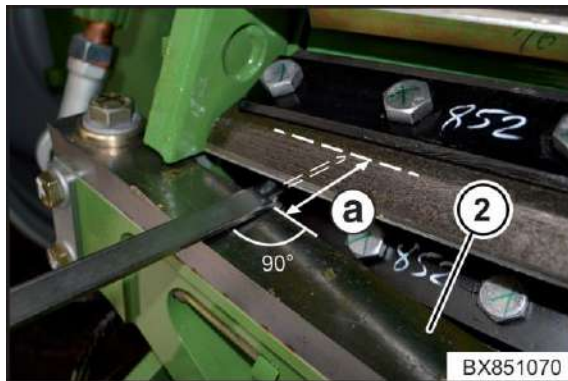


Fig. 656

- Measure the distance (a) from the counterblade (2) to the drum shell on the right and left side of the chopping drum.
- Determine the differential between the two measurements and taken into account in the following adjustment of the counterblade (2).
- Adjust the counterblade so that there is a maximum distance of  $a = 80-82$  mm between the counterblade (2) and the drum body.

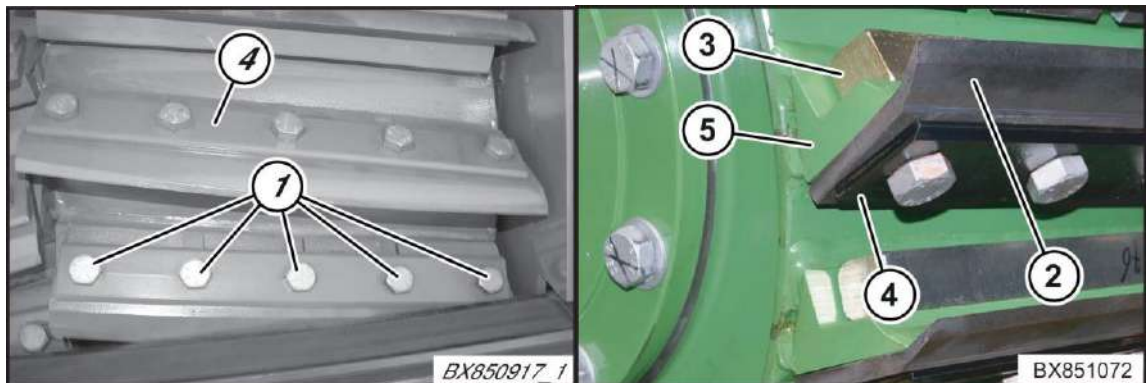


Abb. 657

- Unscrew the hexagonal head screws (1).
- Remove the chopping blade (2), the perforated plate (4) and the screw bar (3).
- Clean the blade carrier (5) and the screw bar (3).
- Check the screw bar (3) for damage and wear, and replace it if necessary.



### Inserting Cutting Blades

 **WARNING**

**Risk of injury due to incorrectly attached components!**

Components that are not attached may become detached, causing serious injuries to people or damage to the machine.

- Whenever you change a blade, clean the blade carriers, perforated plates and the blades.
- Whenever you change a blade, you must use new screws and perforated plates.
- After mounting the blades, check the tightening torque of the screws and re-tighten if necessary.

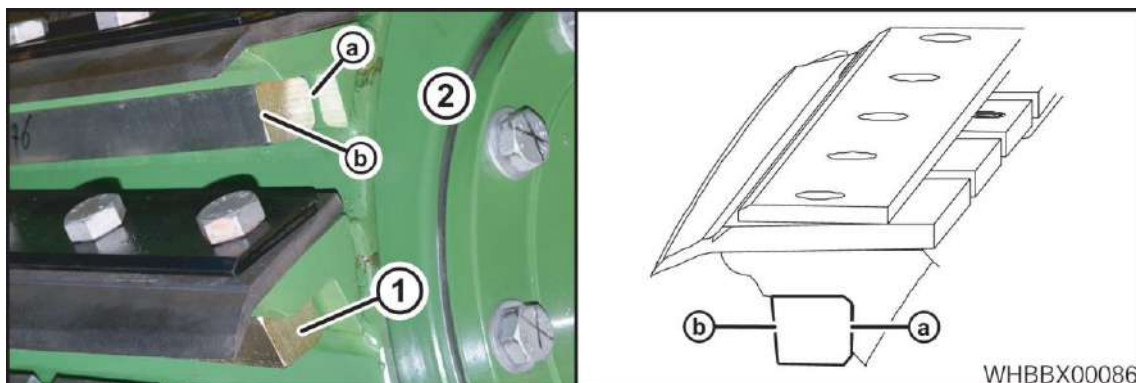


Fig. 658

- Insert new chopping blades in pairs.
- When installing the blades, observe the installation position of the tapped strips (1). The surface (a) with the rounded corner must be placed on the blade drum (2), the surface (b) must be turned away from the blade drum (2).

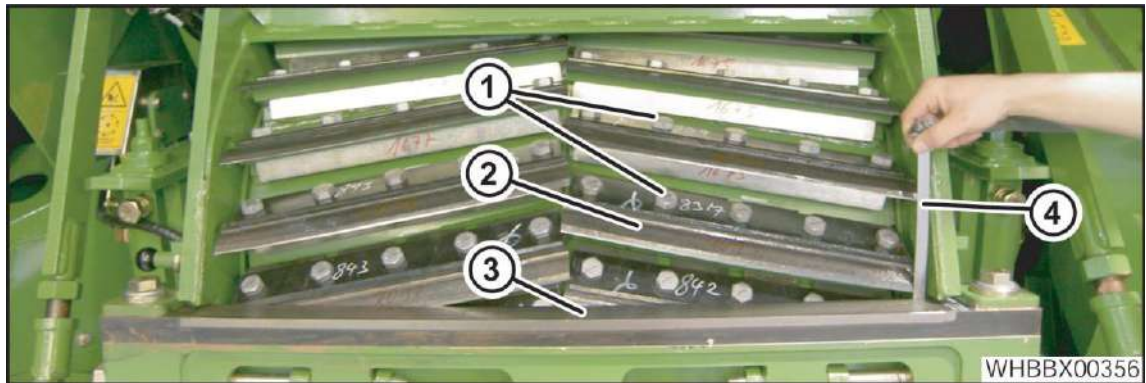
**Adjusting the cutting blades**


Fig. 659

- Set the new blades (2) evenly to the counterblade (3).
- Check the dimension on both sides by using a feeler gauge (4) (nominal dimension 0.1 mm).
- Tighten all screws (1) from the inside to the outside (tightening torque 270 Nm).
- Insert the second blade pair in the same way.
- Loosen the locking of the cutting drum, turn the cutting drum one row of blades further and lock it in place again.
- Continue in this manner until all rows of blades of the chopping drum are changed.
- Loosen the locking of the chopping drum.
  - Check if the chopping drum can be turned easily and make certain that the blades do not touch anything (e.g. counterblade, drum base).  
Readjust blades, if necessary.
- Adjust the grinding stone so that there is a distance of 0.5 mm between blade back and grinding stone.
- Fit intake housing.
- Grind cutting blades.
- Readjust the counterblade so that no contact noise can be heard.

**24.5 Working with half the number of cutting blades**

The speed of the intake and the number of cutting blades determine the cutting length.

If the adjustable cutting length range is inadequate and the chopping length is still too short, the number of cutting blades can be reduced to half.

- Remove every second blade from both sides of the chopping drum.
- To protect the blade carrier, mount the dummy blades (accessories) provided chopping drums with 20, 28, 36 blades, see page 694, chopping drums with 40, 48 blades, see page 701 Re-adjusting or changing chopping blades on chopping drums with 40, 48 blades.
- In the info centre, set the corresponding number of blades, see page 188.

### 24.6 Turning or replacing the counterblade

 **WARNING**

**Risk of injury from sharp cutting blades!**

When performing maintenance work on the cutting drum, there is a risk of the operators being injured by the sharp cutting blades.

- When working on the cutting drum, work particularly carefully and prudently.
- Always wear work gloves when working on the cutting drum.
- Turn the cutting drum clockwise on the belt pulley only and, when the correct position is reached, lock with the locking bolt.

**NOTE**

The counterblade and the counterblade support must be clean and flat. If required, replace the components.

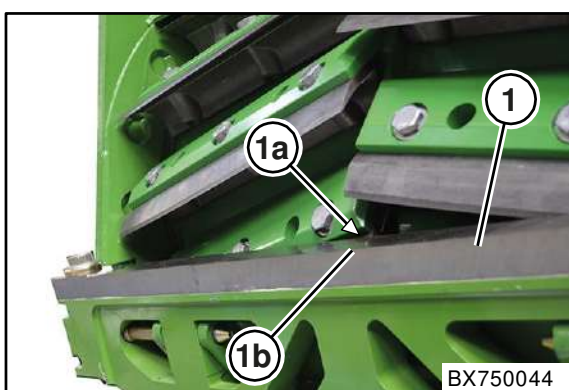


Fig. 660

Both sides of the counterblade (1) can be used. The counterblade must be turned or replaced if one or both sides (1a, 1b) of the counterblade are worn.

A worn counterblade (cutting edge round) can be detected by the fact that the cutting quality is not satisfactory. The distance from counterblade to chopping blades (kerf) must be set correctly in order to minimise wear, refer to chapter Operation “Grinding the Chopping Blades”.

Furthermore the chopping blades must be ground correctly, refer to chapter Maintenance “Readjusting or Changing the Cutting Blades”.



Prerequisites:

- The feed attachment is removed, see page 657.

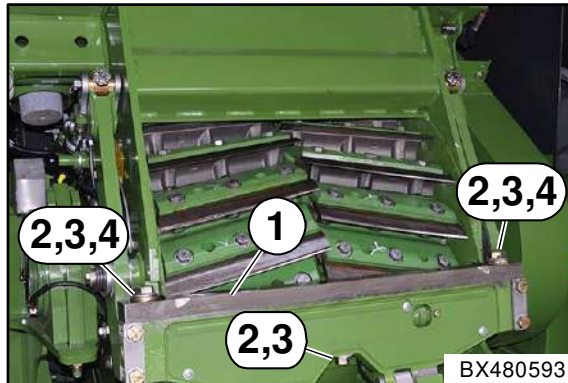


Fig. 661

### Turning/changing counterblade

- Grind chopping blades by using grinding device, refer to chapter Operation “Grinding the Chopping Blades”.
- Set the counterblade (1) via manual operation on the platform in parallel to the ground surface of the blades, refer to chapter Operation “Blocking the Counterblade”.
- Unscrew hexagon head screws (2), detent edged washers (3) and washers (4).
- Pull counterblade (1) to the front out of the support.
- Clean skid surface area and bottom side of the counterblade.
- Turn counterblade or mount the new counterblade.

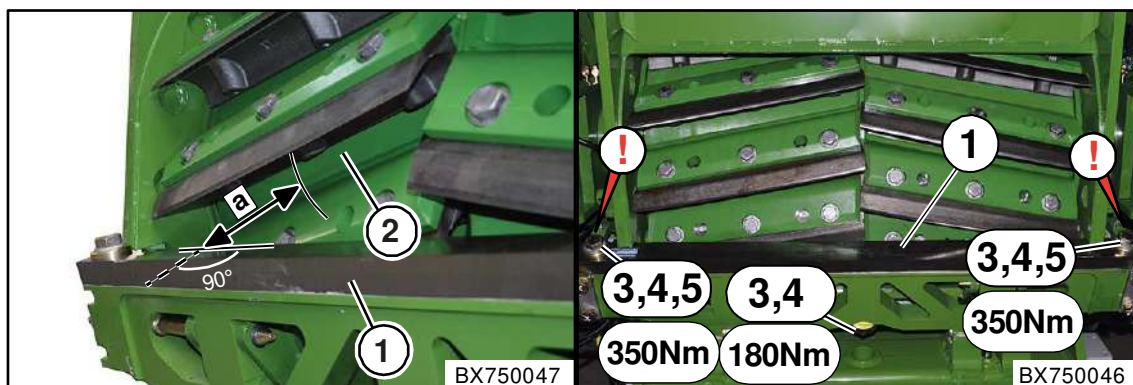


Fig. 662

**CAUTION**

**Damage to machine parts due to loose components!**

If the counterblade is not securely attached, it may become detached and damage the blades on the cutting drum or the entire cutting drum.

- Secure the screw connections identified by  on the right and left of the machine with medium strength LOCTITE.

**Mounting the new counterblade**

- Place the new counterblade (1) on the counterblade support and mount hand-tight by using hexagon head screws (3), detent edged washers (4) and washers (5) centre bottom.
- Check the distance from counterblade to drum shell (2) and set the dimension  $a = 87 - 89$  mm by using the adjusting spindle, if necessary.
- Align the counterblade (1) in parallel to the ground backs of the blades on the counterblade support.
- Tighten all three screw connections of the counterblade with the specified torque, refer to figure BX750046.
- Fit intake unit.
- Set counterblade (1) via manual operation on the platform in parallel with the ground surface of the blades, refer to chapter Operation “Blocking the Counterblade”.

### 24.7 Turning or changing the conveyor bars on the pre-compression roller

The pre-compression roller (1) is fitted with conveyor bars which have a smooth and a serrated side. The conveyor bars can be attached in such a way that either the smooth or the serrated side is used.

From experience the smooth side obtains the best results for grass operation and the serrated side for maize operation.



#### **NOTE**

The conveyor bars must be changed if the wear is so great that the conveyor bars are no longer higher than the crossbars on the pre-compression and feed roller.

#### Turning the conveyor bars on the pre-compression roller

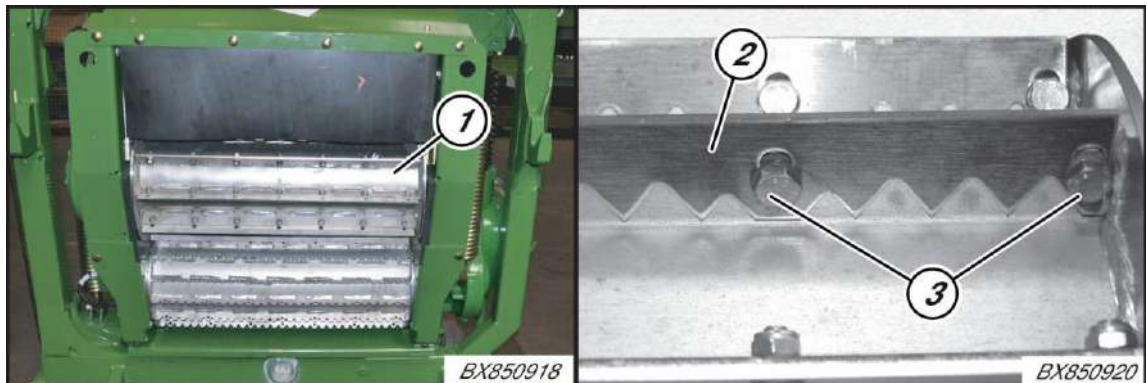


Fig. 663

- Remove the intake unit, see chapter Maintenance - Supply system, "Removing intake unit".
- Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".
- Remove the fastening bolts (3) from the conveyor bar (2).
- Turn the conveyor bar (2) and attach (tightening torque 35 Nm).



#### **NOTE**

Because of metal detection, only fastening materials made of anti-magnetic steel may be used. The screws must not be tightened with an impact wrench because of the magnetising effect.

### Changing the conveyor bars on the feed roller



Fig. 664

The bottom feed roller (4) can also be fitted with conveyor bars. These conveyor bars are used to protect the feed roller against wear and cannot be turned.

### 24.8 Adjusting the distance between the scraper and flat roller

Prerequisites:

- The feed attachment is removed, see page 657.

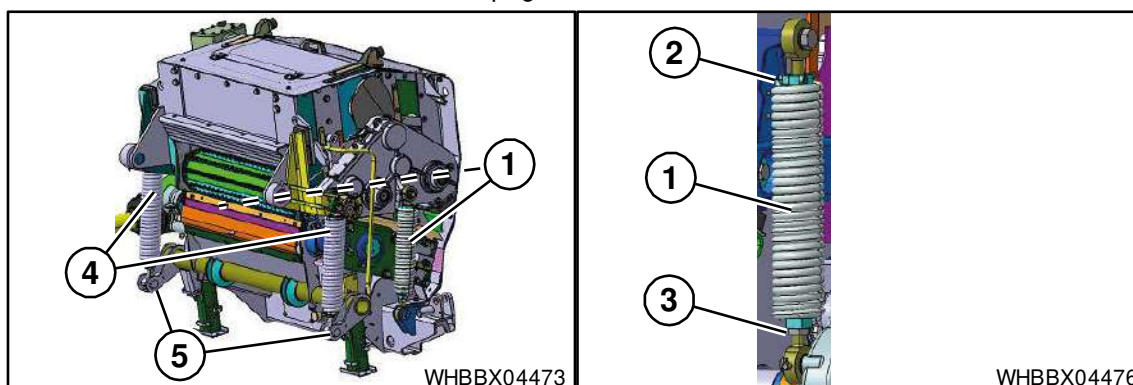


Fig. 665

#### Relieving tension springs:

To relieve the front tension springs (1):

- Loosen the nuts (3) and unscrew the screws (2).
- Turn the tension springs (1).

To relieve the rear tension springs (4):

- Unscrew the clamping screws (5).

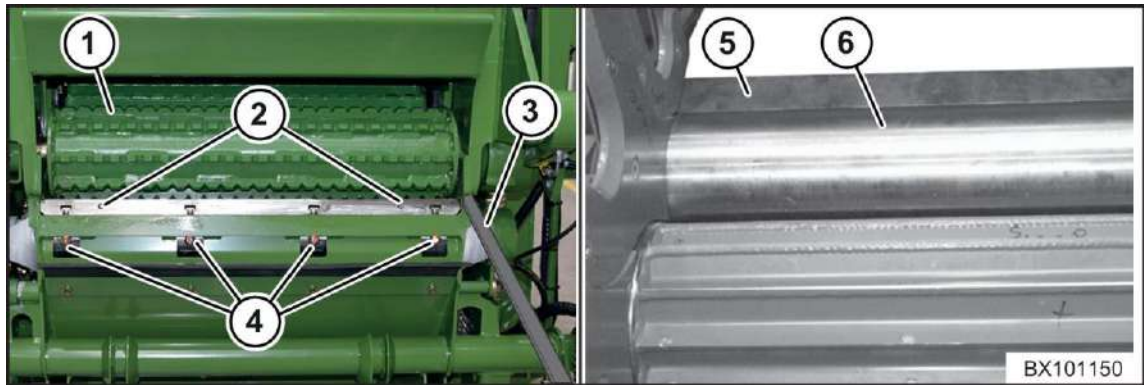


Fig. 666

#### Preparatory work

- Check the flat roller for wear (leaching). If there is a high level of wear, the function of the scraper cannot be guaranteed.
- Check the scraper and replace it if the thickness falls below 26 mm.

The scraper must be adjusted, preferably with no gap, over the entire width of the flat roller. The gap between the scraper and flat roller must be 0.3 to 0.6 mm.

#### **CAUTION**

#### **Damage to scraper and flat roller due to overheating!**

If the gap between the scraper and flat roller is too small, the scraper will exert pressure on the flat roller and both components may be damaged.

#### Setting gap between scraper and flat roller

- Loosen the hexagon nuts (4).
  - Press the compression roller (1) upwards using a mounting lever (3).
  - Check the gap between the scraper (5) and the flat roller (6) using a feeler gauge.
- The gap between the flat roller and scraper must be 0.3 mm to 0.6 mm.
- If the gap exceeds 0.6 mm, reduce the gap by tapping gently across the entire width.
- If the gap is less than 0.3 mm:
- Screw two M12 hexagon head screws into the forcing bores (2) and set the gap of the scraper to the required dimension evenly across the entire width.
  - Use a feeler gauge to measure the gap and re-adjust if required.
  - Remove both hexagon head screws M12 from the forcing bores (2).
  - Tighten the hexagon nuts (4).
  - Pretension the tension springs on both sides of the intake unit, see page 715.

### 24.9 Adjusting the gap between the baling roller and scraper

Prerequisites:

- The feed attachment is removed, see page 657.
- The tension springs (1) on the rear right and left at the intake housing are correctly set, see page 715.

#### Preparatory work

- Check the flat roller for wear (leaching). If there is a high level of wear, the function of the scraper cannot be guaranteed.
- Check the scraper (b) and replace it if the thickness falls below 26 mm.

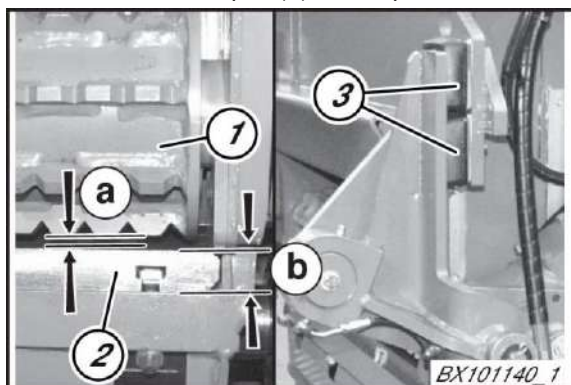


Fig. 667

#### Adjusting the gap between the compression roller and scraper

The distance (a) between the compression roller (1) and the scraper (2) must be 6-7 mm.

- Measure the distance (a) between the compression roller (1) and the scraper (2).
- If distance (a) is less than 6 mm or greater than 7 mm:
- Loosen the tension springs on the feed attachment, see page 715.
  - Insert or remove discs under the bump stop (3) of the feed attachment to set the distance (a) evenly across the entire width.
  - Pretension the tension springs on both sides of the feed attachment, see page 715.



24.10 Setting the tension springs on the feed attachment

Carry out the following work steps on both machine sides:

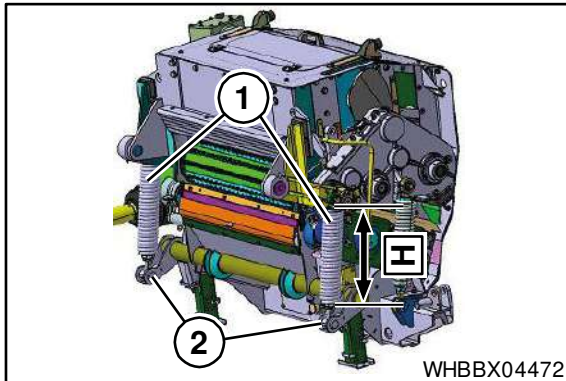


Fig. 668

- Pre-tension the rear tension springs (1) to the dimension  $a = 450$  mm. To do this, screw in the clamping screws (2).

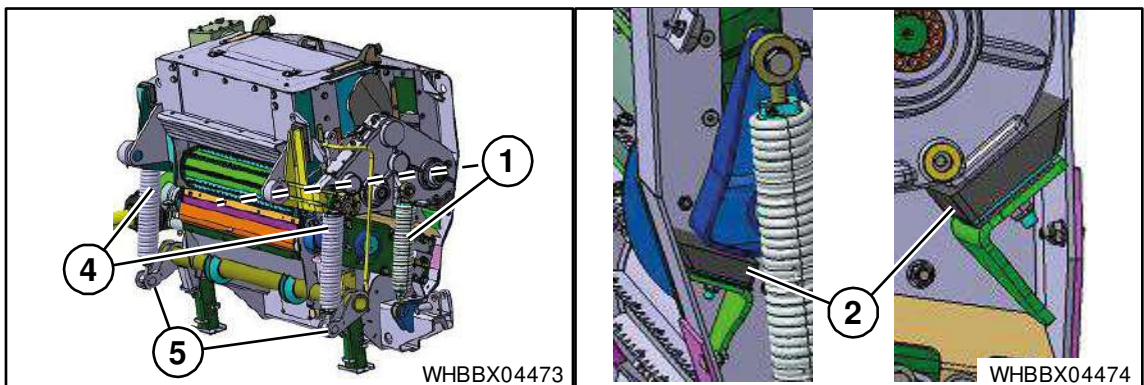


Fig. 669

- Adjust the length of the front tension springs (1) so that the upper roller unit rests on the rubber buffers (2).

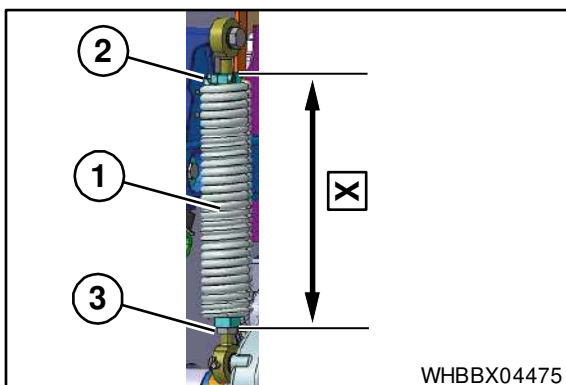


Fig. 670

- Measure the dimension "X" on both front tension springs (1).
- In order to pre-tension the tension spring, increase the measured dimension "X" by turning the tension spring by 20 mm.
- Tighten the screw (2) and the nut (3) to keep the tension of the tension spring.

### 25 Maintenance - hydraulic system

 **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".

**CAUTION**

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

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

- Clean hydraulic connections and components before removal.
- Seal open hydraulic connections with protective caps.
- Ensure that foreign objects or liquids do not get into the hydraulic system.

**CAUTION**

**Disposing and storing oil and used oil filters**

If oil and used oil filters are not stored and disposed of properly, the environment may be damaged.

- Store or dispose of used oil and oil filters according to statutory regulations.

#### 25.1 Over-pressure valves

 **NOTE**

Over-pressure valves preset in the factory.

Work on the over-pressure valve may be carried out by KRONE customer service only.

The valve blocks have been equipped with over-pressure valves. These valves were preset in the factory and must not be changed.

#### 25.2 Hydraulic oil

**CAUTION**

**If non-approved hydraulic oils or a mixture of different oils are used, the hydraulic system may be damaged.**

- Never mix different types of oil.
- Never use engine oil.
- Use approved hydraulic oils only.

Filling quantities and types of oil: See chapter Description of machine "Consumables".



### 25.3 Hydraulic oil tank

#### 25.3.1 Oil level check and oil change on the hydraulic tank

Prerequisites:

- The machine is parked on level ground.
- The lifting unit is fully lowered, see page 140.
- The spout is in parking position, see page 140.
- The machine is shut down and secured, see page 41.

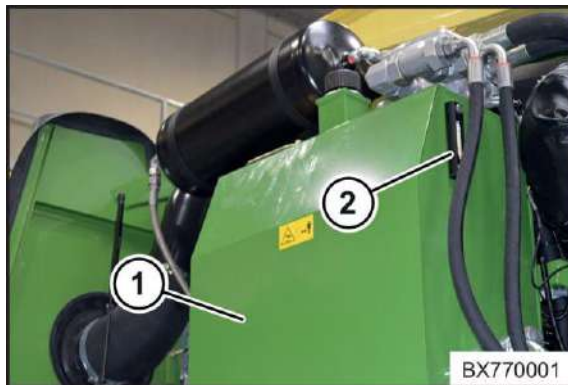


Fig. 671

To check the oil level:

- Perform a visual inspection to check that the hydraulic oil is up to the middle of the inspection glass (1).
- If this is not the case, top up hydraulic oil via the oil filler pipe, see page 717.

### Changing the oil in the hydraulic tank

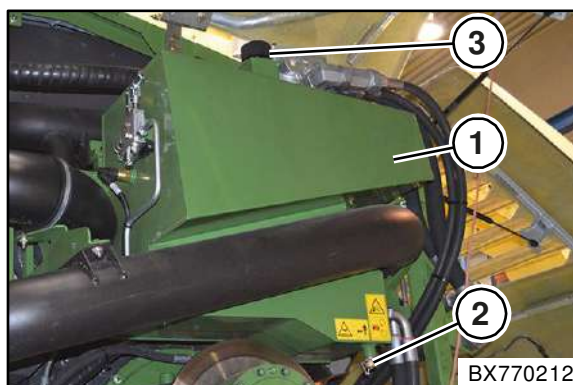


Fig. 672

#### Oil change:

- Provide a collecting vessel (approx. 150 litres).
- Clean thoroughly around the oil drainage pipe (2).
- Place the end of the oil drain hose (included with the machine) into the collecting vessel. Mount the other end of the hose onto the oil drain plug (2) of the hydraulic tank (1). This automatically opens the oil drainage valve and the hydraulic oil drains into the collecting vessel.
- Remove the drain hose.
- Top up the hydraulic tank with hydraulic oil via the oil filler pipe (2) up to the middle of the inspection glass. Quantity and specification, see page 33.
- Run the diesel engine at a low idle speed for approx. 10 seconds.
- Switch off the diesel engine.
- Check the oil level in the hydraulic tank; top up the hydraulic oil if required.
- Repeat the process until the oil level no longer drops.

### 25.3.2 Change return suction filter

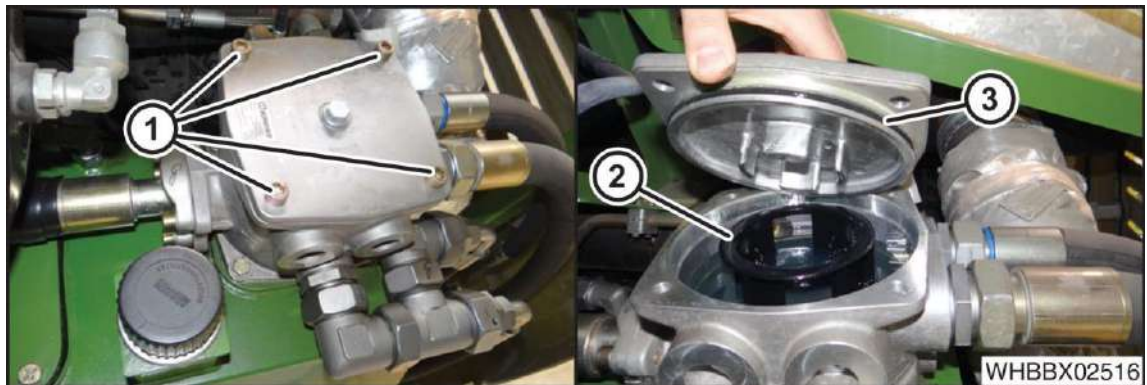


Fig. 673

#### Prerequisites:

- The machine is shut down and secured, see page 41.
- The oil filler pipe on the hydraulic tank is open (tank depressurised) and cleaned.

#### Changing the filter:

- Loosen and remove the four screws (2) on the cover (1) with the hexagon key.
- Remove the cover (1).
- Raise the filter insert (2) and allow hydraulic oil to drip out.
- Remove the filter insert and dispose of it properly.
- Moisten the sealing surface of the new filter insert with oil and set it in place.
- Screw on the screw cover manually. Do not fasten it too tightly.
- Run the engine at a low idle speed for approx. 10 seconds.
- Shut down the engine.
- Check the hydraulic oil filter for leaks.
- Put on the cover (1) and secure with the four screws (2).

### 25.4 High-pressure filter

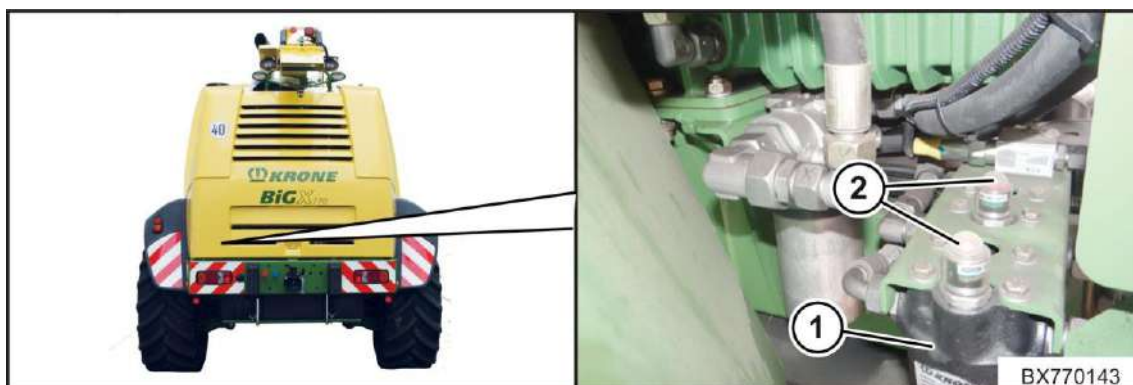


Fig. 674

The high-pressure filters (1) for the working and steering hydraulics are equipped with an visual contamination indicator (2). The contamination indicator (2) provides visual information about the degree of contamination of the filter. During start-ups in the cold state, the button of the contamination indicator (2) can jump out.

- Push the button back in once the operating temperature has been reached.
- If it pops out again immediately, the filter insert must be replaced.
- Check the contamination indicator each time before operating it. If necessary, replace the contaminated filter insert. If the contamination indicator does not respond, replace the filter insert once annually or with every oil change.

#### Change filter element in the high-pressure filter

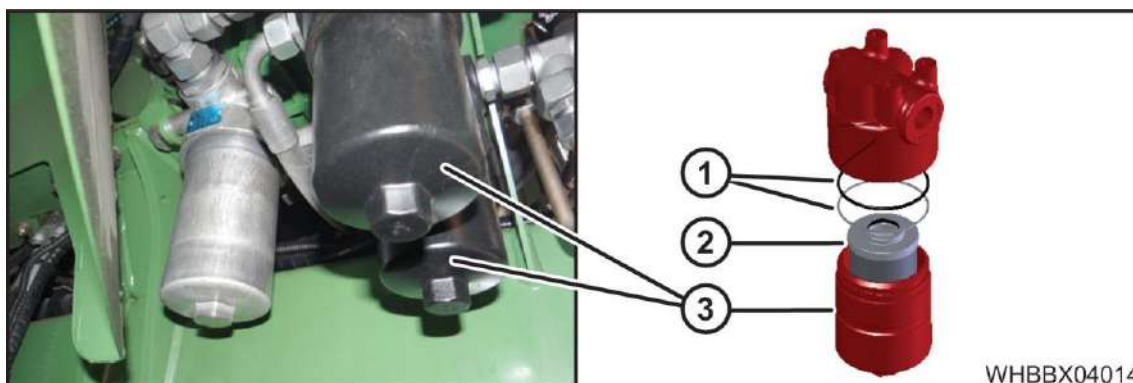


Fig. 675

- Switch off the diesel engine.
- Depressurise the hydraulic system.
- Remove and clean the filter housing (3).
- Remove the filter insert (2) and replace with a new one.
- Check the O-rings (1) for damage and replace if required.
- Wet the thread and the sealing surfaces with hydraulic oil.
- Mount the filter housing (3) up to the stop, then turn back a quarter turn.
- Charge the hydraulic system with pressure and check for leaks.

### 25.5 Check hydraulic hoses

Hydraulic hoses are subject to natural ageing. This limits their service life. The recommended service life is 6 years, including a maximum storage time of 2 years. The date of manufacture is printed on the hydraulic hoses. When checking hydraulic hoses, the state-specific conditions (e.g., BGVU) must be observed.

#### **Perform a visual inspection**

- Visually inspect all hydraulic hoses for damage and leaks and have them replaced by an authorised specialist if necessary.

### 26 Maintenance - Gearbox

**⚠ WARNING**

**Risk of burns and scalding due to hot parts of the machine and hot liquids!**

Unprotected body parts will be injured if they come into contact with hot parts of the machine or hot liquids.

- Never open the cover (1) on the coolant reservoir when the engine is hot.
- Switch off the engine and wait until the engine has cooled down.
- Wear suitable protective clothing.

#### 26.1 Overview of the drives

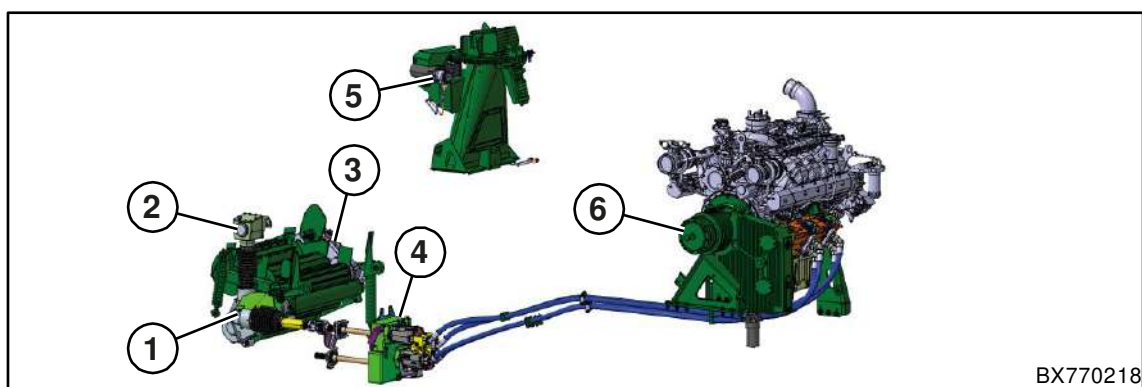


Fig. 676

- |                        |                        |                       |
|------------------------|------------------------|-----------------------|
| 1 Lower roller gearbox | 3 Upper roller gearbox | 5 Worm drive          |
| 2 Intermediate gearbox | 4 Transfer gearbox     | 6 Power take-off gear |

BX770218

26.1.1 Maintenance of power take-off gear

Oil level check

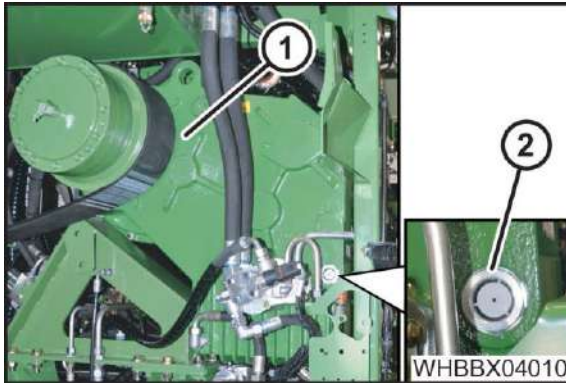


Fig. 677

- The oil level of the power take-off gear (1) must reach up to 1/2 the inspection glass (2), if necessary top up gear oil.

Oil change

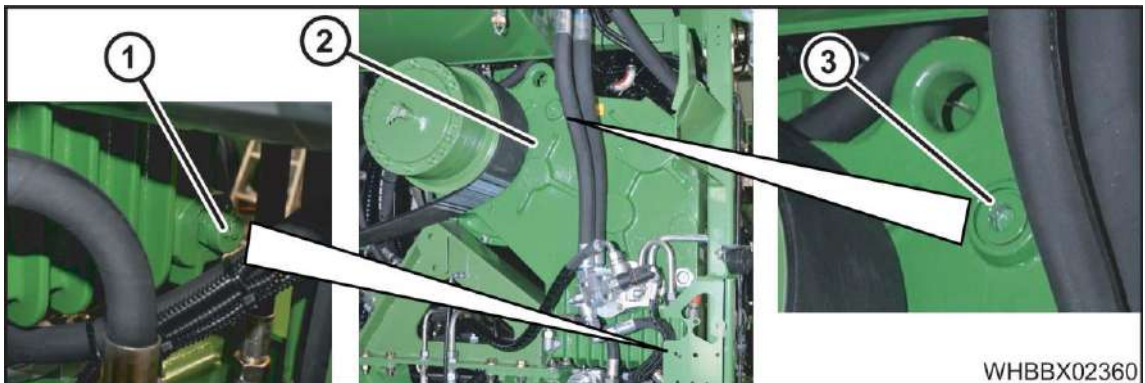


Fig. 678

- Bring the machine up to operating temperature.
- Thoroughly clean the area surrounding the locking cap at the drain sleeve (1) and the oil filler plug (3).
- Dismount the locking cap at the drain sleeve (1).
- Provide a collecting vessel (approx. 30 litres).
- Place the end of the drain hose (included with the machine) into the collecting vessel. Mount the other end of the hose onto the drain sleeve (1). This automatically opens the drain valve and the oil drains into the collecting vessel.
- Remove the drain hose.
- Mount the locking cap at the drain sleeve (1).



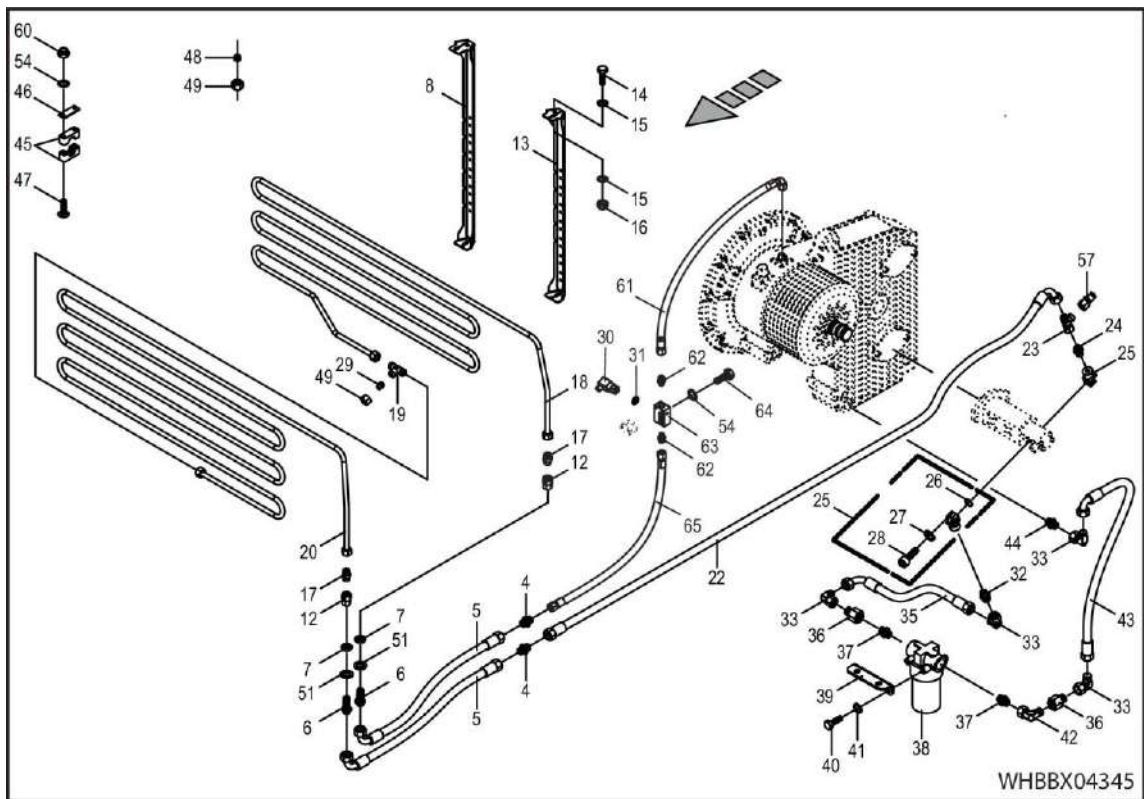


Fig. 679

- Dismount the hoses (22, 35, 43, 65, 61) at the pump and the gearbox (top and bottom) and drain them into the collecting vessel.
- Dismount the filter container (38).
- Remove the filter insert from the filter container (38) and clean the filter container.
- Clean the cooling coils and hoses from the cooler to the gearbox/pump with compressed air (note non-return valve (21)). Only apply compressed air from the pump in the direction of the cooler and collect the oil in a suitable container.
- Mount the hoses (22, 35, 43, 65, 61) at the pump and the gearbox (top and bottom).
- Place a new filter insert in the filter container (38).
- Mount the filter container (38).



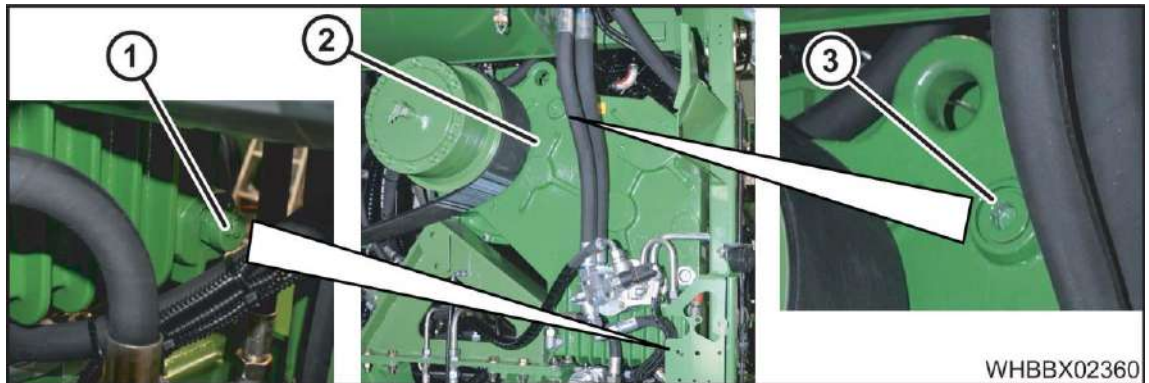


Fig. 680

- Dismount the oil filler plug (3).

**CAUTION!** Damage to the gearbox! The gearbox may be damaged if a mixture of different oils is used.

- Add the gear oil. Type of oil and filling quantity, see page 104.
- Mount the oil filler plug (3).
- Allow the machine to run for a short while, subsequently check the oil level.

**Change the oil filter in the gearbox circular lubrication**



**NOTE**  
Always change the filter when you change the gear oil.

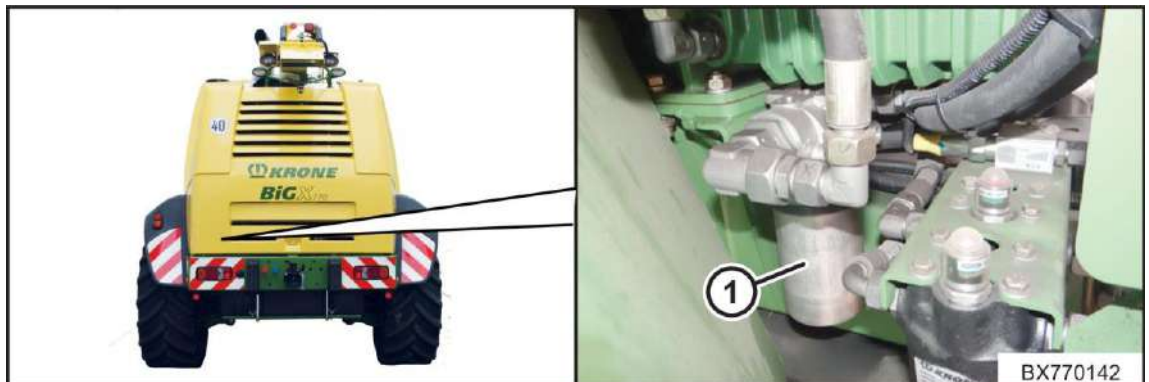


Fig. 681

- Thoroughly clean the area around the filter housing.
- Dismount the filter housing (1).
- Remove the filter insert.
- Clean the filter housing.
- Install a new filter insert.
- Mount the filter housing (1) with a new seal.

### 26.1.2 Maintenance of transfer gearbox

#### Oil level check



Fig. 682

- Thoroughly clean the area around the oil level inspection screw (1).
- Dismount the oil level inspection screw (1) at the transfer gearbox.
- Oil level must reach the inspection bore, if necessary, top up oil (see Oil change).
- Mount the oil level inspection screw (1).

#### Oil change

- Provide a collecting vessel (approx. 10 litres).
- Thoroughly clean the area around the oil drain plug (2) and the screw plug with ventilation filter (3).
- Dismount the oil drain plug (2) and drain the oil.
- Dismount the screw plug with ventilation filter (3).
- Mount the oil drain plug (2).

**CAUTION!** Damage to the gearbox! The gearbox may be damaged if a mixture of different oils is used.

- Add the oil. Type of oil and filling quantity, see page 104.
- Mount the screw plug with ventilation filter (3).

**26.1.3 Maintenance of lower roller gearbox****NOTE**

Check oil level and change the oil when the feed drive housing cover is in a horizontal position.

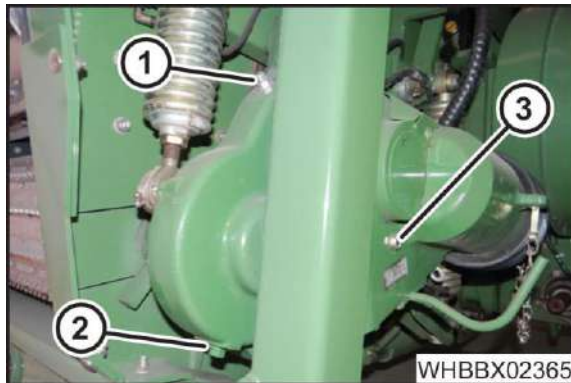
**Oil level check**

Fig. 683

- Read the oil level on the viewing glass (3).
- The oil level must reach up to the middle of the viewing glass, if required, add oil (see Oil change).

**Oil change**

- Provide a collecting vessel (at least 10 litres).
- Thoroughly clean the area around the oil drain plug (2) and the locking screw with breather filter (1).
- Dismount the oil drain plug (2) and drain the oil.
- Dismount the locking screw with breather filter (1).
- Mount the oil drain plug (2).
- Add oil. Type of oil and filling quantity, see page 104.
- Mount the locking screw with breather filter (1).

### 26.1.4 Maintenance of angular gearbox

**NOTE**

Check oil level and change the oil when the feed drive housing cover is in a horizontal position.

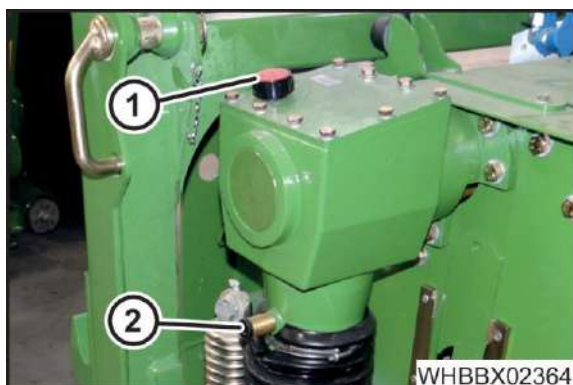
**Oil level check**

Fig. 684

- Thoroughly clean the area around the oil dip stick (1).
- Unscrew the oil dip stick (1) and remove any oil residue using a lint-free, clean cloth.
- Screw in the oil dip stick (1) and unscrew it again.
- Read the oil level.
- The oil level must be between the markings "MIN" and "MAX", if necessary top up oil (see Oil change).
- Screw in the oil dip stick again.

**Oil change**

- Provide a collecting vessel (approx. 5 litres).
- Thoroughly clean the area around the oil drain plug (2).
- Dismount the oil drain plug (2) and drain the oil.
- Unscrew the oil dip stick.
- Re-attach the oil drain plug (2).
- Add the oil. Type of oil and filling quantity, see page 104.
- Screw in the oil dip stick again.

**26.1.5 Maintenance upper roller gearbox****NOTE**

Check oil level and change the oil when the feed drive housing cover is in a horizontal position.

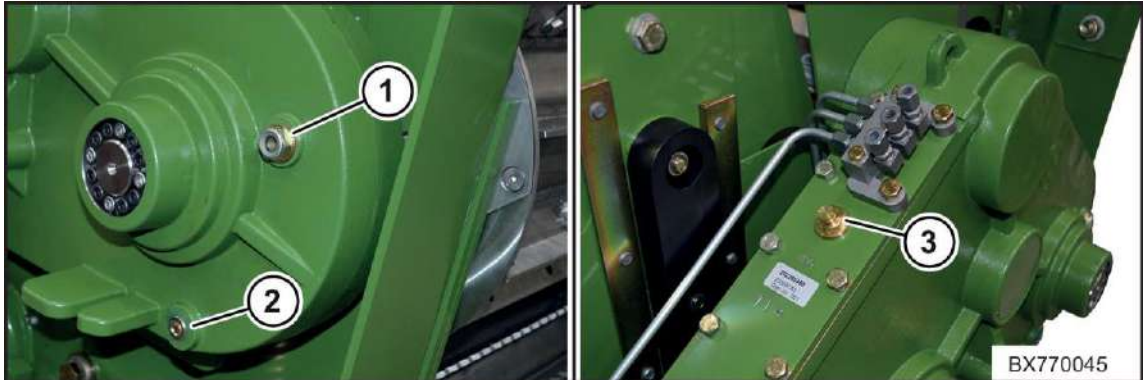
**Oil level check**

Fig. 685

- Thoroughly clean the area around the oil level inspection screw (1).
- Dismount the oil level inspection screw (1).
- Oil level must reach the inspection bore, if necessary, top up oil (see Oil change).

**Oil change**

- Provide a collecting vessel (approx. 10 litres).
- Thoroughly clean the area around the oil drain plug (2) and the locking screw with breather filter (3).
- Dismount the oil drain plug (2) and drain the oil.
- Dismount the locking screw (3).
- Mount the oil drain plug (2) again.
- Add the oil. Type of oil and filling quantity, see page 104.
- Mount the locking screw (3).

### 26.1.6 Maintenance worm drive

#### Oil level check



Fig. 686

- Thoroughly clean the area around the oil level inspection screw (4).
- Dismount the oil level inspection screw (4).
- Oil level must reach the inspection bore, if necessary, top up oil (see Oil change).
- Re-mount the oil level inspection screw (4).

#### Oil change

- Remove the cover plate (1).
- Thoroughly clean the area around the oil drain plug (2) and the ventilation filter (3).
- Dismount the ventilation filter (3).
- Provide a collecting vessel (10 litres).
- Dismount the oil drain plug (2) and drain the oil.
- Re-attach the oil drain plug (2).

**CAUTION!** Damage to the gearbox! The gearbox may be damaged if a mixture of different oils is used.

- Add the oil. Type of oil and filling quantity, see page 104.
- Mount the ventilation filter (3).
- Attach the cover plate (1).



26.1.7 Wheel hub gearbox maintenance



**NOTE**

Use SHELL SPIRAX S4 CX 50 gear oil only.

**Front wheel hub gearbox**

**Oil level check**

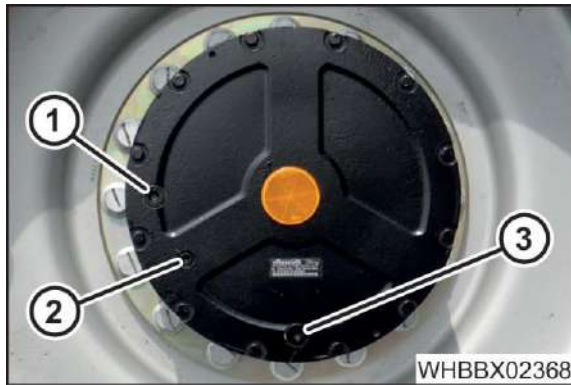


Fig. 687

- Position the wheel ensuring the oil filler plug (1) is at the top.
- Thoroughly clean the area around the oil filler plug (1) and the oil level inspection screw (2).

**WARNING!** Risk of scalding by hot gear oil escaping under pressure.

- To reduce the pressure, carefully open the oil filler plug (1) from a lateral position.
- Mount the oil filler plug (1).
- Position the wheel ensuring the oil filler plug (1) is horizontal to the hub.
- Dismount the oil level inspection screw (2).
- Oil level must reach the inspection bore, if necessary, top up oil (see Oil change).
- Re-mount the oil level inspection screw (2).

**Oil change**

- Provide a collecting vessel (10 litres).
- Thoroughly clean the area around the oil filler plug (1) and the oil level inspection screw (2).
- Position the wheel ensuring the oil filler plug (1) is at the top.

**WARNING!** Risk of scalding by hot gear oil escaping under pressure.

- To reduce the pressure, carefully open the oil filler plug (1) from a lateral position.
- Mount the oil filler plug (1).
- Position the wheel ensuring the oil drain plug (3) is vertical relative to the hub.
- Dismount the oil drain plug (3) and drain the oil.
- Dismount the oil filler plug (1).
- Mount the oil drain plug (3).
- Add the oil. Type of oil and filling quantity, see page 104.
- Mount the oil filler plug (1).

### Rear wheel hub gearbox

#### Oil level check

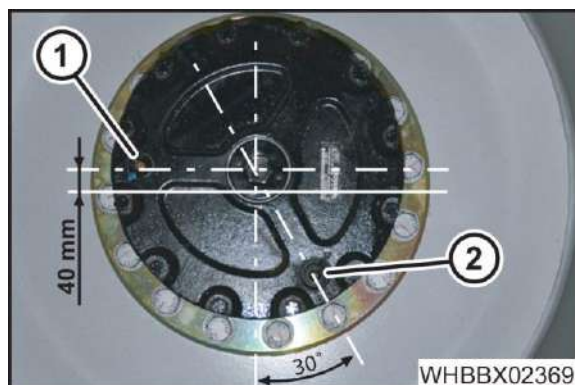


Fig. 688

- Position the wheel ensuring the oil filler plug (1) is at the top.
- Thoroughly clean the area around the oil filler plug (1).

**WARNING!** Risk of scalding by hot gear oil escaping under pressure.

- To reduce the pressure, carefully open the oil filler plug (1) from a lateral position.
- Mount the oil filler plug (1).
- Position the wheel ensuring that the lower edge of the filler plug (1) is approx. 40 mm below the centre of the hub. To do this, position a spirit level horizontally in the centre of the hub and use a measuring tape to measure the 40 mm.
- Thoroughly clean the area around the oil filler plug (1).
- Dismount the oil filler plug (1).
- Oil level must reach the oil filler plug, if necessary top up oil (see Oil change).
- Re-mount the oil filler plug (1).



### Oil change

- Position the wheel ensuring the oil filler plug (1) is at the top.
- Thoroughly clean the area around the oil drain plug (2).

**WARNING!** Risk of scalding by hot gear oil escaping under pressure.

- To reduce the pressure, carefully open the oil filler plug (1) from a lateral position.
- Mount the oil filler plug (1).
- Position the wheel ensuring the oil drain plug (2) is vertical relative to the hub.
- Provide a collecting vessel (10 litres).
- Thoroughly clean the area around the oil drain plug (2).
- Dismount the oil drain plug (2) and drain the oil.
- Re-attach the oil drain plug (2).
- Position the wheel ensuring that the lower edge of the filler plug (1) is approx. 40 mm below the centre of the hub. To do this, position a spirit level horizontally in the centre of the hub and use a measuring tape to measure the 40 mm.
- Dismount the oil filler plug (1).
- Add the oil. Type of oil and filling quantity, see page 104.
- Mount the oil filler plug (1).

### 26.1.8 Maintenance VariLOC Gearbox (Option)

#### Oil level check

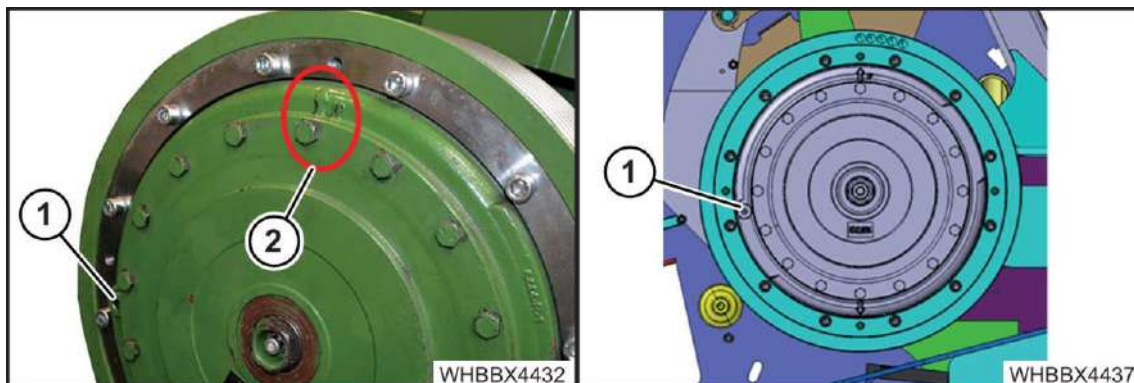


Fig. 689

#### Prerequisites:

- The machine is shut down and safeguarded, see page 41.
- The intake has been removed.
- A suitable container is available for escaping oil.

**WARNING!** Risk of injury due to rotating chopping drum! Do not reach into the chopping drum.

- Turn the belt pulley until the identification "Arrow+UP" (2) is in the top position.
- Lock the chopping drum, see page 701.
- Thoroughly clean the area around the locking screw (1).
- Remove the locking screw (1).
- Oil level must reach the inspection hole, if necessary, top up oil (see Oil change).
- Fit the locking screw (1).
- Unlock the chopping drum, see page 701.

## Oil change

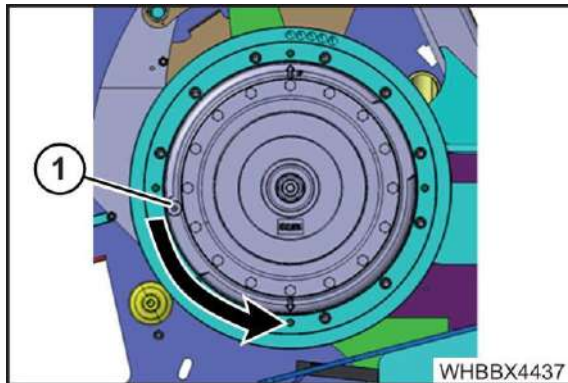


Fig. 690

## Prerequisites:

- The machine is shut down and safeguarded, see page 41.
- A suitable container is available for escaping oil.

- Turn the gearbox until the locking screw (1) is in the bottom position.
- Lock the chopping drum, see page 701.  
Thoroughly clean the area around the locking screw (1).
- Unscrew the locking screw (1) and drain the oil.
- Unlock the chopping drum, see page 701.

**WARNING!** Risk of injury due to rotating chopping drum! Do not reach into the chopping drum.

- Turn the belt pulley until the identification "Arrow+UP" (2) is in the top position.
- Lock the chopping drum, see page 701.

**NOTE!** Possible damage to the gearbox if a mixture of different oils is used.

- Fill gear oil into the filling hole until it escapes. Type of oil and filling quantity, see page 104.
- Fit the locking screw (1).
- Unlock the chopping drum, see page 701.

### 27 Maintenance – electrical system

 **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**

**Danger to life due to exploding battery gas!**

Highly explosive battery gas may escape from the battery.

- Keep ignition sources and naked flames away from the battery.
- Observe the correct polarity when connecting and disconnecting the battery.

**CAUTION**

**Damage to the electrical system due to incorrect polarity of the battery!**

Non-observance of the correct polarity between the battery and three-phase generator may severely damage the electrical system.

- First connect the positive terminal of the battery.
- Then connect the negative terminal of the battery.

**CAUTION**

**Damage to electronic components due to voltage peaks or overheating!**

If the vehicle power supply is interrupted on the main battery switch while the engine is running, voltage peaks or overheating may occur and possibly damage the electronic components in the vehicle.

- Actuate the main battery switch only when the engine is switched off.

**NOTE**

An overview of all control unit circuit boards and fuses is in the circuit diagram which is enclosed with every machine.

### 27.1 Battery

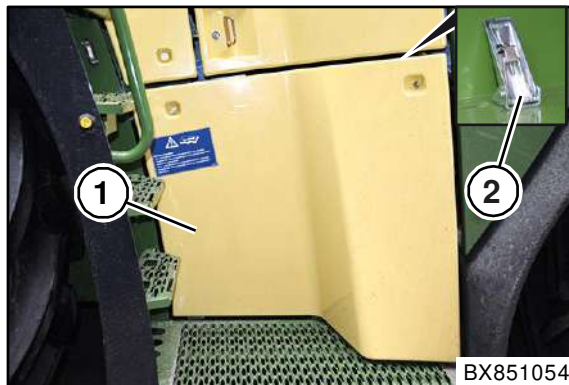


Abb. 691

The battery compartment is located on the left-hand machine side behind the cover (1).

#### Opening the battery compartment

Pre-condition:

- The side flap at the front left is open.
- Open the lock (2) on both sides.
- Unhook and remove the cover (1) including the battery cover.

### 27.1.1 Removing and Installing Battery

Prerequisite:

- The main battery switch is in the "0" position, see page 58.

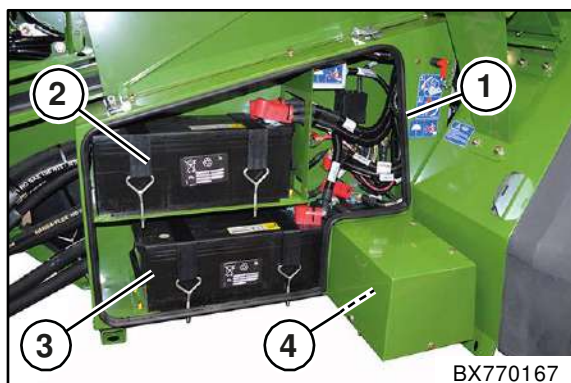


Fig. 692

Item	Designation
1	Battery compartment
2	Battery (12 volts)
3	Battery (12 volts)
4	Battery (12 volts)

The machine is fitted with 3 12 V batteries (150 Ah, 1150 A). The batteries (2) and (3) are connected in series (24 V).

#### Disconnecting the batteries

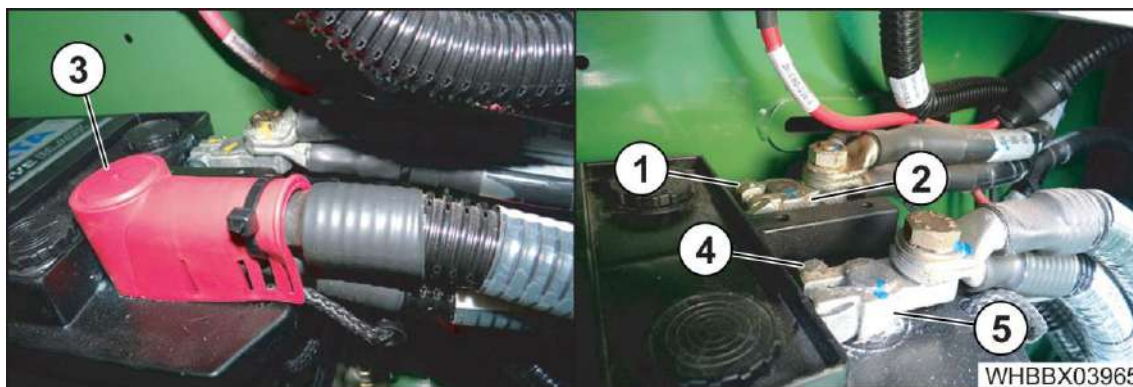


Fig. 693

#### **NOTE**

To avoid a short circuit, do not touch any parts of the machine when working on the battery with metal tools.

- Loosen the screws (1) on the pole terminals on the negative terminals (2) on the batteries.
- Disconnect and isolate the negative terminals on the batteries in sequence.
- Dismount the terminal caps (3) from the positive terminals on the batteries.
- Loosen the screws (4) on the pole terminals (5) on the positive terminals on the batteries.
- Disconnect and isolate the positive terminals on the batteries in sequence.

### Removing the batteries

Prerequisite:

- The battery has been disconnected.



Fig. 694

Replacement of the batteries is the same for batteries (1), (2) and (3).

- In the case of battery (3) unscrew the screws from the cover (4) beforehand and remove the cover.

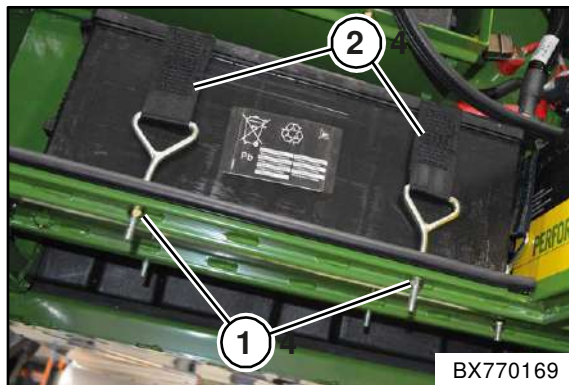


Fig. 695

- Remove the screws and washers (1) and loosen the tensioning straps (2).
- Remove the battery.

### Installing the batteries

- Insert the battery.
- Tighten the tensioning straps (2) with the screws and washers (1).
- Connect the battery, initially the plus terminal and then the minus terminal of the battery.
- Screw the pole terminals to the plus terminals of the batteries and mount the pole protection cap.
- In the case of battery (3) attach the cover (4) and secure with the associated screws.



## Maintenance – electrical system

### 27.1.2 Servicing the battery

- Keep the battery surface clean and dry, clean with a damp or anti-static cloth only.
- Protect the battery terminals and connecting terminals from corrosion by applying terminal grease to the battery terminals and connecting terminals.
- Use a brush to remove any oxidation from the terminal posts.
- When batteries are removed and placed in storage, regularly check the charge state or use a charge maintenance device. If the open-circuit voltage is below 12.3 V, recharge the battery.
- Keep removed batteries cool, dry and charged.

### 27.2 Three-phase generator

#### **CAUTION**

##### **Damage due to improper handling.**

When installing / removing the batteries, an improper procedure may cause a short circuit. As a result, electronic components may be damaged.

- Interrupt the circuit using the main battery switch and secure to prevent it from being switched on again.
- Protect the cable contact of the positive lead from accidentally touching components of the machine.

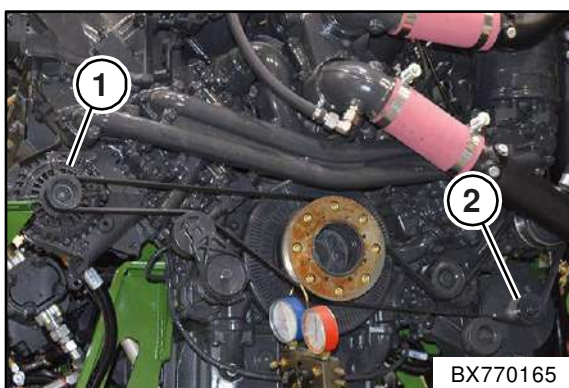


Fig. 696

The engine features two alternators which supply all consumers of the machine with adequate electrical energy and charge the battery.

Item	Electrical voltage
1	24 V
2	12 V



### Checking/tensioning/replacing V-belt of the alternator

The procedure can be found in the supplied Liebherr operating and maintenance manual.

If the three-phase generator fails or does not work properly, determine the cause of the damage. If the suggestions below do not repair the damage, ask your KRONE dealer.

Malfunction	Cause, remedy
– Charging warning light lights up.	The output voltage of the alternator is too low <ul style="list-style-type: none"> <li>• Have the alternator checked by a qualified service centre.</li> </ul>
– Error messages Under/overvoltage.	The batteries are inadequately charged. <ul style="list-style-type: none"> <li>• Charge the batteries.</li> </ul> The batteries are defective. <ul style="list-style-type: none"> <li>• Replace the batteries (in pairs).</li> </ul> The connection cable to the alternator is loose. <ul style="list-style-type: none"> <li>• Tighten the cable connections to the corresponding tightening torque (see maintenance or repair instructions).</li> </ul> The cable connections are corroded. <ul style="list-style-type: none"> <li>• Clean the cable connections on the alternator and battery.</li> </ul>

### 27.3 Starter

#### **CAUTION**

**Damage due to improper handling.**

When installing / removing the batteries, an improper procedure may cause a short circuit. As a result, electronic components may be damaged.

- Interrupt the circuit using the main battery switch and secure to prevent it from being switched on again.
- Protect the cable contact of the positive lead from accidentally touching components of the machine.

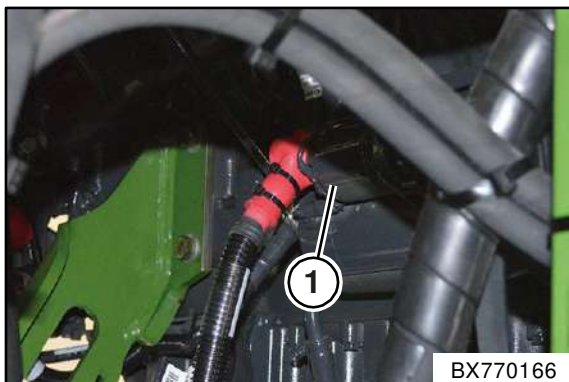


Fig. 697

1) Starter (24V)

If the starter fails or does not work properly, determine the cause of the damage. If the suggestions below do not repair the damage, ask your KRONE dealer.

Disturbance	Cause, remedy
Starter fails or does not work properly	<p>The batteries are inadequately charged.</p> <ul style="list-style-type: none"> <li>• Charge the batteries.</li> </ul> <p>The connection cable to the starter is loose.</p> <ul style="list-style-type: none"> <li>• Tighten the cable connections firmly</li> </ul> <p>The cable connections are corroded.</p> <ul style="list-style-type: none"> <li>• Clean the cable connections on the starter and batteries.</li> </ul> <p>The solenoid switch of the starter is defective.</p> <ul style="list-style-type: none"> <li>• Have the starter checked by a qualified service centre.</li> </ul>

 **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".

**CAUTION****Environmental damage caused by lubricants!**

If lubricants are not stored and disposed of properly, they may escape into the environment. As a result, the environment will be damaged, even by small quantities.

- Store the lubricants in suitable containers according to the statutory regulations.
- Dispose of used lubricants according to the statutory regulations.

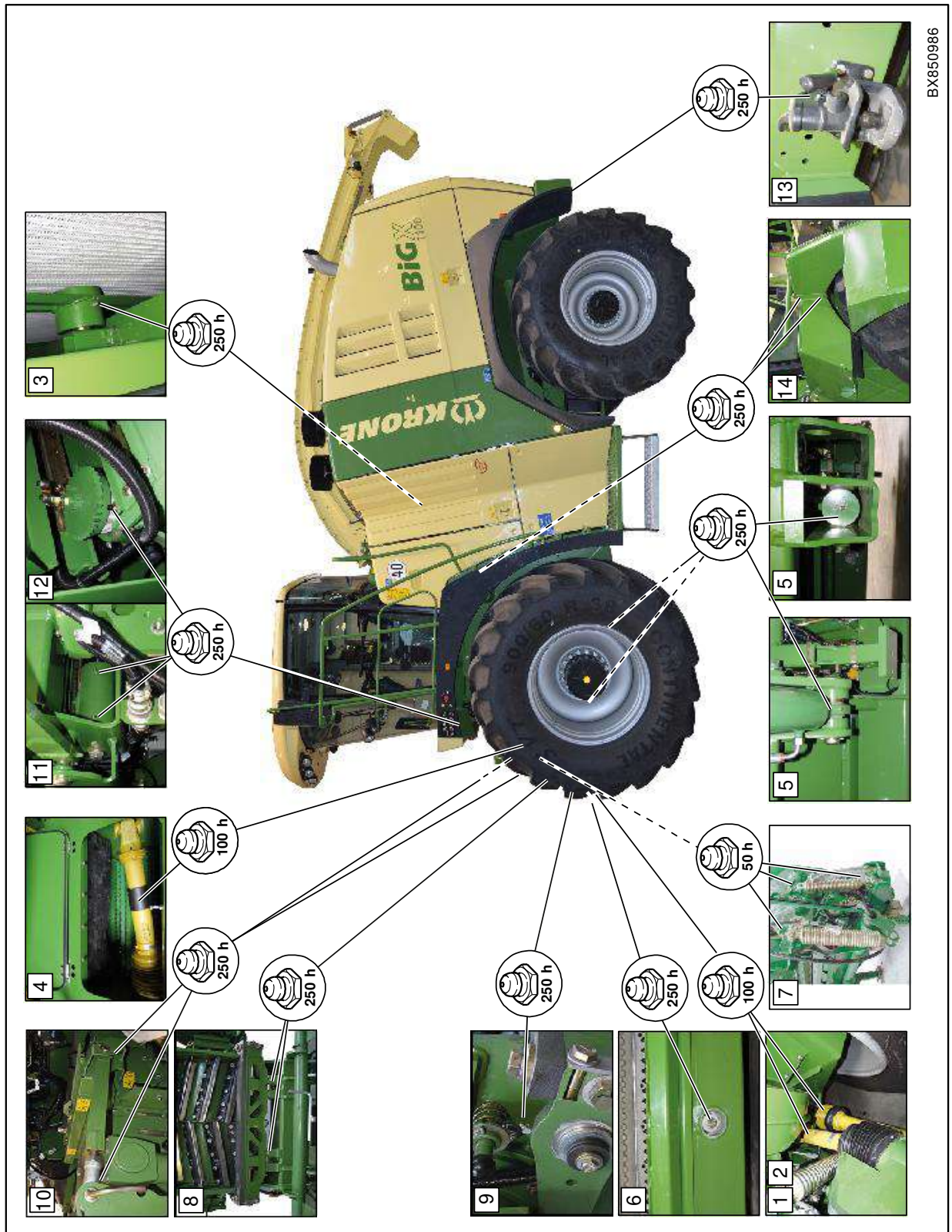
Soft, supple NLGI Class 2 lithium soap greases with EP additives should be used as lubricants in accordance with DIN 51825. We advise against using lubricants with any other base material.

 **NOTE**

Do not use greases containing graphite!  
Problems may occur if different greases are mixed together.

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.

28.1 Manual lubrication chart



BX850986

Fig. 698

**Lubrication points**

- Lubricate the lubrication points mentioned according to the number of operating hours specified in the lubrication chart.

<b>Pos.</b>	<b>Part</b>	<b>Number of lubrication points</b>	<b>Lubrication interval Operating hours</b>
1	PTO shaft W 2500 (VS)	3	100 h
2	Universal shaft W 2500 (ZW)	3	100 h
3	Flange-mounted bearing cooling system	1	250 h
4	Universal shaft feed system	4	100 h
5	Lifting cylinder	4	250 h
6	Pendulum frame	1	250 h
7	Tension springs: top and bottom front, top rear	6	50 h
8	Tension anchor counterblade adjustment	2	250 h
9	Rocker arm	2	250 h
10	Coupling rods	4	250 h
11	Carriage for grinding device	2	250 h
12	Grinding stone grinding device	1	250 h
13	Tow coupling	1	250 h
14	Tool box	2	250 h

### 29 Maintenance – central lubrication system

<b><i>CAUTION</i></b>
<p><b>Damage to the machine due to the use of incorrect and contaminated lubricants!</b></p> <p>Unauthorised or contaminated lubricants in the central lubrication system will cause faults in the central lubrication and damage the bearing positions.</p> <ul style="list-style-type: none"><li>• When working on the central lubrication system, use clean and suitable tools.</li><li>• Use authorised lubricants only.</li><li>• Ensure that dirt or dirty lubricant cannot get into the central lubrication system.</li></ul>



#### 29.1 Overview of the distributor blocks of the central lubrication system



<b><i>NOTE</i></b>
<p>The distributor blocks have one grease nipple each (red cap) for lubrication with a grease gun if required.</p>



BX770055

Fig. 699

Item	Component
1	Main distributor
2	Auxiliary distributor, steering axle
3	Auxiliary distributor for discharge system and drive
4	Auxiliary distributor, right chopper unit
5	Auxiliary distributor, feed system



Overview of lubrication points of the central lubrication system

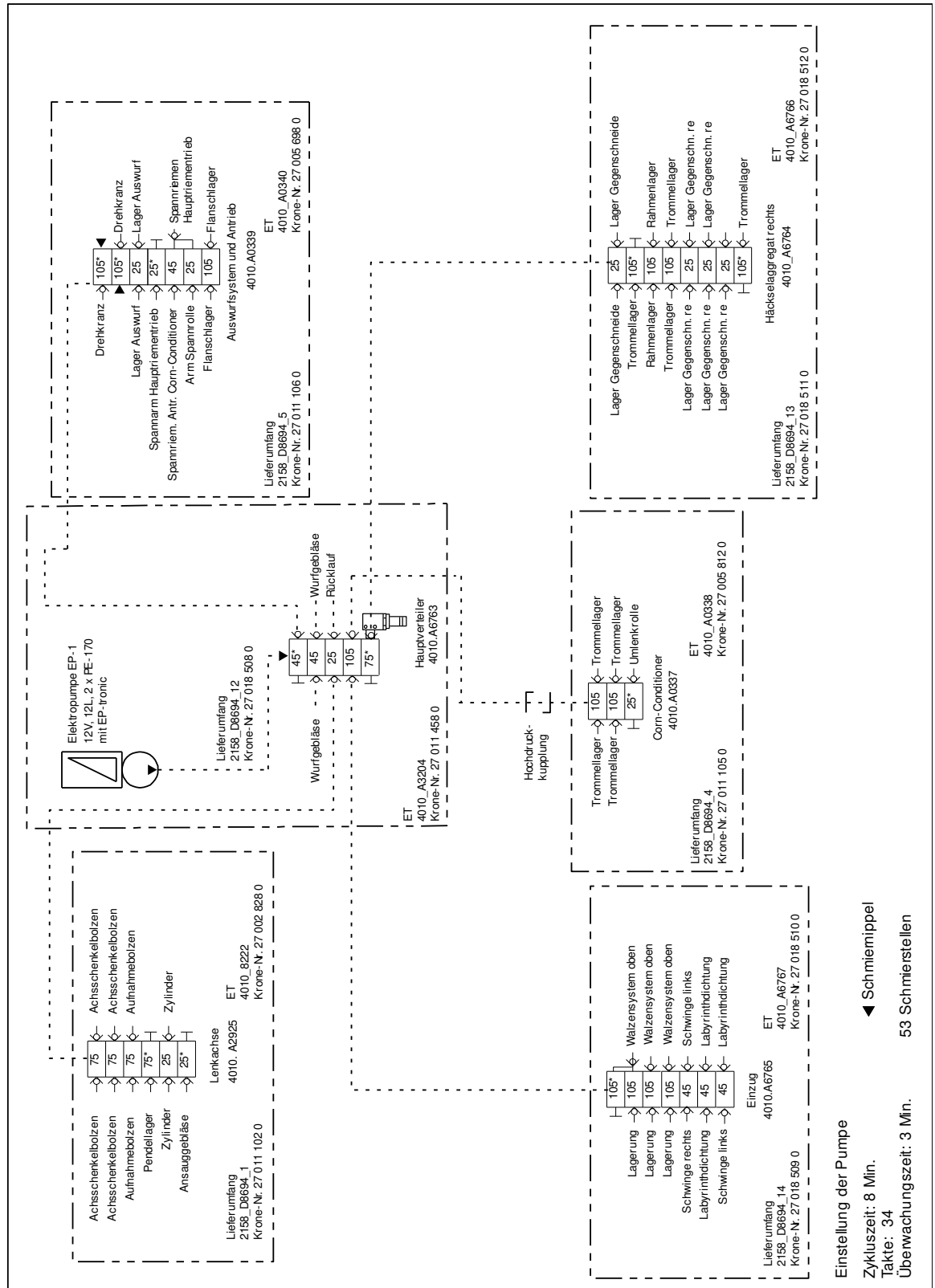


Fig. 700



### Emergency lubrication points



#### **NOTE**

Thoroughly clean the lubrication points prior to use.

With the exception of the auxiliary distributor on the supply system, each other auxiliary distributor features an emergency lubricating point (grease nipple at the connecting piece of the line) which can be manually lubricated if the central lubrication fails.

These lubrication points can also be used for diagnostic purposes in order to localise blockages.

## 29.2 Lubricant filling

### 29.2.1 Visual filling level control

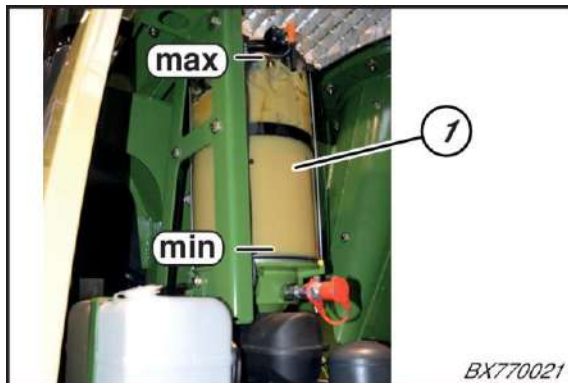


Fig. 701

- Perform a visual check of the filling level of the lubricant tank (1). The lubricant level must be above the min. mark.
- Top up with lubricant if necessary.

### 29.2.2 Topping up lubricant



#### **NOTE**

Add only clean lubricant using a suitable tool.  
Dirty lubricants result in serious system faults.

#### Hydraulic-type lubricating nipple



Fig. 702

- The lubricant is filled through the hydraulic-type lubricating nipple (1) by means of a commercially available grease gun.

#### Fill coupling

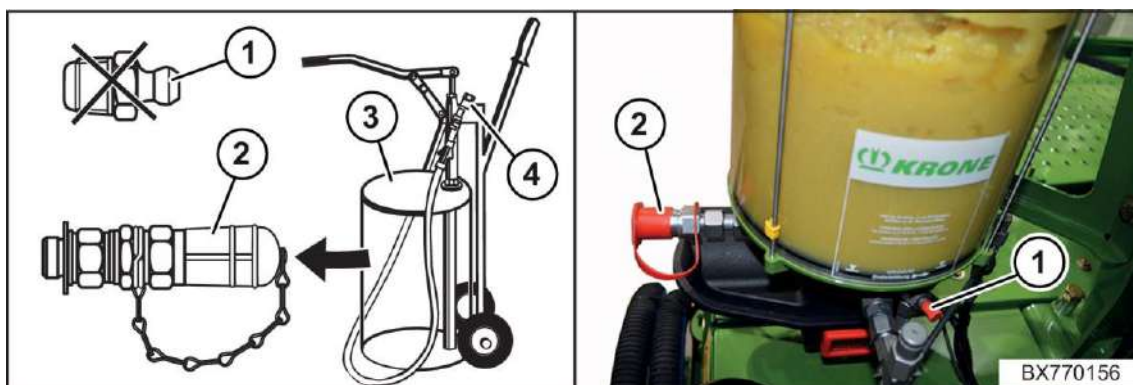


Fig. 703

#### **The lubricant is filled via a quick coupling plug.**

- Dismount the conical grease nipple (1) and mount the coupling plug 27 001 594 0 (2) instead. Alternatively, you can also mount the coupling plug (2) on the side of the reservoir.
- Fit the coupling box 27 001 595 0 (4) to the filling pump (3).

### Filling cylinder

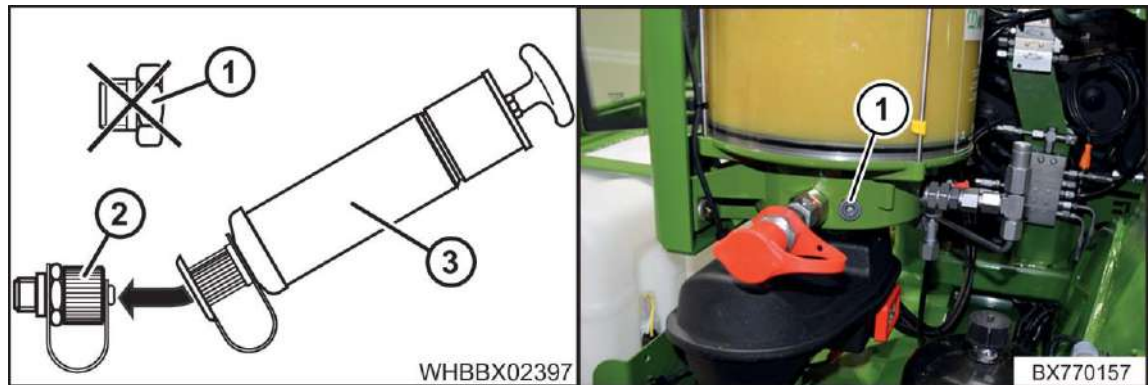


Fig. 704

**The lubricant is filled via a filling cylinder.**

- Dismount the screw plug M20 x 1.5 (1) and mount the filling socket 940 392 0 (2).
- For filling, remove the protective caps on the socket (2) and the filling cylinder 940 393 0 (3)

### Operational sequence



Fig. 705

- Switch on the ignition.
  - ➔ The green (2) and red (1) LEDs light up for approx. 1.5 s (independently of the set programme) and indicate that the control of the lubrication system is operational.
- Subsequently, both LEDs extinguish again.

The central lubrication operates automatically. The machine only provides the power supply and displays a general fault message.

The lubrication intervals are set at the control unit of the lubrication system.

The actual error is displayed via various signal statuses of both LEDs.

#### **NOTE**

If the ignition is interrupted while lubrication is taking place or during the cycle time, the time is stopped and saved to the data memory. After the ignition is turned on again, the remaining lubrication period or cycle time is read from the memory and the operational sequence continues from the point at which it was interrupted.

## 29.2.3 Signal displays

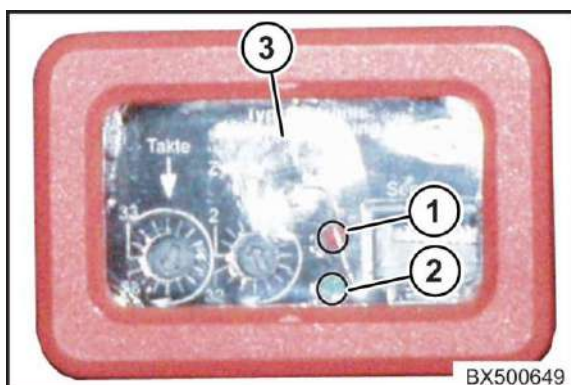


















Fig. 706

The functions of the pump are indicated by two control LEDs, red (1) / green (2) in the viewing window (3) for the motor half shell of the pump.

### Explanation of the display

LED	Explanation
	LED continuously lit
	LED flashes every 1 s
	LED is lit for 1.5 s
	LED is not lit

### Description of the signal displays

LED red	LED green	Explanation
 1.5 s	 1.5 s	Display of functional readiness The LEDs are lit simultaneously.
		Program run of a lubrication process The green LED is lit throughout the lubrication process.
 1 s	 1 s	Cycle error on the progressive distributor The LEDs flash in identical cycles.
		Error grease level; grease level too low The LED is lit until the lubricant tank is topped up.
 1 s		Error pump motor speed
 0.5 s		Error CPU/memory

29.2.4

Fault



Fig. 707



**NOTE**

The red LED (1) always displays a fault in the programme sequence.

If a central lubrication system error message appears in the machine display, the precise fault must be read at the operation unit of the lubrication system.

- If you press the intermediate lubrication key (3), the pump starts another lubrication process despite the fact that an error is pending. This is only a short-term solution until the problem has been solved.

**Blocking of a lubricant distributor**



**NOTE**

If a grease distributor becomes blocked, contact an authorized Beka-Max representative.

## Placing in Storage

### 30 Placing in Storage

#### 30.1 At the End of the Harvest 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".

Placing the machine in storage at the end of the harvest season is the best possible way to preserve the machine.

- Park the machine in a dry spot protected from the weather and at a distance from corrosive substances.
- Support the machine on blocks so that the total weight is not resting on the wheels.
- Protect the tyres against external influences such as oil, grease or direct sunlight.
- Thoroughly clean the machine.

Chaff and dirt attract moisture which causes steel parts to start rusting.

**CAUTION**

**Damage to the machine caused by water from a high-pressure washing device!**

If the water jet from a high-pressure cleaner is aimed directly at bearings and electrical/electronic components, these components may be damaged.

- Do not aim the water jet from a high-pressure cleaner at bearings or electrical/electronic components.

- Lubricate the machine according to the lubrication chart. Do not wipe off any grease leaking from the bearing positions because the ring of grease offers additional protection against moisture.
- Grease the threads of setting screws and similar items.
- Release the springs.
- Lower the intake as far as possible.
- Remove the kraftband of the corn conditioner.
- Disassemble the universal shaft. Lubricate the inner tubes with grease.
- Lubricate the grease nipples at the universal joint of the universal shaft and at the bearing rings of the guard tubes; lubricate the universal shaft.



**NOTE**

Follow the operating instructions of the universal shaft manufacturer.

- Protect the machine, including the lubrication points "Maintenance – every 1000 hours", after the harvest by injecting lubricant.  
To distribute the grease evenly, subsequently run the machine until a small collar of grease forms on the outside of the bearings.
- Lubricate the bearing positions before and after using a high-pressure cleaner to clean the machine.
- If the corn conditioner is installed, remove the corn conditioner, clean it thoroughly and coat with grease or a preservative to protect it against corrosion. Subsequently re-install the corn

conditioner and run the diesel engine for 5 minutes to ensure any water is squeezed out of the bearings.

- Lubricate the uncoated piston rods of all hydraulic cylinders liberally and insert as far as possible.
- Wet all lever joints and bearing positions, which cannot be lubricated, with oil.
- Touch up damaged paint and preserve all uncoated areas thoroughly with rust protection agent.
- Check all moving components for smooth running. If necessary remove, clean, grease and remount.
- If parts need to be replaced, use KRONE original spare part only.



### **NOTE**

Write down all repair jobs which must be performed by the next harvest and arrange for them to be done with sufficient lead time. Your KRONE dealer is better able to perform maintenance service and any required repairs outside of harvest season.

- Before wintering the machine, charge the batteries and re-charge them every six weeks or have them serviced at a battery service station.

### **CAUTION**

#### **Damage to the silage additives unit due to low outdoor temperatures.**

If there is any water left in the silage additives unit prior to it being stored for the winter, the unit is at danger of being damaged by frost.

- Fill the silage additives tank with a biological, non-aggressive frost protection agent prior to storing it for the winter and allow the silage additives unit to pump in "continuous operation" mode for 2 minutes with a dosing quantity of 50%.
- After the winter, before the season begins, fill the silage additives tank with clear water and allow the silage additives unit to pump in "continuous operation" mode for 10 minutes with a dosing quantity of 75%.



### **NOTE**

For more detailed information about storing the engine when not in use and restarting the engine, refer to the service instructions supplied by the engine manufacturer.

### 30.2 Before the Start of the New Season

Before the start of the new harvest season, inspect the machine thoroughly.

Keeping the machine in a perfect technical condition will significantly reduce costly running problems during harvest time.

If this was not already done after the last harvest, the machine must be thoroughly cleaned inside and out.

- Refit any belts and V-belts which were removed and check belt tension.
- If engine openings were covered, remove the covers.
- Lubricate the machine completely according to the lubrication chart.
- Check that all bolts have been tightened and that all split pins are in place.
- Check all seals and the filling quantity of the cooling system. Antifreeze and anticorrosion agent must remain in the cooling system even during summer months, since they protect the system against corrosion.
- Check the charge state of the batteries; recharge the batteries if required.
- Check the tyre pressure, see chapter Description of machine, "Technical data of the machine".
- After completing these tasks, let the machine run for about one hour at half speed. Then check all bearings for overheating.



**31 Disposal of the machine****31.1 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.



## Disposal of the machine

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**32**

**Appendix**

**32.1**

**Appendix - CropControl System**



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## Appendix – CropControl System

The CropControl system enables a complete yield recording and documentation of the harvested areas.



### Note

The CropControl system does not present a measuring device as defined by law via measurement and calibration (Eichgesetz).

### 1.1.1 Connecting the Terminal in case of Self-Propelled Machines

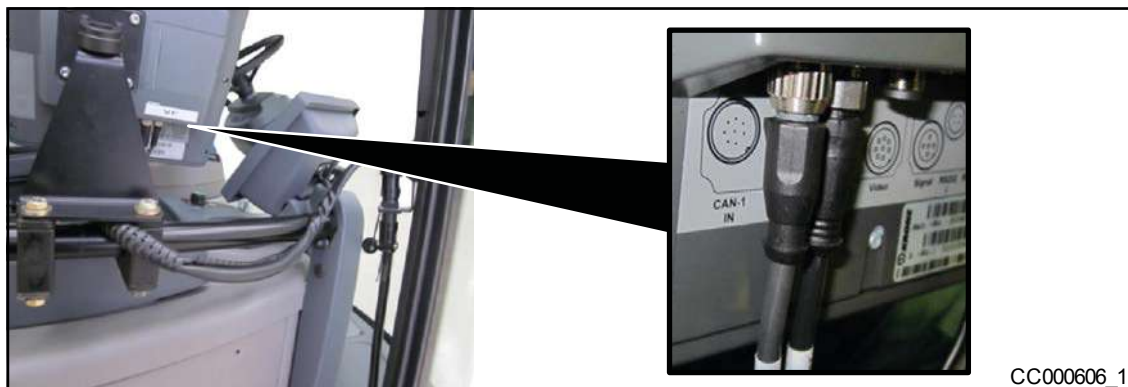


Fig. 1

For the connection to a self-propelled machine, a special cable set “IN-CAB“ is required. It can be ordered by stating KRONE number 20 082 207 1.

- Connect interfaces “CAN1-IN” and “CAN1-OUT” on the terminal via “INCAB” cable with “INCAB” bushing of the machine.
- Mount KRONE CCI 200 control unit or KRONE Delta control unit as described in the assembly instructions and connect it.

### Switch control unit on and off if CropControl is not connected to ISOBUS

- Make sure that the connections on the device are correctly and firmly seated before the terminal is switched on for the first time.



Fig. 2

- To switch the control unit on or off, press key (1) and hold it down for approx. 2 seconds.

In Delta terminal, the CAN resistance must be deactivated before the terminal is used:



Fig. 3

Menu “CAN Settings” is called.

- Deactivate resistance by pressing the key “CAN 1 termination” (1).

**For further information on how the terminal works, observe the provided terminal operating instructions ord. no. 150 000 294.**

### **Switch the terminal on/off when CropControl is connected to ISOBUS**

When the terminal is switched on for the first time, the configuration of the specific CropControl menu is loaded into the terminal. The loading process may take a few minutes. The configuration is saved in the memory of the terminal.

After loading, the “working screen” is displayed.

CropControl is ready for operation.

### 1.2 **Mode of Operation CropControl and CropControl TC Sync in Connection with ISOBUS Task Controller**

#### **Brief explanation concerning ISOBUS Task Controller**

ISOBUS Task Controller is able to continuously record data of the machine digitally such as yields, rotational speed etc. The data can then be made available to another system, such as Farm Management information software, .

#### **Mode of operation CropControl without CropControl TC Sync**

CropControl is a system for KRONE BiG X to record crop yields.

The volumetric flow of the crops is measured as a basis to determine the weight.

To be able to determine the exact weight, the weight determined via CropControl must be compared with the actual weight. To do this, counterweighings are necessary.

CropControl generates a new correction factor due to counterweighings. This factor also corrects retrospectively the weights already determined in the CropControl for the respective cultivated area in the CropControl.

If ISOBUS Task Controller is used, it forms the total yield for the order from the current yields of CropControl.

Caution: The yields in the Task Controller are not corrected retrospectively after a counterweighing has been made!

#### **Mode of operation CropControl with CropControl TC Sync**

If the yields in the ISOBUS Task Controller should be corrected retrospectively after a counterweighing has been performed, CropControl with CropControl TC Sync and KRONE ISOBUS TaskController is required.

If CropControl TC Sync is activated, there are no longer cultivated areas in the CropControl but only the orders in the KRONE Task Controller. Counterweighings are entered via KRONE Task Controller.

There are the following possibilities to operate CropControl TC Sync:

- CropControl is displayed on the CCI 200 and the KRONE Task Controller also runs on the same CCI 200.
- CropControl is displayed on ISOBUS UT or on the KRONE Delta terminal and the Task Controller runs on the IPAD (Control.Mobile).

#### **Mode of operation KRONE AutoCalibrate**

When using KRONE AutoCalibrate, the weights of the counterweighings of KRONE forage wagon, discharge wagon or transport wagon are determined by means of weighing device and entered automatically via mobile Internet in the CropControl counterweighings.

## 1.3 Operating CropControl System via KRONE CCI 200 Operation Terminal or KRONE Delta Operation Terminal

### 1.3.1 Display Working Screen

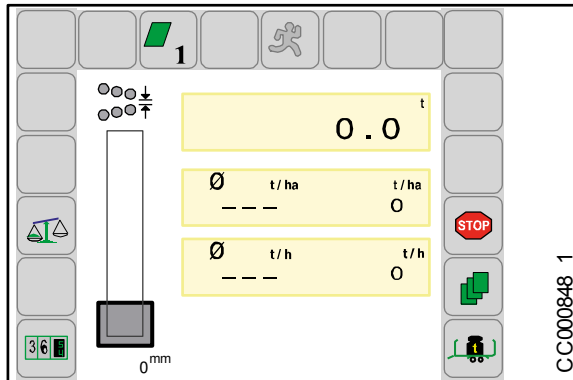


Fig. 4

### 1.3.2 Design of the Display

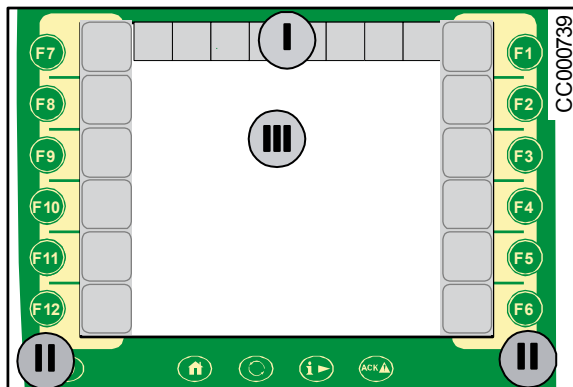


Fig. 5

The display of the terminal is divided up into the following sections:

#### Status line (I)

- The status displays of the machine.

#### Function keys (II) (F1 to F12)

- CropControl is operated via function keys. The softkeys (graphics) belonging to the function keys are touch sensitive.

#### Main window (III)



## Appendix – CropControl System

### Status line (I)

Current CropControl states are shown in the top line (I) of the display.

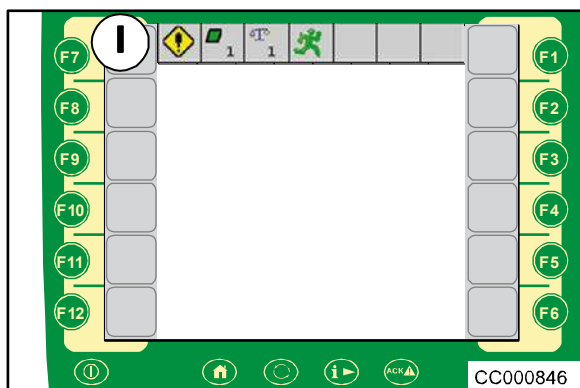







Fig. 6

Possible status displays:

Graphic	Meaning	Information
	Alarm message present.	
	Currently active cultivated area.	Cultivated areas 1-50 exist.
	Currently active counterweighing for the displayed cultivated area	A total of 500 counterweighing operations can be carried out.
	CropControl counts yield.	The following conditions must be fulfilled to enable CropControl to count yield: <ul style="list-style-type: none"> <li>– Intake is rotating</li> <li>– Header in working position</li> <li>– Machine moves forward</li> <li>– The excursion of the pre-compression rollers is more than the set minimum excursion.</li> </ul>
	Cultivated area is active, but CropControl is not counting yield.	The machine is not currently harvesting, or insufficient crops are passing through the machine.

Description of graphics (II) for function keys (F1 to F12)

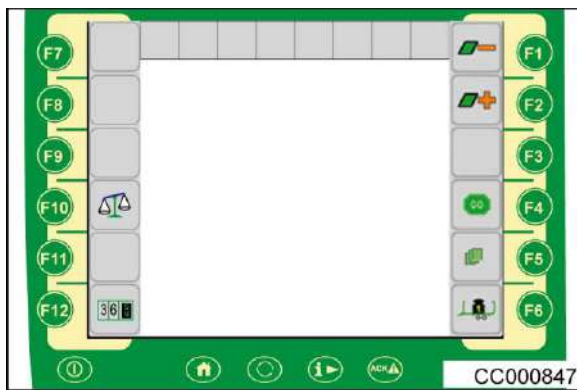












Fig. 7

Softkey	Meaning	Information
	One cultivated area back	Cultivated areas can only be selected when no is currently active.
	One cultivated area forward	
	Stop yield counter of active cultivated area.	The displayed cultivated area is active.
	Start yield counter of active cultivated area	The displayed cultivated area is not active.
	Call menu level of CropControl	
	Start/reset load counter	The laden weight can be determined by means of load counter.
	Start or stop counterweighing	
	Call yield counter menu	Short-cut button to the "List of yield counters"

1.3.3 Short-cut Buttons in the Working Screen

m


Selecting cultivated area

- Select the desired cultivated area by using function keys  and .

The selected cultivated area is displayed on the status line!


Once a cultivated area has been started, no other cultivated area can be selected. The yield counter must first be stopped.

Starting yield counter

- Start the yield counter for the selected cultivated area by using function key .
- The selected cultivated area is displayed on the status line!


At the same time the function key  indicates that no yield counter has been started.

### Stopping yield counter

- Stop the yield counter for the selected cultivated area by using function key . The selected cultivated area is displayed on the status line!

At the same time, function key  indicates that a yield counter has been started.

### Calling menu level

- To call the menu level, press the function key , the CropControl menu level is displayed. For further information, see chapter “Menu Level”.

### Load counter


This function can be used to measure the laden weight and so determine the total weight of the tractor/wagon combination.



#### Note

The load counter only indicates the laden weight precisely when CropControl has been calibrated for the field by means of counterweighing operations and the field is homogeneous in terms of moisture. Otherwise, major differences may result.



### Starting the load counter


- Start the load counter by using function key .

### Stopping the load counter

- Stop the load counter by using function key  and reset it at the same time.

### Starting counterweighing


- To start counterweighing, press the function key . The number of the currently active counterweighing is displayed on the status line next to the  icon.

- If the  icon does not appear, the list of possible counterweighings is full. A cultivated area with counterweighing operations that is no longer required must be deleted.

### Stopping counterweighing

- To stop active counterweighing, press function key .

### Calling the list of yield counters

- To call the list of yield counters in the main menu 13 “Yield Counters”, press the function key .

1.3.4 Display in basic screen

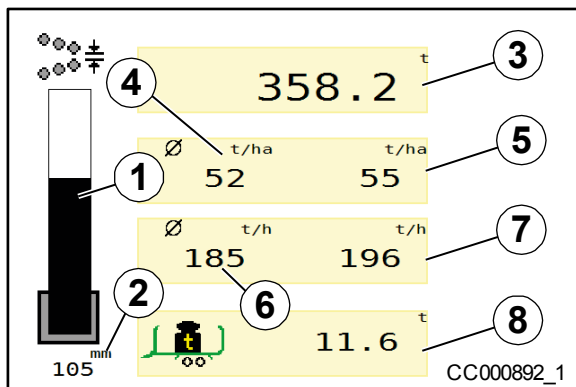


Fig. 8

Graphic	Meaning
1)	Excursion of the last pre-compression rollers
2)	Excursion of the last pre-compression roller as a numerical value.
3)	Harvested yield of selected cultivated area.
4)	Average yield per unit of area <ul style="list-style-type: none"> <li>The values only appear when no yield was yet counted or the respective cultivated area is deleted after software has been updated to version 150200570_07 or higher.</li> </ul>
5)	Current yield per unit of area
6)	Average yield per unit of time <ul style="list-style-type: none"> <li>The values only appear when the respective cultivated area is deleted or no yield was yet counted after the software has been updated to version 150200570_07 or higher.</li> </ul>
7)	Current yield per unit of time
8)	Payload counter

### 1.3.5 Counterweighing

To ensure that the yield measurement is accurate, it is necessary to carry out at least one counterweighing for each cultivated area and type of crop.

In order to obtain correct measurement values, counterweighing should be performed in the middle and not at the edge of the field.

When counterweighing is complete and the entered weight of counterweighing has been applied, the correction factor is recalculated. The recalculation of correction factor initiates the correction of the measured mass retrospectively for the entire cultivated area.

If several counterweighings are carried out, the correction factor is calculated from the average of the total counterweighings for the cultivated area.

#### 1.3.5.1 Performing a Counterweighing


To ensure that the yield measurement is accurate, the following steps need to be done for counterweighing:


- Select a trailer load that represents the average of the entire field.
- Run at average driving speed and engine load.

Prerequisites:



- The path sensor and the pressure sensor are calibrated, refer to menu 2-1 “Calibration Path Sensor” / menu 2-2 “Calibration Pressure Sensor”.
- Empty tractor/wagon combination with known tare weight is available.
- Machine stopped.


Performing counterweighing with active working screen:

- Position the empty tractor/wagon combination next to the machine.
- To start counterweighing, press  function key.

The status line displays the number of the currently active counterweighing next to the  icon.

Notice: Memorise the number of the counterweighing and write it down.

- If the  icon does not appear, delete a cultivated area that contains the counterweighings.
- Load the tractor/wagon combination. Ensure that all harvested chopping crops are loaded on the tractor/wagon combination.
- Press the function key  to stop active counterweighing.
- Weigh the tractor/wagon combination. Make sure no crops are lost when travelling to the scale.

- Press function key  to call the list of yield counters in the main menu 13 “Yield Counters”.

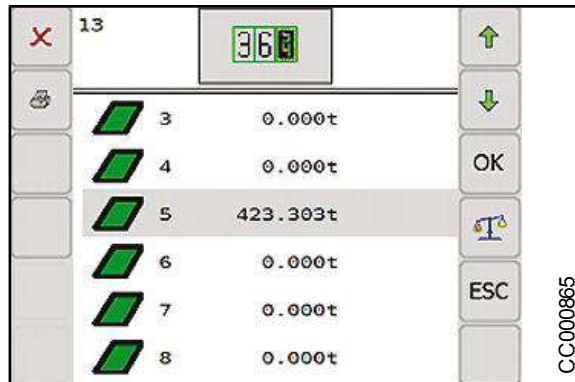





Fig. 9

- Select the cultivated area to enter counterweighing by using the function keys  and . The selected cultivated area is highlighted in grey.
- Press function key **OK** or .

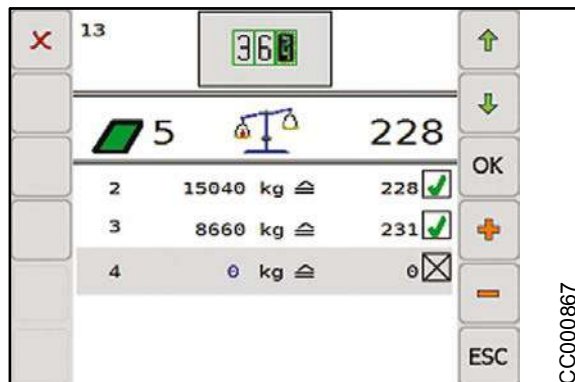







Fig. 10

The display shows the “Counterweighing” menu.

- Select the number of performed counterweighing by using the function keys  and . The selected counterweighing is highlighted in grey.
- Enter full weight minus tare weight of tractor/wagon combination (i.e. laden weight) for counterweighing by using the function keys  and .
- To apply the value for calculation of correction factor, press the function key **OK**. The  icon indicates that the value has been accepted.
- To cancel the process, press the function key **ESC**. The value is not accepted.

**Note**


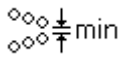











If a tractor/wagon combination with AutoCalibrate is used for counterweighing, the laden weight is determined automatically and entered in the list of counterweighings. The automatically determined value can be deleted or modified manually.

---

While the weight of weighing is being calculated, you can continue harvesting and/or carry out another counterweighing operation.

1.3.6 Menu Level

Short Overview

Main menu	Sub-menu	Designation
<b>1</b> 		Settings
	 1	Setting Minimum Excursion
<b>2</b> 		Calibration
	 1	Calibration of Path Sensor
	 2	Calibration Pressure Sensor
<b>13</b> 		Yield Counter of Individual Cultivated Areas
<b>14</b> 		ISOBUS Settings
	1 	Setting the Background Colour
<b>15</b> 		Service
	1 	Manual Sensor Test
	2 	Current Alarms
	4 	Information
	5 	Technician



## 1.3.7 Bringing up a Menu Level

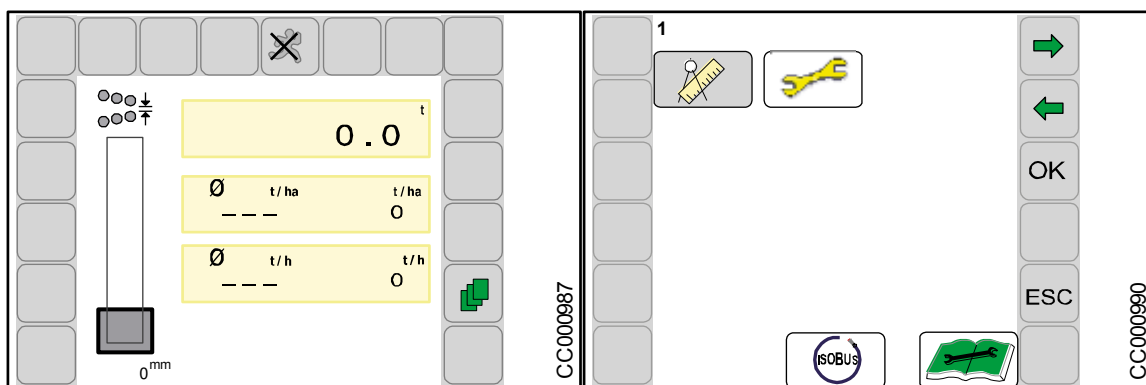


Fig. 11

- Press to bring up the menu level from the basic screen.

The menu level is divided into the following main menus:

	Main menu 1 "Settings"
	Main menu 2 "Calibration"
	Main menu 13 "Yield Counter"
	Main menu 14 "ISOBUS Settings"
	Main menu 15 "Service"

Press function keys or to select the desired main menu.  
The selected icon is highlighted in grey.

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

1.3.8 Main Menu 1 Settings

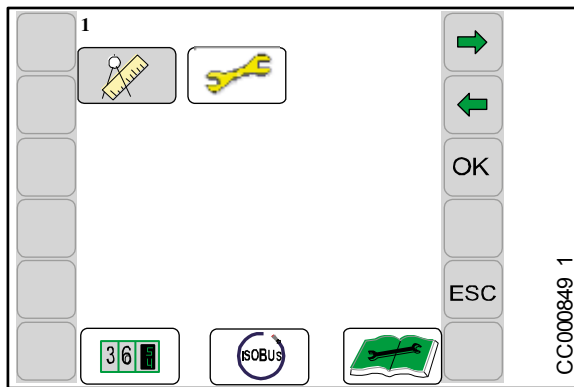







Fig. 12

- Press function key  from the basic screen to bring up the menu level.
- Press function key  or  to choose main menu 1 , the icon is highlighted in grey.
- Press function key **OK**.

The display shows menu level 1 “Settings”.

Main menu 1 contains the following sub-menu:

-  Menu 1-1 “Minimum Excursion”

### Menu 1-1 Minimum Excursion

In menu 1-1 “Minimum Excursion”, you can set from what excursion of the pre-compression rollers the measurement is started. The higher the minimum excursion setting, the more crops must flow through the rollers to activate the yield counter.

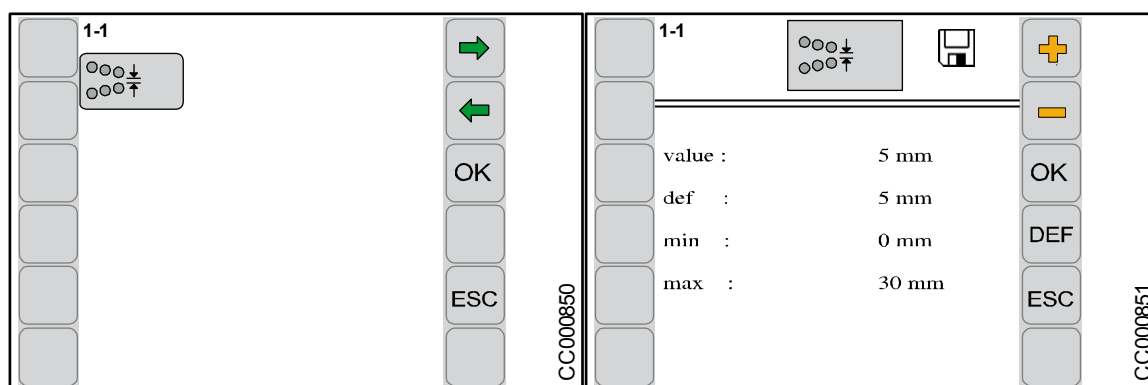





Fig. 13

#### Calling the menu


Main menu 1 “Settings” is called.




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


The display shows menu 1-1 „Minimum Excursion“.

The minimum excursion can be set between 0 and 30 mm.

The guide value to set the minimum excursion is 5 mm.

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

- Increase or reduce the desired value of minimum excursion via function key  or , the symbol  in the upper line goes out.
- Press function key **OK**.

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

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

1.3.9 Main Menu 2 Calibration

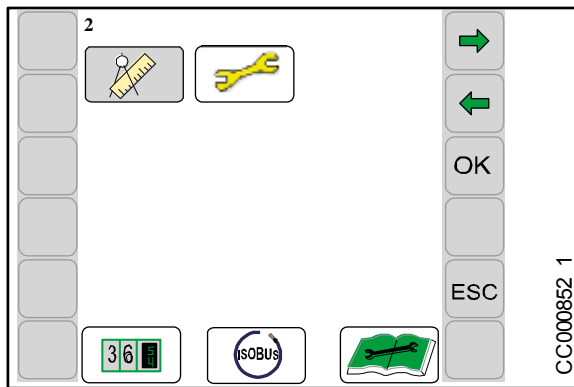




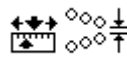



Fig. 14

- Press function key  from the basic screen to bring up the menu level.
- Press function keys  or  to choose main menu 2 , the icon is highlighted in grey.
- Press function key **OK**.

The display shows menu level 2 “Calibration”.

Menu level 2 is divided into two sub-menus:

 Menu 2-1 “Calibration Path Sensor”

 Menu 2-2 “Calibration Pressure Sensor”

### Menu 2-1 Calibration of Path Sensor

Before placing the machine in service the first time and after any assembly work on the path sensor, it must be calibrated. In this process, it must be ensured that there is no crop in the intake and the pre-compression rollers are in the bottom position on the stop.

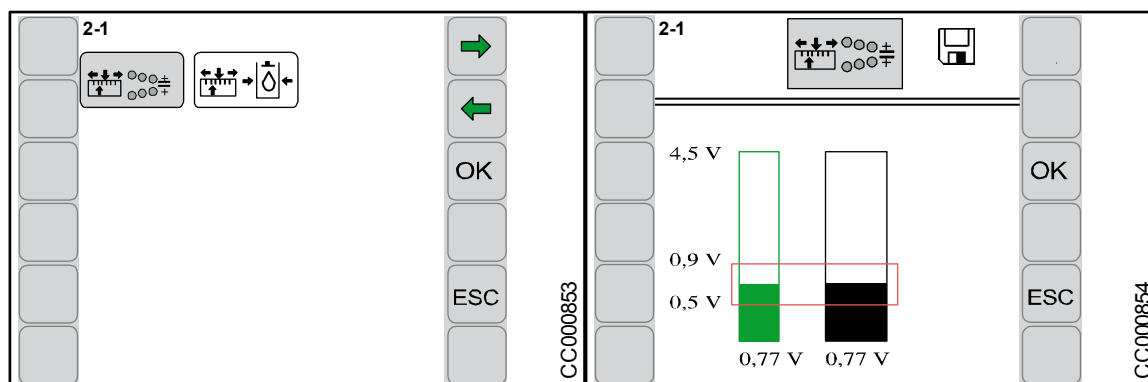
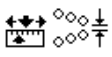




Fig. 15

#### Calling the menu

Main menu 2 “Calibration” is called.


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

The display shows menu 2-1 „Calibration of Path Sensor“.

The left bar display and the value below it show the calibrated voltage value for the path sensor. The right bar display and the value below it show the current voltage value of the path sensor. If the red bar is the red marked area, the path sensor can be calibrated.

A calibration is not possible if the value is outside this area. The following causes may be possible:

- The intake is soiled so that the intake rollers are not in the position on the stop.
- Path sensor defective.
- The voltage value is too small after assembly. Mount a distance sheet, if necessary.

The symbol  in the upper line indicates that the calibrated value is saved.

#### Calibrating the path sensor

The current voltage value of the path sensor is saved as a calibrated value via function key **OK**.

### Menu 2-2 Calibration Pressure Sensor

The calibration of the pressure sensor must be carried out before placing the machine in service the first time, after any assembly work and weekly during operation. Ensure that no crops are in the intake and that the pre-compression rollers are in the bottom limit stop.

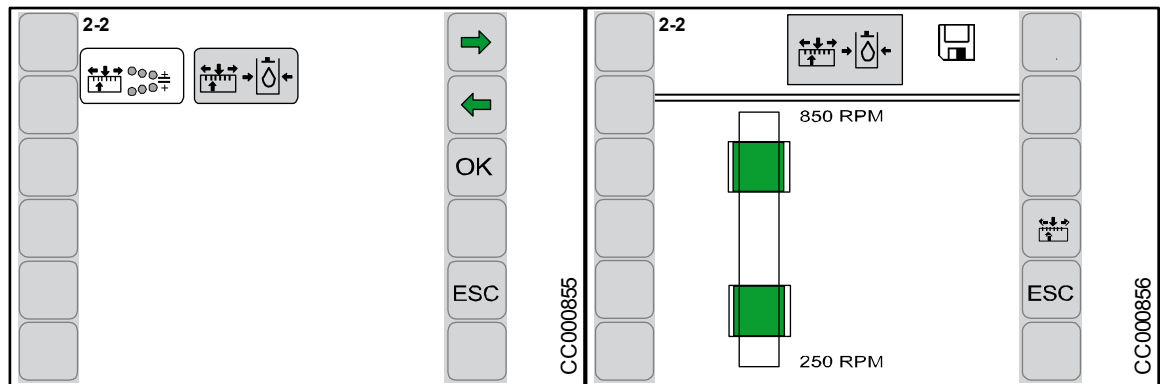
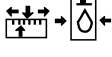





Fig. 16

#### Calling the menu

Main menu 2 “Calibration” is called.

- Select menu 2-2  by pressing function key  or , the symbol is highlighted in grey .
- Press function key **OK**

The display shows menu 2-2 “Calibration of Pressure Sensor“.

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

The bar indicates the intake speed.

The green areas specify the areas of the intake speed for the both intake speeds to be calibrated.

To calibrate the pressure sensor, proceed according to the following steps:

- Move lifting unit in working position (not lifted).
- Turn on cutting drum.
- Turn on intake.
- Adjust engine to working speed (1950/2000 rpm).
- Set the cutting length in the machine terminal to the smallest possible value.
- Slowly increase the cutting length in the machine terminal until the black bar is within the lower green area.

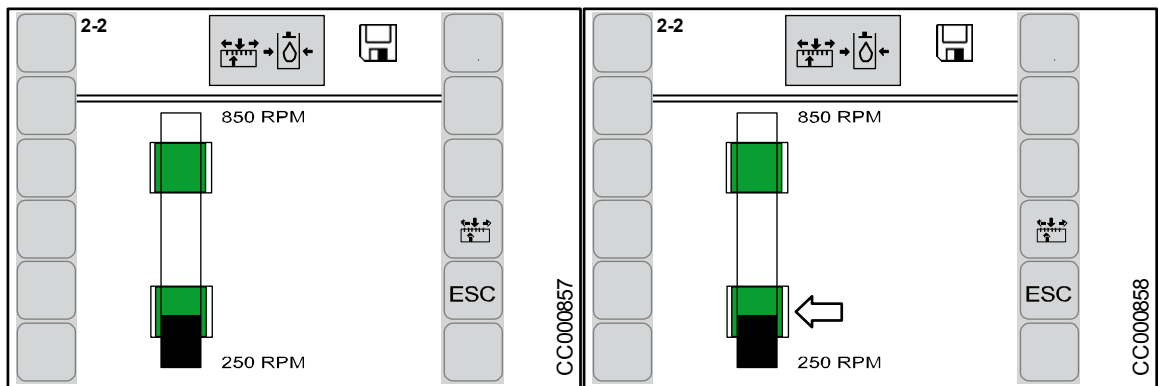



Fig. 17

- Press function key .
- Calibration has been started. For a short time, an arrow appears on the right next to the lower green area.

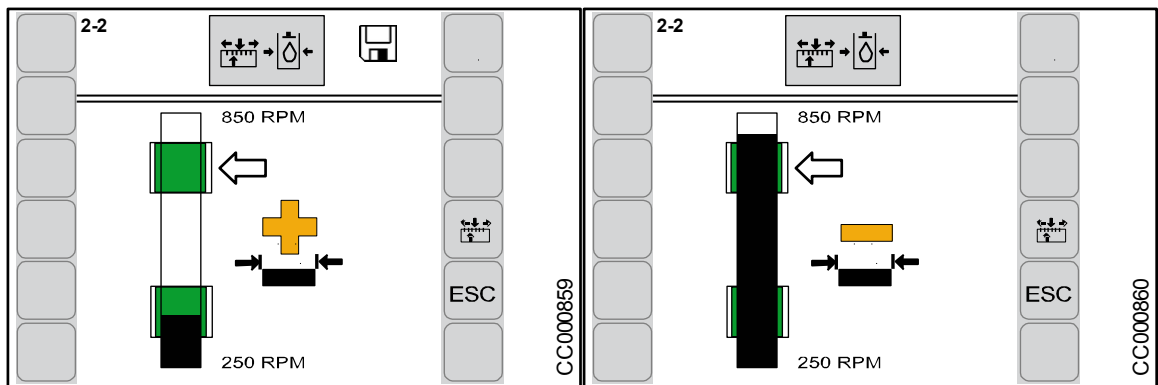



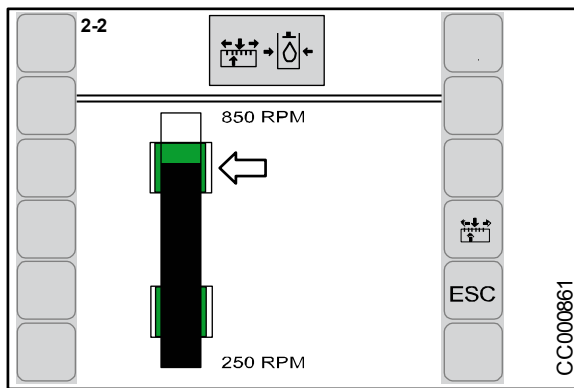




Fig. 18

The arrow next to the bottom green area disappears and an arrow appears next to the upper green surface.

The symbol  or  next to the bar flashes and it indicates whether the cutting length in the machine terminal must be increased or reduced. The symbol  in the upper line goes out.

- Adapt the cutting length until the black bar reaches the upper green area.



- If the black bar is in the upper green area, the symbol  or  disappears. Wait for a short time.



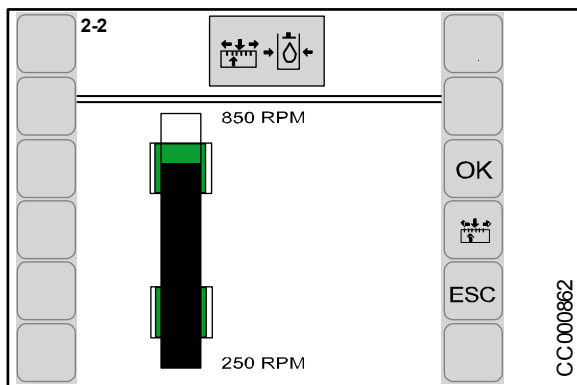


Fig. 19

- Press function key **OK** to save the calibrated values.

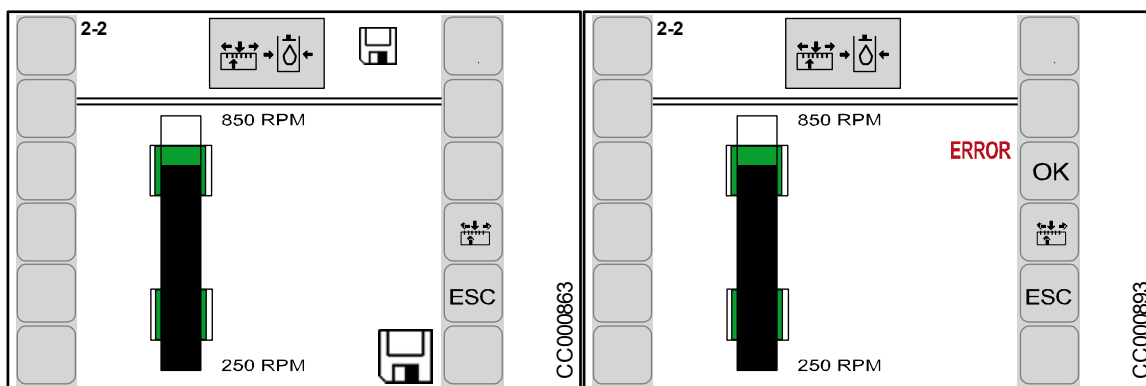




Fig. 20

If the calibration has been completed successfully, the symbol  appears in the upper line and for a short time in the lower right edge.

If the calibration has not been completed successfully, the symbol **ERROR** appears on the right and the symbol  is not shown in the upper line.

- Press function key **ESC** to leave the “Calibration Pressure Sensor” menu.

1.3.10 Main Menu 13 Yield Counter

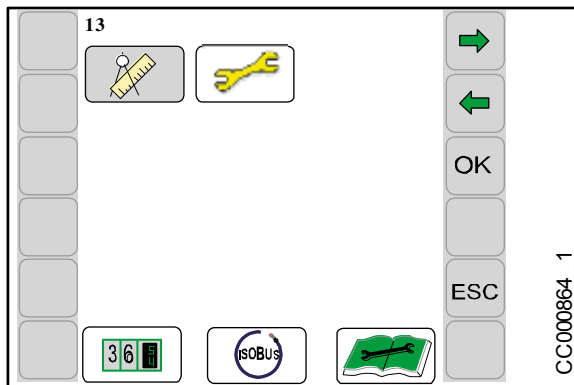






Fig. 21

- Press function key  from the basic screen to bring up the menu level.
- Press function key  or  to choose main menu 13 , the icon is highlighted in grey.
- Press function key **OK**.

The display shows the yield counter list.


- The preselected cultivated area is shown in reverse video.
- At the end of the list, a maximum of three cultivated areas without mass (0.000t) are visible.








Fig. 22

## Appendix – CropControl System

The total mass is displayed for each cultivated area:

Graphic	Meaning	Information
	Yield counter (here for area 3)	Area 1 to 50

Softkeys	Meaning	Information
	Scrolling up	
	Scrolling down	
	Printing yield counter	– Print one or more cultivated areas.
	Deleting yield counter	– Delete one or more cultivated areas.
<b>OK</b>	Calling up the list of control weighings	– The list of control weighings for the cultivated area marked in grey is called.
	Calling up the list of control weighings	– The list of control weighings for the cultivated area marked in grey is called.
<b>ESC</b>	Leaving menu	– Pressing the key and holding it down brings up the basic screen.

**Printing yield counter value**

If a CAN printer is connected to the diagnostics interface of the machine, the values of the yield counter can be printed.

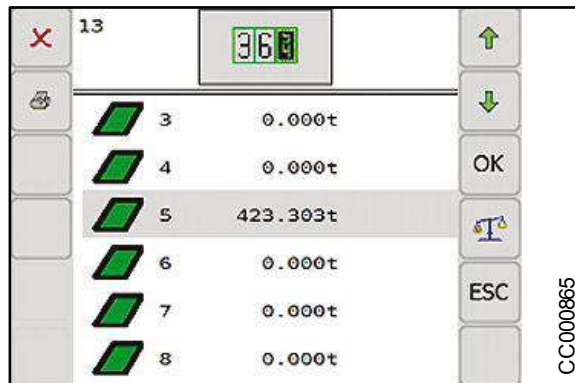


Fig. 23

- Press function key  in menu 13 "Customer Counter".

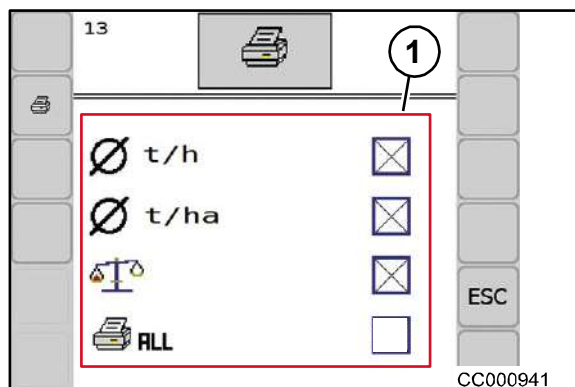










Fig. 24

The display shows the selection list (1) of data to be printed.

- By making a cross in the box , select the data that you wish to print.
- By leaving the box blank , select the data that you do not wish to print.

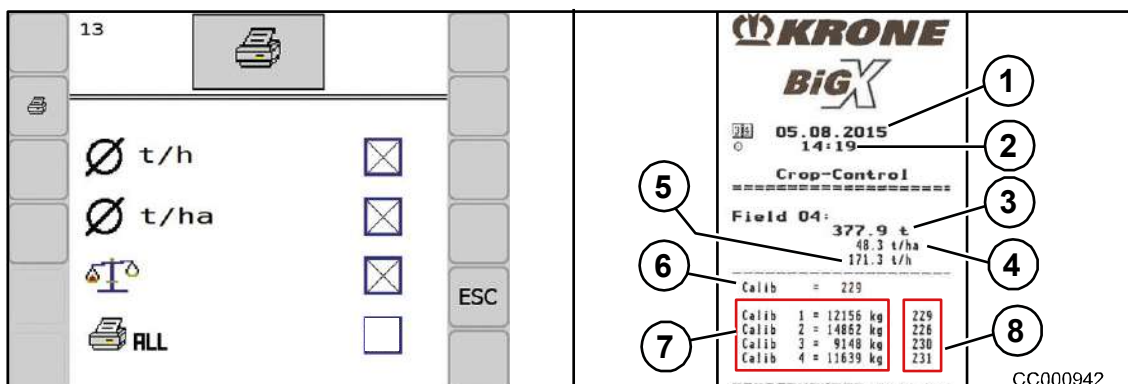
## Appendix – CropControl System

Graphic	Meaning
 t / h  to / h	Average value of yield per unit of time of the respective cultivated area.
 t / ha  to / acre	Average value of yield per unit of area of the respective cultivated area.
	Listing of all data concerning control weighings.
 ALL	Listing of all cultivated areas.





Graphic	Meaning	Information
	Print data.	Use  to print the selected data.
<b>ESC</b>	Leave menu.	Pressing the key and holding it down brings up the basic screen.

### Description of printout in case of CropControl

#### Example 1:



The screenshot shows the CropControl system interface. On the left, a menu is displayed with the following options and checkboxes:

-  t/h
-  t/ha
- 
-  ALL

The printout on the right shows the following information:

- 1**: KRONE logo
- 2**: Date: 05.08.2015, Time: 14:19
- 3**: Crop-Control header
- 4**: Field 04 data: 377.9 t, 48.3 t/ha, 171.3 t/h
- 5**: Calibration data: Calib = 229
- 6**: Calibration table header
- 7**: Calibration table data (highlighted in red):
 

Calib 1 = 12156 kg	229
Calib 2 = 14862 kg	226
Calib 3 = 9148 kg	230
Calib 4 = 11639 kg	231
- 8**: Calibration table data (highlighted in red)

The printout also includes the ID number CC000942 at the bottom right.

Fig. 25

Example 2:

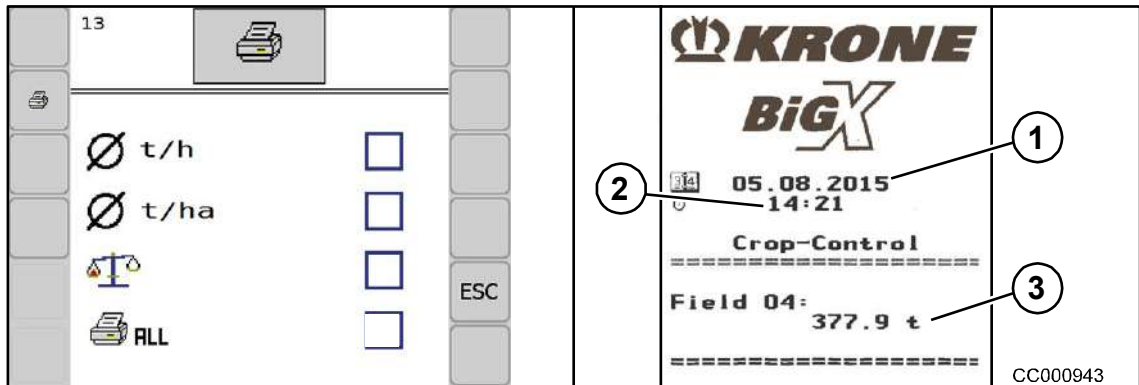




Fig. 26

- 1) Date of printout
- 2) Time of printout
- 3) Determined weight of stated field (here field 4).
- 4) Average value tons per hectare for the stated field.
- 5) Average value tons per hour for the stated field.
- 6) Average calibration value for the stated field.
- 7) Mass entered by driver or mass determined by AutoCalibrate for control weighing.
- 8) Determined calibration values for control weighing.

**Deleting yield counter values**

- Press function key  for longer than one second to delete the selected cultivated area.
- Press function key  for longer than 5 seconds to delete all cultivated areas.

## Entering the weighed mass of a control weighing

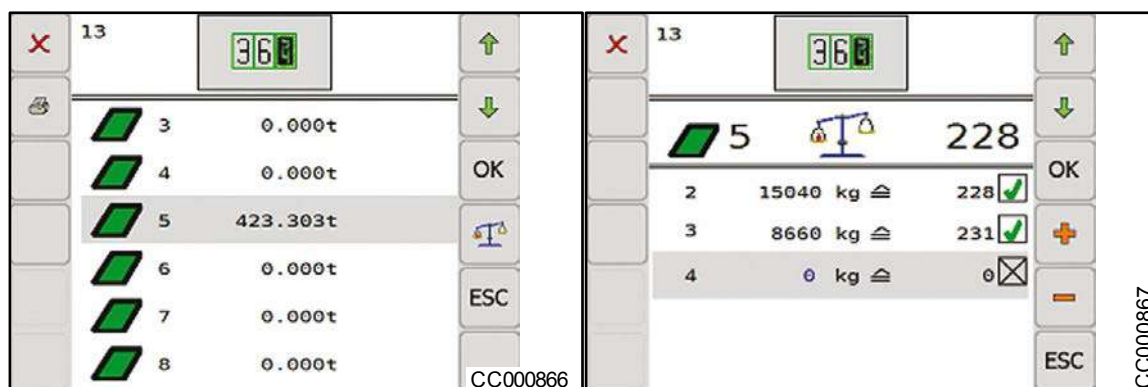









Fig. 27

Menu 13 “List of Yield Counters” is called.







Select the cultivated area to enter a control weighing by using function keys  and . The selected cultivated area is highlighted in grey.

Press function key **OK** or  .






The display shows the “Counterweighing” menu.

- Select the number of the desired counterweighing by using the function keys  and . The selected counterweighing is highlighted in grey.
- Enter the value for counterweighing via function keys  and  .
- Press the function key **OK** to adopt the value. The  icon indicates that the value has been accepted.
- To cancel the process, press **ESC**. The value is not accepted.

The display shows the counterweighing list for the selected cultivated area:

Graphic	Meaning	Information
 5	Yield counter (here for cultivated area 5)	1 to 50 areas
 228	Correction factor for entire cultivated area	In this case the value is 228.
	This correction factor is not used to determine the correction factor of the cultivated area.	Entered weight is not saved.
	This correction factor is used to determine the correction factor of the cultivated area.	Entered weight is saved. The total correction factor is calculated from the individual correction factors of the displayed cultivated area.
2    15040 kg  228 	This line means: <ul style="list-style-type: none"> <li>– Counterweighing number 2</li> <li>– Weight of 15,040 kg is entered</li> <li>– Calculated correction factor of 228 for this counterweighing.</li> </ul>	The correction factor is also used to determine the correction factor of the entire cultivated area.
<b>ESC</b>	Leave menu	– By pressing the key a little longer, the working screen is called.



Softkeys	Meaning	Information
	Scroll up	
	Scroll down	
	Delete counterweighing. <ul style="list-style-type: none"> <li>– The entered weight is deleted and saved.</li> <li>– The correction factor is set to zero. The correction factor is not used to determine the correction factor of the entire cultivated area.</li> </ul>	If the weight of this counterweighing is available again later, it can be re-entered .
<b>OK</b>	The entered weight is saved.	The calculated correction factor is used to recalculate the correction factor of the entire cultivated area.
	Reduce the weight for the counterweighing highlighted in grey.	
	Increase the weight for the counterweighing highlighted in grey.	
<b>ESC</b>	Leave menu	<ul style="list-style-type: none"> <li>– By pressing the key a little longer, the working screen is called.</li> </ul>

## Entering the correction factor directly



### Note

The recalculation of the correction factor initiates the correction of the measured mass retrospectively for the entire cultivated area.

If no control weighing has been carried out for the cultivated area, a correction factor directly be entered. However, this correction value does not necessarily reflect the characteristics of the cultivated area.

The accuracy that can be achieved by the direct entry of the correction factor strongly depends on the experience of the operator.

The correction factor must only be entered when a control weighing cannot be carried out or the current correction factor seems to be unrealistic.

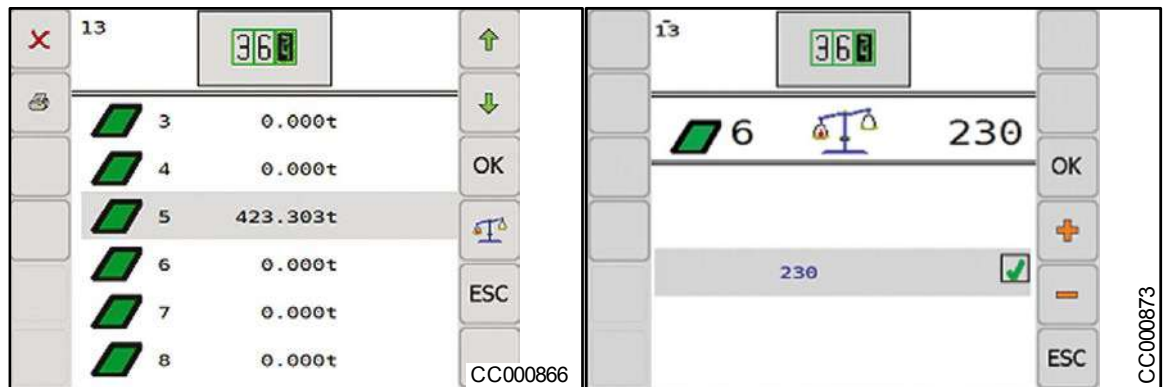




Fig. 28





Menu 13 “List of Control Weighings” is called.



Select the cultivated area to enter a control weighing by using function keys  and . The selected cultivated area is highlighted in grey.

Press function key **OK** or  .

The display shows the mask to enter the correction value for the selected cultivated area.

## Appendix – CropControl System

Graphic	Meaning	Information
 6	Yield counter (in this case for cultivated area 6)	Area 1 to 50
 230	Correction factor for entire cultivated area (in this case for value 230)	
	Displayed correction factor is not saved.	
230 	This line means: – A correction factor of 230 has been entered and saved.	

Softkeys	Meaning	Information
<b>OK</b>	Entered correction factor is saved	
	Reducing the correction factor.	
	Increasing the correction factor.	
<b>ESC</b>	Leave menu	– By pressing the key a little longer, the working screen is called.

1.3.11 Main Menu 14 ISOBUS Settings

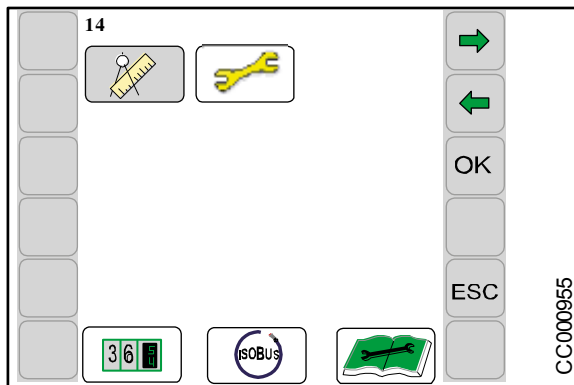






Fig. 29

- Press function key  from the basic screen to bring up the menu level.
- Press function key  or  to choose main menu 14 , the icon is highlighted in grey.
- Press function key **OK**.

The display shows menu level 14 “ISOBUS Settings”.

Menu level 14 contains the following sub-menu:



Menu 14-1 “Setting the Background Colour”

## Menu 14-1 “Setting the Background Colour”

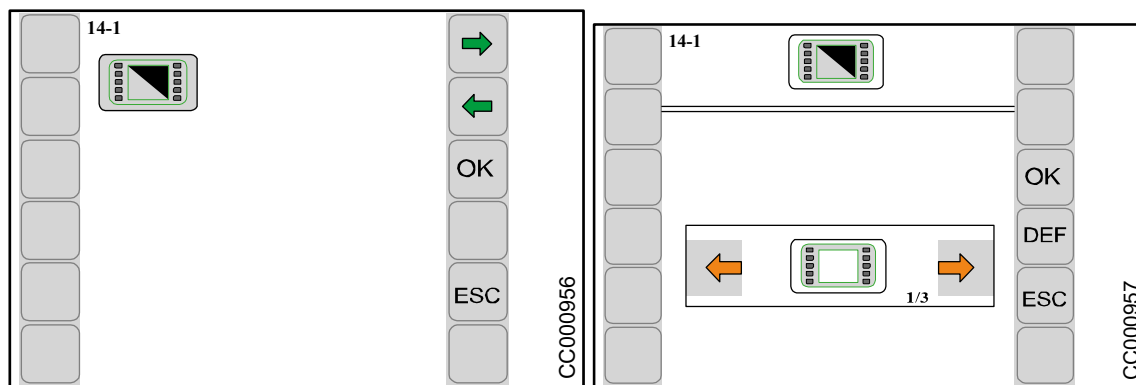





Fig. 30




Calling the menu

Main menu 14 “ISOBUS Settings” is called.

- Press function key  or  to choose menu 14-1 , the icon is highlighted in grey.
- Press function key **OK**.



The display shows menu 14-1 “Setting the Background Colour”.


You can select between three modes.

Icon	Designation	Explanation
	Background colour white	Recommended for day
	Background colour grey	Recommended for night
	Automatic background colour	Background colour is set automatically. <ul style="list-style-type: none"> <li>• When headlight is switched on, the background is grey.</li> <li>• When headlight is switched off, the background is white.</li> </ul>

### Selecting and saving mode

The icon  in the upper line indicates that the displayed mode is saved.

- Press  to bring up the next mode.
- Press  to bring up the previous mode.

The icon  in the upper line disappears.

- Press **OK** to save the value.

The icon  in the upper line indicates that the chosen mode is saved.

- Press **ESC** to leave the menu.

## 1.3.12 Main Menu 15 Service

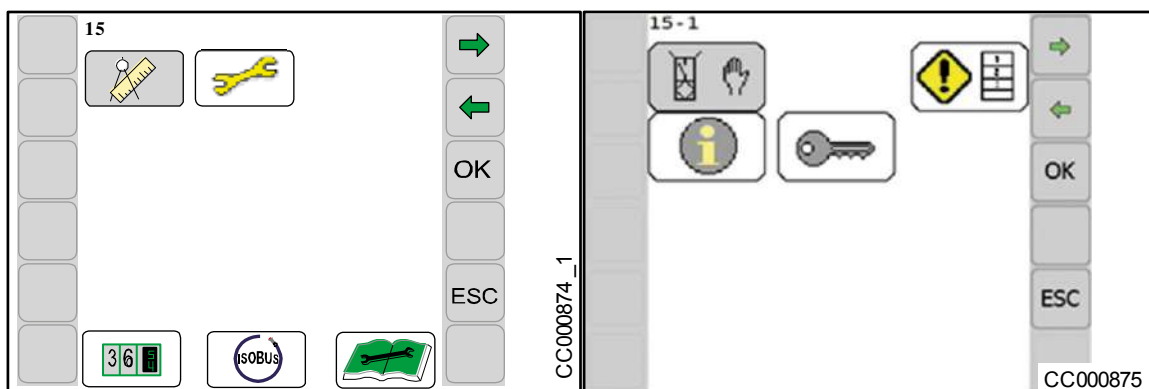










Fig. 31

- Press function key  to bring up the menu level from the basic screen.
- Press function key  or  to select main menu 15 . The icon is highlighted in grey.
- Press function key **OK**.

The display shows menu level 15 “Service”.

**Menu level 15 is divided into the following sub-menus:**

	Menu 15-1 Manual Sensor Test
	Menu 15-3 Alarms
	Menu 15-4 Information
	Menu 15-15 Technician

**Menu 15-1 Manual Sensor Test**

In the manual sensor test, the sensors are checked for errors.

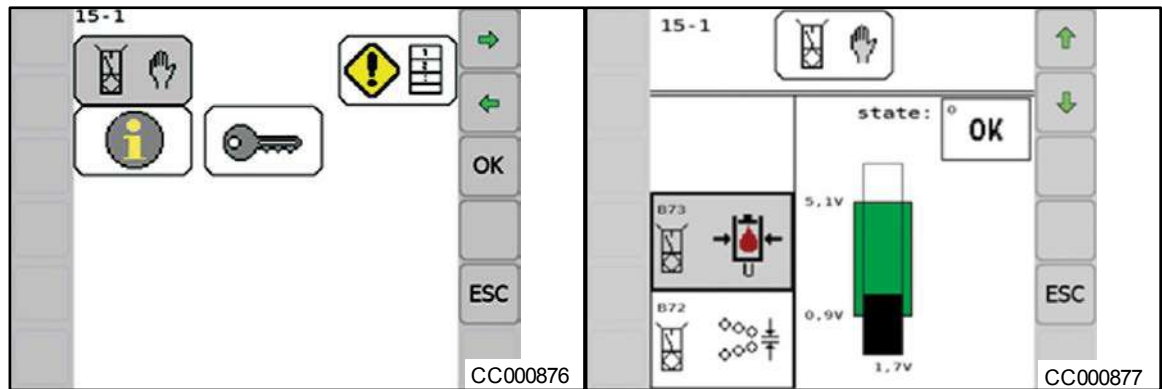








Fig. 32

**Calling the menu**

Main menu 15 “Service” is called.

- Press function key  or  to select menu 15-1   . The selected symbol is highlighted in grey.

**Selecting the sensor**

- Press function key  or  to select the sensor. The selected symbol is highlighted in grey and tested.



## Diagnostics of analogue sensors

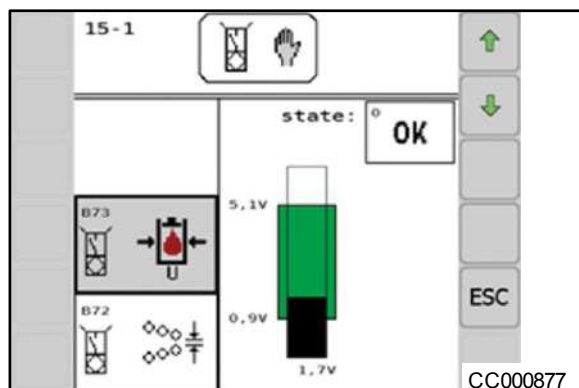
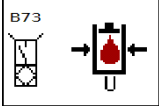
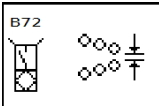


Fig. 33

Setting values:

The black bar must be in the green area of the bar display.

## Analog sensors

No.	Sensor symbol	Description
B73		Pressure sensor
B72		Path sensor pre-compression rollers

### State:

**OK**

Sensor OK

**ERROR**

Defect on sensor or job computer



Cable break/short circuit on the sensor

- Press function key **ESC** to close the menu currently displayed.

The display shows the previously called main menu.

- Pressing function key **ESC** longer brings up the basic screen.

Diagnostics pressure increase

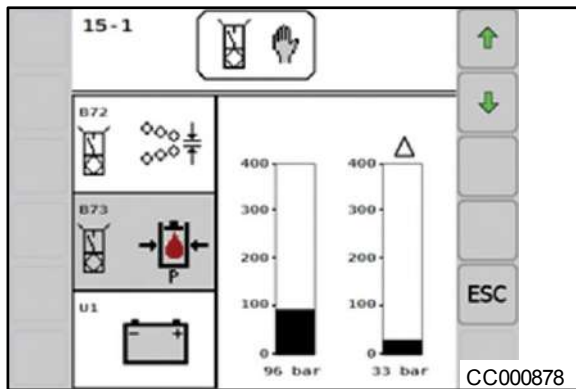
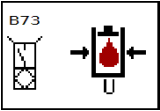


Fig. 34

**Description of display:**

The left black bar indicates the pressure measured by the pressure sensor. The value is displayed under the black bar.

The right black bar indicates the pressure difference between the current pressure and the calibrated pressure (by calibration of pre-compression rollers in the unloaded condition).

No.	Sensor symbol	Description
B73		Pressure sensor with pressure difference

- Press function key **ESC** to close the menu currently displayed.

The display shows the previously called main menu.

- Pressing function key **ESC** longer brings up the basic screen.

## Diagnostics power supply voltages

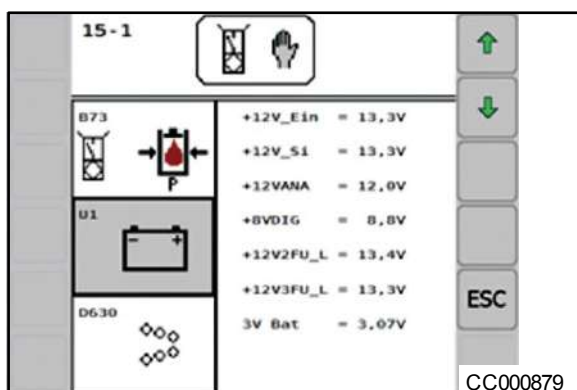



Fig. 35

No.	Sensor symbol	Description
U1		Power supply voltage

### Nominal voltages:

Designation	Values
+12V_EIN	12 - 14.5 V
+12V_Si	12 - 14.5 V
+12VANA	12 – 13 V
+8VDIG	8.5 – 9.1 V
+12V2FU_L	12 - 14.5 V
+12V3FU_L	12 - 14.5 V
3V Bat	Exceeds 2.5 volts

- Press function key **ESC** to close the menu currently displayed. The display shows the previously called main menu.
- Pressing function key **ESC** longer brings up the basic screen.

**Diagnostics intake**

The speed of intake drive as well as the speed of the crop through the intake is displayed.

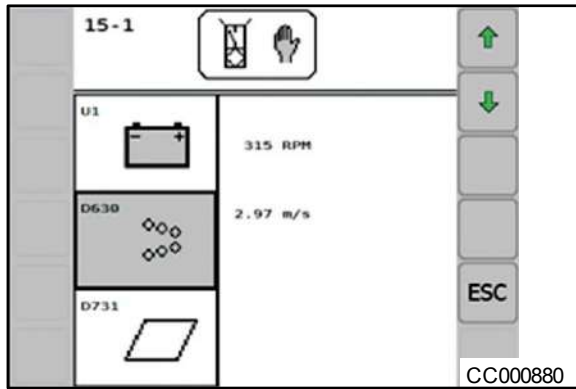
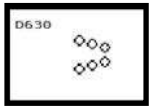


Fig. 36

No.	Sensor symbol	Description
D630		Display of speed/intake speed when the intake is turning.

- Press function key **ESC** to close the menu currently displayed. The display shows the previously called main menu.
- Pressing function key **ESC** longer brings up the basic screen.

## Diagnostics acreage counter

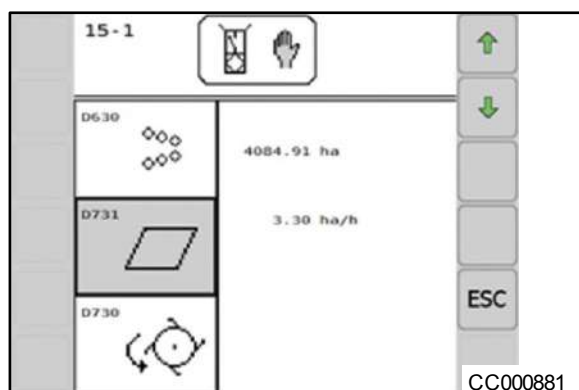
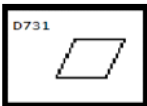


Fig. 37

### Description of display:

The latest state of the total acreage counter of the machine is displayed in the first line. This must correspond to the total acreage counter displayed in the machine terminal.

The current acreage (in hectares per hour) of the machine is displayed in the second line.

No.	Sensor symbol	Description
D731		Display acreage counter/hectares per hour. If the machine is chopping actively and driving forward, the acreage counter must increase and a value that is bigger than 0 must be displayed for ha/h.

- Press function key **ESC** to close the menu currently displayed.

The display shows the previously called main menu.

- Pressing function key **ESC** longer brings up the basic screen.

Diagnostics machine chops

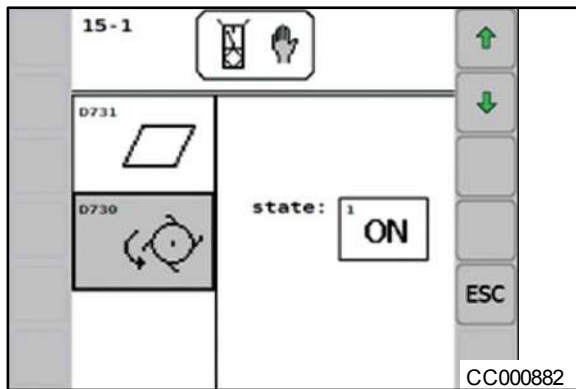



Fig. 38

**Description of display:**

It indicates whether the machine is currently chopping or not.

The state must be **ON**, if:

- The machine moves forward.
- The lifting unit is in the working position.
- The cutting drum is turned on.
- Intake and header turn forward.

No.	Sensor symbol	Description
D730		The machine chops (status <b>ON</b> is displayed if the machine chops and moves forward, otherwise <b>OFF</b> is displayed).

**State:**

**ON**            The machine chops actively.

**OFF**            The machine chops inactively.

- Press function key **ESC** to close the menu currently displayed.

The display shows the previously called main menu.

- Pressing function key **ESC** longer brings up the basic screen.

### Menu 15-3 Alarms

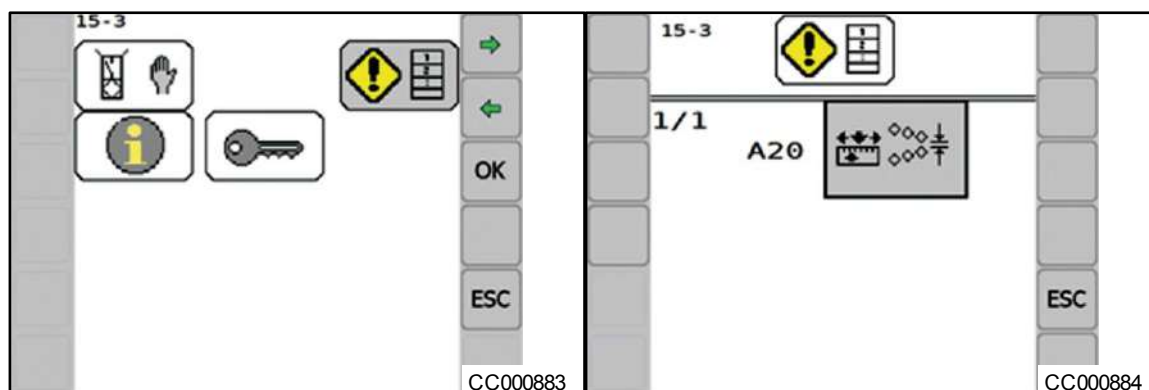






Fig. 39

#### Calling the menu

Main menu 15 “Service” is called.



- Press function key  or  to select menu 15-3  . The selected symbol is highlighted in grey.
- Press function key **OK**.

The display shows menu 15-3 “Alarms”.

The currently pending alarms are displayed here.

Description, possible cause and remedy are listed in chapter “Alarm Messages”.

The current page and the number of pages are shown at the top left.

If there are several pages, press function keys  or  to scroll in the list.

- Press function key **ESC** to close the menu currently displayed.

The display shows the previously called main menu.

- Pressing function key **ESC** longer brings up the basic screen.

**Menu 15-4 Information**

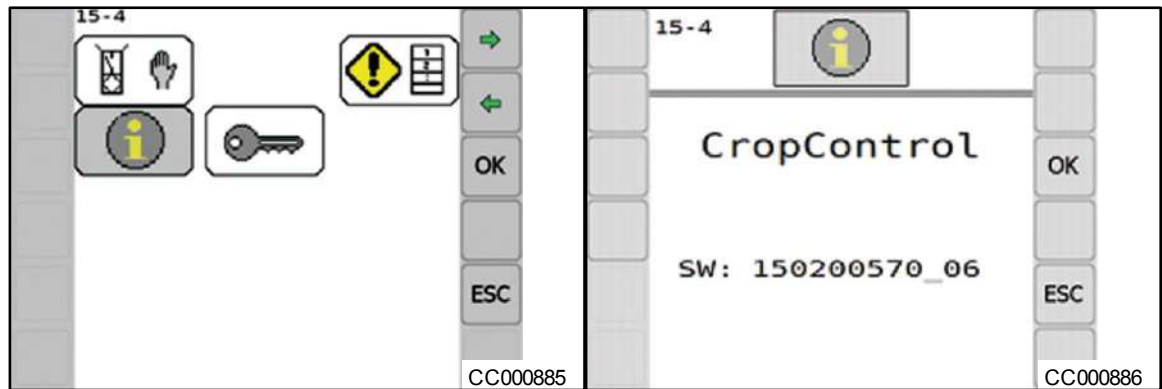





Fig. 40

**Calling the menu**

Main menu 15 “Service” is called.

- Press function key  or  to select menu 15-4  . The selected symbol is highlighted in grey.
- Press function key **OK**.

The display shows menu 15-4.

The complete CropControl software version is displayed here.

- SW = complete software version
- Press function key **ESC** to close the menu currently displayed.

The display shows the previously called main menu.

- Pressing function key **ESC** longer brings up the basic screen.

**Menu 15-5 Technician**

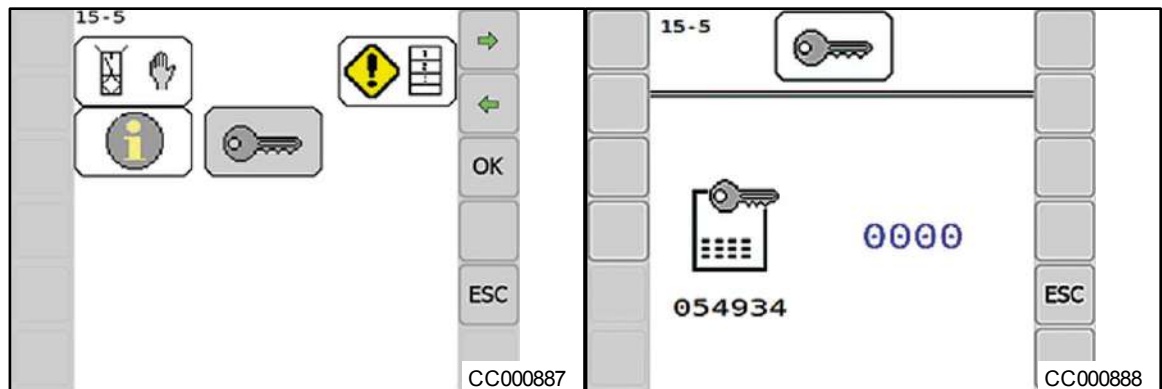





Fig. 41

**Calling the menu**

Main menu 15 “Service” is called.

- Press function key  or  to select menu 15-5  . The selected symbol is highlighted in grey.
- Press function key **OK**.

Menu 15-5 “Technician” is protected by password.

The display shows the password query.



### 1.3.13 Error Messages (UT)

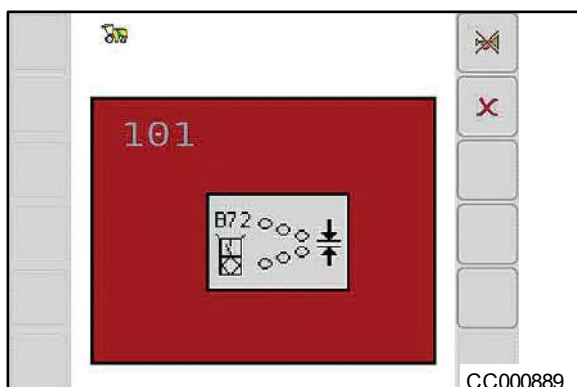



Fig. 42


#### Alarm message

If there is a disturbance on the CropControl, an alarm message appears in the display and an audio signal sounds at the same time (constant horn signal). Description, possible cause and remedy are listed in chapter “Alarm Messages”.





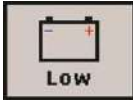

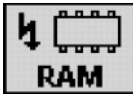


#### To stop audio signal:

- Press function key .

#### To acknowledge the alarm:

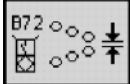
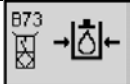
- Press function key  briefly, the alarm is acknowledged and the audio signal stops. If the disturbance occurs again, the alarm message will also appear again.

### General messages

No.	Image	Possible cause	Remedy
A01		<ul style="list-style-type: none"> <li>– Computer internal plug-in fuse 2 defective.</li> <li>– Short circuit on voltage output +12V2FU_L.</li> </ul>	<ul style="list-style-type: none"> <li>– Check wiring for short circuit.</li> <li>– Replace fuse.</li> </ul>
A02		<ul style="list-style-type: none"> <li>– Fuse 3 defective (self-repairing)</li> <li>– Short circuit on voltage outputs +12V3FU_L</li> </ul>	<ul style="list-style-type: none"> <li>– Check wiring for short circuit.</li> </ul>
A04		<ul style="list-style-type: none"> <li>– EEPROM error</li> <li>– Job computer defective</li> </ul>	<ul style="list-style-type: none"> <li>– Replace job computer.</li> </ul>
A13		<ul style="list-style-type: none"> <li>– Undervoltage back-up battery</li> <li>– Back-up battery defective</li> </ul>	<ul style="list-style-type: none"> <li>– Check the back-up battery and replace it, if necessary.</li> </ul>
A14		<ul style="list-style-type: none"> <li>– Undervoltage</li> <li>– Fuse -22F39 defective</li> </ul>	<ul style="list-style-type: none"> <li>– Replace fuse.</li> </ul>
A15		<ul style="list-style-type: none"> <li>– Overvoltage</li> <li>– Alternator is defective</li> </ul>	<ul style="list-style-type: none"> <li>– Check alternator</li> </ul>
A16		<ul style="list-style-type: none"> <li>– RAM error</li> <li>– Back-up battery defective</li> <li>– Job computer defective</li> </ul>	<ul style="list-style-type: none"> <li>– Check the back-up battery and replace it, if necessary.</li> <li>– Replace job computer.</li> </ul>
A19		<ul style="list-style-type: none"> <li>– The yield counter for the currently active cultivated area will soon overflow (jumps to 0 t).</li> <li>– The yield counter of the currently active cultivated area is active for too long.</li> </ul>	<ul style="list-style-type: none"> <li>– Use another cultivated area or delete the currently active cultivated area.</li> </ul>
A20		<ul style="list-style-type: none"> <li>– Intake is soiled</li> <li>– Path sensor is not calibrated</li> </ul>	<ul style="list-style-type: none"> <li>– Clean the intake so that the pre-compression rollers can be moved back to the basic position.</li> <li>– After cleaning is complete, recalibrate the path sensor.</li> </ul>

## Appendix – CropControl System

### Physical messages

No.	Image	Sensor	Possible cause	Remedy
101	 B72	Path sensor	– Sensor or supply line defective.	– Perform sensor test. – Check sensor and supply line for damage.
102	 B73	Pressure sensor		

1.4 Operating CropControl System with Installed CropControl TC Sync. System via KRONE CCI 200 Operating Terminal

1.4.1 Display Working Screen with CropControl TC Sync System

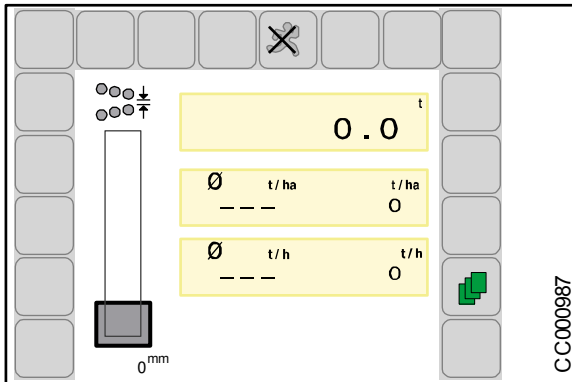


Fig. 43

1.4.2 Design of the Display

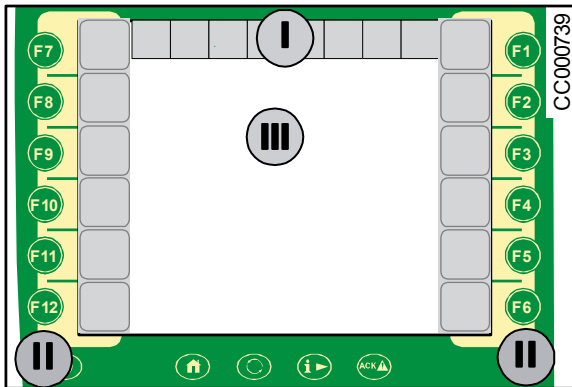


Fig. 44

The display of the terminal is divided up into the following sections:

**Status line (I)**

- The status displays of the machine.

**Function keys (II) (F1 to F12)**

- CropControl is operated via function keys. The softkeys (graphics) belonging to the function keys are touch sensitive.

**Main window (III)**

## Appendix – CropControl System

### Status line (I)

Current states of CropControl are indicated on the top line (I) of the display.

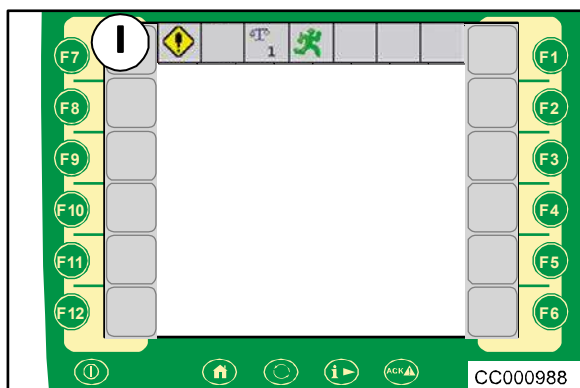







Fig. 45

Possible status displays:

Graphic	Meaning	Information
	Alarm message present.	
	Currently active counterweighing for the displayed order.	
	CropControl counts yield.	The following conditions must be met to enable CropControl to count yield: <ul style="list-style-type: none"> <li>– Intake is rotating</li> <li>– Header in working position</li> <li>– Machine moves forward</li> <li>– The excursion of the pre-compression rollers is more than the set minimum excursion.</li> </ul>
	The order is started but CropControl does not count yield.	<ul style="list-style-type: none"> <li>– An order must be started in the Task Controller.</li> <li>– The machine is not currently harvesting, or insufficient crops are passing through the machine.</li> </ul>
	No order is started.	

Description of graphics (II) for function keys (F1 to F12)

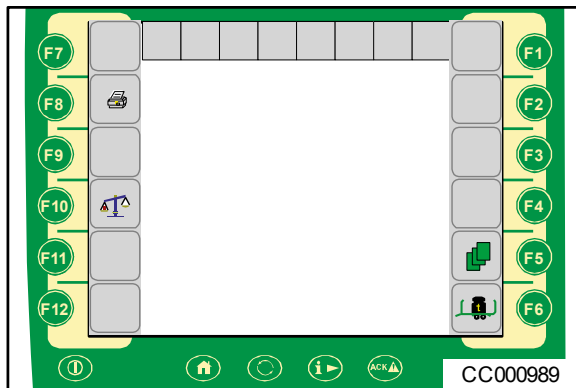







Fig. 46

Softkey	Meaning	Information
	Open CropControl menu level	
	Start/reset load counter	The laden weight can be determined by means of load counter.
	Start or stop counterweighing	
	Print order	

### 1.4.3 Short-cut Buttons in the Working Screen

#### Calling menu level

- To call the menu level, press the function key , the CropControl menu level is displayed. For further information, see chapter "Menu Level".

### Load counter

This function can be used to measure the laden weight and so determine the total weight of the tractor/wagon combination.




---

#### Note


The load counter only indicates the laden weight precisely when CropControl has been calibrated for the field by means of counterweighing operations and the field is homogeneous in terms of moisture. Otherwise, major differences may result.

---



### Starting the load counter

- Start the load counter by using function key .


### Stopping the load counter

- Stop the load counter by using function key  and reset it at the same time.

### Starting counterweighing

- To start counterweighing, press the  function key.  
The number of the currently active counterweighing is displayed on the status line next to the  icon.

### Stopping counterweighing

- Press the  function key to stop the active counterweighing.

**Printing yield counter values**

Prerequisites:

- A CAN printer is connected to the diagnostics interface.
- An order is started.

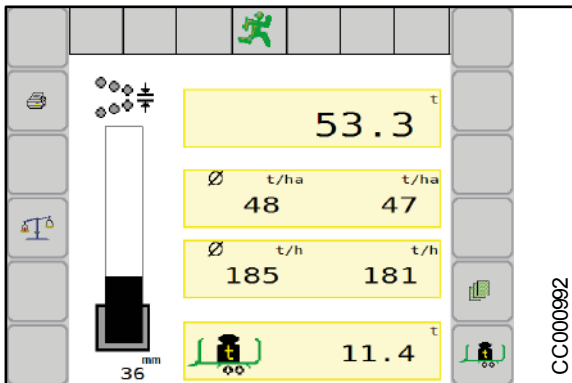



Fig. 47

- Press function key .

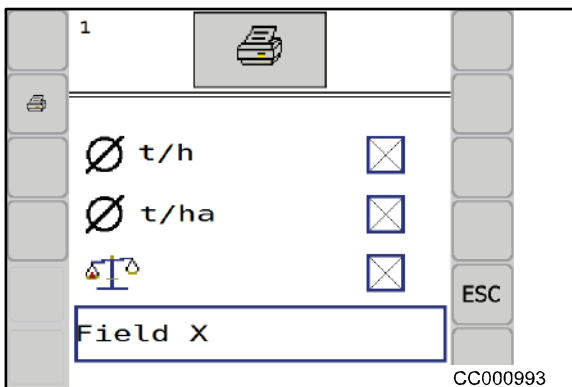







Fig. 48



The display shows the selection list of data which can be printed.

- By making a cross in the box , select the data which should be printed.
- By leaving the box  blank, select the data which should not be printed.
- A name can be entered for the printout in the field . This name will be printed afterwards.



## Appendix – CropControl System

Graphic	Meaning
 t / h  to / h	Average value of yield per time unit of the respective order.
 t / ha  to / acre	Average value of yield per area unit of the respective order.
	List of data belonging to counterweighings.

Graphic	Meaning	Information
	Print data.	Use  to print the selected data.
<b>ESC</b>	Leave menu.	Pressing the key and holding it down brings up the basic screen.

Description of printout

Example 1:

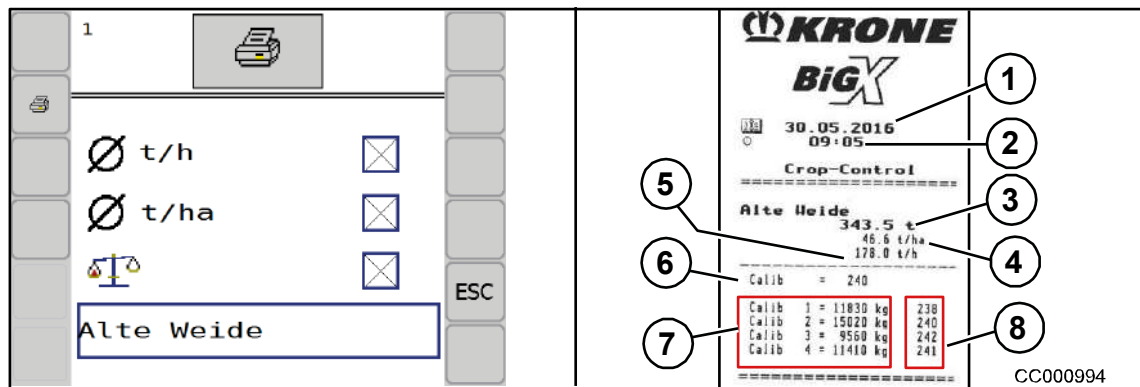


Fig. 49

Example 2:

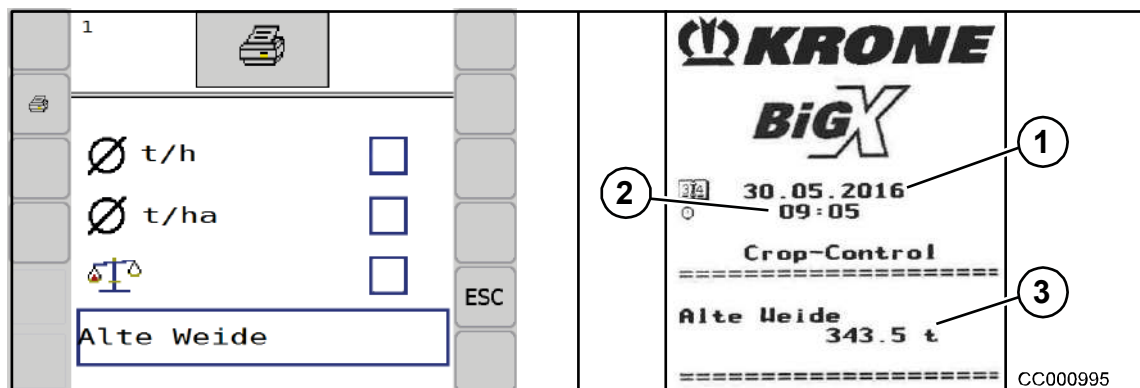


Fig. 50

Pos.	Explanation
1	Date of printout
2	Time of printout
3	Determined weight of stated order (here "Alte Weide").
4	Average value tonnes per hectare for the stated order.
5	Average value tonnes per hours for the stated order.
6	Average determined calibration value for the stated order.
7	Mass entered by the driver or mass determined by AutoCalibrate for counterweighing.
8	Determined calibration values for counterweighing.

## 1.4.4 Display in Working Screen

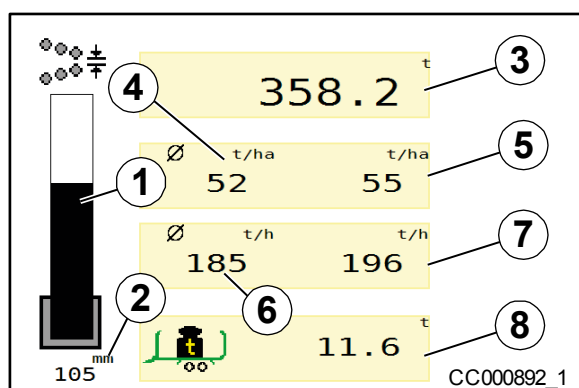


Fig. 51

Pos.	Meaning
1	Excursion of the last pre-compression rollers
2	Excursion of the last pre-compression roller as a numerical value.
3	Harvested yield of the selected order.
4	Average yield per area unit
5	Current yield per area unit
6	Average yield per time unit
7	Current yield per time unit
8	Load counter

All displayed values refer to the active order in the Task Controller.


## 1.4.5 Creating CCI200 Order and Performing Counterweighing

### 1.4.5.1 Creating Order

The process for creating an order and creating a field is the same.



Fig. 52

- To open the start menu from the working screen, press  .

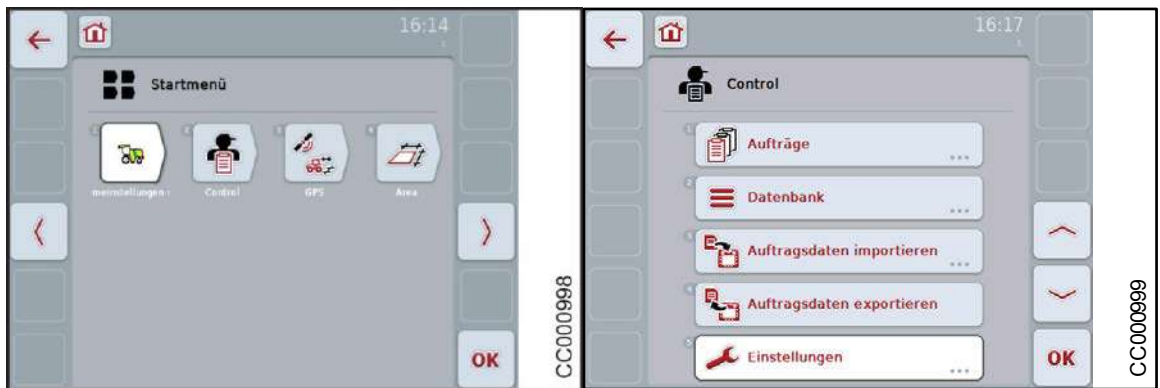




Fig. 53

- Press  to open the Control programme.
- Select "Orders" from the selection list and press  .

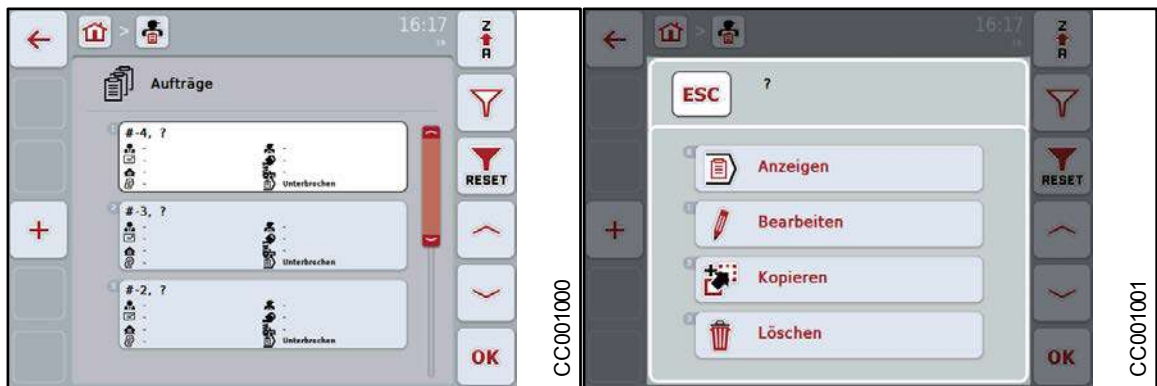


Fig. 54



- Select an order to display the selection list.
- Select “Display” from the selection list and press  .



Fig. 55

- To start the order, press  .



**Notice**

The softkey for the list of counterweighings  does not appear for orders which have never been started.

### 1.4.6 Counterweighing

To ensure that the yield measurement is accurate, it is necessary to carry out at least one counterweighing for each cultivated area and type of crop.

In order to obtain correct measurement values, counterweighing should be performed in the middle and not at the edge of the field.

When counterweighing is complete and the entered weight of counterweighing has been applied, the correction factor is recalculated. The recalculation of the correction factor initiates the correction of the measured mass retrospectively for the entire order.

If several counterweighings are carried out, the correction factor is calculated from the average of the total counterweighings for the order.

To ensure that the yield measurement is accurate, the following steps need to be done for counterweighing:

- Select a trailer load corresponding to the average of the complete order,
- Run at average driving speed and engine load.


Prerequisites:


- The path sensor and the pressure sensor are calibrated, refer to menu 2-1 “Calibration Path Sensor” / menu 2-2 “Calibration Pressure Sensor”.
- Empty tractor/wagon combination with known tare weight is available.
- Machine stopped.

#### 1.4.6.1 Performing Counterweighing


There are two possibilities to start and stop counterweighing.

##### 1. Performing counterweighing on the working screen of CropControl

- Position the empty tractor/wagon combination next to the machine.
- To start counterweighing, press function key  .

The status line displays the number of the currently active control weighing next to the  icon.

**Notice: Memorise the number of the counterweighing and write it down.**



- Load the tractor/wagon combination. Ensure that all harvested chopping crops are loaded on the tractor/wagon combination.
- Press the function key  to stop active counterweighing.
- Weigh the tractor/wagon combination. Make sure no crops are lost when travelling to the scale.

### 2. Performing Counterweighing in the Task Controller of the Operating Terminal CCI 200



- Position the empty tractor/wagon combination next to the machine.
- An order is started and is running, refer to chapter Operation, “Operating CropControl System with Installed CropControl TC Sync System via KRONE CCI 200 Operating Terminal”, “Creating CCI 200 Order and Performing Counterweighing”, “Creating Order”.



Fig. 56

- Press the  function key to start counterweighing. The icon changes to . The number of the currently active counterweighing is displayed below the scale icon.

**Notice: Memorise or write down the number of the counterweighing or the current time.**

- Load the tractor/wagon combination. Ensure that all harvested chopping crops are loaded on the tractor/wagon combination.
- Press the  function key to stop the active counterweighing. The icon changes to .
- Weigh the tractor/wagon combination. Make sure no crops are lost when travelling to the scale.



#### Notice

While waiting for the weight of the counterweighing, you can continue chopping, another order can be started or another counterweighing can be performed.

## 1.4.6.2 Entering the Weight of the Counterweighing



### Notice

While the counterweight for an order is entered, another order may run simultaneously.

Prerequisite:

- The order for which the counterweighing was performed is started or paused, refer to chapter Operation, “Operating CropControl System with Installed CropControl TC Sync System via KRONE CCI 200 Operating Terminal”, “Creating CCI 200 Order and Performing Counterweighing”, “Creating Order”.



Fig. 57

- To open the counterweighing list, press

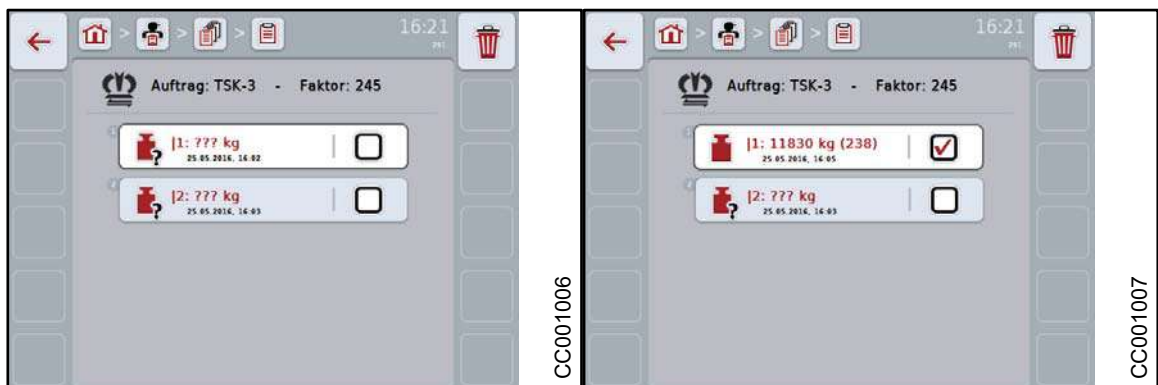


Fig. 58

- Press a counterweighing, for example |1: ??? kg and enter a weight in kg. The counterweighing factor changes and is marked by means of a tick .



### Notice

The entered weight is checked for plausibility. If the weight is too big or too small, an error message is displayed and the weight for the counterweighing is not adopted.

If a value is entered for the last open counterweighing for a paused order, a query will occur which asks to finish this order.



## Appendix – CropControl System

### 1.4.6.3 Deleting a Counterweighing

Prerequisite:

- The order for which the counterweighing was performed is started or paused, refer to chapter Operation, “Operating CropControl System with installed CropControl TC Sync via KRONE CCI 200 Operating Terminal”, “Creating CCI 200 Order and Performing Counterweighing”, “Creating Order”.



Fig. 59

- To open the counterweighing list, press .



Fig. 60


- Select the desired counterweighing by using the scroll wheel. The selection box is highlighted in colour.
- To delete the weighing, press . If a value has already been entered, a query will appear which asks whether the weighing should actually be deleted. Confirm this query.



Fig. 61

The counterweighing is marked as deleted. However, a new value can be entered at any time.

### 1.4.6.4 Entering Calibration Factor Directly

If no counterweighing has been carried out for an order, a correction factor can be entered directly. However, this correction factor does not necessarily reflect the characteristics of the order.



#### Notice

While the correction factor for an order is entered, another order may run simultaneously.

Prerequisite:

- The order for which the correction factor should be modified is started or paused, refer to chapter Operation, “Operating CropControl System with Installed CropControl TC Sync System via Operating Terminal KRONE CCI 200”, “Creating CCI 200 Order and Performing Counterweighing”, “Creating Order”.
- No counterweighing has yet been started and stopped.

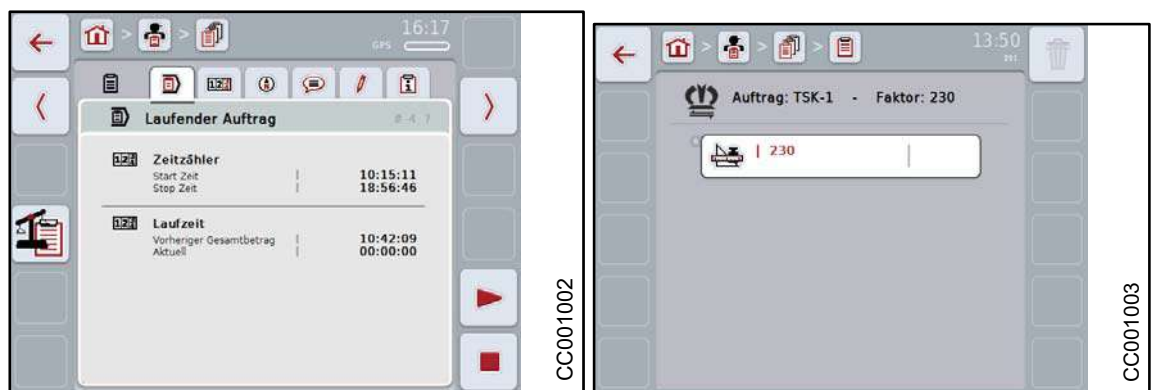




Fig. 62



#### Notice

The softkey for the list of counterweighings  does not appear for orders which have never been started.

- To open the list of counterweighings, press . The input mask to enter the factor opens.
- Press  and enter the new factor. The factor changes.

### 1.4.6.5 AutoCalibrate

If AutoCalibrate is used, the weights of the counterweighings are entered automatically in the list of the counterweighings. They can be modified or deleted manually.

## Appendix – CropControl System

### 1.4.7 Creating Control Mobile Order and Performing Counterweighing

#### 1.4.7.1 Creating Order

The process for creating an order and creating a field is the same.



Fig. 63


- To select an order, press .



Fig. 64

- Select an order

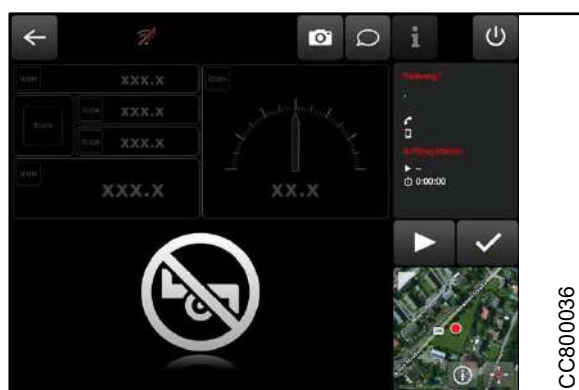


Fig. 65










- To start the order, press .



Fig. 66


**Overview icons**


Icons	Description
	Set correction factor
	Start counterweighing
	Stop counterweighing (here counterweighing 1)
	Display list with made counterweighings
	Counterweighing without correction
	Counterweighing with correction
	Counterweighing deleted
	Counterweighing with correction via AutoCalibrate

**1.4.7.2 Performing Counterweighing**


There are two possibilities to start and stop counterweighing.

**2. Performing counterweighing on the working screen of CropControl**

- Position the empty tractor/wagon combination next to the machine.
- To start counterweighing, press function key  .

The status line displays the number of the currently active control weighing next to the  icon.

**Notice: Memorise the number of the counterweighing and write it down.**


- Load the tractor/wagon combination. Ensure that all harvested chopping crops are loaded on the tractor/wagon combination.
- Press the function key  to stop active counterweighing.
- Weigh the tractor/wagon combination. Make sure no crops are lost when travelling to the scale.


### 2. Performing a counterweighing in the TaskController of ControlMobile

- Position the empty tractor/wagon combination next to the machine.
- An order is started and is running, refer to chapter Operation, “Operating CropControl System with Installed CropControl TC Sync System via KRONE CCI 200 Operating Terminal”, “Creating ControlMobile Order” and “Performing Counterweighing”, “Creating Order”.




Fig. 67

- Press  to start counterweighing.

The icon changes to . The number of the currently active counterweighing is displayed under the icon.

**Notice: Memorise the number of the counterweighing and write it down.**

- Load the tractor/wagon combination. Ensure that all harvested chopping crops are loaded on the tractor/wagon combination.
- Press  to stop active counterweighing.

The icon changes to .

- Weigh the tractor/wagon combination. Make sure no crops are lost when travelling to the scale.



#### Notice

While waiting for the weight of the counterweighing, you can continue chopping or another order can be started.

## 1.4.7.3 Entering the weight of counterweighing



### Notice

While the weight of the counterweighing is entered for an order, another order may run simultaneously.

Prerequisite:

- The order for which the counterweighing was performed is started or paused, .

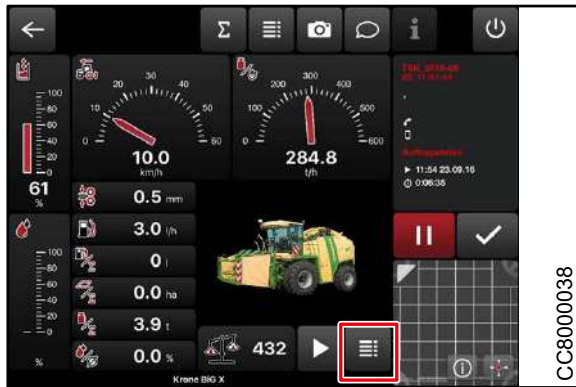


Fig. 68


- To open the list of counterweighings, press .




Fig. 69

- Press on a counterweighing, for example  and enter a weight in kg.



### Notice

The entered weight is checked for plausibility. If the weight is too big or too small, an error message is displayed and the weight for the counterweighing is not adopted.

- The factor changes,  230.

If a value is entered for the last open counterweighing for a paused order, a query will occur which asks to finish this order.

## Appendix – CropControl System

### 1.4.7.4 Deleting a Counterweighing

Prerequisite:

- The order for which the counterweighing is performed is started or paused, refer to chapter Operation, “Operating CropControl System with Installed CropControl TC Sync System via KRONE CCI 200 Operating Terminal”, “Creating ControlMobile Order and Performing Counterweighing”, “Creating Order”.

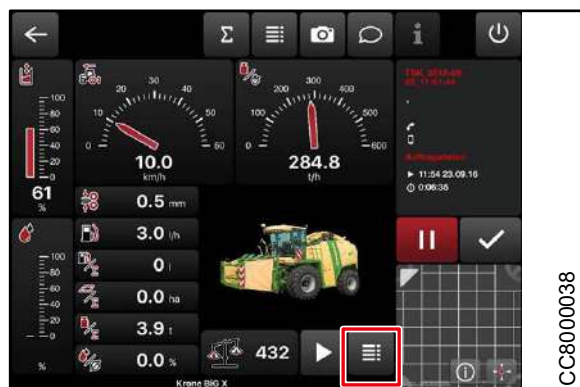



Fig. 70

- To open the list of counterweighings, press 

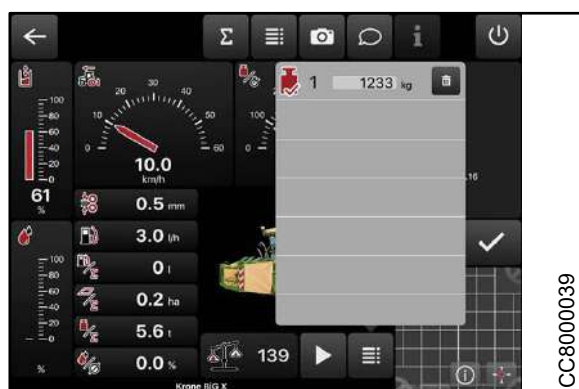



Fig. 71

- To delete a weighing, press . If a weight has already been entered for counterweighing, a query will appear which asks whether the counterweighing should really be deleted. Confirm this query.

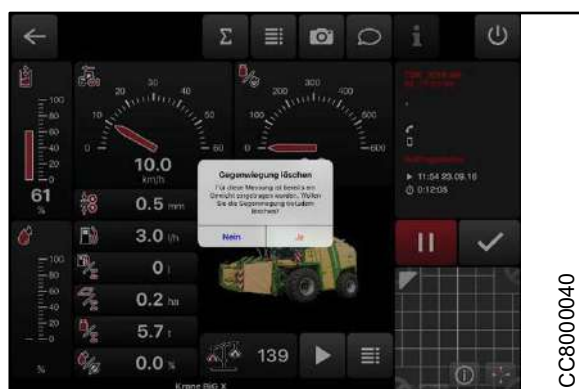


Fig. 72

- The counterweighing is deleted. However, a new value may be entered at any time for the weight of the counterweighing.



## 1.4.7.5 Entering correction factor directly

If counterweighing has not yet been carried out for an order, a correction factor can be entered directly. However, this factor does not necessarily reflect the characteristics of the order.



### Notice

While the factor for an order is entered, another order may run simultaneously.

Prerequisite:

- The order for which the factor should be modified is started or paused, refer to chapter Operation, “Operating CropControl System with Installed CropControl TC Sync System via KRONE CCI 200 Operating Terminal”, “Creating Control Mobile Order and Performing Counterweighing”, “Creating Order”.
- No counterweighing has not yet been started and stopped for the order.



Fig. 73

- Press .

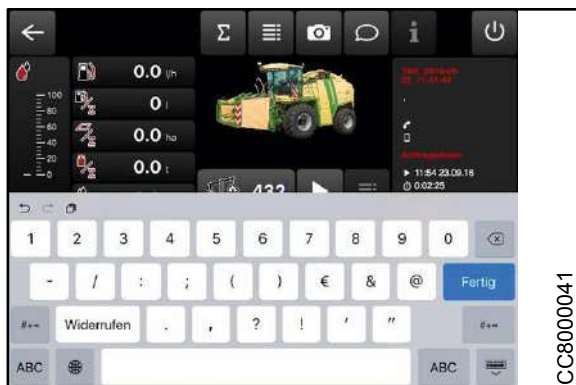


Fig. 74

- The input mask to enter the factor opens.
- Enter the factor.



### 1.4.7.6 AutoCalibrate

If AutoCalibrate is used, the weights of the counterweighings are entered automatically in the list of the counterweighings. They can be modified or deleted manually.

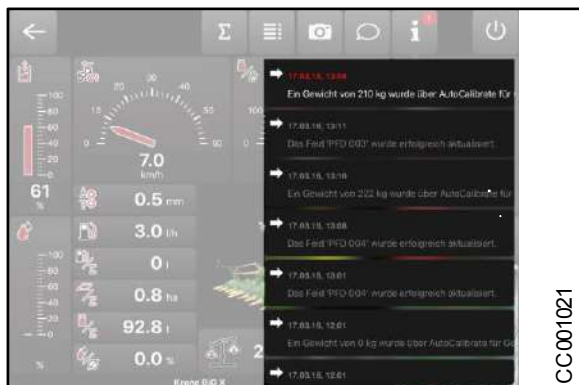

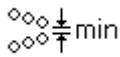












Fig. 75

If a correction is made via AutoCalibrate, a corresponding message will be displayed that confirms this correction.

1.4.8 Menu Level

Short Overview

Main menu	Sub-menu	Designation
<b>1</b> 		Settings
	 1	Setting Minimum Excursion
<b>2</b> 		Calibration
	 1	Calibrating Path Sensor
	 2	Calibrating Pressure Sensor
<b>14</b> 		ISOBUS Settings
	1 	Setting Background Colour
<b>15</b> 		Service
	1 	Manual Sensor Test
	2 	Current Alarms
	4 	Information
	5 	Technician

## 1.4.9 Bringing up a Menu Level

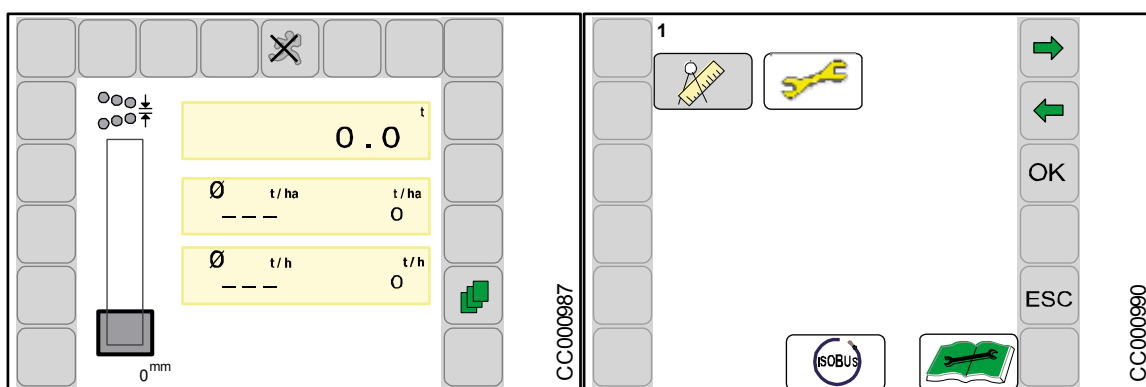








Fig. 76

- Press  to bring up the menu level from the working screen.

The menu level is divided into the following main menus:

	Main menu 1 “Settings”
	Main menu 2 “Calibration”
	Main menu 14 “ISOBUS Settings”
	Main menu 15 “Service”

To select the desired main menu, press  or  function key.  
The selected icon is highlighted in grey.

- Pressing the **OK** function key brings up the menu level of the selected main menu.
- Pressing the **ESC** function key closes menu currently displayed.
- Pressing the **ESC** function key brings up the working screen.

1.4.10 Main Menu 1 Settings

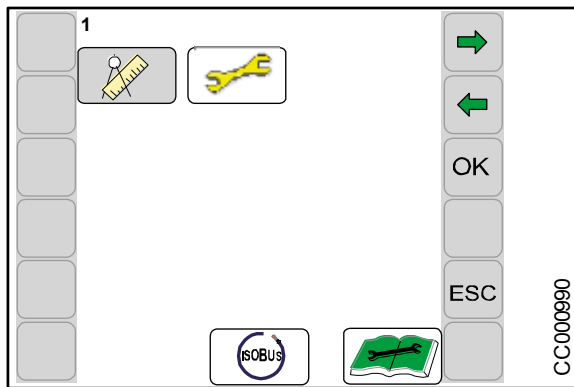







Fig. 77

- By pressing the  function key from the working screen you get into the menu level.
- Press  or  function key to select main menu 1 , the icon is highlighted in grey.
- Press the **OK** function key.

The display shows menu level 1 “Settings”.

Main menu 1 contains the following sub-menu:

-  Menu 1-1 “Minimum Excursion”

### Menu 1-1 Minimum Excursion

In menu 1-1 “Minimum Excursion”, you can set from what excursion of the pre-compression rollers the measurement is started. The higher the minimum excursion setting, the more crops must flow through the rollers to activate the yield counter.

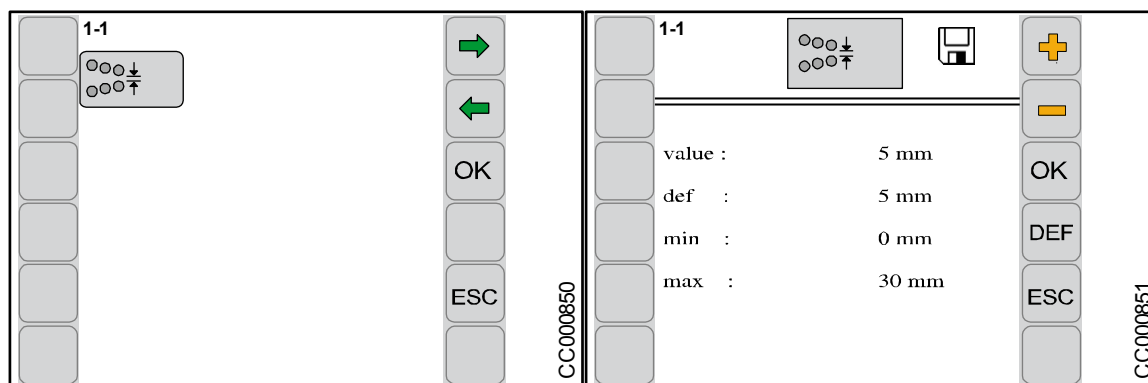





Fig. 78

#### Calling the menu

Main menu 1 “Settings” is called.




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


The display shows menu 1-1 „Minimum Excursion“.

The minimum excursion can be set between 0 and 30 mm.

The guide value to set the minimum excursion is 5 mm.

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

- Increase or reduce the desired value of minimum excursion via function key  or , the symbol  in the upper line goes out.
- Press function key **OK**.

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

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

1.4.11 Main Menu 2 Calibration

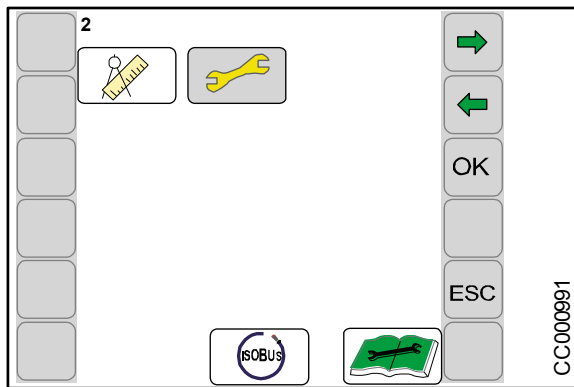




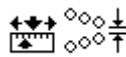


Fig. 79

- Open the menu level from the working screen by pressing the  function key.
- Select main menu 2  by pressing the  or  function key, the icon is highlighted in grey.
- Press the **OK** function key.

The display shows menu level 2 “Calibration”.

Menu level 2 is divided into two sub-menus:

 Menu 2-1 “Calibration Path Sensor”

 Menu 2-2 “Calibration Pressure Sensor”

### Menu 2-1 Calibration of Path Sensor

Before placing the machine in service the first time and after any assembly work on the path sensor, it must be calibrated. In this process, it must be ensured that there is no crop in the intake and the pre-compression rollers are in the bottom position on the stop.

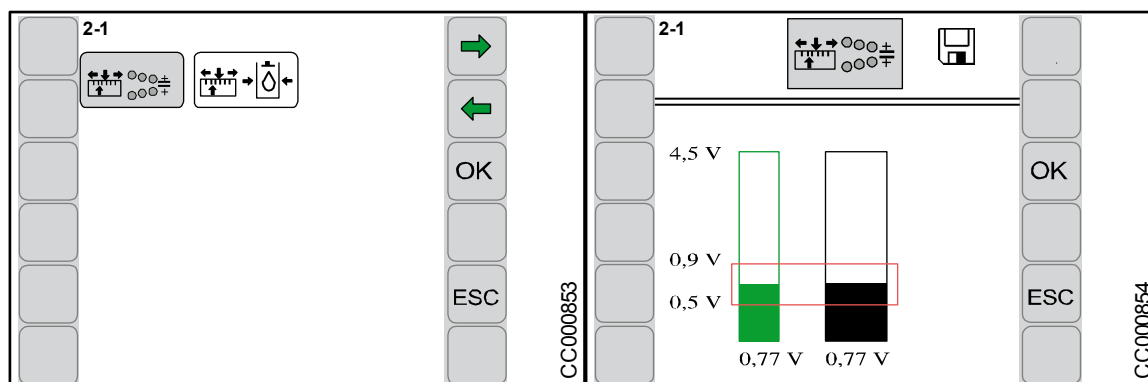
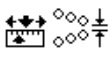




Fig. 80

#### Calling the menu

Main menu 2 “Calibration” is called.


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

The display shows menu 2-1 „Calibration of Path Sensor“.

The left bar display and the value below it show the calibrated voltage value for the path sensor. The right bar display and the value below it show the current voltage value of the path sensor. If the red bar is the red marked area, the path sensor can be calibrated.

A calibration is not possible if the value is outside this area. The following causes may be possible:

- The intake is soiled so that the intake rollers are not in the position on the stop.
- Path sensor defective.
- The voltage value is too small after assembly. Mount a distance sheet, if necessary.

The symbol  in the upper line indicates that the calibrated value is saved.

#### Calibrating the path sensor

The current voltage value of the path sensor is saved as a calibrated value via function key **OK**.

### Menu 2-2 Calibration Pressure Sensor

The calibration of the pressure sensor must be carried out before placing the machine in service the first time, after any assembly work and weekly during operation. Ensure that no crops are in the intake and that the pre-compression rollers are in the bottom limit stop.

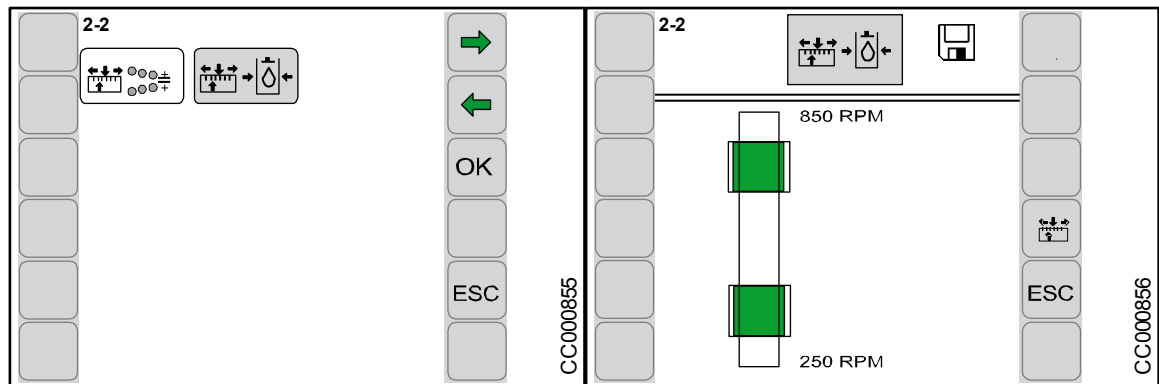






Fig. 81

#### Calling the menu

Main menu 2 “Calibration” is called.

- Select menu 2-2  by pressing function key  or , the symbol is highlighted in grey .
- Press function key **OK**

The display shows menu 2-2 “Calibration of Pressure Sensor“.

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

The bar indicates the intake speed.

The green areas specify the areas of the intake speed for the both intake speeds to be calibrated.

To calibrate the pressure sensor, proceed according to the following steps:

- Move lifting unit in working position (not lifted).
- Turn on cutting drum.
- Turn on intake.
- Adjust engine to working speed (1950/2000 rpm).
- Set the cutting length in the machine terminal to the smallest possible value.
- Slowly increase the cutting length in the machine terminal until the black bar is within the lower green area.



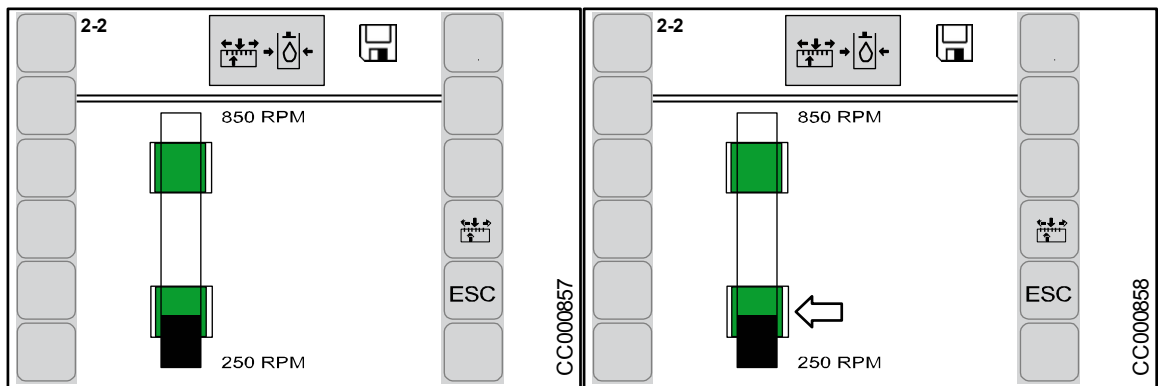



Fig. 82

- Press function key .
- Calibration has been started. For a short time, an arrow appears on the right next to the lower green area.

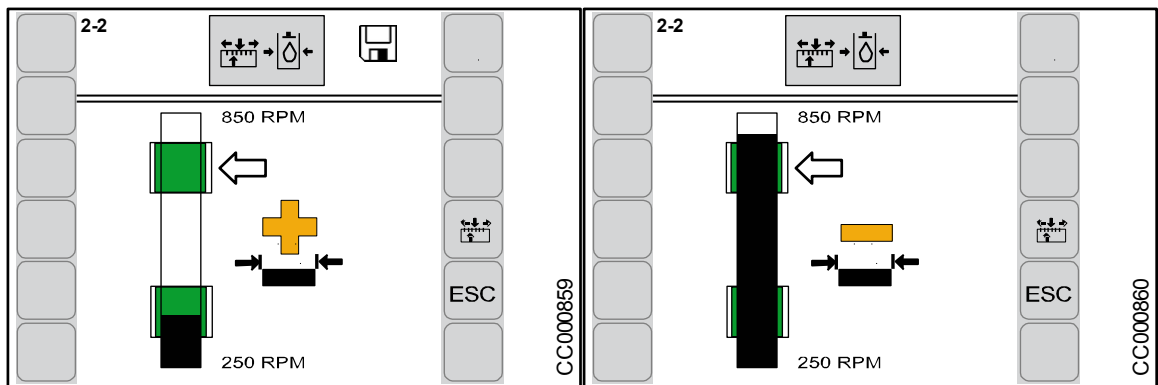



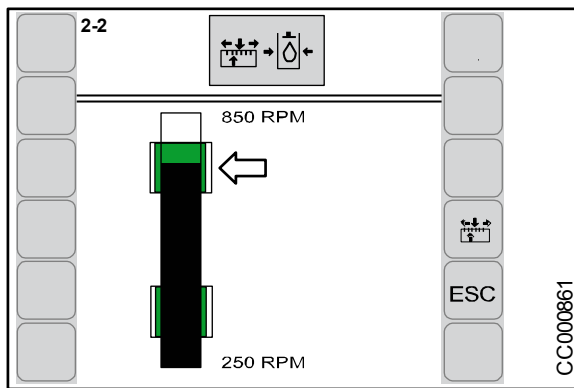




Fig. 83

The arrow next to the bottom green area disappears and an arrow appears next to the upper green surface.

The symbol  or  next to the bar flashes and it indicates whether the cutting length in the machine terminal must be increased or reduced. The symbol  in the upper line goes out.

- Adapt the cutting length until the black bar reaches the upper green area.



- If the black bar is in the upper green area, the symbol  or  disappears. Wait for a short time.

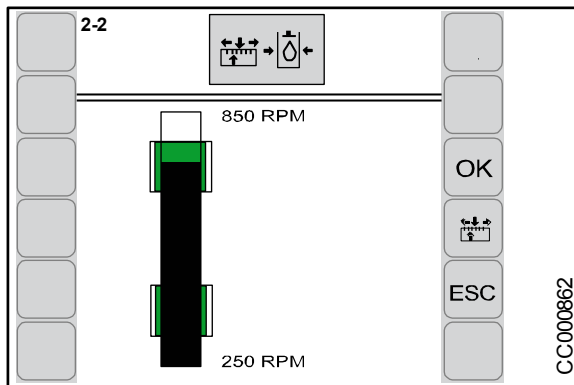


Fig. 84

- Press function key **OK** to save the calibrated values.

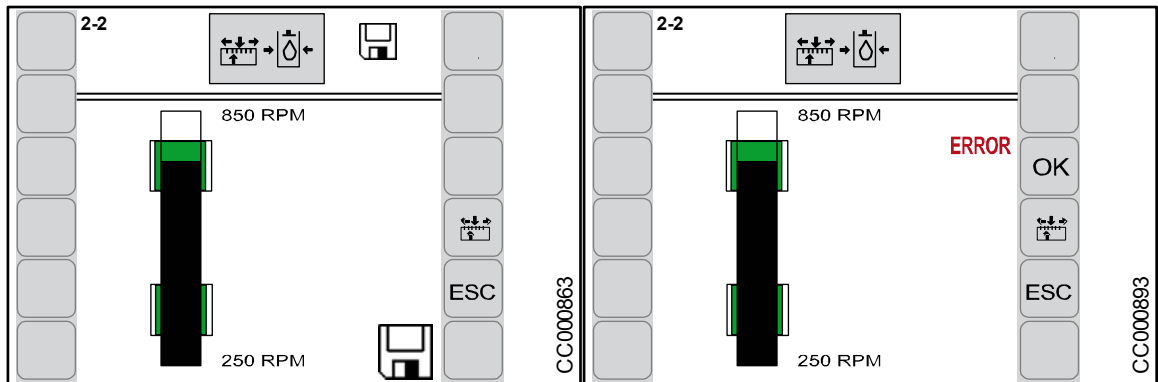




Fig. 85

If the calibration has been completed successfully, the symbol  appears in the upper line and for a short time in the lower right edge.

If the calibration has not been completed successfully, the symbol **ERROR** appears on the right and the symbol  is not shown in the upper line.

- Press function key **ESC** to leave the “Calibration Pressure Sensor” menu.

## 1.4.12 Main Menu 14 ISOBUS Settings

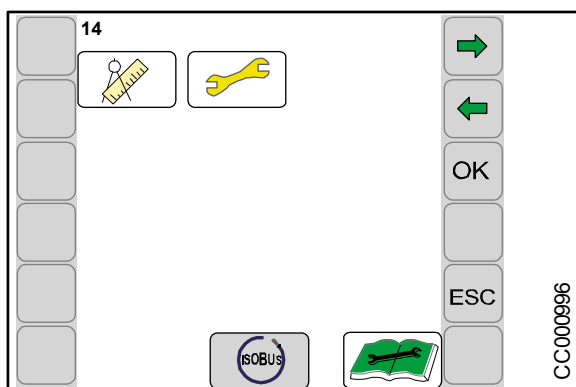






Fig. 86

- Open the menu level from the working screen by pressing the  function key.
- Select main menu 14  by pressing the  or  function key, the icon is highlighted in grey.
- Press **OK** function key .

The display shows menu level 14 “ISOBUS Settings”.

Menu level 14 contains the following sub-menu:



Menu 14-1 “Setting the Background Colour”

Menu 14-1 “Setting the Background Colour”

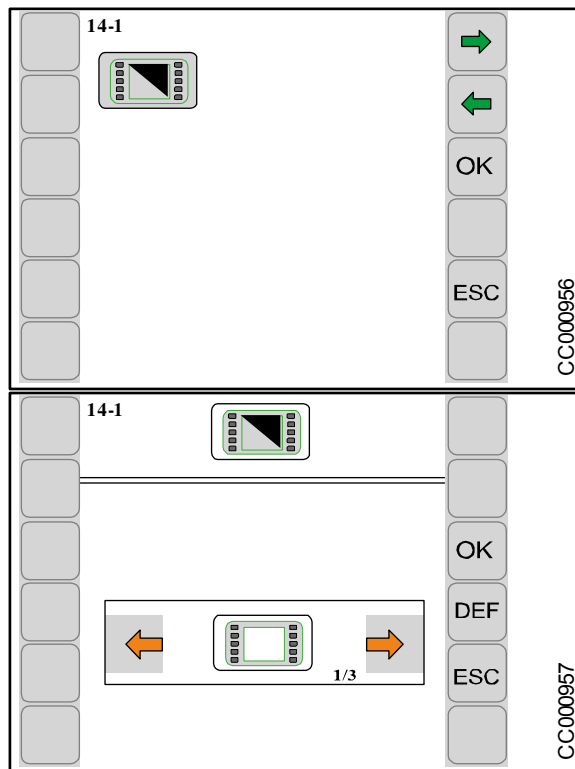





Fig. 87

Opening the menu




Main menu 14 “ISOBUS Settings” is active.

- Select menu 14-1  by pressing the  or  function key, the icon is highlighted in grey.

- Press **OK** function key



The display shows menu 14-1 “Setting the Background Colour”.


You can select between three modes.

Icon	Designation	Explanation
	Background colour white	Recommended for day
	Background colour grey	Recommended for night
	Automatic background colour	Background colour is set automatically. <ul style="list-style-type: none"> <li>• When the driving lights are switched on, the background is grey.</li> <li>• When the driving lights are switched off, the background is white.</li> </ul>


### Selecting and saving mode

The  icon in the upper line indicates that the displayed mode is saved.

- To bring up the next mode, press .
- To bring up the previous mode, press .

The  icon in the upper line disappears.

- To save, press **OK**.

The  icon in the upper line indicates that the selected mode is saved.

- To leave the menu, press **ESC**.

1.4.13 Main Menu 15 Service

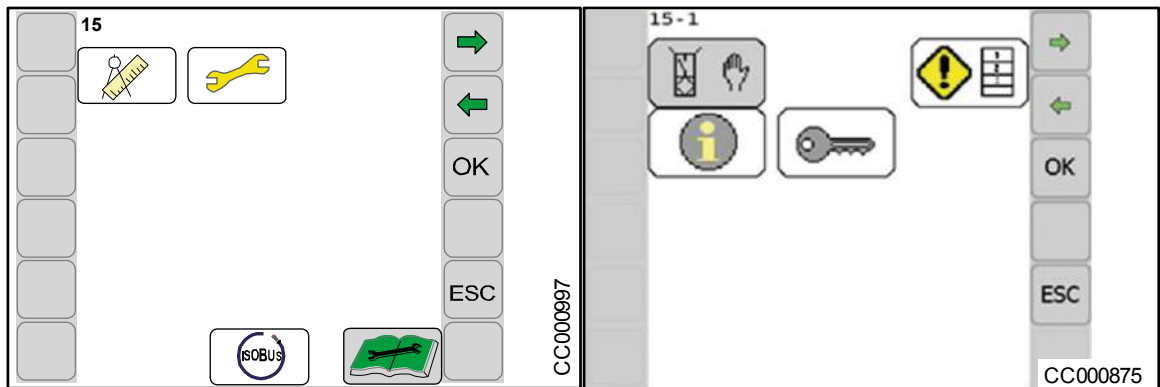










Fig. 88

- Press  function key to open the menu level from the working screen.
- Press the  or  function key to select main menu 15  . The icon is highlighted in grey.
- Press function key **OK**.

The display shows menu level 15 “Service”.

**Menu level 15 is divided into the following sub-menus:**

	Menu 15-1 Manual Sensor Test
	Menu 15-3 Alarms
	Menu 15-4 Information
	Menu 15-15 Technician

### Menu 15-1 Manual Sensor Test

In the manual sensor test, the sensors are checked for errors.

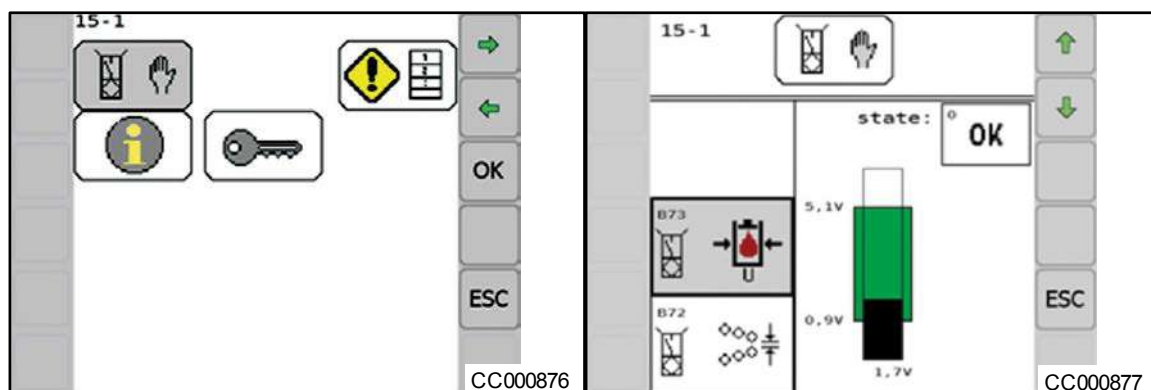








Fig. 89

#### Calling the menu

Main menu 15 “Service” is called.

- Press function key  or  to select menu 15-1   . The selected symbol is highlighted in grey.

#### Selecting the sensor

- Press function key  or  to select the sensor. The selected symbol is highlighted in grey and tested.

Diagnostics of analogue sensors

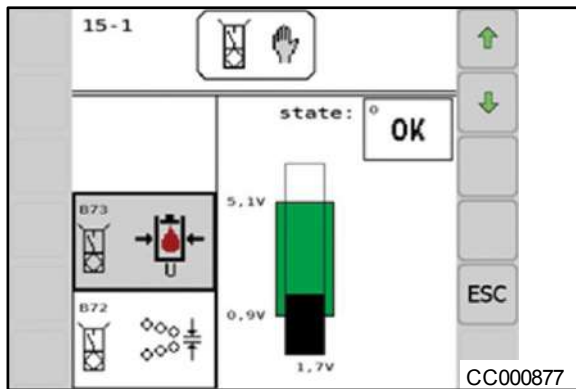
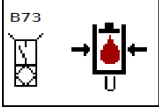
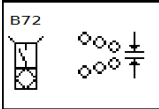


Fig. 90

Setting values:

The black bar must be in the green area of the bar display.

Analog sensors

No.	Sensor symbol	Description
B73		Pressure sensor
B72		Path sensor pre-compression rollers

State:

OK

Sensor OK

**ERROR**

Defect on sensor or job computer



Cable break/short circuit on the sensor

- Press function key **ESC** to close the menu currently displayed.

The display shows the previously called main menu.

- Pressing function key **ESC** longer brings up the basic screen.



## Diagnostics pressure increase

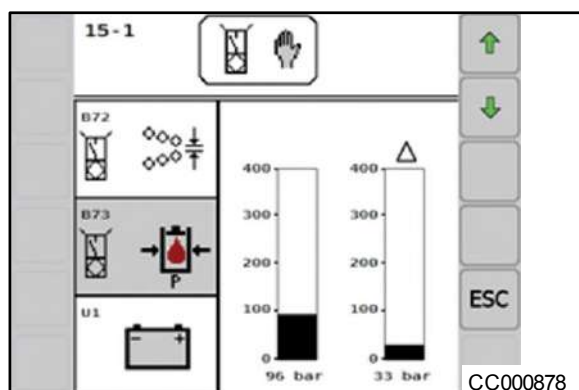
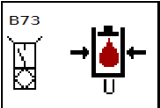


Fig. 91

### Description of display:

The left black bar indicates the pressure measured by the pressure sensor. The value is displayed under the black bar.

The right black bar indicates the pressure difference between the current pressure and the calibrated pressure (by calibration of pre-compression rollers in the unloaded condition).

No.	Sensor symbol	Description
B73		Pressure sensor with pressure difference

- Press function key **ESC** to close the menu currently displayed.

The display shows the previously called main menu.

- Pressing function key **ESC** longer brings up the basic screen.

Diagnostics power supply voltages

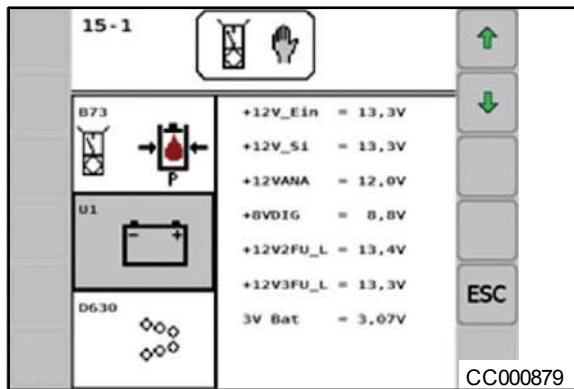
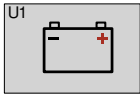


Fig. 92

No.	Sensor symbol	Description
U1		Power supply voltage

Nominal voltages:

Designation	Values
+12V_EIN	12 - 14.5 V
+12V_Si	12 - 14.5 V
+12VANA	12 – 13 V
+8VDIG	8.5 – 9.1 V
+12V2FU_L	12 - 14.5 V
+12V3FU_L	12 - 14.5 V
3V Bat	Exceeds 2.5 volts

- Press function key **ESC** to close the menu currently displayed. The display shows the previously called main menu.
- Pressing function key **ESC** longer brings up the basic screen.

### Diagnostics intake

The speed of intake drive as well as the speed of the crop through the intake is displayed.

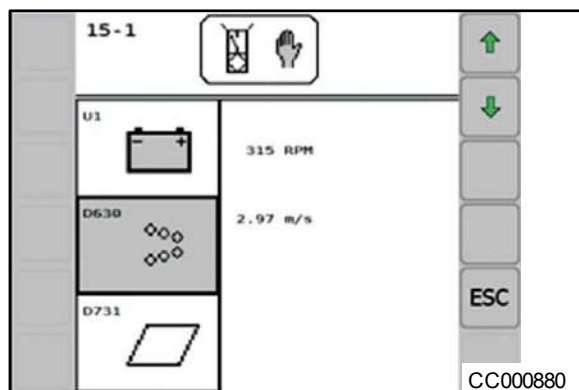
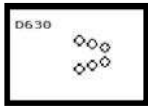


Fig. 93

No.	Sensor symbol	Description
D630		Display of speed/intake speed when the intake is turning.

- Press function key **ESC** to close the menu currently displayed.

The display shows the previously called main menu.

- Pressing function key **ESC** longer brings up the basic screen.

Diagnostics acreage counter

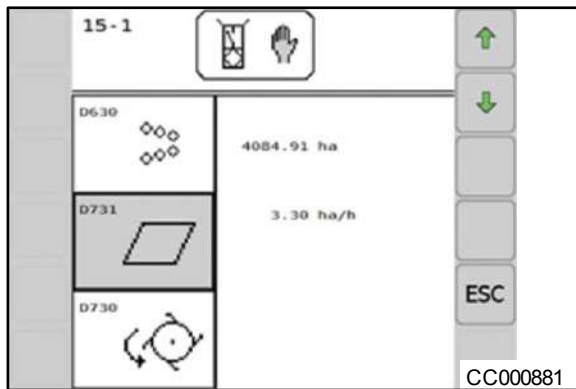
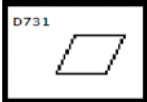


Fig. 94

**Description of display:**

The latest state of the total acreage counter of the machine is displayed in the first line. This must correspond to the total acreage counter displayed in the machine terminal.

The current acreage (in hectares per hour) of the machine is displayed in the second line.

No.	Sensor symbol	Description
D731		Display acreage counter/hectares per hour. If the machine is chopping actively and driving forward, the acreage counter must increase and a value that is bigger than 0 must be displayed for ha/h.

- Press function key **ESC** to close the menu currently displayed.

The display shows the previously called main menu.

- Pressing function key **ESC** longer brings up the basic screen.

### Diagnostics machine chops

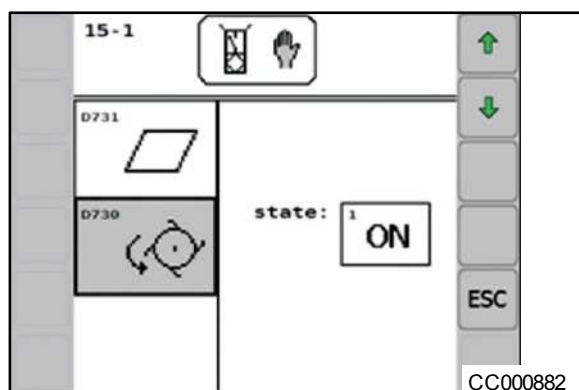



Fig. 95

#### Description of display:

It indicates whether the machine is currently chopping or not.

The state must be **ON**, if:

- The machine moves forward.
- The lifting unit is in the working position.
- The cutting drum is turned on.
- Intake and header turn forward.

No.	Sensor symbol	Description
D730		The machine chops (status <b>ON</b> is displayed if the machine chops and moves forward, otherwise <b>OFF</b> is displayed).

#### State:

**ON**            The machine chops actively.

**OFF**            The machine chops inactively.

- Press function key **ESC** to close the menu currently displayed.

The display shows the previously called main menu.

- Pressing function key **ESC** longer brings up the basic screen.

Menu 15-3 Alarms

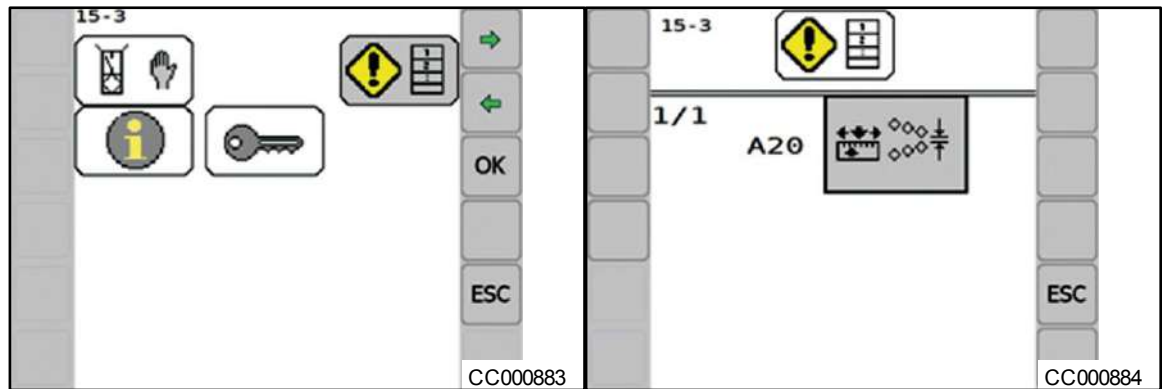






Fig. 96

**Calling the menu**

Main menu 15 “Service” is called.



- Press function key  or  to select menu 15-3  . The selected symbol is highlighted in grey.
- Press function key **OK**.

The display shows menu 15-3 “Alarms”.

The currently pending alarms are displayed here.

Description, possible cause and remedy are listed in chapter “Alarm Messages”.

The current page and the number of pages are shown at the top left.

If there are several pages, press function keys  or  to scroll in the list.

- Press function key **ESC** to close the menu currently displayed.

The display shows the previously called main menu.

- Pressing function key **ESC** longer brings up the basic screen.

### Menu 15-4 Information

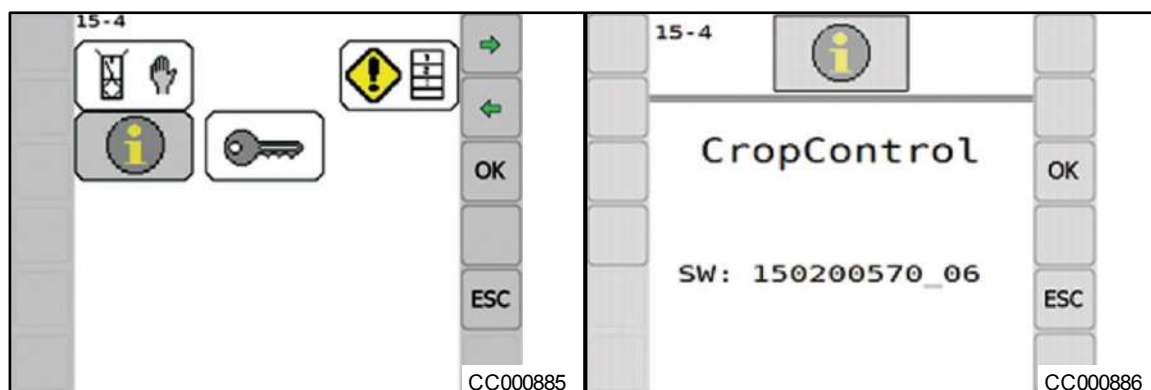





Fig. 97

#### Calling the menu

Main menu 15 “Service” is called.

- Press function key  or  to select menu 15-4  . The selected symbol is highlighted in grey.

- Press function key **OK**.

The display shows menu 15-4.

The complete CropControl software version is displayed here.

- SW = complete software version

- Press function key **ESC** to close the menu currently displayed.

The display shows the previously called main menu.

- Pressing function key **ESC** longer brings up the basic screen.

Menu 15-5 Technician

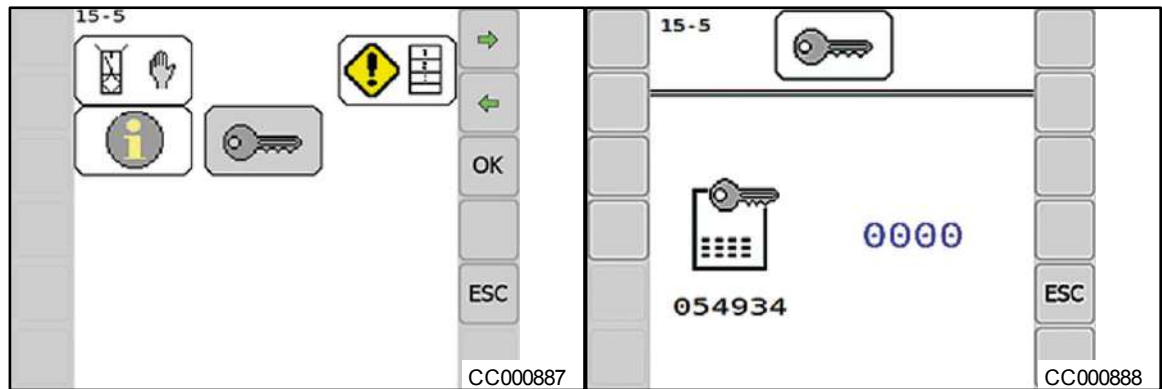





Fig. 98

**Calling the menu**

Main menu 15 “Service” is called.

- Press function key  or  to select menu 15-5 . The selected symbol is highlighted in grey.
- Press function key **OK**.

Menu 15-5 “Technician” is protected by password.  
The display shows the password query.

1.4.14

**Error Messages (UT)**

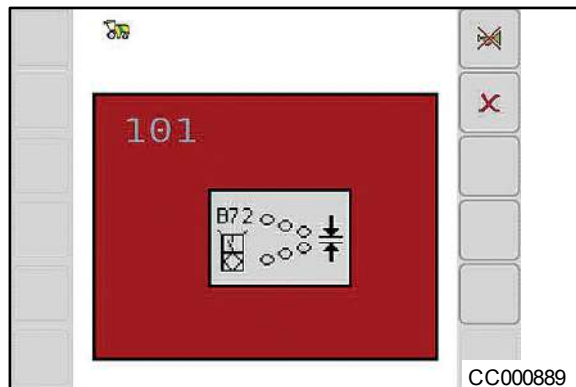


Fig. 99


**Alarm message**

If there is a disturbance on the CropControl, an alarm message appears in the display and an audio signal sounds at the same time (constant horn signal). Description, possible cause and remedy are listed in chapter “Alarm Messages”.

**To stop audio signal:**

- Press function key .


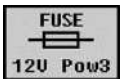


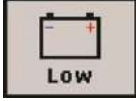

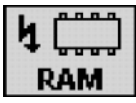

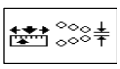

**To acknowledge the alarm:**

- Press function key  briefly, the alarm is acknowledged and the audio signal stops. If the disturbance occurs again, the alarm message will also appear again.

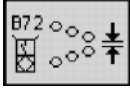
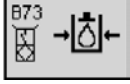


## Appendix – CropControl System

### General messages

No.	Image	Possible cause	Remedy
A01		<ul style="list-style-type: none"> <li>– Computer internal plug-in fuse 2 defective.</li> <li>– Short circuit on voltage output +12V2FU_L.</li> </ul>	<ul style="list-style-type: none"> <li>– Check wiring for short circuit.</li> <li>– Replace fuse.</li> </ul>
A02		<ul style="list-style-type: none"> <li>– Fuse 3 defective (self-repairing)</li> <li>– Short circuit on voltage outputs +12V3FU_L</li> </ul>	<ul style="list-style-type: none"> <li>– Check wiring for short circuit.</li> </ul>
A04		<ul style="list-style-type: none"> <li>– EEPROM error</li> <li>– Job computer defective</li> </ul>	<ul style="list-style-type: none"> <li>– Replace job computer.</li> </ul>
A13		<ul style="list-style-type: none"> <li>– Undervoltage back-up battery</li> <li>– Back-up battery defective</li> </ul>	<ul style="list-style-type: none"> <li>– Check the back-up battery and replace it, if necessary.</li> </ul>
A14		<ul style="list-style-type: none"> <li>– Undervoltage</li> <li>– Fuse -22F39 defective</li> </ul>	<ul style="list-style-type: none"> <li>– Replace fuse.</li> </ul>
A15		<ul style="list-style-type: none"> <li>– Overvoltage</li> <li>– Alternator is defective</li> </ul>	<ul style="list-style-type: none"> <li>– Check alternator</li> </ul>
A16		<ul style="list-style-type: none"> <li>– RAM error</li> <li>– Back-up battery defective</li> <li>– Job computer defective</li> </ul>	<ul style="list-style-type: none"> <li>– Check the back-up battery and replace it, if necessary.</li> <li>– Replace job computer.</li> </ul>
A19		<ul style="list-style-type: none"> <li>– The yield counter for the currently active cultivated area will soon overflow (jumps to 0 t).</li> <li>– The yield counter of the currently active cultivated area is active for too long.</li> </ul>	<ul style="list-style-type: none"> <li>– Use another cultivated area or delete the currently active cultivated area.</li> </ul>
A20		<ul style="list-style-type: none"> <li>– Intake is soiled</li> <li>– Path sensor is not calibrated</li> </ul>	<ul style="list-style-type: none"> <li>– Clean the intake so that the pre-compression rollers can be moved back to the basic position.</li> <li>– After cleaning is complete, recalibrate the path sensor.</li> </ul>
A22		<ul style="list-style-type: none"> <li>– The order:</li> <li>– has not been started with CropControl TC Sync.</li> <li>– has meanwhile been continued without CropControl TC Sync.</li> </ul>	<ul style="list-style-type: none"> <li>– Start a new order and do not continue the previous order.</li> </ul>

### Physical messages

No.	Image	Sensor	Possible cause	Remedy
101		Path sensor	– Sensor or supply line defective.	<ul style="list-style-type: none"> <li>– Perform sensor test.</li> <li>– Check sensor and supply line for damage.</li> </ul>
102		Pressure sensor		



# **Parameter BiG X 600/I, 600-2, 700/I, 700-2, 700-3, 770-2 770-3, 850/I, 850-2, 850-3, 1100, 1100/I, 1100-2, 1100-3**

Software-Version: 150 200 104-42  
DRIVER EN\_US  
Dated: Fr Jun 28 2019

Legende:

r = nur Lesen

rw = Lesen/Schreiben

Farbe Schwarz = Nicht modifiziert

Farbe Blau = gelöscht

Farbe Grün = Neu

Farbe rot = Modifiziert

Verglichen mit 150 200 104-41





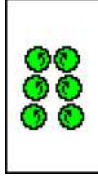
## Chute

No.	Designation	Rights	Min.	Max.	Default Unit	Reduce	Increase	Description
33480 driver	Discharge chute check park. pos. active 0=OFF, 1=Road operation, 2= Main coupling OFF, 3 MC off and v> 0km/h	nw	0	2	1			Check to determine whether the upper discharge chute is in the parking position when switching to road operation. 0=No check 1=Check in road operation only 2=Check if main coupling is switched off. 3=Check if main coupling is OFF and machine moves (independently of release switch field and release switch travelling gear)



## Joystick

No.	Designation	Rights	Min.	Max.	Default Unit	Reduce	Increase	Description
25227 driver	Joystick turn discharge chute mode 2nd stage 0=Joystick, 1=Parameter 25215	rw	0	1	1			Setting how the second level on the joystick for rotating the upper discharge chute is to be treated. 0 = The speed in both levels is specified by the lever on the joystick. 1 = The speed for the second level is specified via the parameter 25215.



## Feed drive

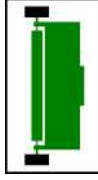
No.	Designation	Rights	Min.	Max.	Default Unit	Reduce	Increase	Description
25626 driver	Maize reduce speed feed drive in	rw	0	100	m	The distance for the speed reduction becomes less.	The distance for the speed reduction becomes greater	The distance for which the speed of the feed drive is reduced when driving into the maize crop.
25627 driver	Maize reduce speed feed drive time drive out	rw	0	60	s	The duration for the speed reduction becomes less.	The duration for the speed reduction becomes greater	The time for which the speed of the feed drive is reduced when driving out of the maize crop.
25628 driver	Maize value reduce speed feed drive in/out	rw	50	100	%	The speed is reduced less.	The speed is reduced more	The value at which the speed of the feed drive is reduced when driving in/out.



## front attachment

No.	Designation	Rights	Min.	Max.	Default	Unit	Reduce	Increase	Description
25476 driver	Minimal rpm front attachment dynamic	rw	0	1000	200	RPM	The attachment speed decreases if speed > set speed in the terminal	The attachment speed increases if speed > set speed in the terminal	The attachment speed is adjusted to the driving speed. "Min. spd. dynamic front attachment" is the front attachment speed at 0 km/h. If the speed set in the terminal is greater, the speed set at the terminal is actuated.
25477 driver	Front attachment rpm dynamic rpm differenz per km/h	rw	0	750	30	RPM	The speed change per km/h is decreased if speed > set speed in the terminal	The speed change per km/h is increased if speed > set speed in the terminal	For every 1 km/h the attachment speed increases by the set value. If the speed set in the terminal is greater, the speed set at the terminal is actuated.
25478 driver	Front attachment rpm dynamic active 0=OFF, 1=maize, 2=Grass/XDisc, 3=All	rw	0	3	0				The dyn. front attachment speed actuation function can be activated/deactivated. Deactivated means that the speed set on the terminal is set. 0 = Dyn. front attachment speed deactivated 1 = Dyn. front attachment speed activated for maize only 2 = Dyn. front attachment speed activated for grass/XDisc only 3 = Dyn. front attachment speed activated for grass/XDisc and for maize.
25634 driver	Front attachment forward only XDisc 1=Front attachment reversing not possible	rw	1	2	2				The "Reverse front attachment" function is not run, instead "Front attachment forwards" is actuated. (Only in XDisc mode) 1 = "Reverse front attachment" not possible ("Front attachment forwards" is actuated.) 2 = Normal operation, the front attachment can also be reversed in the usual way.

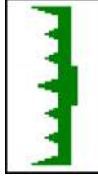




## Grass mode / EasyFlow

No.	Designation	Rights	Min.	Max.	Default Unit	Reduce	Increase	Description
33482 driver	Holding-dwn dev. automatic 1=On, 2=OFF	rw	1	2	1			The automatic lift setting for the holding-down device on the pick-up when reversing the feed drive and front attachment: 1=Automatic switched on 2=Automatic switched off.
33500 driver	Reduce hold-down offset time	rw	0	30	s	The time up to lowering is decreased.	The time up to lowering is increased.	The delay time until the holding-down device is automatically lowered.
33501 driver	Reduce hold-down time	rw	0	30	s	The duration of lowering is decreased.	The duration of lowering is increased.	The ramp time for which the holding-down device is lowered when automatic is switched on. Setting 0 deactivates automatic
34051 driver	Lifting gear Position Work	rw	20	70	%	The maximum working position is decreased.	The maximum working position is increased.	If the lifting unit is below this position (in percentage terms), it means that the machine is cutting. This is used for the automatic silage material unit and the hectare counter.
34065 driver	Manual speed 1 raise lifting gear 1=slow, 20=fast	rw	0	20	5	The speed of the lifting gear becomes less	The speed of the lifting gear becomes greater	Speed to lift lifting gear 1st level
34066 driver	Manual speed 2 raise lifting gear 1=slow, 20=fast	rw	0	20	20	The speed of the lifting gear becomes less	The speed of the lifting gear becomes greater	Speed to lift lifting gear 2nd level
34067 driver	Manual speed 1 lower lifting gear 1=slow, 20=fast	rw	0	20	5	The speed of the lifting gear becomes less	The speed of the lifting gear becomes greater	Speed to lower lifting gear 1st level
34068 driver	Manual speed 2 lower lifting gear 1=slow, 20=fast	rw	0	20	9	The speed of the lifting gear becomes less	The speed of the lifting gear becomes greater	Speed to lower lifting gear 2nd level

No.	Designation	Rights	Min.	Max.	Default	Unit	Reduce	Increase	Description
34075 driver	Raise lifting gear when reversing travelling gear automatic 1=ON	rw	0	1	0				Setting as to whether the lifting gear is to be lifted automatically during reversal of the travelling gear. 1 = Lifting gear is lifted automatically during reversing 2 = Lifting gear is not lifted automatically
34076 driver	Pendulum frame float position auto with header contour 1=Automatic	rw	0	1	1				Setting as to whether the pendulum frame is automatically enabled when the "header contour" function is activated. (Is switched on and off by simultaneously pressing the "Lateral levelling left" and "Right" buttons or by manual override.)
34077 driver	Pendulum frame horizontal automatic with lifting gear to top 1=Automatic	rw	0	1	0				Setting as to whether the pendulum frame is automatically set to horizontal position when the "Lifting gear to up" function is triggered.
34079 driver	Active lateral levelling deact. 1=deactiv, 2=active over ground tracer	rw	1	2	1				Setting as to whether active lateral levelling is active when sensor hooks are connected. 1 = Lateral levelling not active (lateral levelling passive via float position) 2 = Lateral levelling active (lateral levelling via the sensor hooks)

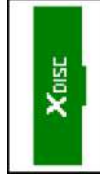


## Maize mode / EasyCollect

No.	Designation	Rights	Min.	Max.	Default Unit	Reduce	Increase	Description
34251 driver	Lifting gear Position Work	rw	20	70	40 %	The maximum working position is decreased.	The maximum working position is increased.	If the lifting unit is below this position (in percentage terms), it means that the machine is cutting. This is used for the automatic silage material unit and the hectare counter.
34275 driver	Raise lifting gear when reversing travelling gear automatic 1=ON	rw	0	1	0			Setting as to whether the lifting gear is to be lifted automatically during reversal of the travelling gear. 1 = Lifting gear is lifted automatically during reversing 0 = Lifting gear is not lifted automatically
34276 driver	Pendulum frame float position auto with header contour 1=Automatic	rw	0	1	1			Setting as to whether the pendulum frame is automatically enabled when the "header contour" function is activated. (Is switched on and off by simultaneously pressing the "Lateral levelling left" and "Right" buttons or by manual override.)
34277 driver	Pendulum frame horizontal automatic with lifting gear to top 1=Automatic	rw	0	1	1			Setting as to whether the pendulum frame is automatically set to horizontal position when the "Lifting gear to up" function is triggered.
34278 driver	Fold front attachment in and out Automatic 1=Automatic, 0=Manual	rw	0	1	1			Setting as to whether the front attachment can be retracted automatically or not. 1=Automatic possible 0=Automatic not possible

Parameter BiG X 600/I, 600-2, 700/I, 700-2, 700-3, 770-2 770-3, 850/I, 850-2, 850-3, 1100, 1100/I, 1100-2, 1100-3

No.	Designation	Rights	Min.	Max.	Default Unit	Reduce	Increase	Description
34279 driver	Active lateral levelling deact. 1=deactiv, 2=active over ground tracer	rw	1	2	1			Setting as to whether active lateral levelling is active when sensor hooks are connected. 1 = Lateral levelling not active (lateral levelling passive via float position) 2 = Lateral levelling active (lateral levelling via the sensor hooks)



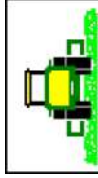
## XDisc mode

No.	Designation	Rights	Min.	Max.	Default Unit	Reduce	Increase	Description
34451 driver	Lifting gear Position Work	rw	20	70	40 %	The maximum working position is decreased.	The maximum working position is increased.	If the lifting unit is below this position (in percentage terms), it means that the machine is cutting. This is used for the automatic silage material unit and the hectare counter.
34475 driver	Raise lifting gear when reversing travelling gear automatic 1=ON	rw	0	1	0			Setting as to whether the lifting gear is to be lifted automatically during reversal of the travelling gear. 1 = Lifting gear is lifted automatically during reversing 0 = Lifting gear is not lifted automatically
34476 driver	Pendulum frame float position auto with header contour 1=Automatic	rw	0	1	1			Setting as to whether the pendulum frame is automatically enabled when the "header contour" function is activated. (Is switched on and off by simultaneously pressing the "Lateral levelling left" and "Right" buttons or by manual override.)
34477 driver	Pendulum frame horizontal automatic with lifting gear to top 1=Automatic	rw	0	1	0			Setting as to whether the pendulum frame is automatically set to horizontal position when the "Lifting gear to up" function is triggered.
34479 driver	Active lateral levelling deact. 1=deactiv, 2=active over ground tracer	rw	1	2	1			Setting as to whether active lateral levelling is active when sensor hooks are connected. 1 = Lateral levelling not active (lateral levelling passive via float position) 2 = Lateral levelling active (lateral levelling via the sensor hooks)



## Main Drive

No.	Designation	Rights	Min.	Max.	Default Unit	Reduce	Increase	Description
33440 driver	Offset correction speed 2whl	rw	0	20	4			Correction of travelling speed. The specified offset is deducted from the calculated travelling speed (efficiency level extrapolated) of the SmartDrive. Valid in 2-wheel field mode
33443 driver	Offset correction speed 4whl	rw	0	20	1			Correction of travelling speed. The specified offset is deducted from the calculated travelling speed (efficiency level extrapolated) of the SmartDrive. Valid in 4-wheel field mode
33446 driver	Offset correction speed road	rw	0	20	0			Correction of travelling speed. The specified offset is deducted from the calculated travelling speed (efficiency level extrapolated) of the SmartDrive. Valid in road operation.



## Common working functions

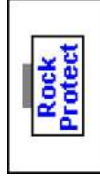
No.	Designation	Rights	Min.	Max.	Default Unit	Reduce	Increase	Description
33651 driver	Blow valve Feed drive off time	rw	35	3600	s			The time period during which the blow-off valve Y73 (engine compartment /intake cleaning compressed air) is activated.
33652 driver	Blow valve Feed drive on time	rw	0	10	s			The duration the valve Y73 (engine compartment/feed drive cleaning compressed air) is actuated.
33765 driver	Blow valve engine on time	rw	0	5	s			The length of time the blow-off valve Y109 (engine compartment cleaning compressed air) is switched on.
33766 driver	Blow valve engine off time	rw	35	3600	s			The length of time the blow-off valve Y109 (engine compartment cleaning compressed air) is switched off.
34005 driver	Info messages 1=all ON, 2=All OFF, 3=important info ON	rw	1	3				Setting as to whether all information messages are to be shown: 1=Show all information messages (operating error, information, etc.) 2=Do not show unimportant information 3=Show only the most important information (e.g. information about completed calibrations).
34025 driver	Transmission of chop length gearbox VariLOC. 0= automatic identification, 1= position I (gear ratio 1:1), 2= position II (1:1.5), 3= not installed	rw	0	3				Setting to determine the setting of the cutting length gearbox. 1 = position I or without gearbox (gear ratio 1:1), 2 = position II (gear ratio 1:1.5), 3 = cutting length gearbox not fitted



## Autopilot

No.	Designation	Rights	Min.	Max.	Default Unit	Reduce	Increase	Description
26025 driver	Flexible row tracer (0= not present, 1= present)	rw	0	1	0			From SW version 150200029-07 of the autopilot: "Flexible row tracer installed" ==> Setting denoting whether a flexible row tracer is installed instead of the normal bracket sensors. 0=normal bracket sensor (default) 1=flexible row tracer Up to SW version 150200029-06 of the autopilot: "AnteiMittenvaufLenkw2" ==> control parameter autopilot (default = 0)
34016 driver	Autopilot row tracer to central tip 1=central tip (EasyCollect 2-part)	rw	0	1	0			Setting as to whether the touch sensors for the autopilot are installed in the central tip or in the outside tips. Parameter is used only for the display on the terminal and does not apply to the autopilot control. 0 = Touch sensor in the outside tips 1 = Central tip





## RockProtect

No.	Designation	Rights	Min.	Max.	Default Unit	Reduce	Increase	Description
27500 driver	RockProtect Sensitivity 0=Insensitive, 100%=Very sensitive	rw	0	100	50 %			Setting denoting how sensitive the stone detector is to react. 0% ==> no stone detection 100% ==> Stone detection very sensitive.



## Moisture measurement

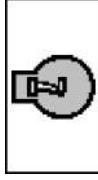
No.	Designation	Rights	Min.	Max.	Default Unit	Reduce	Increase	Description
30044 driver	Crop type	rw	0	255	16			The setting that determines which crop type or parameter set will be used. 16 = maize, 32 = grass, 0 = user-defined crop
34019 driver	Type of humidity measurement (0= no sensor or Harvest Tec, 2=NIR)	rw	0	2	0			Hardware type of the moisture measuring system. 0=Harvesttech, 2=NIR

Parameter BiG X 600/I, 600-2, 700/I, 700-2, 700-3, 770-2 770-3, 850/I, 850-2, 850-3, 1100, 1100/I, 1100-2, 1100-3



## AutoScan

No.	Designation	Rights	Min.	Max.	Default Unit	Reduce	Increase	Description
34020 driver	AutoScan settings in terminal expert mode 1=Expert, 0=Normal display	rw	0	1	0			Setting as to whether the extended settings are to be available in the AutoScan mask.



## Diesel engine

No.	Designation	Rights	Min.	Max.	Default Unit	Reduce	Increase	Description
33495 driver	Maximum rpm maintenance 36-48 blades	r	1100	1700	RPM	The maximum speed is decreased	The maximum speed is increased	The maximum speed of the diesel engine that can be set in field mode and with the maintenance switch on can be with a 36-48 blade drum.
33499 driver	Max.rpm maintenance 24-28 blades	r	1100	1700	RPM	The maximum speed is decreased	The maximum speed is increased	The maximum speed of the diesel engine that can be set in field mode and with the maintenance switch on can be with a 24-28 blade drum.
33504 driver	Max.rpm maintenance 10-20 blades	r	1100	1700	RPM	The maximum speed is decreased	The maximum speed is increased	The maximum speed of the diesel engine that can be set in field mode and with the maintenance switch on can be with a 10-20 blade drum.
33515 driver	Power mode diesel engine road (2=X-Power 3=EcoPower)	rw	2	3	3			Setting with which parameter set the intermediate speed controller is to be operated for the MAN engine. 2=X-Power ==> full power in road operation. 3=EcoPower ==> reduced power
33516 driver	Auto PowerSplit (0 = off, 1 = on)	rw	0	1	0			Automatic adjustment of the diesel engine power mode. Setting of the terminal in the "Settings of diesel engine" mask
33517 driver	Power mode diesel engine maize/X-Disc (2=X-Power 3= EcoPower)	rw	2	3	2			Setting with which parameter set the intermediate speed controller is to be operated for the MAN engine. 2=X-Power ==> full power in maize/XDisc mode. 3=EcoPower ==> reduced power
33518 driver	Power mode diesel engine grass (2=X-Power 3= EcoPower)	rw	2	3	3			Setting with which parameter set the intermediate speed controller is to be operated for the MAN engine. 2=X-Power ==> full power in road operation. 3=EcoPower ==> reduced power

Parameter BiG X 600/I, 600-2, 700/I, 700-2, 700-3, 770-2 770-3, 850/I, 850-2, 850-3, 1100, 1100/I, 1100-2, 1100-3

No.	Designation	Rights	Min.	Max.	Default	Unit	Reduce	Increase	Description
33543 driver	Increment RPM Field Grass	rw	1	200	50	RPM	The step width is decreased	The step width is increased	The change to rpm in the diesel engine when the RPM- or RPM+ buttons are pressed in field mode grass.
33573 driver	Increment RPM Field Maize	rw	1	200	50	RPM	The step width is decreased	The step width is increased	The change to rpm in the diesel engine when the RPM- or RPM+ buttons are pressed in field mode maize.



## Grinding

No.	Designation	Rights	Min.	Max.	Default Unit	Reduce	Increase	Description
33495 driver	Maximum rpm maintenance 36-48 blades	r	1100	1700	RPM	The maximum speed is decreased	The maximum speed is increased	The maximum speed of the diesel engine that can be set in field mode and with the maintenance switch on can be with a 36-48 blade drum.
33499 driver	Max.rpm maintenance 24-28 blades	r	1100	1700	RPM	The maximum speed is decreased	The maximum speed is increased	The maximum speed of the diesel engine that can be set in field mode and with the maintenance switch on can be with a 24-28 blade drum.
33504 driver	Max.rpm maintenance 10-20 blades	r	1100	1700	RPM	The maximum speed is decreased	The maximum speed is increased	The maximum speed of the diesel engine that can be set in field mode and with the maintenance switch on can be with a 10-20 blade drum.
33657 driver	Grinding stone adaption	rw	1	2	1			The number of times the grinding stone is regulated by the ratchet mechanisms in one complete grinding cycle. A grinding cycle means grinding stone once left and once right until the grinding stone is back in its original position.
34014 driver	Grinding stone adaption number teeth	rw	1	100	32			The number of teeth on the grinding stone adjuster: 24 teeth ==> machines manufactured up to 2007 32 teeth ==> machines manufactured since 2007



## Metal detection

No.	Designation	Rights	Min.	Max.	Default Unit	Reduce	Increase	Description
33611 driver	Time control horn with metal/stone recog.	nw	0	20	5 s	The actuation of the horn on metal alarm is shortened	The actuation of the horn on metal alarm is lengthened	The time in seconds that the horn is actuated when the metal detection system locates "Metal in the feed drive".



## Shearbar

No.	Designation	Rights	Min.	Max.	Default Unit	Reduce	Increase	Description
33614 driver	Mot. counterblade time 2nd speed	rw	0	200	2 s	The time when the counterblade switches to the 2nd speed level is shortened.	The time when the counterblade switches to the 2nd speed level is extended.	Setting denoting after what time in sec. the counterblade engine changes from the reduced speed to the 2nd Speed level ( 100% ) changes. The speed of the 2nd level cannot currently be set. The speed of the 1st level is set with the parameters 33616 - 33619.
33616 driver	PWM Motor counterblade left down	rw	200	1000	0,001	The speed of the counterblade in the 1st level is decreased	The speed of the counterblade in the 1st level is increased	Setting denoting which voltage of the counterblade motor is to be actuated in the 1st level. 0% ==> 0 volts 100 % ==> 12-14 volts (max. speed)
33617 driver	PWM Motor counterblade left up	rw	200	1000	0,001	The speed of the counterblade in the 1st level is decreased	The speed of the counterblade in the 1st level is increased	Setting denoting which voltage of the counterblade motor is to be actuated in the 1st level. 0% ==> 0 volts 100 % ==> 12-14 volts (max. speed)
33618 driver	PWM Motor counterblade right down	rw	200	1000	0,001	The speed of the counterblade in the 1st level is decreased	The speed of the counterblade in the 1st level is increased	Setting denoting which voltage of the counterblade motor is to be actuated in the 1st level. 0% ==> 0 volts 100 % ==> 12-14 volts (max. speed)
33619 driver	PWM Motor counterblade right up	rw	200	1000	0,001	The speed of the counterblade in the 1st level is decreased	The speed of the counterblade in the 1st level is increased	Setting denoting which voltage of the counterblade motor is to be actuated in the 1st level. 0% ==> 0 volts 100 % ==> 12-14 volts (max. speed)



Parameter BiG X 600/I, 600-2, 700/I, 700-2, 700-3, 770-2 770-3, 850/I, 850-2, 850-3, 1100, 1100/I, 1100-2, 1100-3

## Deleted

No.	Designation	Rights	Min.	Max.	Default Unit	Reduce	Increase	Description
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32.3 **Appendix - Error Messages**

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
1	1 overvoltage - SmartDrive	Error: SmartDrive supply voltage too high.	The controller of the dynamo is defective	While engine is running, measure on batteries. Voltage must not be over 14.8V	Replace the dynamo
			Dynamo defective	Check the dynamo	Replace the dynamo
			Battery change-over relay defective (500, 800, and 1000)	Test function of the relays according to circuit diagram	Replace battery change-over relay
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
2	2 undervoltage - SmartDrive	Error: SmartDrive power supply voltage too low	SmartDrive power supply voltage too low	LED +22-LD31 not lit	Check fuse +22-F77
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD60 not lit	Check fuse +22-F60
				LED +22-LD11 not lit	Check fuse +22-F92
			Wiring defective	Check the cables.	Replace cabling
Battery dead	Measure battery voltage Check battery acid	Charge battery, change battery			

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3	3 Malfunction sensor volt 12V - SmartDrive	Error: 12 V sensor supply voltage too low	Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Charge indicator lamp defective	Check charge indicator lamp	Change charge indicator lamp
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
			12-sensors power supply too low	LED +22-LD31 not lit	Check fuse +22-F77
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
			Wiring defective	LED +22-LD11 not lit	Check fuse +22-F92
			Battery dead	Check the cables.	Replace cabling
			Short circuit in the wiring to a 12V sensor	Measure battery voltage Check battery acid	Charge battery Change battery
			Short circuit in a 12V sensor	Check wiring to the 12V sensors	Replace cabling
			Internal SmartDrive error	Check 12V sensors	Change 12V sensor
			See Remedial action	Replace SmartDrive	

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
4	4 Malfunction sensor volt 5V - SmartDrive	Error: 5 V sensor supply voltage too low	<p>5-sensors power supply too low</p> <p>Central electrical power supply voltage defective</p> <p>Wiring defective</p> <p>Battery dead</p> <p>Short circuit in the wiring to a 5V sensor</p> <p>Short circuit in a 5V sensor</p> <p>Internal SmartDrive error</p>	<p>LED +22-LD31 not lit</p> <p>LED +22-LD63 not lit</p> <p>LED +22-LD11 not lit</p> <p>Check the cables.</p> <p>Measure battery voltage</p> <p>Check battery acid</p> <p>Check wiring to the 5V sensors</p> <p>Check 5V sensors</p> <p>See Remedial action</p>	<p>Check fuse +22-F77</p> <p>Check fuse +22-F63</p> <p>Check fuse +22-F92</p> <p>Replace cabling</p> <p>Charge battery</p> <p>Change battery</p> <p>Replace wiring to the 5V sensors</p> <p>Change 5V sensors</p> <p>Replace SmartDrive</p>
8	8 Malfunction speed wheel rear right - SmartDrive	From the speed sensor in the hydraulic engine rear right, no signals can be detected	<p>No speed sensor is installed in the hydraulic engine rear right. However, a number of pulses is indicated as parameter 22049 \\\"number of pulses per revolution of the rear wheel\\\". If 0 pulses are indicated, this means that no wheel sensor is installed.</p>	<p>Maker certain a wheel sensor is installed rear right on the machine.</p>	<p>If no sensor is installed, the value 0 must be entered in the parameter 22049.</p>

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Cable harness defective	Check the power supply from the sensor. To do this, measure the voltage in plug XB90 from sensor B90 speed wheel with a multimeter. Contact 1 = + 12 V, contact 3 = earth. Voltage must be greater than 11 V.	Check the following steps; if they are not OK, replace the cable harness
			Sensor supply voltage from the wheel sensor defective	Check the wiring between sensor and control unit SmartDrive	Remedy the fault in the wiring or replace the cable harness
				Measure the power supply from the sensor directly on the control unit Voltage must be greater than 11 V	Check the following steps; if these steps are OK, replace control unit SmartDrive
				Disconnect all further sensors which are supplied via this sensor supply voltage and measure the sensor supply voltage directly on the control unit (pull the plug on the respective sensor). The following sensors are supplied via this supply voltage: -Service brake pressure (B16) -High pressure of front axle (B13) -Service brake switch (B40)	If OK, replace the appropriate sensor that is responsible for the short circuit.
				Check / measure the wiring of the sensor supply voltage for cable break / short circuit	Remedy the fault in the wiring or replace the wiring

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				Measure signal line in the cable harness between control unit and sensor for cable break / short circuit	Remedy the fault in the wiring or replace the cable harness
			Sensor defective	Install replacement sensor	Install new sensor
			Sensor input in SmartDrive defective	Install replacement SmartDrive	Install new SmartDrive
16	16 parameter set invalid - SmartDrive	Error: EEPROM checksum	No update of new parameters performed	Check software version	Load parameter file in SmartDrive
			Incorrect values in EEPROM	Check parameters	Load parameter file in SmartDrive
			EEPROM defective	See Remedial action	Replace SmartDrive
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
17	17 parameter value impermissible - SmartDrive	Error: MIN/MAX parameters	Incorrect parameter file downloaded	Check parameter file	Transfer parameter file onto Smart Drive

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Incorrect values in EEPROM	Check parameters	Transfer parameter file onto Smart Drive
			EEPROM defective	See Remedial action	Replace SmartDrive
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
18	18 internal Malfunction - SmartDrive	Error: EEPROM	EEPROM defective	See Remedial action	Replace SmartDrive
19	19 internal Malfunction - SmartDrive	Error: Digital Pot	Internal SmartDrive error	See Remedial action	Replace SmartDrive
20	20 internal Malfunction - SmartDrive	Error: EV DAC	Internal SmartDrive error	See Remedial action	Replace SmartDrive
21	21 internal Malfunction - SmartDrive	Error: I2C Bus	Internal SmartDrive error	See Remedial action	Replace SmartDrive
30	30 Malfunction control loop front axis pump 1 - SmartDrive	Error: Control loop for drive pump 1 front axle - Maximum speed of remaining pump possible	Short circuit/broken cable in wiring for pump valves Coil for solenoid valves defective	Check wiring to pump valves Test coil	Replace wiring Replace the solenoid valve



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
31	31 Malfunction control loop rear axis pump 2 - SmartDrive	Error: Control loop for drive pump 2 rear axle - Maximum speed of remaining pump possible	Adjusting unit defective	See Remedial action	Change adjusting unit
			The charge pressure is too low	Check charge pressure	Change charge pressure valve (30+/-3bar)
			The drive pump 1 is defective	Test function of drive pump	Replace the drive pump 1
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
			Valve plug defective	Check valve plug	Replace valve plug
			Short circuit/broken cable in wiring for pump valves	Check wiring to pump valves	Replace wiring to pump valves
			Valve plug defective	Check valve plug	Replace valve plug
			Coil for solenoid valves defective	Test coil	Replace coil
			Solenoid valve defective	See Remedial action	Replace the solenoid valve
			The charge pressure is too low	Check charge pressure	Change charge pressure valve (30+/-3bar)
			The drive pump 2 is defective	See Remedial action	Replace the drive pump 2

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
32	32 Malfunction swivel angle sensor B38 pump front axis SmartDrive	Error: Pivoting angle of drive pump 1 front axle - Signal out of range - Maximum speed of remaining pump possible	Internal SmartDrive error  Values incorrectly set  Calibration of the pivoting angle sensor not correct	See Remedial action  Run travelling gear diagnostics  Remeasure voltage in neutral position	Replace SmartDrive  Correctly set voltage values  Set the sensor pivoting angle. There must be a signal of approx. 2.5 volts present in neutral position
			Short circuit/broken cable in wiring for pivoting angle sensors	Check the wiring to the sensors for the pivoting angle	Replace wiring to the pivoting angle sensors
			Sensor plug for pivoting angle defective	Check sensor plugs	Replace sensor plug
			Pivoting angle sensor defective	Test voltage on the sensor	Replace and adjust the sensor pivoting angle. There must be a signal of approx. 2.5 volts present in neutral position
33	33 Malfunction swivel angle sensor B39 pump rear axis - Smart Drive	Error: Pivoting angle of drive pump 2 rear axle - Signal out of range - Maximum speed of remaining pump possible	Values incorrectly set  Calibration of the pivoting angle sensor not correct	Run travelling gear diagnostics  Measure voltage on the sensor	Correctly set voltage values  Set the sensor pivoting angle. There must be a signal of approx. 2.5 volts present in neutral position

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
34	34 swivel angle sensor B38 pump front axis signal change implausible - SmartDrive	Error: Pivoting angle of drive pump 1 front axle - Pivoting angle is changing too quickly - Maximum speed of remaining pump possible	Short circuit/broken cable in wiring for pivoting angle sensors	Check the wiring to the sensors for the pivoting angle	Replace wiring to the pivoting angle sensors
			Sensor plug for pivoting angle defective	Check sensor plugs	Replace sensor plug
			Pivoting angle sensor defective	Measure voltage on the sensor	Replace and adjust the sensor pivoting angle. There must be a signal of approx. 2.5 volts present in neutral position
			Values incorrectly set	Run travelling gear diagnostics	Correctly set voltage values
			Dirt in the hydraulics (actuator valves, for example)	Check hydraulics for contamination	Remove dirt
			Calibration of the pivoting angle sensor not correct	Measure voltage in neutral position	Set the sensor pivoting angle. There must be a signal of approx. 2.5 volts present in neutral position
			Short circuit/broken cable in wiring for pivoting angle sensors	Check the wiring to the sensors for the pivoting angle	Replace wiring to the pivoting angle sensors
			Sensor plug for pivoting angle defective	Check sensor plugs	Replace sensor plug
			Pivoting angle sensor defective	Measure voltage on the sensor	

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
35	35 swivel angle sensor B39 pump rear axis signal change implausible - SmartDrive	Error: Pivoting angle of drive pump 2 rear axle - Pivoting angle is changing too quickly - Maximum speed of remaining pump possible	<p>Values incorrectly set</p> <p>Dirt in the hydraulics (actuator valves, for example)</p> <p>Calibration of the pivoting angle sensor not correct</p> <p>Short circuit/broken cable in wiring for pivoting angle sensors</p> <p>Sensor plug for pivoting angle defective</p> <p>Pivoting angle sensor defective</p>	<p>Run travelling gear diagnostics</p> <p>Check hydraulics (e.g. actuator valves) for contamination</p> <p>Measure voltage in neutral position</p> <p>Check the wiring to the sensors for the pivoting angle</p> <p>Check sensor plugs</p> <p>Measure voltage on the sensor</p>	<p>Replace and adjust the sensor pivoting angle. There must be a signal of approx. 2.5 volts present in neutral position</p> <p>Correctly set voltage values</p> <p>Remove dirt</p> <p>Set the sensor pivoting angle. There must be a signal of approx. 2.5 volts present in neutral position</p> <p>Replace wiring to the pivoting angle sensors</p> <p>Replace sensor plug</p> <p>Replace and adjust the sensor pivoting angle. There must be a signal of approx. 2.5 volts present in neutral position</p> <p>Correctly set voltage values</p>
36	36 brake pressure sensor B16 and brake pedal switch B40 signal change implausible - SmartDrive	Error: Brake pressure sensor - For road travel: Maximum speed / 4	Values incorrectly set	Run travelling gear diagnostics	Correctly set voltage values

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Brake pedal switch not adjusted	See Remedial action	Adjust brake pedal switch so that the switching of the brake pedal switch is within a range of 70 - 90 bar brake pressure; observe installation distance!
			Short circuit / broken cable in wiring for brake pressure sensor, brake pedal switch	Check the wiring to the sensors for the brake pedal sensor and brake pedal switch	Replace wiring to the sensors for the brake pressure sensor and brake pedal switch
			Sensor plug for brake pressure sensor, brake pedal switch defective	Check sensor plugs	Replace sensor plug
			Brake pedal switch defective	See Remedial action	Change and adjust brake pedal switch so that the switching of the brake pedal switch is within a range of 70 - 90 bar brake pressure; observe installation distance!
			Brake pressure sensor defective	Test function of sensor	Replace the brake pressure sensor
			Brake pressure defective	Check brake pressure	Set brake pressure
			Internal SmartDrive error	See Remedial action	Replace SmartDrive

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
37	37 pump speed/diesel motor speed too low - SmartDrive	Error: Pump speed too slow	Engine speed too low Internal error KMC3 Internal SmartDrive error	Check engine speed See Remedial action See Remedial action	Set engine speed Replace the KMC3 Replace SmartDrive
38	38 brake tank pressure B18 too low - SmartDrive	Error: Brake tank pressure too low - For road travel: Maximum speed / 4	The brake tank pressure is too low Values incorrectly set Accumulator charging valve defective Accumulator defective	See Remedial action Run travelling gear diagnostics Check valve See Remedial action	Start diesel engine so that the accumulator is filled Correctly set voltage values Replace accumulator charging valve Replace accumulator
			Short circuit/broken cable in wiring for brake tank pressure sensor Sensor plug for brake tank pressure defective	Check the wiring to the brake tank pressure sensor Check sensor plugs	Replace wiring to the brake tank pressure sensor Replace sensor plug
			Sensor for brake tank pressure defective	See Remedial action	Replace brake tank pressure sensor
			Internal SmartDrive error	See Remedial action	Replace SmartDrive

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
39	Malfunction CAN1 communication - SmartDrive	Error: CAN bus communication	SmartDrive power supply defective	LED +22-LD31 not lit	Check fuse +22-F77
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
			Short circuit/broken cable in the wiring for the CAN1 bus	LED +22-LD11 not lit	Check fuse +22-F92
			CAN1 terminating resistors defective	Check wiring	Replace wiring
			Joystick power supply defective	Check wiring and terminating resistors	Replace terminating resistors
			Internal joystick error	Check fuse +22-F65	Replace fuse +22-F65
			KMC3 power supply defective	See Remedial action	Replace joystick
				LED +22-LD62 not lit	Check fuse +22-F62
				LED +22-LD11 not lit	Check fuse +22-F92
				LED +22-LD44 not lit	Check fuse +22-F44
	Internal error KMC3	See Remedial action	Replace the KMC3		
	Internal SmartDrive error	See Remedial action	Replace SmartDrive		

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
40	40 Malfunction high press.sensor B13 - SmartDrive	Error: High pressure sensor - signal out of range	<p>Short circuit/broken cable in the wiring for the high pressure sensor</p> <p>Sensor plug, high pressure - defective</p> <p>High pressure sensor defective</p> <p>High pressure incorrect</p> <p>Internal SmartDrive error</p>	<p>Check wiring to high pressure sensor</p> <p>Check sensor plugs</p> <p>Measure voltage on the sensor</p> <p>Check high pressure (420 bar)</p> <p>See Remedial action</p>	<p>Replace wiring to high pressure sensor</p> <p>Replace sensor plug</p> <p>Replace high-pressure sensor</p> <p>If required, re-adjust high pressure</p> <p>Replace SmartDrive</p>
42	42 park brake active - SmartDrive	Error: Attempt to move against the parking brake	<p>Parking brake switch is actuated</p> <p>Short circuit in the wiring of the switch</p> <p>Parking brake switch defective</p> <p>Broken cable in the wiring bridge of the parking brake pressure input at the SmartDrive</p>	<p>Check whether parking brake is actuated</p> <p>Check fuse +22-F72.1</p> <p>Check the wiring to the parking brake switch</p> <p>Remeasure whether switch actuates</p> <p>Check wiring bridge at the parking brake pressure input</p>	<p>Switch off the parking brake switch</p> <p>Replace fuse +22-F72.1</p> <p>Replace wiring to the parking brake switch</p> <p>Replace parking brake switch</p> <p>Replace wiring bridge at the parking brake pressure input</p>



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
43	43 charge pressure too low - SmartDrive	Error: The charge pressure is too low	Internal SmartDrive error  No engine speed or speed too slow  Hydraulic leakage  Supply pump defective  Supply pressure valve defective	See Remedial action  Check engine speed  Check hydraulics for leaks  Test charge pressure  Test function of charge pressure valve	Replace SmartDrive  Start engine or increase speed  Repair the leakage  Change charge pump (30+/-3bar)  Replace the supply pressure valve
44	44 oil temp too high B14 - Smart Drive	Error: Oil temperature too high - For road travel: Maximum speed / 1,5	Short circuit/broken cable in the wiring for the supply pressure sensor  Internal SmartDrive error  Hydraulic oil too hot  Short circuit/broken cable in wiring for the temperature sensor flush valve  Flush valve temperature sensor defective	Check the wiring for the temperature sensor flush valve  See Remedial action  Check that radiator is clean  Check the wiring for the temperature sensor flush valve  Check flush valve temperature sensor	Replace wiring for the flush valve temperature sensor  Replace SmartDrive  Clean the radiator  Replace wiring for the flush valve temperature sensor  Replace the temperature sensor flush valve

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
45	45 release travelling gear S3 missing - SmartDrive	Error: Attempt to move without travelling gear release - Maximum speed possible	Internal SmartDrive error	See Remedial action	Replace SmartDrive
			Release travelling gear switch is not actuated	Check travelling gear release switch	Switch on the travelling gear switch
			Short circuit/broken cable in the wiring of the switch	Check the wiring to the release travelling gear switch	Replace wiring to the travelling gear release switch
46	46 Valve coil Y1 Malfunction pump 1 front axis - SmartDrive	Error: Coil 1, pump 1	Release travelling gear switch defective	Check the LED +22-LD43 on the relay board	Replace release travelling gear switch
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
			Short circuit/broken cable in wiring for coil	Check wiring to valve	Replace wiring to valve
47	47 Valve coil Y2 Malfunction pump 1 front axis - SmartDrive	Error: Coil 1, pump 2	Coil defective	Check coil	Replace coil
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
			Short circuit/broken cable in wiring for coil	Check wiring to valve	Replace wiring to valve

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Coil defective	Test coil	Replace coil
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
48	48 Valve coil Y3 Malfunction pump 2 rear axis - SmartDrive	Error: Coil 1, pump 2	Short circuit/broken cable in wiring for coil	Check the cables.	Replace wiring to valve
			Coil defective	Test coil	Replace coil
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
49	49 Valve coil Y4 Malfunction pump 2 rear axis - SmartDrive	Error: Coil 2, pump 2	Short circuit/broken cable in wiring for coil	Check wiring to valve	Replace wiring to valve
			Coil defective	Test coil	Replace coil
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
50	50 Malfunction joystick - SmartDrive joystick error	Error: Driving lever - Signal incorrect/faulty - Maximum speed / 4	Joystick power supply defective	Check fuse + 22-F57	Replace fuse +22-F57
				Check fuse + 22-F65	Replace fuse +22-F65
			Central electrical power supply defective.	LED +22-LD63 not lit	Check fuse +22-F63

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				LED +22-LD11 not lit	Check fuse +22-F92
			Driving lever defective	Test functions of the driving lever	Replace driving lever
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
60	60 Valve coil Y1 current implaus.pump 1 front axis - SmartDrive	Error: actuator valve 1 drive pump 1 - Maximum speed of remaining pump possible	Short circuit/broken cable in the wiring for actuator valve 1 pump 1 Valve plug defective	Check wiring to actuator valve 1 pump 1 Check valve plug	Replace wiring to actuator valve 1 pump 1 Replace valve plug
			Coil for solenoid valves defective	Test coil	Replace coil
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
61	61 Valve coil Y2 current implaus.pump 1 front axis - SmartDrive	Error: actuator valve 2 drive pump 1 - Maximum speed of remaining pump possible	Short circuit/broken cable in the wiring for actuator valve 2 pump 1 Valve plug defective	Check wiring to actuator valve 2 pump 1 Check valve plug	Replace wiring to actuator valve 2 pump 1 Replace valve plug
			Coil for solenoid valves defective	Test coil	Replace coil
			Internal SmartDrive error	See Remedial action	Replace SmartDrive

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
62	62 Malfunction valve coil Y69 stop valve pump 1 front axis - SmartDrive	Error: Stop valve for drive pump 1 - Front axle - Maximum speed of remaining pump possible	Short circuit/broken cable in the wiring for stop valve pump 1	Check wiring to stop valve for pump 1	Replace wiring to stop valve for pump 1
			Valve plug defective	Check valve plug	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
63	63 Valve coil Y3 current implausible pump 2 rear axis - SmartDrive	Error: actuator valve 1 drive pump 2 - Maximum speed of remaining pump possible	Short circuit/broken cable in the wiring for actuator valve 1 pump 2	Check wiring to actuator valve 1 pump 2	Replace wiring to actuator valve 1 pump 2
			Valve plug defective	Check valve plug	Replace valve plug
			Coil for solenoid valves defective	Test coil	Replace coil
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
64	64 Valve coil Y4 current implausible pump 2 rear axis - SmartDrive	Error: actuator valve 2 drive pump 2 - Maximum speed of remaining pump possible	Short circuit/broken cable in the wiring for actuator valve 2 pump 2	Check wiring to actuator valve 2 pump 2	Replace wiring to actuator valve 2 pump 2
			Valve plug defective	Check valve plug	Replace valve plug

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
65	65 Malfunction valve coil Y70 stop valve pump 2 rear axis - SmartDrive	Error: Stop valve for drive pump 2 - Rear axle - Maximum speed of remaining pump possible	Coil for solenoid valves defective Internal SmartDrive error Short circuit/broken cable in the wiring for stop valve pump 2 Valve plug defective Coil for solenoid valve defective Internal SmartDrive error	Test coil See Remedial action Check wiring to stop valve for pump 2 Check valve plug Test coil See Remedial action	Replace coil Replace SmartDrive Replace wiring to stop valve for pump 2 Replace valve plug Replace coil Replace SmartDrive

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
70	70 Malfunction seat switch - SmartDrive	<p>The control unit for the traction drive (SmartDrive) has detected a cable break or a short circuit on the diagnostics-capable seat switch. If the voltage from seat switch is between 0 - 1.2 volts, a cable break is detected. If the voltage from seat switch is between 3.8 - 5 volts, a short circuit is detected. The faulty voltage must be present for at least 0.5 seconds before the error message is displayed.</p> <p>Voltage between 1.2 volts - 2.2. Volts ==&gt; Driver on the seat</p> <p>Voltage between 2.8 - 3.8 volts ==&gt; No driver on the seat</p> <p>Voltage between 2.2 volts - 2.8 volts ==&gt; Undefined area</p> <p>If the fault has occurred, the traction drive changes to Limp mode and only limited driving is possible</p> <p>Road operation max. 25 km/h Field mode max. 5 km/h.&lt;br /&gt;The diagnostics-capable seat switch is installed on BiG X 700, 850 and 1100.</p>	<p>Parameter for the setting for the seat switch installed is wrongly indicated</p> <p>Seat switch defective</p> <p>Wiring to the seat switch defective</p>	<p>Check parameter "33659 \\"Seat switch hardware\\" in the parameter group \\"General work."</p> <p>Check the seat switch in the diagnostics of the terminal</p> <p>Measure the resistance from the seat switch with multimeter</p> <p>Measure resistance from seat switch with multimeter on the plug from seat between contact 21X1.12 (earth) and 21X1.11 (+5 V). Driver on the seat = seat switch closed = 1.5 kilohm No driver on the seat = seat switch open = 3 kilohm</p> <p>Check seat switch with diagnostics in the terminal</p> <p>Measure wiring from seat switch to control unit from traction drive and KMC3 with multimeter for cable break and short circuit</p>	<p>Adapt the parameter accordingly.  Note: On machine with a new cabine, a diagnostics-capable seat switch is installed.</p> <p>See next check</p> <p>Replace seat switch and/or wiring in the seat</p> <p>Replace wiring in the seat</p> <p>Replace seat switch</p> <p>Replace wiring</p> <p>See next check</p> <p>Remedy the fault in the wiring or replace the cable harness</p>

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
71	71 Seat switch value implausible - SmartDrive	<p>The seat switch is parallelly evaluated by the control unit for the traction drive (SmartDrive) and by the control unit KMC3. These two states are compared by the traction drive. If the state is not the same for more than 3 seconds, this fault is shown. If the error has occurred, the traction drive changes to Limp mode and only limited driving is possible                      Road operation max. 25 km/h                      Field operation max. 5 km/h.</p>			
			SmartDrive defective	Install replacement SmartDrive	Replace SmartDrive
			KMC3 defective	Install replacement KMC3	Install new KMC3
			The parameter 33659 \\\\\"Seat switch hardware\\\\\\" for the setting for the seat switch installed is wrongly indicated.	<p>Check parameter 33659 \\\\\"Seat switch hardware\\\\\\" in the parameter group \\\\\"General work.</p> <p>Note: On machines with new cab, a diagnostics-capable seat switch is installed.                      0 = closer                      1 = diagnostics-capable 5 volts (new cab Poclain traction drive)                      2 = diagnostics-capable 10 volts (new cab Bosch traction drive)</p>	Adapt the parameter accordingly.
			Wiring defective	Measure wiring of the seat switch to SmartDrive and KMC3 with multimeter for cable break and short circuit	Remedy the fault in the wiring or replace the cable harness



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			SmartDrive defective	Install replacement SmartDrive	Install new SmartDrive
			KMC3 defective	Install replacement KMC3	Install new KMC3
95	95 foot brake permanent activated / Malfunction brake pressure sensor B16 - SmartDrive	Error: Brake valve	Brake was applied continuously (for example braking pressure greater than 10 bar and longer than 3 min; terminal version 150200104-13 or later: braking pressure greater than 5 bar)	See Remedial action	Remove foot from the brake
			Brake valve defective or jammed	Check brake valve	Replacing the Brake Valve
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
96	96 Malfunction CAN1 between terminal and SmartDrive / DRC	Error: CAN bus communication - SmartDrive to terminal.	Determine via the terminal	Perform CAN diagnostics.	
			Control unit not programmed	In the menu - Info software versions - check the software version of the control units	Program control unit
			SmartDrive power supply defective	LED +22-LD31 not lit	Check fuse +22-F77
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				LED +22-LD11 not lit	Check fuse +22-F92
			Safety output for travelling gear of KMC3 defective	LED+22-LD102 not lit	Check the safety output of KMC3 (output is always active with engine shut off) and check wiring
			Life signal from SmartDrive faulty	LED +22-LD116 not flashing	Check the SmartDrive power supply and check wiring
			Short circuit/broken cable in the wiring for the CAN1 bus	Check wiring	Replace wiring
			CAN1 terminating resistors defective	Check wiring and terminating resistors	If required, replace wiring and terminating resistors
			Old software version on KMC3. Up to KMC3 software version 150 200 103 - 08 the error 96 can be caused by an error in the KMC3 software.	Have software versions displayed on the terminal and compare.	Load current software version.
			In some cases an incorrect CAN configuration from the autopilot may be the cause. The hardware does not match the autopilot autopilot software and sporadically causes this and /or other CAN error messages	If the serial number of the hardware autopilot is greater than 13.154157.1022 the autopilot software version must be at least 150200029-20	If necessary, update the software version of the autopilot
			Internal SmartDrive error	See Remedial action	Replace SmartDrive



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
98	98 Unknown error - SmartDrive	Error: Internal error in SmartDrive	Internal error in SmartDrive	See Remedy	Replace SmartDrive
113	113 Undervoltage 12V - joystick	Error: 12 V supply voltage too low	Determine via the terminal	Perform joystick diagnostics	
			Joystick power supply voltage too low	Check fuse +22-F57	Replace fuse +22-F57
				Check fuse +22-F65	Replace fuse +22-F65
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD11 not lit	Check fuse +22-F92
			Wiring defective	Check the cables.	Replace cabling
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Charge indicator lamp defective	Check charge indicator lamp Check the cables.	Replace charge indicator lamp, renew cabling
			Dynamo defective	Test dynamo	Replace the dynamo
			Internal joystick error	See Remedial action	Replace joystick

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
114 	114 Overvoltage 12V - joystick	Error: 12 V supply voltage too high	Determine via the terminal  The controller of the dynamo is defective  Dynamo defective  Battery change-over relay defective (500, 800, and 1000)  Internal joystick error	Perform joystick diagnostics  While engine is running, measure on batteries. Voltage must not be over 14.8V  Check the dynamo  Test function of the relays according to circuit diagram  See Remedial action	Replace the dynamo  Replace the dynamo  Replace battery change-over relay  Replace joystick
115 	115 Undervoltage 8V - joystick	Error: 8.5 V joystick supply voltage too low	Determine via the terminal  Joystick power supply voltage too low  Central electrical power supply voltage defective  Battery dead	Perform joystick diagnostics  Check fuse +22-F57  Check fuse +22-F65  LED +22-LD63 not lit  LED +22-LD11 not lit  Check battery acid Check battery voltage	Replace fuse +22-F57  Replace fuse +22-F65  Check fuse +22-F63  Check fuse +22-F92  Charge battery Change battery




# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Charge indicator lamp defective	Check charge indicator lamp Check the cables.	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Test dynamo	Replace the dynamo
			Internal joystick error	See Remedial action	Replace joystick
116	116 Malfunction Button voltage 12V - joystick	Error: 12 volt button voltage - voltage out of range	Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Charge indicator lamp defective	Check charge indicator lamp Check the cables.	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Test dynamo	Replace the dynamo
			Internal joystick error	See Remedial action	Replace joystick
117	117 Malfunction Voltage supply LED - joystick	Error: 12 volt supply voltage LED out of range	Determine via the terminal	Perform joystick diagnostics	
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Charge indicator lamp defective	Check charge indicator lamp Check the cables.	If required, replace charge indicator lamp and/or Replace cabling

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
118 	118 Malfunction Voltage supply outputs - joystick	Error: 12 volt supply voltage for outputs - voltage out of range	Dynamo defective Internal joystick error	Test dynamo See Remedial action	Replace the dynamo Replace joystick
119 	119 Internal Malfunction - joystick	Error: Min/Max parameters	Battery dead Charge indicator lamp defective Dynamo defective Internal joystick error	Check battery acid Check battery voltage Check charge indicator lamp, Check the cables. Test dynamo See Remedial action	Charge battery Change battery If required, replace charge indicator lamp and/or renew cabling Replace the dynamo Replace joystick
120 	120 Internal Malfunction - joystick	Error: FLASH checksum	Incorrect values in EEPROM EEPROM defective EEPROM defective Download was interrupted	See Remedial action See Remedial action See Remedial action See Remedial action	Replace joystick Replace joystick Repeat download

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			FLASH defective	See Remedial action	Replace joystick
			Internal joystick error	See Remedial action	Replace joystick
121	121 Internal Malfunction - joystick	Error: Internal fault in the joystick	Internal fault in the joystick	See Remedy	Replace joystick
				Siehe Abhilfe	Joystick tauschen
					Es wurde KEINE Taste vom Fahrer betätigt, die Fehlermeldung erscheint jedoch nach jedem Neustart der Maschine ==> Fahrhebel tauschen
				Fehlercode: 0000 0200: ==> Uebertemperatur. Die interne Temperatur im Joystick ist > 80°C	Die Umgebungstemperatur ist auch > 75° C ==> Kabine abkuehlen lassen und Maschine neu starten
					Es sind
				Fehlercode: 0000 0200: ==> CAN BusOff	Maschine neustarten
					CAN-Verkabelung kontrollieren

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				Fehlercode: 0000 2000: ==> Restart durch Watchdog ==> Joystick wurde nicht ordnungsgemaess ausgeschaltet. Z.B. bei eingeschalteter Zuendung den Batteriehaupschalter ausgeschaltet.	Joystick tauschen  Bei eingeschalteter Zuendung wurde der Batteriehaupschalter ausgeschaltet ==> Neustart der Maschine  Wackelkontakt in der Spannungsversorgung vom Joystick ==> Verkabelung und Spannungsversorgung vom Joystick kontrollieren  Interner Fehler im Joystick ==> Joystick tauschen
124	124 Undervoltage 12V - CU	Error: 12 V supply voltage too low	Determine via the terminal	Perform operating panel diagnostics	
			Power supply for operating panel too low	Check fuse + 22-F47	Replace fuse +22-F47
				Check fuse + 22-F48.1	Replace fuse +22-F48.1
			Central electrical power supply voltage defective	LED +22-LD62 not lit	Check fuse +22-F62
				LED +22-LD64 not lit	Check fuse +22-F64





# Error descriptions BiG X 600-1100+750C




Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
125	125 Overvoltage 12V - CU	Error: 12 V supply voltage too high	<p>Wiring defective</p> <p>Battery dead</p> <p>Charge indicator lamp defective</p> <p>Dynamo defective</p> <p>Internal error, operating panel</p>	<p>Check the cables.</p> <p>Check battery acid Check battery charge</p> <p>Check the charge indicator lamp, check the wiring</p> <p>Check the dynamo</p> <p>See Remedial action</p> <p>Perform operating panel diagnostics</p> <p>While engine is running, measure on batteries. Voltage must not be over 14.8V</p> <p>Check the dynamo</p> <p>Test function of the relays according to circuit diagram</p> <p>See Remedial action</p>	<p>Replace cabling</p> <p>Charge battery Replace battery</p> <p>Replace charge indicator lamp, if required also replace cabling</p> <p>Replace the dynamo</p> <p>Replace operating panel</p> <p>Replace the dynamo</p> <p>Replace the dynamo</p> <p>Replace battery change-over relay</p> <p>Replace operating panel</p>






# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
126 	126 Undervoltage 5V electronics - CU	Error: 5 V electronics supply voltage too low	Determine via the terminal  Battery dead  Charge indicator lamp defective  Dynamo defective  Internal error, operating panel	Perform operating panel diagnostics  Check battery acid Check battery voltage  Check the charge indicator lamp, check the wiring  Check the dynamo  See Remedial action	Charge battery Change battery  Replace charge indicator lamp  Replace the dynamo  Replace operating panel
127	127 Overvoltage 5V electronics - CU	Error: 5 V electronics supply voltage too high	Determine via the terminal  The controller of the dynamo is defective  Dynamo defective  Battery change-over relay defective (500, 800, and 1000)  Internal error, operating panel	Perform operating panel diagnostics  While engine is running, measure on batteries. Voltage must not be over 14.8V  Check the dynamo  Test function of the relays according to circuit diagram  See Remedial action	Replace the dynamo  Replace the dynamo  Replace battery change-over relay  Replace operating panel


# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
129 	129 Voltage 12V LEDs too high - CU	Error: 12 V LED supply voltage too high	Determine via the terminal  The controller of the dynamo is defective  Battery change-over relay defective (500, 800, and 1000)  Internal error, operating panel	Perform operating panel diagnostics  While engine is running, measure on batteries. Voltage must not be over 14.8V  Test function of the relays according to circuit diagram  See Remedial action	Replace the dynamo  Replace battery change-over relay  Replace operating panel
130 	130 Parameter value imperm. - CU	Error: Min/Max parameters	Incorrect values in EEPROM  EEPROM defective  Internal error, operating panel	Check parameters  See Remedial action  See Remedial action	Set parameters  Replace CU  Replace operating panel
131 	131 Internal Malfunction - CU	Error: FLASH checksum	Download was interrupted  FLASH defective  Internal error, operating panel	Check whether the download is complete  See Remedial action  See Remedial action	Repeat download  Replace CU  Replace operating panel



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
132 	132 Key actuated / Malfunction keyboard console - CU	Error: Keyboard error (at least one key is pressed continuously)	Keyboard defective Internal error, operating panel	at least one key is pressed continuously See Remedial action	Replace keyboard Replace operating panel
135 	135 Undervoltage 12V - manual operation	Error: 12 V supply voltage too low	Power supply voltage for manual operation too low Central electrical power supply voltage defective Wiring defective Battery dead Charge indicator lamp defective Dynamo defective Internal error, manual operation	Check fuse + 22-F56 LED +4-LD33 not lit LED +22-LD63 not lit LED +22-LD11 not lit Check the cables. Check battery acid Check battery voltage Check the charge indicator lamp, check the wiring Test dynamo See Remedial action	Change fuse +22-F56 Check fuse +4-F33 Check fuse +22-F63 Check fuse +22-F92 Replace cabling Charge battery Change battery If required, replace charge indicator lamp and/or renew cabling Replace the dynamo Replace manual operation



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
136 	136 Overvoltage 12V - manual operation	Error: 12 V supply voltage too high	The controller of the dynamo is defective  Dynamo defective  Battery change-over relay defective (500, 800, and 1000)  Internal error, manual operation	While engine is running, measure on batteries. Voltage must not be over 14.8V  Test dynamo  Test function of the relays according to circuit diagram  See Remedial action	Replace the dynamo  Replace the dynamo  Replace battery change-over relay  Replace manual operation
137 	137 Internal voltage 5V too low - manual operation	Error: 5 V voltage too low	Determine via the terminal  Battery dead  Charge indicator lamp defective  Dynamo defective  Internal error, manual operation	Perform diagnostics for manual operation  Check battery acid Check battery voltage  Check charge indicator lamp Check the cables.  Test dynamo  See Remedial action	Charge battery Change battery  If required, replace charge indicator lamp and/or renew cabling  Replace the dynamo  Replace manual operation

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
138 	138 Internal voltage 5V too high - manual operation	Error: 5 V voltage too high	Determine via the terminal  The controller of the dynamo is defective  Dynamo defective  Battery change-over relay defective (500, 800, and 1000)  Internal error, manual operation	Perform diagnostics for manual operation  While engine is running, measure on batteries. Voltage must not be over 14.8V  Test dynamo  Test function of the relays according to circuit diagram  See Remedial action	Replace the dynamo  Replace the dynamo  Replace battery change-over relay  Replace manual operation
139 	139 Supply voltage LEDs too low - manual operation	Error: 12 V voltage for LEDs too low	Power supply voltage for 12 V LEDs too low  Central electrical power supply voltage defective  Wiring defective  Battery dead	Check fuse +22-F56  LED +4-LD33 not lit  LED +22-LD63 not lit  LED +22-LD11 not lit  Check the cables.	Change fuse +22-F56  Check fuse +4-F33  Check fuse +22-F63  Check fuse +22-F92  Replace cabling




# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				Check battery acid Check battery voltage	Charge battery Change battery
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Test dynamo	Replace the dynamo
			Internal error, manual operation	See Remedial action	Replace manual operation
140	140 Supply voltage LEDs too high - manual operation	Error: 12 volt voltage for LEDs too high	The controller of the dynamo is defective	While engine is running, measure on batteries. Voltage must not be over 14.8V	Replace the dynamo
			Dynamo defective	Test dynamo	Replace the dynamo
			Battery change-over relay defective (500, 800, and 1000)	Test function of the relays according to circuit diagram	Replace battery change-over relay
			Internal error, manual operation	See Remedial action	Replace manual operation
141	141 Parameter value impermissible - manual operation	Error: Min/Max parameters	Incorrect values in EEPROM	Check parameters	Update parameters
			EEPROM defective	See Remedial action	Replace manual operation

# Error descriptions BiG X 600-1100+750C






Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
142	142 Internal Malfunction - manuel operation 	Error: FLASH checksum	Internal error, manual operation Download was interrupted FLASH defective	See Remedial action See Remedial action See Remedial action	Replace manual operation Repeat download Replace manual operation
143	143 Key actuated / Malfunction keyboard or external key - manuel operation 	Error: Keyboard error (at least one key is pressed continuously)	Internal error, manual operation Keyboard defective	See Remedial action Check keyboard	Replace manual operation Replace manual operation
150	150 Button pressed / keyboard malfunction - Joystick 	When switching on the ignition, a keypress has been detected on the joystick.	The driver has accidentally pressed a key on the joystick. Key sticks mechanically or a short circuit from the key is internally available	Restart the machine without a key being activated by the driver. Check each key from the joystick in the terminal in the joystick diagnostics to make certain whether the key changes the status in the display when pressing.	Restart the machine Replace the joystick if a button has always the status ON and if this status does not change when it is activated.






# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
151 	151 Overtemperature - Joystick	The internal temperature from the joystick was higher than 80°C for 5 seconds. The error will be reset if the temperature is below 78°.	Overheating of the joystick due to direct sunlight.  Internal error joystick	See remedy	Cool off the joystick and restart the machine  Replace joystick
152 	152 CAN bus malfunction - Joystick	The joystick has detected an error on CAN bus	Determination via terminal  Short circuit/cable break in the wiring CAN1 bus  CAN1 terminating resistors defective  In some cases an incorrect CAN configuration from the autopilot may be the cause. The hardware does not match the autopilot autopilot software and sporadically causes this and /or other CAN error messages	Perform CAN and joystick diagnostics  Check wiring  Check wiring and terminating resistors	Replace the wiring  Replace wiring and/or terminating resistors, if necessary  If necessary, update the software version of the autopilot
153 	153 LIN bus malfunction - Joystick	The joystick has detected an error on the internal LIN bus.	Internal error joystick	See remedy	Replace joystick  Restart the machine




# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
154 	154 Internal malfunction - Joystick	Der Joystick hat einen internen Fehler im Joystick erkannt	Interne Stoerung im Joystick		Replace joystick Maschine neu starten Joystick tauschen Joystick tauschen
155 	155 Joystick restart by Watchdog	The joystick has been switched off unexpectedly, e. g. by switching off the machine with switched on ignition or due to an internal error in the joystick	Machine has been switched off by the main battery switch as well as by ignition stage 1 or 2 turned on  Internal fault in the joystick		Switch off and switch on the machine via ignition lock  Install the current software for the joystick again Replace joystick
502 	Instantaneous stop switch console	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			




# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
505 	Instantaneous stop switch manuell controll	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			
508 	Release switch Maintenance	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			
511 	Release switch Road/Field!	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			




# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
512 	Release switch feed drive / front attachment!	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			
514 	Release switch Transmission!	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			
517 	Release switch AutoPilot!	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			




# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
520 	Switch axis seperation!	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			
521 	Release switch all-wheel!	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			
522 	Release switch 2nd Diesel engine!	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			


# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
523 	release switch Parking brake!	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			
524 	Machine driving!	The vehicle is moving or standing. In order to start the desired function the machine must, however, stand when it is still driving, or drive when it is still standing.			
526	Cruise control active!				
527 	Driver NOT on seat!	The seat switch has a wrong position in order to start the desired function. In case the switch is activated (driver on the seat), it must not be activated to start the function. In case the switch is not activated (driver not on the seat), it must be accordingly activated.			




# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
528	Press break pedal!	The brake pedal must be pressed for the requested function!	Brake pedal not pressed	See Remedy	Press the brake pedal
529	Door OPEN! 	The accordant switch (door switch) has a wrong position in order to start the desired function. In case the switch is activated (door closed), it must not be activated to start the function (door open). In case the switch is not activated (door open), it must accordingly be activated (door closed).	Operating brake sensor (B40) not adjusted	Check setting of the sensor (B40)	Make adjustment
			Operating brake sensor (B40) faulty	Measure voltage on sensor (B40)	Replace operating brake sensor (B40)
530	Motor speed too low!	During cutting process, the engine speed has fallen below 1200 rpm. Feed drive / front attachment are switched off	Load of the engine is too strong		Reduce engine load

# Error descriptions BiG X 600-1100+750C







Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
531 	Engine NOT running!	The diesel engine is operating or not operating. In order to start the desired function the diesel engine must not be in operation or must be in operation. When diesel engine is turning, it must not be turning. When diesel engine is not turning, it must be turning.			
532 	Engine running!	The diesel engine is operating or not operating. In order to start the desired function the diesel engine must not be in operation or must be in operation. When diesel engine is turning, it must not be turning. When diesel engine is not turning, it must be turning.			
533 	Engine NOT low idle!	For starting the desired function the diesel engine must run with idle speed.			







# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
534 	Engine does not have any nominal rpm	In order to start the desired function the diesel engine must run with nominal speed (standard 2000 rpm).			
535 	Value out of range - set to minimum!	The changed parameter or setting value has been set under the minimum value. Therefore, the parameter or setting value has automatically been adjusted to the minimum limit value.			
536 	Value out of range - set to maximum!	The changed parameter or setting value has been set under the minimum value. Therefore, the parameter or setting value has automatically been adjusted to the minimum limit value.			
537 	Engine speed too high!	To start the desired function the engine speed is too high, so it can not be started.			






# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
538 	Position Saved	The desired position or value (e.g. cutting length #1 and #2 on the small joystick) has been saved.			
539 	Reset active faults!	An initialize operation was carried out (no significance for driver)			
540 	front attachment Control NOT Active	It has been tried to move the lifting gear manually or automatically. But the steering of the lifting gear (EMR) is not active, since the diesel engine is not running.	The error message appears despite the diesel engine running and a software update has been accomplished before.	see remedy	Restart the machine Lift the lifting gear manually.
541 	EMR Adjustment 1 (bottom position) OK	The adjustment/calibration 1 (position below) of the lifting gear has been successfully completed.			




# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
542 	EMR Adjustment 2 (Pressure lifting gear) OK	The adjustment/calibration 2 (pressure lifting gear when lifting gear is floating freely) of the lifting gear has been successfully accomplished for weight determination.			
543 	EMR Adjustment 3 (top position) OK	The adjustment/calibration 3 (top position) of lifting gear has been successfully accomplished.			
544 	Auto lifting gear Active	for the future			
545 	Distance Mode EMR active	for the future			
546 	Lifting gear too high	In order to start the desired function the position of the lifting gear is too high.			


# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
547 	Lifting gear too low	For starting the desired function the position of the lifting gear is too low			
548 	Distance Mode EMR deactivate	An error has been detected on the sensors of the header contour \\B47 and/or B48) or a front attachment without ground skids has been installed. Therefore, the function \\Header contour\\ can not be started from the lifting gear. In order that the errors are not being displayed anymore, the other control function (pressure regulation or position control) must be selected from the lifting gear.			
549 	Lifting gear position saved	The position of the lifting gear (top position, ground pressure, position below with position control or header contour) has been successfully saved and can afterwards be recalled.			

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
550 	Cutting drum stopped!	For starting the desired function the cutting drum must be running, but there was no speed detected on the cutting drum.			
551 	Cutting drum turning!	For starting the desired function the cutting drum must be at standstill, but it is still running.			
552	Check EMR adjustment!	Void values are saved for the calibration of the set front attachment.	EMR control unit exchanged	see remedy	Accomplish the adjustment 1 - 3 of the lifting gear again
			Front attachment exchanged and there has not been an adjustment for the new front attachment	see remedy	Accomplish adjustment 1 - 3 of the lifting gear with new front attachment
553	Invalid sensor/actuator value	The value of the sensor or one actuator are inadmissible	When calibrating the row sensor or the steering axle this note appears	The accordant sensor is displayed in the mask calibration autopilot of which the sensor value is inadmissible, because it has for example been installed in a wrong way.	Install the sensor according to the installation instructions and connect it electrically

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
554	Lifting gear position saved, set to minimum value!	for the future		The sensors of the row sensor left and right are interchanged connected to the cable harness	Exchange plugs on the sensors
555	Lifting gear position saved, set to maximum value!	for the future			
556	Engine protection mode active!	Diesel engine is in protective mode - speed is reduced	The engine oil level is too low	Check engine oil level	Refill engine oil
			The oil pressure is too low	Perform engine diagnostics	Consult KRONE Service
			Determined via the terminal	Perform engine diagnostics	
			Engine parameters not OK	Run diagnostics using the engine diagnostic device	Consult KRONE Service
557	Main clutch protection mode active!	For the future			



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
558	Begin reversing feed drive/front attachment	Information for the driver: reversing of feed drive and front attachment will start in a few seconds as the main belt must previously be released and the main coupling must be connected. Message is only displayed if the feed drive or the front attachment is reversed without cutting drum being activated. Reversing without cutting drum being activated is possible on machines with Bosch traction drive from YOM 2012.			
559	Overrun not yet complete!	After the function \"Reversing feed drive/front attachment without the cutting drum being activated\" has been exited, this function cannot be started again for 7 seconds. If the driver starts this function again, this information message is displayed. Wait for 7 seconds and start the function once again.			

# Error descriptions BiG X 600-1100+750C





Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
560 	Front attachment NOT Folded IN!	To start the desired function the front attachment must be folded in, but it is folded out	The front attachment is folded out	see remedy  The sensors B25 front attachment right and B55 front attachment left are defective or not properly adjusted so that the position can not be detected in a correct way. Check the conditions of the sensors in the diagnostics	Fold in front attachment  Reset the distance of the sensor, change sensor if necessary
561 	Front attachment NOT Folded OUT!	In order to start the desired function the front attachment must be folded out, but it is folded in	The front attachment is folded in	The front attachment is folded in  The sensors B25 front attachment right and B55 front attachment left are defective or not properly adjusted so that the position can not be detected in a correct way. Check the conditions of the sensors in the diagnostics	Fold out front attachment  Reset the distance of the sensor, change sensor if necessary
562	Lifting gear Raised!	In order to start the desired function the front attachment must be below or on top. In case the front attachment is below, the front attachment must be on top. In case the front attachment is on top, it must be located below.			






# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
563	Front attachment Lowered!	In order to start the desired function the front attachment must be below or on top. In case the front attachment is below, the front attachment must be on top. In case the front attachment is on top, it must be located below.			
564 	Front attachment NOT Turning!	To start the desired function the front attachment must be running or at standstill. When the front attachment is at standstill, the front attachment must run in order to start the function. When the front attachment is running, the front attachment must be at standstill in order to start the function.			
565 	front attachment IS Turning!	To start the desired function the front attachment must be running or at standstill. When the front attachment is at standstill, the front attachment must run in order to start the function. When the front attachment is running, the front attachment must be at standstill in order to start the function.			


# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
566 	Feed drive NOT Turning!	To start the desired function the front attachment must be running or at standstill. When the front attachment is at standstill, the front attachment must run in order to start the function. When the front attachment is running, the front attachment must be at standstill in order to start the function.			
567 	Feed drive IS Turning!	For starting the desired function the feed drive must be running or at a standstill. When the feed drive is at a standstill, the feed drive must be running in order to start the function. When the feed drive is running, the feed drive must be at standstill in order to start the function.			
568 	Pendulum Frame NOT Horizontal	For starting the desired function the pendulum frame must be horizontal, but the pendulum frame is not yet horizontal.	The pendulum frame is not horizontal	Position the pendulum frame horizontally  Check the calibration of the position "L" Pendulum frame horizontal" "	Position the pendulum frame horizontally  Accomplish calibration of pendulum frame

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				Check sensors	Set sensor correctly and accomplish calibration
					Exchange sensor
				The KMC3 unit has been exchanged and the pendulum frame has not been calibrated	Set sensor correctly and accomplish calibration
569	Calibrate feed drive/front attachment!	Feed drive and/or front attachment must be calibrated	An overspeed has been detected on the front attachment. Thus the front attachment must be recalibrated.	see error 2408	Carry out front attachment drive calibration
570 	Speed diesel engines not synchron.	When switching on the 2. diesel engine the speeds of engine1 and engine2 are identical, therefore the control unit was also not able to switch on the engine coupling	ADM of engine 1 or engine 2 defective	Check, if the speed of engine 1 can be readjusted?	Check the power supply of the ADM1 of engine 1
					Check CAN connection from control unit KMC3 to ADM of engine 1
					Check parameter of ADM or install again. ADM engine 1 and ADM engine 2 have separate parameters and can not be interchanged.
					Change ADM of engine 1.

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
					Change PLD of engine 1.
					Check CAN connection from ADM of engine 2 to the PLD of engine 2
				Check, if the speed of engine 2 can be readjusted?	Check the power supply of the ADM1 of engine 2
					Check CAN connection from control unit KMC3 to ADM of engine 2.
					Check CAN connection from ADM of engine 2 to the PLD of engine 2
					Check parameter of ADM or install again. ADM engine 1 and ADM engine 2 have separate parameters and can not be interchanged.
					Change ADM of engine 2.
					Change PLD of engine 2.

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
571	Check feed drive wiring! (Power suppression cutting drum active)	Feed drive wiring is not ok. Switch-on suppressor mechanism for blade drum is active!	Cables for feed drive not/incorrectly connected Plug for feed drive faulty	Check parameter for the actuation of the diesel engine Check wiring for feed drive Check plug for feed drive	Connect cables for feed drive Replace plug for feed drive
572	Engine clutch 2	For starting the desired function the diesel engine 2 must be coupled or uncoupled. When diesel engine 2 is coupled, it must be uncoupled in order to start the function. When diesel engine 2 is uncoupled, it must be coupled in order to start the function.	Cables for metal detection not connected	Check cables for metal detection	Replace cables for metal detection
			CAN connection KMC3 to KMC2	See error 2600 "CAN to KMC2"	
			KMC 3 has no CAN connection to metal sensor	See error 9924 "CAN to metal detection"	
			Internal error KMC2/3	See Remedy	Replace KMC2/3



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
573 	Download to EMR!	The control unit for the lifting gear control will be re-flashed. There is currently no download taking place on the EMR.			
574	Terminal Software inconsistent!!	The software versions of the single control units on the machine do not fit together. Malfunctions cannot be excluded.	A software version of a control unit is not up to date. Example: Software version 150 200 104-12 is on the terminal and version 150 200 102-10 is on control unit KMC2 and the version is on control unit KMC3. But the terminal expects in the terminal software version 150 200 104-12 the version 150 200 102-11 of KMC2 or 150 200 103-11 of KMC3.	Have the single software versions of the control units displayed in the mask \\\"Info Software-Versionen\\\"	The wrong software version of a control unit will be marked red. Flash the control unit with the according software version.

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
575	Drum prepared for connection, press key again for 2 seconds	<p>Emergency connection of the chopping drum. The chopping drum can only be connected in field mode if the software has detected an intake unit at the machine. Connection is enabled if:</p> <ul style="list-style-type: none"> <li>• a metal sensor has been detected on the CAN Bus</li> <li>• pressure is detected on the lifting unit or</li> <li>• at least one sensor has been detected without error by the header. If these conditions are not fulfilled, emergency connection of the main coupling is possible in maintenance mode. Perform emergency connection: • Switch on the "Maintenance" release switch. • Press and hold the key "Switch on main coupling" on the membrane keypad until message "575 drum prepared for connection" appears in the display. • Then release the main coupling ON key. • Then press the main coupling ON key for min. 2 seconds within the next 5 seconds, and the chopping drum rotates. The follow-up alarm is triggered during the entire emergency connection process. </li></ul>	<p>One of the connection conditions is not satisfied: • a metal sensor on the CAN Bus or • pressure is detected on the lifting unit • at least one sensor has been detected without error by the header.</p>		Restore connection condition

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure		
576	Header speed too low!	The measured header speed is too low for smooth operation.	The setpoint speed of the header is set too low	Check the target header speed in the terminal	Increase the header speed		
			Actual header speed is too low	Check the header speed without a load and at maximum engine speed.	Switch cutting disk drive in XCollect to quick switching level		
					Reduce driving speed		
					Reduce the load of the overall machine or the header.		
577	Feed drive/front attachment not reversed!	The intake / header must be reversed beforehand for the desired function to be performed.	Speed measurement is faulty	Check the header speed subject to loading.	- Check the charge pressure - Check the hydraulics - Check valve control		
			The intake / header has not yet been reversed or was not reversed for long enough.	Compare the actual speed against that measured by the KMC.	- Replace the speed sensor - Internal fault in the KMC = replace KMC		
578	Check VariLOC gearbox switch position!	The ratio of the measured speed on the chopping drum to the diesel motor speed does not match the setting of the VariLOC gearbox in the terminal.	The setting at the terminal does not concur with the mechanical position of the VariLOC gearbox.		Reverse intake / header		




# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				<p>Compare parameter 34025 with the set gearbox ratio.</p> <p>0=Automatic detection of gearbox position</p> <p>1=Gearbox position I gear ratio 1:1</p> <p>2=Gearbox position II gear ratio 1:1.5</p> <p>3=No VariLOC gearbox installed</p> <p>The drum has the following speeds at the rated speed:</p> <p>Chopping drum speed gearbox position I approx. 660-760 rpm (gear ratio 1:1)</p> <p>Chopping drum speed gearbox position II approx. 440 - 506 rpm (gear ratio 1:1.5)</p>	<p>Adjust the parameter or gearbox position according to the desired setting.</p>
579	Briefly lift the load from the seat!	Seat switch monitoring is integrated. At least a non-actuated seat switch must be detected within 24 hours.	The seat has not been left when the ignition has been started.	<p>Speed measurement of chopping drum faulty. Check the drum speed at the motor rated speed: Chopping drum gearbox position I approx. 660-760 rpm (gear ratio 1:1)</p> <p>Chopping drum gearbox position II approx. 440 - 506 rpm (gear ratio 1:1.5)</p>	<p>- Mount sensor correctly - Sensor defective = replace - Control unit defective = replace</p>



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
580 	Discharge chute in park position	For starting the desired function the current position of the discharge chute is faulty.	<p>Short circuit in seat switch</p> <p>The discharge chute is parked, but must not be in parking position</p>	<p>In the diagnostics in the terminal check whether the seat switch detects that there is no driver on the seat.</p> <p>Check if the discharge chute is in parking position.</p> <p>Check if discharge chute is in parking position.</p> <p>Check sensor B29 \\\"Discharge chute position below\\\"</p>	<p>- Check wiring - Replace seat switch - Check DRC input = replace DRC</p> <p>Lift the discharge chute all the way up so that it is no longer parking position.</p> <p>Move discharge chute to central position and put it all the way down</p> <p>Check sensor B29 in the mask \\\"Diagnostics discharge chute\\\"</p> <p>Set the sensor mechanically correct</p> <p>Check the sensor electrically</p> <p>Exchange sensor</p> <p>Exchange control unit KMC2</p>

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
581 	Discharge chute not parked!	For starting the desired function the current position of the discharge chute is faulty.	The discharge chute is parked, but must not be in parking position	Check if the discharge chute is in parking position.	Lift the discharge chute all the way up so that it is no longer parking position.
				Check if discharge chute is in parking position.	Move discharge chute to central position and put it all the way down
582 	Discharge chute not at top!	For starting the desired function the current position of the discharge chute is faulty.	The discharge chute is parked, but must not be in parking position	Check sensor B29 "Discharge chute position below"	Check sensor B29 in mask "Diagnostics discharge chute"
					Set the sensor mechanically correct
					Check the sensor electrically
					Exchange sensor
					Exchange control unit KMC2
				Check if the discharge chute is in parking position.	Lift the discharge chute all the way up so that it is no longer parking position.
				Check if discharge chute is in parking position.	Move discharge chute to central position and put it all the way down

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure	
583	Bottom inspection access for crop flow open!	The crop flow revision access is open yet should be closed in order to execute the desired function.	The bottom crop flow revision access (between the chopping drum and discharge accelerator) is open.	Check sensor B29 \\\\"Discharge chute position below\\\"	Check sensor B29 in the mask \\\\"Diagnostics discharge chute\\\"	
					Check the sensor electrically	
					Exchange sensor	
					Exchange control unit KMC2	
					Close the revision access.	
			The parameter 34030 is set incorrectly. No sensor B113 "Locking lever for revision accesses to crop flow from below" is installed on the machine. The parameter, however, is set to 1 = installed.	Check parameter 34030	Set the parameter correctly	
					Sensor is not mounted correctly mechanically	Set or install the sensor properly mechanically.
					Wiring to one of the sensors B113 defective	Replace wiring and plug

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Sensor B113 defective	Measure voltage on the sensor	Replace sensor
			Internal error KMC3	See remedy	Replace KMC3
594	Sharpen flap CLOSED	In order to start the desired function the grinding flap has a wrong position.	The grinding flap is closed, but must be opened to start the function	Check, if the grinding flap is closed.	Close the grinding flap
595	Sharpen flap or service flap OPEN	In order to start the desired function the grinding flap has a wrong position.	The grinding flap is closed or open. In order to start the desired function the grinding flap must have the accordant other position.	Check, if the grinding flap is closed. Check, if the grinding flap is open.	Close the grinding flap Open the grinding flap
596	Sharpening in operation!	For starting the desired function, the function \\\ "Grinding\\\" must not be active.	The function \\\ "Grinding\\\" is active.	see remedy	In order to start the other desired function the function \\\ "Grinding\\\" must be cancelled or closed.
597	Sharpening stone parked!	In order to start the desired function \\\ "Grinding\\\" the function must be active			

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
598	Caution: adjust grindstone!	The max number of total grinding cycles is reached. The grinding stone must be readjusted and the grinding cycle counter in the terminal must be reset	The max number of total grinding cycles is reached. The grinding stone must be readjusted and the grinding cycle counter in the terminal must be reset	Readjust the grinding stone and check the number of grinding cycles in the terminal	Reset the number of grinding cycles in the terminal.
600	600 Internal error - DRC	Internal error in DRC control unit	DRC control unit faulty	Effect:- Vehicle stop via error mode #1- Sending error message (shown on display)- Emergency mode #1	- Contact Krone service - Replace control unit Replace DRC control unit
601	601 Malfunction valve coil Y101 pump forwards - DRC	Fault on valve Y101 pump forward	Short circuit on valve Y101	Check cable harnessCheck magnet	Replace cable harnessReplace magnet
602	602 Malfunction valve coil Y102 pump backwards - DRC	Fault on valve Y102 pump backwardEffects:- Short circuit on valve Y102- Interruption - Faulty magnet	- Short circuit- Interruption - Faulty magnet	- Check cable harness- Check magnet	- Replace cable harness- Replace magnet
603	603 Malfunction valve coil Y106 rear axis right - DRC	DRC fault on valve Y106 Rear axle rightEffects:- Vehicle deceleration via error mode #2b- Sending error message (shown on display)- Emergency mode #2	- Short circuit on valve Y106- Interruption - Faulty magnet	- Check cable harness- Check magnet	- Replace cable harness- Replace magnet

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
604	604 Malfunction valve coil Y105 rear axis left - DRC	DRC fault on valve Y105 Rear axle leftEffects:- Vehicle deceleration via error mode #2b- Sending error message (shown on display)- Emergency mode #2	- Short circuit- Interruption - Faulty magnet	- Check cable harness- Check magnet	- Replace cable harness- Replace magnet
605	605 Malfunction valve coil Y104 front axis right - DRC	DRC fault on valve Y104 front axle rightEffects:- Vehicle deceleration via error mode #2b - Sending error message (shown on display)- Emergency mode #2	- Short circuit- Interruption - Faulty magnet	- Check cable harness- Check magnet	- Replace cable harness- Replace magnet
606	606 Malfunction valve coil Y103 front axis left - DRC	DRC fault on valve Y103 front axle leftEffects:- Vehicle stop via error mode #2b - Sending error message (shown on display)- Emergency mode #2	- Short circuit- Interruption - Faulty magnet	- Check cable harness- Check magnet	- Replace cable harness- Replace magnet
607	607 Malfunction valve coil Y18 parking brake - DRC	Current to the valve Y18 is defective Effects: limited operation (emergency mode) Plausibility check control of the parking brake deactivated	Short circuit on the valve Y18 Interruption Defective magnet	- Check cable harness - Check magnet	- Replace cable harness -Replace magnet

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
608	608 Malfunction joystick - DRC	DRC malfunction on the joystick Effects: Standstill of the vehicle via stop ramp	Fault in the multifunction joystick. At the same time, the error message appears  - CAN bus interruption Multi-function lever/joystick defective	See error message 121  - Check cable harness - Check multi-function lever	
609	609 Malfunction pressure sensor B101 - DRC	DRC fault on pressure sensor B101 Effects:- Vehicle deceleration via error mode #2b- Sending error message (shown on display)- Emergency mode #2	Sensor voltage too high or too low	- Check cable harness- Check sensor	
610	610 Malfunction pressure sensor B102 - DRC	DRC fault on pressure sensor B102	Sensor voltage too high or too low	- Check cable harness- Check sensor B102	
611	611 Undervoltage - DRC	DRC undervoltageEffects:- Vehicle stop via error mode #2a- Sending error message (shown on display)- Emergency mode #1	- Battery voltage too low (below 7V). - Take starting phase of Diesel engine into account.	- Check cable harness- Check battery voltage- Take starting phase of Diesel engine into account	
612	612 Overvoltage - DRC	DRC overvoltageEffects:- Vehicle stop via error mode #2a- Sending error message (shown on display)- Emergency mode #1	Battery voltage too high (above 17V)	- Check cable harness- Check battery voltage	



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
613	613 Check rel.switch travelling gear and quick stop - DRC	DRC check FS (release switch) Travelling gear and emergency stopEffects:- Vehicle stop via error mode #1 - Sending error message (shown on display)- Emergency mode #2	Travelling gear release missing	- Activate Travelling gear release- Deactivate emergency stop panel	
614	614 Malfunction speed sensor B106 rear axis right - DRC	DRC fault speed sensor B106 rear axle rightEffects:- Vehicle deceleration via error mode #2c- Sending error message (shown on display)- Emergency mode #3- ASR (Traction Control) disabled- ABS disabled	Speed 0 although travel condition fulfilled	- Check cable harness- Check sensor	
615	615 Malfunction speed sensor B105 rear axis left - DRC	DRC fault speed sensor B105 rear axle leftEffects:- Vehicle deceleration via error mode #2c- Sending error message (shown on display)- Emergency mode #3- ASR (Traction Control) disabled- ABS disabled	Speed 0 although travel condition fulfilled	- Check cable harness- Check sensor B105	

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
616	616 Malfunction speed sensor B104 front axis right - DRC	Fault on speed sensor B104 front axle rightEffects:- Vehicle deceleration via error mode #2c - Sending error message (shown on display)- Emergency mode #3- ASR (Traction Control) disabled- ABS disabled	Speed 0 although travel condition fulfilled	- Check cable harness- Check sensor B104	
617	617 Malfunction speed sensor B103 front axis left - DRC	DRC fault on speed sensor B103 front axle leftEffects:- Vehicle deceleration via error mode #2c - Sending error message (shown on display)- Emergency mode #3- ASR (Traction Control) disabled- ABS disabled	Speed 0 although travel condition fulfilled	- Check cable harness- Check sensor B103	
618	618 CAN3 communication to diesel engine - DRC	DRC faultEffects:	- CAN bus interruption- Diesel control unit faulty	- Check cable harness- Check diesel control unit	
619	619 CAN1 communication to joystick - DRC	DRC Fault CAN Timeout driving lever Multifunction joystickEffects:- Vehicle stop via error mode #2a- Sending error message (shown on display)- Emergency mode #1	- CAN bus interruption- KKC (Krone Console Controller) faulty	- Check cable harness- Check driving lever Multifunction joystick	

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
620	620 CAN1 communication to CU - DRC	DRC Fault CAN Timeout control unit console switchEffects:- Vehicle deceleration via error mode #2b- Sending error message (shown on display)- Emergency mode #2- Road mode only	In some cases an incorrect CAN configuration from the autopilot may be the cause. The hardware does not match the autopilot autopilot software and sporadically causes this and /or other CAN error messages  - CAN bus interruption- Control unit console faulty	If the serial number of the hardware autopilot is greater than 13.154157.1022 the autopilot software version must be at least 150200029-20  - Check cable harness- Check control unit console	If necessary, update the software version of the autopilot
621	621 CAN1 communication to KMC3 - DRC	DRC Fault KMC communication CAN Timeout Effect:- Vehicle stop via error mode #2a- Sending error message (shown on display)In case of KMC Timeout and if KSM message (engine speed control) is missing as well the travelling gear needs to take over control of the Diesel engine. Only in emergency mode #2 with a reduced characteristic line of the engine	In some cases an incorrect CAN configuration from the autopilot may be the cause. The hardware does not match the autopilot autopilot software and sporadically causes this and /or other CAN error messages  - CAN bus interruption- KMC faulty	If the serial number of the hardware autopilot is greater than 13.154157.1022 the autopilot software version must be at least 150200029-20  - Check cable harness- Check KMC	If necessary, update the software version of the autopilot

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
622	622 Malfunction outputs - DRC	DRC Fault outputs supplied externallyEffect:- Vehicle stop via error mode #1- Sending error message (shown on display)- Emergency mode #1	One or more outputs are supplied externally (before switching on the main switch one of the outputs is energized from the battery)	Check cable harness	
623	623 Malfunction steering angle sensor B107 - DRC	DRC Fault on the steering angle sensor B107Effect:- Sending error message (shown on display)- ASR (Traction Control) function restricted- ABS function restricted	Sensor voltage too high or too low	- Check cable harness- Check sensor	
624	624 Malfunction seat switch S69 - DRC	DRC Fault on the seat switch sensorEffect: - Vehicle stop via error mode #2b- Sending error message (shown on display)- Emergency mode #2	- Short circuit on sensor - Broken cable	No check possible	
625	625 Seat switch open (driver has left seat) - DRC	DRC Fault seat switch open			

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
626	626 Internal error - DRC	DRC Hardware Fault monitor emergency modeEffect:- Vehicle stop via error mode #2- Sending error message (shown on display)- Error acknowledgement followed by emergency mode #1			
627	627 Malfunction brake press.sensor B16 - DRC	DRC Fault on brake pressure sensor B16Effect:- Vehicle deceleration via error mode #2b-Sending error message (shown on display)- Error acknowledgement followed by emergency mode #2	- Sensor voltage too high or too low- Plausibility check with angle sensor of foot brake pedal (angle present but no pressure)	- Check cable harness- Check sensor B16	
628	628 Malfunction brake pedal sensor B109 - DRC	DRC Fault on foot brake pedal sensor B109Effect:- Vehicle deceleration via error mode #2b-Sending error message (shown on display)- Emergency mode #2	- Sensor voltage too high or too low- Plausibility check with angle sensor of foot brake pedal (pressure present but no angle)	- Check cable harness- Check sensor	
629	629 Sensors brake pedal B16/B109 not plausible - DRC	DRC Fault on brake pedal not plausibleEffect:- Error message via CAN	Brake pedal not plausible compared to brake pressure	No check possible	

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
630	630 Malfunction swivel angle sensor B108 - DRC	DRC Fault on pivoting angle sensor Effect: - Vehicle stop via error mode #2c- Sending error message (shown on display)- Emergency mode #3	Sensor voltage too high or too low	- Check cable harness- Check sensor	
631	631 Malfunction brake tank pressure B18 - DRC	DRC Fault on manometric switch for brake tank pressure Effect:- Sending error message (shown on display)	- Manometric switch for brake tank pressure faulty - Brake tank faulty	- Check cable harness- Check sensor- Check pressure accumulator	
632	632 Malfunction output revers.signal K29 - DRC	DRC malfunction reversing light Effect: Send the error message (shown in the display)	Short circuit, interruption reversing light	Check cable harness Check reversing light	Replace cable harness, reversing light
633	633 Malfunction output brake light sig.K30 - DRC	DRC malfunction output brake light Effect: Send the error message (shown in the display)	Short circuit, interruption brake light	Check cable harness Check brake light	Replace cable harness, brakelight
634	634 Malfunction pressure sensor B110 parking brake - DRC	DRC malfunction of parking brake manometric switch Effect: Limited operation (emergency mode)	Manometric switch of parking brake defective	Check parking brake, manometric switch, cable harness	Replace parking brake, manometric switch or cable harness
635	635 Control parking brake not plausible - DRC	DRC malfunction control of the parking brake is not plausible Effect: Limited operation (emergency mode)	Control of the parking brake not plausible	Check parking brake, manometric switch, cable harness	Replace parking brake, manometric switch, cable harness

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
636	636 Pump control not plausible - DRC Malfunction	Pump control not plausible Effect: Standstill of the vehicle (switching off the outputs)	The signal of the pivoting angle sensor does not match the actual control of the pump via solenoid valves.	Check pump, pivoting angle sensor, cable harness	Replace pump, pivoting angle sensor or cable harness
637	637 Malfunction reserve DRC	Reserve			
638	638 Malfunction reserve DRC	Reserve			
639	639 Malfunction reserve DRC	Reserve			
640	640 Unexpected movement of machine - DRC	SR1 unexpected start-up: The pivoting angle sensor on the drive pump has detected that the pump is not in neutral position. Effects: Standstill of the vehicle (switching-off the outputs)	SR1 unexpected start-up: Hydraulic pump defective (swivels out actually) pump is controlled by mistake (swivels out actually) Wiring of pivoting angle sensor is defective Pivoting angle sensor defective Pivoting angle sensor defective Input on DRC defective	Measure high-pressures MA and MB	Contact KRONE customer service

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
641	641 Unintentional release of parking brake - DRC	Parking brake of the manometric switch indicates pressure although the parking brake valve is not controlled Effects: Standstill of the vehicle (switching-off the outputs)	Manometric switch of the parking brake is defective, valve of the parking brake is defective, short circuit wiring manometric switch	Check manometric switch of parking brake, check parking brake valve, check short circuit wiring manometric switch	
642	642 Malfunction reserve DRC	Reserve			
643	643 Malfunction reserve DRC	Reserve			
644	644 Malfunction reserve DRC	Reserve			
645	645 Malfunction reserve DRC	Reserve			
646	646 Malfunction reserve DRC	Reserve			
647	647 Malfunction reserve DRC	Reserve			



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
648	648 Driving lever not in neutral position - DRC	Start condition not met Effects: Standstill of the vehicle	Control lever not in neutral position  Internal fault driving lever	Check the position of the control lever  See remedy	Move control lever to neutral position  Replace control lever
649	649 Internal Malfunction - DRC	Reaction to another fault (see possible cause) Effects: Standstill of the vehicle	Fault 600 or 622 active	Refer to the respective fault	Refer to the respective fault
650	650 Malfunction output pump forwards - DRC	Reaction to another fault (see possible cause) Effects: Standstill of the vehicle	Fault 601 active	Refer to the respective fault	Refer to the respective fault
651	651 Malfunction output pump backwards - DRC	Reaction to another fault (see possible cause) Effects: Standstill of the vehicle	Fault 602 active	Refer to the respective fault	Refer to the respective fault
652	652 Internal Malfunction - DRC	Reaction to another fault (see possible cause) Effects: Standstill of the vehicle	Fault 608 and/or further faults active	Refer to the respective fault	Refer to the respective fault
653	653 Internal Malfunction - DRC	Reaction to another fault (see possible cause) Effects: Standstill of the vehicle/limited operation	Fault 603 and/or further faults active	Refer to the respective fault	Refer to the respective fault

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
654	654 Release travelling gear - DRC	Start condition is not fulfilled   Effects: limited operation, emergency mode active	Release travelling gear not met  Determination via terminal	Check release traction drive switch  \"Carry out operating console diagnostics \"	Actuate release traction drive switch
655	655 Requested speed too high - DRC	Maximum pump speed has been exceeded	Short circuit / broken cable in the wiring of the switch  \"Traction drive release switch defective\"	\"Check wiring to switch Traction drive release\"  \"Check the shifting behavior of the switch via pass-through measurement \"	Replace wiring to switch Traction drive release  \"Replace traction drive release switch \"
656	656 No driver on seat - DRC	Fault: When starting, no driver on the seat	Speed of the diesel engine is too high  Seat switch not actuated	See remedy  Check seat switch wiring  Check seat switch	Contact KRONE customer service  Replace seat switch wiring  Replace seat switch
657	3211 Druck Hubwerk zu hoch waehrend der Gegenschneideverstellung				

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
658	3211 Druck Hubwerk zu hoch waehrend der Gegenschneideverstellung				
659	3211 Druck Hubwerk zu hoch waehrend der Gegenschneideverstellung				
660	3211 Druck Hubwerk zu hoch waehrend der Gegenschneideverstellung				
661	3211 Druck Hubwerk zu hoch waehrend der Gegenschneideverstellung				
662	3211 Druck Hubwerk zu hoch waehrend der Gegenschneideverstellung				

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
663	3211 Druck Hubwerk zu hoch waehrend der Gegenschneideverstellung				
1300	1300 Malfunction valve coil Y32 raise lifting gear	Error: Raise lifting gear valve	Determine via the terminal  Function to raise lifting gear valve defective	Perform lifting gear diagnostics  Check the function using manual operation on the hydraulic block valve. Ensure easy motion and no noises in the lifting gear!	Replace lifting gear valve
1301	1301 Malfunction valve coil Y33 lower lifting gear	Error: Lower lifting gear valve	Work pressure defective	Check work pressure (0 - 200 bar)	Set work pressure
			Coil for solenoid valve defective	See Remedial action	Replace the EMR
			Internal EMR error	See Remedial action	Replace the EMR
			Determine via the terminal	Perform lifting gear diagnostics	
			Function to lower lifting gear valve defective	Check the function using manual operation on the hydraulic block valve. Ensure easy motion and no noises in the lifting gear!	Replace lifting gear valve

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
1302	1302 Malfunction EMR voltage	Error: Supply voltage too low (less than 10V)	Work pressure defective	Check work pressure (0 - 200 bar)	Set work pressure
			Coil for solenoid valve defective	See Remedial action	Replace the EMR
			Internal EMR error	See Remedial action	Replace the EMR
			Power supply voltage for EMR too low	LED +22-LD52 not lit	Check fuse +22-F52
			Wiring defective	Check the cables.	Replace cabling
			Battery dead	Check battery acid	Charge battery
				Check battery voltage	Change battery
			Charge indicator lamp defective	Check charge indicator lamp	Replace charge indicator lamp
			Dynamo defective	Check the cables.	Replace cabling
			Dynamo defective	Check the dynamo	Replace the dynamo
	Short circuit in the wiring to an EMR sensor	Check wiring	Replace wiring		
	Internal EMR error	See Remedial action	Replace the EMR		

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
1303	1303 electronics EMR not active!!	Error: EMR has not received any CAN messages for at least 1 minute, or it has been deactivated	Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD11 not lit	Check fuse +22-F92
			The KMC3 control has been switched off manually (e.g. plug has been removed)	Check plugs are secure	Place the plug and switch the ignition off and on again
			The maintenance switch has been switched on	Check whether switch is switched on	Switch off the maintenance switch
			Short circuit / broken cable in the wiring for the CAN3 bus	Check wiring	Replace wiring
			CAN3 terminating resistors defective	Check wiring and terminating resistors	If required, rewire or replace terminating resistors
			KMC3 was restarted but not the EMR	See Remedial action	Switch the ignition off and on again
			Internal error KMC3	See Remedial action	Replace the KMC3
			Internal EMR error	See Remedial action	Replace the EMR
			1304	1304 Malfunction lifting gear position sensor B50	Error: Sensor position lifting gear - wrong signal

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
1305	1305 Malfunction lifting gear pressure sensor B49	Error: Pressure sensor for lifting gear - wrong signal	Short circuit / broken cable in wiring for lifting gear position sensor	Check wiring to the lifting gear position sensor	Replace wiring to the lifting gear position sensor
			Lifting gear position sensor plug defective	Check sensor plugs	Replace sensor plug
			Lifting gear position sensor defective	Measure voltage on the sensor	Replace lifting gear position sensor
			Short circuit in the wiring to another EMR sensor	Check wiring	Replace wiring
			Internal EMR error	See Remedial action	Replace the EMR
			Determine via the terminal	Perform lifting gear diagnostics	
			Short circuit / broken cable in the wiring for the lifting gear pressure sensor	Check wiring to lifting gear pressure sensor	Replace wiring to lifting gear pressure sensor
			Lifting gear pressure sensor plug defective	Check sensor plugs	Replace sensor plug
			Lifting gear pressure sensor defective	Measure voltage on the sensor	Replace lifting gear pressure sensor

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Short circuit in the wiring to another EMR sensor	Check wiring	Replace wiring
			Internal EMR error	See Remedial action	Replace the EMR
1306	1306 Malfunction sensor B47 header contour left	Error: Height of left lifting gear sensor - wrong signal	The height of left lifting gear sensor has not been fitted, because the grass pick-up has been fitted, or corn operation has been set, but no skids are present	See Remedial action	Deactivate the distance adjustment if no skids are fitted, or switch the machine to maize operation on the display, if the ground skids are fitted
			Front attachment plug not inserted	Check the front attachment plug	Plug in front attachment plugs
			Height of left lifting gear sensor not adjusted	Check setting of the sensor	Make adjustment
			Short circuit / broken cable in wiring for height of the left lifting gear sensor	Check wiring to sensor for height of left lifting gear	Replace wiring to sensor for height of left lifting gear
			Height of the left lifting gear sensor plug defective	Check sensor plugs	Replace sensor plug
			Height of the left lifting gear sensor defective	Measure voltage on the sensor	Replace height of lifting gear left sensor
			Short circuit in the wiring to another EMR sensor	Check wiring	Replace wiring
			Internal EMR error	See Remedial action	Replace EMR.



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
1307	1307 Malfunction sensor B48 header contour right	Error: Height of right lifting gear sensor - wrong signal	<p>The height of right lifting gear sensor has not been fitted, because the grass pick-up has been fitted, or corn operation has been set, but no skids are present</p> <p>Front attachment plug not inserted</p> <p>Height of the right lifting gear sensor not adjusted</p> <p>Short circuit / broken cable in wiring for height of right lifting gear sensor</p> <p>Height of right lifting gear sensor plug defective</p> <p>Height of right lifting gear sensor defective</p> <p>Short circuit in the wiring to another EMR sensor</p> <p>Internal EMR error</p>	<p>See Remedial action</p> <p>Check the front attachment plug</p> <p>Check position of the sensor</p> <p>Check wiring to sensor for height of right lifting gear</p> <p>Check sensor plugs</p> <p>Measure voltage on the sensor</p> <p>Check wiring</p> <p>See Remedial action</p>	<p>Deactivate the distance adjustment if no skids are fitted, or switch the machine to maize operation on the display, if the ground skids are fitted.</p> <p>Plug in front attachment plugs</p> <p>Make adjustment</p> <p>Replace wiring to sensor for height of right lifting gear</p> <p>Replace sensor plug</p> <p>Replace height of right lifting gear sensor defective</p> <p>Replace wiring</p> <p>Replace the EMR</p>
1308	1308 Left pendulum valve coil Y37 current too low	Error: Turn pendulum frame to the left valve	<p>Determine via the terminal</p> <p>Broken cable in the wiring for the valve</p>	<p>Perform lifting gear diagnostics</p> <p>Check wiring to valve</p>	<p>Replace wiring to valve</p>

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
1309			Valve plug defective	Check valve plug	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil
			Internal EMR error	See Remedial action	Replace the EMR
			Determine via the terminal	Perform lifting gear diagnostics	
			Broken cable in the wiring for the valve	Check wiring to the valve	Replace wiring to the valve
			Valve plug defective	Check valve plug	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil
			Internal EMR error	See Remedial action	Replace the EMR
1310	1310 Malfunction Valve coil Y37 pendulum left	Error: Turn pendulum frame valve left - current too high	Determine via the terminal	Perform lifting gear diagnostics	Perform lifting gear diagnostics
			Turning function of left pendulum frame valve defective	Check the function using manual operation on the hydraulic block valve. Ensure easy motion and no noises in the pendulum frame!	Change pendulum frame valve


# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Short circuit in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Coil for solenoid valve defective	Test coil	Replace coil
			Internal EMR error	See Remedial action	Replace the EMR
1311	1311 Malfunction Valve coil Y38 pendulum right	Error: Turn pendulum frame valve right - current too high	Determine via the terminal	Perform lifting gear diagnostics	
			Turning function of right pendulum frame valve defective	Check the function using manual operation on the hydraulic block valve. Ensure easy motion and no noises in the pendulum frame!	Change pendulum frame valve
			Short circuit in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Coil for solenoid valve defective	Test coil	Replace coil
			Internal EMR error	See Remedial action	Replace the EMR
2101	2101 Electronics undervoltage - KMC2	Error: Electronics voltage KMC2 too low	Determine via the terminal	Run electronics diagnostics	
			Power supply voltage of KMC2 too low	LED +22-LD61 not lit	Check fuse +22-F61


# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Central electrical power supply voltage defective	LED +22-LD60 not lit	Check fuse 22-F60
			Wiring defective	LED +22-LD11 not lit	Check fuse +22-F92
			Short circuit in the wiring to a 12V sensor	Check the cables.	Replace cabling
			Battery dead	Check wiring	Replace wiring
			Charge indicator lamp defective	Check battery acid Check battery voltage	Charge battery Change battery
			Dynamo defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Internal error KMC2	Check the excitation voltage, check wiring	Replace the dynamo
				See Remedial action	Replace KMC2
			Determine via the terminal	Run electronics diagnostics	
			The controller of the dynamo is defective	While engine is running, measure on batteries. Voltage must not be over 14.8V	Replace the dynamo
			Dynamo defective	Check the dynamo	Replace the dynamo
2102  x16V/12V	2102 Electronics overvoltage - KMC2	Error: Electronics voltage KMC2 too high			


# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2103 	2103 Malfunction Voltage V1 - KMC2	Error: KMC2 output voltage of V1	Battery change-over relay defective (500, 800, and 1000)  Internal error KMC2	Test function of the relays according to circuit diagram  See Remedial action	Replace battery change-over relay  Replace KMC2
			Determine via the terminal	Run electronics diagnostics	
			Output voltage of V1 defective	LED +22-LD40 not lit	Check fuse +22-F87
			voltage V1 KMC2 optional defective (possible with additional cutting drum brake)	Check fuse -22F72	Replace fuse -22F72
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD60 not lit	Check fuse +22-F60
				LED +22-LD11 not lit	Check fuse +22-F92
			Fuse F13 in KMC2 defective	Check fuse F13 in KMC2	Replace fuse F13 in KMC2
			Wiring of release switch defective	Check wiring	Replace cabling
			Release switch defective	Test function of the release switch	Replace release switch

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			GAL component release logic wrong (wrong GAL component)	Check release logic	Replace GAL component
			GAL component defective	See Remedial action	Replace GAL component
			Battery dead	Check battery acid voltage	Charge battery Change battery
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Internal error KMC2	See Remedial action	Replace KMC2
			Determine via the terminal	Run electronics diagnostics	
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD60 not lit	Check fuse +22-F60
				LED +22-LD11 not lit	Check fuse +22-F92
			Fuse F6 in KMC2 defective	Check fuse F6 in KMC2	Replace fuse F6 in KMC2
2104 	2104 Malfunction Voltage V2 - KMC2	Error: KMC2 output voltage of V2			

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Wiring of release switch defective	Check wiring	Replace cabling
			Release switch defective	Check release switch	Replace release switch
			GAL component release logic wrong (wrong GAL component)	Check release logic	If required, change GAL component
			GAL component defective	See Remedial action	Replace GAL component
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Internal error KMC2	See Remedial action	Replace KMC2
			Output voltage of V2 defective.	LED +22-LD38 not lit	Check fuse +22-F86
			Determine via the terminal	Run electronics diagnostics	
			Output voltage of V3 defective.	LED +22-LD37 not lit	Check fuse +22-F85
2105	2105 Malfunction Voltage V3 - KMC2	Error: KMC2 output voltage of V3			

# Error descriptions BiG X 600-1100+750C




Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD60 not lit	Check fuse +22-F60
				LED +22-LD11 not lit	Check fuse +22-F92
			Fuse F12 in KMC2 defective	Check fuse F12 in KMC2	Replace fuse F12 in KMC2
			Wiring of release switch defective	Check wiring	Replace cabling
			Release switch defective	Test function of the release switch	Replace release switch
			GAL component release logic wrong (wrong GAL component)	Check release logic	If required, change GAL component
			GAL component defective	See Remedial action	Replace GAL component
			Battery dead	Check battery acid voltage	Charge battery Change battery
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2106 	2106 Malfunction Voltage V4 - KMC2	Error: KMC2 output voltage of V4	Internal error KMC2	See Remedial action	Replace KMC2
			Determine via the terminal	Run electronics diagnostics	
			Output voltage of V4 defective	LED +22-LD36 not lit	Check fuse +22-F84
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD60 not lit	Check fuse +22-F60
				LED +22-LD11 not lit	Check fuse +22-F92
			Fuse F2 in KMC2 defective	Check fuse F2 in KMC2	Replace fuse F2 in KMC2
			Wiring of release switch defective	Check wiring	Replace cabling
			Release switch defective	Test function of the release switch	Replace release switch
			GAL component release logic wrong (wrong GAL component)	Check release logic	If required, change GAL component
			GAL component defective	See Remedial action	Replace GAL component
			Battery dead		

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2107	2107 Malfunction Voltage 12V digital sensors - KMC2	Error: 12V voltage of digital sensors		Check battery acid Check battery voltage	Charge battery Change battery
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Internal error KMC2	See Remedial action	Replace KMC2
			Short circuit in the wiring to a digital sensor	Check wiring	Replace wiring
			Digital sensor defective	Test function of the sensors	Replace sensors
			Battery dead	Check battery acid	Charge battery
				Check battery voltage	Change battery
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Check the excitation voltage, check the wiring, replace the dynamo	Replace the dynamo

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure	
2108	2108 Malfunction Voltage 8V digital sensors - KMC2	Error: 8V voltage of digital sensors	Internal error KMC2	See Remedial action	Replace KMC2	
			Short circuit in the wiring to a digital sensor	Check wiring	Replace wiring	
				Digital sensor defective		
				Test function of the sensor	Replace the sensor	
					Charge battery Change battery	
2109	2109 Malfunction Voltage 8V analogue sensors - KMC2	Error: 8 V voltage of analogue sensors	Charge indicator lamp defective.	Check charge indicator lamp, check wiring.	If required, replace charge indicator lamp and/or renew cabling.	
			Dynamo defective.	Check the excitation voltage, check wiring	Replace dynamo.	
			Internal error KMC2.	See Remedial action	Replace KMC2.	
				Check wiring	Replace wiring	
				Test function of the sensor	Replace the sensor	

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2110	2110 Voltage battery 3V too low - KMC2	Error: Backup battery voltage 3 V too low	Battery dead	Check battery acid	Charge battery
			Charge indicator lamp defective	Check battery voltage	Change battery
				Check charge indicator lamp, check wiring.	If required, change charge indicator lamp and/or replace cabling.
			Dynamo defective.	Check the excitation voltage, check wiring	
			Internal error KMC2.	See Remedial action	Replace KMC2
			Discharge the backup battery	Check voltage of the battery	Replace backup battery in KMC2
	Dynamo defective.	Check the excitation voltage, check wiring	Replace dynamo.		
		Internal error KMC2.	See Remedial action		

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2111	2111 Malfunction Voltage V1 - KMC2	<p>The actual present voltage V1 for the control unit KMC2 does not correspond to the logic for voltage V1</p> <p>The logic for V1 is without cutting drum brake:</p> <ul style="list-style-type: none"> <li>- Release Switch Field ON</li> <li>- Release Switch Maintenance OFF</li> <li>- both Instantaneous stop switch OFF</li> <li>- Release Switch feed drive safety output ON</li> <li>- Release Switch feed drive/front attachment ON</li> </ul>	<p>Release switch defective</p> <p>GAL component release logic wrong (wrong GAL component)</p> <p>Relay 22K40 defective</p> <p>GAL component defective</p> <p>Wiring of release switch defective</p>	<p>Check the required position of the release switches according to logic table</p> <p>Check release logic</p> <p>22LD40 is lit even though logic is not fulfilled</p> <p>See remedy</p> <p>Check wiring</p>	<p>Replace release switch</p> <p>Replace GAL component</p> <p>Replace console relay circuit board</p> <p>Replace GAL component</p> <p>Replace the wiring</p>
2112	2112 RAM initialised (Check 3V battery) - KMC2	<p>Error: Re-initialization of the battery backup RAM in KMC2</p>	<p>Job computer KMC2 was replaced</p> <p>3V backup battery voltage too low</p> <p>Internal error KMC2</p>	<p>none</p> <p>Measure voltage on the battery</p> <p>See Remedial action</p>	<p>none</p> <p>Replace backup battery in KMC2</p> <p>Internal error KMC2</p>
2113	2113 disturbance voltage V2 - KMC2	<p>Error: KMC2 output voltage V2 There is a voltage on the output voltage V2 from KMC2 although this is not permitted.</p>	<p>The logical control status of the street / field release switch or of the quick stop console or manual operation does not concur with the actual switch position.</p>	<p>Check the logical control status of street / field release. Check LED 22LD113 on the relay circuit board console against the state in the diagnostics terminal (mask 4-1-17) and the actual control status of the release switch.</p>	<p>- Insert the street / field release switch properly into the plug contacts - Check the plug for soiling and clean - Replace the street / field release switch - Check the wiring - Control CUC and replace if necessary</p>

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				Logical control status of the quick stop console or manual operation. Check LED 16LD14, 16LD15 on the CUC and 22LD107 on the relay circuit board console against the state in the diagnostics terminal (mask 4-1-17) and the actual control status of the quick-stop switch.	- Clean the plug of the quick stop switch - Replace the quick stop switch - Clean the plug connector - Check the wiring
			- Wrong GAL module or error in GAL module	See remedy	Replace GAL module
			Relay circuit board console defective	See remedy	Replace relay circuit board
			Voltage is read in incorrectly by the KMC	Read off voltage V2 from the KMC2 in the terminal	Replace KMC2
2114	2114 disturbance voltage V3 - KMC2	Error: KMC2 output voltage V2. There is a voltage on the output voltage V2 from KMC2 although this is not permitted. The release conditions for the voltage V2 are not satisfied, yet a voltage of V2 is measured.	The logical control status of the street / field release switch or of the quick stop console or manual operation does not concur with the actual switch position.	Check the control status state of street / field release. Check LED 22LD113 on the relay circuit board console against the state in the diagnostics terminal (mask 4-1-17) and the actual control status of the release switch.	- Insert the street / field release switch properly into the plug contacts - Check the plug for soiling and clean - Replace the street / field release switch - Check the wiring - Control CUC and replace if necessary

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				Logical control status of the quick stop console or manual operation. Check LED 16LD14, 16LD15 on the CUC and 22LD107 on the relay circuit board console against the state in the diagnostics terminal (mask 4-1-17) and the actual control status of the quick-stop switch.	- Clean the plug of the quick stop switch - Replace the quick stop switch - Clean the plug connector - Check the wiring
			- Wrong GAL module or error in GAL module	See remedy	Replace GAL module
			Relay circuit board console defective	See remedy	Replace relay circuit board
			Voltage is read in incorrectly by the KMC	Read off voltage V2 from the KMC2 in the terminal	Replace KMC2
2115	2115 disturbance voltage V4 - KMC2	Error: KMC2 output voltage V4. There is a voltage on the output voltage V4 from KMC2 although this is not permitted. The release conditions for the voltage V4 are not satisfied, yet a voltage of V4 is measured.	The logical control status of the street / field release switch or of the quick stop console or manual operation does not concur with the actual switch position.	Check the logical control status of street / field release. Check LED 22LD113 on the relay circuit board console against the state in the diagnostics terminal (mask 4-1-17) and the actual control status of the release switch.	- Insert the street / field release switch properly into the plug contacts - Check the plug for soiling and clean - Replace the street / field release switch - Check the wiring - Control CUC and replace if necessary

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				Logical control status of the quick stop console or manual operation Check LED 16LD14, 16LD15 on the CUC and 22LD107 on the relay circuit board console against the state in the diagnostics terminal (mask 4-1-17) and the actual control status of the quick-stop switch.	- Clean the plug of the quick stop switch - Replace the quick stop switch - Clean the plug connector - Check the wiring
			- Wrong GAL module or error in GAL module	See remedy	Replace GAL module
			Relay circuit board console defective	See remedy	Replace relay circuit board
			Voltage is read in incorrectly by the KMC	Read off voltage V2 from the KMC2 in the terminal	Replace KMC2
2201	2201 Valve coil Y5 feed drive in front current too low	Error: Minimum current feed drive forward valve has fallen below the normal level	Determine via the terminal	Perform feed drive diagnostics	
			Broken cable in the wiring for feed drive forward valve	Check wiring	Replace cabling
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil
			Internal error KMC2	See Remedial action	Replace KMC2



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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure		
2202	2202 Valve coil Y6 feed drive backwards current too low	Error: Minimum current feed drive backward valve has fallen below the normal level	Determine via the terminal	Perform feed drive diagnostics			
			Broken cable in the wiring for feed drive backward valve	Check wiring	Replace wiring		
			Valve plug defective	Check valve plugs and contacts	Replace valve plug		
			Coil for solenoid valve defective	Test coil	Replace coil		
			Internal error KMC2	See Remedial action	Replace KMC2		
						Perform feed drive diagnostics	
						Check wiring	Replace wiring
2203	2203 Valve coils Y5/Y6 feed drive current too high	Error: Maximum current of the feed drive forward or feed drive backward valves has been exceeded	Determine via the terminal	Perform feed drive diagnostics			
			Short circuit in the wiring for feed drive forward/feed drive backward valve	Check wiring	Replace wiring		
			Valve plug defective	Check valve plugs and contacts	Replace valve plug		
			Coil for solenoid valve defective	Test coil	Replace coil		
			Internal error KMC2	See Remedial action	Replace KMC2		

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2204	2204 Valve coil Y7 front attachment in front current too low	Error: Minimum current front attachment forward valve has fallen below the normal level	Determine via the terminal	Perform feed drive diagnostics	
			Broken cable in the wiring for front attachment forward valve	Check wiring	Replace wiring
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil
			Internal error KMC2	See Remedial action	Replace KMC2
2205	2205 Valve coil Y8 front attachment backwards current too low	Error: Minimum current front attachment backward valve has fallen below the normal level	Determine via the terminal	Perform front attachment diagnostics	
			Broken cable in the wiring for front attachment backward valve	Check wiring	Replace wiring
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil
			Internal error KMC2	See Remedial action	Replace KMC2

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2206	2206 Valve coils Y7/Y8 front attachment current too high	Error: Maximum current of the front attachment forward or front attachment backward valves has fallen below the normal level	Determine via the terminal	Perform front attachment diagnostics	
			Short circuit in the wiring for front attachment forward/front attachment valve backward	Check wiring	Replace wiring
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil
2207	2207 Reserve alarm - KMC2		Internal error KMC2	See Remedial action	Replace KMC2
2208	2208 Reserve alarm - KMC2				
2209	2209 Valve coil Y21 rotate discharge chute on right current too low	Error: Minimum current turn discharge chute to the right valve has fallen below the normal level	Determine via the terminal	Perform discharge chute diagnostics	

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2210	2210 Valve coil Y63 precontrol A current too low	Error: Current for pilot control discharge chute valve left or lift (Y63) has fallen below minimum level (Hydac valve block)	Broken cable in wiring to turn discharge chute valve right	Check wiring	Replace wiring
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil
			Internal error KMC2	See Remedial action	Replace KMC2
			Determined via the terminal	Perform discharge chute diagnostics	
2211	2211 Valve coil Y64 precontrol B current too low	Determined via the terminal	Broken cable in the wiringPilot control discharge chute valve left or lift (Y63)	Check wiring	Replace wiring
			Valve plug defective	Check valve plug and contacts	Replace valve plug
			Coil for solenoid valve defective	Check coil	Replace coil
			Internal error KMC2	See Remedy	Replace KMC2
			Determined via the terminal	Perform discharge chute diagnostics	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2212	2212 Sensor B114 Pressure trailer brake Signal too low	Error: Cable break sensor B114 pressure trailer brake	Broken cable in the wiringPilot control discharge chute valve right or lower (Y64)	Check wiring	Replace wiring
			Valve plug defective	Check valve plug and contacts	Replace valve plug
			Coil for solenoid valve defective	Check coil	Replace coil
			Internal error KMC2	See Remedy	Replace KMC2
			See remedy	Check parameter 25665	Set parameter 25665 accordingly
			Determination via terminal		
2213	2213 Sensor B114 Pressure trailer brake Signal too high	Error: Short circuit sensor B114 pressure trailer brake	Cable break in the wiring to the sensor	Check wiring and plug	Replace wiring and plug
			Sensor defective	Measure voltage on the sensor	Replace sensor
			Internal error KMC2	See remedy	Replace KMC2
			Incorrect parameter setting Parameter 25665 "Trailer brake" is set to 1 = installed yet not trailer brake is installed	Check parameter 25665	Set parameter 25665 accordingly

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2214	2214 Pressure trailer brake too low	The measured air pressure at sensor B113 is less than 6.0 bar and the machine is moved (> 1 km/h)	Determination via terminal "Diagnostics traction drive" mask 4-1-6 page 2		
			Short circuit in the wiring to the sensor	Check wiring and plug	Replace wiring and plug
			Sensor defective	Measure voltage on the sensor	Replace sensor
			Internal error KMC2	See remedy	Replace KMC2
			The air pressure is too low.	See remedy	Check air pressure system
			Sensor defective	Check pressure via an external measuring device and compare against the pressure measured by the machine which is shown in the terminal (menu 4-1-6, page 2)	Replace sensor
				Internal fault KMC2	
	See remedy	Replace KMC2			
	See remedy	Internal error KMC2	Replace KMC2		

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2301	2301 Valve coil Y21 rotate discharge chute on right current too high	Error: Maximum current to turn discharge chute valve to the right exceeded	Determine via the terminal	Perform discharge chute diagnostics	
			Short circuit in wiring to turn discharge chute valve right	Check wiring	Replace wiring
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil
			Internal error KMC2	See Remedial action	Replace KMC2
2302	2302 Valve coil Y20 rotate discharge chute on left current too low	Error: Minimum current turn discharge chute to the left valve has fallen below the normal level	Determine via the terminal	Perform discharge chute diagnostics	
			Broken cable in wiring to turn discharge chute valve left	Check wiring	Replace wiring
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil
			Internal error KMC2	See Remedial action	Replace KMC2

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2303	2303 Valve coil Y20 rotate discharge chute on left current too high	Error: Maximum current to turn discharge chute valve to the left exceeded	Determine via the terminal	Perform discharge chute diagnostics	
			Broken cable in wiring to turn discharge chute valve left	Check wiring	Replace wiring
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil
			Internal error KMC2	See Remedial action	Replace KMC2
2304	2304 Malfunction Valve coil Y24 raise discharge chute	Error: Lift discharge chute valve	Determine via the terminal	Perform discharge chute diagnostics	
			Function to raise discharge chute valve defective	Check the function using manual operation on the hydraulic block valve. Ensure easy motion and no noises in the discharge chute!	Change lift discharge chute valve
			Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil



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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2305	2305 Malfunction Valve coil Y25 lower discharge chute	Error: Lower discharge chute valve	Solenoid valve defective	Test function of solenoid valve	Replace the solenoid valve
			Internal error KMC2	See Remedial action	Replace KMC2
			Determine via the terminal	Perform discharge chute diagnostics	
			Function to lower discharge chute valve defective	Check the function using manual operation on the hydraulic block valve. Ensure easy motion and no noises in the discharge chute!	Change lower discharge chute valve
			Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil
			Solenoid valve defective	Test function of solenoid valve	Replace the solenoid valve
			Internal error KMC2	See Remedial action	Replace KMC2
			2306	2306 Malfunction Valve coil Y22 raise ejector flap	Error: Raise discharge chute flap valve

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Function to raise discharge chute flap valve defective	Check the function using manual operation on the hydraulic block valve. Ensure easy motion and no noises in the discharge chute flap!	Change lift discharge chute flap valve
			Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil
			Solenoid valve defective	Test function of solenoid valve	Replace the solenoid valve
			Internal error KMC2	See Remedial action	Replace KMC2
2307	2307 Malfunction Valve coil Y23 lower ejector flap	Error: Lower discharge chute flap valve	Determine via the terminal	Perform discharge chute diagnostics	
			Function to lower discharge chute flap valve defective	Check the function using manual operation on the hydraulic block valve. Ensure easy motion and no noises in the discharge chute flap!	Replace lower discharge chute flap valve
			Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2308	Discharge chute not at top	Error: Discharge chute not up	Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Check coil	Replace coil
			Solenoid valve defective	Test function of solenoid valve	Replace the solenoid valve
			Internal error KMC2	See Remedial action	Replace KMC2
			Discharge chute is not up	Check position of the discharge chute	Lift discharge chute
			Determine via the terminal	Perform discharge chute diagnostics	
			Discharge chute centre position or discharge chute lower position sensor not adjusted correctly	Check setting of the sensors	Correct setting of the sensors
Wiring to one of the sensors discharge chute centre position or discharge chute lower position defective	Check wiring and plug	Replace cabling and plugs			
Sensor for discharge chute centre position or discharge chute lower position defective	Measure voltage on the sensors	Replace the sensor			

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2400	2400 discharge chute not in parking position	Error: Discharge chute not in parking position	Internal error KMC2	See Remedial action	Replace KMC2
2401	2401 Sensor B28 discharge chute centre signal too low	Error: Broken cable - discharge chute centre position sensor	Discharge chute centre position or discharge chute lower position sensor not adjusted correctly	Check setting of the sensors	Correct setting of the sensors
			Wiring to one of the sensors discharge chute centre position or discharge chute lower position defective	Check wiring and plug	Replace cabling and plugs
			Sensor for discharge chute centre position or discharge chute lower position defective	Measure voltage on the sensors	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2
			Determine via the terminal	Perform discharge chute diagnostics	Replace wiring and plugs

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2402	2402 Sensor B28 discharge chute centre signal too large	Error: Short circuit - discharge chute centre position sensor	Discharge chute centre position sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2
2403	2403 Sensor B29 discharge chute top signal too low	Error: Broken cable - discharge chute top position sensor	Determine via the terminal	Perform discharge chute diagnostics	
			Short circuit in the wiring to the discharge chute centre position sensor	Check wiring and plug	Replace wiring and plugs
			Discharge chute centre position sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2
			Determine via the terminal	Perform discharge chute diagnostics	
			Broken cable in the wiring to the discharge chute top position sensor	Check wiring and plug	Replace wiring and plugs
2403	2403 Sensor B29 discharge chute top signal too low	Error: Broken cable - discharge chute top position sensor	Discharge chute top position sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2404	2404 Sensor B29 discharge chute top signal too large	Error: Short circuit - discharge chute top position sensor	Determine via the terminal	Perform discharge chute diagnostics	
			Short circuit in the wiring to the discharge chute top position sensor	Check wiring and plug	Replace wiring and plugs
			Discharge chute top position sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2
2405	2405 Sensor B30 discharge chute impulse signal too low	Error: Broken cable discharge chute moments of momentum sensor	Determine via the terminal	Perform discharge chute diagnostics	
			Broken cable in the wiring to the discharge chute moments of momentum sensor	Check wiring and plug	Replace wiring and plugs
			Discharge chute moments of momentum sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2
2406	2406 Sensor B30 discharge chute impulse signal too large	Error: Short circuit discharge chute moments of momentum sensor	Determine via the terminal	Perform discharge chute diagnostics	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2407	2407 Fault feed drive speed	Error: Feed drive speed	Short circuit in the wiring to the discharge chute moments of momentum sensor	Check wiring and plug	Replace wiring and plugs
			Discharge chute moments of momentum sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2
			Current is flowing through the feed drive forward valve and the diesel engine is running, but the feed drive is not running	Perform feed drive diagnostics	
			Parameters for feed drive incorrect	Check parameters for feed drive	Correct parameters for feed drive
			The cables to the feed drive speed sensor are defective	Check wiring and plug	Replace cabling and plugs
			Feed drive speed sensor is not adjusted properly	Check the sensor setting and correct if necessary	Turn the sensor up to stop and then turn back by approx. half a turn and counter
			Feed drive speed sensor defective	Measure voltage on the sensor	Replace the sensor
			Feed drive is not running, although the feed drive is turned on, and the diesel engine is running	Check pump, engine, and valves of feed drive and stop valve of metal detection. Note any noises!	When checking, eliminate detected faults

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2408	2408 Fault front attachment speed	Error: Front attachment speed	Feed drive forward and feed drive backward valves defective	Check feed drive valves forwards and feed drive valves backwards defective	Clean or change feed drive valves forwards and feed drive valves backwards
			Charge pressure for the feed drive incorrect	Check charge pressure for feed drive (30+/-3 bar)	Set charge pressure for feed drive
			High pressure for feed drive incorrect	Check high pressure for feed drive (420 bar)	Set high pressure for feed drive
			Internal error KMC2	See Remedial action	Replace KMC2
			Parameters for front attachment incorrect	Check parameters for front attachment	Set parameters for front attachment
			The cables to the front attachment speed sensor are defective	Check wiring and plug	Replace cabling and plugs
			Parameters defective after software update	Check parameters 25260 and 25270 for no-load speeds front attachment	Set parameters 25260 and 25270 for no-load speeds front attachment to standard value 80
			Current is flowing through the front attachment forward valve and the diesel engine is running, but the front attachment is not running	Perform front attachment diagnostics	



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Front attachment speed sensor not adjusted properly	Check the sensor setting and correct if necessary	Turn the sensor up to stop and then turn back by approx. half a turn and counter
			Front attachment speed sensor defective	Measure voltage on the sensor	Replace the sensor
			Feed drive is not running even though the front attachment is turned on and the diesel engine is running	Check pump, engine, and valves of the front attachment, and stop valve of metal detection. Note any noises!	When checking, eliminate detected faults
			Front attachment forward and front attachment backward valves defective	Check front attachment valves forwards and front attachment valves backwards	Clean or change front attachment valves forwards and front attachment valves backwards.
			Charge pressure for front attachment too low	Check charge pressure for front attachment (30+/-3 bar)	Set charge pressure for front attachment
			High pressure for front attachment incorrect	Check high pressure for front attachment (420 bar)	Set high pressure for front attachment
			Internal error KMC2	See Remedial action	Replace KMC2
2409	2409 Fault cutting drum speed	Error: Cutting drum speed	Determine via the terminal	Perform work diagnostics	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2410			Cutting drum speed sensor not adjusted properly	Check setting of the sensor	Correct setting of the sensor
			Cutting drum attachment speed sensor defective	Measure voltage on the sensor	Replace the sensor
			Main belt for cutting drum defective	Check main belt	Change main belt
			Main coupling defective	Check main coupling	Replace main coupling
			Internal error KMC2	See Remedial action	Replace KMC2
			Determine via the terminal	Perform work diagnostics	
2411	2411 Sensor B58 cutting drum signal too large	Error: Short circuit cutting drum speed sensor	Broken cable in the wiring to the cutting drum speed sensor	Check wiring and plug	Replace wiring and plugs
			Cutting drum attachment speed sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2
			Determine via the terminal	Perform work diagnostics.	
			Short circuit in the wiring to the cutting drum speed sensor	Check wiring and plug	Replace wiring and plugs

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2412	2412 Malfunction metal det.	Error: Metal detection defective	Cutting drum attachment speed sensor defective	Measure voltage on the sensor	Replace sensor.
			Internal error KMC2	See Remedial action	Replace KMC2.
2413	2413 Malfunction sensor B28 discharge chute centre	Error: Time exceeded when parking or mirroring the discharge chute up to which discharge chute centre position sensor should have been alive	Incorrect default setting	Perform metal detection diagnostics	
			Conditions output metal detection, and input KMC2 deviate from each other	Check wiring between the metal detection and the KMC2	Perform test stop in metal detection diagnostics display
			Metal detection output defective	Test function of metal detection	Replace the metal detection system
			KMC2 input defective	See Remedial action	Replace KMC2
			Determine via the terminal	Perform discharge chute diagnostics	
			Wiring to the discharge chute centre position sensor defective	Check wiring and plug	Replace wiring and plugs
2413	2413 Malfunction sensor B28 discharge chute centre	Error: Time exceeded when parking or mirroring the discharge chute up to which discharge chute centre position sensor should have been alive	Discharge chute centre position sensor defective	Measure voltage on the sensor	Replace the sensor
			More pulses to one side were counted than permitted	Check discharge chute parameter max pulses left and discharge chute max pulses right	Correct discharge chute parameter max pulses left and discharge chute max pulses right

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2414	2414 Malfunction sensor B29 discharge chute top	Error: Discharge chute not up when attempting to park or mirror	Internal error KMC2 Discharge chute is not up Determine via the terminal	See Remedial action Check position of the discharge chute Perform discharge chute diagnostics	Replace KMC2 Lift discharge chute
2415	2415 Malfunction sensor B30 discharge chute impulse	Error: Sensor, discharge chute, moments of momentum	Discharge chute top position sensor is not adjusted properly Internal error KMC2 Determine via the terminal	Check setting of the sensors See Remedial action Perform discharge chute diagnostics	Correct setting of the sensors Replace KMC2
2500	2500 Sensor B55 front attachment left signal too low	Error: Broken cable front attachment left sensor	Short circuit / broken cable in the wiring to the discharge chute moments of momentum sensor Discharge chute moments of momentum sensor defective Internal error KMC2	Check wiring and plug Measure voltage on the sensor See Remedial action	Replace wiring and plugs Replace the sensor Replace KMC2

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2501	2501 Sensor B55 front attachment left signal too large	Error: Short circuit front attachment left sensor	The setting of the front attachment in the display does not agree with the actually mounted front attachment	Check setting on the display	Correct setting on the display
			Broken cable in the wiring to the front attachment left sensor	Check wiring and plug	Replace wiring and plugs
			Front attachment left sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2
2502	2502 Sensor B25 front attachment right signal too low	Error: Broken cable front attachment right sensor	Short circuit in the wiring to the front attachment left sensor	Check wiring and plug	Replace wiring and plugs
			Front attachment left sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2
			The setting of the front attachment in the display does not agree with the actually mounted front attachment	Check setting on the display	Correct setting on the display
			Broken cable in the wiring to the front attachment right sensor	Check wiring and plug	Replace wiring and plugs

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2503	2503 Sensor B25 front attachment right signal too large	Error: Short circuit front attachment right sensor	Front attachment right sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2
2506	2506 Release switch S1 field OFF - KMC2	Error: Action cannot be performed, or was terminated, because the field release switch is, or was, turned off	Short circuit in the wiring to the front attachment right sensor	Check wiring and plug	Replace wiring and plugs
			Front attachment right sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2
			Field release switch is, or was, turned off	Check switching position of field release switch	Switch on field release switch
			Determine via the terminal	Perform operating panel diagnostics	
			Field release switch wiring defective	Check wiring	Replace wiring
2506	2506 Release switch S1 field OFF - KMC2	Error: Action cannot be performed, or was terminated, because the field release switch is, or was, turned off	Field release switch defective	Test function of release switch.	Replace field release switch
			Internal error, operating panel	See Remedial action	Replace operating panel
			Internal error KMC2	See Remedial action	Replace KMC2

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure			
2507	2507 Release switch S5 maintenance OFF - KMC2	Error: Action cannot be performed, or was terminated, because the maintenance release switch is, or was, turned on	Maintenance release switch is, or was, turned on	Check switching position of maintenance release switch	Switch maintenance release switch off			
			Determine via the terminal	Perform operating panel diagnostics				
			Wiring of maintenance release switch defective	Check wiring	Replace wiring			
			Maintenance release switch defective	Test function of the release switch	Replace maintenance release switch			
			Internal error, operating panel	See Remedial action	Replace operating panel			
			Internal error KMC2	See Remedial action	Replace KMC2			
			2508	2508 Quick stop S90 or S91 ON - KMC2	Error: Action cannot be performed, or was terminated, because the quick stop switch is, or was, turned on	Quick stop switch is, or was, turned on	Check switching position of the quick stop switch	Turn quick stop switch off
						Determine via the terminal	Perform operating panel diagnostics	
						Wiring of the quick stop switch defective	Check wiring	Replace wiring
						Quick stop switch defective	Test function of switch	Replace quick stop switch
			Internal error, operating panel	See Remedial action	Replace operating panel			

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2509	2509 Lift additional axle valve coil Y80 current too low	Error: Current to lift additional axle valve is below minimum value (Y80)	<p>Internal error KMC2</p> <p>Determined via the terminal</p> <p>Broken cable in the wiring Additional axle valve (Y80)</p> <p>Valve plug defective</p> <p>Coil for solenoid valve defective</p> <p>Internal computer error - additional axle control</p>	<p>See Remedial action</p> <p>Run travelling gear diagnostics</p> <p>Check wiring</p> <p>Check valve plug and contacts</p> <p>Check coil</p> <p>See Remedy</p>	<p>Replace KMC2</p> <p>Replace wiring</p> <p>Replace valve plug</p> <p>Replace coil</p> <p>Replace additional axle control computer</p>
2510	2510 Lower additional axle valve coil Y81 current too low	Error: Current to lower additional axle valve is below minimum value (Y81)	<p>Determined via the terminal</p> <p>Broken cable in the wiring for the additional axle valve (Y81)</p> <p>Valve plug defective</p> <p>Coil for solenoid valve defective</p> <p>Internal computer error - additional axle control</p>	<p>Run travelling gear diagnostics</p> <p>Check wiring</p> <p>Check valve plug and contacts</p> <p>Check coil</p> <p>See Remedy</p>	<p>Replace wiring</p> <p>Replace valve plug</p> <p>Replace coil</p> <p>Replace additional axle control computer</p>



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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2511	2511 Pressure sensor B80 add.axis signal too low	Error: Broken cable for additional axle pressure sensor (B80)	Determined via the terminal  Broken cable in the wiring to the additional axle sensor (B80)  Additional axle sensor (B80) faulty  Internal computer error - additional axle control	Run travelling gear diagnostics  Check wiring and plug  Measure sensor supply voltage  See Remedy	  Replace wiring and plugs  Replace the sensor  Replace additional axle control computer
2512	2512 Malfunction during lowering of add. axis 	An error occurred while lowering the additional axle! Stop machine immediately and eliminate the error!	Determined via the terminal  Fault in the additional axle area  Broken cable/short circuit in wiring for the additional axle  Internal computer error - additional axle control	Run travelling gear diagnostics  Switch off the machine and check the additional axle  Check wiring and plug  See Remedy	  Switch off the machine and remedy the fault  Replace wiring and plugs  Replace additional axle control computer
2513	2513 Malfunction CAN2 between add.axis and KMC2	Error: CAN bus communication from additional axle control computer to the terminal	Determined via the terminal  Additional axle set but not available	Run CAN and travelling gear diagnostics  See Remedy	Check the travelling gear settings

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2514	Malfunction voltage 12V - add.axis	Error: Power supply voltage for additional axle computer too low / too high	Power supply voltage for additional axle control computer faulty	Check fuse +22-F51	Replace fuse +22-F51
			Central electrical power supply voltage defective	LED +22-LD60 not lit	Check/replace fuse +22-F60
			Short circuit/broken cable in the wiring for the CAN2 bus	LED +22-LD11 not lit	Check fuse +22-F92
			Internal computer error - additional axle control	Check wiring	Replace wiring
			Determined via the terminal	See Remedy	Replace additional axle control computer
			Power supply voltage for additional axle control computer faulty	Run travelling gear diagnostics	
			Central electrical power supply voltage defective	Check fuse +22-F51	Replace fuse +22-F51
			Internal computer error - additional axle control	LED +22-LD60 not lit	Check/replace fuse +22-F60
				LED +22-LD11 not lit	Check fuse +22-F92
				See Remedy	Replace additional axle control computer

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2515	2515 Malfunction voltage 5V - add.axis	Error: Switching voltage of additional axle too low/too high	Determined via the terminal  Internal computer error - additional axle control	Run travelling gear diagnostics  See Remedy	Replace additional axle control computer
2600	2600 Malfunction CAN1 between terminal and KMC2	Error: CAN bus communication - KMC2 to terminal	Determine via the terminal  Control unit not programmed  KMC2 power supply defective  Central electrical power supply defective.  Short circuit/broken cable in the wiring for the CAN1 bus  CAN1 terminating resistors defective	Perform CAN diagnostics  In the menu - Info software versions - check the software version of the control units  LED +22-LD61 not lit.  LED +22-LD60 not lit.  LED +22-LD11 not lit.  Check wiring  Check wiring and terminating resistors	Program control unit  Check fuse +22-F61  Check fuse +22-F60  Check fuse +22-F92  Replace wiring  If required, replace wiring and/or terminating resistors



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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			In some cases an incorrect CAN configuration from the autopilot may be the cause. The hardware does not match the autopilot autopilot software and sporadically causes this and /or other CAN error messages	If the serial number of the hardware autopilot is greater than 13.154157.1022 the autopilot software version must be at least 150200029-20	If necessary, update the software version of the autopilot
			Internal error KMC2	See Remedial action	Replace KMC2
2601	2601 sensor B91 leak oil pressure signal too low	Error: Leakage oil pressure sensor (B91) has broken cable	Determined via the terminal	Run travelling gear diagnostics	
			Broken cable in the wiring to the sensor (B91)	Check wiring and plug	Replace wiring and plugs
			Sensor for leakage oil pressure (B91) faulty	Measure sensor supply voltage	Replace the sensor
			Internal error KMC2	See Remedy	Replace KMC2
2602	2602 sensor B91 leak oil pressure signal too large	Error: Leakage oil pressure sensor (B91) has short circuit	Determined via the terminal	Run travelling gear diagnostics	
			Short circuit in the wiring to the sensor (B91)	Check wiring and plug	Replace wiring and plugs
			Sensor for leakage oil pressure (B91) faulty	Measure sensor supply voltage	Replace the sensor
			Internal error KMC2	See Remedy	Replace KMC2

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2603	2603 leak oil filter soiled	Error: Leakage oil filter dirty	Leakage oil filter dirty	Clean leakage oil filter	Replace leakage oil filter if necessary
			Short circuit/broken cable in wiring for leakage oil filter sensor (B91)	Check wiring to the leakage oil filter sensor (B91)	Replace wiring to the leakage oil filter sensor (B91)
			Sensor for leakage oil pressure (B91) faulty	Measure sensor supply voltage	Replace the sensor
			Internal error KMC2	See Remedy	Replace KMC2
2604	2604 leak oil filter very soiled	Error: Wheel motors faulty	Leakage oil filter dirty	Clean leakage oil filter	Replace leakage oil filter if necessary
			Sensor for leakage oil pressure (B91) faulty	Measure sensor supply voltage	Replace the sensor
			Short circuit/broken cable in wiring for leakage oil filter sensor (B91)	Check wiring to the leakage oil filter sensor (B91)	Replace wiring to the leakage oil filter sensor (B91)
			Wheel motors faulty	Check wheel motors	Consult KRONE Service
2605	2605 Foot switch malfunction S15/S16 - KMC2	When switching on the machine, a keypress has been detected by the foot switch.	Internal error KMC2	See Remedy	Replace KMC2
			The driver has accidentally pressed a foot switch.	Restart the machine without a key being activated by the driver.	Restart the machine

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2606	2606 Front attachment speed too high - KMC2	The maximum permissible front attachment speed has been exceeded	<p>Switch sticks mechanically or a short circuit from the switch is internally available</p> <p>Front attachment calibration is defective</p> <p>Sensor type from front attachment speed sensor wrongly indicated in the machine terminal (parameter 25492 engine front attachment)</p> <p>Mixed installation from 75ccm hydraulic pump with 55ccm hydraulic engine of front attachment drive</p> <p>Front attachment speed sensor defective</p>	<p>Check the switch and the wiring</p> <p>Check installed hydraulic component</p> <p>Make certain the parameter 25492 "Engine front attachment" is correctly set and compare the speed by using a speed measuring instrument on universal shaft of the front attachment drive with the display in the front attachment diagnostics in the machine terminal.</p>	<p>Replace switch or wiring</p> <p>Carry out front attachment drive calibration again</p> <p>Set the parameter appropriately and carry out the front attachment drive calibration again</p> <p>Replace hydraulic engine or hydraulic pump of the front attachment drive and carry out front attachment calibration again</p> <p>Replace the sensor and carry out front attachment drive calibration again</p>

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2607	2607 Valve Coil Y77 Release front attachment reverse current too low	Error: Power consumption from valve Y77 release front attachment backward is too low.	KMC2 shows an internal fault (input from job computer KMC2 defective)  Determination via terminal	Perform front attachment diagnostics	Replace job computer KMC2 and carry out the front attachment drive calibration again
2608	2608 Valve Coil Y77 Release front attachment reverse current too high	Error: Power consumption for the valve Y77 front attachment backward is too high.	Cable break in the wiring to valve Y77	Check wiring to valve	Replace the wiring to the valve
			Valve plug defective	Check valve plug	Replace valve plug
			Solenoid valve coil defective	Test coil	Replace coil
2608	2608 Valve Coil Y77 Release front attachment reverse current too high	Error: Power consumption for the valve Y77 front attachment backward is too high.	Determination via terminal	Perform front attachment diagnostics	
			Short circuit in the wiring to valve Y77	Check wiring to valve	Replace the wiring to the valve
			Valve plug defective	Check valve plug	Replace valve plug
			Solenoid valve coil defective	Test coil	Replace coil

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2609	2609 Malfunction cutting drum brake	The setting stated in the machine terminal for the braked cutting drum parameter 25655 \\\"Cutting drum brake available\\\" does not correspond to the actual configuration on the machine.	<p>The parameter 25655 does not correspond to the actual equipment on the machine.</p> <p>There is no braked cutting drum installed but valve Y77 can be detected. The voltage from valve Y77 must be approx. 8.5V if parameter 25655 \"Cutting drum brakes available\" is 0 (brake not installed).</p> <p>A braked cutting drum is installed but valve Y77 cannot be detected. The voltage from valve Y77 in the non-switched state must be approx. 0V if the parameter 25655 \"Cutting drum brakes available\" is 1.</p>	<p>Check current equipment and compare it with the set parameters.</p> <p>Check the voltage from valve Y77 in the diagnostics braked cutting drum in the machine terminal. A voltage of approx. 8.5V must always be present here if no braked cutting drum is installed.</p> <p>Check whether a cable break/short circuit valve Y77 is available. To do this, check the current as well as the voltage from valve Y77 in the diagnostics braked cutting drum in the machine terminal. If a braked cutting drum is installed, a voltage of approx. 0V must be present here if the valve Y77 release front attachment backward is not controlled. If the valve Y77 is controlled (front attachment reversed), a voltage of more than 10V is present here.</p>	<p>Set the parameter correctly</p> <p>Check plug 2X2 from KMC2 to make certain it is not soiled or moist. Also make certain that there is no short circuit. Clean the plug, if necessary.</p> <p>Internal fault in the control unit KMC2 ==&gt; replace KMC2</p> <p>The current from valve Y77 is greater than 500 mA. However, the voltage is approx. 8.5V ==&gt; Check the wiring from input Dig_3 from KMC2 to valve Y77.</p> <p>The current from valve Y77 is approx. 0 mA and the voltage from valve Y77 is approx. 8.5 V ==&gt; Check valve Y77 and the wiring from output KMC2.PWM_LA_8 to valve Y77 as well as from valve Y77 to output KMC2.HBPWM_6</p> <p>Output KMC2.PWM_LA_8 or output KMC2.HBPWM_6 defective or input KMC2.Dig_3 defective ==&gt; replace control unit KMC2</p>



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2610	2610 Malfunction cutting drum brake	A speed has been measured on the cutting drum even beyond 1.1 seconds.	Wrong mechanical setting of cutting drum speed sensor (B58).  Fault in the hydraulic system	Check the mechanical setting of the cutting drum speed sensor  Check the hydraulics	Set the sensor correctly.
2611	2611 Malfunction cutting drum brake	"The front attachment has detected a speed while the cutting drum has been braked. The parameter 25661 - Cutting drum brakes deactivated - has been set automatically to 1 (deactivated) and the brake for the cutting drum is no longer controlled. The parameter can only be changed by a service technician."	Fault on sensor front attachment speed B27  Fault in the hydraulic system	Check the front attachment speed in the diagnostics front attachment and the actual movement of the front attachment.  Check the hydraulics	The sensor B27 must be replaced if the front attachment does not move but a speed for the front attachment drive is displayed in the front attachment diagnostics.
2612	2612 Malfunction relay 20K2.1 front attachment in front - KMC2				
2613	2613 Malfunction relay 20K2.3 feed drive in front - KMC2				

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2614	2614 Malfunction relay 20K2.2 feed drive backwards - KMC2				
2615	2615 Malfunction relay 20K2.4 front attachment backwards release - KMC2				
2705	2705 disturbance CAN2 between KMC2 and FHC	The CAN communication between KMC2 and the FHC control unit (control unit for speed monitoring on the XCollect) is faulty.	<p>Plug for XCollect not inserted</p> <p>Incorrect machine setting. An XCollect is selected as the header yet no XCollect is mounted on the BIG X.</p> <p>An XCollect BJ 2016 is installed where no FHC control unit is installed.</p>	<p>See remedy</p> <p>See remedy</p> <p>See remedy.</p>	<p>Insert plug for XCollect</p> <p>Deselect XCollect as the feeder type and select the installed feeder device.</p> <p>Select EasyCollect as header device and also adjust the following parameters in the machine: 25242 "Reverse header idle state duration" = 0ms 25256 "Header run-up time maize" = 3900 ms 25266 "Header on ramp time maize" = 5100 ms 25267 "Header reverse ramp time maize" = 5100 ms 25270 "Header idle state speed maize" = 800 rpm 25405 "Header brake ramp time maize" = 2500ms</p>

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Control unit not programmed	See remedy	Program FHC control unit via Krone Diagnostics
			AutoScan supply voltage defective	Check fuse +22-F58 (link p.104)	Replace fuse +22-F58 (link p.104)
			Central electrical system supply voltage defective	LED +22-LD63 does not light up (link p.40)	Check fuse +22-F63 (link p.40)
				LED +22-LD11 does not light up (link p.40)	Check fuse +22-F92 (link p.39)
			Short circuit/cable break in the wiring CAN2 bus	Check wiring (link p.148)	Replace wiring
					Replace wiring
			Short circuit/cable break in the wiring CAN2 bus	Check wiring (link p.148)	Replace wiring and/or terminating resistors, if necessary
			Internal error AutoScan		
			See remedy	See remedy	Replace FHC control unit
2800	2800 disturbance speed sensor B115 - FHC	Cable break or short circuit to ground, signal or supply voltage from sensor B115	Determination via KRONE Diagnostics	Perform diagnostics using Krone Diagnostics	

# Error descriptions BiG X 600-1100+750C

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Cable break or short circuit in wiring to cutting drum speed sensor	Check wiring and plug	Replace wiring and plug
			Sensor defective	Measure voltage on the sensor	Replace sensor
			Internal error FHC	See remedy	Replace FHC
2801	2801 disturbance speed sensor B116 - FHC	Cable break or short circuit to ground, signal or supply voltage from sensor B116.	Causes, tests and remedies See error 2800.		
2802	2802 disturbance speed sensor B117 - FHC	Cable break or short circuit to ground, signal or supply voltage from sensor B117.	Causes, tests and remedies See error 2800.		
2803	2803 disturbance speed sensor B118 - FHC	Cable break or short circuit to ground, signal or supply voltage from sensor B118.	Causes, tests and remedies See error 2800.		
2804	2804 disturbance speed sensor B119 - FHC	Cable break or short circuit to ground, signal or supply voltage from sensor B119.	Causes, tests and remedies See error 2800.		
2805	2805 disturbance speed sensor B120 - FHC	Cable break or short circuit to ground, signal or supply voltage from sensor B120.	Causes, tests and remedies See error 2800.		

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2806	2806 disturbance speed sensor B121 - FHC	Cable break or short circuit to ground, signal or supply voltage from sensor B121.	Causes, tests and remedies See error 2800.		
2807	2807 disturbance speed sensor B122 - FHC	Cable break or short circuit to ground, signal or supply voltage from sensor B122.	Causes, tests and remedies See error 2800.		
2808	2808 disturbance speed sensor B123 - FHC	Cable break or short circuit to ground, signal or supply voltage from sensor B123.	Causes, tests and remedies See error 2800.		
2809	2809 disturbance speed sensor B124 - FHC	Cable break or short circuit to ground, signal or supply voltage from sensor B124.	Causes, tests and remedies See error 2800.		
2810	2810 disturbance coding resistor R121-R124 - FHC	One of the resistors R121 - R124 on the XCollect is outside the valid range.	Error in the wiring or at the resistors.	Measure resistors at the FHC plug. The resistors must have a resistance of 300 Ohm which corresponds to a voltage of 1.8 V on the sensor input.	- Replace resistors
					Replace wiring and plug
2811	2811 invalid configuration - FHC	An invalid configuration is saved in the EEPROM in the FHC	Internal error on the FHC	See remedy	Replace FHC
					Install the new configuration using Krone Diagnostics
					Replace control unit

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2812	2812 disturbance voltage general - FHC	An undervoltage, overvoltage or overload was detected on one of the supply voltages (electronic voltage supply, load voltage group UB1 - UB2).	Undervoltage on the electronics voltage supply Ue or on the load voltage group UB1 - UB2	Check fuse +22-F58 (link p.104)	Replace fuse +22-F58 (link p.104)
			Central electrical system supply voltage defective	LED +22-LD11 does not light up (link p.40)	Check fuse +22-F92 (link p.39)
			Wiring defective	LED +22-LD63 does not light up (link p.40)	Check fuse +22-F63 (link p.40)
			Discharge battery	Check wiring (link p.104)	Replace the wiring
			Charging warning light defective	Check battery acid Check battery voltage	- Charge battery - Replace battery
			Alternator defective	Check charging warning light, check wiring (link p.48)	Replace charging warning light or charging resistor and/or replace wiring
			Internal error in FHC control unit	Check alternator for proper functioning	Replace alternator
			Overload at UB1	Internal error in FHC control unit	
				See remedy	Replace FHC control unit
				Check soiling / error at FHC plug	- Remove soiling on plug - Replace wiring
					Replace FHC control unit


# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2813	2813 disturbance CAN2 - FHC	Physical bus error detected (bus off, CAN H/L short circuit to ground/UB)			
2814	2814 internal disturbance - FHC	An internal fault in the FHC was detected	Internal fault in the FHC	Detailed error analysis via Krone Diagnostics	Machine restart Reinstall FHC configuration using Krone Diagnostics Reinstall FHC software Perform FHC basic setting Replace control unit
3100	3100 Voltage electronics - KMC3	Error: Electronic voltage - voltage out of range	Determine via the terminal	Run electronics diagnostics.	
			KMC3 power supply defective	LED +22-LD44 not lit	Check fuse +22-F44
			Central electrical power supply voltage defective	LED +22-LD62 not lit	Check fuse +22-F62
				LED +22-LD11 not lit	Check fuse +22-F92

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Wiring defective	Check the cables.	Replace cabling
			Short circuit in the wiring to a 12V sensor	Check wiring	Replace wiring
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			The controller of the dynamo is defective	Check the excitation voltage, check wiring	Replace cabling
			Dynamo defective	Test function of dynamo	Replace the dynamo
				Battery dead	
				Check battery acid,	Charge battery,
				Check battery voltage	Change battery
			Battery change-over relay defective (500, 800, and 1000)	Test function of the relays according to circuit diagram	Replace battery change-over relay
			Internal error KMC3	See Remedial action	Replace the KMC3
3101 	3101 Undervoltage electronics - KMC3	Error: Electronics voltage too low		Run electronics diagnostics	





# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Power supply voltage of KMC3 too low	LED +22-LD44 not lit	Check fuse +22-F44
			Central electrical power supply voltage defective	LED +22-LD62 not lit	Check fuse +22-F62
			Wiring defective	LED +22-LD11 not lit	Check fuse +22-F92
			Short circuit in the wiring to a 12V sensor	Check the cables.	Replace cabling
			Charge indicator lamp defective	Check wiring	Replace wiring
			The controller of the dynamo is defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Check the excitation voltage, check wiring	Replace cabling
			Battery dead	Test function of dynamo	Replace the dynamo
			Battery change-over relay defective (500, 800, and 1000)	Check battery acid, Check battery voltage	Charge battery, Change battery
			Internal error KMC3	Test function of the relays according to circuit diagram	Replace battery change-over relay
				See Remedial action	Replace the KMC3

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3102 	3102 Overvoltage electronics - KMC3	Error: Electronics voltage too high	Power supply voltage of KMC3 too high	Run electronics diagnostics	
			Wiring defective	Check the cables.	Replace cabling
			Short circuit in the wiring to a 12V sensor	Check wiring	Replace wiring
			Charge indicator lamp defective	Check charge indicator lamp, Check wiring	If required, replace charge indicator lamp and/or renew cabling
			The controller of the dynamo is defective	Check the excitation voltage, check wiring	Replace cabling
			Dynamo defective	Test function of the dynamo	Replace the dynamo
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Battery change-over relay defective (500, 800, and 1000)	Test function of the relays according to circuit diagram	Replace battery change-over relay
			Internal error KMC3	See Remedial action	Replace the KMC3
			3103 	3103 Malfunction Voltage V1 - KMC3	Error: KMC3 output voltage of V1
Output voltage of V1 defective	LED +22-LD35 not lit	Check fuse +22-F81			


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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD60 not lit	Check fuse +22-F60
				LED +22-LD11 not lit	Check fuse +22-F92
			Fuse F13 in KMC3 defective	Check fuse F13 in KMC3	Replace fuse F13 in KMC3
			Wiring of release switch defective	Check wiring	Replace cabling
			Release switch defective	Test function of release switch.	Replace release switch
			GAL component release logic wrong (wrong GAL component)	Check release logic	Replace GAL component
			GAL component defective	See Remedial action	Replace GAL component
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, change charge indicator lamp and/or replace cabling
			Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Battery dead	Check battery acid, Check battery voltage	Charge battery Change battery
			Internal error KMC3	See Remedial action	Replace KMC3.


# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3104 	3104 Malfunction Voltage V2 - KMC3	Error: KMC3 output voltage of V2	Determine via the terminal	Run electronics diagnostics	
			Output voltage of V2 defective.	LED +22-LD34 not lit	Check fuse +22-F80
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD60 not lit	Check fuse +22-F60
				LED +22-LD11 not lit	Check fuse +22-F92
			Fuse F6 in KMC3 defective	Check fuse F6 in KMC3	Change fuse F6 in KMC3
			Wiring of release switch defective.	Check wiring	Replace cabling
			Release switch defective	Test function of release switch.	Replace release switch
			GAL component release logic wrong (wrong GAL component)	Check release logic	Replace GAL component
			GAL component defective	See Remedial action	Replace GAL component
Charge indicator lamp defective	Check charge indicator lamp Check the cables.	If required, replace charge indicator lamp and/or renew cabling			
Dynamo defective					


# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure	
3105 	3105 Malfunction Voltage V3 - KMC3	Error: KMC3 output voltage of V3	Battery dead	Check the excitation voltage, check wiring	Replace the dynamo	
			Internal error KMC3	Check battery acid Check battery voltage	Charge battery Change battery	
			Determine via the terminal	See Remedial action	Replace the KMC3	
			Output voltage of V3 defective	Run electronics diagnostics		
			Central electrical power supply voltage defective	LED +22-LD32 not lit	Check fuse +22-F78	
				LED +22-LD63 not lit	Check fuse +22-F63	
				LED +22-LD60 not lit	Check fuse +22-F60	
				LED +22-LD11 not lit	Check fuse +22-F92	
				Fuse F12 in KMC3 defective	Check fuse F12 in KMC3	Replace fuse F12 in KMC3
				Wiring of release switch defective	Check wiring	Replace cabling
	Release switch defective	Test function of release switch.	Replace release switch			
	GAL component release logic wrong (wrong GAL component)	Check release logic	If required, change GAL component			

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			GAL component defective	See Remedial action	Replace GAL component
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Internal error KMC3	See Remedial action	Replace the KMC3
3106	3106 Malfunction Voltage V4 - KMC3	Error: KMC3 output voltage of V4	Determine via the terminal	Run electronics diagnostics	
			Output voltage of V4 defective	LED +22-LD33 not lit	Check fuse +22-F79
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
		LED +22-LD60 not lit		Check fuse +22-F60	
		LED +22-LD11 not lit		Check fuse +22-F92	
			Fuse F2 in KMC3 defective	Check fuse F2 in KMC3	Replace fuse F2 in KMC3

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3107	3107 Malfunction Voltage 12V digital sensors - KMC3	Error: 12 volts - voltage of digital sensors	Wiring of release switch defective	Check wiring	Replace cabling
			Release switch defective	Test function of release switch.	Replace release switch
			GAL component release logic wrong (wrong GAL component)	Check release logic	If required, change GAL component
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Internal error KMC3	See Remedial action	Replace the KMC3
			Determine via the terminal	Run electronics diagnostics	
			Short circuit in the wiring to a digital sensor	Check wiring	Replace wiring
			Digital sensor defective	Check sensors	If required, replace sensors
Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling			

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3108	3108 Malfunction Voltage 8V digital sensors - KMC3	KMC3 Spg. 8V dig.sensors	Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Internal error KMC3	See Remedial action	Replace the KMC3
			Determine via the terminal	Run electronics diagnostics	
			Short circuit in the wiring to a digital sensor	Check wiring	Replace wiring
			Digital sensor defective	Check sensors	If required, replace sensors
			Charge indicator lamp defective	Check charge indicator lamp, Check wiring	Replace cabling
			Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Internal error KMC3	See Remedial action	Replace the KMC3



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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3109	3109 Malfunction Voltage 8V analogue sensors - KMC3	Error: 8 V voltage of analogue sensors	Determine via the terminal	Run electronics diagnostics	
			Short circuit in the wiring to an analogue sensor	Check wiring	Replace wiring
			Analogue sensor defective	Check sensors	If required, replace sensors
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	Replace cabling
			Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
3110	3110 Voltage battery 3V too low - KMC3	Error: Backup battery voltage 3 volts too low	Internal error KMC3	See Remedial action	Replace the KMC3
			Discharge the backup battery	Measure voltage on the battery	Replace backup battery in KMC3
			Internal error KMC3	See Remedial action	Replace the KMC3
3111	3111 Cutting drum no speed!	Error: No cutting drum speed!	Determined via the terminal	Perform work diagnostics	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3112	3112 Joystick not correct!	Error: Joystick type set incorrectly	Short circuit/broken cable in wiring for cutting drum speed sensor (B58) Cutting drum speed sensor (B58) faulty Internal error KMC2	Check wiring to the cutting drum speed sensor (B58) Check sensor See Remedy	Replace wiring to the cutting drum speed sensor (B58) Replace the sensor Replace KMC2
3200	3200 M11 Cracker motor current too high	Short-circuit Cracker engine (M11)	Current joystick type not set Error: Maximum current engine cracker has been exceeded Determine via the terminal Power consumption too high due to sluggish mechanics Wrong parameter value for maximum current of cracker engine Short circuit in the engine cracker wiring Plug defective	Check settings Perform cracker diagnostics Check mechanism for contamination Check parameters Check wiring Check plug	Set joystick type Remove the dirt; grease the mechanics If required, increase current Replace wiring Replace plug

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3201	3201 M11 Cracker motor current too low	Error: Minimum current engine cracker has fallen below the normal level	Engine cracker defective	Check Cracker engine	Replace the engine cracker
			Internal error KMC3	See Remedial action	Replace the KMC3
3202	3202 Cracker motor minimum distance reached	Error: When reducing the cracker gap, the current is monitored for the zero position of the cracker rollers. The current has a value between the normal and the maximum current	Determine via the terminal	Perform cracker diagnostics	
			Wrong parameter value for minimum current of cracker engine	Check parameters	If required, reduce current
			Output voltage defective	Check output voltage	Adjust output voltage
			Broken cable in the engine cracker wiring	Check wiring	Replace wiring
			Plug defective	Test function of plugs and contacts	Replace plug
			Engine cracker defective	Test engine	Replace the engine cracker
			Internal error KMC3	See Remedial action	Replace the KMC3
			The zero position of the cracker has been reached	none	none
			Wrong parameter value for cracker	Test default setting of the Cracker parameter s	Perform a default setting of the parameter crackers

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			The wiring to the engine cracker is defective	Check wiring and plug	Replace cabling or plugs
			Internal error KMC3	See Remedial action	Replace the KMC3
3203	3203 Malfunction cracker sensor B42	Error: Sensor cracker position detected	Mechanik vom Cracker-Motor ist zu schwergaengig	Cracker-Motor ausbauen und im ausgebauten Zustand testen	Wenn der Motor dreht, muss die Mechanik vom Cracker gereinigt werden. Wenn der Motor nicht dreht siehe weitere Ursachen.
			Power supply voltage for analogue sensors incorrect	Check power supply voltage	Set supply voltage
			Wiring to cracker position sensor defective	Check wiring and plug	Replace cabling and plugs
			Cracker position sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error in KMC3	See Remedial action	Replace the KMC3
			Engine does not rotate continuously	Test engine at no load	Remove engine and actuate electrically, check whether it rotates continuously. As long as the engine is supplied with current, a signal from the sensor is expected. If this does not occur, an error message is issued.

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3204	3204 Sensor BM17 position rear wall of discharge accelerator malf.			Check that corn conditioner moves easily	Check whether corn conditioner is mechanically jammed
3205	3205 disturbance CAN communication - KMC3	An overflow occurred in the KMC3 when sending CAN messages	Too many CAN messages were sent within a certain period which meant that some could not be sent.	Are control units which have not been certified by KRONE connected to the CAN Bus?  See remedy	Remove the relevant control unit  Notify Krone customer service
3206	3206 disturbance voltage V1 - KMC3	Error: KMC3 output voltage V2 There is a voltage on the output voltage V2 from KMC3 although this is not permitted. The release conditions for the voltage V2 are not satisfied, yet a voltage of V2 is measured.	Logical control status of the release switch traction drive, street/field, maintenance or quick stop console or manual operation does not concur with the actual switch position.	Check the logical switching states of the release switch. Check the LED of the inputs of the release switches on the console against the states in the diagnostics in the terminal.	- Insert the release switches properly into the plug contacts in the CUC - Check plug for soiling and clean - Replace release switches - Check wiring - Control CUC and replace if necessary

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				Logical control status of the quick stop console or manual operation. Check LED 16LD14, 16LD15 on the CUC and 22LD107 on the relay circuit board console against the state in the diagnostics terminal (mask 4-1-17) and the actual control status of the quick-stop switch.	- Clean the plug of the quick stop switch - Replace the quick stop switch - Clean the plug connector - Check the wiring
			Wrong GAL module or error in GAL module	See remedy	Replace GAL module
			Relay circuit board console defective	See remedy	Replace relay circuit board
			Voltage is read in incorrectly by the KMC	Read off the voltage Vx from the KMC3 in the terminal	Replace KMC3
3207	3207 disturbance voltage V2 - KMC3	Logical control status of the release switch traction drive, street/field, maintenance or quick stop console or manual operation does not concur with the actual switch position.	For causes, tests and remedies see error 3206		

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3208	3208 disturbance voltage V3 - KMC3	Logical control status of the release switch traction drive, street/field, maintenance or quick stop console or manual operation does not concur with the actual switch position.	For causes, tests and remedies see error 3206		
3209	3209 disturbance voltage V4 - KMC3	Logical control status of the release switch traction drive, street/field, maintenance or quick stop console or manual operation does not concur with the actual switch position.	For causes, tests and remedies see error 3206		
3210	3210 Lifting gear pressure low during counterblade adjustment				
3211	3211 Lifting gear pressure too high during counterblade adjustment				

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3212	3212 Automatic detection of VariLOC position is not possible, please check the settings manually!	Automatic detection of the VariLOC gearbox position is not possible. To allow the system to work without errors, the current gearbox position must be set manually.	There is an unknown speed ratio between the engine speed and the chopping drum speed.	Speed measurement of chopping drum faulty.  See remedy	- Check assembly of the speed sensor - replace the speed sensor  Set parameter 35025 manually according to the mechanical gearbox setting. Transmission of chop length of VariLOC gearbox. 0= automatic detection, 1= position I (transmission 1:1), 2= position II (1:1.5), 3= not installed
3213	3213 Check VariLOC gearbox switch position!	The manual setting of parameter 34025 "Transmission of chop length of VariLOC gearbox" does not concur with the actual measured speed ratio between the engine speed and chopping drum speed.	Adjust parameter 34025 according to the mechanical setting. Transmission of chop length of VariLOC gearbox. 0= automatic detection, 1= position I (transmission 1:1), 2= position II (1:1.5), 3= not installed	Check parameter 34025	Set parameter 34025 accordingly
			Error in chopping drum speed measurement	Check speed of chopping drum at the rated speed of the diesel engine (approx. 1950 rpm) in the terminal. In switch position I of the gearbox (1:1) the chopping drum speed must be approx. 1100 rpm.	Check the mechanical setting of the sensor  Replace sensor  Check wiring
			Internal KMC3 fault	See remedy	Replace KMC3



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3301	3301 M9 counterblade left motor current too high	Error: Maximum current left counterblade engine has been exceeded	Determine via the terminal	Perform counterblade diagnostics	
			Power consumption too high due to sluggish mechanics	Check mechanism for contamination	Remove the dirt; grease the mechanics
			Wrong parameter value for the maximum current left counterblade engine	Check parameters	Run default setting parameters
			Short circuit in the left counterblade engine wiring	Check wiring	Replace wiring
			Plug defective	Check plugs and contacts	Replace plug
			Left counterblade engine defective	Check counterblade engine left	Replace left counterblade engine
			Internal error KMC3	See Remedial action	Replace the KMC3
3302	3302 M9 counterblade left motor current too low	Error: Minimum current left counterblade engine has fallen below the normal level	Determine via the terminal	Perform counterblade diagnostics	
			Wrong parameter value for the minimum current left counterblade engine	Check parameters	Run default setting parameters
			Output voltage defective	Check output voltage	Set output voltage

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Plug defective	Check plugs and contacts	Replace plug
			Left counterblade engine defective	Test function of engine	Replace left counterblade engine
			Internal error KMC3	See Remedial action	Replace the KMC3
			Broken cable in the left counterblade engine wiring	Check wiring	Replace wiring
3303	3303 Motor M10 counterblade right maximum current	Error: Maximum current right counterblade engine has been exceeded	Determine via the terminal	Perform counterblade diagnostics	
			Power consumption too high due to sluggish mechanics	Check mechanics	Remove the dirt; grease the mechanics
			Wrong parameter value for the maximum current right counterblade engine	Check parameters	Run default setting parameters
			Short circuit in the right counterblade engine wiring	Check wiring	Replace wiring
			Plug defective	Check plugs and contacts	Replace plug
			Right counterblade engine defective	Test function of the engine	Replace right counterblade engine

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3304	3304 M10 counterblade right motor current too high	Error: Maximum current right counterblade engine has been exceeded	Internal error KMC3  Determine via the terminal  Power consumption too high due to sluggish mechanics  Wrong parameter value for the maximum current right counterblade engine  Short circuit in the right counterblade engine wiring  Plug defective  Right counterblade engine defective  Internal error KMC3	See Remedial action  Perform counterblade diagnostics  Check mechanics  Check parameters  Check wiring  Check plugs and contacts  Test function of engine  See Remedial action	Replace the KMC3   Remove the dirt; grease the mechanics  Run default setting parameters  Replace wiring  Replace plug  Replace right counterblade engine  Replace the KMC3
3305	3305 M10 counterblade right motor current too low	Error: Minimum current right counterblade engine has fallen below the normal level	Determine via the terminal	Perform counterblade diagnostics	

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Wrong parameter value for the minimum current right counterblade engine	Check parameters	Run default setting parameters
			Output voltage defective	Check output voltage	Set output voltage
			Broken cable in the right counterblade engine wiring	Check wiring	Replace wiring
			Plug defective	Check plugs and contacts	Replace plug
			Right counterblade engine defective	Test function of engine	Replace right counterblade engine
			Internal error KMC3	See Remedial action	Replace the KMC3
3306	3306 Reserve Alarm				
3307	3307 Reserve Alarm				
3308	3308 Valve coil Y12 main coupling current too low	Error: Minimum current main coupling valve has fallen below the normal level	Determine via the terminal	Perform work diagnostics	

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Broken cable in the wiring for the main coupling valve	Check wiring	Replace wiring
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Check coil. The coil must have a resistance of approx. 2.2 ohm	- Change coil - Coil with the valve \"Y11 1/2 intake volume HA\" has been interchanged. The valve Y11 \"1/2 intake volume HA is connected to connection A from the valve block. The main coupling valve is connected to connection B from the valve block. The valve Y11 \"1/2 intake volume HA\" has an internal resistance of approx. 8 ohm.
			Internal error KMC3	See Remedial action	Replace the KMC3
3400	3400 Sensor B84 external temperature signal too large	Error: Short circuit in external temperature sensor (B84)	Short circuit in the wiring to the sensor (B84) External temperature sensor (B84) faulty Internal error KMC3	Check wiring and plug Measure sensor supply voltage See Remedy	Replace wiring and plugs Replace the sensor Replace the KMC3

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3401	3401 Sensor B84 external temperature signal too low	Error: External temperature sensor (B84) has broken cable	Broken cable in the wiring to the sensor (B84) External temperature sensor (B84) faulty Internal error KMC3	Check wiring and plug Measure sensor supply voltage See Remedy	Replace wiring and plugs Replace the sensor Replace the KMC3
3402	3402 Sensor B85 hydraulic oil temperature signal too large	Error: Short circuit in hydraulic oil temperature sensor (B85)	Determined via the terminal Short circuit in the wiring to the sensor (B85) Hydraulic oil temperature sensor (B85) faulty Internal error KMC3	Perform engine diagnostics Check wiring and plug Measure sensor supply voltage See Remedy	Replace wiring and plugs Replace the sensor Replace the KMC3
3403	3403 Sensor B85 hydraulic oil temperature signal too low	Determined via the terminal	Perform engine diagnostics Broken cable in the wiring to the sensor (B85) Hydraulic oil temperature sensor (B85) faulty Internal error KMC3	Perform engine diagnostics Check wiring and plug Measure sensor supply voltage See Remedy	Replace wiring and plugs Replace the sensor Replace the KMC3

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3404	3404 Engine fan speed too high	Error: Maximum speed of engine fan exceeded	Determined via the terminal	Perform engine diagnostics	
			Short circuit in the wiring to the hydraulic fan control valve (Y82)	Check wiring	Replace wiring
			Valve plug defective	Check valve plug and contacts	Replace valve plug
			Coil for solenoid valve defective	Check coil	Replace coil
			Internal error DIOM	See Remedy	Replace DIOM
3405	3405 Engine fan speed too low	Error: Engine fan speed below minimum value	Determined via the terminal	Perform engine diagnostics	
			Broken cable in the wiringHydraulic fan control valve (Y82)	Check wiring	Replace wiring
			Valve plug defective	Check valve plug and contacts	Replace valve plug
			Coil for solenoid valve defective	Check coil	Replace coil
			Internal error DIOM	See Remedy	Replace DIOM

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3406	3406 Sensor B36 grinding stone left signal too large	Error: Short circuit left position grinding stone sensor	Determine via the terminal	Perform grinding diagnostics	
			Short circuit in the wiring to the left position grinding stone sensor	Check wiring and plug	Replace wiring and/or plugs
			Left grinding stone sensor position defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC3	See Remedial action	Replace the KMC3
3407	3407 Sensor B36 grinding stone left signal too low	Error: Broken cable left position grinding stone sensor	Determine via the terminal	Perform grinding diagnostics	
			Broken cable in the wiring to the left position grinding stone sensor	Check wiring and plug	Change wiring and/or plugs
			Left grinding stone sensor position defective	Measure voltage on the sensor	Replace the sensor
			Power supply for digital sensors incorrect	Check power supply voltage	Set supply voltage
3408	3408 Sensor B37 grinding stone right signal too large	Error: Short circuit right position grinding stone sensor	Internal error KMC3	See Remedial action	Replace the KMC3
			Determine via the terminal	Perform grinding diagnostics	



# Error descriptions BiG X 600-1100+750C

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3409			Short circuit in the wiring to the right position grinding stone sensor	Check wiring and plug	Change wiring and/or plugs
			Left grinding stone sensor position defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC3	See Remedial action	Replace the KMC3
			Determine via the terminal	Perform grinding diagnostics	
			Broken cable in the wiring to the right position grinding stone sensor	Check wiring and plug	Check wiring and/or plugs Screw
			Right grinding stone position sensor defective	Measure voltage on the sensor	Replace the sensor
			Power supply for digital sensors incorrect	Check power supply voltage	
			Internal error KMC3	See Remedial action	Replace the KMC3
			Determine via the terminal	Perform grinding diagnostics	
			Short circuit in the wiring to the grinding device maintenance flap sensor closed	Check wiring and plug	Replace wiring and/or plugs
3410	3410 Sensor B37 grinding stone right signal too low	Error: Broken cable right position grinding stone sensor	Determine via the terminal	Perform grinding diagnostics	
			Short circuit grinding device maintenance flap sensor closed	Check wiring and plug	Replace wiring and/or plugs
3410	3410 Sensor B59 maintenance flap grinding device signal too large	Error: Short circuit grinding device maintenance flap sensor closed	Determine via the terminal	Perform grinding diagnostics	
			Short circuit in the wiring to the grinding device maintenance flap sensor closed	Check wiring and plug	Replace wiring and/or plugs

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Grinding device maintenance flap closed sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC3	See Remedial action	Replace the KMC3
3411	3411 Sensor B59 maintenance flap grinding device signal too low	Error: Broken cable grinding device maintenance flap sensor closed	Determine via the terminal	Perform grinding diagnostics	
			Broken cable in the wiring to the grinding device maintenance flap sensor closed	Check wiring and plug	If required, replace wiring and/or plugs
			Grinding device maintenance flap closed sensor defective	Measure voltage on the sensor	Replace the sensor
			Power supply for digital sensors incorrect	Check power supply voltage	Set supply voltage
			Internal error KMC3	See Remedial action	Replace the KMC3
3412	3412 Sensor B113 locking lever for bottom inspection access points - signal too low				
3413	3413 Sensor B113 locking lever for bottom inspection access points - signal too great				

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3414	3414 Grinding stone not in parking position				
3415	3415 Error front attachment folding! For emergency folding additionally press key N. Caution: contact with cabin possible!	When folding up the header, one of the conditions required to fold on (e.g., pendulum frame) is no longer met. However, in order to proceed with folding up, the missing release condition can be overdriven with the "N" key on the control lever. During this time, the driver must monitor the header and cabin closely and stop the procedure immediately in the event of a possible collision.	Pendulum frame is not horizontal.	Check on the working screen in the terminal whether the pendulum frame is straight.	Fold out the header again, align the pendulum frame horizontally and fold up the header.  Also press the N button to continue the folding procedure. Monitor the cabin and header closely during folding. In the event of a possible collision, stop the procedure immediately.
3500	3500 chute not in parking position!	Error: Discharge chute not in parking position	The discharge chute is not in parking position	Check whether discharge chute is in parking position	Move discharge chute into parking position
			Discharge chute centre or lower position sensor defective	Perform discharge chute diagnostics	
			Discharge chute centre position or discharge chute lower position sensor not adjusted correctly	Check setting of the sensors	Correct setting of the sensors



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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Wiring to one of the sensors discharge chute centre position or discharge chute lower position defective	Check wiring and plug	Replace cabling and/or plugs
			Sensor for discharge chute centre position or discharge chute lower position defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2.	See Remedial action	Replace KMC2
3501	3501 Engine 2 speed too low!	Error: Speed of 2nd diesel engine below minimum value	Determined via the terminal	Perform engine diagnostics	
			Determined by the diagnostic unit	Run diagnostics via MiniDiag	Consult KRONE Service
			Engine control of second engine faulty	See Remedy	Replace engine control of second engine
3502	3502 disturbance sensor B87 pendulum frame on left	Error: Cable break or short circuit on sensor B87 on pendulum frame on left.	Parameter 33634, the sensor type which is installed on the pendulum frame, (parameter 33634 "Pendulum frame sensor 0 = Elobau, 1 = NAMUR") is not the actually installed sensor.	Check parameter 33634	Adjust parameter 33634 according to the installed sensor.

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Short circuit in the wiring to the sensor position on grinding stone left.	Check wiring and plug.	Replace wiring and/or plugs.
			Sensor defective	Measure voltage on the sensor	Replace sensor
			Internal error KMC3	See remedy	Replace KMC3
3503	3503 disturbance sensor B88 pendulum frame on right	Error: Cable break or short circuit on sensor B88 pendulum frame position right.	Parameter 33634, the sensor type which is installed on the pendulum frame, (parameter 33634 "Pendulum frame sensor 0 = Elobau, 1 = NAMUR") is not the actually installed sensor.	Check parameter 33634	Adjust parameter 33634 according to the installed sensor.
			Cable break or short circuit in the wiring to the sensor position on grinding stone right.	Check wiring and plug.	Replace wiring and/or plugs.
			Sensor defective	Measure voltage on the sensor	Replace sensor
			Internal error KMC3	See remedy	Replace KMC3
3504	3504 Malfunction sensor B52 pendulum frame	Error: Sensor for transversal inclination position	Sensor for transversal inclination position not adjusted	Check setting on sensor	Make adjustment

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Sensor for transversal inclination position defective	Perform lifting gear diagnostics	Set lifting gear
			Error in the wiring to the sensor transverse incline position	Check wiring and plug	Replace wiring and/or plugs
			Sensor for transversal inclination position defective	Measure voltage on the sensor	Replace the sensor
			Power supply voltage for analogue sensors incorrect	Check power supply voltage	Set supply voltage
			Internal error KMC3	See Remedial action	Replace the KMC3
3505	3505 SmartDrive safety signal missing	Error: Safety signal - Smart Drive to KMC3	Determine via the terminal	Run travelling gear diagnostics	
			SmartDrive power supply defective	Check the Smart Drive power supply and check the wiring	Replace cabling to the SmartDrive
			Short circuit/broken cable in the wiring of the safety signal	Check wiring	Replace wiring
			Internal error - Smart Drive	See Remedial action	Replace Smart Drive
			Internal error - KMC3.	See Remedial action	Replace the KMC3
3506	3506 Malfunction Sensor B44 tank sensor	Error: Filling level fuel tank sensor	Error in the wiring of the filling level fuel tank sensor	Check wiring to filling level fuel tank sensor	Replace wiring to fuel tank filling level sensor



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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Protective resistor defective	Check series resistor	Change series resistor
			Filling level fuel tank sensor defective	Check fuel tank filling level sensor	Replace fuel tank filling level sensor
			Short circuit in the wiring to another KMC3 sensor	Check wiring	Replace wiring
			Internal error KMC3	See Remedial action	Replace the KMC3
3507	3507 Diesel engine maintenance	Note: Maintenance work must be performed	The maintenance interval has elapsed	Check whether the maintenance interval has expired	Have maintenance performed at the intended factory, and have the maintenance reminders reset
			Determine via the terminal	Perform engine diagnostics	
			Air filter dirty	Cleaning the Air Filter	If required, change air filter
			Short circuit/broken cable in wiring for air filter contamination sensor	Check wiring to air filter contamination sensor	Replace wiring to air filter contamination sensor
			Air filter contamination sensor defective	Measure voltage on the sensor	Replace air filter contamination sensor
			Internal error KMC3	See Remedial action	Replace the KMC3
3508	3508 Air filter contaminat.	Error: Air filter contamination (800 and 1000 have 2 air filters)			



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3509 	3509 Fill level hydraulic oil control	Error: Hydraulic tank filling level	The hydraulic oil level is too low	Check hydraulic fluid level	If required, top up hydraulic fluid
			Short circuit/broken cable in the wiring for the hydraulic oil level sensor	Check wiring	Replace wiring
			Determine via the terminal	Perform work diagnostics	
			Hydraulic oil level sensor defective	Check hydraulic tank filling level sensor	If required, replace hydraulic tank filling level sensor
			Power supply voltage for analogue sensors incorrect	Check power supply voltage	Correct supply voltage
			Short circuit in the wiring to another KMC3 sensor	Check wiring	Replace wiring
			Internal error KMC3	See Remedial action	Replace the KMC3
3510 	3510 Fault suct. return filter 1	Error: Suction return filter 1 filling level	Suction return filter 1 dirty	Clean suction return filter 1	If required, change suction return filter 1
			Determine via the terminal	Perform work diagnostics	
			Short circuit/broken cable in the wiring for the suction return filter 1 sensor	Check wiring	Replace wiring



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Suction return filter 1 sensor defective	Measure voltage on the sensor	Replace suction return filter 1 sensor
			Internal error KMC3	See Remedial action	Replace the KMC3
3511	3511 Malfunction M12 central lubrication	Error: Central lubrication IMPORTANT: All malfunction messages from the central lubrication system must be confirmed and deleted using the DK key on the central lubrication system. This will simultaneously delete any intermediate lubrication. Before deleting the error message, determine the cause of the error, and eliminate it. See also Central Lubrication System in the operating instructions.	Power supply voltage for central lubrication defective	LED +22-LD42 not lit	Check fuse +22-F89  See also Central Lubrication System in the operating instructions
			No grease present	Check grease filling level	Add grease as described in the BIG X operating instructions, chapter Maintenance central Lubrication System. See also Central Lubrication System in the operating instructions
			Determine via the terminal	Perform work diagnostics	
			Jam in the system or at a connected lubrication point.	Check main distributor, subdistributor and lubrication points for blockage	Clean and, if required, replace main distributor, subdistributor and lubrication points
3512	3512 Malfunction B43 sensor filling level hydraulic oil	Error: Hydraulic oil filling level	Short circuit / broken cable in the wiring to the sensor	Check wiring	Replace wiring


# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3513	3513 Oil pressure main gearbox	Error: Main gearbox oil pressure	Sensor defective Short circuit / broken cable in the wiring to the sensor Sensor defective	Measure voltage on the sensor Check wiring Measure voltage on the sensor	Replace the sensor Replace wiring Replace the sensor
3600	3600 Malfunction CAN1 between terminal - KMC3	Error: CAN bus communication - KMC3 to terminal	Determine via the terminal KMC3 power supply defective Central electrical power supply voltage defective	Perform CAN diagnostics LED +22-LD44 not lit LED +22-LD62 not lit LED +22-LD11 not lit	Check fuse +22-F44 Check fuse +22-F62 Check fuse +22-F92
			Short circuit/broken cable in the wiring for the CAN1 bus CAN1 terminating resistors defective	Check wiring Check wiring and terminating resistors	Replace wiring Replace wiring and/or terminating resistors
			In some cases an incorrect CAN configuration from the autopilot may be the cause. The hardware does not match the autopilot autopilot software and sporadically causes this and /or other CAN error messages	If the serial number of the hardware autopilot is greater than 13.154157.1022 the autopilot software version must be at least 150200029-20	If necessary, update the software version of the autopilot

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
4000	4000 Metal detection deactivated!!!	Alarm: Metal detection has been switched off	Metal detection has been switched off	Perform metal detection diagnostics	Change metal detection settings
4001	4001 Malfunction voltage 10V - metal detection	Error: Power supply voltage for metal detection	Power supply voltage for metal detection defective	Check fuse +22-F55	Replace fuse +22-F55
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
			Wiring defective	LED +22-LD11 not lit	Check fuse +22-F92
				Check the cables.	Replace cabling
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Dynamo defective	Test function of dynamo	Replace the dynamo
			Metal detection internal error	See Remedial action	Replace the metal detection system

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
4002 	4002 Malfunction voltage 8V - metal detection	Error: Power supply voltage too low (<8V)	Power supply voltage for metal detection too low Central electrical power supply voltage defective	Check fuse +22-F55 LED +22-LD63 not lit LED +22-LD11 not lit	Change fuse +22-F55 Check fuse +22-F63 Check fuse +22-F92
			Wiring defective	Check the cables.	Replace cabling
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Dynamo defective	Test function of dynamo	Replace the dynamo
			Metal detection internal error	See Remedial action	Replace the metal detection system
4003	4003 Metal detection activated!!!	Note: Metal detection has been turned on	none	none	none
4010 	4010 Stop valve Y35 current too low - metal detection	Error: Broken cable - quick stop valve	Quick stop valve - broken cable	LED +22-LD71 glowing	Check fuse +22-F71

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Central electrical power supply voltage defective	LED +22-LD11 not lit	Check fuse +22-F92
			Broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil
			Metal detection internal error	See Remedial action	Replace the metal detection system
4011	4011 Stop valve Y35 current too high - metal detection	Error: Short circuit in quick stop valve	Error: Short circuit in quick stop valve	LED +22-LD71 glowing	Check fuse +22-F71
			Central electrical power supply voltage defective	LED +22-LD11 not lit	Check fuse +22-F92
			Short circuit in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Coil for solenoid valve defective	Test coil	Replace coil
			Metal detection internal error	See Remedial action	Replace the metal detection system
4012	4012 stop valve Y35 - metal detection	Error: Overload quick stop valve	Quick stop valve overload	LED +22-LD71 glowing	Check fuse +22-F71





# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Central electrical power supply voltage defective	LED +22-LD11 not lit	Check fuse +22-F92
			Wiring to the valve defective	Check wiring to valve	Replace wiring to valve
			Coil for solenoid valve defective	Test coil	Replace coil
			Metal detection internal error	See Remedial action	Metal detection internal error
4013	4013 internal malfunction - metal detection	Error: Quick stop valve output defective	Parameters for metal detection system incorrect	Check parameters	Set the factory settings of the metal detection in the display of the metal detection diagnostics
			Output defective	Perform metal detection diagnostics	Replace the metal detection system
			Metal detection internal error	See Remedial action	Replace the metal detection system
4032	4032 internal malfunction - metal detection	Error: Metal detection internal	Parameters for metal detection system incorrect	Check parameters	Set the factory settings of the metal detection in the display of the metal detection diagnostics
			Metal detection internal error	See Remedial action	Replace the metal detection system




# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
4033 	4033 internal malfunction - metal detection	Error: Metal detection internal	Parameters for metal detection system incorrect  Metal detection internal error	Check parameters  See Remedial action	Set the factory settings of the metal detection in the display of the metal detection diagnostics  Replace the metal detection system
4034 	4034 internal malfunction - metal detection	Error: Metal detection internal	Parameters for metal detection system incorrect  Metal detection internal error	Check parameters  See Remedial action	Set the factory settings of the metal detection in the display of the metal detection diagnostics  Replace the metal detection system
4048 	4048 internal malfunction - metal detection	Error: Metal detection internal	Parameters for metal detection system incorrect  Metal detection internal error	Check parameters  See Remedial action	Set the factory settings of the metal detection in the display of the metal detection diagnostics  Replace the metal detection system
4049 	4049 internal malfunction - metal detection	Error: Metal detection internal	Parameters for metal detection system incorrect	Check parameters	Set the factory settings of the metal detection in the display of the metal detection diagnostics

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
4050 	4050 internal malfunction - metal detection	Error: Metal detection internal	Metal detection internal error  Parameters for metal detection system incorrect	See Remedial action  Check parameters	Replace the metal detection system  Set the factory settings of the metal detection in the display of the metal detection diagnostics
4220 	4220 Malfunction CAN2 communication - metal detection	Error: Metal detection internal	Parameters for metal detection system incorrect  In some cases an incorrect CAN configuration from the autopilot may be the cause. The hardware does not match the autopilot autopilot software and sporadically causes this and /or other CAN error messages	Check parameters  If the serial number of the hardware autopilot is greater than 13.154157.1022 the autopilot software version must be at least 150200029-20	Replace the metal detection system  Set the factory settings of the metal detection in the display of the metal detection diagnostics  If necessary, update the software version of the autopilot
4222 	4222 internal malfunction (parameter error) - metal detection	Error: Metal detection internal	Parameters for metal detection system incorrect	See Remedial action  Check parameters	Replace the metal detection system



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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
4224	4224 Internal malfunction - metal detection	Error: Fault in metal detection or data saving	Metal detection internal error	See Remedial action	Replace the metal detection system
4301	4301 METAL DETECTED!!	Error: Metal detected in feed drive	Metal in feed drive	Check whether there is metal in the feed drive	Remove metal and then reverse feed drive/front attachment
4302	4302 Malfunction metal detection	Error: Fault, metal detection	Incorrect default setting	Check default setting	Perform default setting in the display in the metal detection diagnostics

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Conditions output metal detection, and input KMC2 deviate from each other	Check wiring between the metal detection and the KMC2	Perform test stop in metal detection diagnostics display
			Metal detection output defective	Perform metal detection diagnostics	Replace the metal detection system
			KMC2 input defective	Run KMC2 diagnostics	Replace KMC2
			Short circuit/broken cable in the wiring for the CAN2 bus	Check wiring	Replace wiring
			CAN2 terminating resistors defective	Check wiring and terminating resistors	If required, replace wiring and terminating resistors
4400	4400 pressure sensor steer B63 signal too low	Error: Broken cable steering wheel pressure sensor	Determine via the terminal	Perform autopilot diagnostics	
			Steering pressure sensor function defective	Check the function using manual operation on the hydraulic block valve. Ensure easy motion and no noises in the steering!	Replacing the Pressure Sensor
			Steering hydraulic pressure defective	Check steering hydraulic pressure (0 - 200 bar)	Set steering hydraulic pressure
			Broken cable in the wiring to the sensor	Check wiring to sensor	Replace wiring to the sensor
			Sensor plug defective	Check plugs and contacts	Replace sensor plug

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error autopilot	See Remedial action	Replace autopilot
4401	4401 pressure sensor steer B63 signal too high	Error: Short circuit steering wheel pressure sensor	Determine via the terminal	Perform autopilot diagnostics	
			Steering pressure sensor function defective	Check the function using manual operation on the hydraulic block valve. Ensure easy motion and no noises in the steering!	Replace pressure sensor
			Steering hydraulic pressure defective	Check steering hydraulic pressure (0 - 200 bar)	Set steering hydraulic pressure
			Short circuit in the wiring to the sensor	Check wiring to sensor	Replace wiring to the sensor
			Sensor plug defective	Check sensor plugs	Replace sensor plug
			Sensor defective	Measure voltage on the sensor	Replace the sensor
			Short circuit in the wiring to another autopilot sensor	Check wiring	Replace wiring
			Internal error autopilot	See Remedial action	Replace autopilot

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure			
4402	4402 sensor steer.axis B64 signal too low	Error: Broken cable steering axle angle sensor	Determine via the terminal	Perform autopilot diagnostics				
			Broken cable in the wiring to the sensor	Check wiring to sensor	Replace wiring to the sensor			
			Sensor plug defective	Check sensor plugs	Replace sensor plug			
			Sensor defective	Measure voltage on the sensor	Replace the sensor			
			Internal error autopilot	Measure voltage on the sensor	Replace autopilot			
			4403	4403 sensor steer.axis B64 signal too high	Error: Short circuit steering axle angle sensor	Determine via the terminal	Perform autopilot diagnostics	
						Short circuit in the wiring to the sensor	Check wiring to sensor	Replace wiring to the sensor
						Sensor plug defective	Check sensor plugs	Replace sensor plug
Sensor defective	Measure voltage on the sensor	Replace the sensor						
Short circuit in the wiring to another autopilot sensor	Check wiring	Replace wiring						
Internal error autopilot	See Remedial action	Replace autopilot						

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure			
4404	4404 sensor row-tracer B65 signal too low	Error: Broken cable sensor row tracer left	Determine via the terminal	Perform autopilot diagnostics				
			Broken cable in the wiring to the sensor	Check wiring to sensor	Replace wiring to the sensor			
			Sensor plug defective	Check sensor plugs	Replace sensor plug			
			Sensor defective	Measure voltage on the sensor	Replace the sensor			
			Internal error autopilot	See Remedial action	Replace autopilot			
			4405	4405 sensor row-tracer B65 signal too high	Error: Short circuit sensor row tracer left	Determine via the terminal	Perform autopilot diagnostics	
						Short circuit in the wiring to the sensor	Check wiring to sensor	Replace wiring to the sensor
						Sensor plug defective	Check sensor plugs	Replace sensor plug
Sensor defective	Measure voltage on the sensor	Replace the sensor						
Short circuit in the wiring to another autopilot sensor	Check wiring	Replace wiring						
Internal error autopilot	See Remedial action	Replace autopilot						

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure			
4406	4406 sensor row-tracer B61 signal too low	Error: Broken cable sensor row tracer right	Determine via the terminal	Perform autopilot diagnostics				
			Broken cable in the wiring to the sensor	Check wiring to sensor	Replace wiring to the sensor			
			Sensor plug defective	Check sensor plugs	Replace sensor plug			
			Sensor defective	Measure voltage on the sensor	Replace the sensor			
			Internal error autopilot	See Remedial action	Replace autopilot			
			4407	4407 sensor row-tracer B61 signal too high	Error: Short circuit sensor row tracer right	Determine via the terminal	Perform autopilot diagnostics	
						Short circuit in the wiring to the sensor	Check wiring to sensor	Replace wiring to the sensor
						Sensor plug defective	Check sensor plugs	Replace sensor plug
Sensor defective	Measure voltage on the sensor	Replace the sensor						
Short circuit in the wiring to another autopilot sensor	Check wiring	Replace wiring						
Internal error autopilot.	See Remedial action	Replace autopilot						

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
4408	4408 valve coil Y39 steering axis left current too low	Error: Broken cable steering axle valve left	Determine via the terminal	Perform autopilot diagnostics	
			Broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plug	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil
4409	4409 valve coil Y39 steering axis left current too high	Error: Short circuit steering axle valve left	Internal error autopilot	See Remedial action	Replace autopilot
			Determine via the terminal	Perform autopilot diagnostics	
			Short circuit in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Coil for solenoid valve defective	Test coil	Replace coil
4410	4410 valve coil Y40 steering axis right current too low	Error: Broken cable steering axle valve right	Internal error autopilot	See Remedial action	Replace autopilot
			Determine via the terminal	Perform autopilot diagnostics	
			Broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective		

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
4411	4411 valve coil Y40 steering axis right current too high	Error: Short circuit steering axle valve right	Coil for solenoid valve defective	Check valve plugs and contacts	Replace valve plug
			Internal error autopilot	Test coil	Replace coil
			Determine via the terminal	See Remedial action	Replace autopilot
			Short circuit in the wiring for the valve	Perform autopilot diagnostics	
			Coil for solenoid valve defective	Check wiring to valve	Replace wiring to valve
			Internal error autopilot	Test coil	Replace coil
4412	4412 Malfunction power supply voltage outputs - Autopilot	Error: Electronic voltage - voltage out of range	Determine via the terminal	Perform diagnostics for autopilot and electronics	
			Power supply voltage for autopilot incorrect	LED +22-LD50 not lit	Check fuse +22-F50
			Central electrical power supply voltage defective	LED +22-LD30 not lit	Check fuse +22-F76
				LED +22-LD63 not lit	Check fuse +22-F63



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				LED +22-LD11 not lit	Check fuse +22-F92
			Wiring defective	Check the cables.	Replace cabling
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Test function of dynamo	Replace the dynamo
			The controller of the dynamo is defective	While engine is running, measure on batteries. Voltage must not be over 14.8V	Replace the dynamo
			Battery change-over relay defective (500, 800, and 1000).	Test function of the relays according to circuit diagram	Replace battery change-over relay
			Internal error autopilot	See Remedial action	Replace autopilot
4413	4413 Malfunction sensor voltage - Autopilot	Error: Power supply voltage too low	Determine via the terminal	Perform diagnostics for autopilot and electronics	

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Short circuit in the wiring to the sensors	Check wiring to the sensors	Replace wiring to the sensors
			Sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error autopilot	See Remedial action	Replace autopilot
4414	4414 Malfunction reserve 0/14 - Autopilot				
4415	4415 Malfunction reserve 0/15 - Autopilot				
4419	4419 Internal malfunction - Autopilot	Internal fault in the autopilot computer	ISOBUS-ID is not available in the control unit		Replace control unit
4420	4420 Error ISOBUS between Autopilot and Task Controller	There is a fault on the CAN ISOBUS between the autopilot and the Task Controller	Wrong setting in the autopilot. The Task Controller is not available. However, one is activated.	Read out the ISOBUS ECU configuration using Krone Helper	Correctly set the configuration in Krone Helper accordingly.
			No TaskController server on the machine	See remedy	Connect the ISOBUS terminal to the TaskController server on the ISOBUS.

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Physical fault on the CAN-ISOBUS	Check wiring	Replace CAN terminating resistor
				Check wiring from CAN-ISOBUS.	Replace the wiring.
				Check the CAN-ISOBUS with Krone Diagnostics	Replace the wiring
			Incorrect software on the autopilot	See remedy	Perform software update for autopilot
			Internal error in autopilot	See remedy	Replace autopilot
			Internal error in TaskController server	See remedy	- Perform software update for TaskController server - replace TaskController server
4421	4421 Error ISOBUS between Autopilot and AutoGuidance	There is a fault on the CAN ISOBUS between the autopilot and the Task Controller	Incorrect setting in the autopilot or ISOBUS-ECU. The AutoGuidance (GPS autopilot) is not available. However, one is activated.	Read out the ISOBUS ECU configuration using Krone Helper	Set the configuration in Krone Helper correctly according to the components present.
			There is no AutoGuidance on the machine	See remedy	Connect AutoGuidance to CAN-ISOBUS.
			Physical fault on the CAN-ISOBUS	Check the CAN terminating resistors	Replace CAN terminating resistor

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				Check wiring from CAN-ISOBUS.	Replace the wiring.
			Incorrect software on the autopilot	Check the CAN-ISOBUS with Krone Diagnostics	Replace the wiring
			Internal error in autopilot	See remedy	Perform software update for autopilot
			Internal error in autopilot	See remedy	Replace autopilot
			Internal error in AutoGuidance	See remedy	- Perform software update for AutoGuidance - replace AutoGuidance
4432	4432 Malfunction CAN between terminal - Autopilot	Error: CAN bus communication - autopilot to KMC3.	Determine via the terminal	Perform diagnostics for autopilot and CAN	
			Power supply voltage for autopilot incorrect	LED +22-LD50 not lit	Check fuse +22-F50
				LED +22-LD30 not lit	Check fuse +22-F76
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD11 not lit	Check fuse +22-F92

# Error descriptions BiG X 600-1100+750C

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Short circuit/broken cable in the wiring for the CAN1 bus	Check wiring	Replace wiring
			CAN1 terminating resistors defective	Check wiring and terminating resistors	If required, replace wiring and/or terminating resistors
			In some cases an incorrect CAN configuration from the autopilot may be the cause. The hardware does not match the autopilot autopilot software and sporadically causes this and /or other CAN error messages	If the serial number of the hardware autopilot is greater than 13.154157.1022 the autopilot software version must be at least 150200029-20	If necessary, update the software version of the autopilot
			Internal error autopilot	See Remedial action	Replace autopilot
5000	5000 Display battery empty	Error: Backup battery voltage	Discharge the backup battery	Check battery voltage	Replace backup battery in display
			Internal error display	See Remedial action	Replace display
5001	5001 KMC2 software wrong machine type	Error: Wrong software	Wrong software loaded	Check software version	Load new software
5002	5002 KMC3 software wrong machine type	KMC3 software - incorrect machine type	Wrong software loaded	Check software version	Load new software

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
5003	5003 Diesel engine maintenance	Note: Maintenance work must be performed	The maintenance interval has elapsed	Check whether the maintenance interval has expired	Have maintenance performed at the intended factory, and have the maintenance reminders reset  Perform engine diagnostics
5004	5004 Diesel engine maintenance	Note: Maintenance work must be performed	The maintenance interval has elapsed	Check whether the maintenance interval has expired	Have maintenance performed at the intended factory, and have the maintenance reminders reset  Perform engine diagnostics
5005	5005 Software inconsistent	The installed software versions of the individual control units are not compatible.	One or more control units on the machine have an incorrect software version.	Display the software versions on the terminal of the machine on the "Software Info" screen and compare with the software information in the KroneDownloadCenter. The control unit where the incorrect software version has been transferred, transfer correspondingly new software	
5006	5006 Electronic Autopilot still active	Note: Autopilot electronics still active	Determined via the terminal  Autopilot release switch turned on	Perform autopilot diagnostics  See Remedy	Turn off Autopilot release switch

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
5007	5007 Recalibrate cracker	Note: Calibration work must be performed	Check whether calibration is required Calibration required	Run grain conditioner diagnostics See Remedy	Perform calibration
5008	5008 Memory for error list full	Error: Wait queue for saving data full Attention: For the engine error 5008 please open engine error list MAN MFR!	Wait queue for saving data full	See Remedy	Consult KRONE Service
5009	5009 Diesel engine oil pressure too low	Error: Diesel engine oil pressure has fallen below minimum value	Determined via the terminal Determined by the diagnostic unit Engine control faulty	Perform engine diagnostics Run diagnostics using the engine diagnostic device See Remedy	Consult KRONE Service Replace engine control
5010	5010 Cooling water temperature too high	Error: Cooling water temperature too high!	The cooling water temperature is too high Determined via the terminal Determined by the diagnostic unit	Check radiator to ensure it is clean Perform engine diagnostics Run diagnostics using the engine diagnostic device	Clean the radiator Consult KRONE Service

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
5011	5011 Check diesel engine type setting	Fault: Diesel engine type lost	Setting of diesel engine not available	Check engine type setting in the terminal	Contact KRONE customer service
5012	5012 Machine data inconsistent!	The saved machine number or the engine type in the individual control units as well as in the terminal are not compatible with each other.	A control unit has been replaced	Check the set engine type in the terminal of the machine  Check the machine number in the terminal with the actual machine number	Enter engine type anew by using the "Krone-Helper" PC programme  Enter machine number anew
5013	5013 Check wear on brake lining on main drive				
5014	5014 coolant level too low!	The coolant level in the main cooler is too low.	Too little water / coolant	Check the filling level of the coolant	Top up coolant
7000	7000 Acceleration sensor left BXX signal too low - RockProtect	Error: Acceleration sensor left broken cable	Broken cable in the wiring to the left acceleration sensor  Left acceleration sensor defective  Internal error - KMC4	Check wiring and plug  Measure voltage on the sensor  See Remedial action	Renew wiring and plugs  Replace left sensor  Replace KMC4



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
7001	7001 Acceleration Sensor left BXX overvoltage - RockProtect	Error: Acceleration sensor left voltage too high	Short-circuit of operating voltage for acceleration sensor left	Check wiring and plug	Replace wiring and/or plugs
			Left acceleration sensor defective	Measure voltage on the sensor	Replace left sensor
			Internal error - KMC4	See Remedial action	Replace KMC4
7002	7002 Malfunction acceleration sensor left BXX - RockProtect	Error: RockProtect acceleration sensor left	Determined via the terminal	Run RockProtect diagnostics	
			Acceleration sensor faulty	Measure sensor supply voltage	Replace the sensor
			Internal error KMC4 (RockProtect)	See Remedy	Replace KMC4 (RockProtect)
7003	7003 Acceleration sensor B76 right signal too low - RockProtect	Error: Acceleration sensor right broken cable	Broken cable in the wiring to the right acceleration sensor	Check wiring and plug	Replace wiring and plugs
			Right acceleration sensor defective	Measure voltage on the sensor	Replace left sensor
			Internal error - KMC4	See Remedial action	Replace KMC4
7004	7004 Overvoltage acceleration sensor B76 signal too high - RockProtect	Error: Acceleration sensor right voltage too high	Short-circuit of operating voltage for acceleration sensor right	Check wiring and plug	Replace wiring and/or plugs
			Right acceleration sensor defective	Measure voltage on the sensor	Replace right sensor

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal error - KMC4	See Remedial action	Replace KMC4
7005	7005 Malfunction acceleration sensor B76 right - RockProtect	Error: RockProtect acceleration sensor right	Determined via the terminal Acceleration sensor (B75) faulty	Run RockProtect diagnostics Measure sensor supply voltage	Replace the sensor
			Internal error KMC4 (RockProtect)	See Remedy	Replace KMC4 (RockProtect)
7006	7006 Path sensor BXX signal too low - RockProtect	Error: Broken cable - path sensor	Broken cable in the wiring to the path sensor Path sensor defective	Check wiring and plug Measure voltage on the sensor	Replace wiring and/or plugs Replace sensor
			Internal error - KMC4	See Remedial action	Replace KMC4
7007	7007 Path sensor BXX overvoltage - RockProtect	Error: Path sensor voltage too high	Short-circuit of operating voltage path sensor right Path sensor defective	Check wiring and plug Measure voltage on the sensor	Replace wiring and plugs Replace sensor
			Internal error - KMC4	See Remedial action	Replace KMC4
7008	7008 Path sensor BXX Malfunction - RockProtect	Error: RockProtect distance sensor	Determined via the terminal	Run RockProtect diagnostics	

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Distance sensor (B72) faulty	Measure voltage on sensor	Replace the sensor
			Internal error KMC4 (RockProtect)	See Remedy	Replace KMC4 (RockProtect)
7009	7009 Stop valve Y35 current too low - RockProtect	Error: Valve current is below the minimum level	Broken cable in the wiring for the valve Valve plug defective Coil for solenoid valve defective	Check wiring Check valve plugs and contacts Check coil	Replace wiring Replace valve plug Replace coil
7010	7010 Stop valve Y35 current too high - RockProtect	Error: Maximum valve current exceeded	Internal error - KMC4 Short circuit in the wiring for the valve Valve plug defective Coil for solenoid valve defective Internal error - KMC4	See Remedial action Check wiring Check valve plugs and contacts Check coil See Remedial action	Internal error - KMC4 Replace wiring Replace valve plug Replace coil Replace KMC4
7011	7011 Malfunction valve coil Y35 - RockProtect	Determined via the terminal	Run RockProtect diagnostics	Run RockProtect diagnostics	

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
7012	7012 Undervoltage electronics - RockProtect	Error: Voltage in KMC4 is too low	Internal error KMC4 (RockProtect)  Wiring defective  Short circuit in the wiring to a 12V sensor  Battery dead	See Remedy  Check the cables.  Check wiring  Check battery acid Check battery voltage	Replace KMC4 (RockProtect)  Replace cabling  Replace wiring  Charge battery Change battery
7013	7013 Overvoltage electronics - RockProtect	Error: Voltage in KMC4 is too high	Charge indicator lamp defective  Dynamo defective  Internal error - KMC4	Check charge indicator lamp Check the cables.  Check the excitation voltage, check wiring  See Remedial action	If required, replace charge indicator lamp and/or renew cabling  Replace the dynamo  Replace KMC4
			The controller of the dynamo is defective  Dynamo defective	While engine is running, measure on batteries. Voltage must not be over 14.8V  Test dynamo	Replace the dynamo  Replace the dynamo

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Battery change-over relay defective (500, 800, and 1000)	Test function of the relays according to circuit diagram	Replace battery change-over relay
			Internal error - KMC4	See Remedial action	Replace KMC4
7014	7014 Undervoltage sensors - RockProtect	Error: Voltage on sensors too low	Wiring defective	Check the cables.	Replace cabling
			Wiring to a 12 V sensor defective	Check wiring	Replace wiring
			Battery dead	Check battery acid	Charge battery
				Check battery voltage	Change battery
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or check cabling
			Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Internal error - KMC4	See Remedial action	Replace KMC4
7015	7015 Overvoltage sensors - RockProtect	Error: Voltage on sensors too high	The controller of the dynamo is defective	While engine is running, measure on batteries. Voltage must not be over 14.8V	Replace the dynamo

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Dynamo defective	Test dynamo	Replace the dynamo
			Battery change-over relay defective (500, 800, and 1000)	Test function of the relays according to circuit diagram	Replace battery change-over relay
			Internal error - KMC4.	See Remedial action	Replace KMC4
7016	7016 Rock detected!!	Error: Rock detected in the feed drive	Rock in feed drive	Check whether stone in feed drive	Remove rock and then reverse feed drive/front attachment
8000	8000 ensilage tank empty	Error: silage tank empty	Silage tank empty	Check tank	Fill tank
			Sensor (B60) defective	Measure sensor supply voltage	Replace sensor (B60)
			Wiring faulty	Check wiring and plug	If required, replace wiring and/or plug
			Internal error KMC2/3	See Remedy	Replace KMC2/3
8001	8001 Error ensilage pump	Error: Silage agent pump defective	Determined via the terminal	Perform work diagnostics	
			Short circuit/broken cable in the silage agent pump wiring	Check wiring	Replace wiring

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9611	9611 Overvoltage - AutoScan	Error: Power supply voltage too high	Silage agent pump faulty	Check silage agent pump	Replace silage agent pump
			Short circuit/broken cable in wiring for the silage agent flow sensor (B77)	Check wiring	Replace wiring
			Silage agent flow sensor (B77) faulty	Measure sensor supply voltage	Replace sensor (B77)
			Internal error KMC3	See Remedy	Replace the KMC3
			Determine via the terminal	Perform AutoScan diagnostics	
9612	9612 Undervoltage 10V - AutoScan	Error: Supply voltage too low (	The controller of the dynamo is defective	While engine is running, measure on batteries. Voltage must not be over 14.8V	Replace the dynamo
			Dynamo defective	Test function of dynamo	Replace the dynamo
			Battery change-over relay defective (500, 800, and 1000)	Test function of the relays according to circuit diagram	Replace battery change-over relay
			Internal error - AutoScan	See Remedial action	Replace AutoScan
			Falsche Software-Version im AutoScan-Sensor		

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				Software-Version vom AutoScan-Sensor im Terminal der Maschine kontrollieren	SW-Version in Abhaengigkeit der vorhandenen Hardware-Version (Mat.-Nr.) vom AutoScan-Sensor aufspielen.  bis Mat.-Nr 20 080 287 1 ==> SW AutoScan = 150 200 162-01 aufspielen. (Ist die SW-Version 150 200 162-02 auf dem AutoScan - Sensor mit der MAT-Nr. 20 080 287 1 aufgespielt gewesen ist eine Kalibrierung vom Sensor notwendig. Dazu muss der Sensor zu Krone zurueck)  bis Mat.-Nr 20 080 287 2 ==> SW AutoScan = 150 200 162-03 aufspielen. Eine Neukalibrierung ist mit der MAT-Nr 20 080 287 2 nicht notwendig.
			Determine via the terminal	Run AutoScan diagnostics.	
			AutoScan power supply voltage too low	Check fuse +22-F58	Change fuse +22-F58
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD11 not lit	Check fuse +22-F92
			Wiring defective	Check the cables.	Replace cabling



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9613	9613 Undervoltage 8V - AutoScan	Error: Supply voltage too low (	Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Test function of dynamo	Replace the dynamo
			Internal error - AutoScan	See Remedial action	Replace AutoScan
			Determine via the terminal	Perform AutoScan diagnostics	
			AutoScan power supply voltage too low	Check fuse +22-F58	Change fuse +22-F58
			Central electrical power supply voltage defective	LED +22-LD63 not lit. LED +22-LD11 not lit	Check fuse +22-F63 Check fuse +22-F92
			Wiring defective	Check the cables.	Replace cabling
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Test function of dynamo	Replace the dynamo
			Internal error - AutoScan	See Remedial action	Replace AutoScan
9614	9614 Glass scratched - AutoScan	Error: AutoScan glass scratched	Determine via the terminal	Perform AutoScan diagnostics	
9615	9615 Malfunction LED 1 - AutoScan	Error: AutoScan LED1 defective	AutoScan glass scratched	Check AutoScan for scratches	Replace AutoScan
			Determine via the terminal	Perform AutoScan diagnostics	
9616	9616 Malfunction LED 2 - AutoScan	Error: AutoScan LED2 defective	AutoScan LED 1 defective	Test function of LED	Replace AutoScan
			Determine via the terminal	Perform AutoScan diagnostics	
9617	9617 Malfunction Photo diode - AutoScan	Error: AutoScan photo diode defective	AutoScan LED 2 defective	Test function of LED	Replace AutoScan
			AutoScan photo diode defective	See Remedial action	Replace AutoScan

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9618	9618 Internal Malfunction (parameter error) - AutoScan	Error: AutoScan wrong parameters	Wrong AutoScan parameters	Check parameters	Correct parameters
9907	9907 Malfunction CAN2 between KMC2 and Rock Protect	Error: CAN bus communication - RockProtect to KMC2	Determined via the terminal  Control unit not programmed  RockProtect supply voltage faulty	Run diagnostics for RockProtect and CAN  In the menu - Info software versions - check the software version of the control units  LED +22-LD4 not lit  LED +22-LD6 not lit  LED KMC4 not lit/not flashing	Program control unit  Check fuse +22-F40  Check fuse +22-F39  Check fuse for KMC4 (RockProtect)
			Central electrical power supply voltage defective	LED +22-LD63 not lit  LED +22-LD60 not lit  LED +22-LD11 not lit	Check fuse +22-F63  Check fuse +22-F60  Check fuse +22-F92
			Short circuit/broken cable in the wiring for the CAN2 bus	Check wiring and resistance values.	Replace wiring

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9910	9910 Malfunction CAN2-communication between KMC2 - NIR-Sensor (A37)	Fault: Communication between KMC2 and NIR sensor	Internal error KMC4 (RockProtect)  Determination via terminal  Power supply NIR sensor defective  Short circuit / broken cable in the wiring for the CAN2 bus  Central electrical power supply voltage defective  Internal error - KMC2 or NIR sensor	See Remedy  Carry out CAN diagnostics  Check LED LD7 on relay circuit board console  Check wiring and plug  LED +22-LD63 not lit  See remedy	Replace KMC4 (RockProtect)   Check/replace fuse F41 on relay circuit board console  Replace wiring and plug  Check fuse +22-F63  Replace KMC2 or NIR sensor
9911	9911 Malfunction CAN2 between KMC2 and Autoscan	Error: CAN bus communication - AutoScan to terminal	AutoScan selected, even though there is no AutoScan available  Control unit not programmed  AutoScan power supply voltage defective	Check whether Autoscan is available   In the menu - Info software versions - check the software version of the control units  Check fuse +22-F58	Deactivate AutoScan in the display  Perform CAN diagnostics  Program control unit  Change fuse +22-F58


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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
			Short circuit/broken cable in the wiring for the CAN2 bus	LED +22-LD11 not lit	Check fuse +22-F92
			CAN2 terminating resistors defective	Check wiring	Replace wiring
			Internal error - AutoScan	Check wiring and terminating resistors	Verdrahtung erneuern
			Determination via terminal	See Remedial action	If required, replace wiring and/or terminating resistors
9912	9912 Malfunction CAN2 between KMC2 and Crop Control	Error: CAN bus communication - Crop Control to KMC2	Internal error - AutoScan	Carry out CAN diagnostics	Replace AutoScan
			Power supply voltage Crop Control defective	LED +22-LD5.1/LD6 on relay circuit board console is not lit	Replace fuse +22-F39
			Switching voltage Crop Control defective	LED +22-LD4/LD5 on relay circuit board console is not lit	Check fuse +22-F40
			Short circuit/cable break in the wiring CAN2 bus	Check wiring and resistances	Replace wiring
			Internal error Crop Control	Replace Crop Control computer	


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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9920 	9920 Malfunction CAN1 between terminal and joystick	Error: CAN bus communication - joystick to terminal	Determine via the terminal	Perform CAN diagnostics	
			Control unit not programmed	In the menu - Info software versions - check the software version of the control units	Program control unit
			Joystick power supply defective	Check fuse +22-F57	Change fuse +22-F57
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
			Short circuit/broken cable in the wiring for the CAN1 bus	LED +22-LD11 not lit	Check fuse +22-F92
			CAN1 terminating resistors defective	Check wiring	Replace wiring
			In some cases an incorrect CAN configuration from the autopilot does not match the autopilot autopilot software and sporadically causes this and /or other CAN error messages	Check wiring and terminating resistors	If required, replace wiring and/or terminating resistors
	If the serial number of the hardware autopilot is greater than 13.154157.1022 the autopilot software version must be at least 150200029-20	If necessary, update the software version of the autopilot			

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9921 	9921 Malfunction CAN1 between terminal and CU	Error: CAN bus communication - CU to terminal	Internal joystick error  Determine via the terminal  Control unit not programmed  Power supply voltage operating panel defective  Central electrical power supply voltage defective  Short circuit/broken cable in the wiring for the CAN1 bus  CAN1 terminating resistors defective	See Remedial action  Perform CAN diagnostics  In the menu - Info software versions - check the software version of the control units  Check fuse +22-F47  Check fuse +22-F48.1  LED +22-LD62 not lit  LED +22-LD64 not lit  LED +22-LD11 not lit  Check wiring  Check wiring and terminating resistors	Replace joystick   Program control unit  Change fuse +22-F47  Change fuse +22-F48.1  Check fuse +22-F62  Check fuse +22-F64  Check fuse +22-F92  Replace wiring  If required, change wiring and/or terminating resistors

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			In some cases an incorrect CAN configuration from the autopilot may be the cause. The hardware does not match the autopilot autopilot software and sporadically causes this and /or other CAN error messages	If the serial number of the hardware autopilot is greater than 13.154157.1022 the autopilot software version must be at least 150200029-20	If necessary, update the software version of the autopilot
			In some cases, the message can also occur when the signal of the charge indicator is between 4-8Volt!	It appears only the message 9921 and no further CAN error messages. In ignition stage 1 (without the engine has been running before), no error message appears. After starting the diesel engine, the message 9921 appears. The running LED on the BEK does not flash than. Disconnect connector 16x13 (signal from the charge indicator light) of the BEK and start new diesel engine. If the BEK starts now, the BEK shall be exchanged by BEK with the material number: larger than 200840580.	If necessary, replace BEK
			Internal error, operating panel	See Remedial action	Replace operating panel
			Determined via the terminal	Perform CAN diagnostics	
			Control unit not programmed		
9922	9922 Malfunction CAN2 between KMC2 and manual operation.	Error: CAN bus communication - manual operation to KMC2			





# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				In the menu - Info software versions - check the software version of the control units	Program control unit
			Power supply voltage for manual operation defective	Check fuse +22-F56	Replace fuse +22-F56
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD60 not lit	Check fuse +22-F60
				LED +22-LD11 not lit	Check fuse +22-F92
			Short circuit/broken cable in the wiring for the CAN2 bus	Check wiring and resistance values.	Replace wiring
			Determine via the terminal	Perform CAN diagnostics	
			Power supply voltage EMR defective	LED +22-LD52 not lit	Check fuse +22-F52
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD11 not lit	Check fuse +22-F92
			Short circuit / broken cable in the wiring for the CAN3 bus	Check wiring	Replace wiring
9923	9923 Malfunction CAN3 between terminal and EMR	Error: CAN bus communication - EMR to terminal			



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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			CAN3 terminating resistors defective	Check wiring and terminating resistors	If required, replace wiring and/or terminating resistors
			Internal EMR error	See Remedial action	Replace the EMR
			Determine via the terminal	Perform CAN diagnostics	
			Control unit not programmed	In the menu - Info software versions - check the software version of the control units	Program control unit
			Power supply voltage for metal detection defective	Check fuse +22-F55	Replace fuse +22-F55
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD11 not lit	Check fuse +22-F92
			Short circuit/broken cable in the wiring for the CAN2 bus	Check wiring	Replace wiring
			CAN2 terminating resistors defective	Check wiring and terminating resistors	If required, replace wiring and/or terminating resistors
			Metal detection internal error	See Remedial action	Replace the metal detection system
9924	9924 Malfunction CAN2 between KMC2 and metal detection	Error: CAN bus communication - metal detection to terminal			




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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9925 	9925 Malfunction CAN1 between terminal and DIOM	Error: CAN bus communication - DIOM to terminal	Determine via the terminal  Power supply voltage DIOM defective  Central electrical power supply voltage defective	Perform CAN diagnostics  LED +22-LD59 not lit  LED +22-LD27 not lit	  Check fuse +22-F59  Check fuse +22-F73
				LED +22-LD63 not lit  LED +22-LD60 not lit  LED +22-LD11 not lit	Check fuse +22-F63  Check fuse +22-F60  Check fuse +22-F92
			Short circuit/broken cable in the wiring for the CAN1 bus	Check wiring	Replace wiring
			CAN1 terminating resistors defective	Check wiring and terminating resistors	If required, replace wiring and/or terminating resistors
			In some cases an incorrect CAN configuration from the autopilot may be the cause. The hardware does not match the autopilot autopilot software and sporadically causes this and /or other CAN error messages	If the serial number of the hardware autopilot is greater than 13.154157.1022 the autopilot software version must be at least 150200029-20	If necessary, update the software version of the autopilot
			Internal error DIOM	See Remedial action	Replace DIOM


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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9926 	9926 Malfunction CAN3 between terminal - ADM1/MFR	Error: CAN bus communication - ADM1 to terminal	Nur bei Maschinen mit MAN-Motor: Die Kommunikation zwischen MFR und EDC - Master ist fehlerhaft  Determine via the terminal  Central electrical power supply voltage defective	In der Fehlerliste vom Dieselmotor kontrollieren, ob die Fehlermeldung 5019 auch Parallel anliegt. Liegt die Fehlermeldung 5019 parallel an, liegt die Störung an der MFR, EDC Master oder in der CAN-Verbindung zwischen MFR und EDC Master  Perform CAN diagnostics  LED +22-LD63 not lit  LED +22-LD64 not lit  LED +22-LD11 not lit	Siehe Fehler 5019 in der Fehlerliste vom Dieselmotor  Check fuse +22-F63  Check fuse +22-F64  Check fuse +22-F92
			Short circuit / broken cable in the wiring for the CAN3 bus	Check wiring	Replace wiring
			CAN3 terminating resistors defective	Measure resistors	If required, replace wiring and/or terminating resistors
			Internal error ADM1	See Remedial action	Replace ADM1
			Power supply voltage ADM 1 defective	Check fuse +22-F68	Replace fuse +22-F68

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9927	 9927 Malfunction CAN3 between terminal - ADM engine 2	Error: CAN bus communication - ADM2 to terminal (800 and 1000)	Determine via the terminal  Power supply voltage ADM 2 defective  Wrong machine type selected  Short circuit / broken cable in the wiring for the CAN3 bus  CAN3 terminating resistors defective  Internal error ADM2	LED +22-LD17 not lit  Perform CAN diagnostics  Check fuse +22-F66  LED +22-LD16 not lit  Check machine type in the display  Check wiring  Check wiring and terminating resistors  See Remedial action	Check fuse +22-F70   Change fuse +22-F66  Check fuse +22-F69  Select correct machine type  Replace wiring  If required, replace wiring and/or terminating resistors  Replace ADM2
9942	9942 hardware restart to SmartDrive/DRC	Error: Restart hardware SmartDrive	SmartDrive power supply defective  Central electrical power supply voltage defective	LED +22-LD31 not lit  LED +22-LD63 not lit  LED +22-LD60 not lit	Check fuse +22-F77  Check fuse +22-F63  Check fuse +22-F60

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				LED +22-LD11 not lit	Check fuse +22-F92
			Wiring defective.	Check wiring and plug	If required, replace wiring and/or plugs
			Safety output for travelling gear of KMC3 defective.	LED+22-LD102 not lit	Check the safety output of KMC3 (output is always active with engine shut off) and check wiring
			Life signal from SmartDrive faulty	LED+22-LD116 not flashing	Check the power supply voltage on the SmartDrive
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
9945	9945 hardware restart KMC2	Error: Restart KMC2 hardware	KMC2 power supply defective	LED +22-LD61 not lit	Check fuse +22-F61
			Central electrical power supply voltage defective	LED +22-LD60 not lit	Check fuse 22-F60
				LED +22-LD11 not lit	Check fuse +22-F92
			Wiring faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Internal error KMC2	See Remedial action	Replace KMC2

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9946	9946 hardware restart Autopilot	Error: Restart autopilot hardware	Power supply voltage for autopilot incorrect	LED +22-LD50 not lit	Check fuse +22-F50
				LED +22-LD30 not lit	Check fuse +22-F76
				LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD11 not lit	Check fuse +22-F92
				Wiring faulty	If required, replace wiring and/or plugs
9947	9947 hardware restart RockProtect	Error: Restart RockProtect hardware	RockProtect supply voltage faulty	See Remedial action	Replace autopilot
				LED +22-LD4 not lit	Check fuse +22-F40
				LED +22-LD6 not lit	Check fuse +22-F39
				LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD60 not lit	Check fuse +22-F60
				LED +22-LD11 not lit	Check fuse +22-F92
				Wiring faulty	Check wiring and plug

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
					If required, replace wiring and/or plug
			Internal error KMC4 (RockProtect)	See Remedy	Replace KMC4 (RockProtect)
9950	9950 Restart hardware NIR-Sensor (A37)	Fault: Electrical power supply interrupted, restart of the hardware	Power supply NIR sensor defective Wiring faulty Internal error NIR sensor	Check LED LD7 on relay circuit board console Check wiring and plug See remedy	Check/replace fuse F41 on relay circuit board console Replace wiring and plug Replace NIR sensor
9951	9951 hardware restart maturity detection	Error: Restart AutoScan hardware	AutoScan power supply voltage defective Central electrical power supply voltage defective Wiring faulty Internal error - AutoScan	Check fuse +22-F58 LED +22-LD63 not lit LED +22-LD11 not lit Check wiring and plug See Remedial action	Change fuse +22-F58 Check fuse +22-F63 Check fuse +22-F92 If required, replace wiring and/or plugs Replace AutoScan



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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9952	9952 hardware restart CropControl	Error: Power supply interrupted, restart of hardware	Power supply voltage Crop Control defective Internal error Crop Control	LED +22-LD5.1/LD6 on relay circuit board console is not lit Replace Crop Control computer	Replace fuse +22-F39
9953	9953 hardware restart KMC3	Error: Restart KMC3 hardware	KMC3 power supply defective Central electrical power supply voltage defective Wiring faulty Internal error KMC3	LED +22-LD44 not lit LED +22-LD62 not lit LED +22-LD11 not lit Check wiring and plug See Remedial action	Check fuse +22-F44 Check fuse +22-F62 Check fuse +22-F92 If required, replace wiring and/or plugs Replace the KMC3
9960	9960 hardware restart joystick	Error: Restart joystick hardware	Joystick power supply defective Central electrical power supply voltage defective	Check fuse +22-F57	Change fuse +22-F57 Check fuse +22-F65 Check fuse +22-F63 Check fuse +22-F92

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Wiring faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Internal joystick error	See Remedial action	Replace joystick
9961	9961 hardware restart CU	Error: Restart CU hardware	Power supply voltage CU defective	Check fuse + 22-F47	Change fuse +22-F47
			Central electrical power supply voltage defective	LED +22-LD62 not lit	Check fuse +22-F62
				LED +22-LD64 not lit	Check fuse +22-F64
				LED +22-LD11 not lit	Check fuse +22-F92
			Wiring faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Internal error, operating panel	See Remedial action	Replace operating panel
9962	9962 hardware restart manual operation	Error: Restart manual operation hardware	Power supply voltage for manual operation defective	Check fuse + 22-F56	Change fuse +22-F56
				LED +4-LD33 not lit	Check fuse +4-F33

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9963	9963 hardware restart EMR	Error: Restart EMR hardware	Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
			Wiring faulty	LED +22-LD11 not lit	Check fuse +22-F92
			Internal error, manual operation	Check wiring and plug	If required, replace wiring and/or plugs
			Power supply voltage EMR defective	See Remedial action	Replace manual operation
9964	9964 hardware restart met. detect.	Error: Restart metal detection hardware	Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
			Wiring faulty	LED +22-LD11 not lit	Check fuse +22-F92
			Internal EMR error	Check wiring and plug	If required, replace wiring and/or plugs
			Power supply voltage for metal detection defective	See Remedial action	Replace the EMR
			Central electrical power supply voltage defective	LED +16-LD1 not lit	Check fuse +22-F55
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Wiring faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Metal detection internal error	See Remedial action	Replace the metal detection system
9965	9965 Restart hardware DIOM	Error: Restart DIOM hardware	Power supply voltage DIOM defective	LED +22-LD59 not lit	Check fuse +22-F59
				LED +22-LD27 not lit	Check fuse +22-F73
			Central electrical power supply voltage defective	LED +22-LD60 not lit	Check fuse +22-F60
				LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD11 not lit	Check fuse +22-F92
				Wiring faulty	Check wiring and plug
			Internal error DIOM	See Remedial action	Replace DIOM
9966	9966 hardware restart ADM1 / MFR	Error: Restart ADM1 hardware	Power supply voltage ADM1 defective	Check fuse +22-F68	Change fuse +22-F68
				LED +22-LD17 not lit	Check fuse +22-F70

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9967	9967 hardware restart ADM engine2	Error: Restart ADM2 hardware (800 and 1000)	Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
			Wiring faulty	LED +22-LD64 not lit	Check fuse +22-F64
			Internal error ADM1	LED +22-LD11 not lit	Check fuse +22-F92
			Power supply voltage ADM2 defective	Check wiring and plug	If required, replace wiring and/or plugs
9982	9982 CAN1-Communication SmartDrive/DRC restored	Error: Interruption in CAN communication to SmartDrive	Wiring faulty	See Remedial action	Replace ADM1
			Internal error ADM2	Check fuse +22-F66	Change fuse +22-F66
			Short circuit/broken cable in the wiring for the CAN1 bus	LED +22-LD16 not lit	Check fuse +22-F69
			CAN1 terminating resistors defective	Check wiring and plug	If required, replace wiring and/or plugs
			Internal error ADM2	See Remedial action	Replace ADM2
			Short circuit/broken cable in the wiring for the CAN1 bus	Check wiring	Replace wiring
			CAN1 terminating resistors defective	Check wiring and terminating resistors	If required, replace wiring and/or terminating resistors

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9985	9985 CAN1-Communication KMC2 restored	Error: Error - interruption of the CAN communication to KMC2	Internal SmartDrive error Short circuit/broken cable in the wiring for the CAN1 bus CAN1 terminating resistors defective Internal error KMC2	See Remedial action Check wiring Check wiring and terminating resistors See Remedial action	Replace SmartDrive Replace wiring If required, replace wiring and/or terminating resistors Replace KMC2
9986	9986 CAN1-Communication Autopilot restored	Error: Interruption in CAN communication to autopilot	Short circuit/broken cable in the wiring for the CAN1 bus CAN1 terminating resistors defective Internal error autopilot	Check wiring Check wiring and terminating resistors See Remedial action	Replace wiring If required, replace wiring and/or terminating resistors Replace autopilot
9987	9987 CAN-Communication RockProtect restored	Error: Interruption in CAN communication to RockProtect	Short circuit/broken cable in the wiring for the CAN2 bus CAN2 terminating resistors defective Internal RockProtect error	Check wiring Check wiring and terminating resistors See Remedial action	Replace wiring Replace wiring and terminating resistors Replace RockProtect

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9991	9991 CAN-Communication AutoSCAN-Sensor (A40) restored	Error: Interruption in CAN communication to AutoScan	Short circuit/broken cable in the wiring for the CAN2 bus CAN2 terminating resistors defective Internal error - AutoScan	Check wiring Check wiring and terminating resistors See Remedial action	Replace wiring If required, replace wiring and/or terminating resistors Replace AutoScan
9992	9992 CAN-Communication CropControl restored	The previously detected faulty communication between the both control units KMC2 and CropControl could be re-established.	Communication KMC2 to Crop Control has previously been interrupted	Check the occurrence of error message 9912	See error message 9912
9993	9993 CAN1-Communication KMC3 restored	Error: Error - interruption of the CAN communication to KMC3	Short circuit/broken cable in the wiring for the CAN1 bus CAN1 terminating resistors defective Internal error KMC3	Check wiring Check wiring and terminating resistors See Remedial action	Replace wiring If required, replace wiring and/or terminating resistors Replace the KMC3
10000	10000 Overvoltage 12V - NIR sensor	Fault: 12V power supply voltage is too high	Determination via terminal Power supply NIR sensor defective	Carry out moisture measuring diagnostics Check LED LD7 on relay circuit board console	Read voltage values Check/replace fuse F41 on relay circuit board console

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
10001	10001 Undervoltage 12V - NIR sensor	Fault: 12 V power supply voltage is too low	Controller of the dynamo is defective	Measure on batteries while the engine is running. The voltage may not exceed 14,8V	Replace the dynamo
			Dynamo defective	Check the dynamo	Replace the dynamo
			Internal error NIR sensor	See remedy	Replace NIR sensor
			Determination via terminal	Carry out moisture measuring diagnostics	Read voltage values
			Discharge battery	"Check battery voltage/Check battery voltage"	Charge battery/ replace battery
			Power supply NIR sensor defective	Check LED LD7 on relay circuit board console	Check/replace fuse F41 on relay circuit board console
			Power supply voltage additional electrical system defective	Check LED LD4 on relay circuit board console	Check/replace fuse F40 on relay circuit board console
			Dynamo defective	Check the dynamo	Replace the dynamo
			Internal error NIR sensor	See remedy	Replace NIR sensor
			10002	10002 Internal Malfunction - NIR sensor	Fault: internal malfunction NIR sensor, no troubleshooting possible
Internal error NIR sensor	See remedy	Replace NIR sensor			



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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
10003	10003 Internal Malfunction - NIR sensor	Fault: internal malfunction NIR sensor, no troubleshooting possible	Internal error NIR sensor	See remedy	Replace NIR sensor
10004	10004 Internal Malfunction - NIR sensor	Fault: internal malfunction NIR sensor, no troubleshooting possible	Internal error NIR sensor	See remedy	Replace NIR sensor
10005	10005 Internal Malfunction - NIR sensor	Fault: internal malfunction NIR sensor, no troubleshooting possible	Internal error NIR sensor	See remedy	Replace NIR sensor
10006	10006 Internal Malfunction - NIR sensor	Fault: internal malfunction NIR sensor, no troubleshooting possible	Internal error NIR sensor	See remedy	Replace NIR sensor
10100	10100 Malfunction Temperature element - NIR sensor	Fault: Power supply NIR sensor defective	Determination via terminal	Carry out moisture measuring diagnostics	Check temperature display
10101	10101 Internal Malfunction - NIR sensor	Fault: internal malfunction NIR sensor, no troubleshooting possible	Internal error NIR sensor	See remedy	Replace NIR sensor
10102	10102 Internal Malfunction - NIR sensor	Fault: internal malfunction NIR sensor, no troubleshooting possible	Internal error NIR sensor	See remedy	Replace NIR sensor
10103	10103 Internal Malfunction - NIR sensor	Fault: internal malfunction NIR sensor, no troubleshooting possible	Internal error NIR sensor	See remedy	Replace NIR sensor

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
10107	10107 Malfunction calibration - NIR sensor	Fault: Automatic calibration failed	Determination via terminal  Internal error NIR sensor	Carry out moisture measuring diagnostics  See remedy	Carry out restart of the machine  Replace NIR sensor
15000	15000 CAN1-Communication joystick restored	Error: Interruption in CAN communication to Joystick	Short circuit/broken cable in the wiring for the CAN1 bus  CAN1 terminating resistors defective  Internal joystick error	Check wiring  Check wiring and terminating resistors  See Remedial action	Replace wiring  If required, replace wiring and/or terminating resistors  Replace joystick
15001	15001 CAN1-Communication CU restored	Error: Interruption in CAN communication to CU	Short circuit/broken cable in the wiring for the CAN1 bus  CAN1 terminating resistors defective	Check wiring  Check wiring and terminating resistors	Replace wiring
15002	15002 CAN-Communication manual operation restored	Error - interruption of the CAN communication to the manual operation.	Internal error, operating panel  Short circuit/broken cable in the wiring for the CAN2 bus  CAN2 terminating resistors defective	See Remedial action  Check wiring  Check wiring and terminating resistors	Replace operating panel  Replace wiring  If required, replace wiring and/or terminating resistors

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
15003	15003 CAN-Communication EMR restored	Error: Interruption in CAN communication to EMR	Internal error, manual operation Short circuit / broken cable in the wiring for the CAN3 bus CAN3 terminating resistors defective	See Remedial action Check wiring Check wiring and terminating resistors	Replace manual operation Replace wiring If required, replace wiring and/or terminating resistors
15004	15004 CAN-Communication metal detection restored	Error: Interruption in CAN communication to metal detection	Internal EMR error Short circuit/broken cable in the wiring for the CAN2 bus CAN2 terminating resistors defective	See Remedial action Check wiring Check wiring and terminating resistors	Replace the EMR Replace wiring If required, replace wiring and/or terminating resistors
15005	15005 CAN1-Communication DIOM restored	Error: Interruption in CAN communication to DIOM	Metal detection internal error Short circuit/broken cable in the wiring for the CAN1 bus CAN1 terminating resistors defective	See Remedial action Check wiring Check wiring and terminating resistors	Replace the metal detection system Replace wiring If required, replace wiring and/or terminating resistors
			Internal error DIOM	See Remedial action	Replace DIOM

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
15006	15006 CAN-Communication ADM/MFR restored	Error: Interruption in CAN communication to ADM1	Short circuit / broken cable in the wiring for the CAN3 bus	Check wiring	Replace wiring
			CAN3 terminating resistors defective	Check wiring and terminating resistors	If required, replace wiring and/or terminating resistors
			Internal error ADM1	See Remedial action	Replace ADM1
15007	15007 CAN-Communication ADM engine 2 restored	Error: Interruption in CAN communication - ADM2 to terminal (800 and 1000)	Short circuit / broken cable in the wiring for the CAN3 bus	Check wiring	Replace wiring
			CAN3 terminating resistors defective	Check wiring and terminating resistors	If required, replace wiring and/or terminating resistors
			Internal error ADM2	See Remedial action	Replace ADM2
16000	16000 DIOM CAN1 communication - DIOM	Error: Communication - DIOM to CAN	Determine via the terminal	Perform CAN diagnostics	
			Power supply voltage DIOM defective	LED +22-LD59 not lit	Check fuse +22-F59
				LED +22-LD27 not lit	Check fuse +22-F73
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD60 not lit	Check fuse +22-F60

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Short circuit/broken cable in the wiring for the CAN1 bus	LED +22-LD11 not lit	Check fuse +22-F92
			CAN1 terminating resistors defective	Check wiring	Replace wiring
			In some cases an incorrect CAN configuration from the autopilot may be the cause. The hardware does not match the autopilot autopilot software and sporadically causes this and /or other CAN error messages	Check wiring and terminating resistors	If required, replace wiring and/or terminating resistors
			Internal error DIOM	If the serial number of the hardware autopilot is greater than 13.154157.1022 the autopilot software version must be at least 150200029-20	If necessary, update the software version of the autopilot
16001	16001 Malfunction temperature - DIOM	Error: DIOM temperature too high	DIOM has overheated	See Remedial action	Replace DIOM
			Internal error DIOM	See Remedial action	Allow DIOM to cool down
			Determine via the terminal	See Remedial action	Replace DIOM
16002	16002 Malfunction internal voltage - DIOM	Error: Internal voltage in DIOM incorrect	Internal voltage in DIOM incorrect	LED +22-LD59 not lit	Check fuse +22-F59

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				LED +22-LD27 not lit	Check fuse +22-F73
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD60 not lit	Check fuse +22-F60
				LED +22-LD11 not lit	Check fuse +22-F92
			Wiring faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Internal error DIOM	See Remedial action	Replace DIOM
16003	16003 Malfunction operating voltage - DIOM	Error: DIOM UB voltage incorrect	Determine via the terminal	Run electronics diagnostics	
			Power supply voltage DIOM defective	LED +22-LD59 not lit	Check fuse +22-F59
				LED +22-LD27 not lit	Check fuse +22-F73
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD60 not lit	Check fuse +22-F60
				LED +22-LD11 not lit	Check fuse +22-F92

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Wiring faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Internal error DIOM	See Remedial action	Replace DIOM
16004	16004 Malfunction total current - DIOM	Error: DIOM overall current incorrect	Determine via the terminal	Run electronics diagnostics	
			DIOM overall current incorrect	LED +22-LD59 not lit	Check fuse +22-F59
				LED +22-LD27 not lit	Check fuse +22-F73
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD60 not lit	Check fuse +22-F60
				LED +22-LD11 not lit	Check fuse +22-F92
			Wiring faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Internal error DIOM	See Remedial action	Replace DIOM
16005	16005 Malfunction current at output - DIOM	Error: DIOM	Internal DIOM error	See Remedy	Consult KRONE Service

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16006	16006 Malfunction hardware - DIOM	Error: DIOM hardware defective	Short circuit/broken cable in the wiring	Check wiring	Replace wiring
			Internal error DIOM	See Remedial action	Replace DIOM
16007	16007 Malfunction internal voltage UC - DIOM	Error: DIOM UC voltage incorrect	Determine via the terminal	Run electronics diagnostics	
			Power supply voltage DIOM defective	LED +22-LD59 not lit	Check fuse +22-F59
				LED +22-LD27 not lit	Check fuse +22-F73
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD60 not lit	Check fuse +22-F60
				LED +22-LD11 not lit	Check fuse +22-F92
			Wiring faulty	Check wiring and plug.	If required, replace wiring and/or plugs.
16008	16008 Malfunction voltage 7.5V - DIOM	Error: DIOM 7.5 V voltage incorrect	Internal error DIOM	See Remedial action	Replace DIOM
			Power supply voltage DIOM defective	LED +22-LD59 not lit	Check fuse +22-F59



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				LED +22-LD27 not lit	Check fuse +22-F73
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD60 not lit	Check fuse +22-F60
				LED +22-LD11 not lit	Check fuse +22-F92
				Check wiring and plug	If required, replace wiring and/or plugs
			Internal error DIOM	See Remedial action	Replace DIOM
16009	16009 Internal error - DIOM	Error: EEPROM defective	EEPROM defective	See Remedial action	Replace DIOM
			Internal error DIOM	See Remedial action	Replace DIOM
16010	16010 Overcurrent valve coil Y66 steering lock left - DIOM	Error: Maximum current on left steering valve	Determine via the terminal	Perform DIOM diagnostics	
			Short circuit/broken cable in the wiring for the valve	Check wiring to valve	If required, replace wiring to valve
			Valve plug defective	Check valve plugs and contacts	Replace valve plug

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16011	Overcurrent valve coil Y67 steering lock right - DIOM	Error: Maximum current on right steering valve	Coil for solenoid valve defective	Test coil	Replace coil
			Solenoid valve defective	Test solenoid valve	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM
			Determine via the terminal	Perform DIOM diagnostics	
			Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil
			Solenoid valve defective	Test solenoid valve	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM
			16012	Overcurrent valve coil Y62 additive hydraulic 2 DOWN - DIOM	Error: Over-current in additional hydraulics 2 DOWN on PWM3
Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve			
Valve plug defective					

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16013	16013 Overcurrent valve coil Y63 additive hydraulic 2 UP - DIOM	Error: Over-current in additional hydraulics 2 UP on PWM4	Coil for solenoid valve defective	Check valve plugs and contacts	Replace valve plug
			Internal error DIOM	Test solenoid valve	Replace the solenoid valve
			Determine via the terminal	See Remedial action	Replace DIOM
			Short circuit/broken cable in the wiring for the valve	Perform work diagnostics	
			Valve plug defective	Check wiring to valve	Replace wiring to valve
			Coil for solenoid valve defective	Check valve plugs and contacts	Replace valve plug
			Internal error DIOM	Test coil	Replace the solenoid valve
			Determine via the terminal	See Remedial action	Replace DIOM
			Short circuit/broken cable in the wiring for the valve	Perform work diagnostics	
			Valve plug defective	Check wiring to valve	Replace wiring to valve
16014	16014 Overcurrent valve coil Y51 additive hydraulic 1 hitch UP - DIOM	Error: Over-current in additional hydraulics 1 UP	Coil for solenoid valve defective	Check valve plugs and contacts	Replace valve plug
			Internal error DIOM	Test coil	Replace the solenoid valve
			Determine via the terminal	See Remedial action	Replace DIOM
16014	16014 Overcurrent valve coil Y51 additive hydraulic 1 hitch UP - DIOM	Error: Over-current in additional hydraulics 1 UP	Coil for solenoid valve defective	Perform work diagnostics	
			Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plugs and contacts	Replace valve plug

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16015	16015 Overcurrent valve coil Y52 additive hydraulic 1 hitch DOWN - DIOM	Error: Over-current in additional hydraulics 1 DOWN	Coil for solenoid valve defective	Test coil	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM
			Determine via the terminal	Perform work diagnostics	
			Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace the solenoid valve
16016	16016 Overcurrent relay K28 molasses - DIOM	Error: Over-current DIG3	Internal error DIOM	See Remedial action	Replace DIOM
			Power supply voltage molasses relay defective	LED +22-LD28 not lit	Check fuse +22-F74
16017	16017 Overcurrent valve coil Y56 coupling 2nd diesel engine - DIOM	Error: Over-current in coupling for 2nd diesel engine	Short circuit / broken cable in the wiring for the relay	Check wiring	Replace wiring
			Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plugs and contacts	Replace valve plug

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Coil for solenoid valve defective	Test coil	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM
16018	16018 Malfunction output valve coil Y66 steering lock left - DIOM	Error: Status of PWM1 on left steering valve defective	Short circuit/broken cable in the wiring for the valve Valve plug defective	Check wiring to valve Check valve plugs and contacts	Replace wiring to valve Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace the solenoid valve
			Internal error in DIOM	See Remedial action	Replace DIOM
16019	16019 Malfunction output valve coil Y67 steering lock right - DIOM	Error: Status of PWM2 on right steering valve defective	Short circuit/broken cable in the wiring for the valve Valve plug defective	Check wiring to valve Check valve plugs and contacts	Replace wiring to valve Replace valve plug.
			Coil for solenoid valve defective	Test coil	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM
16020	16020 Malfunction output valve coil Y62 additive hydraulic 2 DOWN - DIOM	Error: Status of PWM3 on additional hydraulics 2 defective	Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16021	16021 Malfunction output valve coil Y63 additive hydraulic 2 UP - DIOM	Error: Status of PWM4 on additional hydraulics 2 defective	Valve plug defective	Check valve plugs and contacts	Replace valve plug.
			Coil for solenoid valve defective	Test coil	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM
			Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace the solenoid valve
16022	16022 Malfunction output valve coil Y51 additive hydraulic 1 hitch UP - DIOM	Error: Status of DI on additional hydraulics 1 hitch UP defective	Internal error DIOM	See Remedial action	Replace DIOM
			Determine via the terminal	Perform work diagnostics	
			Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16023	16023 Malfunction output valve coil Y52 additive hydraulic 1 hitch DOWN - DIOM	Error: Status of DI on additional hydraulics 1 hitch DOWN defective	Determine via the terminal  Short circuit/broken cable in the wiring for the valve  Valve plug defective  Coil for solenoid valve defective  Internal error DIOM	Perform work diagnostics  Check wiring to valve  Check valve plugs and contacts  Coil defective  See Remedial action	  Replace wiring to valve  Replace valve plug  Replace the solenoid valve  Replace DIOM
16024	16024 Malfunction output relay K28 molasses - DIOM	Error: Over-current DIG3	Power supply voltage molasses relay defective  Short circuit / broken cable in the wiring for the relay	LED +22-LD28 not lit  Check wiring	Check fuse +22-F74  Replace wiring
16025	16025 Malfunction output valve coil Y56 coupling 2nd diesel engine - DIOM	Error: Status of DI on coupling for 2nd diesel engine defective	Short circuit/broken cable in the wiring for the valve  Valve plug defective  Coil for solenoid valve defective  Internal error DIOM	Check wiring to valve  Check valve plugs and contacts  Test coil  See Remedial action	Replace wiring to valve  Replace valve plug  Replace the solenoid valve  Replace DIOM

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16041	16041 overcurrent output valve coil Y109 compressed air valve - DIOM				
16042	16042 overcurrent output relay rear wall of discharge accelerator (A23) - DIOM				
16043	16043 reserve DIOM PWM8 current				
16044	16044 Overcurrent relay K15 terminating resistor CAN2 KMC2 - DIOM	Error: Terminating resistor CAN2 KMC2 over-current	Determine via the terminal	Perform CAN diagnostics.	
			Short circuit / broken cable in the wiring for the resistor	Check wiring.	Replace wiring.
16045	16045 Overcurrent valve coil Y73 engine cleaning comp.air - DIOM	Error: Over-current - compressed air for engine cleaning	Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plugs and contacts	Replace valve plug



# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Coil for solenoid valve defective	Test coil	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM
16046	16046 Overcurrent valve coil Y75 pressure relief front attachment - DIOM				
16047	16047 disturbance output valve coil Y110 increase of tensioning force main belt - DIOM				
16048	16048 disturbance output valve coil Y108 tension roll main belt - DIOM	Error: Silage agent pump defective	Short circuit / broken cable in the wiring for the pump	Check wiring	Replace wiring
16049	16049 disturbance output valve coil Y109 compressed air valve - DIOM		Silage agent pump defective	Check silage agent pump	If required, change silage agent pump

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16050	16050 disturbance output relay rear wall of discharge accelerator (A23) - DIOM				
16051	16051 reserve DIOM PWM8 state				
16052	16052 Malfunction output relay K15 terminating resistor CAN2 KMC2 - DIOM	Error: Terminating resistor CAN2 KMC2 status D	Determine via the terminal	Perform CAN diagnostics	
			Short circuit / broken cable in the wiring for the resistor	Check wiring	Replace wiring
16053	16053 Malfunction output valve coil Y73 engine cleaning comp.air - DIOM	Error: Compressed air for engine cleaning status D	Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM
16054	16054 Malfunction output valve coil Y75 pressure relief front attachment - DIOM				

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16055	16055 reserve DIOM DIG8 state				
16071	16071 reserve DIOM PWM10 current				
16072	16072 reserve DIOM PWM11 current				
16073	16073 reserve DIOM PWM12 current				
16074	16074 Overcurrent 12/24V changeover K41 - DIOM	Error: Over-current 12/24-V switching relay	Central electrical power supply voltage defective	LED +22-LD41 not lit	Check fuse +22-F88
					Check fuse +22-F93
				LED +22-LD11 not lit	Check fuse +22-F92

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16075	16075 Overcurrent rel.voltage feed drive/front attachment - DIOM	Error: Over-current feed drive/front attachment	Short circuit/broken cable in the wiring for the valve	Check wiring	Replace wiring
16076	16076 Overcurrent horn metal detection K18 - DIOM	Error: Over-current metal detection horn	Short circuit / broken cable in the wiring for the horn	Check wiring	Replace wiring
16077	16077 Overcurrent valve coil Y65 grind.flap open/closed - DIOM	Error: Over-current grinding flap open/closed	Determine via the terminal	Perform grinding diagnostics	
			Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM
16078	16078 Overcurrent valve coil Y82 hydraulic air regulation - DIOM				
16079	16079 reserve DIOM PWM10 state				
16080	16080 reserve DIOM PWM11 state				

# Error descriptions BiG X 600-1100+750C



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16081	16081 Reserve DIOM PWM12 state				
16082	16082 Malfunction output relay K41 12/24V changeover - DIOM	Error: Over-current 12/24-V switching relay	Central electrical power supply voltage defective	LED +22-LD41 not lit	Check fuse +22-F88 Check fuse +22-F93
16083	16083 Malfunction release voltage feed drive/front attachment - DIOM	Error: Release voltage feed drive/front attachment	Short circuit/broken cable in the wiring for the valve	Check wiring	Replace wiring
16084	16084 Malfunction output relay K18 horn metal detection - DIOM	Error: Horn metal detection	Short circuit / broken cable in the wiring for the horn	Check wiring	Replace wiring
16085	16085 Malfunction valve coil Y65 grinding flap open/closed - DIOM	Error: Grinding flap open/closed	Short circuit/broken cable in the wiring for the valve Valve plug defective Coil for solenoid valve defective Internal error DIOM	Check wiring to valve Check valve plugs and contacts Test coil See Remedial action	Replace wiring to valve Replace valve plug Replace the solenoid valve Replace DIOM

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