KRONE

Original operating Instructions
150 000 103 03 en

Self-propelled Forage Harvester

BiG X 500 BiG X 650
BiG X 800 BiG X 1000

(Machine No. 791 256 or higher)

EC Declaration of Conformity

We,

Maschinenfabrik Bernard Krone GmbH

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

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

Machine: **Self-Propelled Forage Harvester**

Type / Types: **BiG X 500, BiG X 650, BiG X 800, BiG X 1000**

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

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

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

Spelle, 20.04.10

Dr.-Ing. Josef Horstmann

(Managing Director, Design and Development)

Year of manufacture:	**Machine No.:**

Dear Customer:

This manual provides you with the operating instr uctions for the KRONE product y ou ha ve purchased.

These oper ating instr uctions contain impor tant information on the correct use and saf e operation of the machine .

If for some reason these operating instructions should ha ve become unusable in whole or in par t, you may obtain replacement instr uctions for your machine b y quoting the number mentioned o verleaf.

Contents

1 General Aspects

These operating instructions contain fundamental instructions. These must be observed in operation and maintenance. For this reason, these operating instructions must be read by operating personnel before commissioning and use, and must be available for easy reference.

Follow both the general safety instructions contained in the section on safety and the specific safety instructions contained in the other sections.

1.1 Purpose

The self-propelled forage harvester BiG X is used to harvest and chop blades and leaves, maize and similar crops, when provided with front attachments in the works of the manufacturer.

1.2 Information on the product

1.2.1 General Aspects

These operating instructions are valid for the self-propelled forage harvester BiG X.

1.2.2 Address of the manufacturer:

Maschinenfabrik Bernard Krone GmbH
Heinrich-Krone-Str. 10
D-48480 Spelle (Germany)
Telephone: 0 59 77/935-0
Fax: 0 59 77/935-339
E-mail: info.ldm@krone.de

1.2.3 Declaration

EC declaration of conformity corresponding to the EC directive
See reverse side of title page

1.2.4 Designation

Vehicle identification plate

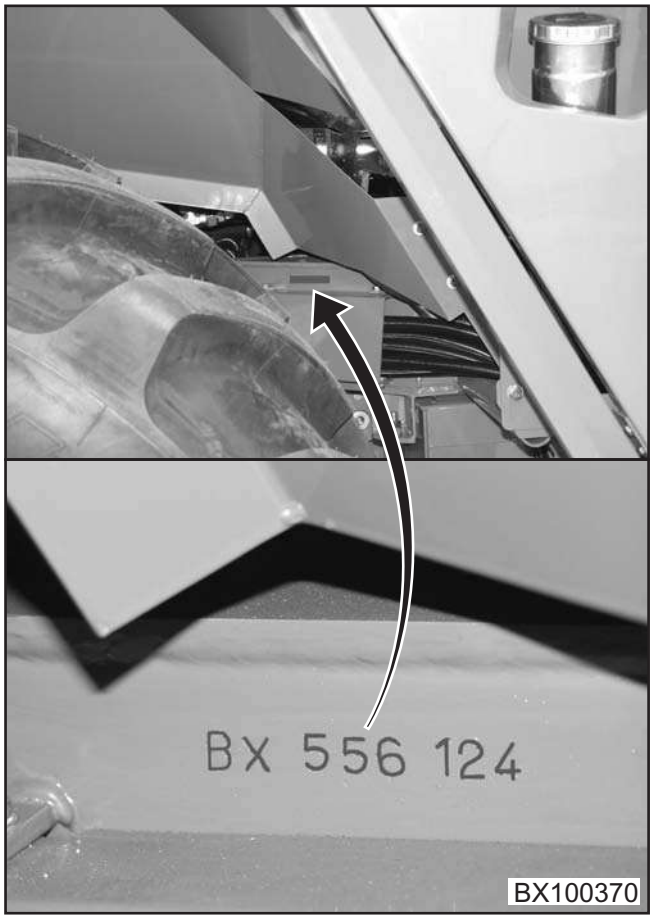
The machine data are rendered on a type plate (1), which is located on right front side of the machine.

Type	
Vehicle ID No.	
Year of construction	
Tank cover key number	

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

Vehicle frame number

The vehicle frame number is located in the wheel well of the right rear wheel.



1.2.5 Information for enquiries and orders

When asking questions concerning the machine or ordering spare parts, be sure to provide type designation, vehicle ID number and the year of construction.

Original spare parts and accessories authorised by the manufacturer ensure safe use. Use of other parts may void the liability for any resulting damage.

1.2.6 Intended Use

The self-propelled forage harvester**"BiG X"** is intended exclusively for the conventional use in agricultural or similar work (intended use).

Any use of the machine for other purposes is deemed not to be in accordance with specifications. The manufacturer shall not be liable for any resulting damage; the user alone shall bear the risk.

Use as intended includes compliance with the operating, maintenance and repair conditions specified by the manufacturer.

If unauthorised modifications are made to the machine, the manufacturer is released from liability for any resulting damage.

1.2.7 Technical Data

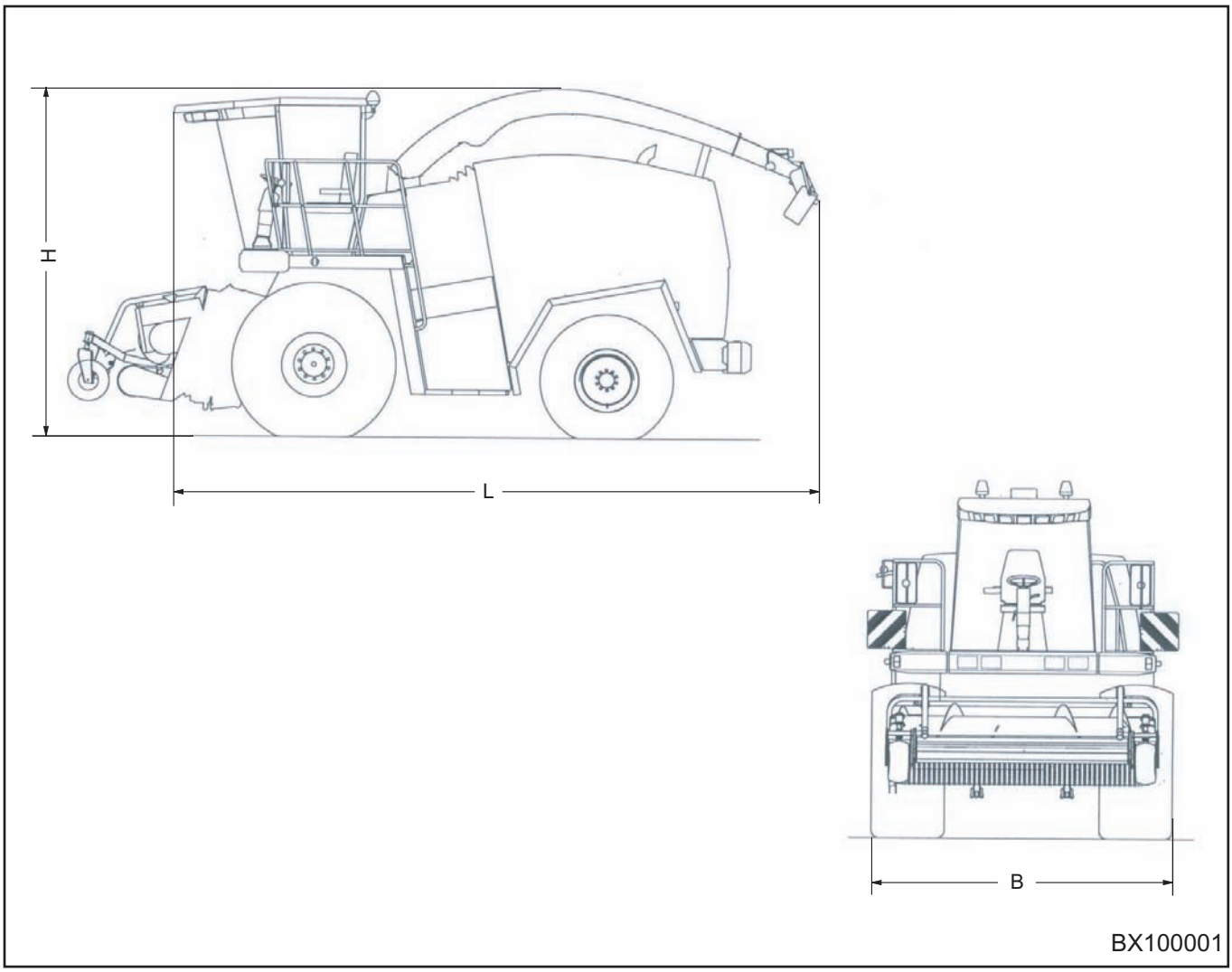
Type		**BiG X 500**
Motor manufacturer		Daimler-Chrysler
Type of engine		OM 460 LA
Output at rpm	KW/HP	375 / 510
Cylinders		R-6
Stroke capacity	l	12,8
Harvesting attachment drive		Hydraulic, continuous
Feed drive rollers/front baling rollers		6
Feed drive rollers drive		Hydraulic
Cutting length	mm	Continuous 4-21 mm
Gathering drum width	mm	800
Diameter	mm	660
Speed	rpm	1,100
Cutter arrangement/number of cutters		V-shaped 20 / 28
Cuts/min		11.000 / 15.400
Swivel range of discharge		210°
Overload height	mm	approx. 6.000
Travelling gear		Hydrostatic
Vmax at engine speed 1600 rpm	km/h	40 km/h
All-wheel drive		standard
Spring-mounted steering axle		standard
Comfort cab with driver information system		standard
Air conditioning system		standard
Air cushioned seat		standard
Undercarriage		4 wheels Direct drive provided by radial piston engines
Drive axle tyres air pressure, refer to the section on Maintenance - Tyres	Tread	Michelin 650/75 R32 Michelin 710/75 R34 Michelin 800/65 R32 Michelin 900/60 R32
Steering axle tyres air pressure, refer to the section on Maintenance - Tyres	Tread	Michelin 18.4 R30 TL Michelin 600/70 R28 (Michelin 710/55 R30)
Tightening torque for wheel nuts	Nm	485 drive axle/485 steering axle
Hydrostatic travelling gear (speeds)		Level I axle separation:0 to 14 km/h continuous Level II all-wheel drive:0 to 17 km/h continuous Level III field mode:0 to 26 km/h continuous Level IV road travel:0 to 40 km/h continuous Connectable axle separation in stage I
Drive pumps (double pump)		Absorption volume 105/75 ccm pressure 430 bar
Wheel motors, front		Switchable 3494/1774 ccm
Wheel motors, rear		not switchable 1259 ccm (old generation) not switchable 1536 ccm (current)
Feed drive pump		Absorption volume 75 ccm pressure 430 bar
Hydraulic engine feed drive		Absorption volume 75 ccm
Front attachment pump		Absorption volume 55 ccm pressure 430 bar
Hydraulic motor front attachment drive		Absorption volume 55 ccm

Type		BiG X 650
Motor manufacturer		Daimler-Chrysler
Type of engine		OM 502LA
Output at rpm	KW/HP	480/650
Cylinders		V-8
Stroke capacity	l	16
Harvesting attachment drive		Hydraulic, continuous
Feed drive rollers/front baling rollers		6
Feed drive rollers drive		Hydraulic
Cutting length	mm	Continuous 4-22 mm
Gathering drum width	mm	800
Diameter	mm	660
Speed	rpm	1,100
Cutter arrangement/number ofcutters		V-shaped 20/28/40
Cuts/min		11,000/15,400/22,000
Swivel range of discharge		210°
Overload height	mm	approx. 6,000
Travelling gear		Hydrostatic
Vmax at engine speed 1600 rpm	km/h	40 km/h
All-wheel drive		standard
Spring-mounted steering axle		standard
Comfort cab with driver information system		standard
Air conditioning system		standard
Air cushioned seat		standard
Undercarriage		4 wheels Direct drive provided by radial piston engines
Drive axle tyres air pressure, refer to the section on Maintenance - Tyres	Tread	Michelin 650/65 R32 Michelin 800/65 R32TL Michelin 900/60 R32 TL Michelin 710/75 R34 TL
Steering axle tyres air pressure, refer to the section on Maintenance - Tyres	Tread	Michelin 18.4 R30 Michelin 600/70 R28 TL (Michelin 710/55 R30 TL)
Tightening torque for wheel nuts	Nm	485 drive axle/360 steering axle
Level I axle separation: (speeds)		0 to 14 km/h continuous Level II all-wheel drive:0 to 17 km/h continuous Level III field mode:0 to 26 km/h continuous Level IV road travel:0 to 40 km/h continuous Connectable axle separation in stage I
Drive pumps (double pump)		Absorption volume 105/75 ccm pressure 430 bar
Wheel motors, front		Switchable 4250/1500 ccm
Wheel motors, rear		Switchable 2099/1049 ccm
Feed drive pump		Absorption volume 105 ccm pressure 430 bar
Hydraulic engine feed drive		Absorption volume 75 ccm
Front attachment pump		Absorption volume 55 ccm pressure 430 bar
Hydraulic motor front attachment drive		Absorption volume 55 ccm

Type		BiG X 800	
Motor manufacturer		Daimler-Chrysler	
Type of engine		1x OM 926 LA	1x OM 460 LA
Output at rpm	KW/HP	240 / 326	375 / 510
Cylinders		R-6	
Stroke capacity	l	9,6	12,8
Harvesting attachment drive		Hydraulic, continuous	
Feed drive rollers/front baling rollers		6	
Feed drive rollers drive		Hydraulic	
Cutting length	mm	Continuous 4-20 mm	
Gathering drum width	mm	800	
Diameter	mm	660	
Speed	rpm	1.200	1.100
Cutter arrangement/number of cutters		V-shaped 28 / 40	20
Cuts/min		16.800 / 24.000	11.000 / 15.400 / 22.000
Swivel range of discharge		210°	
Overload height	mm	approx. 6.000	
Travelling gear		Hydrostatic	
Vmax at engine speed 1600 rpm	km/h	40 km/h	
All-wheel drive		standard	
Spring-mounted steering axle		standard	
Comfort cab with driver information system		standard	
Air conditioning system		standard	
Air cushioned seat		standard	
Undercarriage		4 wheels Direct drive provided by radial piston engines	
Drive axle tyres air pressure, refer to the section on Maintenance - Tyres	Tread	Michelin 650/75 R32 Michelin 710/75 R34 Michelin 800/65 R32 Michelin 900/60 R32	
Steering axle tyres air pressure, refer to the section on Maintenance - Tyres	Tread	Michelin 18.4 R30 Michelin 600/70 R28 Michelin 710/55-34	
Tightening torque for wheel nuts	Nm	485 drive axle/485 steering axle	
Level I axle separation: (speeds)		0 to 14 km/h continuous Level II all-wheel drive:0 to 17 km/h continuous Level III field mode:0 to 26 km/h continuous Level IV road travel:0 to 40 km/h continuous Connectable axle separation in stage I	
Drive pumps (double pump)		Absorption volume 135/75 ccm pressure 430 bar	
Wheel motors, front		Switchable 5133/3300/1833 ccm	
Wheel motors, rear		Switchable 2808/1404 ccm	
Feed drive pump		Absorption volume 105 ccm pressure 430 bar	
Hydraulic engine feed drive		Absorption volume 75 ccm	
Front attachment pump		Absorption volume 55 ccm pressure 430 bar	
Hydraulic motor front attachment drive		Absorption volume 55 ccm	

Type		BiG X 1000
Motor manufacturer		Daimler-Chrysler
Type of engine		2 x OM 460 LA
Output at rpm	KW/HP	375 / 510
Cylinders		R-6
Stroke capacity	l	12,8
Harvesting attachment drive		Hydraulic, continuous
Feed drive rollers/front baling rollers		6
Feed drive rollers drive		Hydraulic
Cutting length	mm	Continuous 4-20 mm
Gathering drum width	mm	800
Diameter	mm	660
Speed	rpm	1,200
Cutter arrangement/number of cutters		V-shaped 28 / 40
Cuts/min		16.800 / 24.000
Swivel range of discharge		210°
Overload height	mm	approx. 6.000
Travelling gear		Hydrostatic
Vmax at engine speed 1600 rpm	km/h	40 km/h
All-wheel drive		standard
Spring-mounted steering axle		standard
Comfort cab with driver information system		standard
Air conditioning system		standard
Air cushioned seat		standard
Undercarriage		4 wheels Direct drive provided by radial piston engines
Drive axle tyres air pressure, refer to the section on Maintenance - Tyres	Tread	Michelin 650/75 R32 Michelin 710/75 R34 Michelin 800/65 R32 Michelin 900/60 R32
Steering axle tyres air pressure, refer to the section on Maintenance - Tyres	Tread	Michelin 18.4 R30 Michelin 600/70 R28 Michelin 710/55-34
Tightening torque for wheel nuts	Nm	485 drive axle/485 steering axle
Level I axle separation: (speeds)		0 to 14 km/h continuous Level II all-wheel drive:0 to 17 km/h continuous Level III field mode:0 to 26 km/h continuous Level IV road travel:0 to 40 km/h continuous Connectable axle separation in stage I
Drive pumps (double pump)		Absorption volume 135/75 ccm pressure 430 bar
Wheel motors, front		Switchable 5133/3300/1833 ccm
Wheel motors, rear		Switchable 2808/1404 ccm
Feed drive pump		Absorption volume 135 ccm pressure 430 bar
Hydraulic engine feed drive		Absorption volume 75 ccm
Front attachment pump		Absorption volume 55 ccm pressure 430 bar
Hydraulic motor front attachment drive		Absorption volume 55 ccm

1.2.7.1 Dimensions



Length L (mm)		Width B (mm)		Height H (mm)	
Depending on version					
min	max	min	max	min	max
8335	9440	3200	3455	3990	4000

1.2.8 Weights

1.2.9 Consumables

	Quantities Litres	Filtered oils Brand name	Bio-degradable lubricants Brand name
Diesel tank Big X 500/650 Big X 800/1000	Approx. 960 approx. 960 approx. 1150	Diesel fuel (DIN EN 590) Please observe the operating instructions of the engine manufacturer!	
Engine oil	*	Engine oil 10W40 Please observe the operating instructions of the engine manufacturer!	
Hydraulic oil	Approx. 150	HLP 46	HE 46 (on request)
Coolant	Approx. 60	Anti-freeze (30 litres) /water (30 litres) Mixing ratio 50:50 Please observe the operating instructions of theengine manufacturer!	
Gear of power takeoff BiG X 500 BiG X 650,800,1000 BiG X 800/1000	 13,5 10,0 23.0 initial filling**	 Gear oil PGLP DIN 51502 ISO viscosity Class (220)	
Distributor gearbox	8.0	Gear oil PGLP DIN 51502 ISO viscosity Class (220)	
Fan gear	1.7	Gear oil API-GL5-SAE85W-90	
Lower roller gear	5.0	Gear oil API-GL5-SAE85W-90	
Lower roller gear Upper tower	1.6	Gear oil API-GL5-SAE85W-90	
Upper roller gear	3.6	Gear oil API-GL5-SAE85W-90	
tower gearbox on the upper discharge chute	1,0	Gear oil API-GL5-SAE85W-90	

*** See accompanying documents (DaimlerChrysler)**

**** After a runtime of 5 min., top up the transmission oil up to the middle of the inspection window.**

As a general rule, the oils listed in the chapter on maintenance/hydraulic can be used as well.

Do not mix different types of oil!
Viscosity class ISO VG 46.
Vegetable oil cannot be used.
Ask our after-sales department about the use of other oils.

1.2.10 Accompanying documents

- Engine operating instructions (DaimlerChrysler)
- Engine maintenance manual (DaimlerChrysler)
- Engine parts catalogue (DaimlerChrysler)
- Directives on consumables (DaimlerChrysler)
- List of spares parts BiG X (Krone)
- Operating instructions of the central lubrication system (Vogel)

All information, illustrations and technical data in this operating manual are in keeping with the latest state of technology at the point of publication. Design subject to modifications at any time without any stated reason.

2 Safety

2.1 Identifying important information in the Operating Instructions

Important safety instructions in the present operating instructions are identified with the general hazard symbol. Non-observance of these safety instructions may result in personal injury:

Safety symbol as per DIN 4844 - W9

General functional instructions are indicated as follows:

Instructions affixed directly to the machine must be complied with and kept in a completely legible condition by all means. If illegible, they must be replaced.

2.2 Safety instructions and accident prevention regulations

2.2.1 Personnel qualification and training

The self-propelled forage harvester BiG X may be used, maintained and repaired only by persons who are familiar with it and have been informed of the hazards involved. The operator must define areas of responsibility and arrange the monitoring of the personnel. Should personnel lack the required knowledge, they must receive the required training and instruction. The operator must ensure that the contents of these operating instructions have been fully understood by personnel.

Repair work not described in these operating instructions must only be carried out by authorised service centres.

2.2.2 Dangers in case of non-compliance with the Safety Instructions

Failure to follow the safety instructions could result in personal injury and environmental hazards as well as damage to the machine. Failure to comply with the safety instructions can lead to the forfeiture of any claims for damages.

If the safety instructions are not respected, this may result, **for example**, in the following hazards:

- Danger to persons through improperly safeguarded working areas
- Failure of important functions of the machine
- Failure of compulsory procedures for maintenance and repair
- Danger to persons due to detrimental mechanical and chemical effects
- Danger to the environment due to leaking hydraulic oil

2.2.3 Safety-conscious work practices

Always observe the safety instructions set out in these operating instructions, all existing accident prevention rules and any internal work, operating and safety rules issued by the operator.

The safety and accident prevention regulations issued by the responsible professional associations are binding.

The safety instructions of the vehicle manufacturer must be complied with.

Always observe the applicable traffic laws when using public roads (for example, in Germany, the Road Traffic Type Approval Law and Road Traffic Law).

Be prepared for emergencies. Always store the fire extinguisher and the first-aid kit close at hand. Always keep the numbers for emergency calls to physicians and the fire department ready at the telephone.

2.2.4 Safety and accident prevention regulations

1. In addition to the instructions in these operating instructions, you must comply with the generally applicable safety and accident prevention regulations!

2. The warning and safety signs affixed to the vehicle provide important information for safe operation. For your own safety always pay attention to these!

3. When using public roads, make sure that you observe the applicable traffic regulations!

4. Make sure that you are familiar with all equipment and controls as well as their functions before you begin working with the machine. It is too late to learn this when you are operating the machine!

5. Users must wear close-fitting clothes. Avoid wearing loose or baggy clothing. Wear protective gloves when performing work in the vicinity of the crop conveying mechanisms.

6. Keep the machine clean to prevent the danger of fire!

7. Before starting or moving the machine, make certain that nobody is in the vicinity of the machine! (Watch out for children!) Make sure that you have a clear view!

8. The instructional seat must only be used during the instructional driving. Apart from that, no other person, except from the driver, is allowed to be on the machine or the driver's cab during operation.

9. Attach implements correctly! Only attach and secure implements to the prescribed devices!

10. When attaching or removing implements, place the supporting devices in the correct positions!

11. Always attach ballast weights properly to the fixing points provided!

12. Observe permitted axle loads, gross weight and transport dimensions!

13. Check and attach transport equipment, such as lighting, warning devices and any protective equipment!

14. Actuating mechanisms (ropes, chains, rods, etc.) of remotely operated devices must be run so that they do not trigger unintended movements in any transport and working positions.

15. Ensure that implements are in the prescribed condition for road travel and lock them according to the instructions of the manufacturer!

16. Never leave the driver's seat when the vehicle is moving!

17. Always drive at the correct speed for the prevailing driving conditions! Avoid sudden changes in direction when travelling uphill or downhill or across a gradient!

18. Implements and ballast weights attached to the vehicle affect its driving, steering and braking response. For this reason, make sure that you are able to steer the machine and brake as required!

19. Take into account the extension radius and/or inertia of an implement when turning corners!

20. Start up implements only when all protective devices have been attached and set in the required position!

21. Always keep the safety equipment in good working order. Replace missing or damaged parts.

22. Keep out of the working range of the machine at all times!

23. Do not stay in the swivel and ejecting range of the ejector!

24. Hydraulic hinged frames/lifting equipment may be operated only if no persons are in the swivel range!

25. Parts operated by external power (e.g. hydraulics) can cause crushing and shearing injuries!

26. Before leaving the forage harvester, lower the front attachments onto the ground, apply the holding brake, switch off the engine and remove the ignition key!

27. There must not be anyone between the forage harvester and the front attachment without the vehicle being secured against rolling off through the holding brake and/or wheel chocks!

2.2.5 Self-propelled work machine

1. When driving on public roads, the hazard warning lights or the revolving signal light and the excess width identification equipment must be used in compliance with the applicable national traffic regulations.

2. Switch on the lights so that the vehicle can be easily recognised.

3. Safety equipment.

4. Always check the machine for driving and operational safety before use.

5. Hold on to the hand grip when getting on and off the forage harvester.

6. It is not permitted to transport people on the platform.

7. The road safety switch must be in road position during road travel to ensure that all hydraulic functions - except for the steering and brakes – are deactivated.

8. Only drive the machine at the permitted speed.

9. Implements must be in transport position and locked in accordance with the manufacturer's instructions for road driving.

10. If the engine is running in an enclosed space, divert the exhaust fumes and ensure sufficient ventilation.

11. When using starting fluid, avoid ignition sources and naked flames. Keep starting fluid clear of batteries and electrical cables.

12. When passing through corners, always take into consideration the width of the front attachment and the fact that the rear of the forage harvester will swivel out. The condition of the ground influences the driving properties of the forage harvester.

13. Drive with care if you notice pits, ditches and obstacles; they can cause the forage harvester to overturn. This is particularly important on slopes.

2.2.6 Autopilot

1. The autopilot must only be used for its intended purpose. It must only be used in open fields, off public and semi-public roads, away from open areas frequented by people and far away from any persons that could be endangered. They must only be used for their intended purpose:
   • Automatic forage harvester guiding on a stalk-line row of plants.

2. Before placing autopilot in service, its full functionality must be verified and all its modules checked.
   To do this, the user should proceed as follows:
   - Check switching off of the autopilot when the steering wheel is moved and the door contact switch engages (open the door).
   - Check for proper operating condition - i.e. free of mechanical damages and leaks – row tracers, wheel angle transmitter as well as all visible hoses and wiring.

3. When the autopilot is in operation, there must be on one within 50 m of the forage harvester in any direction.

4. The operator is not permitted to leave the driver's cabin while the autopilot is in operation.

5. 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 harvest forager immediately if obstructions or interruptions come up in the vehicle's path.

6. After the autopilot has been in operation and before leaving the field, the autopilot must always be switched off on the autopilot release switch on the console.

7. Manipulating safety-related elements of the autopilot is prohibited, as is making changes to the hydraulic, electrical or electronic components.

8. The autopilot should only be installed by an authorised service centre.

2.2.7 Implements

1. **Caution!** Once the drives have been switched off, a hazard remains from the flywheel which continues to turn by inertia! Keep away from the implement during this time. Be sure that the machine has come to a complete stop before starting any maintenance work!

2. Cleaning, lubricating and adjusting the implements must be carried out only when the drive is switched off, the engine switched off and the ignition key removed!

2.2.8 PTO operation

1. Only PTO shafts specified by the manufacturer may be used!

2. The protective tube and protective funnel of the PTO shaft as well as the PTO shield - also on the implement end - must be attached and in proper condition!

3. Make sure that the required tube covers for PTO shafts are in place in transport and working position!

4. Before installing or detaching PTO shafts, switch off the PTO shaft, turn the engine off and remove the ignition key!

5. When using PTO shafts with an overload or free-wheel coupling that is not covered by the protective equipment on the tractor, the overload or free-wheel couplings must be attached to the device!

6. Always make sure that the PTO shafts are mounted correctly and secured properly!

7. Secure the PTO shaft guard against turning by hooking in the chains!

8. Before switching on the PTO shaft, make sure that the selected PTO shaft speed of the tractor agrees with the permissible speed of the device!

9. Before switching on the PTO shaft make sure that no person is in the hazard area of the device!

10. Never switch on the PTO with the engine switched off!

11. While working with the PTO, nobody is permitted to stay in the range of the turning PTO or PTO shaft.

12. Always switch off the PTO in the case of excessive bending and if the PTO is not required!

13. **Caution!** After switching off the PTO, there is danger due to the inertia of the flywheel mass! Keep away from the implement during this time. Be sure that the machine has come to a complete stop before starting any maintenance work.

14. Cleaning, lubricating or adjusting PTO driven implements or the PTO shaft only with PTO disengaged, engine switched off and ignition key withdrawn!

15. Place the uncoupled PTO shaft on the holder provided!

16. After detaching the PTO shaft, fit the protective sleeve on the PTO stump!

17. Immediately repair any damage before working with the implement!

2.2.9 Hydraulic system

1. The hydraulic system is pressurised!

2. When connecting hydraulic cylinders and motors, make sure the hydraulic hoses are connected as specified!

3. When connecting the hydraulic hoses to the forage harvester hydraulics, take care that the hydraulic system is depressurised both on the tractor side and on the device side!

4. When functions are connected hydraulically between the forage harvester and the front attachment, coupling sleeves and plugs should be identified so that faulty operation is excluded! If the connectors are interchanged, the functions will be reversed (e.g. raising/lowering) - **Risk of accident!**

5. Check the hydraulic hose lines at regular intervals and replace them if damaged or worn! The replacement hose lines must meet the technical requirements of the device manufacturer!

6. When searching for leaks, use suitable aids to avoid the risk of injuries!

7. Liquids escaping under high pressure (hydraulic oil) can penetrate the skin and cause serious injury! In the case of injuries, seek medical assistance immediately. Risk of infection!

8. Before working on the hydraulic system, depressurise the system and switch off the engine!

2.2.10 Battery

1. Maintenance work on the batteries requires sufficient knowledge and mounting tools according to the instructions.

2. Keep naked flames, burning matches and spark sources clear of the battery. **Risk of explosion!**

3. Never check the charging level of the battery by connecting the two poles with a metal object. Use an acid tester or voltmeter.

4. Never charge a frozen battery. **Explosion hazard!** Warm the battery to 16 °C beforehand.

5. Battery acid can cause severe injuries by burning your skin and eyes. For this reason, wear suitable protective clothing.

2.2.11 Cooling system

A heated cooling system is pressurised – **Burning hazard**! For this reason, only remove the radiator cap with the engine switched off and after the engine has been able to cool.

2.2.12 Tyres

1. When working on the tyres, make sure that the device is in a safe position and has been secured against rolling (wheel chocks).

2. You must have adequate knowledge and the proper tools to undertake the work of fitting wheels and tyres!

3. Repair work on the tyres and wheels should only be carried out by specially trained personnel and only tools appropriate to the job should be used!

4. Check tyre pressure regularly! Inflate the tyres to the recommended pressures!

5. Check the wheel nuts periodically! Missing wheel nuts can result in a wheel falling off and the machine tipping over.

2.2.13 Emergency exit

There is an emergency hammer in the cab. In emergency situations, you can use it to smash the cabin window.

2.2.14 Working in the vicinity of power transmission lines

1. Always take great care when working under or in the vicinity of power transmission lines.

2. Please remember that during operation of the forage harvester, the overall height of 4 m is exceeded considerably due to the upper discharge chute.

3. If there is any need to travel under overhead lines, the machine operator must request information on the rated voltage and the minimum height of the overhead lines from the overhead line operator.

4. Always keep the safety distances according to the table.

Rated voltage kV	Safe distance from overhead lines m
to 1	1
Above 1 to 110	2
Above 101 to 220	3
Above 220 to 380	4

2.2.15 Fire prevention measures

1. Before starting to work, make sure the fire extinguisher is in a condition according to the regulations and familiarise yourself with how to use it.

2. The associated fire extinguisher must be serviced periodically. If it was used, it must always be refilled, even if you only used it very briefly.

3. To avoid fire hazards, always keep the forage harvester clean! In particular remove any crop wound around rotating parts.

4. The forage harvester is also used to process very dry crop (hay, straw), which constitutes an imminent fire hazard.

5. The fire hazard can be reduced by removing accumulated crop from the machine several times a day (interval depends on the type of crop) and checking the machine components for overheating. Check for oil leaks or exiting oil and take corrective action. Heed the lubricating instructions. Take special care when regrinding the cutting blades – fire hazard due to flying sparks! Before regrinding the blades, clear the vicinity of the machine of any crop/substances that may catch fire!

6. Frequently check the hydraulic oil lines thoroughly for proper condition and position with sufficient clearance to contact edges that may be sharp.

7. Check the vicinity of the hot zones of the engine, the exhaust system and pipes and the turbo charger, and remove crop residues.

8. Take great care when handling fuels. Never fill in fuel in the vicinity of unshielded flames or sparks that may cause ignition. Do not smoke when filling in fuel! Extreme fire hazard.

2.2.16 Maintenance

1. Always perform repair, maintenance and cleaning work as well as troubleshooting only when the drive is switched off and the engine stopped!
   - Remove the ignition key!

2. The audio coastdown alarm, which is sounded after the main drive is switched off, does not relieve the operator of the obligation to make certain the machine is at an absolute standstill before working on it.

3. Regularly check that nuts and bolts are properly seated and tighten them if necessary!

4. When performing maintenance work with the implement raised, always secure it with suitable supporting elements.

5. When replacing working tools with cutting edges, use suitable tools and gloves!

6. **Dispose of oils, greases and filters according to the regulations!**

7. Always disconnect the power supply before working on the electrical system!

8. If protective devices and guards are subject to wear, check them regularly and replace them in good time!

9. When performing repair and electric welding work on the forage harvester, always switch off the engine, disconnect the power supply via the battery power switch and disconnect the plug of the electric system from the PLD controller on the engine!

10. Replacement parts must, as a minimum, comply with the technical requirements set by the manufacturer of the implements!
    This is ensured by using genuine KRONE replacement parts!

11. Use only nitrogen for filling pneumatic accumulators - **Explosion hazard!**

2.2.17 Telephones and radio sets

Telephones and radio equipment not connected to an external antenna may cause malfunctions in the electronic system of the vehicle and thus jeopardising the operating safety of the vehicle.

2.2.18 Unauthorised conversion/ modification and manufacture of spare parts

Modifications to the machine are permitted only with the prior approval of the manufacturer. Original spare parts and accessories authorised by the manufacturer ensure safe use. The use of other parts may void the liability for any consequential damage.

2.2.19 Non-permissible modes of operation

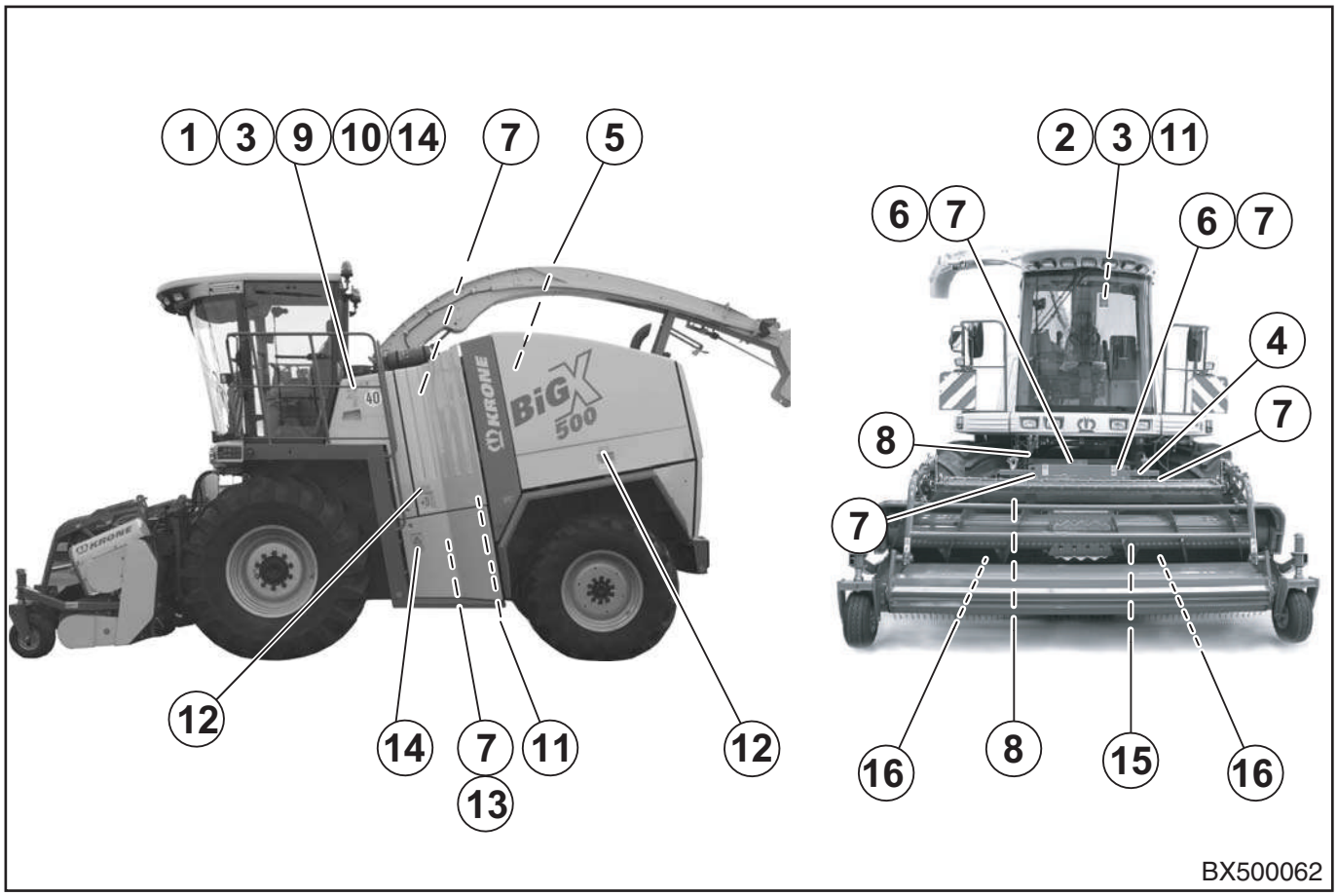
The operational safety of the machine is only guaranteed if it is used for its intended purpose in accordance with the Chapter "General Information" of these operating instructions. The limit values stated in the data sheets must not be exceeded under any circumstances.

2.3 Safety instructions on the machine

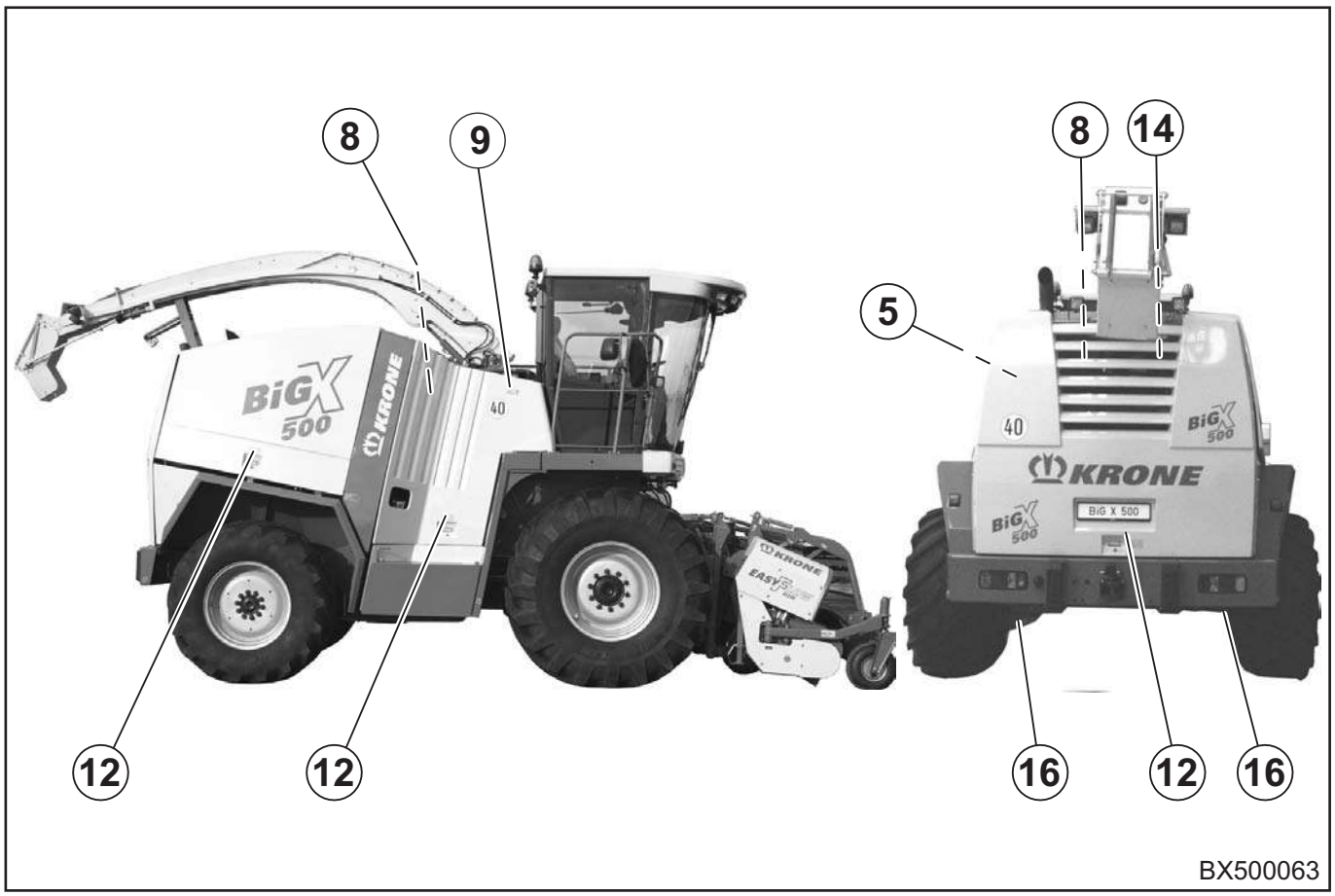
The self-propelled forage harvester BiG X is equipped with all the required safety equipment (protective devices). However, it is not possible to eliminate all potential hazards on this machine since to do so would impair its full functional capability. You will find corresponding hazard warnings on the machine that point out the residual risks.
We have implemented the hazard warnings in the form of warning pictograms.
In the following, you will find important information on the locations of these warning pictograms and an associated description/supplementation!

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

2.3.1 Location of the warning pictograms on the machine

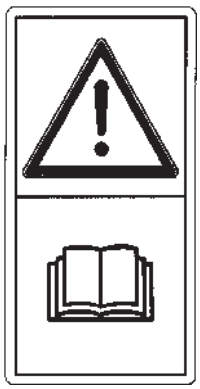


Left-hand side and front of the machine



Right-hand side and rear of the machine

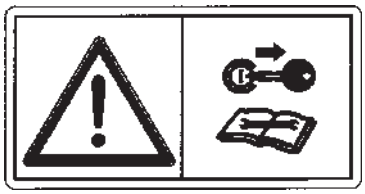
(1)



Before placing the machine into operation, read the operating instructions and safety instructions. Both must be heeded.

Order No. 939 471-1 (1x)

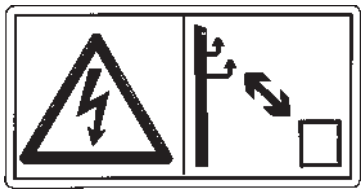
(2)



Before performing maintenance and repair work, switch off the engine and remove the ignition key.

Order No. 942 289-0 (1x)

(3)



Keep the stipulated safe distance to power transmission lines.

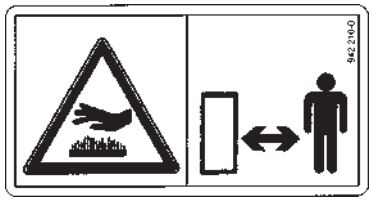
Order No. 942 293-0 (2x)

(4)

Keep sufficient distance to rotating machine parts.

Order No. 942 200-1 (1x)

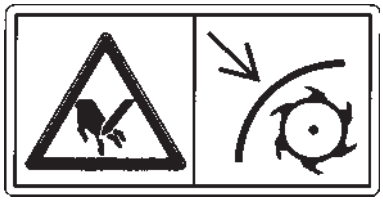
(5)



Burning hazard! Hot surface, keep sufficient distance.

Order No. 942 210-0 (2x)

(6)



While performing grinding work, keep your distance. Close the protective cover once you have completed the grinding work.

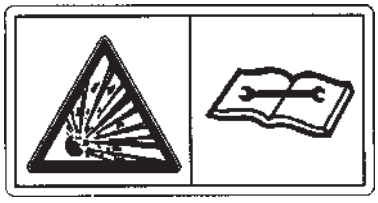
Order No. 942 294-0 (1x)

(7)

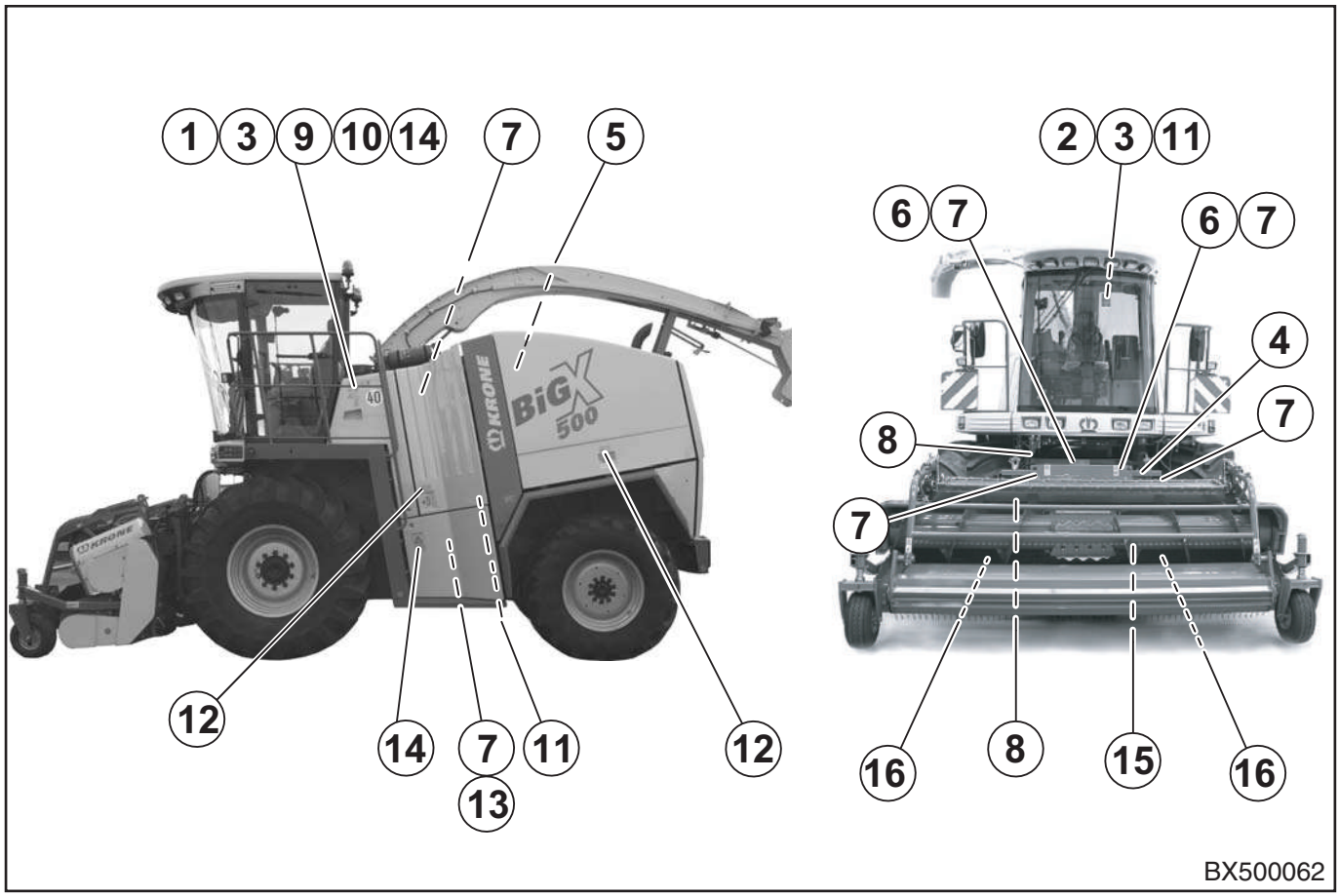
Never touch any moving machine parts.
Wait until they have come to a complete stop.

Order No. 939 410-2 (6x)

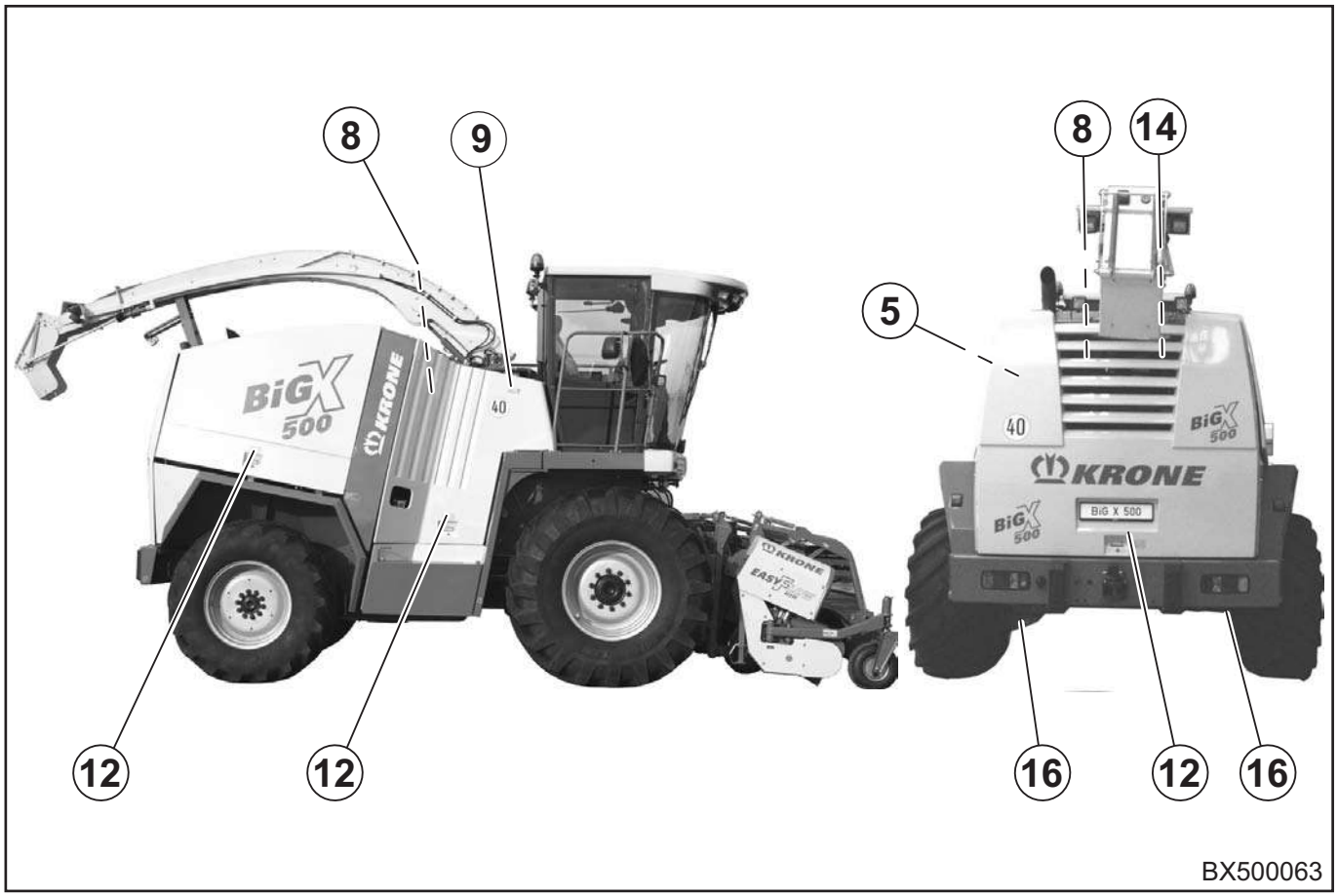
(8)



The pressure accumulator is under gas and oil pressure.
Always perform dismounting and repair work exclusively in compliance with the instructions in the technical manual.
Order No. 939 529-0 (4x)

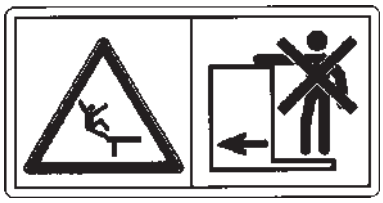


Left-hand side and front of the machine



Right-hand side and rear of the machine

(9)



It is impermissible to carry passengers on ladder steps or platforms.

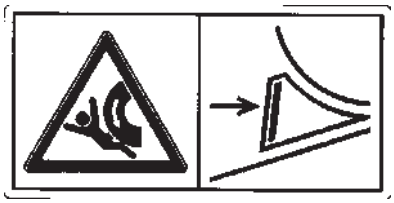
Order No. 942 291-0 (2x)

(10)

The machine may be taken into operation only when a suitable fire extinguisher is at hand.

Order No. 942 290-0 (1x)

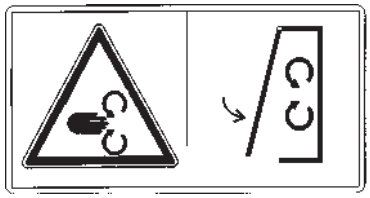
(11)



Before parking the machine, secure it with wheel chocks against unintended rolling.

Order No. 942 250-0 (1x)

(12)



Do not open or remove the protective equipment when the engine is running.

Order No. 942 002-4 (5x)

(13)

When performing welding work, switch off the power switch and disconnect the plug of the PLD engine timer from the engine block!

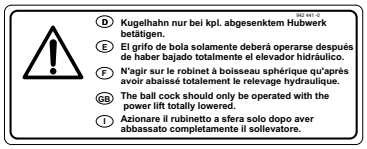
Order No. 942 409-0 (1x)

(14)

When performing welding work, switch off the power switch and disconnect the plug of the PLD engine timer from the engine block!

Order No. 942 408-0 (1x)

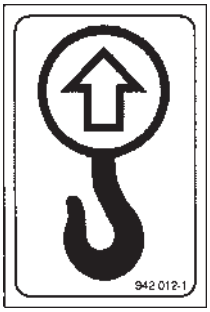
(15)



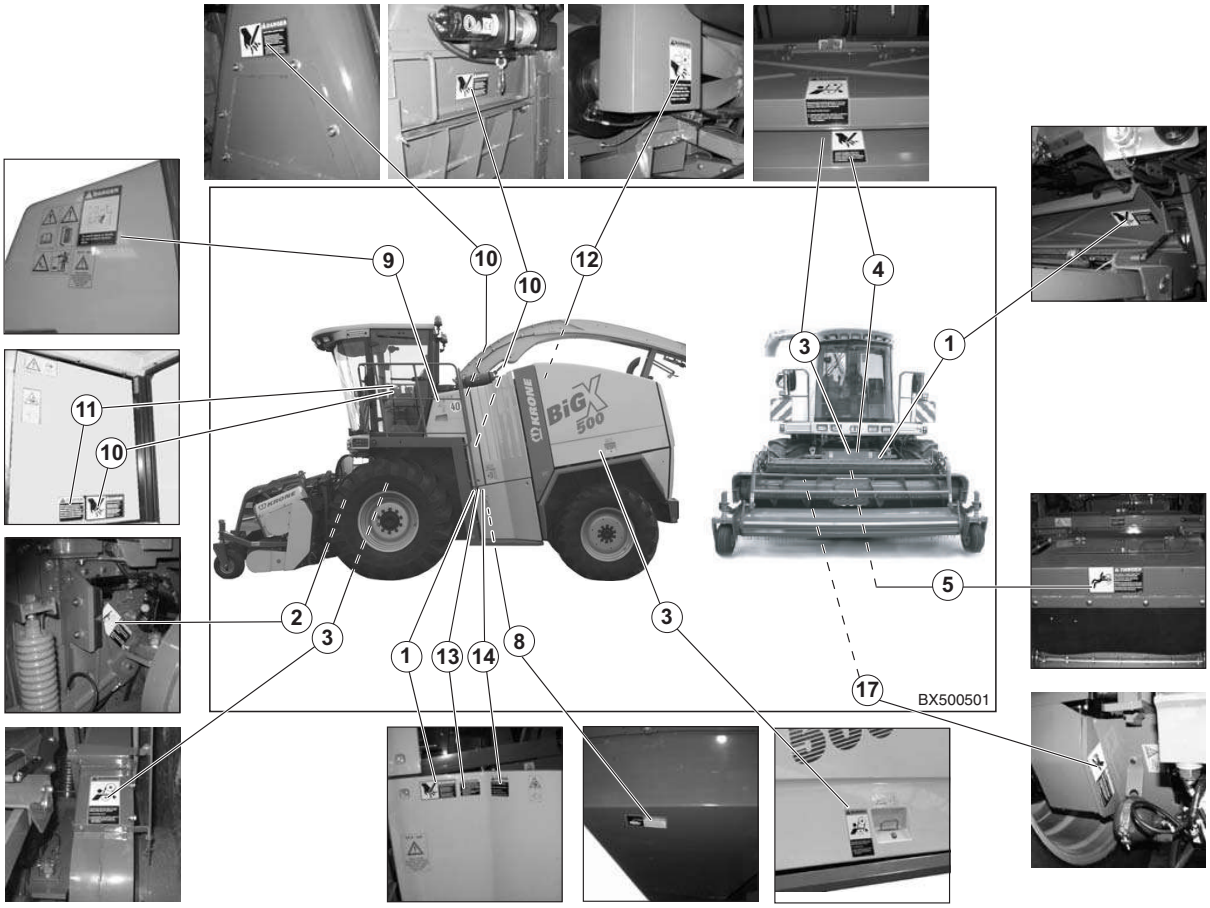
Order No. 942 441-0 (1x)

(16)

Stop points



Order No. 942 012-1 (4x)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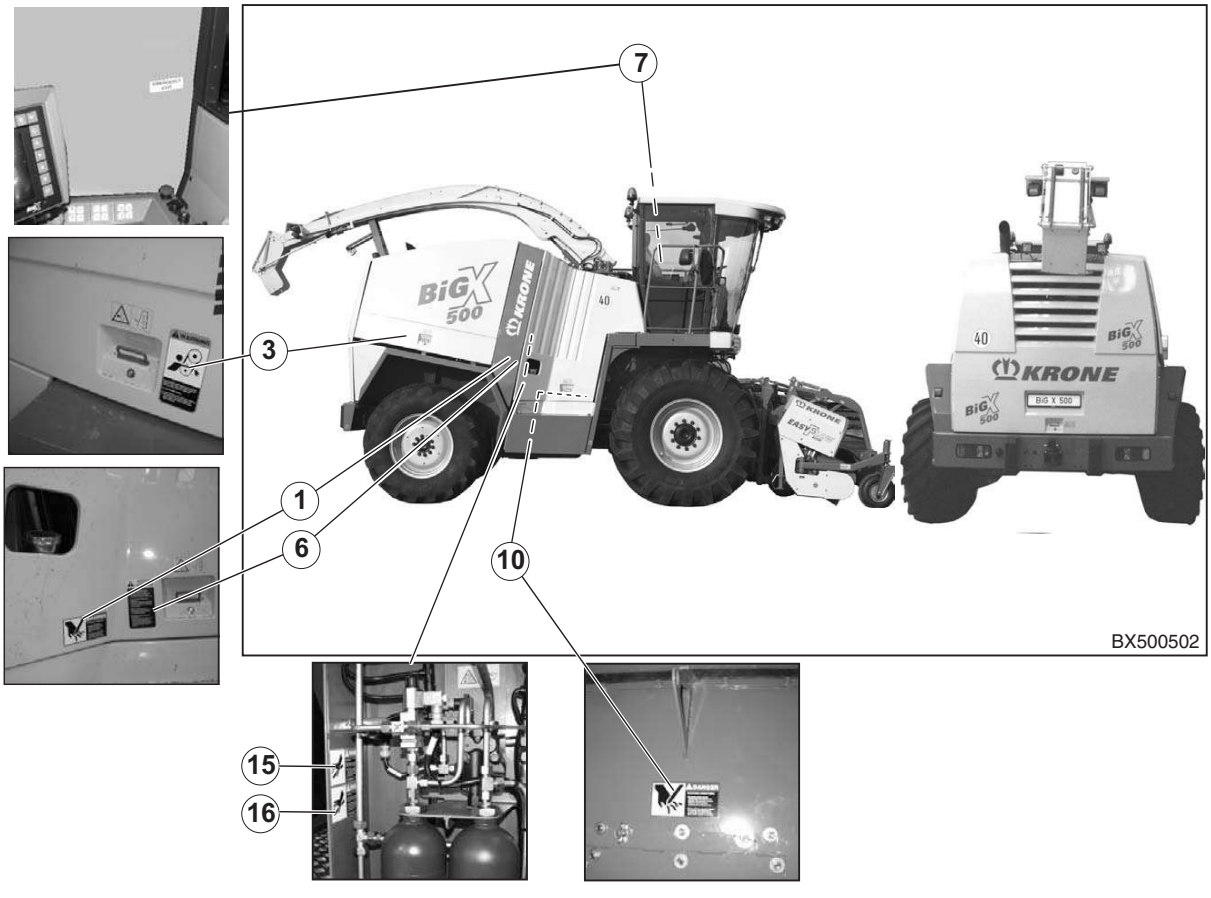
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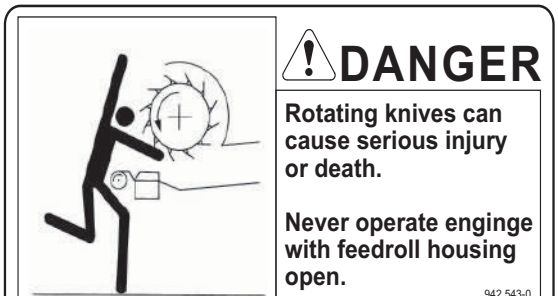
942 540 -0
(3) Required

2



942 543 -0
(1) Required

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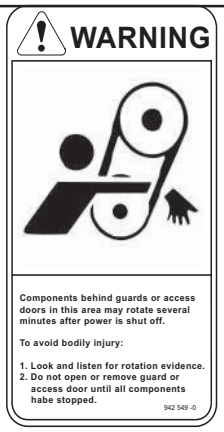
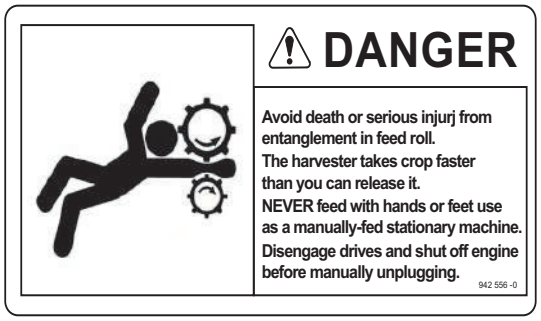


942 549 -0
(3) Required

4

942 536 -0
(1) Required

5



942 556 -0
(1) Required

6

942 550 0
(1) Required

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942 537 -0
(1) Required

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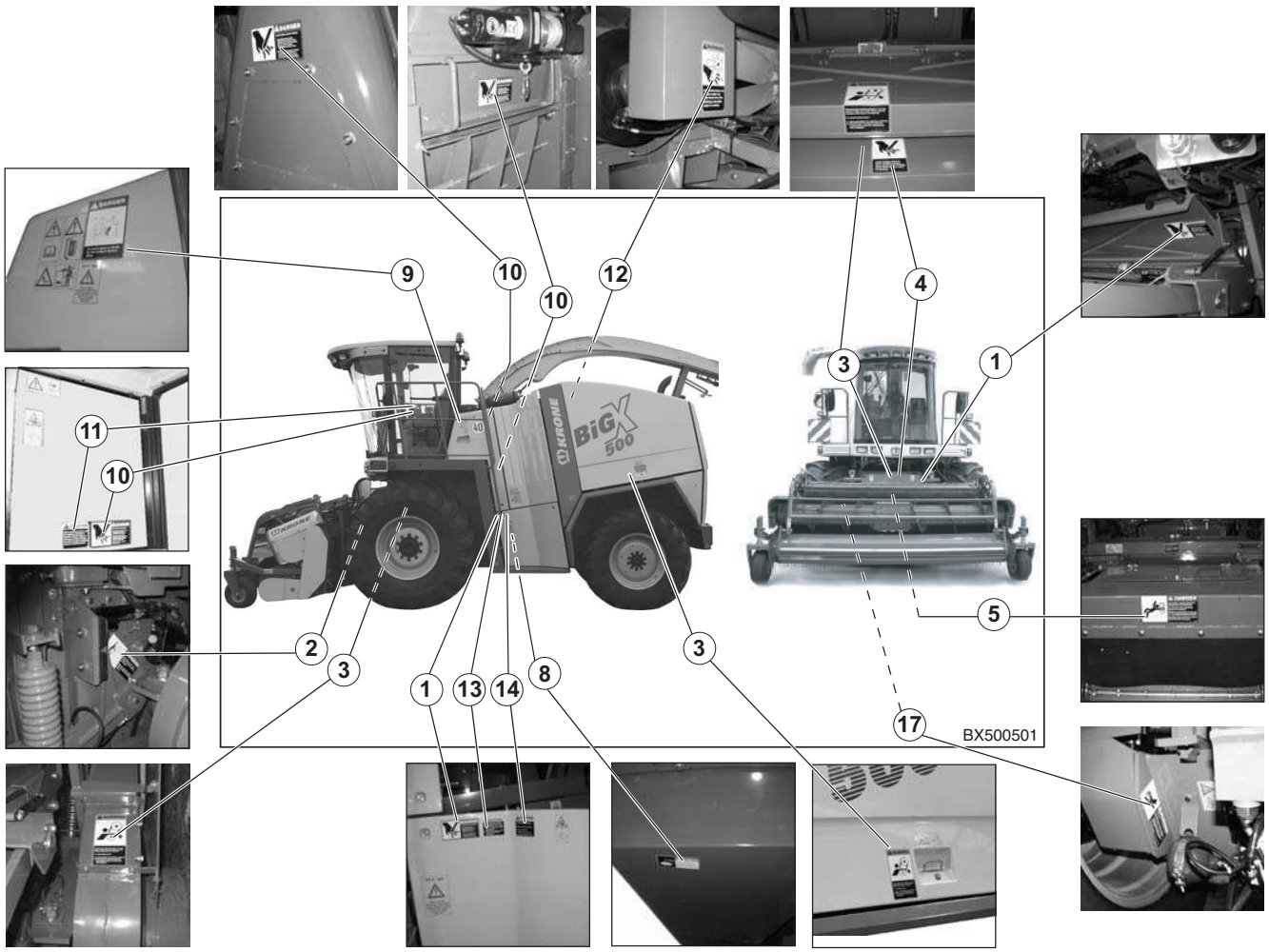
942 538 -0
(1) Required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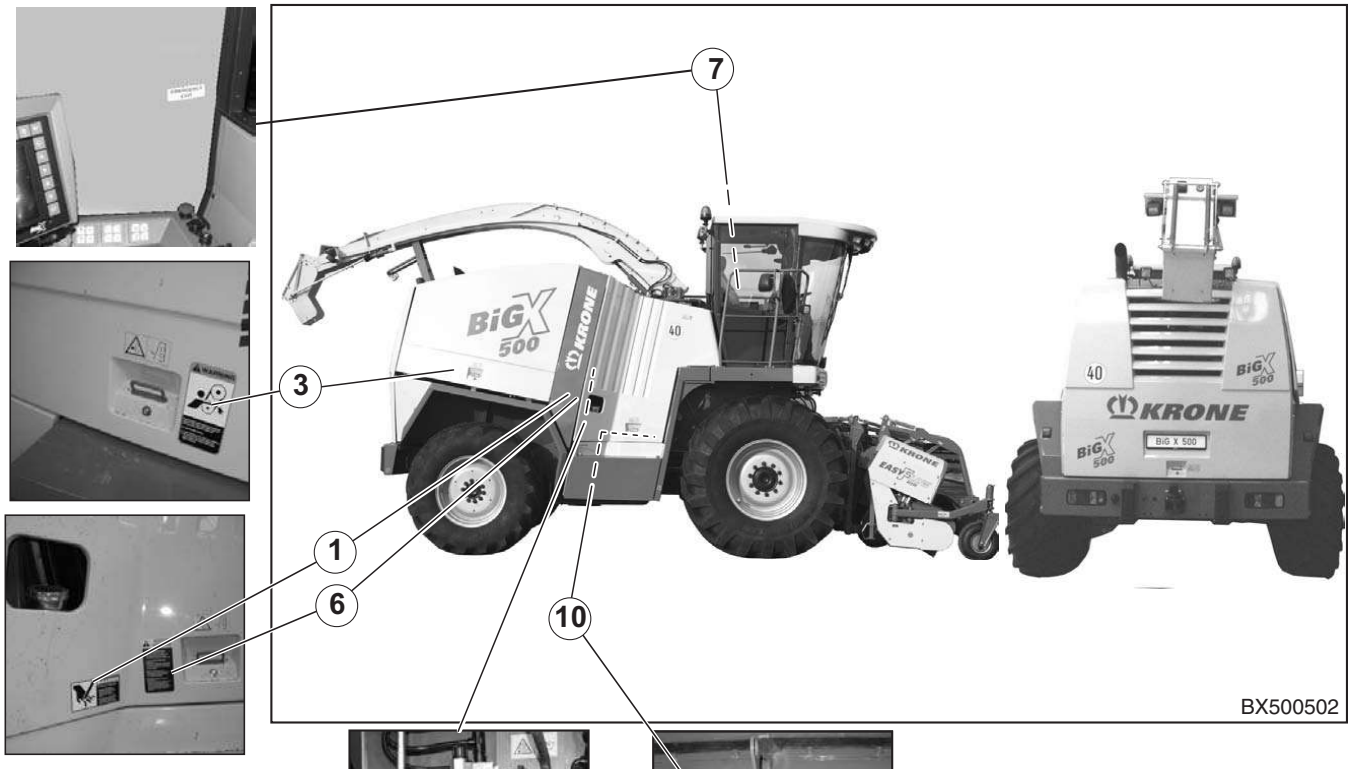
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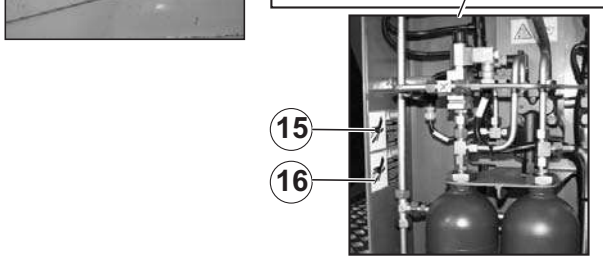
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9

942 547 -0
(1) Required

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942 541 -0
(5) Required

11

942 542 -0
(1) Required

12

942 546 -0
(2) Required

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942 551 -0
(1) Required

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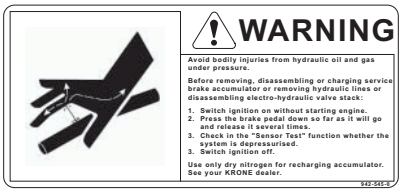
942 552 -0
(1) Required

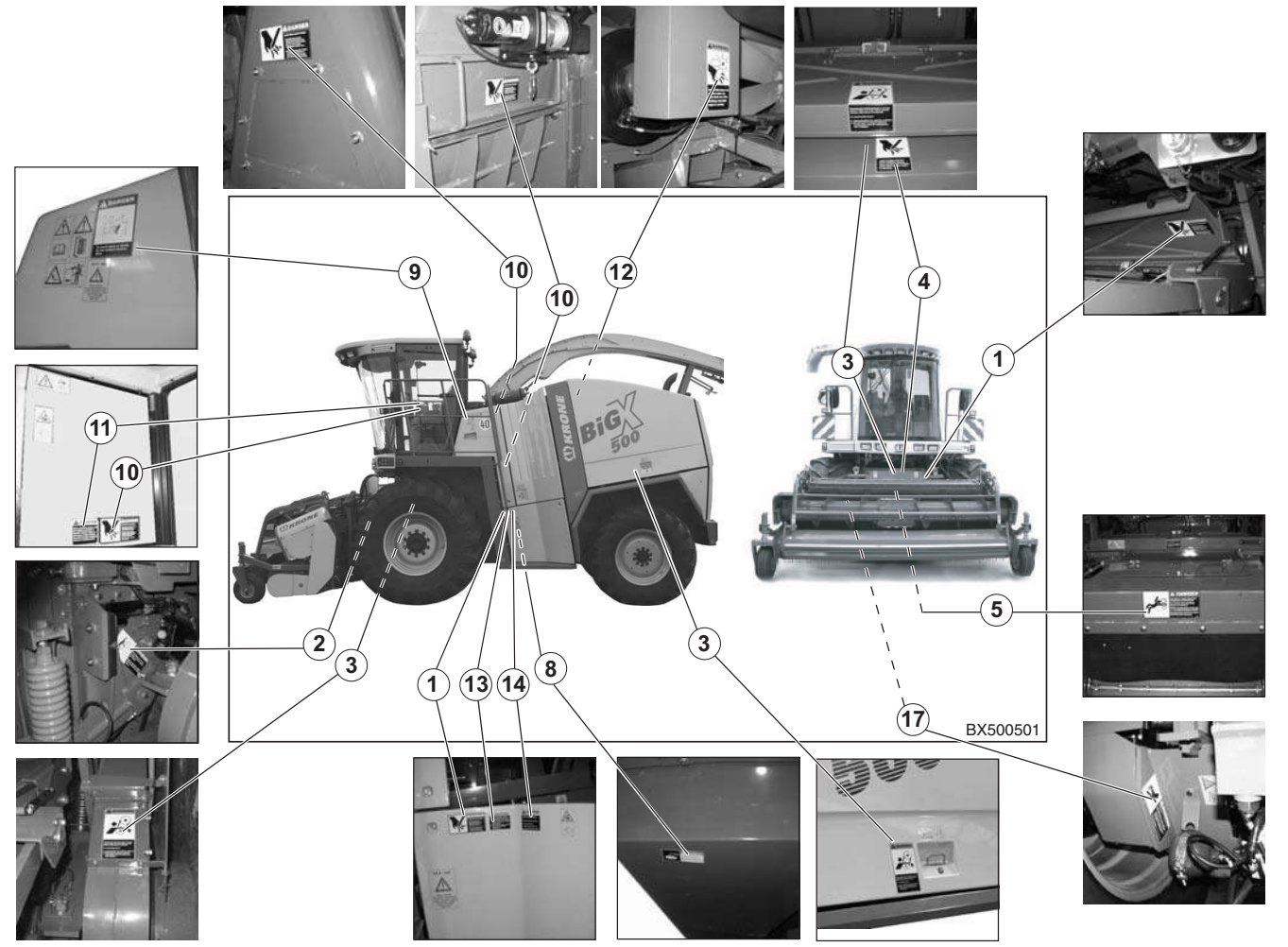
15

942 539 -0
(1) Required

16



942 545 -0
(1) Required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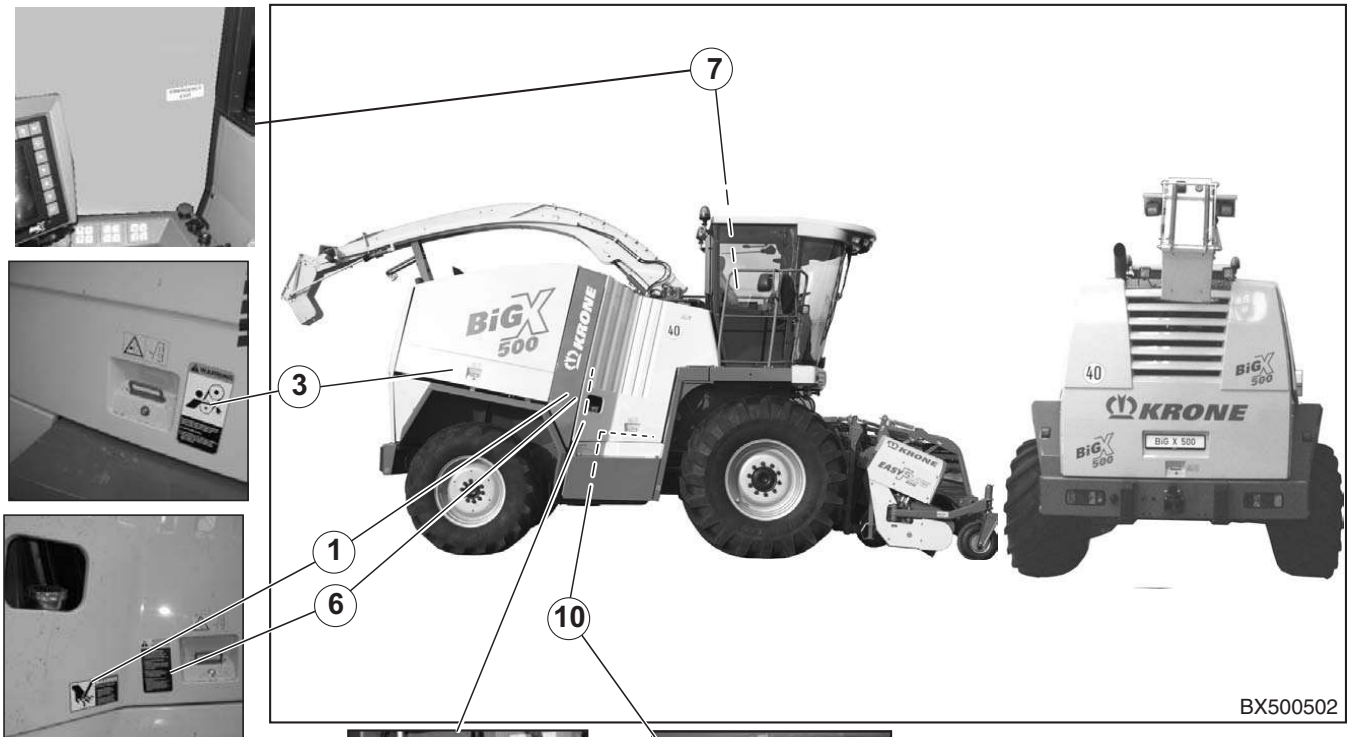
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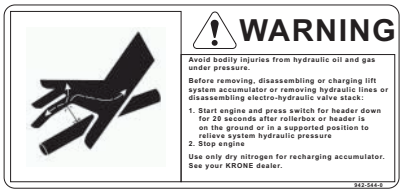
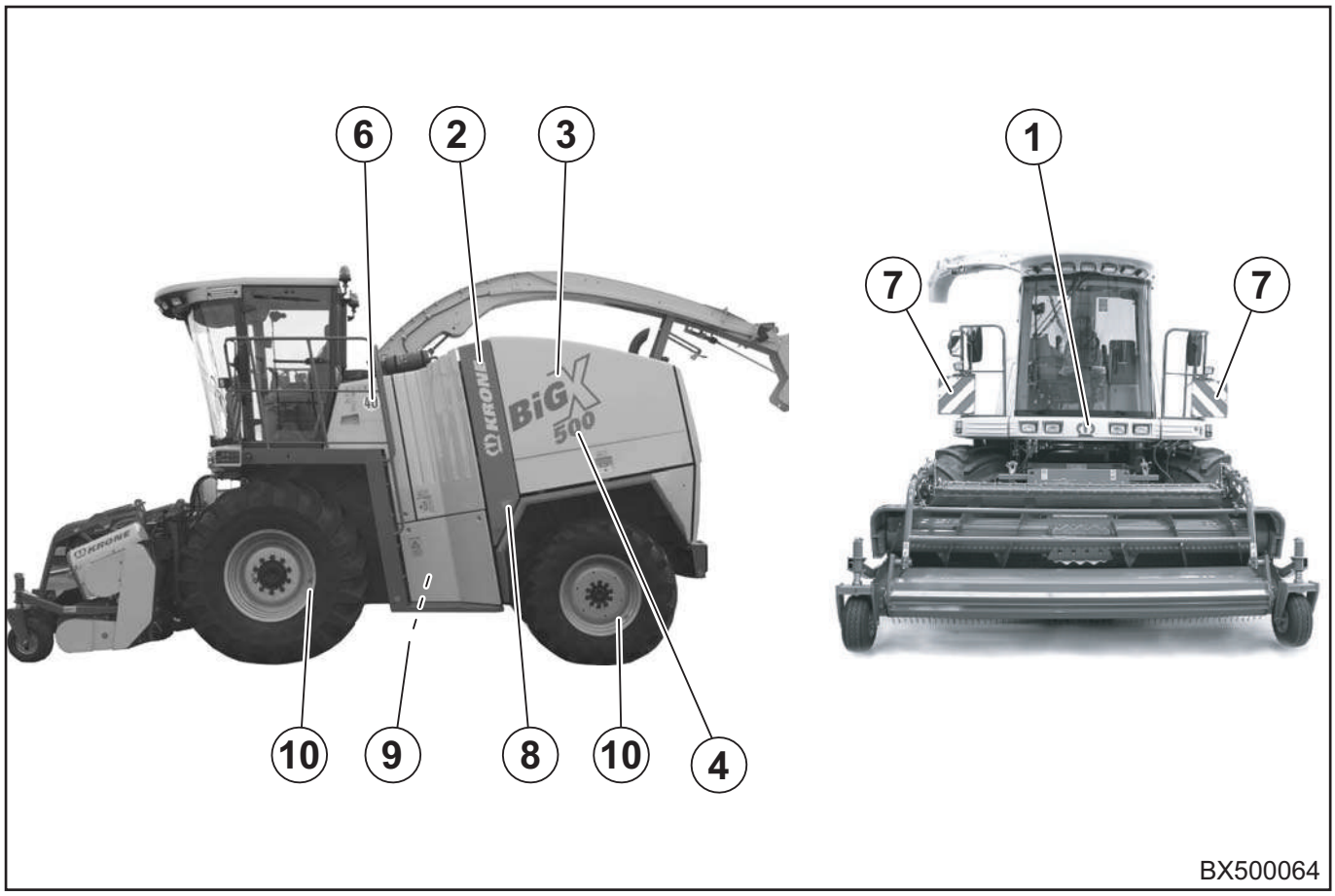
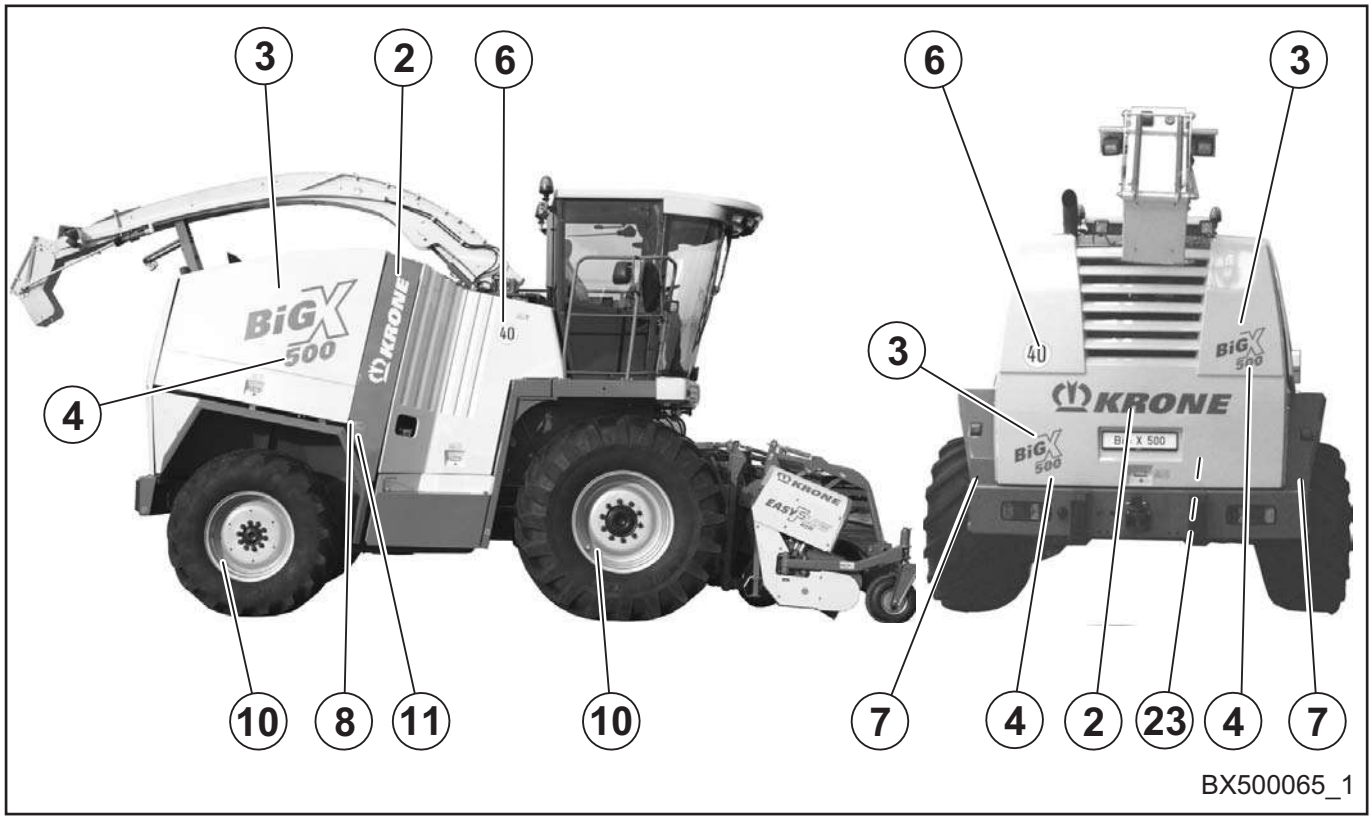


942 544 -0
(1) Required

2.3.2 Location of general labels on the machine

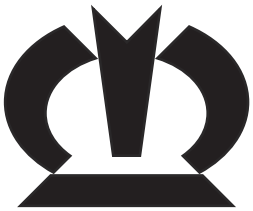


Left-hand side and front of the machine



Right-hand side and rear of the machine

(1)



942 434 0 (1x)

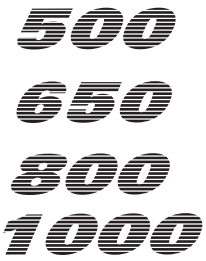
(2)

942 393 0 (2x), length of 1400, beige
942 392 0 (2x), length of 1250, green

(3)

942 395 0 (2x), length of 1098, green
942 394 0 (2x), length of 395, green

(4)



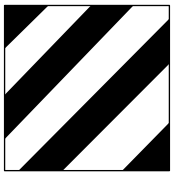
27 000 342 0 (2x) H= 68 anthrazit
27 000 343 0 (2x) H= 190 anthrazit

27 000 344 0 (2x) H= 68 anthrazit
27 000 345 0 (2x) H= 190 anthrazit

27 001 160 0 (2x) H= 68 anthrazit
27 001 161 0 (2x) H= 190 anthrazit

27 001 162 0 (2x) H= 68 anthrazit
27 001 163 0 (2x) H= 190 anthrazit

(7)

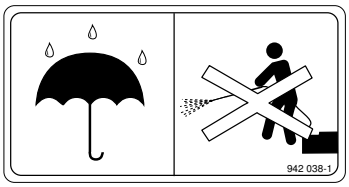


924 569 0 (4x)

(6)

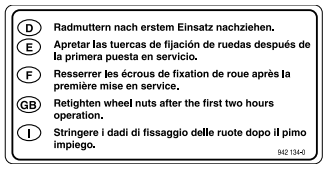
939 145 1 (3x)

(9)



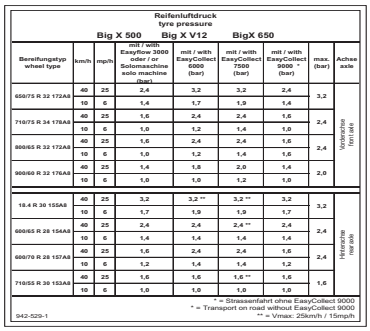
942 038 1 (3x)

(8)



942 134 0 (2x)

(11)



Reifenluftdruck / tyre pressure

Bereifungstyp wheel type	km/h	mp/h	Big X 500 / Big X V12 / BigX 650 mit / with Easyflow 3000 oder / or Solomaschine solo machine (bar)	mit / with EasyCollect 6000 (bar)	mit / with EasyCollect 7500 (bar)	mit / with EasyCollect 9000 * (bar)	max. (bar)	Achse axle
650/75 R 32 172A8	40	25	2,4	3,2	3,2	2,4	3,2	Vorderachse front axle
	10	6	1,4	1,7	1,9	1,4		
710/75 R 34 178A8	40	25	1,6	2,4	2,4	1,6	2,4	
	10	6	1,0	1,2	1,4	1,0		
800/65 R 32 172A8	40	25	1,6	2,4	2,4	1,6	2,4	
	10	6	1,0	1,2	1,4	1,6		
900/60 R 32 176A8	40	25	1,4	1,8	2,0	1,4	2,0	
	10	6	1,0	1,0	1,2	1,0		
18.4 R 30 155A8	40	25	3,2	3,2 **	3,2 **	3,2	3,2	Hinterachse rear axle
	10	6	1,7	1,9	1,9	1,7		
600/65 R 28 154A8	40	25	2,4	2,4	2,4 **	2,4	2,4	
	10	6	1,4	1,4	1,4	1,4		
680/70 R 28 157A8	40	25	1,6	2,4	2,4	1,6	2,4	
	10	6	1,2	1,4	1,4	1,2		
710/55 R 30 153A8	40	25	1,6	1,6	1,6 **	1,6	1,6	
	10	6	1,0	1,0	1,0	1,0		

* = Strassenfahrt ohne EasyCollect 9000
* = Transport on road without EasyCollect 9000
** = Vmax: 25km/h / 15mp/h

942-529-1

942 529-1 (1x)

(11) **BIG X 800/100**

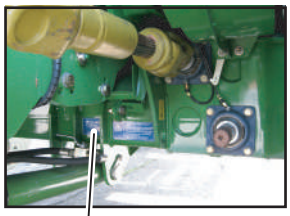
Reifenluftdruck / tyre pressure

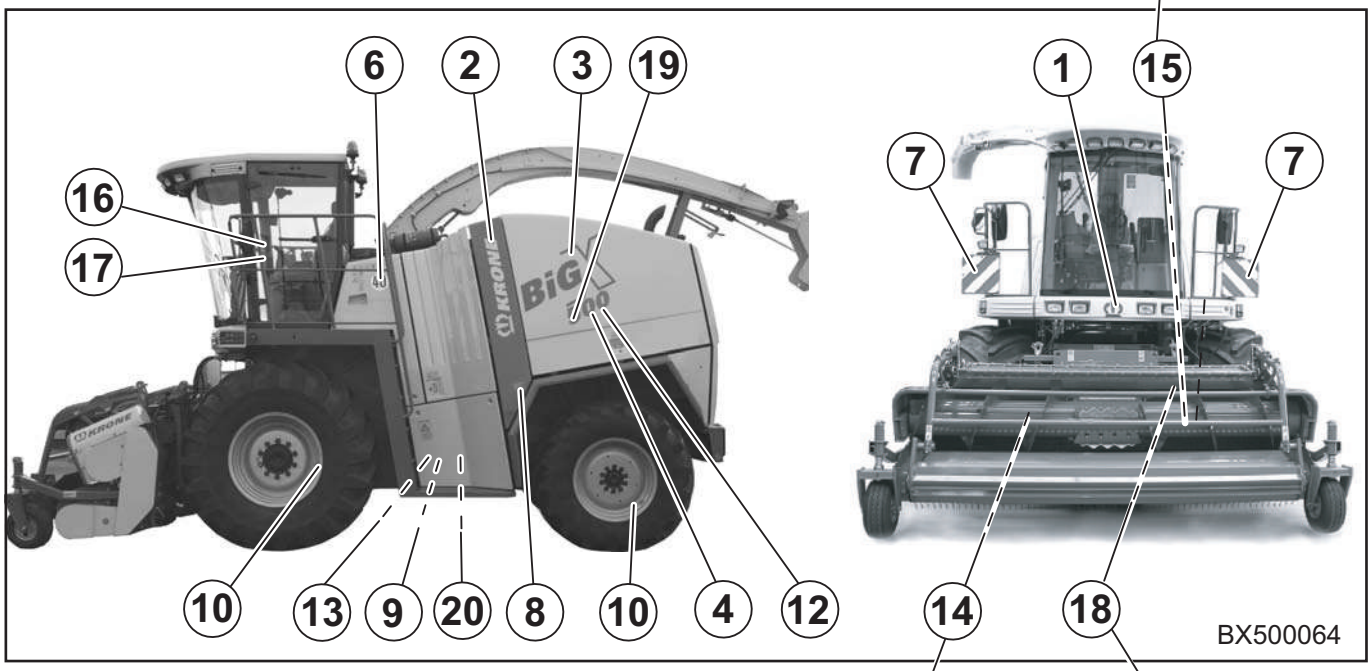
Bereifungstyp wheel type	km/h	mp/h	Big X 800 / Big X 1000 mit / with Easyflow 3001 oder / or Solomaschine solo machine (bar)	mit / with EasyCollect 6000 / 753 (bar)	mit / with EasyCollect 7500 / 903 (bar)	mit / with EasyCollect 9000 * / 1053 * (bar)	max. (bar)	Achse axle
710/75 R 34 178A8	40	25	1,8	2,4	2,4	1,8	2,4	Vorderachse front axle
	10	6	1,0	1,4	1,4	1,4		
800/65 R 32 172A8	40	25	1,6	2,4	2,4	1,6	2,4	
	10	6	1,0	1,4	1,4	1,4		
900/60 R 32 176A8	40	25	1,4	2,0	2,0	1,4	2,0	
	10	6	1,0	1,2	1,2	1,2		
600/70 R 28 157A8 TM 900 HP (Trelleborg)	40	25	2,9	2,9	2,9	2,9	2,9	Hinterachse rear axle
	10	6	1,7	1,7	1,7	1,7		
710/55-34 155A8 T 414 (Trelleborg)	40	25	2,1	2,1	2,1	2,1	2,1	
	10	6	1,4	1,4	1,4	1,4		

* = Strassenfahrt ohne EasyCollect 9000 / 1053
* = Transport on road without EasyCollect 9000 / 1053

270 022 783

270 022 783 (1x)

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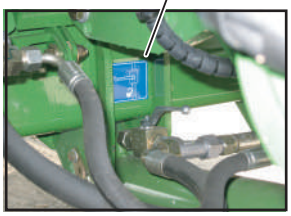

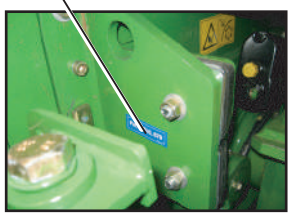

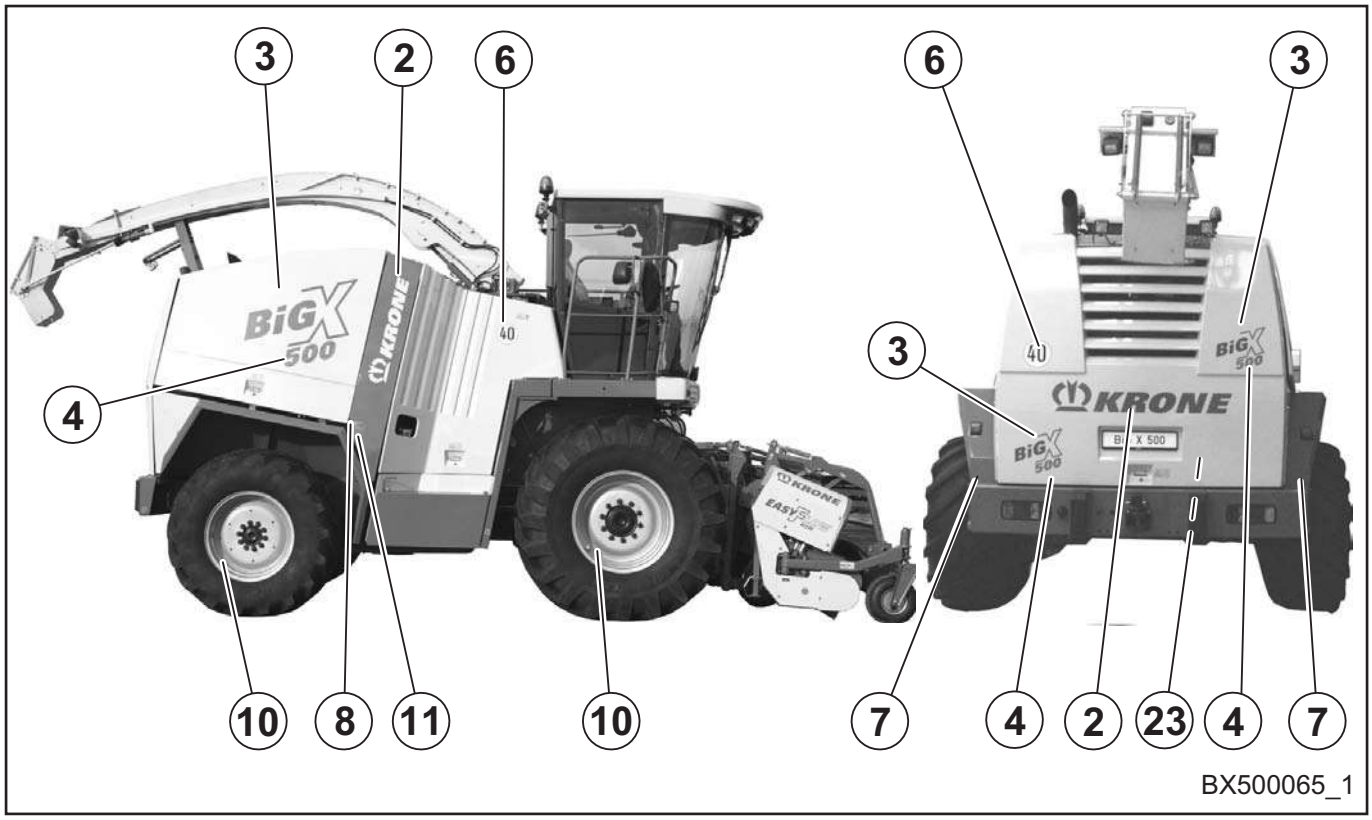
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BX500065_1

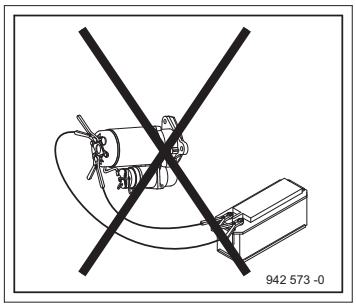
(10)

3,0 bar

942 377-0	1.6 bar
942 432-0	1.8 bar
939 170-1	2.0 bar
942 418-0	2.4 bar
942 233-0	2.7 bar
942 433-0	3.2 bar

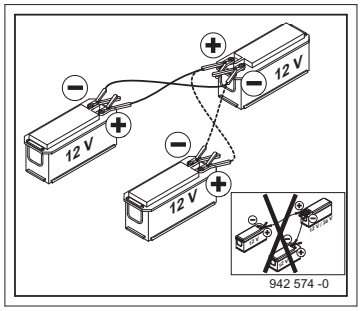
(4x)
Also refer to
Technical Data

(12)



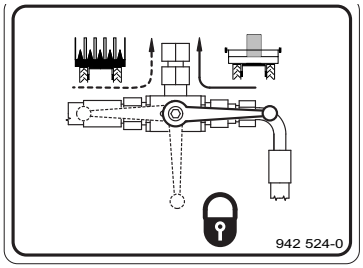
942 573-0 (1x)

(13)



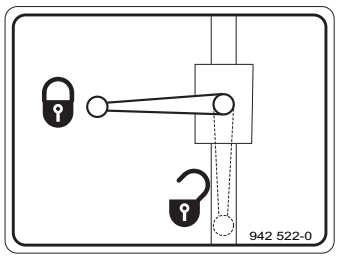
942 574-0 (1x)

(15)



942 524-0 (1x)

(14)



942 522-0 (1x)

(17)

Pat. 6, 638, 153

942 475-0 (1x)

(16)

Pat. 6, 594, 979

942 453-0 (1x)

(19)

12 V

942 572 -0

942 572-0 (1x)

(18)

Pat. 6, 510, 679

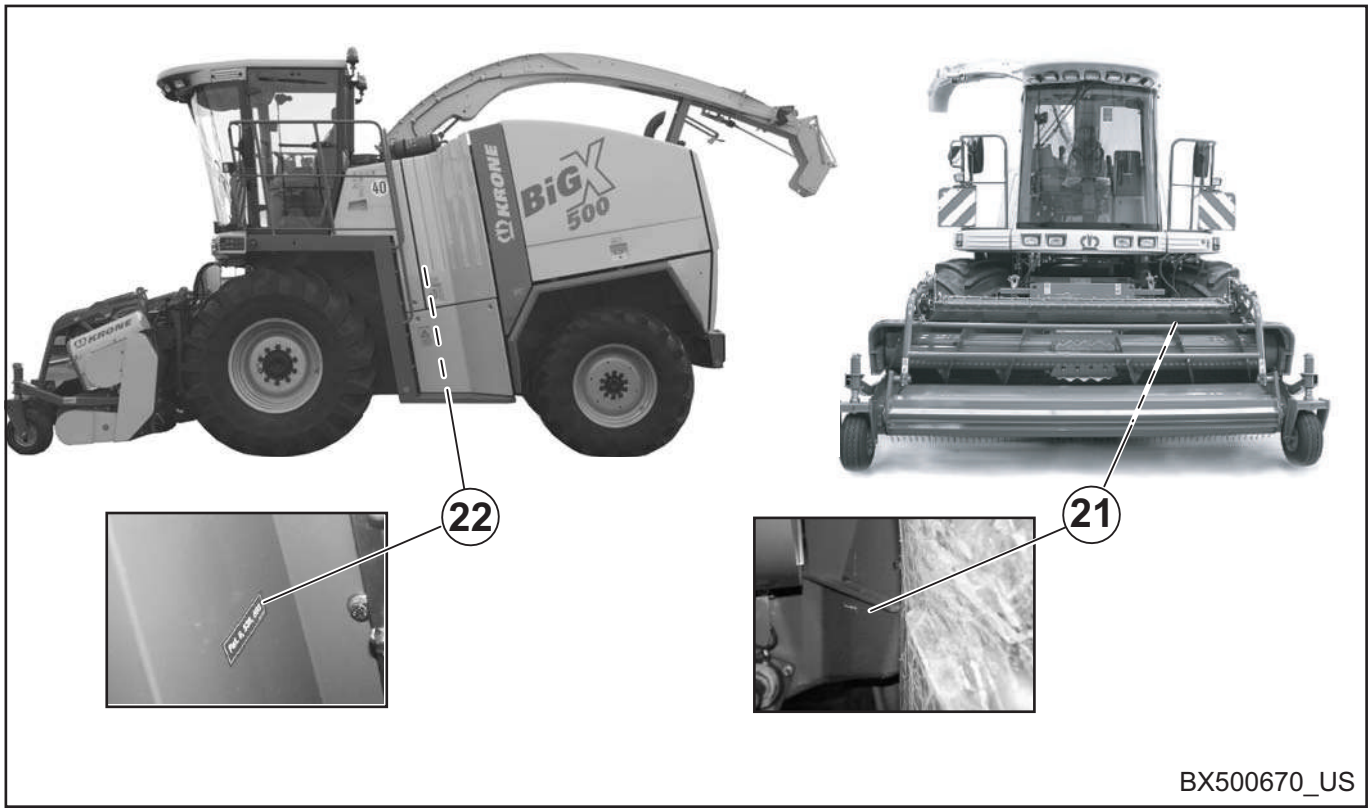
942 447-0 (1x)

(20)

12V / 24 V

942 570 -0

942 570-0 (1x)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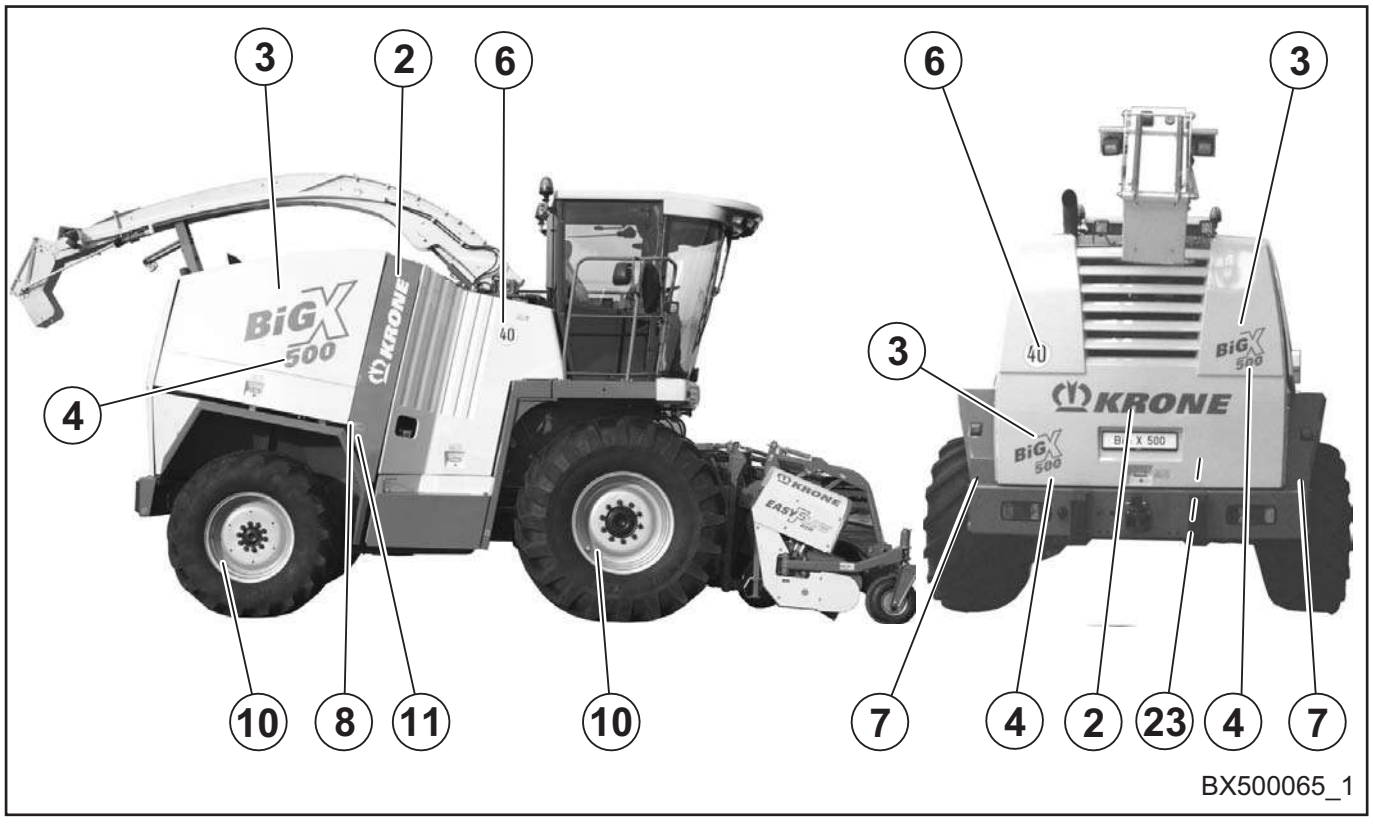
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BX500065_1

(21)

Pat. 6, 550, 231

942 452-0 (1x)

(22)

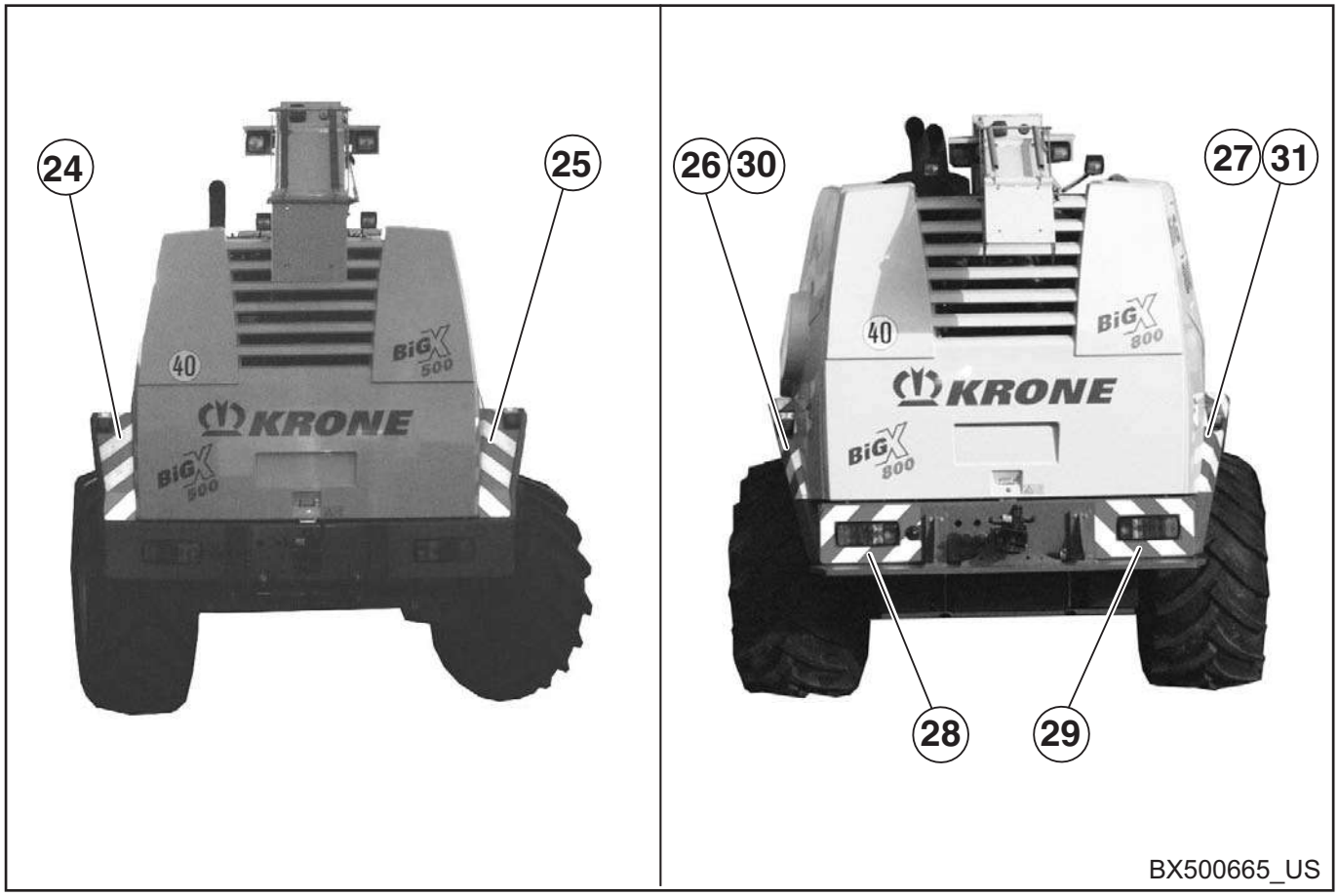
Pat. 6, 539, 693

942 448-0 (1x)

(23)

Pat. 6, 607, 204

942 482-0 (1x)



Rear side of machine

(24) BiG X 500

200 208 240 (1x)

(25) BiG X 500

200 208 250 (1x)

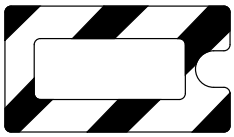
(26) BiG X 650

200 229 680 (1x)

(27) BiG X 650

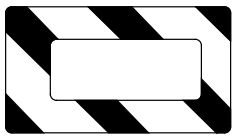
200 229 690 (1x)

(28) BiG X 650
800
1000



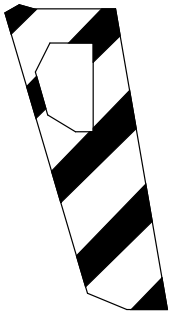
200 227 280 (1x)

(29) BiG X 650
800
1000



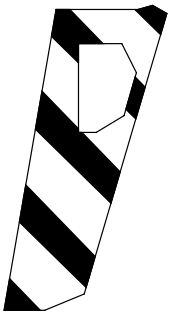
200 227 270 (1x)

(30) BiG X 800
1000



200 227 300 (1x)

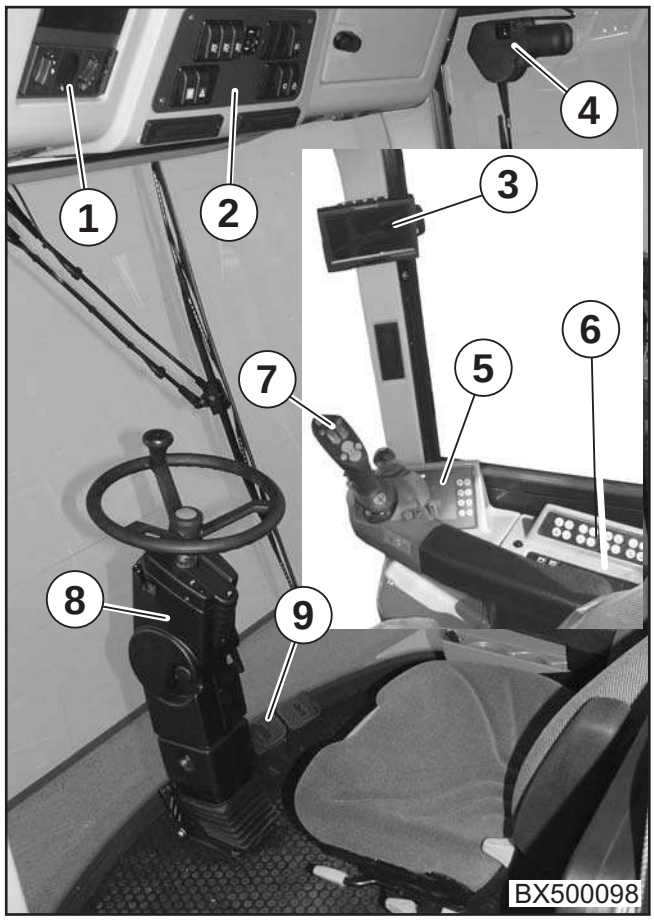
(31) BiG X 800
1000



200 227 290 (1x)

3 Operators controls

3.1 Overview



1 - Switch group – air conditioning/heating

2 - Switch group – roof panel

3 - Camera monitoring system (optional)

4 - Side window wiper (right/left) (optional)

5 - Info Centre

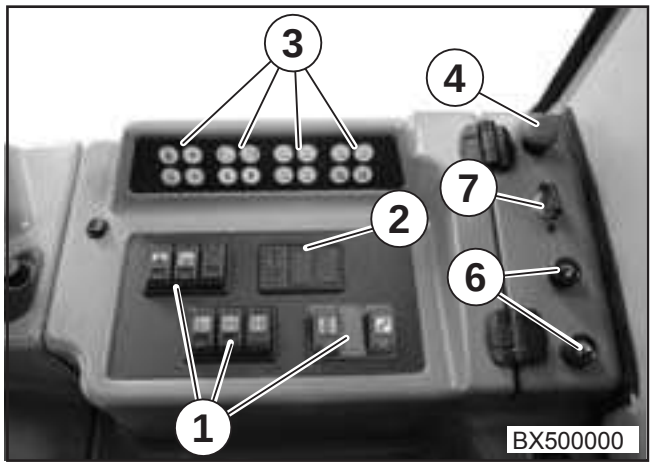
6 - Switch panel

7 - Multi-function lever

8 - Steering column

9 - Operating brake

3.2 Switch panel



1 - Panel switches

2 - Pilot lamps

3 - Keyboards

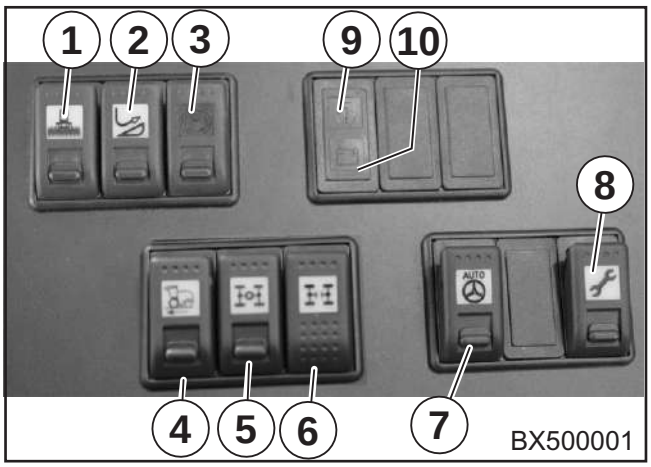
4 - Instantaneous stop switch

5 - 12-Volt socket

6 - Cigarette lighter

7 - Ignition lock

3.2.1 Panel switches and pilot lamps



1 - Release switch – road/field

2 - Release switch – feed drive/front attachment

3 - Release switch – holding brake

4 - Release switch – travelling gear

5 - Release switch – all-wheel drive

6 - Axle separation key

7 - Release switch – autopilot

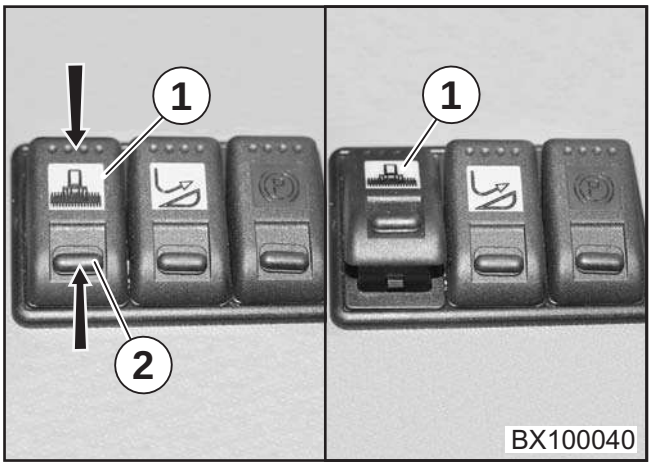
8 - Release switch - maintenance

9 - Engine failure indicator light

10 - Charge indicator light

Actuating release switches

The release switches are locked against unintentional actuation.



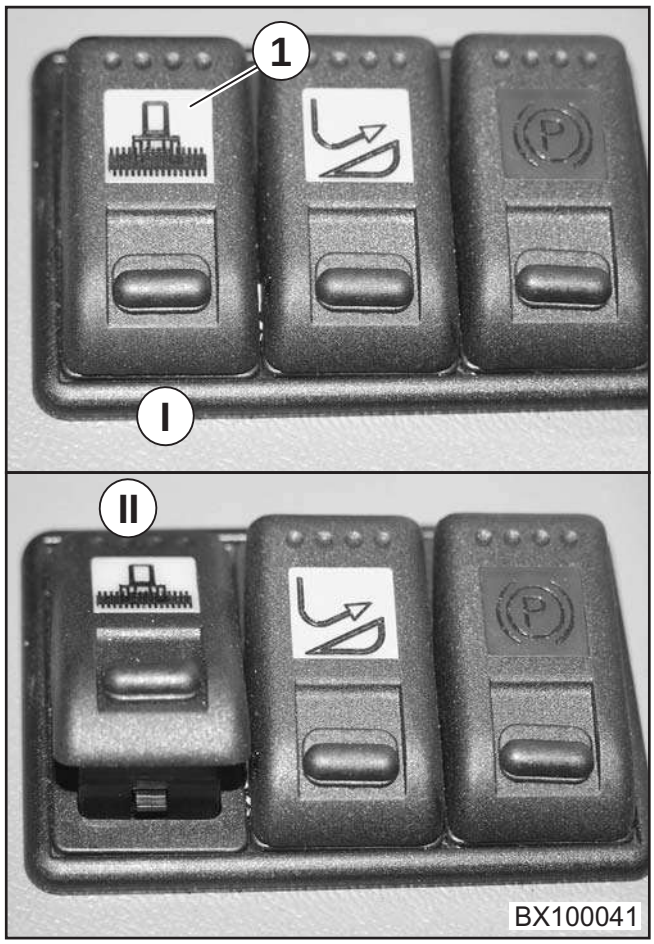
- To actuate the release switches (1), push the lock (2) forward and press the release switch.

3.2.2 Release switch – road/field

When travelling on roads, the road/ field release switch must be set to the position "I".
This ensures that only the travelling gear, the steering mechanism and the brakes are active.

The road/field release switch (1) is used to switch from road travel to field operation and vice versa.

I - Road travel
II - Field operation

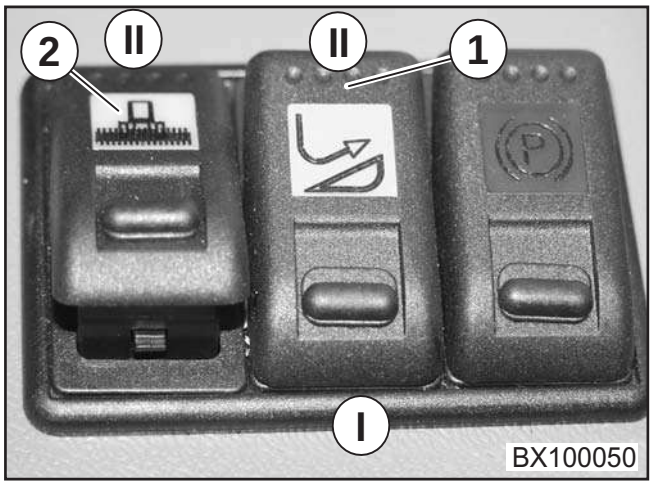


3.2.3 Release switch – feed drive/front attachment

Actuating the feed drive/attachment release switch (1) releases the feed drive rollers and the corresponding attachment.

- The road/field release switch (2) must be set to field operation (**II**).

I - Feed drive/front attachment off
II - Feed drive/front attachment on

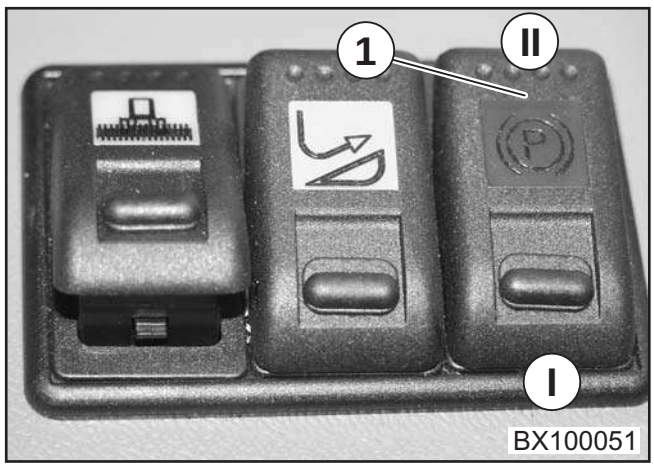


3.2.4 Release switch – holding brake

Driving for an extended period of time with the holding brake applied will result in overheating of the brake.

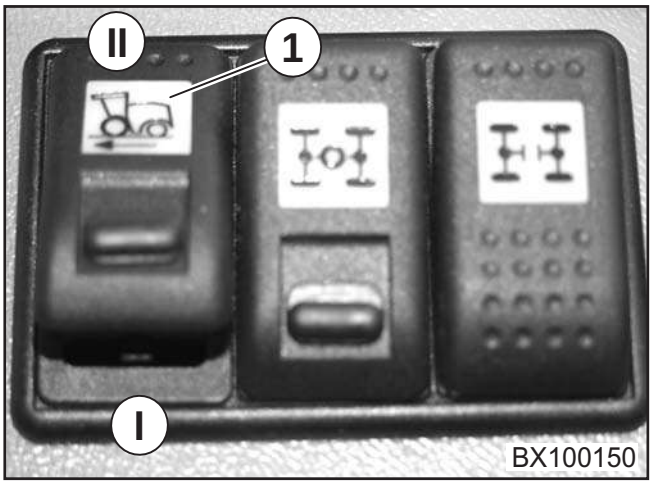
I - Holding brake released
II - Holding brake applied

The holding brake is applied automatically when the ignition is switched off.



3.2.5 Release switch – travelling gear

When the travelling gear release switch (1) is actuated, the travelling gear is released.



No persons may be present in the direct hazardous area of the machine when the travelling gear release switch is actuated!

Always remove the ignition key when leaving the driver's cab. To switch off the forage harvester, actuate the holding brake switch and set the travelling gear switch (1) to the off position (I).

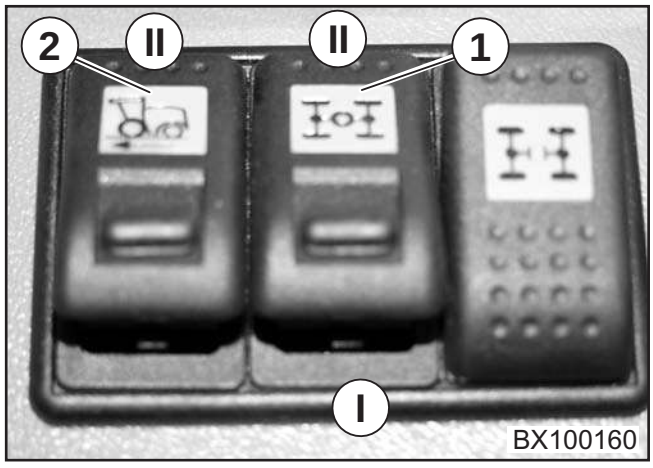
I - Travelling gear off

II - Travelling gear on

When the travelling gear is switched on (**II** position), the maintenance functions (manual operation on the left platform) are not released.

3.2.6 Release switch – all-wheel drive

Actuating the all-wheel drive release switch (1) connects all-wheel drive.



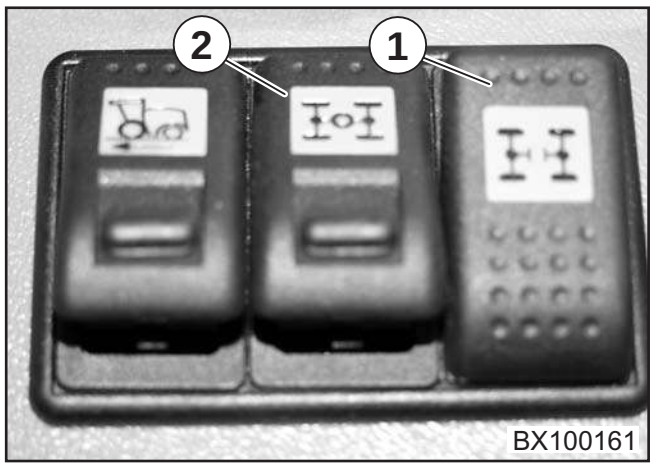
- The road/field release switch must be set to field operation.
- The travelling gear release switch (2) must be switched on (**II**) and the forage harvester must be at a standstill.

I - All-wheel drive switched off

II - All-wheel drive switched on

3.2.7 Axle separation key

Actuating the axle separation key switches axle separation on or off.



- The all-wheel drive release switch (2) must be switched on; the drive speed must be below 10 km/h.
- Actuate axle separation key (1) – axle separation switched on.
- Actuate axle separation key (1) again – axle separation switched off.

When all-wheel drive is switched off, axle separation is also switched off.

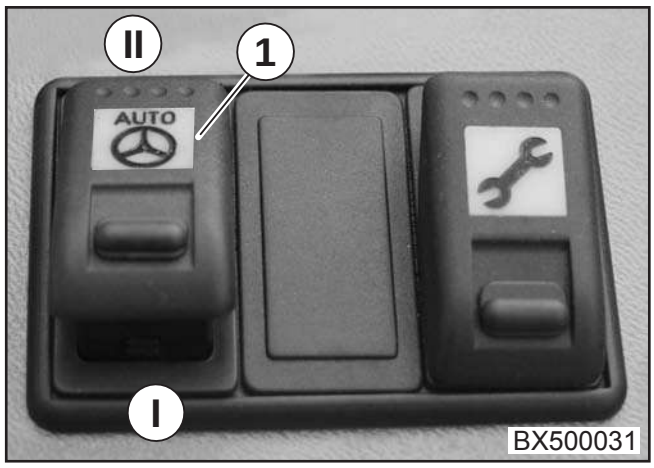
3.2.8 Release switch – autopilot

Actuating the autopilot release switch (1) releases the autopilot function.

The autopilot is available only in maize operation when the EasyCollect maize header has been attached.

- The road/field release switch must be active in field operation and the travelling gear release switch must be switched on.

I - Autopilot off
II - Autopilot on

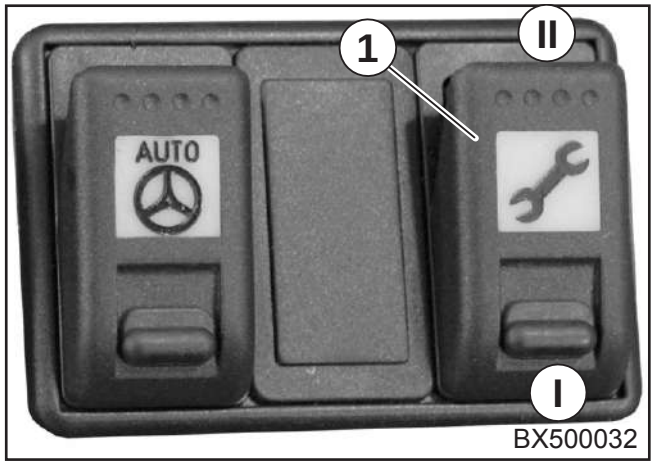


3.2.9 Release switch - maintenance

Actuating the maintenance release switch (1) releases all maintenance functions (manual operation on the left platform).

- The road/field release switch must be active in field operation and the travelling gear release switch must be switched off.

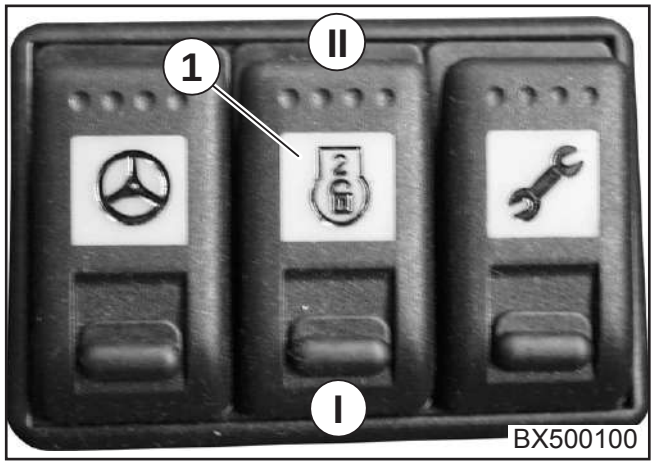
I - Maintenance off
II - Maintenance on



3.2.10 Release Switch for Diesel Engine II (only for BiG X 800 and BiG X 1000)

Activating the release switch for diesel engine II (1) releases the functionality of diesel engine II.

I - Diesel engine II switched off
II - Diesel engine II released



3.2.11 Engine failure indicator light

The engine pilot lamp (I) (1) lights up as soon as a failure in the engine (I) is detected..

Switch the engine off immediately.
Rectify the fault.

The engine pilot lamp (II) (3) lights up as soon as a failure in the second engine is detected.
(Only for BiG X 800 and BiG X 1000)

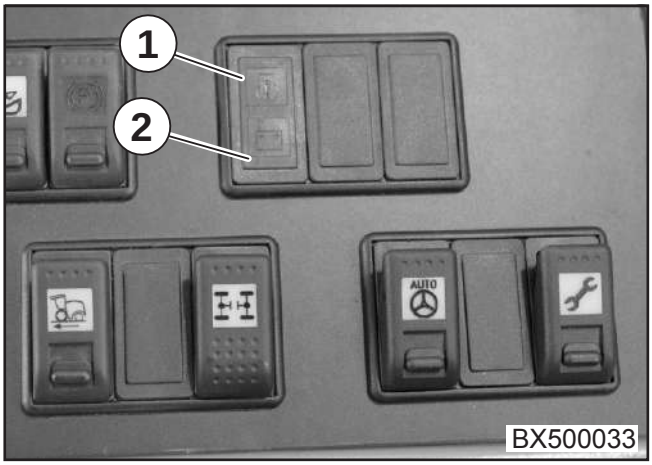
Switch the engine off immediately.
Rectify the fault.

3.2.12 Charge indicator light

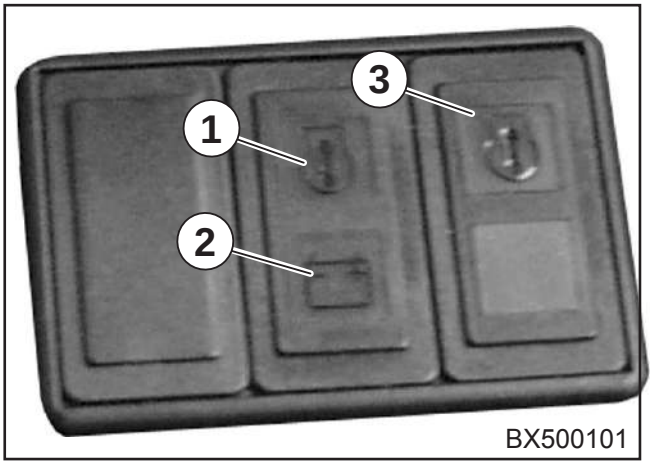
The charge indicator light (2) will light up, if the output voltage of the three-phase generator is not sufficient to charge the batteries.

- Check the cables and connections on the three-phase generator and on the batteries. Check the V- belt on the three-phase generator.

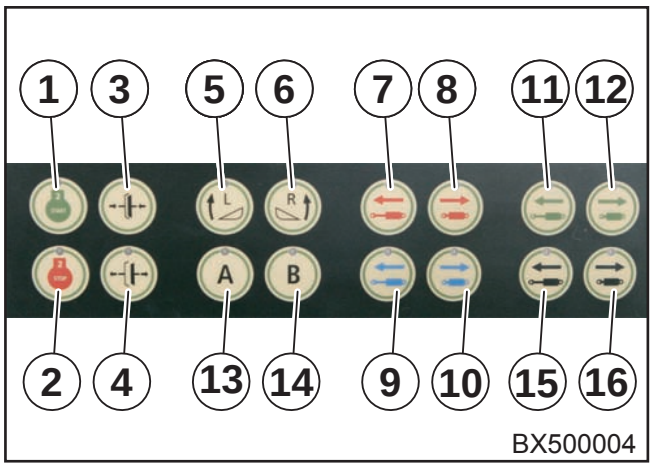
BiG X 500, BiG X 650



BiG X 800, BiG X 1000

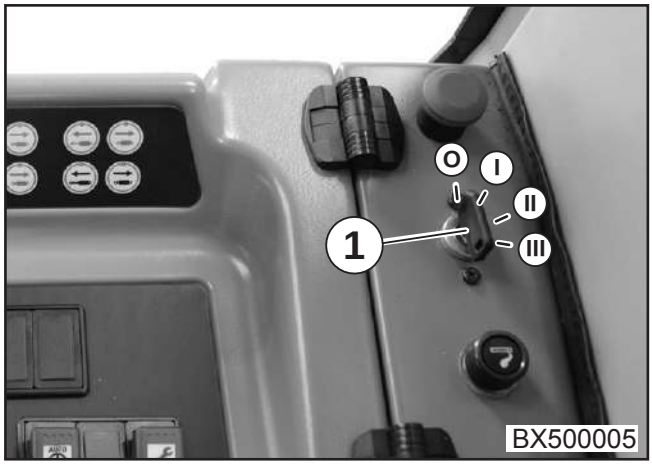


3.2.12 Keyboards



1 - not taken
2 - not taken
1 - Start diesel engine II (BiG X 800, 1000)
2 - Switch off diesel engine II (BiG X 800, 1000)
3 - Main coupling on
4 - Main coupling off
5 - Pendulum frame - swing up to the left
6 - Pendulum frame - swing up to the right
7 - (red) pick-up = lift roller-type crop guard
(red) maize header = retract
8 - (red) pick-up = lower roller-type crop guard
(red) maize header = fold out
By pressing the keys (7) and (8) simultaneously, switch off the pressure in the first hydraulic circuit.
9 - (blue) pick-up = swing in roller feelers
(blue) maize header = lift plant divider
10 - (blue) pick-up = extend roller feelers
(blue) maize header = lower plant divider
By pressing the keys (9) and (10) simultaneously, switch off the pressure in the second hydraulic circuit.
11 - (green) optional for additional control
12 - (green) optional for additional control
13 - not taken
14 - not taken
15 - (black) optional for additional control
16 - (black) optional for additional control

3.2.13 Ignition lock



The ignition lock (1) has four positions:

0 - Off

I - Electric circuit for electronics is switched on

II - The ignition is switched on

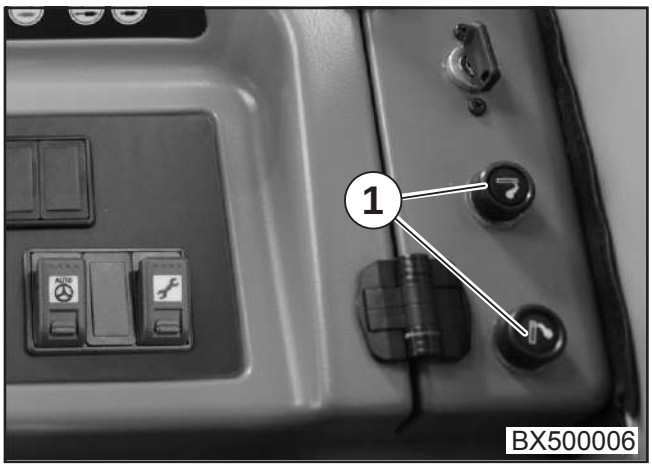
III - Start position

3.2.14 Cigarette lighter

In order to prevent damage and injury, never hold the cigarette lighter (1) in pressed position.

- Press the cigarette lighter (1) in; when the required temperature is reached the insert will come out by itself.

The socket of the cigarette lighter can be used to connect other power consumers with 12 volts and a maximum of 10 amps. When the engine has been switched off, the battery will be discharged. Use the specified plug to connect accessory units.



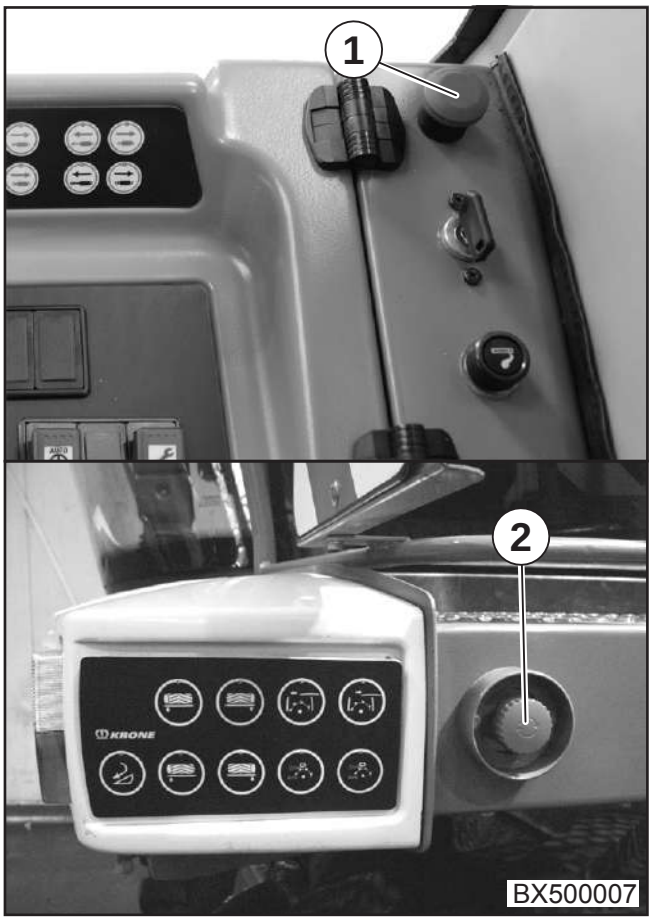
3.2.15 12-V socket

The 12-Volt socket can be used to connect accessory units.
Power consumers with a maximum of 15 amps can be connected.

3.2.16 Instantaneous stop switch

When the instantaneous stop switch (1) is actuated, the travelling gear is deactivated and the machine stops. All work functions are stopped.

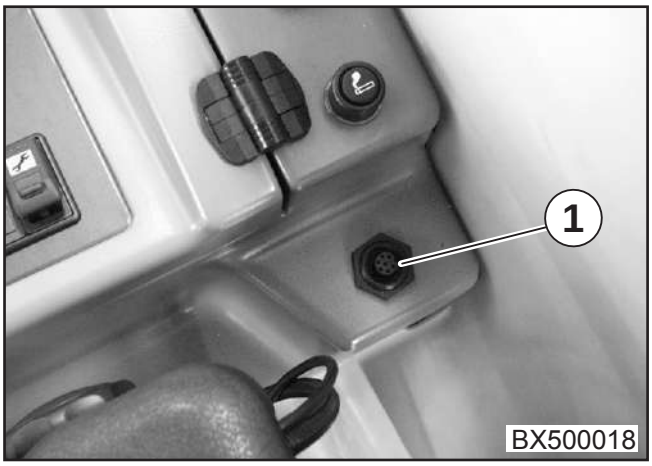
- Press the instantaneous stop switch (1 or 2) – the machine stops/work functions are stopped.
- In order to activate the machine, move the actuated instantaneous stop switch (1 or 2) to its initial position by turning it slightly to the right.



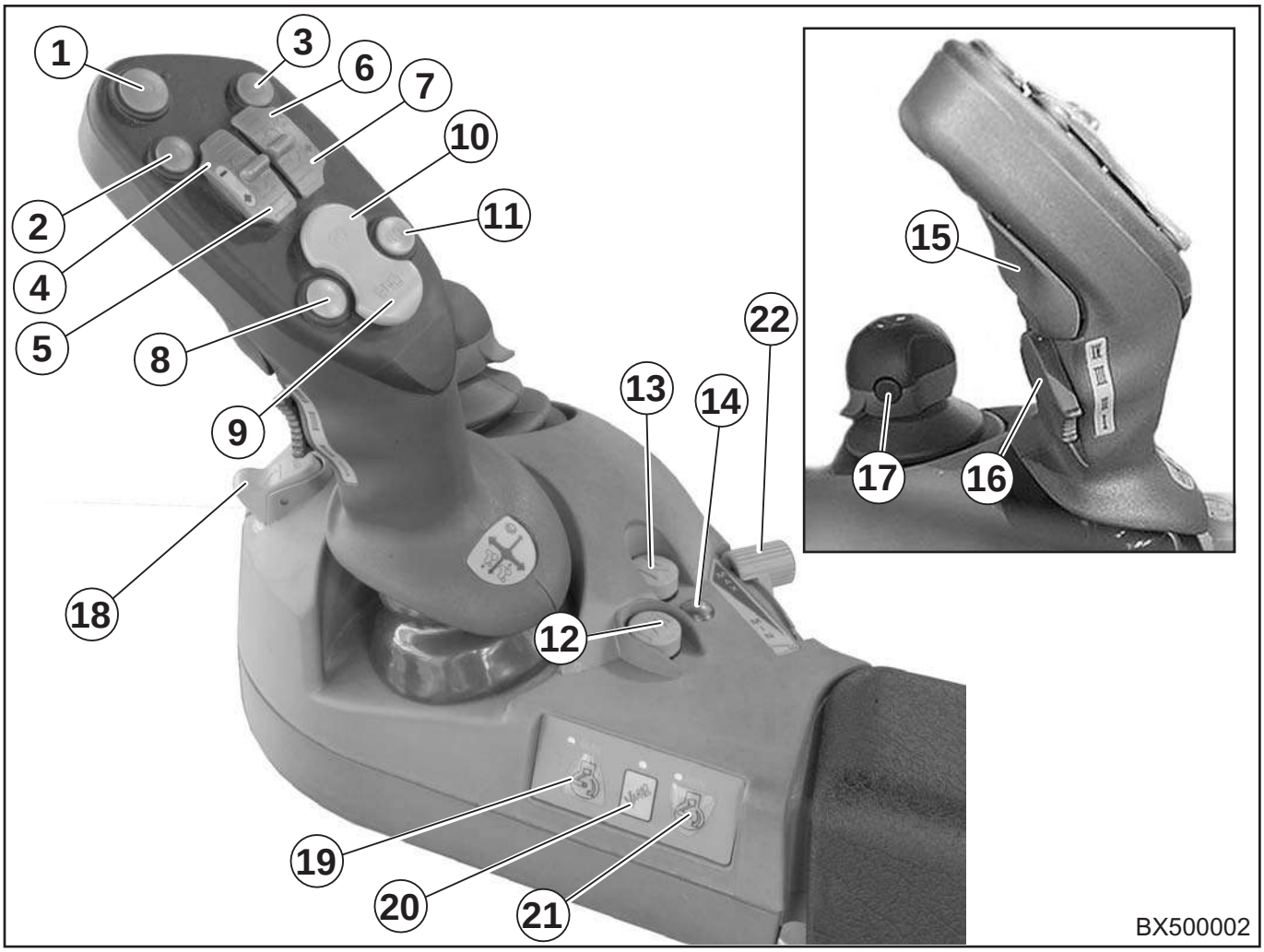
3.2.17 Diagnostics socket

- CAN interface (1)

Only devices that are approved by KRONES may be connected to the CAN interface.



3.3 Multi-function lever



1 - Autopilot (field operation of maize header only)

2 - Feed drive/front attachment on - off

3 - Reverse feed drive/front attachment

4 - Lower the lifting gear (sensing mode)

5 - Raise the lifting gear (sensing mode)

6 - Automatic header contour (step mode)

7 - Raise the lifting gear up to top (step mode)

8 - Rotate discharge chute left

9 - Ejector flap down

10 - Ejector flap up

11 - Rotate discharge chute right

12 - Mirror upper discharge chute (with main coupling switched on)
- Upper discharge chute in transport position (with main coupling switched off)

13 - Memory key for adjustment process – lifting gear

14 - Pilot lamp – travelling gear on

15 - Actuation key for travelling gear

16 - Selector switch – acceleration ramp

17 - Save the cutting length

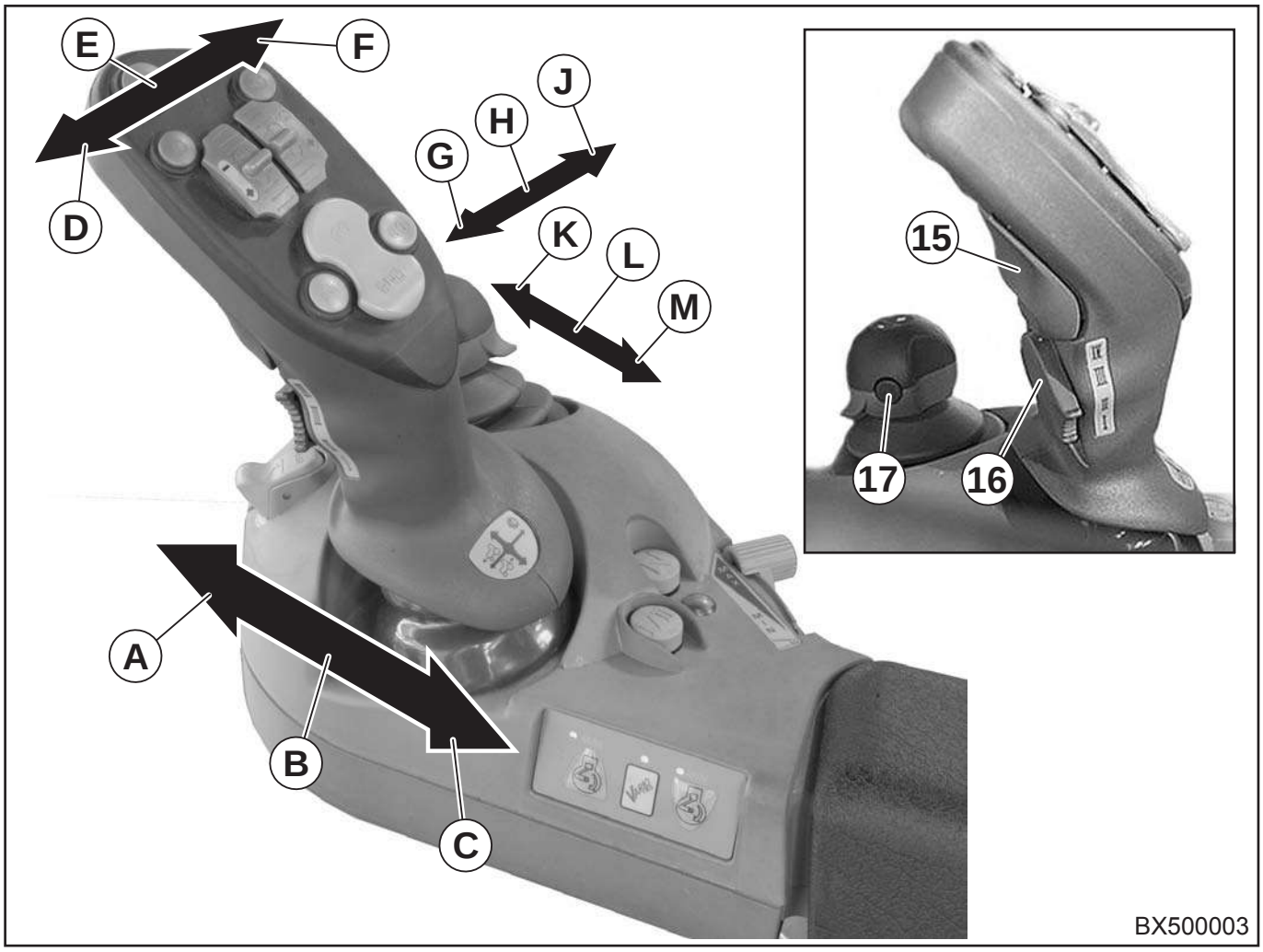
18 - Free

19 - Raise engine speed

20 - Change from nominal speed to idling speed and vice versa

21 - Reduce engine speed

22 - Speed discharge chute



A - Acceleration (in forward travel)
Deceleration (in reverse)
Start travelling gear with actuation key (15) pressed

B - Multi-function lever – centre position

C - Acceleration (in reverse)
Deceleration (in forward travel)
Start travelling gear with actuation key (15) pressed

D - Deceleration to 0 km/h
Fast reversing with actuation key (15) pressed (field operation only)

E - Multi-function lever – centre position

F - Switch on cruise control (in forward travel only)
Save present speed for cruise control – Press actuation key (15) and move multi-function level in direction F
- In field mode, the load limit control "Constant Power" will be activated by briefly pressing the driving lever twice to the right.

G - Bring up cutting length value 1
If the 17 button is pressed and is past the action point, the cutting length is saved in the Info Centre (value 1)

H - Central position

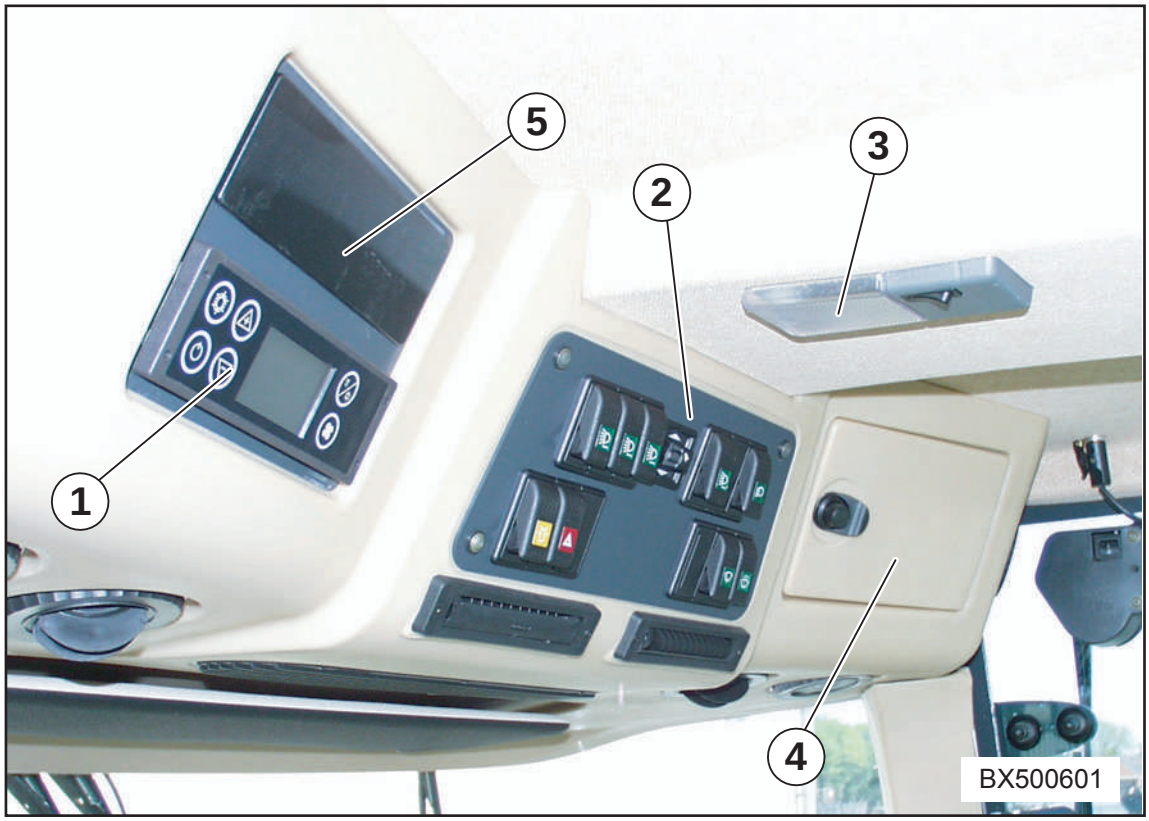
J - Bring up cutting length value 2
If the 17 button is pressed and is past the action point, the cutting length is saved in the Info Centre (value 2)

K - Lower upper discharge chute

L - Central position

M - Lift upper discharge chute

3.4 Roof console



1 - Switch – air conditioning/heating

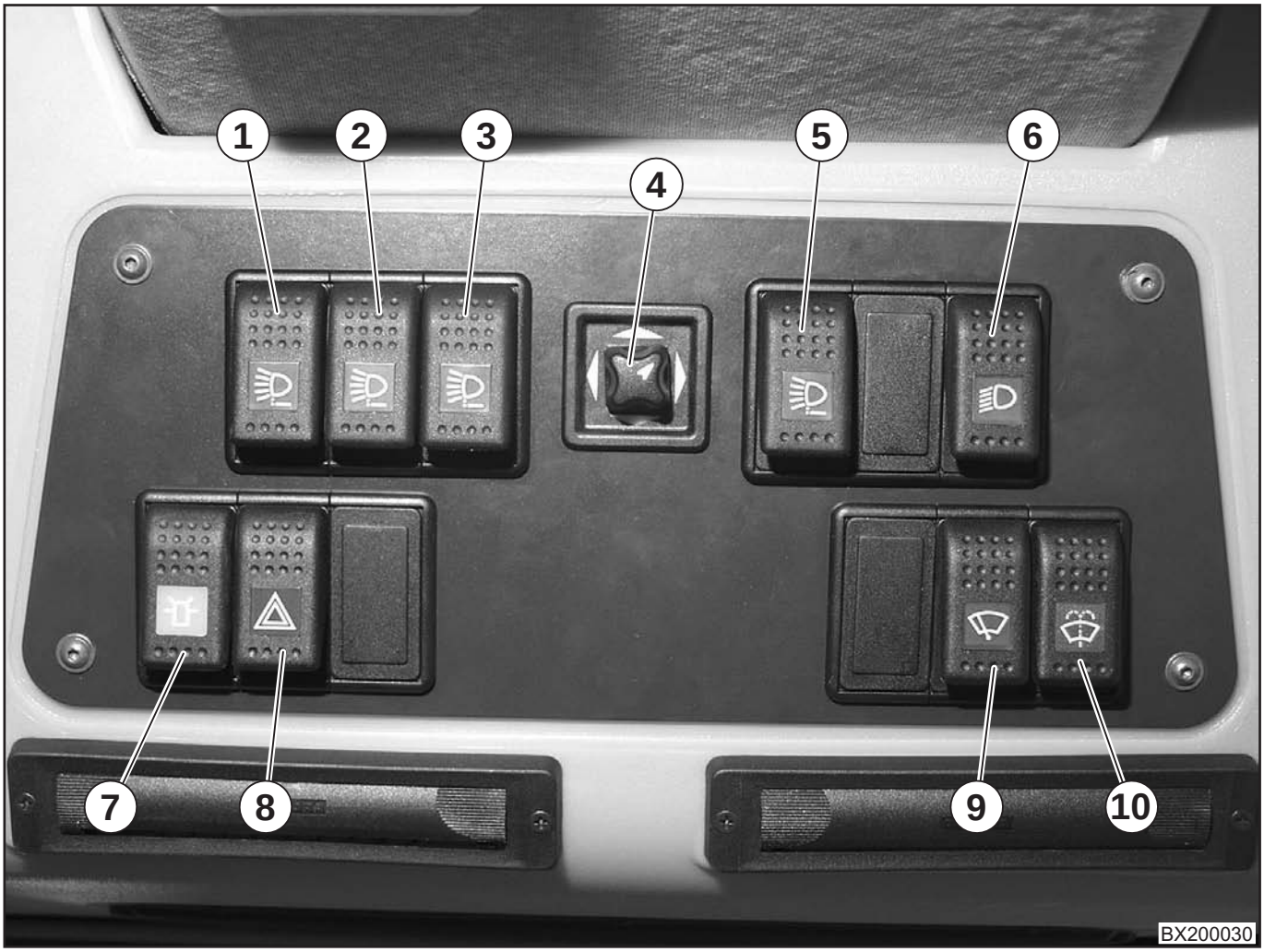
2 - Switch group – roof panel

3 - Interior lighting

4 - Cooling compartment

5 - ISO compartment for radio

3.5 Switch group – roof panel



1 - Working floodlight – side of cab

2 - Working floodlight – cab roof and upper discharge chute

3 - Working floodlight - front

4 - Mirror adjustment (right rear view mirror only)

5 - Rear working floodlights

6 - Side light/dipped beam

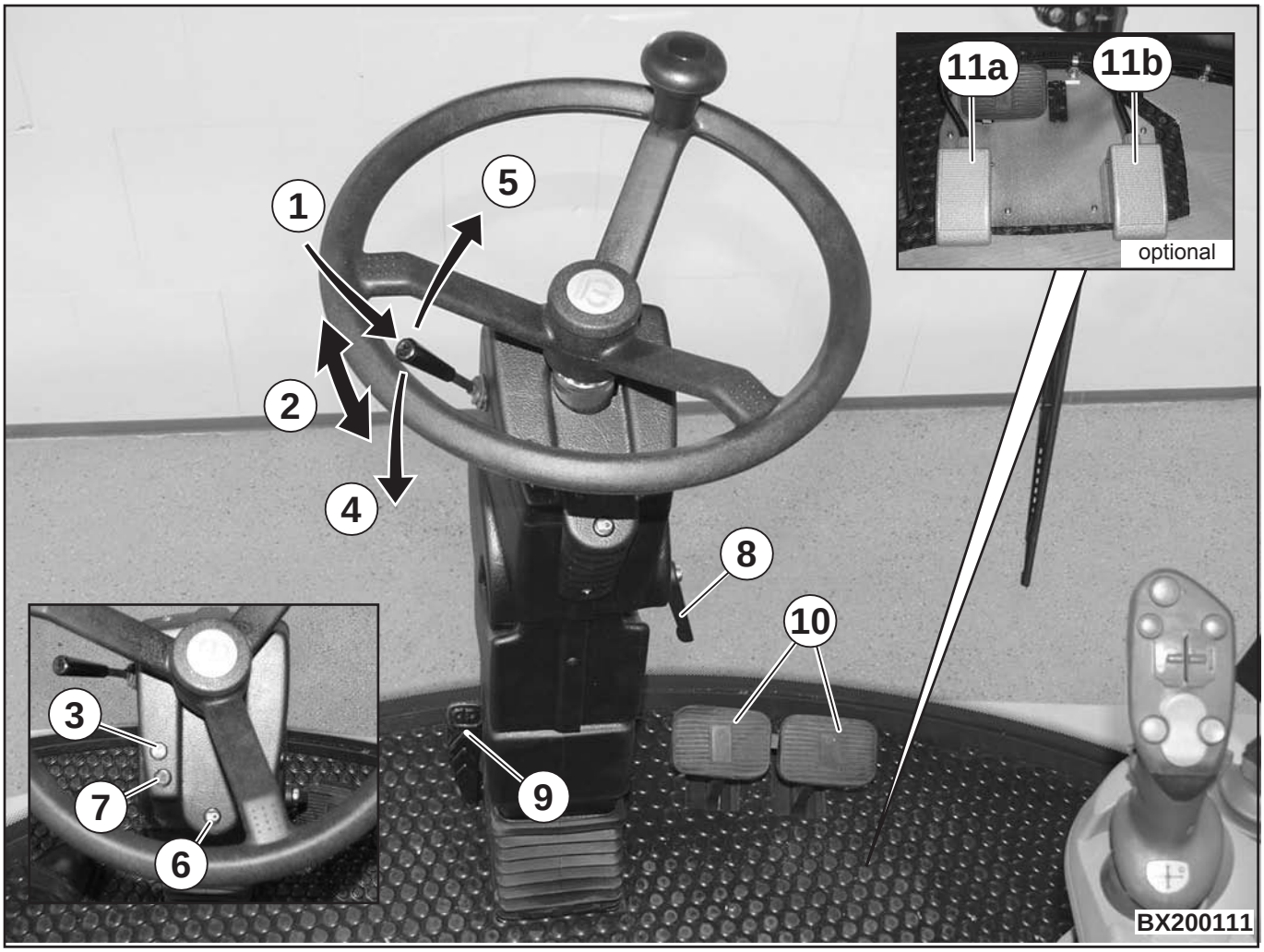
7 - Allround lights

8 - Warning flashers

9 - Windshield wipers

10 - Windshield washer unit

3.6 Steering column and foot pedals



1 - Button for horn

2 - Indicator switch

3 - Pilot lamp indicator

4 - Full beam

5 - Headlamp flasher

6 - Full beam indicator light

7 - Pilot lamp – trailer function

8 - Release lever for horizontal steering column adjustment

9 - Release lever for horizontal and vertical steering column adjustment

10 - Operating brake

11a - Swivel the foot pedal discharge chute to the left (optional)

11b - Swivel the foot pedal discharge chute to the right (optional)

3.6.1 Steering column adjustment

Adjust the steering column only when the machine is at a standstill.

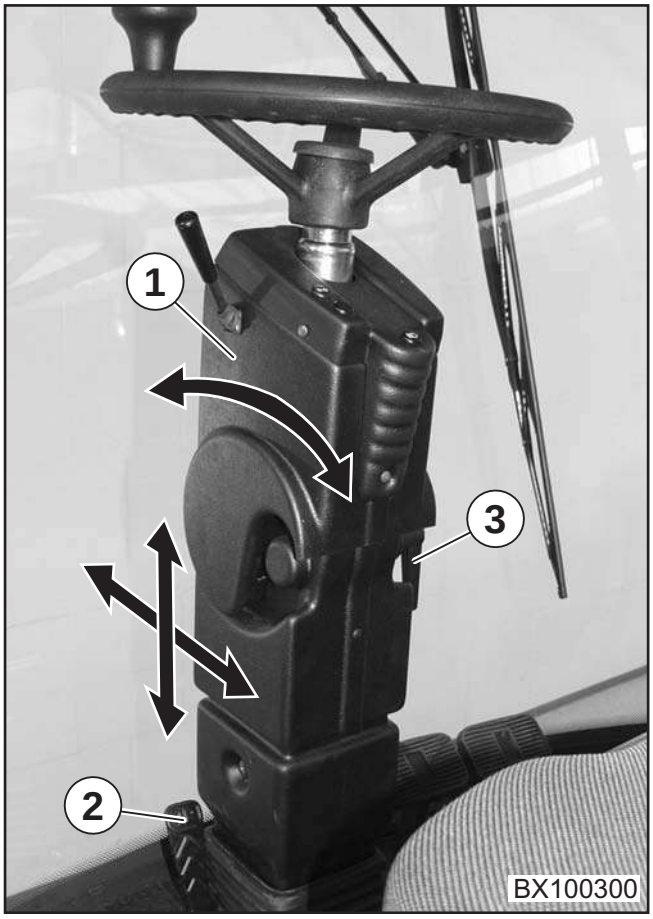
Horizontal and vertical steering column adjustment

The steering column (1) is held in vertical position by spring pressure. Before actuating the pedal (2), hold the steering wheel with both hands.

- Use the pedal (2) to release the steering column (1), and adjust to the desired position. After the pedal (2) has been released, the steering column (1) will be locked.

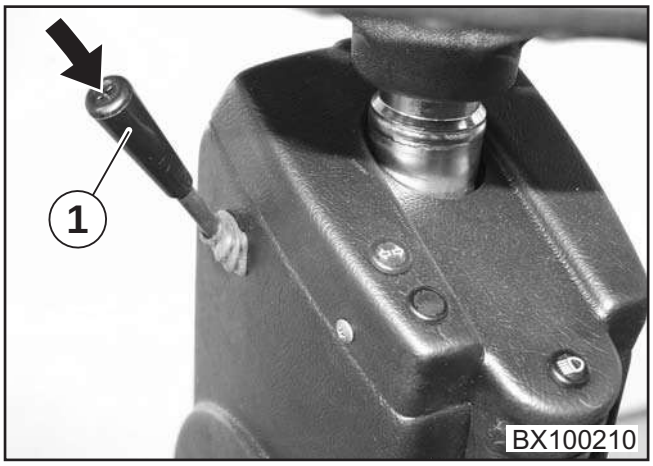
Horizontal steering column adjustment

- Loosen release lever (3). Move the steering column (1) into the requested position. Lock the release lever (3) again.



3.6.2 Horn

- When the push-button (1) is pressed, the horn is sounded.

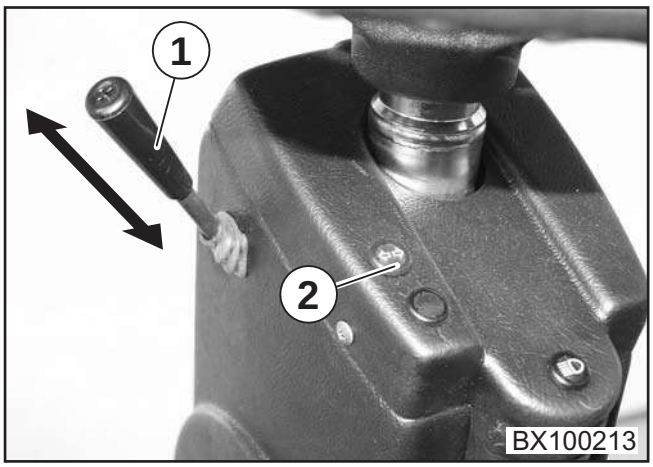


3.6.3 Indicator switch

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

- Switch (1) forward – right indicator
- Switch (1) backward – left indicator
- Set the switch to neutral position by hand.

The indicator pilot lamp (2) will light up when the indicator has been switched on.

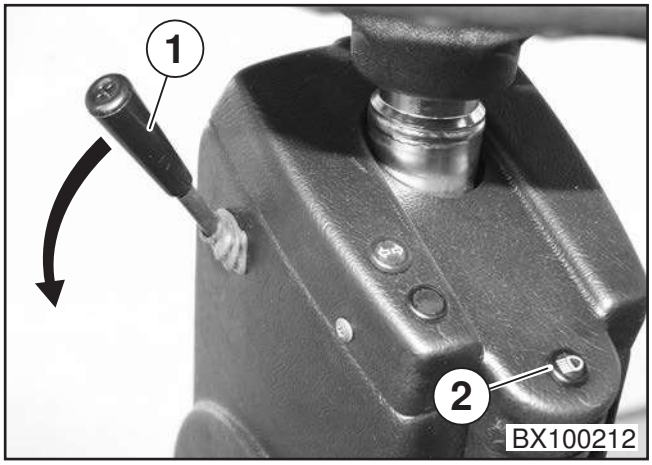


3.6.4 Full beam

High beam is operational only when the dipped beam has been switched on.
Switch off high beam when a vehicle approaches.

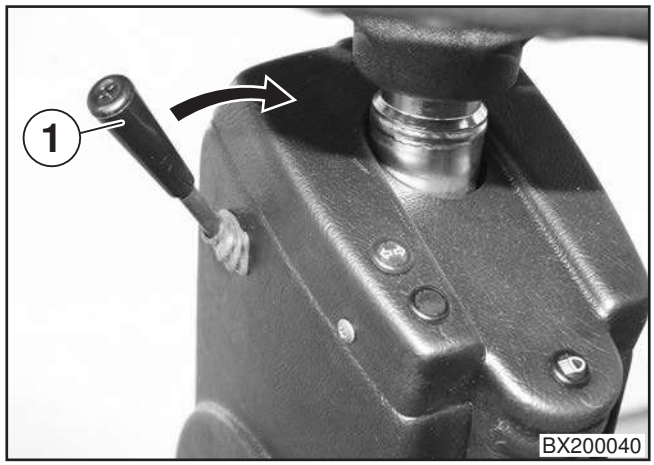
- Switching high beam on – press lever (1) down.
- Switching high beam off – press lever (1) up.

When high beam is switched on, the blue pilot lamp (2) will be lit.



3.6.5 Headlamp flasher

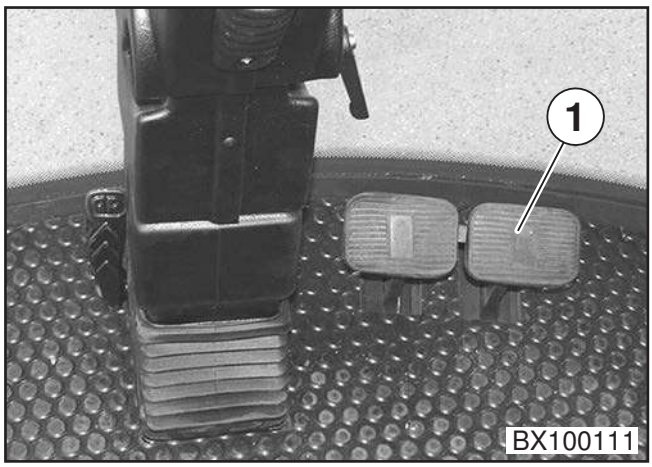
- Pull the headlamp flasher lever (1) up.



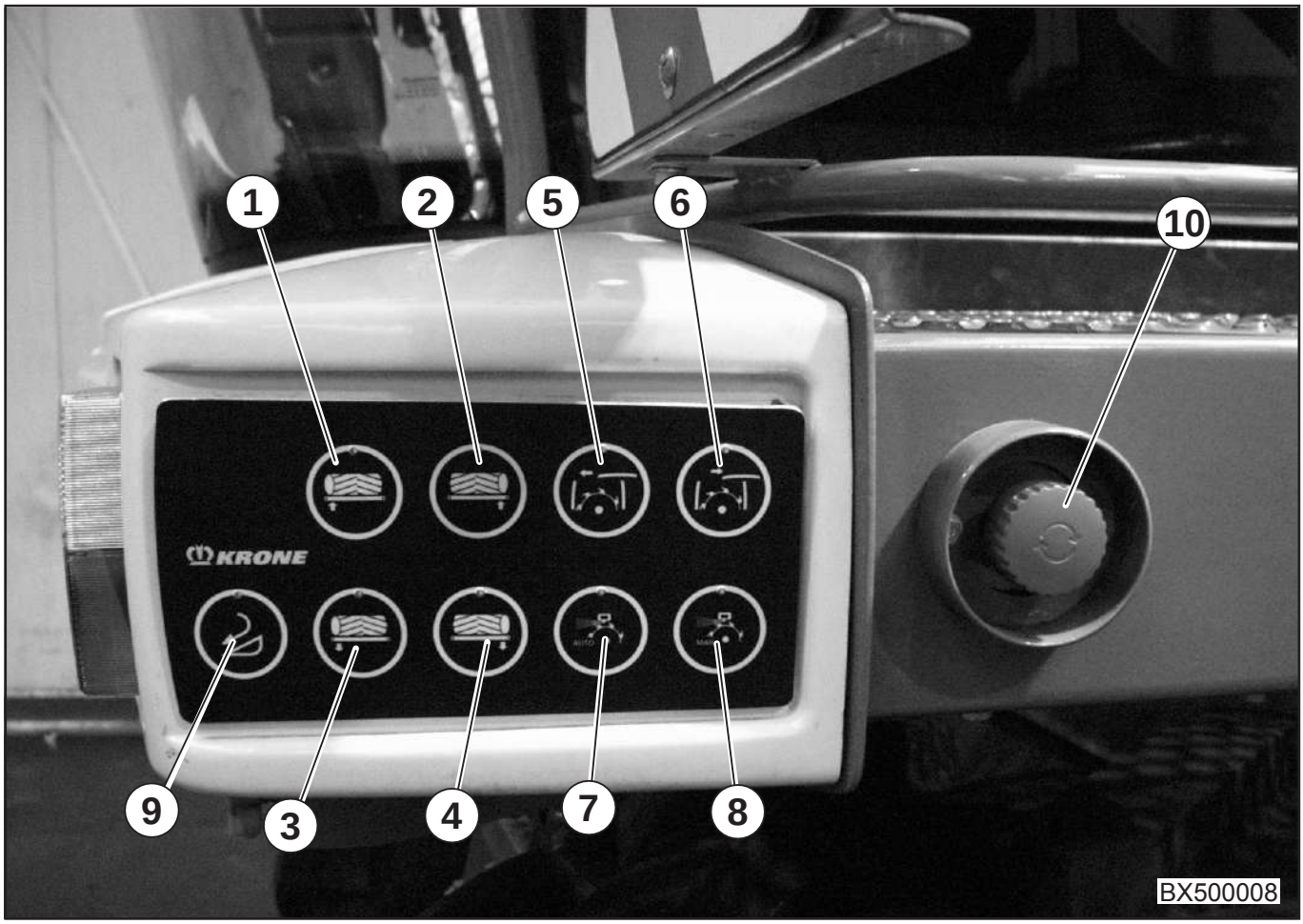
3.6.6 Using the operating brake

In road traffic

For reasons of traffic safety the brake pedals must be connected at all times. Check the brake function prior to travel.



3.7 Manual operation on the platform



Activation of manual operation:

Road/field release switch in field operation position

Travelling gear release switch off

Maintenance release switch on

Main coupling on

1 - Move the right counterblade to blade drum

2 - Move the left counterblade to blade drum

3 - Move the right counterblade away from blade drum

4 - Move the left counterblade away from blade drum

5 - Close grinding flap

6 - Open grinding flap

7 - Automatic grinding operation

8 - Move grindstone by hand

9 - reverse feed drive/front attachment

10 - Instantaneous stop switch

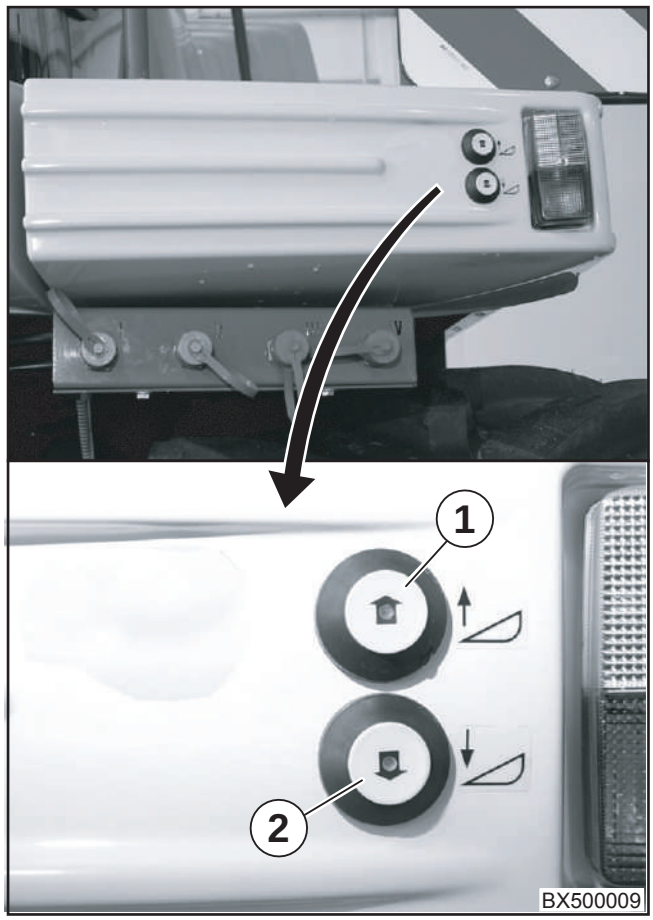
Activation of manual operation:

Road/field release switch in field operation position

Travelling gear release switch off

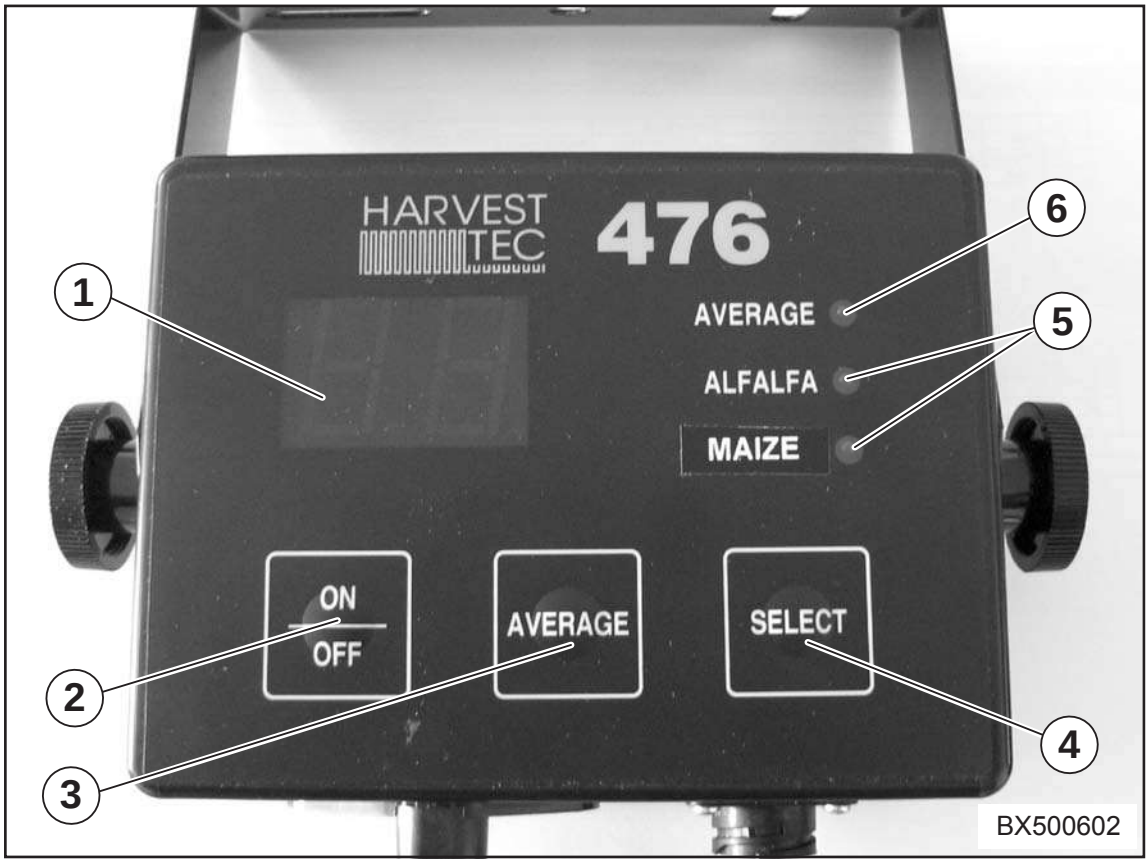
1 - Raise lifting gear

2 - Lower lifting gear



3.8 Control unit for measuring the humidity of the foraged crops

The humidity-measuring unit is used to display and save the humidity values of the foraged crops.



1 - Display

2 - ON / OFF key /Save

3 - Key for average values

4 - Key for the selection of the foraged crops

5 - Display of the selected foraged crops

6 - Display for average values

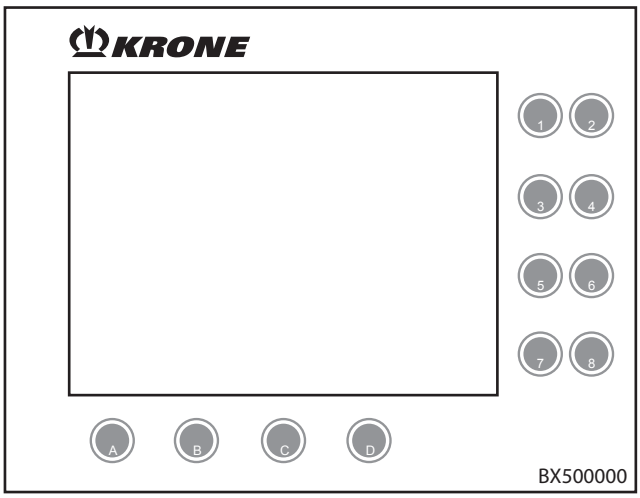
For information on operating the humidity measuring device, see chapter „Measuring the humidity of the crop with the humidity-measuring device“.

4 "EasyTouch" Info Centre

Overview

- I = Display
- II = Keys 1 to 8 (1 - 8)
- III = Keys A to D (A - D)
- IV = Rotary potentiometer
- V = Menu key

The Info Centre renders information on the power actions and the present operating conditions of BiG X. The Info Centre can be used to carry out settings in the machine as well as to start and stop actions.



Its main components are:

Keys 1-8

Keys 1-8 are used to activate the softkeys located in the right column. For the assignment of the keys, see the illustration.
If there is no softkey next to the key, it has no function.

Keys A-D

The keys A-D are used to activate the softkeys located in the line just above them. For the assignment of the keys, see the illustration.
If there is no softkey above the key, the key has no function.

Rotary potentiometer

The rotary potentiometer has two functions:
1. The rotary potentiometer can be turned to change settings and to select the desired menu in the menu level.
2. Pressing the rotary potentiometer activates and saves the settings.

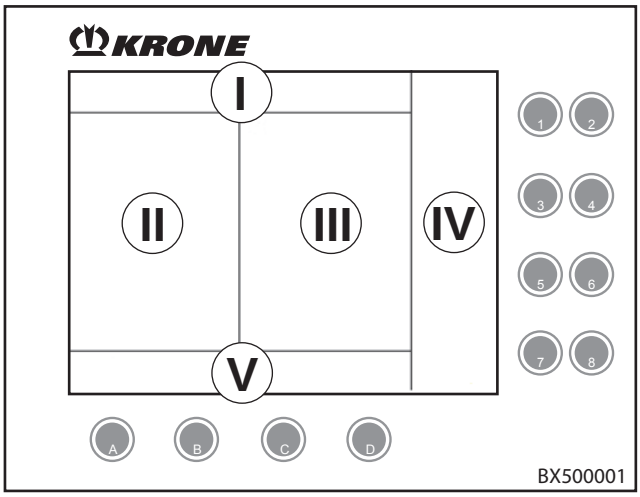
You can use the key with the rotary potentiometer to call or close the menu level or to go to the preceding menu level. Holding the key down slightly longer takes you back to the basic screen.

Display (screen display)

The display is divided up into the following sections:

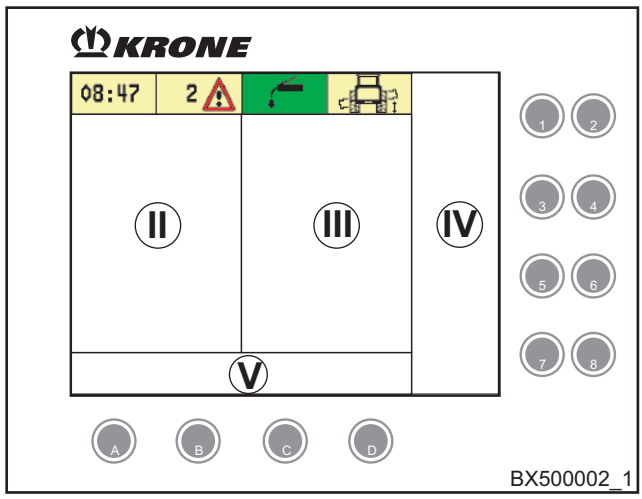
Status line (I): Time, number of errors, central lubrication, pendulum frame.

Information section: Engine data (II)
Drive data (III)
Settings (IV and V)



4.1 Information Section

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



4.1.1 Basic Screen

Status line (I):

- = Error; at at least one error occurred. The number of errors present is in front of the icon.
- Central lubrication

  = Central lubrication active (green)

  = Error in central lubrication (red)

- Pendulum frame

  = Pendulum frame free. Position of pendulum frame is as shown.

  = Pendulum frame free. Position of pendulum frame is as shown.

  = Pendulum frame free. Position of pendulum frame is as shown.

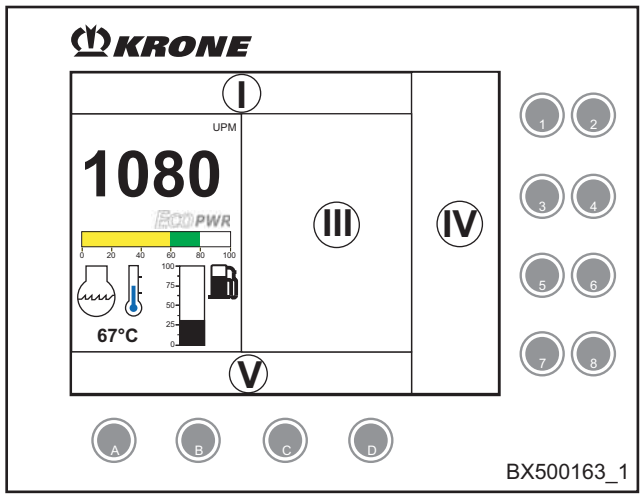
  = Position of pendulum frame unknown because pendulum frame sensor is defective or not calibrated.

  = Pendulum frame locked. Position of pendulum frame is as shown.

  = Pendulum frame locked. Position of pendulum frame is as shown.

  = Pendulum frame locked. Position of pendulum frame is as shown.

  = Position of pendulum frame unknown because pendulum frame sensor is defective or not calibrated.



Engine data information section (II):

1080

- Engine speed

  Road operation: 1000 - 1700 rpm
  Field mode: 1100 -2100 rpm

Speeds may vary depending on the diesel engine.

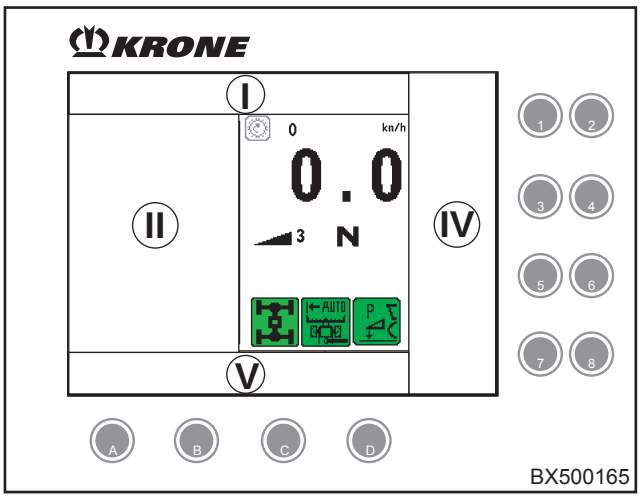
- Engine capacity as %

- Cooling water temperature display

If the cooling water temperature reaches the critical range, the background of the cooling water temperature display changes to red.

- Fuel gauge

Information section of the travelling gear data (III):



- = Cruise control active; the number after the icon is the saved speed for Tempomat operation in km/h.

  = Cruise control inactive

- Travelling speed
  Road operation: 0 - 40 km/h
  Field mode: 0 - 22 km/h (BiG X 500)
  0 - 18 km/h (BiG X 650)
  0 - 25 km/h (BiG X 800 / BiG X 1000)

- Acceleration ramp

  1 = lowest acceleration ramp

  2 = ...

  3 = ...

  4 = highest acceleration ramp

- Direction of travel

  = Forward travel

  = Neutral (standstill)

  = Reverse travel

- Type of drive

  = Front wheel drive active

  = Front wheel drive inactive

  = All-wheel drive active (only possible in field mode, can only be activated at a standstill, travelling speed 0 - 14 km/h)

  = All-wheel inactive

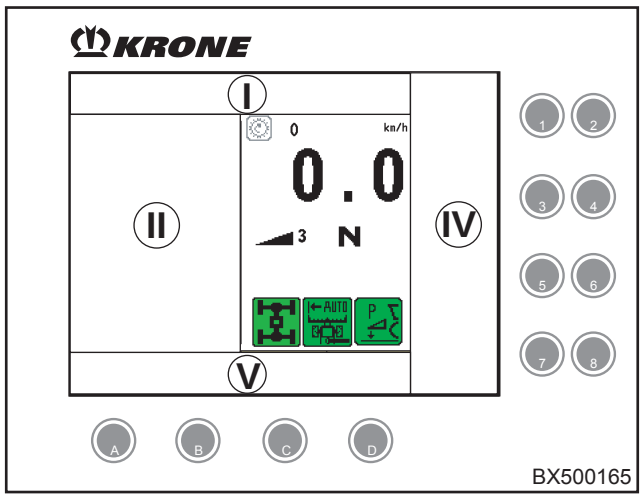
  = Axle separation of active (only possible in field mode with all-wheel drive turned on, activation at travelling speed < 10 km/h)

  = Axle separation inactive

  = Parking brake is applied

If the machine is running with the parking brake engaged, the parking brake indicator flashes and a horn sounds at intervals of about 30 seconds.

= Emergency mode; allows the driver to drive the vehicle out of the danger zone even if there are serious drive problems.



- Others:

  = Quick stop button has been activated on the console.

  = Quick stop button has been activated by manual operation device (platform).

- = Load limit control active - the travelling speed is automatically adjusted to the speed reduction of the engine.
- Autopilot (optional, only in maize field mode):

  = Autopilot active, the row tracer is evaluated on the left

  = Autopilot active, the row tracer is evaluated on the right

  = Autopilot active, both row tracers are evaluated

  = Autopilot active, the row tracer is evaluated on the left (depending on the upper discharge chute)

  = Autopilot active, the row tracer is evaluated on the right (depending on the upper discharge chute)

  = Autopilot active, the mirrored row tracer is evaluated on the left (depending on the upper discharge chute)

  = Autopilot active, the mirrored row tracer is evaluated on the right (depending on the upper discharge chute)

- Lifting gear control (only in field mode)

  = The lifting gear pressure control is active

  = The lifting gear pressure control is inactive

  = The lifting gear distance control is active

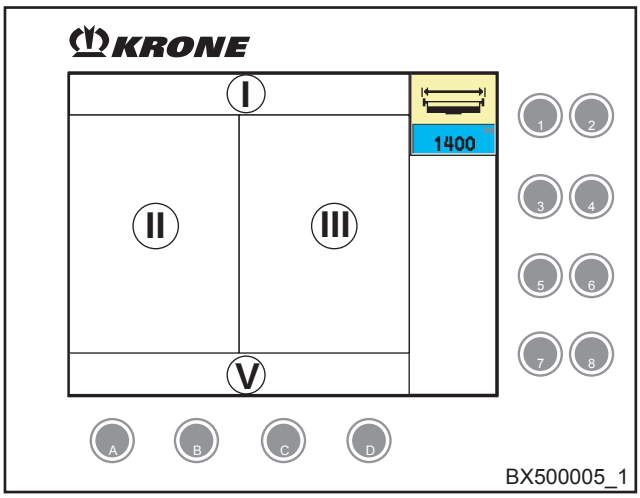
  = The lifting gear distance control is inactive

  = The lifting gear position control is active

  = The lifting gear position control is inactive

Information section of settings (IV and V):
(see Chapter "Settings").

4.2 Settings



4.2.1 Working Width

The working width must be set in order to be able to calculate the surface.

In grass pickup mode, the symbol and the set width (swathed width) is displayed in the information section settings (IV) in cm or inches.

In maize header mode, the settings (IV) information section displays the symbol and the number of rows set with the resulting working width in cm or inches.

In Direct cutting system mode, the symbol XDISC and the set width are displayed in the information section settings (IV) in cm or inches.

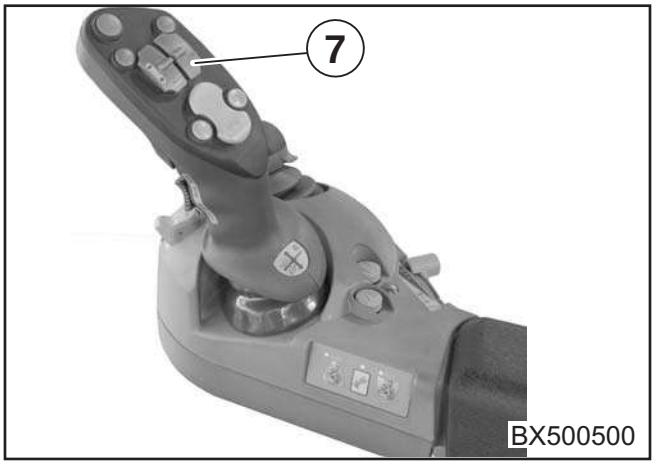
4.2.2 Temporary change in the working width of the grass pickup

Working width = swathed width

- Pressing the 1 key decreases the working width; if the 1 key is held down for a longer time, the working width will decrease faster.
- Pressing the 2 key increases the working width (up to the maximum for the fixed set width). If the 2 key is held down for a longer time, the working width will increase faster.

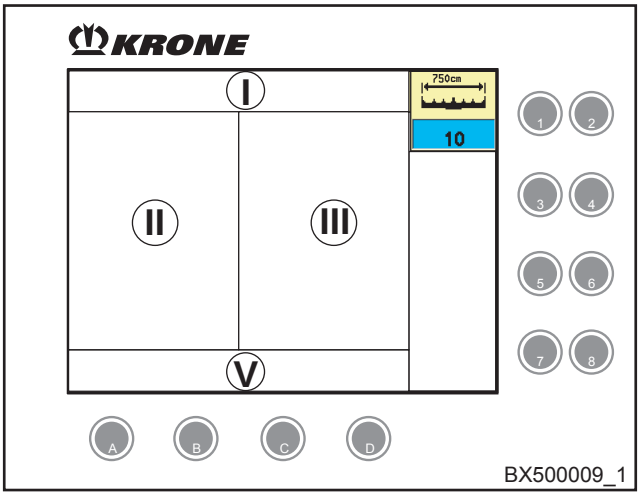
It is also possible to make a setting with the rotary potentiometer:

- You can use the rotary potentiometer to select the setting for the working width. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can adjust the desired working width with the rotary potentiometer (up to a maximum for the fixed set width).
- To exit the input field again, press the rotary potentiometer.



Activating the key on the multifunction lever ((7) = raise lifting gear up to top) causes the system to switch back to the permanently set working width.

4.2.3 Temporary Change of the Maize Header Working Width

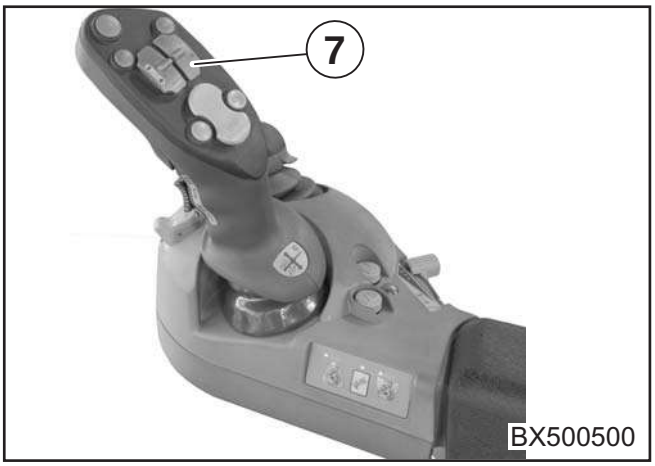


The resulting working width is calculated from the row distance and the number of rows directly and the result is displayed.

- Pressing the 1 key decreases the number of rows; if the 1 key is held down for a longer time, the number decreases faster.
- Pressing the 2 key increases the number of rows (up to the maximum for the fixed set number). If the 2 key is held down for a longer time, the number will increase faster.

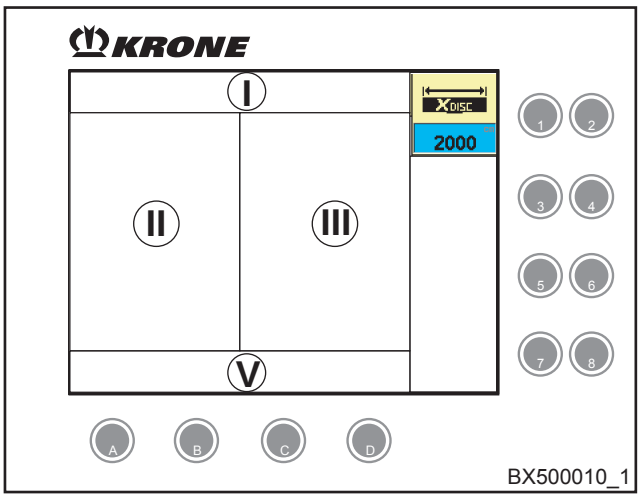
It is also possible to make a setting with the rotary potentiometer:

- You can use the rotary potentiometer to select the setting for the working width. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can adjust the desired number of rows with the rotary potentiometer (up to a maximum for the fixed set number).
- To exit the input field again, press the rotary potentiometer.



Activating the key on the multifunction lever ((7) = raise lifting gear up to top) causes the system to switch back to the permanently set working width.

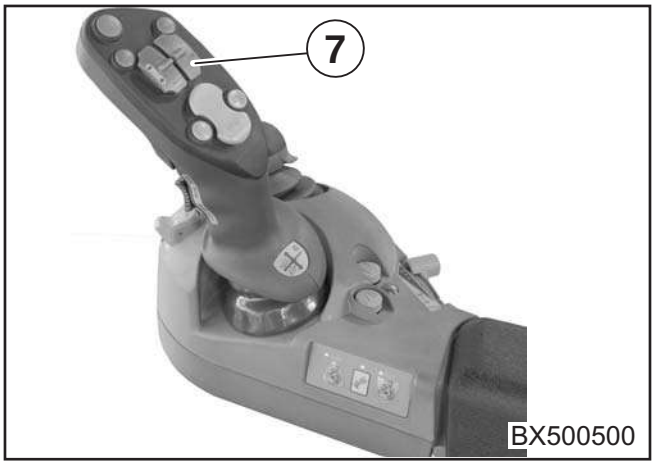
4.2.4 Temporary Change of the Working Width of the Direct Cutting System



- Pressing the (1) key decreases the working width; if the (1) key is held down for a longer time, the working width will decrease faster.
- Pressing the (2) key increases the working width (up to the maximum for the fixed set width). If the (2) key is held down for a longer time, the working width will increase faster.

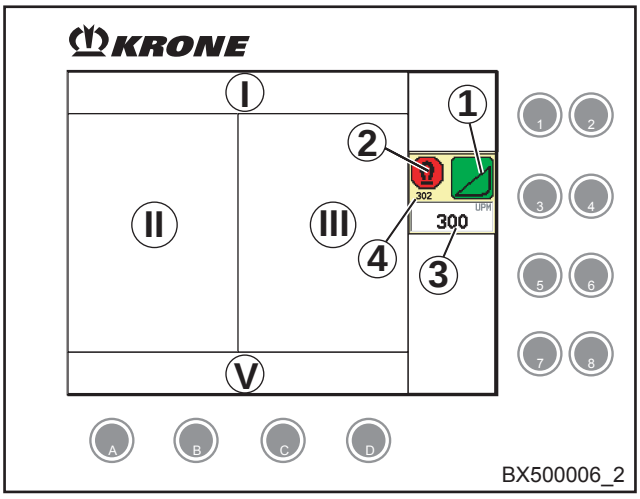
It is also possible to make a setting with the rotary potentiometer:

- You can use the rotary potentiometer to select the setting for the working width. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can adjust the desired working width with the rotary potentiometer (up to a maximum for the fixed set width).
- To exit the input field again, press the rotary potentiometer.



Activating the key on the multifunction lever ((7) = raise lifting gear up to top) causes the system to switch back to the permanently set working width.

4.3 Front Attachment



During field mode, if the feed drive/front attachment release switch is turned on, the current actual speed and the set setpoint speed of the front attachment are shown in the Settings (IV) info area in the Front attachment menu field.

4.3.1 Status (1)

- = Front attachment standstill
- = front attachment not OK
- = front attachment OK
- = Front attachment forward inactive
- = Front attachment forward active
- = Front attachment reverse inactive
- = Front attachment reverse active

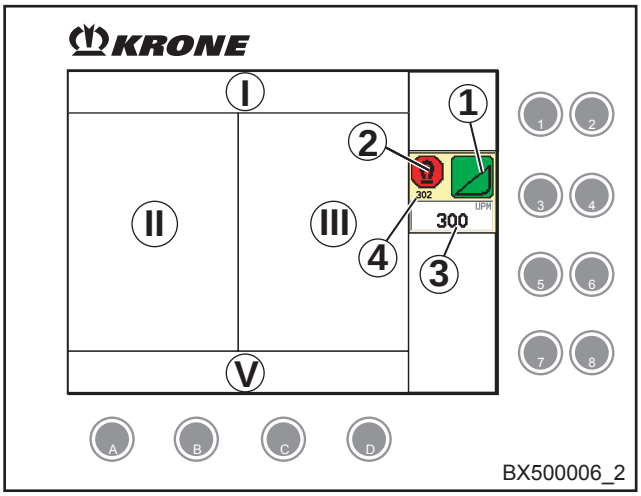
4.3.2 Foreign object detection (2)

- = Metal detection deactivated
- = metal detected in feed drive
- = An error has occurred in metal detection.

RockProtect

- = A rock was detected in the feed drive.
- = An error has occurred in RockProtect.
- = An error has occurred in metal detection and RockProtect.

4.3.3 Setting the Setpoint Speed (3)



- Pressing the 3 key decreases the setpoint speed; if the 3 key is held down for a longer time, the setpoint speed will decrease faster.
- Pressing the 4 key increases the setpoint speed; if the 4 key is held down for a longer time, the setpoint speed will increase faster.

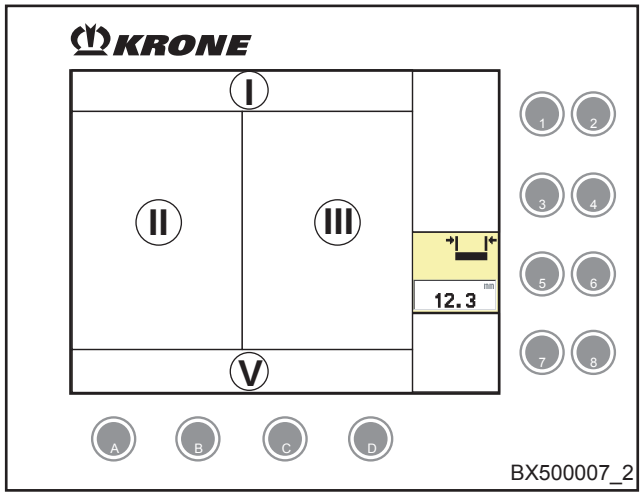
It is also possible to make a setting with the rotary potentiometer:

- You can use the rotary potentiometer to select the setting for the setpoint speed. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can use the rotary potentiometer to set the desired setpoint speed.
- To exit the input field again, press the rotary potentiometer.

4.3.4 Actual speed (4)

- Display of current actual speed

4.4 Feed Drive



The cutting length is determined by the speed of the feed drive rollers and the number of blades that are used.
In field mode, the current cutting length is displayed in the feed drive menu field in the information section of settings (IV).

- Cutting length display
  and the current cutting length in mm or inches.
  Depending on the number of blades that are used, the cutting length can be set within a range from 3 - 62 mm.

4.4.1 Adjusting the cutting length

- Pressing the 5 key decreases the cutting length;
  if the 5 key is held down for a longer time, the cutting length will decrease faster.
- Pressing the 6 key increases the cutting length;
  if the 6 key is held down for a longer time, the cutting length will increase faster.

It is also possible to make a setting with the rotary potentiometer:

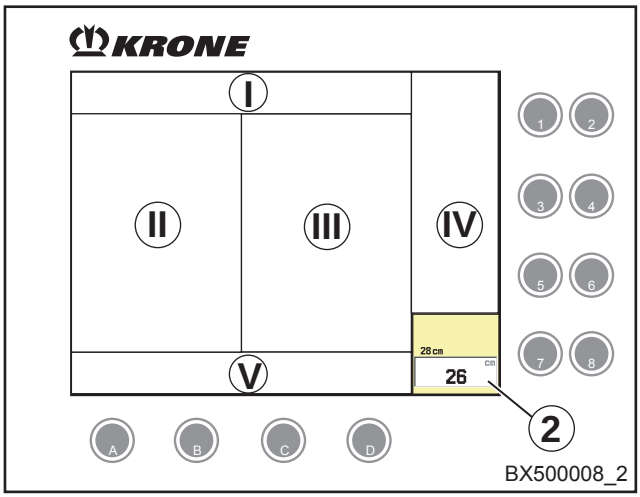
- You can use the rotary potentiometer to select the setting for the cutting length. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can use the rotary potentiometer to adjust the desired cutting length.
- To exit the input field again, press the rotary potentiometer.

The change is accepted immediately.

Two different cutting lengths (value 1/ value 2) can be saved and retrieved with the multifunction lever (see the chapter on the Multi-Function Lever).

4.5 Lifting Gear

In field mode, the current lifting gear control is displayed in the Drive data info area (II). The actual height of the lifting gear and the corresponding setpoint pressure or the setpoint height is displayed in the Settings info area (IV) in the Lifting gear menu field.



4.5.1 Status

-  = The lifting gear pressure control is active. The controller regulates the pressure against the ground to a constant value. Control is active.
-  = The lifting gear pressure control has been switched on. Control is still inactive.
-  = Lifting gear distance control (optional, only in conjunction with distance sensors); the control sets the height constant relative to the ground. Control is active.
-  = The lifting gear distance control has been switched on. Control is still inactive.
-  = Lifting gear position control; the control sets the height constant relative to the machine. Control is active.
-  = The lifting gear position control has been switched on. Control is still inactive.

- 1st value (1) = actual height of the lifting gear in cm or inches

- 2nd Value (2) = setpoint pressure as a percentage value for the own weight of the front attachment. It is adjustable between -6% (front attachment sways above the ground) to a maximum of 70% (front attachment presses on to the ground with 70% of its own weight).

  or

  2nd value (2) = nominal height in cm or inches or as a % if the lifting gear distance control is set.

4.5.2 Changing the setpoint pressure or setpoint height

- Pressing the 7 key decreases the setpoint value;

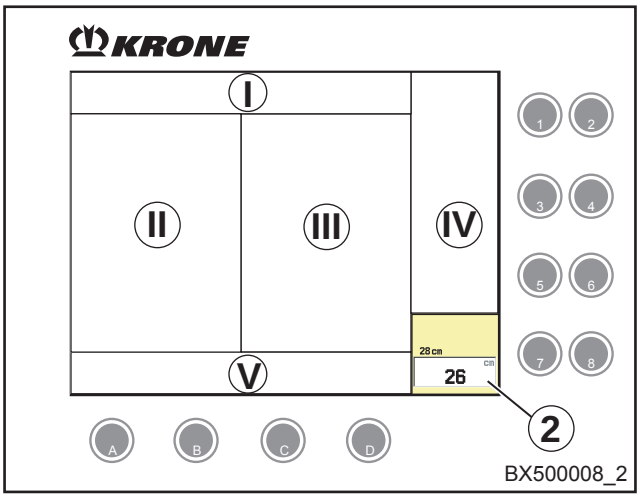
  if the 7 key is held down for a longer time, the setpoint value will decrease faster.
- Pressing the 8 key increases the setpoint value;

  if the 8 key is held down for a longer time, the setpoint value will increase faster.

It is also possible to make a setting with the rotary potentiometer:

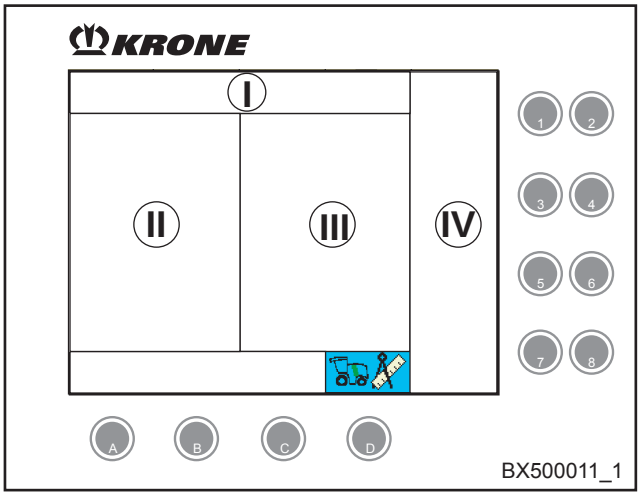
- You can use the rotary potentiometer to select the setting for the lifting gear. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can use the rotary potentiometer to adjust the desired setpoint value.
- To exit the input field again, press the rotary potentiometer.

The setpoint pressure or setpoint height can also be saved using the multi-function lever.



4.6 General Machine Settings

- Activating this key (D) brings up general machine settings.

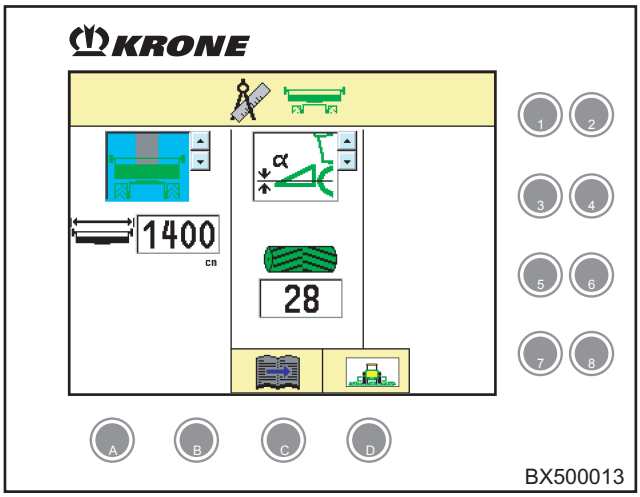


BX500011_1

4.6.1 General machine settings - grass pickup

4.6.1.1 Setting the grass pick-up operating mode

- = Grass pickup

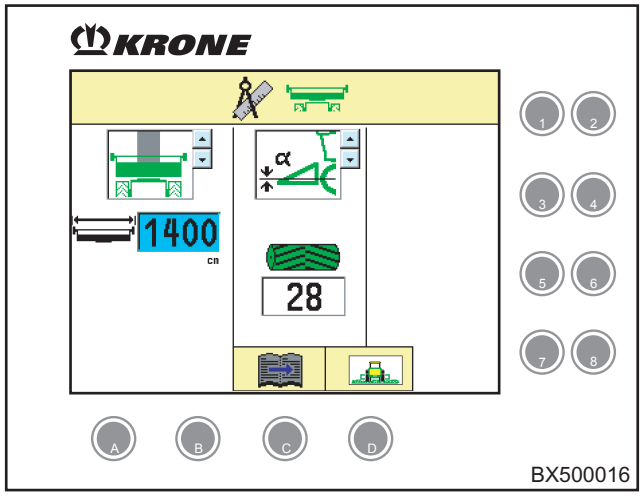


BX500013

- You can use the rotary potentiometer to select the setting for the operating mode. The selection box is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the selection box.
- You can use the rotary potentiometer to adjust the operating mode of the grass pickup.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection box.

- Activating the (D) key brings up the basic screen.
- To open the settings for load limit control, press the (C) key.
- Pressing the key on the rotary potentiometer takes you one menu level back.

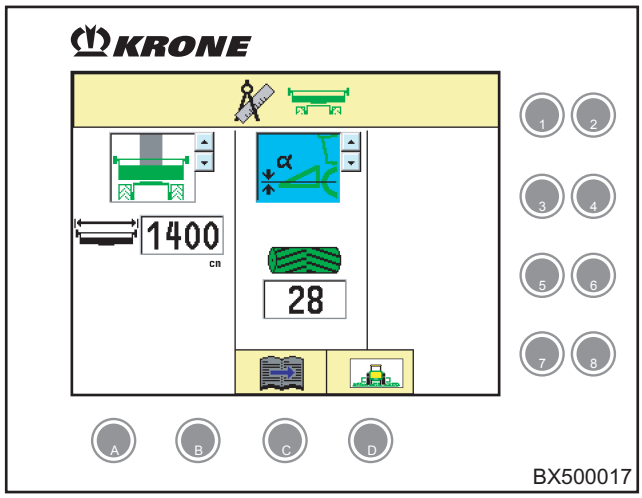
4..6.1.2 Setting the grass pick-up working width



Working width = swathed width

- You can use the rotary potentiometer to select the setting for the working width. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can use the rotary potentiometer to adjust the desired working width.
- To exit the input field again, press the rotary potentiometer.
- Activating the D key brings up the basic screen.
- To open the settings for load limit control, press the C key.
- Pressing the key on the rotary potentiometer takes you one menu level back.

4.6.1.3 To adjust the lifting gear control



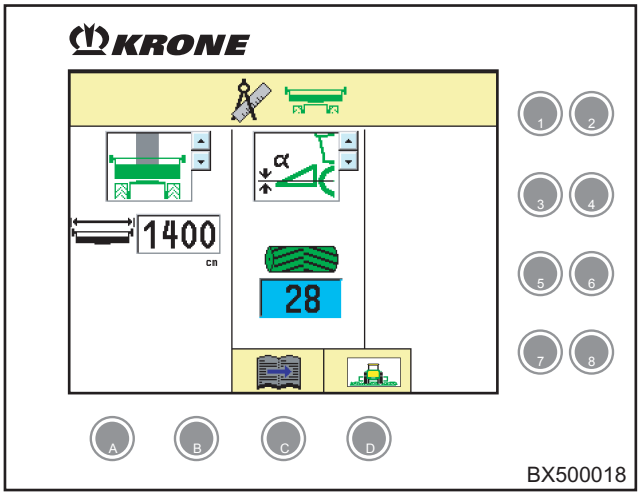
- P↓ = Lifting gear pressure control; the control sets the pressure on the ground to a constant value.
- α = Lifting gear position control; the control sets the height constant relative to the machine.
- d = Lifting gear distance control (optional, only in conjunction with distance sensors); the control sets the height constant relative to the ground.

- You can use the rotary potentiometer to select the setting for the lifting gear control. The selection box is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the selection box.
- You can use the rotary potentiometer to adjust the desired lifting gear control.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection box.

- Activating the D key brings up the basic screen.
- To open the settings for load limit control, press the C key.
- Pressing the key on the rotary potentiometer takes you one menu level back.

4.6.1.4 Setting the number of blades

After the number of blades has been changed (see chapter Maintenance - Working with Half the Number of Blades), the current number of blades must be set. Setting the number of blades automatically adjusts the speed of the feed drive roller to the set cutting length of the new number of blades.



- You can use the rotary potentiometer to select the setting for the number of blades. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can use the rotary potentiometer to adjust the desired number of blades.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection field.
- Activating the D key brings up the basic screen.
- To open the settings for load limit control, press the C key.
- Pressing the key on the rotary potentiometer takes you one menu level back.

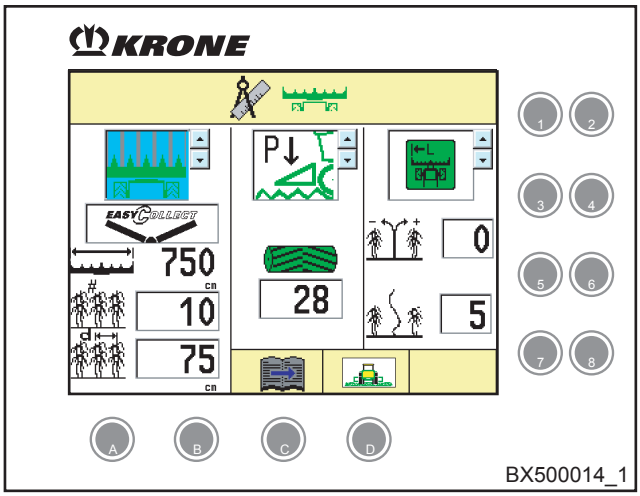
4.6.2 General machine settings - maize header

4.6.2.1 To set the operating mode of the maize header

- = Maize header

Machine type:

- = KRONE-EasyCollect (6000,7500,9000)
- = KRONE-EasyCollect (953,1053)
- = Not a KRONE product

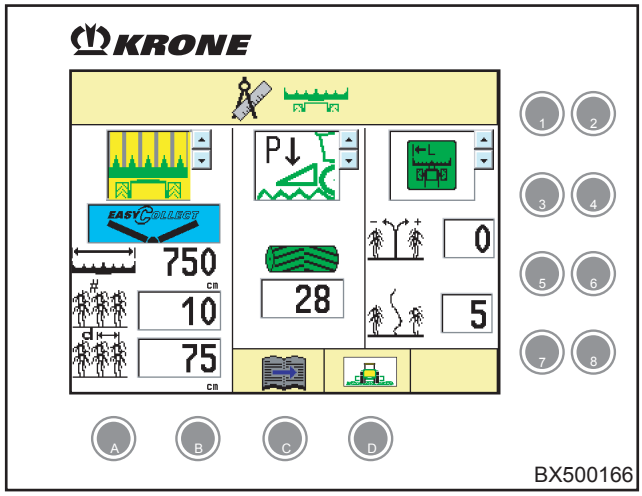


To set the operating mode:

- You can use the rotary potentiometer to select the setting for the operating mode. The selection box is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the selection box.
- You can use the rotary potentiometer to adjust the operating mode of the maize header.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection box.

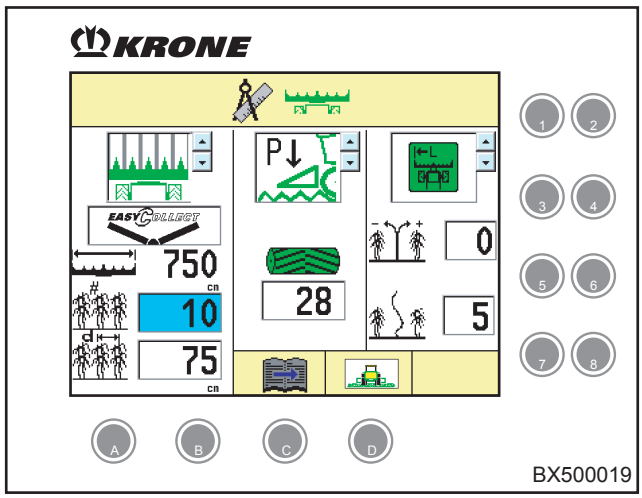
To set the machine type:

- You can use the rotary potentiometer to select the setting for the machine type. The selection box is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the selection box.
- Use the rotary potentiometer to adjust the machine type.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection box.
- Activating the D key brings up the basic screen.
- To open the settings for AutoScan, press the C key.
- Pressing the key on the rotary potentiometer takes you one menu level back.

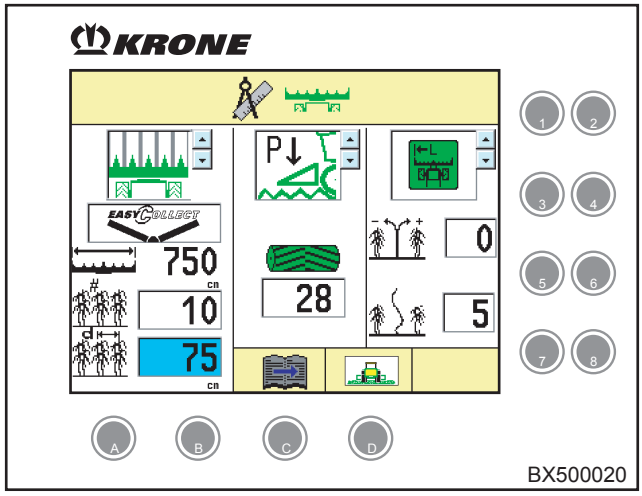


4.6.2.2 Setting the maize header working width

- You can use the rotary potentiometer to select the setting for the number of rows. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- Use the rotary potentiometer to adjust the desired number of rows.
- To exit the input field again, press the rotary potentiometer.



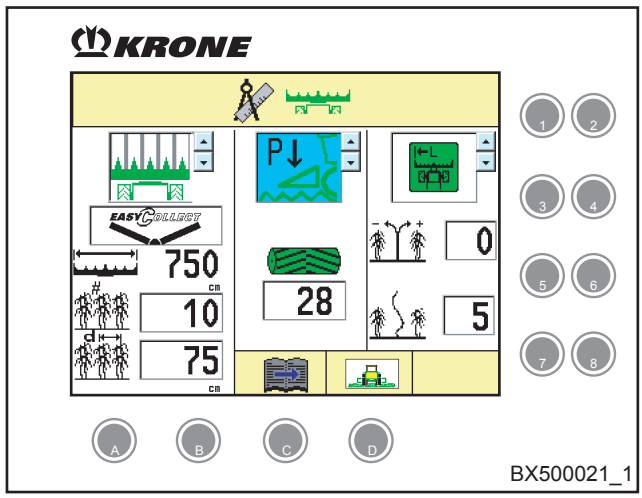
- You can use the rotary potentiometer to select the setting for the spacing between rows. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can use the rotary potentiometer to adjust the desired spacing between rows.
- To exit the input field again, press the rotary potentiometer.



- Activating the D key brings up the basic screen.
- To open the settings for AutoScan, press the C key.
- Pressing the key on the rotary potentiometer takes you one menu level back.

The resulting working width is calculated directly from the row spacing and the number of rows and the result is displayed.

4.6.2.3 Adjusting the lifting gear control

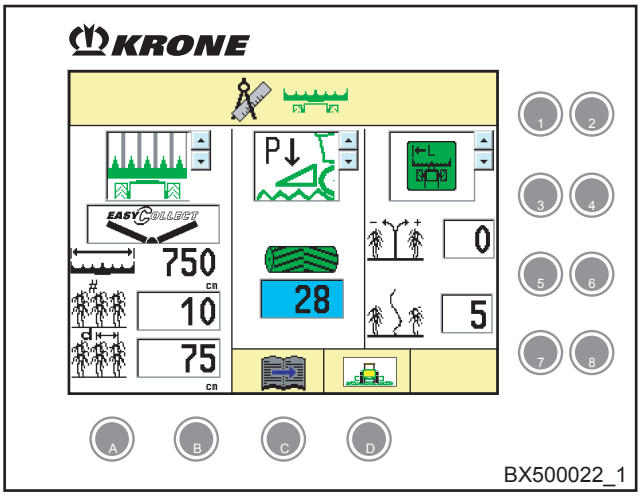


- P↓ = Lifting gear pressure control; the control sets the pressure on the ground to a constant value.
- α = Lifting gear position control; the control sets the height constant relative to the machine.
- d = Lifting gear distance control (optional, only in conjunction with distance sensors); the control sets the height constant relative to the ground.

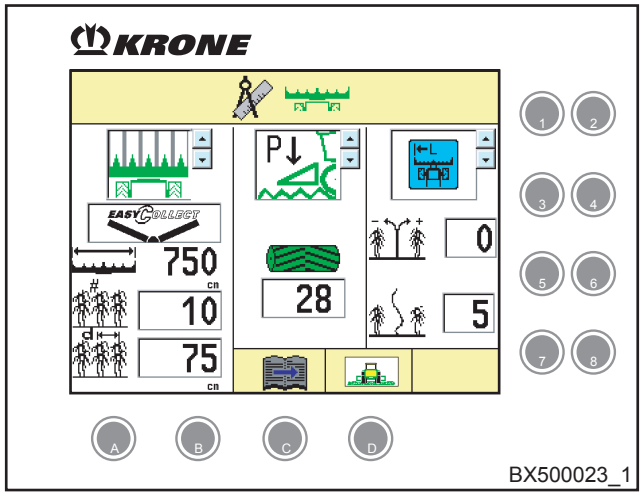
- You can use the rotary potentiometer to select the setting for the lifting gear control. The selection box is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the selection box.
- You can use the rotary potentiometer to adjust the desired lifting gear control.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection box.
- Activating the D key brings up the basic screen.
- To open the settings for AutoScan, press the C key.
- Pressing the key on the rotary potentiometer takes you one menu level back.

4.6.2.4 Setting the number of blades

After the number of blades has been changed (see chapter Maintenance - Working with Half the Number of Blades), the current number of blades must be set. Setting the number of blades automatically adjusts the speed of the feed drive roller to the set cutting length of the new number of blades.



- You can use the rotary potentiometer to select the setting for the number of blades. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can use the rotary potentiometer to adjust the desired number of blades.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection field.
- Activating the D key brings up the basic screen.
- To open the settings for AutoScan, press the C key.
- Pressing the key on the rotary potentiometer takes you one menu level back.



4.6.2.5 Selecting row tracer for autopilot

This mode determines which row tracer on the maize header will be evaluated for control of the autopilot. Chaffing should preferably be in row tracer mode left or right, with automatic row tracer mode for crops.

-  = Row tracer left is evaluated.
-  = Row tracer right is evaluated.
-  = Both row tracers are evaluated.
-  = Row tracer is automatically evaluated.
  The row tracer selection is made automatically based on the position of the upper discharge chute.
  Upper discharge chute left = row tracer left
  Upper discharge chute right = row tracer right
-  = Row tracer is automatically evaluated mirrored.
  The row tracer selection is made automatically based on the position of the upper discharge chute.
  Upper discharge chute left = row tracer right
  Upper discharge chute right = row tracer left

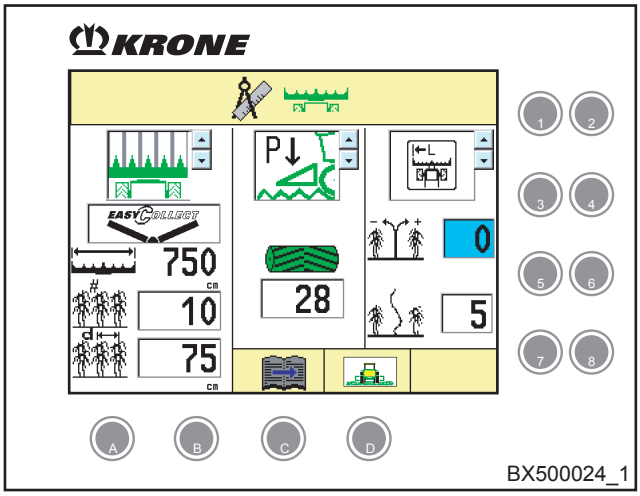
In "Row tracer automatic" and "Row tracer mirrored automatic" mode, if the upper discharge chute is not swivelled out, the "Upper discharge chute left" position is used as the basis.

4.6.2.6 Setting the row tracer

- You can use the rotary potentiometer to select the setting for the row tracer. The selection box is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the selection box.
- You can use the rotary potentiometer to set the desired mode.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection box.
- Activating the D key brings up the basic screen.
- To open the settings for AutoScan, press the C key.
- Pressing the key on the rotary potentiometer takes you one menu level back.

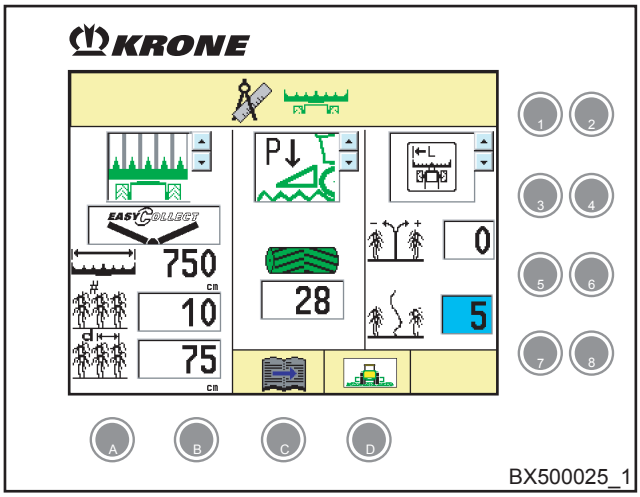
4.6.2.7 Setting the autopilot centre adjuster

The centre setting can be used to justify the side distance from the forage harvester to the crop edge queried by the row tracer.
If the lateral distance needs to be reduced, a negative number should be set. To increase it, set a positive value.



- You can use the rotary potentiometer to select the setting for the centre adjuster. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can use the rotary potentiometer to adjust the desired distance.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection field.
- Activating the D key brings up the basic screen.
- To open the settings for AutoScan, press the C key.
- Pressing the key on the rotary potentiometer takes you one menu level back.

4.6.2.8 Setting the response sensitivity of the autopilot

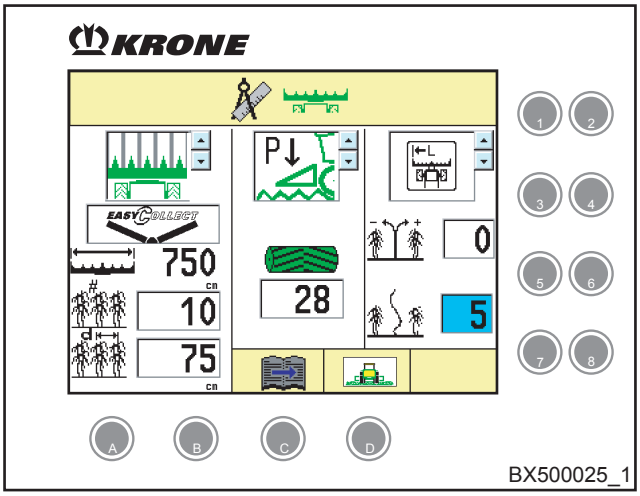


The response sensitivity can be used to adjust the response (delay) of the autopilot control system.
The response sensitivity must be adjusted to the specific combination of crop edge, driving speed and ground conditions.
With an even crop edge, slow driving speed and dry ground conditions, a low (slow) 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 must be made based on specific local factors and depends on the situation in question.
The setting can be changed during operation while driving.

Setting range: 1 (slow) - 10 (fast)

- You can use the rotary potentiometer to select the setting for the response sensitivity. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can use the rotary potentiometer to set the desired value.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection field.

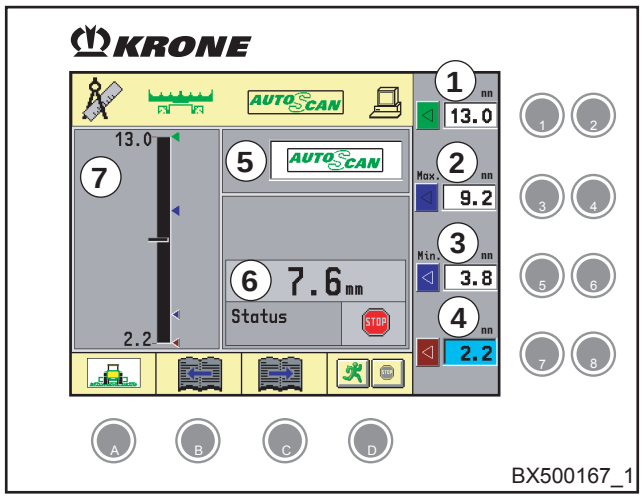
- Activating the D key brings up the basic screen.
- To open the settings for AutoScan, press the C key (only for setting of operating modes grass or XDisc).
- Pressing the key on the rotary potentiometer takes you one menu level back.



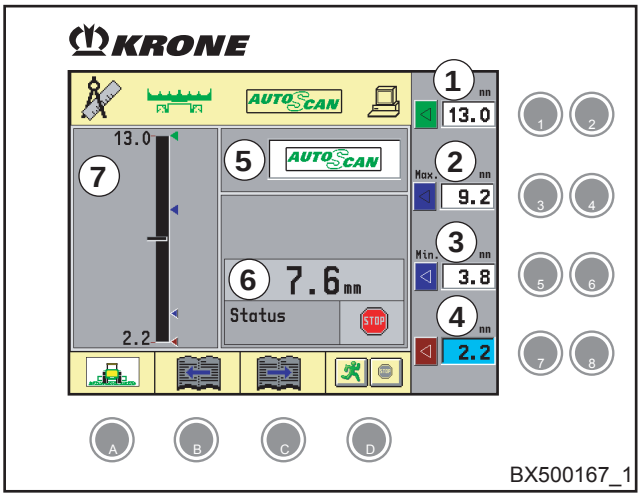
4.6.2.9 Automatic setting of the cutting length by maturity detection on the on the maize plant (AutoScan)

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 cutting length and control the speed of the pre-compression rollers accordingly.

- To open the „AutoScan“ settings menu, press the C key (only for setting of maize header operating mode).



First define a characteristic line with the values in input fields 1 and 4. These values for green or brown maize are never reached in practical situations. They can be greater or less than the physical limits of the machine. The actual cutting length range can be set with input fields 2 and 3. If the cutting length determined by the AutoScan sensor is greater or less than the set cutting length range, the target cutting length is set to the corresponding limit.



(1) Cutting length entry for the set value of green maize. The entry can be made with the (1) key (to reduce the set value) and the (2) key (to increase the set value).

(2) Entry for the max. cutting length. The entry can be made with the (3) key (to reduce the set value) and the (4) key (to increase the set value).

(3) Entry for the min. cutting length. The entry can be made with the (5) key (to reduce the set value) and the (6) key (to increase the set value).

(4) Cutting length entry for the set value of brown maize. The entry can be made with the (7) key (to reduce the set value) and the (8) key (to increase the set value).

(5) Setting for AutoScan sensor (does not take effect until after restart).

AUTOSCAN: Sensor present.

AUTOSCAN: Sensor not present.

(6) Indicates the current status of the AutoScan sensor and the calculated cutting length.

: Automatic cutting length adjustment activated

STOP: Automatic cutting length adjustment deactivated

(7) Graphical overview of the current configuration

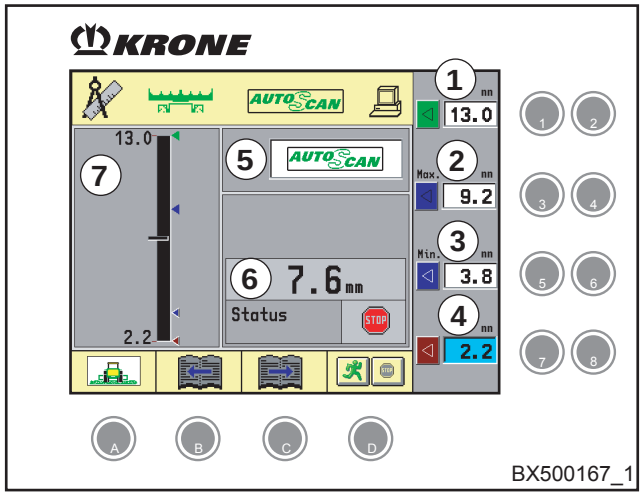
(8) You can use the (D) key to activate or deactivate automatic cutting length adjustment.

: Activate automatic

STOP: Deactivate automatic

STOP: Setting not possible (AutoScan not connected).

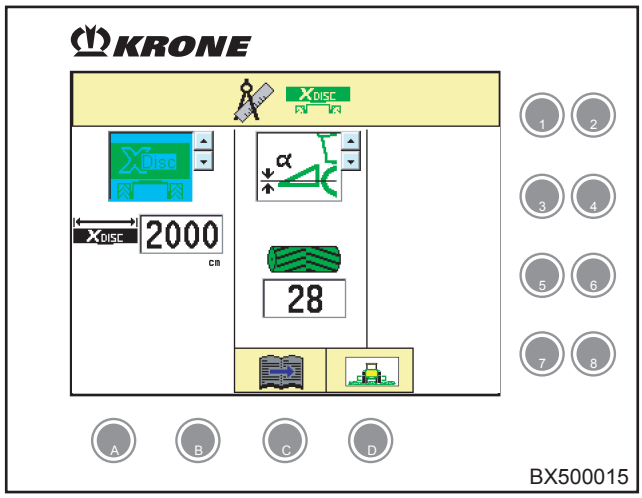
- Activating the D key brings up the basic screen.
- Pressing the key on the rotary potentiometer takes you one menu level back.
- To open the settings for load limit control, press the C key (only if load limit control is available).



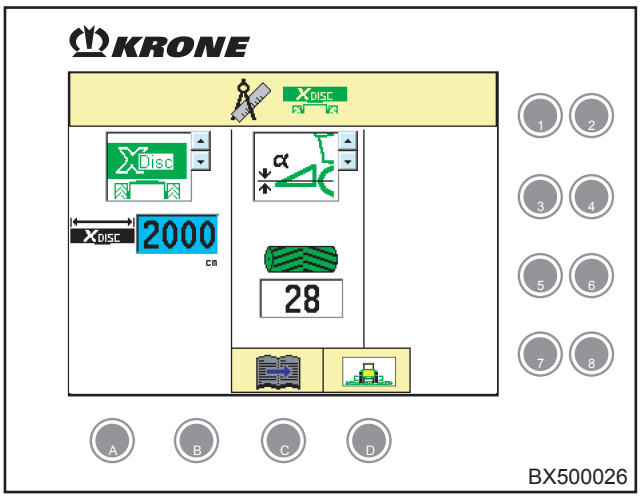
4.6.3 General machine setting - direct cutting system

Set the operating mode to direct cutting system

- XDISC = Direct cutting system
- You can use the rotary potentiometer to select the setting for the operating mode. The selection box is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the selection box.
- You can use the rotary potentiometer to adjust the operating mode of the direct cutting system.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection box.
- Activating the D key brings up the basic screen.
- To open the settings for load limit control, press the C key.
- Pressing the key on the rotary potentiometer takes you one menu level back.



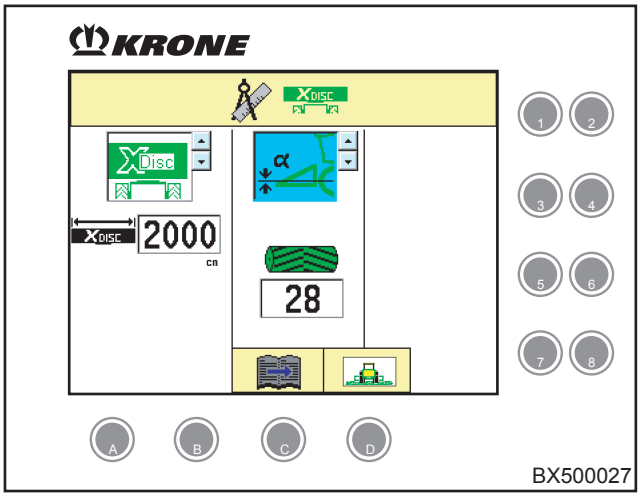
4.6.3.1 To set the working width of the direct cutting system



- You can use the rotary potentiometer to select the setting for the working width. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can use the rotary potentiometer to adjust the desired working width.
- To exit the input field again, press the rotary potentiometer.

- Activating the D key brings up the basic screen.
- To open the settings for load limit control, press the C key.
- Pressing the key on the rotary potentiometer takes you one menu level back.

4.6.3.2 To adjust the lifting gear control

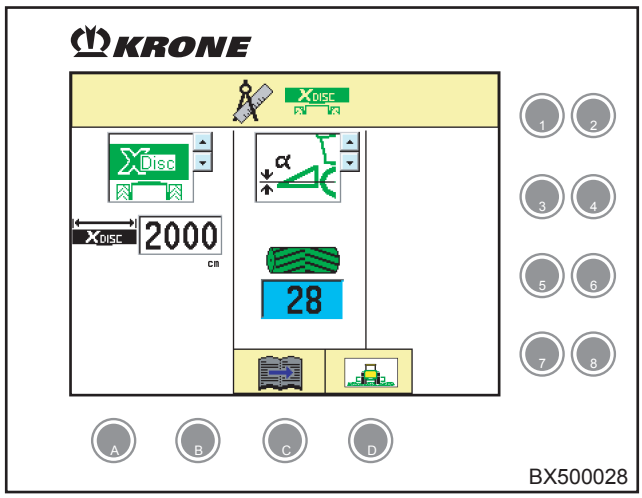


- P↓ = Lifting gear pressure control; the control sets the pressure on the ground to a constant value.
- α = Lifting gear position control; the control sets the height constant relative to the machine.
- d = Lifting gear distance control (optional, only in conjunction with distance sensors); the control sets the height constant relative to the ground.

- You can use the rotary potentiometer to select the setting for the lifting gear control. The selection box is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the selection box.
- You can use the rotary potentiometer to adjust the desired lifting gear control.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection box.

- Activating the D key brings up the basic screen.
- To open the settings for load limit control, press the C key.
- Pressing the key on the rotary potentiometer takes you one menu level back.

4.6.3.3 Setting the number of blades

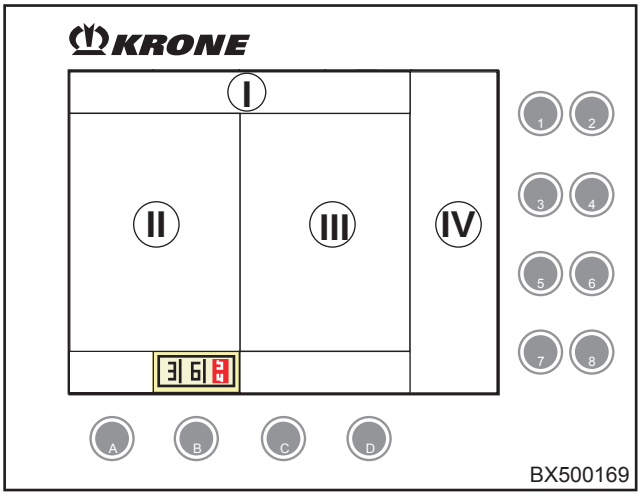


After the number of blades has been changed (see chapter Maintenance - Working with Half the Number of Blades), the current number of blades must be set. Setting the number of blades automatically adjusts the speed of the feed drive roller to the set cutting length of the new number of blades.

- You can use the rotary potentiometer to select the setting for the number of blades. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can use the rotary potentiometer to adjust the desired number of blades.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection field.

- Activating the D key brings up the basic screen.
- To open the settings for load limit control, press the C key.
- Pressing the key on the rotary potentiometer takes you one menu level back.

4.6.4 Customer Data Counter



- To bring up the Customer counter, activate the B key under the softkey.
- The softkey is displayed green if a customer counter is active.

When the customer counter is active, a dataset will be selected but not yet incremented.

Customer record (1)

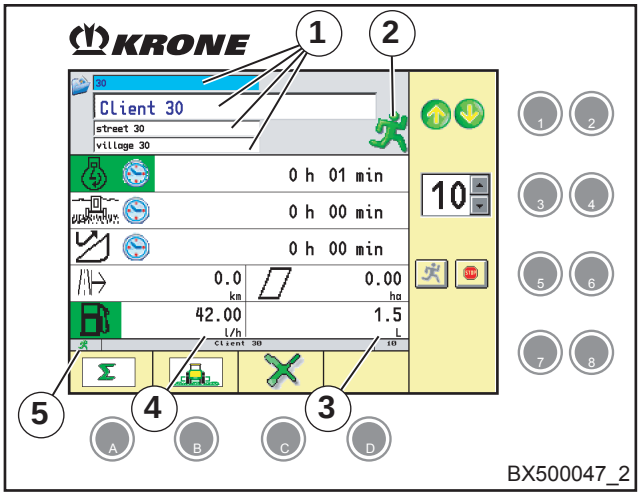
Status display (2)

STOP Counter stopped

A counter is activated

A counter other than the one shown is activated.

10 Freely usable numeric input field (for the example to assign several different cultivated areas to the customer record)



Counter (active counters are highlighted in colour)

- = operating hour counter (h)
- = drum hours counter (h)
- = working hours counter (h)
- = surface counter (ha)
- = road kilometre counter (km)
- = fuel consumption (l)

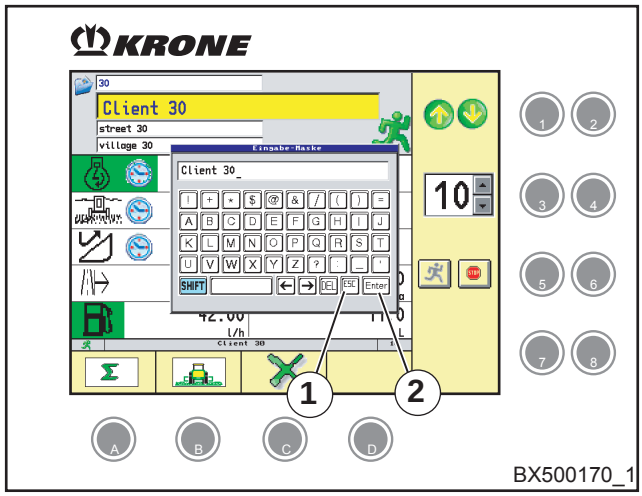
(3)= absolute fuel consumption (can be deleted with C key)

(4)= current average consumption (l/h)

(5) = Display of currently activated counters

4.6.4.1 Changing a customer record (1) or creating a new one

A total of 30 customer records can be created. Select the customer record you want to modify; select a free customer record to create a new entry with the (1) and (2) keys.



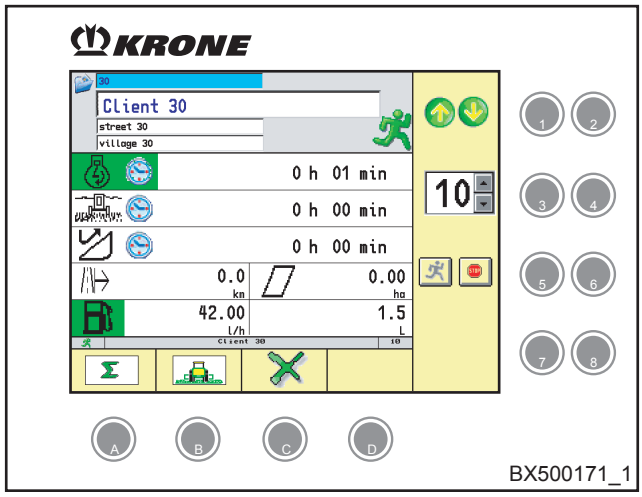
- You can use the rotary potentiometer to select the desired setting. The entry box is highlighted in colour.
- Pressing the rotary potentiometer opens an alphanumeric input field.
- You can change the customer record or enter a new one with the rotary potentiometer. (To accept the desired alphanumeric value, press the rotary potentiometer.)

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.

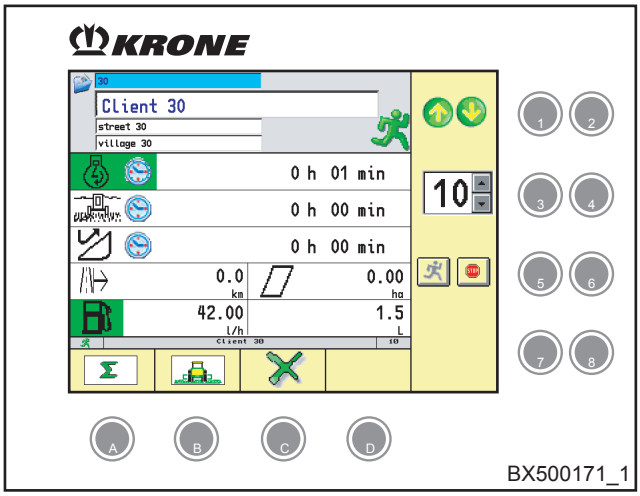
- Pressing the (B) key on the rotary potentiometer also takes you one menu level back.

4.6.4.2 Switching the counter on or off

- Use the (5) and (6) keys to switch the counter on or off STOP.
- Activating the (B) key brings up the basic screen.
- Pressing the (B) key on the rotary potentiometer takes you one menu level back.



4.6.4.3 Deleting the customer counter



- Pressing the C key under the sofkey deletes the counters of the selected cultivated area 10 in the selected customer record (in the example shown here, the tenth cultivated area).

4.6.4.4 Switching to general counters (machine data counters)

- Pressing the A key under the Σ softkey brings up the "Counters and machine data" menu.

For more information see chapter "Counters and Machine Data"

You can print out all customer records or selected ones with the aid of a printer.
For additional Information, please refer to chapter "Printing Customer Data"

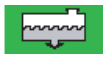
4.6.5 Silage Fodder Addition

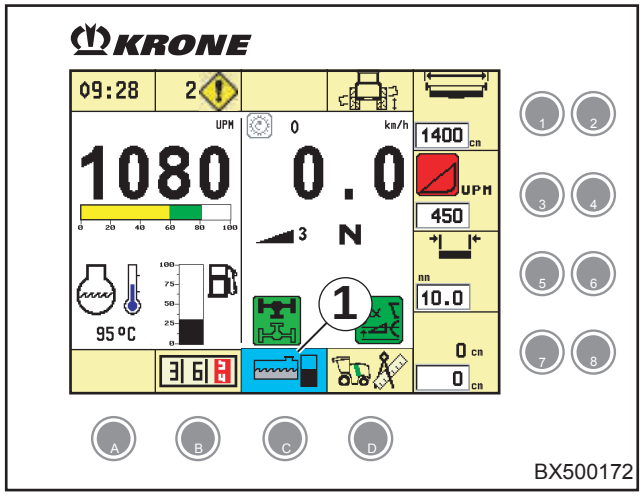
In field mode, the silage fodder addition icon is displayed in the information section of settings (V) with the current setting.

Pre-requisite for switching on Automatic mode:

- Feed drive/front attachment switched on
- Main drive switched on
- Front attachment lowered
- Driving forward

Status (1)

-  = Automatic mode switched on, silage fodder addition active.
-  = Automatic mode switched on, silage fodder addition inactive.
-  = silage fodder addition is deactivated.
-  = silage fodder addition is always active.
-  = filling level indicator for silage agent addition (optional)
- Activating the C key brings up the silage fodder addition screen.



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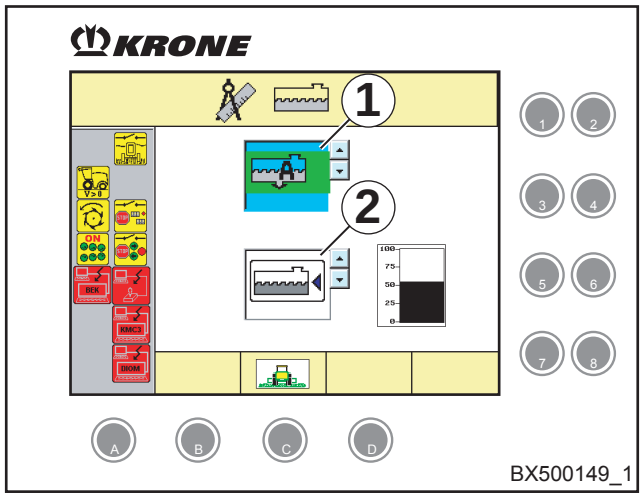

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Conditions for release not met

-  = lower lifting gear
-  = vehicle moving
-  = Main coupling on
-  = feed drive on
-  = Release switch – road/field
-  = Maintenance release switch
-  = Stop switch for control unit console
-  = stop switch for manual operation

Fault

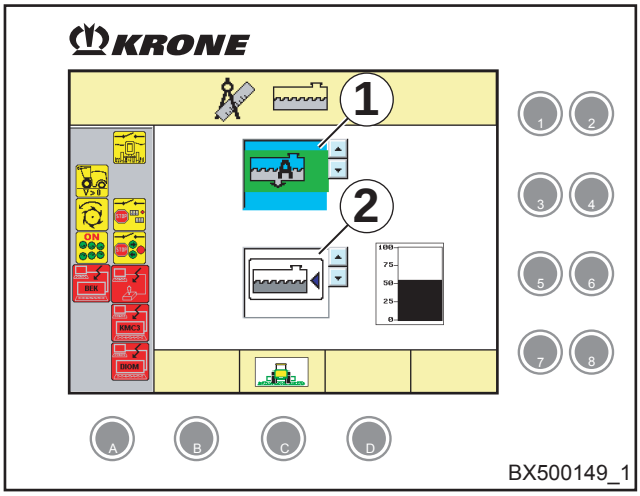
-  = CU
-  = Joystick
-  = KMC2
-  = KMC3
-  = Metal detection
-  = DIOM

Silage fodder addition (1)

- = silage fodder addition not active
- = silage fodder addition always active
- = silage fodder addition Automatic mode

Activate/deactivate fill level indicator for silage fodder addition (optional) (2)

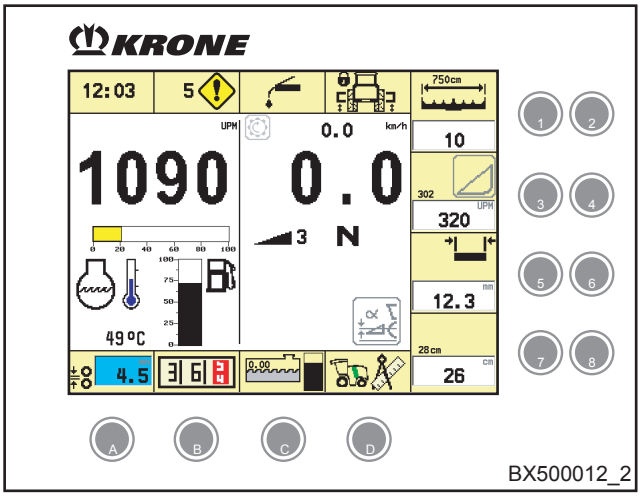
- = fill level indicator for silage fodder addition activated
- = fill level indicator for silage fodder addition deactivated



- You can use the rotary potentiometer to set the silage fodder addition setting. The selection box is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the selection box.
- You can use the rotary potentiometer to adjust the desired setting.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection box.
- Activating the C key brings up the basic screen.
- Press the key on the rotary potentiometer to open the menu.

4.6.6 Adjusting the Grain Conditioner Distance

If "Maize header or X-Disc" mode has been set, the symbol and the current actual value of the grain conditioner distance is displayed in the information section of settings (V).



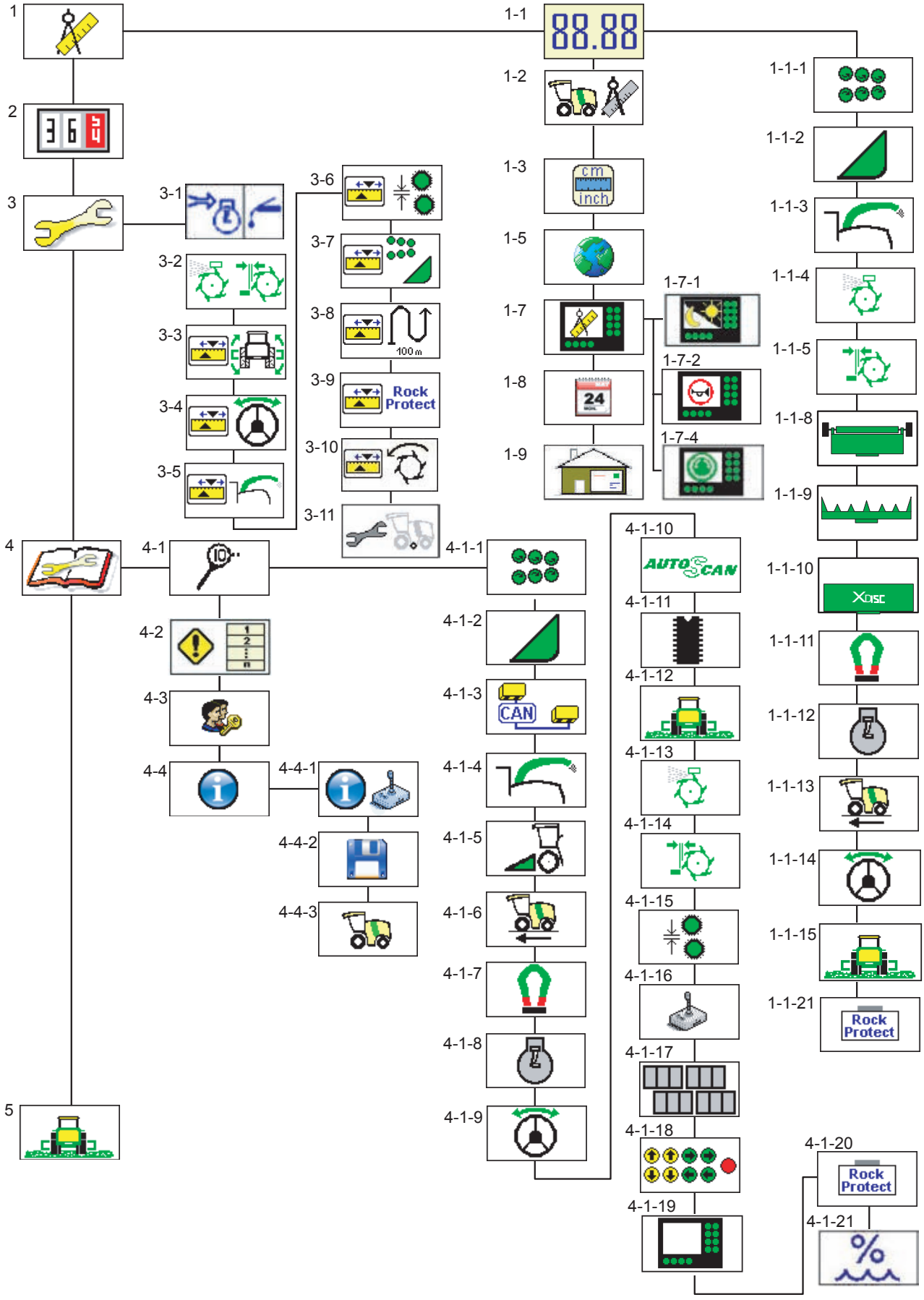
- You can use the rotary potentiometer to select the setting for the grain conditioner. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can use the rotary potentiometer to adjust the distance.
- To exit the input field again, press the rotary potentiometer.

The currently set target distance is approached automatically.

Calibrating the grain conditioner
(See chapter on Grain Conditioner Calibration).

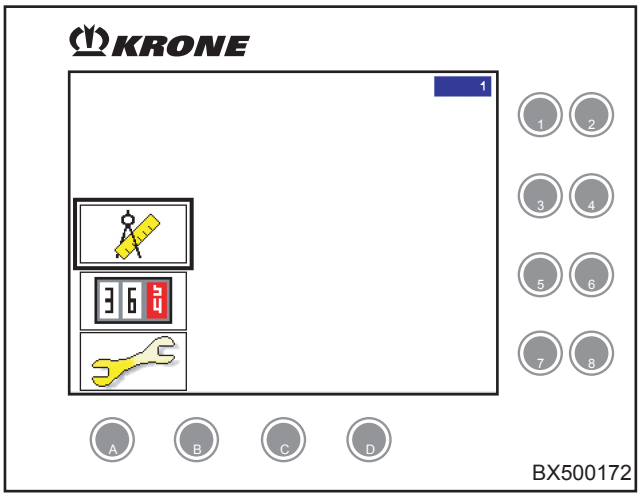
4.7 Menu Level

Short overview



4.7.1 Bringing up a Menu Level

- You can bring up a menu level with the key on the rotary potentiometer.



The display indicates the menu level.

The menu level is divided into 5 main menus:

- = main menu 1 „Settings“
- = main menu 2 „Counters“
- = Main menu 3 „Maintenance“
- = main menu 4 „Service“
- = Main menu 5 „Basic screen“

- You can close the menu level that was called with on the rotary potentiometer.

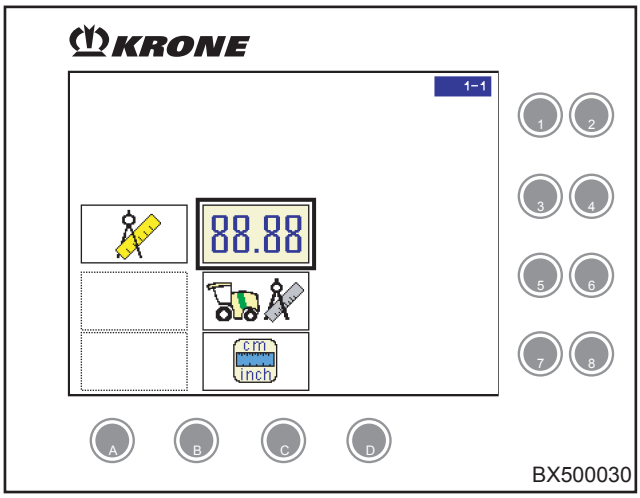
4.7.2 Main menu 1 „Settings“

The main menu level is active.

- Select main menu 1 with the rotary potentiometer.
- Press the rotary potentiometer.

The display shows menu level 1 „Settings“.

The main menu, „Settings“, is divided up into these menus:



- = Menu 1-1 „Parameters“
- = Menu 1-2 „Machine setting“
- = Menu 1-3 „Units“
- = Menu 1-5 „Language“
- = Menu 1-7 „Display“
- = Menu 1-8 „Date/time“
- = Menu 1-9 "Contractor address"

- Pressing the key on the rotary potentiometer takes you one menu level back.

4.7.3 Menu 1-1 „Parameters“

The main menu „Settings“ is active.

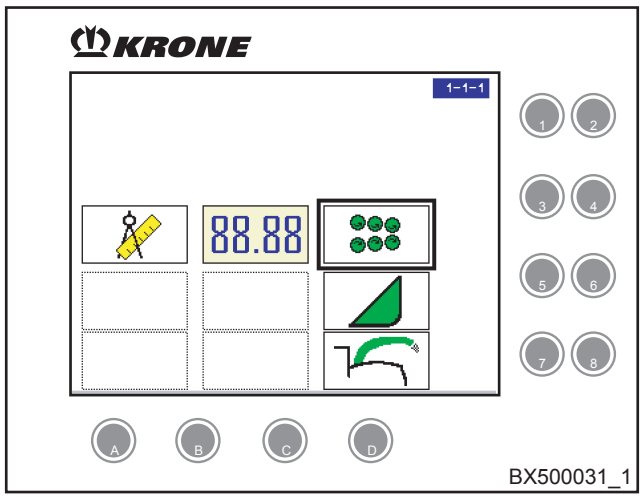
- Select menu 1-1 „Parameters“ with the rotary potentiometer.
- Press the rotary potentiometer.

The display indicates the menu level „Parameters“.

The „Parameters“ menu is divided into these sub-menus:

-  = Menu 1-1-1 „Feed drive“
-  = Menu 1-1-2 „Front attachment“
-  = Menu -1-1-3 „Discharge chute“
-  = Menu1-1-4 „Grinding“
-  = Menu1-1-5 „Counterblade“
-  = Menu 1-1-8 „EasyFlow“
-  = Menu 1-1-9 „EasyCOLLECT“
-  = Menu 1-1-10 „X-DISC“
-  = Menu 1-1-11 „Metal detection“
-  = Menu 1-1-12 „Diesel engine“
-  = Menu 1-1-13 „Drive“
-  = Menu 1-1-14 „Autopilot“
-  = Menu 1-1-15 „Work“
-  = Menü 1-1-21 „RockProtect“

- Pressing the key on the rotary potentiometer takes you one menu level back.
- You can use the rotary potentiometer to select the desired menu.
- Pressing the rotary potentiometer causes the parameters of the selected menu to be displayed.



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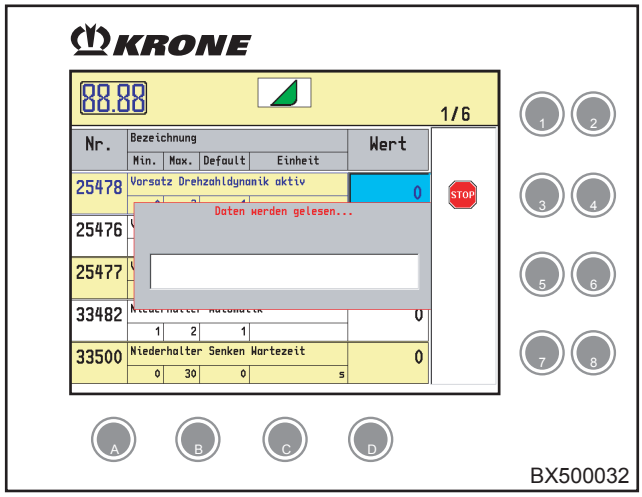


BX500032

Entering parameters

- You can use the rotary potentiometer to select individual parameters. The input field is highlighted in light blue.

Only input fields with a light blue background can be changed.

- Pressing the rotary potentiometer allows you to jump to the input field.
  The mask for parameter entry appears with the following displays:

  (1) Shows the designation of the selected parameter.

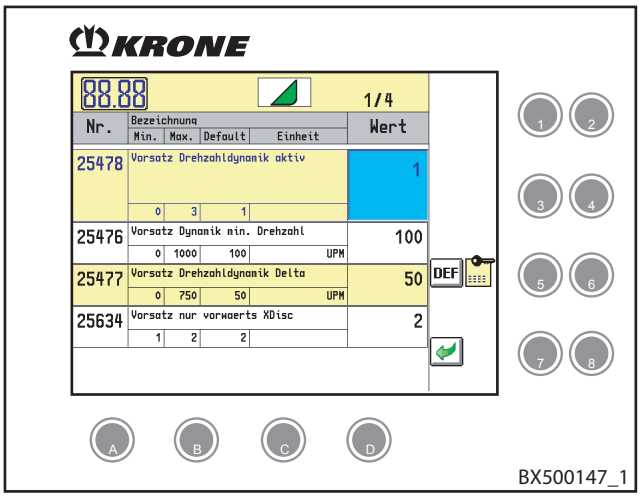
  (2) Visual display of the possible range of the parameter value.

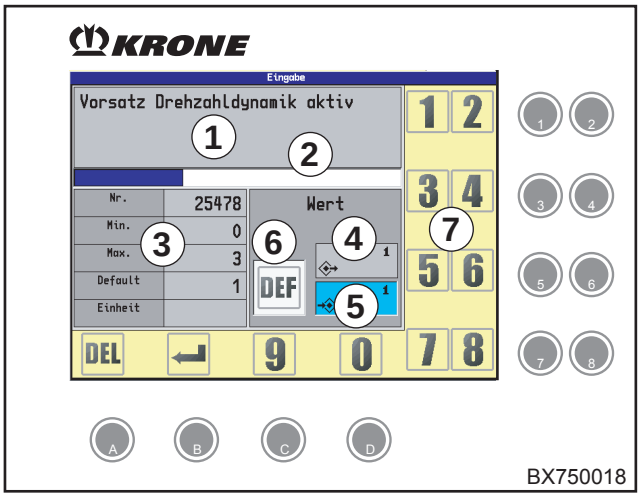
  (3) Parameter data: (from top to bottom) parameter number, min. value, max. value, default setting value, unit.

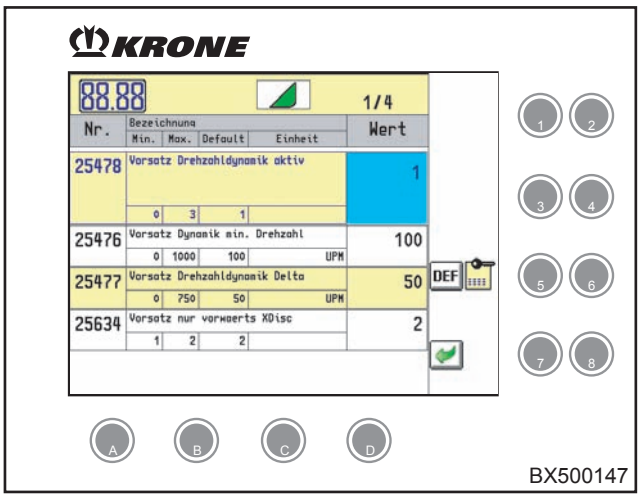
  (4) Actual value of the parameter. 99999 means the corresponding control unit is offline.

- Enter the new setpoint value in the input field (5) with the rotary potentiometer or keyboard (7).
- You can reset to the default setting value in the input field (6) (non-locking function).
- To delete the setpoint value, press the A key.
- To accept the modified value and/or parameter input mask, press the B key.
- To stop the process temporarily, press the 3 key next to the STOP softkey.
- To apply the default setting values, press the 5 key next to the DEF softkey.
- To jump back to the screen that was previously displayed, press the 7 key next to the softkey.
- Pressing the key on the rotary potentiometer takes you one menu level back.

For additional information on the individual parameters, please refer to the parameter list in the appendix entitled „Parameter list“.







4.7.4 Menu 1-3 „Units“

The main menu „Settings“ is active.

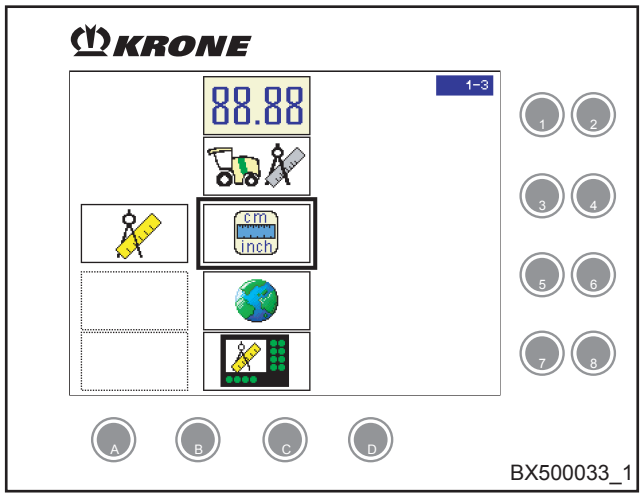
- Select menu 1-3 „Units“ with the rotary potentiometer.
- Press the rotary potentiometer.

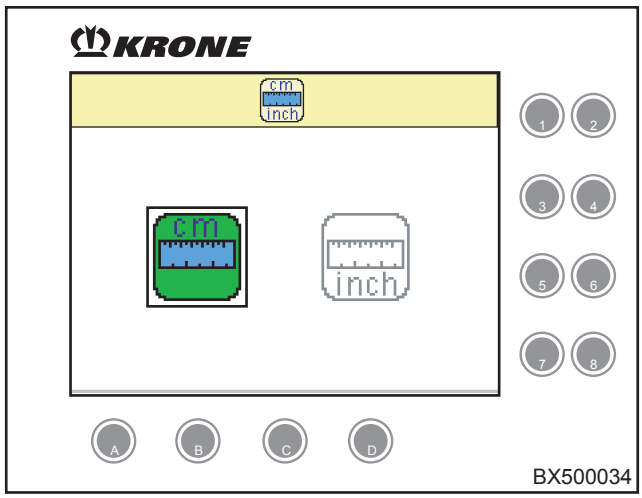
The display indicates the selected measuring units. The currently set measuring unit is highlighted in colour.

-  = Anglo-American units active
-  = English/American units active
-  = Metric (SI) units
-  = Metric (SI) units inactive

Setting the measuring units

- You can use the rotary potentiometer to select the desired setting.
- To accept the setting, press the rotary potentiometer.
- Pressing the  key on the rotary potentiometer takes you one menu level back.





4.7.5 Menu 1-5 „Language“

The main menu „Settings“ is active.

- Select menu 1- 5„Language“ with the rotary potentiometer.
- Press the rotary potentiometer.

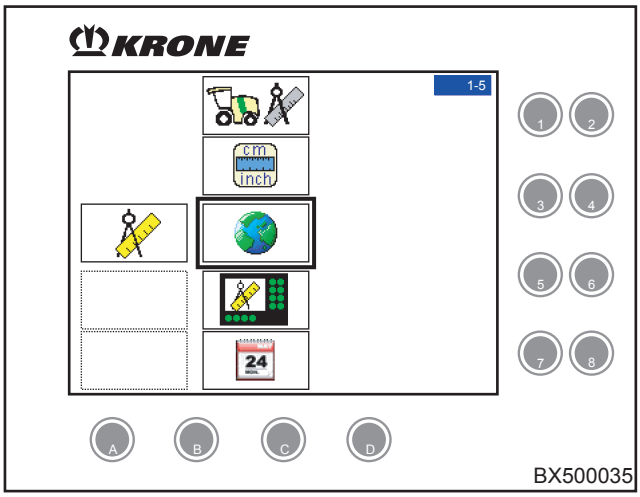
The display shows the language selection.

Set language

(1) = currently set language
(2) = display of the selected language

- You can select the language you want with the rotary potentiometer.
- To confirm the selection, press the rotary potentiometer.
- Pressing the ● key on the rotary potentiometer takes you one menu level back.

The selected language is applied immediately.



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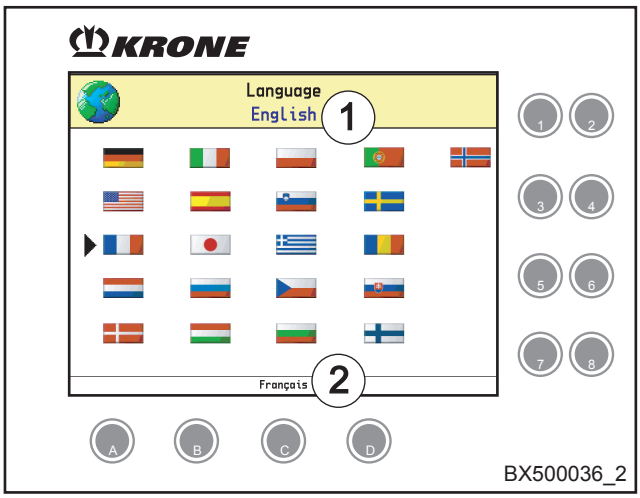


BX500036_2

4.7.6 Menu 1-7 „Display“

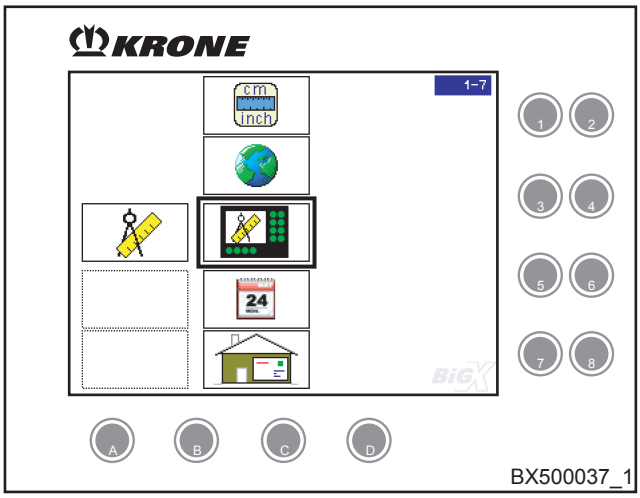
The main menu „Settings“ is active.

- Select menu 1-7 „Display“ with the rotary potentiometer.
- Press the rotary potentiometer.

The display shows menu level 1-7 „Display“.

The "Display" menu is divided into three sub-menus:

-  = Menu 1-7-1 "Contrast/brightness"
-  = Menu 1-7-2 „Beeper“
-  = menu 1-7-4„Direction of Rotation“
- Pressing the ● key on the rotary potentiometer takes you one menu level back.



BX500037_1

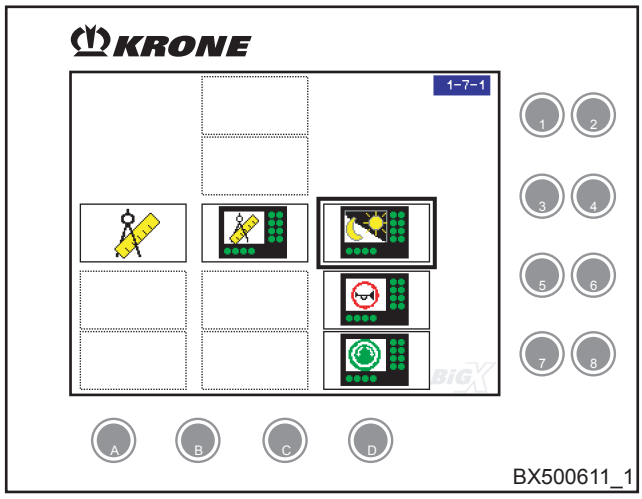
4.7.7 Menu 1-7-1 contrast/brightness

The „Display“ menu is active.

- Select menu 1-7-1 „Contrast/brightness“ with the rotary potentiometer.
- Press the rotary potentiometer.

The display shows the settings for contrast and brightness.

- = brightness
- = contrast

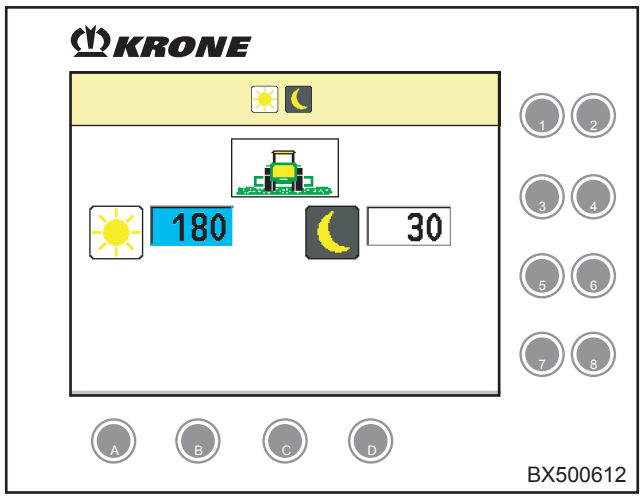


BX500611_1

Adjusting contrast/brightness

- You can use the rotary potentiometer to select the desired setting. The selection box is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the selection box.
- You can use the rotary potentiometer to adjust the desired function.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection box.

- Pressing the key on the rotary potentiometer takes you one menu level back.



BX500612

4.7.8 Menu 1-7-2 Beeper

The „Display“ menu is active.

- Select menu 1-7-2 „Beeper“ with the rotary potentiometer.
- Press the rotary potentiometer.

The display indicates the beeper settings.

- = Key pressed (Signalling device in terminal)
- = Alarm (Signalling device in console)
- = Note (Signalling device in console)

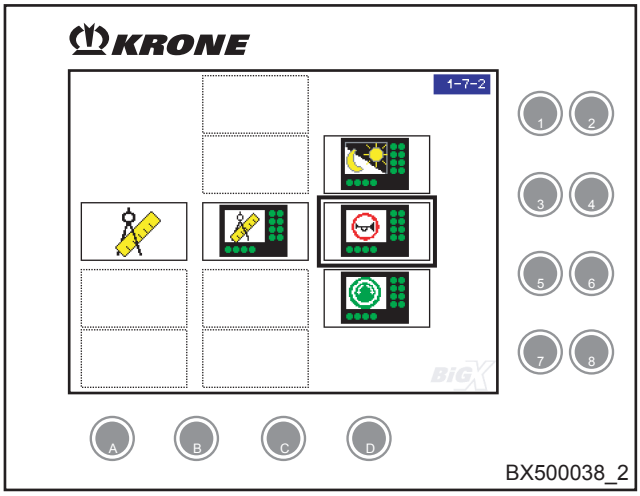
Beeper function

- = Beeper inactive
- = Beeper active
- = Beeper limited by time

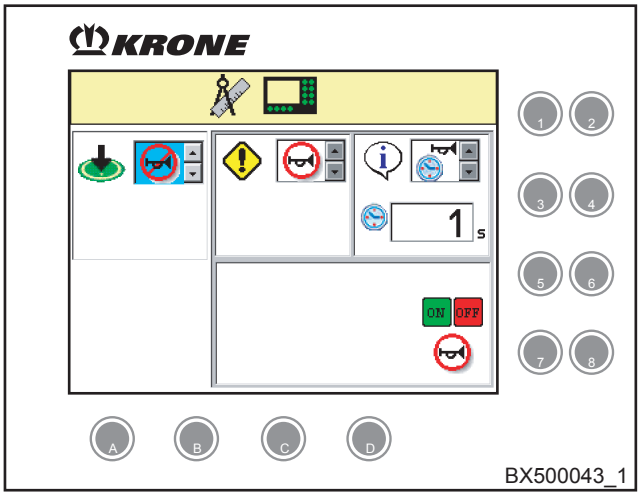
The activation time of the beeper can be set optionally to and .

To set the beeper

- You can use the rotary potentiometer to select the desired setting. The selection box is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the selection box.
- You can use the rotary potentiometer to adjust the desired function.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection box.
- To turn on the beeper, press the 7 key.
- To turn off the beeper, press the 8 key.
- Pressing the key on the rotary potentiometer takes you one menu level back.



BX500038_2



BX500043_1

4.7.9 Menu 1-7-4 Direction of Rotation

The „Display“ menu is active.

- Select menu 1-7-4 „Direction of rotation“ with the rotary potentiometer.
- Press the rotary potentiometer.

The display shows settings for direction of rotation.

-  = Scroll down in the parameter list
-  = Input elements selection down
-  = Scroll down in the menu

Set the direction of rotation
(1) Direction of rotation „Scroll down in the parameter list“:

- Press the 1 key to set „Anti-clockwise“.
- Press the 2 key to set „Clockwise“.

(2) Direction of rotation „Input elements selection down“:

- Press the 3 key to set „Anti-clockwise“.
- Press the 4 key to set „Clockwise“.

(3) Direction of rotation „Scroll down in the menu“:

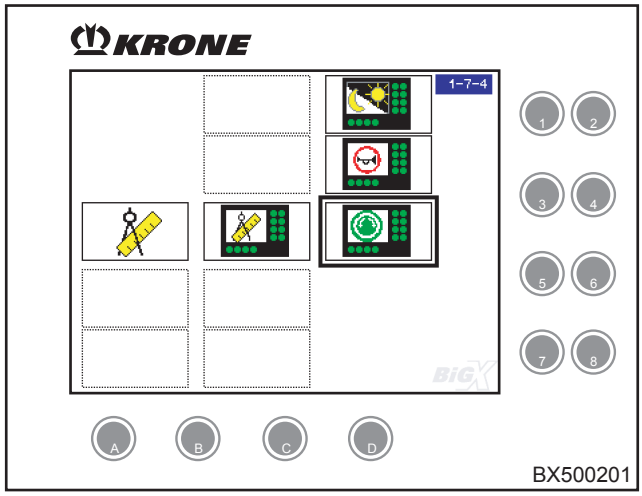
- Press the 5 key to set „Anti-clockwise“.
- Press the 6 key to set „Clockwise“.

(4) Press the softkey DEF to set all direction of rotation settings to default values.

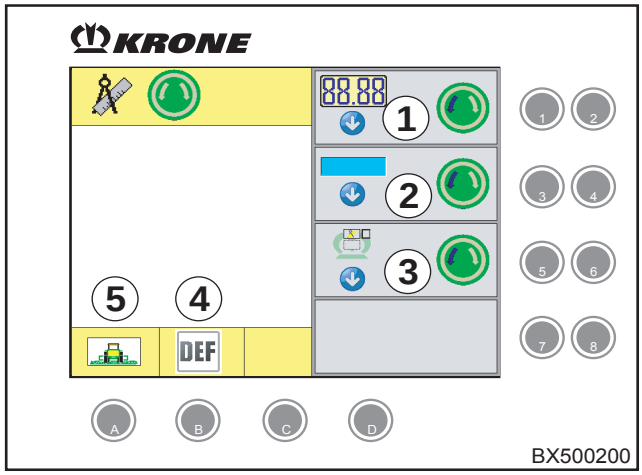
(5) Press the softkey  to return to the basic screen.

The currently set direction of rotation is represented by the blue arrow  .

- Pressing the key on the rotary potentiometer takes you one menu level back.



BX500201



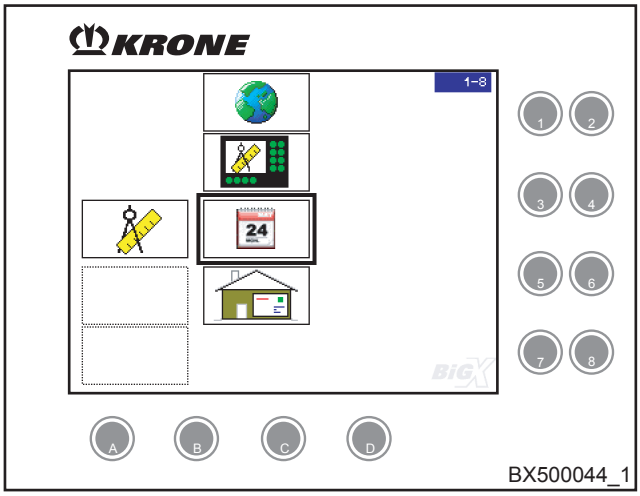
BX500200

4.7.10 Menu 1-6 „Date/time“

The main menu „Settings“ is active.

- Select menu 1-8 „Date/time“ with the rotary potentiometer.
- Press the rotary potentiometer.

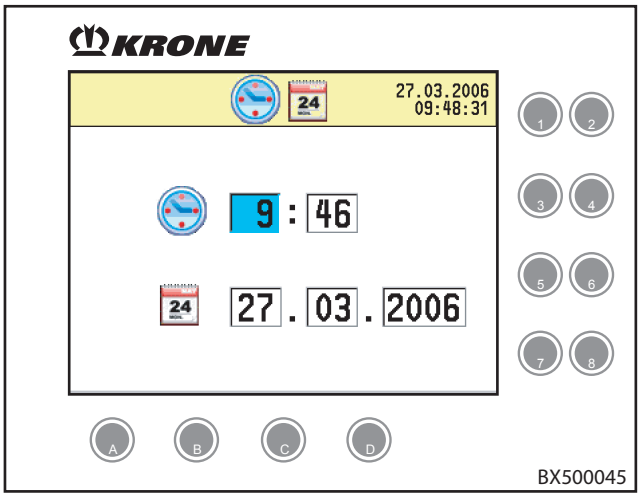
The display shows the date and the time.



4.7.10.1 To set date/time

- You can use the rotary potentiometer to select the desired setting. The entry box is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- Set the desired date/time with the rotary potentiometer.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection field.

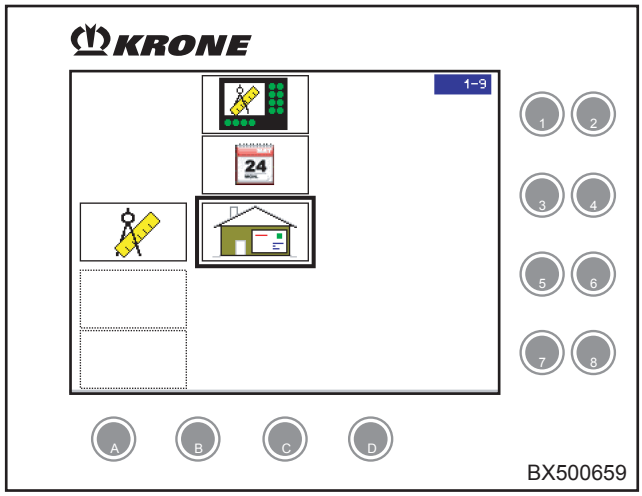
- Pressing the key on the rotary potentiometer takes you one menu level back.



4.7.11 Menu 1-9 „Contractor address“

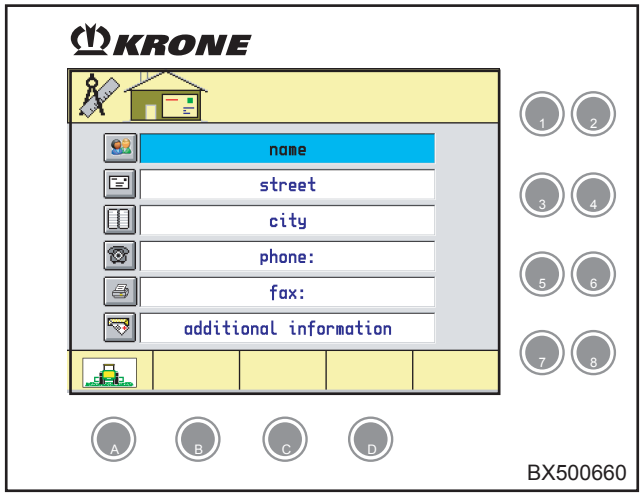
The main menu "Settings" is active.

- Select menu 1-9 "Contractor" with the rotary potentiometer.



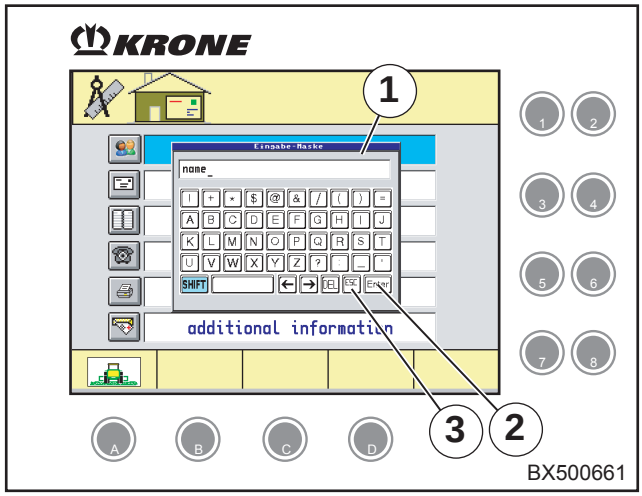
- Press the rotary potentiometer to call the <Contractor Information> mask.

A maximum of 6x30 characters can be entered. The information is used each time a print job is sent to the CAN printer. If a line contains no characters (including no spaces), that line will not be considered for printing.



- Pressing the rotary potentiometer opens an alphanumeric input field (1).
- Turn the rotary potentiometer to select a letter (yellow mark).
- Press the rotary potentiometer to select the letter.
- Selecting the "Enter" symbol (2) and confirming causes the program to accept and save the entry or change.

Selecting the "ESC" symbol (3) and confirming causes the program to exit the input field without saving the entries or changes.



- Pressing the key on the rotary potentiometer takes you one menu level back.

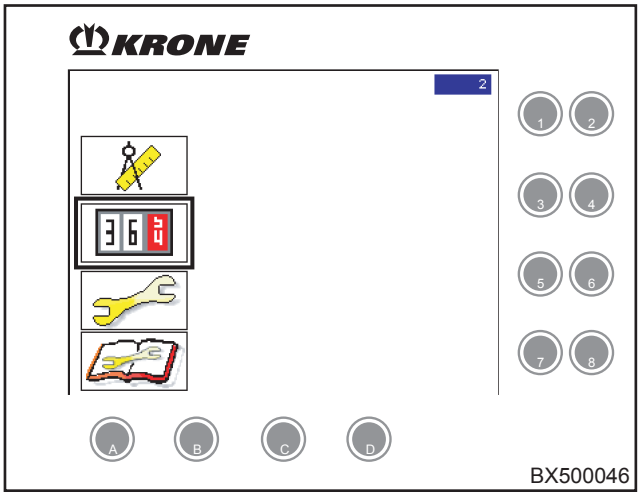
4.8 Main Menu 2 „Counters“

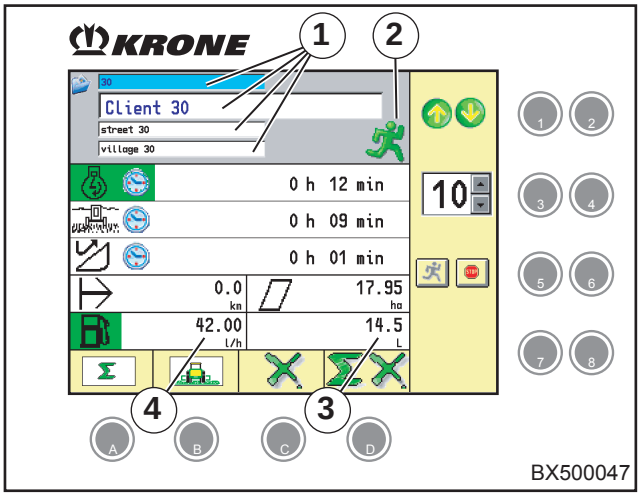
- You can bring up a menu level with the key on the rotary potentiometer.
- Select main menu 2 „Counter“ with the rotary potentiometer.
- Press the rotary potentiometer.

The display shows various counters.

Counter level(sets)

- Σ = total bale counter (cannot be deleted)
- 1 = counter level 1 (can be deleted)
- 2 = counter level 2 (can be deleted)
- 3 = counter level 3 (can be deleted)





4.8.1 Machine Data Counter

(Active counters are highlighted in colour)

- = Operating hours counter
- = Drum hours counter
- = Working hours counter
- = Surface counter
- = Odometer (both street and field mode) (km)
- = Fuel consumption meter

To set the counter level

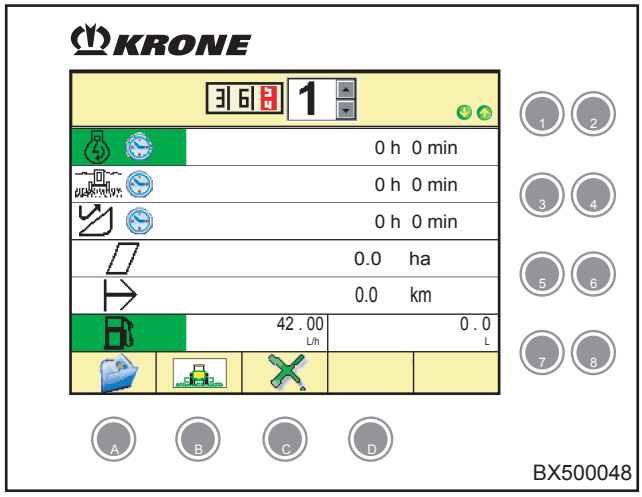
- To change counter level, activate the key for or .

It is also possible to make a setting with the rotary potentiometer:

- You can use the rotary potentiometer to select the setting for the counter level. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the selection box.
- You can use the rotary potentiometer to adjust the desired counter level.
- To exit the selection field, press the rotary potentiometer.

4.8.2 Deleting the Machine Data Counters

- Pressing the C key under the softkey deletes all counters in a set. (Only the counters of sets 1 to 3 can be deleted.)
- Pressing the key on the rotary potentiometer takes you one menu level back.
- Pressing the B key under the softkey brings up the basic screen.

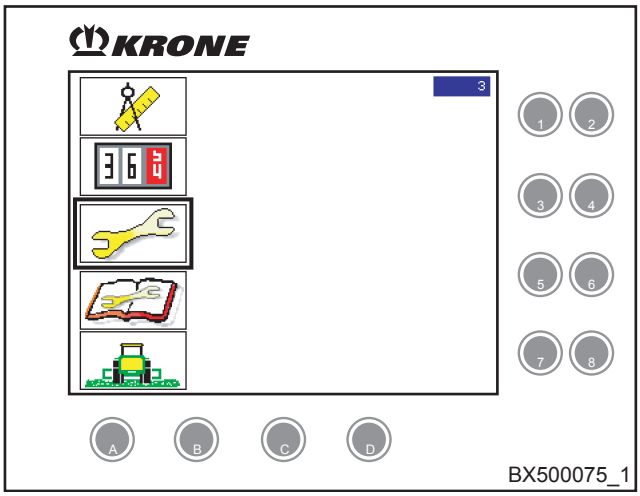


4.8.2 Switching to Customer Data Counters

- Pressing the A key under the softkey brings up the „Customer data counter“ menu.

For more information, see chapter „Customer Data Counters“

4.9 Main Menu 3 „Maintenance“



The main menu level is active.

- Select main menu 1 with the rotary potentiometer.
- Press the rotary potentiometer.

The display shows menu level 3 „Maintenance“.

The main menu „Maintenance“ is divided up into six menus:

-  = Menu 3-1 "Central lubrication/cleaning the engine compartment"
-  = Menu 3-2 „Grinding / counterblade“
-  = Menu 3-3 „Calibration of pendulum frame“
-  = Menu 3-4 „Calibration of Autopilot“
-  = Menu 3-5 „Calibration of upper discharge chute“
-  = Menu 3-6 „Calibration of cracker“
-  = Calibration of feed drive/front attachment"
-  = Menu 3-7 „Calibration of front attachment“
-  = Menu 3-8 „Calibration of travel path“
-  = Menü 3-9 „RockProtect“ (optional)
-  = Menu 3-10 "Calibration of main coupling"
-  = Menu 3-11 „Maintanance additional axis“ (option)

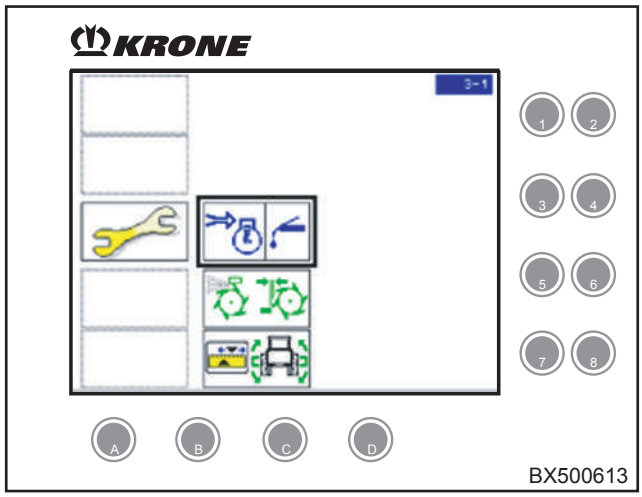
- Pressing the key on the rotary potentiometer takes you one menu level back.

When the maintenance switch in the basic screen is activated, the „Maintenance“ main menu appears automatically.

4.9.1 Menu 3-1 "Central lubrication"

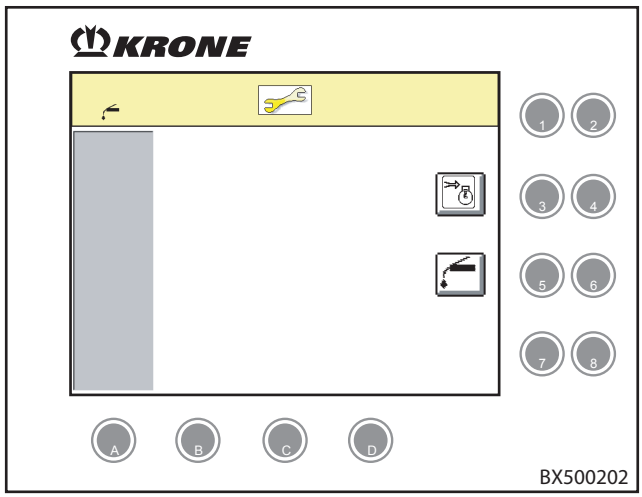
The main menu "Maintenance" is active.

- Select menu 3-1 "Central lubrication" with the rotary potentiometer.
- Press the rotary potentiometer.



The display shows the „Clean central lubrication“ mask.

- Press the (5) key to initiate the „Intermediate lubrication“ function.



Conditions for release not met

- = Release switch – road/field
- = Travelling gear release switch
- = Diesel engine speed
- = Release switch – feed drive/front attachment
- = Maintenance release switch
- = Stop switch for control unit console
- = Stop switch for manual operation

Malfunction

- = CU
- = Manual operation
- = Joystick
- = KMC2
- = KMC3

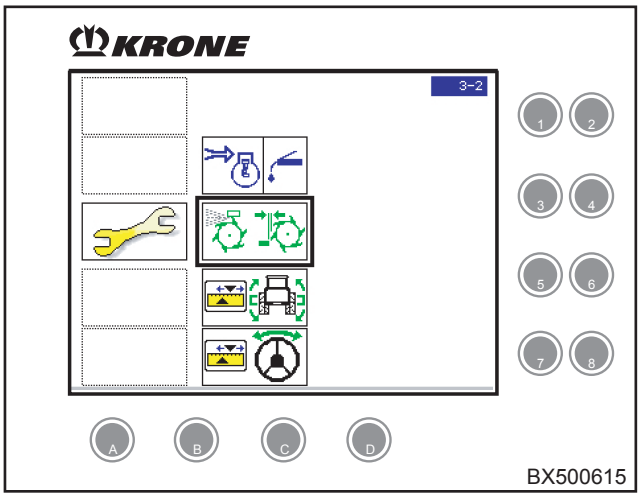
4.9.2 Menu 3-2 „Grinding / Counterblade“

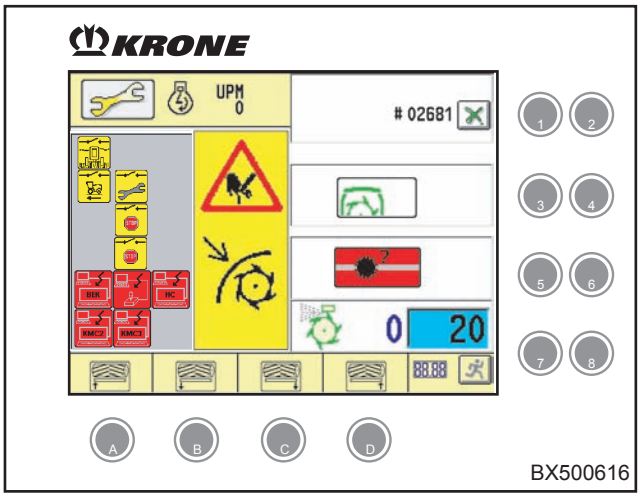
The main menu „Maintenance“ is active.

- Select menu 3-2 „Grinding / counterblade“ with the rotary potentiometer.
- Press the rotary potentiometer.

Warning notices appear pointing out special dangers associated with grinding the cutting blade (refer to the section on Operation – grinding the cutting blade).

- Actuating the (7) key takes you to a parameter input box for the grinding of the counterblade.





Conditions for release not met

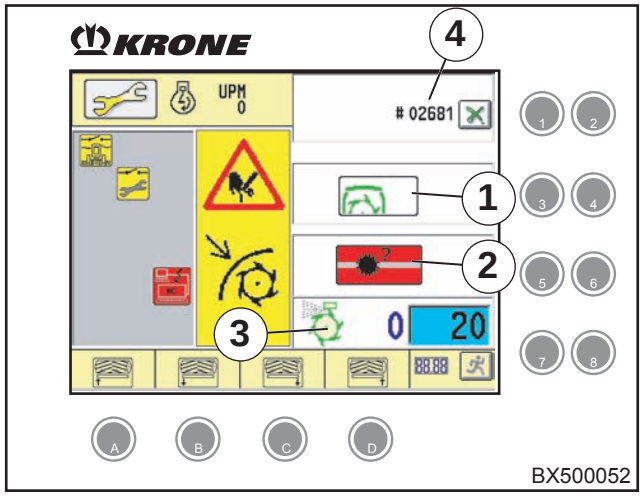
- = Release switch – road/field
- = Travelling gear release switch
- = Diesel engine speed
- = Release switch – feed drive/front attachment
- = Maintenance release switch
- = Stop switch for control unit console
- = Stop switch for manual operation

Malfunction

- = CU
- = Manual operation
- = Joystick
- = KMC2
- = KMC3

Status of the grinding flap (1)

- = Grinding flap is closed
- = Grinding flap is open



Status of the grinding stone (2)

- = Grinding stone is on the left
- = Grinding stone is in the centre
- = Grinding stone is on the right
- = Position of grinding stone unknown; grinding stone sensors are both alive/sensor is defective - FAULT

Status of grinding operation (3)

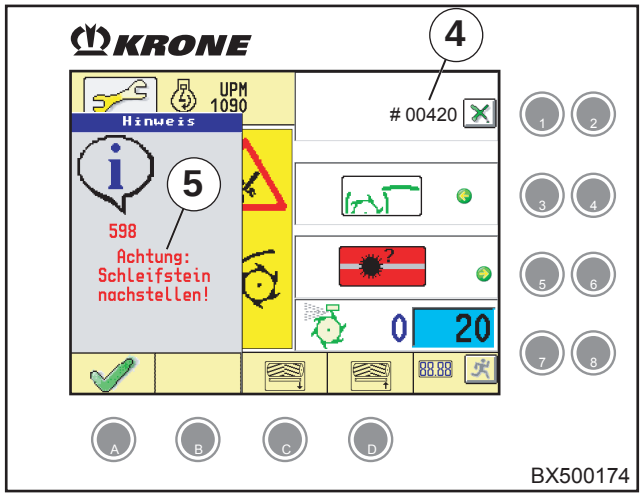
- 1. number = current grinding cycle, 2nd number = number of target grinding cycles

One grinding cycle corresponds to a double stroke of the grinding stone (1 x left/1 x right).

Status „Total of all grinding cycles“ (4)

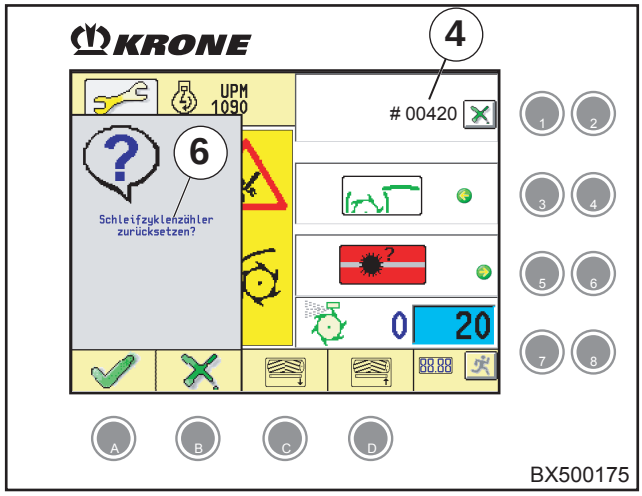
- (4) = Counter „Total of all grinding cycles“ since the last time the counter status was set to „Zero“.

After approximately 420 grinding cycles (depending on the grinding stone adjuster), the error message (5) "Readjust grinding stone" appears on the display. The grinding process is disabled until the error message has been reset.



Acknowledging the error message

- Using the A key under softkey ✓, hide the message.
- Activate the 1 key to set counter „Total of all grinding cycles“ (4) to zero. Message (6) appears in the display.
- Using the A key under softkey ✓, hide the message.
- Using the B key under softkey ✗, cancel the process.

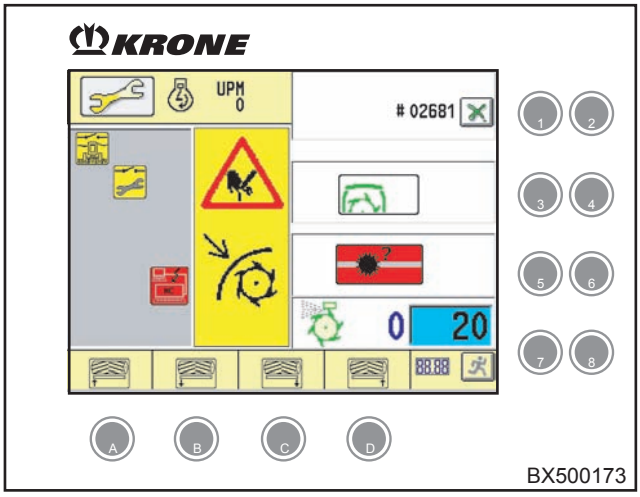


Readjust the grinding stone or replace it. (See Chapter „Readjusting or Replacing the Grinding Stone“)

Counterblade – status of the counterblade motors (data as seen in direction of travel)

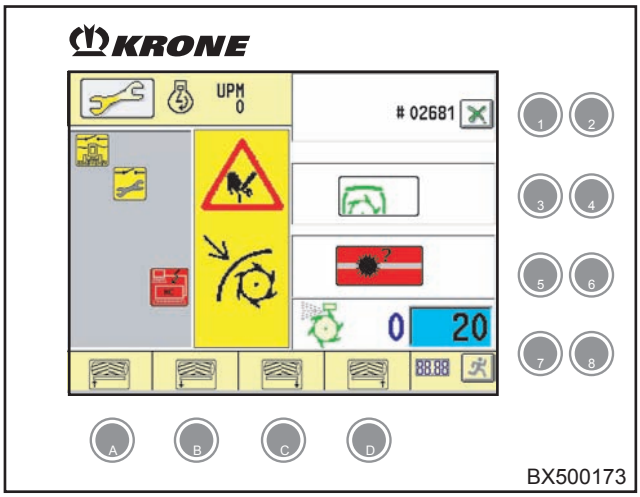
Visual display if the counterblade will be moved manually.

- = 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 broken cable
- = 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 broken cable
- = Counterblade left short circuit



Adjusting the number of grinding cycles (Factory setting 20)

- You can use the rotary potentiometer to select the desired setting. The entry box is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can use the rotary potentiometer to adjust the desired number.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection field.



Start/stop grinding operation

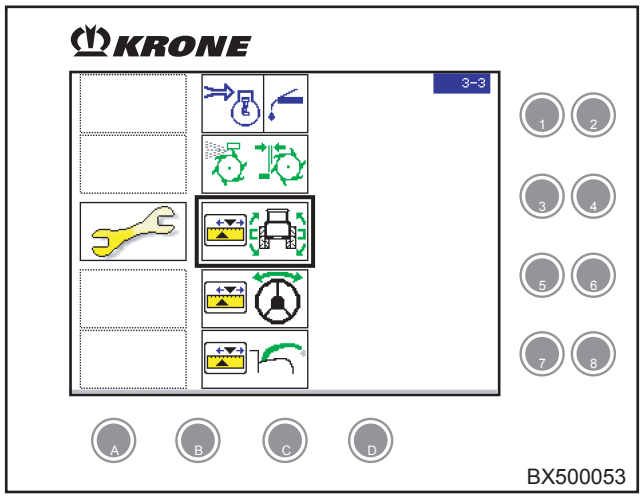
Pressing the 8 key starts or stops grinding operation.

- = Grinding operation not possible.
- = Start grinding operation.
- = Stop grinding operation.
- Pressing the key on the rotary potentiometer takes you one menu level back.
- Pressing the 7 key takes you to a parameter input box for counterblade adjustment.

4.9.3 Menu 3-3 „Calibration of Pendulum Frame and Absolute Lifting Gear Height“

During the calibration, components may move around, in particular the lifting gear and pendulum frame - risk of injury!

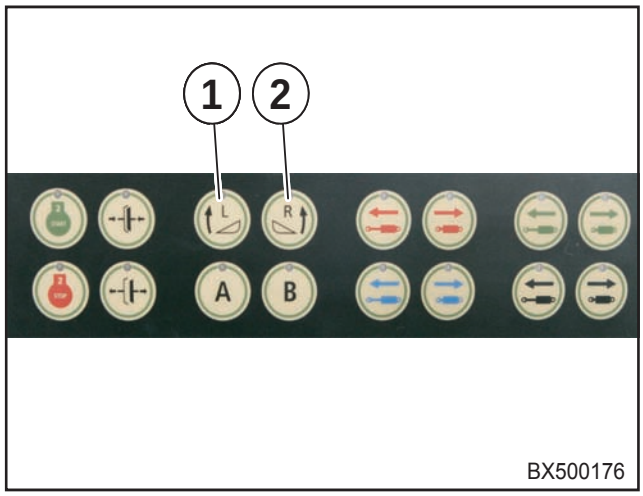
The pendulum frame only needs to be calibrated after work on the pendulum frame or after replacement of the electronic system.
Before calibrating the pendulum frame, adjust the lifting gear (see chapter „Adjusting the lifting gear“)



The main menu „Maintenance“ is active.

- Select menu 3-3 „Calibration of pendulum frame“ with the rotary potentiometer.
- Press the rotary potentiometer.

The „Calibration of pendulum frame and absolute lifting gear height“ menu appears.



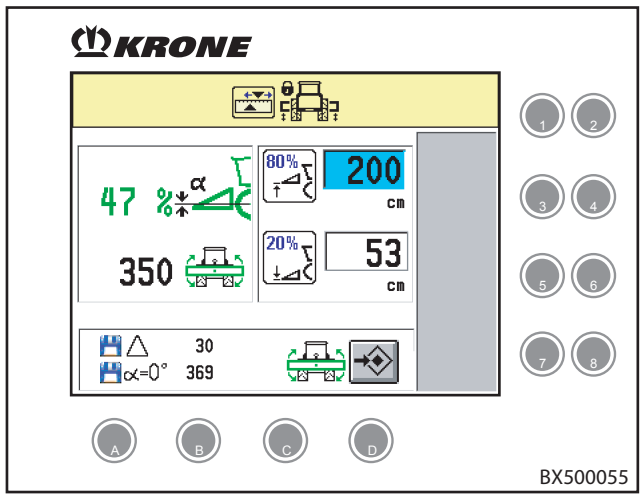
Conditions for release not met

- = Release switch – road/field
- = Seat switch
- = Diesel engine speed
- = Release switch – feed drive/front attachment
- = Maintenance release switch
- = Stop switch for control unit console
- = Stop switch for manual operation

Malfunction

- = CU
- = Joystick
- = KMC2
- = KMC3

Lifting gear



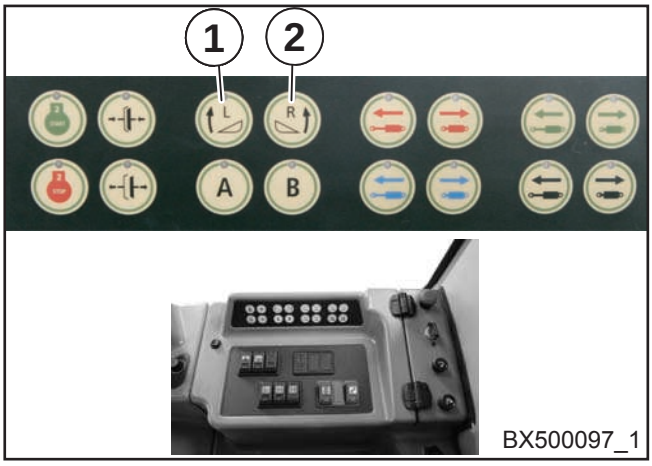
- The current lifting height is indicated as a % with the symbol.
- The currently saved absolute height of the lifting gear at 80 % is indicated by the symbol.
- The currently saved absolute height of the lifting gear at 20 % is indicated by the symbol.

Pendulum frame

- The saved digital value for maximum deviation is indicated by the symbol ; the digital value for the pendulum frame by the symbol .
  The digital value for the pendulum frame is updated during the calibration process.
- The current value of the sensor is indicated as a digital value with the symbol for pendulum frame.

Calibration process for the pendulum frame

Prerequisites



- Field mode release switch turned on.
- Front attachment unit connected.
- The front attachment (with the maize header folded out) must be standing on the ground with a solid subsurface
- Lower the lifting gear until the front attachment comes to rest on the ground.
- If the front attachment is not horizontal to the machine, align the pendulum frame exactly with the pendulum frame left (1) or pendulum frame right (2) keys.
- To start calibration, activate the D key under softkey = „Apply setpoint value“. The display on the softkey switches to = „Calibration process running“ and = „Calibration process successfully completed“.

The saved digital value for the pendulum frame is updated.

Calibration process for absolute lifting gear height

Calibration of the absolute lifting gear height is required so that the lifting gear height can be specified in absolute terms in the Info Centre.
The calibration values are stored separately for grass pick-up and maize header.

Prerequisites

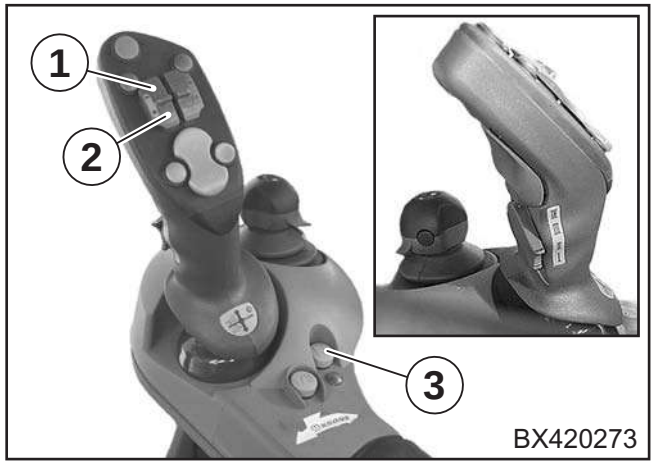
- Lifting gear adjusted (see chapter „Adjusting the lifting gear“).
- Field mode release switch off.
- Travelling gear release switch off.
- Front attachment unit connected.

- Adjust the connected front attachment to match grass pick-up or maize header mode as appropriate.

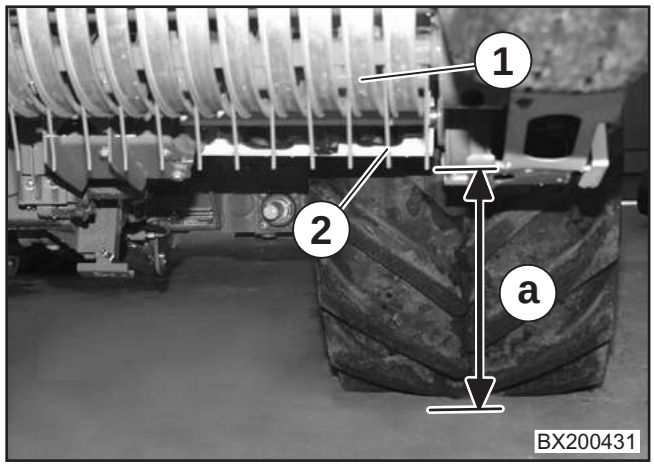
- The front attachment (with the maize header folded out) must be standing on the ground with a solid subsurface and are aligned horizontally.

Calibrate the upper lifting gear height

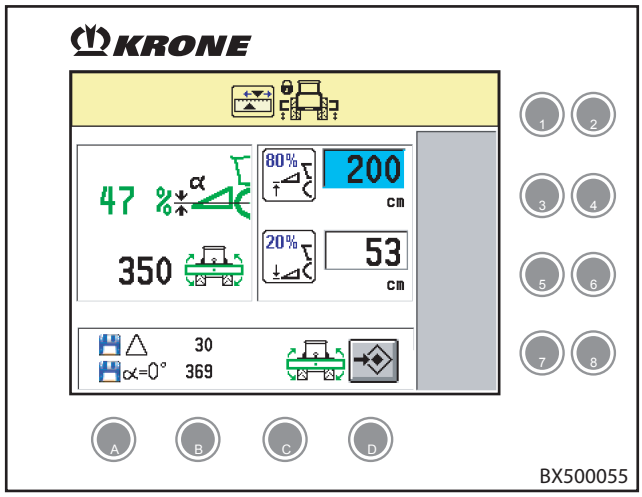
- Press the raise lifting gear key (2) and the save button for the lifting gear adjustment process (3) at the same time until the display of the current lifting height is 80 % with icon .



- For pick-up (1), measure the distance „a“ between the ground and the lowest point under spring tine (2).
  For the maize header, measure the distance between the ground and the cutter blade.



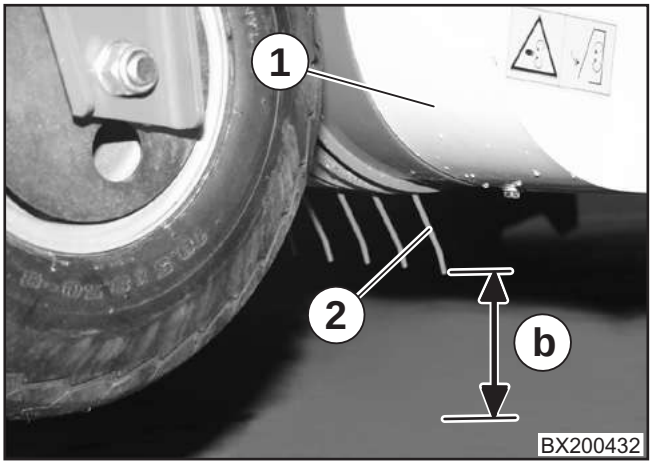
- With the rotary potentiometer, select the setting „Save the absolute height of lifting gear at 80 %“. The input field is highlighted in the colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can use the rotary potentiometer to adjust the measured distance „a“.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection field.



To calibrate the lower lifting gear height

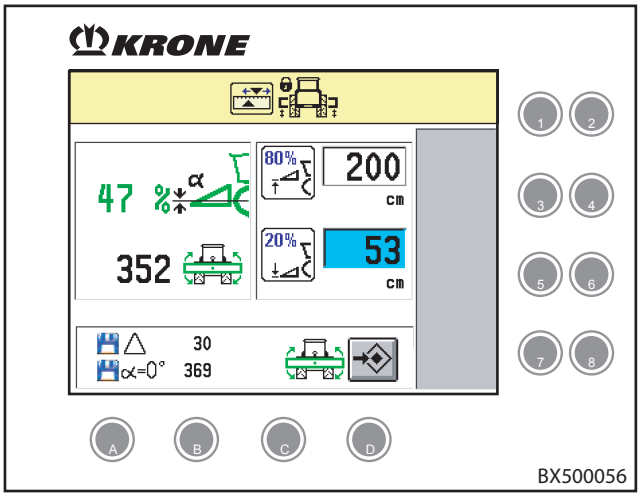
- Press the key to lower (1) or raise (2) the lifting gear until the current lifting height displayed with the symbol in the sixth field is 20 %.

- For pick-up (1), measure the distance „b“ between the ground and the lowest point under spring tine (2).
  For the maize header, measure the distance between the ground and the cutter blade.



- With the rotary potentiometer, select the setting „Save the absolute height of lifting gear at 20 %“. The input field is highlighted in the colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can use the rotary potentiometer to adjust the measured distance „b“.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection field.

The calibration process for „absolute lifting gear height“ is complete.

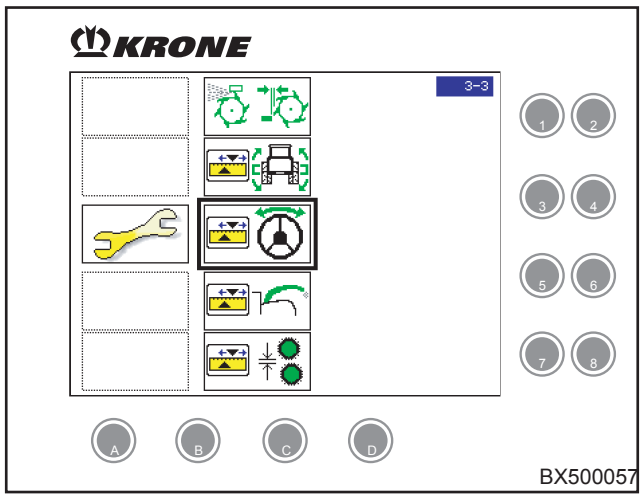


- Pressing the key on the rotary potentiometer takes you one menu level back.

4.9.4 Menu 3-4 „Calibration of Autopilot“

- **There is danger of injury during calibration due to the spontaneous movements of mechanical parts (for example the steering axle). No persons may remain in the danger zone of the machine.**
- **Work steps apply to Autopilot with software version 150 200 029-08.**

Before using autopilot for the first time, the autopilot must be calibrated to ensure problem-free operation.



BX500057

Pre-requisite:
- EASYCOLLECT maize header with row tracer attached.
- The main menu "Maintenance" is called.

When the autopilot is calibrated, the work steps must be performed in the specified order.

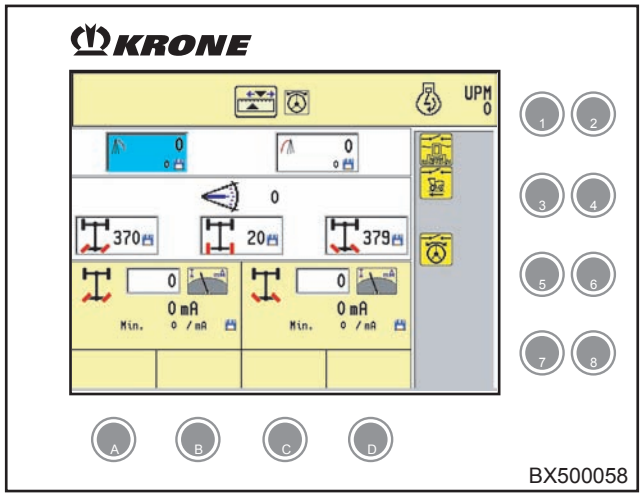
Work steps:

1. **Start the diesel engine and set the release switch to ON.**
   Start the diesel engine and turn on release switches <Field>, <Travelling gear>, and <Autopilot>.

If one of these conditions is not fulfilled, the right side of the screen will display a corresponding message. Release conditions are highlighted in yellow; errors are highlighted in red.

Conditions for release not met

- = Release switch – road/field
- = Travelling gear release switch
- = Seat switch
- = Release switch autopilot
- = Maintenance release switch
- = Stop switch for control unit console
- = Stop switch for manual operation

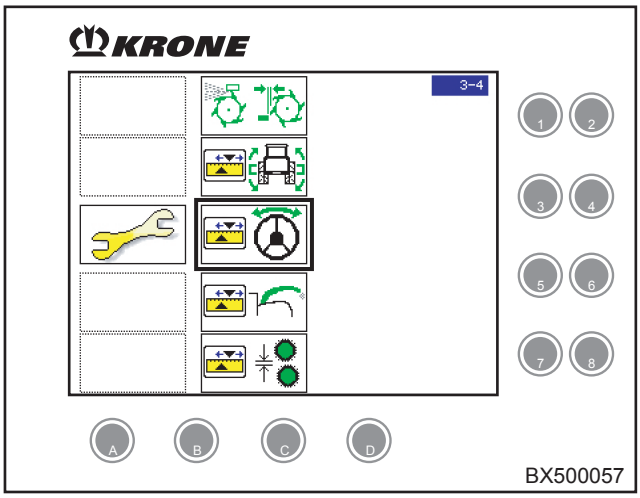


BX500058

Malfunction

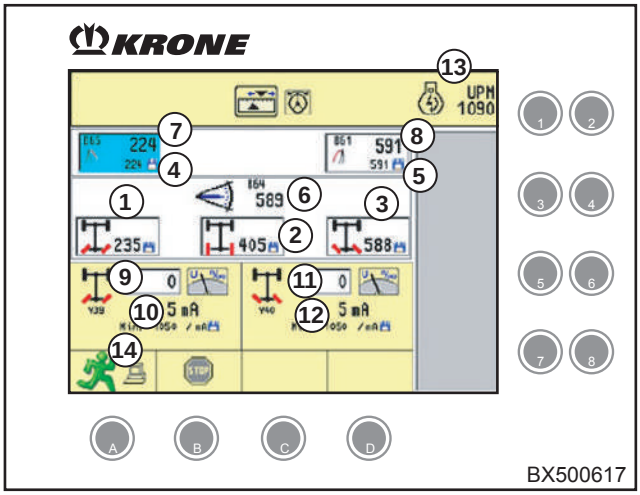
- = CU
- = Joystick
- = Autopilot
- = KMC3

2. Calling up the calibration screen on the terminal

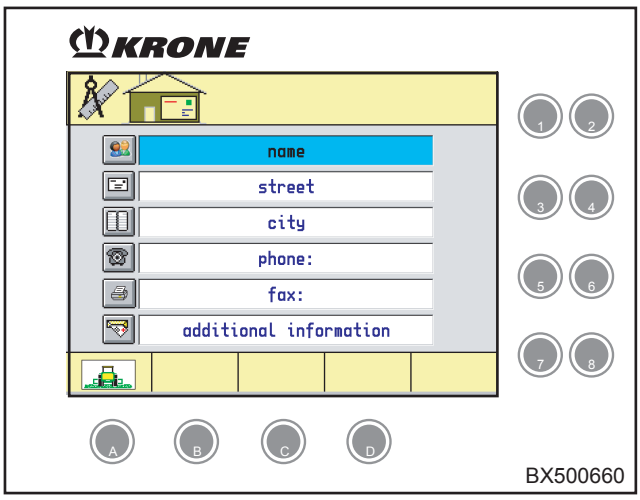


It is displayed the picture "Calibration of Autopilot"

- **Picture BX500617 display with outside tip**



- **Picture BX500660 Display with centre tip**



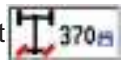
Pos.	Meaning
1	Saved value, maximum steering angle, left
2	Saved value, straight-ahead driving
3	Saved value, maximum steering angle, right
4	Saved value, minimum row tracer, left
5	Saved value, minimum row tracer, right
6	Actual value, steering angle sensor
7	Actual value, row tracer, left
8	Actual value, row tracer, right
9	Setpoint value, voltage/pulse duty factor at a steering angle of 0.01%, left
10	Saved value, minimum current steering angle, left
11	Setpoint value, voltage/pulse duty factor at a steering angle of 0.01%, right
12	Saved value, minimum current steering angle, right
13	Actual value, engine speed
14	Automatically calibration the minimum current from the valve steering left / right

The calibrated values are checked, if there possible. If a value out of range, it is displayed with an exclamation mark

by the calibrated value.

3. Calibrating the steering angle sensor

3.1 Calibrate steering angle left max.

- Move the steering angle to the max. left position (move it to the left until the steering angle has gone as far as it can).
- Use the rotary potentiometer to select 

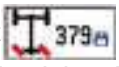
<saved value, maximum steering angle, left>. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- To save the current actual value of the steering angle sensor and exit the input field, press the rotary potentiometer again.
- The actual value or the saved value must not be less than 220. If it is, readjust the sensor.

3.2 Calibrating steering angle - straight-ahead driving

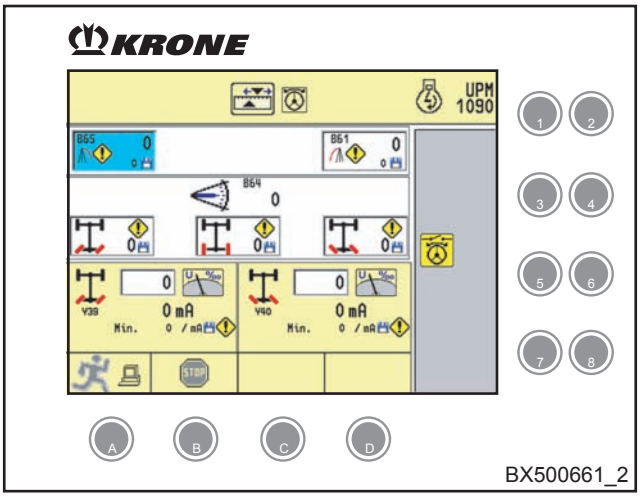
- Move the steering axle to the centre position (move it until the steering is set to straight-ahead driving).
- Use the rotary potentiometer to select 

<saved value, straight-ahead driving>. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- To save the current actual value of the steering angle sensor and exit the input field, press the rotary potentiometer again.
- The actual value or the saved value should be in the range of 400 +/- 10. If it is not, readjust the sensor.

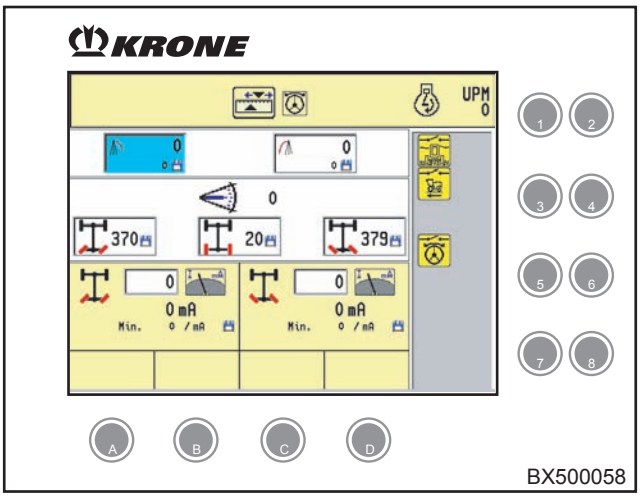
3.3 Calibrating the steering angle - right max.

- Move the steering axle to the max. right position (move it until the steering has gone as far as it can).
- Use the rotary potentiometer to select 

<saved value, maximum steering angle, right>. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- To save the current actual value of the steering angle sensor and exit the input field, press the rotary potentiometer again.
- The actual value or the saved value may not be greater than 630. If it is not, readjust the sensor.



BX500661_2



BX500058

4. Calibrate and select row tracer

The two row tracers right/left must be calibrated together.

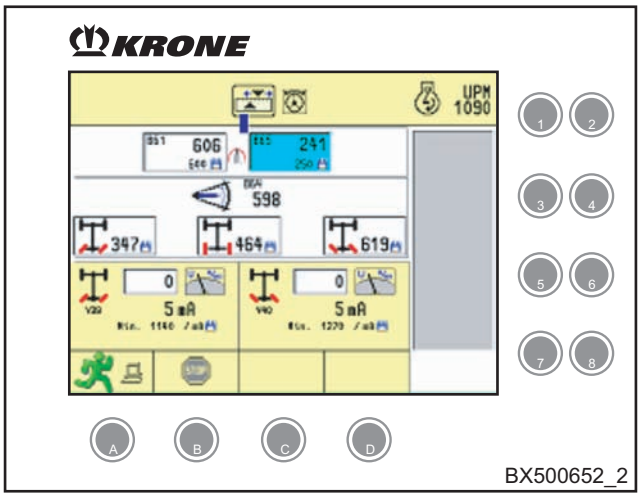
Since the program does not know which sensor brackets are attached to the machine, the row tracers are shown reversed right/left with the central tip (see Fig. BX500618).
Fig. BX500619 shows the display with external sensors.

Selection of row tracer

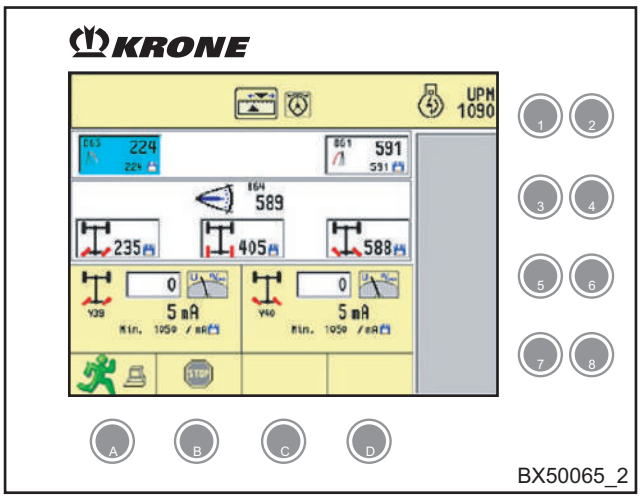
The row tracer in the central tip or in the outside tips can be selected.

- Select parameter 34016 "Autopilot row tracer in central tip"
  0 = outside tip, 1 = central tip. If the parameter is set to 1 accordingly, the mask for calibration see picture BX500652.

The mask for calibration with outside tip see picture BX500651.



BX500652_2



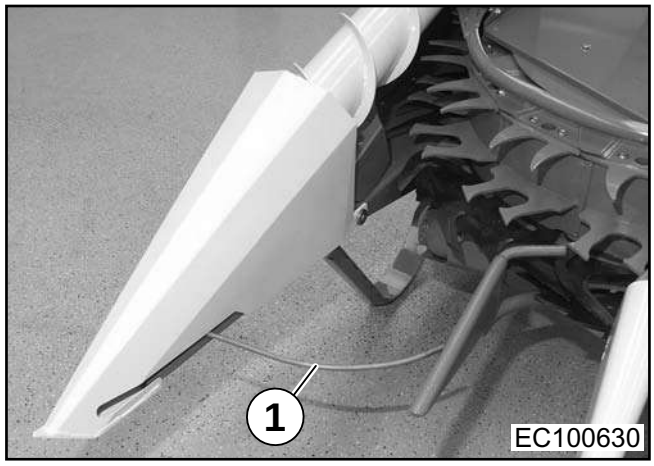
BX50065_2

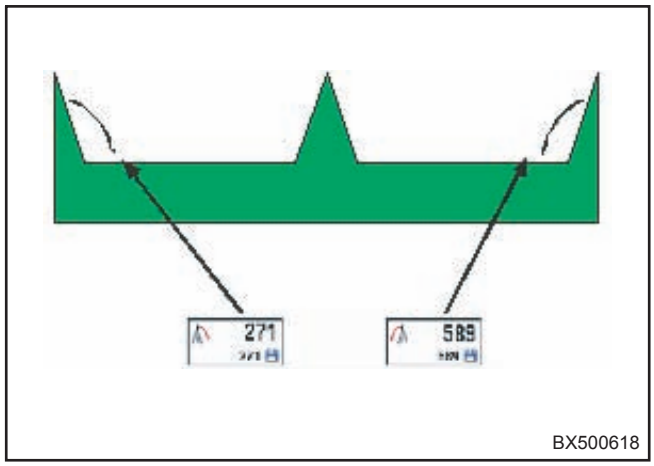
4.1 Calibrate row tracer left

The left row tracer must be in its basic position and must not be actuated.

- You can use the rotary potentiometer to select the setting  or  for the „Left row tracer“. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- To save the current actual value of the current actual value of the left row tracer and exit the input field, press the rotary potentiometer.
- The actual value must be in the range of 250 ±50. If necessary, readjust the sensor.
- When the row tracer has been moved to the limit obstruction, the sensor value must have a difference of 300 - 320.

Actuating <Row tracer left> increases the sensor value.



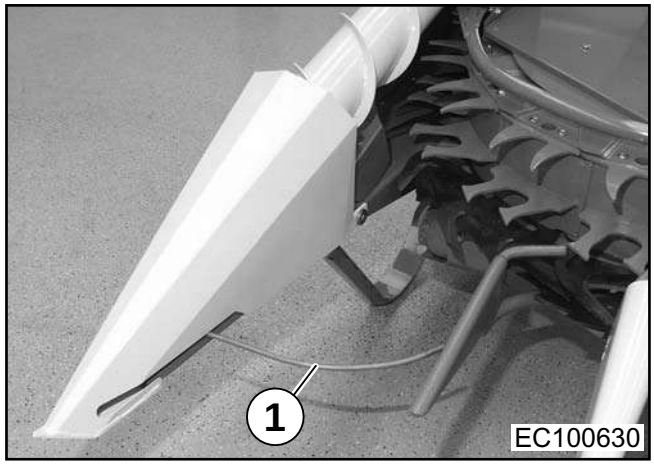


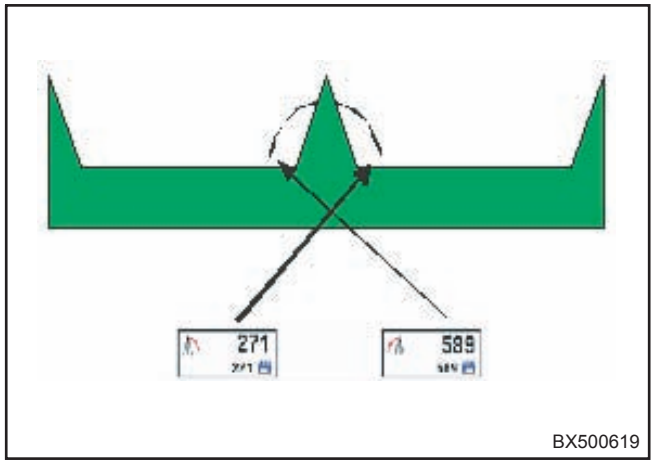
4.2 Calibrate row tracer right

The right row tracer must be in its basic position and must not be actuated.

- You can use the rotary potentiometer to select the setting  or  for the „Right row tracer“. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- To save the current actual value of the current actual value of the right row tracer and exit the input field, press the rotary potentiometer.
- The actual value must be in the range of 590 ±50. If necessary, readjust the sensor.
- When the row tracer has been moved to the limit obstruction, the sensor value must have a difference of 300 - 320.

Actuating <Row tracer right> increases the sensor value.





5. Calibrating of the valves - steering left/right (manually)

Prerequisite

- Move the steering axle to the centre position (move it until the steering is set to straight-ahead driving).

5.1 Minimum current for the valve, steering to the left (manually)

- You can use the rotary potentiometer to select  <Current value valve right> (9) . The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- With the rotary potentiometer, increase the current setpoint value (in increments of 0.01%) of the valve until the steering just starts to move.
  Then with the potentiometer, decrease the setpoint value (in increments of 0.01%), until the steering had just stopped moving.
- To accept the setting as a calibrated value, press the rotary potentiometer.

The saved minimum current value for the left valve  is updated.

- Activating the ● key under the rotary potentiometer cancels the process.

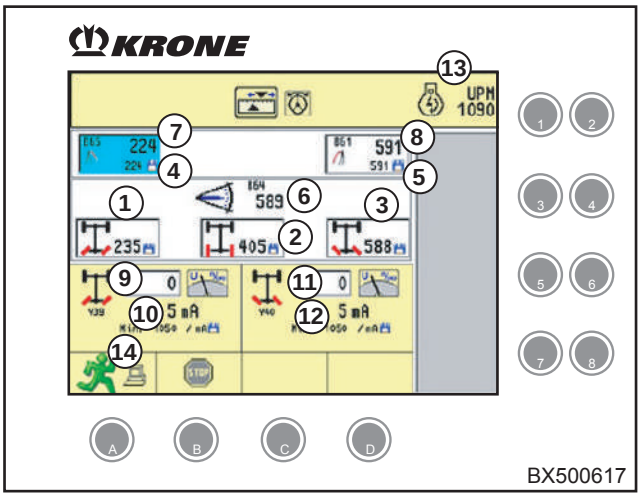
5.2 Minimum current for the valve, steering to the right (manually)

- You can use the rotary potentiometer to select  <Current value valve right> (11) . The input field is highlighted in colour.
- Durch Drücken des Drehpotis in das Eingabefeld springen.
- Mit dem Drehpoti den aktuellen Sollwert (in 0,01%) des Ventiles vergrößern, bis die Lenkung sich gerade bewegt.
  Mit dem Drehpoti dann den Sollwert (in 0,01%) verringern, bis die Lenkung sich nicht mehr bewegt.
- To accept the setting as a calibrated value, press the rotary potentiometer.

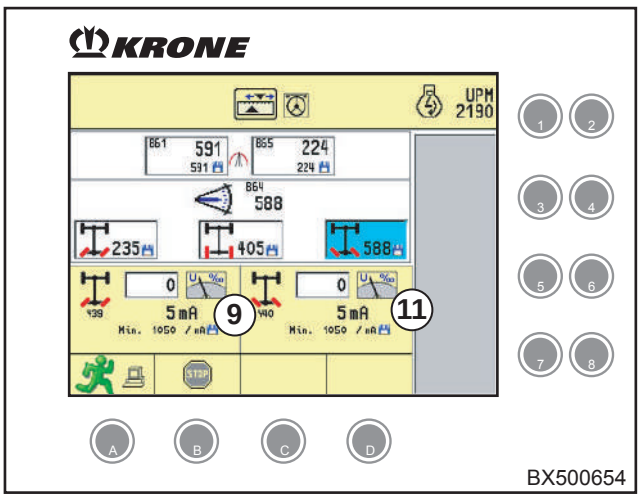
The saved minimum current value for the right valve  is updated.

- Activating the ● key under the rotary potentiometer cancels the process.

Calibration with outside tip



Calibration with centre tip

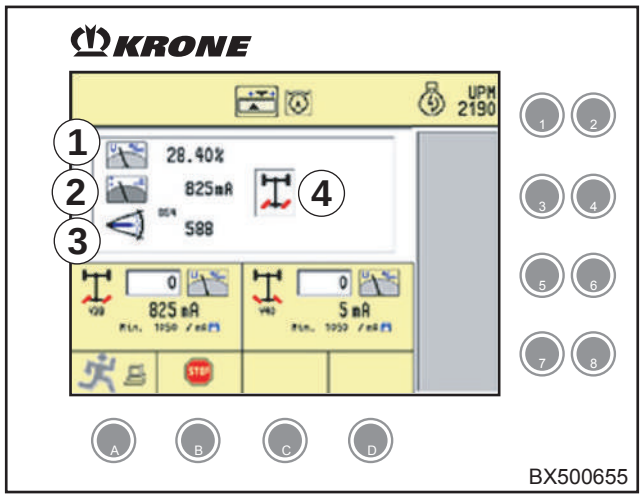


6. Automatic calibration of steering valves left / right

Risk of injury!
The steering axle moves automatically while the steering valves are being calibrated. No one is permitted in the danger zone!

Beginning with Terminal software version 150 200 104 - 08, automatic calibration of minimum valve currents left/right is possible.

Correct calibration of the steering angle sensor is required to start automatic calibration.



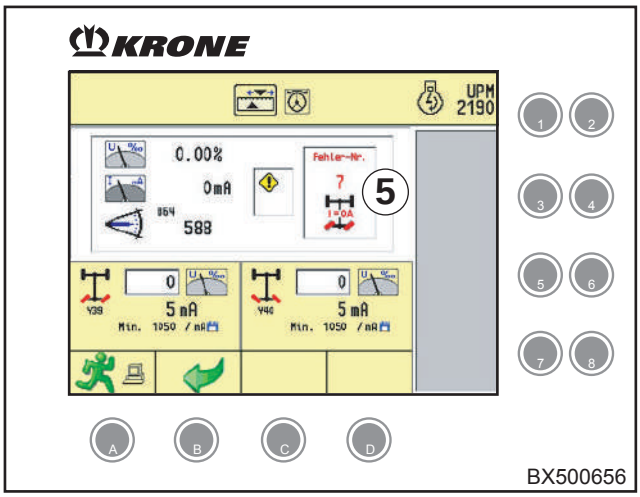
Start the automatic calibration process with the A key. A new window appears.

Item	Meaning
1	Current PWM pulse duty cycle. Voltage expressed as a %; the relevant coil is controlled.
2	Current is presently flowing through the relevant 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 saved. Calibration stopped • If an error occurs, the corresponding error number appears.

Then the valves are immediately controlled automatically. The steering axle moves accordingly.

- The process can be interrupted at any time with the STOP key.
- When calibration has stopped, you can switch back to the previous view with the key.

The automatic calibration process may last several minutes. If minimum currents were successfully determined during automatic calibration, this is indicated by a diskette icon that appears for about 3 seconds.



If an error occurs during calibration, the calibration process is interrupted and the corresponding error appears.

Error number	Icon	Meaning	Cause / remedy
1		The value of steering angle sensor B64 is less that the calibrated value "Steering full left"	• Recalibrate steering angle sensor B64 left, centre and right.
2		The value of steering angle sensor B64 is greater that the calibrated value "Steering full right"	• Recalibrate steering angle sensor B64 left, centre and right.
3		Valve Y39 "Steering left" is controlled. The value of steering angle sensor B64 should therefore also become smaller. However the sensor value has become greater.	• Exchange valves Y39 and Y40 between themselves. Activation is to the left, but steering turns to the right. • Parameter 26027 "Valves reversed" is set incorrectly. • Steering angle sensor B64 is mounted incorrectly • Wrong sensor as steering angle sensor B64.
4		"Steering right" valve is activated. The value of steering angle sensor B64 should therefore also become greater. However, the sensor value has become smaller.	• Valves reversed. Activation is to the right, but steering turns to the left. • Parameter 26027 "Valves reversed" is set incorrectly. • Sensor on the steering axle is mounted incorrectly • Wrong sensor on the steering axle
5		Valve Y39 "Steering left" was activated, but no change was noted on steering angle sensor B64.	• The minimum current that was previously determined automatically is not correct Ò repeat calibration. • Steering angle sensor B64 defective • Steering angle sensor B64 or linkage on steering angle sensor B64 mounted incorrectly. • Hydraulics defective • Hydraulic valve Y39 "Steering left" defective

Error number	Icon	Meaning	Cause / remedy
6		Valve Y39 "Steering left" was activated, but no change was noted on steering angle sensor B64.	• The minimum current that was previously determined automatically is not correct Ò repeat calibration. • Steering angle sensor B64 defective • Steering angle sensor B64 or linkage on steering angle sensor B64 mounted incorrectly. • Hydraulics defective • Hydraulic valve Y40 "Steering right" defective
7 and 9		Broken cable Y39 valve Steering Left	• Broken cable to valve Y39 "Steering left" • Valve coil Y39 defective • Autopilot control defective
8 and 10		Broken cable Y40 valve Steering Right.	• Broken cable to valve Y40 "Steering right" • Valve coil Y40 defective
11		Pressure was detected on pressure sensor B63 "Pressure steering".	• Autopilot control defective • Steering intervention on steering wheel • Pressure sensor B63 defective • Autopilot control defective • Hydraulics defective

7. Functional check of the autopilot

At the standard setting, the automatic pilot does not start working until the speed is 0.7 km/h. To be able to test the automatic pilot even when it is stopped, you can set the parameter „w min speed control on“ (No. 26007) in the „Autopilot“ group to 0.
The minimum speed will be displayed at which the autopilot starts regulating (in 0.1 km/h).

After the functional check is complete, set parameter 26007 back to 7 again (0.7 km/h)!

Risk of injury!

Temporarily fasten straps on the sensor hooks so that hooks can be activated from the side, from a safe distance.
Persons must not stay directly in front of the machine because the travelling gear release switch is switched ON.

- Switch ON the release switches „Travelling gear“, „Road/field“ and „Autopilot“. The cabin door must be closed. There must be no error message present from the autopilot.
- Activate the left crop edge.
- Activate the autopilot and the left sensor hook completely. Turn the steering wheel to the left. If the sensor hook is released to its home position, turn the steering to the right.
- Activate the right crop edge.
- Activate the autopilot and the right sensor hook. Turn the steering wheel to the right. If the sensor hook is released to its home position, turn the steering to the left.
- If the steering is set up exactly backwards, this can be remedied with the „Valves reversed“ parameter (No. 26027) in the autopilot group. To do this, change the value from 0 to 1 if 0 was entered, or from 1 to 0 if 1 was entered.
- Set the parameter„w min speed control on“ (No. 26007) in the „Autopilot“ group back to 7 (0.7 km/h).

4.9.4 Menu 3-5 „Calibration of upper discharge chute“

During the calibration, components may move around, in particular the lifting gear and upper discharge chute - risk of injury!

Prerequisite

- The upper discharge chute must be raised.

The main menu „Maintenance“ is active.

- Select menu 3-5 „Calibration of upper discharge chute“ with the rotary potentiometer.
- Press the rotary potentiometer.

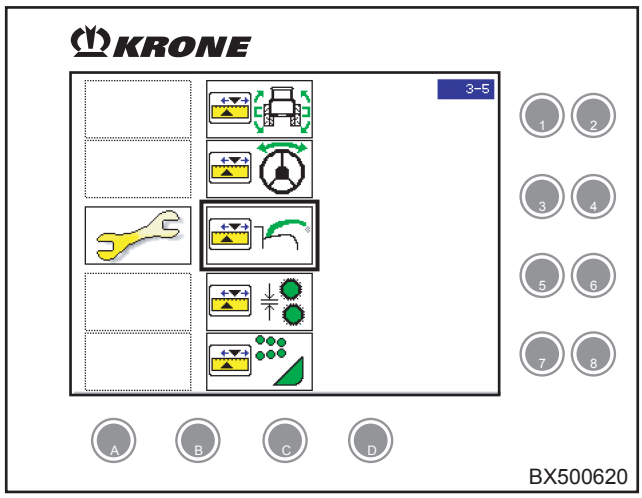
„Calibration of upper discharge chute“ appears.

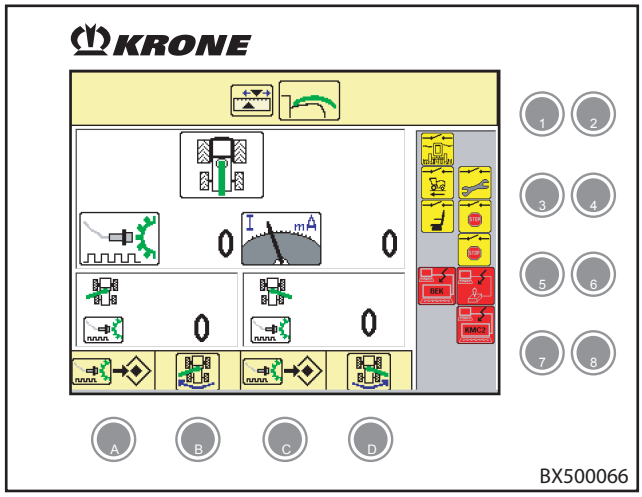
Conditions for release not met

- = Release switch – road/field
- = Travelling gear release switch
- = Seat switch
- = Upper discharge chute not up
- = Maintenance release switch
- = Stop switch for control unit console
- = Stop switch for manual operation

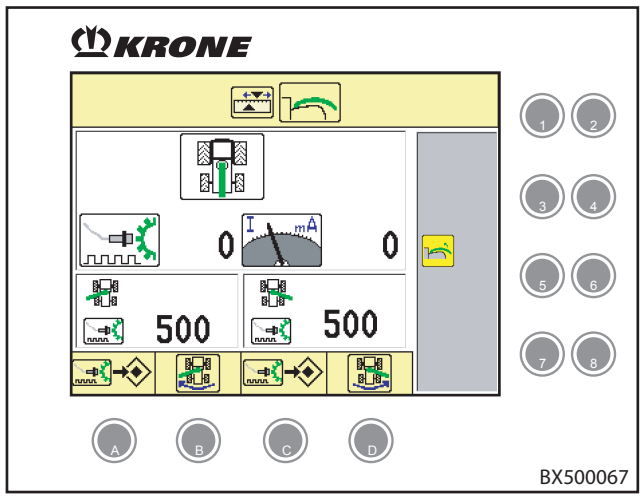
Malfunction

- = CU
- = Joystick
- = KMC2





Upper discharge chute

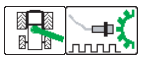


-  = Upper discharge chute up
-  = Upper discharge chute down
-  = Position of upper discharge chute sensor, bottom - broken cable
-  = Position of upper discharge chute sensor, bottom - short circuit
-  = Position of upper discharge chute unknown, lower sensor position may be defective

-  = Upper discharge chute position left
-  = Upper discharge chute position centre
-  = Upper discharge chute position right
-  = Upper discharge chute position unknown, sensor position centre or defective

- The  symbol indicates the current number of pulses for the current side, while the  symbol indicates the momentary current of the upper discharge chute valve for the current direction of rotation.

- The  symbol indicates the saved number of max. pulses for left.

- The  symbol indicates the saved number of max. pulses for right.

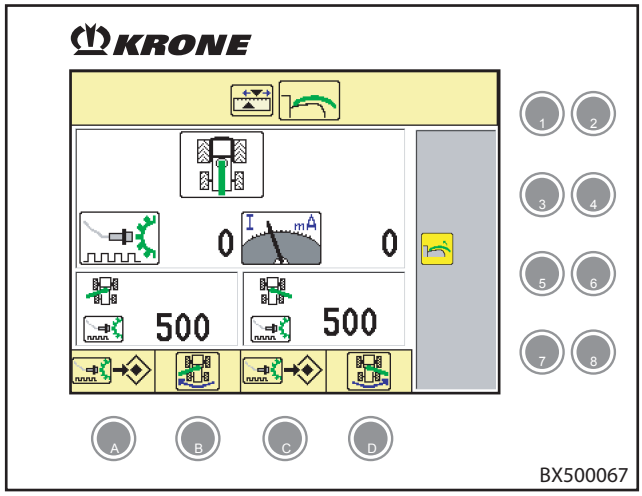
Data requiring calibration

The maximum number of pulses must be determined for left and right.

The individual calibration processes are interrupted by manually operating the upper discharge chute with the key on the multi-function lever and when the driver leaves the driver's seat!

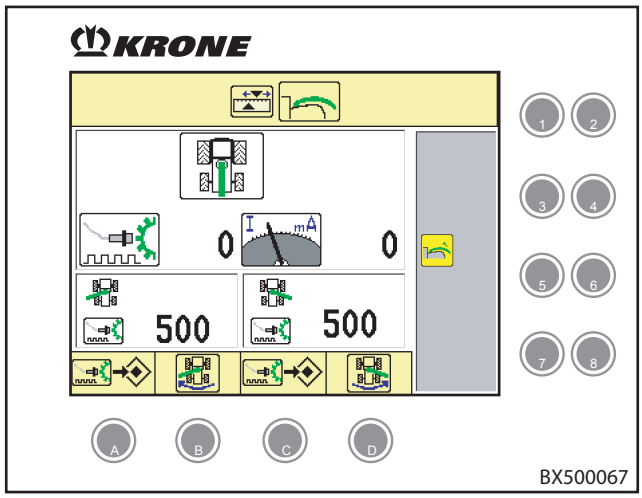
Calibrating the maximum number of pulses to the right

- Move the upper discharge chute all the way to the right manually with the keys on the multi-function lever.
  The upper discharge chute stops when the maximum number of pulses for the side in question has been reached.
- If the upper discharge chute is not reached at the stop, press the D key to continue turning.
  Turning is performed at minimum current.
  Softkey display:
  = Upper discharge chute right turning active
  = Upper discharge chute right turning inactive
  = Upper discharge chute right turning error
- If the upper discharge chute has reached the stop, stop the upper discharge chute by activating the multi-function lever.
- To start calibration, activate the C key under softkey = „Apply max. number of pulses“. The display on the softkey switches to = „Calibration process running“ and = „Calibration process successfully completed“.



Calibrating the maximum number of pulses to the left

- Move the upper discharge chute all the way to the left manually with the keys on the multi-function lever.
  The upper discharge chute stops when the maximum number of pulses for the side in question has been reached.
- If the upper discharge chute is not reached at the stop, press the B key to continue turning.
  Turning is performed at minimum current.
  Softkey display:
  = Upper discharge chute left turning active
  = Upper discharge chute left turning inactive
  = Upper discharge chute left turning error
- If the upper discharge chute has reached the stop, stop the upper discharge chute by activating the multi-function lever.
- To start calibration, activate the A key under softkey = „Apply max. number of pulses“. The display on the softkey switches to = „Calibration process running“ and = „Calibration process successfully completed“.
- Pressing the key on the rotary potentiometer takes you one menu level back.

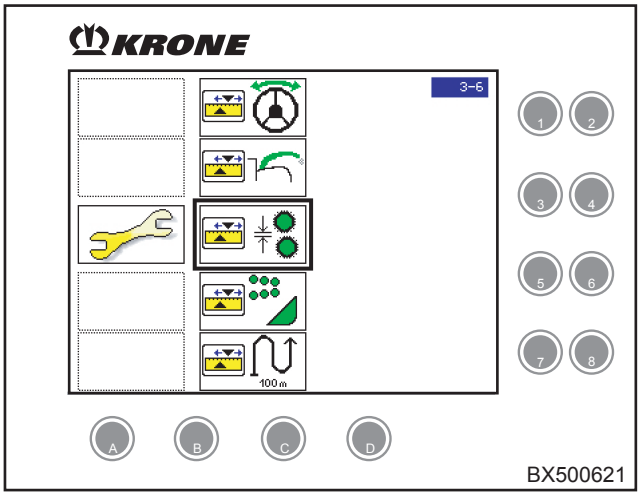


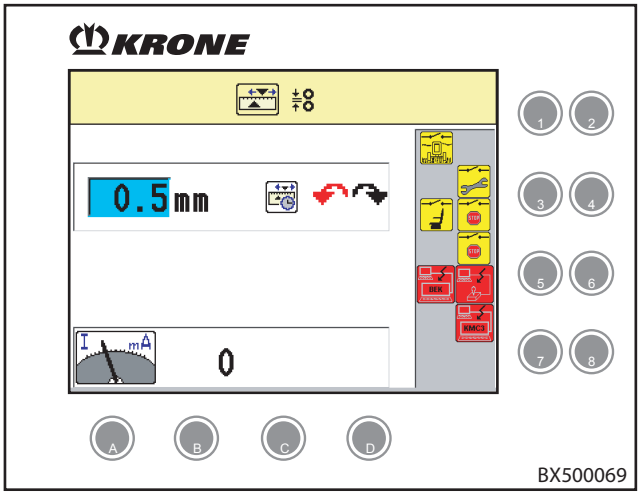
4.9.5 Menu 3-6 „Calibration of grain conditioner“

The main menu „Maintenance“ is active.

- Select menu 3-6 „Calibration of grain conditioner“ with the rotary potentiometer.
- Press the rotary potentiometer.

„Calibration of grain conditioner“ appears.





Conditions for release not met

- = Release switch – road/field
- = Travelling gear release switch
- = Seat switch
- = Maintenance release switch
- = Stop switch for control unit console
- = Stop switch for manual operation

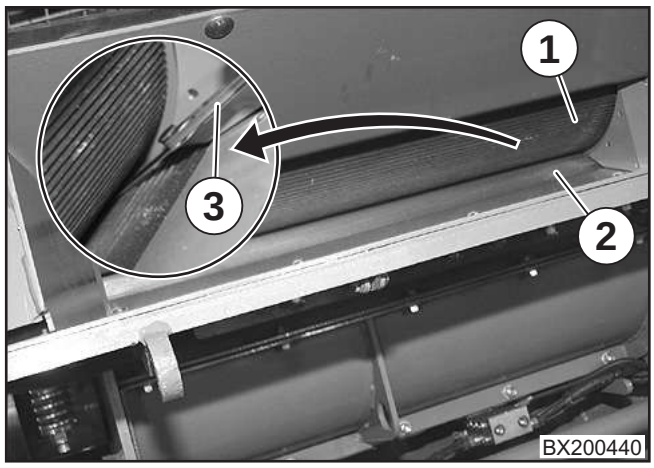
Malfunction

- = CU
- = Joystick
- = KMC2
- = KMC3

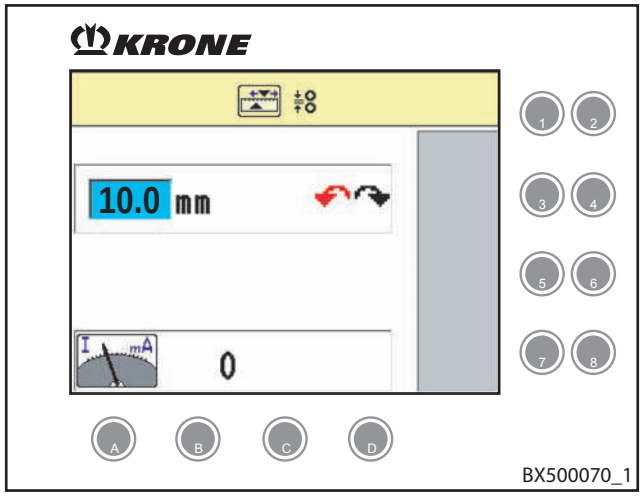
Calibrating the grain conditioner

The grain conditioner should only be calibrated when the grain conditioner is being installed or if the actual value of the grain conditioner distance is significantly different than the setpoint value.

To ensure exact calibration, it is important to determine the exact distance between the two rollers (1, 2) of the grain conditioner with a sensor gauge (3).



The current power consumption of the grain conditioner is indicated by the symbol  . It is required for diagnostic purposes by the Krone service technicians.



- Measure the grain conditionerdistance on the machine (actual value).
- You can use the rotary potentiometer to select the setting for the „Distance“. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can use the rotary potentiometer to set the distance to the measured actual value  .
- Pressing the rotary potentiometer allows you to exit the input field.
- The display on the softkey switches to  = „Calibration process running“ an  = „Calibration process successfully completed“.
- Press the 3 or 4 key to decrease or increase or reduce the grain conditioner distance.
- Pressing the key on the rotary potentiometer takes you one menu level back.

4.9.6 Menu 3-7 „Calibration of Feed Drive/Front Attachment“

The main menu „Maintenance“ is active.

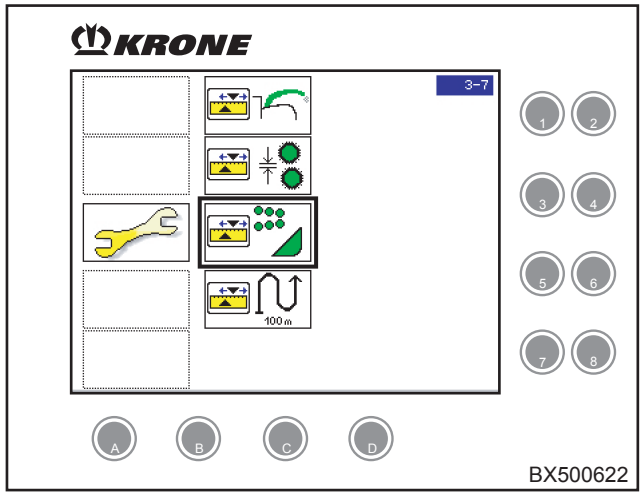
- Select menu 3-7 „Calibration of feed drive/front attachment“ with the rotary potentiometer.
- Press the rotary potentiometer.

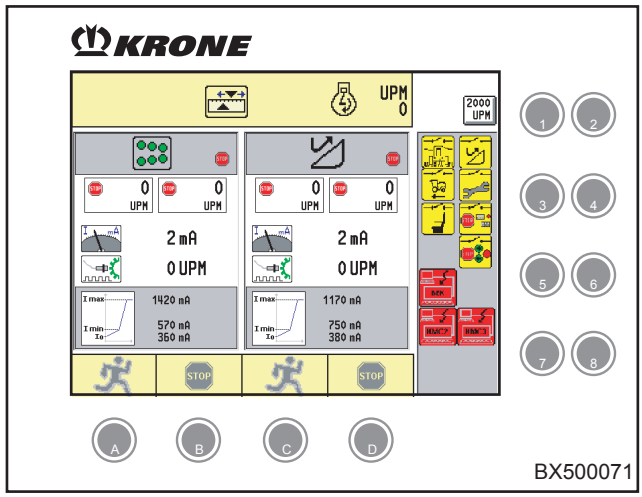
„Calibration of feed drive/front attachment“ appears.

Display of Symbol (1):

= Central lubrication active (green)

= Error in central lubrication (red)





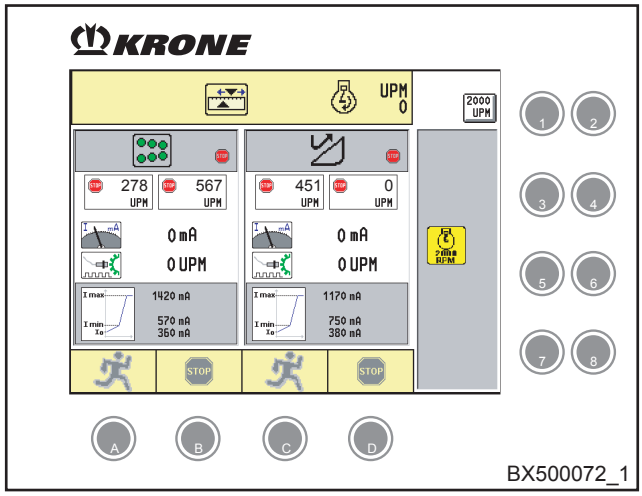
Conditions for release not met

- = Release switch – road/field
- = Travelling gear release switch
- = Seat switch
- = Diesel engine speed
- = Release switch – feed drive/front attachment
- = Maintenance release switch
- = Stop switch for control unit console
- = Stop switch for manual operation

Malfunction

- = CU
- = Joystick
- = KMC2
- = KMC3

Calibrating the front attachment



The front attachment should be calibrated only, when the actual speed massively deviated from the setpoint speed (by technician or after replacement of the job computer).
After the front attachment is calibrated, the feed drive should also be calibrated.

Prerequisites

- Travelling gear release switch off
- Release switch for feed drive/front attachment on

The front attachment must be stopped.
The engine speed must be 2000 rpm.
You can increase the engine speed to 2000 rpm with the (2) key.
Depending on the type of diesel engine, the setpoint speed may deviate during calibration.

- To start calibration for the front attachment, activate the (C) key under softkey .

The Y7 valve „Front attachment forward“ is activated.
The front attachment should start to turn after a brief time.
The calibration process lasts up to 120 seconds. If the necessary data cannot be determined during this time, the calibration process is interrupted.

- Use the (D) or STOP key under the softkey to abort the calibration.

- The progress display after the icon for the front attachment indicates the status:

  STOP = Calibration has been stopped
  = Calibration is running
  = Calibration was successful
  = Calibration was not successful

- The symbol is used to indicate the present current of valve Y7 „Front attachment forward“ in mA.

- The symbol is used to indicate the current speed of the front attachment.

- The speeds are indicated for support values 1 and 2 of the calibration:

Speed (support value) 1:

= Calibration 1 has been stopped

= Calibration 1 is running

= Calibration 1 was successful

= Calibration 1 was not successful

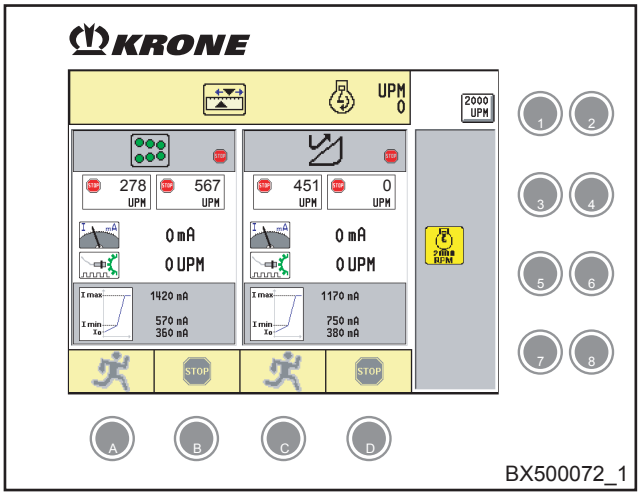
Speed (support value) 2:

= Calibration 2 has been stopped

= Calibration 2 is running

= Calibration 2 was successful

= Calibration 2 was not successful



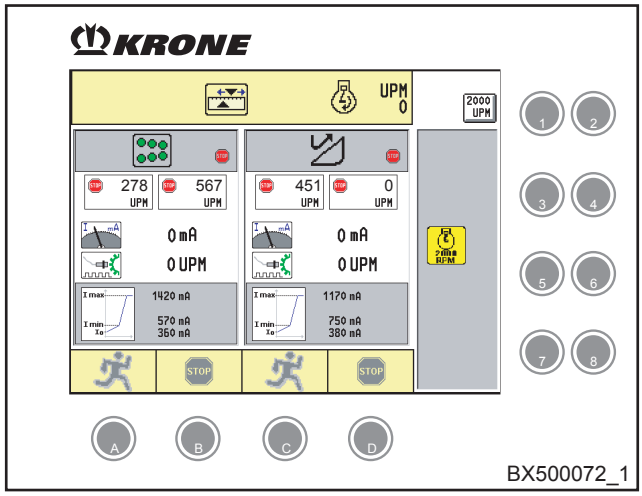
Display stopped; current power consumption and engine speed are at 0.
The calibration is complete.

•The power consumption display is updated:

I 0 = Power consumption when turning is started.
I min = Power consumption at minimum speed.
I max = Power consumption at maximum speed.

- Pressing the key on the rotary potentiometer takes you one menu level back.

Calibrating the feed drive



The feed drive should be calibrated together with the front attachment and should not be performed if the actual cutting length is different from the displayed cutting length.

Prerequisites

- Travelling gear release switch off
- Release switch for feed drive/front attachment on

The feed drive must be at a standstill.
The engine speed must be 2000 rpm.
The engine speed can be increased to 2000 rpm with the (2) key.

- To start calibration for the feed drive, activate the (A) key under softkey .

The Y5 valve „Feed drive forward“ is activated. The front attachment should start to turn after a brief time. The calibration process lasts up to 120 seconds. If the necessary data cannot be determined during this time, the calibration process is interrupted.

- Use the (B) or STOP key under the softkey to abort the calibration.
- The display after the icon for the feed drive indicates the status:
  - STOP = Calibration has been stopped
  - = Calibration is running
  - = Calibration was successful
  - = Calibration was not successful
- The symbol is used to indicate the present current of valve Y5 „Feed drive forward“ in mA.
- The symbol is used to indicate the current speed of the feed drive.

- The speeds are indicated for support values 1 and 2 of the calibration:

Speed (support value) 1:

= Calibration 1 has been stopped

= Calibration 1 is running

= Calibration 1 was successful

= Calibration 1 was not successful

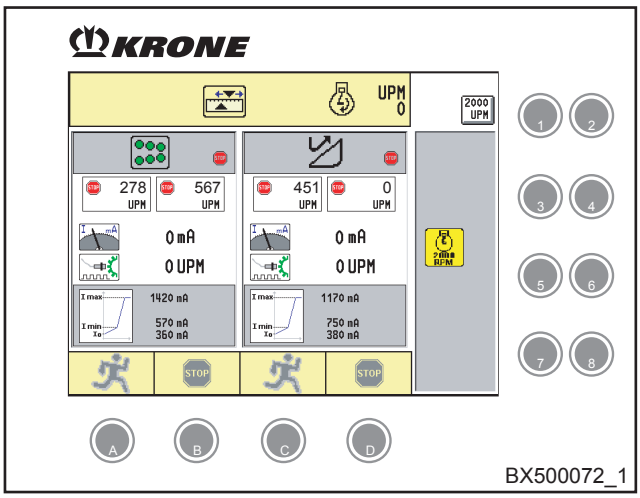
Speed (support value) 2:

= Calibration 2 has been stopped

= Calibration 2 is running

= Calibration 2 was successful

= Calibration 2 was not successful



Display stopped; current power consumption and engine speed are at 0.
The calibration is complete.

•The power consumption display is updated:

I 0 = Power consumption when turning is started.
I min = Power consumption at minimum speed.
I max = Power consumption at maximum speed.

- Pressing the key on the rotary potentiometer takes you one menu level back.

4.9.7 Menu 3-8 „Calibration of Travel Path“

It may become necessary to calibrate the travel path in order to calculate the exact surface area of the new field you are working.

Before you start to calibrate the travel path, you must cover a travel distance of between 50 m and 200 m.

Calibrating the travel path involves 2 work steps.

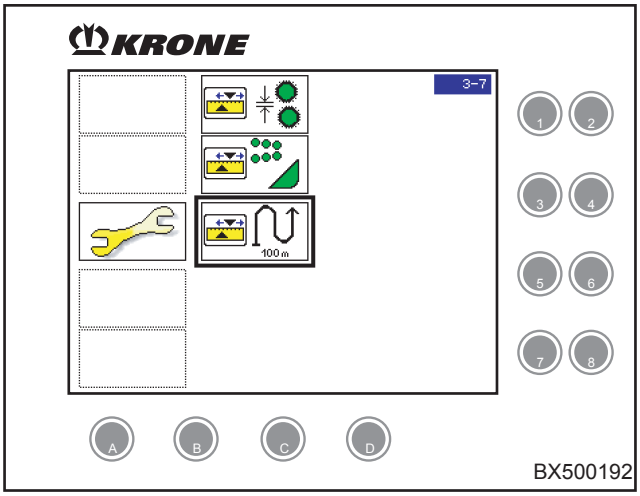
1.) The first calibration trip of the distance covered at V1= 4 km/h (for example)
2.) The second calibration trip of the distance covered at V2= 8 km/h (for example)

The main menu „Maintenance“ is active.

- Select menu 3-8 „Calibration of travel path“ with the rotary potentiometer.

- Press the rotary potentiometer.

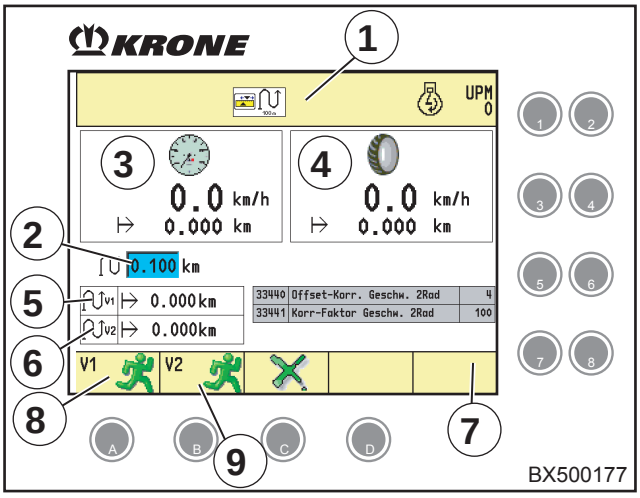
The “Calibrate travel path” menu appears.



Explanation of the display:

1= Indicates the selected travel mode:

- Road operation, 2-wheel
- Field operation 2-wheel
- Field operation 4-wheel



2= Input field for the travel path covered (value between 50 m and 200 m).
3= Travel speed extracted from the basic screen.
4= Travel speed measured on the wheel.

The travel speed of (4) may differ from the travel speed of (3), since the calculated speed accounts for tyre pressure and slippage.

5= Display for the first calibration trip of the travel path covered.
6= Display for the second calibration trip of the travel path covered.
7= The 8 key is used to save the parameters calculated from the first and second calibration trips.

8= Start or stop of the first calibration trip
9= Start or stop of the second calibration trip

Explanation of symbols for item 8+9:

Calibration trip 1 or 2 is stopped.

Start calibration trip 1 or 2 with the A or B key.

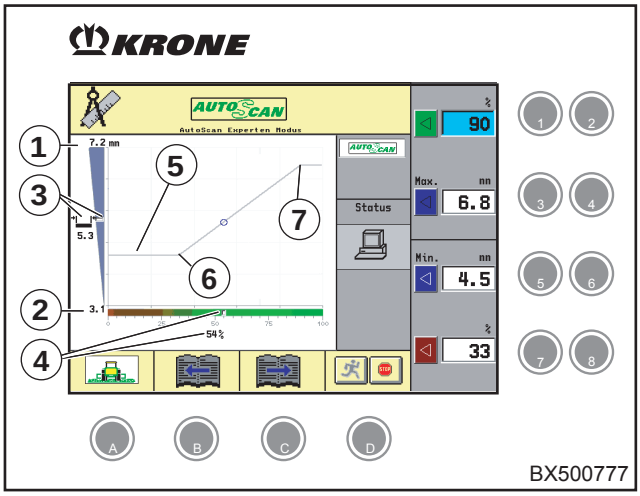
STOP Calibration trip 1 or 2 is started.

Stop calibration trip 1 or 2 with the A or B key.

Calibration trip 1 or 2 has been successfully completed. Calibration trip 1 or 2 can be started again with the A or B key.

10= The C key sets the travel path to zero.

- Pressing the key on the rotary potentiometer takes you one menu level back.



4.9.7.1 Performing a calibration trip (field mode with 2-wheel drive)

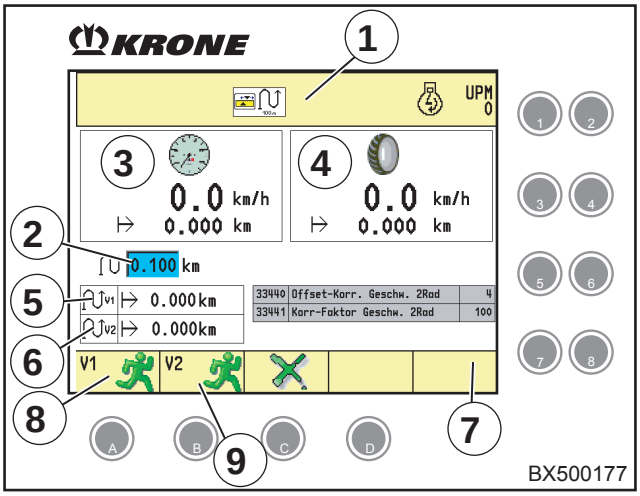
- Bring up the „Calibration of travel path“ menu
- The „Road/Field“ release switch must be in position (II) field mode
- „All-wheel drive“ release switch = OFF
- „Axle separation“ release switch = OFF

If one of the release switches named above is switched during the calibration trip, all values not saved until then will be deleted. The calibration trip must be performed again.

- Using the rotary potentiometer, select input field (2); the input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to input field (2).
- Using the rotary potentiometer, set the value of the previously measured travel path in input field (2).

First calibration trip:

- Move up to the starting line of the measured travel path with the machine.
- Activate the first calibration (V1 in field (5)) with the A key.
- Drive the measured travel path at an approximately constant driving the speed (for example 4 km/h)



The display shows the average speed in the field (5) and the travel path covered so far.

At the end of the measured travel path, press the A key to save the average speed and the travel path actually covered.

The symbol (8) Calibration trip 1 saved appears in the display.

If the symbol does not appear, perform calibration trip 1 again.

Second calibration trip:

The second calibration trip is performed at twice the speed of the first calibration trip (in this example at 8 km/h).

- Move up to the starting line of the measured travel path with the machine.
- Activate the second calibration (V2 in field (6)) with the B key.

- Complete the measured travel path at twice the speed of the first calibration trip **(in this example at 8 km/h).** Make certain to maintain an approximately constant travel speed.

The display shows the average speed in the field (6) at the travel path covered so far.

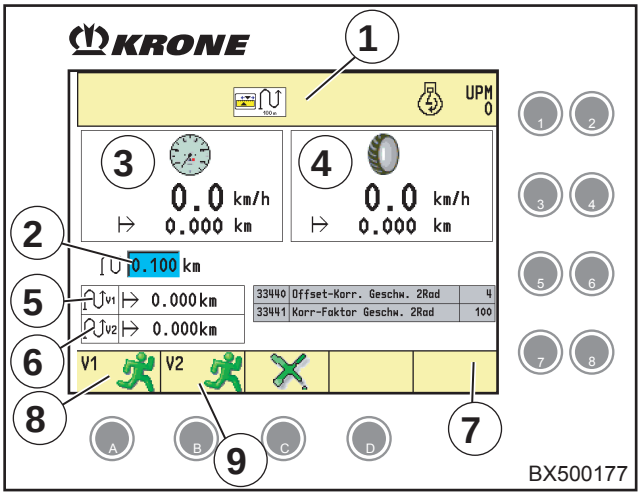
At the end of the measured travel path, press the B key to save the average speed and the travel path actually covered.

The symbol (9) Calibration trip 2 saved appears in the display.

If the symbol does not appear, perform calibration trip 2 again.

As soon as both calibration trips have been successfully saved and the system can determine possible parameters, the symbol appears in the display. The 8 key saves the parameters that have been calculated to EEPROM.
The temporarily stored values from the first and second calibration trip are reset by the system.

If the system is unable to determine any reasonable parameters from the calibration trips that were saved, the symbol does not appear in the display.
Then the calibration trips must be performed again.



4.9.7.2 Performing a calibration trip (field mode with all-wheel drive)

Repeat the calibration process for all-wheel drive. The process is identical to the one in chapter „Performing a Calibration Trip (Field Mode with 2-Wheel Drive)“

The only difference is that the „All-wheel drive“ release switch must he set to the „ON“ position.

4.9.8 Menu 3-9 „Calibration of RockProtect“

The main menu „Maintenance“ is active.

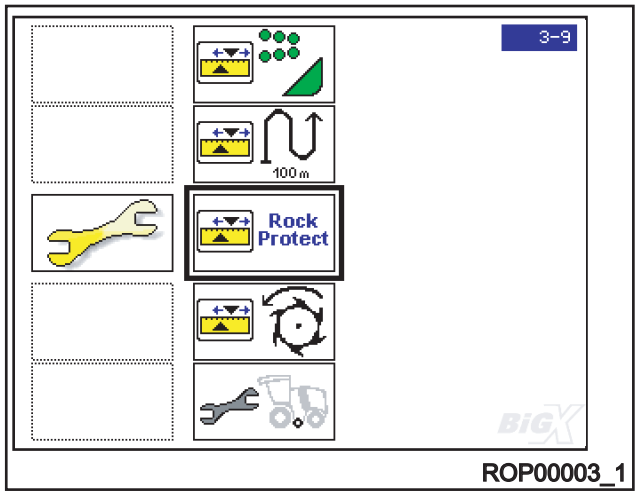
- Select menu 3-9 „Calibration of RockProtect“ with the rotary potentiometer.
- Press the rotary potentiometer.

„Calibration of RockProtect“ appears.

The current voltage value of the sensor is displayed according to the configuration .

The calibrated voltage value of the sensor is displayed according to the configuration.

Any release conditions that have not been fulfilled are displayed in the area highlighted in grey, if applicable. Before starting the calibration, make sure that the front attachment is in the harvest position. In addition, the feed drive must be free from crop and the pre-compression rollers must rest against the bottom limit stop. The feed drive may not be switched on.



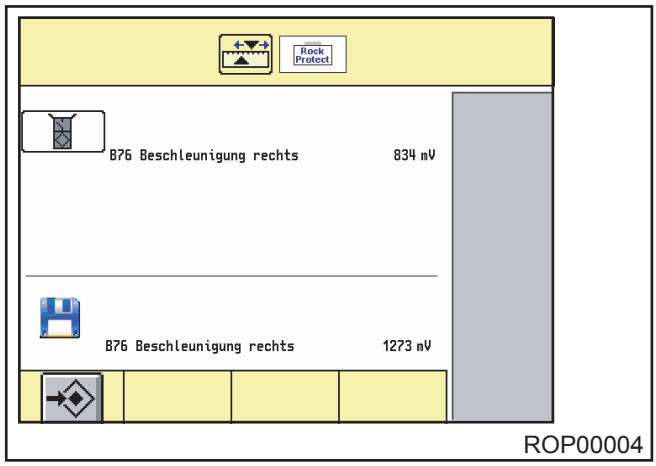
- Press the key under the softkey to start the calibration.

The display on the softkey shows an active or completed calibration process, if applicable:

= Calibration process inactive

= Calibration process active

= Calibration process successfully completed



4.9.9 Menu 3-10 "Calibration of main coupling"

Risk of injury !
While the main coupling valve is being calibrated, the cutting drum starts running automatically!

As of software version 150 200 104-08 the valve current can be calibrated for the main coupling.

Prerequisites:

In order to be able to calibrate the speeds, the following conditions have to be fulfilled:

- Quick-stop switch - panel: OFF
- Quick-stop switch – manual operation: OFF
- Travelling gear release switch: OFF
- Road/field switch: ON
- Maintenance release switch: OFF
- The driver must be sitting on the driver's seat.
- The door must be closed.

If one of these conditions has not been fulfilled, a corresponding symbol is displayed on the terminal.

The keys which must be pressed are displayed on the graphics
The terminal keys must be pressed.

When calibrating the main coupling, observe the sequence of the work steps.

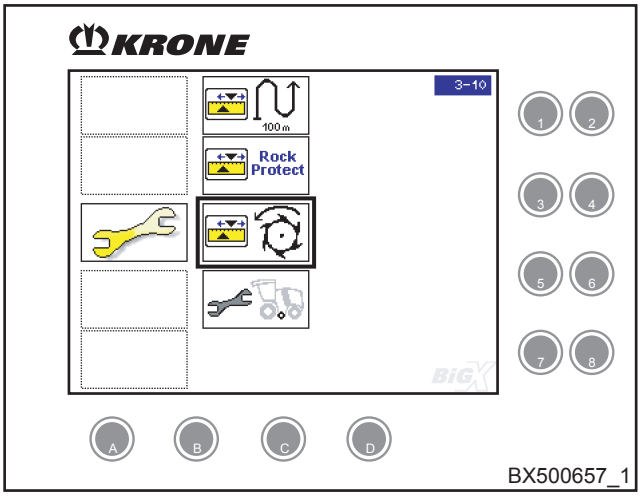
Work steps:

Risk of injury!
During the calibration process components may move, in particular the cutting drum.

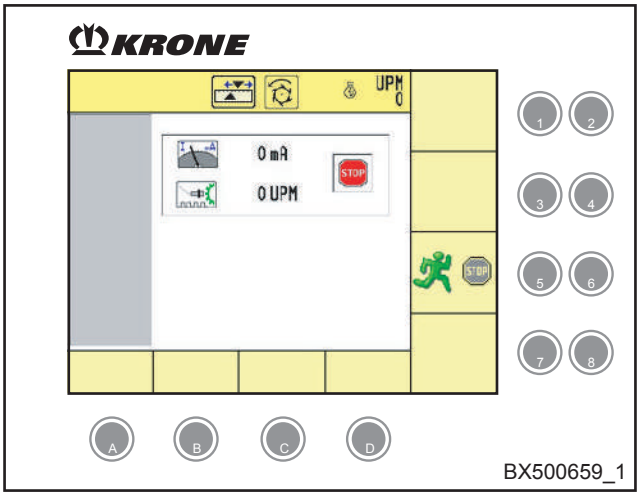
The main menu "Maintenance" is active.

1. Select menu 3-10 "Calibration of main coupling" with the rotary potentiometer.

2. Press the rotary potentiometer.



Conditions for release not met



Field release switch not in position <ON>.

To start the calibration process, the switch must be in the <ON> position.

Travelling gear release switch not in <OFF>

position. To start the calibration process, the switch must be in the <OFF> position.

Maintenance release switch is not in the

<OFF> position. To start the calibration process, the switch must be in the <OFF> position.

The seat switch has not been actuated. To

start the calibration process, there must be a person on the seat.

The quick-stop switch on the panel of the cab

has been actuated. To start the calibration process, the switch must **not** be actuated.

The quick-stop switch in manual operation

has been actuated. To start the calibration process, the switch must **not** be actuated.

The door has not been closed. To start the

function, the door must be **closed** .

When all conditions have been fulfilled for calibration of the main coupling, no symbols are displayed in the left screen area.

3. Starting the calibration process

When all conditions have been fulfilled and the symbol  is displayed, the calibration process can be started:

- Press the (5) key.

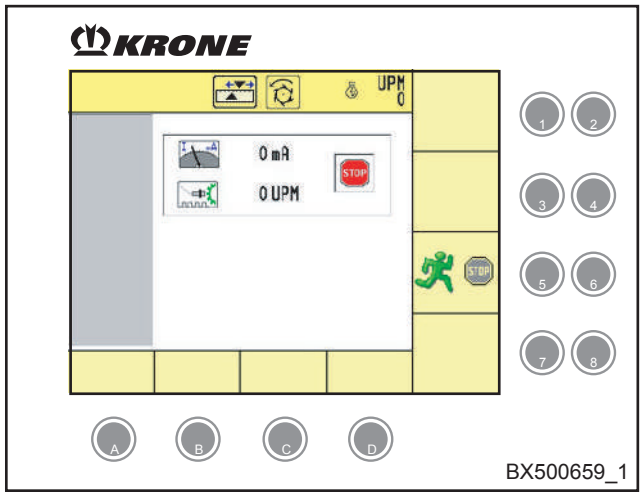
  The current of the "main coupling ON" flows through the valve Y12 in mA
The speed of the cutting drum in r.p.m.

- When a rotation of the cutting 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 cutting drum, the automatic calibration process is stopped at 1400 mA.

If no current is measured, e.g. because the valve cable is broken, the calibration process is also interrupted and an error message is displayed.

- To stop the calibration process, press the (6) key.



The following conditions are possible during the calibration process:

 The calibration process has been stopped

 The calibration process is running

 A speed of the cutting drum has been measured. The values have been saved.

 The calibration process was concluded successfully.

 The speed of the diesel engine in r.p.m.

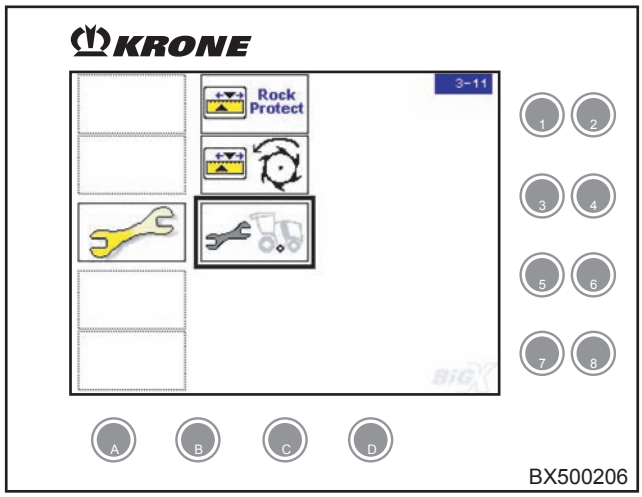
 All conditions for automatic calibration of the main coupling have been fulfilled. The calibration process can be started with the key (A) below.

 The calibration process is running and can be stopped with the key below. No values are saved.
or:
The calibration process cannot be started because e.g. one or more conditions have not been fulfilled.

4.9.10 Menu 3-11 "Maintenance of additional axle"

The main menu „Maintenance“ is active.

- Select menu 3-11 „Maintenance of additional axle“ with the rotary potentiometer.
- Press the rotary potentiometer.

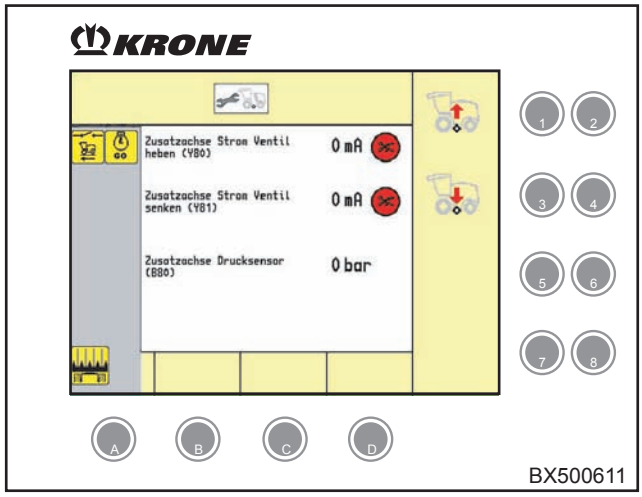


BX500206

Submenu „Maintenance of additional axle“ appears. The following conditions must be met to be able to raise or lower the additional axle:

- The diesel engine must be running.
- Release for the travelling gear must be turned off.

When all conditions for raising or lowering the additional axle have been met, no symbols appear in the left screen area.



BX500611

The additional axle can now be raised or lowered manually:

- Raise the additional axle with the (1) or (2) keys.
- Lower the additional axle with the (3) or (4) keys.

The hydraulic pressure in the hydraulic cylinder of the additional axle (Sensor B80) is displayed at the same time.

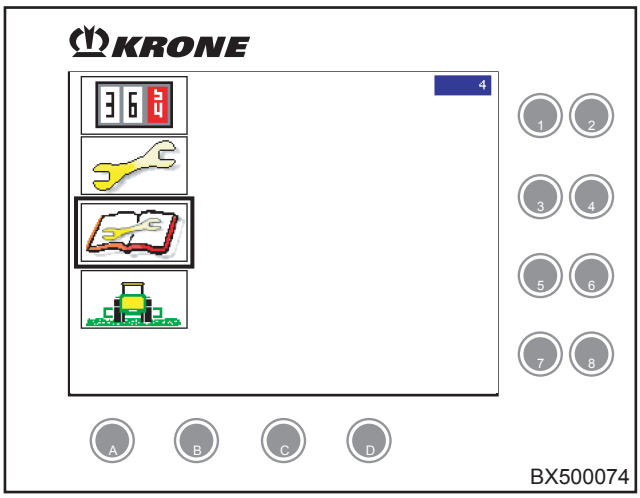
Conditions for release not met

- 

Diesel engine not started. The diesel engine must be started to activate the additional axle manually.
- 
Release switch for travelling gear not in the <OFF> position. The switch must be in the <OFF> position to activate the additional axle manually

- Pressing the key (C) on the rotary potentiometer takes you one menu level back.

4.10 Main Menu 4 Service



The main menu level is active.

- Select the main menu with the rotary potentiometer.
- Press the rotary potentiometer.

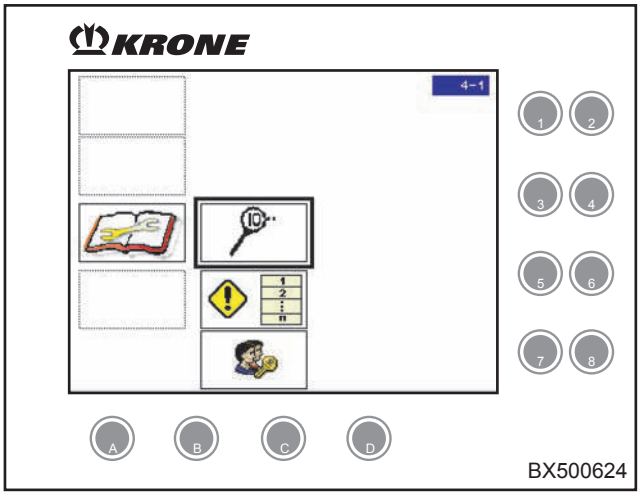
The display shows menu level 4 „Service“.

The main menu „Service“ is divided up into four menus:

-  = Menu 4-1 „Diagnostics“
-  = Menu 4-2 „Error list“
-  = Menü 4-3 „Fitter’s section (password-protected“)
-  = Menu 4-4 „Information“

- Pressing the  key on the rotary potentiometer takes you one menu level back.

4.10.1 Menu 4-1 „Diagnostics“



The main menu level is active.

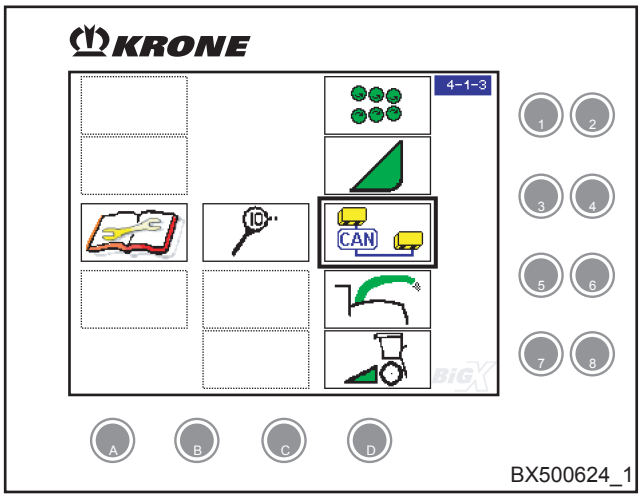
- Select main menu 4-1 with the rotary potentiometer.
- Press the rotary potentiometer.

The display shows menu level 4-1 „Diagnostics“.

The main menu, „Diagnostics“, is divided up into these menus:

-  = Menu 4-1-1 „Feed drive“
-  = Menu 4-1-2 „Front attachment“
-  = Menu 4-1-3 „CAN bus“
-  = Menu 4-1-4 „Discharge chute“
-  = Menu 4-1-5 „Lifting gear“
-  = Menu 4-1-6 „Drive“
-  = Menu 4-1-7 „Metal detection“
-  = Menu 4-1-8 „Diesel engine“
-  = Menu 4-1-9 „Autopilot“

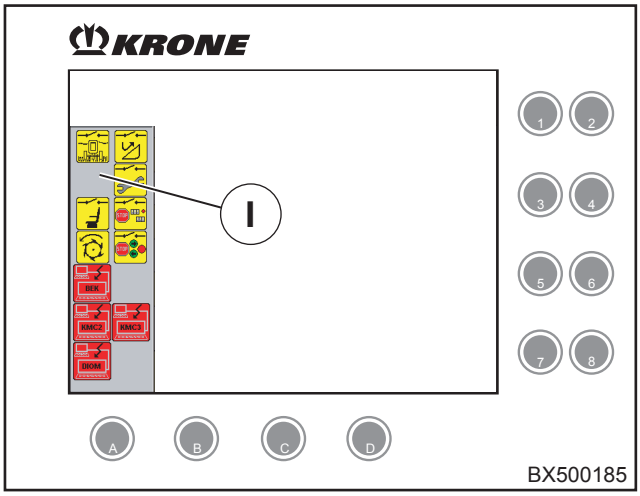
-  = Menu 4-1-10 „Autoscan“
-  = Menu 4-1-11 „Electronics“
-  = Menu 4-1-12 „Work“
-  = Menu 4-1-13 „Grinding“
-  = Menu 4-1-14 „Counterblade“
-  = Menu 4-1-15 „Grain conditioner“
-  = Menu 4-1-16 „Joystick“
-  = Menu 4-1-17 „Control unit console“
-  = Menu 4-1-18 „Manual operation“
-  = Menu 4-1-19 „Terminal“
-  = Menu 4-1-20 „RockProtect“
-  = Menu 4-1-21 „Humidity measurement“
- Pressing the  key on the rotary potentiometer takes you one menu level back.



4.10.1.1 Display of Release Conditions Not Met for Diagnostics

Menu field (I) shows conditions that have not yet been met but which must be met to be able to perform diagnostics. An appropriate remedy must be found in each case.

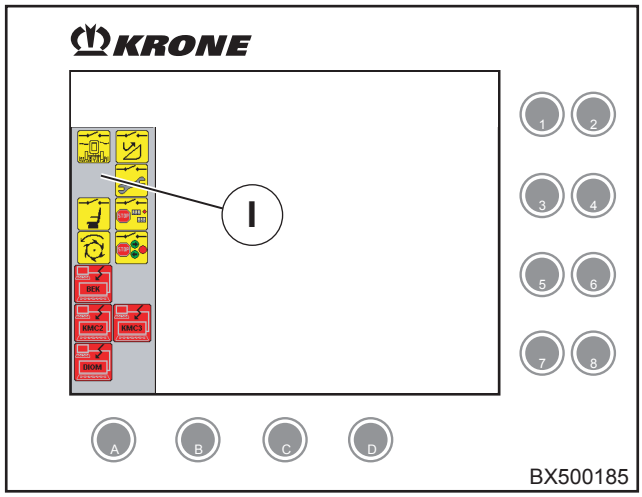
- = Diesel engines1 and 2 not running synchronously
- = Diesel engine coupling engaged or disengaged
- = Diesel engine speed not at 2000 rpm
- =Diesel engine has not been started
- =Diesel engine is not off
- = Diesel engine idle speed of 1100UPM not reached
- =Speed of vehicle is not correct
- = Actuate button release axle separation
- = Switch the all-wheel release switch on or off
- = Switch the release switch autopilot on or off
- = Switch the second diesel engine release switch on or off
- = Switch the feed drive/front attachment release switch on or off
- = Switch the travelling gear release switch on or off
- = Switch the road/field release switch on or off
- = Switch the parking brake release switch on or off



- = Seat switch (driver's seat is unoccupied)
- = Stop switch in the console on or off
- = Manual operation stop switch on or off
- = Open or close door
- = Switch the maintenance release switch on or off
- = Main coupling on/off.
- = Lifting gear too high/not high enough
- = Lifting gear too low/not low enough
- = Upper discharge chute not parked
- = Upper discharge chute not up
- = Feed drive off / not off
- = Feed drive on / not on
- = Cutting drum running / not running
- = Cutting drum stopped / not stopped
- = Pendulum frame not in horizontal position
- = Grinding flap closed
- = Grinding flap open
- = Front attachment not folded out
- = Front attachment not folded in
- = Front attachment off / not off
- = Front attachment on / not on
- = Grass mode not set
- = Maize mode not set
- = XDisc mode not set

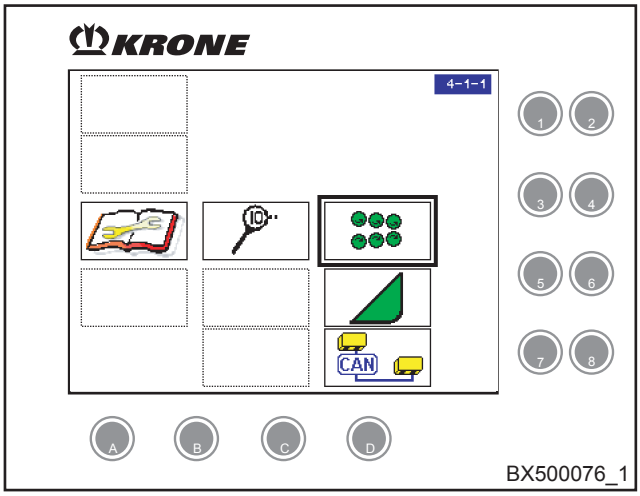
4.10.1.2 Display of possible faults for diagnostics

The faults listed below may appear in menu field (I).



-  = Error CAN to ADM 1
-  = Error CAN to ADM 2
-  = Error CAN to Autopilot
-  = Error CAN to CU
-  = Error CAN to DIOM
-  = Error CAN to EMR
-  = Error CAN to manual operation
-  = Error CAN to Joystick
-  = Error CAN to KMC2
-  = Error CAN to KMC3
-  = Error CAN to metal detection
-  = Error CAN to maturity detection
-  = Error CAN to SD

4.10.2 Menu 4-1-1 „Feed Drive“



The main menu „Diagnostics“ is active.

- Select menu 4-1-1 „Feed drive“ with the rotary potentiometer.
- Press the rotary potentiometer.

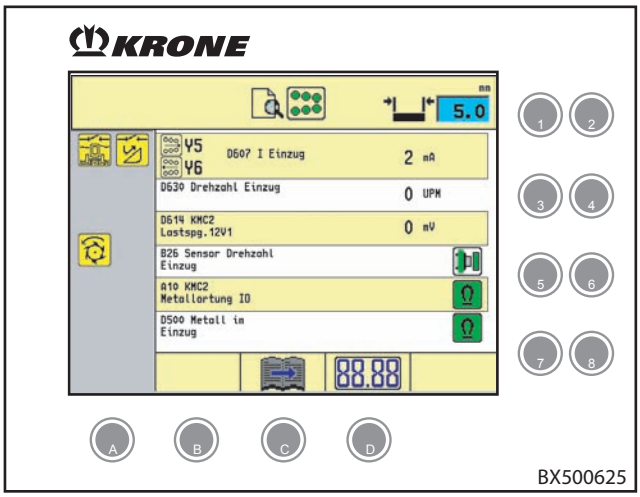
„Feed drive diagnostics“ appears.

For release conditions (1) not met see chapter „Display of Release Conditions Not Met for Diagnostics“

For faults (1) see chapter „Display of Possible Faults for Diagnostics“

The menu „Feed drive diagnostics“ is divided into 2 pages:

Page 1: Sensor test
Page 2: Actuator test

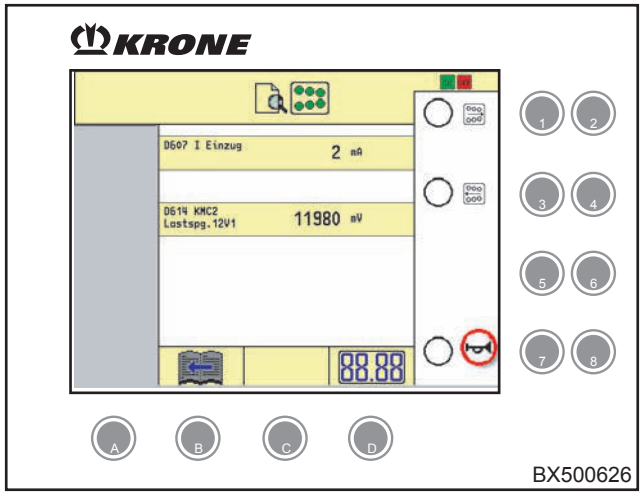


Sensor test (page 1)

- = Error (symbol will be displayed after the incorrect position)
- = Broken cable sensor
- = Sensor alive
- = Sensor not alive
- = Sensor short circuit
- = Metal detection inactive (no medal in the feed drive)
- = Metal detection active (metal in the feed drive)

Press the C key under the softkey to bring up page 2 <Actuator test> of the „Feed drive“ menu.

Actuator test (page 2)



- = Feed drive forward inactive
- = Feed drive forward active (green)
- = Feed drive forward free
- = Feed drive forward error (red)
- = Feed drive rear inactive
- = Feed drive reverse active (green)
- = Feed drive rear free
- = Feed drive reverse error (red)
- = Horn off
- = Hornon (green)
- = Horn brokencable (red)
- = Horn shortcircuit (red)

Switching actuators on/off

Pre-condition: Conditions for release must be met. (See Section „Display of release conditions not met for diagnostics“).

- When all conditions have been met for the actuator test, the ON and OFF softkeys will be displayed and the displayed actuators will be released.
- To turn the forward feed drive on and off, use the 1 key and 2 key.
- To turn the reverse feed drive on and off, use the 3 key and 4 key.
- To turn the horn on and off, use the 7 key and 8 key.
- To show the current value, press the D key under the 88.88 softkey.
- Press the B key under the softkey to go back to page 1 <Sensor test> of the „Feed drive“ menu.
- Pressing the C key on the rotary potentiometer takes you one menu level back.

4.10.3 Menu 4-1-2 „Front attachment“

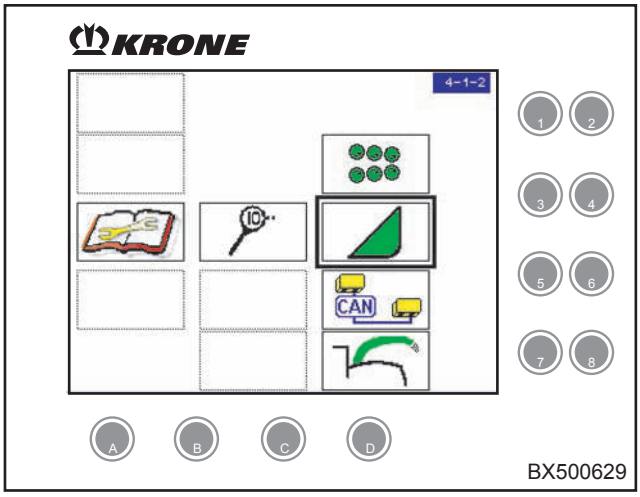
The main menu „Diagnostics“ is active.

- Select menu 4-1-2 „Front attachment“ with the rotary potentiometer.
- Press the rotary potentiometer.

„Front attachment diagnostics“ appears.

For release conditions (1) not met see chapter „Display of Release Conditions Not Met for Diagnostics“

For faults (1) see chapter „Display of Possible Faults for Diagnostics“

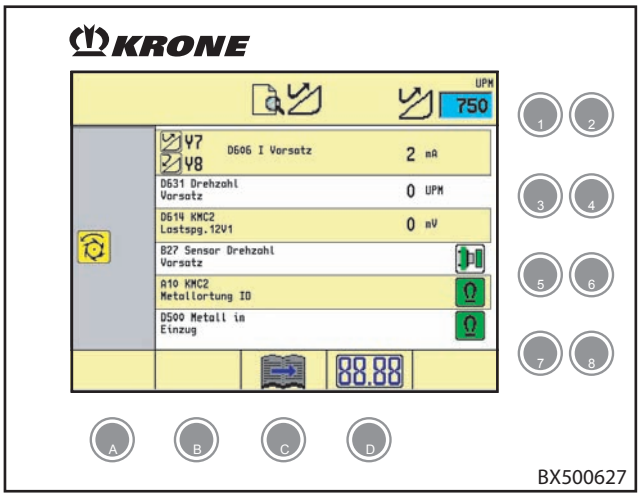


The menu „Front attachment diagnostics“ is divided into 2 pages:

Page 1: Sensor test
Page 2: Actuator test

Sensor test (page 1)

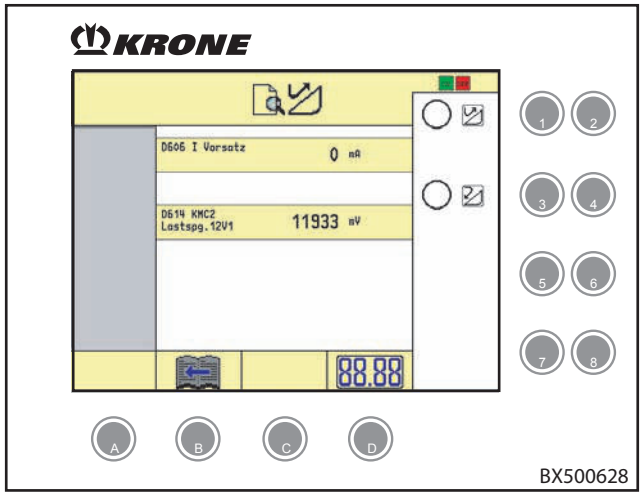
- = Error (symbol will be displayed after the incorrect position)
- = Broken cable sensor
- = Sensor alive
- = Sensor not alive
- = Sensor short circuit
- = Metal detection inactive (no medal in the feed drive)
- = Metal detection active (metal in the feed drive)



Press the C key under the softkey to bring up page 2 <Actuator test> of the „Feed drive“ menu.

Actuator test (page 2)

- = Front attachment forward inactive
- = Front attachment forward active (green)
- = Front attachment forward is free
- = Front attachment forward error (red)
- = Front attachment reverse inactive
- = Front attachment reverse active (green)
- = Front attachment reverse free
- = Front attachment reverse error (red)



Switching actuators on/off

Pre-condition: Conditions for release must be met. (See Section „Display of release conditions not met for diagnostics“).

- When all conditions have been met for the actuator test, the ON and OFF softkeys will be displayed and the displayed actuators will be released.
- To turn the forward feed drive on and off, use the 1 key and 2 key.
- To turn the reverse feed drive on and off, use the 3 key and 4 key.
- To turn the horn on and off, use the 7 key and 8 key.
- Press the B key under the softkey to go back to page 1 <Sensor test> of the „Feed drive“ menu.
- Pressing the C key on the rotary potentiometer takes you one menu level back.

4.10.4 Menu 4-1-3 „CAN Bus“

The main menu „Diagnostics“ is active.

- Select menu 4-1-3 „CAN bus“ with the rotary potentiometer.
- Press the rotary potentiometer.

Diagnostics „CAN bus“ appears.

CAN bus user:

- 

= KMC2 active
- 

= KMC2 inactive or disconnected from CAN bus
- 

= SmartDrive active
- 

= SmartDrive inactive or disconnected from CAN bus
- 

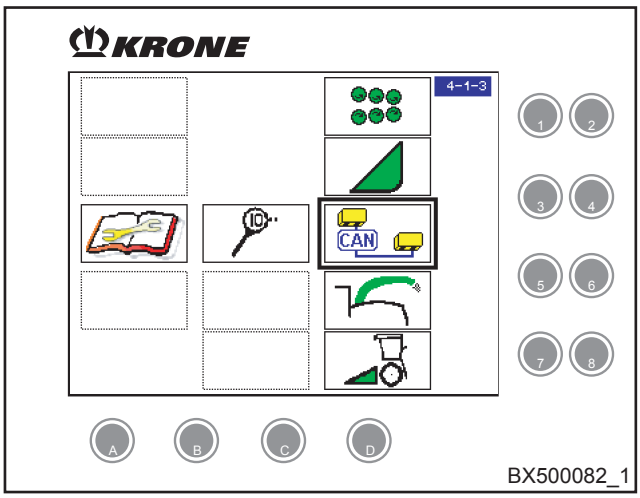
= DIOM active
- 

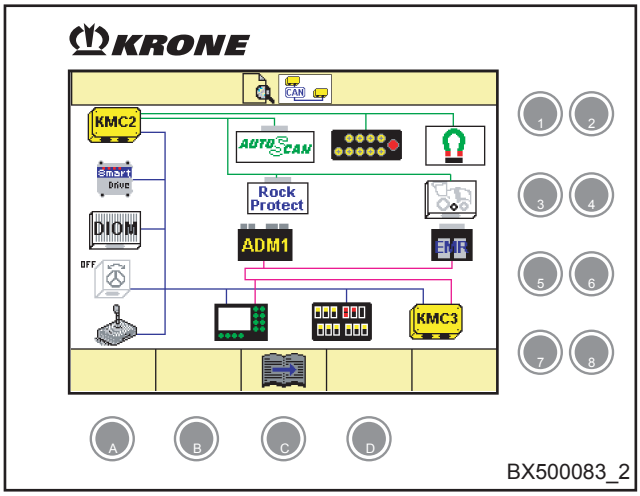
= DIOM inactive or disconnected from CAN bus
- 
= Autopilot active
- 
= Autopilot inactive or disconnected from CAN bus
- 

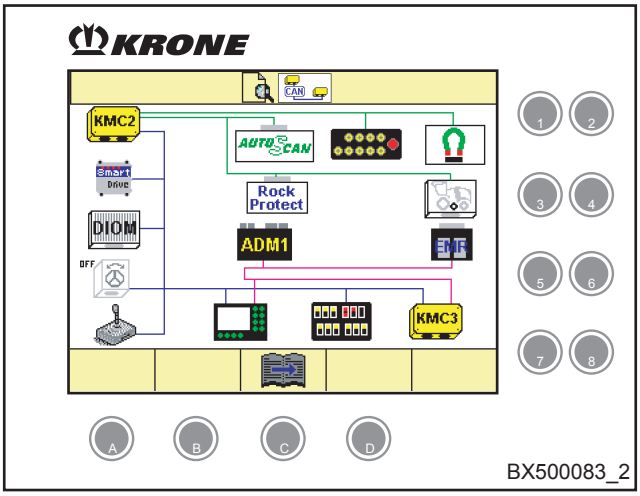
= Autopilot switched off
- 
= Joystick active
- 
= Joystick inactive or disconnected from CAN bus
- 
= Terminal active
- 
= Terminal inactive or disconnected from CAN bus
- 
= CU active
- 
= CU inactive or disconnected from CAN bus
- 

= KMC3 active
- 

= KMC3 inactive or disconnected from CAN bus







- 

= ADM1 active
- 

= ADM1 inactive or disconnected from CAN bus

- 

= Not assigned
- 

= Not assigned

- 

= EMR active
- 

= EMR inactive or disconnected from CAN bus

- 
= Manual operation active
- 
= Manual operation inactive or disconnected from CAN bus

- 
= Metal detection active
- 
= Metal detection inactive or disconnected from CAN bus

- 
= (optional) AutoScan active
- 
= (optional) AutoScan inactive or disconnected from CAN bus

- 

= (optional) RockProtect active
- 
= (optional) RockProtect inactive or disconnected from CAN bus

- 
= (optional) Additional axis active
- 
= (optional) Additional axis inactive or disconnected from CAN bus

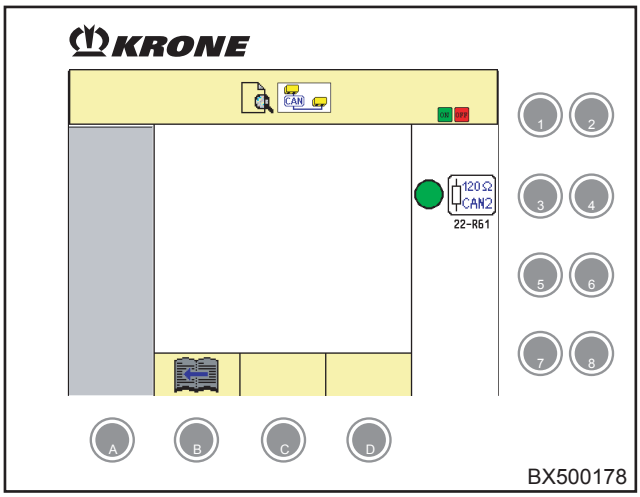
- Press the key on the rotary potentiometer to open the menu level.
- Press the C key to bring up the second page of the „Can bus“ menu.

Switching terminating resistors

-  = Terminating resistor active
-  = Terminating resistor inactive

Press the B key to bring up the previous page of the „Can bus“ menu.

- Pressing the key on the rotary potentiometer takes you one menu level back.



4.10.5 Menu 4-1-4 „Upper Discharge Chute“

The diagnostics menu „Upper discharge chute“ is divided into 3 pages.

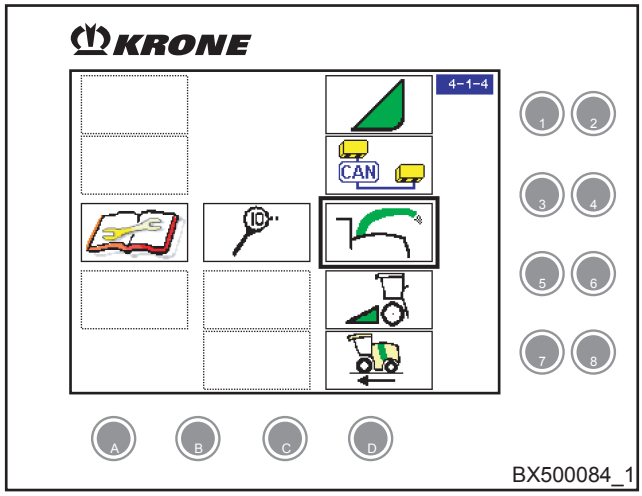
Page 1: Sensor Test
Page 2: Actuator test part 1
Page 3 Actuator test part 2

- Select menu 4-1-4 „Upper discharge chute“ with the rotary potentiometer.
- Press the rotary potentiometer.

„Upper discharge chute diagnostics“ appears.

For release conditions (1) not met see chapter „Display of Release Conditions Not Met for Diagnostics“

For faults (1) see chapter „Display of Possible Faults for Diagnostics“



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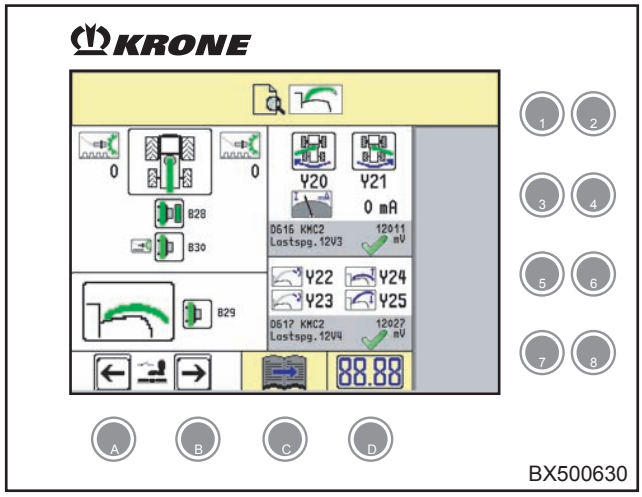
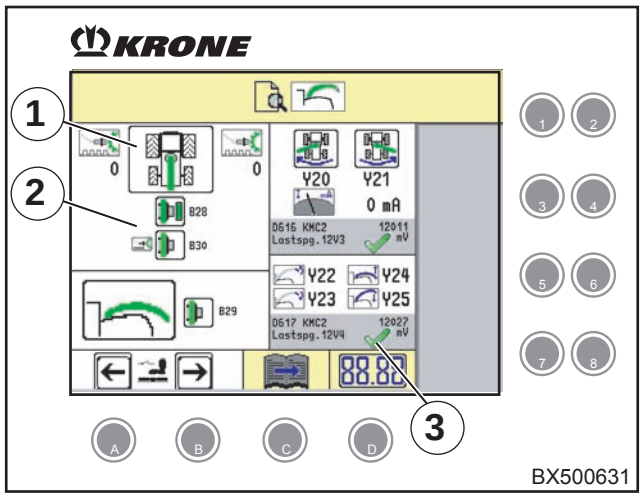


BX500630

Sensor test for upper discharge chute (1) (page 1)

The sensor test is used to test sensors that have been attached to the machine for the function of the upper discharge chute.

-  = Upper discharge chute position left
-  = Upper discharge chute position centre
-  = Upper discharge chute position right
-  = Upper discharge chute position unknown, sensor position centre or defective



BX500631

-  = Upper discharge chute up
-  = Upper discharge chute down
-  = Position of upper discharge chute sensor, bottom - broken cable
-  = Position of upper discharge chute sensor, bottom - short circuit
-  = Position of upper discharge chute unknown, lower sensor position may be defective

Status display of general sensors (2)

- = Broken cable sensor
- = Sensor alive
- = Sensor not alive
- = Sensor short circuit

General error messages (3)

- =Problem with the 12V3/12V4 power supply of the KMC2
- = The 12V3/12V4 power supply of the KMC2 is OK

- The symbol indicates the current number of pulses for the present side.

- The symbol indicates the present current of the upper discharge chute valve for the current direction of rotation.

Actuator test part 1/2 (page 2/page 3)

Actuators are controlled during the actuator test. This may result in the machine performing unexpected actions. Because of this, the test must only be performed from a safe position outside the area that is affected by machine parts moved by the actuators.

The actuator test is used to test actuators that have been attached to the machine for the function of the upper discharge chute.

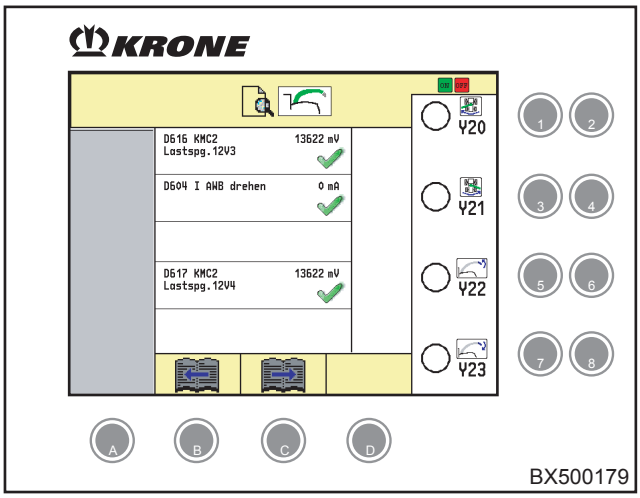
Menu control:

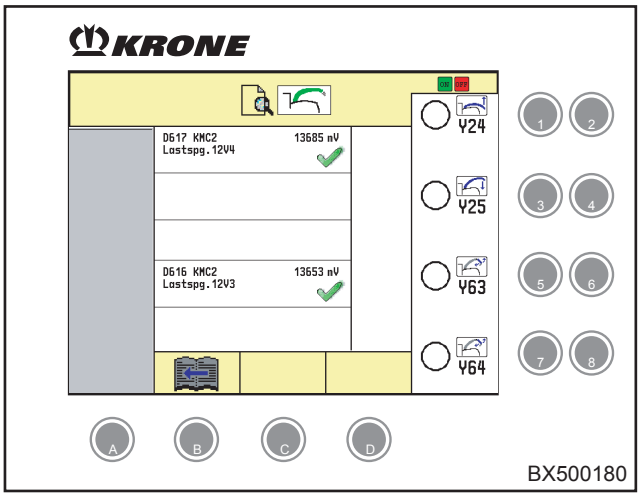
Press the C key under the softkey to bring up the next page of the „Upper discharge chute/actuator test“ menu.

Press the B key to bring up the previous page of the „Upper discharge chute“ menu.

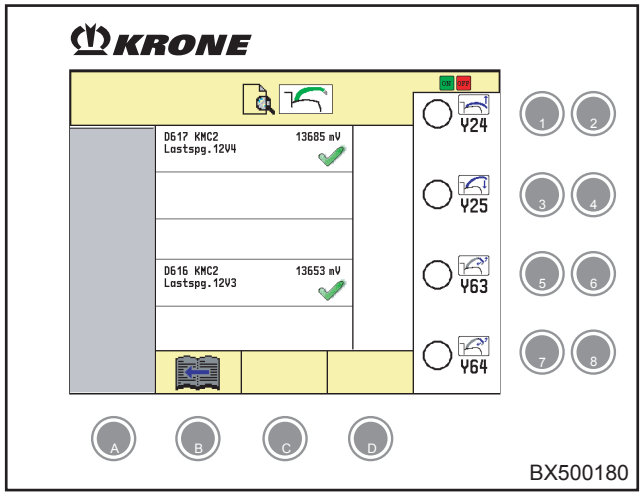
If an actuator is turned on, the next or previous page cannot be called. (If necessary, turn the actuator off and repeat the process)

Pre-requisite: Conditions for release must be met. (**(See chapter „**Display of Release Conditions Not Met for Diagnostics“)





To select an actuator:
To run an actuator (for example upper discharge chute rotate left), activate the corresponding keys on the control unit. For the actuators to be switched, see the table below.
The example below explains how to perform an actuator test. Proceed in a similar manner with the other actuators.



Turn on the actuator „Upper discharge chute rotate left“ with the 1 key

Possible status display of the selected actuator

Actuator turned off

Actuator turned on

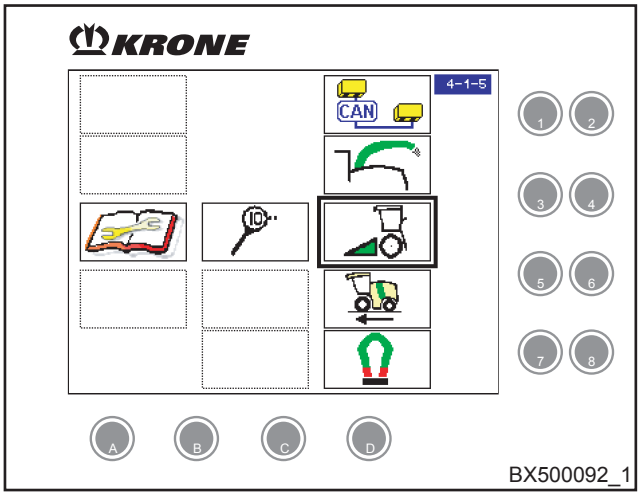
Broken cable

Short circuit

The status displays described above are valid for all actuators related to the upper discharge chute.

Valve	Icon	Description	Turn on the actuator	Turn off the actuator
Y20		Upper discharge chute rotate left	1	2
Y21		Upper discharge chute rotate right	3	4
Y22		Raise ejector flap	5	6
Y23		Lower ejector flap	7	8
Y24		Lift upper discharge chute	1	2
Y25		Lower upper discharge chute	3	4
Y63		Fold in upper discharge chute	5	6
Y64		Fold out upper discharge chute	7	8

4.10.6 Menu 4-1-5 „Lifting Gear“



The „Diagnostics“ main menu is active.

- Select menu 4-1-5 „Lifting gear“ with the rotary potentiometer.
- Press the rotary potentiometer.

„Lifting gear diagnostics“ appears.

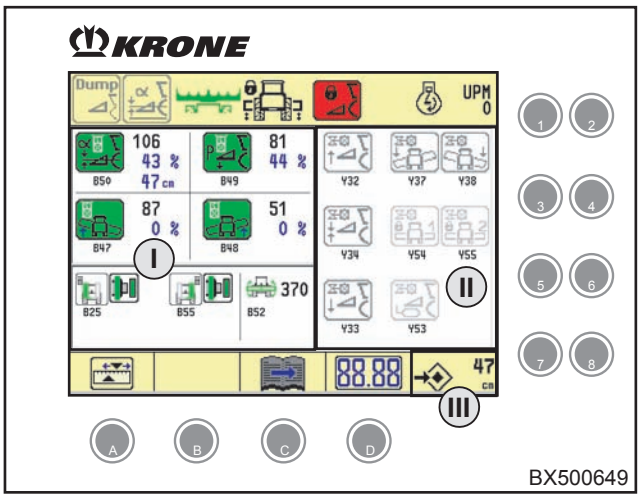
For release conditions (1) not met see chapter „Display of Release Conditions Not Met for Diagnostics“

For faults (1) see chapter „Display of Possible Faults for Diagnostics“

The diagnostics menu „Lifting gear“ is divided into 4 pages.

Page 1: Information page
Page 2: Actuator test (part 1)
Page 3: Actuator test (part 2)
Page 4: Calibration display

Menu overview – information page (page 1) 2



I **Display sensor values**

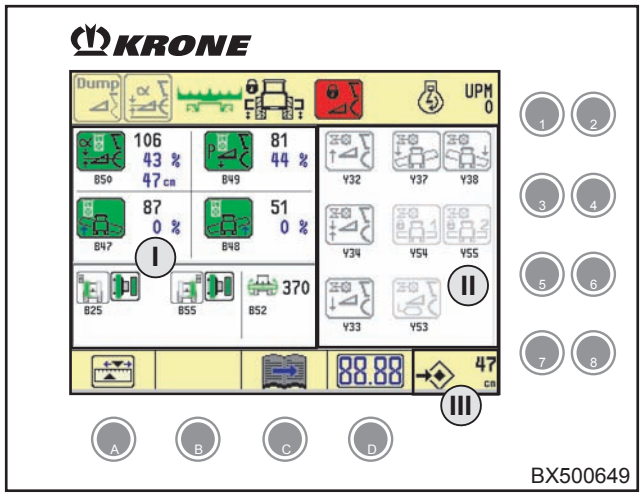
II **Status display valves**

III **Display saved setpoint value**

Menu control

- Press the key under the $$$ softkey to bring up page 2 <Actuator test> of the „Lifting gear“ menu.
- Press the A key under the softkey to bring up page 4 <Calibration display> of the „Lifting gear“ menu.

Lifting gear sensor test (page 1)



The Diagnostics menu is used to test whether the sensor responds when a function is performed.
This is indicated by the values after the symbols in the sensor display (I) changing when the corresponding function is performed.

The status displays listed below also appear in the sensor display (I)

- = Sensor header contour left; the current value is displayed as a digital and percentage value
- = Error, sensor header contour left
- = Position of sensor lifting gear; the current value is displayed as a digital, percentage, and absolute value
- = Error, lifting gear position sensor
- = Sensor header contour right; the current value is displayed as a digital and percentage value
- = Error, sensor header contour right
- = Sensor for lifting gear pressure; the current value is displayed as a digital and percentage value
- = Error, lifting gear pressure sensor

Status displays of sensor display (IV):

- = Front attachment folded out left (EasyCollect)
- = Front attachment folded out right (EasyCollect)
- = Position of pendulum frame
- = Broken cable sensor
- = Sensor alive
- = Sensor not alive
- = Sensor short circuit
- = Suspension active
- = Suspension inactive

  Damping = oscillation absorption for road travel
- Press the C key under the softkey to bring up page 2 <Actuator test> of the "Lifting gear" menu.

Actuator test part 1 (page 2)

Actuators are controlled during the actuator test. This may result in the machine performing unexpected actions. Because of this, the test must only be performed from a safe position outside the area that is affected by machine parts moved by the actuators.

Menu control

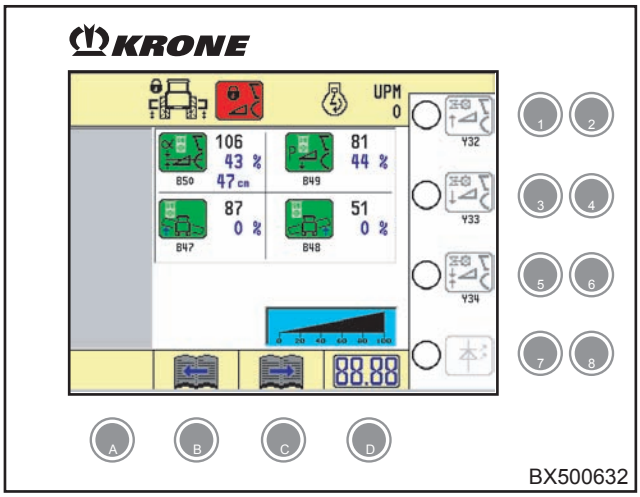
- Press the C key under the softkey to bring up page 1 <Information page> of the "Lifting gear" menu.
- Press the B key under the softkey to bring up page 3 <Actuator test> of the "Lifting gear" menu.

If an actuator is turned on, the next or previous page cannot be called. (If necessary, turn the actuator off and repeat the process)

Pre-requisite: Conditions for release must be met. (**(See chapter „**Display of Release Conditions Not Met for Diagnostics“)

Actuator turn on/off

- To turn <Raise lifting gear> on and off, use the 1 key and 2 key.
- To turn <Lower lifting gear> on and off, use the 3 key and 4 key.
- To turn <Lifting gear accumulator> on and off, use the 5 key and 6 key.
- To turn the LED on the EMR on and off, use the 7 key and 8 key.



Valve	Description	Actuator turned on (LED lights up in green)	Actuator turned off (LED is not lit)
Y32	Raise lifting gear		
Y33	Lower lifting gear		
Y34	Lifting gear accumulator		
	LED on EMR		

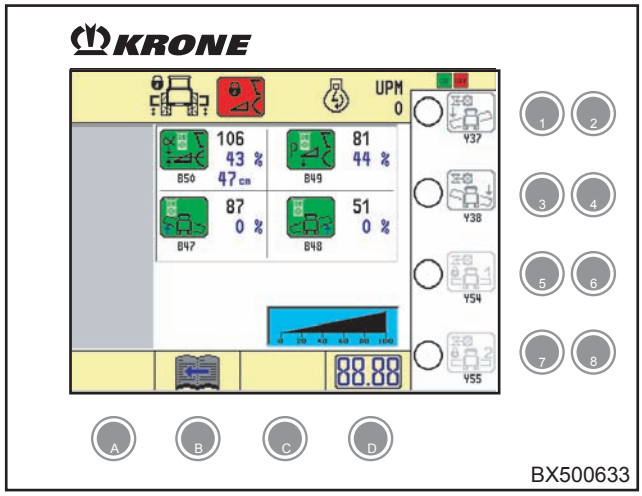
Additional status displays of the selected actuator:

Broken cable

Short circuit

Actuator test part 2 (page 3)

- When all conditions have been met for the actuator test, the softkeys ON and OFF will be displayed and the displayed actuators will be released.



Actuator turn on/off

- To turn <Turn pendulum frame to the left> on and off, use the (1) key and (2) key.
- To turn <Turn pendulum frame to the right> on and off, use the (3) key and (4) key.
- To turn <Pendulum frame locked horizontally> on and off, use the (5) key and (6) key.
- To turn <Pendulum frame locked horizontally> on and off, use the (6) key and (8) key.

Valve	Description	Actuator turned on (LED lights up in green)	Actuator turned off (LED is not lit)
Y37	Turn pendulum frame to the left		
Y38	Turn pendulum frame to the right		
Y54	Pendulum frame locked horizontally		
Y55	Pendulum frame locked horizontally		

Actuator status displays

Actuator status (1) active	Actuator status (1) inactive	Actuator status (1) Broken cable	Actuator status (1) Short circuit	Description
				Raise lifting gear
				Lower lifting gear
				Lifting gear accumulator
				Pendulum frame rotate left
				Pendulum frame rotate left
				Pendulum frame locked horizontally
				Pendulum frame locked horizontally

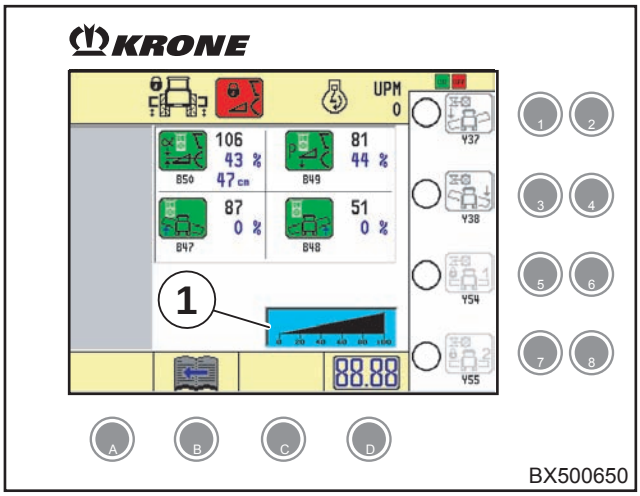
Menu control

- Press the (B) key under the softkey to bring up page 2 <Actuator test> of the „Lifting gear“ menu.

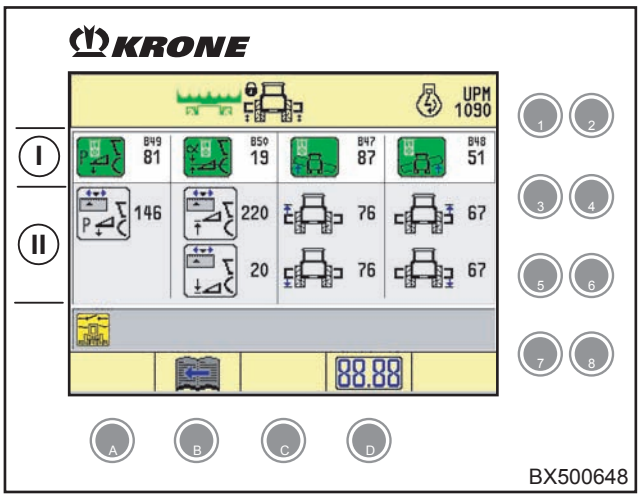
Increase/reduce the setting value for the flow rate (0-100 %)

On the bar graph (1), you can adjust in percentage terms how far the control valve opens (increase or reduce the flow rate).

- With the rotary potentiometer, select the bar graph. The bar graph is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the bar graph.
- Turning the rotary potentiometer clockwise increases the value. Turning it anticlockwise reduces the value.
- Pressing the rotary potentiometer causes the value to be applied and returns you from the bar graph.



Calibration display (page 4)



The list in the table below shows how the elements on which the sensor display (I) and calibration display (III) depend.

Designation	Sensor display (I)	Calibration display (III)	Notes
Lifting Gear Top pressure control			Lower lifting gear must be floating freely (no contact with ground)
Lifting gear distance control		/	Lifting gear must be completely up/ completely down
Header contour left		/	Front attachment must be (optional) completely up / completely down
Header contour right		/	Front attachment must be (optional) completely up / completely down.

Menu control

- Press the (B) key under the softkey to bring up page 1 <Information page> of the „Lifting gear“ menu.
- Pressing the (C) key on the rotary potentiometer takes you one menu level back.

4.10.7 Menu 4-1-6 „Drive“

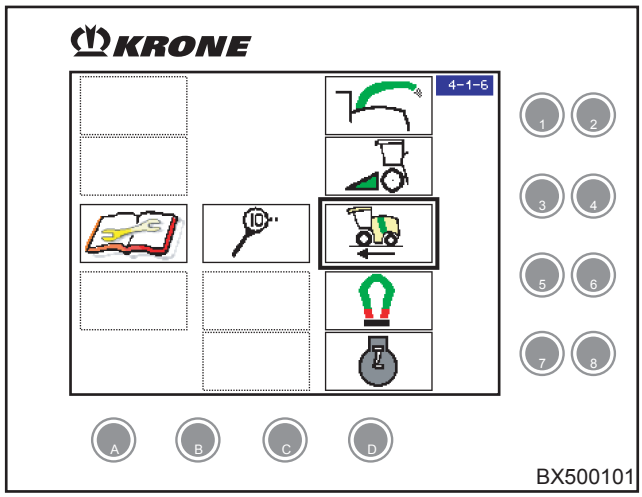
The diagnostics menu „Drive“ is divided into 7 pages.

Page 1: Sensor Test
Page 2: Actuator test part 1
Page 3: Actuator test part 2
Page 4: Actuator test part 3
Page 5: Actuator test part 4
Page 6: Additional axis sensor test (optional)
Page 7: Additional axis actuator test

The „Diagnostics“ main menu is active.

- Select menu 4-1-6 „Drive“ with the rotary potentiometer.
- Press the rotary potentiometer.

„Drive diagnostics“ appears.



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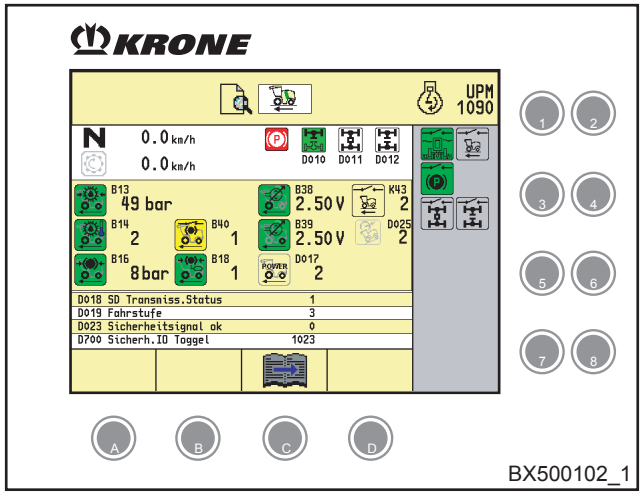

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Drive switch

-  = Release switch – road/field
-  = Release switch – road/field activated
-  = Travelling gear release switch
-  = Travelling gear release switch activated
-  = Parking brake release switch
-  = Parking brake release switch activated
-  = Release switch all-wheel
-  = Release switch all-wheel activated
-  = Button release axle separation
-  = Actuate button release axle separation

For faults (1) see chapter „Display of Possible Faults for Diagnostics“

Drive

- Direction of travel; the number after the symbol is the current travel speed.

  = Forward travel

  = Neutral (standstill)

  = Reverse travel

- = Cruise control active; the number after the icon is the saved speed for Cruise control operation in km/h

  = Cruise control inactive

- Type of drive

  = Front wheel drive active

  = Front wheel drive inactive

  = All-wheel drive active (only possible in field mode, can only be activated at a standstill, travelling speed
  0 - 14 km/h)

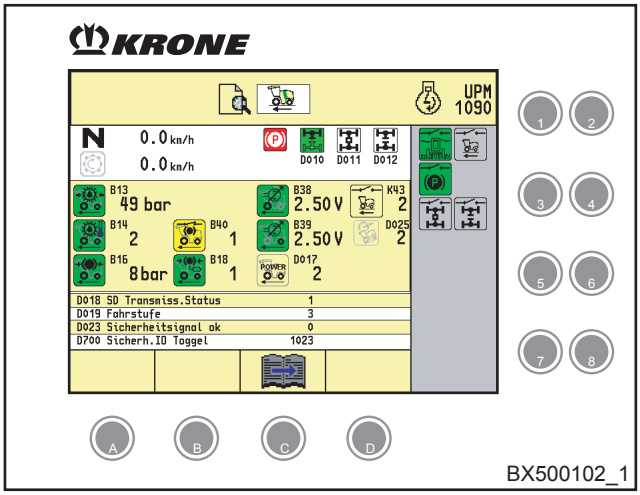
  = All-wheel in active

  = Axle separation of active (only possible in field mode with all-wheel drive turned on, activation at travelling speed < 10 km/h)

  = Axle separation inactive

  = Parking brake is applied

  = Emergency mode; allows the driver to drive the vehicle out of the danger zone even if there are serious drive problems.

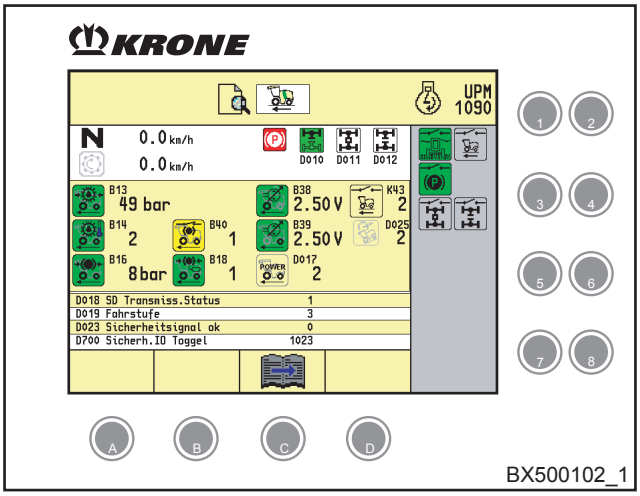


Drive sensor test (1) (page1)

The sensor test is used to test sensors that have been attached to the machine for the function of the drive.

- = High pressure OK
- = High pressure not OK
- = High pressure unknown

- = Temperature of flush valve OK
- = Temperature of flush valve not OK
- = Temperature of flush valve unknown



- = Brake pressure OK
- = Brake pressure not OK
- = Brake pressure unknown

- = Brake pedal switch
- = Brake pedal switch activated
- = Brake pedal switch OK
- = Brake pedal switch unknown

- = Brake tank pressure OK
- = Brake tank pressure not OK
- = Brake tank pressure unknown

- = Pivoting angle pump, front axle
- = Pivoting angle pump, front axle OK
- = Pivoting angle pump, front axle not OK
- = Pivoting angle pump, front axle unknown

- = Pivoting angle pump, rear axle
- = Pivoting angle pump, rear axle OK
- = Pivoting angle pump, rear axle not OK
- = Pivoting angle pump, rear axle unknown

- = Power limitation active
- = Power limitation inactive

Actuator test part1 (page 2)

Actuators are controlled during the actuator test. This may result in the machine performing unexpected actions. Because of this, the test must only be performed from a safe position outside the area that is affected by machine parts moved by the actuators.

Menu control:

- Press the C key to bring up the next page of the „Lifting gear“ menu.
- Press the B key to bring up the previous page of the „Lifting gear“ menu.

If an actuator is turned on, the next or previous page cannot be called. (If necessary, turn the actuator off and repeat the process)

Pre-requisite: Conditions for release must be met. **(See chapter „**Display of Release Conditions Not Met for Diagnostics“)

For faults (1) see chapter „Display of Possible Faults for Diagnostics“

To select an actuator:
To run an actuator (for example reversing lights), activate the corresponding keys on the control unit. For the actuators to be switched, see the table below. The example below explains how to perform an actuator test. Proceed in a similar manner with the other actuators.

Using the 1 key, turn on the „Reversing lights“ actuator.

Possible status display of the selected actuator

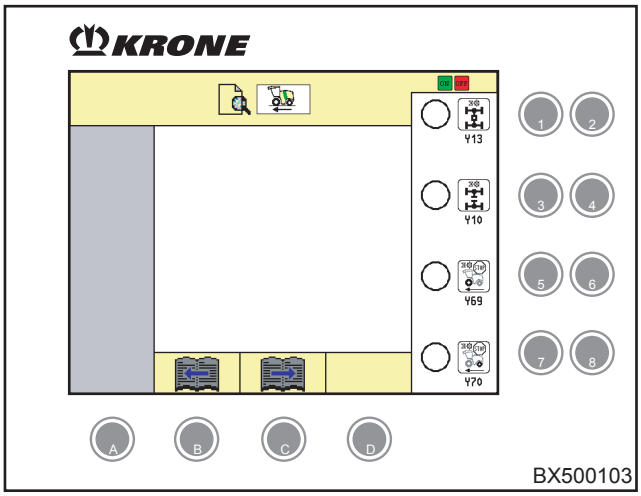
Actuator turned off

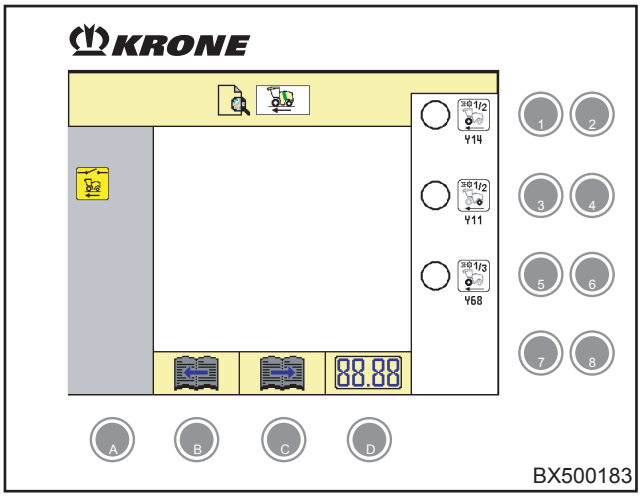
Actuator turned on

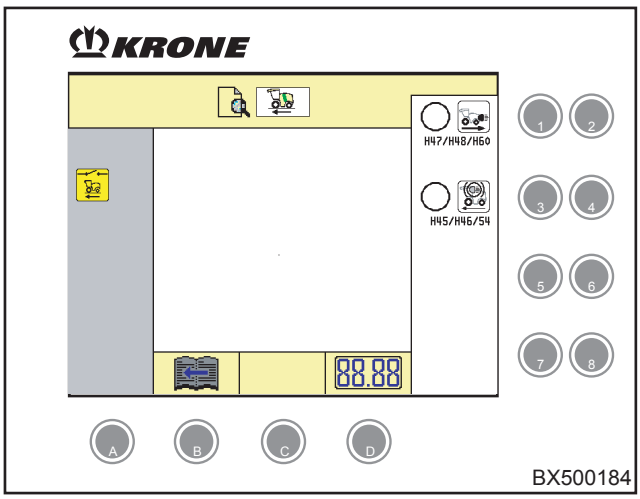
Broken cable

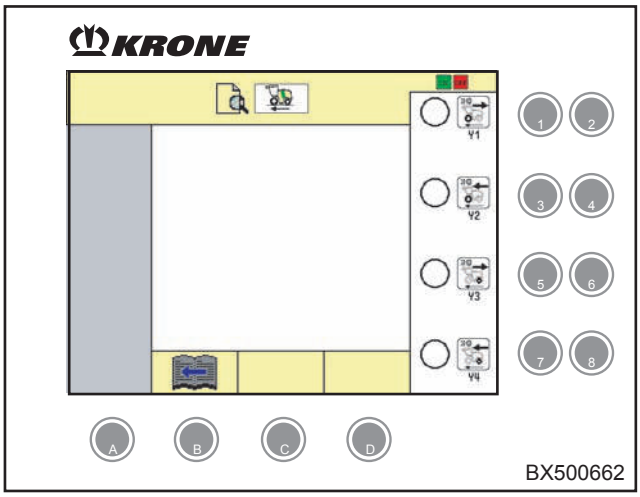
Short circuit

The status displays described above are valid for all actuators related to the upper discharge chute.





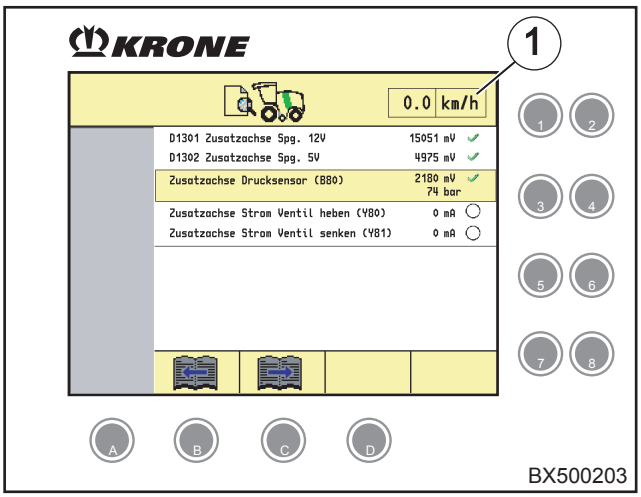




Valve	Icon	Description	Turn on the actuator	Turn off the actuator
Y1		front axle backward	1	2
Y2		front axle forward	3	4
Y3		rear axle backward	5	6
Y4		rear axle forward	7	8
Y13		All-wheel	1	2
Y10		Axle separation	3	4
Y69		Stop valve front axle	5	6
Y70		Stop valve rear axle	7	8
Y14		1/2 absorption volume front axle	1	2
Y11		1/2 absorption volume rear axle	3	4
Y68		1/3 absorption volume front axle	5	6
		Reversing lights	1	2
		Brake light	3	4

- Press the C key to bring up the next page of the „Travelling gear“ menu.

The „Additional axle sensor test“ menu appears.



Possible status displays

(1) = Current speed

= Voltage error

= Voltage ON

Actuator turned off

Actuator turned on

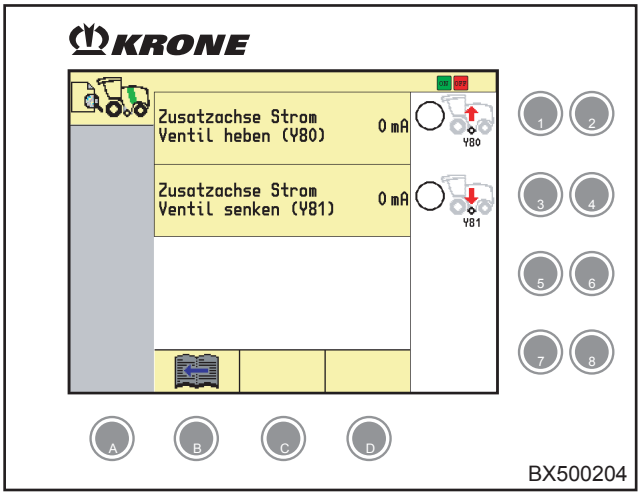
Broken cable

- Press the C key under the softkey to bring up the next page of the „Travelling gear“ menu.

The „Additional axle actuator test“ menu appears.

Actuator test additional axis

> **Actuators are controlled during the actuator test. This may result in the machine performing unexpected actions. Because of this, the test must only be performed from a safe position outside the area that is affected by machine parts moved by the actuators.**



Selecting an actuator:

Use the 1 key to turn on the „Lift additional axis“ actuator.

Use the 2 key to turn off the „Lift additional axis“ actuator.

Use the 3 key to turn on the „Lower additional axis“ actuator.

Use the 4 key to turn on the „Lower additional axis“ actuator.

Menu control

- Press the B key under the softkey to scroll back to the previous page.
- Pressing the C key on the rotary potentiometer takes you one menu level back.

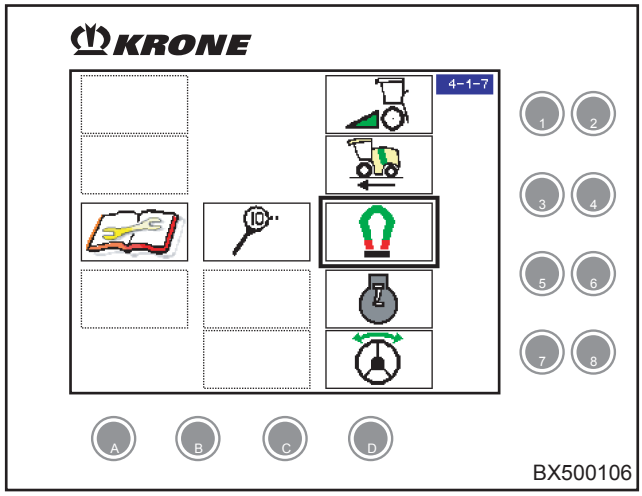
4.10.8 Menu 4-1-7 „Metal Detection“

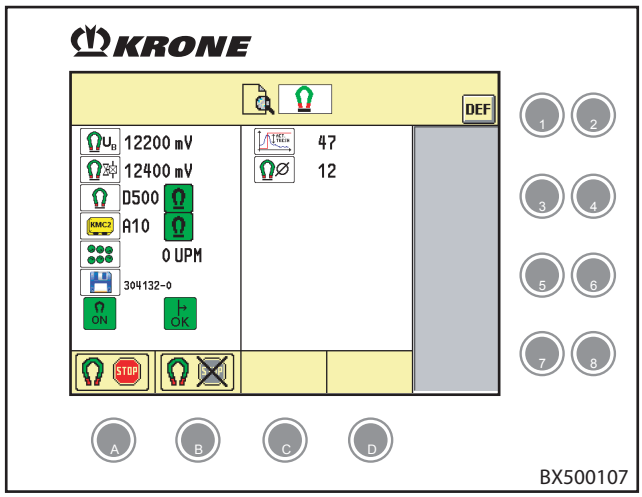
The main menu „Diagnostics“ is active.

- Select menu 4-1-7 „Metal detection“ with the rotary potentiometer.
- Press the rotary potentiometer.

For release conditions (1) not met see chapter „Display of Release Conditions Not Met for Diagnostics“

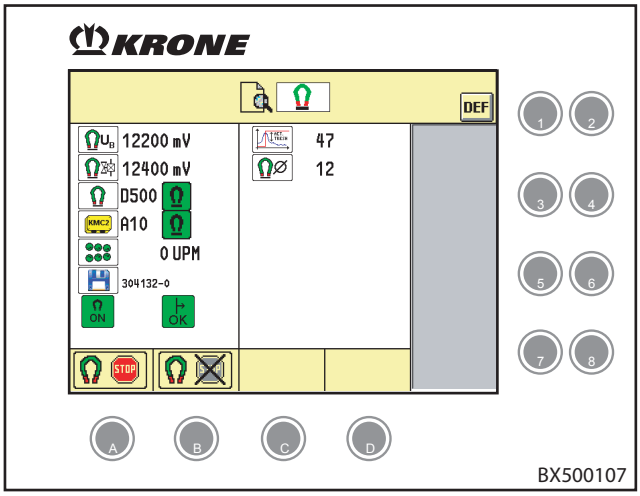
For faults (1) see chapter „Display of Possible Faults for Diagnostics“





Metal detection

- U_B = Operating voltage for metal detection
- = Voltage of the stop valve.
  0 mV = Stop valve switched
  Operating voltage = Stop valve not switched
- = Status of the metal detection output
  = No metal in feed drive
  = Metal in feed drive
- KMC2 = Status of the KMC2 input, which is also switched through the metal detection output.
  = No metal in feed drive
  = Metal in feed drive
  = Error



- = The current speed of the feed drive is displayed. This makes it possible to check that the attachments have come to a complete stop.
- = software version of metal detection
- = Metal detection is on
  = Metal detection is off
- =The output of the metal detection is in good working order
  = The output of the metal detection is not in good working order
  = Broken cable stop valve
  = Short circuit stop valve
  = Power consumption too high
- = Interference limit value
- = Average interference value

To switch actuator on/off

- A test stop for metal detection can be triggered by activating the A key under the STOP softkey.
- To release metal detection again, activate the B key under the softkey.
- To apply the default setting values, press the 1 key next to the DEF softkey.
- Pressing the key on the rotary potentiometer takes you one menu level back.

4.10.9 Menu 4-1-8 „Diesel Engine“

The main menu „Diagnostics“ is active.

- Select menu 4-1-8 „Diesel engine“ with the rotary potentiometer.
- Press the rotary potentiometer.

„Diesel engine Diagnostics“ appears.

Diesel engine page 1

- = Engine speed
- = Engine cooling water temperature
- = Engine oil pressure
- = Engine oil temperature
- = Engine oil level

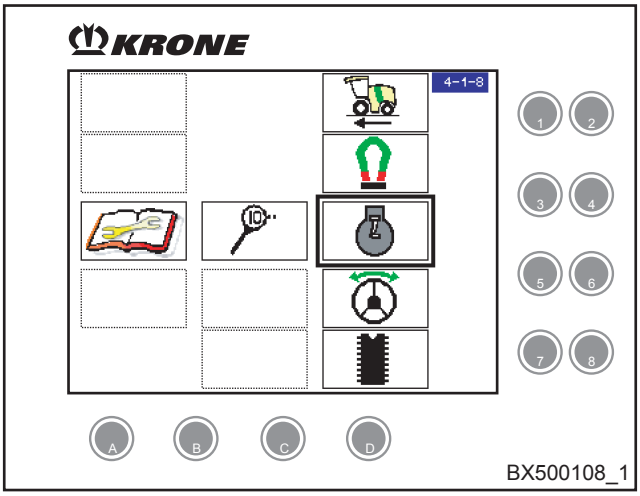
- Activating the C key for causes the next page to be displayed.
- Activating the A key for causes the next maintenance interval to be displayed

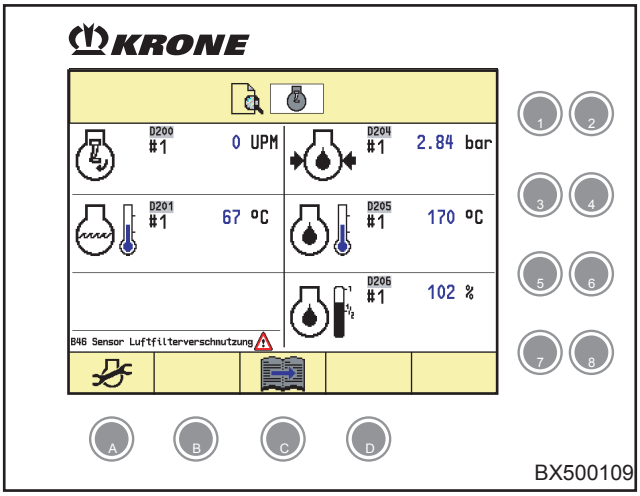
Diesel engine page 2

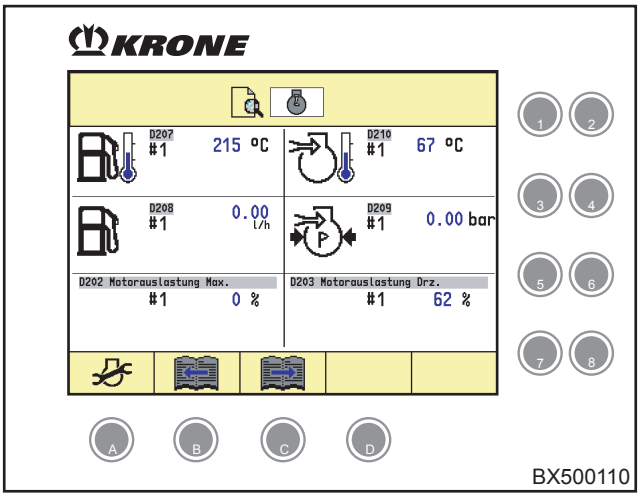
- = Diesel tank fuel level
- = Diesel fuel consumption
- = Temperature of air intake
- = Engine oil temperature
- Maximum engine capacity
- Engine capacity, speed

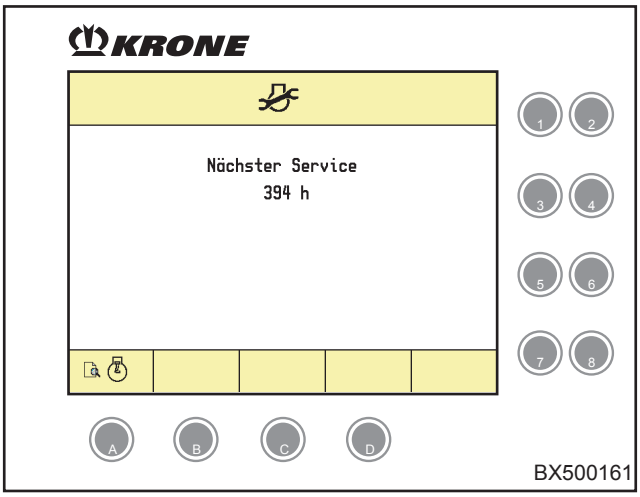
- Activating the A key for causes the next maintenance interval to be displayed.
- Activating the B key for causes the previous page to be displayed.
- Activating the C key for causes the next page to be displayed.
- Activating the A key for causes the diesel engine Diagnostics to be displayed.

- Pressing the key on the rotary potentiometer takes you one menu level back.



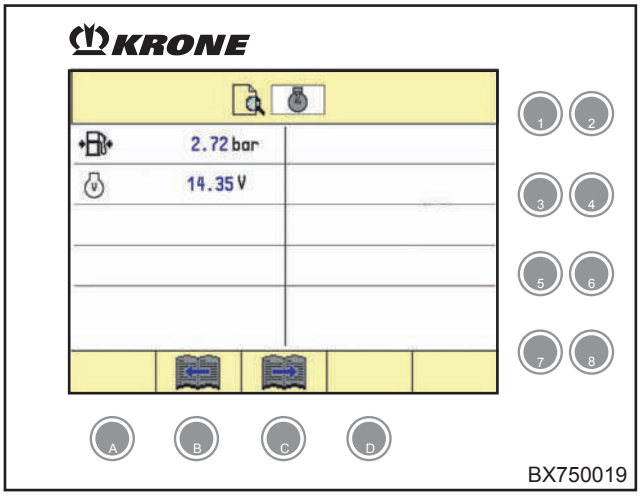






Diesel engine page 3

- = Fuel pressure
- = Engine control unit voltage
- Press the B key for to display the previous page.
- Press the C key for to display the next page.
- Press the key on the rotary potentiometer to open the menu level.

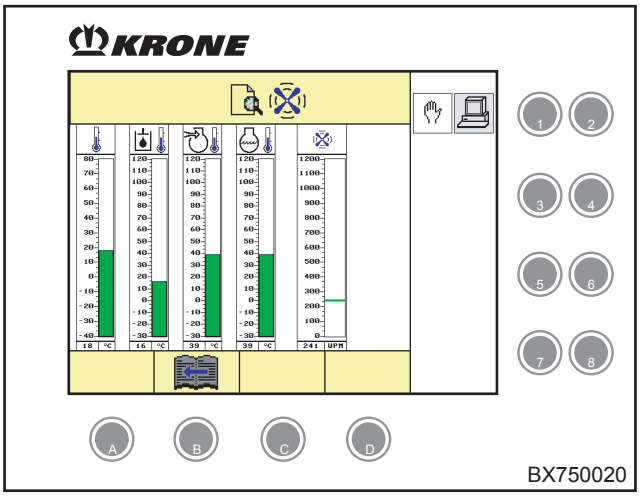


Diesel engine page 4

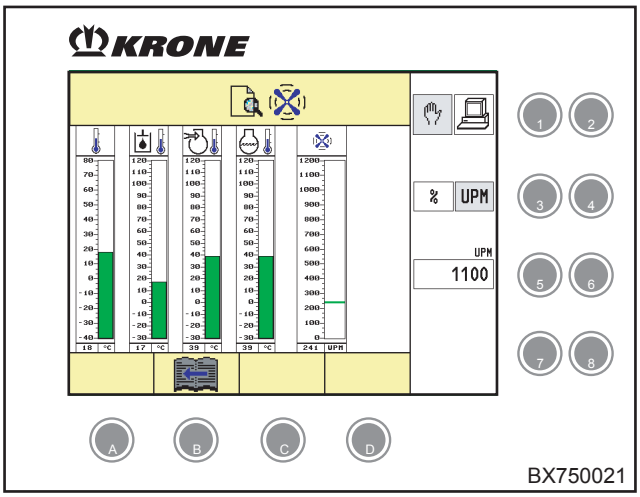
- = Outside temperature
- = Hydraulic oil temperature
- = Load air temperature
- = Engine cooling water temperature
- = Engine fan speed
- % UPM In manual mode the setting can be switched back and forth between RPM and % with the 3 and 4 keys. The currently active unit is shown in grey.
- UPM 1100 The value can be adjusted with the 5 and 6 keys (max. 1100 or 100%).

When you exit the mask, the mode automatically switches to Automatic.

- Press the B key for to display the previous page.
- You can use the 1 and 2 keys to switch between Manual and Automatic mode . The currently active mode is marked in grey.
- Pressing the key on the rotary potentiometer takes you one menu level back.



BX750020



BX750021

4.10.10 Menu 4-1-9 „Autopilot“

The Diagnostics menu „Autopilot“ is divided into 2 pages.
Page 1: Sensor Test
Page 2: Actuator test

The „Diagnostics“ main menu is active.

- Select menu 4-1-9 „Autopilot“ with the rotary potentiometer.
- Press the rotary potentiometer.

„Autopilot Diagnostics“ appears.

- Pressing the key on the rotary potentiometer takes you one menu level back.

For release conditions (1) not met see chapter „Display of Release Conditions Not Met for Diagnostics“

For faults (1) see chapter „Display of Possible Faults for Diagnostics“

Sensor test for upper discharge chute (page1)

Actuator test (page 2)

Actuators are controlled during the actuator test. This may result in the machine performing unexpected actions. Because of this, the test must only be performed from a safe position outside the area that is affected by machine parts moved by the actuators.

The actuator test is used to test actuators that have been attached to the machine f or the function of the Autopilot.

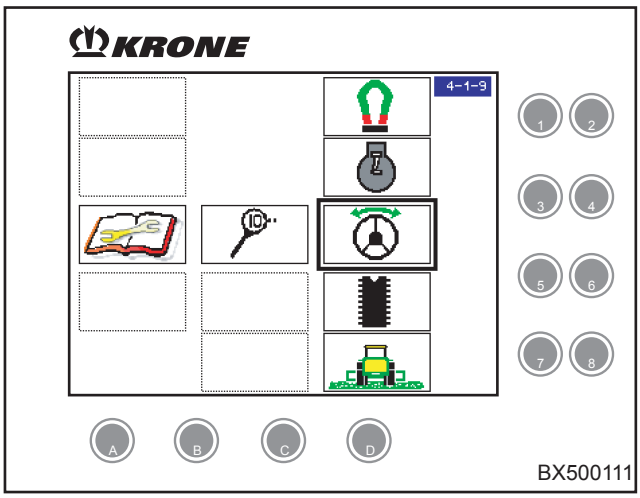
Menu control:

Press the B key under the softkey to bring up the next page of the „Autopilot/actuator test“ menu.

Press the B key to bring up the previous page of the „Autopilot“ menu.

If an actuator is turned on, the next or previous page cannot be called. (If necessary, turn the actuator off and repeat the process)

Pre-requisite: Conditions for release must be met. (**(See chapter** „Display of Release Conditions Not Met for Diagnostics“)



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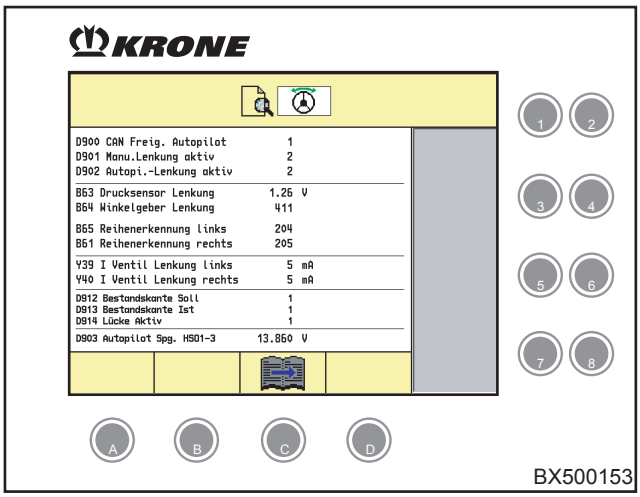
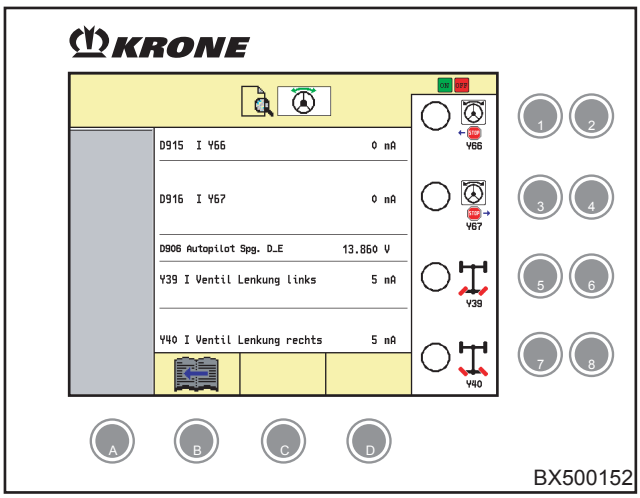


BX500153



BX500152

To select an actuator:
To run an actuator (for example disable steering (I)), activate the corresponding keys on the control unit.
For the actuators to be switched, see the table below.
The example below explains how to perform an actuator test. Proceed in a similar manner with the other actuators.

Turn on the actuator „Disable steering (I)“ with the

1 key

Possible status display of the selected actuator

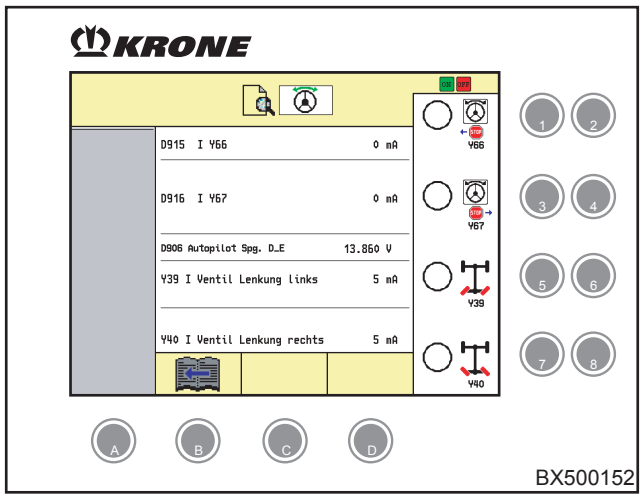
Actuator turned off

Actuator turned on

Broken cable

Short circuit

The status displays described above are valid for all actuators related to the Autopilot.



Valve	Icon	Description	Turn on the actuator	Turn off the actuator
Y66		Disable steering (I)	1	2
Y67		Disable steering (II)	3	4
Y39		Steering left	5	6
Y40		Steering right	7	8

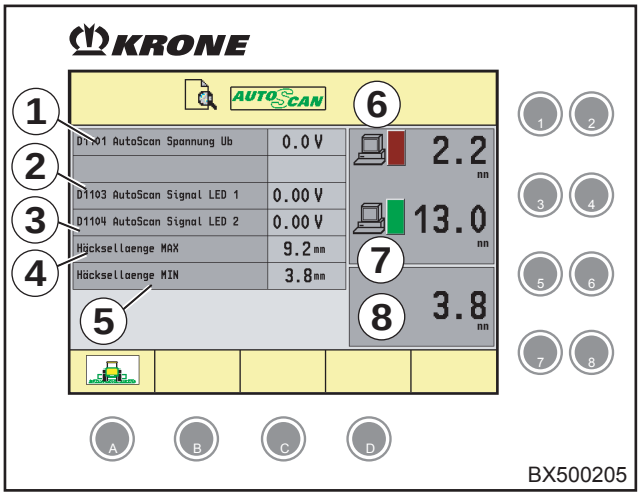
4.10.11 Menu 4-1-10 „AutoScan“

„Diagnostics“ main menu is called up.

- Select menu 4-1-10 „AutoScan“ with the rotary potentiometer.
- Press the rotary potentiometer.

For release conditions (1) not met see Section „Display of Release Conditions Not Met for Diagnostics“.

For faults (1) see Section „Display of Possible Faults for Diagnostics“.



AutoScan

(1) = AutoScan operating voltage

(2) = Signal LED1

(3) = Signal LED2

(4) Set max. cutting length

(5) Set min. cutting length

(6)  Cutting length for brown maize

(7)  Cutting length for green maize

(8) Current cutting length

• Pressing the softkey  returns you to the basic screen.

4.10.12 Menu 4-1-11 „Electronics“

The main menu „Diagnostics“ is active.

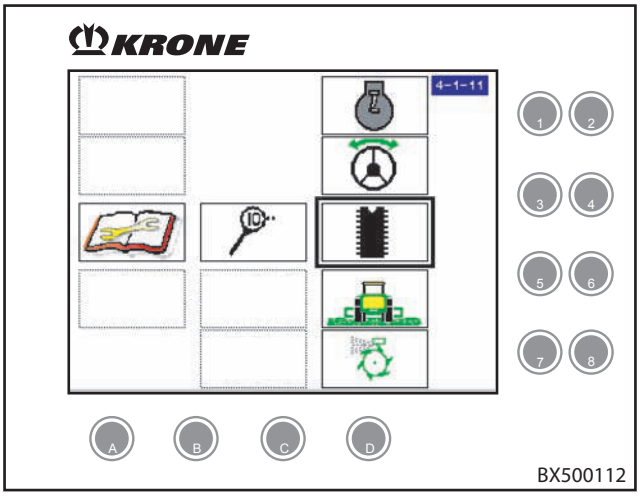
- Select menu 4-1-11 „Electronics“ with the rotary potentiometer.
- Press the rotary potentiometer.

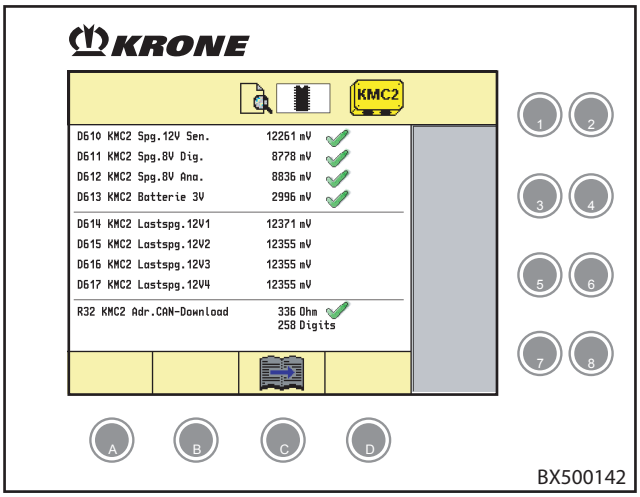
„Electronics Diagnostics“ appears.

For release conditions (1) not met see chapter „Display of Release Conditions Not Met for Diagnostics“

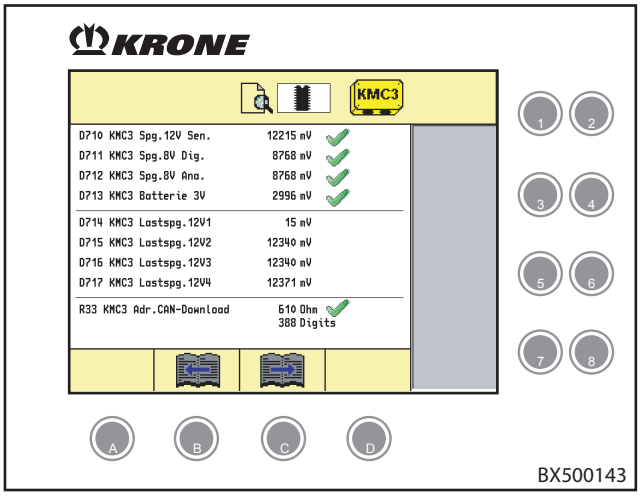
For faults (1) see chapter „Display of Possible Faults for Diagnostics“

- The ✓ symbol identifies diagnostic values that lie within a valid range.
- The ⚠ symbol identifies diagnostic values that do not lie within a valid range.

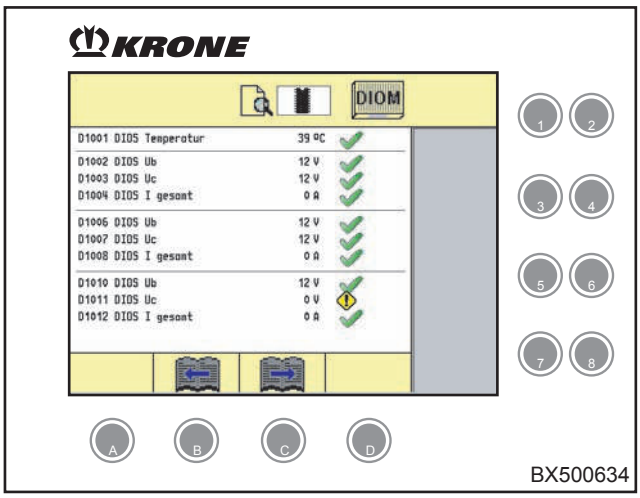




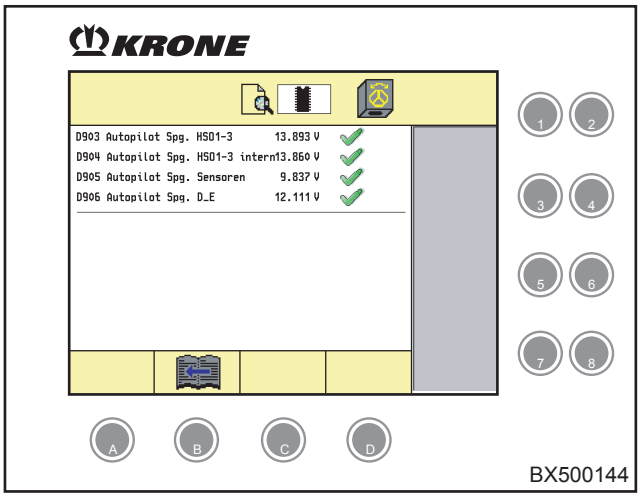
- To scroll forward , use the C key. To scroll backward , use the B key.
- Pressing the key on the rotary potentiometer takes you one menu level back.



BX500143



BX500634



BX500144

4.10.13 Menu 4-1-12 „Work“

The Diagnostics menu „Work“ is divided into 6 pages.
Page 1: Sensor Test
Page 2: Actuator test part 1
Page 3: Actuator test part 2
Page 4: Actuator test part 3
Page 5: Actuator test part 4
Page 6 Actuator test part 5

The „Diagnostics“ main menu is active.

- Select menu 4-1-12 „Work“ with the rotary potentiometer.
- Press the rotary potentiometer.

„Work Diagnostics“ appears.

For release conditions (1) not met see chapter „Display of Release Conditions Not Met for Diagnostics“

For faults (1) see chapter „Display of Possible Faults for Diagnostics“

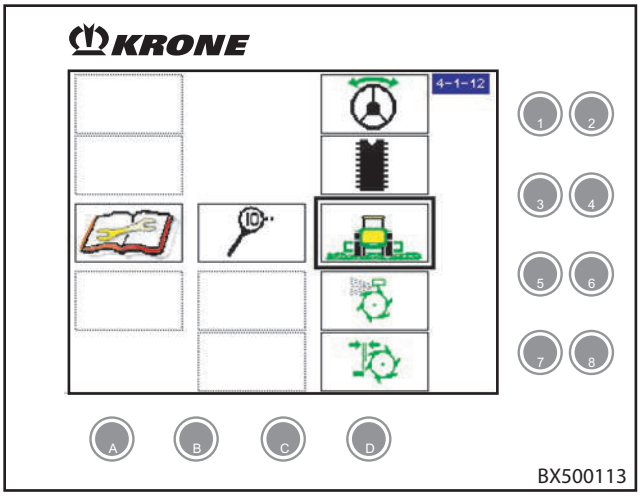
Sensors

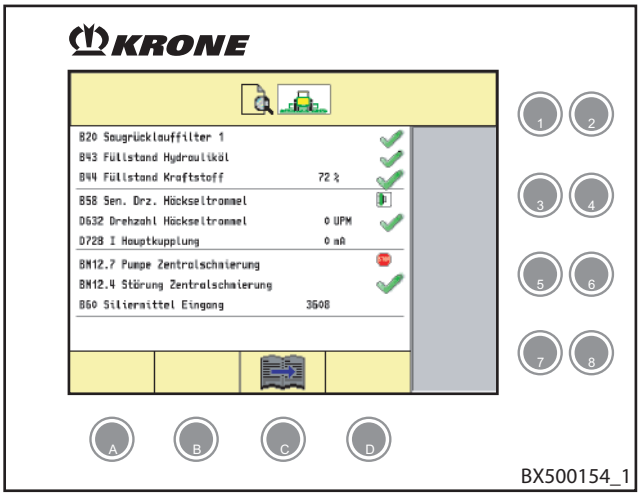
- = Broken cable sensor
- = Sensor alive
- = Sensor not alive
- = Sensor short circuit

- = No error
- = Error
- = Function is active
- = Function is inactive

- To scroll forward, activate the C key.

- Press the key on the rotary potentiometer to open the menu level.





Actuator test part 1 to part 5 (page 2 to page 6)

Actuators are controlled during the actuator test. This may result in the machine performing unexpected actions. Because of this, the test must only be performed from a safe position outside the area that is affected by machine parts moved by the actuators.

The actuator test is used to test actuators that have been attached to the machine for the work function.

Menu control:

Press the B key to bring up the next page of the „Actuator test/Work“ menu.

Press the B key to bring up the previous page of the „Work“ menu.

If an actuator is turned on, the next or previous page cannot be called. (If necessary, turn the actuator off and repeat the process)

Pre-requisite: Conditions for release must be met. (**(See chapter „**Display of Release Conditions Not Met for Diagnostics“)

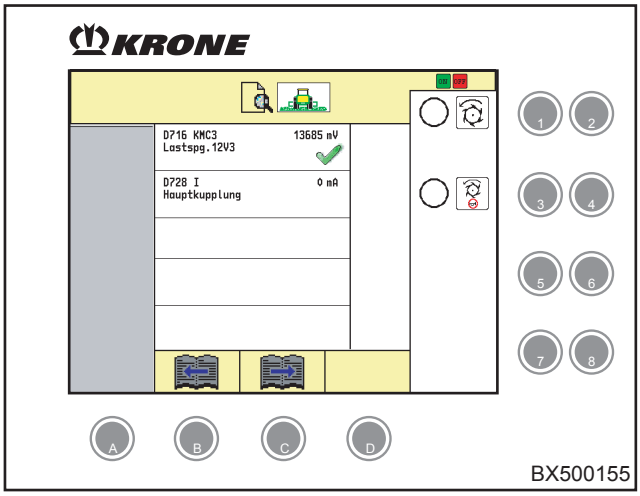
To select an actuator:
To run an actuator (for example main coupling), activate the corresponding keys on the control unit. For the actuators to be switched, see the table below. The example below explains how to perform an actuator test. Proceed in a similar manner with the other actuators.

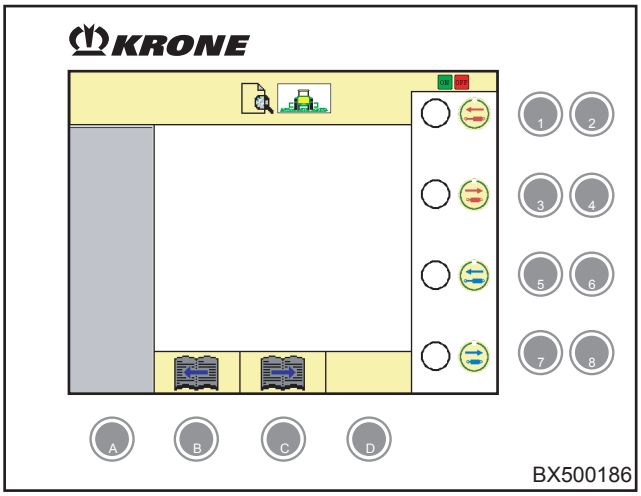
Using the 1 key, turn on the „Main coupling“ actuator.

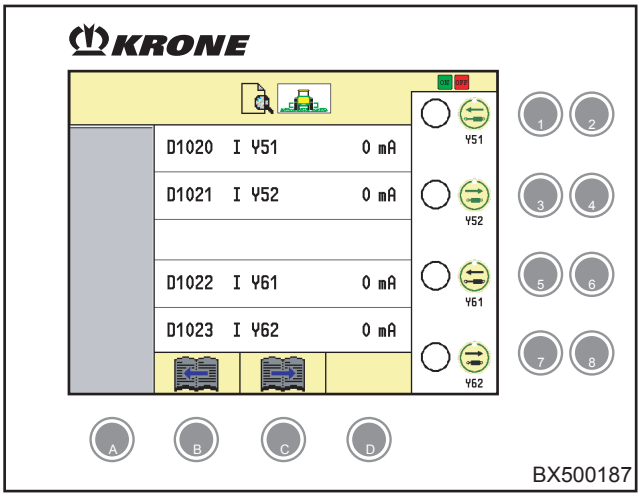
Possible status display of the selected actuator

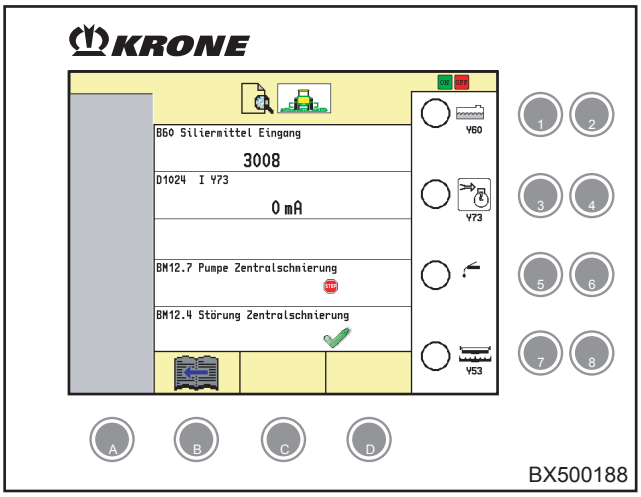
- **Actuator turned off**
- **Actuator turned on**
- **Broken cable**
- **Short circuit**

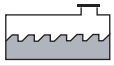
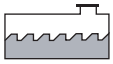
The status displays described above are valid for all actuators related to the work.









Valve	Icon	Description	Turn on the actuator	Turn off the actuator
Y12		Main coupling	1	2
H61		Main coupling acoustic signal	3	4
Y26		Fold in front attachm.	1	2
Y27		Extend front attachm.	3	4
Y29		Lower plant divider / Supporting wheel out	5	6
Y28		Raise plant divider / Supporting wheel in	7	8
Y51		Additional hydraulics (I) up „Hitch“	1	2
Y52		Additional hydraulics (I) down „Hitch“	3	4
Y61		Additional hydraulics (II) up	5	6
Y62		Additional hydraulics (II) down	7	8
Y60		Molasses addition	1	2
M16		Silage agent pump	3	4
Y73		Additional valve for engine cleaning/compressed air	3	4
M12		electric power supply Central lubrication	5	6
Y53		Storage switch grass / maize	7	8

4.10.14 Menu 4-1-13 „Grinding“

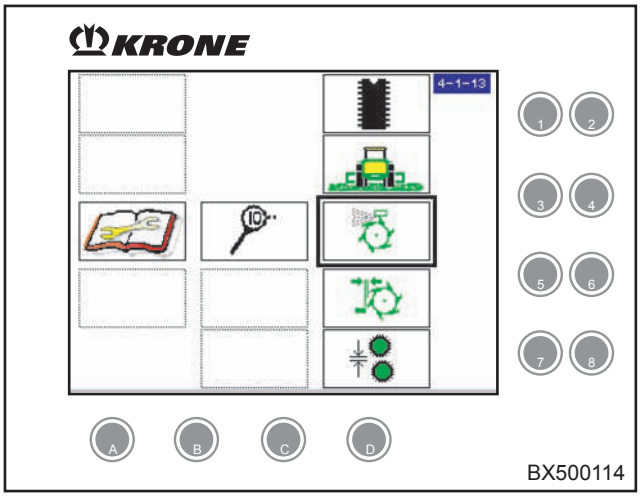
The main menu „Diagnostics“ is active.

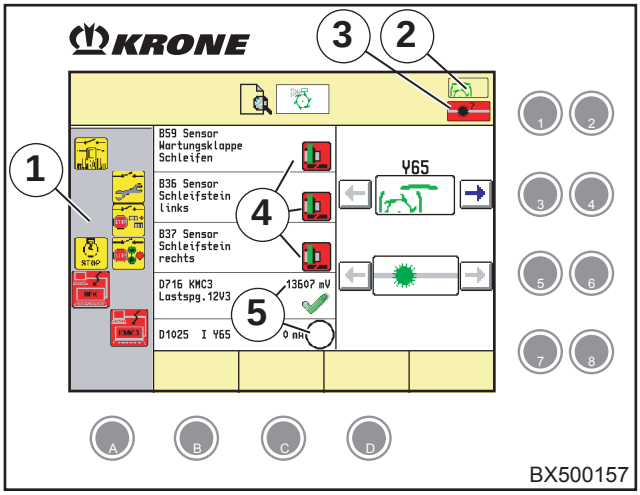
- Select menu 4-1-13 „Grinding“ with the rotary potentiometer.
- Press the rotary potentiometer.

„Grinding Diagnostics“ appears.

For release conditions (1) not met see chapter „Display of Release Conditions Not Met for Diagnostics“

For faults (1) see chapter „Display of Possible Faults for Diagnostics“





Status of the grinding flap (2)

- = Grinding flap is closed
- = Grinding flap is open

Status of the grinding stone (3)

- = Grinding stone is on the left
- = Grinding stone is in the centre
- = Grinding stone is on the right
- = Position of grinding stone unknown; grinding stone sensors are both alive/sensor is defective - FAULT

Status display of sensors (4)

- = Broken cable sensor
- = Sensor alive
- = Sensor not alive
- = Sensor short circuit

Status display of general errors (5)

- = Electrical power supply 12V3 of KMC3 (for grinding stone) is OK
- = Electrical power supply 12V3 of KMC3 (for grinding stone) is faulty
- = Output is turned off
- = Output is turned on (electrical current in mA for valve Y65 „grinding flap open/ closed“ is OK)
- = Output is turned on (electrical current in mA for valve Y65 „grinding flap open/ closed“ is not OK)

Actuator test

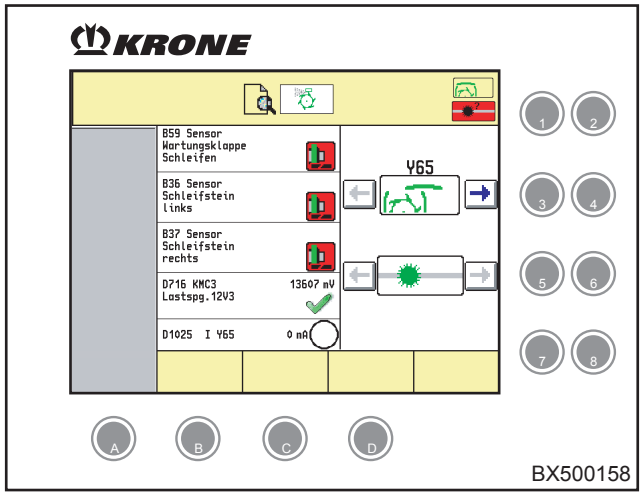
Actuators are controlled during the actuator test. This may result in the machine performing unexpected actions. Because of this, the test must only be performed from a safe position outside the area that is affected by machine parts moved by the actuators.

The actuator test is used to test actuators that have been attached to the machine for the grinding function.

Pre-condition: Conditions for release must be met. (**(See chapter „**Display of Release Conditions Not Met for Diagnostics“)

To select an actuator:

- To open the grinding flap, use the 3 key and 4 key.
- The valves for the grinding stone are controlled by the 5 key and the 6 key.
- Pressing the key on the rotary potentiometer takes you one menu level back.



4.10.15 Menu 4-1-14 „Counterblade“

The main menu „Diagnostics“ is active.

- Select menu 4-1-14 „Counterblade“ with the rotary potentiometer.
- Press the rotary potentiometer.

„Counterblade Diagnostics“ appears.

For release conditions (1) not met see chapter „Display of Release Conditions Not Met for Diagnostics“

For faults (1) see chapter „Display of Possible Faults for Diagnostics“

Status of the grinding flap (2)

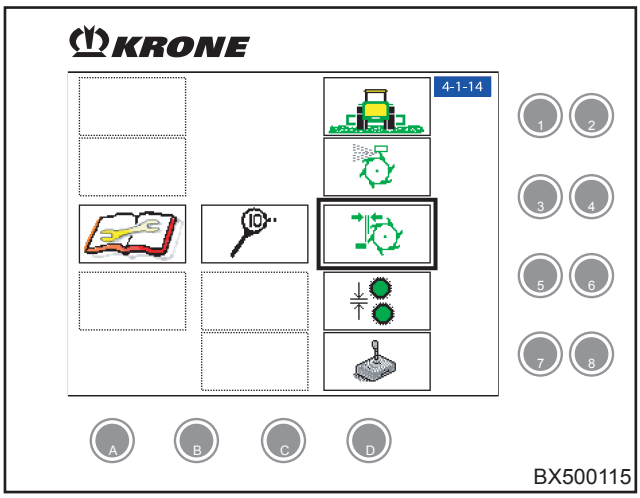
-  = Grinding flap is closed
-  = Grinding flap is open

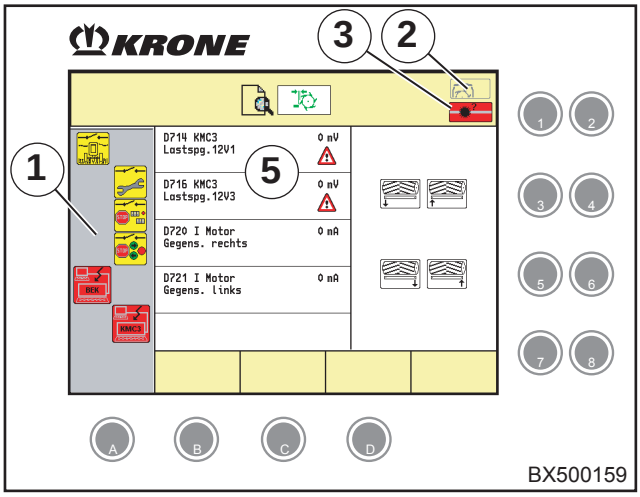
Status of the grinding stone (3)

-  = Grinding stone is on the left
-  = Grinding stone is in the centre
-  = Grinding stone is on the right
-  = Position of grinding stone unknown; grinding stone sensors are both alive/sensor is defective - FAULT

Status display of general errors (5)

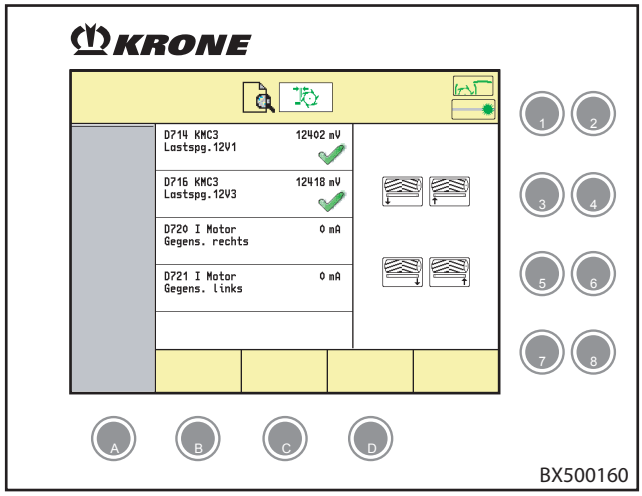
-  = Electrical power supply (12V1/12V3) of KMC3 (for counterblade) is OK
-  = Electrical power supply (12V1/12V3) of KMC3 (for counterblade) is faulty





Actuator test

Actuators are controlled during the actuator test. This may result in the machine performing unexpected actions. Because of this, the test must only be performed from a safe position outside the area that is affected by machine parts moved by the actuators.



The actuator test is used to test actuators that have been attached to the machine f or the counterb lade function.

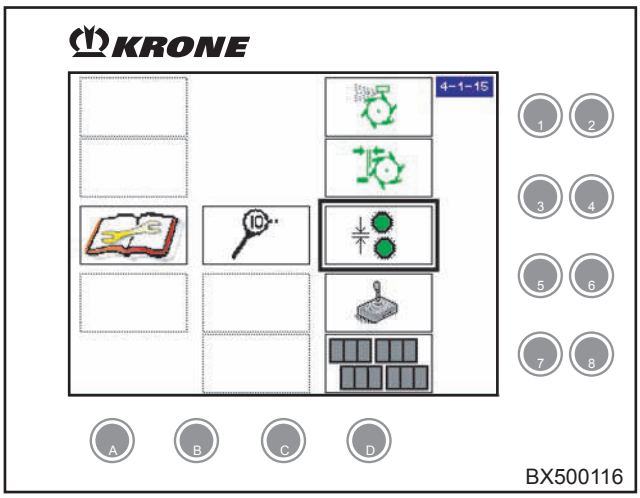
Pre-condition: Conditions for release must be met. (**See chapter „**Display of Release Conditions Not Met for Diagnostics“

- You can use the 3 key to move away from the counterblade on the right and the 4 key to approach it.
- You can use the 5 key to move away from the counterblade on the left and the 6 key to approach it.
- Pressing the key on the rotary potentiometer takes you one menu level back.

Actuator status displays

Actuator status (1) aktive	Actuator status (1) inaktive	Actuator status (1) Broken cable	Actuator status (1) Short circuit	Beschreibung
				Approach counterblade on the right
				Move away from counterblade on the right
				Approach counterblade on the left
				Move away from counterblade on the left

4.10.16 Menu 4-1-15 „Grain conditioner“



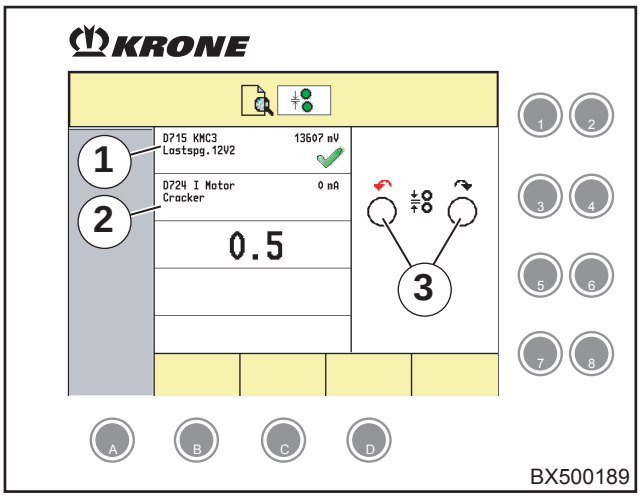
In diagnostic menu 4-1-15 you can test whether voltage is present on the cracker motor.
You can also see whether the voltage via KMC 3 is OK and whether current is flowing on the cracker motor.

The „Diagnostics“ main menu is active.

- Select menu 4-1-15 „Grain conditioner“ with the rotary potentiometer.
- Press the rotary potentiometer.

Diagnostics „Grain conditioner“ appears.

- Pressing the key on the rotary potentiometer takes you one menu level back.



Status display of general errors (1)

- = Electrical power supply (12V2) of KMC3 (for grain conditioner) is OK
- = Electrical power supply (12V2) of KMC3 (for grain conditioner) is not OK

If menu field (2) shows a value with the actuator turned on (cracker motor rotating anticlockwise/ clockwise), current is flowing. If the value remains at zero, no current is flowing.

Actuator test (3)

Actuators are controlled during the actuator test. This may result in the machine performing unexpected actions. Because of this, the test must only be performed from a safe position outside the area that is affected by machine parts moved by the actuators.

The actuator test is used to test actuators that ha ve been attached to the machine f or the function of the g rain conditioner.

Pre-condition: Conditions for release must be met. **(See chapter „**Display of Release Conditions Not Met for Diagnostics“)

To select an actuator:
To run an actuator (for example cracker motor rotating anticlockwise), activate the corresponding keys on the control unit.

Using the key, turn on the „Reduce cracker distance“ actuator.

Using the key, turn on the „Increase cracker distance“ actuator.

Possible status display of the selected actuator

Actuator turned off

Actuator turned on

Broken cable

Short circuit

4.10.17 Menu 4-1-16 „Joystick“

The key functions of the joystick can be checked in the „Joystick“ Diagnostics menu.

When bringing up the „Joystick“ Diagnostics menu, the diesel engine must be stopped.
No functions are performed when the joystick is activated in the „Joystick“ Diagnostics menu.

The „Diagnostics“ main menu is active.

- Select menu 4-1-16 „Joystick“ with the rotary potentiometer.
- Press the rotary potentiometer.

„Joystick Diagnostics“ appears.

- Pressing the key on the rotary potentiometer takes you one menu level back.

Menu control:

Pressing the A key under the softkey brings up the basic screen.
Press the C key under the softkey to bring up the next page of the „Joystick“ menu.
Press the C key under the softkey to bring up the next previous of the „Joystick“ menu.

A representation of the joystick appears in the display. If a function is activated on the joystick, the status of the function that is performed appears in the display.

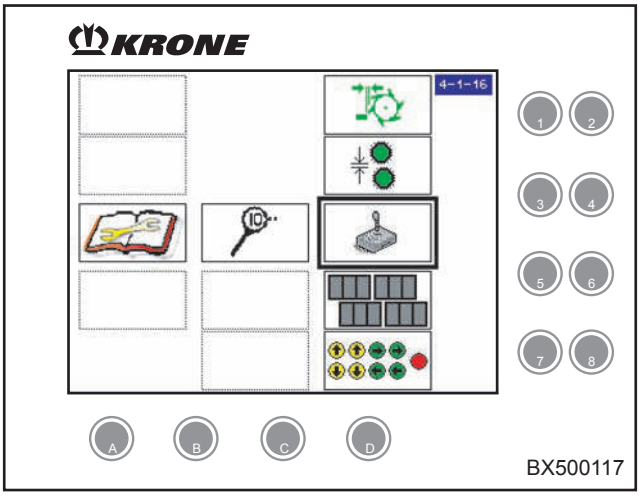
Possible status display of the activated key

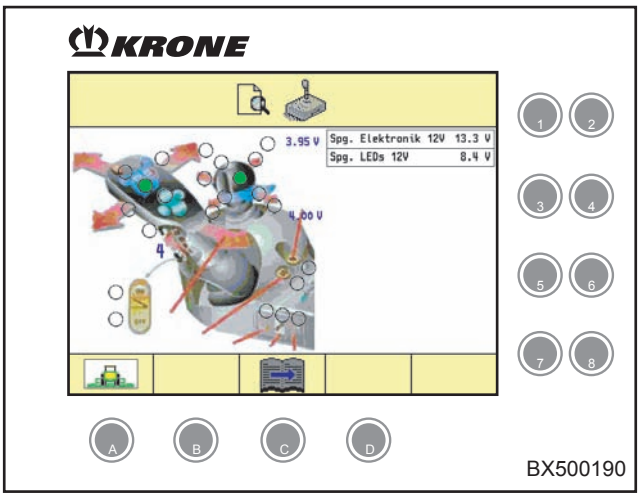
Key not activated

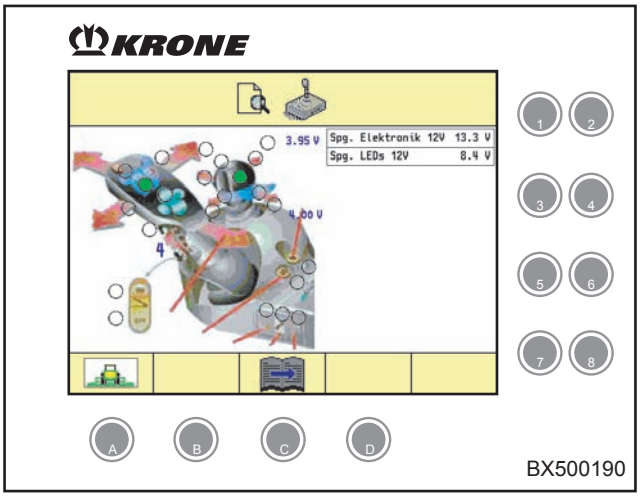
Key activated.

Broken cable

Short circuit







4.10.18 Menu 4-1-17 „Control Unit Console“

Both the release switches and the keys on the console can be checked for their functionality in the „Control unit console“ Diagnostics menu.

When bringing up the „Control unit console“ Diagnostics menu, the diesel engine must be stopped.
No functions are performed in the „Control unit console“ Diagnostics menu when the release switches or keys are activated.

The „Diagnostics“ main menu is active.

- Select menu 4-1-17 „Control unit console“ with the rotary potentiometer.
- Press the rotary potentiometer.

„Control unit console Diagnostics“ appears.

Malfunction

- = Fault in diesel engine 1
- = Fault in diesel engine 2

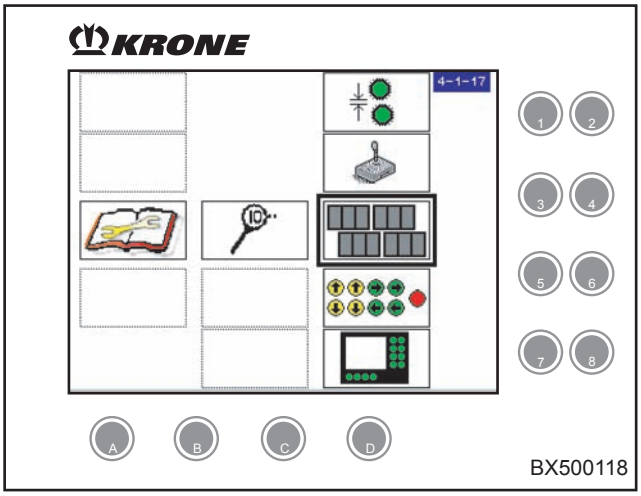
Release switch

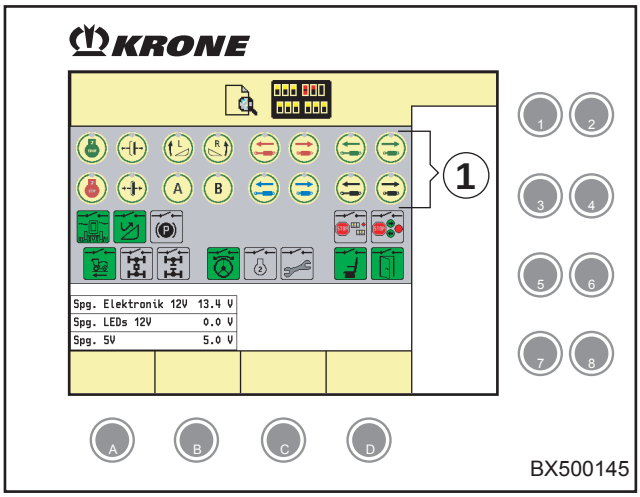
Activated	Inactive	Release switch
		Road/field
		Feed drive/front attachment
		Parking Brake
		Travelling gear
		All-wheel
		Axle separation
		Autopilot
		diesel engine 2
		Maint.
		Seat switch
		Door switch
		Stop switch CU
		Stop switch for manual operation

Keypads (1)

When the keypads (1) are activated, the keys are highlighted in colour.

For assignment of keypads, see chapter on „Keypads“ controls





4.10.19 Menu 4-1-18 „Manual Operation“

Keys for manual operation can be checked for their functionality in the „Manual operation“ Diagnostics menu.

When bringing up the „Manual operation“ Diagnostics menu, the diesel engine must be stopped. No functions are performed when keys are activated in the „Manual operation“ Diagnostics menu.

The main menu „Diagnostics“ is active.

- Select menu 4-1-18 „Manual operation“ with the rotary potentiometer.
- Press the rotary potentiometer.

„Manual operation Diagnostics“ appears.

Malfunction

- = Manual operation

Keypads (1)

When the keypads (1) are activated, the keys are highlighted in colour.

For the assignment of keypads, see chapter „Manual operations on the platform“

- Pressing the key on the rotary potentiometer takes you one menu level back.

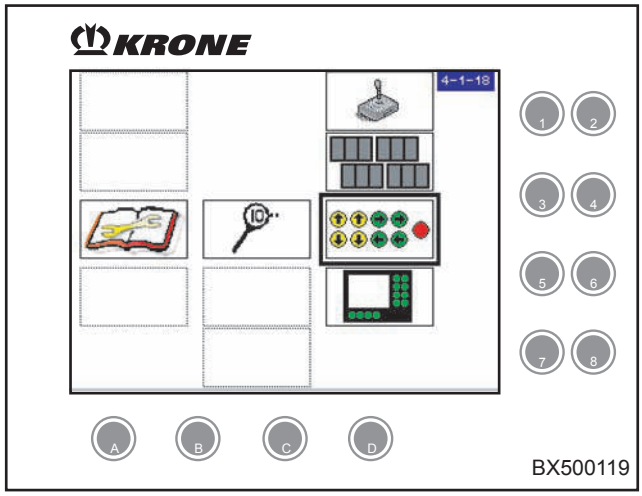
Possible status display of the activated key (2)

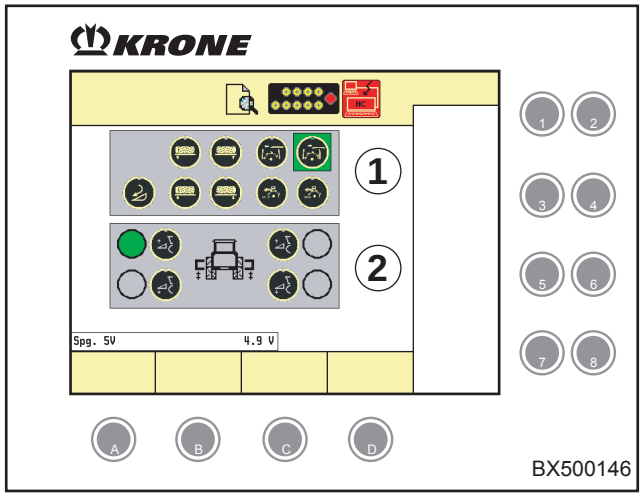
Key not activated

Key activated.

Broken cable

Short circuit





4.10.20 Menu 4-1-19 „Terminal“

You can adjust the brightness of the display in the „Terminal“ Diagnostics menu.
The main menu „Diagnostics“ is active.

- Select menu 4-1-19 „Terminal“ with the rotary potentiometer.
- Press the rotary potentiometer.

The „Terminal“ setting appears.

= Day design

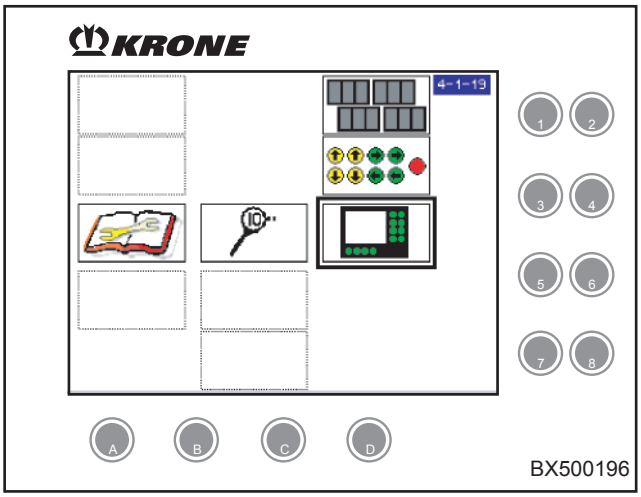
= Night design

The value after the symbols / indicates the set brightness value.

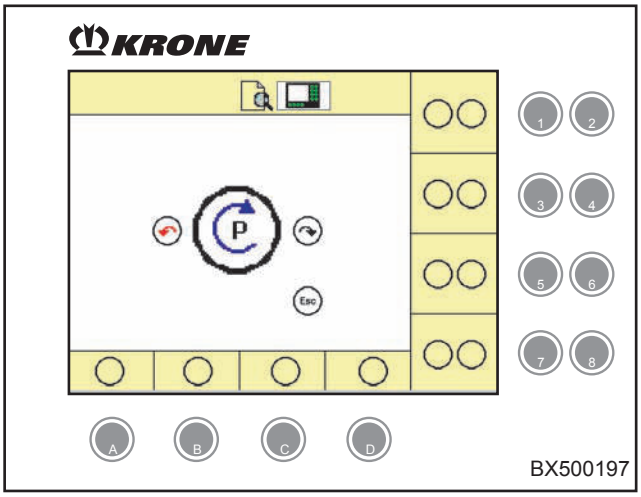
Setting and saving the brightness

The higher the value after the symbols / , the greater the brightness of the display.

- You can use the rotary potentiometer to select the desired selection. The selection box is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the selection box.
- Turning the rotary potentiometer increases or reduces the value.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection box.
- Pressing the key on the rotary potentiometer takes you one menu level back.

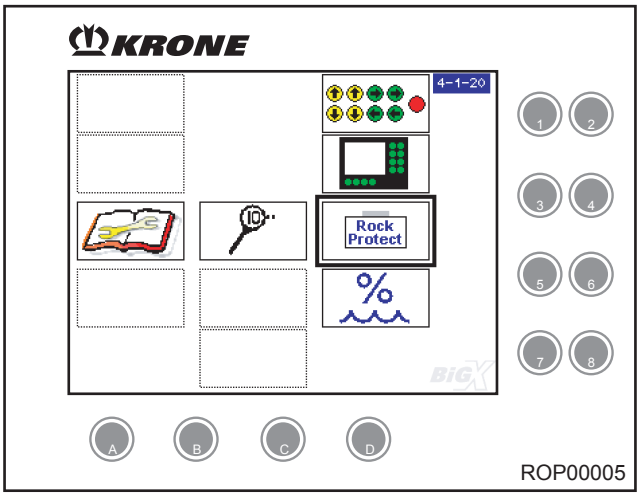


BX500196



BX500197

4.10.21 Menu 4-1-20 "RockProtect Diagnostics"



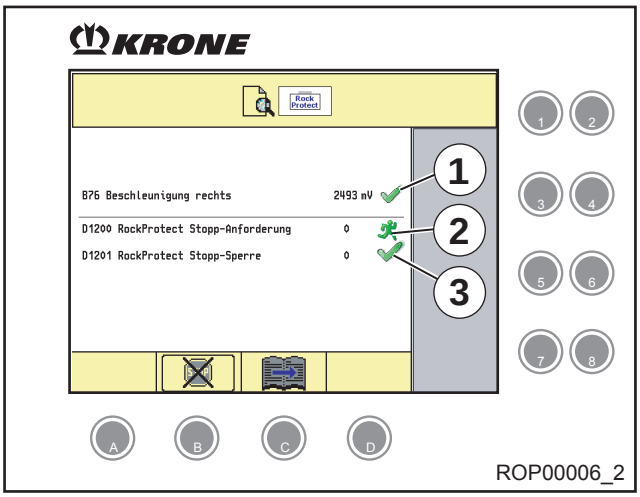
"Diagnostics" main menu is called up.

- Select menu 4-1-20 "RockProtect Diagnostics" with the rotary potentiometer.
- Press the rotary potentiometer.

"RockProtect diagnostics" appears.

RockProtect Diagnostics Page 1

Any release conditions that have not been fulfilled are displayed in the area highlighted in grey, if applicable.



Status display of the sensor (1)

Depending on the configuration, the voltage value and the status of the sensor are displayed.

= Sensor is OK

= Cables/sensor defective.

= Broken cable

= Voltage value too high

Status display of the stop request (2)

= Stop was requested

= Normal Operation, no stop

Status display of the stop lock (3)

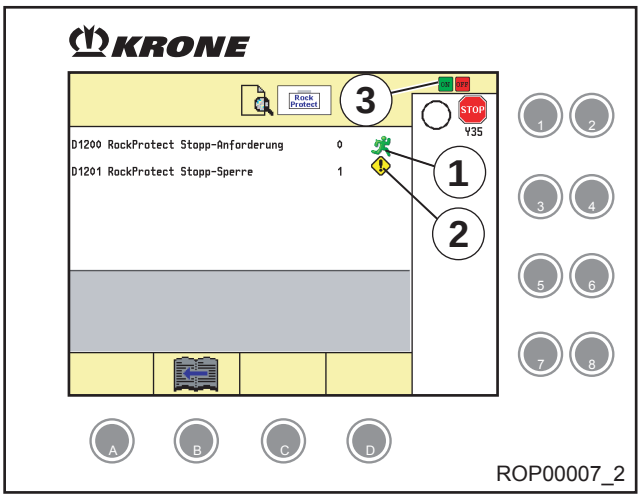
It indicates whether the stop lock is set. It is always active in reverse drive.

= Stop lock inactive, normal operation

= Stop lock active, no rock detection

- Press the key under the softkey to release the RockProtect after a stop.
- To show the next page, press the key under the softkey.

RockProtect Diagnostics Page 2
Any release conditions that have not been fulfilled are displayed in the area highlighted in grey, if applicable.



Status display of the stop request (1)

= Stop was requested

= Normal Operation, no stop

Status display of the stop lock (2)

It indicates whether the stop lock is set. It is always active in reverse drive.

= Stop lock inactive, normal operation

= Stop lock active, no rock detection

- Press the key on the left next to the STOP softkey to switch the output for the stop valve on or off.
  The target status of the output is displayed on the STOP icon next to the icon.

  = Output is not switched.

  = Output is switched.

- If for any reason no diagnostics may be performed, the ON OFF icons will not **(3)** appear

- To show the previous page, press the key under the softkey.

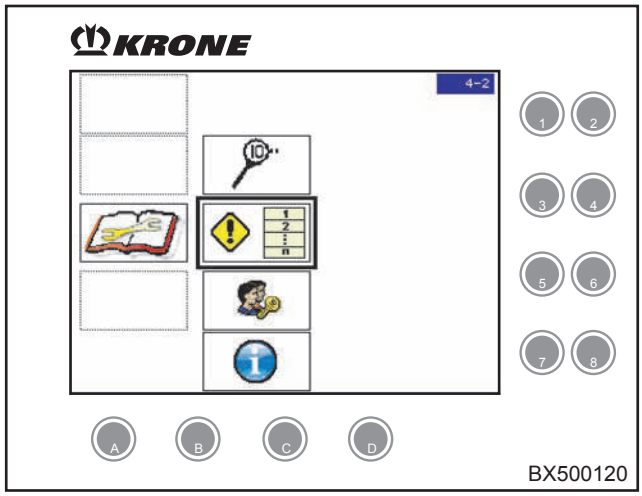
4.11 Menu 4-2 „Error list“

The main menu level is active.

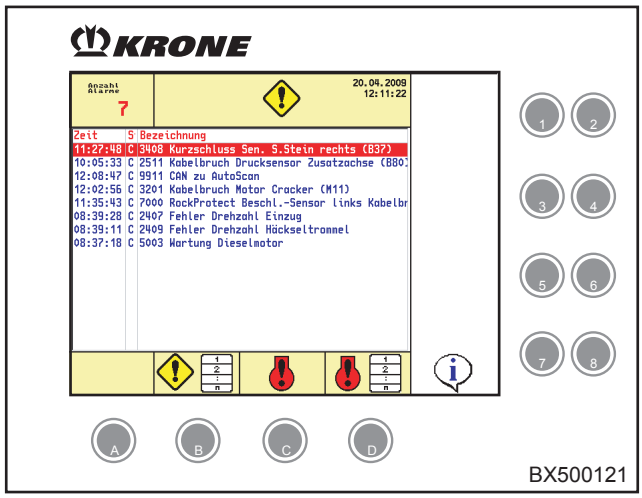
- Select main menu 4-2 with the rotary potentiometer.
- Press the rotary potentiometer.

„Error list“ appears.

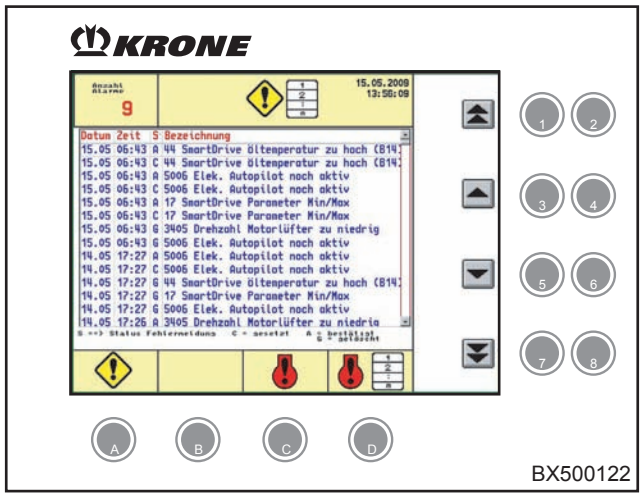
- = Current error
- = Fault storage
- = Current error, diesel engine
- = Fault storage, diesel engine
- = Error list "Informative events"



BX500120



BX500121



BX500122

Current errors

The display shows the error list with the current errors. The time, status, error number and designation are shown.

- Status
  C = Error has come (Come)
  G = Error has gone (Gone)
  A = Error acknowledged

- To display fault storage, activate the B key under the softkey.

Fault storage

Fault storage is arranged chronologically.
The date, time, status, error numbers, and designation are shown.

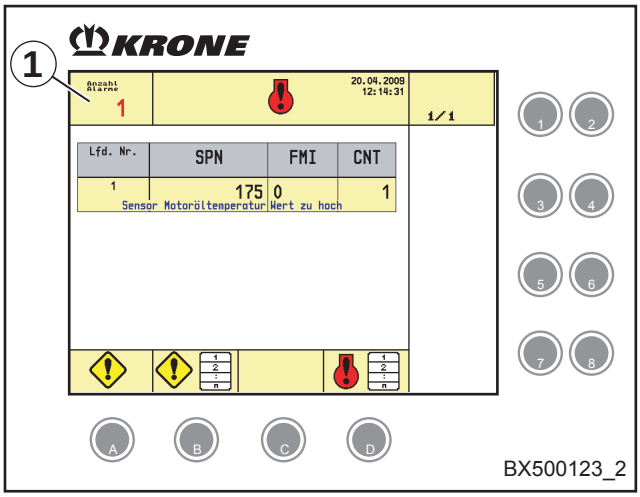
- Status
  C = Error has come (Come)
  G = Error has gone (Gone)
  A = Error acknowledged

- Press the 2 key next to the softkey to scrolls one page up.
- Press the 4 key next to the softkey to scrolls one line up.
- Press the 6 key next to the softkey to scrolls one line down
- Press the 8 key next to the softkey to scrolls one page down
- Press the C key next to the softkey to display current errors of the diesel engine.

Current diesel engine errors

The display shows the error list with the current errors of the diesel engine.
Error codes are displayed with a sequential number.
Menu field (1) indicates the number of alarms present.

- To display diesel engine fault storage, activate the key under the softkey.



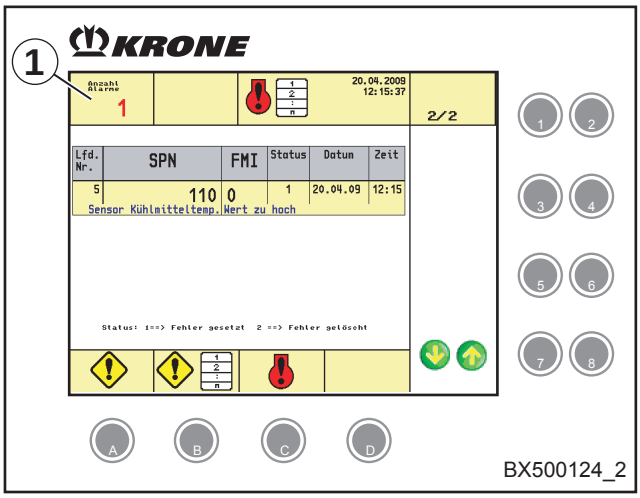
Diesel engine fault storage

The display shows the fault storage of the diesel engine.
Error codes, the status, date and time are indicated with a sequential number.
Menu field (1) indicates the number of alarms present.

- Status
  1 = Error set
  2 = Error deleted

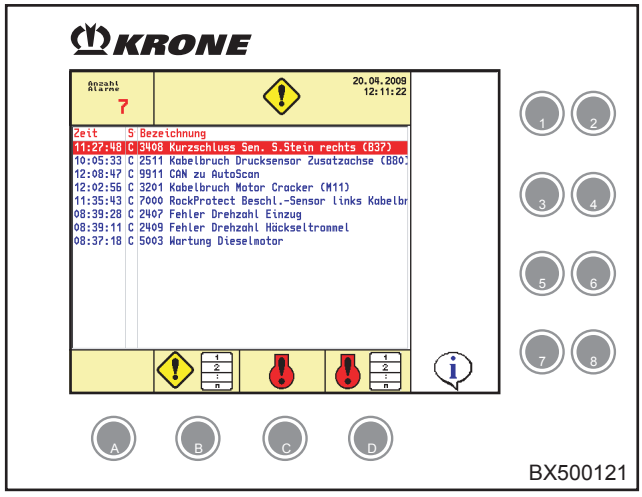
- To scroll to the end of a list, use the key.
  To scroll to the top, use the key.

- To display current errors, activate the key under the softkey.
- Press the key on the rotary potentiometer to open the menu level.



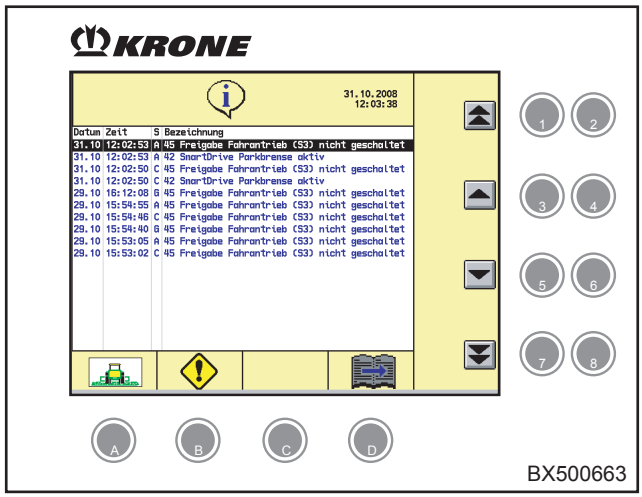
Error list „Informative events“

The „Current errors“ menu appears.



BX500121

- Activating the 7 key calls the „Informative events“ menu.



BX500663

The „Informative events“ menu records the following messages:

- 3507 Diesel engine maintenance
- 3508 Air filter contamination
- 3509 Hydraulic oil filling level
- 4301 Metal in feed drive!
- 7016 Stone detected!
- 42 SmartDrive parking brake active
- 45 Travelling gear release (S3) not switched

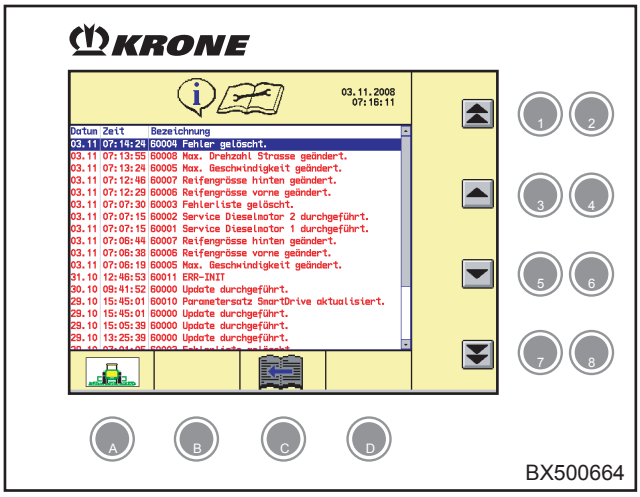
Menu control:

- Activating the A key under the  softkey brings up the basic screen.
- Activating the B key under the  softkey brings up the current alarm list.
- Activating the 2 key next to the  softkey scrolls one page up
- Activating the 4 key next to the  softkey scrolls one line up
- Activating the 4 key next to the  softkey scrolls one line down
- Activating the 8 key next to the  softkey scrolls one page down
- Activating the D key under the  softkey brings up the**„Service events“** menu.

Error list "Service events"

The "Service events" menu contains the following events with the time stamp:

- 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 SmartDrive software updated
- 60010 SmartDrive parameter set updated
- 60011 ERR-INIT



Menu control:

- Activating the A key under the  softkey brings up the basic screen.
- Activating the 2 key next to the  softkey scrolls one page up
- Activating the 4 key next to the  softkey scrolls one line up
- Activating the 6 key next to the  softkey scrolls one line down
- Activating the 8 key next to the  softkey scrolls one page down
- Pressing the C key next to the  softkey takes back you to the **"Informative Events"** menu.

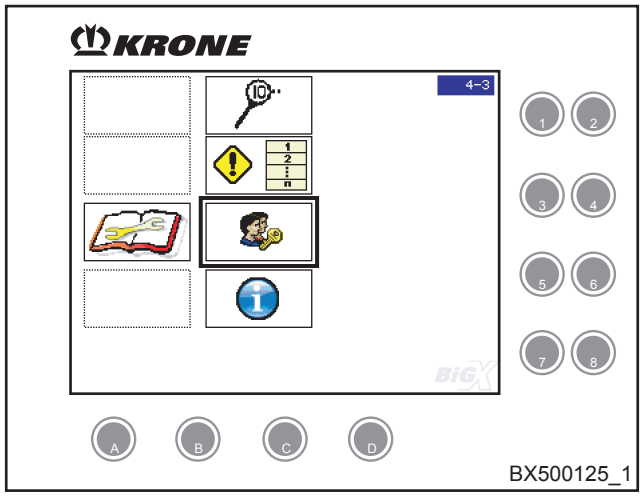
4.12 Menu 4-3 „Service level“

The main menu level is active.

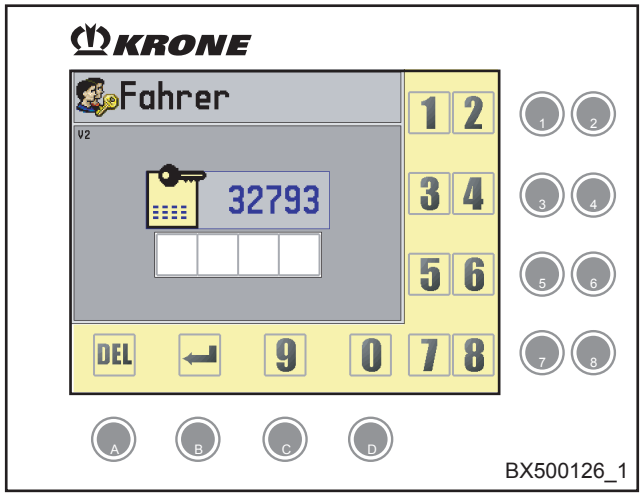
- Select main menu 4-3 with the rotary potentiometer.
- Press the rotary potentiometer.

The „Service level“ is protected by a password and is accessible only to the Krone service staff.

- Pressing the ◯ key on the rotary potentiometer takes you one menu level back.



BX500125_1



BX500126_1

4.13 Menu 4-4 „Information“

The main menu level is active.

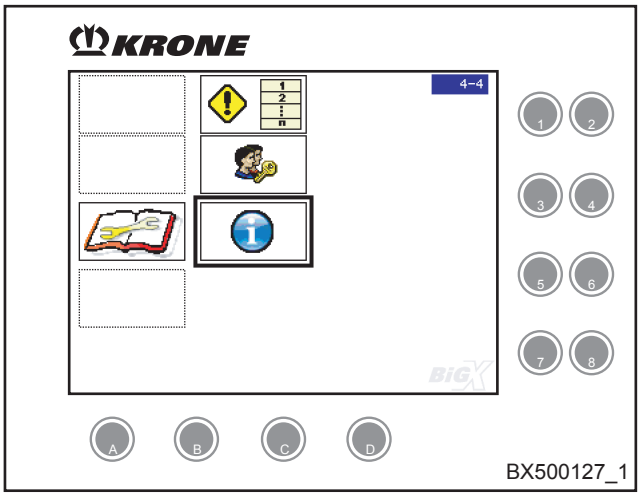
- Select main menu 4-4 with the rotary potentiometer.
- Press the rotary potentiometer.

The display shows menu level 4-4 „Information“.

The main menu, „Settings“, is divided up into three menus:

-  = Menu 4-1 „Joystick“
-  = Menu 4-2 „Software“
-  = Menu 4-3 „Machine“

- Pressing the ● key on the rotary potentiometer takes you one menu level back.



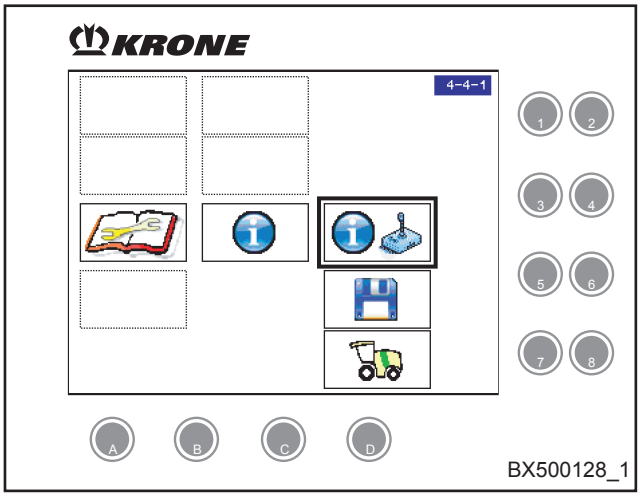
4.13.1 Menu 4-4-1 „Joystick“

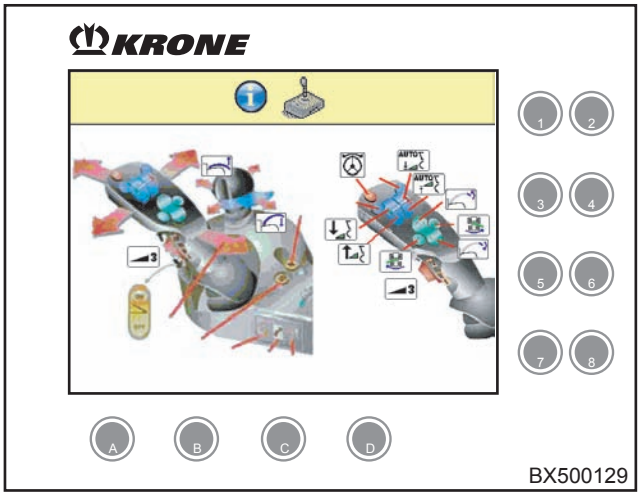
The main menu „Information“ is active.

- Select menu 4-4-1 „Joystick“ with the rotary potentiometer.
- Press the rotary potentiometer.

„Joystick information“ appears.

- Pressing the ● key on the rotary potentiometer takes you one menu level back.





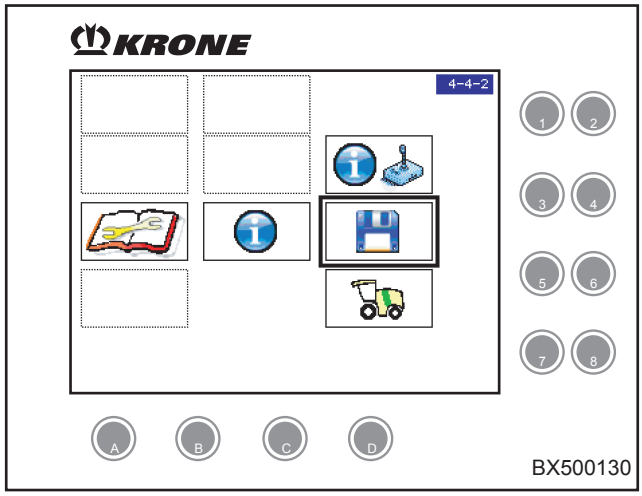
4.13.2 Menu 4-4-2 „Software“

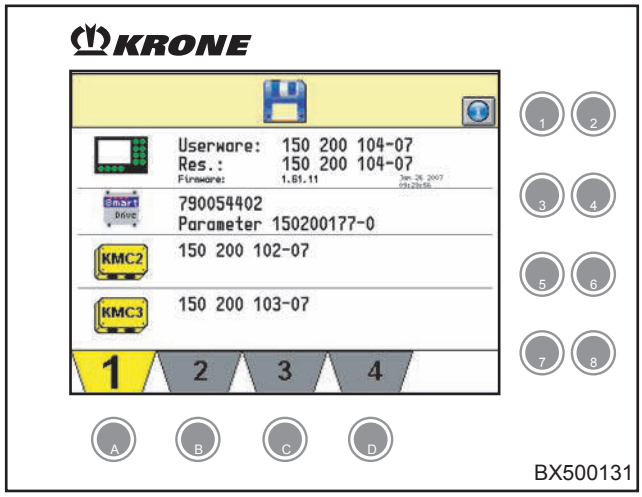
The main menu „Information“ is active.

- Select menu 4-4-2 „Software“ with the rotary potentiometer.
- Press the rotary potentiometer.

„Software information“ appears.

The display shows the software versions of the various controllers.





Page 1

- = Terminal

If the versions of resources and DLLs (Userware) do not match for the terminal, the version numbers appear in red.

- = SmartDrive
- = KMC2
- = KMC3

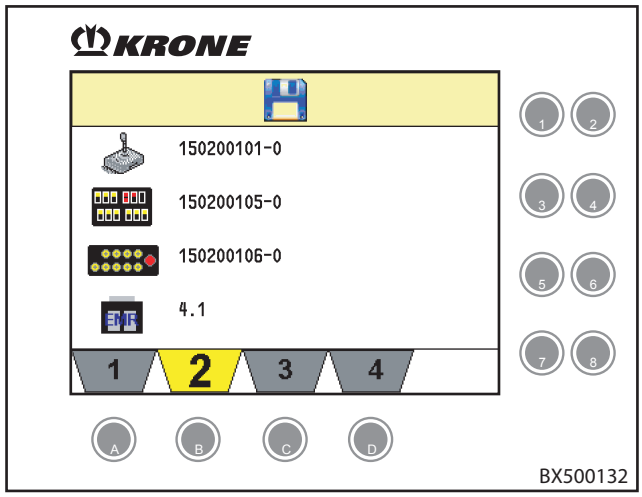
If the KMC2 and KMC3 software is not designed for your machine type, the version numbers appear in red

- Activating the B key or turning the rotary potentiometer causes the second page to be displayed on the rotary potentiometer.
- To show or hide extended information, press the key 1 or 2.

Page 2

- = Joystick
- = CU
- = Manual operation
- = EMR

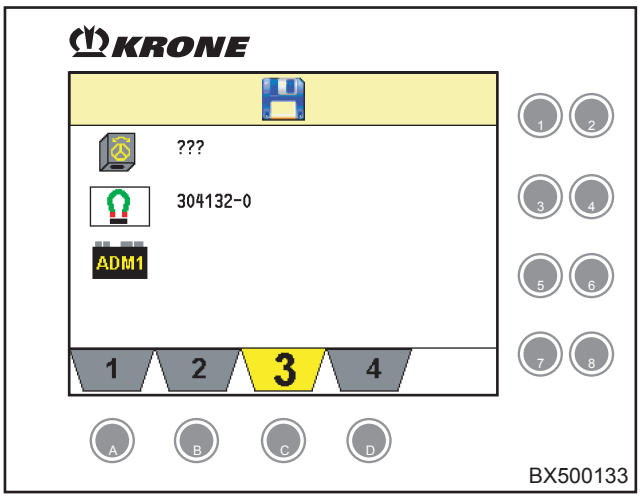
- Activating the C key or turning the rotary potentiometer causes the fourth page to be displayed on the rotary potentiometer.
- To show or hide extended information, press the key 1 or 2.



Page 3

- = Autopilot
- = Metal detection
- = ADM1 (Daimler-Motor) / MFR (MAN-Motor)
- = ADM2 (Daimler-Motor Big X 800/1000)

- Activating the D key or turning the rotary potentiometer causes the fourth page to be displayed on the rotary potentiometer.
- To show or hide extended information, press the key 1 or 2.

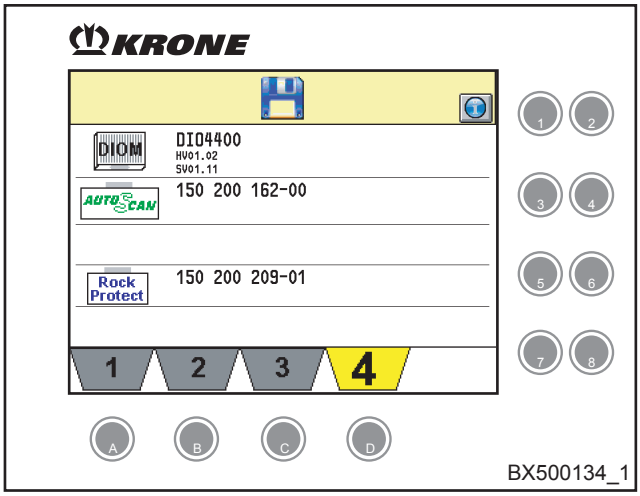


Page 4

- = DIOM
- = AutoScan (optional)
- = RockProtect (optional)

- Activating the A key or turning the rotary potentiometer causes the third page to be displayed on the rotary potentiometer.

- Pressing the key on the rotary potentiometer takes you one menu level back.
- To show or hide extended information, press the key 1 or 2.



4.13.3 Menu 4-4-3 „Machine“

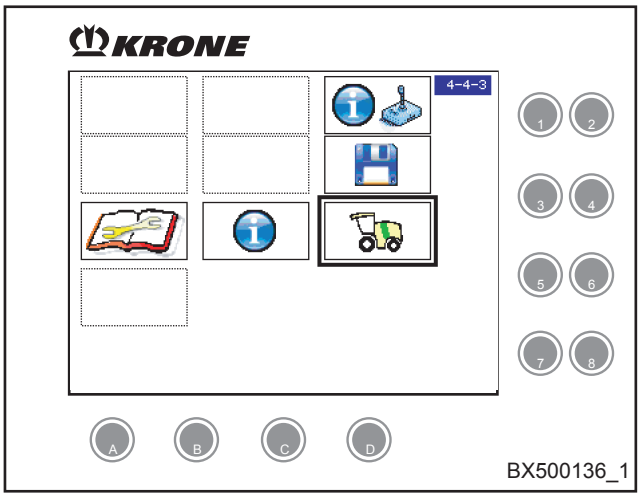
The main menu „Information“ is active.

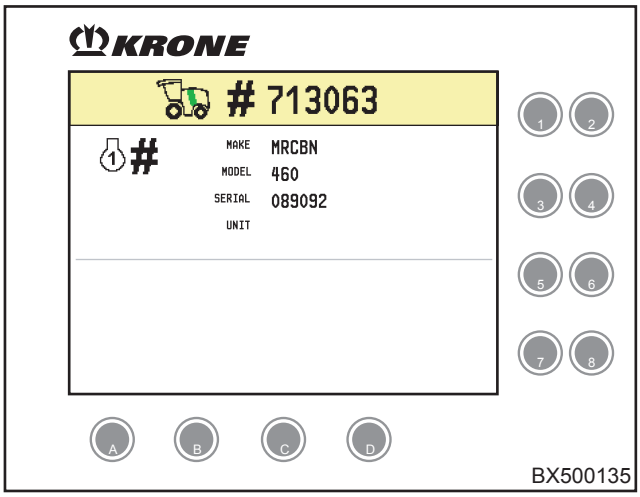
- Select menu 4-4-3 „Machine“ with the rotary potentiometer.

- Press the rotary potentiometer.

„Machine information“ appears.

The display shows machine information.



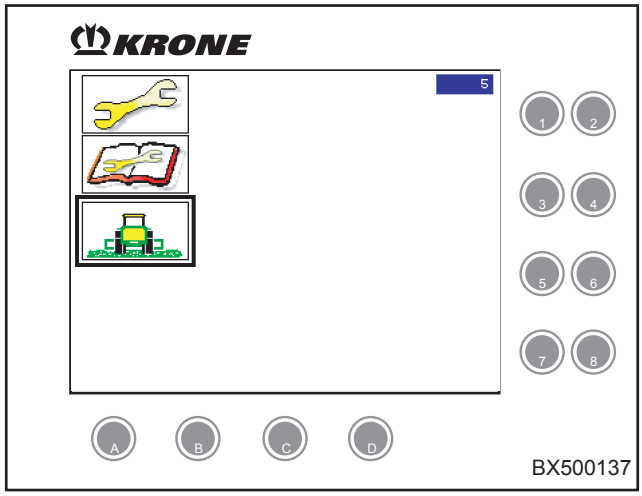


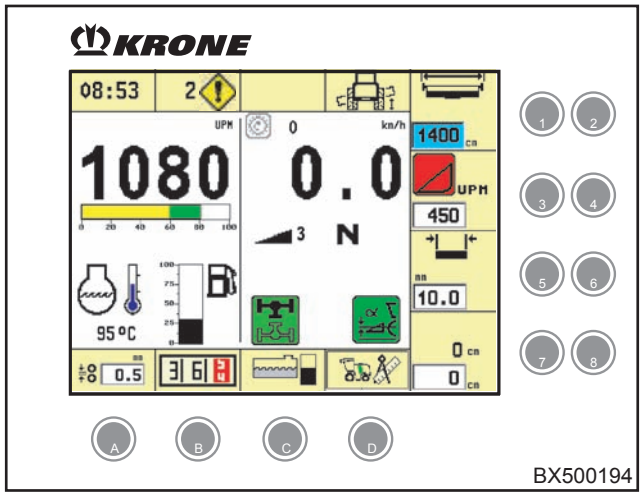
4.14 Menu 5 „Basic Screen“

The main menu is active.

- Select menu 5 "Basic screen" with the rotary potentiometer.
- Press the rotary potentiometer.

The „Basic screen“ is displayed.



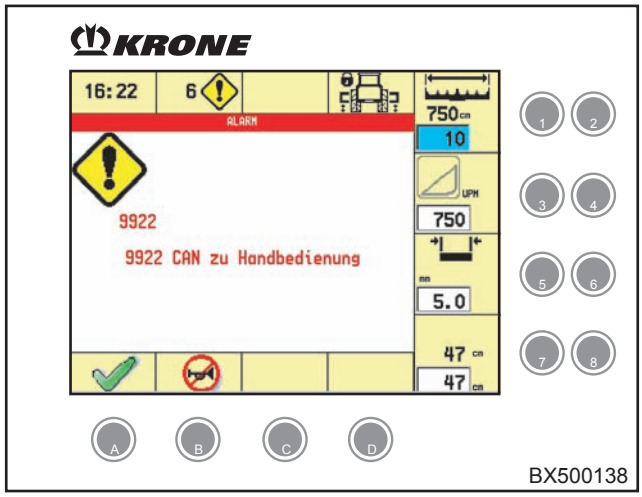


4.14.1 error message

If an error occurs on the machine, the error message appears in the display.

The error message and the fault code are displayed.

- The error message can be confirmed with the A key under softkey ✓.
- The acoustic signal can be turned off with the B key under the softkey.



For a list of error messages, error description, potential error reason and remedy of error, please refer to appendix A – Error messages.

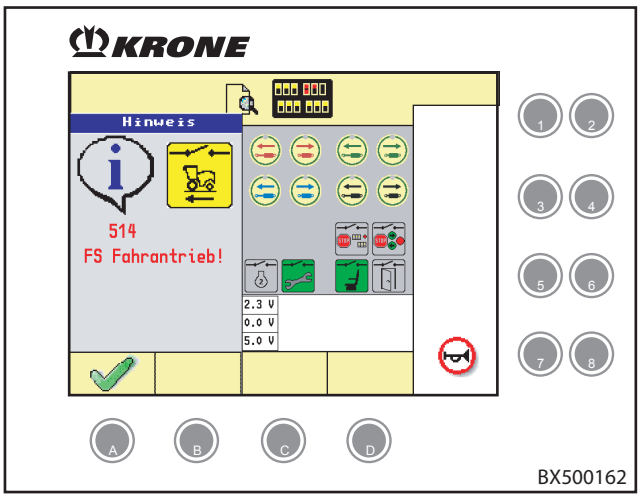
4.14.2 Information message

If one or several conditions are not met to carry out an action, the information message will be displayed in the information section of settings (IV).

The information message and the information code are displayed.

Acknowledging the information message

- The error message can be confirmed with the A key under softkey ✓ .



4.15 Printer Connection

The information items listed below can be printed with the aid of the printer.

- Individual customer records or all
- = operating hour counter (h)
- = drum hours counter (h)
- = working hours counter (h)
- = surface counter (ha)
- = road odometer (km)
- = fuel consumption (l)

Create connection:

- Connect the printer via the diagnostics socket (1) (CAN interface) in the console.
- Insert the paper as explained in the printer's operating instructions.
- The printer is now ready for operation.

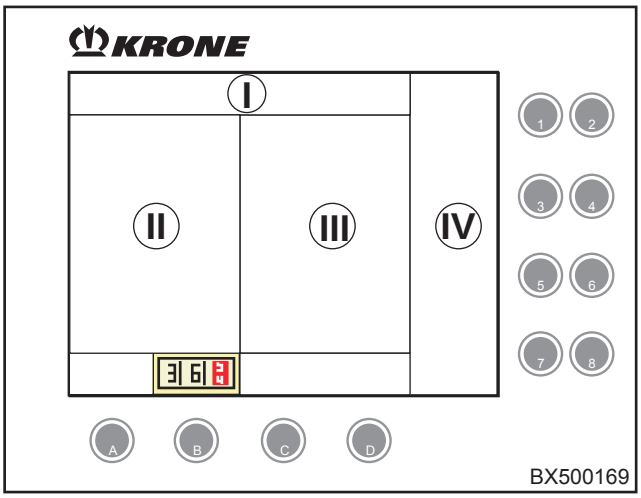
4.15.1 Printing Customer Data

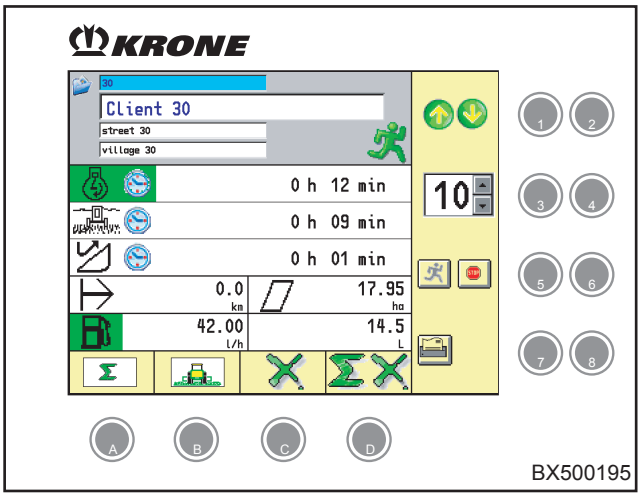
To print customer records, activate the B key under the 3 6 softkey to switch to the „Customer data counter“ submenu

If there is no printer available, or no printer ready for operation, the symbol does not appear.

- Press the 7 key to bring up the „Customer data“ print menu.

Before bringing up the „Customer data“ menu, make certain the customer record you want to print is selected in the Customer data counter menu.





4.15.2 Customer Data Print Menu

Menu overview:

(1) = Use the key to select the displayed customer record for printing.

(2) = Select all customer records to be printed with the key.

(3) = Use the key to select the last selected cultivated area counter or the one that was entered in the „Customer data counter“ menu for printing.

(4) = Select all cultivated area counters of a customer record to be printed with the key.

(5) = Paper feed

(6) = Start printer

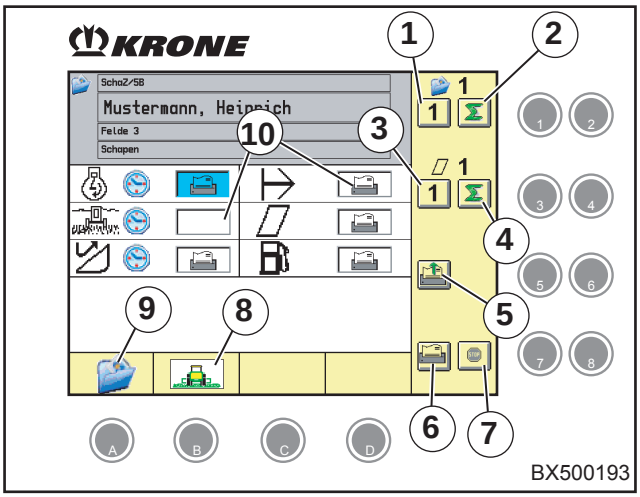
(7) = Stop print job

(8) = Bring up basic screen

(9) = Switch to „Customer data counter“ menu

(10) = Counter is selected for printing.

Counter will not be printed



- You can use the rotary potentiometer to select the desired counter. The entry box is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can activate or deactivate the counter for printing with the rotary potentiometer.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection field.
- Pressing the key on the rotary potentiometer takes you one menu level back.

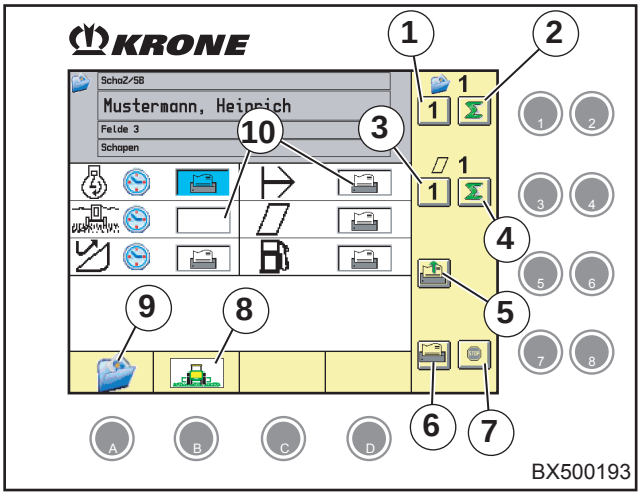
4.15.3 To print a customer record or records:

The customer record to be printed must previously be selected in the „Customer data counter“ menu. (If necessary switch to the customer data counter menu with the $$$ key and and select the desired customer data record)

- Select the displayed customer record for printing with the key and start the print process with the key.
- To print all customer records, press the key and then start the print process with the key.

All counters will be printed for which the counter status is greater than zero.

4.15.4 Printing Cultivated Area Counter States



- Use the (3) key to select the last selected cultivated area counter or the one that was entered in the „Customer data counter“ menu for printing. Start the print process with the (7) key
- You can use the (4) key to select all cultivated area counters of a customer record. Start the print process with the (7) key.

Printing all customer records and all cultivated area counter states

- First press the (2) key.
- Then activate the (4) key and start printing with the (7) key.

All counters will be printed for which the counter status is greater than zero.

4.15.5 Description of Printer Errors

Error message Icon	Description
	No paper. Insert paper and restart the print process.
	The print buffer is full. Restart the terminal and repeat the print process.
	No CAN connection to the printer. Check the cabling to the printer.

4.16 Battery Change on the Terminal

The terminal is equipped with a battery.
The battery is used to protect data in case the power supply fails or when the terminal is turned off.

Caution!
Changing the battery
Effect: Failure to observe instructions will result in loss of data and incorrect settings on the machine.

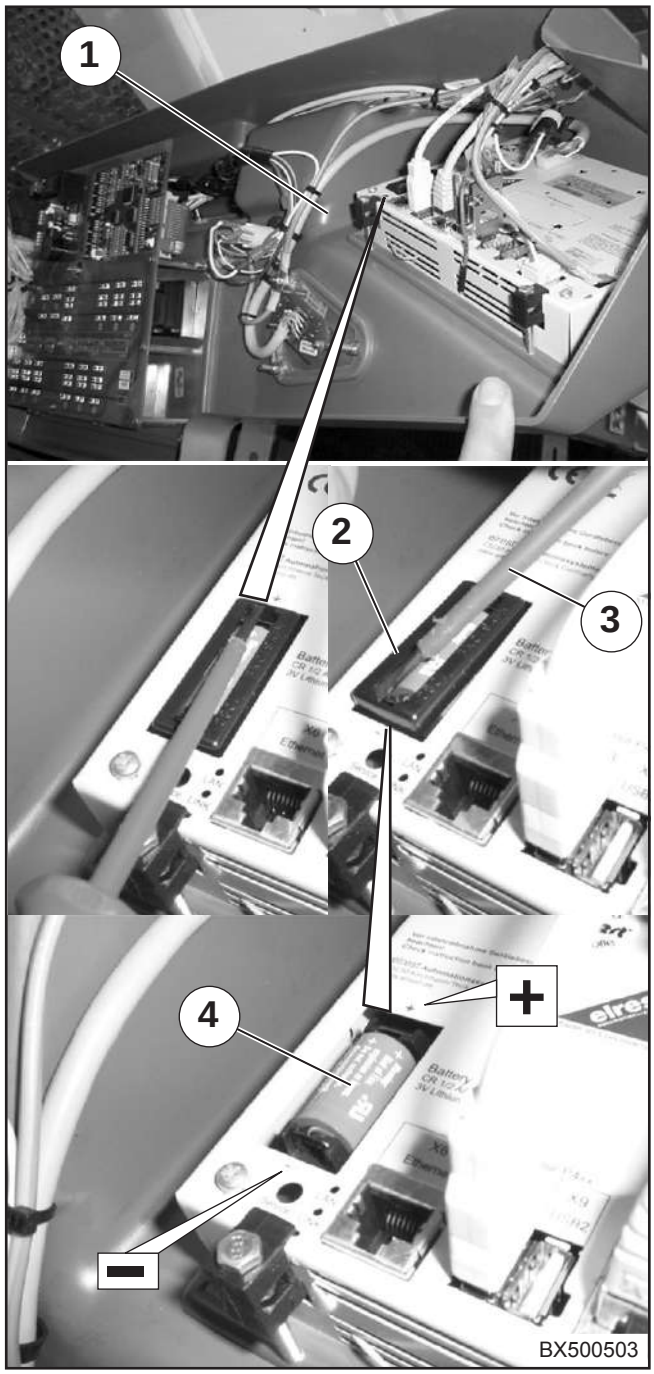
- **Battery (type CR 1/2 AA, 950 mAh Order No. 20 080 607 0) - replace at least once every 2 years.**
- **Follow the exact order of steps when changing the battery.**
- **Do not hold the pole of the new battery with your hands.**
- **Do not create a conducting connection between the two poles of the battery.**
  (Battery discharges and will need to be replaced).
- **When installing the battery, make certain it is always installed with the poles correctly aligned.**

4.16.1 Procedure for Replacing the Battery

- Turn on the ignition to ignition stage 2.
- Wait until the Work icon appears in the terminal.
- Open the console (1) and fold the cover all the way up.
- Pry the battery support (2) out of its holder with a small screwdriver (3).
  (Apply the screwdriver once on the top and once on the bottom of the battery support.)
- Remove the old battery (4).

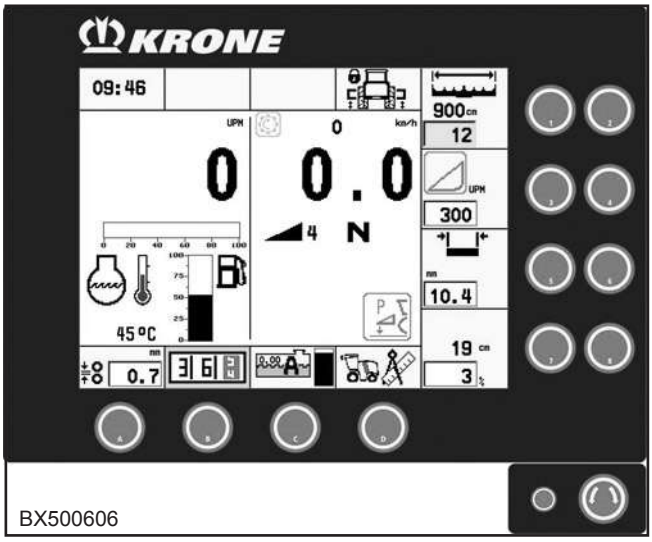
When the battery is removed, an audio signal sounds and an error message appears on the terminal.
Please ignore the error message. The error message is automatically deleted after a new battery is inserted.

- Install the new battery (4). Make certain polarity is correct.
- Insert the battery support (2).
- Fold down the cover and close the console (1).



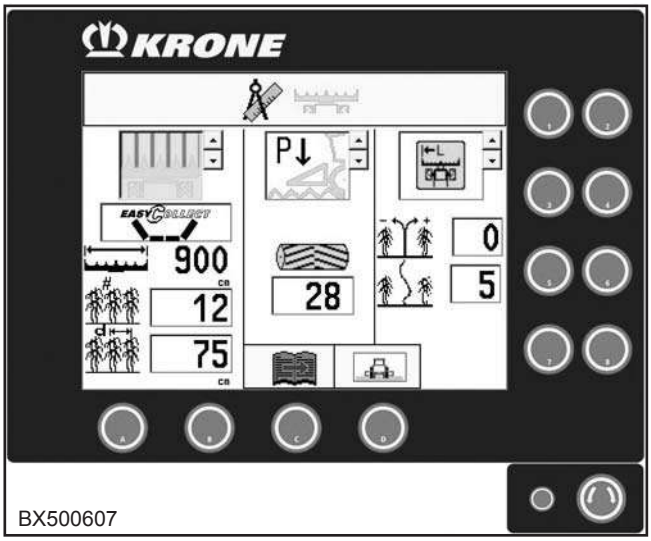
4.17 "Setting of the constant power load limit control" menu appears

- Press the D key on the basic screen to switch to the mask for „Machine settings“.



BX500606

- Press the C key to bring up the next page „Settings of the load limit control“. (In maize mode, press the C key twice, because additional settings can be made).



BX500607

The changes become effective immediately.
In doing so, the forage harvester can be adapted to the respective circumstances during its use.

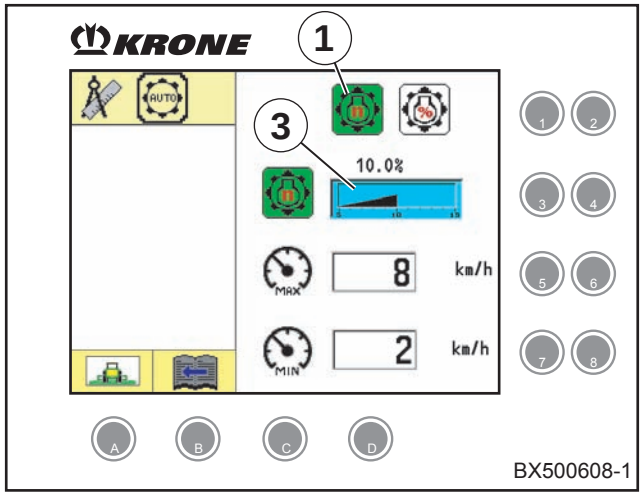
Entering the degree of speed reduction

Speed reduction can be set dependent on speed and engine duty.

Speed-dependent entry:

You can use the rotary potentiometer to select setting (1). The selection box is highlighted in colour.

- Press the rotary potentiometer to switch to the selection box (3). The box has a yellow background.
- The degree of speed reduction can be increased or decreased from 3% - 15% by turning the rotary potentiometer engine to the left or right.
- To accept and save the value, press the rotary potentiometer again. The colour of the background will change to light blue again.

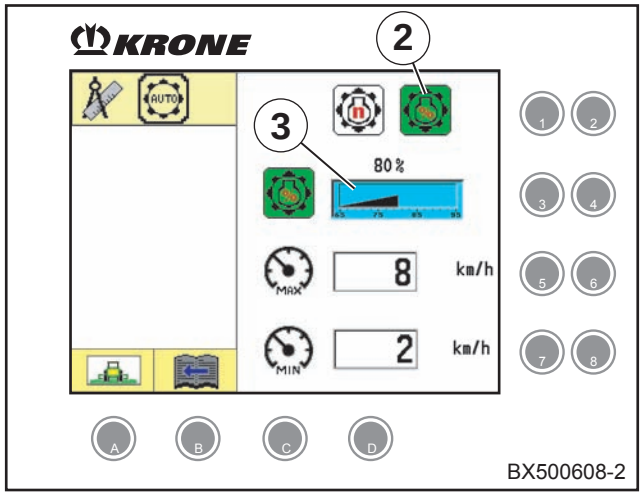


A degree of speed reduction by 10% means that, at a setpoint engine speed of 2000 rpm, the engine speed of 1800 rpm will be controlled by increasing or reducing the speed of the travelling gear.

Engine duty-dependent entry:

You can use the rotary potentiometer to select setting (2). The selection box is highlighted in colour.

- Press the rotary potentiometer to switch to the selection box (3). The box has a yellow background.
- The degree of speed reduction can be increased or decreased from 65% - 95% by turning the rotary potentiometer engine to the left or right.
- To accept and save the value, press the rotary potentiometer again. The colour of the background will change to light blue again.



The changes become effective immediately.
In doing so, the forage harvester can be adapted to the respective circumstances during its use.

Setting the maximum speed

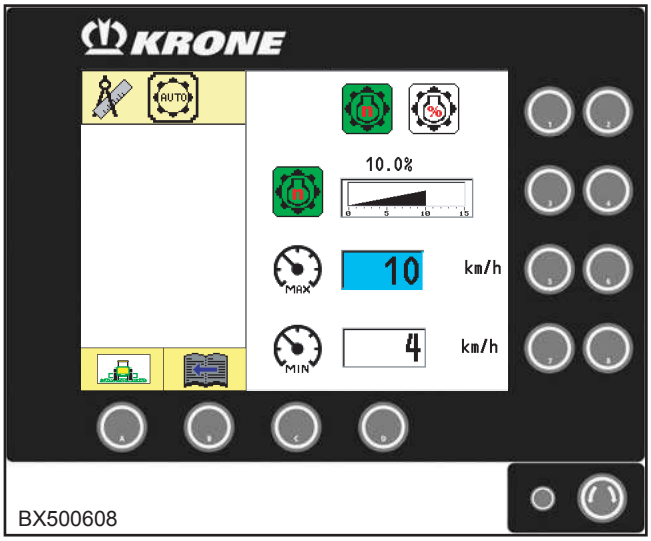
Press the rotary potentiometer to select the input field for the maximum speed  .

- Pressing the rotary potentiometer once will mark the input field.
  The colour of the background will change to yellow, and the value of the maximum speed can be increased or decreased by turning the rotary potentiometer to the left or to the right.

- To accept and save the value, press the rotary potentiometer again.
  The colour of the background will change to light blue again.

The load limit control will now accelerate the travelling gear up to the speed at which it is set.

The changes become effective immediately.
In doing so, the forage harvester can be adapted to the respective circumstances during its use.



BX500608

Setting the minimum speed

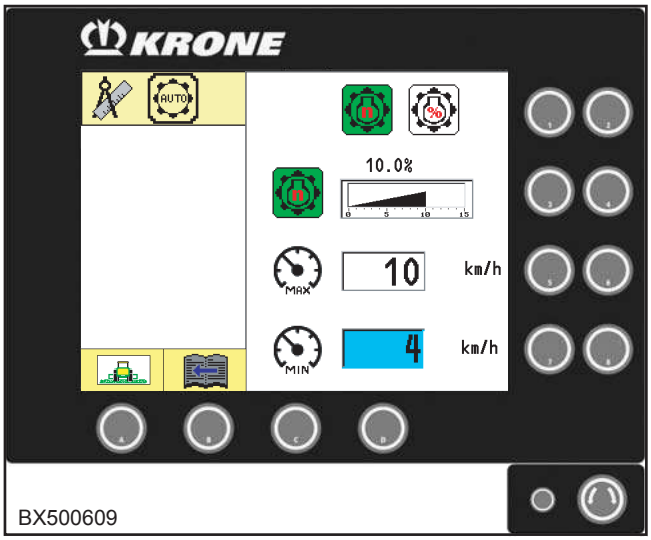
Press the rotary potentiometer to select t he input field for the minimum speed  .

- Pressing the rotary potentiometer once will mark the input field.
  The colour of the background will change to yellow, and the value of the minimum speed can be reduced or increased by turning the rotary potentiometer to the left or to the right.

- To accept and save the value, press the rotary potentiometer again.
  The colour of the background will change to light blue again.

The load limit control will now delay the travelling gear to the speed at which it is set.

The changes become effective immediately.
In doing so, the forage harvester can be adapted to the respective circumstances during its use.



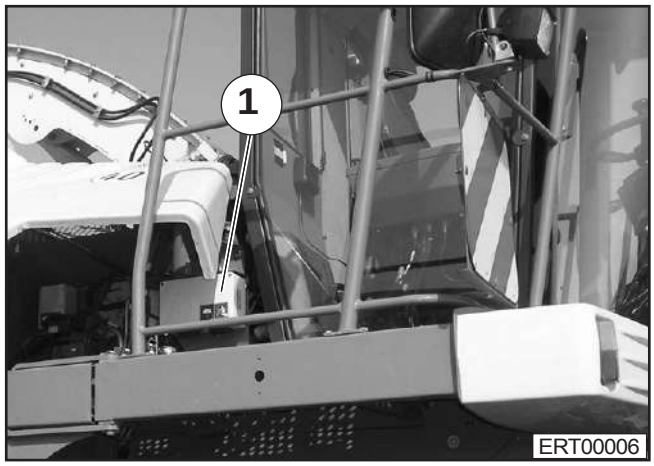
BX500609

4.18 CropControl control unit

4.18.1 General Description

The electronic equipment of the CropControl system consists essentially of the job computer along with the control unit and the sensors.

The job computer (1) is located on the right-hand side of the machine under the side hood behind the driver's cab.



Its functions are:

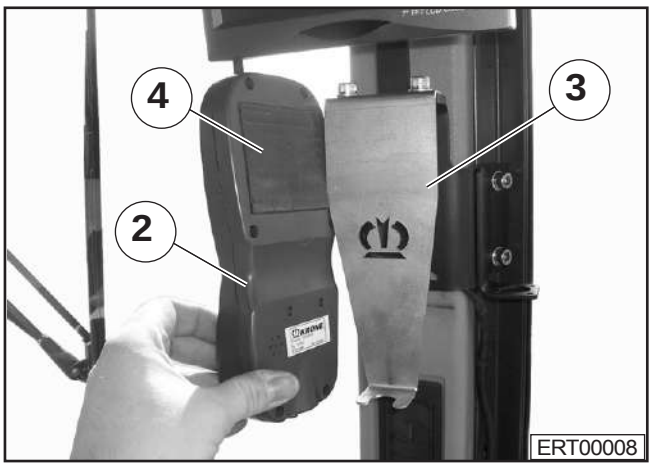
- Yield counter
- Reading in of the signals
- Transfer of alarm messages
- Diagnostics sensors

The control unit (2) communicates information to the driver and performs settings to operate the CropControl. This information is received and further processed by the job computer.

The control unit (2) must be protected against water.

4.18.2 Mounting

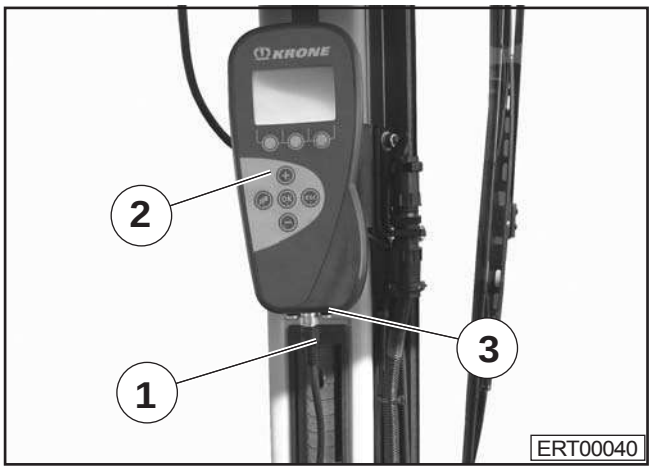
Mount the control unit with its support (3) where it can be seen by the driver following the Operating Manual.



4.18.2.1 Mounting the control unit

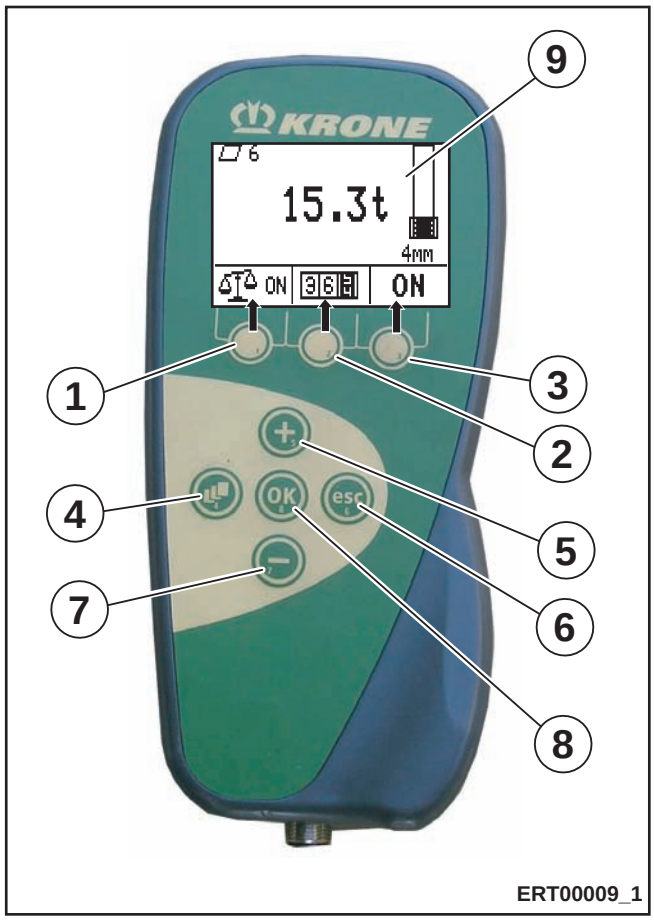
- Attach the control unit (2) onto the support (3) and press onto the support (3).
  The control unit (2) is fixed by the magnetic plate (4) on the support (3).

- Connect the cable (1) included with delivery to the ISO socket and to the socket (3) on the control unit (2).



4.18.3 Control unit

4.18.3.1 Overview



1, 2, 3 Keys for softkey

4 Menu key

5 "+" key

6 Esc key

7 "+" key

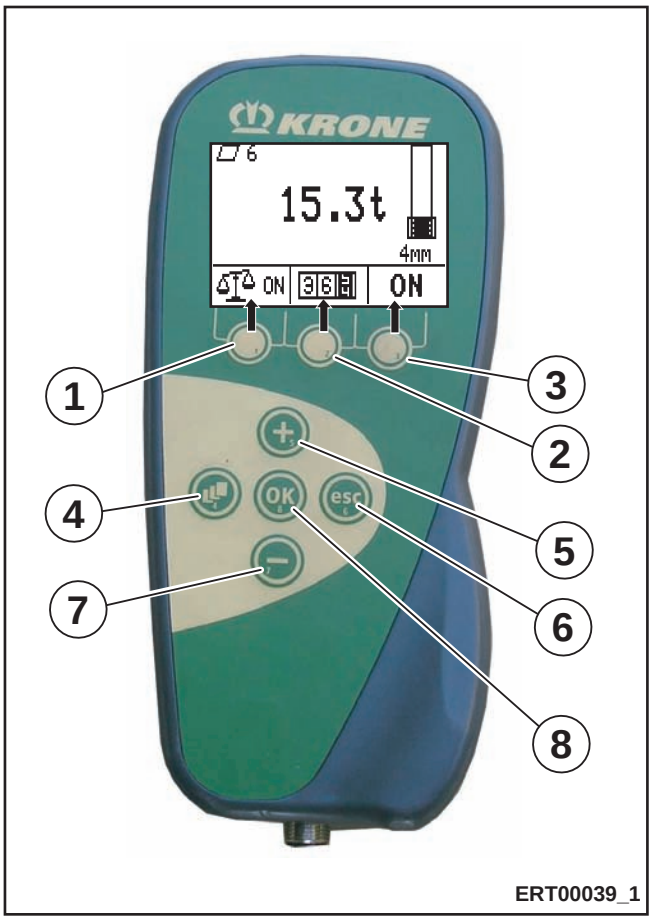
8 OK key

9 Display

4.18.3.2 Description of the keys

Keys 1-3

The keys 1-3 are used to activate the softkeys located in the line just above them.
For the assignment of the keys, see the illustration.
If there is no softkey above the key it has no function.



Key 4

The key can be used to bring up the menu level.

Key 5 and key 7

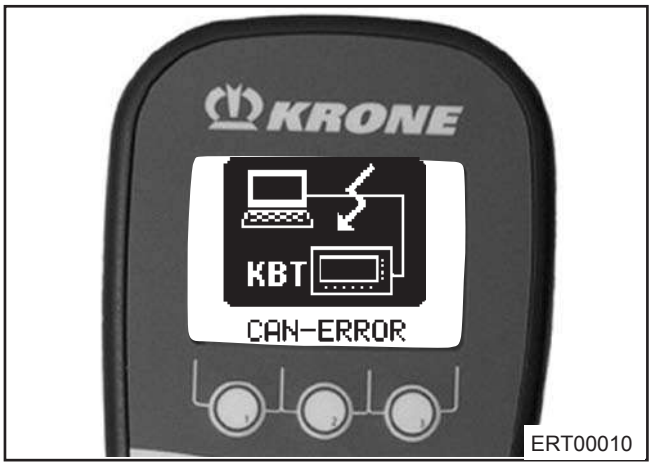
Use the and keys to change the settings and to select the desired menu at the menu level.

Key 6

Use the key to go to the previous screen or previous menu level.
Holding the key down slightly longer takes you back to the basic screen.

Key 8

You can use the key to save settings, bring up selected menus or switch back and forth between display formats for yield recording (kg, t/h and t/ha).



4.18.4 Operational Readiness

Switching ON

To turn on the CropControl System, turn on the ignition of the forage harvester. It does not need to be turned on separately.

After you have switched the unit on, the connection to the job computer is established.

If it is not possible to set up a connection, data connection interrupted, the message shown on the right appears in the display.

The CAN connections and job computer must be checked.

If the connection is established, the basic screen appears after a brief time.

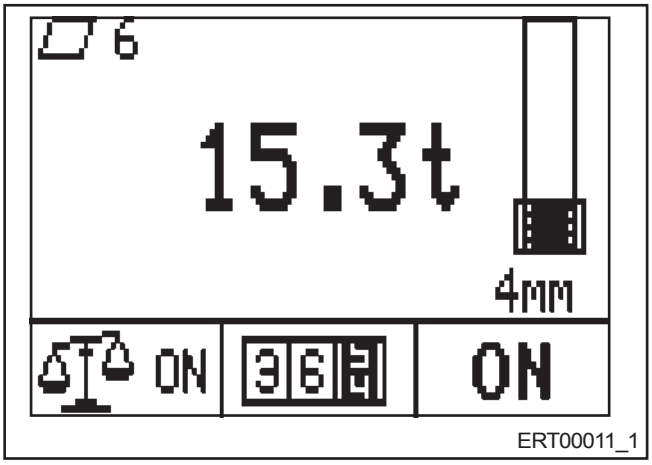
4.18.5 Brief instruction

Start yield recording:

Switch on control, press keys (+5) and (−7) and to select the desired area and operate softkey **ON**.

If such amount of foraged crops is now fed that the bar is outside the hatching, the mass will be added up according to the excursion.

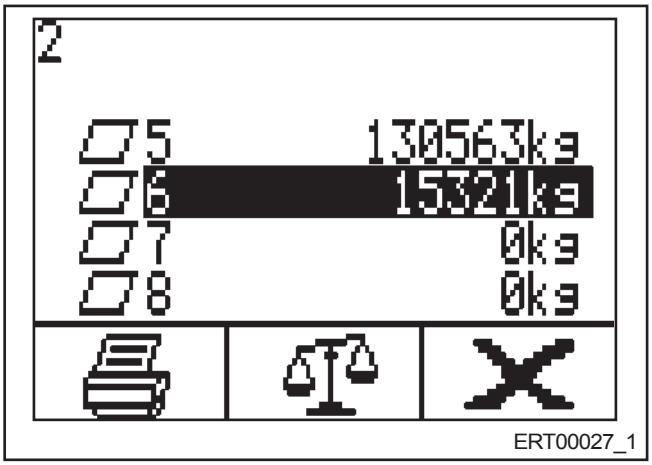
To obtain an accurate result, the system must be calibrated in the middle of the stock (average of the stock) if possible. This is done by a control weighing.



ERT00011_1

Perform control weighing:

Initially, request an empty wagon with known tare weight. Before filling the wagon, press the softkey ON to start the control weighing. Now fill the wagon. Make sure that no foraged crops are lost during cutting and during transport. Once the wagon is full, terminate the control weighing by pressing the softkey ON, send the wagon for weighing and request the weight of the load.
Cutting can continue normally while you wait for the value.

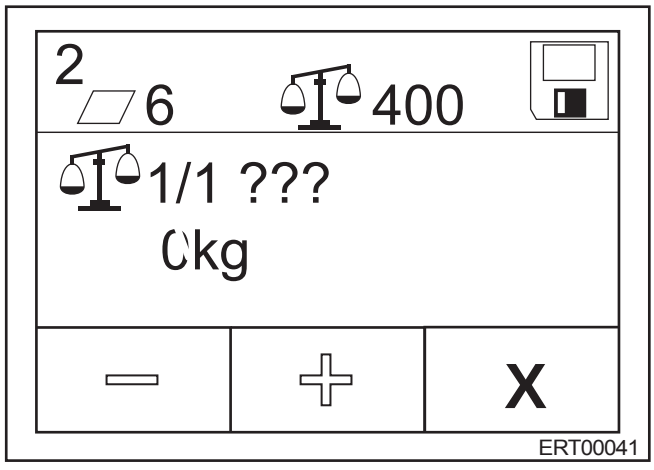


ERT00027_1

Enter weight of the control weighing:

Once the value of the control weighing is known, it can be entered as follows:

Press the "" softkey.
The "Yield counter" menu is displayed.
Press the "" softkey.
The "Enter weighed mass" menu is displayed.
Use the softkeys (+5) and (−7) to enter the value of the control weighing and save it using the key (OK 8).
The calibration factor will then be recalculated and the measured mass will be corrected retrospectively for the entire field.



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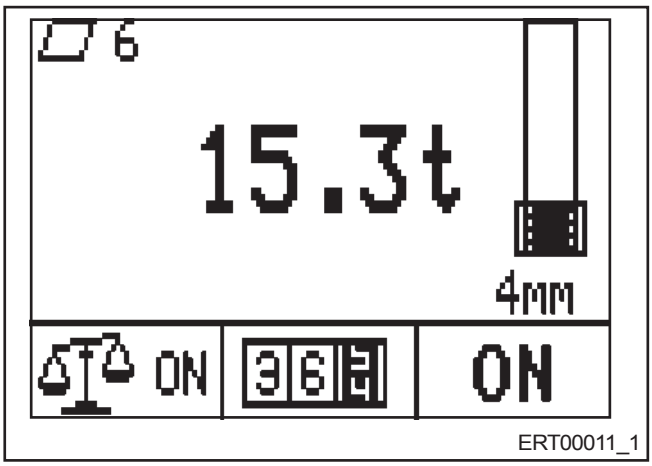
Pressing the (esc 6) key twice brings up the basic screen.

For more detailed information, please read the corresponding chapters.

4.18.6 Basic screen

4.18.6.1 Softkeys basic screen



The following softkeys are found in the lower line:

- ON Start / stop control weighing

Start / stop control weighing

- Press the 1 key for softkey " ON ".

For more information see Section "Control weighing and calibration"

- Call yield counter

Call yield counter

- Press the 2 key for softkey " ".

For further information, see the "Yield Counter" chapter.

Using the softkey it is possible to enter the respective values for the control weighing of the CropControl system directly from the basic screen

- ON start/stop yield counter

Start/stop yield counter

- Press the 3 key for softkey "ON".

For further information, see the "Starting / stopping yield counter" chapter.

Chose between display formats

Click OK to select display of recorded yield in the basic screen. You can chose between display formats t, t/h and t/ha.

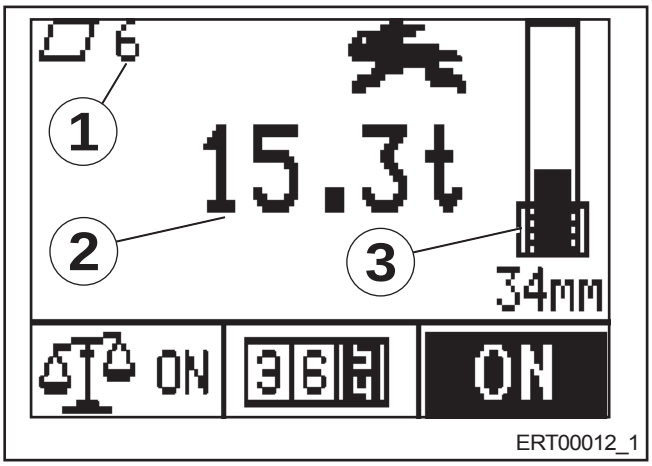
4.18.7 Basic screen graphic display

Description of the graphic display:

ON Yield counter has been stopped

ON Yield counter has been started

Area (the value (1) indicates the area that is currently selected)



You can use the + and − keys to select among the 50 areas.

After the yield counter has been started (visible from softkey "ON" being represented in reverse colours), no other area can be selected.

To be able to select a different area, the yield counter must first be stopped.

- Depending on the selection, the value (2) shows the current weight of the selected cultivated area in t, the current machine throughput in t/h or the current yield in t/ha. Throughput and current yield are only shown when the yield counter is started.

- The display "3" indicates the current excursion of the rear top pre-compression roller.

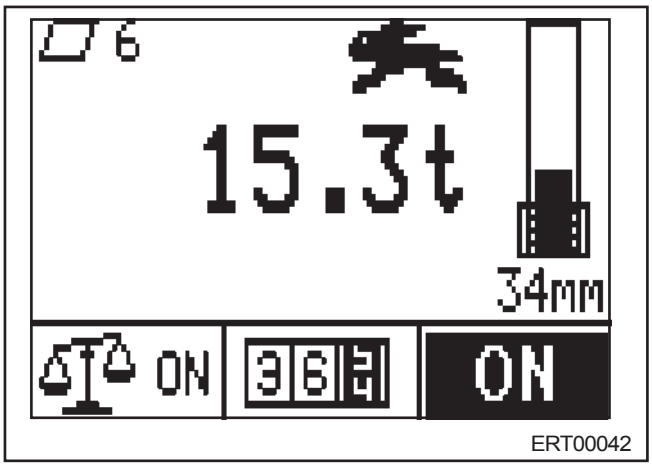
The yield counter can only be active when the bar in the display is outside the hatching.
The value range for the hatching is determined by the minimum excursion. (refer to menu 1-1 "Minimum excursion setting")

If the display bar is far outside the hatching in no-load operation, this indicates significant dirt at the feed drive, which must be removed.

4.18.8 Start / stop yield counter

The following conditions must be met so that the yield counter can operate correctly.

- Feed drive is moving
- Front attachment down
- Machine is moving
- Excursion larger than minimum excursion



Start yield counter:

ON Yield counter has been stopped

ON Yield counter has been started

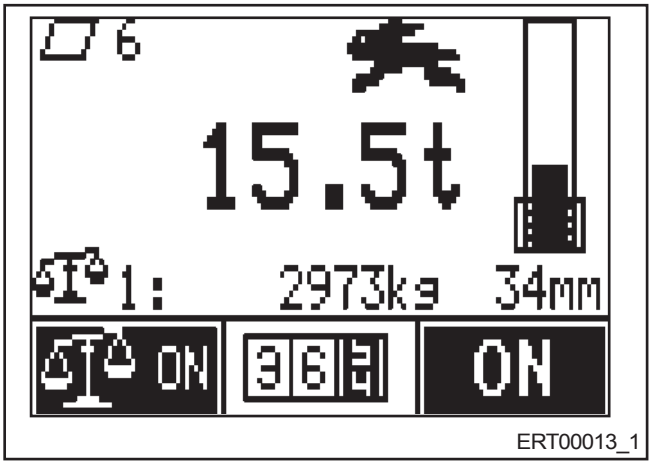
- Press the 3 key for softkey "**ON**" (softkey "**ON**" is displayed in reverse colours, the yield counter has been started).

Pressing the key once again will stop the yield counter, (softkey "**ON**" is no longer displayed in reverse colours.)

Yield is only counted when the icon appears in the display, otherwise not.

4.18.9 Control weighing and calibration

To achieve a high accuracy of the yield measurement, the CropControl system must be calibrated. For this, at least one (but max. 10) control weighings must be performed for each area and each fruit sort.
To obtain correct measurement values, counter weighing should be performed in the middle of the stock and not at the edge of the field.



A maximum of 10 control weighings are available for each area.

Recalculation of the calibration factor initiates the correction of the measured mass retrospectively for the entire field. If several control weighings are performed (max. 10), the calibration factor is calculated from the average of the up to 10 control weighings.

- The yield counter has been started.
  (ON Yield counter has been started)
- Press the 1 key for softkey ON.
  (Softkey " ON " is displayed in reverse colours while control weighing is running.)

The display shows the basic screen with the additional information control weighing in that the current control weighing and the respective mass are displayed.

Yield is only counted when the icon appears in the display, otherwise not.

- Fill wagon

Accuracy can be influenced positively by selecting a trailer load for the control weighing that corresponds to the average of the entire field. Travelling speed and engine capacity should also be average.

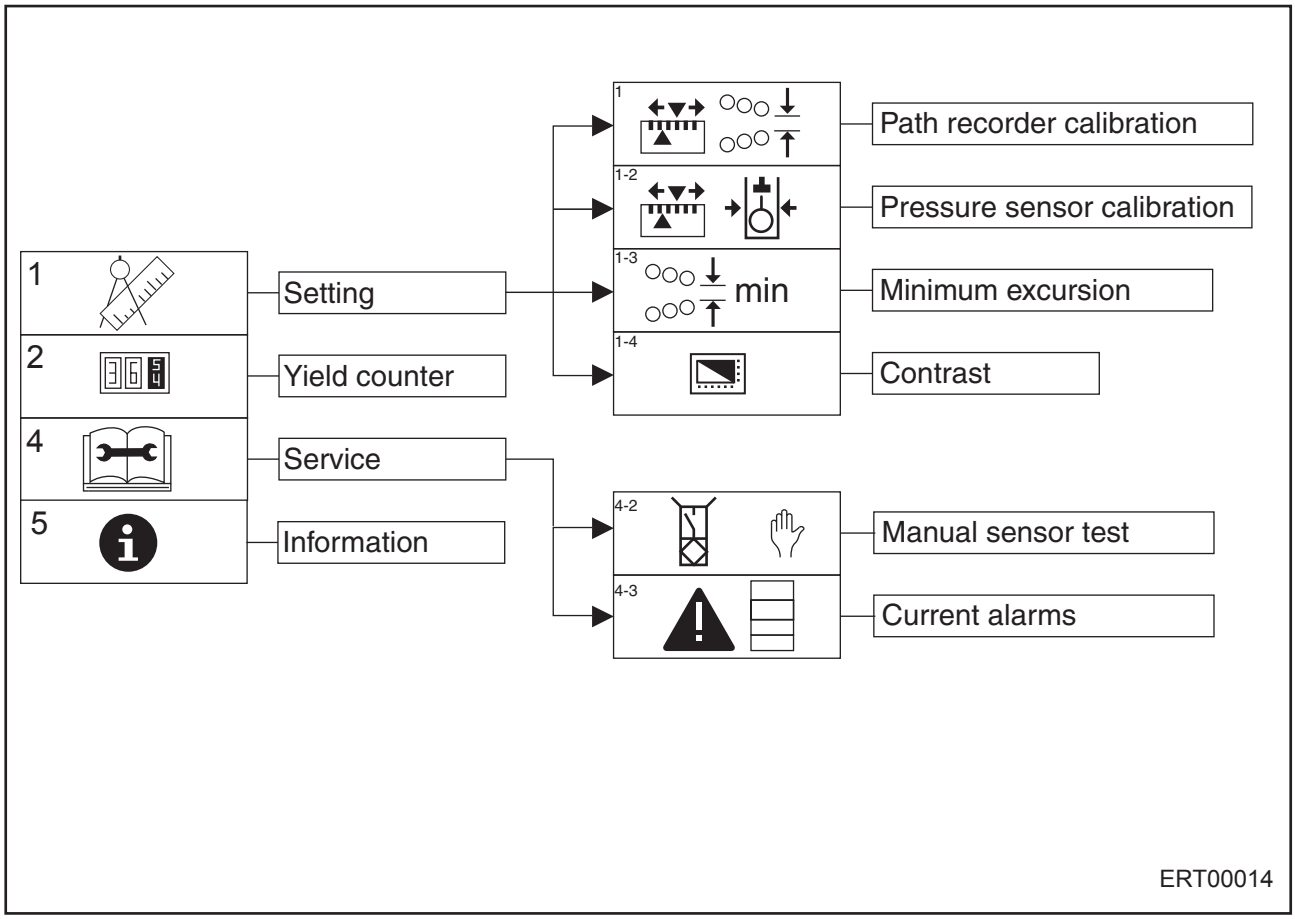
Pressing the key 1 once again will stop the control weighing, (softkey " ON " is no longer displayed in reverse colours.)

- Then, weigh the load of the trailer and enter the determined value according to Section "2.3.4 Entering the weighed mass".

Cutting can continue normally while you wait for the value of the weighing. It is still possible to start a second control weighing directly.

4.18.10 Menu Level

4.18.10.1 Overview

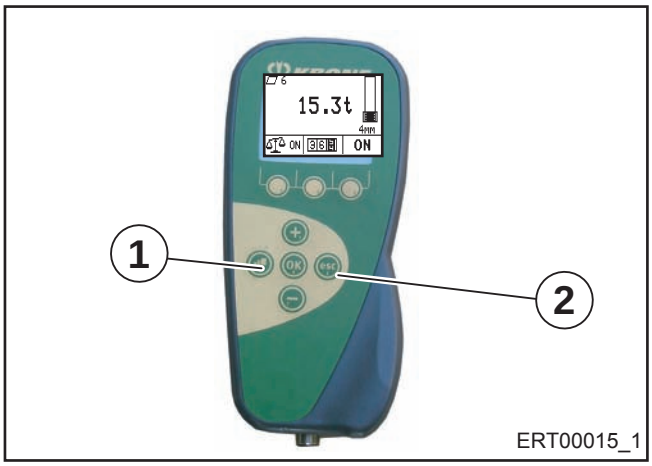


4.18.10.1.1 Bringing up a Menu Level

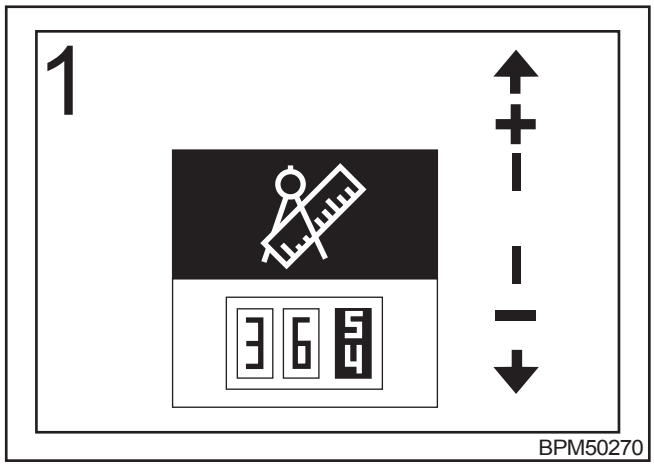
- Press the key (1).

The menu level is shown in the display.

You can exit the menu level again with the key (2).



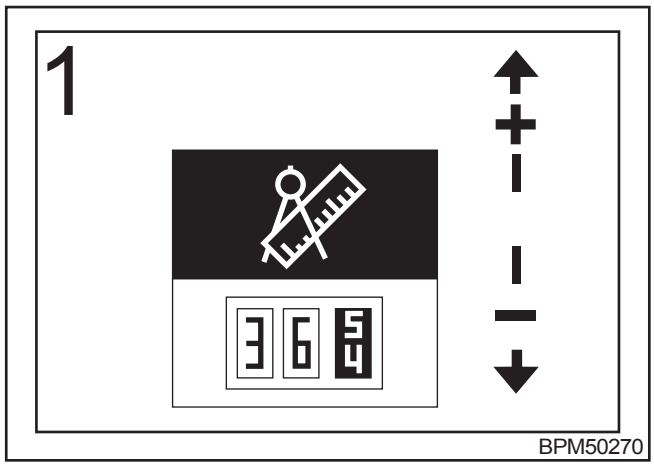
The menu level is divided into 4 main menus:



- 1 = Main menu 1 "Settings"
- 2 = Main menu. 2 "Yield counter"
- 4 = Main menu 4 "Service"
- 5 = Main Menu 5 „Information“
- You can use the 5 and 7 keys to select the main menus. The selected icon is shown in reverse colours.
- Pressing the OK 8 key brings up the menu level of the main menu that is selected.
- Use the esc 6 key to close the menu currently displayed.

4.18.10.2 Main menu 1 "Settings"

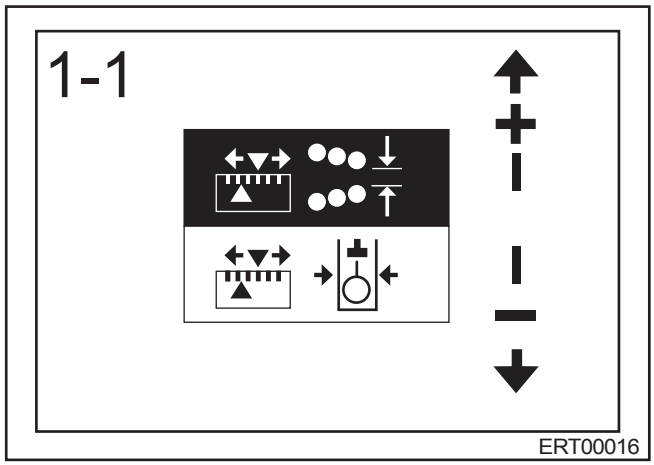
Calling the main menu



- Call the main menu with the 4 key.
- You can select main menu 1 "Settings 1 " with the 5 or 7 keys. The icon is shown in reverse colours.
- Press the OK 8 key.

The display shows menu level 1 "Settings".

Menu level 1 "Settings" is divided into 4 menus:



- 1-1 = Menu 1-1 "Calibration of path recorder"
- 1-2 = Menu 1-2 "Calibration of pressure sensor"
- 1-3 min = Menu 1-3 "Minimum excursion setting"
- 1-4 = Menu 1-4 "Contrast"

4.18.10.2.1 Menu 1-1 "Calibration of path recorder"

Before placing the machine in service the first time and after any assembly work on the path recorder, it must be calibrated. For this, it must be ensured that no crops are in the feed drive and that the pre-compression rollers have been moved to the bottom limit stop.

Displaying the menu

Main menu 1 "Settings" appears

- Use the (5) and (7) keys to select menu 1.1 "[icon] Calibration of path recorder". The icon is shown in reverse colours.
- Press the OK (8) key.

The display shows menu 1-1 "Calibration of path recorder".

The [icon] icon in the upper line indicates that the displayed values are saved.

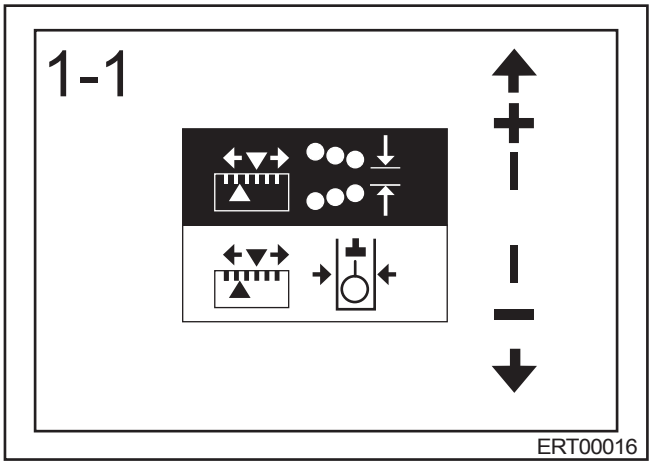
- Press the (2) key for softkey [icon]. The icon appears in reverse colours for a short while. The calibration value of the path recorder is displayed; the symbol [icon] in the upper line will disappear.
- Press the OK (8) key. The calibration value is saved and the [icon] icon appears in the upper line.

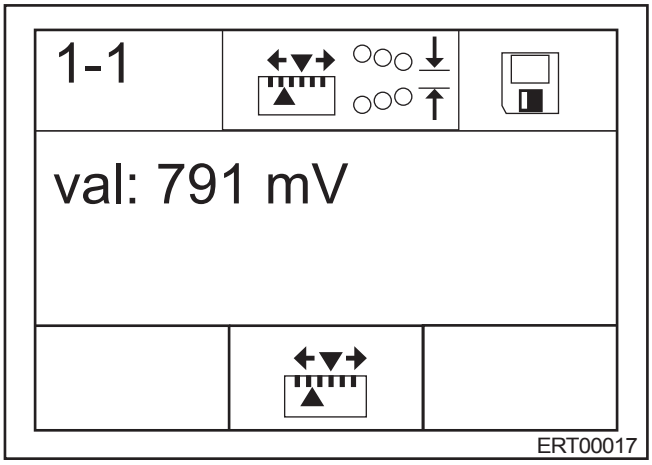
The calibration value must be between 500 mV and 1000 mV.

- Use the esc (6) key to close the menu currently displayed.

The display shows menu level 1 "Settings".

- Pressing the esc (6) key twice brings up the basic screen.





4.18.10.2.2 Menu 1-2 "Calibration of pressure sensor"

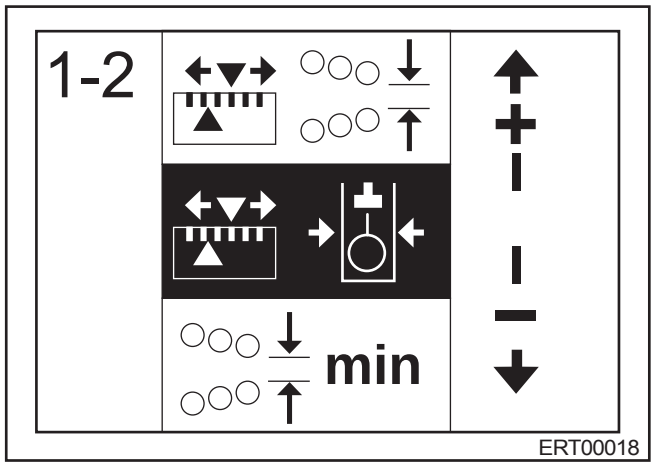
The pressure sensor must be calibrated before placing the machine in service the first time, after any assembly work and weekly during operation. For this, it must be ensured that no crops are in the feed drive and that the pre-compression rollers have been moved to the bottom limit stop.

Displaying the menu

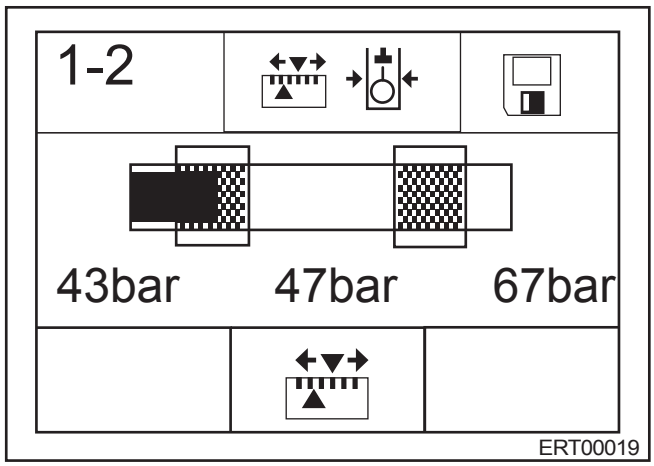
Main menu 1 "Settings" appears

- Use the + and − keys to select menu 1.2 "Calibration of pressure sensor". The icon is shown in reverse colours.
- Press the OK key.

The display shows menu 1-2 "Calibration of pressure sensor".

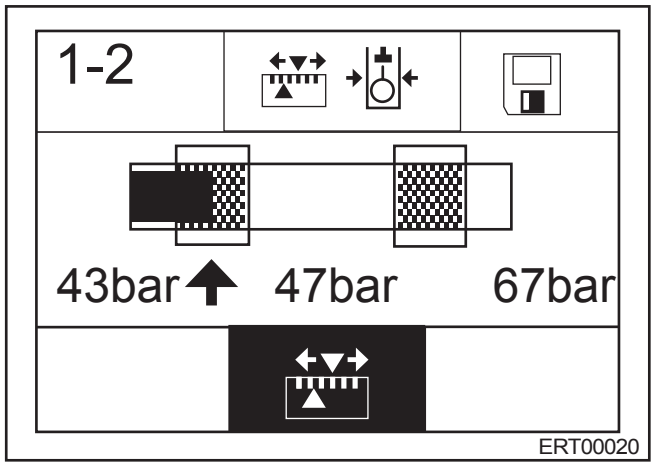


The icon in the upper line indicates that the displayed values are saved.
The value in the middle (1) underneath the bar indicates the current drive pressure. The value on the left (2) is the calibration value "maximum feed drive speed", the value on the right (3) is the calibration value "maximum feed drive speed".

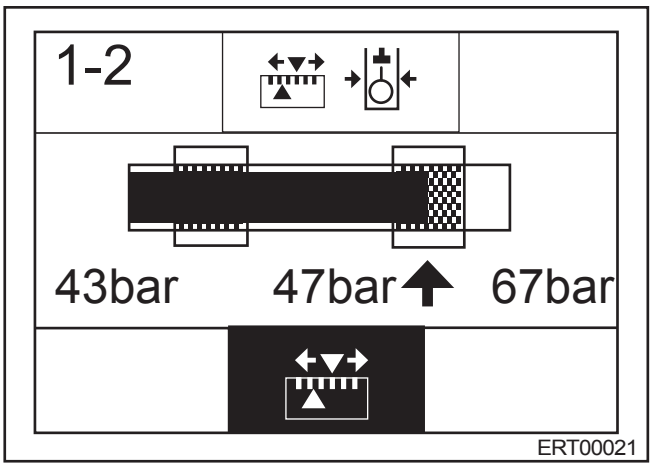


To calibrate the pressure sensor, proceed according to the following steps one after the other:

- Switch on cutting drum
- Switch on feed drive
- Adjust engine to working speed (2000 rpm)
- „ Set chop length to minimum possible value
- Press the 2 key for softkey, the symbol is shown in reverse colours.
  The symbol in the upper line will disappear and calibration is started. An arrow will appear underneath the hatching on the left.
- Slowly increase chop length until the bar is within the hatching on the left.
- Wait for a short time



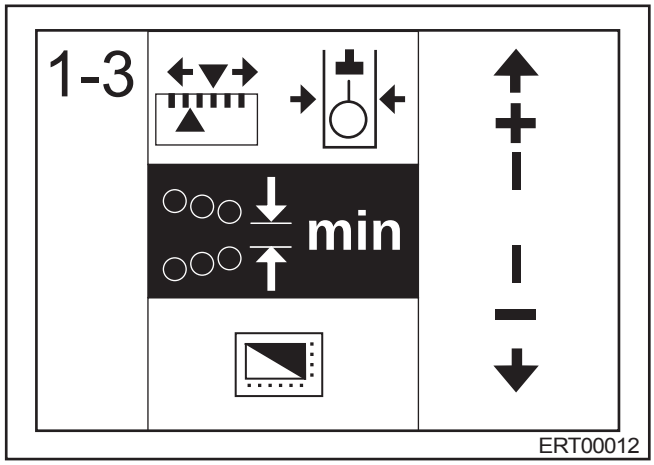
- The left calibration will be overwritten. The arrow underneath the hatching on the left will disappear and an arrow will appear underneath the hatching on the right.
- Slowly increase chop length once again until the bar is within the hatching on the right.
- Wait for a short time
- The right calibration will be overwritten. The arrow underneath the hatching on the right will disappear and the softkey is no longer displayed in reverse colours.
- Press the OK key. The calibration values are saved and the icon appears in the upper line.
- Use the esc key to close the menu currently displayed.



The display shows menu level 1 "Settings".

- Pressing the esc key twice brings up the basic screen.

4.18.10.2.3 Menu 1-1 "Minimum excursion setting"



Use the minimum excursion to 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.

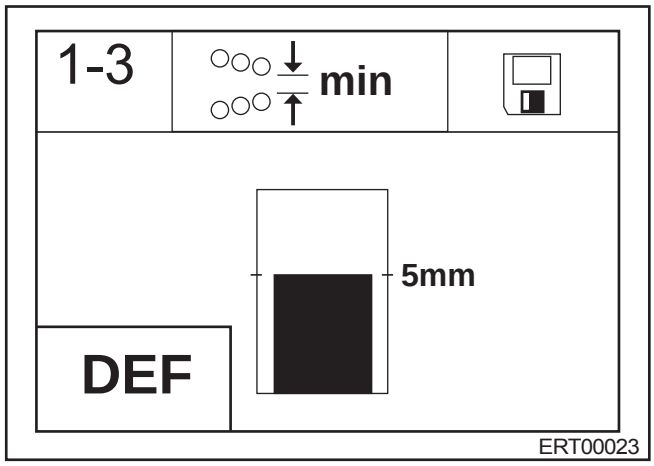
Standard value for minimum excursion: 5 mm

Displaying the menu

Main menu 1 "Settings" appears

- Use the + and − keys to select menu 1.3 "Calibration of minimum excursion". The icon is shown in reverse colours.
- Press the OK key.

The display shows menu 1-3 "Minimum excursion setting".
The icon in the upper line indicates that the displayed values are saved.



The minimum excursion can be set in the range from 0mm to 30mm

The bar display and the value on the right next to it indicate the set minimum excursion.

- You can use the + and − keys to adjust the desired minimum excursion. The icon in the top line goes out.
- Press the OK key. The calibration value is saved and the icon appears in the upper line.

Set minimum excursion to factory setting

- Press the key for softkey "**DEF**", the icon will be displayed in reverse colours for a short while, and the minimum excursion is reset to the factory setting. The symbol in the upper line will disappear.
- Press the OK key. The minimum excursion is saved and the icon appears in the upper line.

- Use the esc 6 key to close the menu currently displayed.

The display shows menu level 1 "Settings".

- Pressing the esc 6 key twice brings up the basic screen.

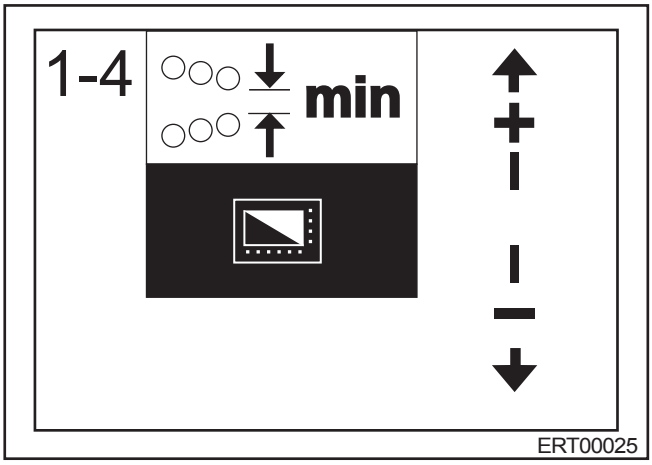
4.18.10.2.4 Menu 1-4 "Contrast"

Displaying the menu

Main menu 1 "Settings" appears

- Use the + 5 and − 7 keys to select menu 1-4 1-4 "Contrast", the icon will be in reverse colours.

- Press the OK 8 key.



The display shows menu 1-1 "Contrast".

The progress bar indicates the contrast value set.
The icon in the upper line indicates that the displayed value is saved.

Setting and saving the contrast
The higher the bar, the stronger the contrast in the display.

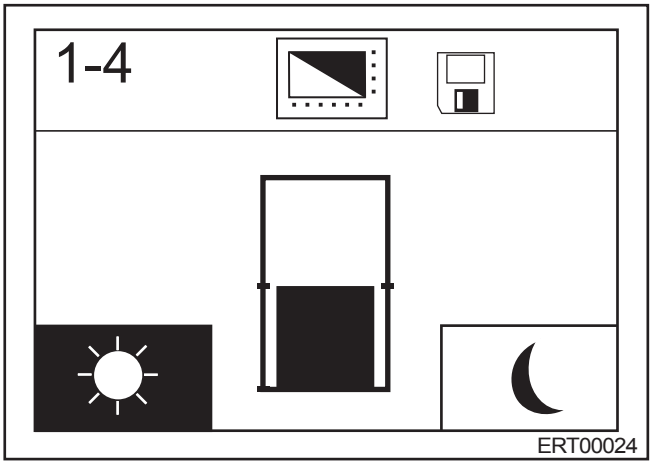
- Use the + 5 and − 7 keys to set the contrast. The icon in the top line goes out.

- Press the OK 8 key, the set contrast value will be saved,the icon the upper line will disappear.

- Use the esc 6 key to close the menu currently displayed.

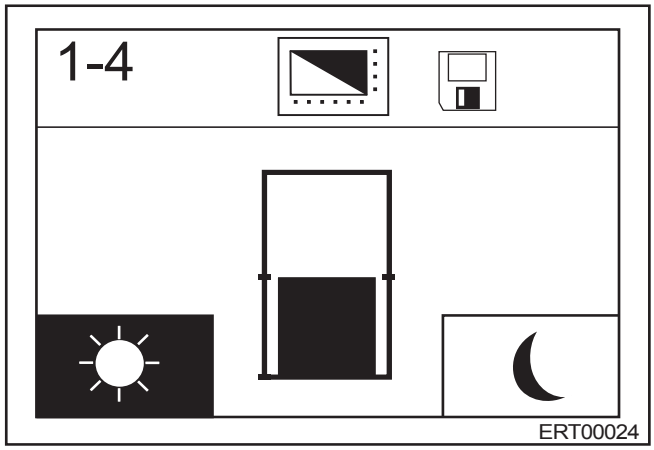
The display shows menu level 1 "Settings".

- Pressing the esc 6 key twice brings up the basic screen.



Day/night design

Switching from day to night design reduces background lighting.



Night design:

- Press the 1 key for softkey .

Background lighting is reduced.

Day design:

- Press the 3 key for softkey .

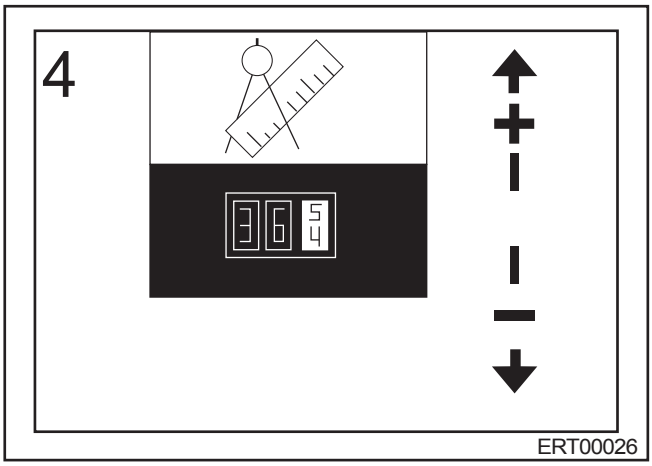
Background lighting is increased.

- Use the esc 6 key to close the menu currently displayed menu.

- Pressing the esc 6 key twice brings up the basic screen.

4.18.10.3 Main menu. 2 "Yield counter"

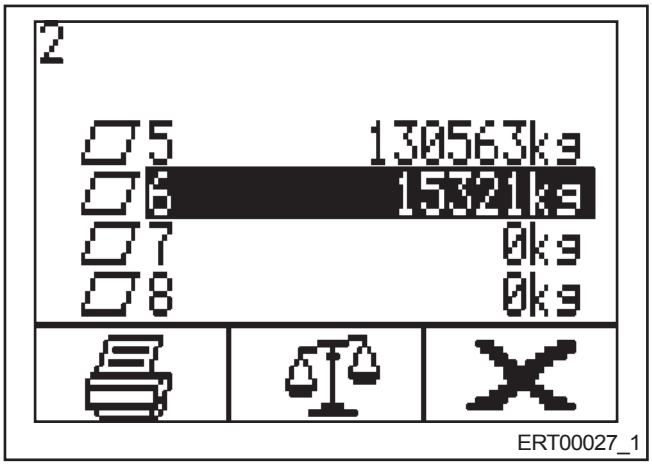
Calling the main menu



- Call the main menu with the key.
- Use the and keys to select main menu 2 " Yield counter", the icon is displayed in reverse colours.
- Press key .

The display shows menu 2 "Yield counter".

4.18.10.3.1 "Yield counter"



The total mass is displayed for each area.

- Use the or key to pre-select the requested area. The pre-selected area is displayed in reverse colours.

At the end of the list, maximally 2 fields without mass (0kg) are visible.

4.18.10.3.2 Printing the values

If a CAN printer is connected to the diagnostics interface of the machine, the values of the yield counter can be printed.

- Press the key for softkey to print out the value for the pre-selected field.
- Press key for softkey for longer than 3s to print out the values for all fields.

4.18.9.3.3 Deleting the values

- Press the key for softkey and hold it down for 1 second to delete the value for the pre-selected field.
- Press the key for softkey and hold it down for longer than 3s to delete the values for the entire yield counter.

4.18.10.3.4 Entering the weighed mass

If at least one control weighing is available for a field, the respective weighed mass can be entered as follows:

- Select the area for that a weighed mass is to be entered as described in Section "2.3.1 Yield counter".
- Press the key for softkey or key .

The display shows the menu "Entering the weighed mass".

The icon in the upper line indicates that the displayed values are saved.

The value (1) indicates the current calibration factor for the selected area (in this example area 7). It is determined from the factors of the individual control weighings.

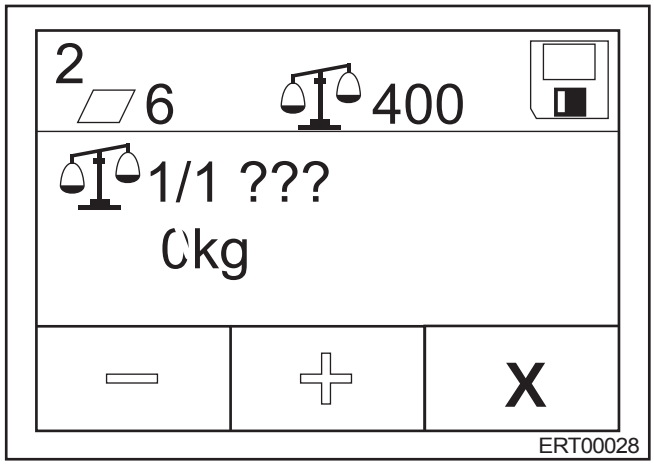
As long as no calibration factor has been saved for the displayed field, the factor from the previous field is displayed and is used for calculating the mass.

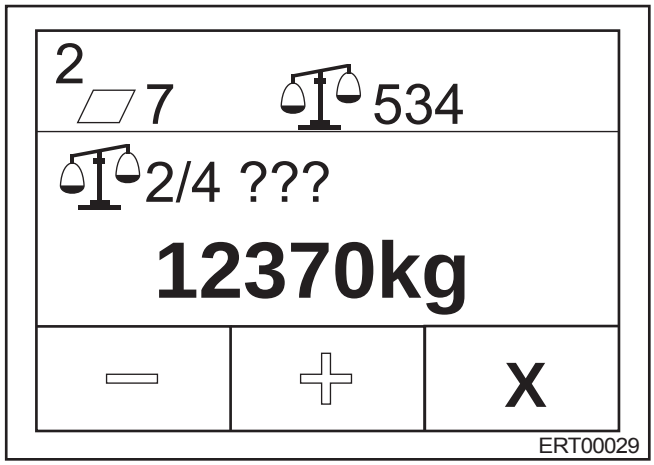
The value (2) indicates the selected control weighing. In the adjacent picture, the 2nd control weighing from a total of 4 control weighings is selected.

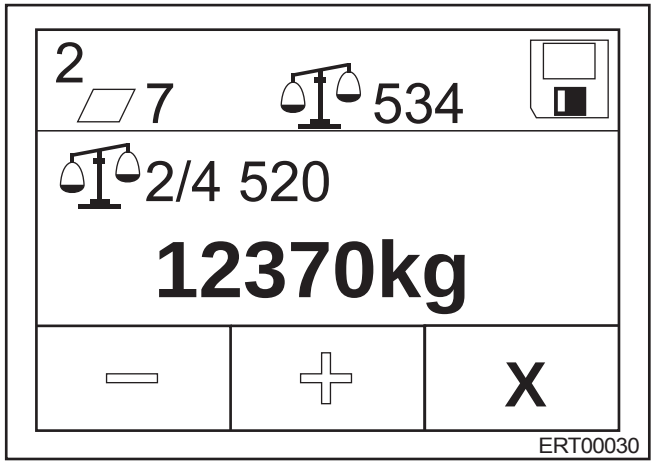
- Use the key and to select the requested control weighing.

The value (3) indicates the calibration factor for the selected control weighing. If not factor has been saved, this is indicated by a question mark.

- Use the keys for softkey and for softkey to enter the weighed mass for the selected control weighing. The symbol in the upper line will disappear.
- Press the key. The entered mass is saved, the calibration factor is recalculated and the icon appears in the upper line.







Recalculation of the calibration factor initiates the correction of the measured mass retrospectively for the entire field.

Deleting the control weighing

If an error has occurred when entering the weighed mass and the correct value is no longer known, it is possible to delete the respective control weighing.

- Press the 3 key for softkey  to delete the value for the selected control weighing. The symbol  in the upper line will disappear.
- Press the OK 8 key. The change is saved, the calibration factor is recalculated and the  icon appears in the upper line.
- Use the esc 6 key to close the menu currently displayed.

The display shows menu 2 "Yield counter".

- Pressing the esc 6 key twice brings up the basic screen.

4.18.10.3.5 Entering the calibration factor directly

If no control weighing is available for a field, it is possible to enter a calibration factor directly. However, this calibration does not necessarily reflect the characteristics of the field.
The accuracy that can be achieved by direct entering of the calibration factor strongly depends on the experience of the operator.
The calibration factor should therefore only be entered if it is not possible to carry out a control weighing and the current calibration factor appears to be unrealistic.

However, if the direct entry of the calibration factor function is to be used repeatedly, it is purposeful to compile an own table for each fruit sort from experience values in that the calibration factors for the different degrees of ripeness and moisture contents are saved.

A calibration factor can only be entered for fields that either contain the mass 0 kg or for that not control weighing has yet been carried out.

The factor can be entered as follows:

- Select the field for that a calibration factor is to be entered as described in Section "2.3.1 Yield counter".
- Press the 2 key for softkey or key OK.

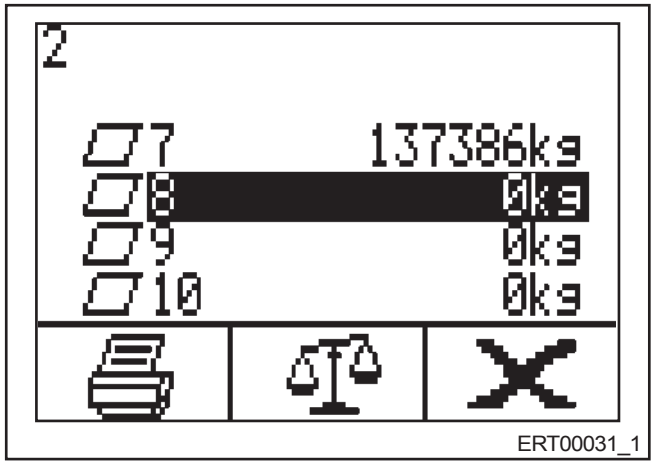
The display shows the menu "Entering the calibration factor".

The icon in the upper line indicates that the displayed values are saved.

- Use the keys 1 for softkey and 2 for softkey to enter the calibration factor for the selected field. The symbol in the upper line will disappear.
- Press the OK key. The calibration factor is saved and the icon appears in the upper line.
- Use the esc key to close the menu currently displayed.

The display shows menu 2 "Yield counter".

- Pressing the esc key twice brings up the basic screen.



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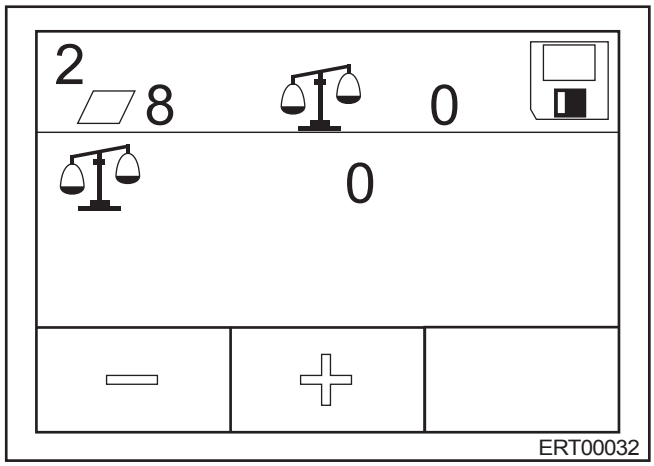
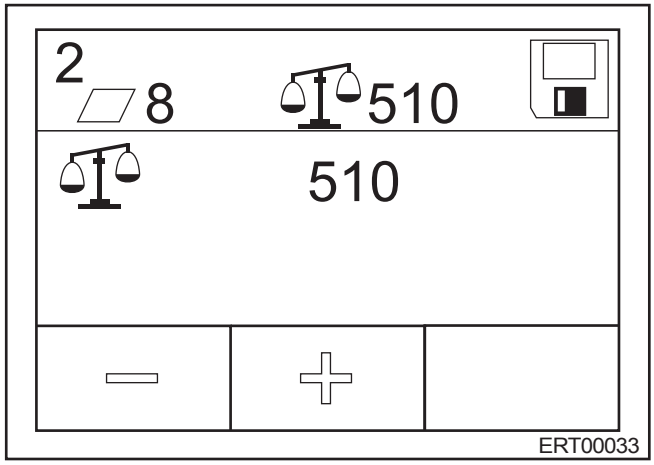


ERT00032



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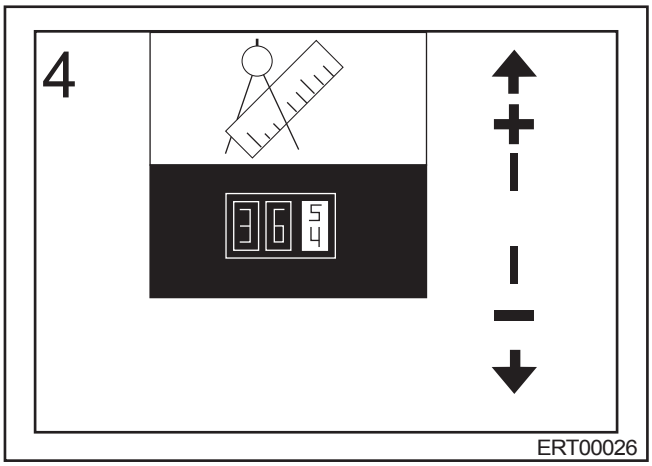
4.18.10.4 Main menu 4 "Service"

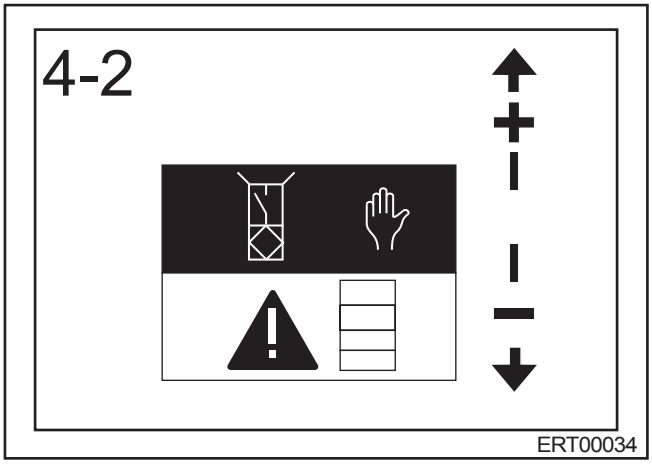


Calling the main menu

- You can select main menu 4 " 4 Service" with the + or − keys. The icon is shown in reverse colours.
- Press the OK key.

The display shows menu level 4 "Service".
Menu level 4 "Service" is divided into two menus:

- = Menu 4-2 "Manual sensor test"
- = Menu 4-5 "Current alarms"

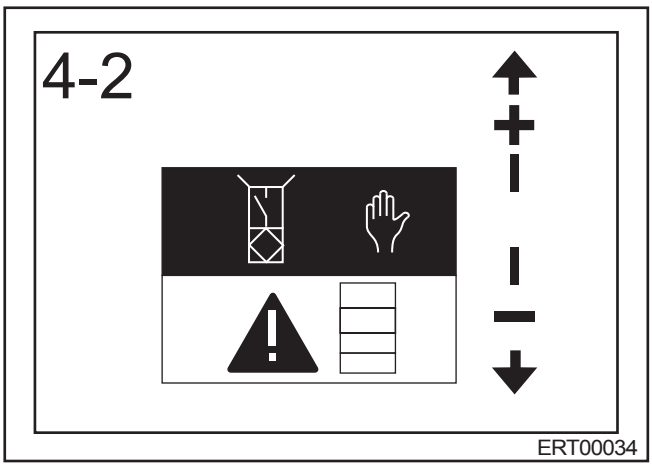


4.18.10.4.1 Menu 4-2 "Manual sensor test"

In the manual sensor test, the sensors fitted on the machine for the CropControl system are tested for errors.

Main menu 4 "Service" is called.

- You can select the menu 4-2 " Manual sensor test" with the + − keys. The icon is shown in reverse colours.
- Press the OK key.

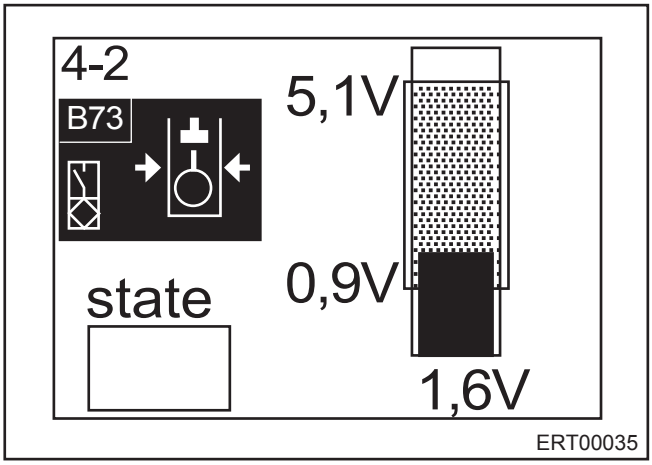


The display shows menu 4-2 "Manual sensor test".

Selecting the sensor

- Select the sensor with the + and − keys.

The selected sensor at the left in the display is shown in reverse colours and is tested.



Diagnostics – analogue sensors

Possible status messages (state):

- 7 --/↯ = Broken cable or short circuit
- 8 Error = Defect in the sensor or job computer

Setting values:

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

Analogue Sensors

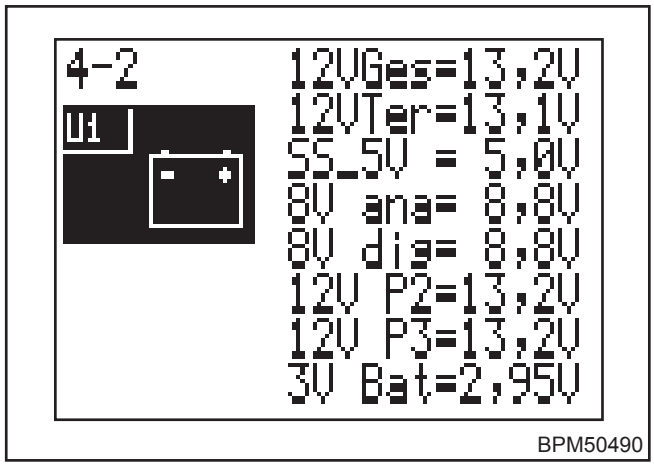
No.	Icon	Description
B72		Path recorder (must always be in the marked area).
B73		Pressure sensor (must always be in the marked area).

Diagnostics power supply voltages

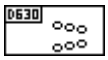
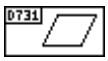
Nominal voltages:

- 12 V tot.: 12 - 14.5 V
- 12 V Ter: 12 - 14.5 V
- SS_5V: 4.5 - 5.5 V
- 8 V ana: 8.5 - 9.1 V
- 8 V dig: 8.5 - 9.1 V
- 12 V P2: 12 - 14.5 V
- 12 V P3: 12 - 14.5 V
- 3V Bat >2,5 V

N°	Icon	Description
U1		Supply voltage



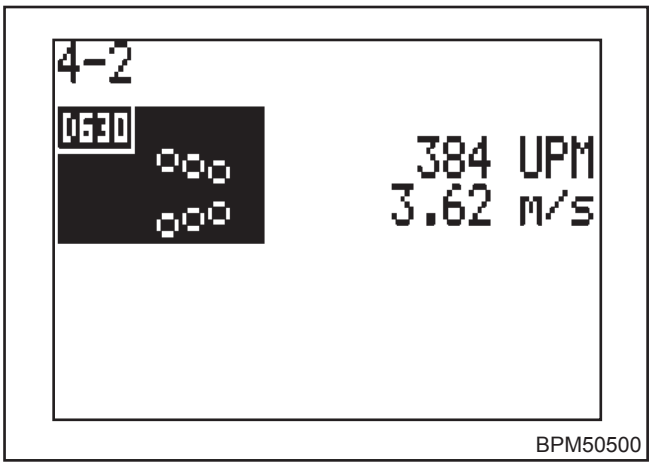
Diagnostic dates

N°	Icon	Description
D630		Speed (rpm) of the feed drive (if the feed drive is running, the speed (rpm) of the feed drive must appear here)
D730		Machine is cutting (when the machine is cutting, "OK" appears, otherwise "OFF".)
D731		Forage harvester counter (if the machine is cutting and also moving, the counter must be incremented)

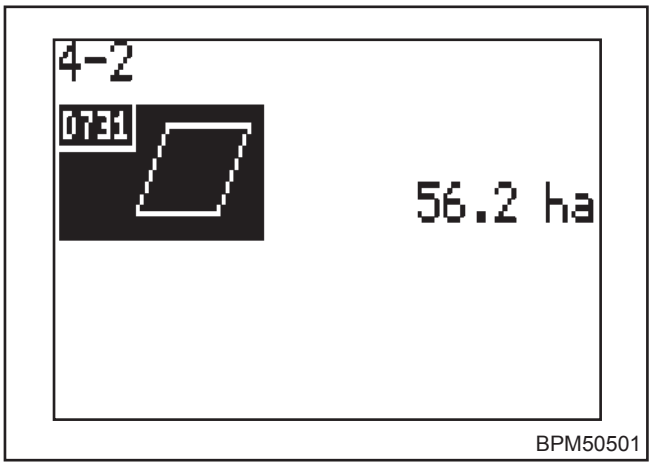
- Use the esc key to close the menu currently displayed menu.

The display shows menu level 4 "Service".

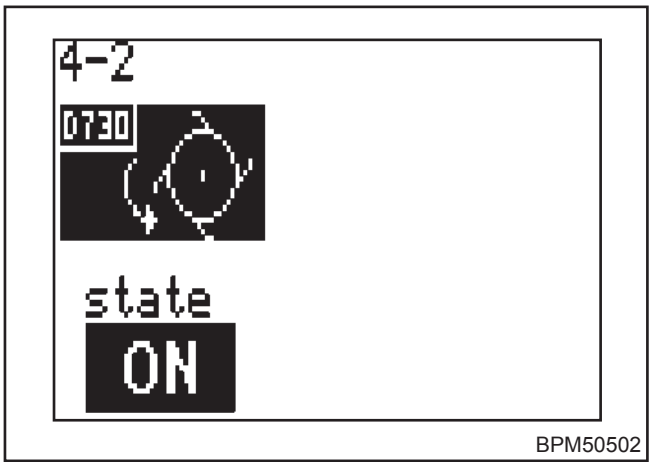
- Pressing the esc key twice brings up the basic screen.



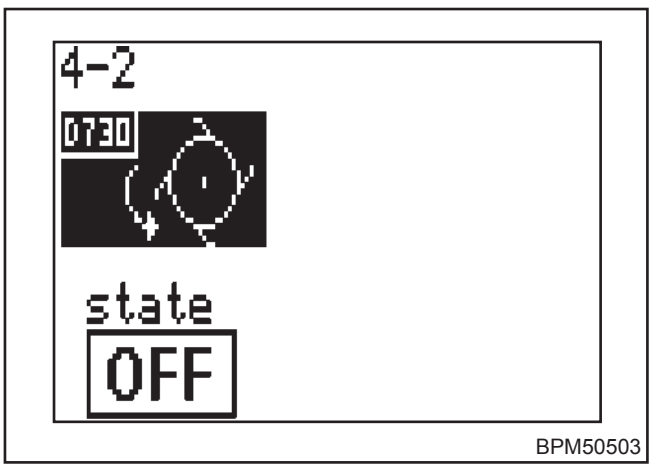
BPM50500



BPM50501



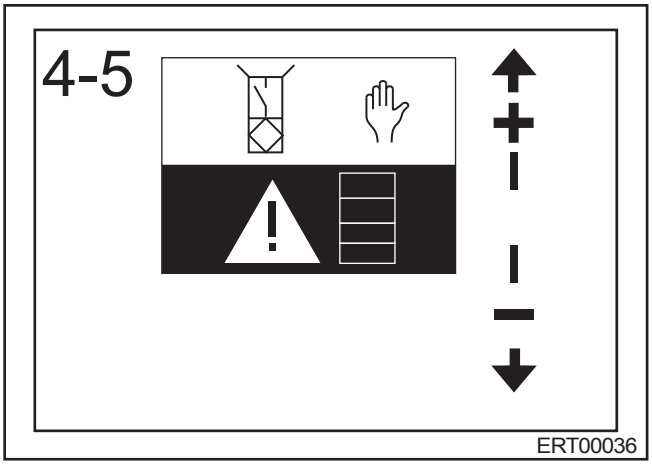
BPM50502



BPM50503

4.18.10.4.2 Menu 4-5 "Current alarms"

Currently pending errors for the CropControl system are displayed in the menu "Current alarms".



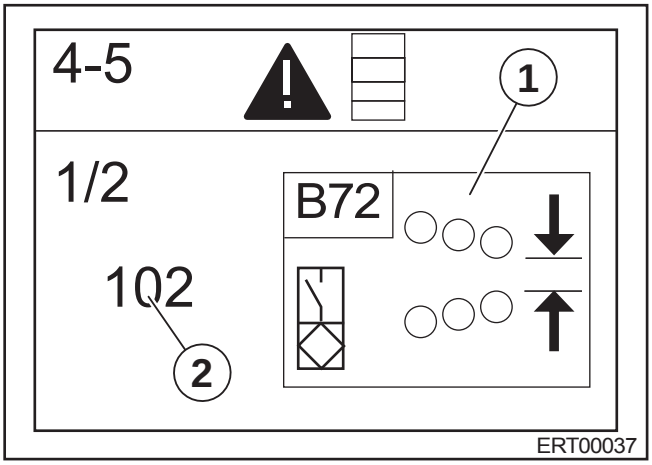
Calling the menu

Main menu 4 "Service" is called.

- You can select the menu 4-5 " Current alarms" with the and keys. The icon is shown in reverse colours.
- Press the key.

The display shows menu 4-5 "Current alarms".

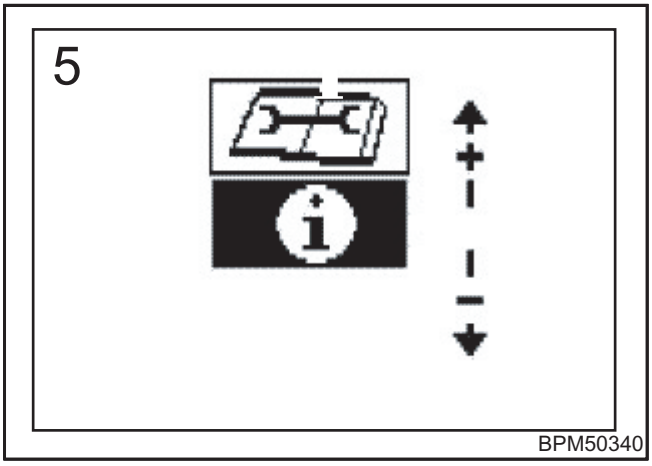
Currently pending alarms are displayed in the lower part (1) with the corresponding alarm number (2).



- You can use the or keys to switch to another window.
  (only possible if there is more than one error present at the same time)
- Use the key to close the menu currently displayed.

The display shows menu level 1 "Settings".

- Pressing the key twice brings up the basic screen.

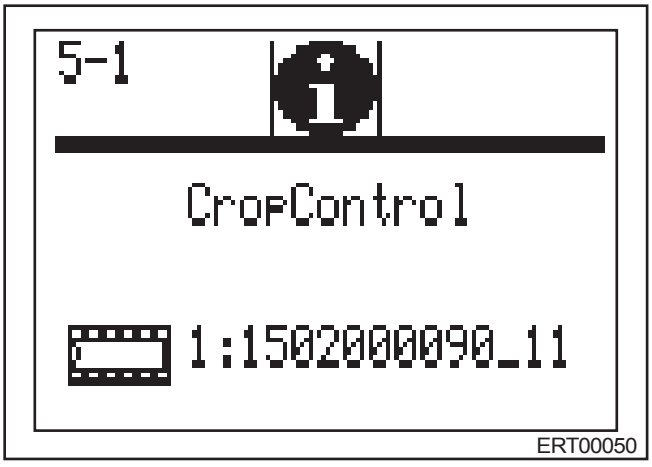


4.18.10.4.3 Main Menu 5 “Info”

Calling the main menu

- Call the main menu with the key.
- You can select main menu 5 with the or keys. The icon is shown in reverse colours.
- Press the key.

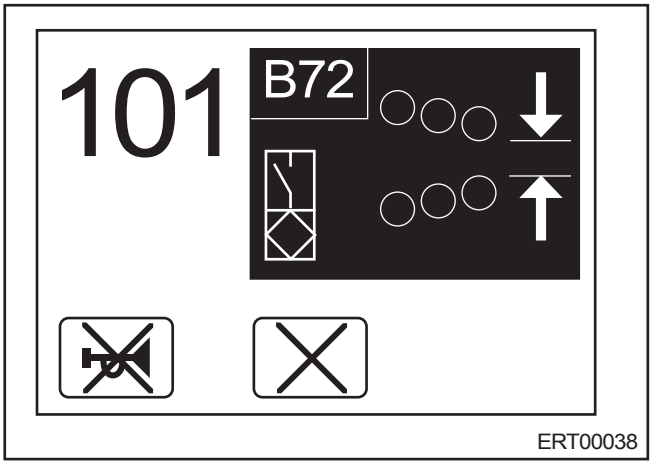
The display shows menu 5 “Info”.



- KMC = Version of the job computer

4.19 Alarm Message

If a malfunction occurs in the machine an alarm message appears in the display and an audio signal is heard at the same time (rapid-interval horn sound). Description, possible cause and remedy are shown in Chapter "3.1 General alarm messages".



All functions in the menu that is covered over are still active.

The softkeys that are covered by the alarm message are disabled.

Stop audio signal:

- Press the 1 key for softkey [horn].

To reset alarm:

- Press the 2 key for softkey [X], the alarm is reset and the audio signal stops.

If the malfunction occurs again, the alarm message will appear again.

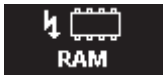
To delete an alarm:

Alarms should only be deleted in emergency situations.

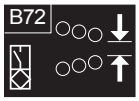
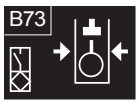
Press the 2 key for softkey [X] and hold it down 5 seconds. The alarm is deleted.

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

4.19.1 Physical alarm messages

No.		Description	Possible cause	Remedy
A01		Fuse 2 defective	Short circuit at the outputs	Replace the fuse and then test all actuators in the actuator test to determine whether an actuator has a short circuit.
A02		Fuse 3 defective (self-repairing)	Short circuit in the power supply for sensors	Check cables to the Multibale-potentiometer, star wheel, pressure sensor and force measurement amplifier.
A03		CAN connection interrupted between terminal and job computer	CAN wiring defective	Check the CAN wiring
A04		EEPROM error	Job computer defective	Replace the job computer
A13		Undervoltage backup battery	Backup battery faulty	Check backup battery and replace if necessary battery
A14 -		Undervoltage	- Tractor battery defective - Tractor light machine too weak -12 V power supply cable too thin on the tractor side or not directly connected to battery	Connect KRONE connection cable directly to battery
A15		Overvoltage	Tractor light machine defective	Check the dynamo
A16		RAM error	Job computer defective	Replace job computer
A19		Counter will soon overflow (returns to 0).	Counter status too high	Use other field counter. Delete field counter.

4.19.2 Physical alarm messages

No.		Description	Possible cause	Remedy
101		Path recorder	Sensor or supply line defective	- Perform a sensor test - Check the sensor and supply line for damage
102		Pressure sensor	Sensor or supply line defective	- Perform a sensor test - Check the sensor and supply line for damage

5 Driver's cab

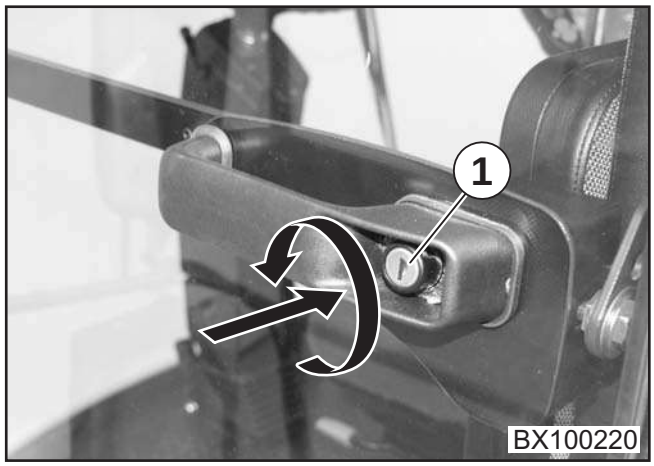
5.1 Ladder to driver's cabin

Do not ascend or descend on the ladder during travel.
Riding on the steps of the ladder or on the platforms is not permitted.

- Ladder (1) to the driver's cab.
- Steps (2) to the roof.

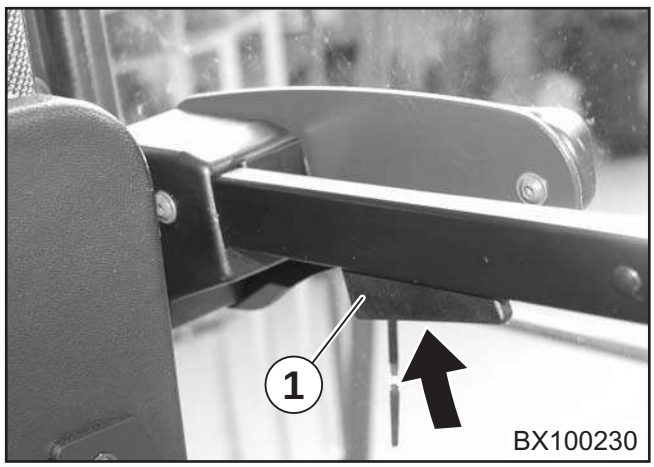
5.2 Opening the cabin door

- **From the outside:** Use the door key to unlock the door lock (1); press in the button (1) and open the door.



- **From the inside:** Lift the door opening lever (1) and open the door.

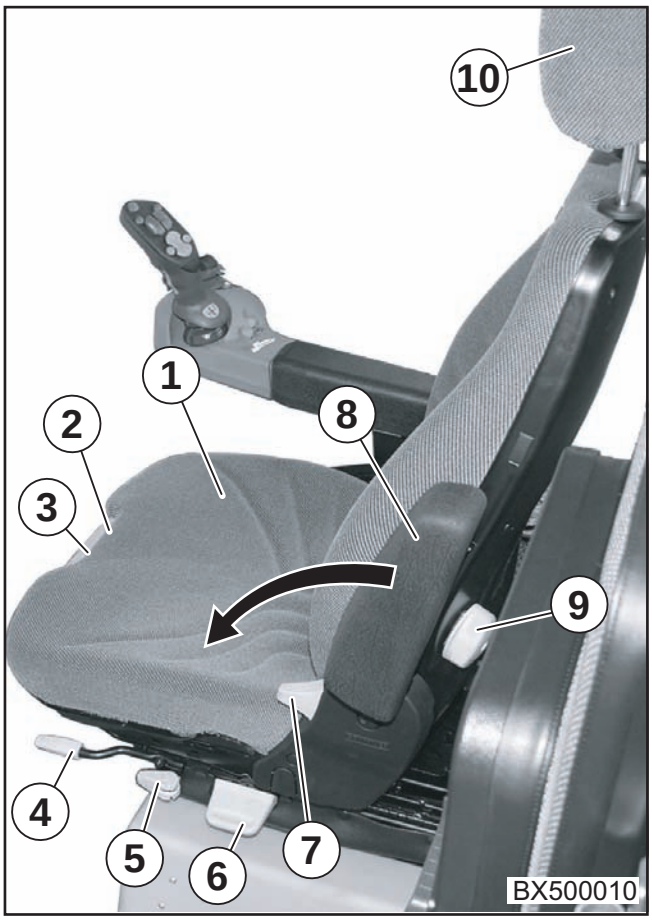
The cab door must be closed during operation.



5.3 The air comfort seat

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

The adjustment devices of the driver's seat must not be actuated during the operation.



Weight adjustment

In order to prevent health problems, the individual driver's weight adjustment should be checked and adjusted prior to operation of the machine.
The adjustment should be carried out whilst sitting absolutely stationary.

- Pull the lever (6) upwards briefly (position I).

Height adjustment

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

- Pull the lever (6) upwards completely (position II) 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 made, the height will be adjusted automatically in order to ensure a minimum spring travel.

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.

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.

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.

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.

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.

Lumbar support

- The height as well as the intensity of the arching in the backrest can be adapted individually by turning the hand wheel (9) to the left or right.

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.

Setting the left armrest

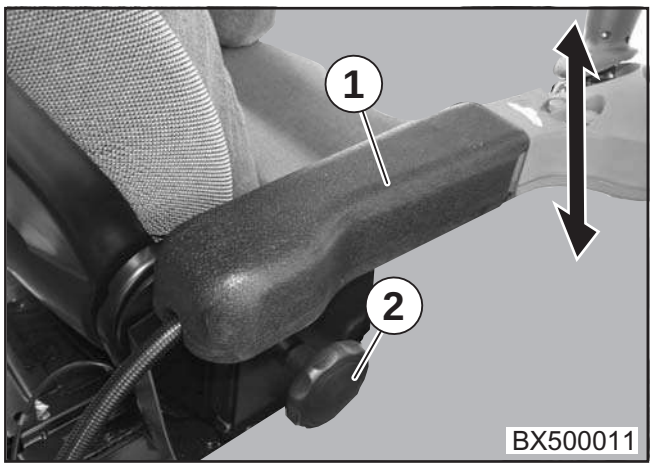
- Tilt the armrest (8) up or down as requested.
- Remove the cover cap (1) to adjust the height of the armrest.
- Undo the hexagon nut; move the armrest into the requested position and tighten the hexagon nut again. Press the cover cap (11) onto the hexagon nut again.

5.4 Right armrest

The right armrest (1) and the multi-function lever are one unit.

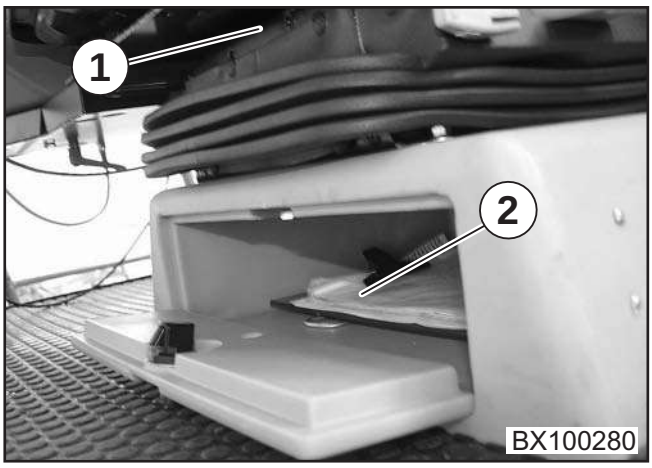
Setting the right armrest

- Undo the clamping screw (2); move the armrest (1) into the requested height and tighten the clamping screw (2) again.



5.5 Storage compartment for first-aid kit/operating instructions

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



5.6 Instructional seat (optional)

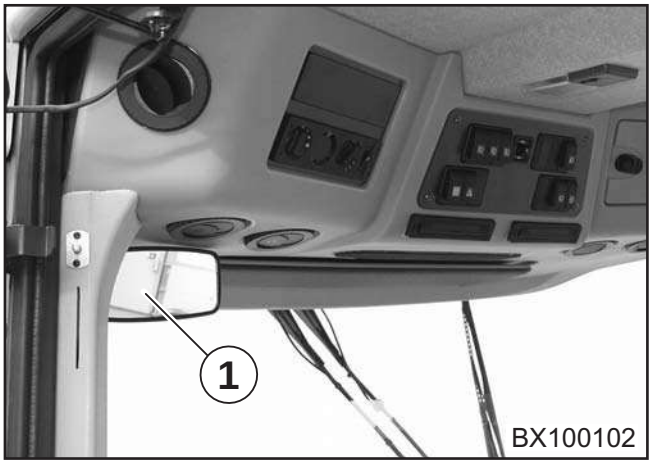
The instructional seat must only be used during the instructional driving. Apart from that, no other person, except from the driver, is allowed to be on the machine or the driver's cab during operation.

- Before use fold down instructional seat (1)

5.7 Inside mirror

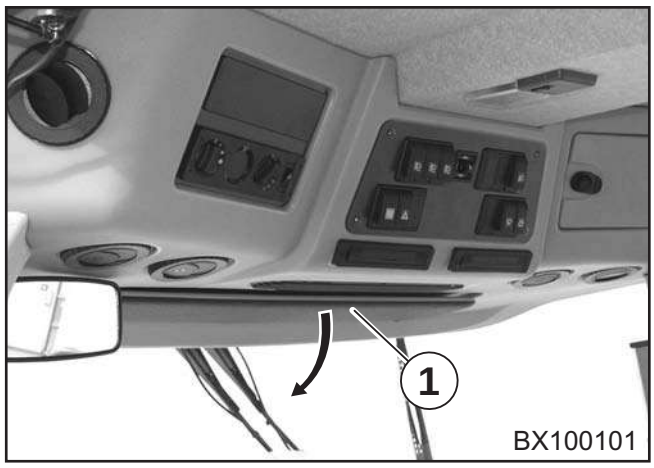
Set the interior mirror (1) according to the requirements of operation.

- Set the interior mirror (1) by hand.



5.8 Sun blind

- Set the sun visor (1) as required.



5.9 Outside mirrors

Left outside mirror

- Set the left outside mirror by hand.

Right outside mirror and anti-collision mirror

The right outside mirror (1) and the anti-collision mirror (2) are electrically adjustable. The switch (3) is located in the roof panel.

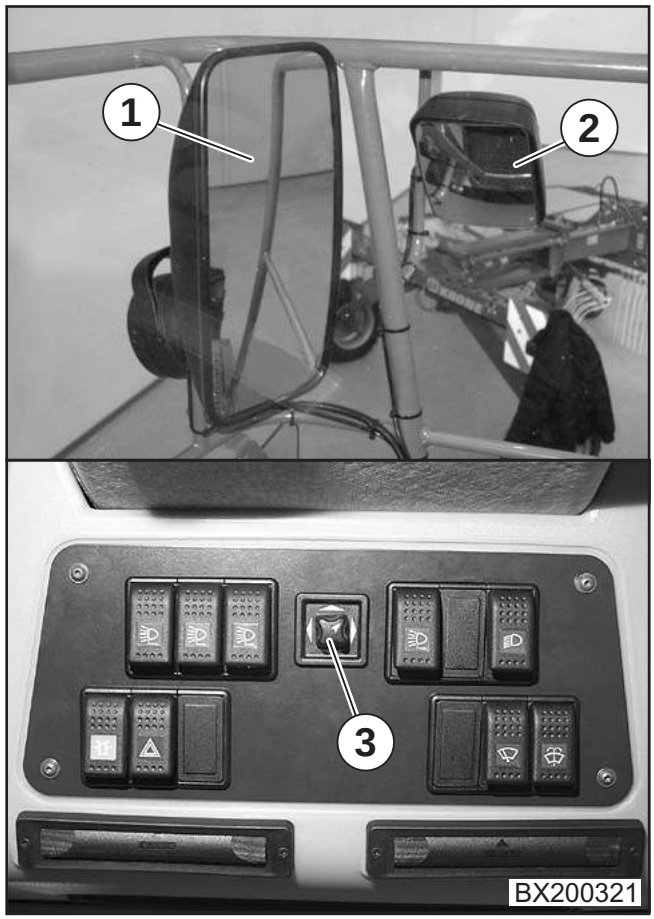
Setting the anti-collision mirror

Set the anti-collision mirror in such a way that the ground area next to the right front wheel can be checked prior to starting.

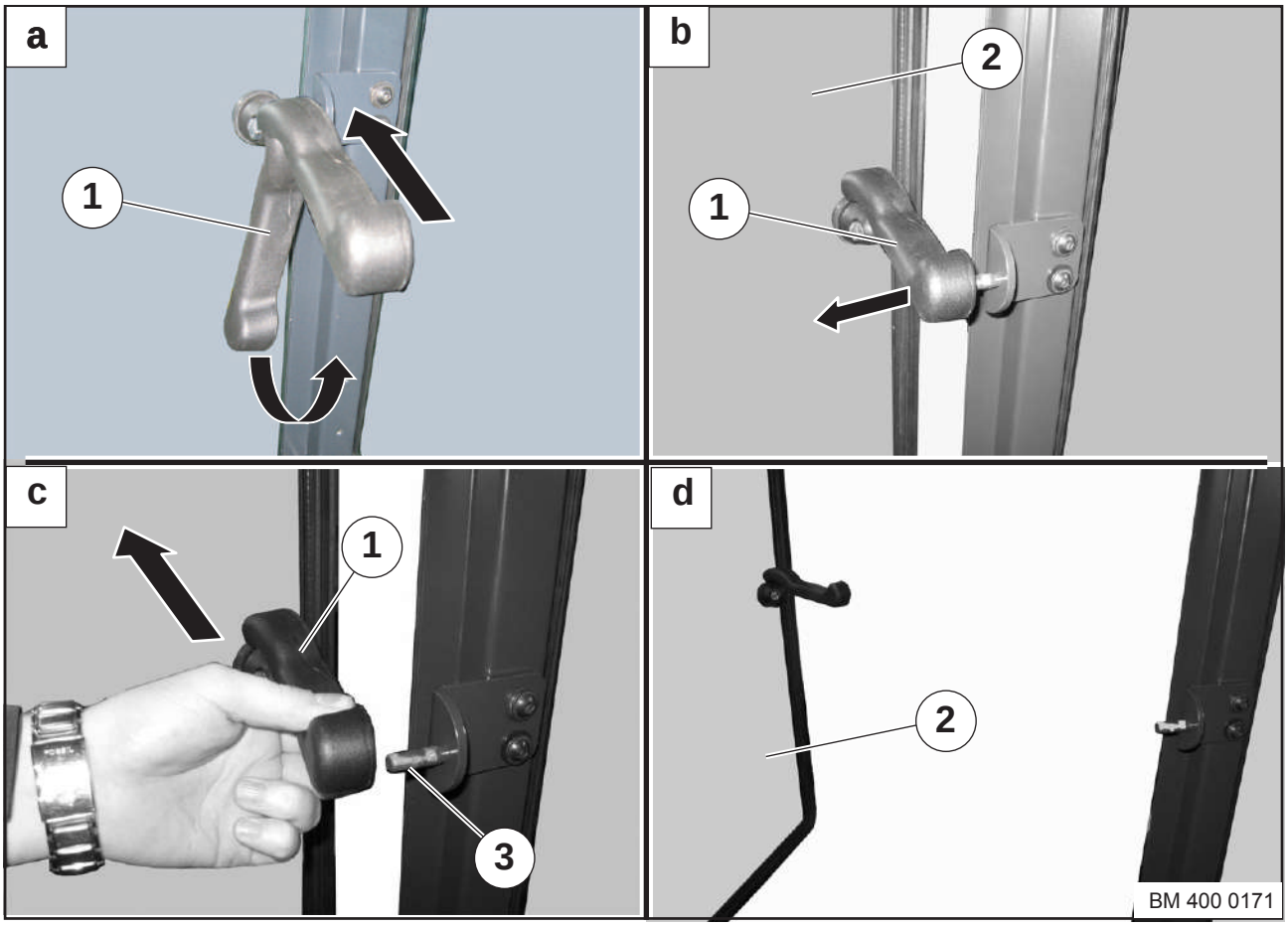
- Turn the switch (3) to the left (arrow to the left).
- Press the switch (3) up, down and to the side until the anti-collision mirror (2) is set correctly.

Setting the right outside mirror

- Turn the switch (3) to the right (arrow to the right).
- Press the switch (3) up, down and to the side until the anti-collision mirror (1) is set correctly.



5.10 Emergency exit



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 do this:
- Swivel the lever (1) upward.
- Press the lever (1) outwards and open the side window (2) slightly.
- Pull the lever (1) from the pin (3).
- Open the side window (2) completely

5.11 Windshield wipers

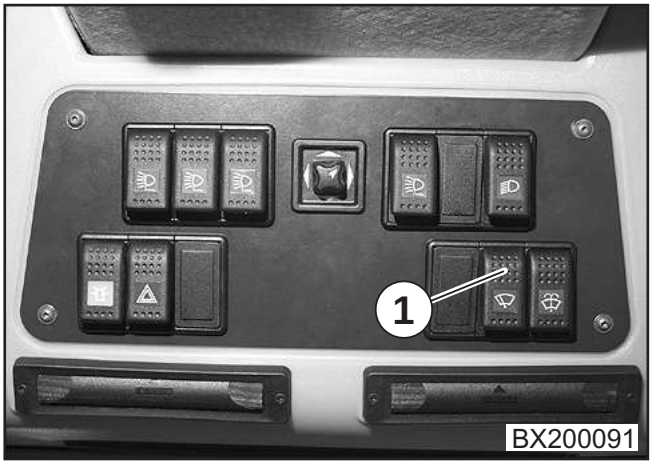
The rocker switch (1) for the windshield wipers is located in the roof panel.

The switch has three positions:

I	-	Off
II	-	Interval
III	-	Continuous operation

Switching on the windshield wipers

- Actuate the rocker switch (1).

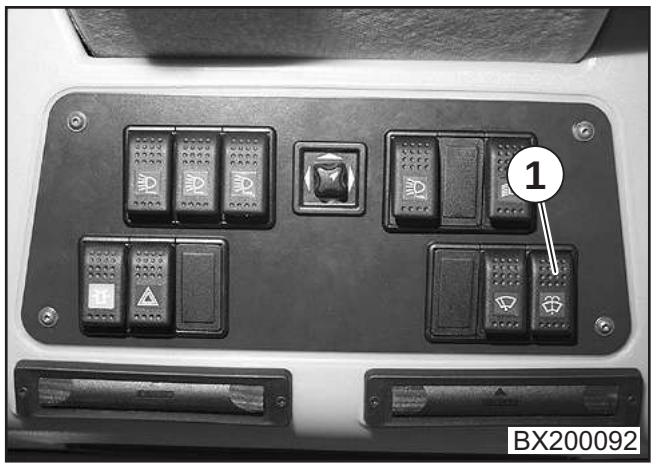


5.12 Washer system - windshield

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

Switching on the windshield washer system

- Actuate the rocker switch (1).

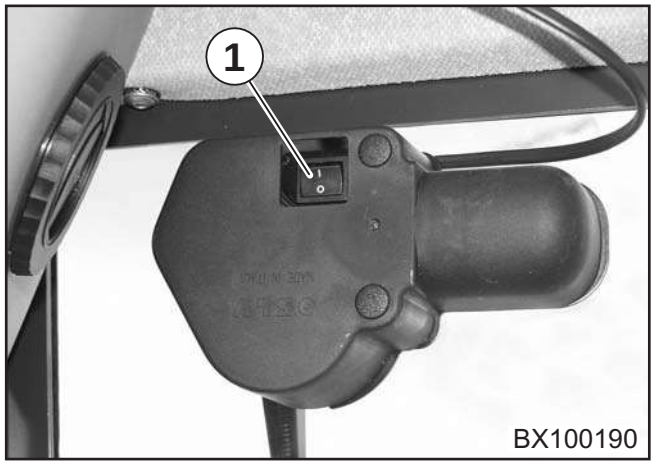


5.13 Side window washer (optional)

The switch (1) for the side window washer is located in the housing of the washer (right/left).

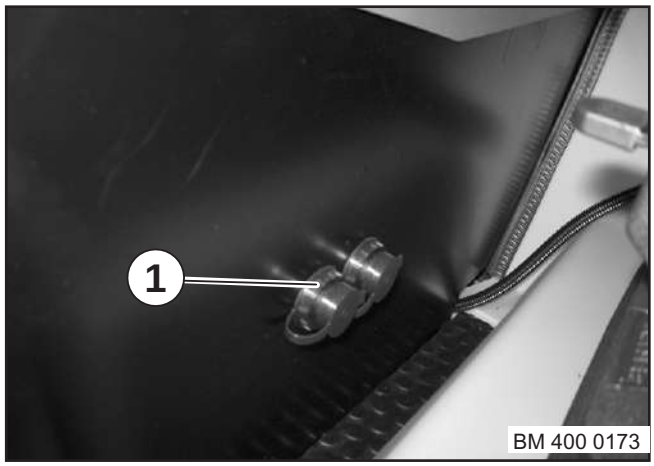
Switching on the side window washer

- Actuate the rocker switch (1) (right/left) as required.



5.14 Diagnosis socket - motor

The diagnostics socket (1) for the engine is located in the driver's cab (in the direction of travel) on the bottom right in the switch panel next to the driver's seat.

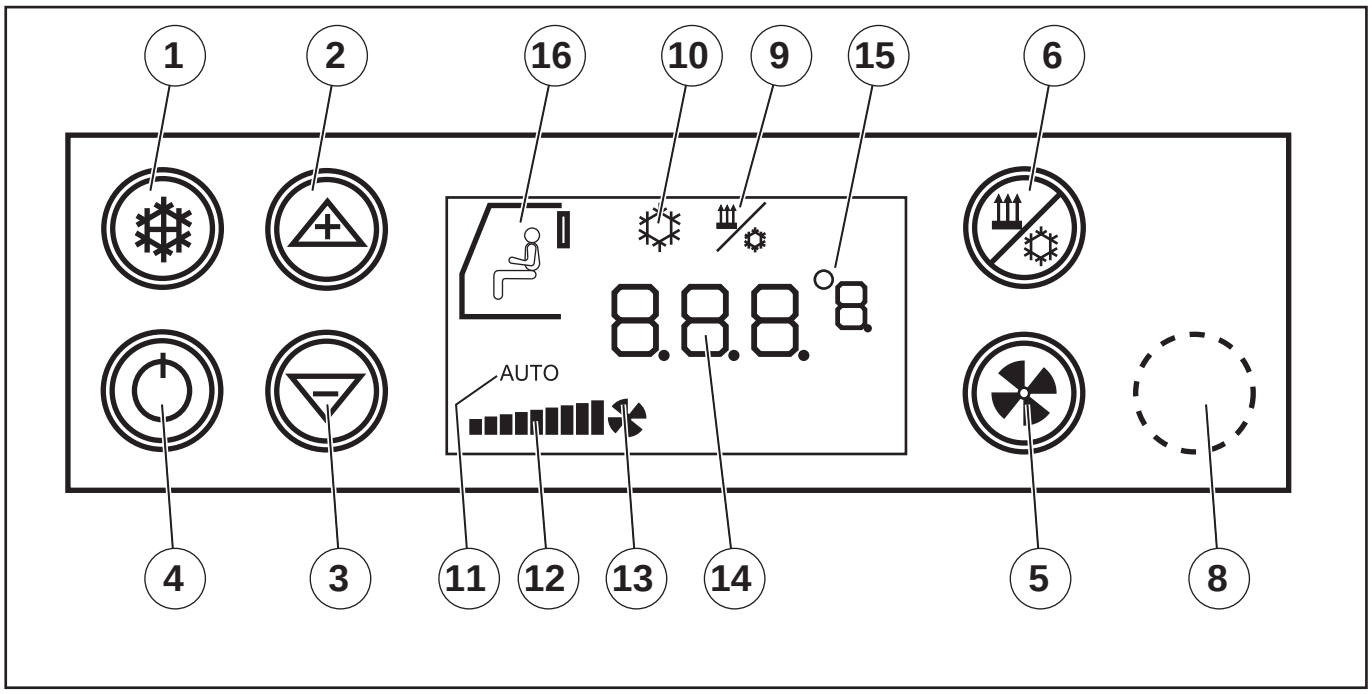


5.15 Climatronic / Heating

5.15.1 Control and indicator elements

The climatronic is a control unit for air conditioning and heating systems in modern vehicle cabins.
The driver is being relieved from all tasks of the ideal air conditioning in the cabin by easy and clear controlling.

In case the power supply for the control unit is interrupted, the control unit accomplishes a self-testing after impressing power. After finishing the self-testing the last saved setting is displayed.



Key	Key function
1	Key for switching air conditioning on and off
2	Key for adjusting the desired cabin temperature up. Alternative: manual adjustments „up“
3	Key for adjusting the desired cabin temperature down. Alternative: manual adjustments „down“
4	Key for switching the control on and off
5	Shift-key evaporator fan speed manual/automatic
6	Key for switching REHEAT (dehumidify cabin air) on and off
7	
8	Blind key for switching the temperature display to ° Fahrenheit

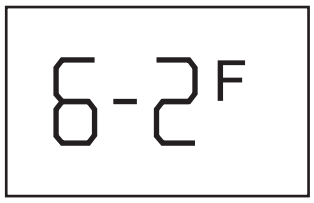
LCD	Function of LCD-display
9	Symbol indicates REHEAT – operation on
10	Symbol indicates air conditioning on
11	Symbol indicates that fully automatic control is switched on
12	Bar indicates the fan speed during manual operation
13	Symbol indicates manual fan operation
14	4-digit seven segment display indicates set value or error code
15	Symbol indicates temperature unit (°)
16	Indicates symbol for the vehicle cabin

5.15.2 Control

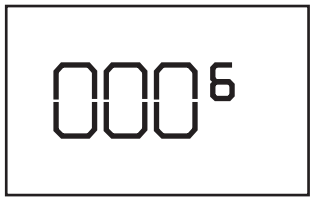
5.15.3 Switch on system

Press key 

After switching on, the control accomplishes a self-testing, the software version is displayed for about 5 sec., e.g.:



Afterwards the hours of operation of the air conditioning system are displayed for about 5 sec.:
(e.g. 6 hours of operation)

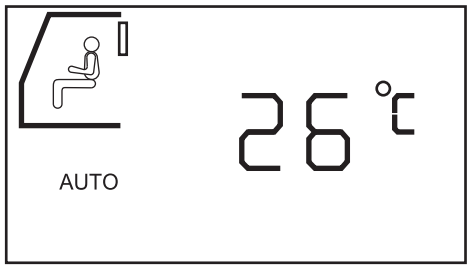


Afterwards the last saved setting is shown in the display.

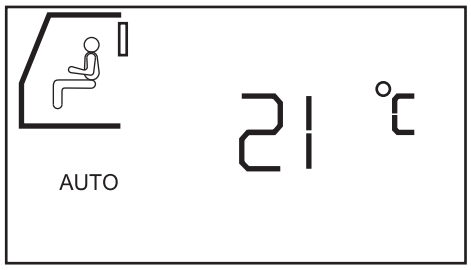
5.15.4 Setting the desired cabin temperature

The adjusted cabin temperature in °C, e.g. 26°C, is displayed.

The control is set on automatic operation.



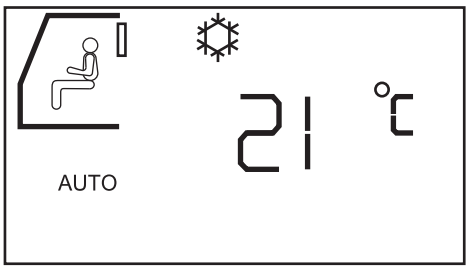
For lowering the desired cabin temperature to e.g. 21°C press key  until the desired value is shown in the display. (press key 5 times)



5.15.5 Switching air conditioning operation on/off

Switching air conditioning on with the key  .

The air conditioning is now operating, this symbol  indicates the air conditioning operating.



If required, the compressor is switched on by the control.

By pressing this key  again the air conditioning is switched off.

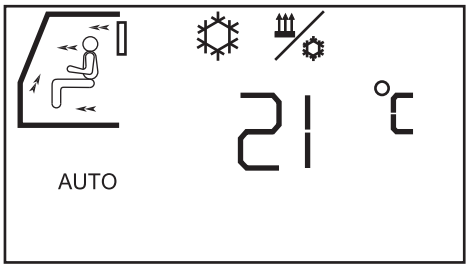
(Compressor deactivated), symbol  is no longer shown.

5.15.6 Switching REHEAT - operation on and off

REHEAT-operation = (dehumidify cabin air)

Switching REHEAT- operation on with this key 

The following notice is shown in the display:
The REHEAT - operation is switched on now, this symbol  indicates REHEAT - operation.



The compressor is constantly switched on. The evaporator fan speed is raised to 100%. If required, the control turns the heater on for keeping the room temperature on set value.
The REHEAT – operation is automatically limited to 10 minutes.

By pressing this key  again, the REHEAT - operation is switched off.

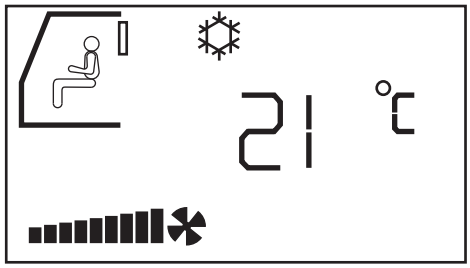
This symbol  is no longer shown.

5.15.7 Manual adjustment of the evaporator fan speed

Switch on evaporator fan speed with

this key .

Manual setting of the fan speed is now active.The currently adjusted fan speed value is shown with this bar (full bar = 100%).



The symbol **AUTO** is no longer shown.

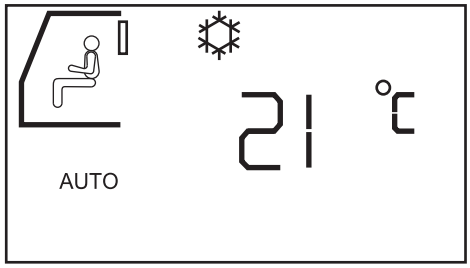
Fan flashes for 5 sec., during this time the fan speed can be raised in 10%-steps with the key or lowered with the key .

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

By pressing the key two times the AUTO - operation is reactivated, symbol **Auto** is shown, symbols and are no longer shown.

5.15.8 Switching the temperature display to ° Fahrenheit

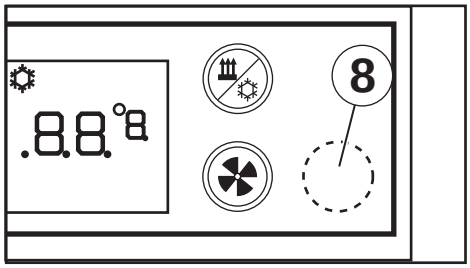
The adjusted set temperature is shown in ° Celsius.

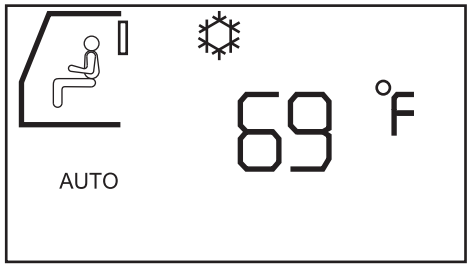


Keep blind key (8) pressed, **additionally** press key , display switches to ° Fahrenheit.

Adjusted set temperature is shown in ° Fahrenheit.

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

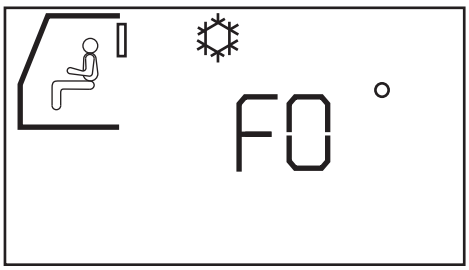




5.15.9 Showing errors on the display

Error code (F0)

Error room temperature sensor is shown with blinking display (**F0**) .



The control received an error of the room temperature sensor, the function is inoperable.

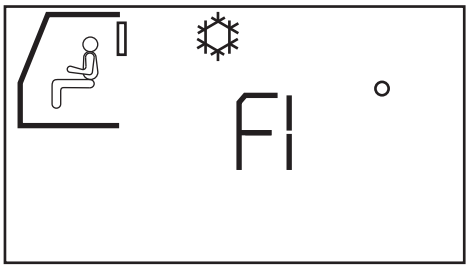
Cause of the sensor error:
Short circuit or interruption of the sensor line, plug connection on the sensor or control, temperature sensor damaged.

Only after eliminating the error, the control is operable again, the sensor error is no longer shown.

In case of an sensor error, the control keeps working with the setting which was in effect before receiving an error.

Error code (FI)

Error blow out-temperature sensor is shown with blinking display (F1).



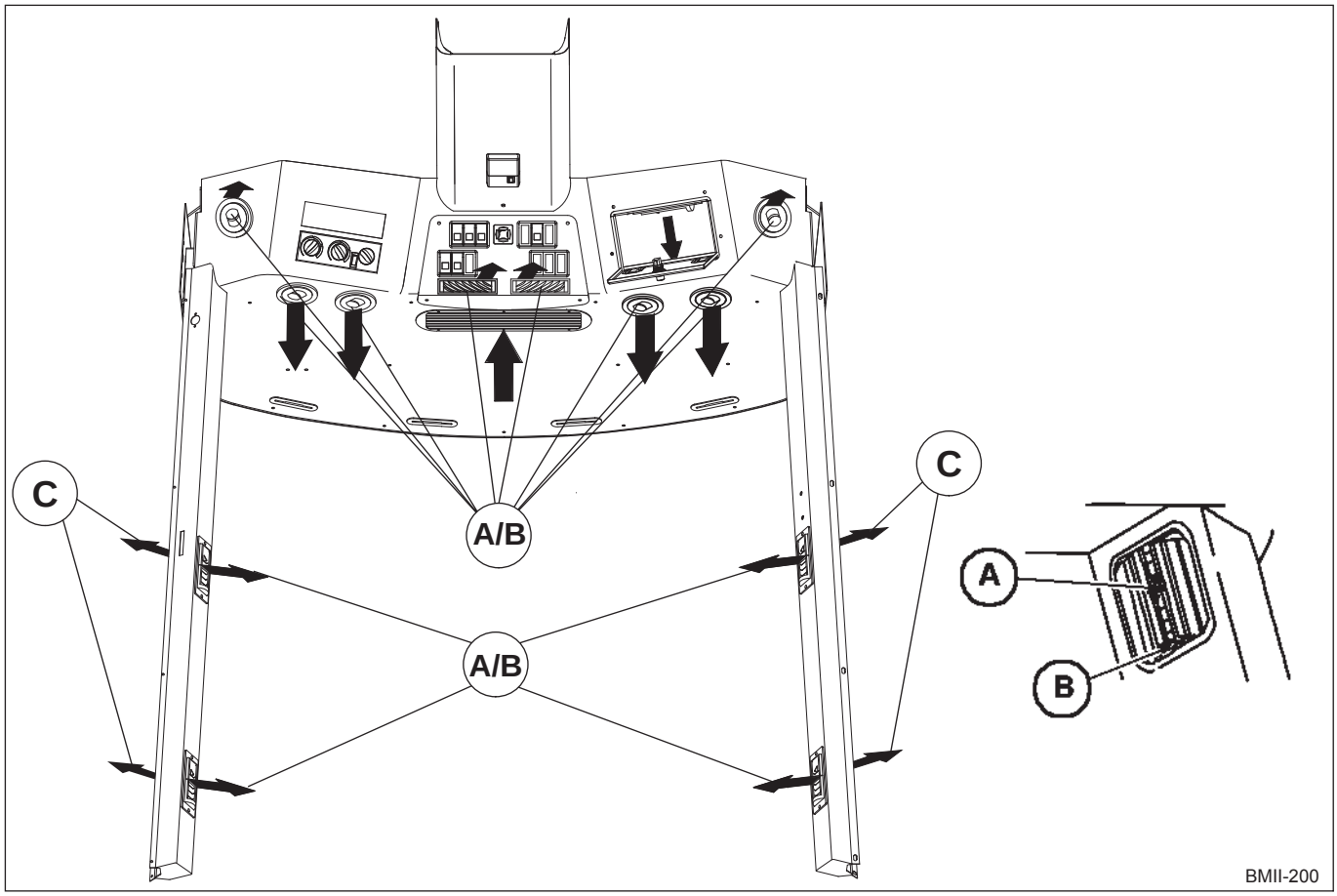
The control received an error of the blow out-temperature sensor, the function is inoperable.

Cause of the sensor error:
Short circuit or interruption of the sensor line, plug connection on the sensor or control, temperature sensor damaged.

Only after eliminating the error, the control is operable again, the sensor error is no longer shown.

In case of an sensor error, the control keeps working with the setting which was in effect before receiving an error.

5.16 Adjustable air jets



A - Knurled wheel to control the amount of air

B - Adjustment of the louvers

C - Air slots

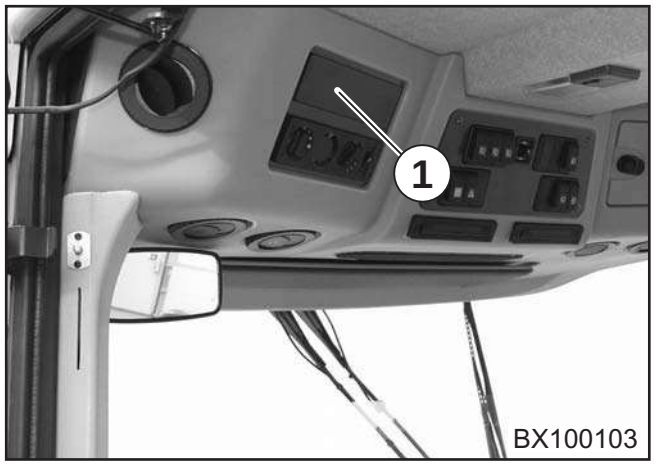
Set the louvers in such a way that the panes do not mist up.

5.17 Radio

1 ISO compartment for radio.

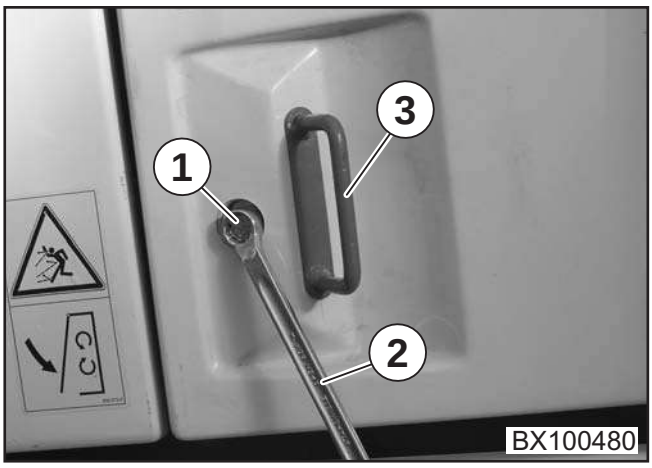
For data on the connections, please refer to circuit diagram in the chapter titled "Maintenance – electrical system".

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.



5.18 Ladders

5.18.1 Flaps with safety locks



Opening the flaps

- Use an open-jawed spanner or ring spanner (NW 13) or a screwdriver (2) to unlock the flap locks (1) by turning to the left. Open the flap with the handle (3).

Closing the flap

- Close the flap by pressing (without tools).

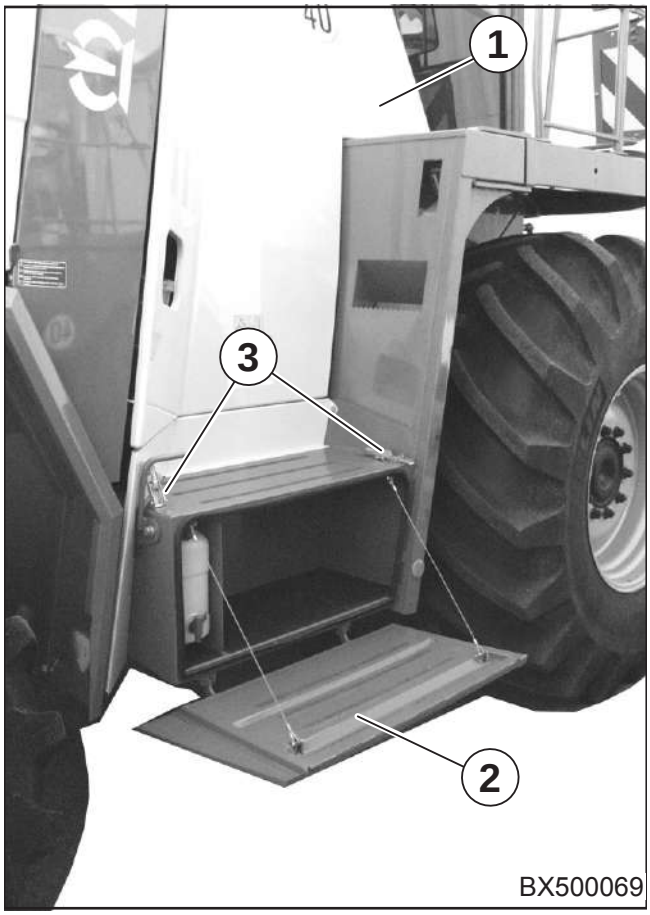
5.18.2 Ladder to the machine compartment

Left-hand side of the machine

- Open the flap (1).

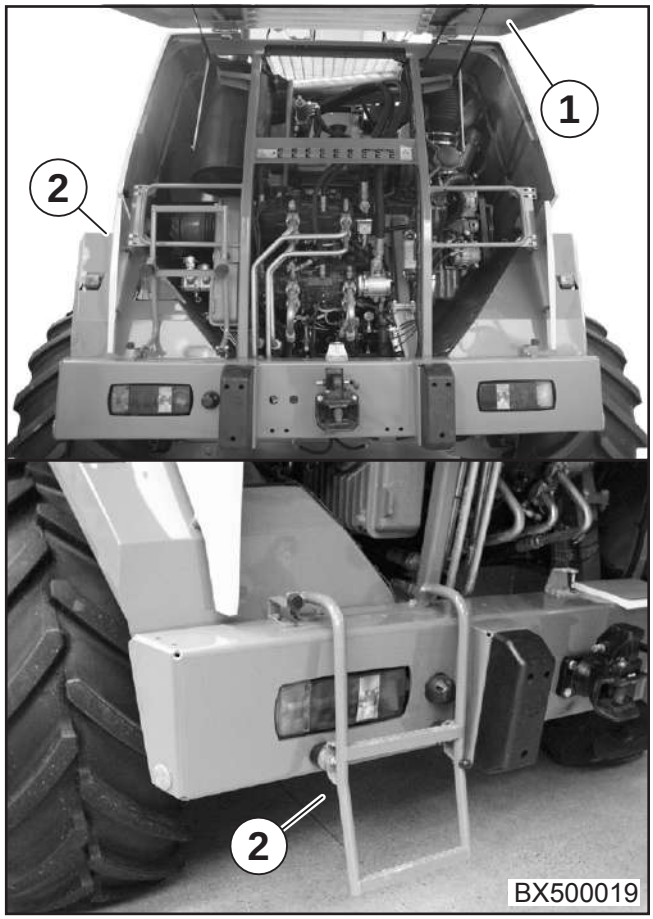
Right-hand side of the machine

- Rotate the flap (1) upward.
- Open the lock (3) of the tool box and fold down the lid (2).



5.18.3 Ladder to the motor compartment

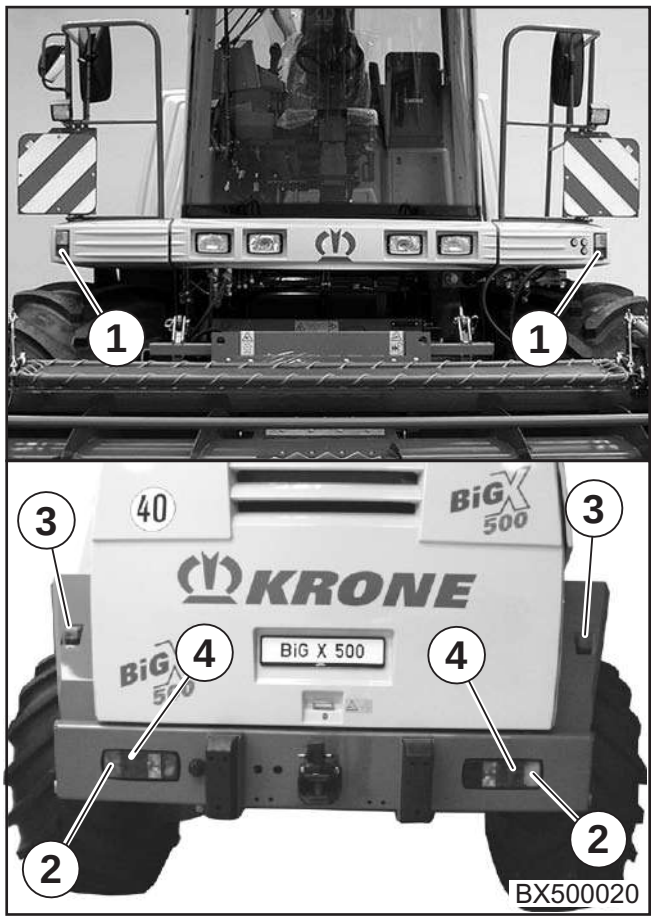
- Open the rear flap (1).
- Fold down the ladder (2).



6 Lighting

6.1 Indicator, hazard warning flasher and brake light

In road traffic indicate the change of travelling direction by means of the indicator.



Switching on the indicator

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

Hazard warning flasher

When the hazard warning flasher has been switched on, all indicators (1, 2, 3) will flash at the same time.

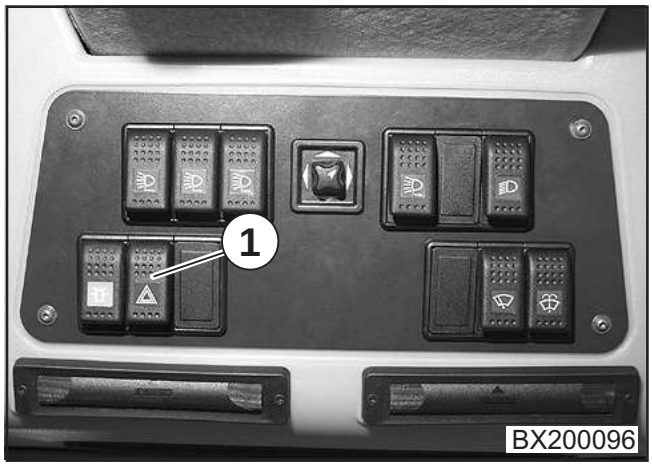
Brake light

When the ignition is switched on, the brake lights (4) will light up as soon as the operating brake is pressed.

Switching on the hazard warning flasher

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

- Actuate the rocker switch (1). The red pilot lamp in the switch (1) will start flashing.



6.2 Parking light

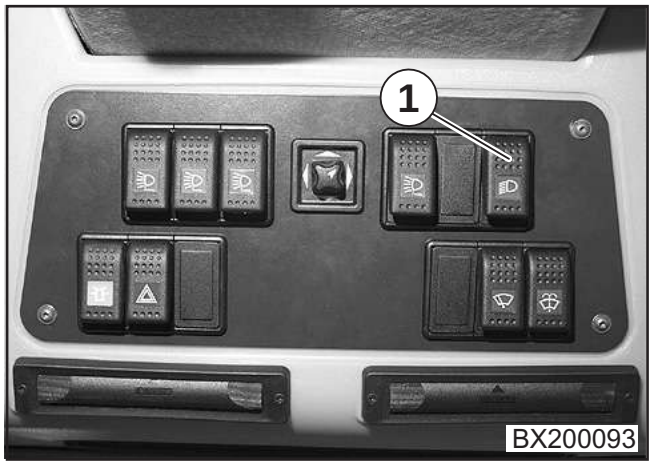
Switching on the parking light

The rocker switch (1) for the parking light and the dipped beam is located in the roof panel switch group.

The switch has three positions:

I	-	Off
II	-	Parking light
III	-	Dipped beam

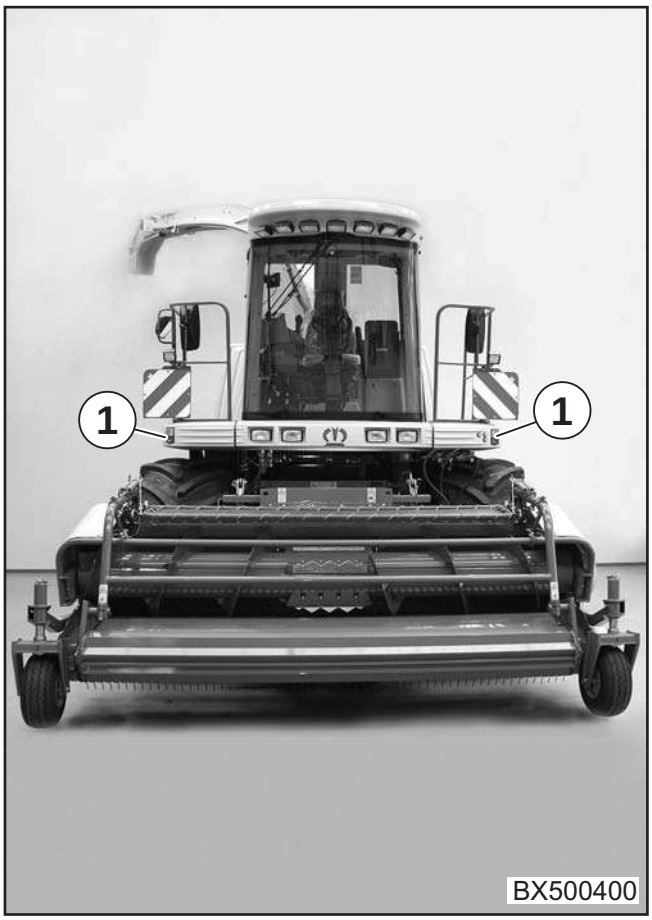
- Set the rocker switch (1) to position II.



The following lamps will light up when the parking light is switched on:

1 - Front side lamps.

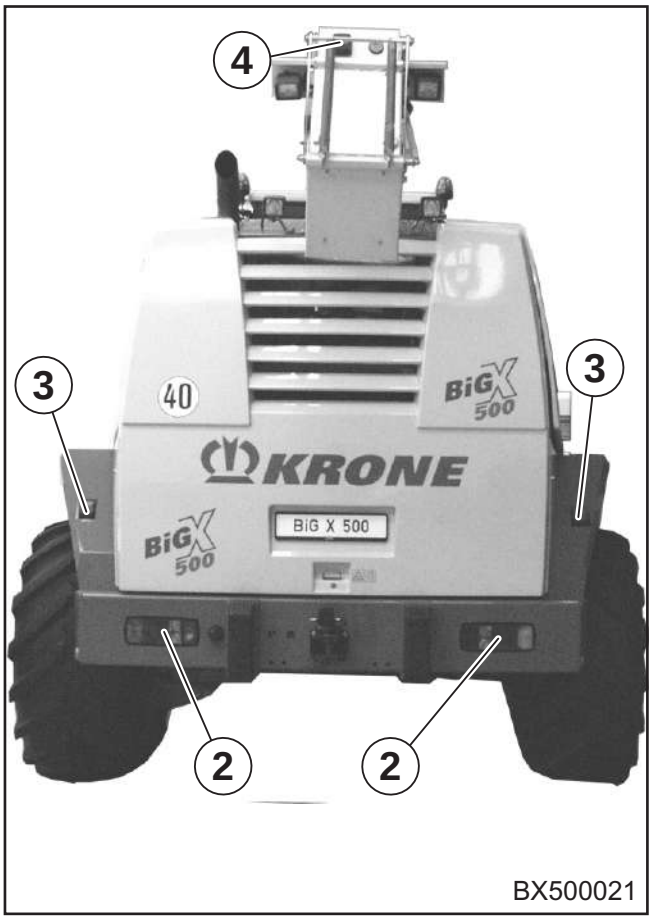
If the forage harvester has been fitted with tyres size 900-60 R32 on the driving axle, the additionally fitted side lamps on the two sides of the platform will also light up.



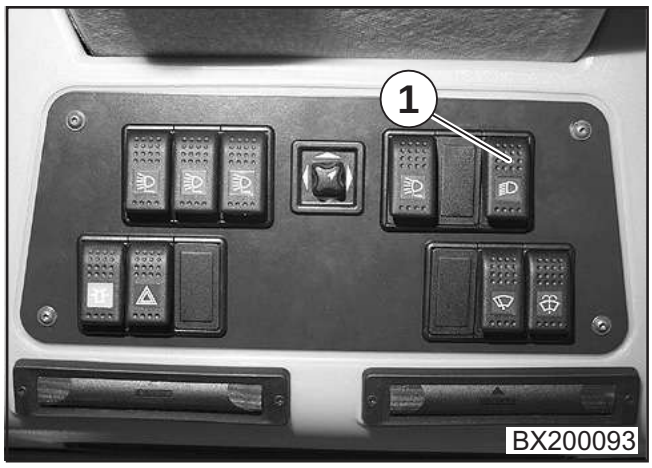
2 - Rear side lamps

3 - Side lamps

4 - Upper side lamp



6.3 Dipped beam



Switching on the dipped beam

The rocker switch (1) for the parking light and the dipped beam is located in the roof panel switch group.

The switch has three positions:

I - Off
II - Parking light
III - Dipped beam

The dipped beam can be switched on only when the ignition has been switched on.

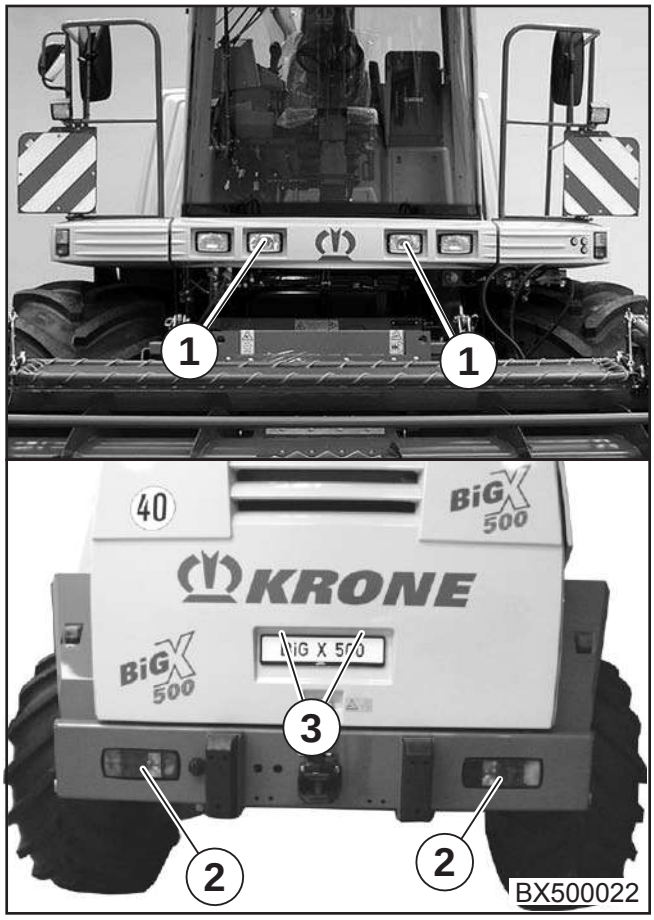
- Set the rocker switch (1) to position III.

When the parking light is on, the following lamps will light up:

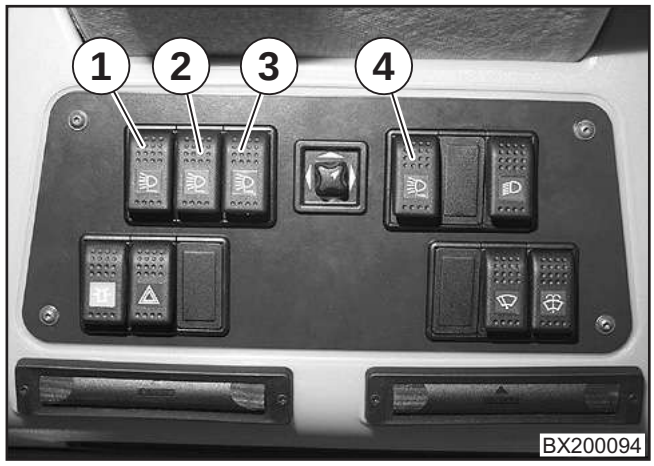
1 - Head lights

2 - Rear lights

3 - License plate lighting



6.4 Working floodlights



Switching on the working floodlights

The rocker switch (1, 2, 3) for the working floodlights is located in the roof panel switch group.

1 - Front working floodlights I

2 - Working floodlight cab roof and upper discharge chute

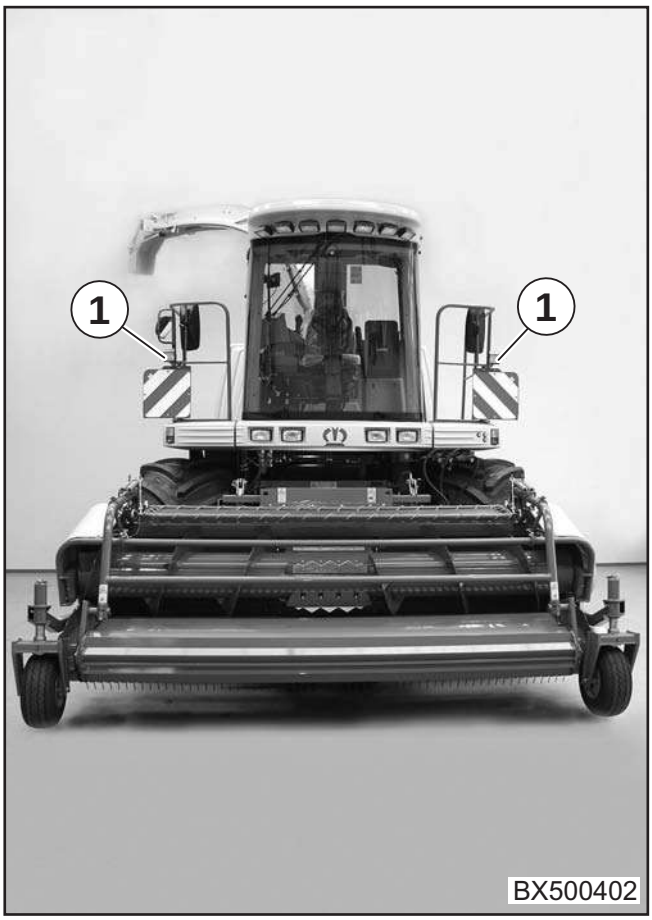
3 - Front working floodlights II

4 - Rear working floodlights

Front working floodlights I

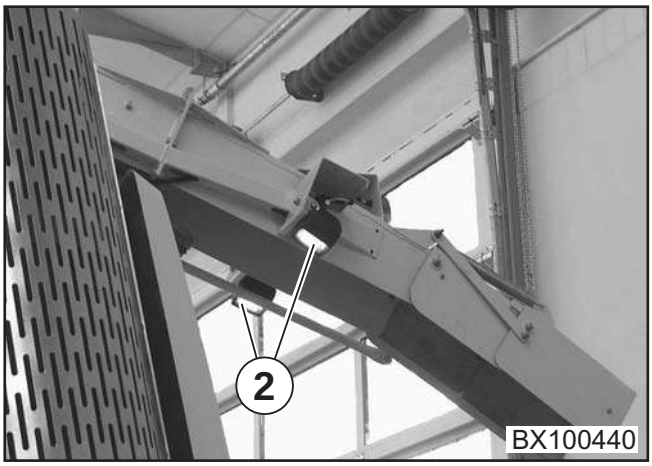
The front working floodlights I can be set by hand.
They have an on/off switch on the rear side.

1 - Front working floodlights I

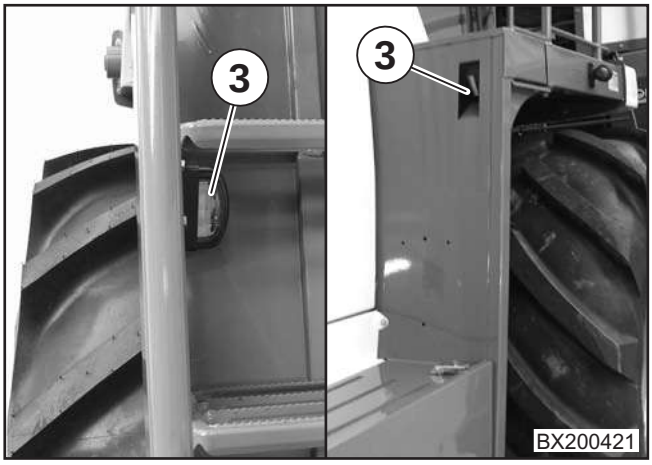


Working floodlight – cab roof and upper discharge chute

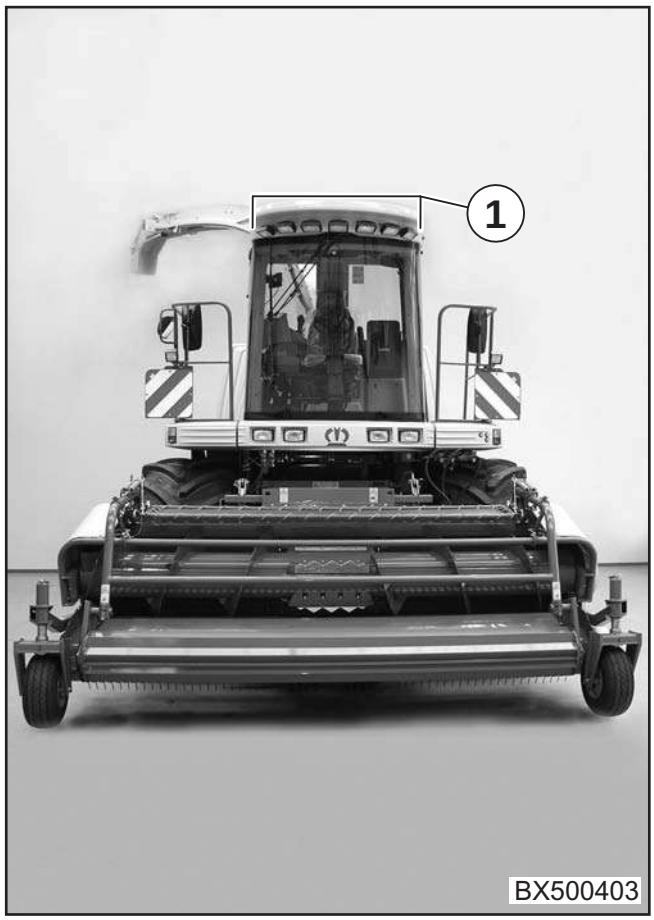
2 - Working floodlights of the ejector



3 - Right and left rear wheel lights

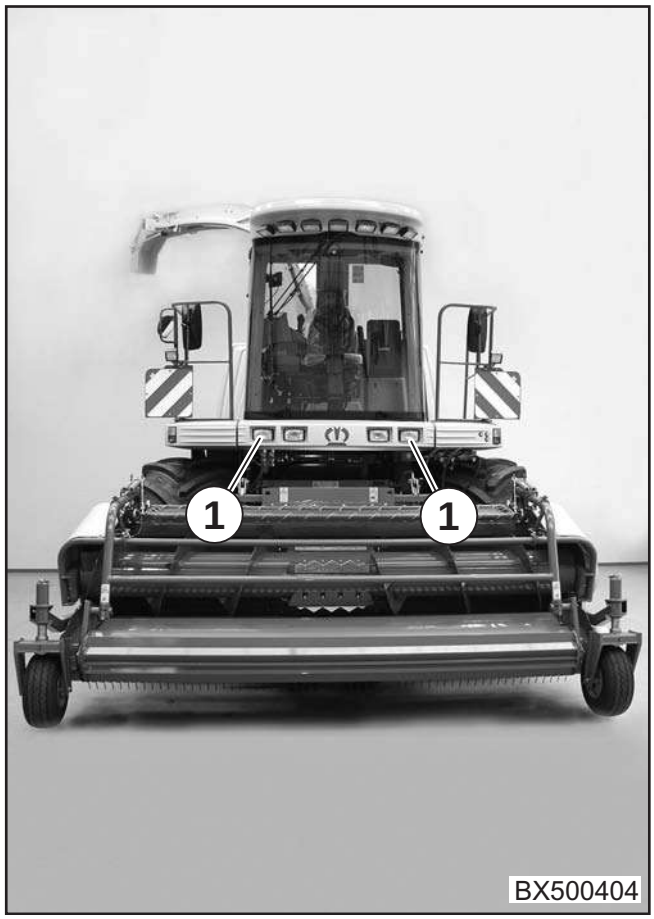


1 - Cab roof working floodlights



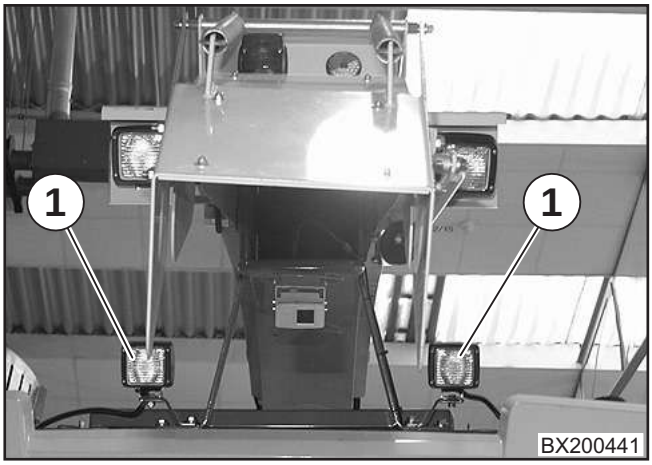
Front working floodlights II

1 - Front working floodlights II



Rear working floodlights

1 - Rear working floodlights



6.5 Allround lights

In some countries the allround lights must be switched on in road traffic.

Switching on the allround lights

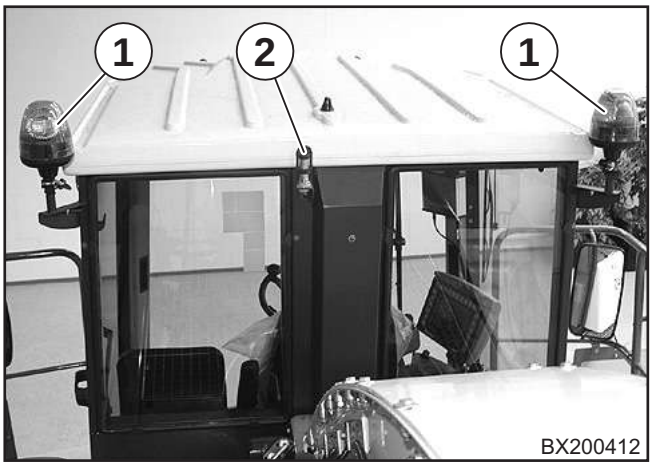
The switch (1) for the allround lights is located in the roof panel switch group.

- Actuate the rocker switch (1). The orange pilot lamp in the switch (1) will light up.

Allround lights

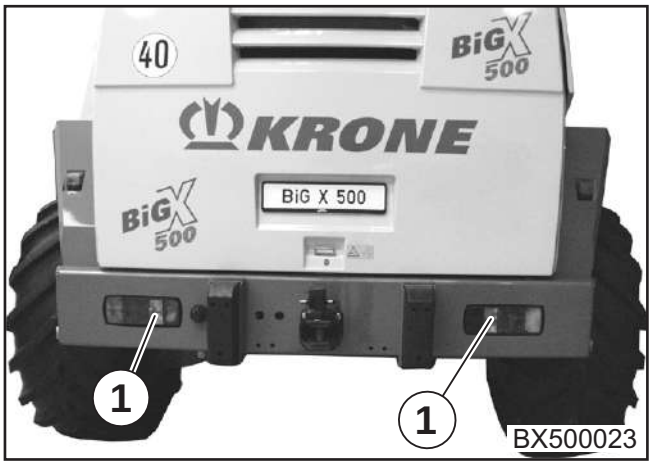
1 - Allround lights

If the allround lights (1) are not visible through the folded-in maize header for road driving, an allround light can be placed on the middle support (2).



6.6 Reversing lights

The reversing lights will light up when reversing, and at the same time an acoustic warning signal is sounded.



7 Start-up

7.1 Daily checks

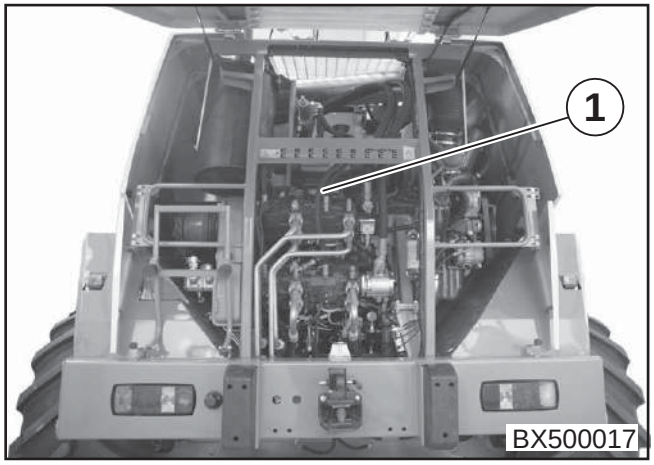
- Check machine for cleanliness, clean if necessary
- Engine oil level
- Hydraulic oil level, tightness of the system
- Coolant level, engine
- Central lubrication
- Tyres
- Light functions
- Brake

7.1.1 Dirt deposits in the engine and machine compartment

Engine compartment (1)

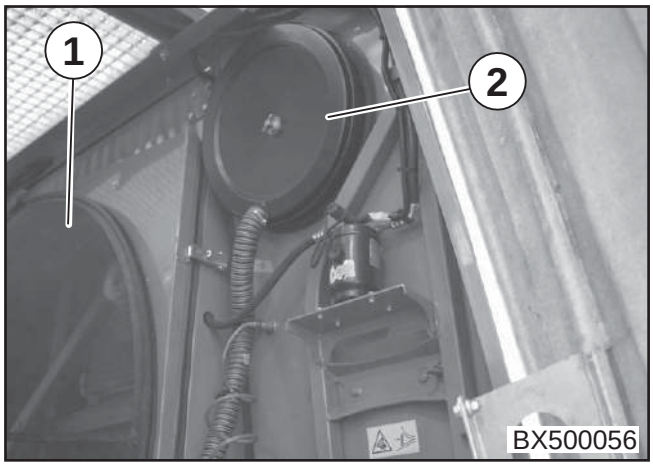
A mixture of dust, oil, grass and chaff in the engine compartment is a source of fire and means an increased fire hazard.

- Always keep the engine and engine compartment (1) clean.
- Blow off dirt with compressed air.
- Wipe off oil deposits.

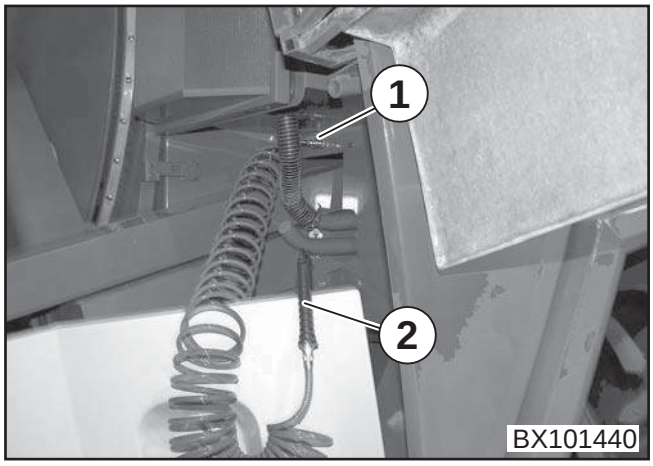


Machine compartment

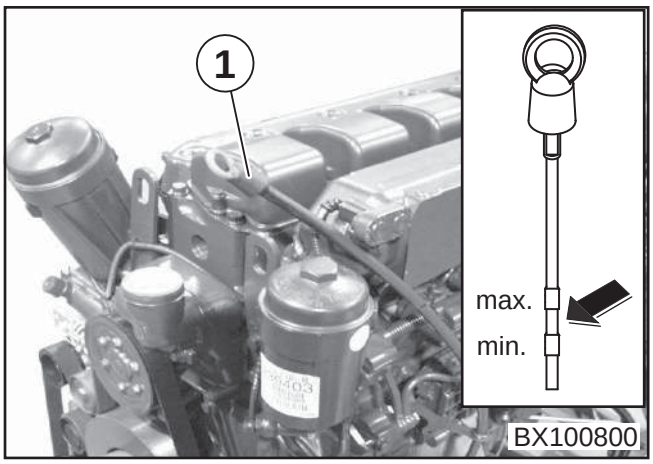
- Always keep the radiator sieve (1) and air filter cover (2) clean.
- Blow off dirt with compressed air.



The compressed air connection (1) and compressed air gun (2) are in the machine compartment.



7.1.2 Engine - oil level check



Park the machine on level ground, perform an oil level check approx. 5 minutes after the engine has stopped.

- Pull out the oil dipstick.
- Clean the oil dip stick with a non-fibrous cloth and push it in completely.
- Pull the oil dipstick back out.

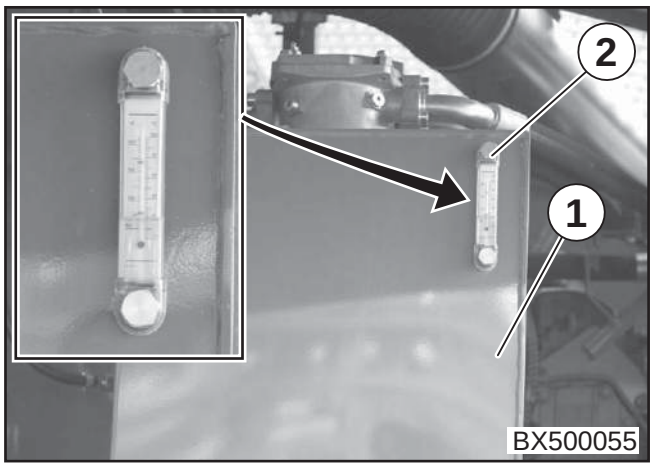
The oil level must lie between the min. and max. mark.

- If necessary refill engine oil (see engine maintenance section).

Engine OM 460 LA

1 - Oil dipstick

7.1.3 Hydraulic oil level check

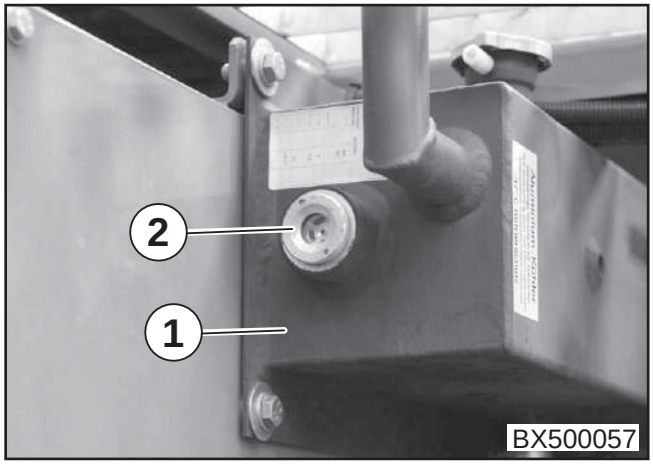


- Lower the lifting gear and switch off the engine.
- Check the hydraulic fluid level in the viewing glass (2) of the hydraulic fluid tank (1).

The hydraulic fluid must be visible in the viewing glass (2).

- If necessary refill hydraulic oil (see hydraulic maintenance section).

7.1.4 Checking the engine coolant level

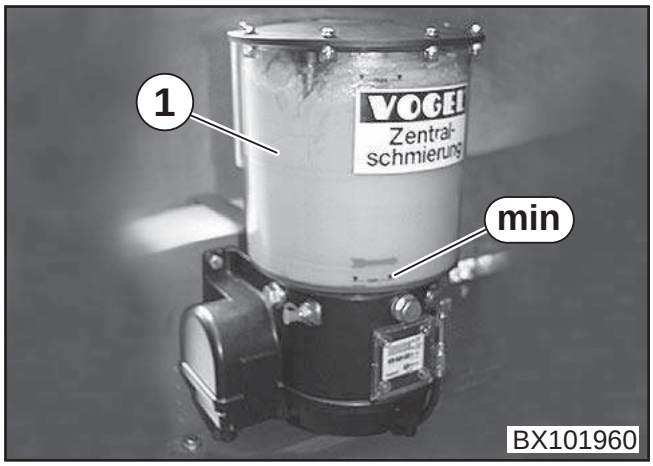


- Check the coolant level in the overflow container (1) in the viewing pane (2).

The coolant level must reach up to the middle of the control eye (2).

- If necessary refill coolant (see section on engine maintenance).

7.1.5 Checking the central lubrication system

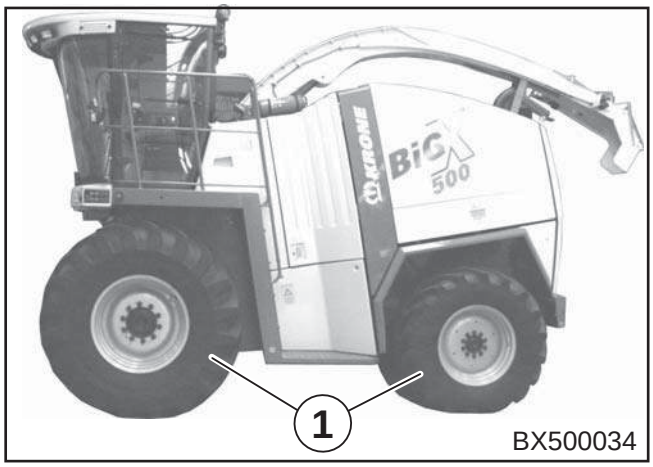


- Perform visual filling level check at the lubricant tank (1).

The lubricant level must be above the min. mark.

- If necessary refill lubricant (see section Maintenance - Central lubrication system).

7.1.6 Tyres



- Check tyres (1) daily for damage and cracks and obviously low tyre pressure.
- Measure the tyre pressure with an accurately working test device at least 1x weekly.

For tyre pressure information, refer to the section on Maintenance - Tyres.
The tyre pressure data refer to cold tyres.

- Correct the tyre pressure if necessary.

7.1.7 Light functions

- Check the functioning of the lighting before the start of every journey.

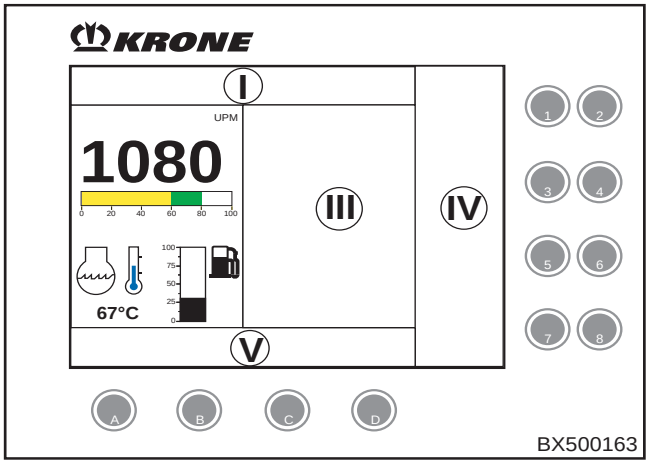
7.1.8 Brake

- Check the functioning of the operating brake before the start of every journey.

7.1.9 Fuel level

- With the ignition switched on, check the fuel level (1) in the display of the Info centre.

- If the symbol  (2) appears in the engine data info area, refuel without delay.



7.2 Fuel system

7.2.1 Fuel

Take care when handling fuel. Refuel only outdoors and with the engine switched off. No smoking.

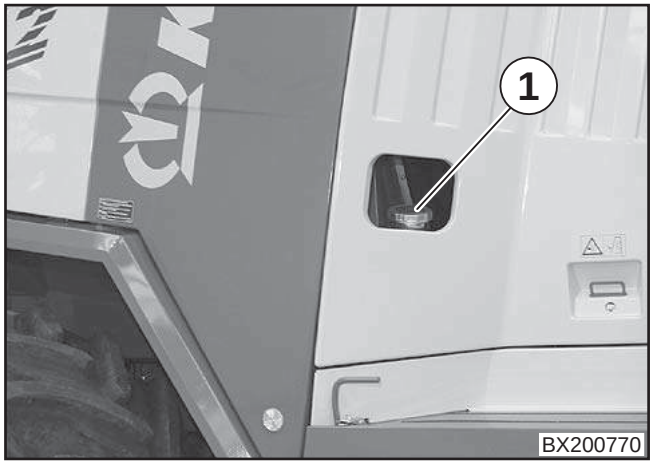
The quality and cleanliness of the fuel are of critical importance for consistently good performance and a long service life for the engine.

Observe the data in the engine operating instructions, operating materials section (Daimler Chrysler) and the operating regulations (DaimlerChrysler).

For temperatures under 10 °C (50 °F), always use winter fuel.

7.2.2 Refueling

- Switch off the engine.
- Clean grass and dust from the area around the filler neck (1).
- Use only clean fuel in the tank. If necessary, filter the fuel before adding it to the tank.
- Capacity of the fuel tank approx. 960 l.
- Close and seal the tank after filling it.
- Dispose of spilled fuel.



Refuel the fuel tank daily after the end of work to avoid the formation of condensation in the fuel tank and freezing when cold.

7.2.3 Venting the fuel system

The fuel system must be vented if necessary after a lengthy standstill.
For more information, please refer to the operating instructions in the section on engine maintenance (DaimlerChrysler).

7.3 Engine operation

7.3.1 Running in the engine

Modifications to the engine not authorised by the manufacturer result in expiry of the warranty protection.

The engine is immediately ready for normal operating conditions; particular caution is required, however, in the first 100 operating hours.

Observe the following notes:

- If one of the following error messages appears in the display of the Info centre and at the same time an acoustic signal sounds, immediately switch off the engine and remedy the fault (see also Appendix A - Error messages).

-  Engine fault!

-  Diesel engine oil pressure!

-  Diesel engine oil level!

-  Cooling water temperature!

-  Cooling water level!

- Check the engine oil level at regular intervals of time (see section 7.1.2 Engine oil level check), watch out for leaks.

- Pay particular attention and be particularly aware until you have the required sense and ear for the engine and operating noises.

- Avoid high loading or idling of the engine for more than 5 minutes during the first 20 operating hours.

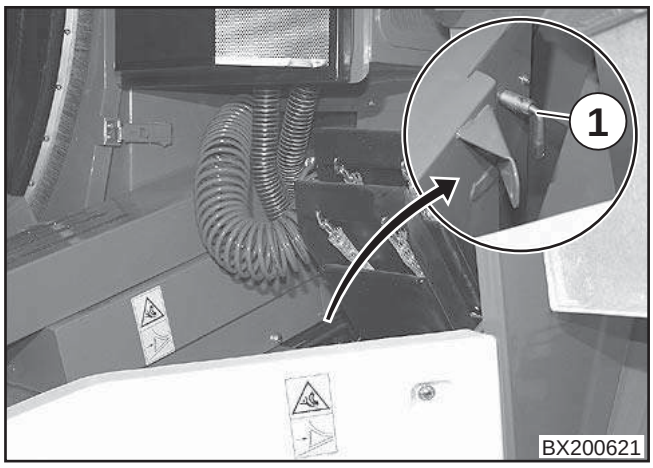
7.3.2 Before starting the engine

Always make sure there is no one in the vicinity of the forage harvester; sound horn.

Never let the engine run in closed rooms without extraction system.

Ensure sufficient ventilation.

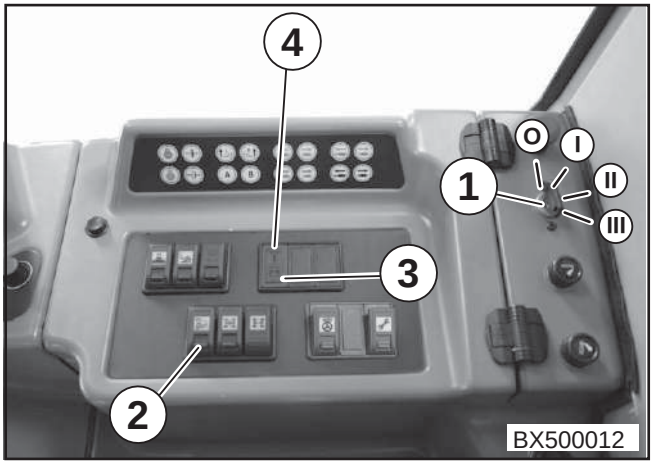
7.3.3 Starting the engine



Prerequisites

- Main battery switch (1) in closed position (vertically downwards).

- Travelling gear release switch (2) off.



Switching on the electronics circuit

- Turn the ignition key (1) to the **I** position.

Switching on the ignition

- Turn the ignition key (1) into the **II** position.

The charging pilot lamp (3) lights up. It must go out after the engine starts.
The engine fault pilot light (4) shines for approx. 2 seconds.

The task computer makes a system check internally, the main display appears in the display of the Info centre.

Starting the engine

Start the engine only from the driver's seat.

- Turn the ignition key (1) into the **III** position. Do not operate the starter too briefly, but not longer than 20 seconds. Immediately let go of the ignition key (1) after the engine starts.

If the engine does not start within the 20 seconds, wait for at least 2 minutes before trying to start it again.

After the engine is started the engine fault control light (4) shines briefly. Check that the pilot light goes out, if not immediately switch off the engine and remove the fault.

If the ignition key (1) is turned back into the **I** position before the engine starts, wait until the engine is at rest before trying to start it.

The task computer makes a system check internally, the main display appears in the display of the Info centre.

7.3.4 Starting at low temperatures

In the cold season let the engine run in the lower idling speed for a few minutes after the start.

If necessary use winter-grade fuel.

7.3.5 Starting with auxiliary battery

Under cold operating conditions use a further 12 V battery as required parallel with the batteries.

Leaking battery gas is highly explosive. Avoid spark formation and open flames in the vicinity of the battery. Always connect the battery with the correct polarity, the earth cable to the minus pole and starter cable to the plus pole of the battery.
Never connect batteries in series, since otherwise excess voltages that damage the electronics can arise.

In the case of non-compliance of the correct polarity between battery and three-phase generator severe faults in the electrical system arise.
Always connect the plus pole first and then the minus pole.

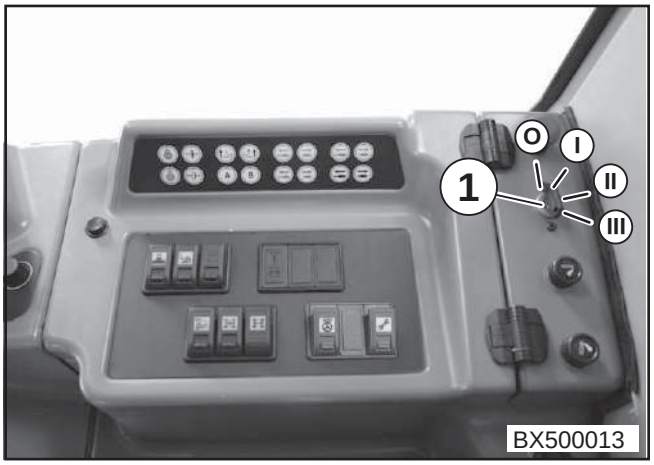
7.3.6 Killing the engine

If an engine at operating heat stalls, immediately restart the engine to avoid an excessive heat accumulation at functionally important parts.
Before switching off the engine, let it run without load for 1-2 minutes in the lower idling range to let all important parts of the engine cool down.

7.3.7 Switching off the engine

- Let the engine run without load for 1-2 minutes in the lower idling range to let all important parts of the engine cool down.
- Turn the ignition key (1) into the **0** position.

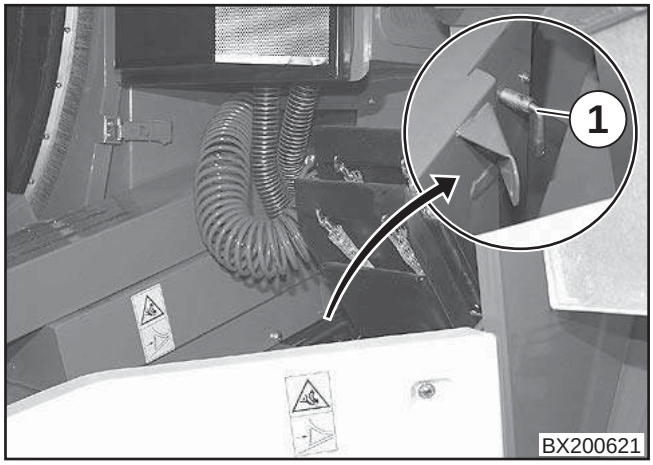
Always pull out the ignition key (1) before leaving the driver's cab. The holding brake is applied automatically.



7.3.8 Second diesel engine auto-start (BiG X 800 and BiG X 1000 only)

7.3.8.1 Start-up of both engines

The self-propelled forage harvesters of the BiG X 800 and BiG X 1000 series are fitted with two engines interconnected by a synchromesh gearbox. If higher or lower power is required during the field mode, the synchronous second engine can be engaged and disengaged as necessary.



7.3.8.2 Preconditions for start-up of both engines

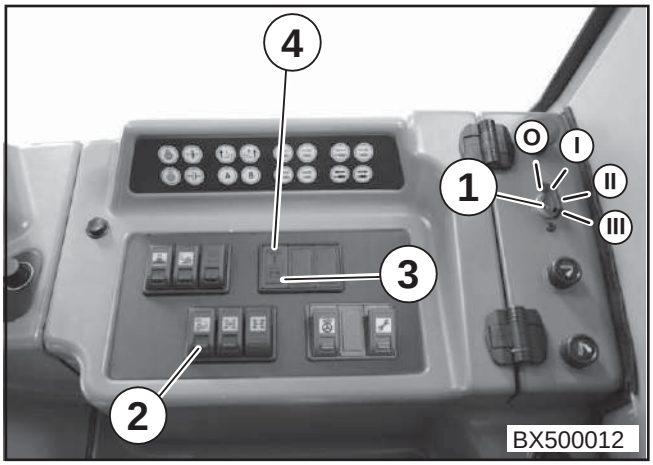
- Main battery switch (1) in closed position (vertically downwards).
- Travelling gear release switch (2) off.

Switching on the electronics circuit

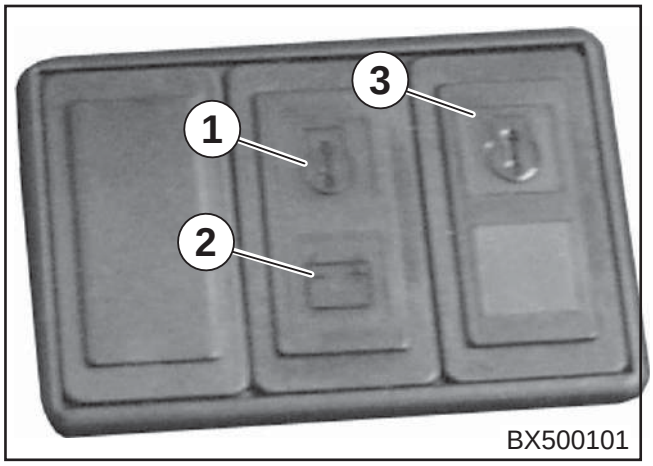
- Turn the ignition key (1) to the **I** position.

Switching on the ignition

- Turn the ignition key (1) into the **II** position.



The charge indicator lamp (3) lights up. It must go out after the first engine starts. The first engine fault pilot lamp (4) remains lit for about two seconds. The on-board electronics automatically start the second engine after a further four seconds. The second engine fault pilot lamp (5) remains lit for about two seconds.



7.3.8.3 Starting the engines

Start the engine only from the driver's seat.

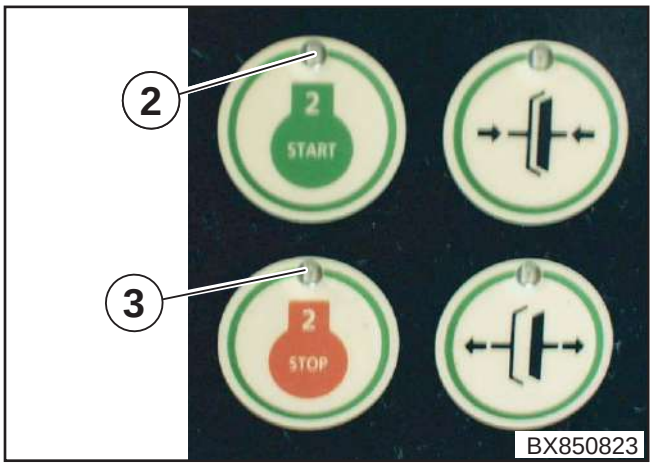
- Turn the ignition key (1) into the **III** position. Do not operate the starter too briefly, but not longer than 20 seconds. Immediately let go of the ignition key (1) after the engine starts.

If the first engine does not start within the 20 seconds, wait at least two minutes before trying to start it again.

- After the first engine is started the engine fault pilot lamp (4) lights briefly. Check whether the pilot lamp goes out. If it does not, immediately switch off the engine and repair the fault.

If the second engine does not start within 15 seconds, it must be started manually. If this is not done, the engine will be ignored on the next start and will then have to be started manually again.

The two pilot lamps (2) (3) in the control unit console (CU) additionally flash and in road operation (field release switch "off") the first engine is throttled to 1300 rpm.



The terminal then displays the following error message.

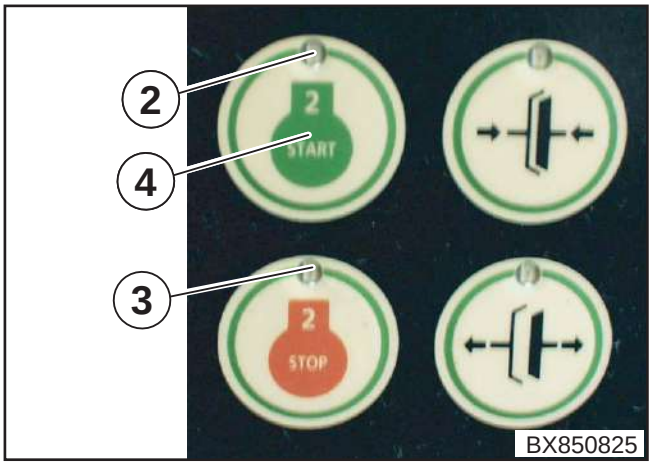
- After auto- starting of the second engine the engine fault pilot lamp (5) lights up briefly. Check whether the pilot lamp goes out. If it does not, switch off the engines immediately and repair the fault.
- If the ignition key (1) is returned to the I position before the first engine starts, wait for the first engine to stop before restarting.
- When both engines have started the first engine runs at 1000 rpm and the second at 850 rpm.

In field mode (field release switch "on"), when the second engine has started and is idling at 850 rpm the pilot lamp (3) on the control unit console (CU) additionally signals the actual status. In road operation (field release switch "off") this pilot lamp (3) on the control unit console (CU) is switched off.

7.3.8.4 Manual starting of the second engine

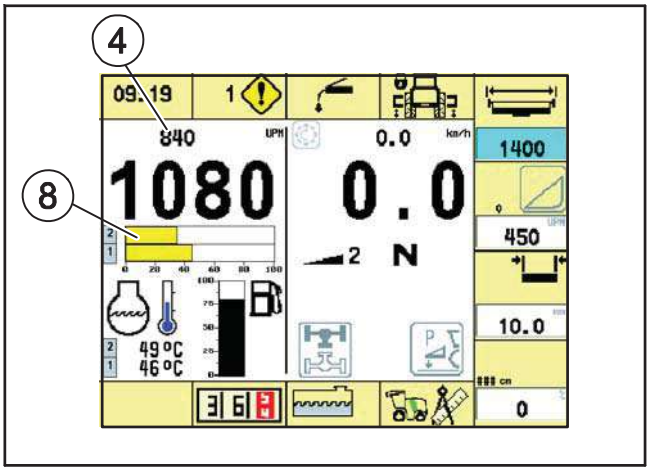
If pilot lamps (2) and (3) are flashing, the second engine must be started manually.

- Press the button (4) on the control unit console (CU) to start the second engine. Pilot lamp (2) goes out. Pilot lamp (3) is then lit steadily (only in field mode).
- When the second engine starts, the throttling of the first engine is cancelled provided the machine is not being moved and neutral position is displayed



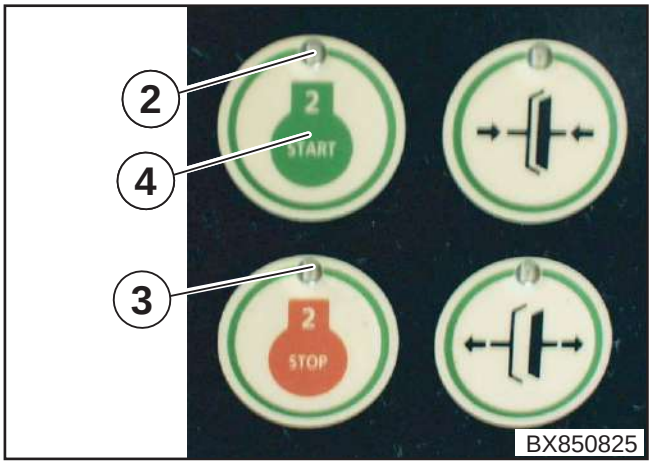
- The display then indicates the engine speed (4) and the "Engine load in %" bar graph (8) for the second engine.

If the second engine has not started, the maximum speed during road travel mode is restricted.

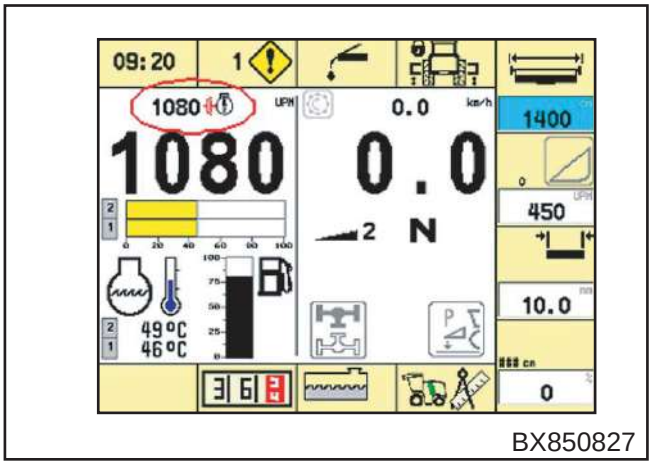


7.3.8.5 Engaging and disengaging the second engine

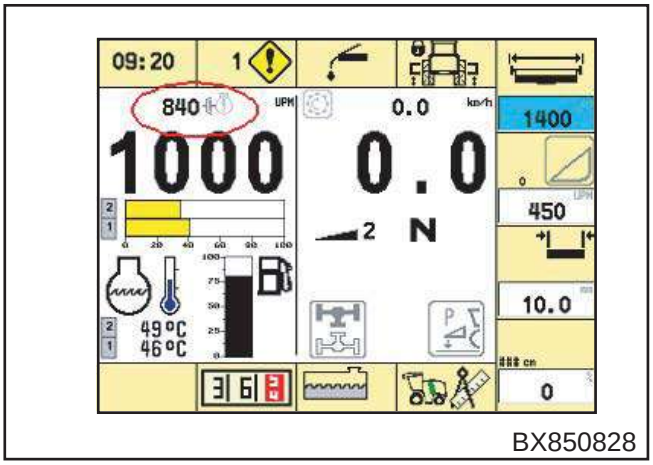
- When the second engine starts it is initially disengaged.
- Press the button (4) to engage the second engine in field mode. The synchronisation of the two engines is indicated by the pilot lamp (2) flashing.



- When the second engine is engaged the pilot lamp (2) is lit and the terminal displays the following.



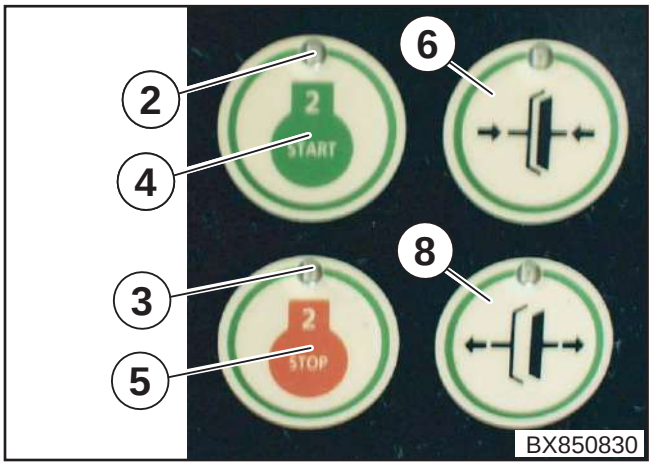
If the second engine is engaged and the field release switch is switched off, the state of the coupling is remembered and the engines are uncoupled. When the switch is turned on, the engines are automatically re-coupled.

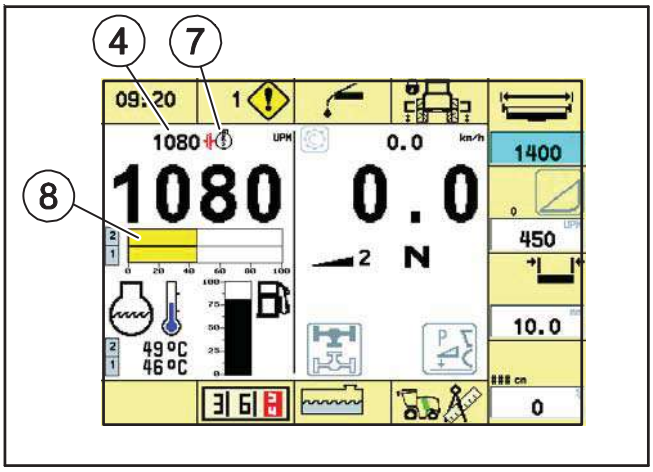


Button (5) no longer switches off the second engine.

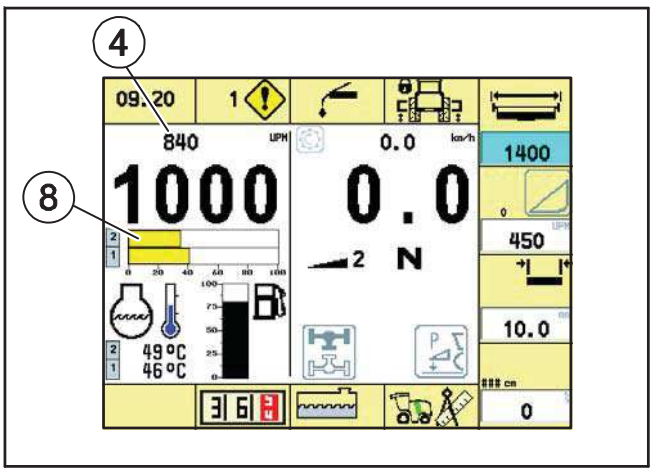
Pressing button "6" activates the main coupling. The engine can automatically be coupled, in case one of the following parameters is set on 1: 33753, 33754, 33755 Pressing button "8" on the operator control console switches off the main coupling.

The terminal then indicates the speed (4) of the second engine and the "Engine coupling on" symbol (7) (only in maize / X-Disc mode).





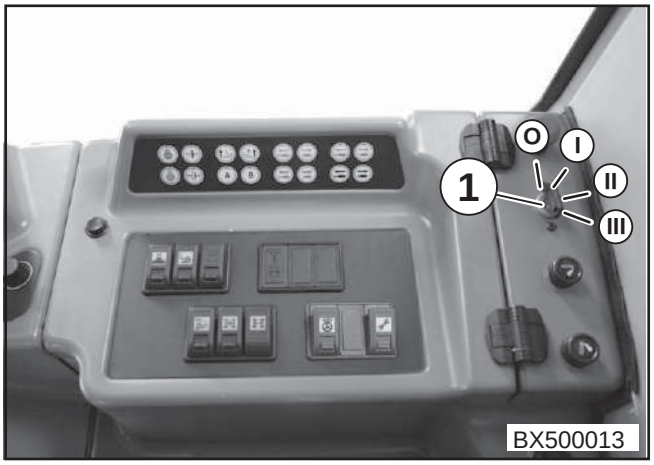
- The second engine can be disengaged again by pressing button (5). Then the terminal displays the following.



7.3.8.6 Switching off the engines

- Run the engines under no load for 1-2 minutes in the lower idling speed range to allow all the main engine components to cool down.
- Turn the ignition key (1) to the 0 position.

Always remove the ignition key (1) before leaving the driver's cab. The parking brake is applied automatically.



7.4 Driving

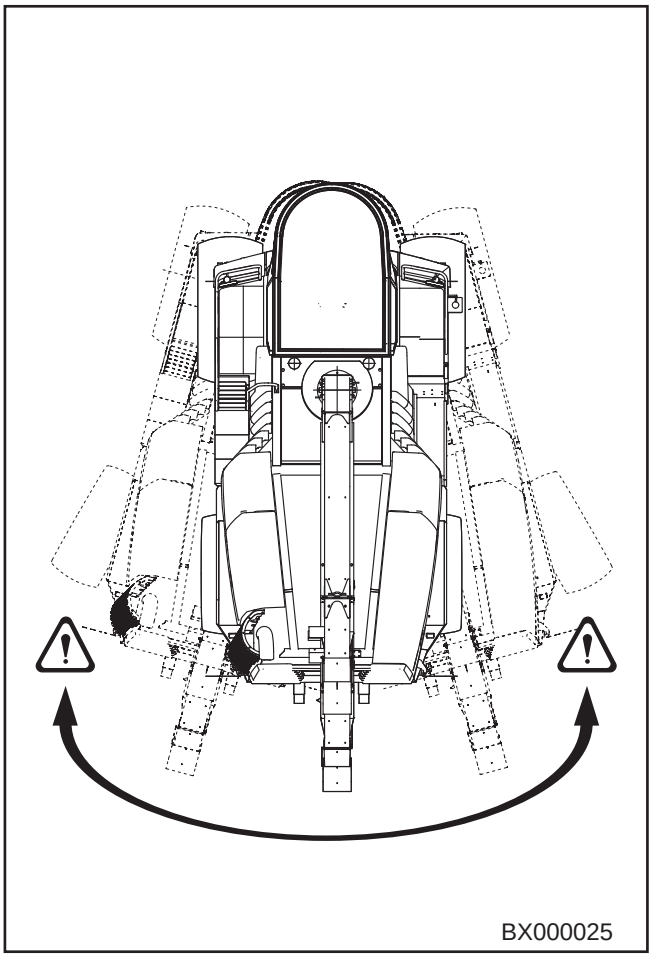
7.4.1 General aspects of driving

The following notes must be observed when driving the forage harvester:

- Handling the forage harvester requires a certain amount of practice because of the rear steering.
- Handling on the road and in the field differs.
- In the case of an error message in the Info centre immediately stop and remove the error.
  If this is not possible, inform the Krone customer service or your Krone dealer.

Handling characteristics

The handling characteristics of the forage harvester are influenced e.g. by the roadway and by the fitted front attachment.
Therefore the style of driving must be adapted to the relevant ground and soil conditions.
Special care is required when working and turning on a slope!



7.4.2 Steering

The forage harvester is easy to steer due to the hydrostatic steering with the rear axle.

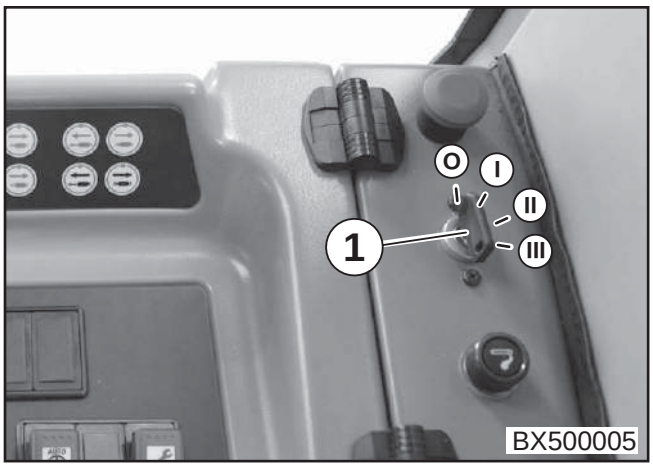
Take care when driving on roads and tight corners, the forage harvester swings out at the rear!

Emergency steering forces

The steering also operates when the engine has stopped. However, considerably more force must be applied.

7.4.3 Starting the engine

For details see section 7.3.3 Engine operation - Starting the engine.

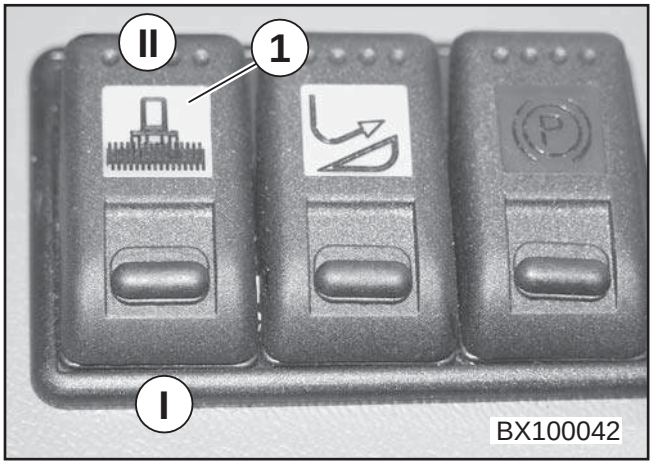


7.4.4 Road/field mode

Road operating mode

- Bring the lifting gear into the transport position.

When travelling on roads, the road/field release switch (1) has to be set to the I position.
This ensures that only the travelling gear, the steering mechanism and the brakes are active.



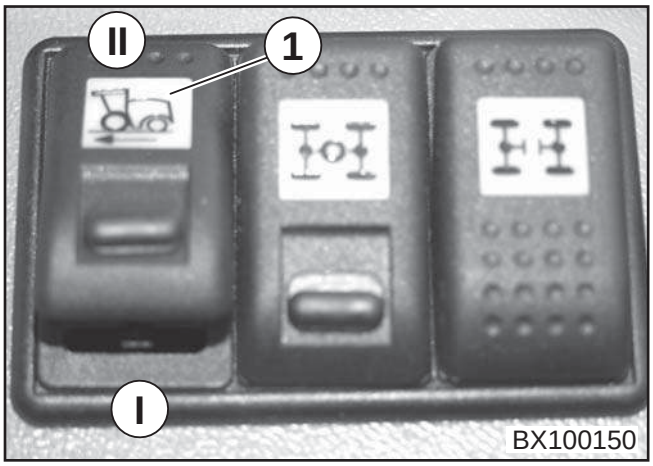
Field mode

- Switch the road/field release switch into the **II** position.

7.4.5 Switching the travelling gear on

No persons may be present in the direct hazardous area of the machine when the travelling gear release switch is actuated!

- Set the travelling gear release switch (1) to position **II**.

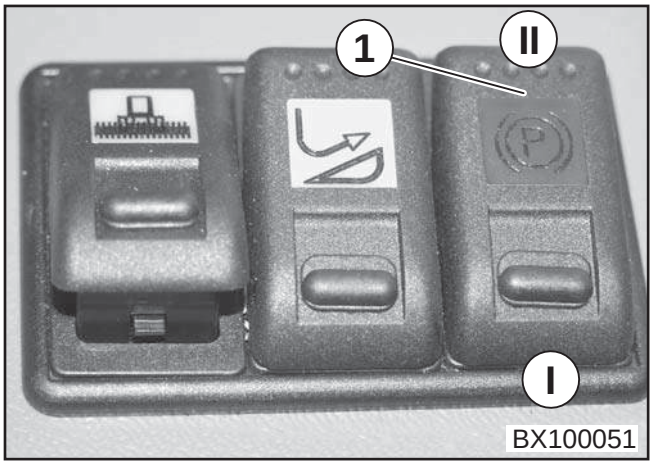


7.4.6 Release holding brake

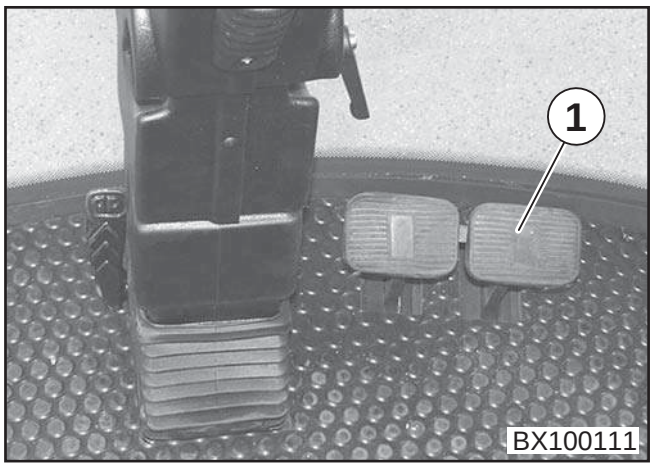
Driving for an extended period of time with the holding brake applied will result in overheating of the brake.

- Switch the holding brake release switch (1) into position **I**.

The holding brake is applied automatically when the ignition is switched off.



7.4.7 Operating brake

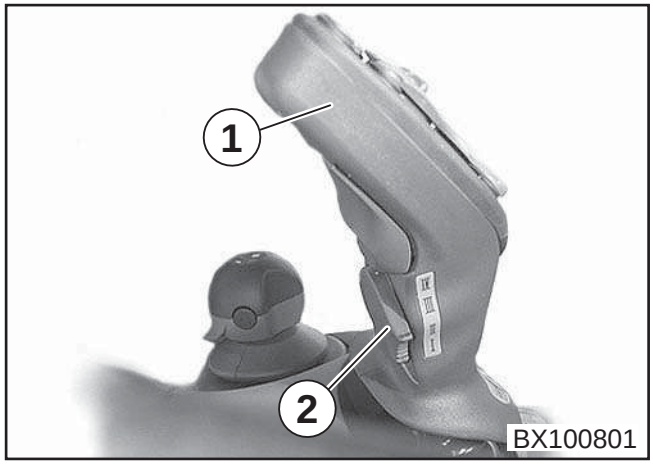


In road traffic

- The hydrostat decelerates automatically when the operating brake (1) is operated.

For reasons of traffic safety the brake pedals must be coupled.
No single brake fitted.
Check the brake function before every journey.

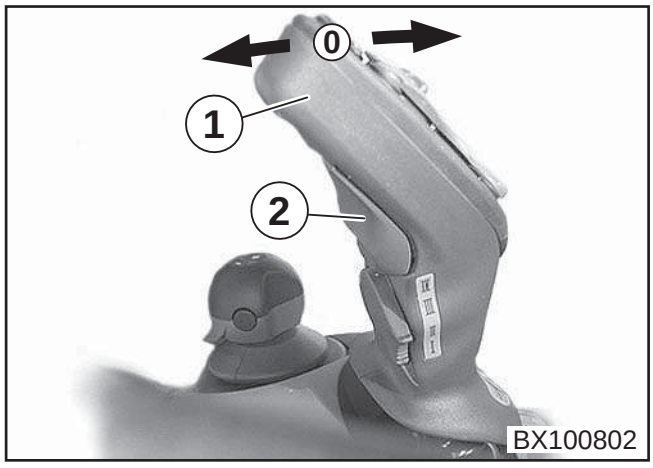
7.4.8 Setting the acceleration behaviour



Four different acceleration stages can be selected while driving with the selector switch acceleration ramp (2) attached to the multi-function lever (1).
With unchanging operation of the multi-function lever (1) in one direction and unchanging engine speed, the travelling speed increases the slowest in the acceleration stage I and the fastest in the acceleration stage IV.

- Switch the selector switch (2) into the desired acceleration stage.

7.4.9 Driving forwards



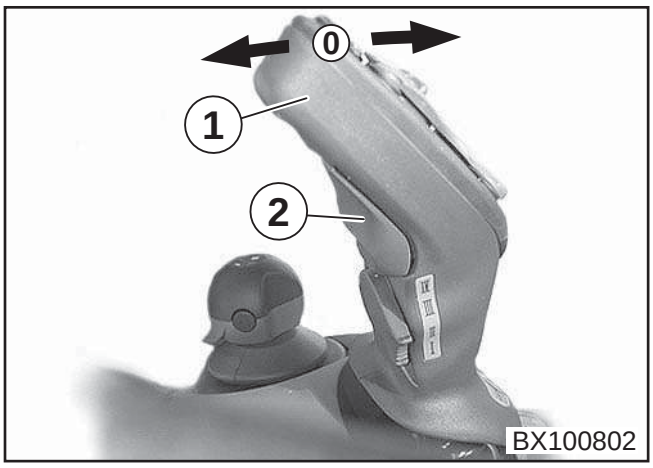
Always adapt the travelling speed of the forage harvester on road and field to the given conditions.

Starting forwards from standstill

After the engine is started and the travelling gear is released, the gearbox is in the neutral position.

- Press the activation button for the travelling gear (2) and keep it pressed.
- Move the multi-function lever (1) to the front, the forage harvester starts to move forwards and accelerates.
- If you release the multi-function lever (1), it returns automatically to the mid position (0). The speed remains constant.
- If you move the multi-function lever (1) to the rear while travelling, the forage harvester decelerates, it is braked until is comes to a stop by friction.

7.4.10 Reversing



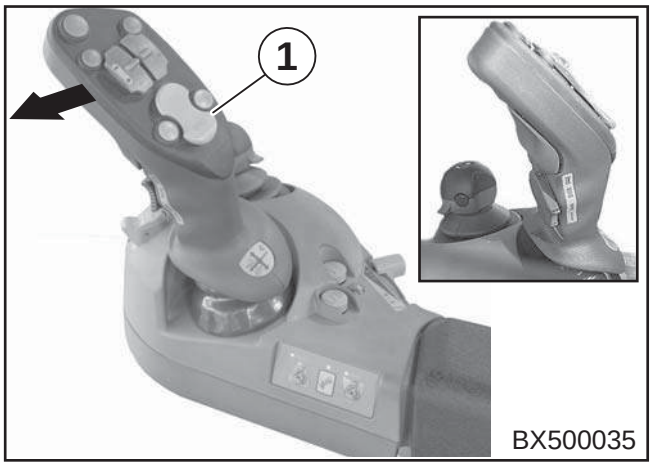
An acoustic warning signal sounds when reversing.

Starting in reverse from standstill

After the engine is started and the travelling gear is released, the gearbox is in the neutral position.

- Press the activation button for the travelling gear (2) and keep it pressed.
- Move the multi-function lever (1) to the rear, the forage harvester starts to move in reverse and accelerates.
- If you release the multi-function lever (1), it returns automatically to the mid position (0), the speed remains constant.
- If one moves the multi-function lever (1) to the front while travelling, the forage harvester decelerates, it is braked until is comes to a stop by friction.

7.4.11 Quick stop

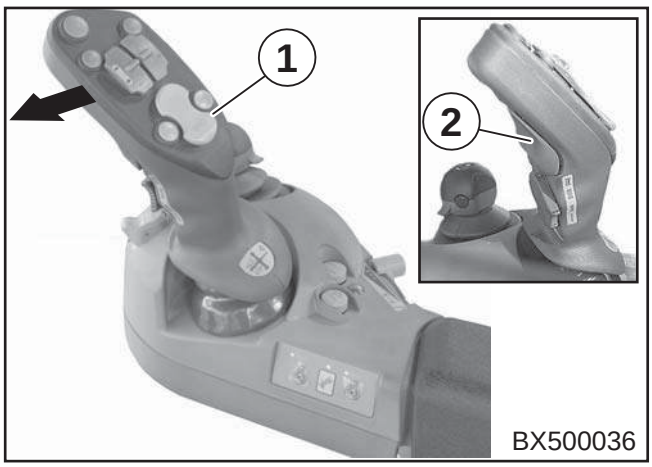


Activating quick stop

- Move the multi-function lever (1) to the left while driving.

The forage harvester decelerates to a standstill.

7.4.12 Fast direction change (fast reversing)



Fast reversing is possible only in the field mode.

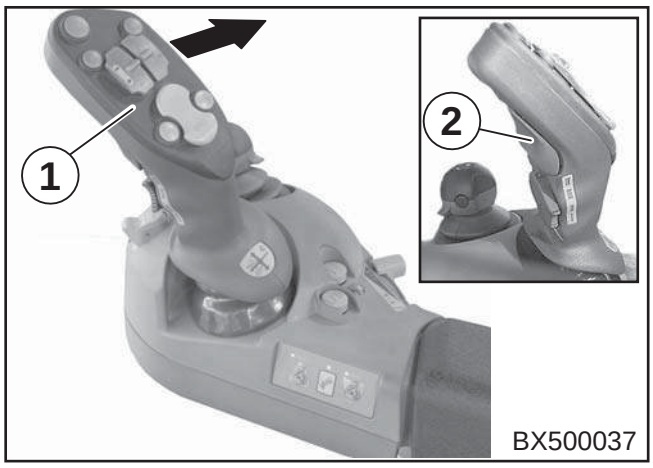
Activating fast reversing

- While travelling press the activation button for the travelling gear (2) and keep it pressed, move the multi-function lever (1) to the left and back to the middle position.

The forage harvester decelerates down to standstill and accelerates in the opposite direction to approx. 70 % of the previous travelling speed.

7.4.13 Cruise control

The cruise control can be activated only when travelling forwards. When the cruise control is activated, the forage harvester is accelerated or decelerated with the set acceleration stage to the speed stored for the cruise control mode.



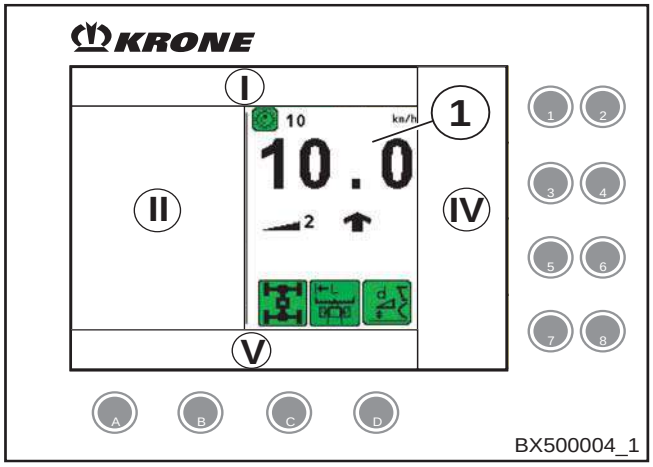
Storing the speed for the cruise control mode

The speed is saved for the operating mode (road/field) the machine is currently in.
One speed can be saved for road and field mode each.

- Accelerate the forage harvester to the desired speed.
- While travelling press the activation button for the travelling gear (2) and keep it pressed, move the multi-function lever (1) to the right and back to the middle position.

The momentary travelling speed is stored.

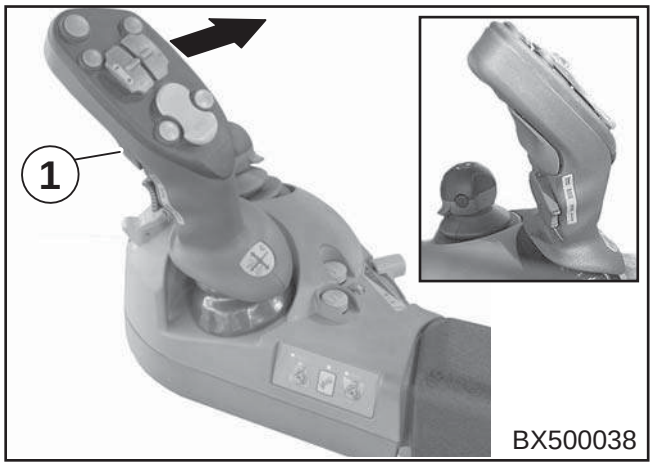
The stored speed (1) is displayed in the display of the Info centre in the travelling gear data Info area.



Activating cruise control

- Move the multi-function lever (1) to the right without the activation key while travelling.

The forage harvester goes to the saved speed, the symbol in the display of the Info centre is displayed for cruise control active.



Deactivating cruise control

- The cruise control is deactivated by overriding the multi-function lever, operating the operating brake and switching off the travelling gear.

If you switch into "Road/field" mode, the display switches to the value that is saved for the currently selected operating mode (field or road speed).

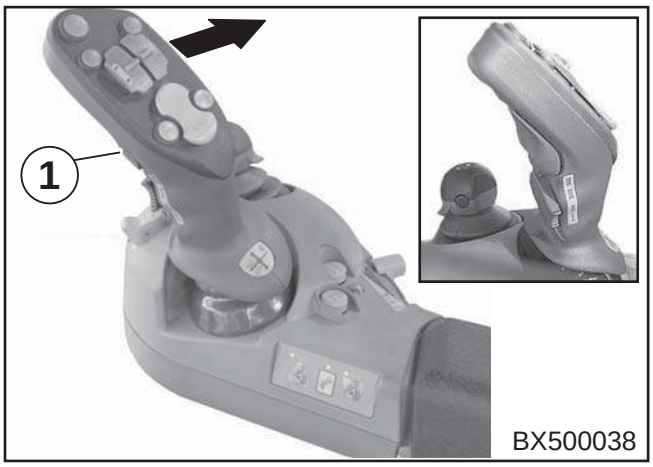
7.4.14 Constant-Power load limit control

The load limit control is used for the automatic acceleration or deceleration of the travelling gear in order to ensure an almost constant diesel engine speed.
If the load limit control has been deactivated in parameter 33685, the menu „Settings of the load limit control“ will not be displayed on the terminal.

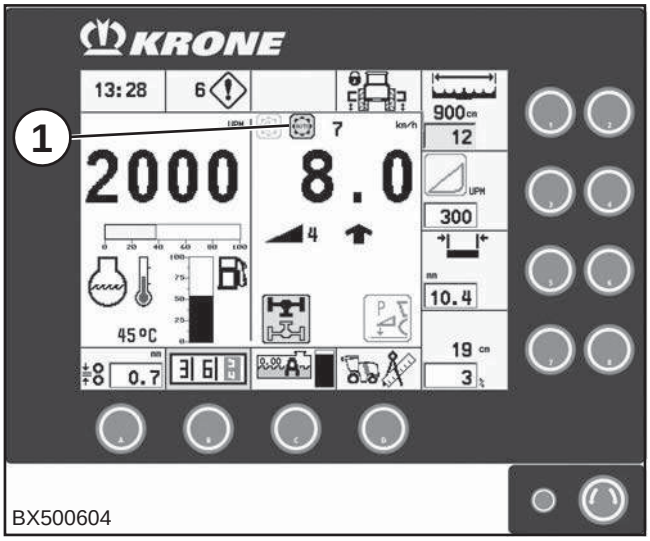
Activating the load limit control

The load limit control is only possible in field mode (see chapter „Road/field mode“).

- By briefly pressing the driving lever (1) twice to the right, the load limit control „Constant Power“ will be activated.



- The green Symbol  (1) on the display indicates that the load limit control is active and the travelling speed is automatically adjusted to the speed reduction of the motor.



Deactivating the load limit control

The following operations will deactivate the load limit control:

- Actuating the driving lever
- Road/field release switch must be in the road mode position.
- Travelling gear release switch off
- Applying the brake pedal

7.4.15 Autopilot

The autopilot is only available in the maize header mode with mounted maize header EasyCollect and autopilot equipment (optional).

Special safety instructions

Autopilot must only be used for its intended purpose. It must only be used in open fields, off public and semi-public roads, away from open areas frequented by people and far away from any persons that could be endangered. They must only be used for their intended purpose:

- **Automatic forage harvester guiding on a stalk-line row of plants.**

Before placing the autopilot in service, check the functionality of safety elements that can be checked and make a visual inspection of all the components.
To do this, the user should proceed as follows:

1. **Check switching off of the autopilot when the steering wheel is moved and the door contact switch engages (open the door).**
2. **Check for proper operating condition - i.e. free of mechanical damages and leaks – row tracers, wheel angle transmitter as well as all visible hoses and wiring.**

When the autopilot is in operation, no one must be within 50 m of the forage harvester in any direction.

The operator is not permitted to leave the driver's cabin while the autopilot is in operation.

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 harvest forager immediately if obstructions or interruptions come up in the vehicle's path.

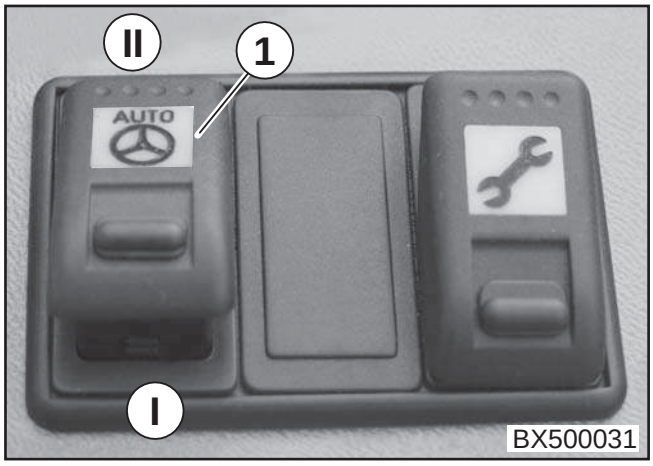
After the autopilot has been in operation and before leaving the field, the autopilot must always be switched off on the autopilot release switch on the console.

Manipulating safety-related elements of the autopilot is prohibited, as is making changes to the hydraulic, electrical or electronic components.

The autopilot should only be installed by an authorised service centre.

Prerequisites for activating the autopilot:

- The cab door must be closed.
- The driver's seat must be occupied.
- Road/field release switch must be in the field mode position.
- Travelling gear release switch must be switched on.
- The autopilot release switch (1) must be switched to position **II**.



Chaffing should preferably be in row tracer mode left or right.
Now, the following modes can be used:
- Row tracer automatic
- Row tracer mirrored, automatic

Setting the row tracer mode (see also Sect. 4.2.5)

Activating the autopilot

- Move the forage harvester parallel to the rows of plants. Autopilot can be activated after about 1 meter.
- Activate the autopilot by pressing the button (1).
- The lastly set icon is displayed in the Info-Center

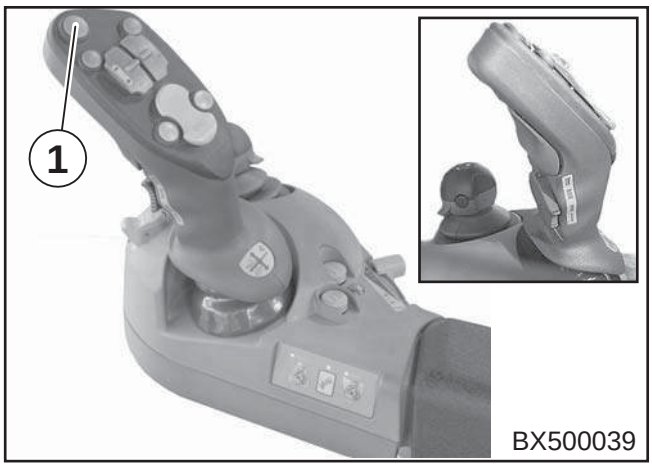
Autopilot now takes over the task of guiding the forage harvester along the row of plants with the selected row tracer on the maize header. In the case of short gaps in the maize crop the autopilot ensures straight-ahead travel of the forage harvester.

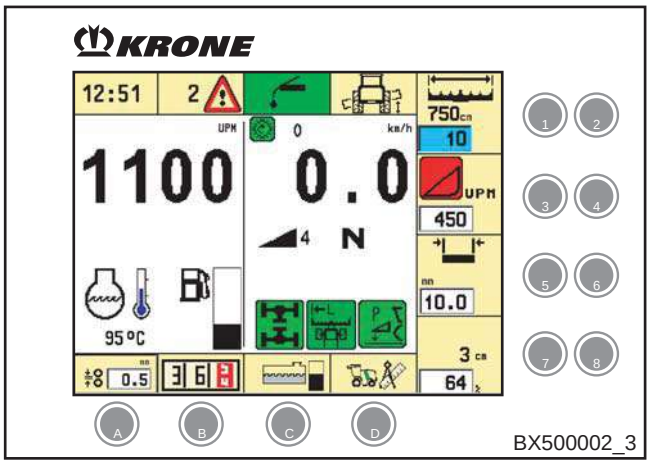
Deactivating the autopilot

- If you move the steering wheel abruptly, the autopilot will be deactivated.

The autopilot is also automatically deactivated if:

- The driver leaves the driver's seat.
- The cab door is opened.
- The autopilot button (1) is pressed again.
- The autopilot release switch is switched off.
- The travelling gear release switch is switched off.
- Road/field release switch is switched to the road mode.
- One of the quick stop buttons is pressed.
- If there is an error in the autopilot system components.

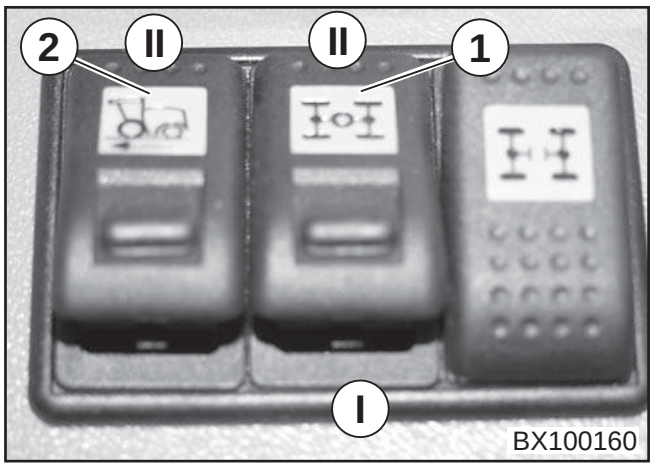




After the autopilot is deactivated, take control of the forage harvester with the steering wheel.

The deactivation of the autopilot is indicated by an audio warning tone.

7.4.16 All-wheel drive



All-wheel drive is possible only in the field mode.

Prerequisites for activating the all-wheel drive:

- Road/field release switch must be in the field mode position.
- The travelling gear release switch (2) must be switched on and the forage harvester must be at a standstill.

Switching in all-wheel drive

- Set the all-wheel drive release switch (1) to position **II**.

The symbol (all-wheel drive active) appears in the display of the Info centre.

Switching off all-wheel drive

- Set the all-wheel drive release switch (1) to position **I**.

The symbol (front wheel drive active) appears in the display of the Info centre.

7.4.16 Axle separation

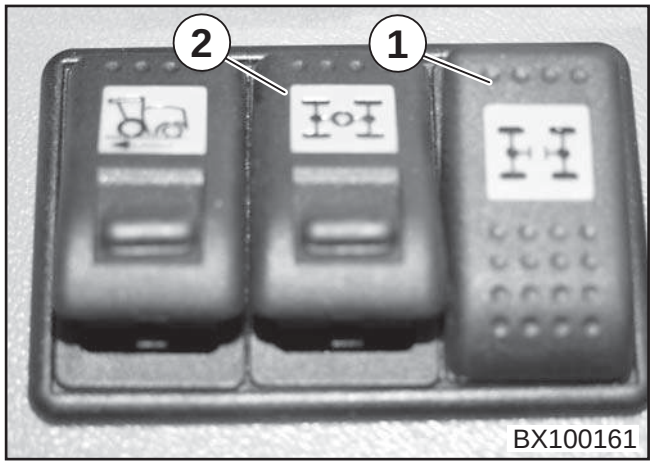
Prerequisites for activating the axle separation:

- Road/field release switch must be in the field mode position.
- Travelling gear release switch must be switched on.
- The all-wheel drive release switch (2) must be switched on; the travelling speed must be below 10 km/h.

Switching on the axle separation

- Actuate the axle separation button (1) – axle separation is switched on.

The symbol (axle separation active) appears in the display of the Info centre.



Switching off the axle separation

- Actuate the axle separation button (1) again.

The symbol (all-wheel drive active) appears in the display of the Info centre.

7.4.18 Hydrostat system

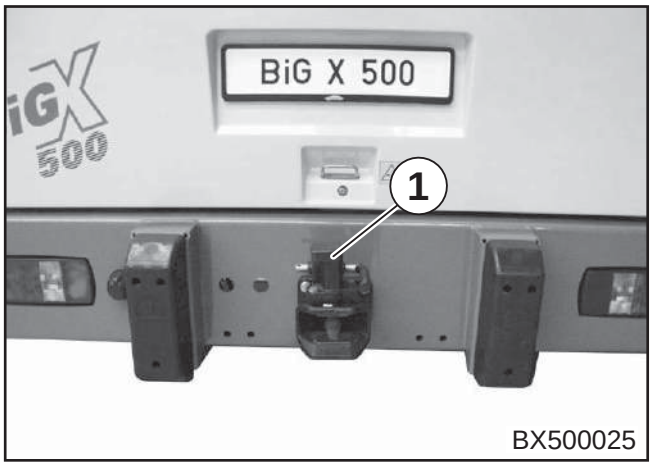
Avoid overheating of the Hydrostat system!
There is an acoustic warning signal if the Hydrostat system is overheated. Switch the engine off and determine the cause of overheating.
Driving speed is automatically reduced to about 25 km/h for road driving.

The drive torque acting on the front wheels depends on the oil pressure in the hydrostatic drive system. If the pressure requirement becomes higher than the pressure in the hydrostatic system, the pressure relief valve will open and the forage harvester will not move.
If appropriate, switch to all wheel drive.

7.4.19 Towing

Tow only out of the danger area. Never tow over longer distances.

For towing choose either the hitch coupling (1) or according to fitted front attachment suitable towing points at the front of the forage harvester.



If the machine no longer builds up the necessary oil pressure for releasing the holding brake, then the holding brake must be released manually.

It is also possible to use an external system (for example the tractor hydraulics) to charge the cylinders of the parking brake with sufficient pressure until the parking brake is released.

A kit containing the parts required to do this can be ordered under **Order No. 20 021 334 0**.

The parts in the same kit (20 021 334 0) can also be used to charge the running gear accumulator.

Instructions for Towing

- Switch on the ignition, so that indicators (warning flasher) and brake light work
- Switch release switch road/ field in position road travel
- If applicable, release parking brake (see following chapters)

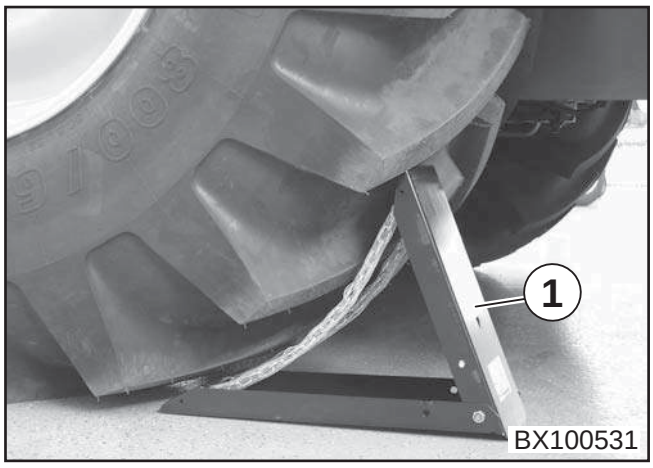
Increased steering and braking forces must be applied with the engine switched off.

Releasing the holding brake manually

Remove the ignition key and secure the forage harvester from being placed in operation or rolling away unintentionally.

Fitting wheel chocks

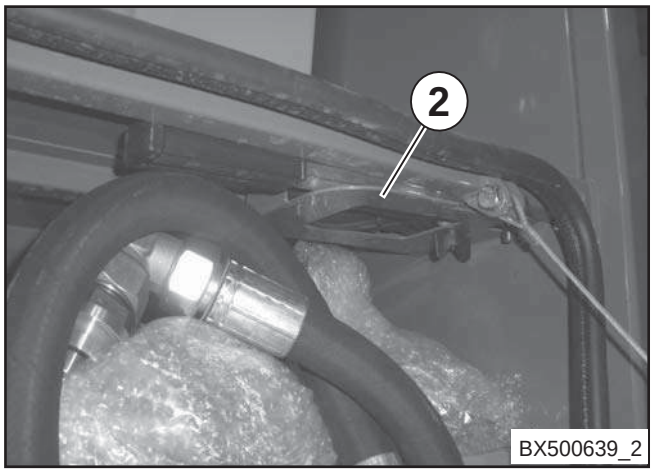
- Place wheel chocks (1) on both sides in front of or behind (according to slope) the driving wheels (front axle).
- Always place the wheel chocks (1) so that the forage harvester cannot roll away.
- Fold the wheel chocks (1) open completely and place them close up against the drive wheels.



Preparation

For all machine types, the parts set for manual release of the hand brake is located in the toolbox on the right side of the machine.

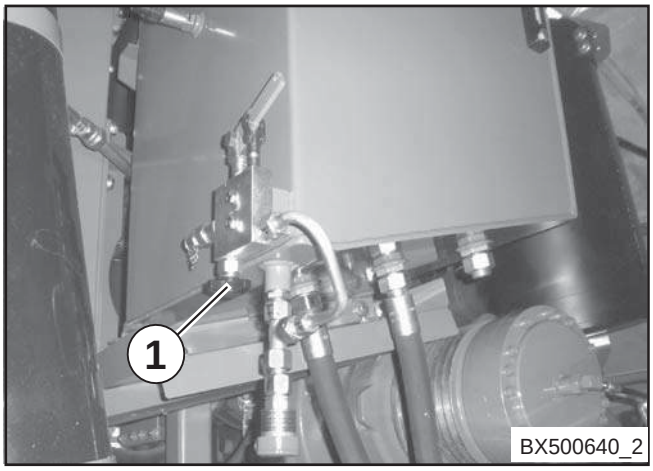
- The parts kit consists of the pump lever and the connecting hose.
- The parts are fastened in the support (2) under the upper cover.



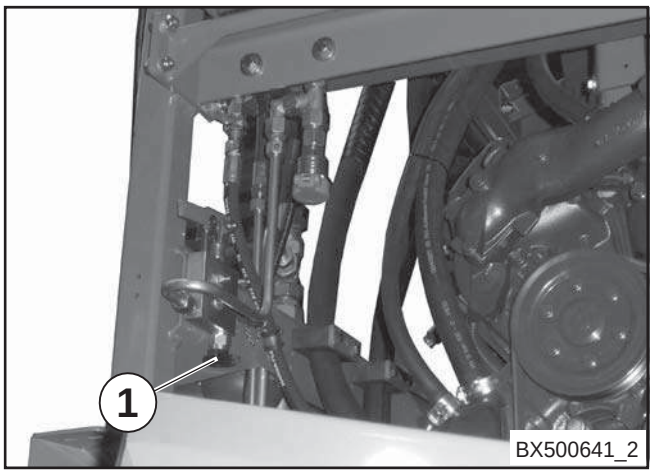
The three adjacent figures show the installation position of the hand pump already installed for the according machine types.

- Close the drain valve (3) on the pump.
- Connect the coupling head with the coupling sleeve on the hydraulic tank.
- By using the hand pump, vent the measuring line until oil emerges from the line.

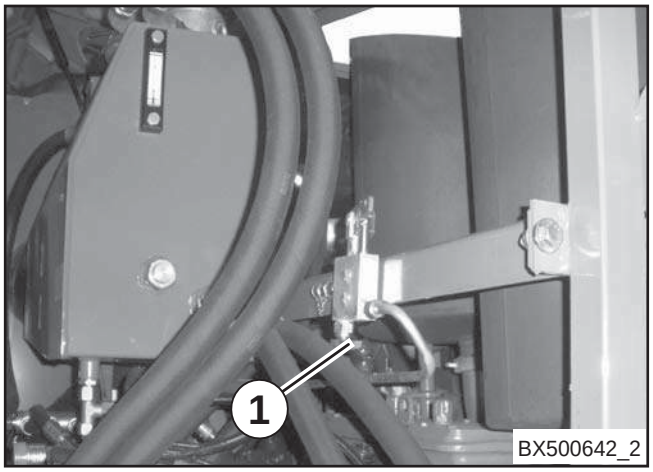
Big X 500



Big X 650



Big X 800/1000



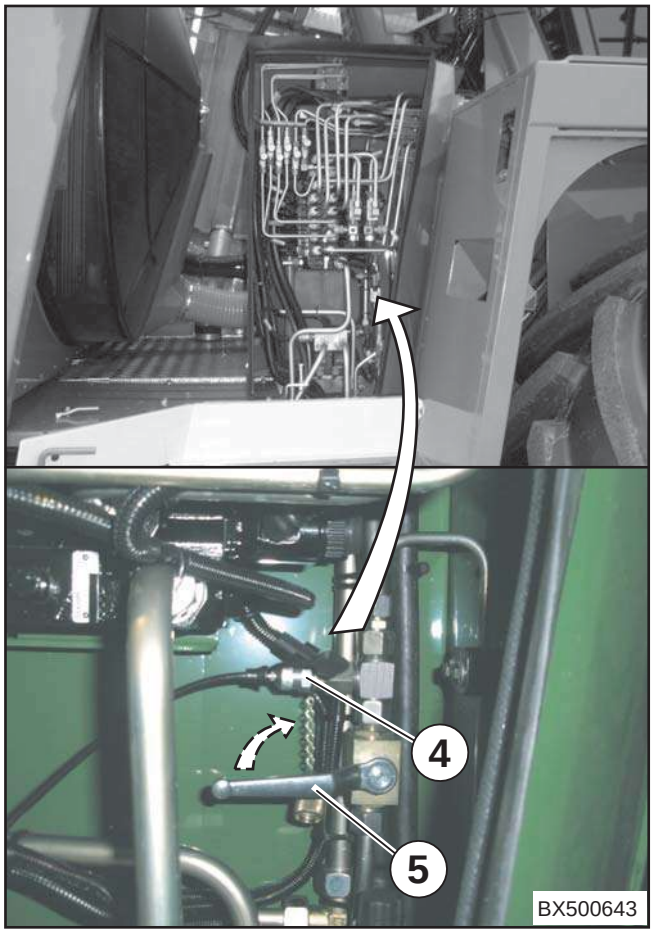
Release parking brake

- Screw the measuring line (4) to the measuring coupling.
- Make sure the lever (5) of the ball valve is in the horizontal position and release the brake through continuous pumping.
  If the effort during pumping increases considerably, check whether the brake has been released by moving the machine.

Before removing the connecting hose, release the pressure of the system by opening the drain valve of the hand pump.

- Once the function of the brake has been restored, relieve the pressure by opening the pressure relieve valve and remove the parts set.
- Place protective cap on the screw coupling.

When removing the parts set, move the lever (5) of the ball valve upwards into the upright position again, as otherwise the parking brake function will not work.



Notes on towing

- Switch on the ignition, so that the indicator (hazard warning flasher) and brake lights function.
- Switch the road/field release switch into the road traffic position.
- Increased steering and braking forces must be applied with the engine switched off.

Transporting on a low loader

The forage harvester must be properly secured in place to be transported on a low loader.

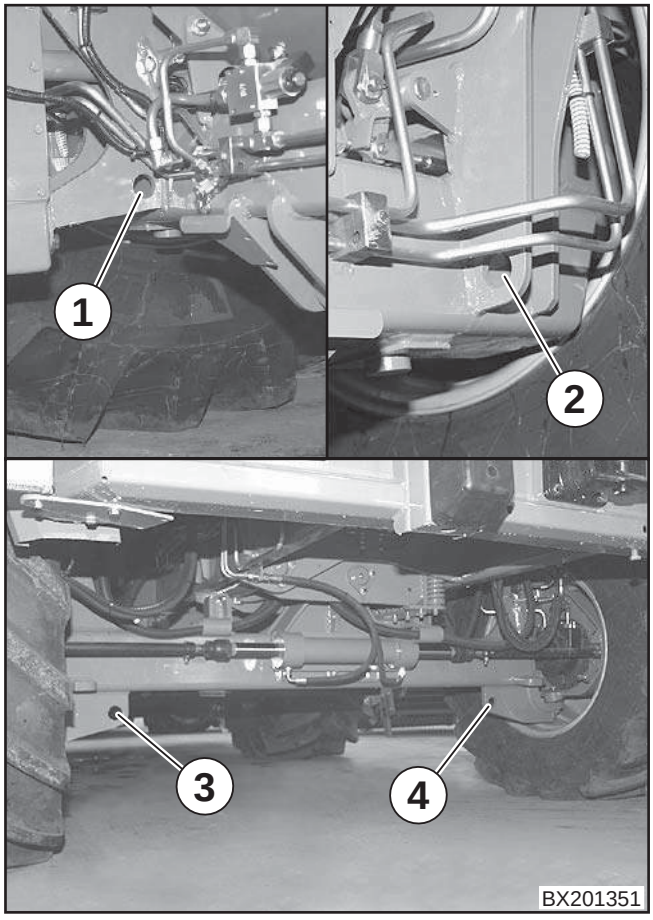
For connection of the tie-down devices, there are accordant tie-down points provided on the axles of the machine

1 - Lashing point left front

2 - Lashing point right front

3 - Lashing point left rear

4 - Lashing point right rear



7.5 Fitting attachments

Danger!
Unpredictable moving of the lifting gear during folding in and out of the front attachment
Effect: Danger to life, injuries of individuals.
No individuals are allowed in the area of the lifting gear during folding in and out of the front attachment!

Only attachments that are type tested by the manufacturer and approved for the use may be fitted. Fitting and operation of other attachments is considered as use not as intended. The manufacturer is not liable for damage resulting from this, the user alone bears the risk for this.

When a front attachment is operated the operating instructions supplied with the front attachment must be read before the use and the given instructions must be complied with.

The forage harvester is equipped for use with the grass pick-up.
The necessary conversion work on the forage harvester for use with the maize header is described in Section 7.6.

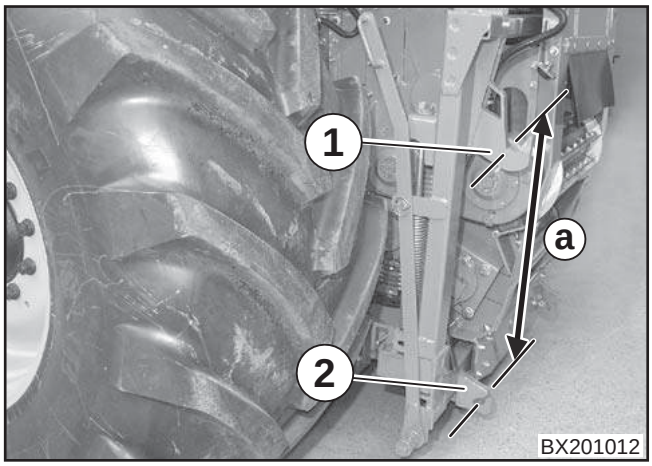
The attachments must be fitted and removed on a level surface with load bearing ground.
Sufficient space on the side for manoeuvring the forage harvester must be available.

Special care is required when fitting and detaching the attachment! The accident prevention regulations must be complied with absolutely.
The data in the operating instructions of the attachment must be observed.

7.5.1 Adjusting the adapter frame

Only for first fitting of the attachment.

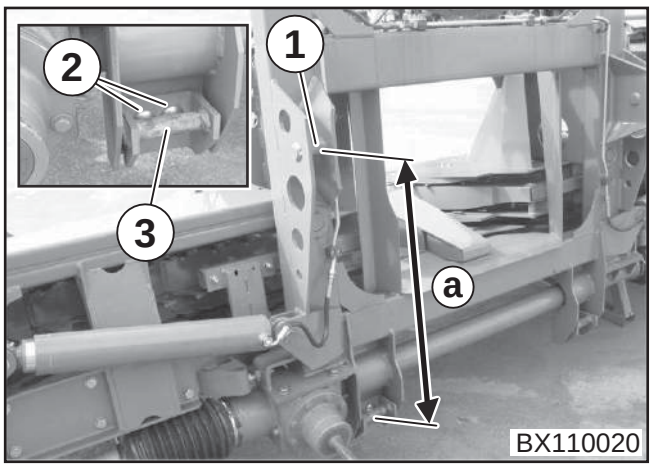
- Measure the axle base "a" between holding claw (1) and locking hook (2) on the pendulum frame of the forage harvester.



- Check the axle base "a" between the holding bolt (1, 3) of the adapter frame on the front attachment and if necessary adapt it to the size of the pendulum frame.

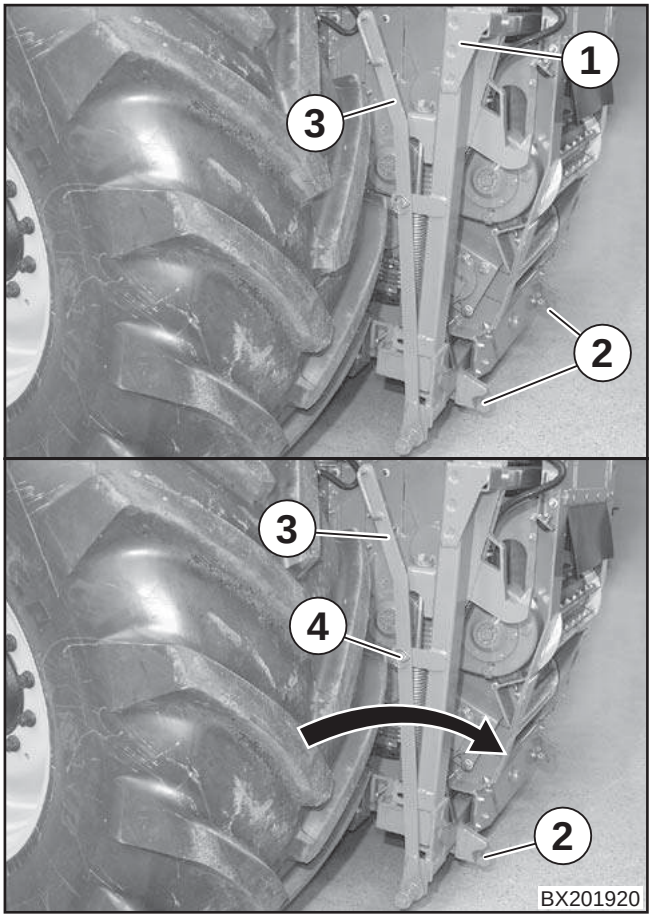
Make the adjustment equally on the right and left of the adapter frame.

- Loosen the screw connections (2) and shift the reciprocal frame holders (3) to the correct distance.
- Tighten the screw connections (2).



7.5.2 Pendulum frame

- Lower fully the feed drive with pendulum frame (1) of the forage harvester.
- Align the pendulum frame (1) of the forage harvester horizontally.

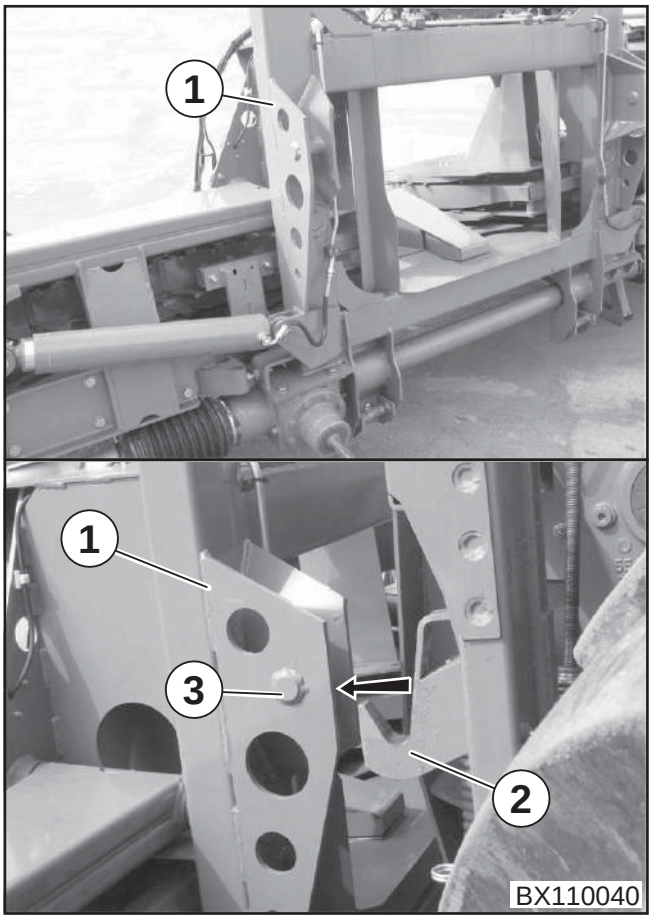


Open the locking hook (2)

- Remove the spring cotter pin (4).
- Pull the locking lever (3) off from the locking pin and swing it to the front.

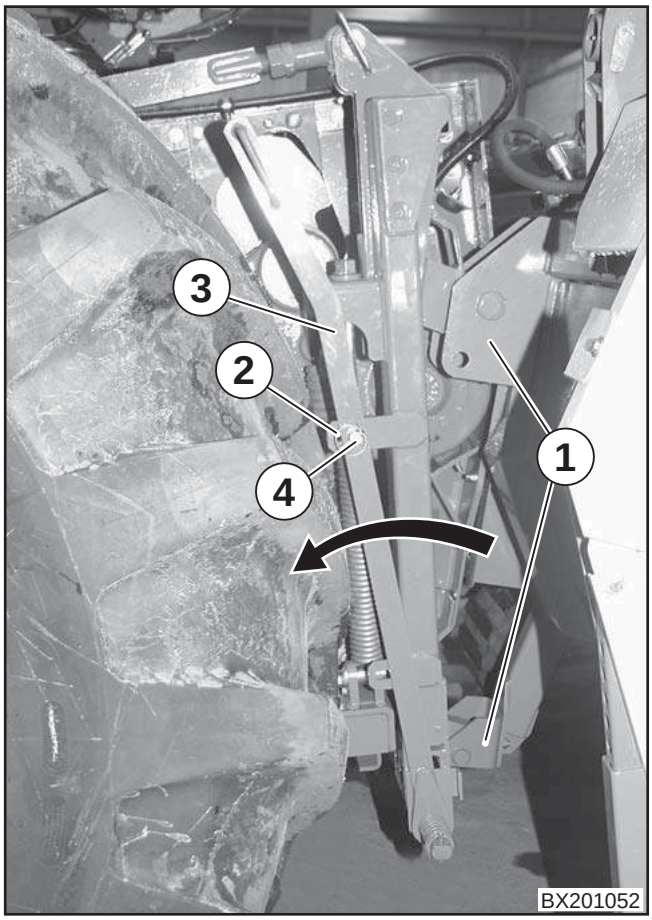
7.5.3 Coupling

- Drive the forage harvester up to the front attachment so that the pendulum frame stands just in front of the adapter frame (1) and the holding bolts (3) are located against the stop surfaces of the holding claws (2).
- Raise the feed drive with pendulum frame with lifting hydraulics until the locking hooks lie in the pendulum frame holder on the adapter frame.
- Stop the machine.



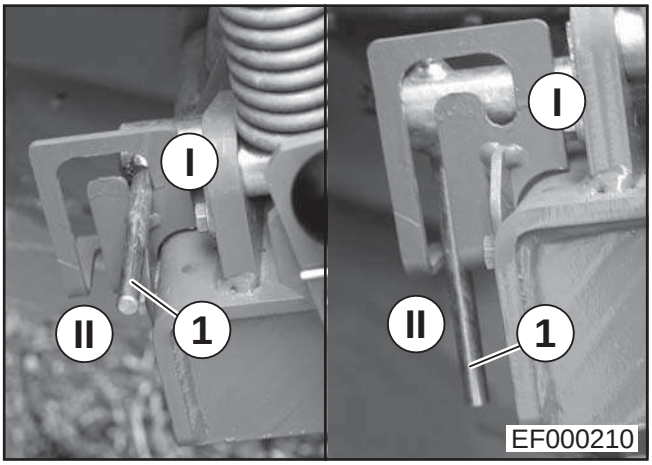
- Swing the locking lever (3) to the rear and engage it on the locking pin (4), secure with spring plug (2).

Check that the pendulum frame (1) hooks correctly into the holding bolts and the locking hooks on both sides.

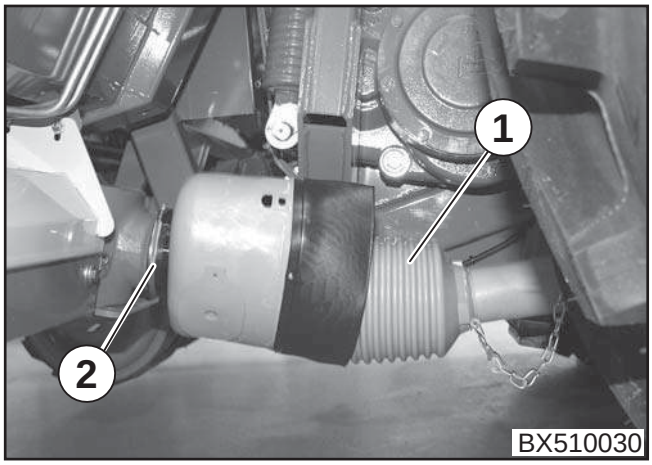


When attaching the grass pickup, unlock the pendulum frame

- Move the locking pin (1) from position I (locked) to position II (unlocked).



- Push the joint fork (1) onto the drive journal (2) of the main angular gear until the closure engages.

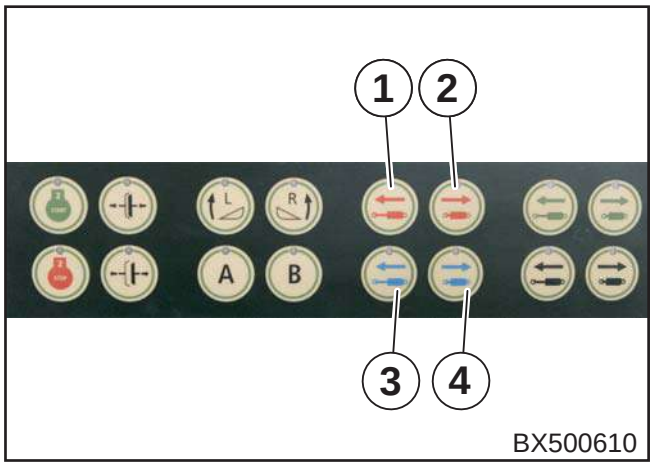


Connecting hydraulic hoses and electrical connection cables

Prior to connecting the hydraulic hoses, depressurise the system on both sides.

To do this:
- Press the keys (1) and (2) (red) simultaneously (the first hydraulic circuit is depressurised).
- Press the keys (3) and (4) (blue) simultaneously (the second hydraulic circuit is depressurised).

Make sure the plugs and couplings are clean; clean them if necessary.



Grass pick-up

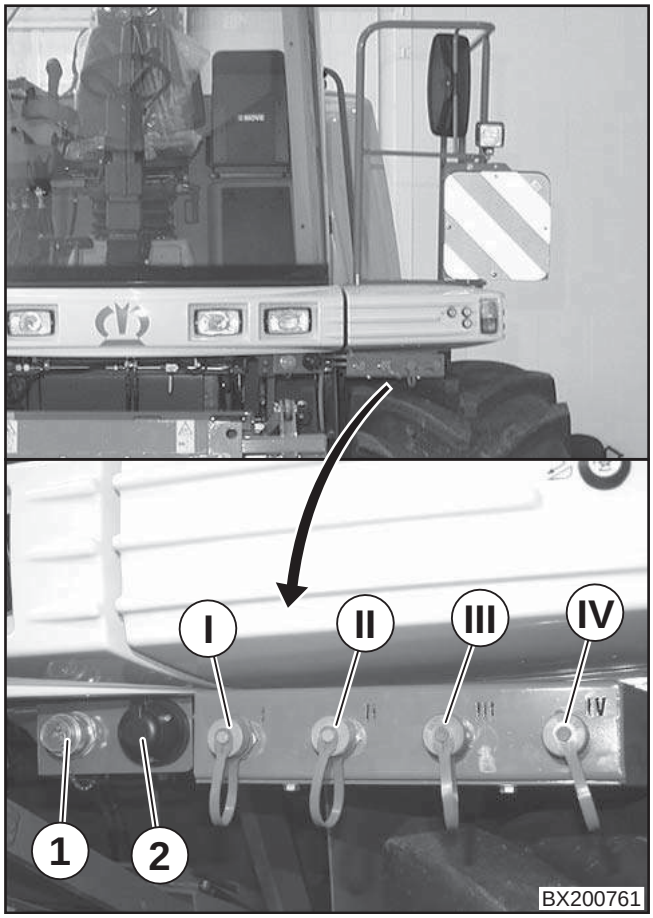
I - Extend roller feelers
II - Retract roller feelers
IV - Roller-type crop guard

Maize header

III - Folding out the maize header
IV - Folding in the maize header

1 - Maize header sensor connection
2 - Lighting cable

The identification of hydraulic connections (I - IV) is also on the hydraulic hoses of the attachment device.



7.5.4 Adjusting hydraulics of the forage harvester

Perform the adjusting work for the hydraulics of the forage harvester only with the machine at standstill and attachment set down.

Danger!
Unpredictable moving of the lifting gear during folding in and out of the front attachment
Effect: Danger to life, injuries of individuals.
No individuals are allowed in the area of the lifting gear during folding in and out of the front attachment!

Grass pick-up

The shut-off valve (1) for the grain conditioner tensioning roller must be in position **I** (closed).

- If necessary close the shut-off valve (1) (**I** position).

Maize header

The shut-off valve for the grain conditioner tensioning roller (1) must be in position **II** (open).

- If necessary open the shut-off valve (1) (position **II**).

Adjusting the lifting hydraulics

Operate only with the lifting gear lowered.

I - Lifting hydraulics locked
II - Lifting hydraulics in grass pick-up position
III - Lifting hydraulics in maize header position

Grass pick-up

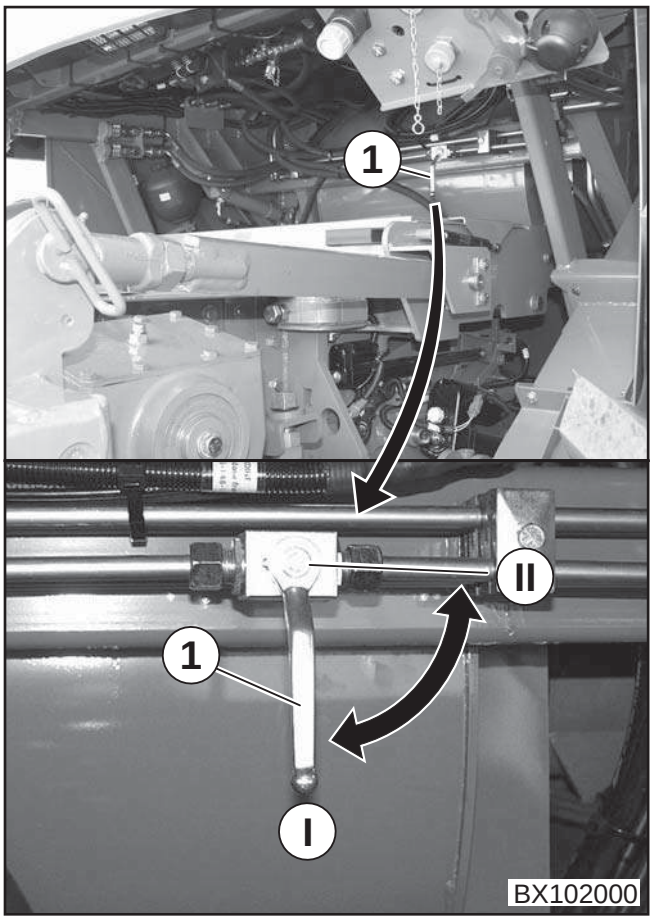
The three-way valve (1) for the lifting hydraulics must be in position **II**.

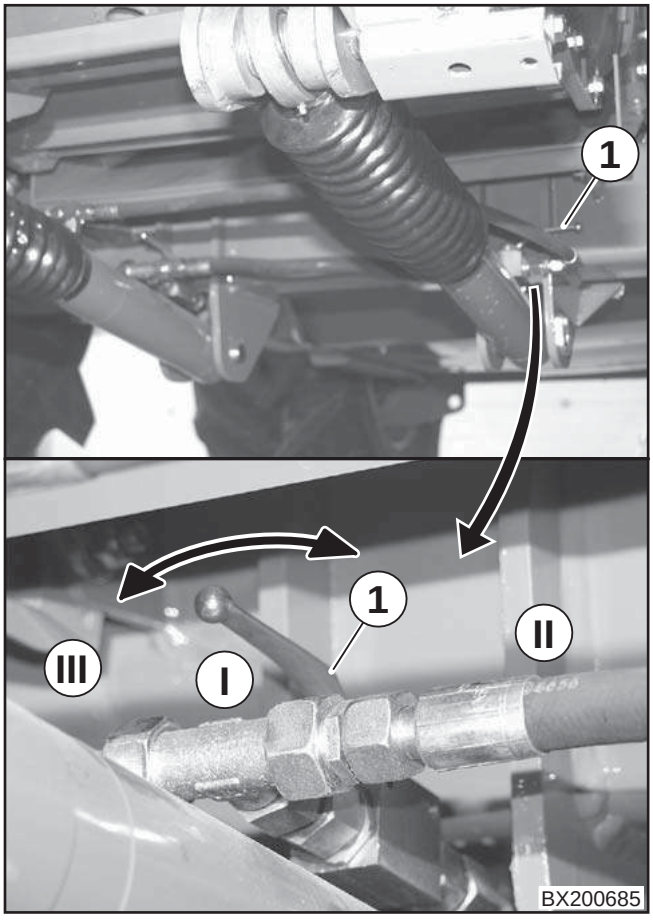
- If necessary turn the three-way valve (1) into position **II**.

Maize header

The three-way valve (1) for the lifting hydraulics must be in position **III**.

- If necessary turn the three-way valve (1) to position **III**.





7.5.5 Adjusting the lifting gear

The adjustment of the lifting gear control EMR must be performed on the first fitting of the attachment and on changing the attachment, so that the lifting gear bearing pressure control, position control and distance control function reliably.

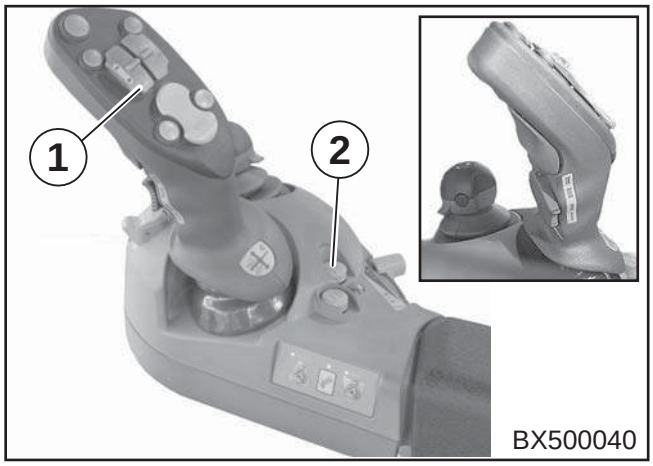
Prerequisites for adjusting the lifting gear:

- Engine is started.
- Road/field release switch must be in the road mode position.
- Travelling gear off.
- Maintenance release switch off.
- Pendulum frame must be horizontal.

Adjusting

During adjustments, components may move around, in particular the lifting gear – danger of injury!

The first adjustment procedure to be covered is number 3.



Adjusting procedure 3 "Upper height"

Calibration of the upper height of the lifting gear.

The lifting gear is raised in the adjusting procedure.

- Keep the lifting gear raising (1) button and memory button for lifting gear adjusting procedure (2) pressed simultaneously for approx. 7 seconds.

After successful adjustment the message "**EMR adjusting procedure 3 OK**" appears in the status line of the Info centre.

Adjusting procedure 2 "Front attachment weight"

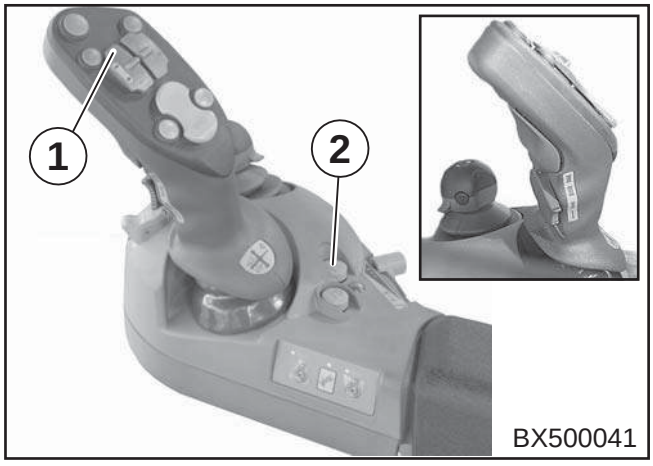
Calibration of the lifting gear pressure.

- Press the lifting gear button (1) until the front attachment unit is not touching the ground at all.

The lifting gear does not need to be raised to calibrate the lifting gear pressure. It does not move during calibration.

- Keep the memory button for lifting gear adjusting procedure (2) pressed for approx. 7 seconds.

After successful adjustment the message "**EMR adjusting procedure 2 OK**" appears in the status line of the Info centre.

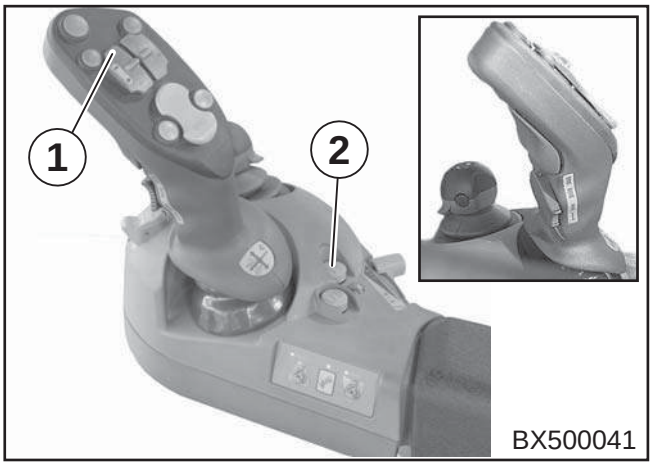


Adjusting procedure 1 "Lower height"

Calibration of the lower height of the lifting gear.

- Keep the lifting gear lowering (1) button and memory button for lifting gear adjusting procedure (2) pressed simultaneously for approx. 7 seconds.

After successful adjustment the mess ge "**EMR adjusting procedure 1 OK**" appears in the status line of the Info centre.



After the lifting gear has been adjusted, the actual lifting gear pressure must be verified in Field 1.

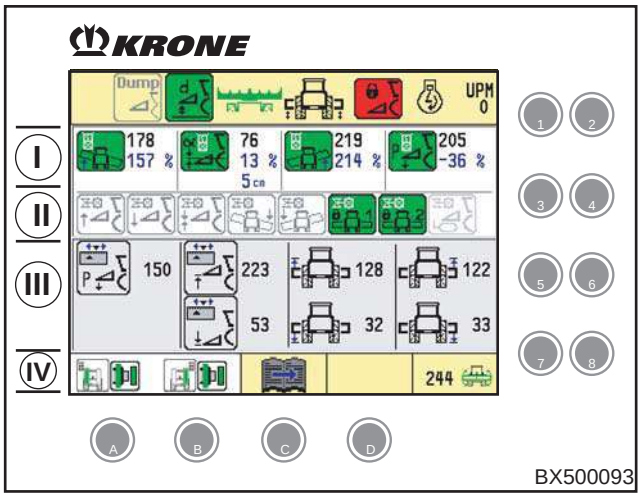
To do this:

Call the „Diagnostics“ main menu.
• Select menu 4-1-5 „Lifting gear“ with the rotary potentiometer.
• Press the rotary potentiometer.

„Lifting gear diagnostics“ appears.

Swivel the lifting gear up and down at least twice. Leave the lifting gear in a floating position (no ground contact) and read the value of the actual lifting gear pressure in Field 1.

The actual lifting gear pressure in Field 1 must have a negative value. If it does not, repeat adjustment process 2.



7.5.6 Converting the grass channel grain conditioner

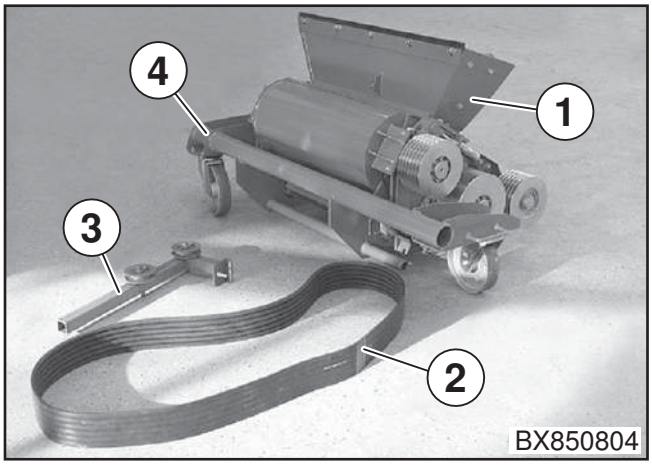
Conversion kit

1 - Grain conditioner

2 - V-belts

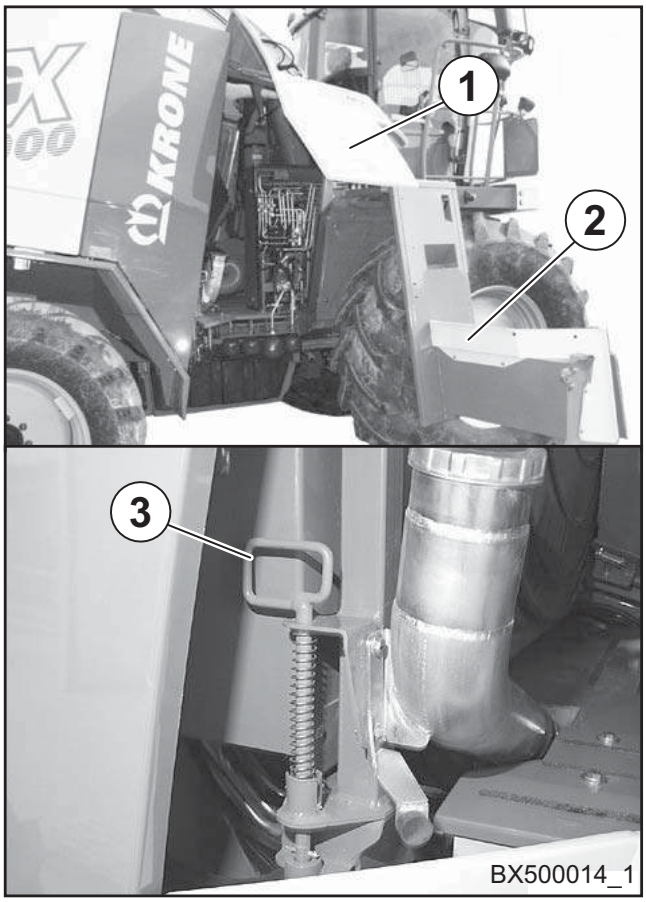
3 - Cable deflection

4 - Transport frame for grain conditioner

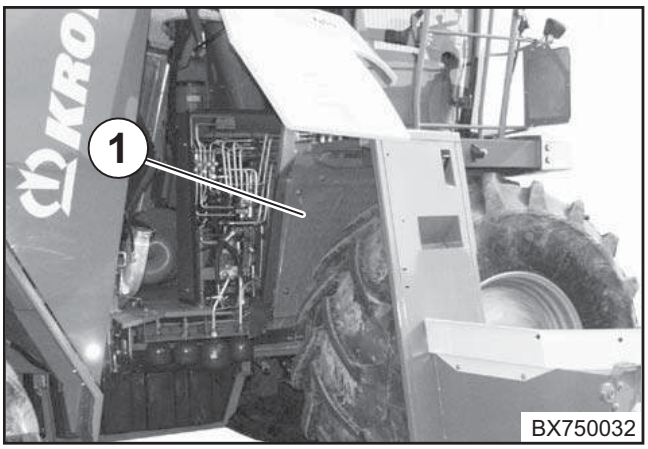


7.5.6.1 Preparations before working on the grass channel - Corn Conditioner

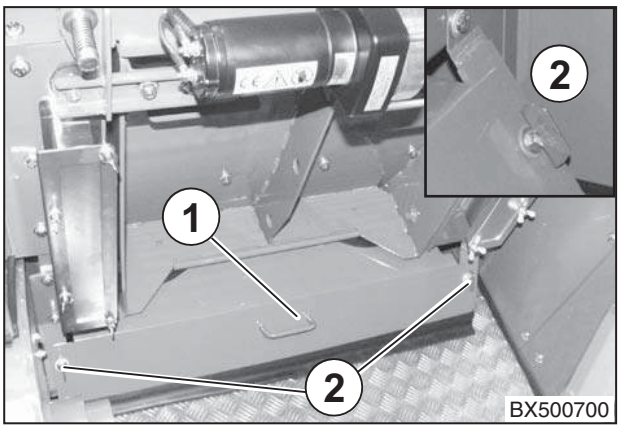
- Open the flap (1) to the machine compartment on the right hand side.
- Pull the catch (3) up, and swivel the tool box (2) open.



- Disassemble the two screws at the cover (1) and remove the cover (1).



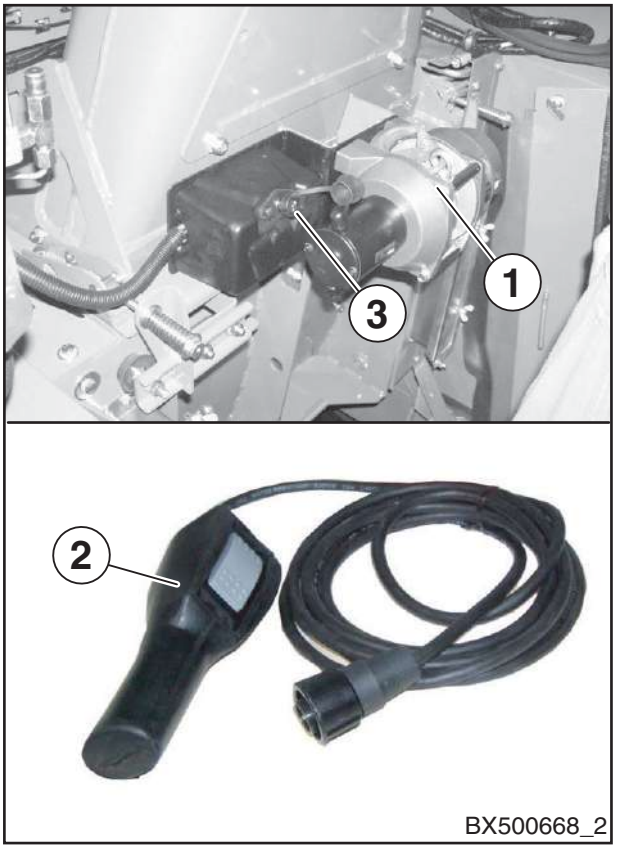
- Unlock the locks (2) of the cover (1) under the discharge accelerator and take out the cover (1).



Safety Instructions for Cable Winch

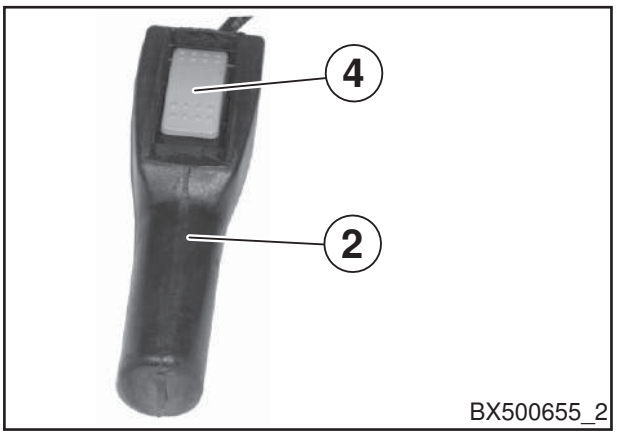
- Before placing the cable winch (1) in operation, read the following safety instructions. Follow the instructions during operation.

- **The cable winch (1) may only be used for installation and removal of the grass channel and grain conditioner.**
- **Cable winch is energised permanently. Connect remote control only if cable winch is required.**
- **Careless operation of the cable winch (1) can result in severe injuries and damage to the machine.**
- **When working with the cable winch, always wear protective gloves.**
- **Each time before using the cable winch, check to make certain the mounting bolts are securely seated on the winch attachment plate.**
- **Check the wire rope of the cable winch and the connecting cable for remote control for damage each time before using and replace if necessary (to replace the wire rope, see Chapter 9 "Replacing the Wire Rope").**
- **When winding the rope make sure that it is not wound one-sided.**
- **Always leave five revolutions on the winch drum for safety.**



- Connect the remote control (2) (comes with delivery, in the document case) to the connection (3) of the cable winch (1).

Keep remote control in the drawer under the driver's seat after usage in order to avoid unwarranted use.



Method of Operation of Remote Control

To let out the rope from the cable winch:

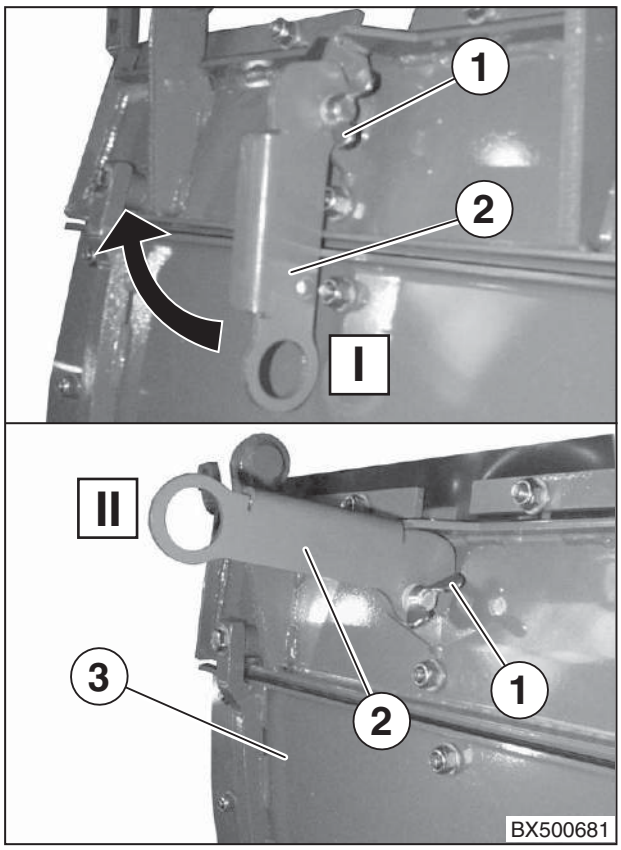
Unwind cable from cable winch (Identification plate via symbol ●→▶▶):
- Activate button (4) below.

Wind cable onto cable winch (Identification plate via symbol ●→◀◀):
- Press button (4) above.

7.5.6.2 Fold out crane splice

Before assembly or disassembly of grass channel, crane splice (2) has to be folded out.

- Loosen the winged nut (1) at the crane splice (2) of grass channel (3).
- Rotate crane splice (2) up to the edge guide upwards in position (II) and attach it by tightening the winged nut (1).

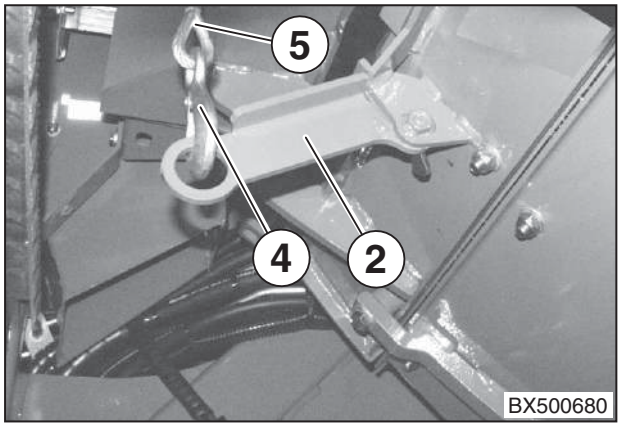


7.5.6.3 Removing of the grass channel

- Unwind cable (5) from cable winch.
- Catch the hook (4) of the cable winch in the eye ofthe pivoted lever (2).

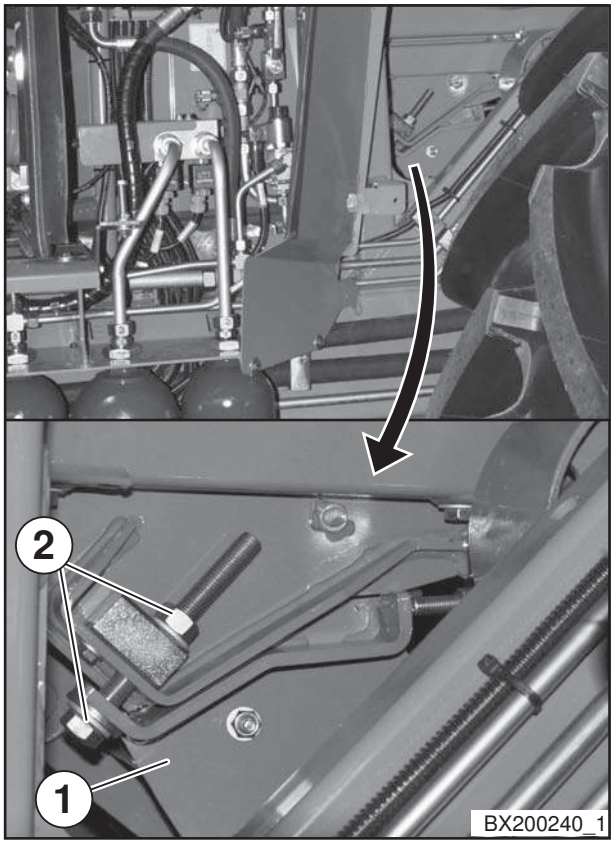
Force of cable winch is higher than necessary for assembly of grass channel. Too long activation of cable winch can lead to damaged components of cable winch.

- Wind cable onto cable winch, until the cable (5) is tight.



The attachment bolt on the left-hand side can only be removed from below. Thus remove the screw coupling on the right-hand side in the end.

- Loosen the screw connection (2) on either side of the grass channel (1). In doing so, remove the left screw at first. The right screw can be removed from the outside or from above.



Danger! - Load falling down.
Effect: Injuries or damage to the machine.
- **Do not step under the suspended load!**

- Let the grass channel down with the cable winch until the oblong holes of the tubes in the rear wall and the bore holes of the discharge accelerator housing lie on top of each other.
- Remove two hexagonal socket head screws M16 x 60 (1) from the tool box and install them on the right and left of the rear wall.

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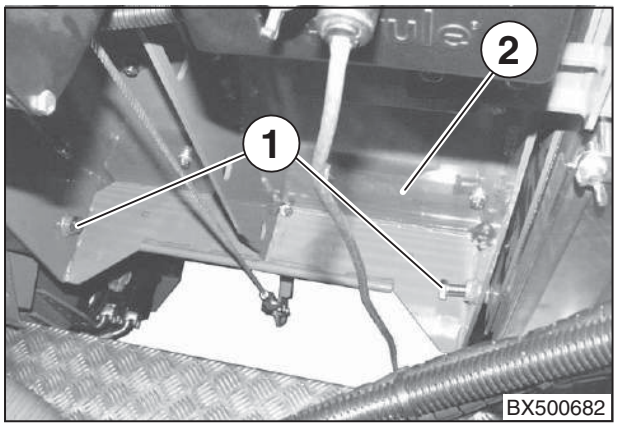
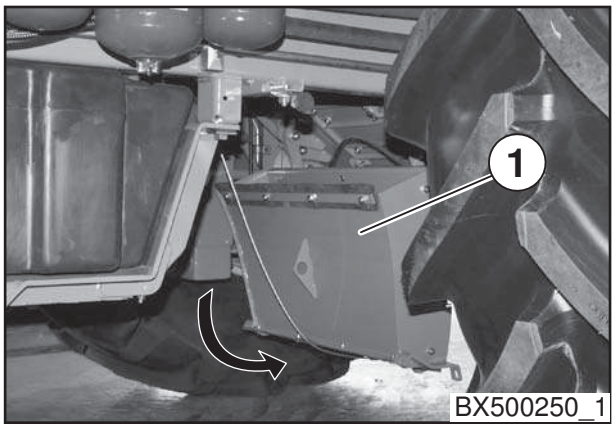
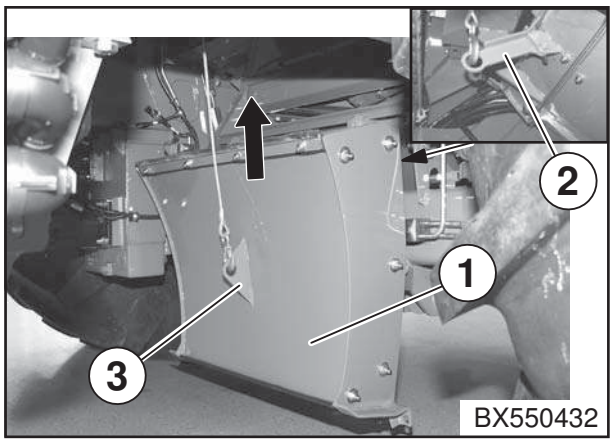


- Unwind cable from cable winch, the grass channel (1) swivels down.

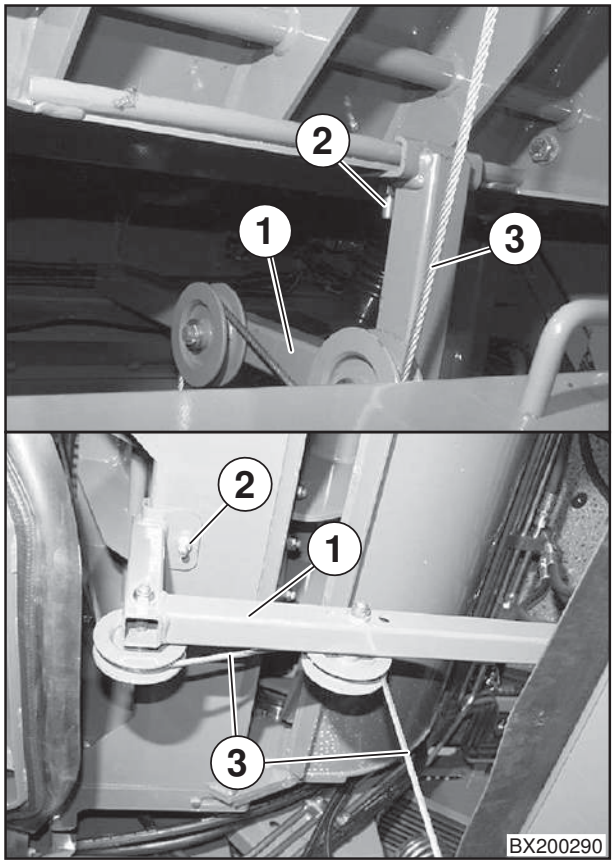


- Remove the hook of the cable winch from the pivoted lever (2) on the grass channel (1) and engage it on the eye (3) on the grass channel (1)



Installation of cable guide:

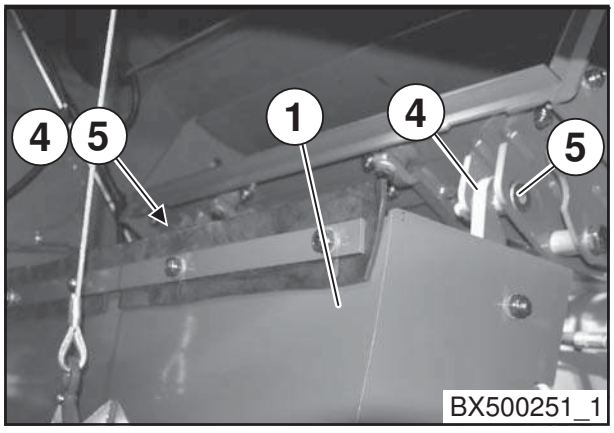
- Position the cable roller guide (1) as shown in the graphic BX200290 and screw in place with the screw connection (2) on the lower cross brace of the rear wall of the discharge accelerator.
- Lead cable (3) corresponding to the description in the graphic BX200290 round the guide roller.



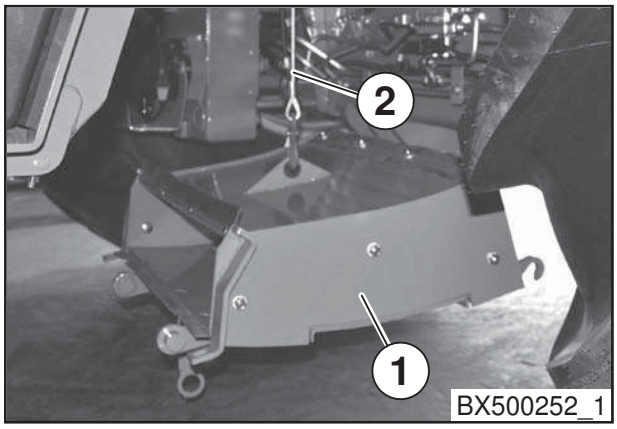
Danger! - Load falling down.
Effect: Injuries or damage to the machine.

- **Do not step under the suspended load!**

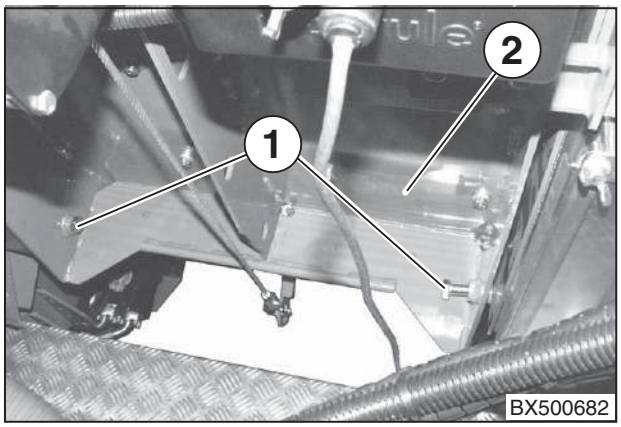
- Raise grass channel (1) with the cable winch until the receiving hooks (4) loose out of the holders (5) at the transfer channel on both sides of the grass channel.



- Unwind cable (2) from cable winch until the grass channel (1) lies on the ground.
- Detach cable winch hook and pull out (1) grass channel to the side.
- Remove cable guide, if necessary.

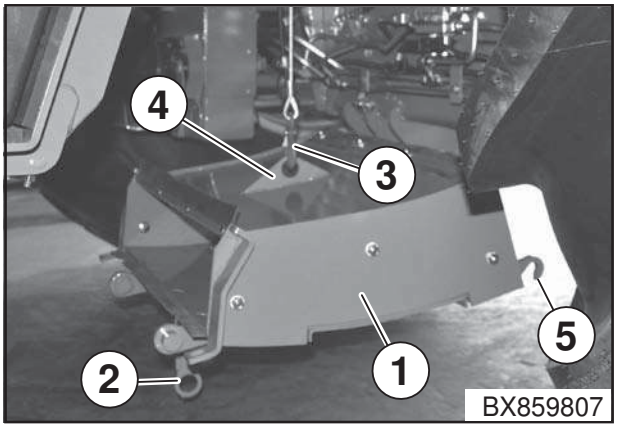


Do not remove the hexagonal head screws (1), since the rear wall (2) does no longer have a fixation.



7.5.6.4 Assembling the grass channel

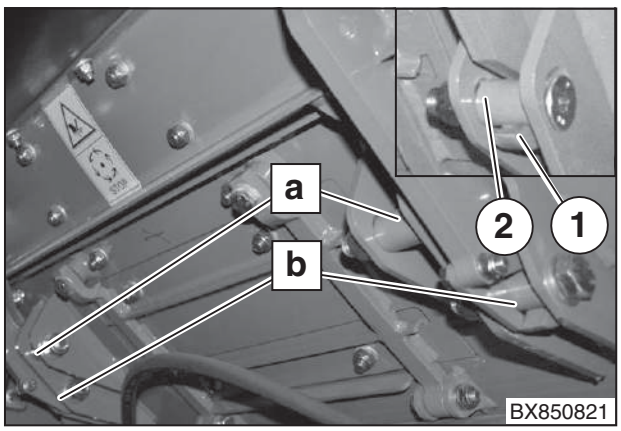
- Rotate the crane splice (2) up to the edge guide upwards in position (II) (see chapter „Fold out crane splice“).
- Install cable guide (see chapter: Disassembling the grass channel „Assembling cable guide“).
- Deposit grass channel via installation cart into mounting position below the machine.
- Engage the hook (3) of the cable winch on the eye (4) on the grass channel (1).



DANGER! - Load falling down.
Effect: Injuries or damage to the machine.
- **Always use the cable winch to hook in the grass channel.**
- **It must be ensured that there are no persons in the range of movement.**

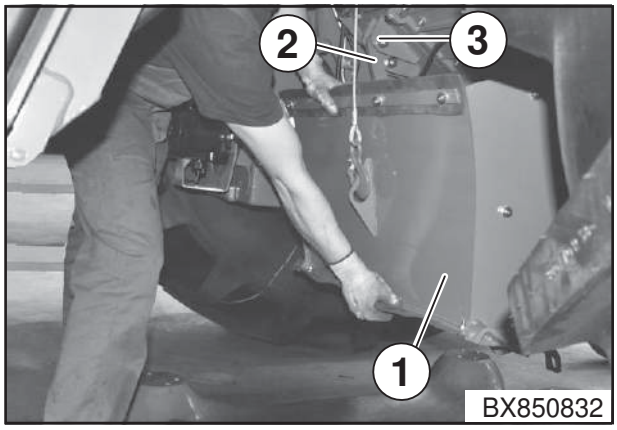
- Pull grass channel (1) with cable winch until the receiving hooks (1) are located approx. at the height of the holders (2).

Use the holders (a) at transfer shaft for hitching the grass channel.

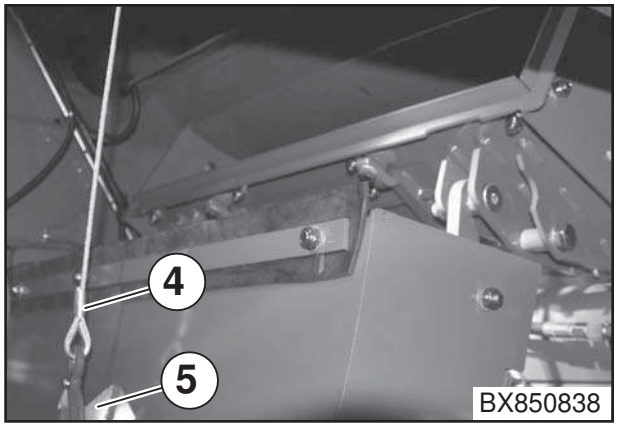


- Tilt grass channel manually towards the front, so that the receiving hooks (2) engage into the holders (3).

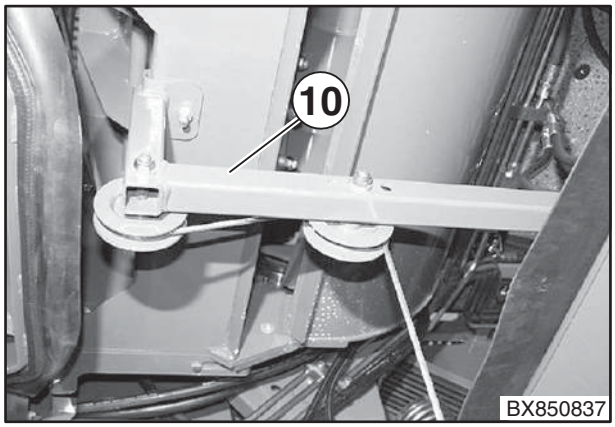
DANGER! - Load falling down.
Effect: Injuries or damage to the machine.
- **Caution when using the grass channel.**
- **Do not use the cable winch as long as there are persons within the range of movement of the parts.**



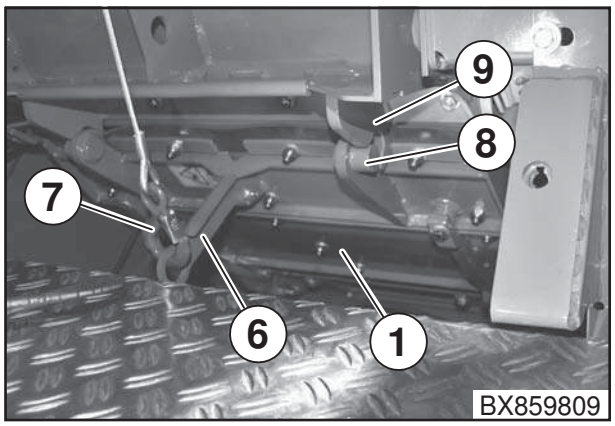
- Let out cable (4) from the cable winch until the grass channel is hanging downwards and the cable (4) can be unhooked.
- Unhook the hook of the cable (4) out of the eye (5).



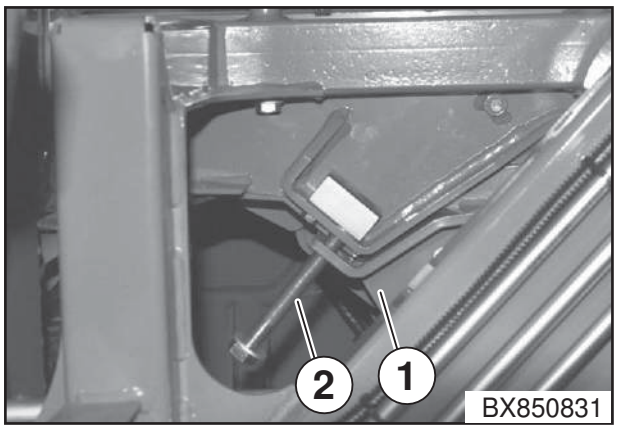
- Disassemble the rope deflection (10).



- Fasten hook (7) of cable winch at the crane splice.
- Pull up grass channel (1) via cable winch until bolt (8) is inserted into the holders (9) of the rear wall at the grass channel.

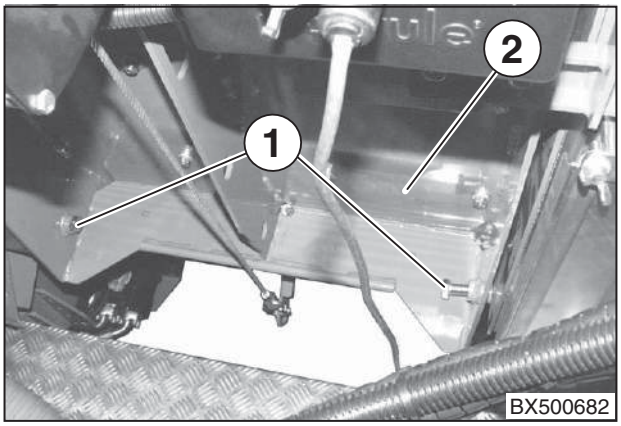


- After swivelling up, assemble the grass channel (1) with the fastening screws (2) on both sides to the frame of the forage harvester starting on the right machine side. Place the grass channel (1) in the correct mounting position by using fastening screws if necessary.

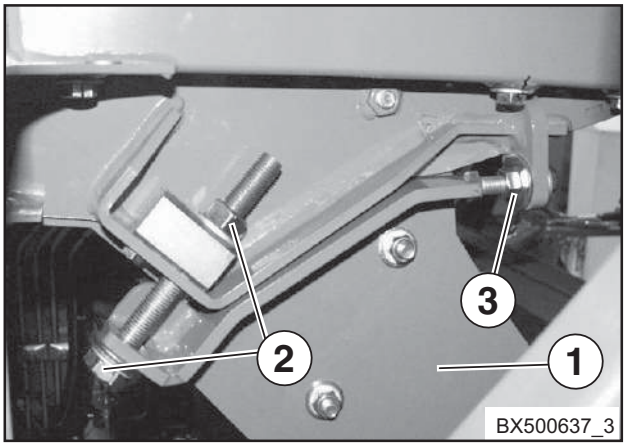


- Remove the hexagonal head screws (1) from the rear wall (2) and place them in the tool box.

The hexagonal head screws (1) must be removed in any case, otherwise the grass channel will not reach into the working position



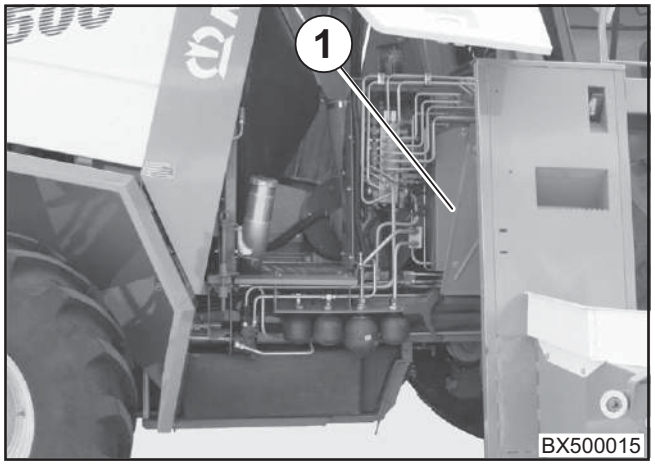
- Screw the grass channel (1) with screw connection (2) to both sides of the machine frame.
  In doing so, start with the screw on the right hand side in direction of travel, since this one can be installed from the outside.
- Loosen hooks of the cable winch and retract cable winch completely.
- Swing the pivoted lever (3 in Fig. BX859810) on the grass channel from Installation/removal position into transport position and attach it.



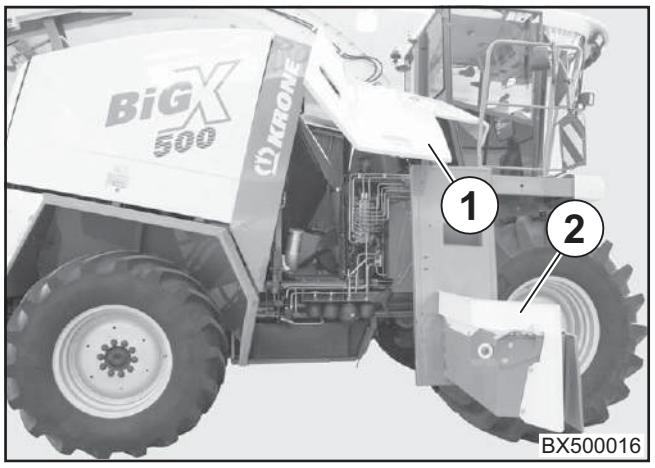
After the installation of the grass channel the following settings need to be checked and, if necessary, readjusted:

1. Setting Pick-up
   The position and the height of the holding-down device roller as well as the following baffle plate must be adapted to the swath height, so that the roller crop guide does not pile up the swath. (refer to operating instructions Pick-up chapter 3.6.3 Setting the roller crop guide and the swath guide plate)
2. Setting the drum base (refer to chapter 8.2.4 Tips for optimising crop flow).
3. Setting the rear wall (refer to chapter 8.2.4 Tips for optimising crop flow).

- Install the cover (1).



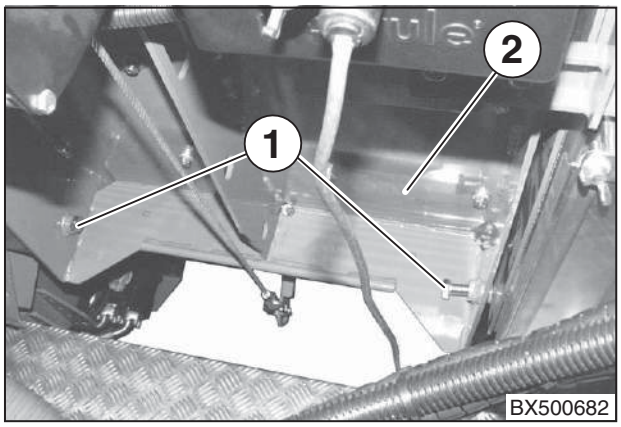
- Close the toolbox (2) and the flap (1) for the machine compartment on the right hand side.
- Remove remote control from cable winch and keep it in the drawer under the driver's seat in order to avoid unwarranted use.

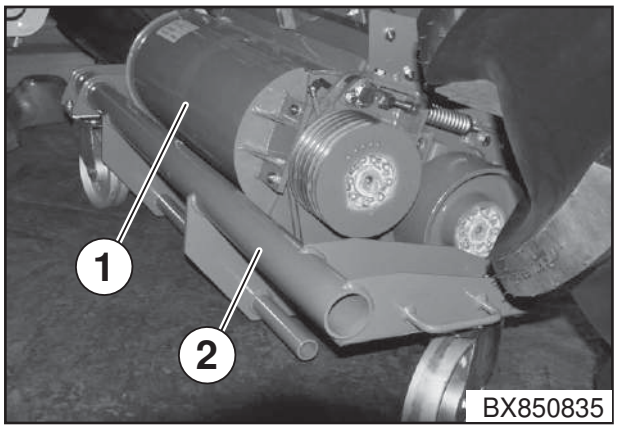


7.5.6.5 Installation of the corn conditioner

Before assembly of the corn conditioner, „Preparations before working on the grass channel - Corn Conditioner“ have to be carried out as described in chapter 7.

- Check if the rear wall is fixated by both hexagonal head screws (1). If not, remove the hexagonal head screw M16 x 60 (1) from the tool box and install them on the right and left of the rear wall (2).
- Install the cable roller guide (refer to chapter 7 „Installation of cable guide“).
- Measure the spacing of the grain conditioner for calibration after installation (refer to chapter 4, menu 3-6).
- Push the corn conditioner with the transport frame (3) half way to the side under the forage harvester.

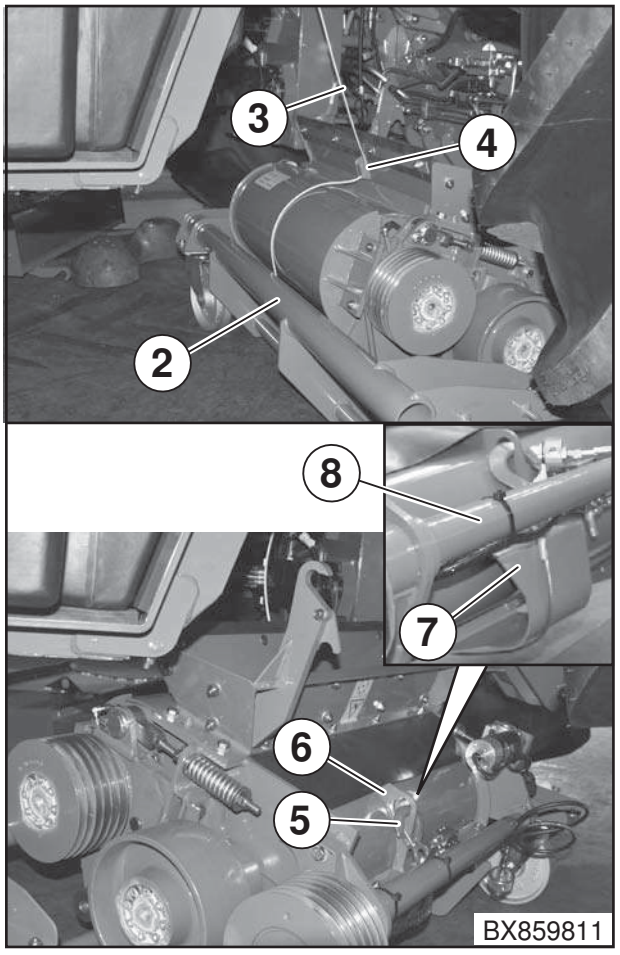




- Set cable winch cable (3) into the hook (4) of the corn conditioner and guide it via roller panel downwards.
- Thread cable between corn conditioner (1) and transport frame (2) and guide it at the underside of the corn conditioner along forwards and then via rope guide (7) further upwards to the holder (6).

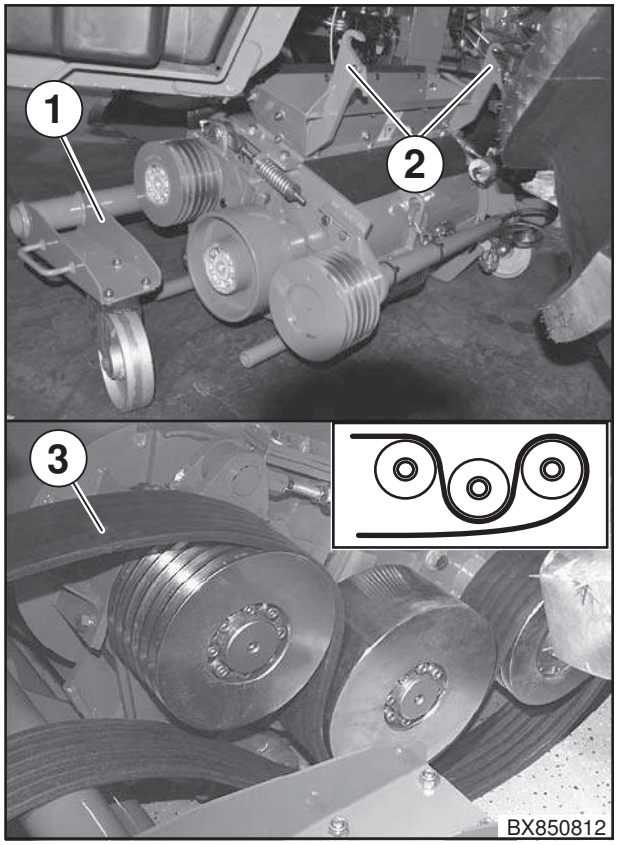
Lay the cable in no case over the axle (8) of the drive.

- Hook the cable winch hook (5) into the holder of the corn conditioner (6).



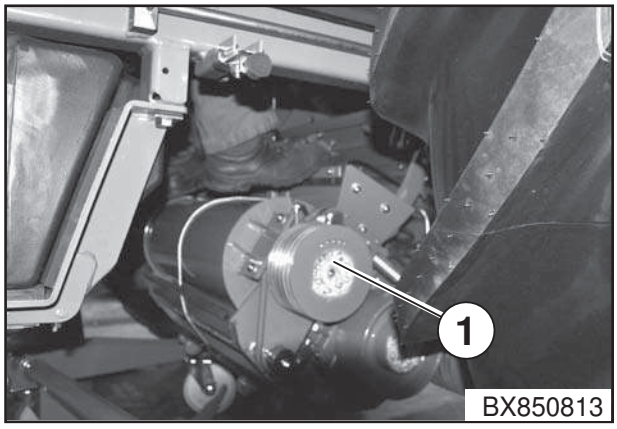
- Put the V-belt (3) in place as shown in the diagram.

- Align the grain conditioner with the transport frame (1) under the forage harvester so that the receiving hook of the corn conditioner (2) is in front of the suspending holding bolts on the forage harvester.



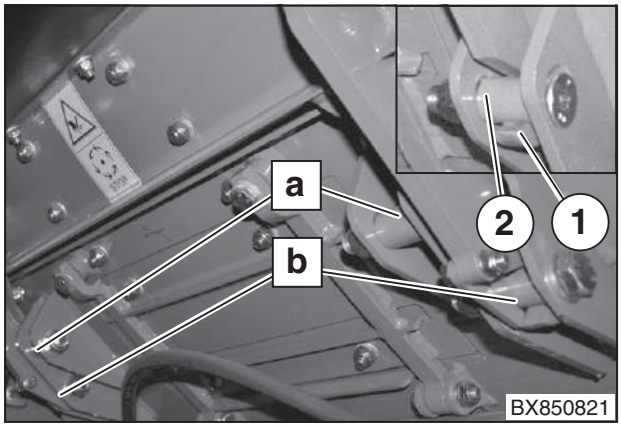
Danger! - Load falling down
Effect: Injuries or damage to the machine.
Do not step under the suspended load!

- Pull corn conditioner (1) up with the aid of a cable winch until the receiving hooks (1) of the corn conditioner are located further up than the holders (2) at the transfer shaft.



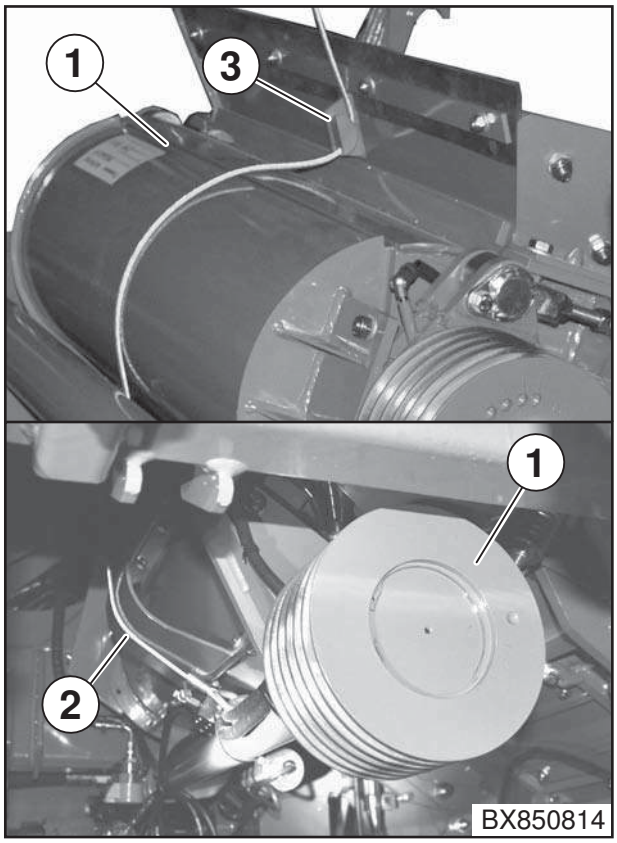
Use the holders (b) at the transfer shaft for hitching the corn conditioner.

- Press corn-conditioner forward with the feet until the receiving hooks (1) of the corn conditioner are located directly over the holders (2) at the transfer shaft.
- Lower corn conditioner via cable winch until the receiving hooks (1) hook in in the holders (2) at the transfer shaft.
- Lower corn conditioner further via cable winch until there is no tension on the cable any more.

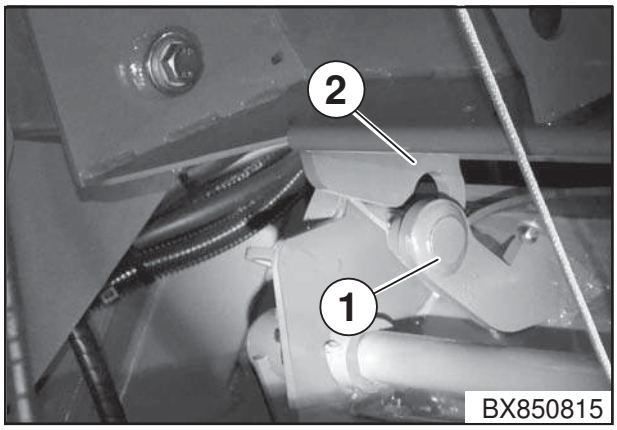


Danger! - Load falling down.
Effect: Injuries or damage to the machine.
- **Do not step under the suspended load!**

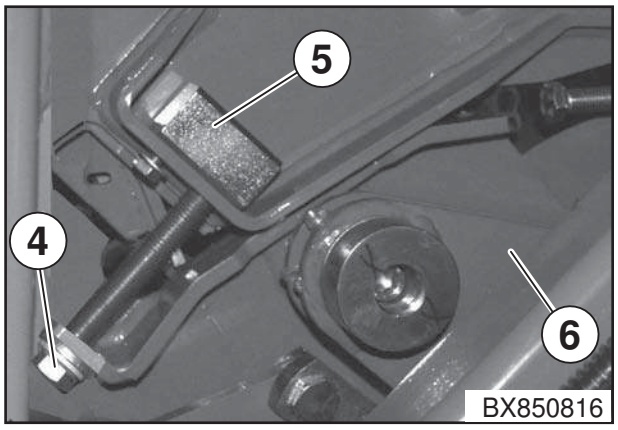
- Unravel cable (2) out of the cable guide and loosen it out of the holder (3) of the corn conditioner.



- Exit danger zone and pull corn conditioner (1) up via cable winch until the bolts (1) are inserted into the locking hooks (2) at the rear wall of the corn conditioner.

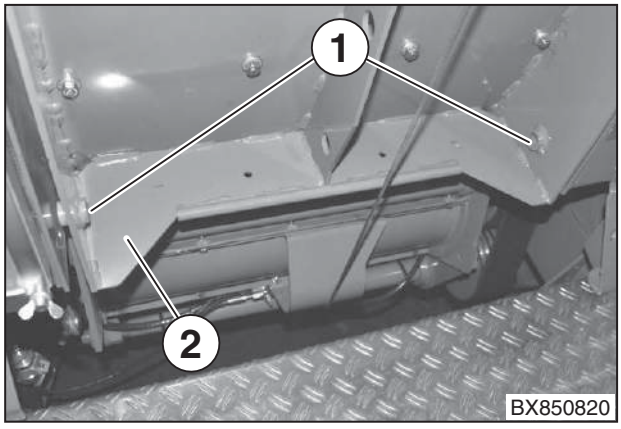


Pre-assemble attachment bolt (4) on the right-hand side of the machine (screw in threading until thread mounting (5) is full).
- Then pre-assemble attachment bolt on the left-hand side of the machine accordingly.

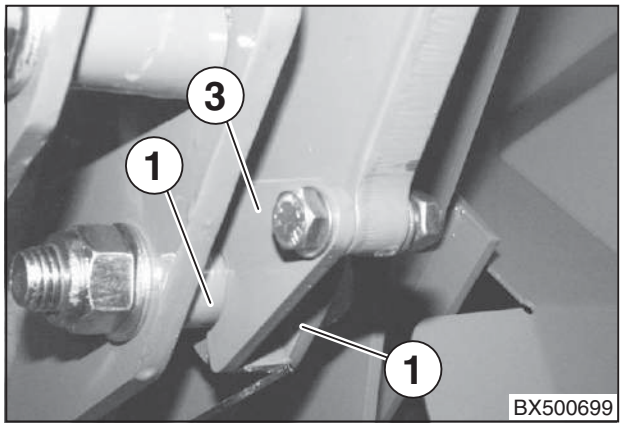


- Remove the hexagonal head screws (1) in order to secure the rear wall and (2) place them in the tool box.

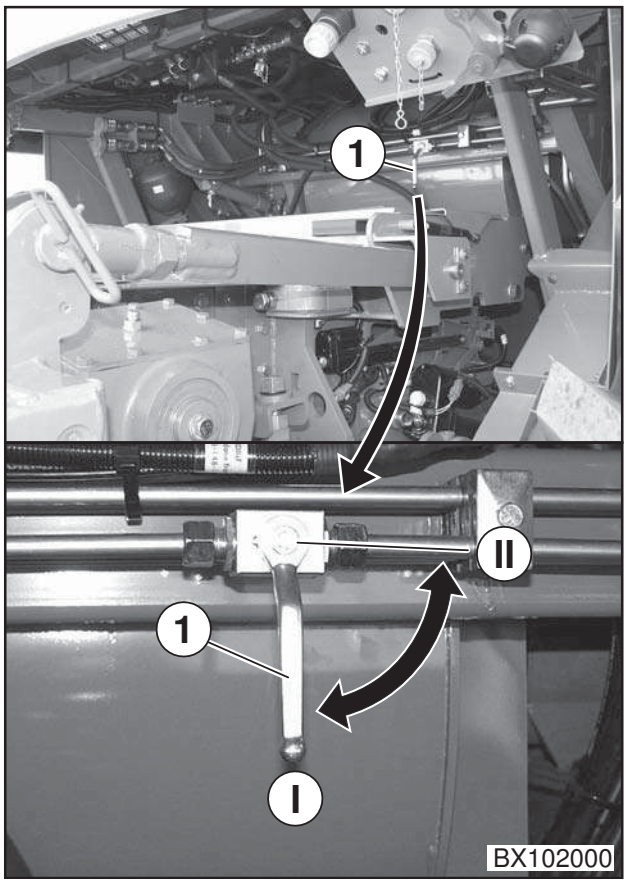
- Remove transport frame
- Loosen cable winch hooks and retract cable winch completely.
- Screw corn conditioner (6) with screw joint (4) on both sides of the machine and secure with counter nut on the right-hand side of the machine.



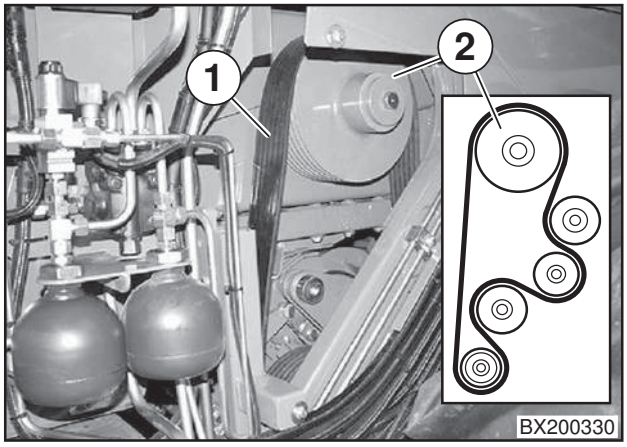
- Fix the position of the receiving hooks (1) (left/right) in the holding bolts (2) by installing the link (3). Secure with screw, washer and nut.
- Remove connection of remote control out of the cable winch, remove remote control and keep it in the drawer under the driver's seat in order to avoid unwarranted use.



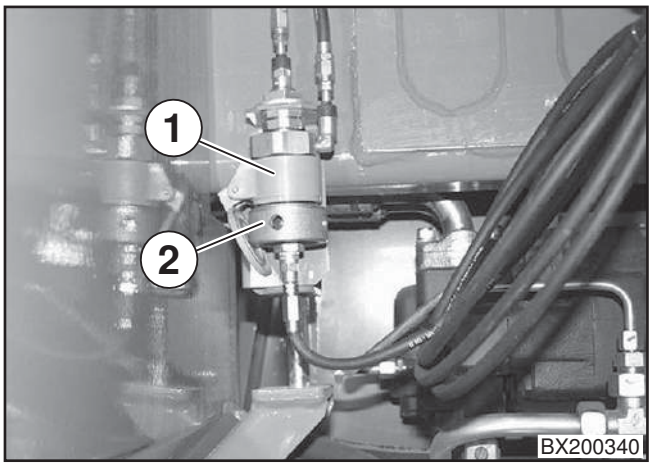
- Open the shut-off valve for the grain conditioner tensioning roller (1) (position **II**).



- Place belts (1) over drive roller (2). Press tension roller back manually, if necessary.

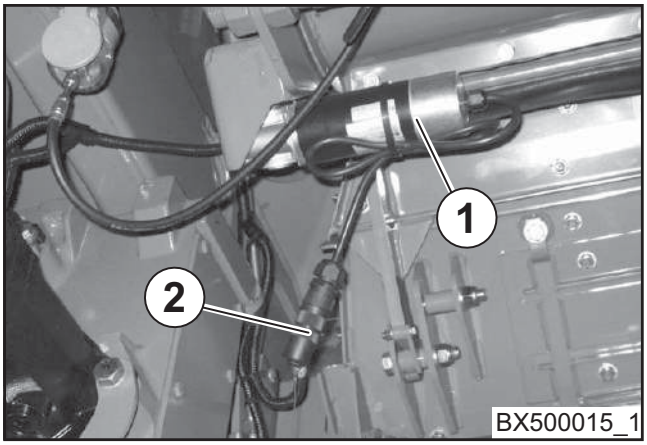


- Connect the central lubrication plug (2) of the grain conditioner onto the central lubrication coupling (1).



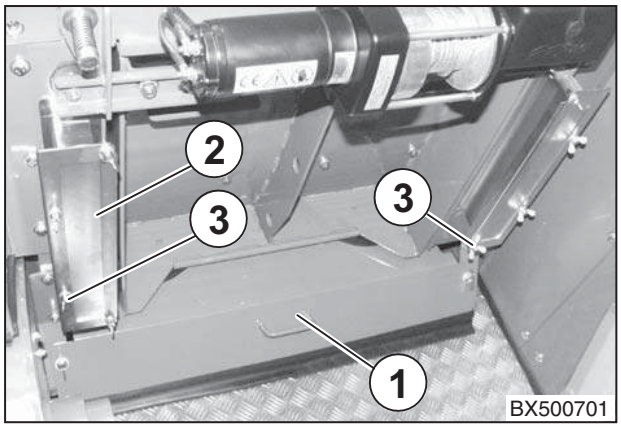
- Connect the connection line (1) of the control motor for roller spacing on the grain conditioner to the electrical system of the forage harvester (2).

After dismantling the grain conditioner, place the protective caps back on the connections.

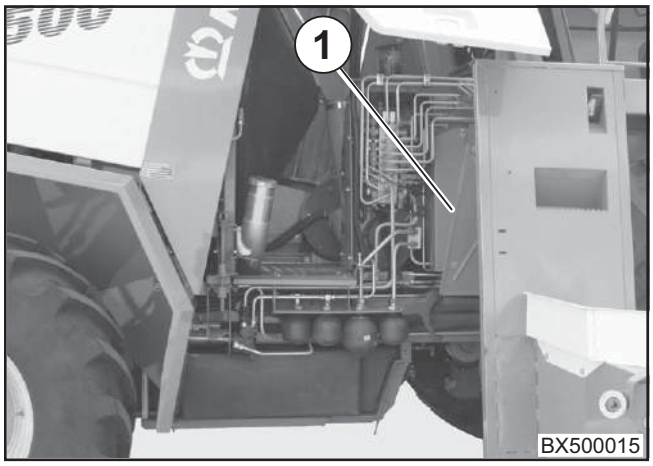


- Close and lock the maintenance flap (1).
- Loosen the wing nuts (3) and remove the covering plates (2) of the additional venting slots.

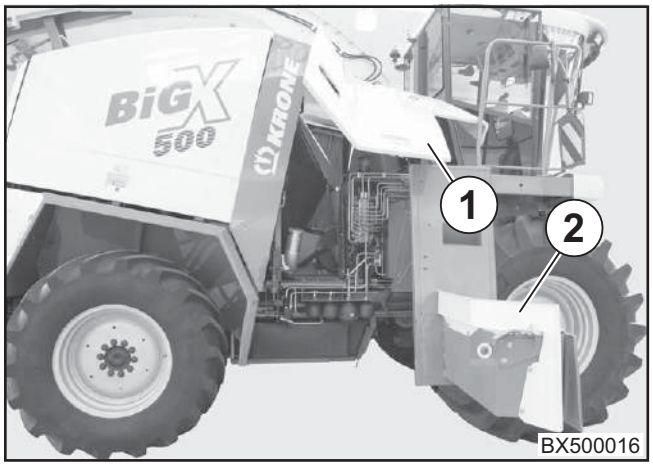
For further measures for optimising the crop route, see Section 8.2.4.



- Install the cover (1).



- Close the toolbox (2) and the flap (1) for the machine compartment on the right hand side.

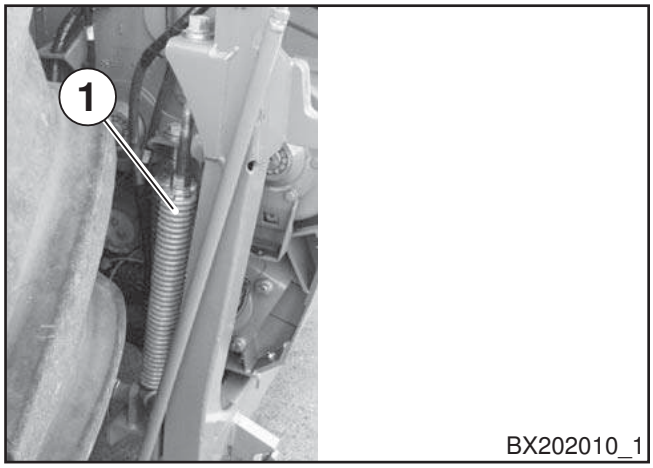


7.5.6.6 Removing of the grain conditioner

Note
Remove the grain conditioner in reverse order to the installation procedure.

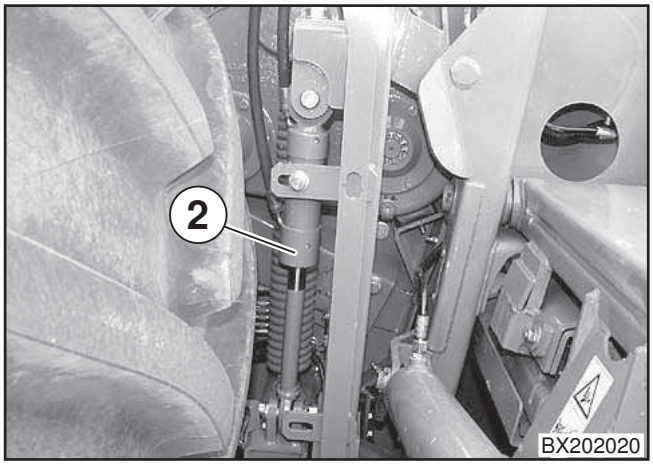
Refitting the pendulum frame cylinder

The compression spring (1) on the pendulum frame on the right must be exchanged for the hydraulic cylinder (2) for field operation with maize header.

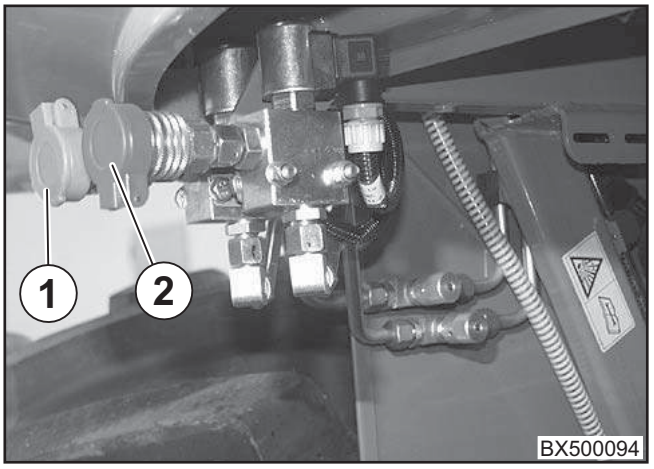


- Release the tension on the compression spring (1) and remove it.

- Dismount the hydraulic cylinder (2).



- Connect the hydraulic cylinder of the pendulum frame to the hydraulic connections (1, 2) according to the colour-coded hydraulic plugs.

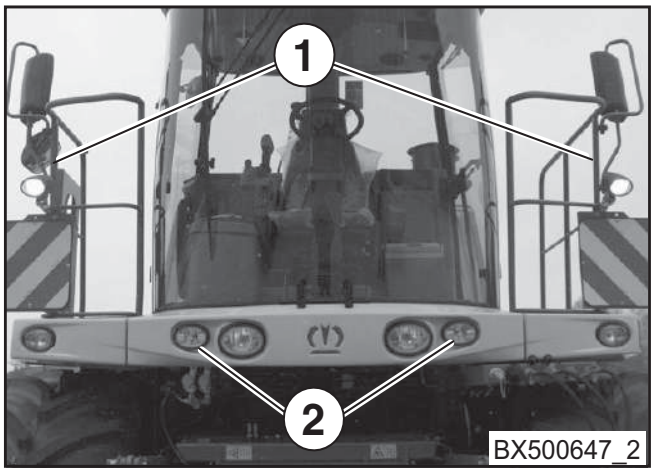


For further hydraulic adjustments of the forage harvester for field operation with maize header, see Section 7.5.4

Perform the following refitting jobs and make these settings:

- Refitting the cutting blade - see Section 9.
- Refitting the conveyor bars on the front baling rollers - see Sect. 9.
- Adjusting the maize header mode - see Sect. 4.
- Adjusting the working width - see Sect. 4.
- Adjusting the lifting gear - see Sect. 4.

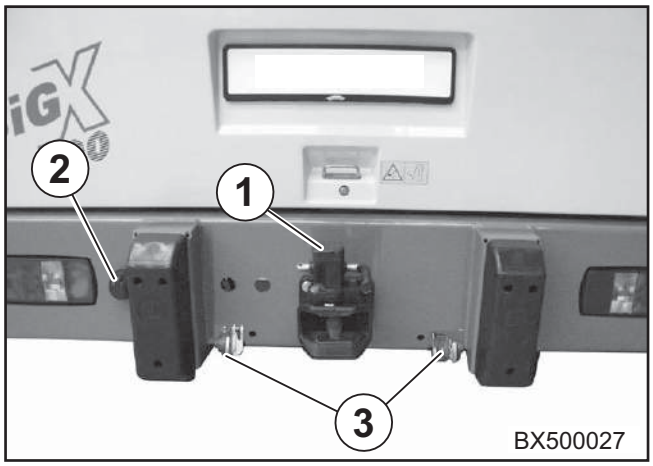
- For changing between driving headlights on the guardrail (1) and the lamp carrier (2) on the EasyCollect 753/903/1053, use the switch (3) on the operating console.
- Grain conditioner – Adjusting the distance - see Sect. 4.
- Calibrate the pendulum frame and absolute lifting gear height - see Sect. 4.
- Mount the upper discharge chute extension (EasyCollect 7500/EasyCollect 9000 only)
- Adjust the rear wall of the discharge accelerator to a gap dimension of 2-4 mm
- Reset the shut-off valves to maize header mode (see Sect. 7)
- Place an allround light in the middle for maize header EasyCollect 7500 (see Sect. 6)
- Adjust the tyres to the correct pressure



7.6 Trailer operation

The forage harvester is equipped as standard with a hitch coupling (1).

Trailers without their own brakes are not approved.
For trailers with supported load, make certain the approved rear axle load is not exceeded.
Attach trailers only to the intended mechanism.
Observe the data of the operating permission of the forage harvester.
Special care is required when coupling a trailer!



1 - Hitch coupling
2 - Power socket for lighting
3 - Compressed air connection (optional)

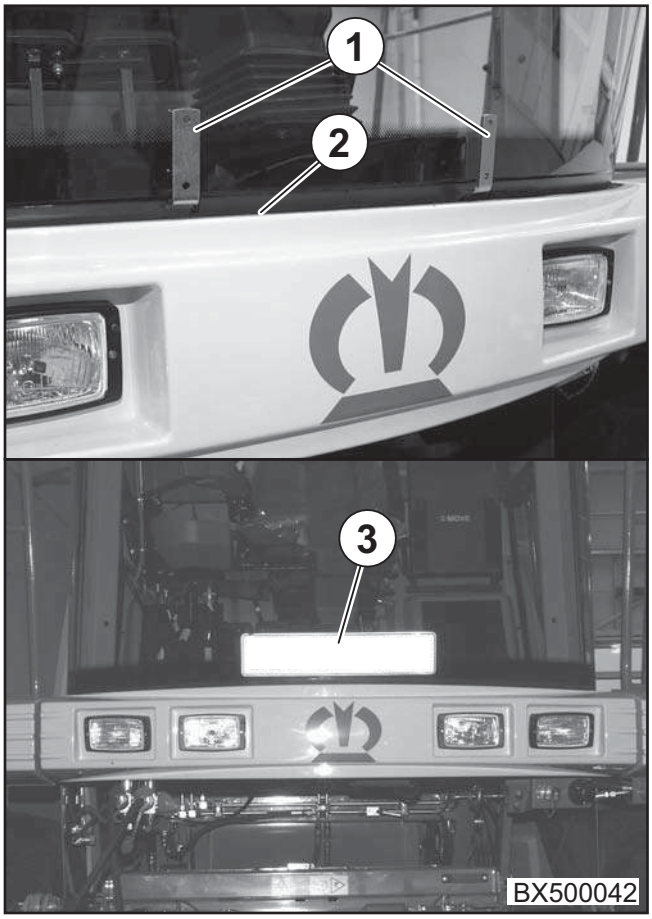
In road traffic connect the lighting of the trailer to the power socket (2) and check it for functioning.

Compressed air coupling

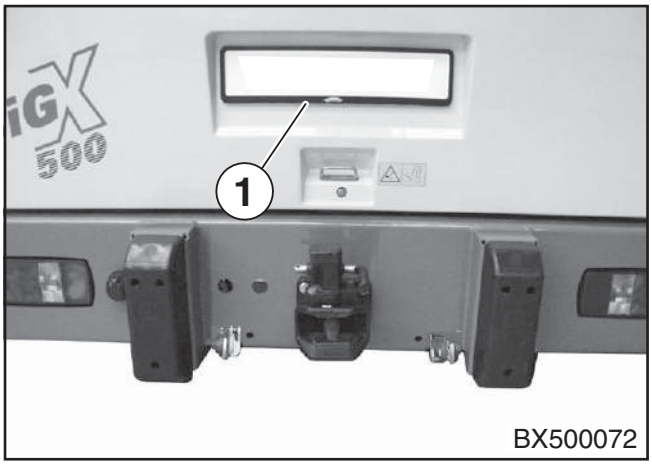
There is a risk of accident caused by the use of defective compressed air couplings.
Worn or damaged compressed air couplings have a negative effect on how the brakes work.
Make certain the couplings are working properly and there are no leaks. Replace defective rubber seals immediately.
Replace the coupling heads regularly depending on frequency of coupling, but in any case once or twice a year.
Make certain all compressed air connections are properly seated.

7.7 Registration plates

Set the front registration plate (3) in place by installing the two support brackets (1) on the front skirt (2) of the driver's cab.



To set the rear registration plates in place, use the recess (1) on the tailgate designed for that purpose

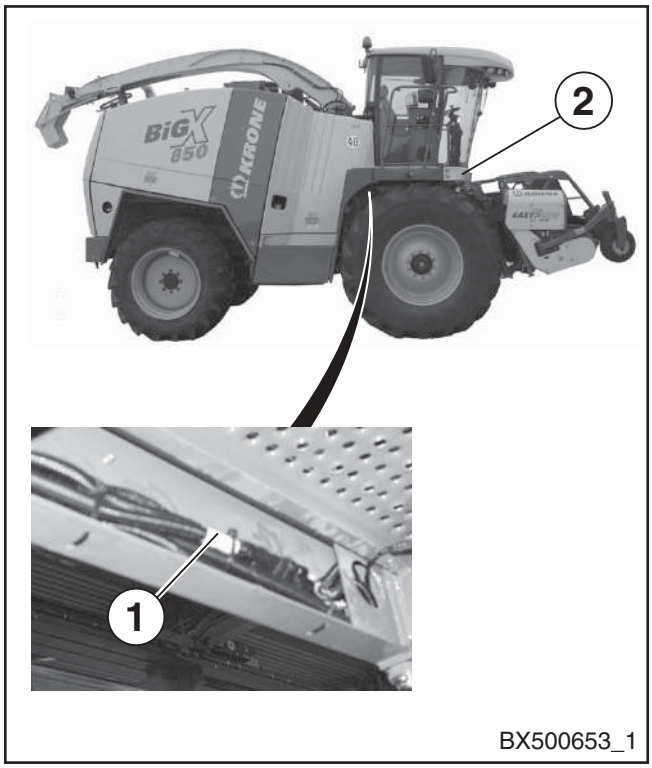


7.8 Connecting an Additional Silage Agent Dosing Unit

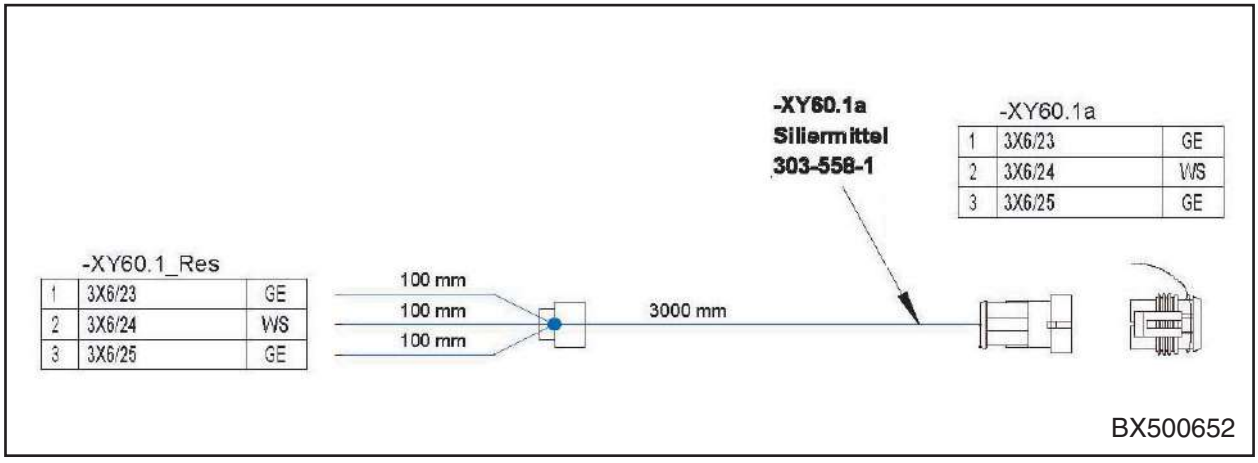
BiG X offers the option of connecting an additional silage agent dosing unit. When this unit is in operation, the electronics controls the dosing unit completely automatically.

The electrical connection (1) for the dosing unit is located above the right front wheel under the platform or in the right lamp carrier (2). It is a 3-pin plug identified as XY60.

The matching connection cable (Material No. 303-558-1, length about 3 m) is included with the machine.



Connection assignment of the cable



- XY 60 contact 1: +12 volts switched max. 15 amps through fuse 22-F74
- XY60 contact 2: Earth
- XY60 contact 3: +12 volts continuous voltage, max. 15 amps through fuse 22-F74

There is another connection plug above the right front wheel identified as XB60.
This plug is intended for an additional sensor for silage agent.

For information on operating the silage agent equipment, see Chapter 4 "Silage Fodder Addition"

8 Operation

8.1 Road travel

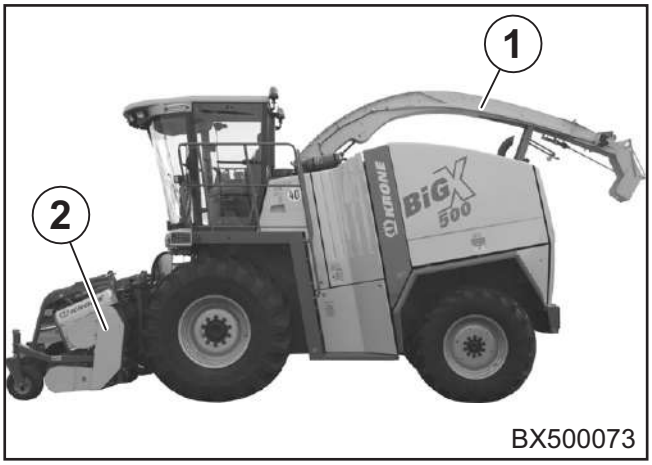
When driving on roads, the general requirements or special conditions of the Road Traffic Type Approval Law (StVZO) and the Road Traffic Law (StVO) must be observed.

The driving speed of the forage harvester must to be adapted to local conditions.

8.1.1 Transport position

In road traffic, the upper discharge chute (1) and the front attachment fitted must be in transport position.

- Moving the front attachment (2) into the transport position – cf. operating instructions of the front attachment.



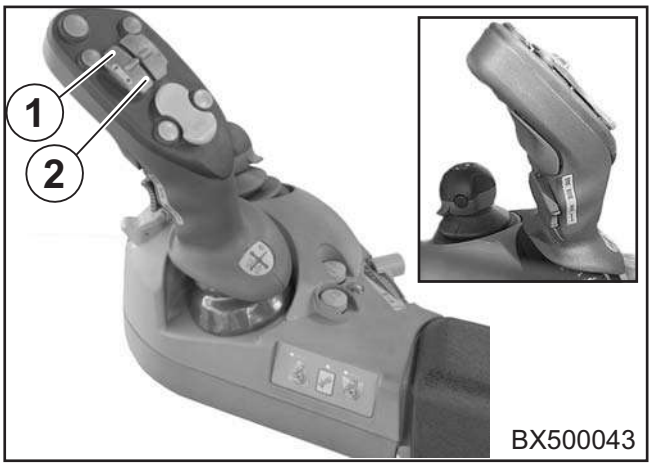
BX500073

Feed drive/front attachment in transport position

Danger!
Unpredictable moving of the lifting gear during folding in and out of the front attachment
Effect: Danger to life, injuries of individuals.
No individuals are allowed in the area of the lifting gear during folding in and out of the front attachment!

- Engine is started.
- Road/field release switch must be in the field mode position.

- Press the "Lower lifting gear" (1) push-button.
- Press the "Lift lifting gear" (2) push-button.



BX500043

The lifting gear is lowered or lifted. During the first second of the actuation the lifting/lowering speed is very slow, but subsequently it will increase in speed.

When the maize header is retracted, the lifting height is limited to 60 % of the maximum lifting height; there is no limitation when the grass pick-up has been fitted.

If no control button is active, the position controller will keep the lifting gear on the current lifting height.

A vibration absorber is permanently active in road traffic. It is also active, if the push-button has not been pressed after the diesel engine has been switched on.

Swivelling the upper discharge chute into transport position

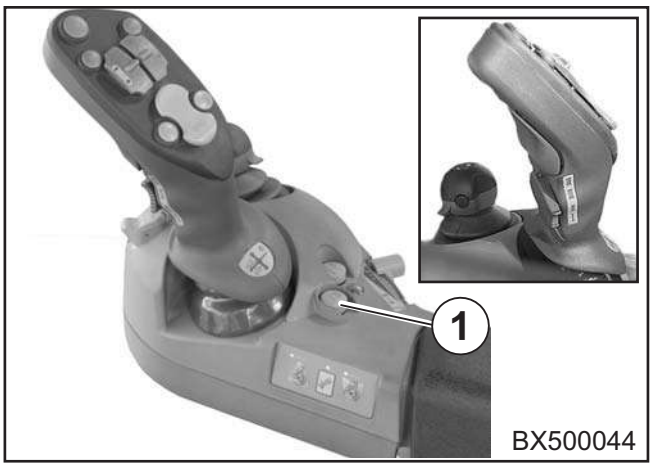
Pre-requisites:

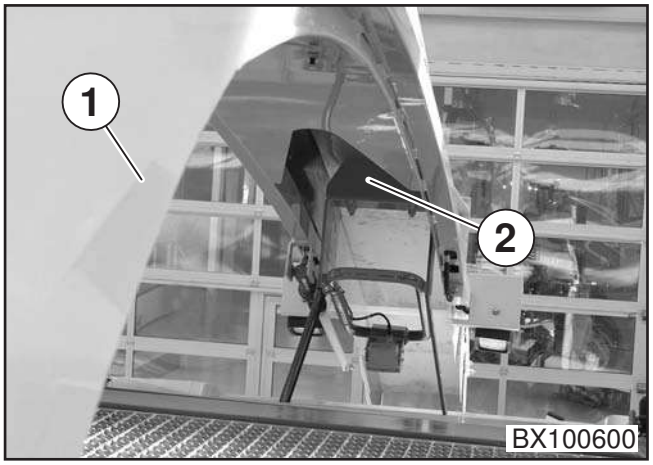
- The driver's seat must be occupied.
- Engine is started.
- Road/field release switch must be in the field mode position.
- Main coupling off.

- Press the "Upper discharge chute in transport position" (1) push-button.

The upper discharge chute travels automatically into the transport position.

- Visually check the correct position of the upper discharge chute (1) on the support (2).
- If and when necessary, use the manual control to move the upper discharge chute into the correct position (cf. chapter on operating the upper discharge chute).

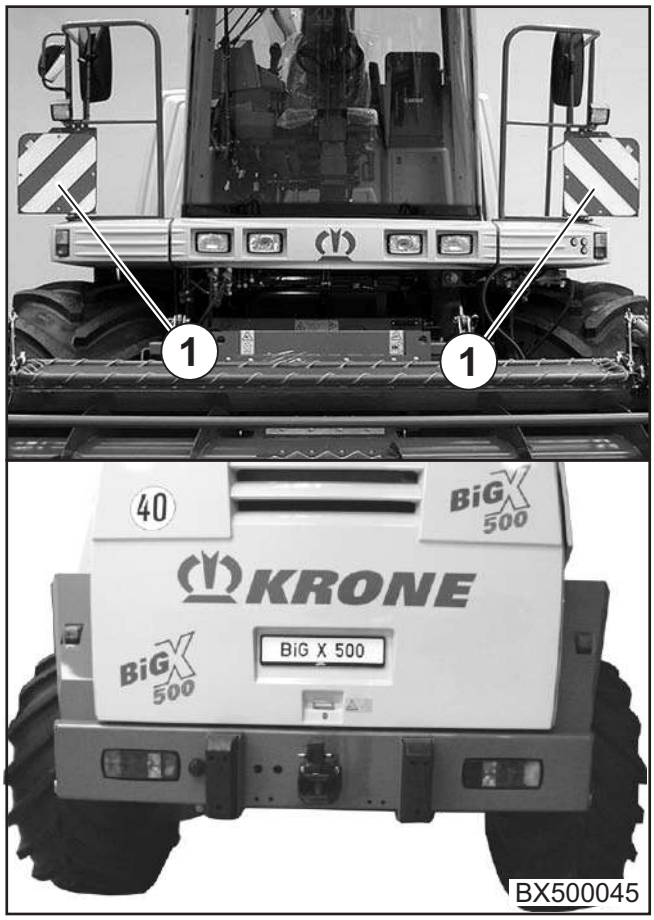




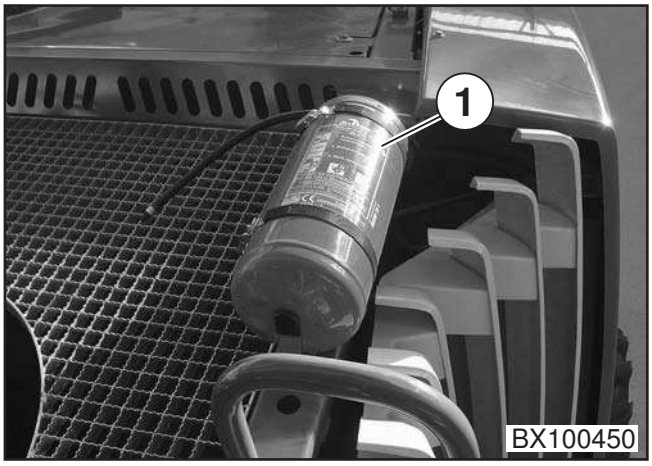
8.1.2 Prior to travel

- Prior to travelling on traffic routes, please ensure that the warning boards (1, 2) have been fitted and are located on the outermost positions.

- Check the brake and light functions.



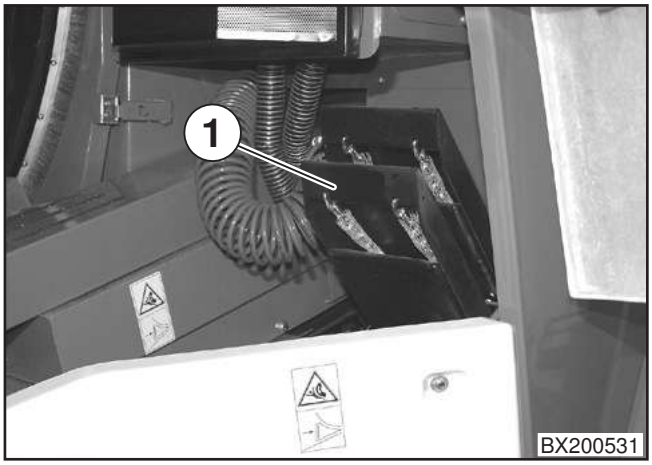
- Check whether the fire extinguisher (1) is in a ready-to-use condition in the holder provided on the machine roof.



Have the operational readiness of the fire extinguisher checked annually, at the latest every two years. The manufacturing date or the date of the final inspection of the fire extinguisher shall be decisive. The testing intervals may vary from country to country. In this case, the instructions on the fire extinguisher of the respective countries shall be applicable.

Two wheel chocks have to be ready to hand at all times.

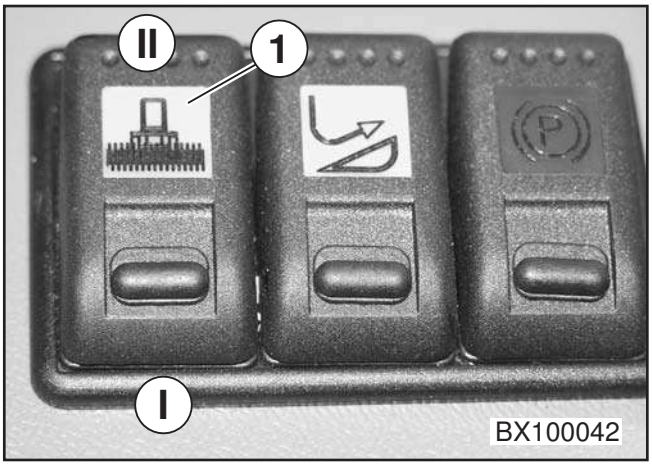
- Check whether the wheel chocks (1) are in a ready-to-use condition in the holder provided on the left side of the machine.



8.1.3 Travel

When travelling on roads, the road/field release switch (1) has to be set to position I.
This ensures that only the travelling gear, the steering mechanism and the brakes are active.

For more information on road travel, please refer to chapter titled "Initial operation – road travel".



8.2 Field operation

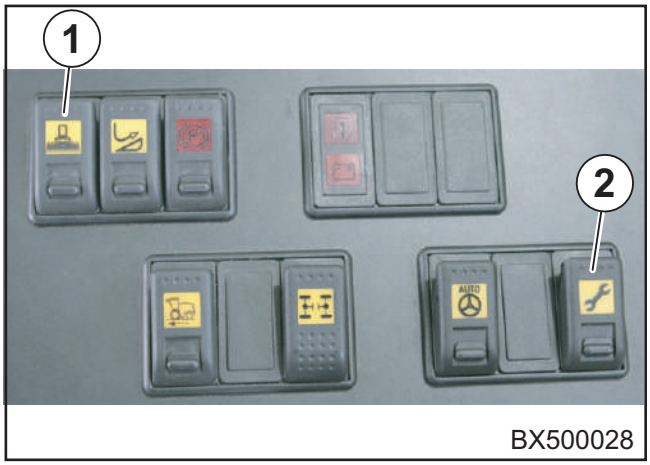
For special instructions on the use of the respective front attachment fitted, please refer to the operating instructions of the front attachment.

Please refer to the chapter titled "Info Centre" for settings, such as mode of operation, working width, front attachment/feed drive, silage attachment, lifting gear, grain conditioner and customer data.

For information on drive operation, please refer to the chapter titled "Initial operation – drive operation".

Pre-requisites for field operation

- The engine is started.
- The road/field release switch (1) must be in field operation position.
- The maintenance release switch (2) must be set to off.



8.2.1 Lifting gear

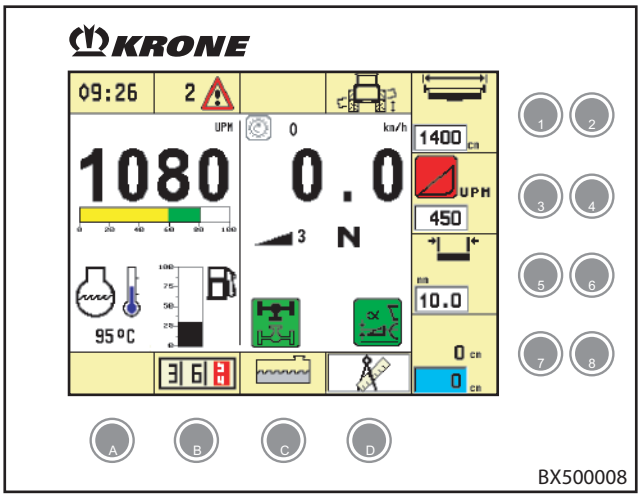
Please refer to the chapter titled "Info Centre – Settings Lifting Gear" for settings of the lifting gear control and setpoint pressure or height.

Activating the lifting gear position control

When the lifting gear position control is active, the control sets the height constant relative to the machine.

Pre-requisites:

- The Info Centre is used to set the lifting gear position control; the icon along with the setpoint height in cm is displayed.



- The lifting gear position control is currently inactive.
- The lifting gear position control is currently inactive.

- Press the "Lower lifting gear" (1) push-button.
- Press the "Lift lifting gear" (2) push-button.

The lifting gear is lowered or lifted. During the first second of the actuation the lifting/lowering speed is very slow, but subsequently it will increase in speed.

When the keys (1 or 2) are released, the current lifting height is measured and kept constant relative to the machine by the lifting gear position control until the lifting gear height is manually overdriven.

Modifying and saving the setpoint height at the multi-function lever

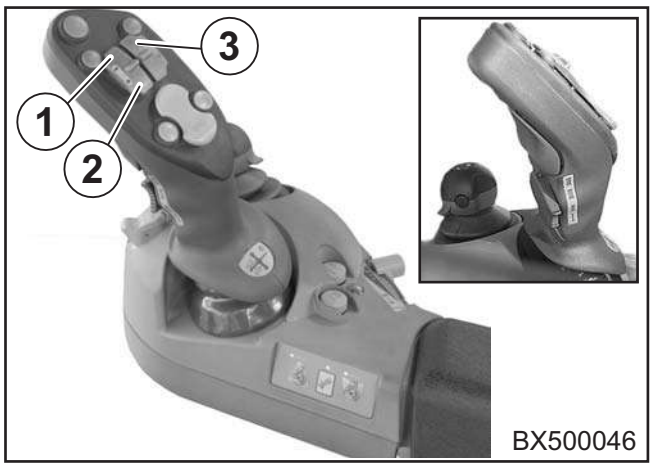
- Use the "Lift lifting gear" (2) or "Lower lifting gear" (1) push-buttons to move the unit to the new setpoint height.
- Keep the "Automatic adapting to ground contours" (3) push-button pressed for about 3 seconds.

The new setpoint height is saved and a corresponding information message will appear in the display of the Info Centre.

Activating the setpoint height adjusted

- Press the "Automatic adapting to ground contours" (3) push-button.

The lifting gear is lifted or lowered to the setpoint height set. The  icon is used in the Info Centre to display the setpoint height set in cm. The lifting gear position control is active.
Deactivating the lifting gear position control



The lifting gear position control will be deactivated in case of:
- Fault detection
- Manual control of the lifting gear with keys (1) and (2).

Deactivating the lifting gear position control
The lifting gear position control will be deactivated in case of:

- Fault detection
- Manual control of the lifting gear with keys (1)and(2)

Setting and saving the lifting height for the headland

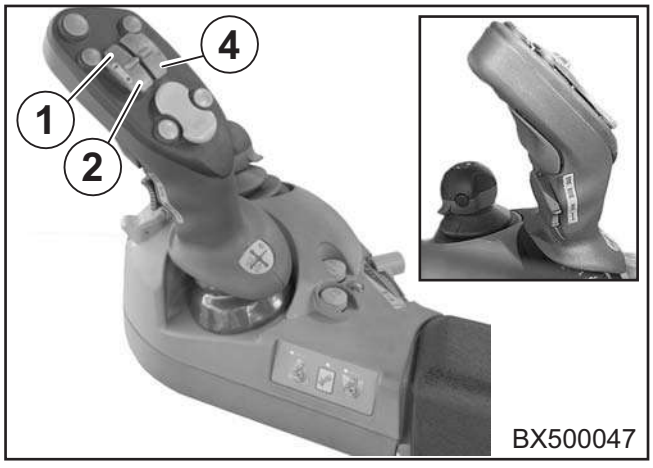
- Use the "Lift lifting gear" (2) or "Lower lifting gear" (1) push-buttons to move the unit to the lifting height.
- Keep the "Lift lifting gear to top" (4) push-button pressed for approx. 3 seconds.

The new lifting height is saved and a corresponding information message will appear in the display of the Info Centre.
Change the lifting height by new setting and saving.

Lifting the lifting gear right up – headland setting
By pressing the "Lift lifting gear to top" (4) push-button, the lifting gear is lifted to the saved value (headland setting).

- Press the "Lift lifting gear to top" (4) push-button.

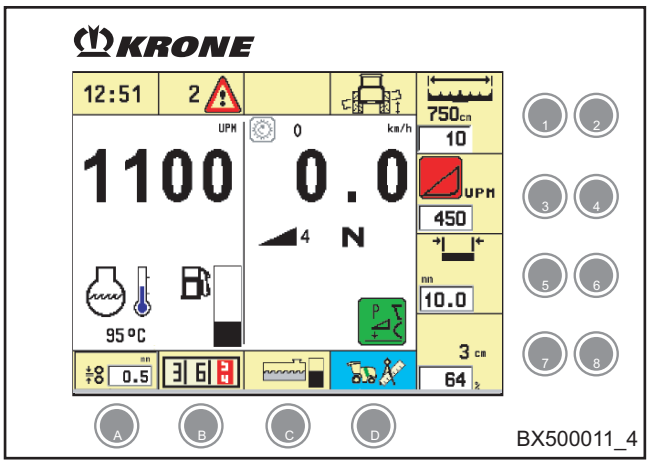
The lifting gear is lifted to the lifting height set.



Activating the lifting gear top pressure control

When the lifting gear top pressure control is active, the control sets the pressure of the lifting gear on the ground to a constant value.

The control is activated as follows: activate the setpoint pressure; use the multi-function lever to change the setpoint pressure; the saving process corresponds to the procedure used in the lifting gear position control.



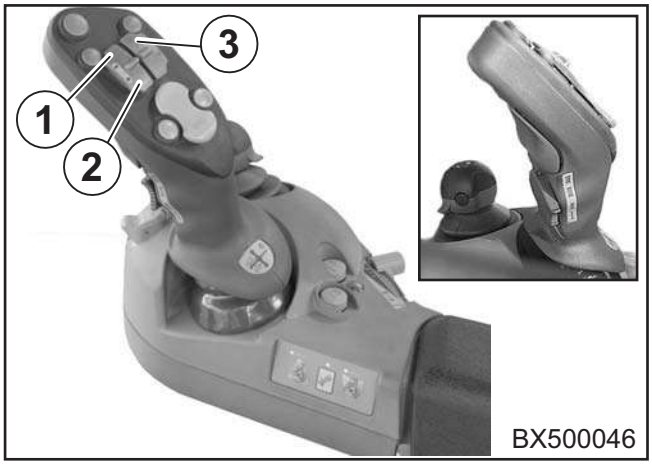
Lifting and lowering the lifting gear in case of lifting gear top pressure control

- Use the "Lift lifting gear" (2) or "Lower lifting gear" (1) push-buttons to move the unit.

After the key is released (1 or 2), a position controller will keep the lifting gear at a constant lifting height. In order to activate the lifting gear top pressure control press the "Automatic adapting to ground contours" (3) push-button.

- Press the "Automatic adapting to ground contours" (3) push-button.

The lifting gear is lowered to the ground and is automatically set to the lifting gear top pressure control.

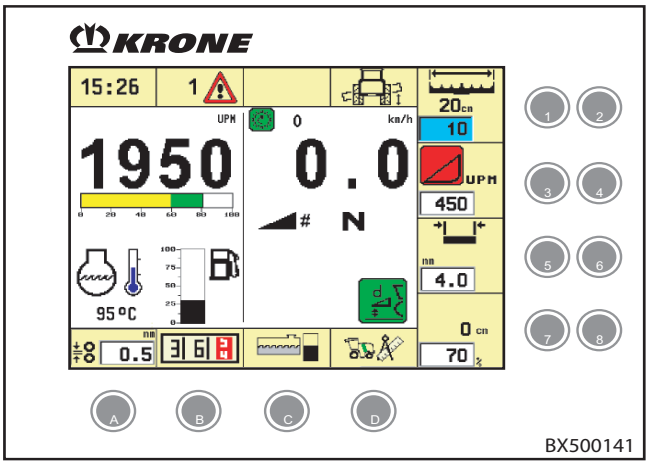


Activating the lifting gear spacing control (optional)

The lifting gear spacing control can be activated only if spacing sensor have been fitted on the maize header.

When the lifting gear spacing control is active, the control sets the height constant relative to the machine.

The control is activated as follows: activate the setpoint height; use the multi-function lever to change the setpoint height; the saving process corresponds to the procedure used in the lifting gear position control.



8.2.2 Feed drive/front attachment

For setting the setpoint speed of the feed drive and the cutting length, please refer to the chapter titled "Info Centre settings – feed drive/front attachment".

Switching the feed drive/front attachment on

Danger!
Unpredictable moving of the lifting gear during folding in and out of the front attachment
Effect: Danger to life, injuries of individuals.
No individuals are allowed in the area of the lifting gear during folding in and out of the front attachment!

In order to be able to switch on the feed drive/front attachment, the following conditions must be met:

- The driver's seat must be occupied.
- The engine is started.
- The road/field release switch (1) must be in field operation position.
- The maintenance release switch (2) must be set to off.
- The feed drive/front attachment release switch (4) must be set to on.
- Switch on the main coupling (3).

- Press the "Reverse feed drive/front attachment" button (2) briefly.
- Press the "Feed drive/front attachment on – off" (1) push-button.

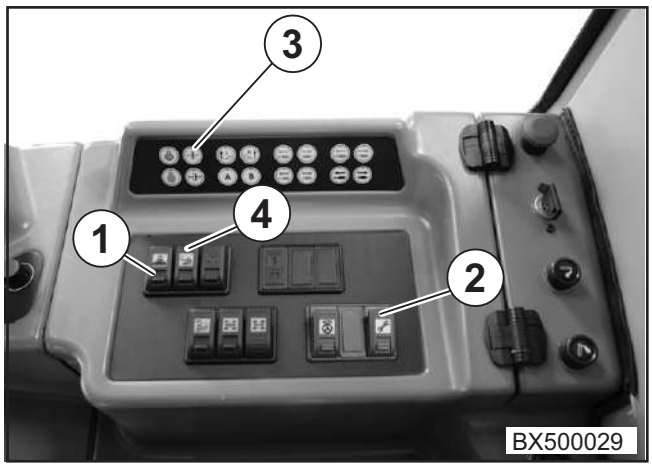
The front attachment units and the feed drive rollers are switched on.

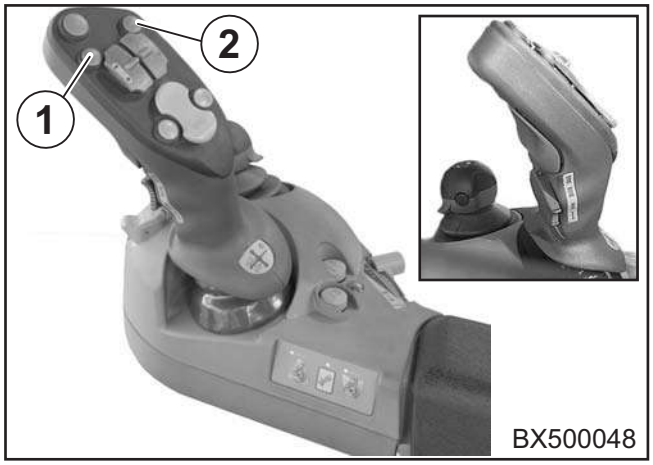
When the feed drive/front attachment is switched on for the first time, the infeed rollers and the front attachment will reverse for a short time to remove any potential soiling.

Switching the feed drive/front attachment off

- Press the "Feed drive/front attachment on – off" push-button (1) again.

The front attachment units and the feed drive rollers are switched off.



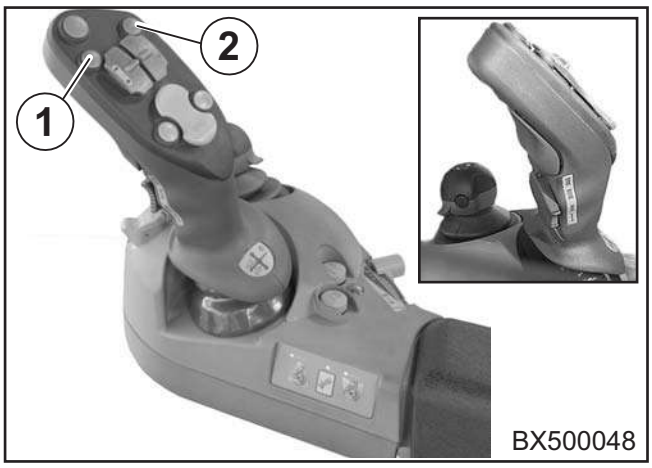


Reversing the feed drive/front attachment
When clogged and when faults are released by the metal detectors, the feed drive/front attachment can be reversed. If the (1) key is used, the **travelling gear release switch** must be **off**.

- Press the "Reverse feed drive/front attachment" key (2) on the multifunction lever and hold it down or press the manual mode key (1) on the platform.

The front attachment units and the drive feed rollers will reverse for as long as the "Reversing the feed drive/front attachment" (2/1) push-button is pressed.

The "Reversing the feed drive/front attachment" (2) push-button can be pressed also, even if the feed drive/front attachment is switched on.
Subsequently the feed drive/front attachment must be switched on again.



Metal detection

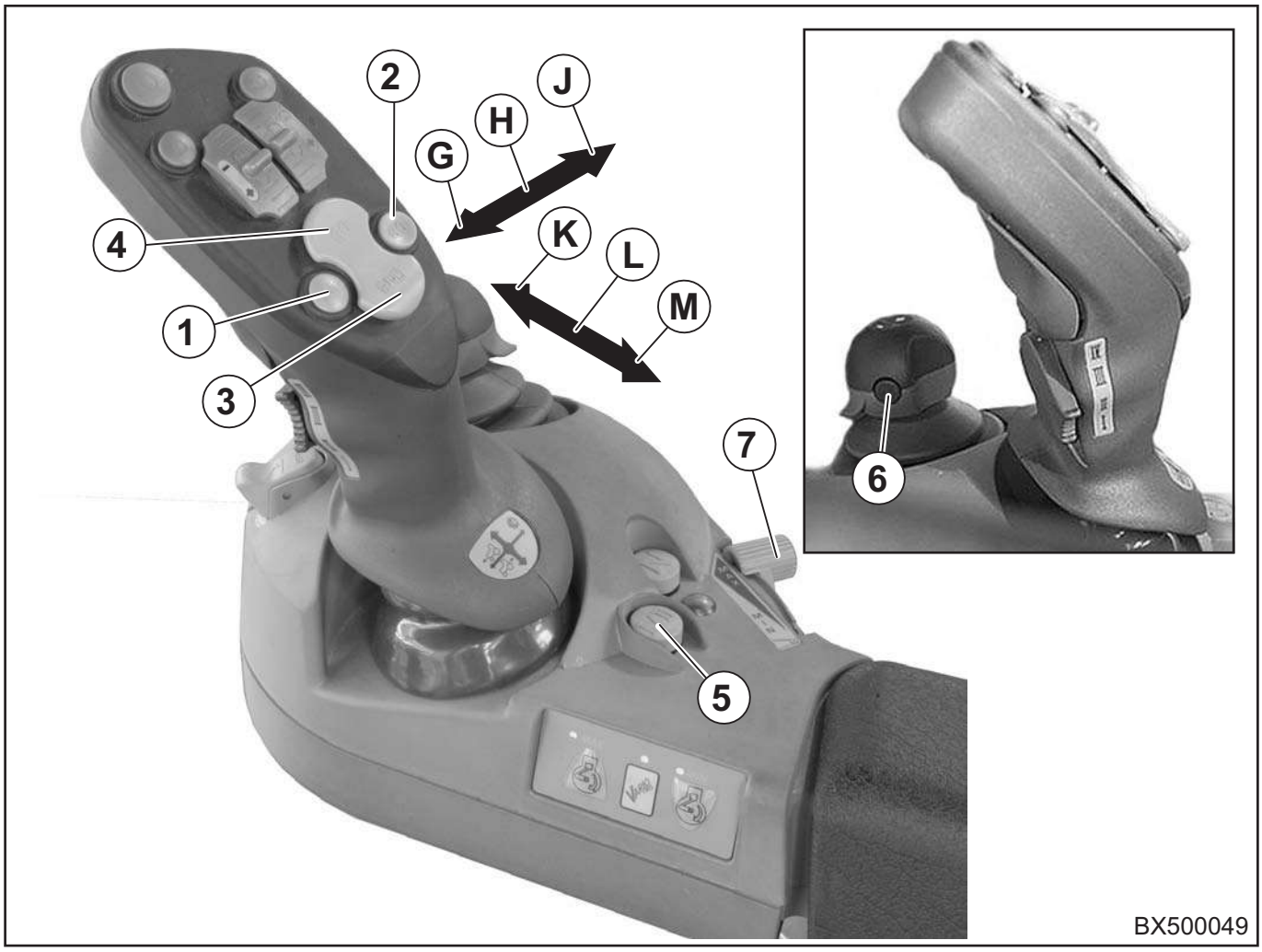
When metal is detected, the feed drive/front attachment stops instantaneously.
- Acknowledge the fault message.
- Permit the feed drive/front attachment to reverse.
- Stop the machine. Remove the metal.

8.2.3 Cutting length and upper discharge chute

Two cutter lengths can be saved and brought up on the multifunction lever.

The shape and swivelling range of the upper discharge chute (1) have been designed in such a way that operation is possible with towing trailer as well as with forage trailers to the left and right.
The operation is controlled by the multi-function lever.
The ejector flap can also be set hydraulically.

BX500050



BX500049

1 - Rotate discharge chute left

2 - Rotate discharge chute right

3 - Ejector flap down

4 - Ejector flap up

5 - Mirror upper discharge chute (with main coupling switched on)

- Upper discharge chute in transport position (with main coupling switched off)

6 - Save the cutting length

7 - Speed discharge chute

G - Bring up cutting length value 1
If the button 6 is pressed and is past the action point, the cutting length is saved in the Info Centre (value 1)

H - Central position

J - Bring up cutting length value 2
If the 6 button is pressed and is past the action point, the cutting length is saved in the Info Centre (value 2)

K - Lower upper discharge chute

L - Central position

M - Lift upper discharge chute

8.2.4 Tips for optimising crop flow

1. How attachment speed depends on cutting length

Long cutting lengths require a higher speed for the front attachment. If the speed is too low, the feed drive rollers will pull the crop in in clumps from the front attachment and the crop flow will separate off.
Short cutting lengths require a slower speed for the front attachment. If the speed is too high, the paddles of the grass pick-up will move the crop too far forward and there may be jams in the maize header.
Reduce the driving speed for the maize header if necessary.

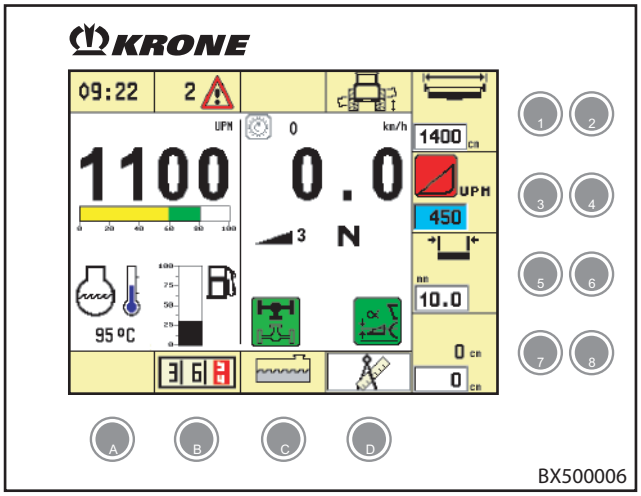
Basic setting (on standard drum with 28 blades):

- Grass — Attachment speed 500 RPM at 10 mm cutting length
  Attachment speed 600 RPM at 18 mm cutting length

Overview cutting length - front attachment speed

	Number of blades			
Front attachment speed	10	14	20	28
500 rpm	28 mm	20 mm	14 mm	10 mm
600 rpm	50 mm	36 mm	25 mm	18 mm

Front attachment speed X-Disc: 700 rpm

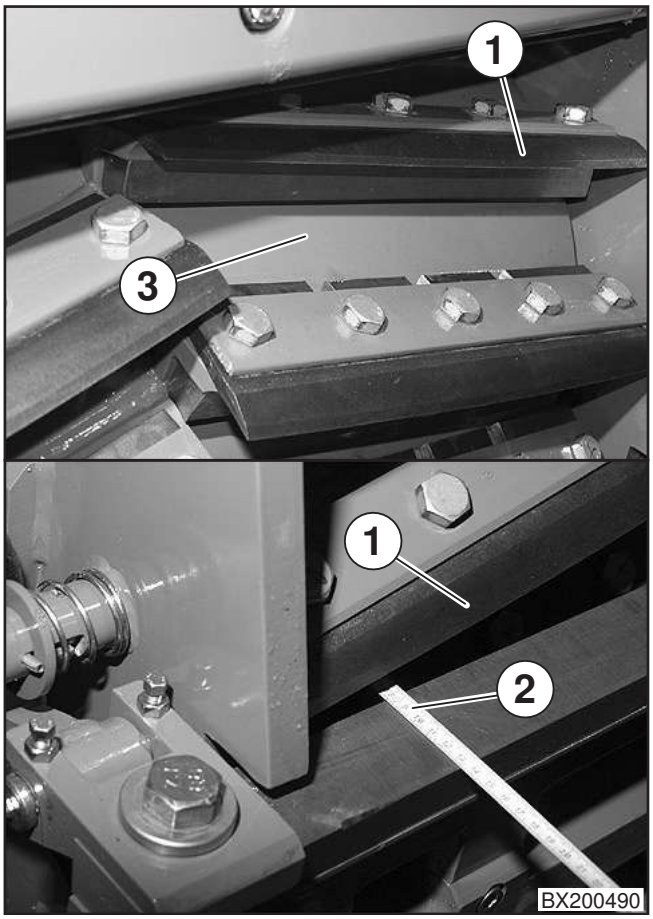


2. Discharge capacity of the machine

The cutting drum determines mainly the discharge capacity of the machine.
Depending on how far the cutter (1) extends beyond the blade carrier (3) there will be correspondingly more or less wind = discharge output.

Grinding off the cutters as well as dirt under the blades reduces the volume for which the discharge capacity is responsible.

Sharp tools – risk of injury!
Always wear gloves when working with the blade drum.



- Move the cutter (1) to its greatest possible overhang. The max. overhang is about 82 mm (2).
  Readjust the cutting blade frequently (refer to the section on Maintenance – Adjusting or replacing the cutting blade).

- Keep the open area under the cutter (1) and blade carrier (3) clean.

Adjusting the drum base

An incorrectly adjusted drum base will result in increased fuel consumption and wear of machine components.

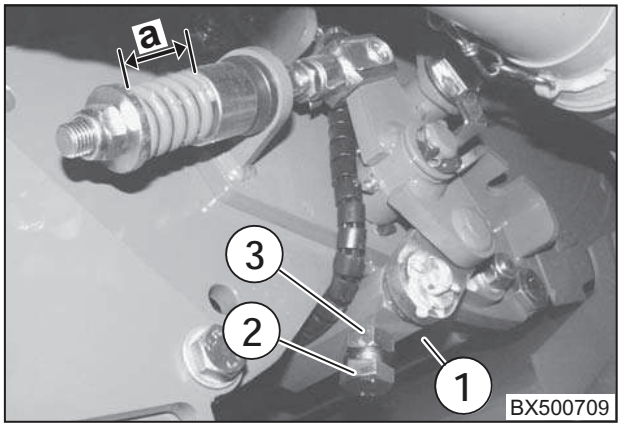
Another way to improve the discharge capacity is to fine-tune the setting of the drum base (1).
The drum base is adjusted in the factory.

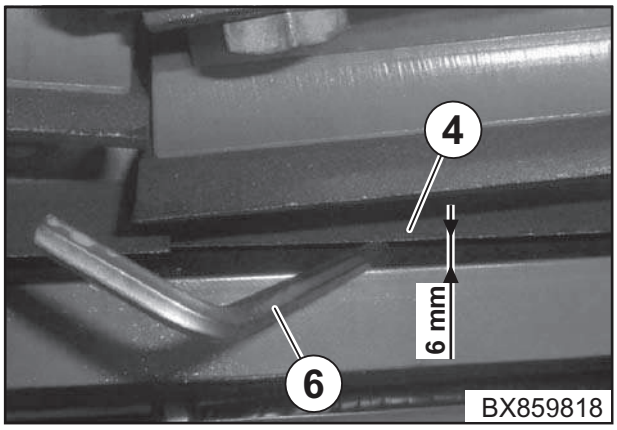
- The distance from the blades to the drum base in the rear is 5-6 mm.

- The distance from the blades (4) to the drum base in the front is adjusted automatically by the counterblade (5).

The nature of the crop (for example a dry crop) may require readjusting the drum base. Furthermore, checking and, if necessary, adjusting of the settings after the conversion of the grass channel are necessary.

The distance between blades - drum base is easiest checked with a 5-6 mm allen key (6) through the maintenance flap in the transfer shaft.



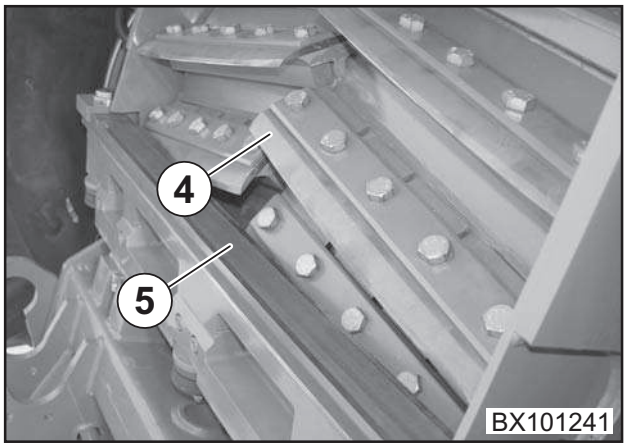


To reduce the gap dimension between the drum base and blade:

- Loosen the counter nuts (3).
- Remove the screw (2), the distance of the drum base (1) minimises.
- Tighten the counter nuts (3).

To increase the gap dimension between the drum base and blade:

- Loosen the counter nuts (3).
- Srew in the screw (2), the distance of the drum base (1) increases.
- Tighten the counter nuts (3).



The blades must be visibly set above the belt drive.

After the drum base is adjusted, check dimension „a“ and reset it to 48 mm if necessary.

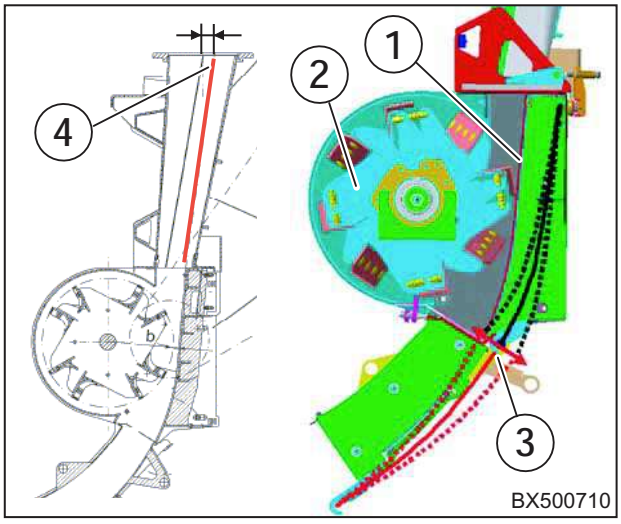
Distance from the discharge accelerator to the rear wall

An incorrect setting of the distance between the discharge accelerator and the rear wall (1) will result in increased fuel consumption and wear on machine components.

Distance from the discharge accelerator to the rear wall

An incorrect setting of the distance between the discharge accelerator and the rear wall (1) will result in increased fuel consumption and wear on machine components.

The rear wall must be set in a way that no bend forms in the contour (3).

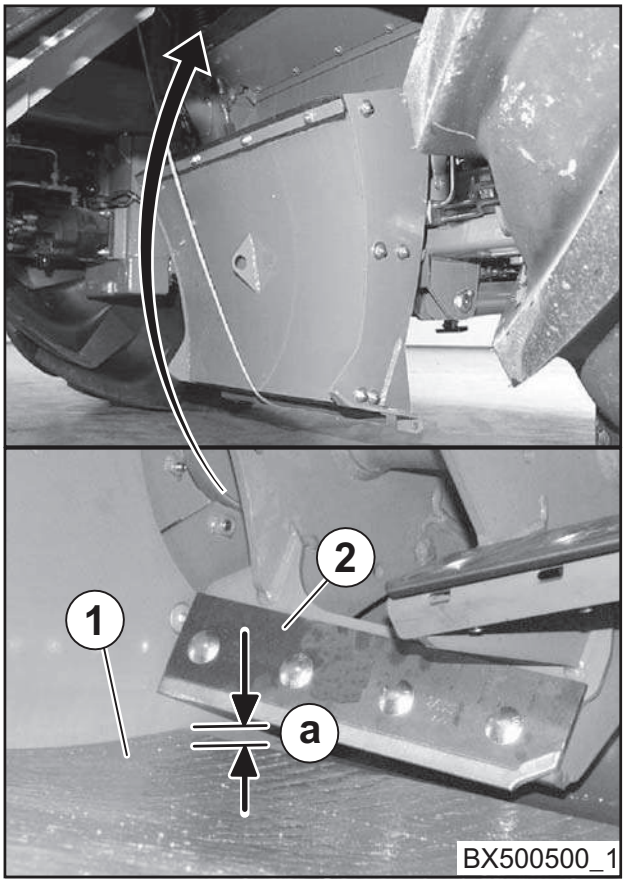


It is very **important** to set the ideal distance between rear wall (1) and discharge accelerator (2) not only on top over rubber pad on the rear wall, but also to bring the rear wall below with the grass channel to the front. This will move the point of impact (4) of the foraged crops on top in the channel support as far as possible behind the centre.

Reducing or increasing the distance (a) between the discharge scoops (2) and the rear wall (1) may improve or reduce the discharge capacity depending on the crop.

Basic factory setting:
- grass 3 mm
- maize 3 mm

Make the setting while switching from grass channel to grain conditioner.



Adjusting the distance from the discharge accelerator to the rear wall

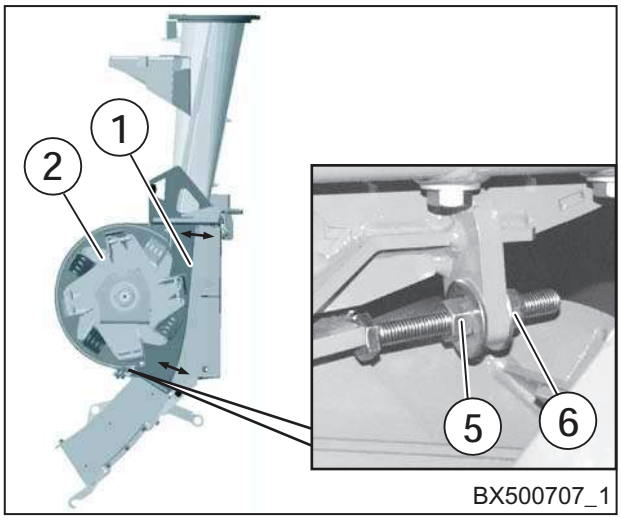
- Remove the ignition key and secure the forage harvester against being placed in operation unexpectedly or rolling away.
  Wait until all units have come to a standstill.
- Measure the distance "a" between the rear wall (1) and the discharge scoop (2).

Setting the distance of discharge accelerator - rear wall below

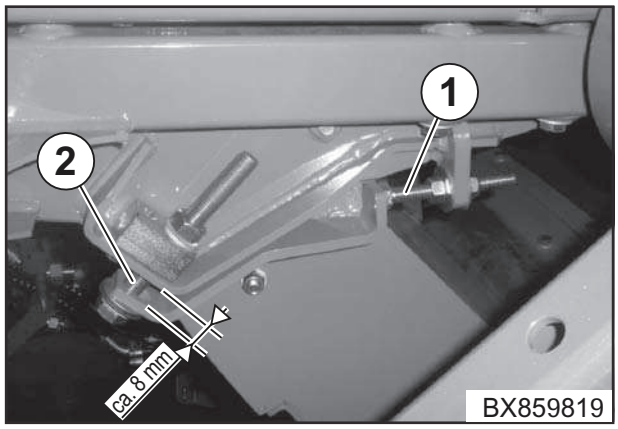
As needed, adjust the distance "a" as follows:
- Loosen the counter nut (5).
- Unscrew the adjusting screw (6) - the lower distance between the discharge accelerator (2) and rear wall (1) increases.

or
- Screw in the adjusting screw (6) - the lower distance between the discharge accelerator (2) and rear wall (1) decreases.
- Tighten the counter nuts (5) again.

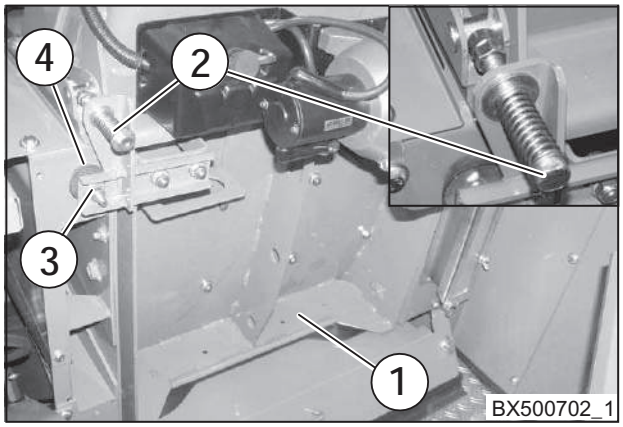
The setting must be uniform on both adjusting screws (6) right and left.



For pressing the grass channel below to the front:
- Loosen the stop screw (1) on the nuts and turn more to the front.
- Press the stop screw (1) with the retaining screw (2) again on the rear wall.



Setting the distance of discharge accelerator - rear wall on top
- Loosen the counter nut (3).
- Twist the rubber pad (4) and thus, bring the rear wall to the front or to the back.



Adjusting the spring tension of the rear wall
To receive a discharge performance as well as possible during chopping of grass, the rear wall needs to be brought as close as possible to the throw shovels (distance approx. 2 mm). Due to the springs the rear wall can easily give way to the back when having pile ups in the crop flow (VariStream effect).

To reduce the spring force:
- Unscrew the hexagonal head screws (2) on the rear wall (1) slightly (tension on spring is released).

To increase the spring force:
- Screw in the hexagonal head screws (2) on the rear wall (1) slightly (tension on spring increases).

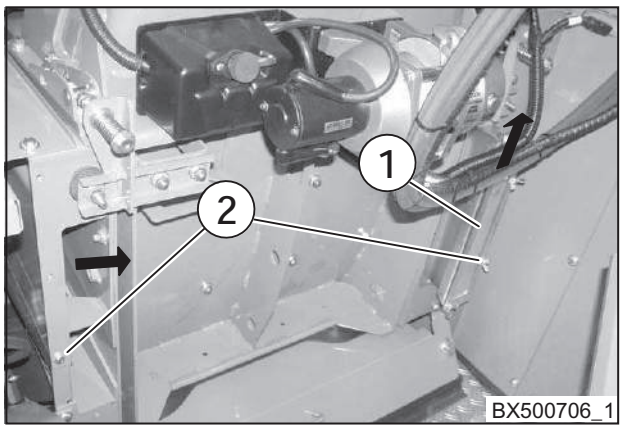
Adjusting the additional venting slots of the discharge accelerator

Additional air can be supplied to the crop flow through the two additional venting slots next to the rear wall of the discharge accelerator.
With lower or drier crop the louvres on the discharge accelerator should be opened half way.

Basic factory setting:
- grass completely closed

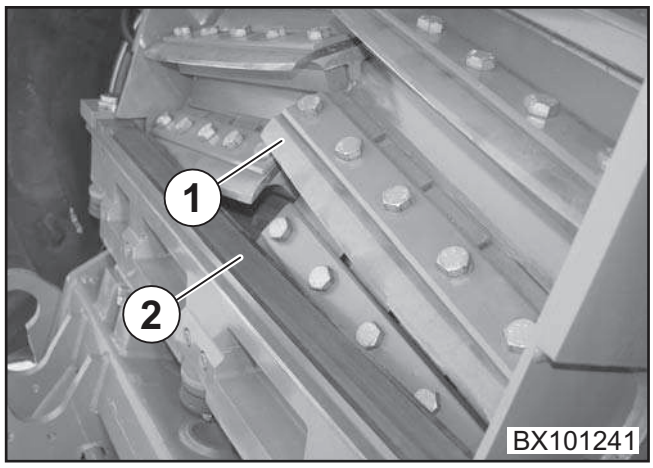
Max. 50 % open left and right. (When the additional air slots are wide open, too much air is directed against the flow of air in the cutting drum and the discharge output is reduced.)
- maize completely open

(no air comes up through the grain conditioner to the discharge accelerator for maize)



Opening the additional venting slots
- Loosen the wing nuts (2), pull the covering sheets (1) up to the desired position or remove completely.
- Tighten the wing nuts (2).

8.2.5 Grinding the cutting blade

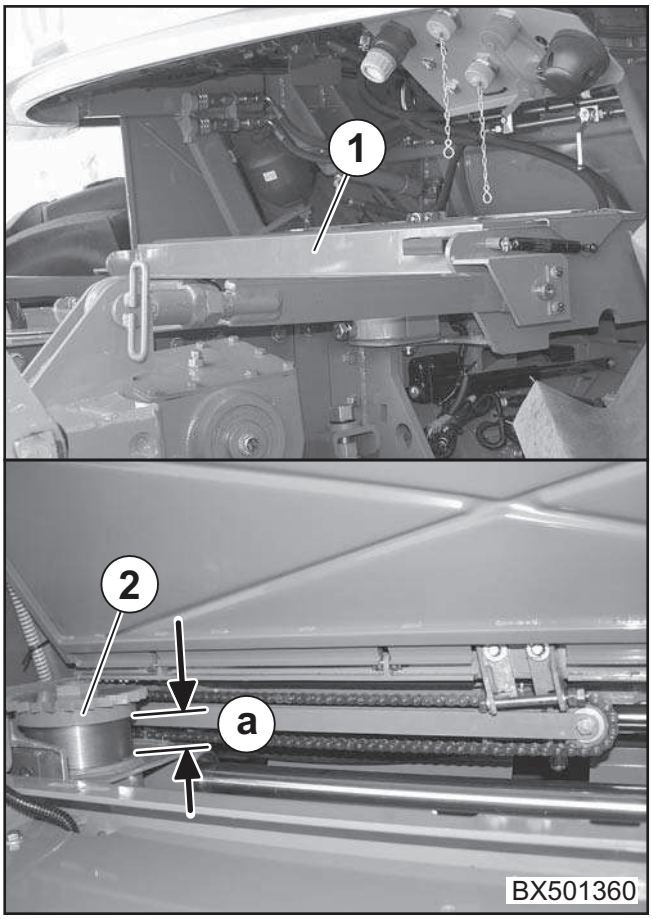


Sharp tools - risk of injury!
Always wear gloves when working with the blade drum.

Dull cutting blades (1) and too great a distance between the cutting blades (1) and the counterblade (2) will result in an unnecessarily high requirement of force, poor chop quality and high wear and tear on the cutting elements.
Sharpening does not do any good unless the counterblade is readjusted as well.
The maize cutters sharpen themselves very effectively, so there is no need to "sharpen them till they shine" at every grinding interval.
Short grinding intervals with a brief grinding duration combined with readjusting the counterblades work better than long grinding intervals with long grinding times.

Checking and cleaning the grinding stone and grinding channel

Before the cutting blades are ground, the automatic readjustment of the grinding stone must be checked and all dirt and residue must be removed from the grinding channel.
A build-up of dust, grass and chaff in the grinding channel is combustible and poses an increased fire hazard. In addition, the accumulation prevents the grinding stone from working as effectively as possible.



- Remove the ignition key and secure the forage harvester from being placed in operation or rolling away unintentionally.

Before opening the covering hood (1) the blade drum must come to a complete stop.

- Open the covering hood (1) of the grinding mechanism (2).
- Clear out dirt and residue in the grinding channel (for example blow it out using compressed air)
- The visible length of threading on the grinding mechanism (dimension "a") must be at least 5 mm. If dimension "a" is less than 5 mm, the grinding stone must be readjusted or replaced (refer to section on Maintenance – Adjusting or replacing the grinding stone).
- Close the covering hood (1) of the grinding mechanism (2).

The "Grind cutting blade" process can only be performed with the engine turned on and the blade drum running.
Because of the nature of the process, not all moving parts of the blade drum and drive can be completely covered, especially during the grinding process.
Especially after opening the grinding flap, there is danger of touching sharp or rapidly rotating parts of the blade drum and drum drive.

To prevent serious injuries, all protective devices and maintenance openings must be closed during the grinding process.
In addition, there must be no one in the area of the blade drum. Do not reach into this area!

Operators should be inside the cab on the driver's seat or at the front left side next to the machine in the manual operation area on the platform while the grinding process is taking place!

Since the blade drum and following parts assigned to it may take longer to coast down to a stop, after switching off, do not open or remove any protective devices until the blade drum has come to a complete stop. Observe the warning signal!

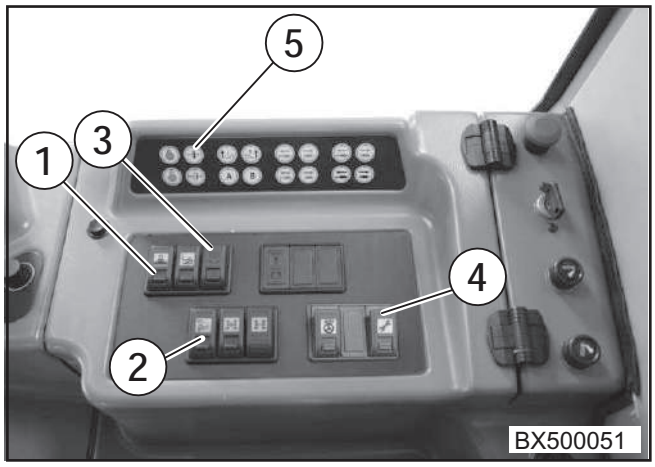
The forage harvester is equipped with an acoustic signalling device that continues to emit a warning signal after the main coupling (drum drive) is switched off as long as the blade drum is turning.

The audio coast-down alarm, which is sounded after the main coupling is switched off, does not relieve the operator of the obligation to make certain the machine is at an absolute standstill before working on it.

To reduce the amount of time it takes the blade drum to coast down, cut the engine speed to lower idle before switching off the main coupling.

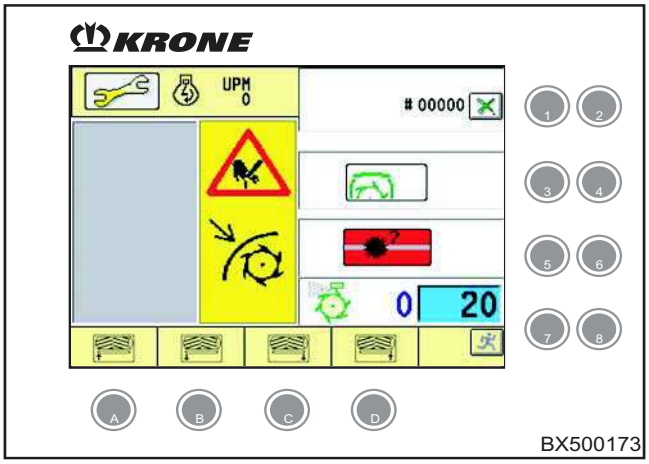
Activation of manual operation on the platform

- The forage harvester has been secured against rolling away with wheel chocks
- Engine started and running at idle
- Release switch for travelling gear (2) in the "Off" position
- Release switch for parking brake (3) in the "Applied" position.
- The road/field release switch (1) must be in "field operation" position.
- Front attachment unit lowered to the ground. Main coupling (5) switched on.
- Release switch - maintenance (4) in the "On" position.
  F3 Maintenance main menu appears in the Info centre display.
- Adjust the idle speed to 1100 rpms with the full number of blades or to 1300 rpms with half the number.



Adjusting the numbers of grinding circles (Factory setting 20)

see Info-Center Menu 3-1 „**Adjusting the numbers of grinding circles**“



Grinding operation

- Activate the "Open grinding flap" key (1)

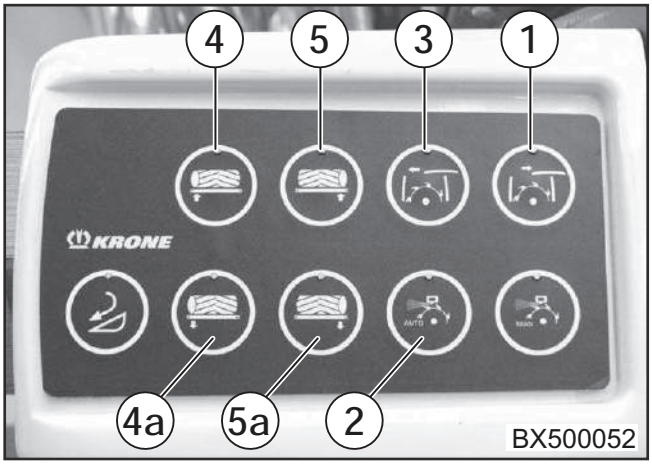
The grinding flap opens.

- Activate the "Automatic grinding operation" key (2).

The number of grinding cycles that was set is performed. After the end of the grinding process, the grinding stone moves to its parking position (the right side of the grinding mechanism).

- Activate the "Close grinding flap" key (3).

The grinding flap closes.



Blocking the counterblade

Once the grinding process is complete, the counter-blade must be blocked while the blade drum is running.

- Press the "Move counterblade right to blade drum" key (4) and then the "Move counterblade left to the blade drum" key (5), holding each one down for about 1 second.

- If there is a noise when you are adjusting one of the sides (right/left) (cutter hitting up against the counter blade!) let go of the key immediately and press the appropriate key "Move counterblade away from blade drum" (4a or 5a) for about 1 second.

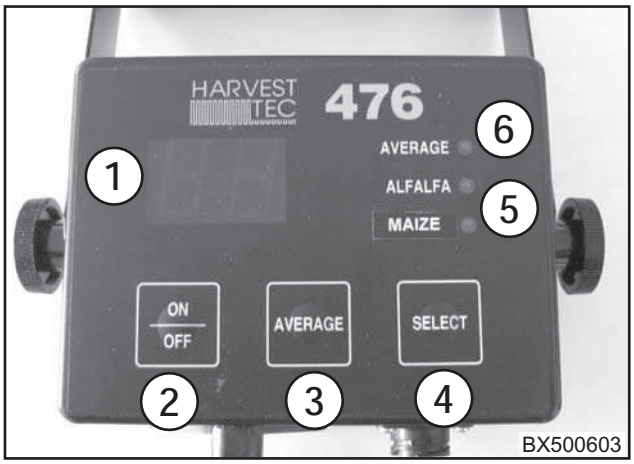
- Block the counterblade on the other side using the same procedure.

After you have blocked the counter-blade, the blade drum must run without making any noise.

If there is no noise while the counterblade is being blocked, the cutters must be readjusted, or else worn cutters and cutters that can no longer be used must be replaced (refer to section on Maintenance - Adjusting or replacing cutters)

8.2.6 Measuring the humidity of the crop with the humidity-measuring device

Before switching off the ignition, the ON/OFF key (2) must be actuated in order to save the current settings and values. If the ignition is switched off now, the old values will be in the memory and displayed when restarting.



Switching ON

By activating the ON/OFF key (2), the humidity-measuring device will be turned on or off. When switching on, all information and the display will be shown for approximately 3 seconds.

The average load value will be reset by switching off the device via ON/OFF or switching off the ignition.

The average field value will not be reset by switching off the device via ON/OFF or switching off the ignition.

Selecting the crop

With regards to the crop, it is possible to select between „Alfalfa“ and „Maize“.

- The setting Alfalfa is used for the harvesting of grass, grain and Lucerne.
- The setting Maize is used for the harvesting of sorghum and maize.
- Press the SELECT key (4) to select the desired setting.

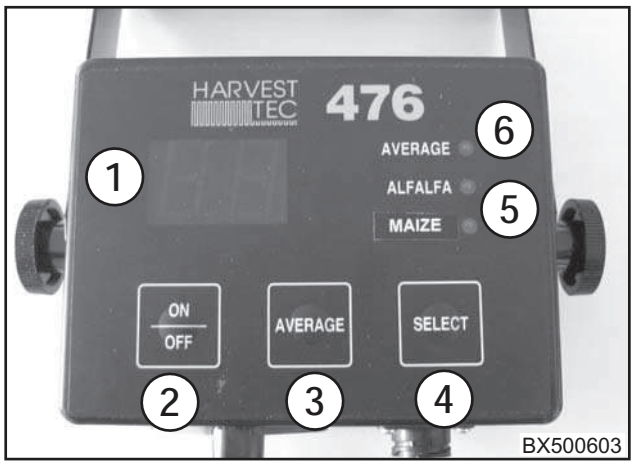
The selected crop is indicated by the illumination of the respective LED (5).

After the activation of the SELECT key (4), it takes approximately 5 seconds for the display (5) to change between the types of crop.

If the setting of the crop is changed, the average load value will be reset.

Starting the measuring

After the selection of the crop, the measuring of the humidity is started via light beam sensors.



- The current humidity value of the crop will appear on the display (1) of the control unit.
- The illumination of a red LED in the lower right corner of the display indicates that the recorded values will be included in the two following average values.

1. Average load value:
The average load value is the average value of the currently measured humidity. Via this value, it is possible, for instance, to display the average value of an individual trailer.
After pressing the AVERAGE key (3), the average load value will be reset.

2. Average field value:
All recorded humidity values will be included in the average field value. This allows the display of the average daily value or the average field value.
After pressing the AVERAGE key (3) and the SELECT key (4), the average field value will be reset.

Displaying the average load values

- Press the AVERAGE key (3).
- On the display (1) of the control unit, the LA will appear for approximately two seconds.
- LA is followed by a numerical value. (Example 68) This is the average load value in percent. (68%)
- The value disappears automatically and the following appears on the display (—). This means that the average value will be reset.
- Then, new values will be recorded.

Displaying the average field values

- Hold down the AVERAGE key (3).
- On the display (1) of the control unit, the FA will appear for approximately two seconds.
- FA is followed by a numerical value. (Example 68) This is average field value in percent. (68%)
- As soon as the key is released, the value disappears and the measuring will continue.
- By pressing the AVERAGE key (3) and the SELECT key (4) simultaneously, the average field value will be reset.

8.3 Blowing device on the feed attachment

The blowing device (1) cleans areas around the feed drive on the feed attachment (2) and grinding device (3).
This increases functional safety.

8.3.1 Adjusting blowing times

In menu 1-1 „Parameters“ (driver’s level), in submenu 1-1-15 „Work“  , you can set parameter 33651 (cycle time) and parameter 33652 (duty cycle) for the blowing device (for additional information see Chap. 4):

Recommended settings:

- Parameter 33651 (cycle time) = 30 s.
- Parameter 33652 (duty cycle) = 3 s.

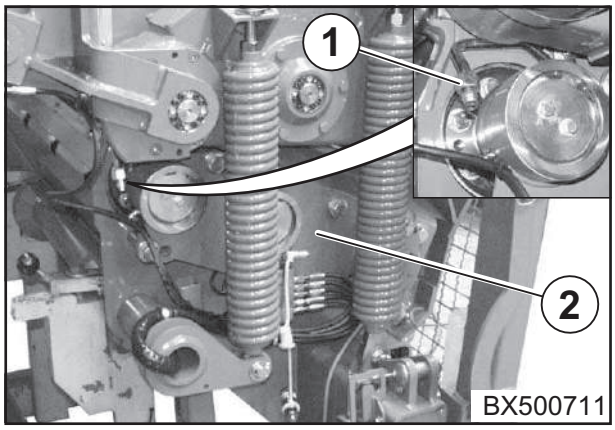
When the duty cycle is set to the same value as the cycle time, the valve is switched on continuously!

8.3.2 Performing a functional test and monitoring set times

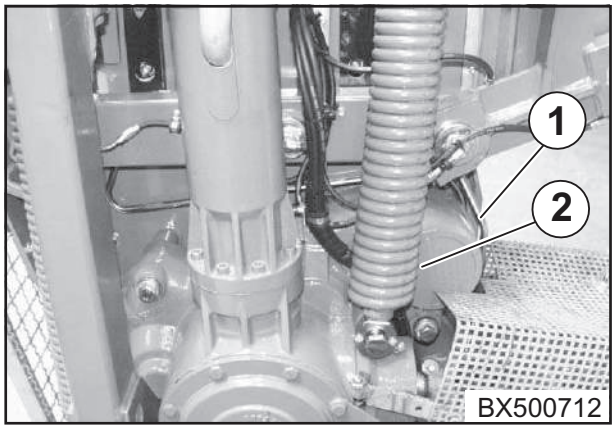
Switching conditions:

- Diesel engine running (to generate compressed air).
- Road/field release switch on the operating panel must be switched on.
- Quick stop switch must not be activated.

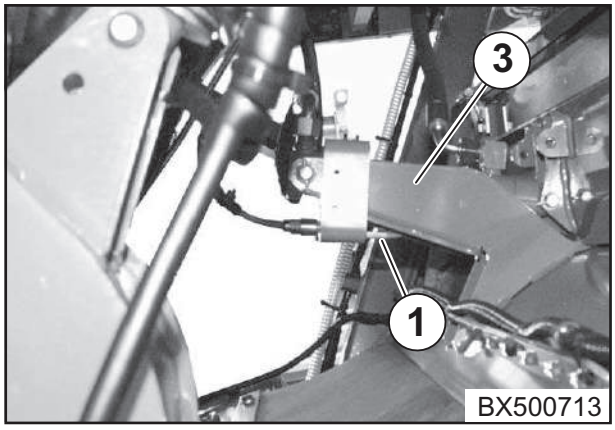
Right-hand side



Left-hand side



Grinding device



9 Maintenance

9.1 Special safety instructions

Repair, maintenance and cleaning tasks must only be performed while the engine is stopped!
Remove the ignition key and secure the forage harvester from being placed in operation or rolling away unintentionally.

The audio coastdown alarm, which is sounded after the main drive is switched off, does not relieve the operator of the obligation to make certain the machine is at an absolute standstill before working on it.

Danger!
Unpredictable moving of the lifting gear during folding in and out of the front attachment
Effect: Danger to life, injuries of individuals.
No individuals are allowed in the area of the lifting gear during folding in and out of the front attachment!

For repair, maintenance and cleaning jobs on a folded down or raised front attachment always secure it with suitable supporting pieces and close the shut-off valve (page IX - 7)!

Only perform tasks on the hydraulic system when all excess pressure has been released.
Liquid escaping under high pressure can penetrate through the skin and cause severe injuries! In the event of injuries, find a physician immediately. There is danger of infection.

After all repair, maintenance and cleaning tasks are complete, all protective coverings and safety devices must be put in place again.

9.2 General Aspects

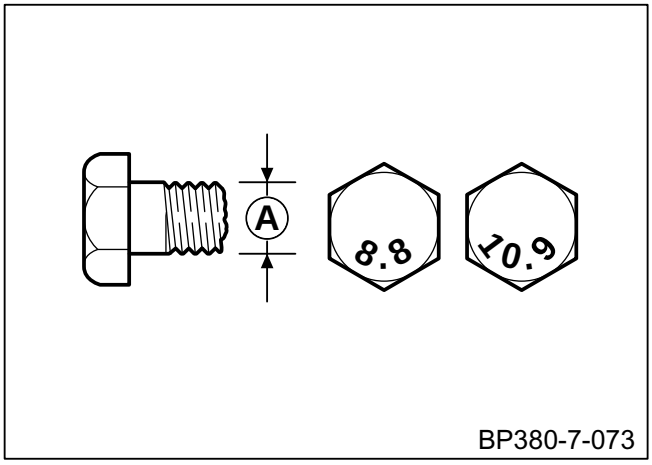
- Test nuts and screws regularly (about every 50 hours) for firm seat and tighten them according to the tightening torque tables if necessary! Deviating tightening torques are indicated separately in the text.

Self-locking nuts must always be replaced.

Tightening torque M_A

A Ø	5.6	6.8	8.8	10.9	12.9
	M_A (Nm)				
M 4		2,2	3,0	4,4	5,1
M 5		4,5	5,9	8,7	10
M 6		7,6	10	15	18
M 8		18	25	36	43
M 10	29	37	49	72	84
M 12	42	64	85	125	145
M 14		100	135	200	235
M 14x1,5			145	215	255
M 16		160	210	310	365
M 16x1,5			225	330	390
M 20			425	610	710
M 24			730	1050	1220
M 24x1,5	350				
M 24x2			800	1150	1350
M 27			1100	1550	1800
M 27x2			1150	1650	1950
M 30			1450	2100	2450

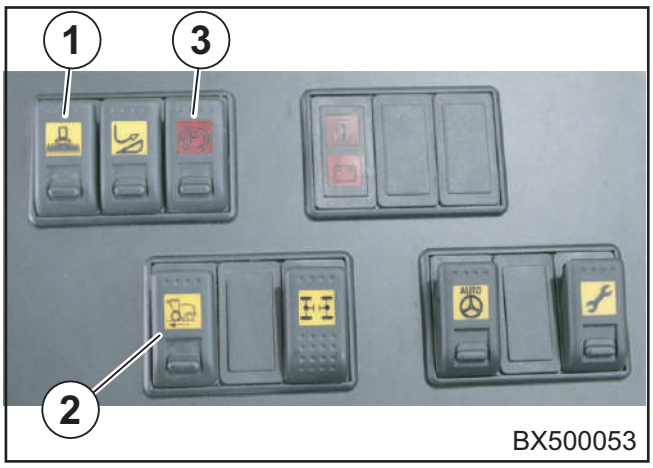
A = thread size
(stability class can be seen on the head of the screw).



BP380-7-073

For all maintenance tasks:

- The road/field release switch (1) must be in "field operation" position.
- Release switch for travelling gear (2) in the "Off" position.
- Release switch for the holding brake (3) in the "Applied" position.



BX500053

9.3 Maintenance of the supply system

9.3.1 Detaching the feed drive housing

You can detach the feed drive housing with the front attachment connected. The maize header must be folded down as you do this.

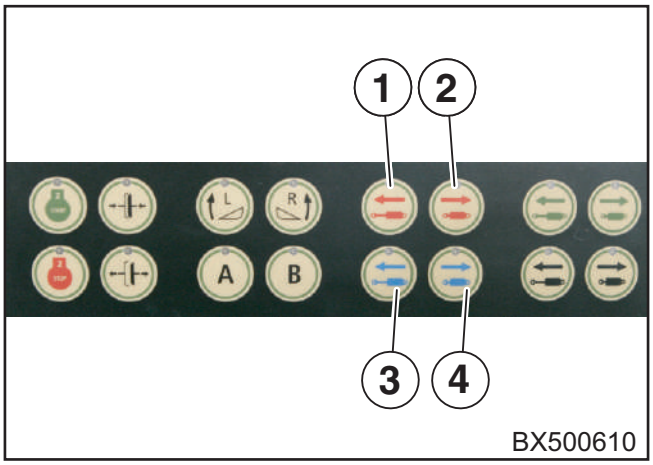
You should attach and detach the feed drive housing on a level surface with a sub-surface capable of bearing the load.
There must be sufficient space available for laying out the forage harvester.

BX500074

- Set down the feed drive housing (1) with the front attachment on the ground.
- Remove the ignition key and secure the forage harvester from being placed in operation or rolling away unintentionally.

Front attachment connection lines
Left-hand side of the machine

Warning!
The hydraulic system is pressurised
Effect: Serious injury due to hydraulic oil penetrating the skin.
- **Before uncoupling the hoses and before performing work on the hydraulic system, relieve the pressure!**
- **Seek medical help immediately should injuries occur! Danger of infection.**

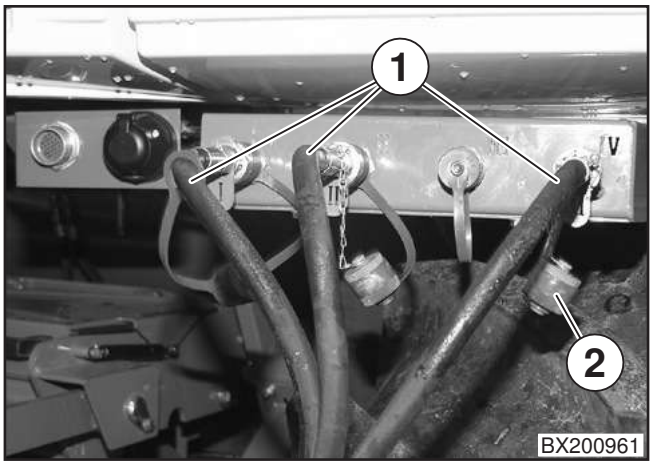


BX500610

Prior to disconnecting the hydraulic hoses, depressurise the system on both sides.

To do this:

- Press the keys (1) and (2) (red) simultaneously (the first hydraulic circuit is depressurised).
- Press the keys (3) and (4) (blue) simultaneously (the second hydraulic circuit is depressurised).

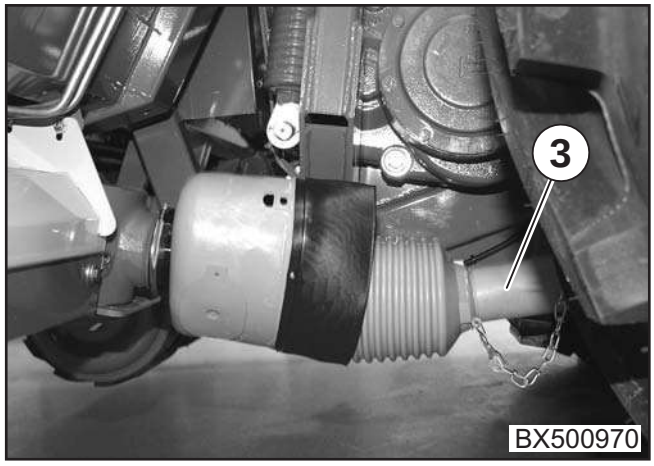


BX200961

- Disconnect the hydraulic lines (1) at the hydraulic couplings and close off with dust caps (2).
- Disconnect the lighting cable and connection line for the sensors (maize header front attachment).

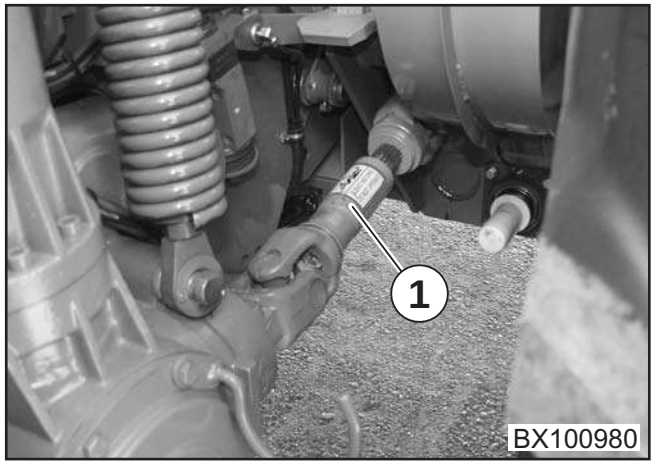
Front attachment for PTO shaft
Left-hand side of the machine

- Completely dismount the PTO shaft (3) for the front attachment drive.



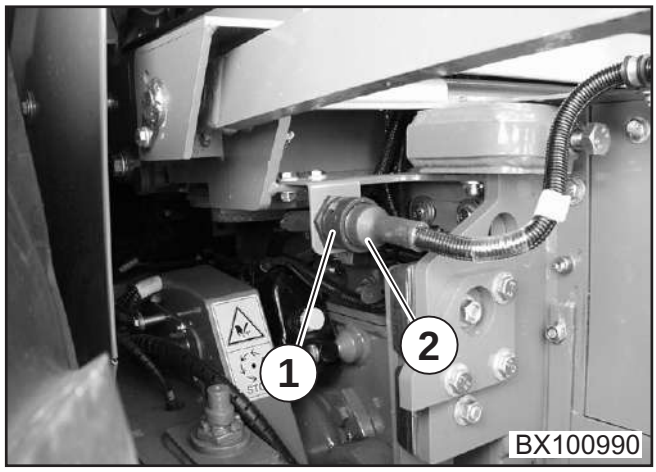
Feed drive PTO shaft
Left-hand side of the machine

- Completely dismount the PTO shaft (1) for the feed drive.



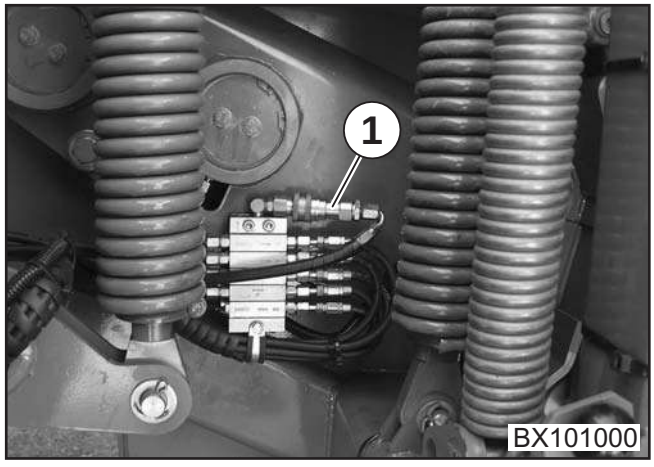
Connection of metal detection sensor and pendulum frame
right-hand side of the machine

- Remove the connection cable plug (1, 2) for the metal detection plug and pendulum frame.



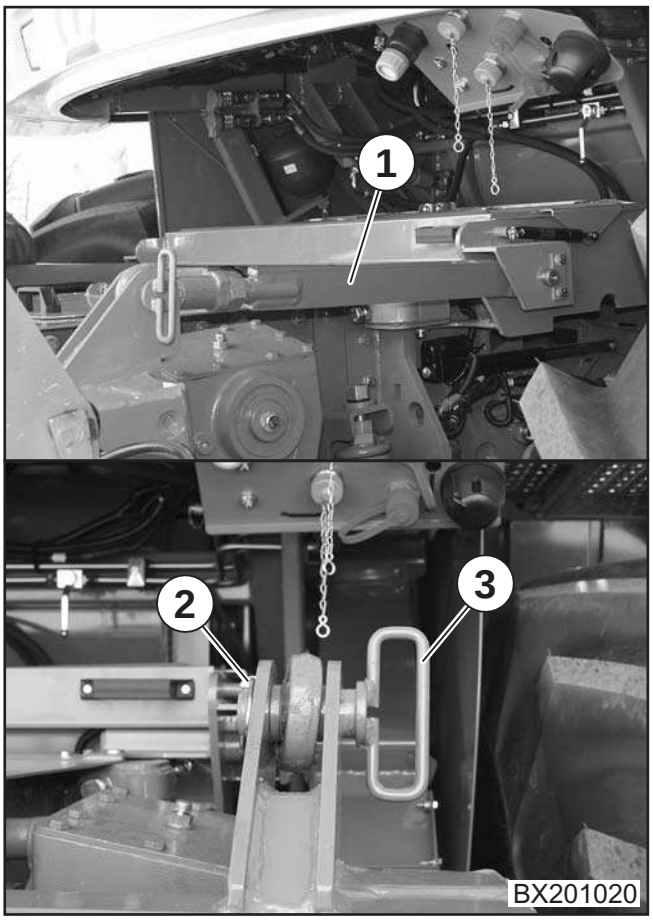
Connection line for central lubrication
right-hand side of the machine

- Loosen the connection line to the lubricant distributor (1).



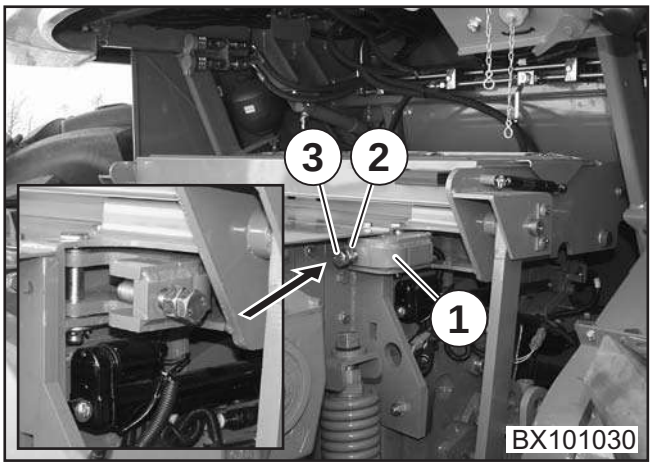
Coupling rods
Right and left side of the machine

- Loosen the hinged cotter pin (2) and dismount the bolts (3).
- Lift the coupling rod (1) out of the bearing and rotate it downward.



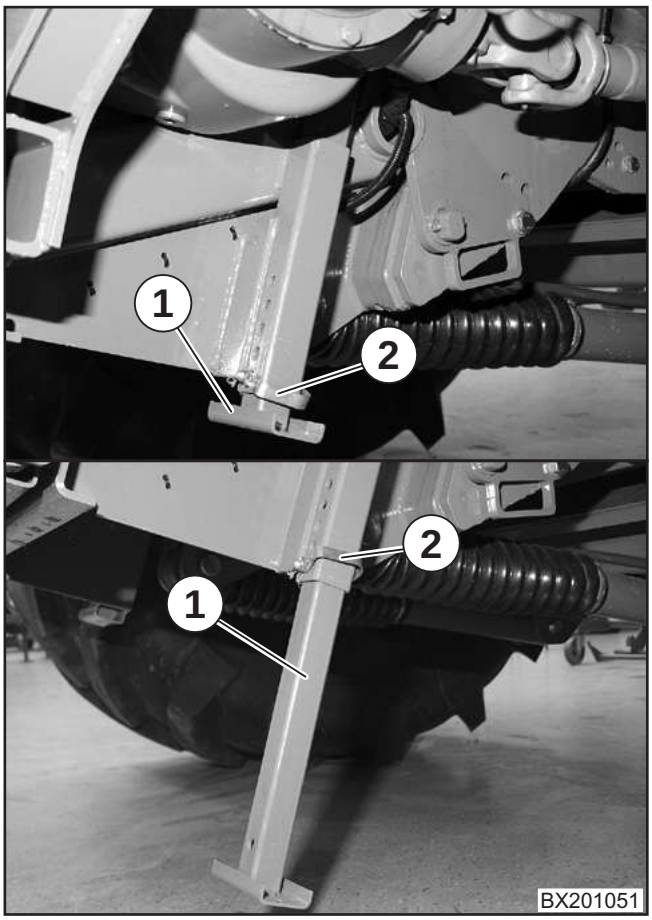
Interlocking claws up
Right and left side of the machine

- Loosen the counter nut (2) and turn back the hexagonal screw (3).
- Swivel open the interlocking claws (1).



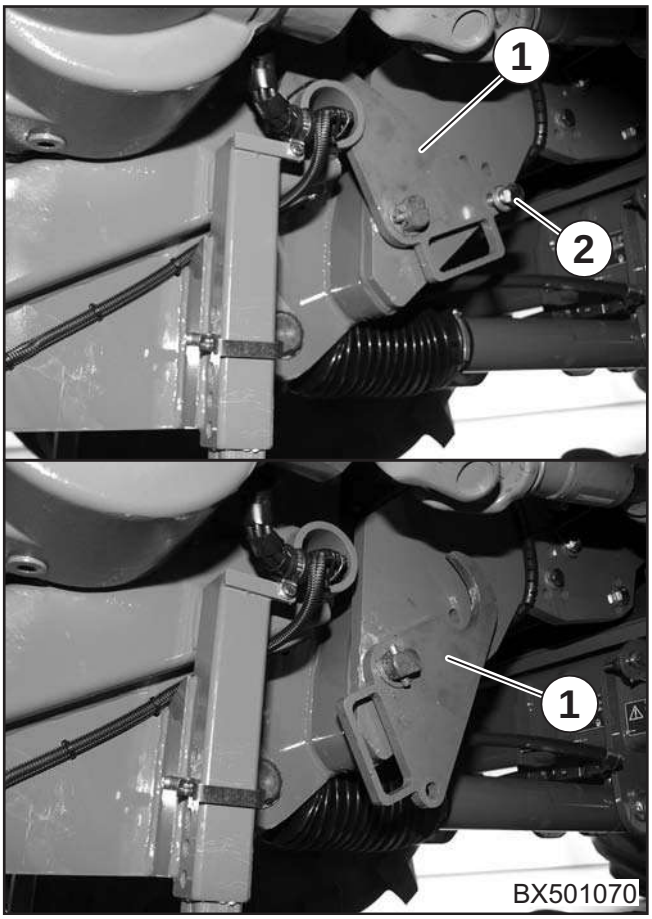
Support base

- Raise the lifting gear until the distance between the feed drive housing and the cutter drum housing is about 200 mm (see Section 9.3.4 Folding down the feed drive housing).
- Disassemble the locking bolts (2) of the support base (1), pull out the support base (1) to the ground and secure in place with locking bolts (2).

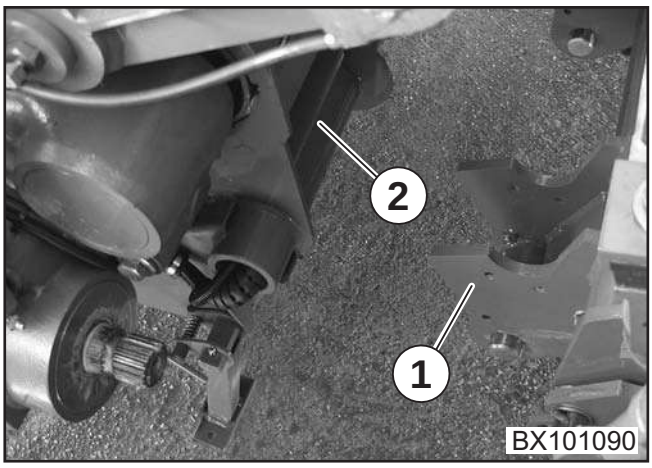


Interlocking down
Left side of the machine

- Screw out the hexagonal screw (2) and swivel the interlocking (1) back.



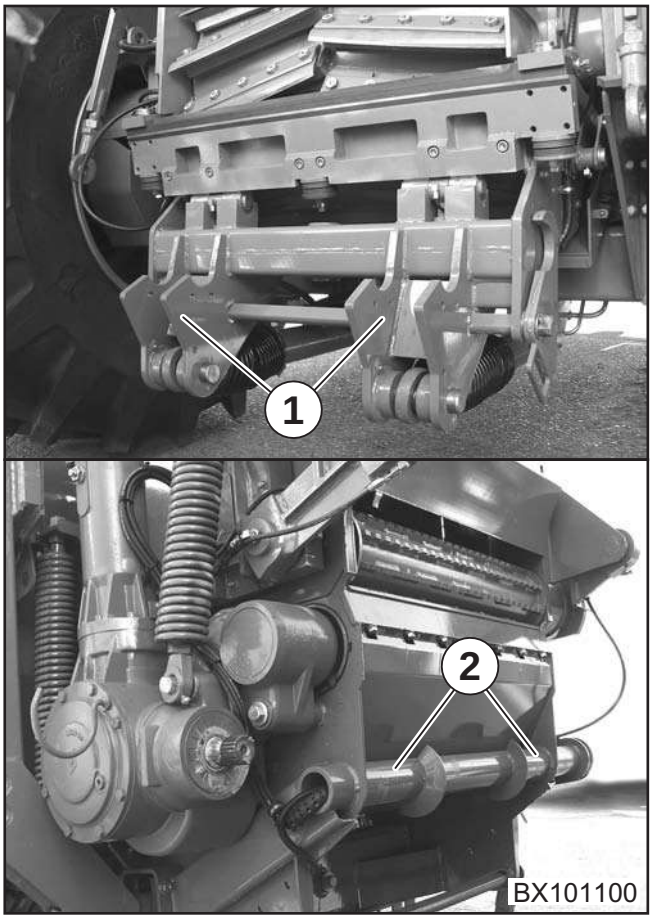
- Rotate the three-way valve to operating position **III** = maize header (see Section 9.3.4).
- Remove the wheel chocks on the forage harvester.
- Raise the lifting gear until the receiving claws (1) of the lifting mechanism are free under the receiving mechanism (2) of the feed drive housing.
- Carefully move the forage harvester back.



9.3.2 Attaching the feed drive housing

- Move the forage harvester onto the feed drive housing and lower the lifting mechanism until the receiving claws (1) of the lifting gear are parallel to the receiving mechanism (2) and are resting under the receiving mechanism (2) of the feed drive housing.

The procedure for attaching the feed drive housing is in the opposite order to detaching it.



9.3.3 Fold down the feed drive housing

The feed drive housing (1) can be folded down for maintenance tasks (such as checking the sharpness of the blade, the condition of the counterblade and scraper).

Perform the following dismounting steps (for specific details see the section on Maintenance - Detaching the feed drive housing):

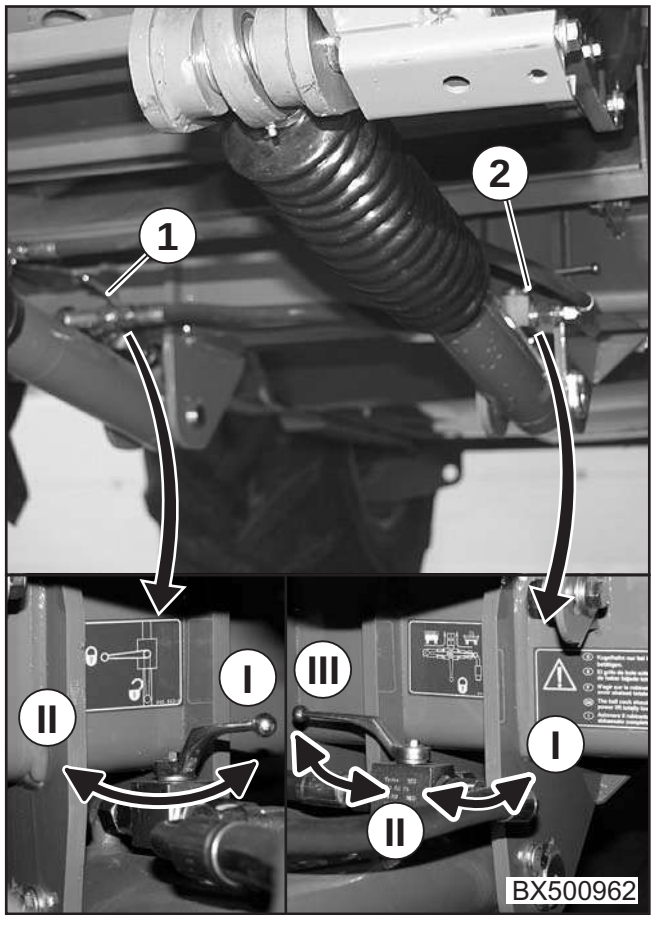
- Front attachment connection lines
- Connection of metal detector sensor/pendulum frame
- Connection line for central lubrication
- Coupling rods
- Interlocking claws up

- Close the shut-off valve and three-way valve. (refer to Section 9.3.4 on Maintenance jobs on the lifting gear while it is folded down or raised).

The procedure for closing the feed drive housing is in the opposite order to folding it down.

9.3.4 Maintenance jobs on the lifting gear while it is folded down or raised

The shut-off valve (1) and the three-way valve (2) must be in position II (closed) for all maintenance tasks on the lifting gear when it is folded down and raised.
Open the tool box and make the changeover from behind.



Shut-off valve (1)

Operating position - position **I** = open
Maintenance jobs - position **II** = closed

Three-way valve (2)

Operating position - position **I** = grass pick-up
Maintenance jobs - position **II** = closed
Operating position - position **III** = maize header

- Close the shut-off valve (1) and three-way valve (2) before performing maintenance tasks on the lifting gear when it is raised (position **II**).

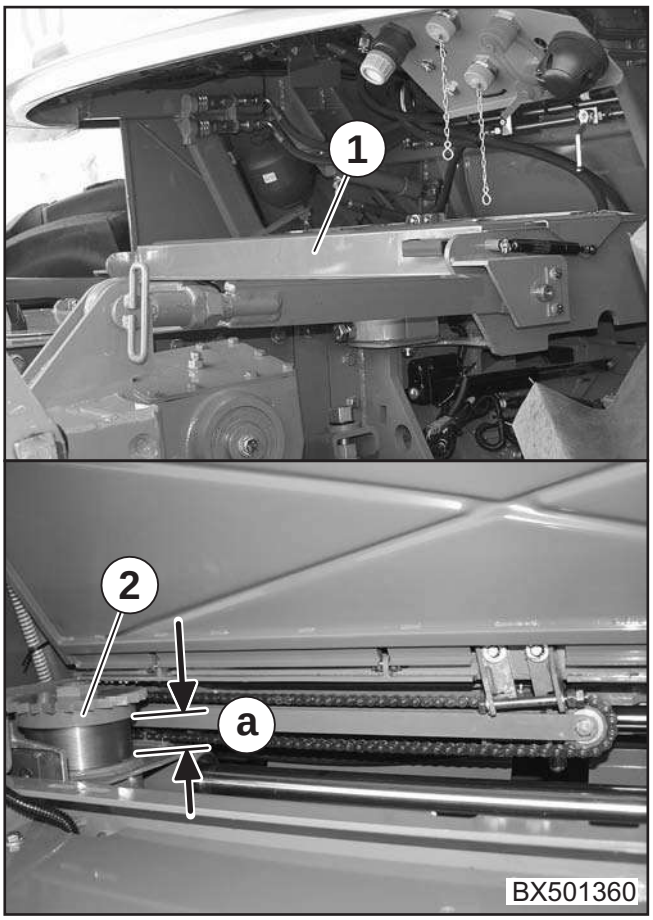
- Open the shut-off valve (1) after completing maintenance tasks on the raised lifting gear (position **I**).

- Rotate the three-way valve (2) back to the appropriate operating mode after the maintenance work on the raised lifting gear is complete.

9.3.5 Adjusting or replacing the grindstone

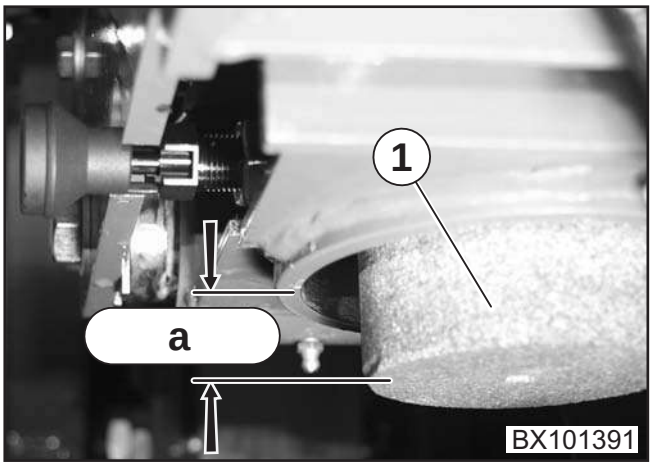
The grindstone must be adjusted if there will be no more automatic adjustment during the grinding process.
The grindstone can be adjusted approximately twice After that the grindstone must be replaced.

- Remove the ignition key and secure the forage harvester from being placed in operation or rolling away unintentionally.

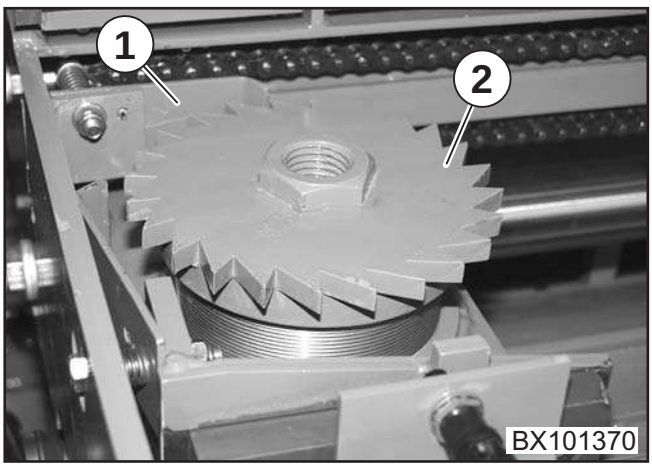


Before opening the covering hood (1) the blade drum must come to a complete stop.

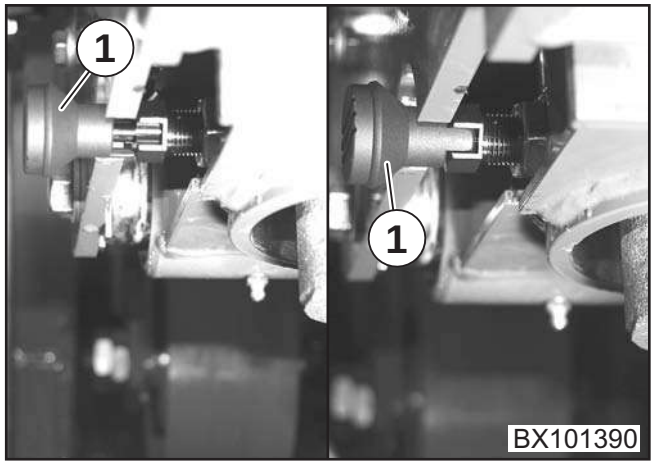
- Open the covering hood (1) of the grinding mechanism (2).
- Clear out dirt and residue in the grinding channel (for example blow it out using compressed air).
- The visible length of threading on the grinding mechanism (dimension "a") must be at least 5 mm. If dimension "a" is less than 5 mm, the grinding stone must be adjusted or replaced.
- Determine the distance "a" from the lower edge of the grindstone (1) to the upper edge of the grinding housing.



- Loosen the catch lock (1).
- Turn back the catch wheel (2) with an SW30 open face wrench.

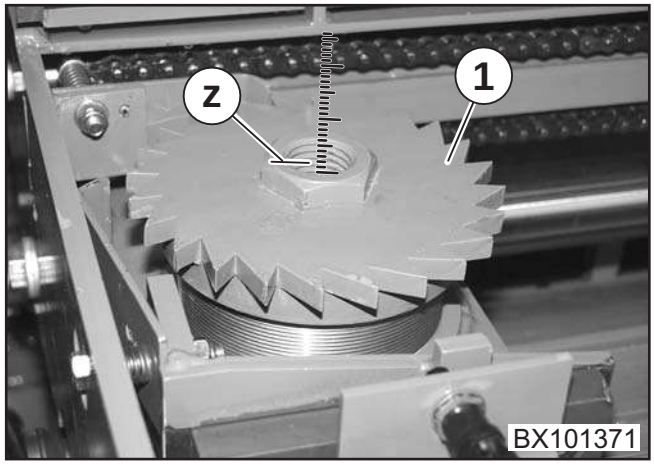


- Allow the locking bolt (1) to lock into place in the lower area by turning it 90°.
- Turn the catch wheel further back until the locking bolt (1) has completely engaged and the grindstone adjustment is locked in place.
- Loosen the grindstone clamp by turning the catch wheel further.



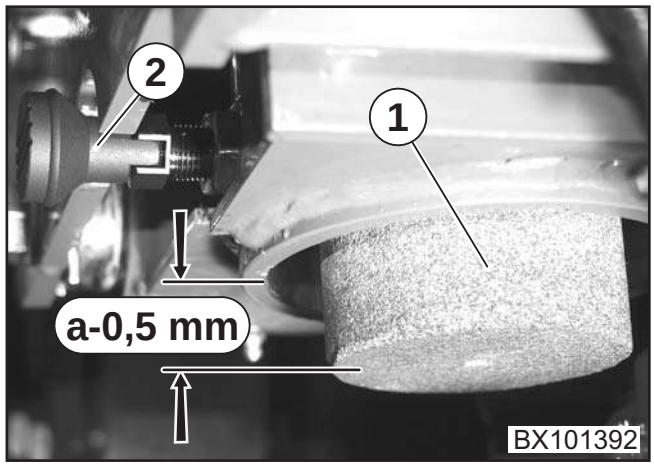
- Measure the distance "z" from the upper edge of the grindstone to the upper edge of the hexagonal nut on the catch wheel (1).

After the grindstone is adjusted the dimension must be "z < 100 mm". Otherwise replace the grindstone.



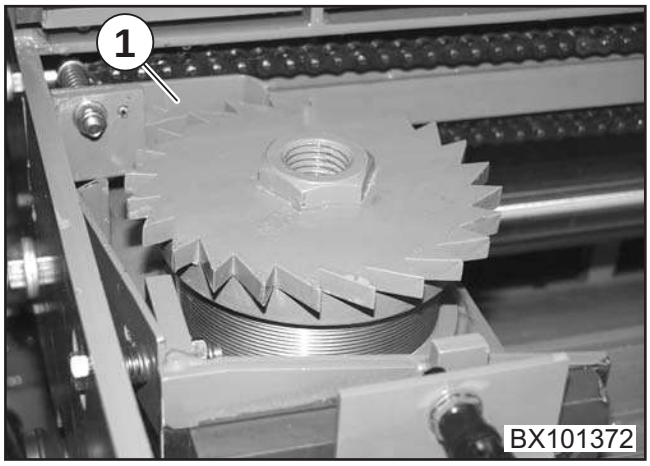
- To replace the grindstone, push the old grindstone down and out, completely unscrew the catch wheel (1) and place the new grindstone on from above. Then screw on the catch wheel.
- Push the grindstone down through the drill hole (d > 30 mm) in the catch wheel (1).

- Adjust the grindstone to the previously determined dimension "a - 0.5 mm".
- Tighten the grindstone clamping with the torque wrench.
  Tightening torque 170 Nm.
- Unscrew the locking bolt (2), rotate it 90° and lock it in this position.



- Fasten the catch lock (1).

- Close the grinding mechanism flap protection.

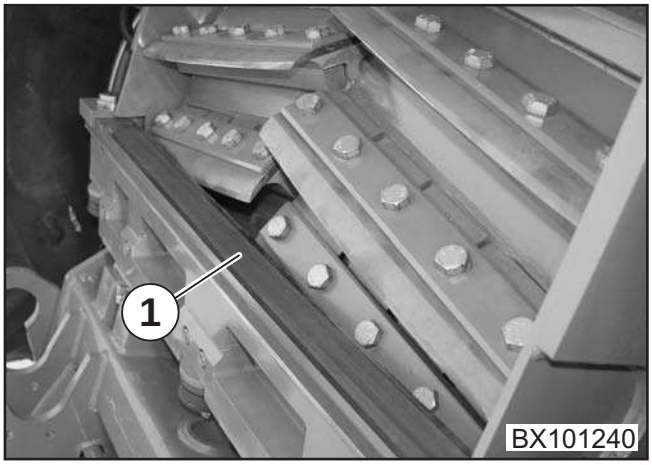


9.3.6 Adjusting or replacing the cutting blade

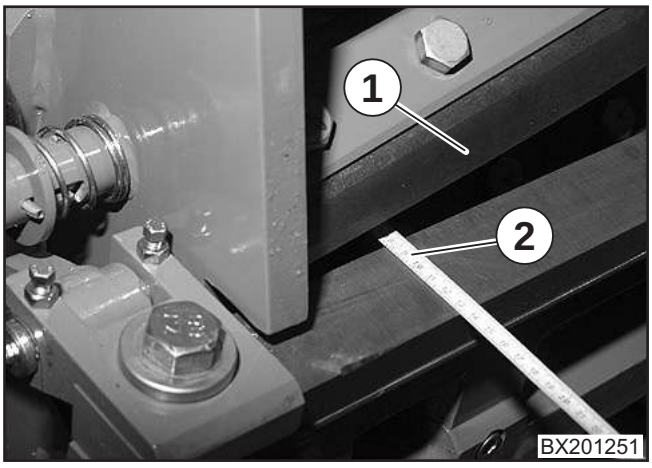
If the adjustment capabilities of the counterblade are no longer sufficient, the cutting blade must be readjusted.
Worn cutting blades and cutting blades that cannot be adjusted any further must be replaced.

To avoid imbalances in the cutting drum, cutting blades must always be replaced in pairs. The two cutters that go together are offset by 180° to each other on the cutting drum (for example blade 1 and blade 7, blade 1 and blade 5, blade 1 and blade 10).

- Detach or fold down the feed drive housing.
- Move the counterblade (1) away from the blade drum on both sides, using manual operation on the platform (see the section Maintenance - Grinding cutting blades).
- Remove the ignition key and secure the forage harvester from being placed in operation or rolling away unintentionally.



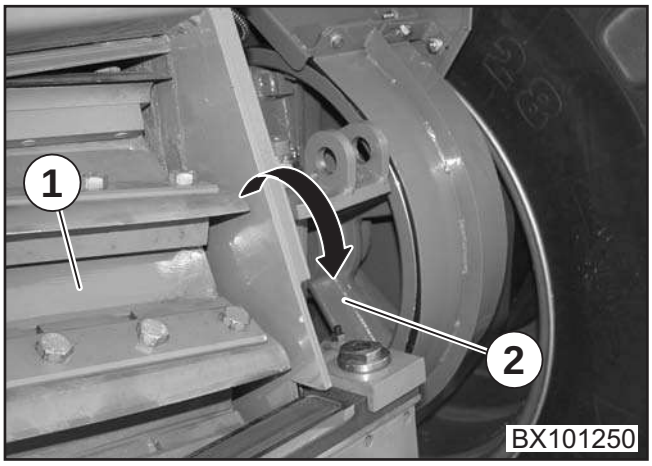
Since the discharge capacity of the machine depends primarily on the distance between the cutter (1) and the blade carrier, readjust the cutter to the max. overhang of about 82 mm.
As you do so, move the counterblade away parallel to the body of the cutting drum.
The measured dimension (2) must be the same on the left and right.
Readjusting the cutting blade



Turning the blade drum

When working on the blade drum, wear gloves.
Do not turn the blade drum directly.
Danger of injury!

- Turn the blade drum (1) by turning the pulley (2) clockwise.

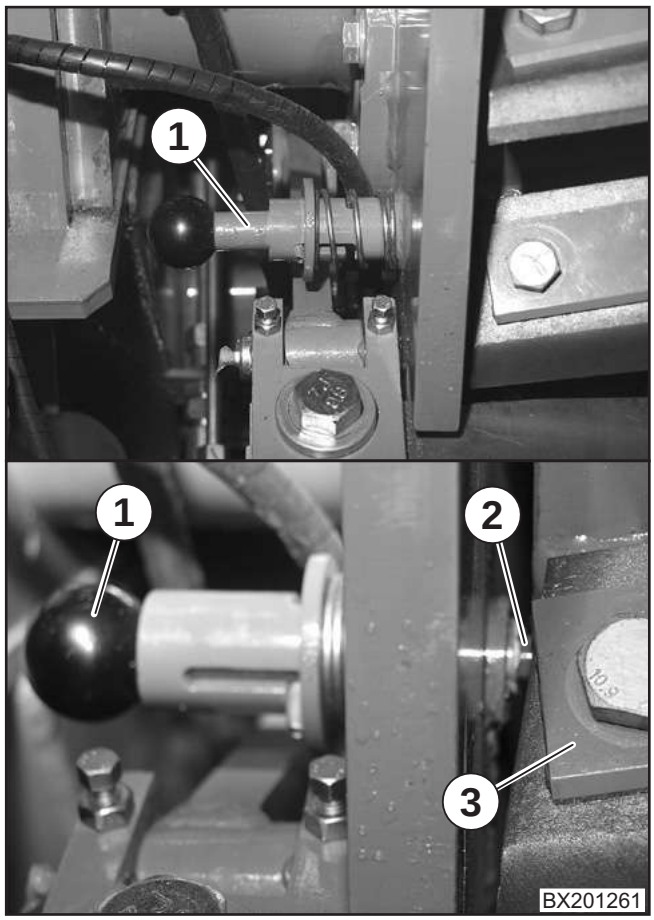


Fixing the blade drum in place

The locking mechanism is located on the right-hand side of the machine.

Lock the blade drum in place for all jobs on the blade drum.

- Rotate the blade drum (3) to the desired working position, push the fastening bolts (2) into the drill hole of the blade drum (3) and secure it in position by turning the fastening bolt (1) with the clamping sleeve (1).



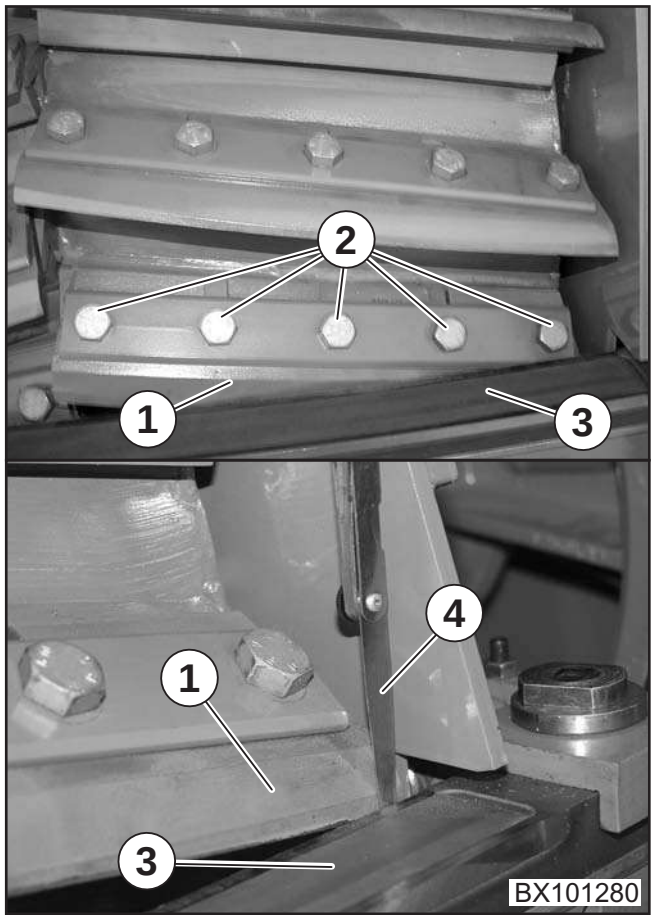
Adjusting the cutting blade

- Unscrew all hexagonal screws (2).
- Adjust the cutter (1) evenly to the counterblade (3) and check on both sides with the sensor gauge (4).
- Tighten all hexagonal screws (2) with the torque wrench
  (tightening torque min. 270 Nm).

- Loosen the blade drum locking, turn the blade drum one blade row further and lock it in place again.
- Adjust the next blade row.
- Continue in this manner until all blade rows of the blade drum are adjusted evenly.
- Loosen the locking of the blade drum.

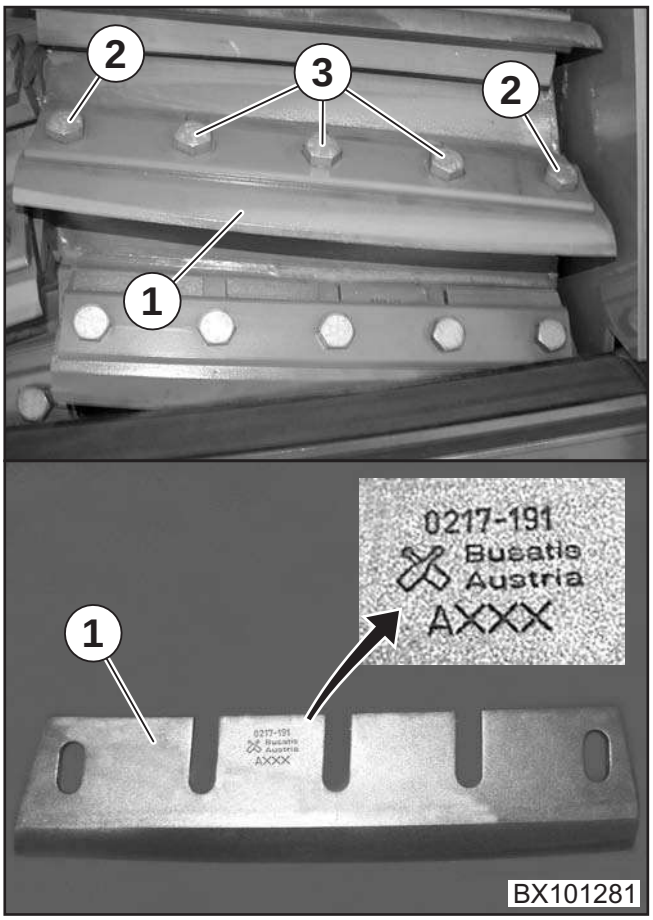
- Adjust the grindstone so that the dimension "a = 20 mm" (20 mm = basic setting of the grindstone). See the section entitled Maintenance - Adjusting or replacing the grindstone.

- Attach the feed drive housing and fold it in.
- Grind the cutting blade.
- Adjust the counterblade.



Replace the cutting blade

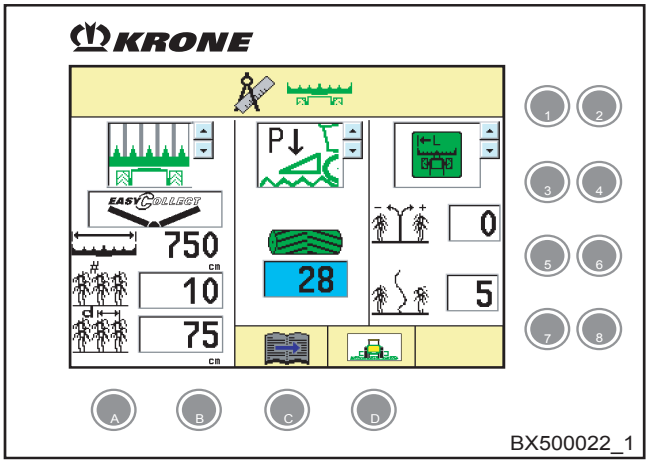
To avoid imbalances in the cutting drum, cutting blades must always be replaced in pairs. Two cutters that are on the cutting drum offset from each other by 180° (for example blade 1 and blade 7, blade 1 and blade 5, blade 1 and blade 10).
The blade drum must always be fitted with the same blades. Note the item number on the replacement blades (see also the spare parts list)!
Do not mount the new cutters on the blade holding surfaces and pressure plates until they are cleaned



- Unscrew the three hexagonal screws (3).
- Unscrew the two outer hexagonal screws (2).
- Remove the cutting blade (1) towards the front.
- Clean the blade holding surface and pressure plate and set a new cutting blade in place.
- The remaining procedure is as described under the section on adjusting the cutting blade.

9.3.7 Working with half the number of cutting blades

The feed drive speed and number of cutting blades determine the cutting length.
If the cutting length is still too short because of the speed adjustment for the feed drive rollers, the number of cutting blades can be reduced to half.

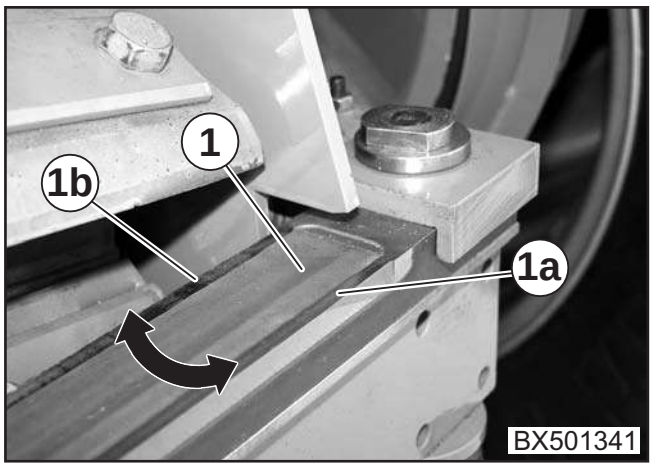


- For use with half the number of cutting blades on the two sides of the cutting drum, remove every other blade. In place of the cutters that have been removed, blind cutters included with delivery should be mounted to protect the blade carriers.
  The tightening torque of the hexagonal headed screws is min. 270 Nm.

- Set the appropriate number of blades in the Info Centre (see Info-Center chapter 4.6.2.4 „Setting the number of blades“).

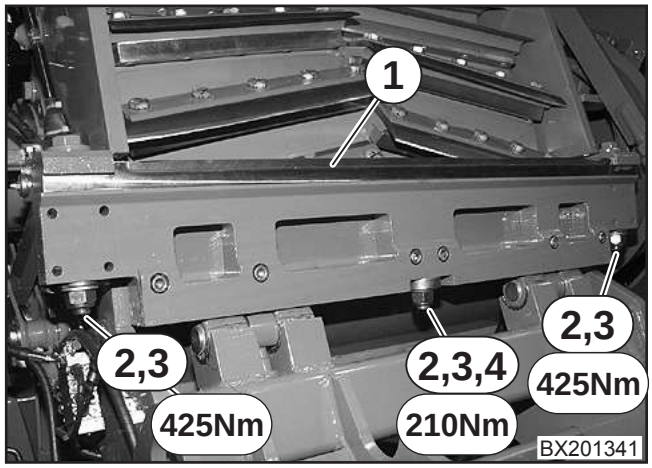
9.3.8 Turning or replacing the counterblade

The counterblade should not be turned or replaced until the satisfactory cutting quality can no longer be achieved even with the cutting gap correctly adjusted and with the blades intact.
The counterblade must not be mounted until the holding surface is cleaned. The holding surface must be flat. If necessary rework it or replace it to ensure that it is.
When turning the counterblade, clean the underside of the counterblade.



Both sides of the counterblade (1) can be used. If one or both sides (1a, 1b) of the counterblade (1) are worn, the counterblade must be turned or replaced.

- Disconnect the feed drive housing.
- Move the counterblade (1) away from the blade drum on both sides, using manual operation on the platform (Refer to thesection on Operation – grinding the cutting blade).
- Remove the ignition key and secure the forage harvester from being placed in operation or rolling away unintentionally.

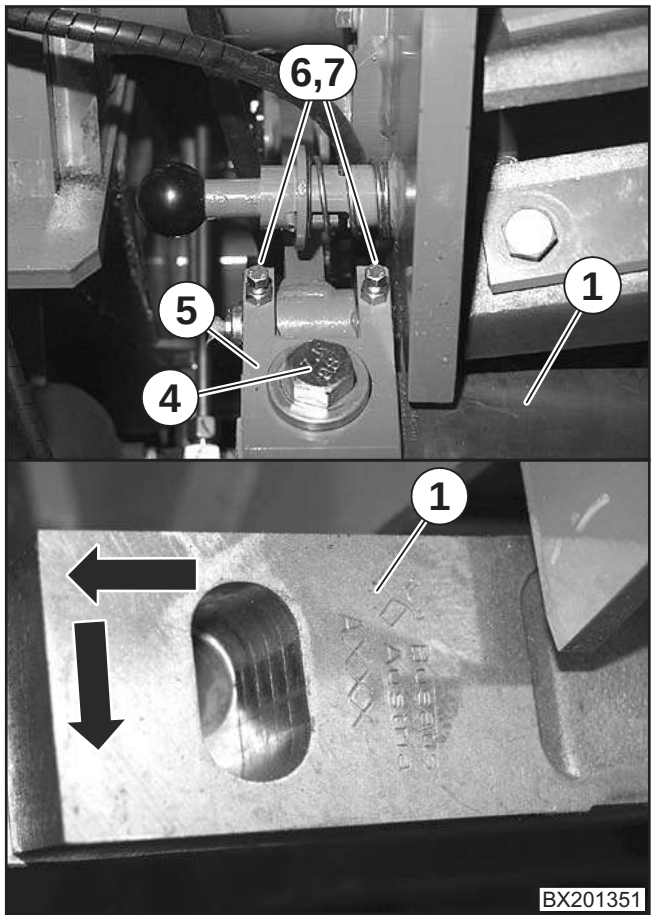


- Replace the self-locking nuts (2) and remove the washers.
- Remove the attachment bolts (4).
- Dismount the holder (5) on one side by loosening the counter nuts (6) and unscrewing the screws (7).
- Remove the counterblade (1) from the other support on the side first.
- Rotate the support (5) back.
- Pull the counterblade to the side out of the second support.
- Clean the holding surface and underside of the counterblade.
- Turn or replace the counterblade.

- Installation is in the reverse order to removal.

Use only new self-locking nuts.

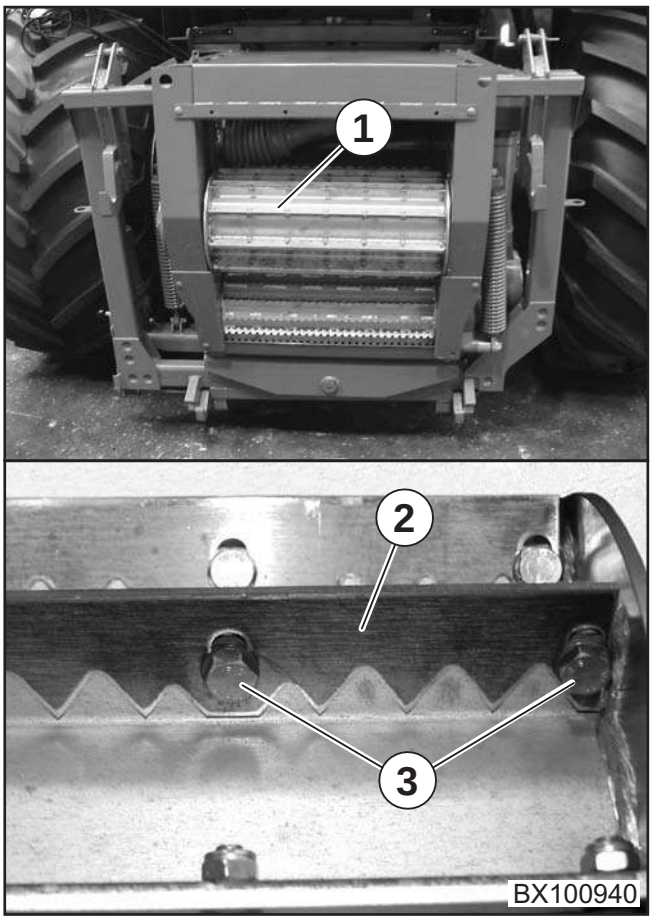
- Attach the feed drive housing.
- Adjust the counterblade. (Refer to the section on Operation – grinding the cutting blade).



9.3.9 Conveyor bars of the front baling roller

The front baling roller (1) is equipped with conveyor bars that 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.



Turning the conveyor bars around

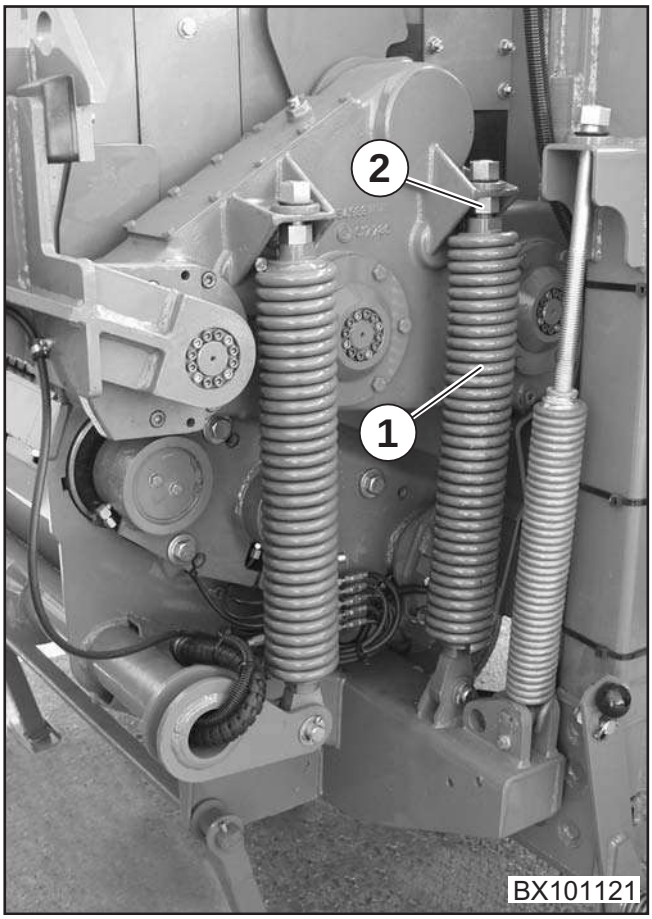
- Disconnect the front attachment.
- Remove the ignition key and secure the forage harvester from being placed in operation or rolling away unintentionally.
- Unscrew the fastening screws (3) on the conveyor bar (2).
- Turn the conveyor bar (2) around and mount it. (Tightening torque 35 Nm)

Because of metal detection, only fastening materials made of antimagnetic steel can be used.
The screws should not be tightened with an impact wrench (magnetising effect).

9.3.10 Adjusting the scraper - smooth roller

The adjustment should be made when the feed drive housing is folded down or disconnected.

The scraper should be adjusted as gap-free as possible over the entire width of the smooth roller.
Distance from scraper to smooth roller = 0 - 0.3 mm.



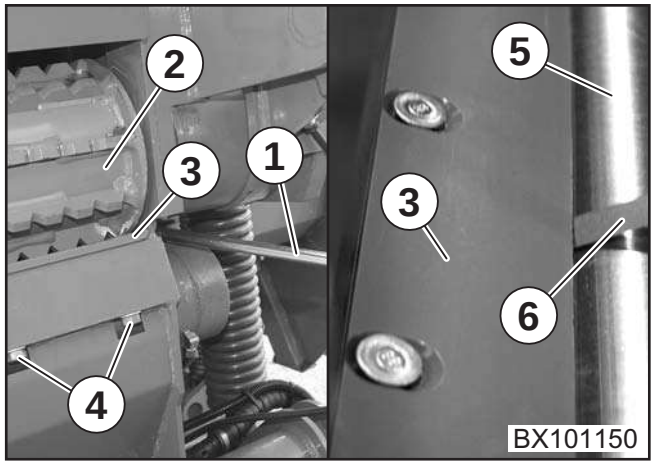
Adjust the scraper so that in is not exerting any pressure on the smooth roller.
Otherwise the scraper may overheat, which will result in damage to the scraper and the smooth roller.

- Release the tension on the compression springs (1) on both sides of the feed drive housing by loosening the counter nuts (2).

Adjust the distance from the scraper to the smooth roller

- Unscrew all hexagonal nuts (4).
- Press the baling roller (2) upward with the mounting lever (1).
- Check the distance (nominal dimension 0 - 0.3 mm) between the scraper (3) and the smooth roller (5) using a sensor gauge (6).
- If necessary, adjust the scraper (3) evenly along the entire width.
- Tighten all hexagonal screws (4).

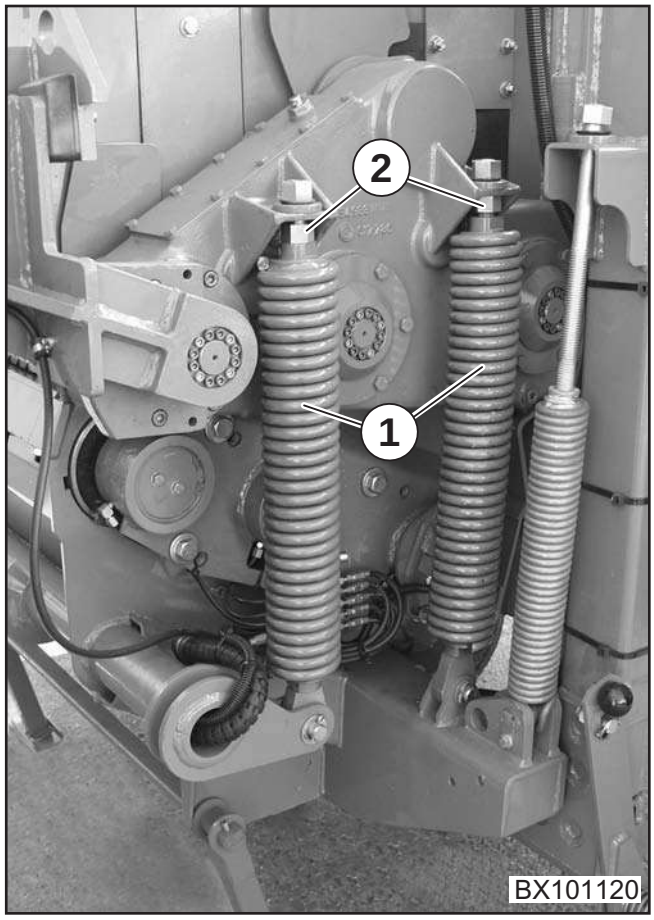
- Pre-tension the compression springs on both sides (see section Maintenance - Adjusting the feed drive housing compression springs)



9.3.11 Adjusting the baling roller - scraper

The adjustment should be made when the feed drive housing is folded down or disconnected.

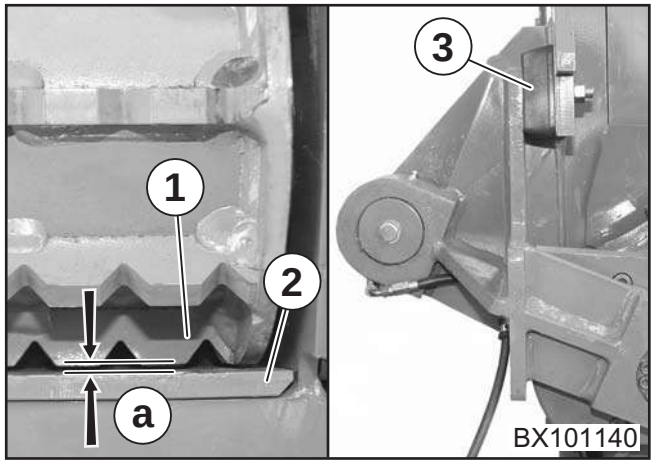
- Release the tension on the compression springs (1) on both sides of the feed drive housing by loosening the counter nuts (2).



Adjusting the distance from the baling roller to the scraper

- The distance between the baling roller (1) and the scraper (2) should be "a = 2 - 6 mm".
- If necessary, adjust the distance evenly along the entire width by placing disks under the stopper pads (3) on the feed drive housing.

- Pre-tension the compression springs on both sides (see section Maintenance - Adjusting the feed drive housing compression springs)



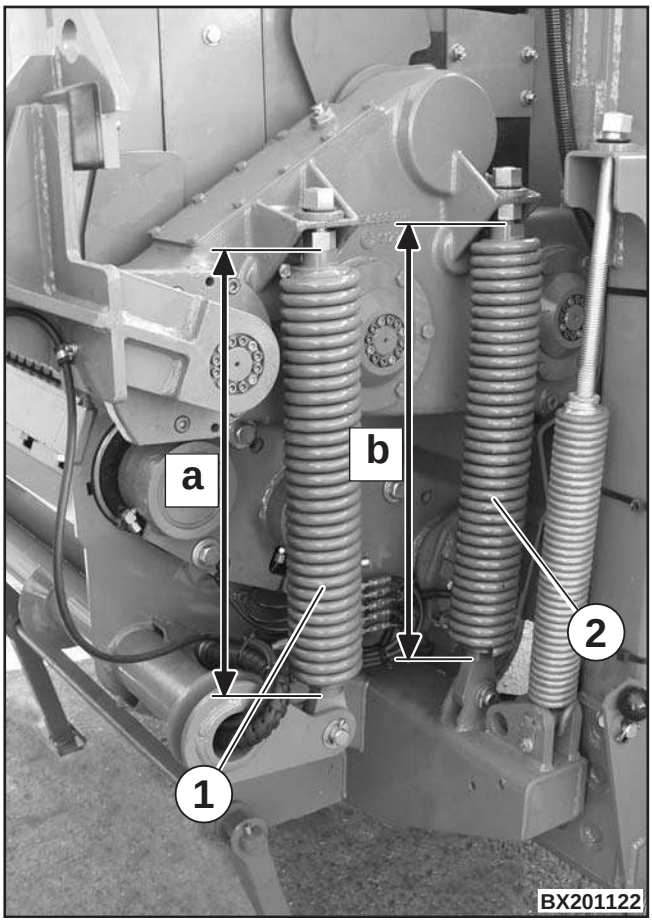
Measure the thickness (b) of the scraper (2) at regular intervals. If the scraper is less than 5 mm, it has to be replaced.

9.3.12 Adjusting the feed drive housing compression springs

The compression springs (1, 2) must be pre-tensioned on both sides of the feed drive housing.

Adjusting the pretension

- Adjust the two rear compression springs (1) to a distance of „a = 490+5 mm“.
- Adjust the two front compression springs (2) to a distance of „b = 530+5 mm“.



9.4 Crop track

9.4.1 Access points to the crop track

The maintenance flaps can be used to clear blockages in the crop track.

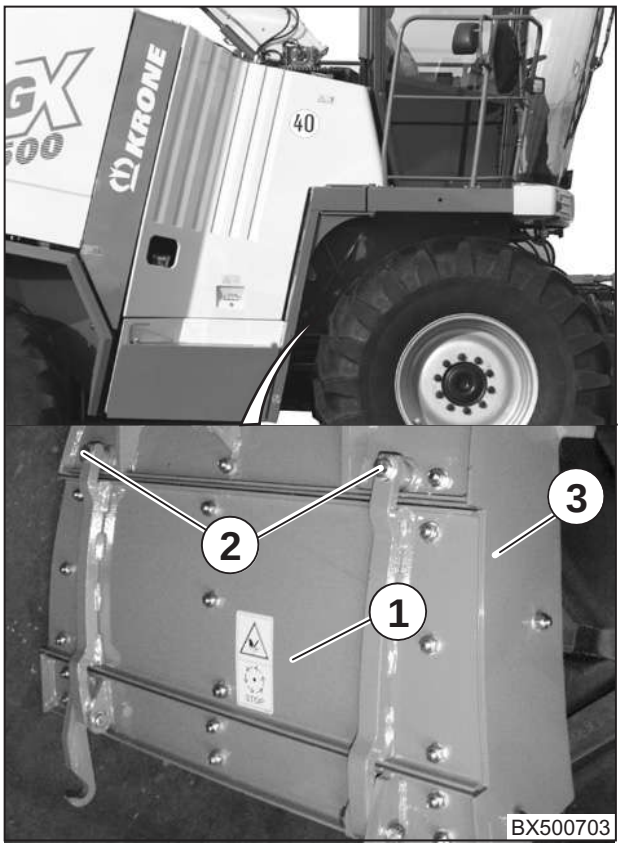
Before opening the maintenance flaps

- Remove the ignition key and secure the forage harvester from being placed in operation or rolling away unintentionally.

After the main drive is switched off, the blade drum and blower continue to coast down and an audio alarm is sounded!
For all tasks and when eliminating malfunctions, always be absolutely certain to wait until the units have come to a complete stop - danger of accident!

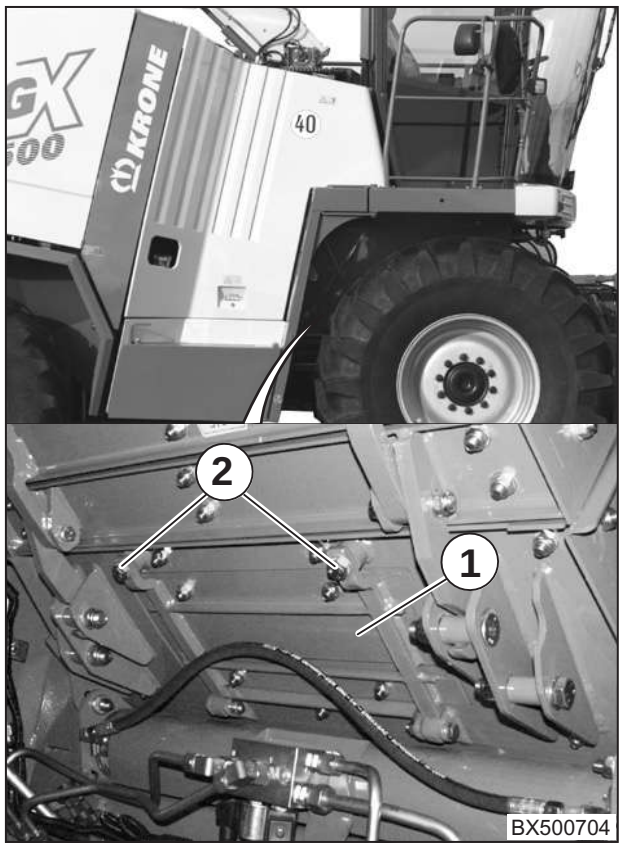
Maintenance flap in the grass channel

- Unscrew the hexagonal head screws (2) on the right and left of the grass channel (3). Remove the screws and washers.
- Fold down the maintenance flap (1).
- After maintenance work is complete, close the flap (1) and secure it with the screws and washers (2).



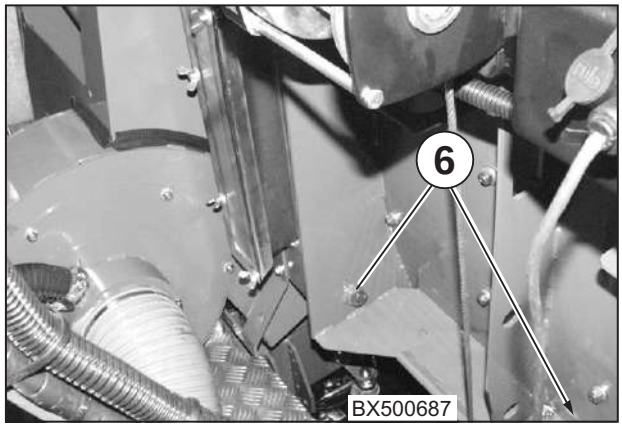
Rear wall in the output shaft of the blower

- Unscrew the hexagonal head screws (2) on the right and left of the transfer channel. Remove the screws and washers.
- Fold down the maintenance flap (1).
- After maintenance work is complete, close the flap (1) and secure it with the screws and washers (2).

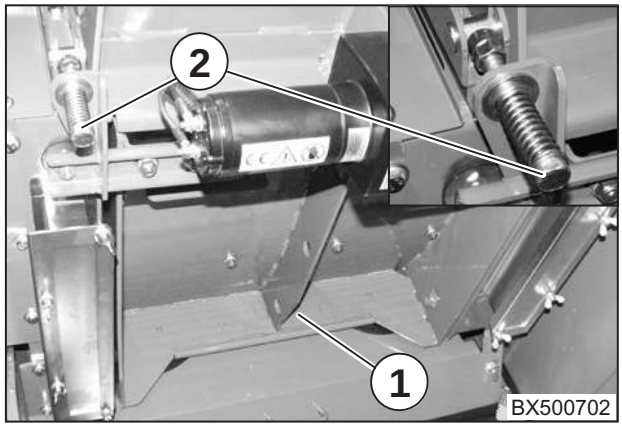


Rear wall of the blower

Before the rear wall (1) is removed, the two hexagonal head screws (6) on the right and left of the rear wall must be unscrewed.

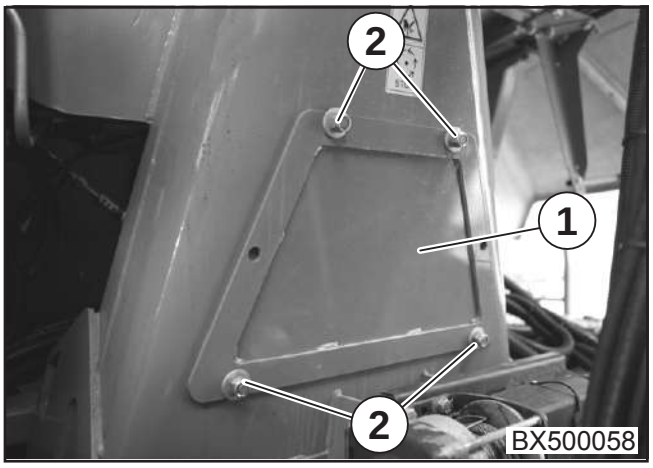


- Remove the two hexagonal head screws (2) on the right and left of the rear wall.
- Take off the rear wall (1).



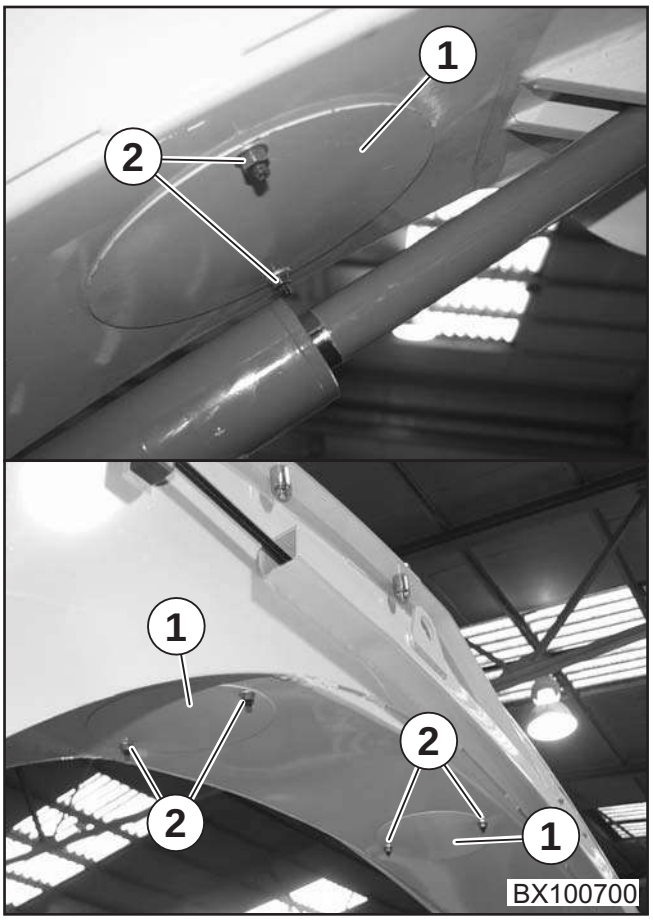
Maintenance flap in the impact area of the tower

- Unscrew the hexagonal nut (2).
- Dismount the maintenance flap (1).



Maintenance flaps in the upper discharge chute

- Unscrew the hexagonal nut (2).
- Dismount the maintenance flap (1).



9.5 Engine maintenance

9.5.1 Overview of maintenance (DaimlerChrysler) Excerpt

This maintenance overview is intended to provide a quick orientation. Information in it is **non-binding**.
For definitive information, please refer to the specifications in the operating instructions and maintenance manuals.
Only operating materials approved in the DaimlerChrysler materials operating specifications may be used.

The scope and frequency of maintenance tasks is based first of all on differing operating conditions and the quality of the oil that is used. The DaimlerChrysler maintenance system offers a choice of three maintenance groups with different maintenance intervals for engines of the 900, 450, 400 and 500 model lines.

Maintenance groups

Maintenance group A

Intermittent operation with low load.

Maintenance group B

Intermittent operation, primarily in the medium speed and load range.

Maintenance group C

Operation primarily in the upper speed and load range.

Application examples (maintenance group C):

Vehicles:	Machine carrying heavy load
Agricultural devices:	harvester threshers, maize threshers,**forage harvesters**, sugar cane harvester, beet root harvesters, potato harvesters
Construction machines:	bulldozers, gripper-ditchers, dump lorries, road milling machines
Work machines:	Drilling equipment, compressor units, pulverisers, snowplough built-in engines, rock crushers, road sweeper built-in engines

Oil change intervals BR 500/OM 460 LA Euro 3a

Maintenance group C	Oil qualities
250 h	228.5
200 h	228.2/3
200 h	228.0/1

Oil change intervals BR 900

Maintenance group C	Oil qualities
500 h	228.5
400 h	228.2/3
300 h	228.0/1

Maintenance services

General determinations:

The maintenance service must be performed at least once a year.
If the sulphur content of the fuel is higher than 0.3 % by weight, all maintenance intervals should be reduced by half.
If another oil quality is used to correct the filling level of the engine oil, the lesser quality applies to the maintenance interval.

9.5.2 Important maintenance instructions

Repair, maintenance, and cleaning jobs or eliminating malfunction must always be performed with the drive turned off and the engine completely stopped- remove the ignition key!

For jobs on the engine, always switch off the main battery switch!

Store lubricants and fuels in suitable containers and ensure they are disposed of properly.

Exercise caution when draining hot oil - danger of burns!

Cooling water and air intake hoses

Check the condition and fastening of cooling water and air intake hoses every 50 operating hours. Replace cooling water hoses and non-metallic parts on the air intake system every 2 years.

Check the engine, water cooler and exhaust system daily to ensure it is clean. Clean it if necessary.

Coolant

The engine cooling system is filled with a mixture of corrosion protection fluid and antifreeze in the factory. The coolant consists of 50 % corrosion protection and antifreeze and 50 % water.

Protection against freezing is ensured to approximately -37 °C. See also the engine manufacturer's specifications.

Belts

All belts must be kept continuously under the proper tension.

For new belts, check the tension after the first 2 to 3 operating hours. If necessary, retighten.

Cleanliness

To protect against the danger of fire, clean the engine area and especially the exhaust system as well as the areas surrounding the brakes and gearbox, etc.
If the material being harvested is very dry and there is a lot of dust, check the spots listed above more frequently for accumulations of dirt and clean if necessary.

9.5.3 Fuel system

Fuel

Exercise caution when working with fuel.
Only add fuel outdoors and with the engine turned off.
Do not smoke.

The quality and cleanliness of the fuel are of critical importance for consistently good performance and a long service life for the engine.

Follow the specifications in the engine operating instructions in the section on fuels (Daimler Chrysler) and requirements for operating materials (DaimlerChrysler).

For temperatures under 10 °C (50 °F), always use winter fuel.

Tanks

- Switch off the engine.
- Clean grass and dust from the area around the filler neck (1).
- Use only clean fuel in the tank. If necessary, filter the fuel before adding it to the tank.
- Close and seal the tank after filling it.
- Dispose of spilled fuel.

Fuel tank

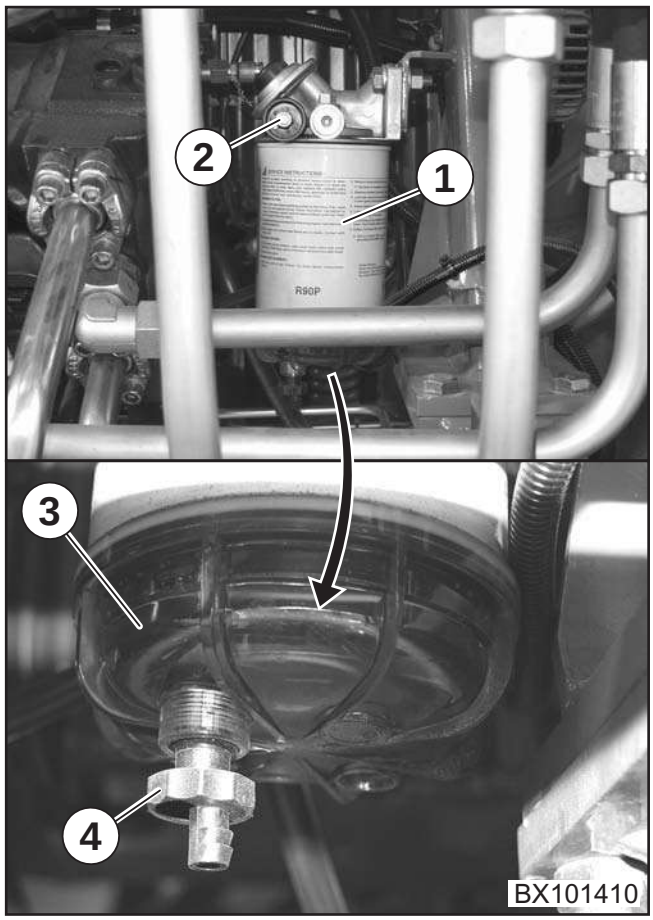
- For the filling quantity of the fuel tank, see the section entitled GeneralAspects- Technical Data.
- Monitor tank filling on the fuel gauge in the Info Centre display.
- Close and seal the fuel tank each time after filling it.
- Fuel drain screw (2).Tightening torque 30 Nm.

Fill the fuel tank daily after finishing operation to prevent condensation water from forming in the tank and freezing in cold weather.

Venting the fuel system

After the engine has not been operated for a long time, the fuel system may need to be vented.
For more information, please refer to the operating instructions of the engine in the chapter titled "Maintenance" (DaimlerChrysler).

9.5.4 Fuel filter/water separator



Replacing the fuel filter

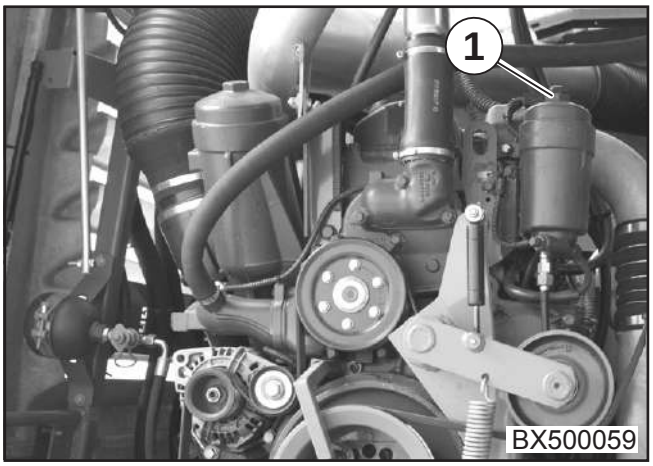
- Open the fuel supply valve (2) (turn to the right). .
- Unscrew the filter pan (1).
- Clean the filter pan and filter insert, if there is a heavy accumulation of dirt or damage, replace the filter insert.
- Check the seal ring for the filter pan and replace it if necessary.
- Wet the seal ring with diesel fuel and set it in place.
- Place the filter insert in the filter pan and screw the filter pan (1) on the filter housing.
- Close the fuel supply valve (2) (turn to the left).

Empty the water separator

- The water that is present in the fuel is collected in the inspection glass (3).
- Drain the collected water by loosening the drain screw (4) and capture it in a container.

- Dispose of used filters and remaining fuel properly.

9.5.5 Fuel filter



The fuel filter (1) removes even the finest pieces of dirt from the fuel.

1 fuel filter

Replacing the fuel filter insert

- Open the cover to prevent excess pressure from forming in the fuel tank.
- Unscrew the screw cover with filter insert (1) and unscrew a piece from the filter housing. Allow the fuel to run out.
- Remove the screw cover with the filter insert. Replace the filter insert and seal ring.
- Wet the seal ring with diesel fuel and set it in place.
- Screw on the screw cover with the filter insert and tighten it; tightening torque 25 Nm.
- Vent the fuel system.

For more information, please refer to the operating instructions of the engine in the chapter titled "Maintenance" (DaimlerChrysler).

9.5.6 Engine oil

The specifications in the operating instructions of the engine manufacturer (DaimlerChrysler) must be observed.

Engine - oil level check

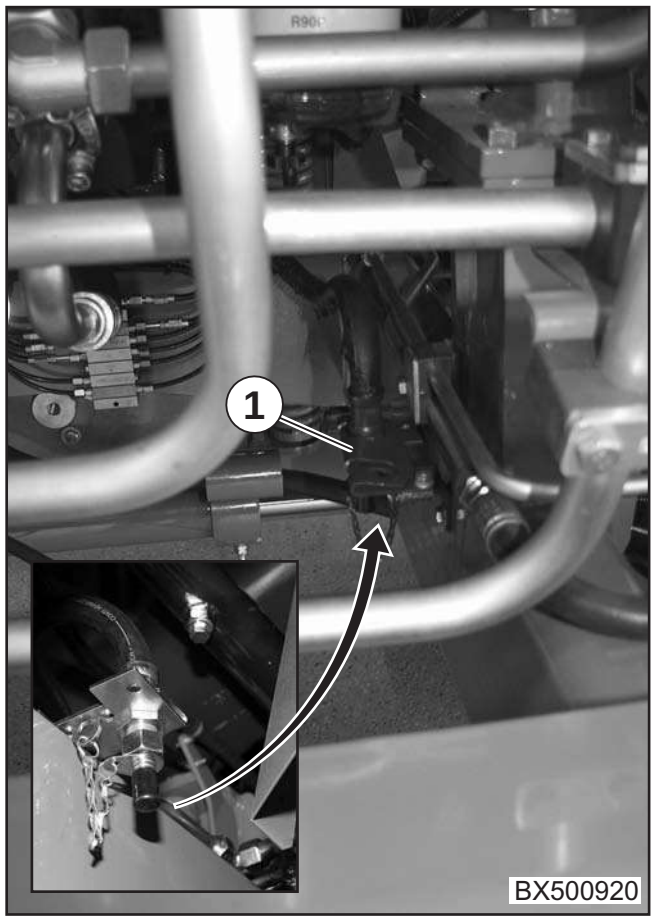
- Check the engine oil level daily about 5 minutes after shutting off the engine.
  See the Section on Commissioning – Engine oil check.

Changing the engine oil

Exercise caution when draining hot oil - danger of burns!
Dispose of drained oil properly.

For the specified types of oil and changing intervals, please refer to the maintenance table.

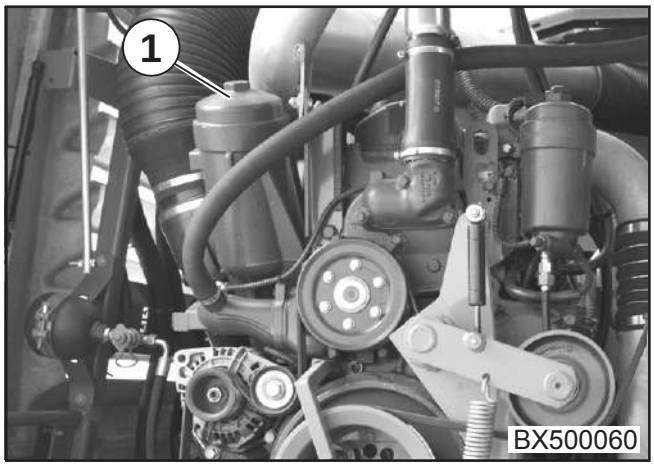
- Remove the oil filter (see Replacing the oil filter).
- Only change the engine oil when it is hot.
- Insert a suitable hose on the drain pipe (1). Loosen the nut somewhat and capture the old oil in a sufficiently large container.
- Screw on the oil filter (see Replacing the oil filter).
- Tighten the nut on the drain pipe (1) securely. Remove the hose.



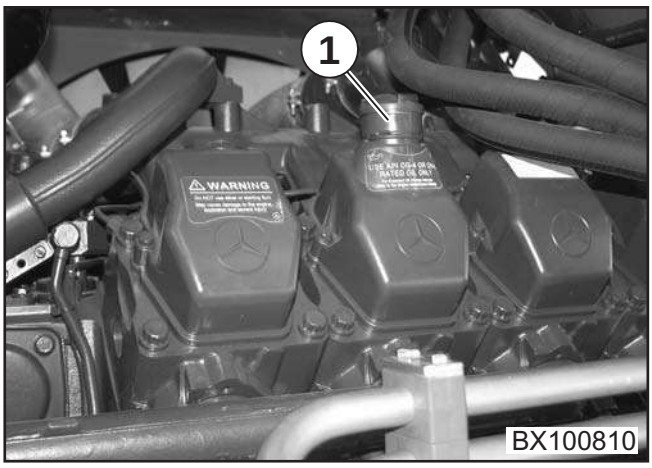
Replacing the oil filter

Replace the filter insert and seals each time you change the oil.

- Unscrew the screw cover on the oil filter (1) and allow the oil to flow out of the filter housing.
- Take off the screw cover with filter insert and remove the filter insert and seal.
- Wet the new seal with oil.
- Insert a seal and filter insert in the screw cover.
- Screw on the screw cover on the oil filter housing and tighten it; tightening torque 40 Nm.



Filling with engine oil



- Lift the cover (1) off the oil filling pipe.
- Fill with engine oil up to the maximum mark of the oil dip stick.
- Unscrew the cover (1) off the oil filling pipe.
- Allow the engine to run at low idle for a short time. Switch off the engine and check it, including the oil filter to make sure there are no leaks.
- After about 5 minutes, check the oil level in the engine again and fill up with engine oil to the maximum mark if necessary.

9.5.7 Cooling system

Coolant

The specifications in the operating instructions of the engine manufacturer (DaimlerChrysler) must be observed.

The engine cooling system is filled with a mixture of corrosion protection fluid and antifreeze in the factory. The coolant consists of 50 % corrosion protection and antifreeze and 50 % water.
Protection against freezing is ensured to approximately -37 °C.

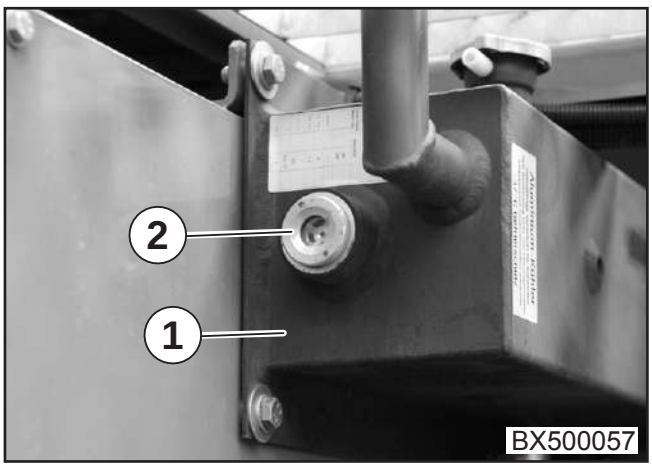
- Before the beginning of winter, always check the capacity of the antifreeze.

If coolant is not available, no matter what time of year it is, a mixture consisting of 50 % ethylene glycol antifreeze/corrosion protectant and 50 % clear soft water must be used. This mixture also offers corrosion protection and protection against freezing to -37 °C.

No cooling system sealing additives may be used.

- Replace all cooling water hoses on the engine every two years.

Checking the coolant level and engine



- Check the coolant level daily.

- Check the coolant level in the overflow container (1) in the viewing pane (2).

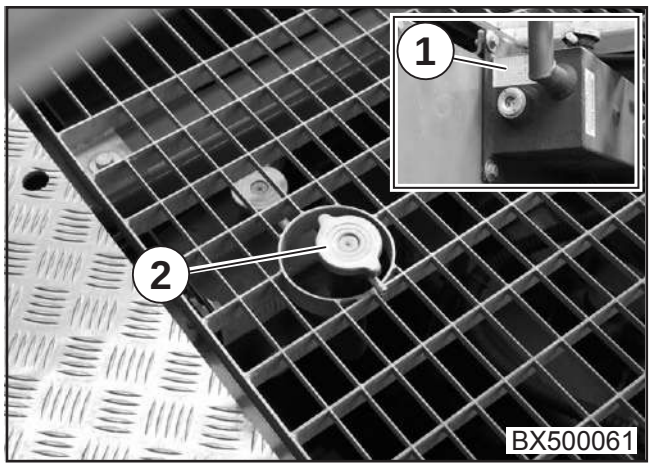
The coolant level must reach up to themiddle of the control eye (2).

- Top off with coolant if necessary.

Filling with coolant

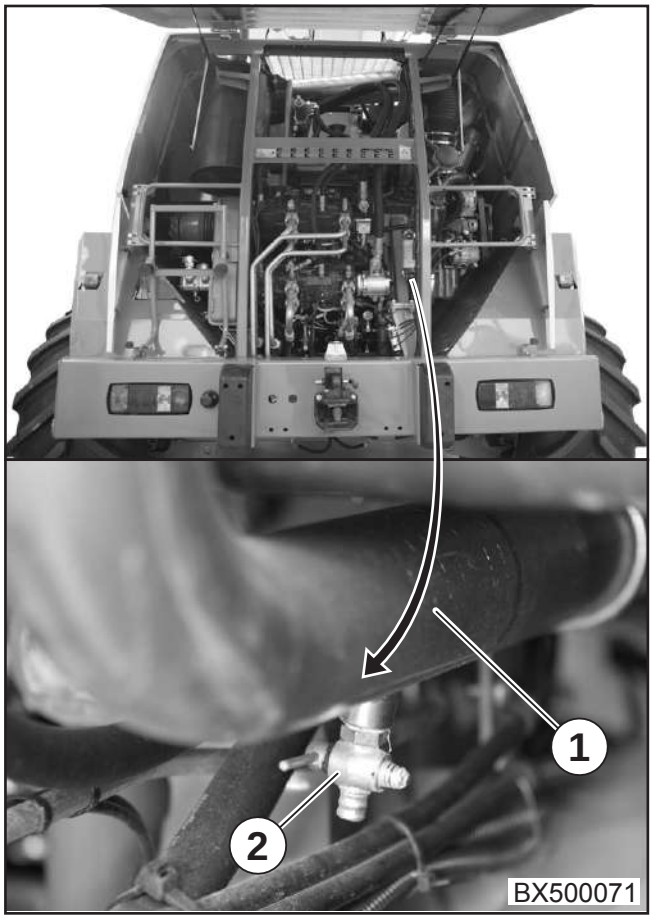
Never open the cover (2) of the overflow container while the engine is hot. Switch off the engine and wait until the engine has cooled off - danger of burns!

- Turn the cover (2) on the overflow container to the right catch point and allow residual pressure to escape slowly.
- Open the cover (2) completely and fill with engine coolant up to the middle of the viewing pane.
- Close the cover again.



Draining off coolant

The drain screw (2) for coolant is located on the cooling water pipe in the back of the engine compartment.



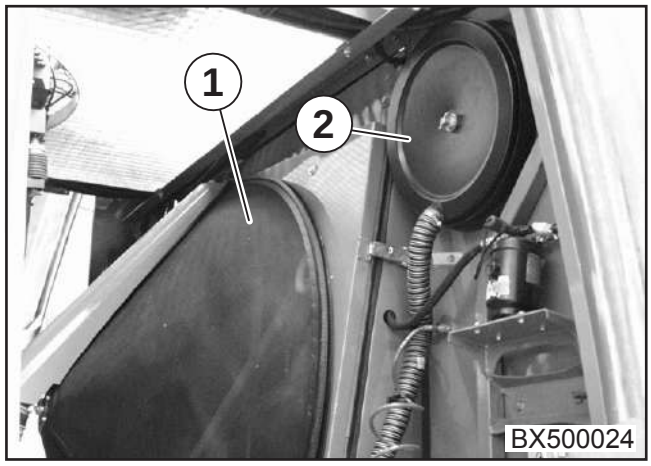
Water cooler, oil cooler and charging air cooler

The water cooler, oil cooler and charging air cooler are located behind the radiator sieve (1) in the engine compartment.

If possible, clean the radiator cooler while the engine is cold.

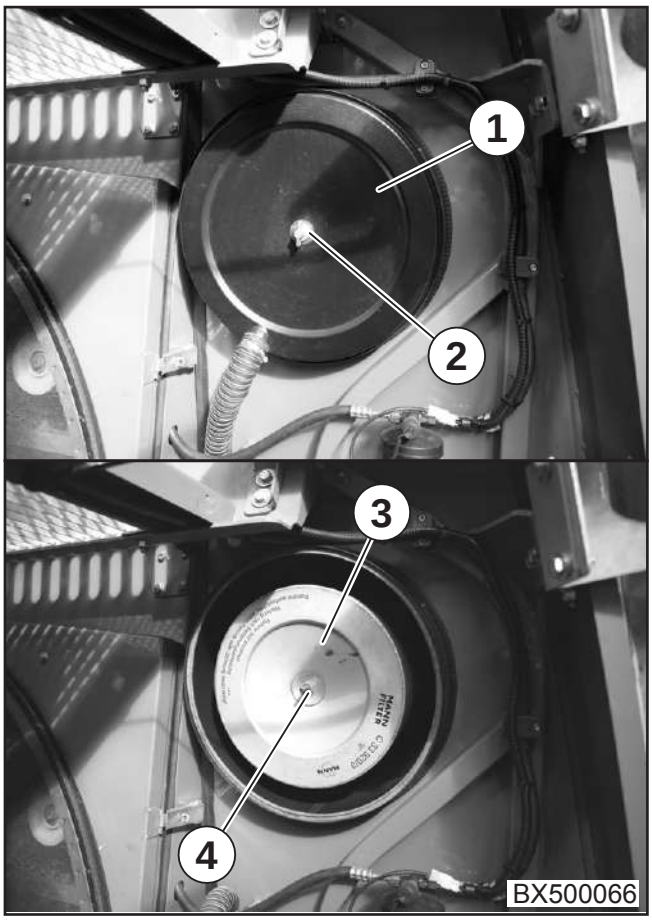
- Check all cooler units regularly to ensure they are clean and blow them off with compressed air if necessary. Do not damage the blades!

- Blow out radiators with compressed air from the outside to the inside.



9.5.8 Air filter

Perform air filter maintenance regularly, but at least when the error message for a dirty air filter appears in the InfoCentre Display.



Cleaning the air filter

- Unscrew the nut (2) and remove the cover (1).
- Unscrew the nut (4) and carefully remove the filter insert (3).
- Clean the interior area and the seal surfaces of the filter housing.
- Blow out the filter insert with compressed air (max. 5 bar) from the inside to the outside.
- Replace filter inserts that are excessively dirty or damaged. Filter inserts that were installed more than 4 years ago must also be replaced.
- Install the filter insert again.
- Mount the cover (1).
- Close the air filter intake sieve.

9.6 Hydraulics maintenance

9.6.1 Special safety instructions

Use suitable aids when searching for leaks because of the risk of injury and wear safety goggles.

Liquids escaping under high pressure can penetrate the skin and cause severe injuries. Therefore, you must depressurise the system before disconnecting lines. Ensure that all line connections are tight before the pressure in the system builds up again.

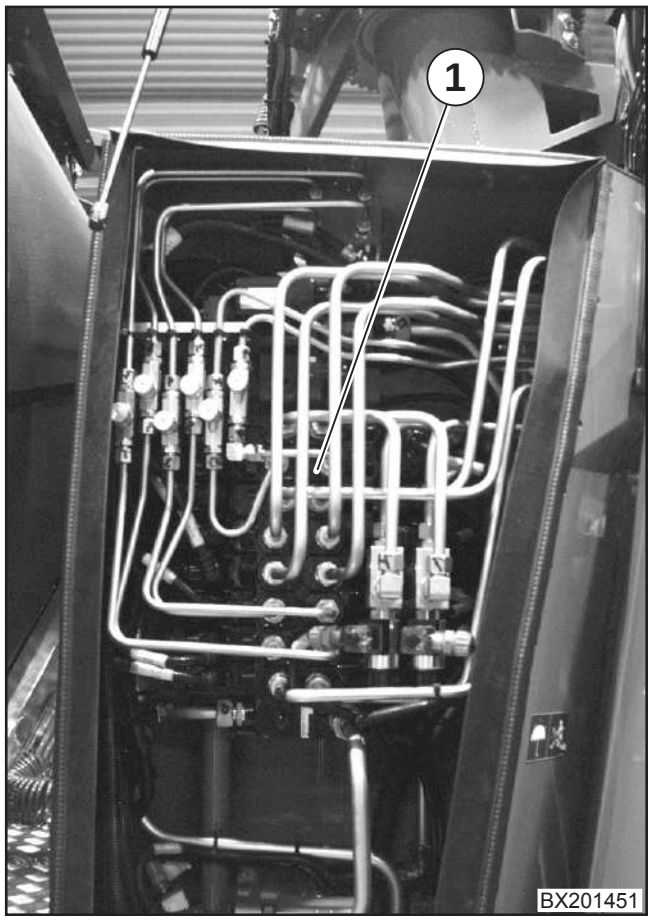
Hydraulic oil escaping from a small opening can barely be seen. Because of this you should use a piece of cardboard or something similar when searching for leaks. Protect your hands and body.
If any fluid penetrates the skin, it must be removed immediately by a doctor who is familiar with this kind of injury; serious infections could otherwise result. Physicians who are not familiar with this area should consult appropriate information from a competent medical source.

Check hydraulic hose lines regularly and replace them if they are damaged or show signs of ageing! Replacement lines must meet the technical requirements of the device manufacturer.

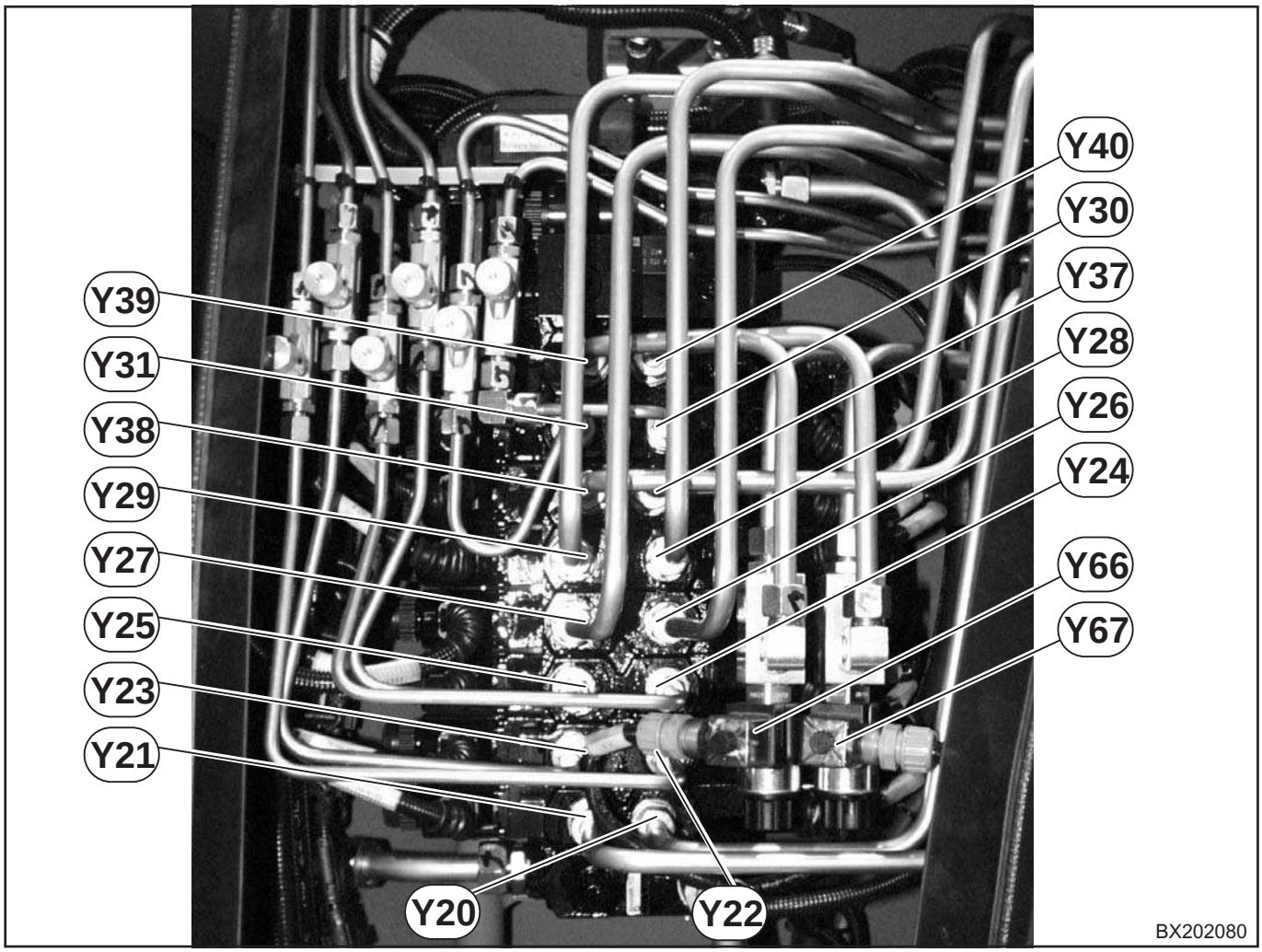
9.6.2 System layout of work and brake hydraulics

For the hydraulics circuit diagram, refer to section on "Maintenance" (explanation of the hydraulics circuit diagram).

The main valve block (1) is located behind the access flap on the right-hand side of the machine.



Main valve block



Y20 - Turn discharge "left"
Y21 - Turn discharge "right"
Y22 - "Raise" ejector flap
Y23 - "Lower" ejector flap
Y24 - "Raise" upper discharge chute
Y25 - "Lower" upper discharge chute
Y26 - Fold in front attachment "Transport"
Y27 - Fold out front attachment "Work"
Y28 - Retract supporting wheels/swivel in feed drive
Y29 - Extend supporting wheels/swing out feed drive
Y30 - Grinding device "Cylinder in"
Y31 - Grinding device "Cylinder out"
Y37 - Pendulum frame "rotate left"
Y38 - Pendulum frame "rotate right"
Y39 - Auto-steering left
Y40 - Auto-steering right
Y66 - arrest steering left
Y67 - arrest steering right

Pressure control valve

The valve blocks have been equipped with pressure control valves. These valves were set at the factory and must not be changed.

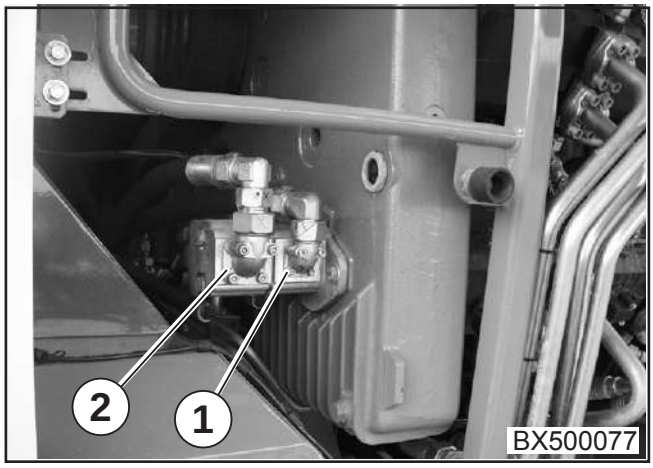
Work on the over-pressure valve must be carried out only by the customer service department.

Pumps

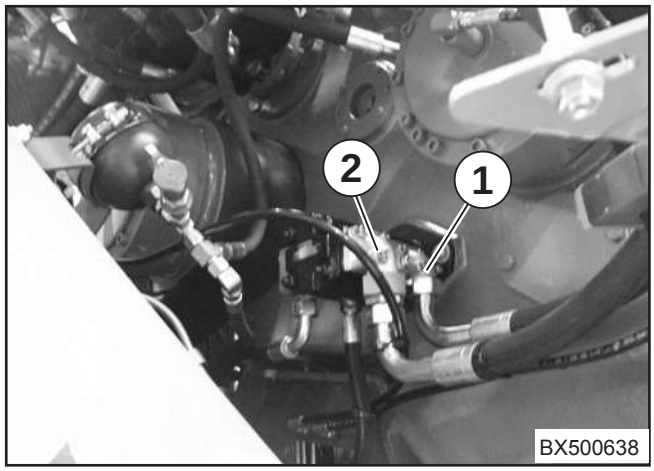
1 - Steering pump

2 - Work hydraulics

Big X 500/650



Big X 800/1000



9.6.3 Hydraulic tank

Hydraulic oil

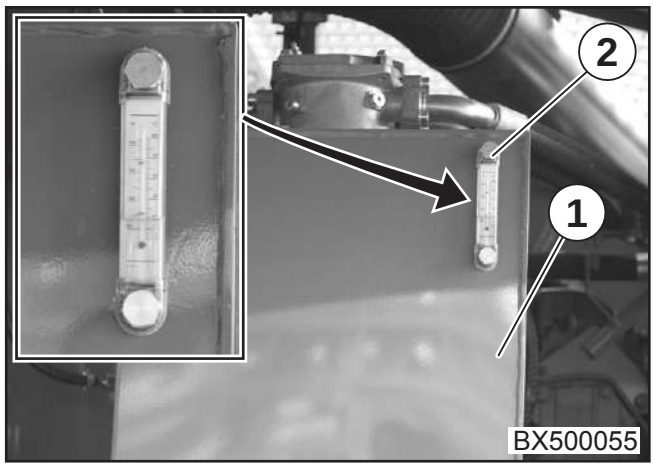
Caution, never mix different types of fluid.
Before changing the type of fluid, consult with our customer service department .
Never use engine oil.

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

ISO viscosity Class / Manufacturer	HEPG VG 46	HLP VG 46
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

ISO viscosity Class / Manufacturer	HEPG VG 46	HLP VG 46
FRAGOL	Hydraulic TR 46	
FUCHS	Renolin PGE 46	RENOLIN MR 15 VG 46 RENOLIN B15 VG 46
Houghton	Syntolubric 46	
KLÜBER		LAMORA HLP 46
KUWAIT		Q8 Haydn 46 Holst 46 Hydraulic 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
Stuart-Theunissen	Hydrocor E 46 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
WINTERSHALL		WIOLAN HS 46 WIOLAN HX 4

Checking the hydraulic fluid level



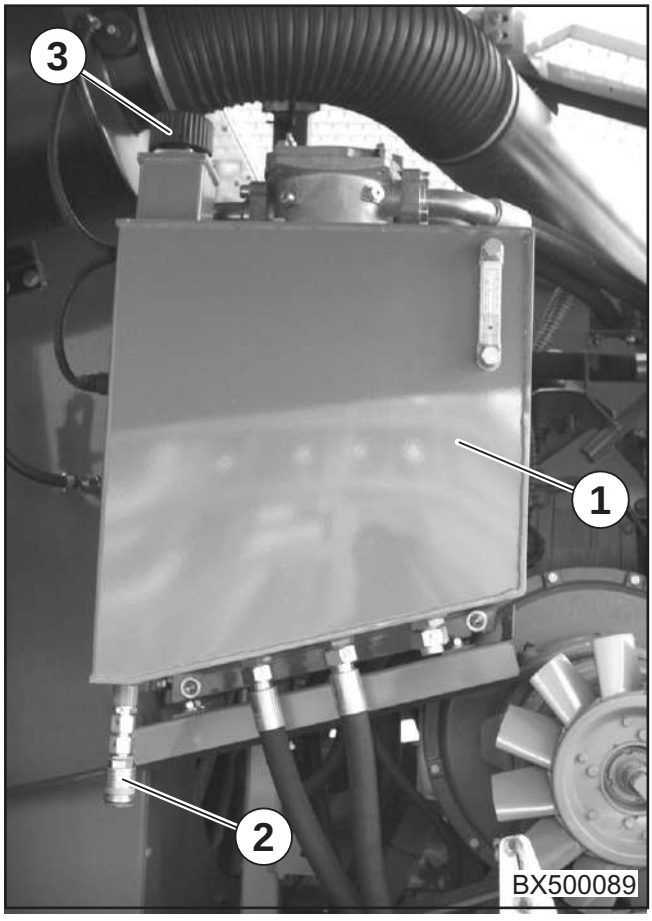
Check the hydraulic fluid level every 50 operating hours.

- Lower the lifting gear and switch off the engine.
- Check the hydraulic fluid level in the viewing glass (2) of the hydraulic fluid tank (1).

The hydraulic fluid must be visible in the viewing glass (2).

- Top off with hydraulic fluid if necessary.

Changing the hydraulic fluid



Exercise caution when draining hot oil or fluid - danger of burns! Dispose of drained fluid properly. Before changing fluid, consult with the KRONE customer service department.

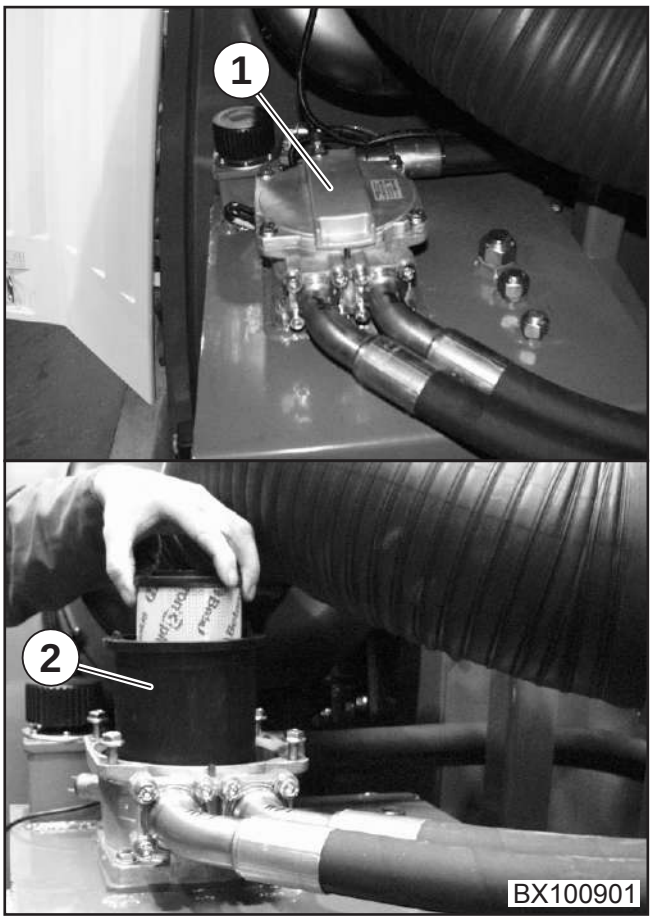
Change hydraulic fluid after 500 h.

- Connect a suitable hose with a clamping connector on the discharge pipe (2) of the hydraulic fluid tank (1) and capture the old oil in a suitably large container.
- Remove the hose.
- Fill with hydraulic oil through the filling pipe (3) on the hydraulic fluid tank (1) until it is visible in the viewing glass of the hydraulic fluid tank.
- Allow the engine to run at low idle speed for about 10 seconds.
  Turn off the engine.
  Check the hydraulic fluid level and top off with hydraulic fluid as necessary.
  Repeat the procedure until the fluid level no longer goes down.

Replacing the hydraulic fluid filter

Change the hydraulic fluid filter if the error message Suction return filter 1 or filter 2 appears in the Info Centre display, but at least once after each season.

- Unscrew the screw cover (1).
- Lift the filter insert (2) and allow hydraulic fluid to drip out.
- Remove the filter insert and dispose of it properly.
- Moisten the seal surface of the new filter insert with fluid and set it in place.
- Screw on the screw cover manually. Do not fasten it too tightly.
- Allow the engine to run at low idle speed for about 10 seconds.
  Turn off the engine.
- Check the hydraulic fluid filter to make sure there are no leaks.



9.7 Gearbox maintenance

- Unless there is some indication to the contrary, after 1000 operating hours for all gear, but at least after the end of every season.
- Check the oil level before the beginning of the season and then every 100 operating hours.
- Check all gears daily for any leaks and check the oil level if necessary.

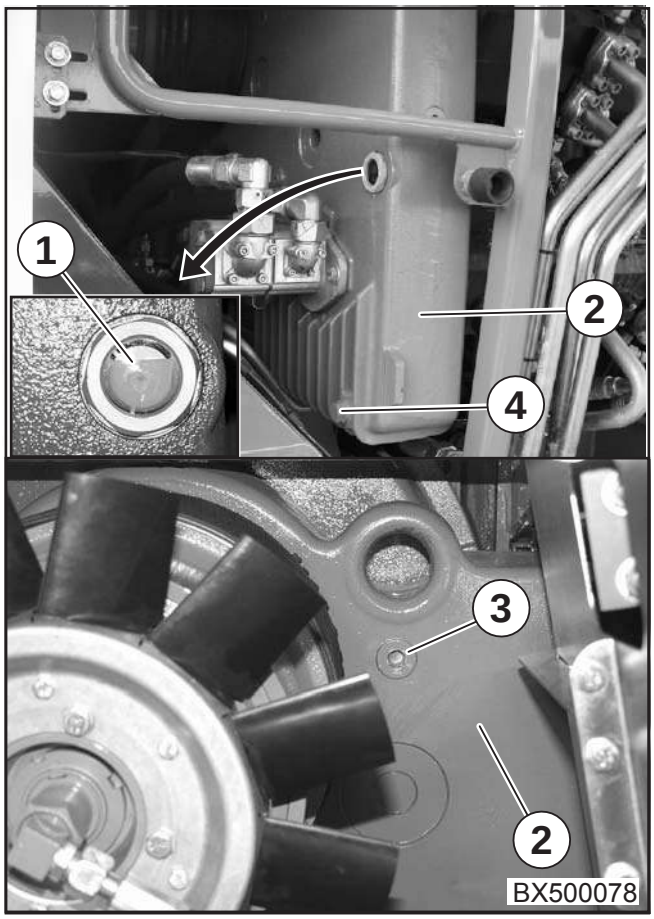
9.7.1 Checking the oil level and changing oil on the gearbox engine power drive

Checking the oil level

- The oil level must reach up to 3/4 the control eye (1) for continuous operation. If necessary top off with (see Changing oil).

Changing the oil

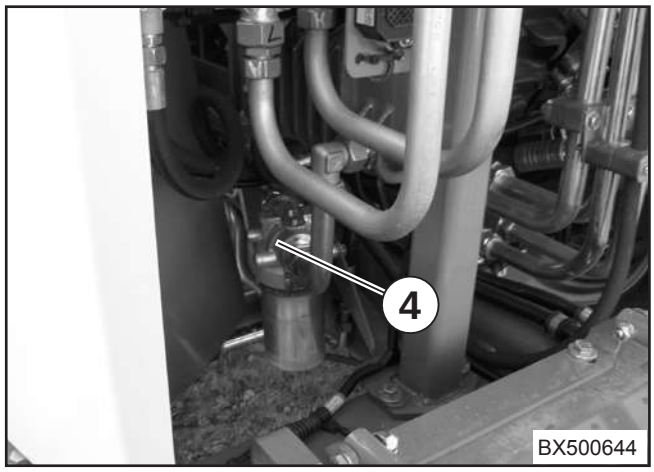
- Unscrew the oil drain screw (4) on the engine drive (2) gearbox. Collect the oil in a suitable container.
- Screw on the oil drain screw (4) again.
- Unscrew the cover screw (3) on the engine drive (2) gearbox.
- Add oil.
- Screw in the cover screw (1) again.



Perform oil level checks and change the oil while the forage harvester is in a horizontal position!

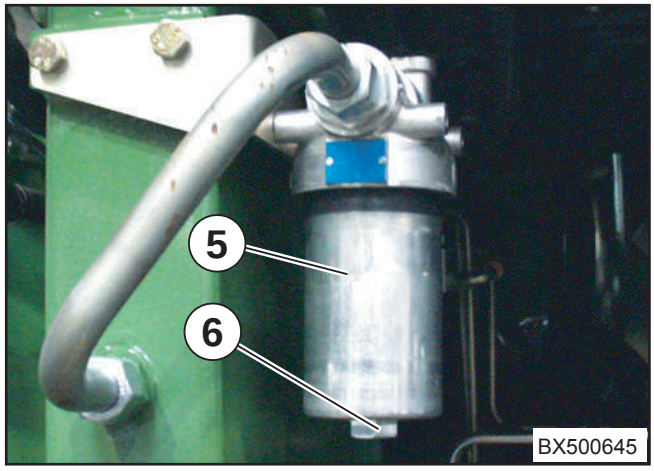
Dispose of old oil properly!

For filling quantities and descriptions of lubricants for gearboxes, see the section entitled "General Aspects – Technical Data").



Oil filter (4) for the circulating oil lubrication of the transmission

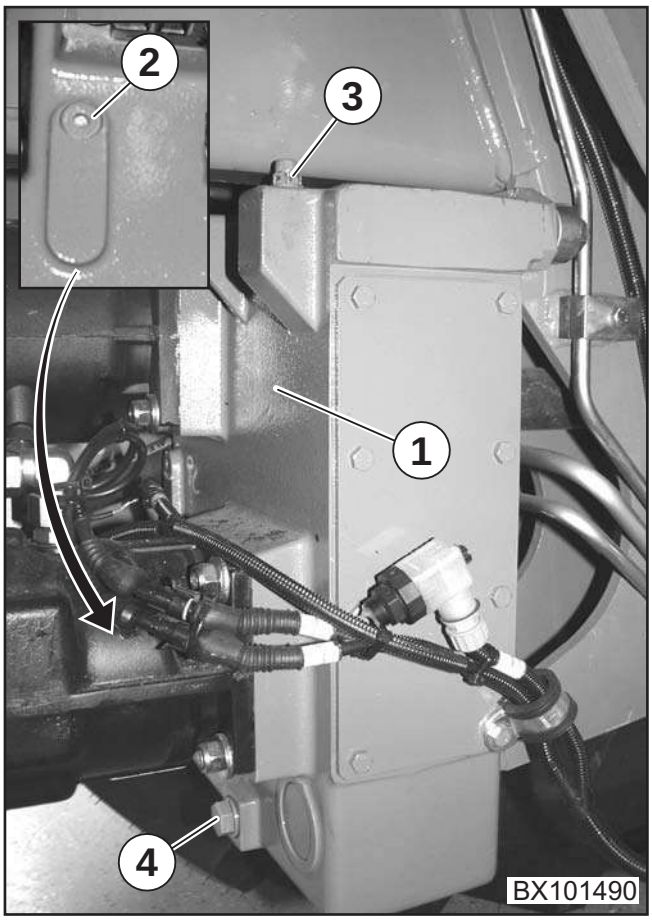
An oil filter (4) for the circulating oil lubrication of the transmission is only installed on Big X 650, 800, 1000.



Always perform the filter replacement together with the change of the transmission oil after 1000 operating hours or at the end of the season.

- Unscrew the filter housing (5) on the welded nut (6) by using a wrench (W/F 32).
- Replace the old filter with a new one.
- Screw the filter housing (5) back into position by using a wrench (W/F 32).

9.7.2 Checking the oil level and changing the oil on the distributor gearbox



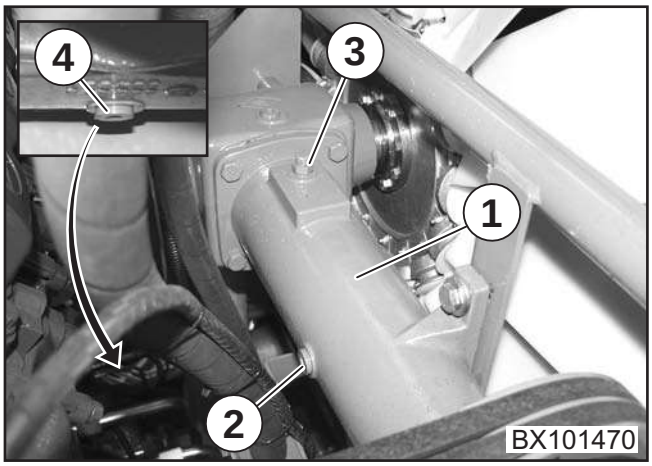
Checking the oil level

- Unscrew the oil level control screw (2) on the distributor gearbox (1).
- The oil level must reach up to the control hole. If necessary, top off the oil (see Changing the oil).
- Screw on the oil level cover screw (2) again.

Changing the oil

- Unscrew the oil drain screw (4) on the transfer gearbox (1). Collect the oil in a suitable container.
- Screw on the oil drain screw (4) again.
- Unscrew the cover screw with the ventilation filter (3) on the distributor gearbox (1).
- Add oil.
- Screw in the cover screw (3) again.

9.7.3 Checking the oil level and changing the oil on the OM 460 fan gearbox



Checking the oil level

- Unscrew the oil level control screw (2) on the fan gearbox (1).
- The oil level must reach up to the control hole. If necessary, top off the oil (see Changing the oil).
- Screw on the oil level cover screw (2) again.

Changing the oil

- Unscrew the oil drain screw (4) on the fan gearbox (1). Collect the oil in a suitable container.
- Screw on the oil drain screw (4) again.
- Unscrew the cover screw with the ventilation filter (3) on the distributor gearbox (1).
- Add oil.
- Screw in the cover screw (3) again.

9.7.4 Checking the oil level and changing the oil on the lower roller gearbox

Perform oil level check and change the oil while the forage harvester is in a horizontal position!

The roller gearbox on the left side of the feed drive housing is divided into two parts.

1 - Roller gearbox below, tower above

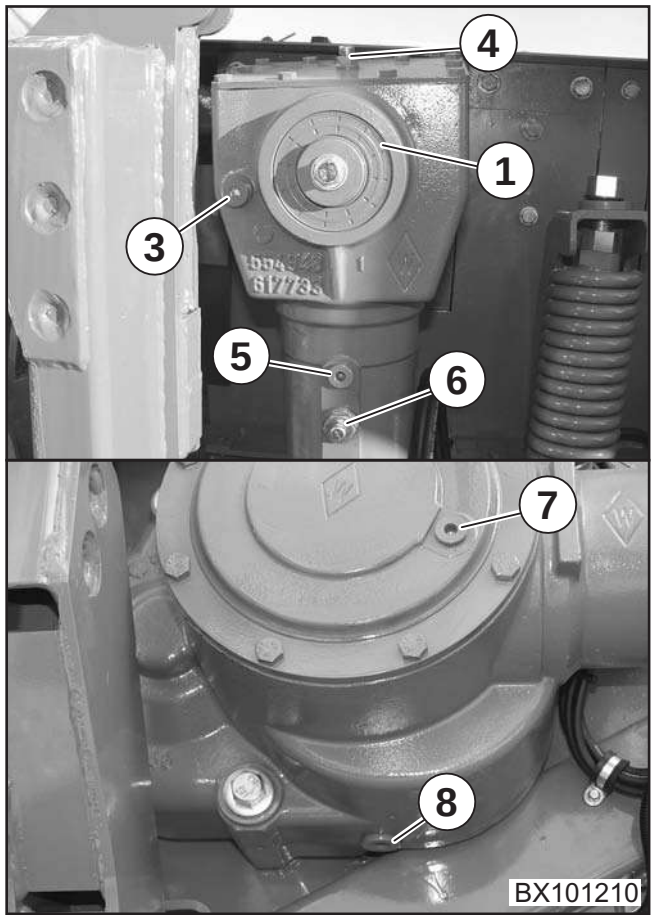
2 - Lower roller gear

Checking the oil level

- Unscrew the oil level control screw (3) on the lower roller gearbox, upper tower (1) or oil level control screw (7) lower roller gearbox (2).
- The oil level must reach up to the control hole. If necessary, top off the oil (see Changing the oil).
- Screw on the oil level cover screw (3 or 7) again.

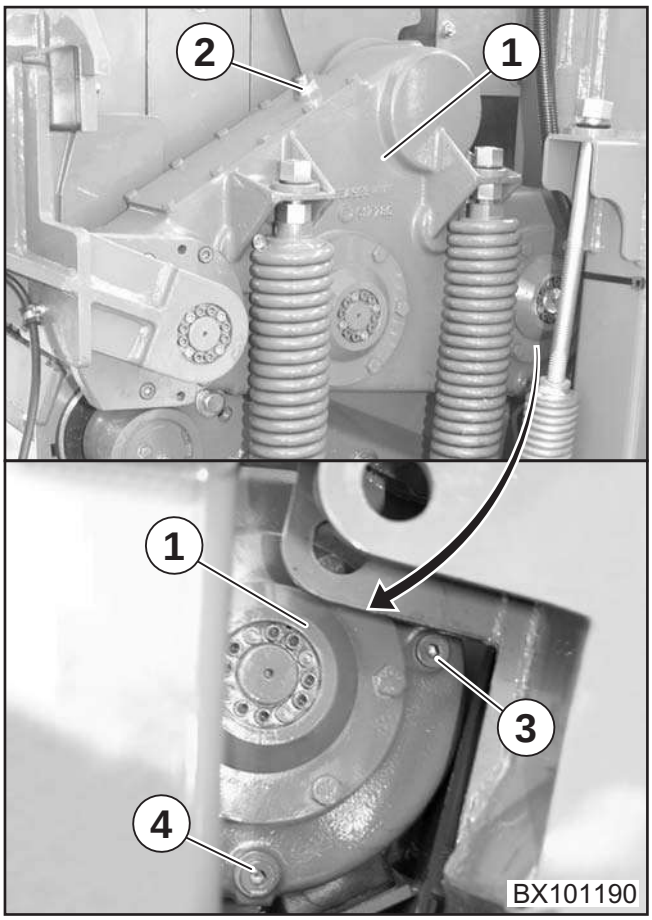
Changing the oil

- Unscrew the oil drain screw (5) on the lower roller gearbox, upper tower (1) or oil drain screw (8) on the lower roller gearbox (2).
  Capture old oil in a suitable container.
- Screw on the oil drain screw (5 or 8) again.
- Screw off the cover screw with ventilation filter (4 or 6) on the appropriate gearbox.
- Add oil.
- Screw on the cover screw (4 or 6) again.



9.7.5 Checking the oil level and changing the oil on the upper roller gearbox

Perform oil level check and change the oil while the forage harvester is in a horizontal position!



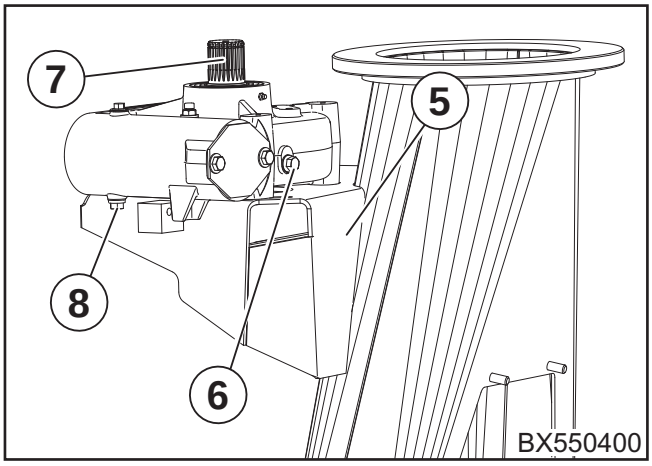
Checking the oil level

- Unscrew the oil level control screw (3) on the upper roller gearbox (1).
- The oil level must reach up to the control hole. If necessary, top off the oil (see Changing the oil).
- Screw on the oil level cover screw (3) again.

Changing the oil

- Unscrew the oil drain screw (4) on the upper roller gearbox (1). Collect the oil in a suitable container.
- Screw on the oil drain screw (4) again.
- Unscrew the cover screw with the ventilation filter (2) on the upper roller gearbox (1).
- Add oil.
- Screw in the cover screw (2) again.

9.7.6 Oil level check and oil change on the tower gearbox of the upper discharge chute



Oil level check

- Unscrew the oil level control screw (6) on the tower gearbox (5).
- The oil level must reach up to the control hole. If necessary, top up the oil (see Oil change).
- Screw on the oil level control screw (6) again.

Oil change

- Remove the protective cover and unscrew the ventilation filter (7).
- Unscrew the oil drain plug (8). Collect the used oil in a suitable container.
- Screw in the oil drain plug (8) again.
- Fill in oil. The oil level must reach up to the control hole (6).
- Screw in the ventilation filter (7) again and reinstall the protective guard.

9.8 Maintenance - Belt drives

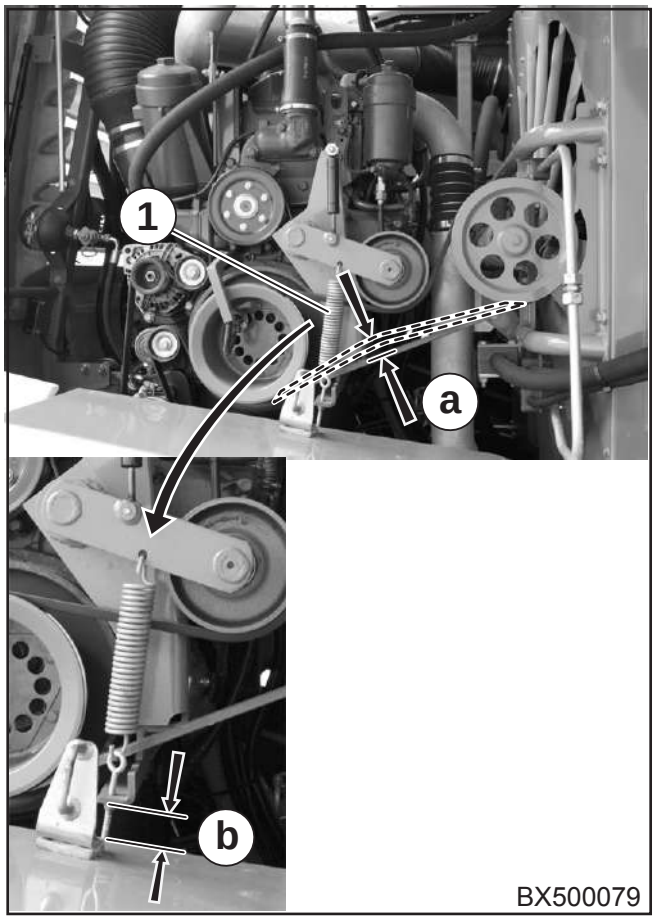
Check the tension and condition of drive belts for all belt drives after the first 10 operating hours, and after that every 100 operating hours. Replace damaged or worn drive belts.

Check the drive belt tension

- Check the belt tension in the middle by pressing in (pressing force about 50 N) on the belt. If the depth of pressing in is "a ≥ approx. 20 mm", the tension is correct. Otherwise correct.

Correcting the belt tension

- To increase or reduce the tension of the tension spring (1), reduce or increase the distance "b" accordingly on the adjustment spindle.

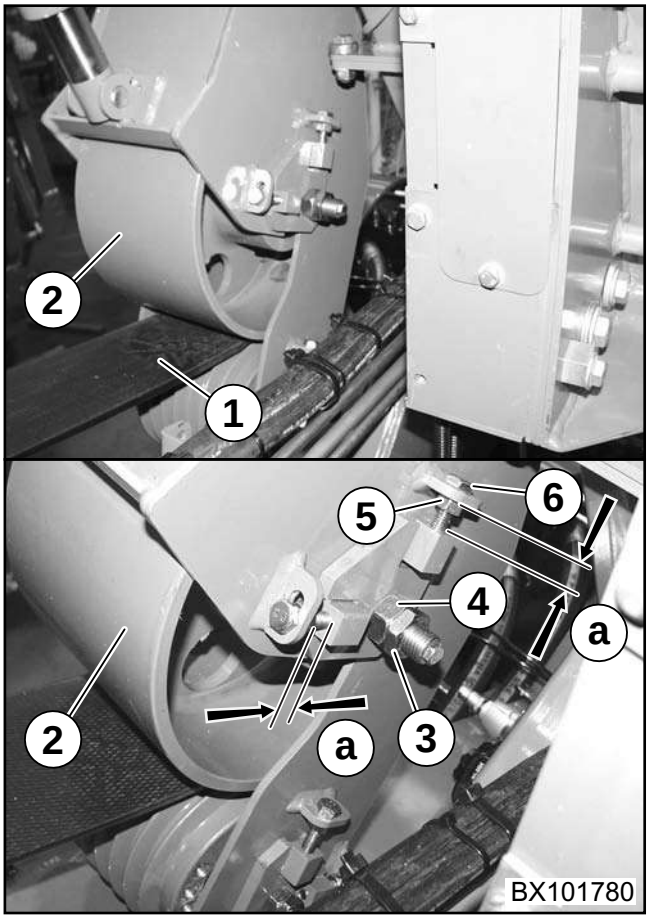


9.8.1 Main belt drive

Belt tension over the hydraulic cylinder.

Correcting belt motion

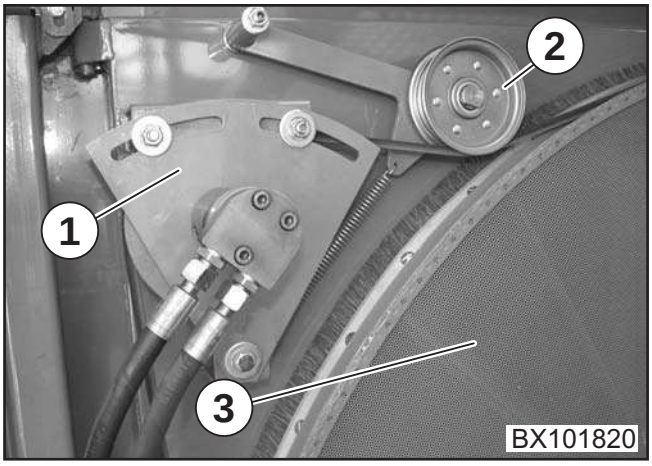
- Check to make certain the belt is running in the guides of the v-notch pulley (1) with no problems.
- If necessary, correct the belt motion by changing the position of the tension roller (2).
- Loosen the counter nut (3) and loosen the hexagonal nut (4) somewhat.
- Loosen the counter nut (5) and adjust the change of position with the hexagonal headed screw (6).
- Tighten the counter nut (5) again.
- Tighten the hexagonal nut (4) and counter nut (3) again.



9.8.2 Screen drum drive

1 - Power take-off – screen drum
3 - Screen drum

Belt tension of the screen drum drive via spring-loaded tensioning roller (2).

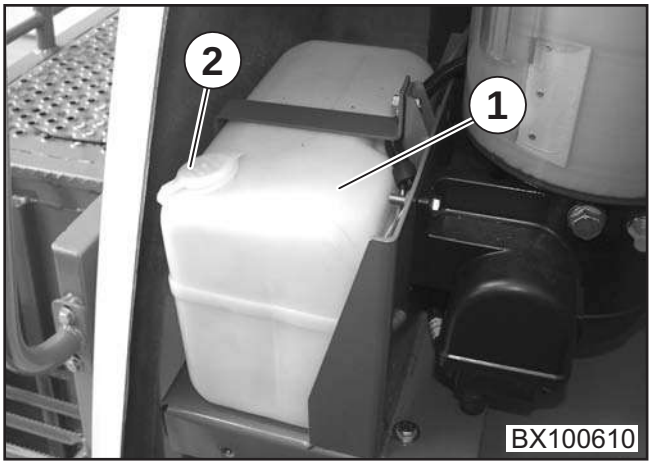


9.9 Windscreen washer system

The tank (1) for the water of the windscreen washer system is located in the machine compartment.

- Open the lid (2) to fill the tank (1).
- In order to obtain a better cleaning action, add some detergent for washer systems to the water.

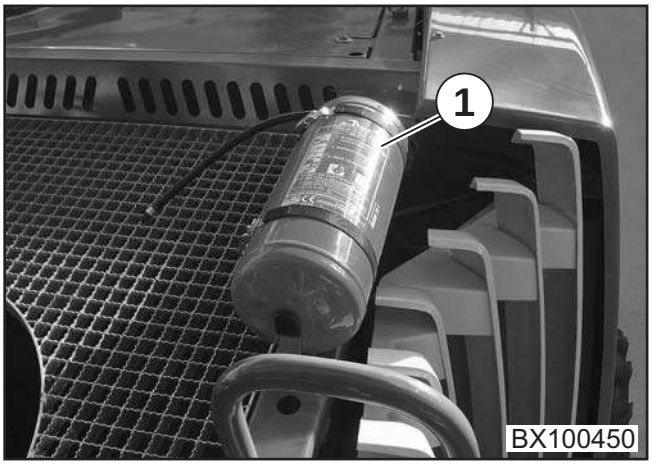
Empty the windscreen washer system in winter or fill a special anti-freeze agent.



9.10 Fire extinguisher

Have the operational readiness of the fire extinguisher (1) checked annually, at the latest every two years. The manufacturing date or the date of the final inspection of the fire extinguisher (1) shall be decisive.

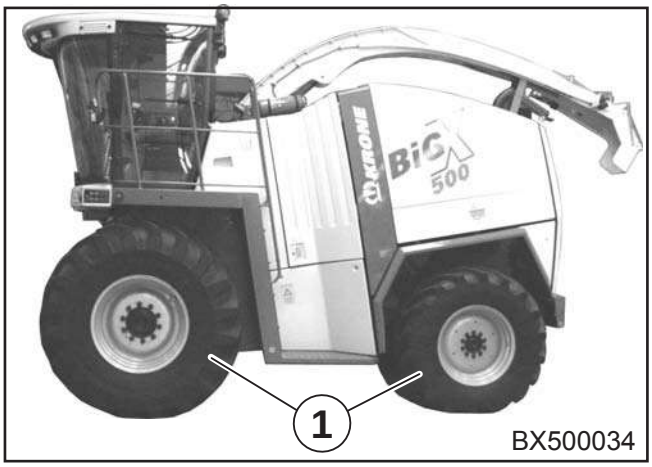
The inspection intervals may differ from one country to another. In this case, the instructions on the fire extinguisher (1) of the respective countries shall be applicable.



9.11 Tyres

9.11.1 Checking and servicing the tyres

- Check the tyres for damage and air pressure every day as the service life of tyres depends on the air pressure.
- Repair any cuts or tears in the tyres as soon as possible or change the tyres.
- Do not expose tyres to oil, grease, fuel, or chemicals; nor should you let them stand in the sunlight for long periods.
- Drive carefully; avoid driving over sharp stones or edges.
- Check the tyre pressure at least once per week with an accurate instrument.



BX500034

Reifenluftdruck
tyre pressure

Big X 500 Big X V12 BigX 650

Bereifungstyp wheel type	km/h	mp/h	mit / with Easyflow 3000 oder / or Solomaschine solo machine (bar)	mit / with EasyCollect 6000 (bar)	mit / with EasyCollect 7500 (bar)	mit / with EasyCollect 9000 * (bar)	max. (bar)	Achse axle
650/75 R 32 172A8	40	25	2,4	3,2	3,2	2,4	3,2	Vorderachse front axle
	10	6	1,4	1,7	1,9	1,4		
710/75 R 34 178A8	40	25	1,6	2,4	2,4	1,6	2,4	
	10	6	1,0	1,2	1,4	1,0		
800/65 R 32 172A8	40	25	1,6	2,4	2,4	1,6	2,4	
	10	6	1,0	1,2	1,4	1,6		
900/60 R 32 176A8	40	25	1,4	1,8	2,0	1,4	2,0	
	10	6	1,0	1,0	1,2	1,0		
18.4 R 30 155A8	40	25	3,2	3,2 **	3,2 **	3,2	3,2	Hinterachse rear axle
	10	6	1,7	1,9	1,9	1,7		
600/65 R 28 154A8	40	25	2,4	2,4	2,4 **	2,4	2,4	
	10	6	1,4	1,4	1,4	1,4		
600/70 R 28 157A8	40	25	1,6	2,4	2,4	1,6	2,4	
	10	6	1,2	1,4	1,4	1,2		
710/55 R 30 153A8	40	25	1,6	1,6	1,6 **	1,6	1,6	
	10	6	1,0	1,0	1,0	1,0		

* = Strassenfahrt ohne EasyCollect 9000
* = Transport on road without EasyCollect 9000
** = Vmax: 25km/h / 15mp/h

942-529-1

Reifenluftdruck
tyre pressure

Big X 800 / Big X 1000

Bereifungstyp wheel type	km/h	mp/h	mit / with Easyflow 3001 oder / or Solomaschine solo machine (bar)	mit / with EasyCollect 6000 / 753 (bar)	mit / with EasyCollect 7500 / 903 (bar)	mit / with EasyCollect 9000 * / 1053 * (bar)	max. (bar)	Achse axle
710/75 R 34 178A8	40	25	1,8	2,4	2,4	1,8	2,4	Vorderachse front axle
	10	6	1,0	1,4	1,4	1,4		
800/65 R 32 172A8	40	25	1,6	2,4	2,4	1,6	2,4	
	10	6	1,0	1,4	1,4	1,4		
900/60 R 32 176A8	40	25	1,4	2,0	2,0	1,4	2,0	
	10	6	1,0	1,2	1,2	1,2		
600/70 R 28 157A8 TM 900 HP (Trelleborg)	40	25	2,9	2,9	2,9	2,9	2,9	Hinterachse rear axle
	10	6	1,7	1,7	1,7	1,7		
710/55-34 155A8 T 414 (Trelleborg)	40	25	2,1	2,1	2,1	2,1	2,1	
	10	6	1,4	1,4	1,4	1,4		

* = Strassenfahrt ohne EasyCollect 9000 / 1053
* = Transport on road without EasyCollect 9000 / 1053

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9.11.2 Fitting tyres

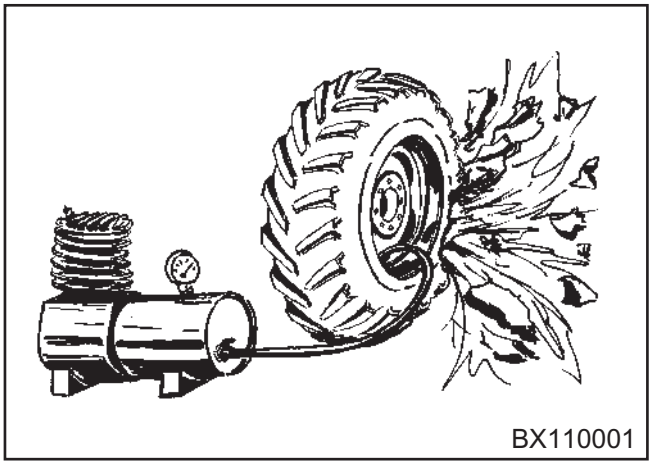
Fitting the tyres requires sufficient knowledge and suitable mounting tools. If tyres are not correctly fitted, it could explode when pumped up. This can cause serious injury. If you do not have sufficient experience of fitting tyres, have tyres fitted by the KRONE dealer or a qualified tyre specialist.

When mounting the tyre on the wheel rim never exceed the highest permissible pressure stated by the tyre manufacturer, otherwise the tyre or even the wheel rim may explode.

If the tyre bead is not located properly when the highest permissible pressure is achieved, deflate the tyre, align the tyre, grease the tyre bead, and inflate the tyre again.

The tyre manufacturers can provide extensive informative material on how to fit tyres on agricultural vehicles.

Never operate the forage harvester at the tyre pressure usual for transport of the tyres. Keep the valve caps fitted on the valves to keep dirt out.
Check the tyre pressure frequently!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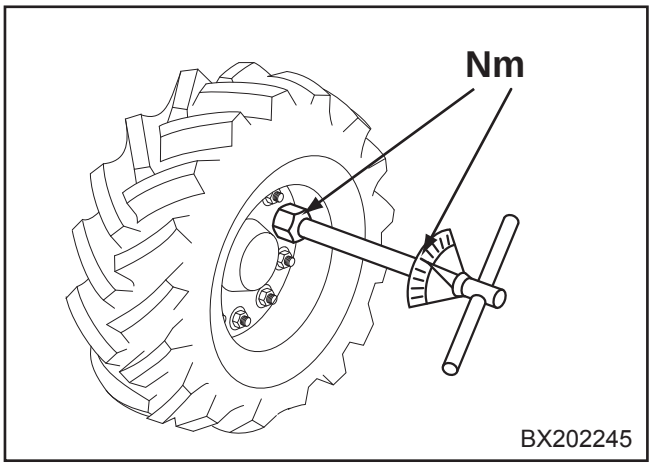
9.11.3 Wheel mounting

- After the first and then after 20 to 25 hours of operation, retighten thewheel lug nuts.
  Tightening torque of the drive axle wheel lug nuts = 485 Nm
  Tightening torque of the steering axle wheel lug nuts = 485 Nm



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9.11.4 Fitting different tyres

When the tyre size is changed, the software of the Info Centre has to be adapted correspondingly.

9.12 Maintenance – electrical system

9.12.1 Electrical equipment – technical data

Performance of the generator..... 12 V/180 A

Number of batteries..... 2

Battery voltage..... 12 V

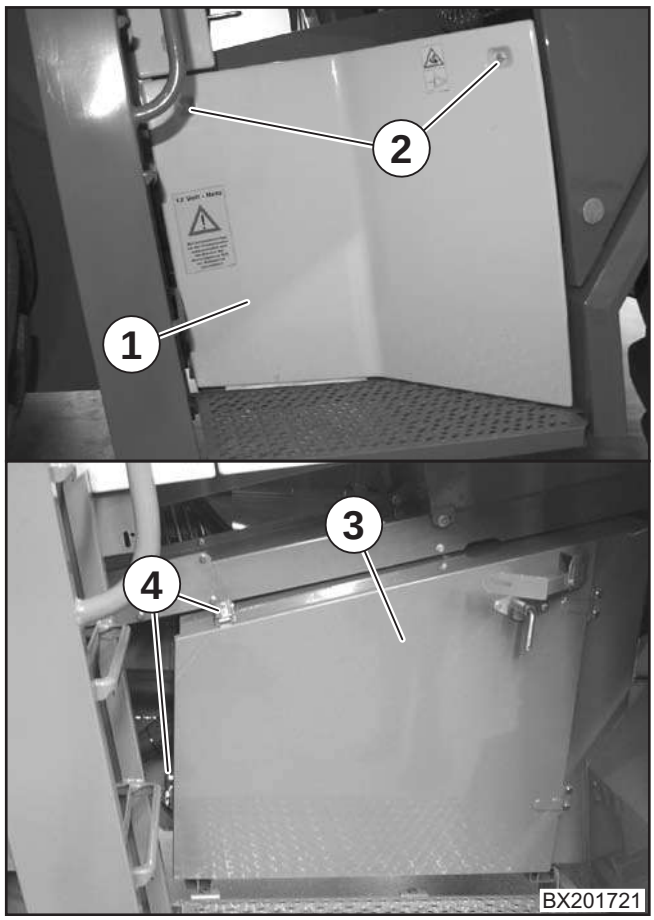
Battery capacity .....(2x) 135 Ah

9.12.2 Batteries

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

Opening the battery compartment

- Unscrew the hexagon head cap screws (2) of the cover (1) and remove it.
- Open the bracket (4) and swing the battery cover (3) aside.

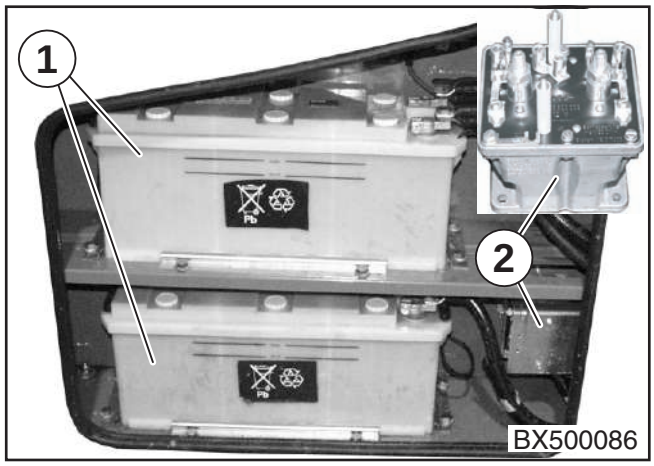


The forage harvester has been fitted with two batteries (1) of 12 V (135 Ah) each.which are connected in series (24 V) for starting.

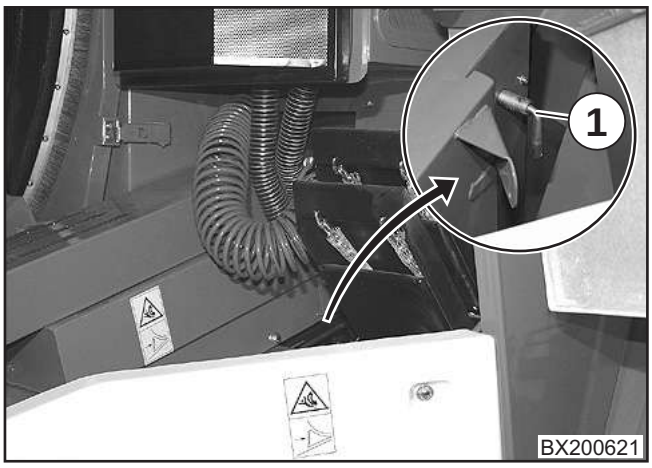
A switching relay (2) is used to switch.
The operating voltage is only 12 V!

When jump-starting the battery, make certain that only a voltage of 12 V is connected to each battery!

Before wintering the forage harvester, charge the batteries and re-charge them every six weeks or have them serviced at a battery service station.



9.12.3 Main battery switch



The main battery switch (1) is located on the battery cover.

The main battery switch (1) can be used to separate the positive pole of the batteries.

- Main battery switch (1) in vertical position – electric circuit closed.
- Main battery switch (1) in horizontal position – electric circuit open.

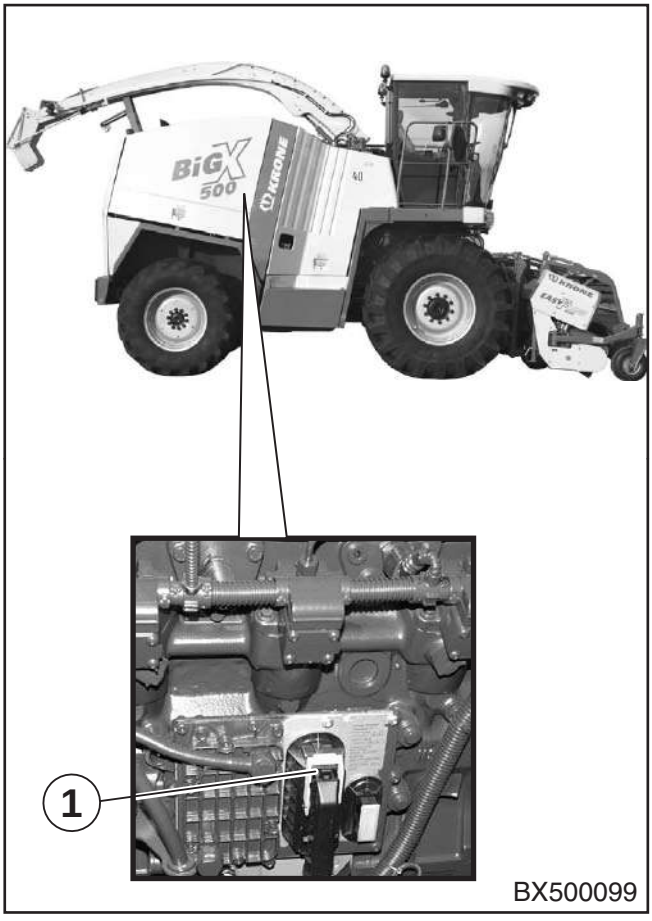
Do not switch off the main battery switch (1) with the engine running.

For repairs, in emergencies and at the end of use, set the main battery switch (1) into the open position.

- Switch off the engine
- Set the main battery switch (1) to off by turning to the left into horizontal position.

The battery is discharged, when the ignition is set to step I or step II, even when the main battery switch (1) has been switched off.

Always switch off the engine during repair work (welding work); set the main battery switch to the open position (horizontal to left), and remove the socket connector (1) from the control unit (MR control device). Do not run cable of the welder in parallel to electrical lines of the machine.



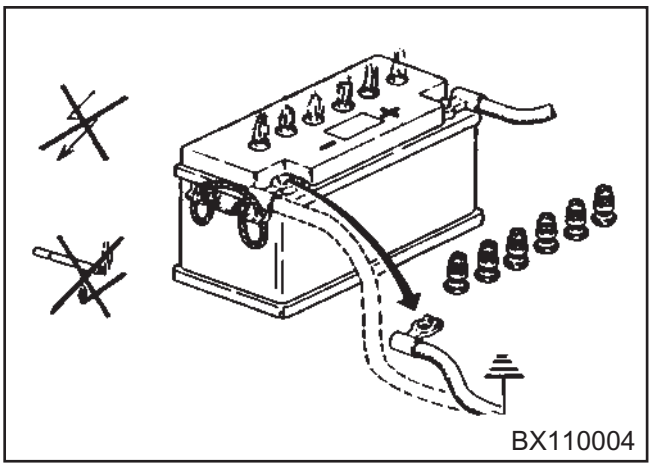
Removing the socket connector (1) from the control unit (MR control device).

- Switch off the engine
- Set the main battery switch to off by turning to the left into horizontal position.
- Release the safety and disconnect the socket connector (1) on the MR control device by swivelling.

- When fitting the socket connector (1) swivel the safety bracket upwards and lock into place.

On Big X 800/1000, the socket connector (1) on the MR control unit is provided twice.

9.12.4 Battery – hazards when handling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General aspects:

Keep the battery clean of dust and chaff.

Batteries develop a highly explosive electrolytic gas. Avoid sparks or open flames in the vicinity of batteries.

When working on the electric system or on the engine, always disconnect the earth cable or open the main battery switch.

Quick charge:
When carrying out a quick charge, disconnect the minus cable from the battery and open all battery cells in order to prevent damage to the electric system.

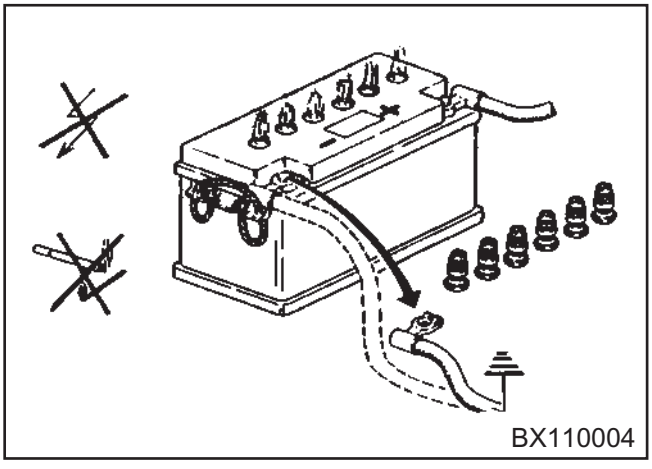
Remove the plastic covers of the battery in order to prevent highly explosive gas from gathering.

Removing the battery:
When removing the battery, first of all disconnect the earth cable, and then remove the positive cable from the battery.

9.12.5 Cleaning the battery

- Wipe the battery clean as and when necessary.
- Use a brush to remove any oxidation on the pole terminals.
- Use pole grease on the battery poles and the pole terminals.
- Keep the venting holes of the plugs open.

9.12.6 Battery – checking the acid level


BX110004

If you top up the distilled water during the winter, allow the engine to run for about 30 minutes to ensure a better mixture of water and acid.

- Check the acid level every 250 operating hours. The acid level should be at the mark above the upper plate edge.

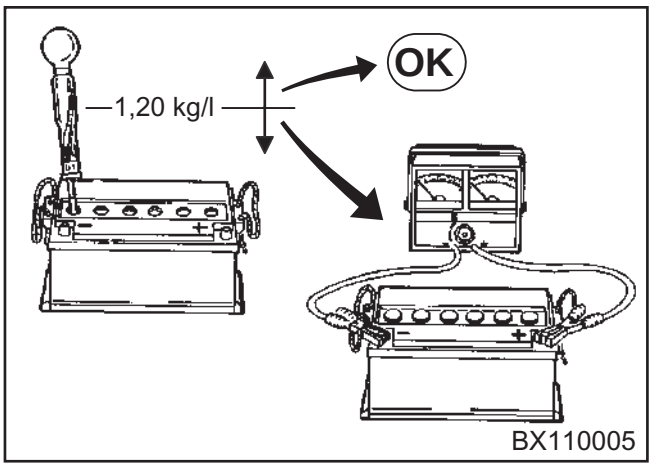
Use distilled water only.

9.12.7 Battery – measuring the acid density

- Use an acid tester to measure the acid density of each battery cell.

Under normal climatic conditions, a fully charged battery should have an acid density of 1.28.

- Recharge the battery, if the density drops below 1.20.



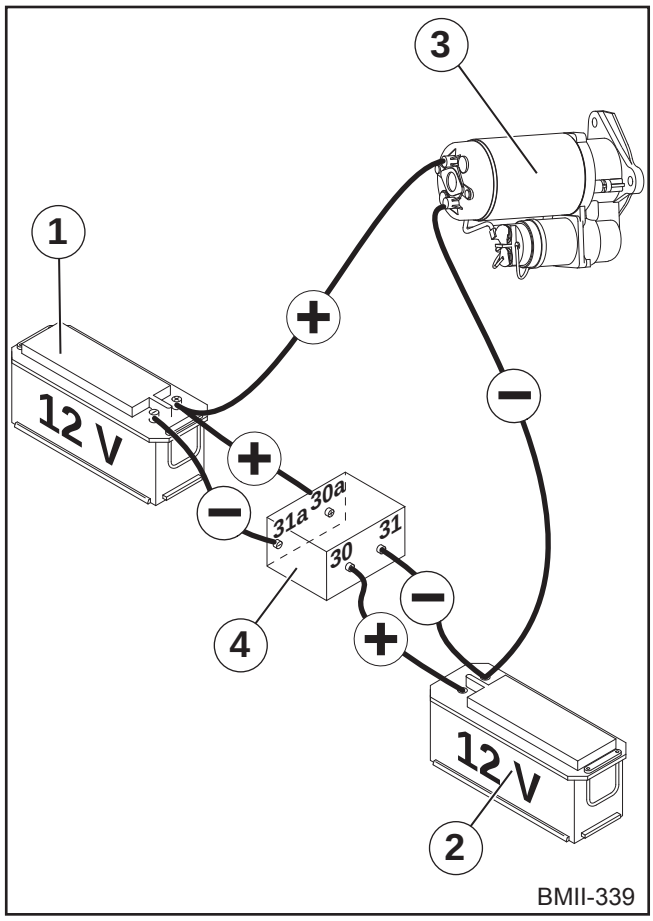
9.12.8 Installing Batteries and Connecting Poles Correctly

Always connect the battery poles correctly:

To do this:

- Connect the positive cable from the starter (3) to the positive pole of the battery (1).
- Connect the positive cable of the battery (1) with the positive pole (30a) of the battery changeover relay (4).
- Connect the negative cable of the battery (1) with the negative pole (31a) of the battery changeover relay (4).
- Connect the negative cable from the starter (3) to the negative pole of the battery (2).
- Connect the negative cable of the battery (2) with the negative pole (31) of the battery changeover relay (4).
- Connect the positive cable of the battery (2) with the positive pole (30) of the battery changeover relay (4).

Not observing the correct polarity between the batteries and alternators can cause serious damage to the electrical system.

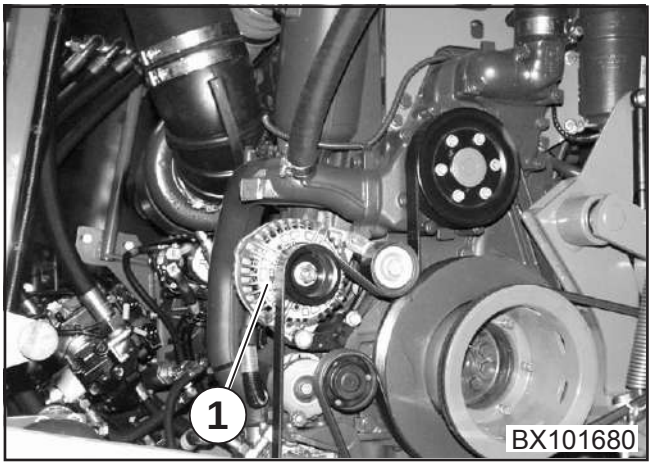


9.12.9 Three-phase generator

When working on the electrical system, always remove the positive cables from the batteries to avoid damage.
The cable contacts of the positive cables have to be protected against unintentional contact to the battery contacts.

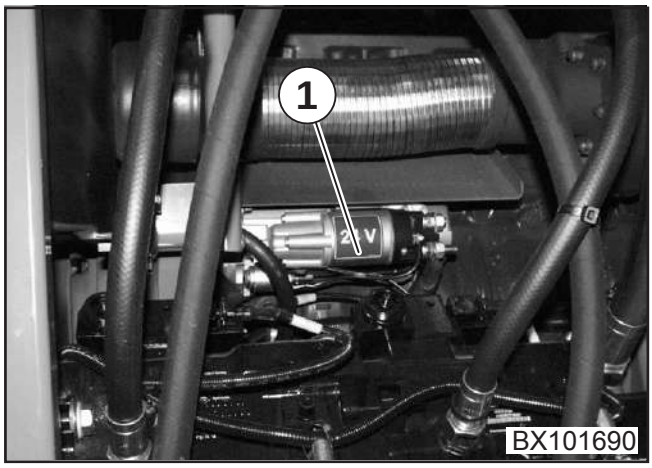
For more information, please refer to the operating instructions of the engine in the Section on "Maintenance" (DaimlerChrysler).

- Have a specialist workshop check the three-phase generator (1) once a year.



9.12.10 Starter

When working on the electrical system, always remove the positive cables from the batteries and switch off the main battery switch to avoid damage.
The cable contacts of the positive cables must be protected against unintentional contact to the battery contacts.



- If the starter (1) fails or does not work satisfactorily, determine the reason for the damage.

If the suggestions listed below do not remove the damage, please seek the advice of your KRONE dealer. Have a specialist workshop check the starter (1) thoroughly once a year.

Loose, soiled or corroded cable connections:

- Clean the cable connections on the starter and tighten the connections.
- Clean the earth cable on the engine and tighten the connection to the engine.

Battery performance too low:

- Check the electrolyte as well as acid density, and recharge the battery, if and when necessary.

Discharged battery:

- Charge the battery.

Use of a wrong engine oil viscosity:

- Always use the right engine oil according to the specification.

Starter safety relay is defective:

- Replace the relay.

9.12.11 Lights

Lamp overview (voltage/capacity and type of lamp):

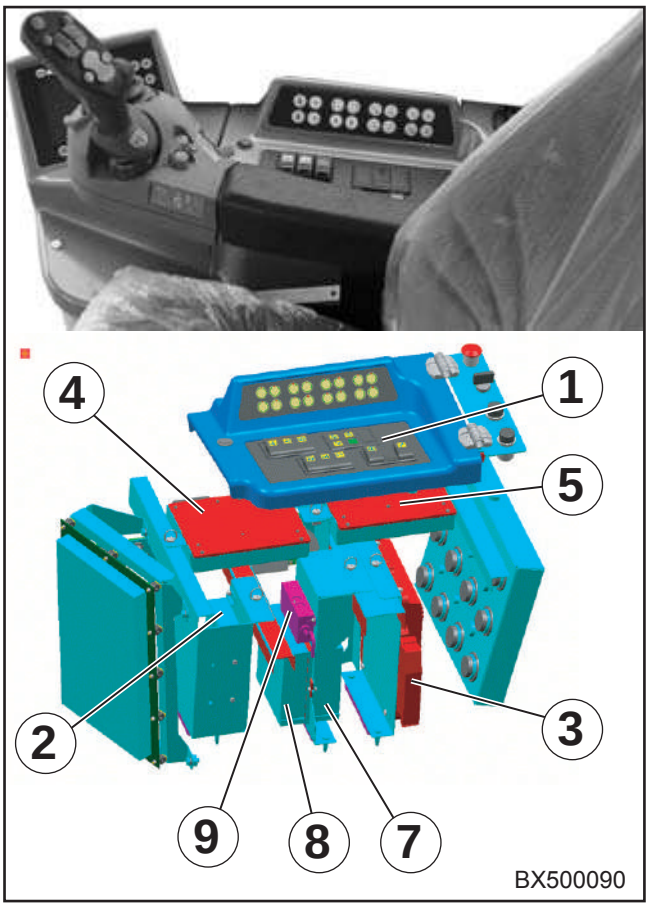
licence plate lamp	12 V/5 W
rear lamps	12 V/10 W
rear lamps - fender	12 V/5 W
clearance lamps - front	12 V/5 W
rear wheel light	12 V/5 W
lamps - tyres	12 V/5 W
rear lamp – upper discharge chute	12 V/10 W
dipped/high beam	12 V/55/60 W H4
cab roof floodlights	12 V/55 W H3
floodlights - upper discharge chute	12 V/55 W H3
cab roof working floodlights	12 V/55 W H3
working floodlights – front lamp carrier	12 V/55 W H3
rear working floodlights	12 V/55 W H3
lighting – grinding device	12 V/55 W H3
indicator – fender/rear/front	12 V/21 W
reversing lights	12 V/21 W
brake lights – rear/upper discharge chute	12 V/21 W
allround lights	12 V/55 W H1

9.12.12 Control units and fuses

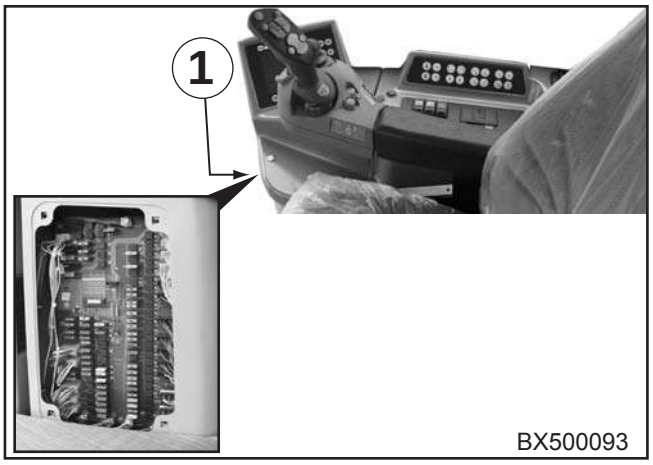
Have work on the electronic system carried out by KRONE after-sales service or KRONE dealer only!

The following listed control units are located behind the cover (1) of the operator console of the driver's cab.

1 BEK-Control unit console
2 ADM-engine control
3 SmartDrive (travelling gear)
4 KMC2 Krone-machine-controller
5 KMC3 Krone-machine-controller
6 Teleservice (optional)
7 Autopilot (optional)
8 DIOM-output module
9 Switchbox Video camera



The designations of the fuses, relays, as well as the LEDs for the control units mentioned above are located on the console board.
The console board is located behind the cover (1) of the operator console of the driver's cab.
For console board overview see page IX-51.

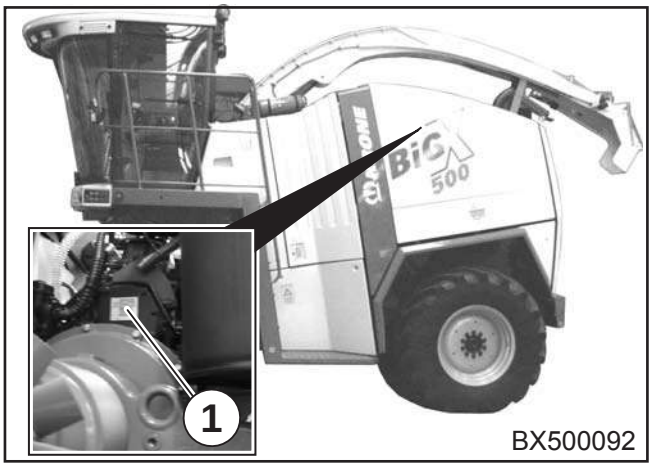


PLD-engine control

The PLD-engine control (1) is located in driving direction left front of the motor.

PLD engine control (1). For more information, please refer to the operating instructions of the engine (DaimlerChrysler).

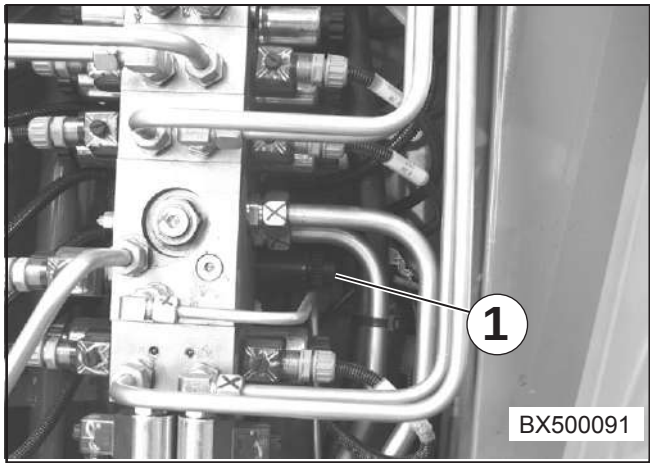
The designations of the fuses, relays, as well as the LEDs for the **PLD-engine control** are located on the console board.
The console board is located behind the cover (1) of the operator console of the driver's cab.
For console board overview see page IX-51.



EMR lifting gear control

The EMR lifting gear control (1) is located above the main valve block.

The designations of the fuses, relays, as well as the LEDs for the **EMR-lifting gear control** are located on the console board.
The console board is located behind the cover (1) of the operator console of the driver's cab.
For console board overview see page IX-51.



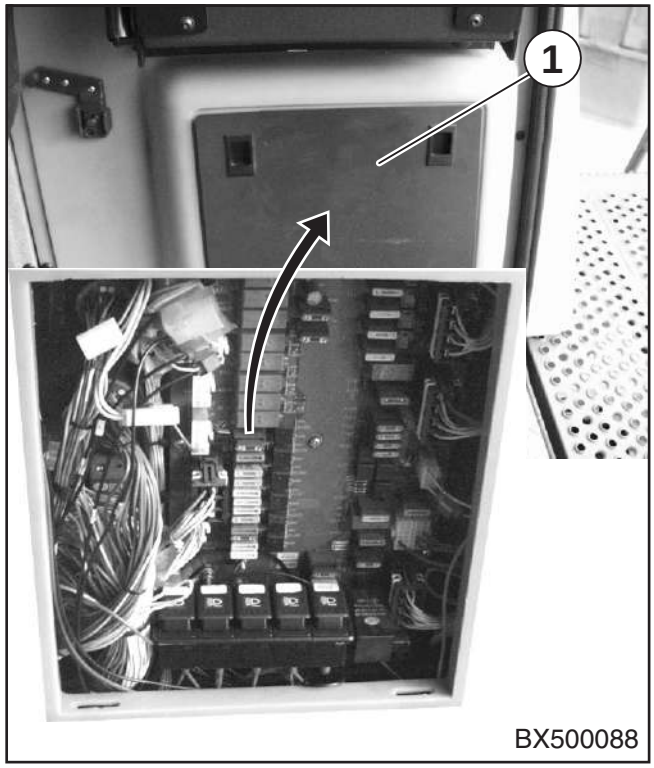
Manual operation on the platform

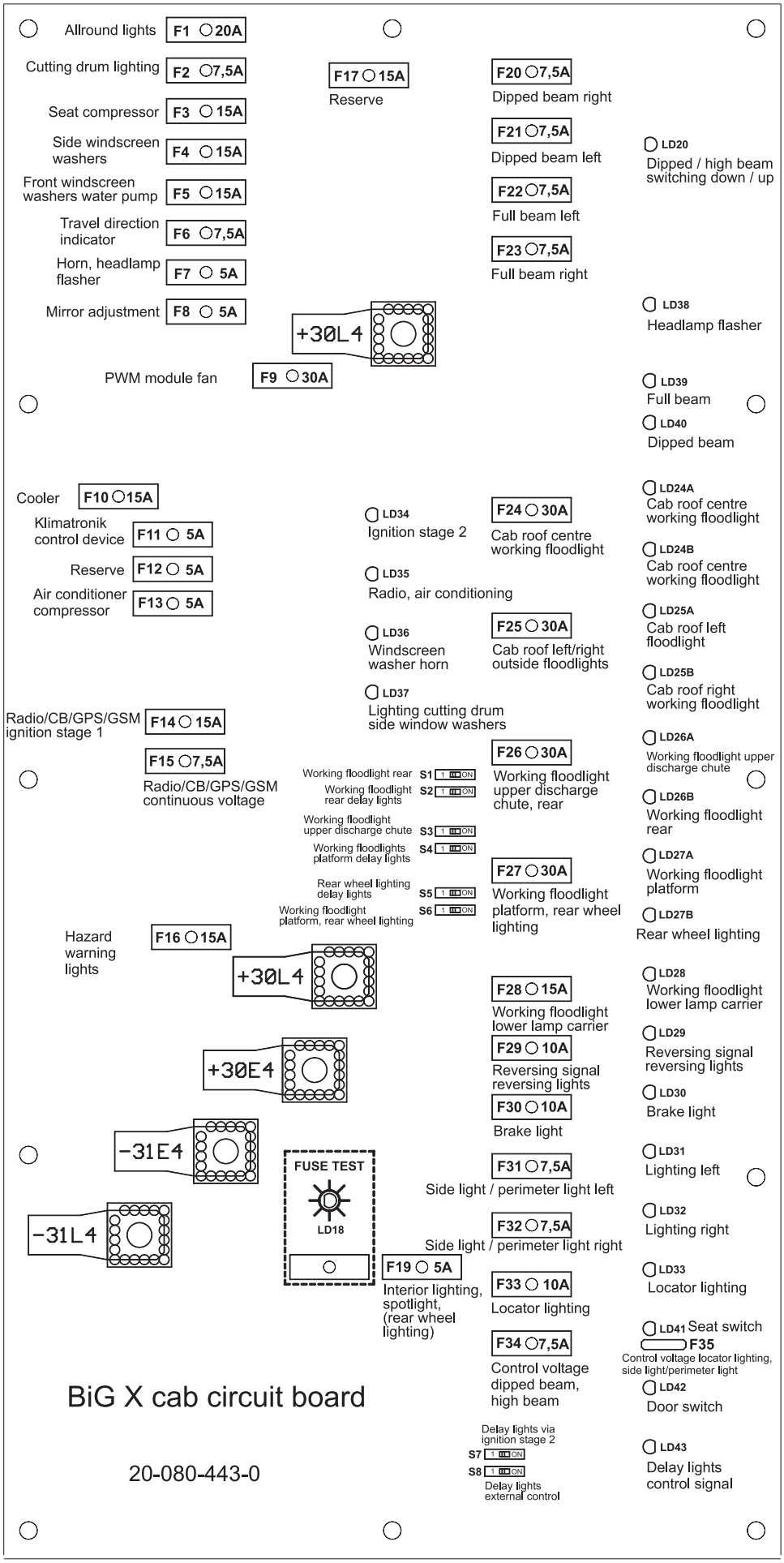
The manual operation (1) is located in driving direction left front on the platform.

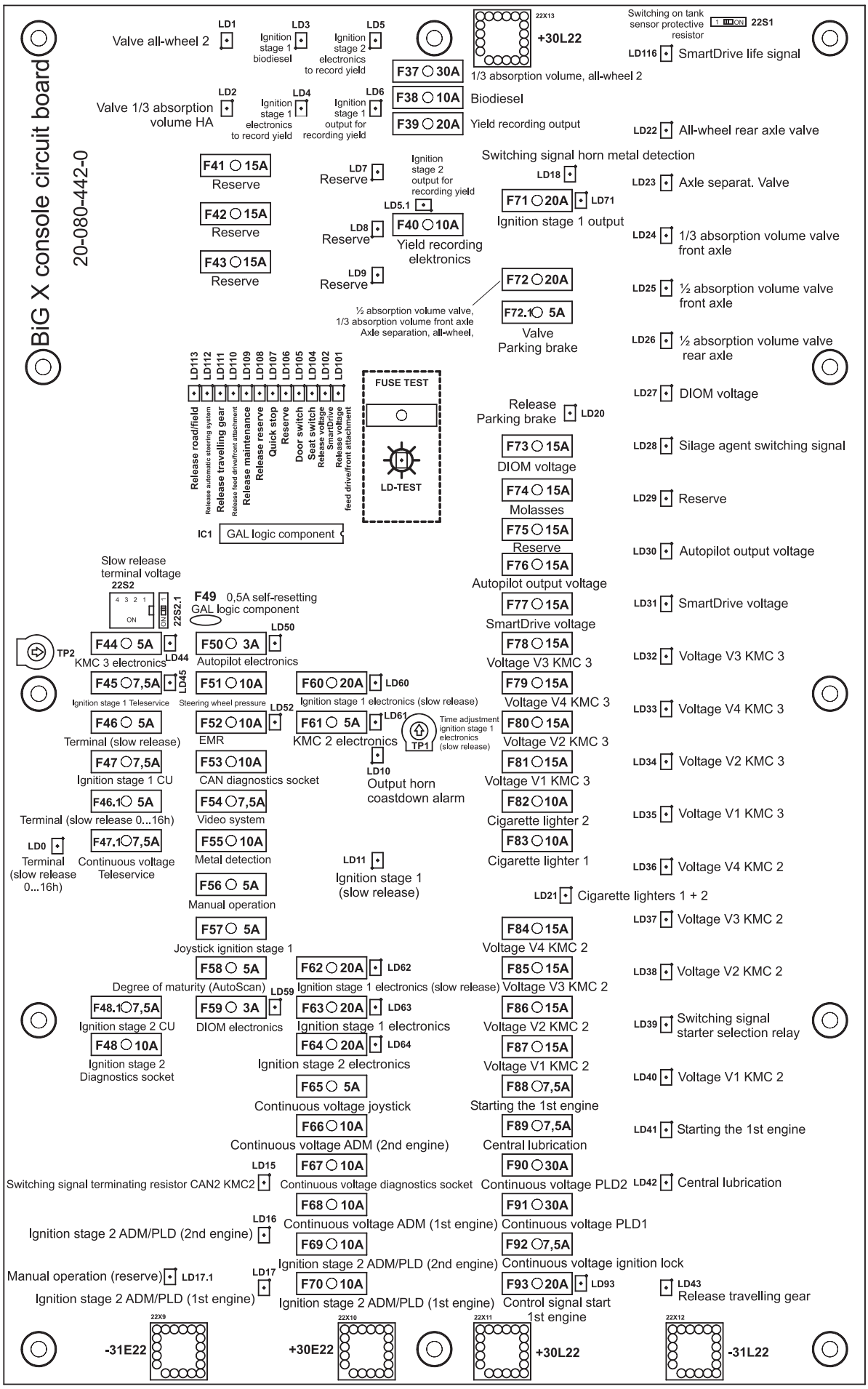
The designations of the fuses, relays, as well as the LEDs for the **manual operation** are located on the console board.
The console board is located behind the cover (1) of the operator console of the driver's cab.
For console board overview see page IX-51.

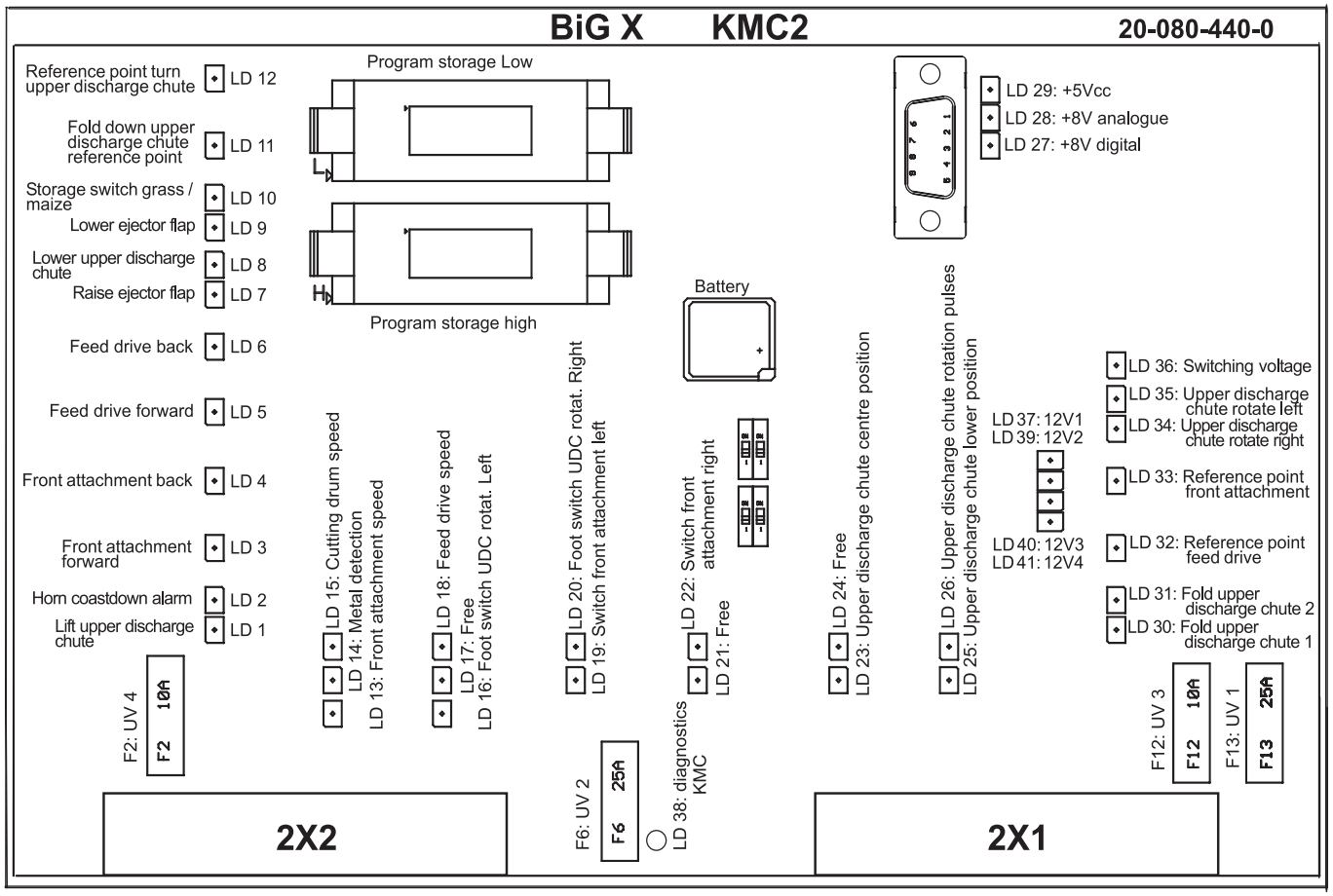
Cabin-relay board

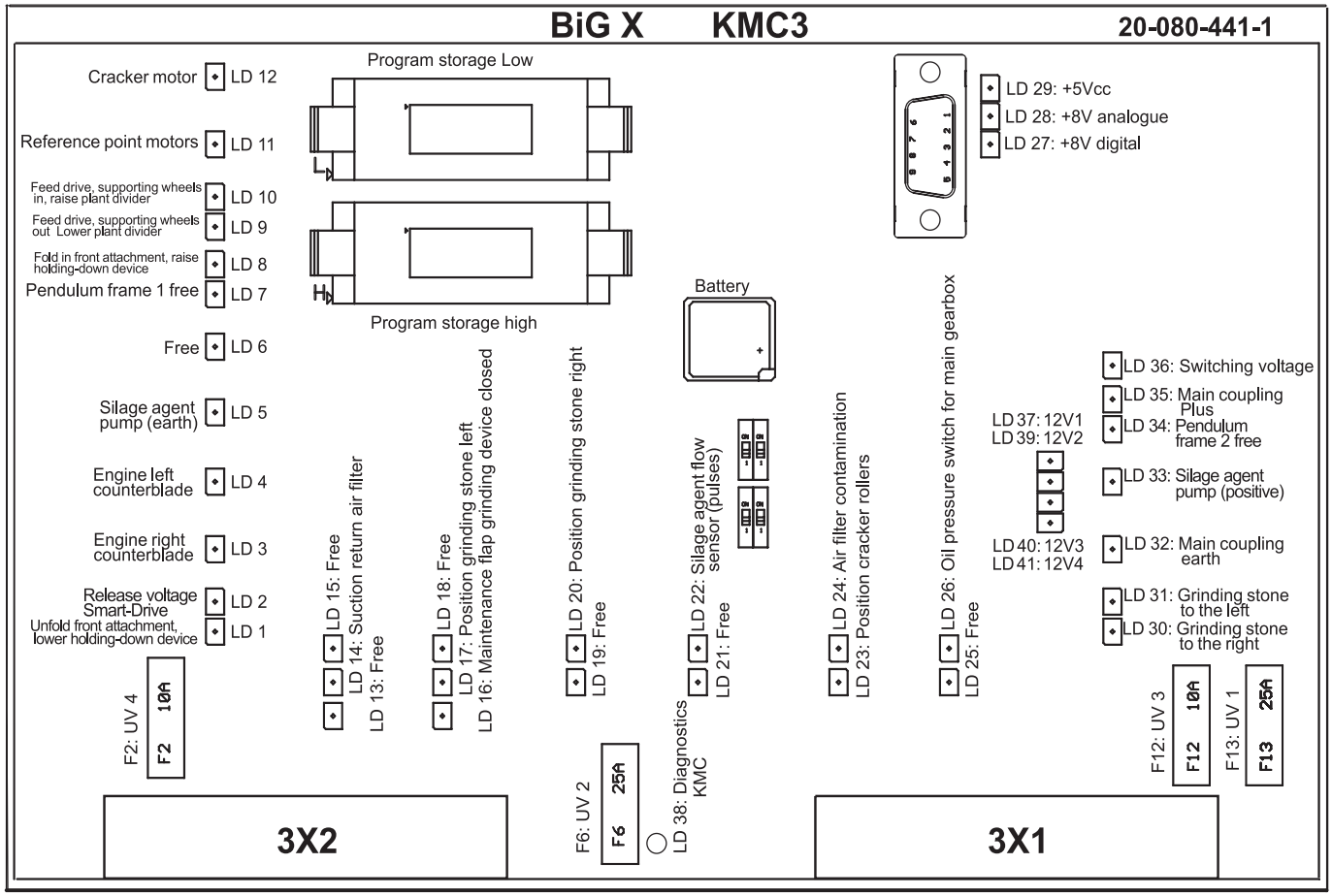
The designations of the fuses, relays, as well as the LEDs for the **cabin** are located on the cabin-relay board.
The cabin-relay board is located behind the cover (1) on the cabin rear panel.
For cabin-board overview see page IX-50.




Allround lights F1 20A
Cutting drum lighting F2 7,5A
Seat compressor F3 15A
Side windscreen washers F4 15A
Front windscreen washers water pump F5 15A
Travel direction indicator F6 7,5A
Horn, headlamp flasher F7 5A
Mirror adjustment F8 5A
PWM module fan F9 30A
+30L4
F17 15A
Reserve
F20 7,5A
Dipped beam right
F21 7,5A
Dipped beam left
F22 7,5A
Full beam left
F23 7,5A
Full beam right
LD20
Dipped / high beam switching down / up
LD38
Headlamp flasher
LD39
Full beam
LD40
Dipped beam
Cooler F10 15A
Klimatronik control device F11 5A
Reserve F12 5A
Air conditioner compressor F13 5A
LD34
Ignition stage 2
LD35
Radio, air conditioning
LD36
Windscreen washer horn
LD37
Lighting cutting drum side window washers
F24 30A
Cab roof centre working floodlight
F25 30A
Cab roof left/right outside floodlights
LD24A
Cab roof centre working floodlight
LD24B
Cab roof centre working floodlight
LD25A
Cab roof left floodlight
LD25B
Cab roof right working floodlight
Radio/CB/GPS/GSM ignition stage 1 F14 15A
F15 7,5A
Radio/CB/GPS/GSM continuous voltage
Working floodlight rear S1
Working floodlight rear delay lights S2
Working floodlight upper discharge chute S3
Working floodlights platform delay lights S4
Rear wheel lighting delay lights S5
Working floodlight platform, rear wheel lighting S6
F26 30A
Working floodlight upper discharge chute, rear
F27 30A
Working floodlight platform, rear wheel lighting
LD26A
Working floodlight upper discharge chute
LD26B
Working floodlight rear
LD27A
Working floodlight platform
LD27B
Rear wheel lighting
Hazard warning lights F16 15A
+30L4
+30E4
-31E4
-31L4
FUSE TEST
LD18
F19 5A
Interior lighting, spotlight, (rear wheel lighting)
F28 15A
Working floodlight lower lamp carrier
F29 10A
Reversing signal reversing lights
F30 10A
Brake light
F31 7,5A
Side light / perimeter light left
F32 7,5A
Side light / perimeter light right
F33 10A
Locator lighting
F34 7,5A
Control voltage dipped beam, high beam
LD28
Working floodlight lower lamp carrier
LD29
Reversing signal reversing lights
LD30
Brake light
LD31
Lighting left
LD32
Lighting right
LD33
Locator lighting
LD41 Seat switch
F35
Control voltage locator lighting, side light/perimeter light
LD42
Door switch
Delay lights via ignition stage 2 S7
Delay lights external control S8
LD43
Delay lights control signal
BiG X cab circuit board
20-080-443-0


BiG X console circuit board
20-080-442-0
Valve all-wheel 2
LD1
LD3 Ignition stage 1 biodiesel
LD5 Ignition stage 2 electronics to record yield
Valve 1/3 absorption volume HA
LD2
LD4 Ignition stage 1 electronics to record yield
LD6 Ignition stage 1 output for recording yield
22X13
+30L22
1/3 absorption volume, all-wheel 2
F37 30A
F38 10A Biodiesel
F39 20A Yield recording output
Switching on tank sensor protective resistor
22S1
LD116 SmartDrive life signal
LD22 All-wheel rear axle valve
Switching signal horn metal detection
LD23 Axle separat. Valve
LD24 1/3 absorption volume valve front axle
LD25 ½ absorption volume valve front axle
LD26 ½ absorption volume valve rear axle
LD27 DIOM voltage
LD28 Silage agent switching signal
LD29 Reserve
LD30 Autopilot output voltage
LD31 SmartDrive voltage
LD32 Voltage V3 KMC 3
LD33 Voltage V4 KMC 3
LD34 Voltage V2 KMC 3
LD35 Voltage V1 KMC 3
LD36 Voltage V4 KMC 2
LD21 Cigarette lighters 1 + 2
LD37 Voltage V3 KMC 2
LD38 Voltage V2 KMC 2
LD39 Switching signal starter selection relay
LD40 Voltage V1 KMC 2
LD41 Starting the 1st engine
LD42 Central lubrication
LD43 Release travelling gear
F41 15A Reserve
F42 15A Reserve
F43 15A Reserve
LD7 Reserve
LD8 Reserve
LD9 Reserve
Ignition stage 2 output for recording yield
LD5.1
F40 10A Yield recording elektronics
LD18
F71 20A
LD71
Ignition stage 1 output
F72 20A
F72.1 5A Valve Parking brake
½ absorption volume valve, 1/3 absorption volume front axle Axle separation, all-wheel,
LD113 LD112 LD111 LD110 LD109 LD108 LD107 LD106 LD105 LD104 LD102 LD101
Release road/field
Release automatic steering system
Release travelling gear
Release feed drive/front attachment
Release maintenance
Release reserve
Quick stop
Reserve
Door switch
Seat switch
Release voltage SmartDrive
Release voltage feed drive/front attachment
FUSE TEST
LD-TEST
IC1 GAL logic component
Release Parking brake
LD20
F73 15A DIOM voltage
F74 15A Molasses
F75 15A Reserve
F76 15A Autopilot output voltage
F77 15A SmartDrive voltage
F78 15A Voltage V3 KMC 3
F79 15A Voltage V4 KMC 3
F80 15A Voltage V2 KMC 3
F81 15A Voltage V1 KMC 3
F82 10A Cigarette lighter 2
F83 10A Cigarette lighter 1
F84 15A Voltage V4 KMC 2
F85 15A Voltage V3 KMC 2
F86 15A Voltage V2 KMC 2
F87 15A Voltage V1 KMC 2
F88 7,5A Starting the 1st engine
F89 7,5A Central lubrication
F90 30A Continuous voltage PLD2
F91 30A Continuous voltage PLD1
F92 7,5A Continuous voltage ignition lock
F93 20A
LD93
Control signal start 1st engine
Slow release terminal voltage
22S2
22S2.1
F49 0,5A self-resetting GAL logic component
TP2
F44 5A
LD44
KMC 3 electronics
F50 3A
LD50
Autopilot electronics
F45 7,5A
LD45
Ignition stage 1 Teleservice
F51 10A
Steering wheel pressure
F60 20A
LD60
Ignition stage 1 electronics (slow release)
F46 5A Terminal (slow release)
F52 10A
LD52
EMR
F61 5A
LD61
KMC 2 electronics
TP1
Time adjustment ignition stage 1 electronics (slow release)
LD10 Output horn coastdown alarm
F47 7,5A Ignition stage 1 CU
F53 10A CAN diagnostics socket
F46.1 5A Terminal (slow release 0...16h)
F54 7,5A Video system
LD0 Terminal (slow release 0...16h)
F47.1 7,5A Continuous voltage Teleservice
F55 10A Metal detection
LD11 Ignition stage 1 (slow release)
F56 5A Manual operation
F57 5A Joystick ignition stage 1
F58 5A Degree of maturity (AutoScan)
F62 20A
LD62
Ignition stage 1 electronics (slow release)
F48.1 7,5A Ignition stage 2 CU
F59 3A
LD59
DIOM electronics
F63 20A
LD63
Ignition stage 1 electronics
F48 10A Ignition stage 2 Diagnostics socket
F64 20A
LD64
Ignition stage 2 electronics
F65 5A Continuous voltage joystick
F66 10A Continuous voltage ADM (2nd engine)
LD15 Switching signal terminating resistor CAN2 KMC2
F67 10A Continuous voltage diagnostics socket
F68 10A Continuous voltage ADM (1st engine)
LD16 Ignition stage 2 ADM/PLD (2nd engine)
F69 10A Ignition stage 2 ADM/PLD (2nd engine)
Manual operation (reserve)
LD17.1
LD17
F70 10A Ignition stage 2 ADM/PLD (1st engine)
Ignition stage 2 ADM/PLD (1st engine)
22X9
-31E22
22X10
+30E22
22X11
+30L22
22X12
-31L22


BiG X KMC2
20-080-440-0
Reference point turn upper discharge chute
LD 12
Fold down upper discharge chute reference point
LD 11
Storage switch grass / maize
LD 10
Lower ejector flap
LD 9
Lower upper discharge chute
LD 8
Raise ejector flap
LD 7
Feed drive back
LD 6
Feed drive forward
LD 5
Front attachment back
LD 4
Front attachment forward
LD 3
Horn coastdown alarm
LD 2
Lift upper discharge chute
LD 1
Program storage Low
Program storage high
LD 15: Cutting drum speed
LD 14: Metal detection
LD 13: Front attachment speed
LD 18: Feed drive speed
LD 17: Free
LD 16: Foot switch UDC rotat. Left
LD 20: Foot switch UDC rotat. Right
LD 19: Switch front attachment left
Battery
LD 22: Switch front attachment right
LD 21: Free
LD 38: diagnostics KMC
LD 24: Free
LD 23: Upper discharge chute centre position
LD 26: Upper discharge chute rotation pulses
LD 25: Upper discharge chute lower position
LD 29: +5Vcc
LD 28: +8V analogue
LD 27: +8V digital
LD 37: 12V1
LD 39: 12V2
LD 40: 12V3
LD 41: 12V4
LD 36: Switching voltage
LD 35: Upper discharge chute rotate left
LD 34: Upper discharge chute rotate right
LD 33: Reference point front attachment
LD 32: Reference point feed drive
LD 31: Fold upper discharge chute 2
LD 30: Fold upper discharge chute 1
F2: UV 4
F2 10A
F6: UV 2
F6 25A
F12: UV 3
F12 10A
F13: UV 1
F13 25A
2X2
2X1

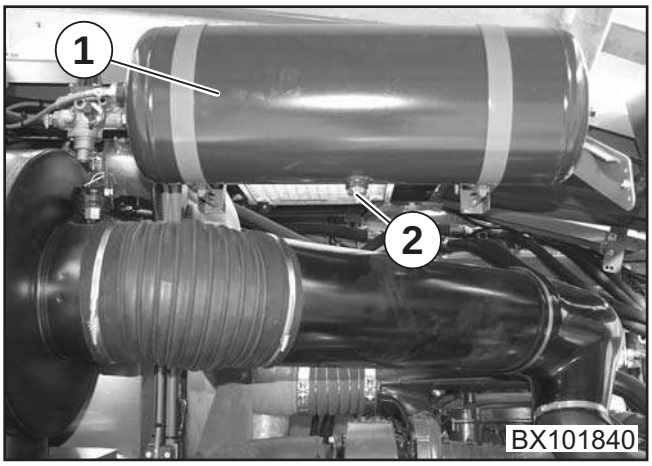

BiG X KMC3
20-080-441-1
Cracker motor
LD 12
Reference point motors
LD 11
Feed drive, supporting wheels in, raise plant divider
LD 10
Feed drive, supporting wheels out Lower plant divider
LD 9
Fold in front attachment, raise holding-down device
LD 8
Pendulum frame 1 free
LD 7
Free
LD 6
Silage agent pump (earth)
LD 5
Engine left counterblade
LD 4
Engine right counterblade
LD 3
Release voltage Smart-Drive
LD 2
Unfold front attachment, lower holding-down device
LD 1
Program storage Low
Program storage high
LD 15: Free
LD 14: Suction return air filter
LD 13: Free
LD 18: Free
LD 17: Position grinding stone left
LD 16: Maintenance flap grinding device closed
LD 20: Position grinding stone right
LD 19: Free
Battery
LD 22: Silage agent flow sensor (pulses)
LD 21: Free
LD 38: Diagnostics KMC
LD 24: Air filter contamination
LD 23: Position cracker rollers
LD 26: Oil pressure switch for main gearbox
LD 25: Free
LD 29: +5Vcc
LD 28: +8V analogue
LD 27: +8V digital
LD 37: 12V1
LD 39: 12V2
LD 40: 12V3
LD 41: 12V4
LD 36: Switching voltage
LD 35: Main coupling Plus
LD 34: Pendulum frame 2 free
LD 33: Silage agent pump (positive)
LD 32: Main coupling earth
LD 31: Grinding stone to the left
LD 30: Grinding stone to the right
F2: UV 4
F2 10A
F6: UV 2
F6 25A
F12: UV 3
F12 10A
F13: UV 1
F13 25A
3X2
3X1

9.13 Maintenance – compressed air system

9.13.2 Compressed air storage tank

Condensation water settles in the compressed air storage tank (1). The condensation water may cause malfunctions.
Drain the condensation water once a week.

- Use the drain valve (2) to drain the condensation water collected in the compressed air storage tank (1) into a container.



9.14 Maintenance – Air conditioning system and heating

9.14.1 Special warnings

Carry out repair, maintenance and cleaning work only when the machine is at a standstill. Switch off the engine. Remove the ignition key. Secure the machine against the possibility of rolling back.

Repair, maintenance and cleaning work may be carried out by authorised specialists only.

In case of repair, maintenance and cleaning work on the refrigerant circuit, refrigerant emissions may occur; these emissions may be liquid or gaseous and are a hazard for man and the environment. Take suitable protective measures (wear protective goggles and protective gloves).

It is imperative that you seek medical advice in case of refrigerant burns; take the data sheet (cf. page IX - 53) along.
Ensure sufficient ventilation when working on the refrigerating system.

Do not permit the refrigerant to escape during filling or repair work; use a recycling container for disposal.

The spare parts used have to meet the technical requirements defined by the machine manufacturer. For this reason, use KRONE original spare parts only.

9.14.2 Components of the air conditioning system

A Compressor
on the right-hand side on the engine in direction of travel, driven by V belt

B Capacitor
behind the radiator screen in the machine compartment

C drier/collector
behind the radiator screen in the machine compartment – bottom right

D Evaporator
in the cab roof

E Manometric switch
on drier

F Expansion valve
at the evaporator inlet

G Air conditioning/heating rotary switch
in cab, roof panel

9.14.3 Data sheet of refrigerant R134a (extract)

Refrigerant R 134a:	
Chemical designation:	1,1,1,2-tetrafluorethane
Chemical formula:	$CH_2F\ CF_3$
Molecular weight:	102.0 g/mol
Boiling point (at 1.013 bar):	-26.1°C
Freezing point:	-101.0°C
Critical temperature:	-101.1°C
Critical pressure:	40.60 bar
Density (liquid at +25 ° Celsius):	1,206 kg/m^3
Flammability limits in air:	not flammable

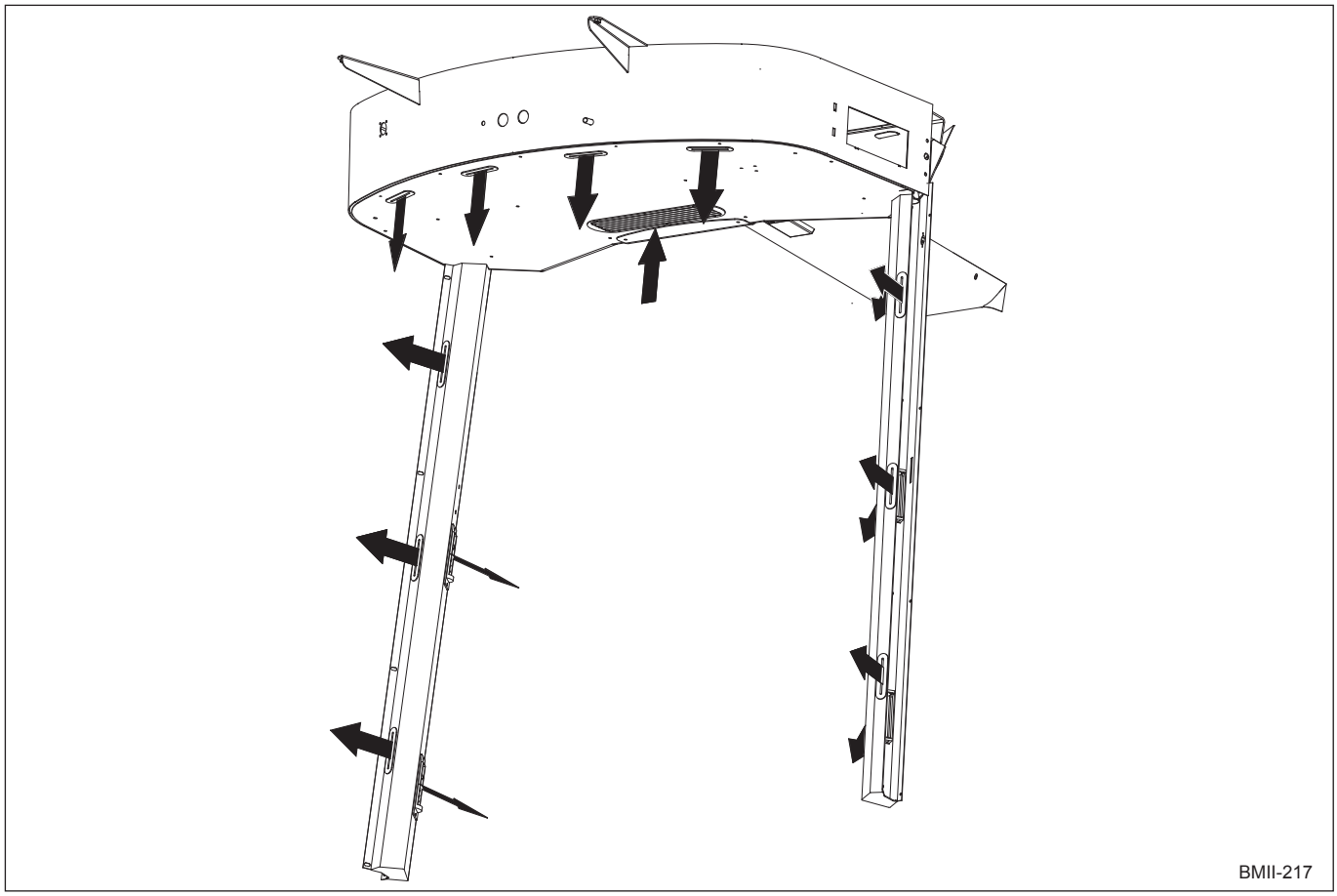
Environmental data		
FKW 134a:		
ODP	- ozonolysis potential	ODP = 0
CLP	- chlorine load potential	CLP = 0
HGWP	- greenhouse effect	HGWP = 0.26
PCR	- photo-chemical reactivity	PCR = 0.5

9.14.4 Technical Data

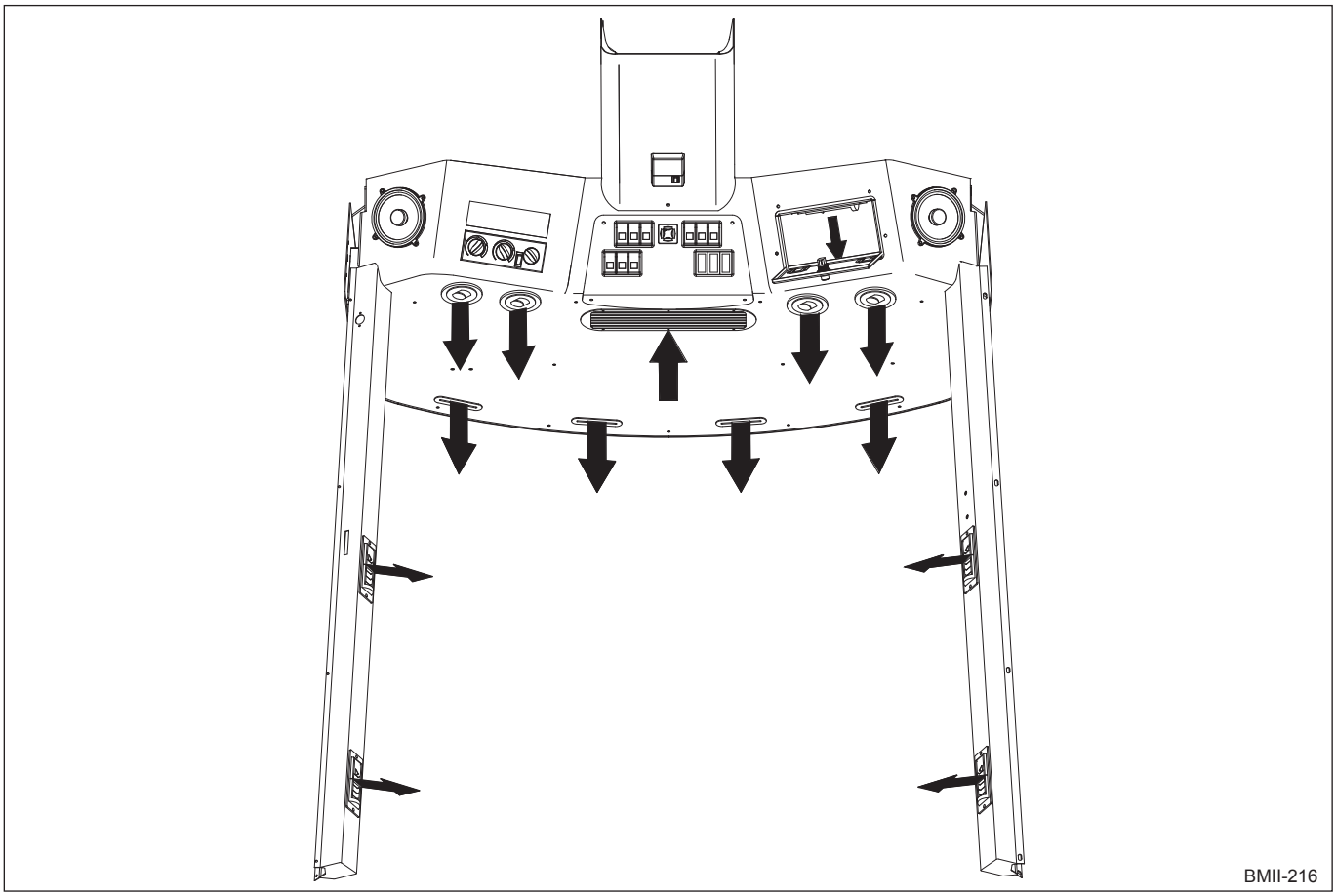
Technical Data	
Component	**Performance data**
Evaporator	refrigerating capacity* 5,200 Watt*
Heater	heating capacity 4,000 Watt
Fan	1000 m^3/h free blowing
Voltage	12 Volt
Current consumption	15 ampères
Refrigerant	R 134a (CFC free)

*measured at +30 ° Celsius ambient temperature
(data rendered by the manufacturer)

9.14.5 Air intake and distribution



BMII-217



BMII-216

9.14.6 Refrigerant

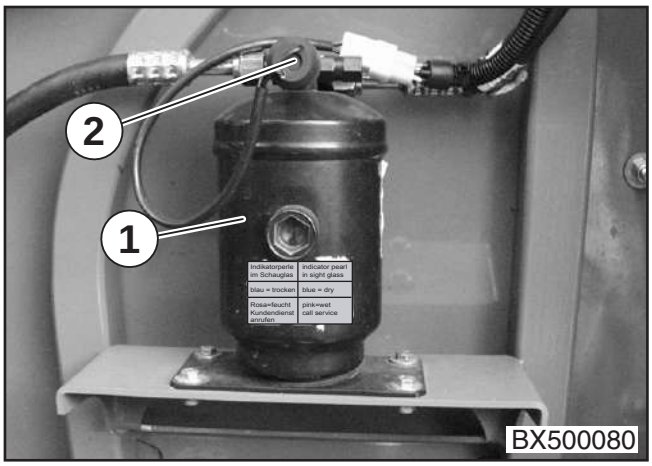
The air conditioning system is operated with 2200 g of refrigerant R134a (tetrafluoroethane). This substance does not contain any chlorine atoms, and thus is inoffensive to the ozone in the atmosphere of the environment.

Nonetheless, the refrigerant must not be drained; it must be collected at a recycling plant. For this reason do not sever any connecting pipes. Have maintenance and repair work on the air conditioning system carried out only by your Krone dealer with a suitable disposal and recycling equipment.

9.14.7 Manometric switch

When the fan speed is at the highest still pleasant performance, set the cooling performance of the air conditioning system to an average value. Let the air conditioning system not operate at the lowest fan speed and highest cooling performance.

The air conditioning system has been fitted with a manometric switch (2) which shuts down the system in case of over or under pressure (on the collector/drier (1) behind the combined radiator on the left hand side in direction of travel).



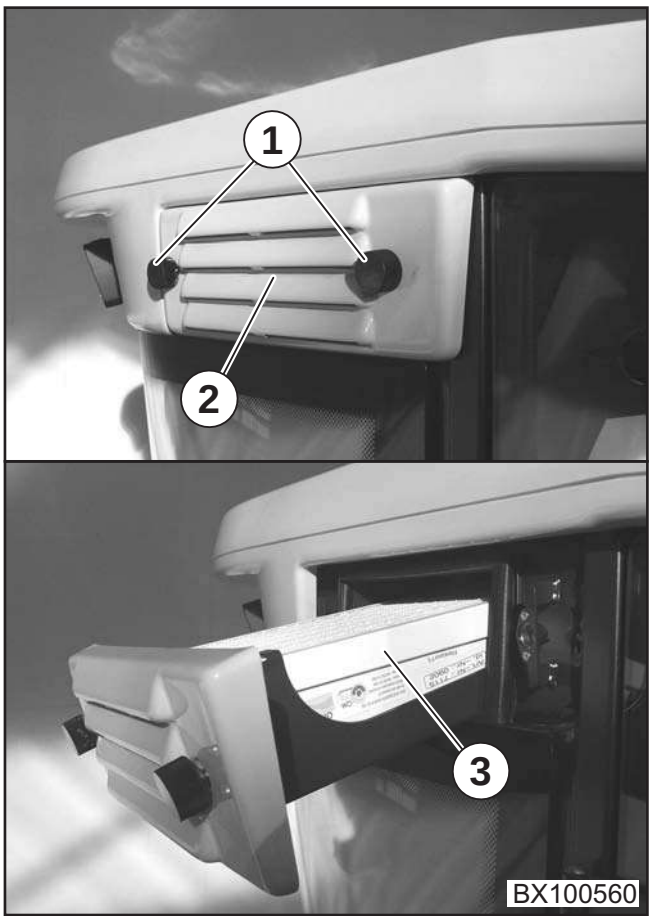
9.14.8 Fresh air fan and circulation mode (cabin)

Fresh air fan

A fresh air filter (3) 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. This filter (3) protects the driver in the cab against dust or airborne dirt, which is outside the cab.
Check the filter for soiling prior to any operation.

If filters are not properly maintained they may become very soiled, no longer ensuring that sufficient fresh air is passed into the cab.

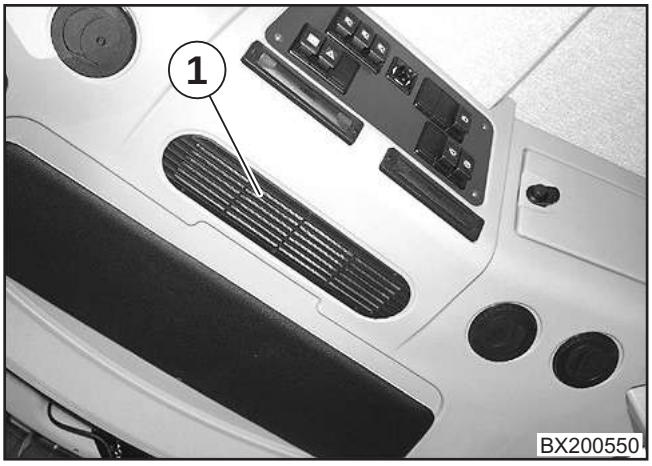
- Open the closing device (1) by turning 90° clockwise.
- Pull the gill screen (2) out; check the wedge filter cell (3) for soiling and clean, if and when necessary.
- Shake out the filter (3); never use compressed air. In case of severe soiling, the filter (3) has to be replaced.



Circulation filter

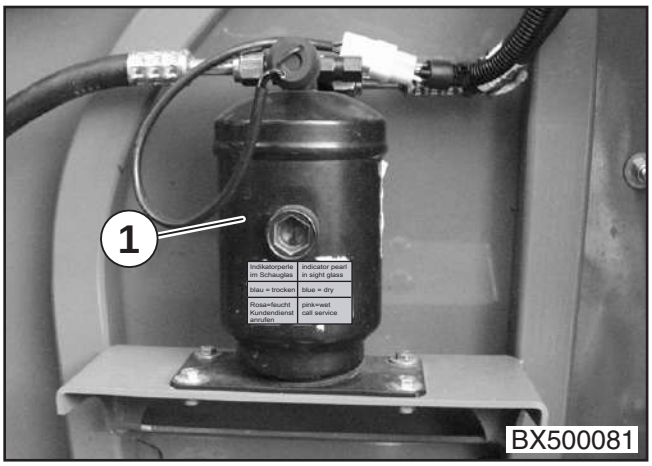
If the circulating air filter (1) is very dirty, the output of the air conditioning system may be reduced and it may heat up.

- Clean the circulating air filter (1) regularly.



9.14.9 Collector/Drier

The ambient temperature must exceed the temperature set at the thermostat (generally +1 ° Celsius) for the compressor to switch on.



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 x l.

In keeping with section 10 of the Pressure Vessel Regulations these pressure tanks have to be subjected to recurrent tests by an expert in keeping 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.

9.14.10 Checking the state of the refrigerant and the fill

Checking the refrigerant volume

Loss of refrigerant through hoses in the air conditioning system is unavoidable. Check the level of the refrigerant every 100 hours.

- Check the window (2) of the drier (1) with the engine running and with the air conditioning system switched on (set to highest cooling action).
- If the white float (3) is at the top, the volume of refrigerant is okay.
- If the white float (3) is at the bottom, the refrigerant must be topped up (specialist workshop).

Checking the moisture saturation

The moisture in the refrigerant circuit is collected in the filter drier (1).

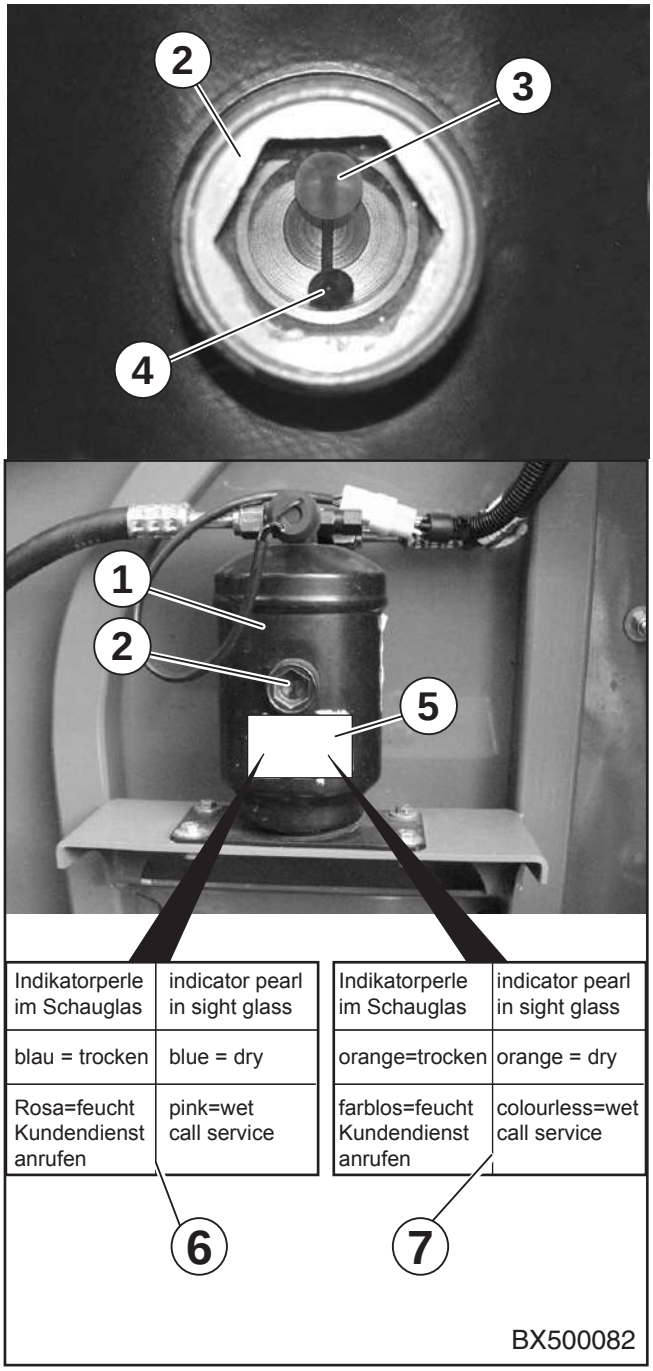
Observe the notice on the sticker (5) on the dryer (1).

Dryer with sticker (6):

- If the indicator pearl (3) is blue, the degree of moisture is okay.
- If the indicator pearl (3) has turned pink, the collector unit of the dryer must be replaced (specialist workshop)

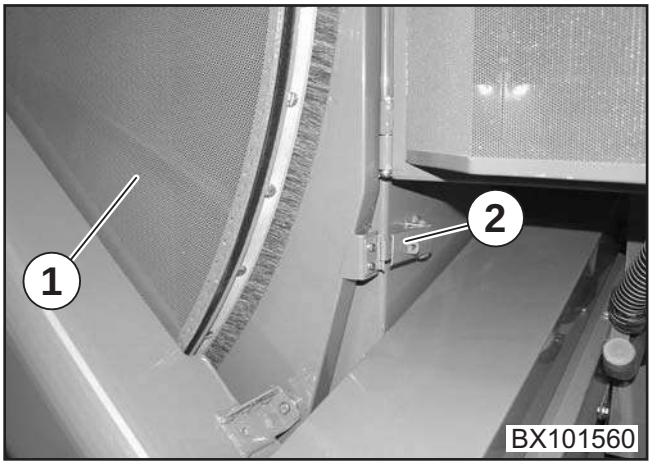
Dryer with sticker (7):

- If the indicator pearl (3) is orange, the degree of moisture is okay.
- If the indicator pearl (3) has turned colourless, the collector unit of the dryer must be replaced (specialist workshop)



9.14.11 Capacitor

The capacitor is located in the engine compartment behind the radiator screen (1).
Regularly check the capacitor for cleanliness; clean the unit depending on the degree of soiling, however, at least once a month.

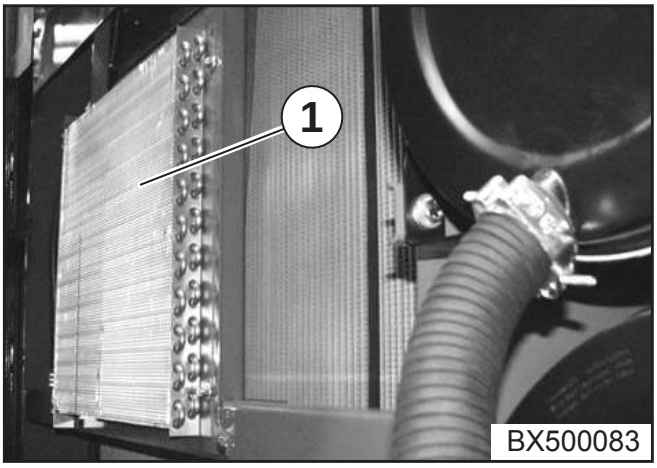


Opening the radiator screen

- Open the catch (2) and swing the radiator screen (1) aside.

Cleaning the capacitor

- Blow the capacitor (1) out from the inside to the outside with compressed air. Do not damage the blades.



9.15 Maintenance – central lubrication system (Vogel)

(Machine under machine number 773 000)

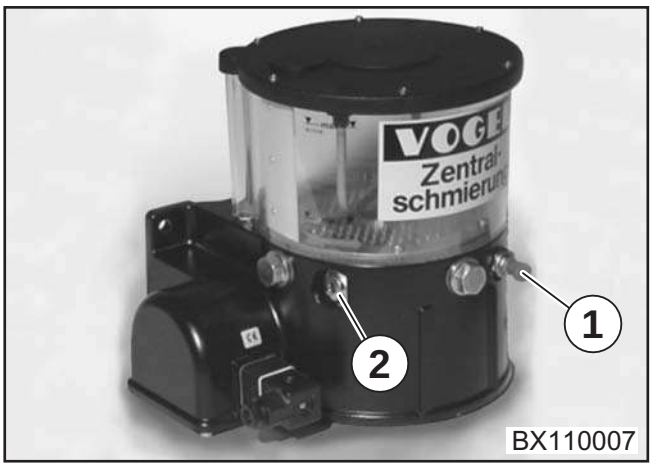
Lubricant fill

Hydraulic-type lubricating nipple

The lubricant is filled through the hydraulic-type lubricating nipple DIN 71412-AM10x1 by means of a commercially available grease gun.

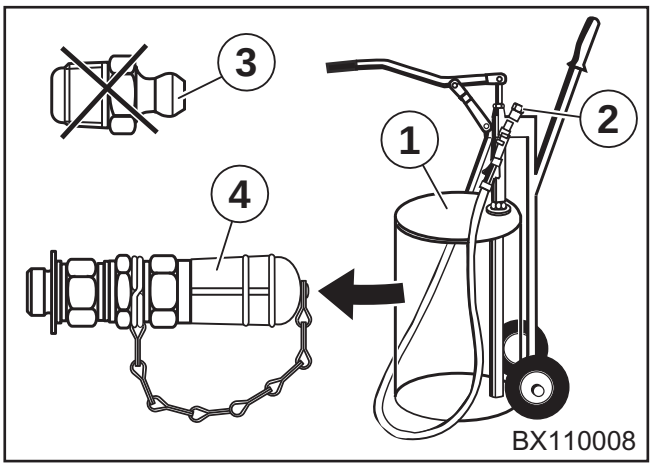
1 - Hydraulic-type lubricating nipple
2 - Mounting connection

The hydraulic-type lubricating nipple can be screwed to position 2. As an alternative, connection 2 can be used to mount potential lubricant return systems.



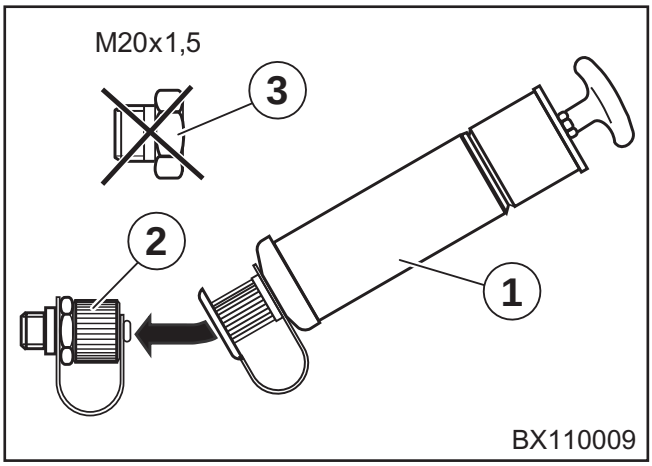
Fill coupling

- Remove the lubricating nipple (3) and replace by filler neck 995-000-705 (4).
- The coupling box 995-001-500 (2) must be fitted to the filling pump (1).



Filling cylinder

- Remove the M20x1.5 closure screw (3) and replace by filler socket 169-000-170 (2).
- For filling remove the protective cap on the socket (2) and the filling cylinder 169-000-171 (1).



Hinged lid

For the KFG3-5, KFG5, KFG3-5 and KFGS5-5 series, a lubricant filling method has been provided through a special hinged lid as an optional feature.

Use clean lubricant with a suitable tool only! Soiled lubricants will lead to severe system failures!

Checking the fill level

Visual

The transparent lubricant tank permits a visual inspection of the fill. For safety reason, this inspection should take place in regular intervals.

If the tank level has dropped to below the "min." mark, the entire system must be deaerated.

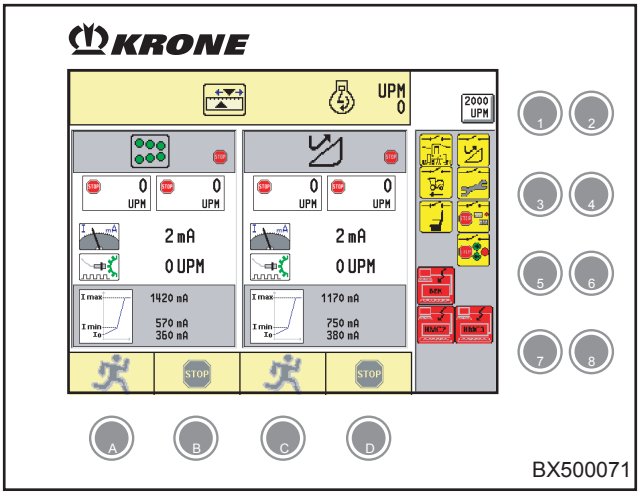
Switching conditions for central lubrication

Central lubrication is only turned on is the feed drive rollers are turning.
To reprogram the central lubrication system (lubrication intervals) and start central lubrication, make the following required setting manually:

- Turn on the ignition (ignition key position II)
- Bring up in the "Calibrate feed drive" in the info centre.

Central lubrication is switched on.

The icon appears in the status line while lubrication is in progress.



Deaerating the system

- Dismount the main pipes on the unit.
- Pump until bubble-free lubricant penetrates from the screw top.
- Mount the main pipes again.

- Dismount the main pipe on the main distributor. Pump until no air is trapped in the pipe anymore. Mount the main pipe again.

- Dismount the side pipe on the main distributor.
- Pump until bubble-free lubricant penetrates from all connections of the main distributor. Mount the side pipes again.

- Subsequently deaerate the side lines, side distributors, lubricating pipes and lubricating nipples and check for correct function.

Changing the times of the lubricating interval

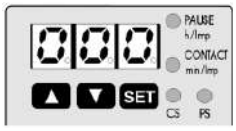
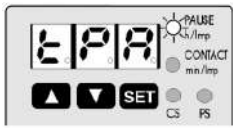
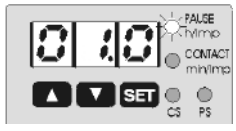
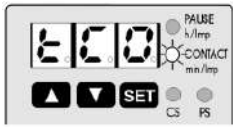
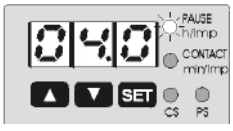
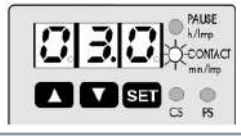
- Carry out step 1 to 9.

Basic setting upon delivery:

Pause time: 0,5 h = 30 min
Lubrication time: 14 min

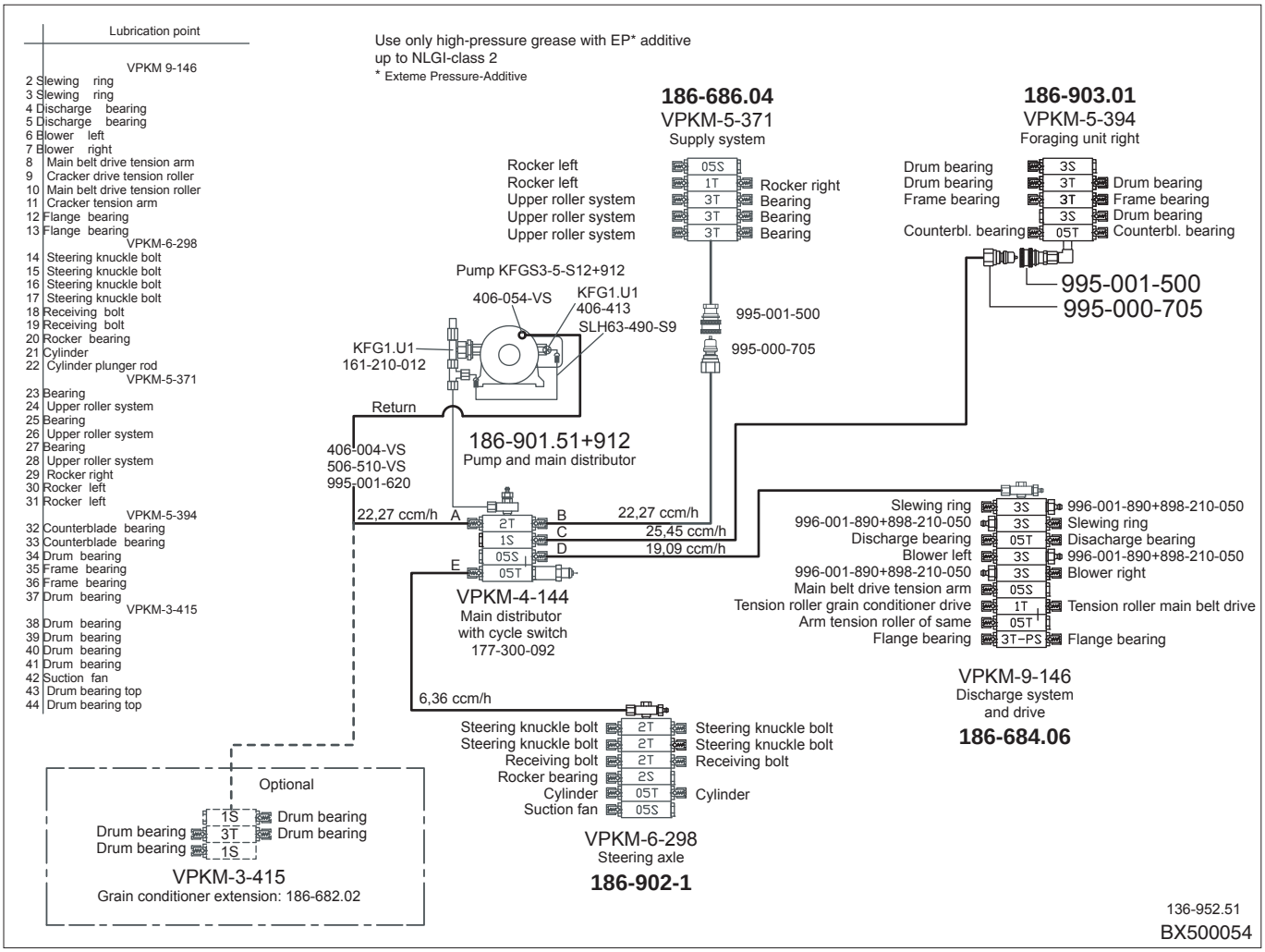
Note on step 2:

If the works code 000 has been changed already, use the ▲ ▼ keys to select the changed code, and use the SET key to acknowledge.

Step	Key	Display	
1	SET Press more than 2 sec		000 flashing (code 000 = factory adjustment)
2	SET Press briefly to acknowledge the code		Automatic display of 1st parameter "stop period in timer mode" Stop LED flashing
3	SET Press briefly		Stop period 0,5 h (factory adjustment)
4	▲ ▼		Set new value Example: 6.8 h = 6 hours 48 minutes
5	SET Press briefly to acknowledge the new value		Display of next parameter "pump running period in timer mode" Contact LED flashing
6	SET Press briefly		Pump running period: 14 min (factory adjustment)
7	▲ ▼		Set new value Example: 3 min
8	SET	Press briefly to acknowledge the new value	
9	SET	Press more than 2 sec	Modified values are stored and the display goes out.

For more information on the maintenance of the central lubricating system, please refer to the operating instructions on the central lubricating system (Vogel).

Overview of central lubrication



Jam in the system or at a connected lubricating point

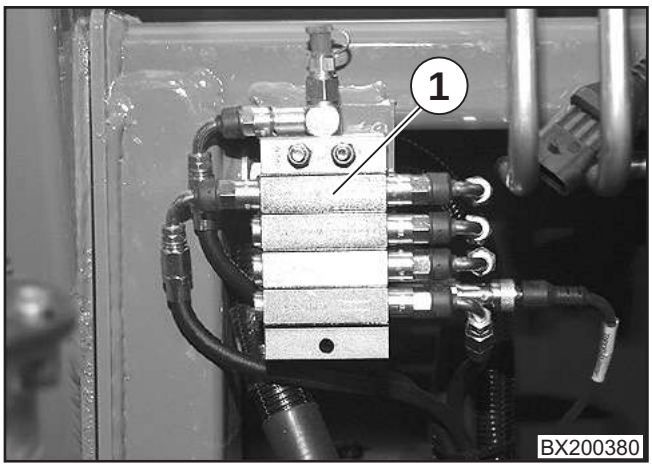
Troubleshooting

- Unscrew the outlet screw connections from the main distributor to the subdistributor one after the other.
  If lubricant suddenly exits under pressure when loosening one of the outlet screw connections, the connected subdistributor is blocked.
  If lubricant does not exit from any of the outlet screw connections, the main distributor is blocked.
  Clean the main distributor or replace it.
- Reinstall the outlet screw connections.

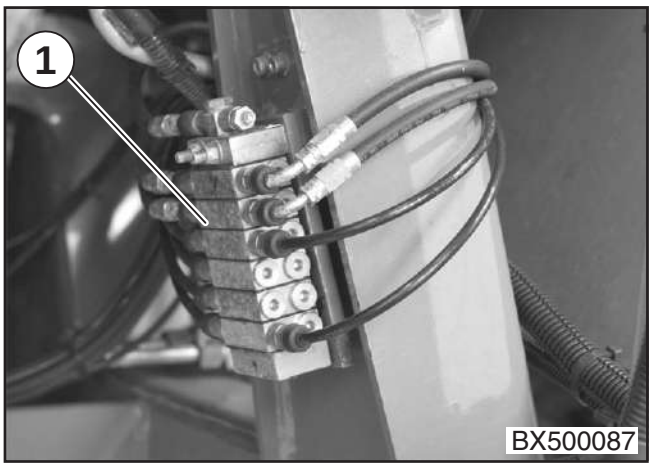
- Unscrew the outlet screw connections of the blocked subdistributor.
  If lubricant suddenly exits under pressure when unscrewing one of the outlet screw connections, the connected lubricating point is blocked.
  If lubricant does not exit from any of the outlet screw connections, the main distributor is blocked.
  Clean the blocked subdistributor or replace it.

- Remove the blockage at the lubricating point.

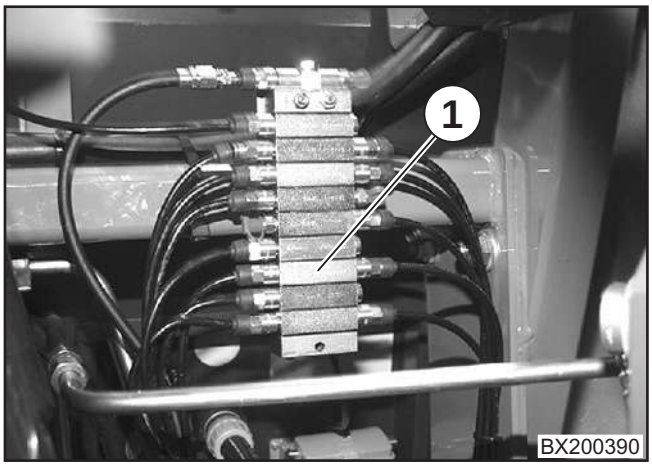
Main distributor (1)



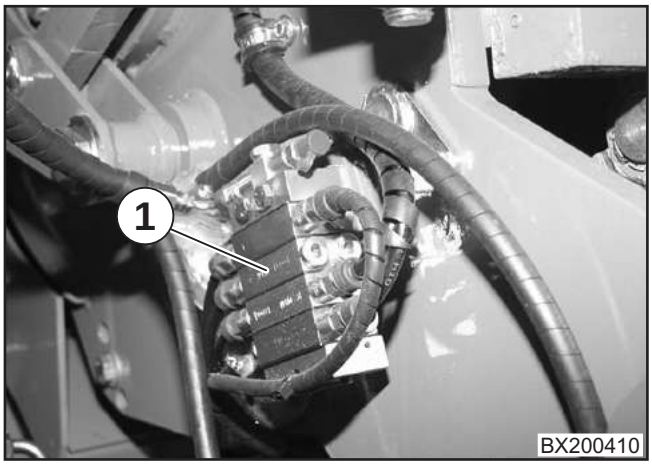
Auxiliary distributor, left steering axle (1)



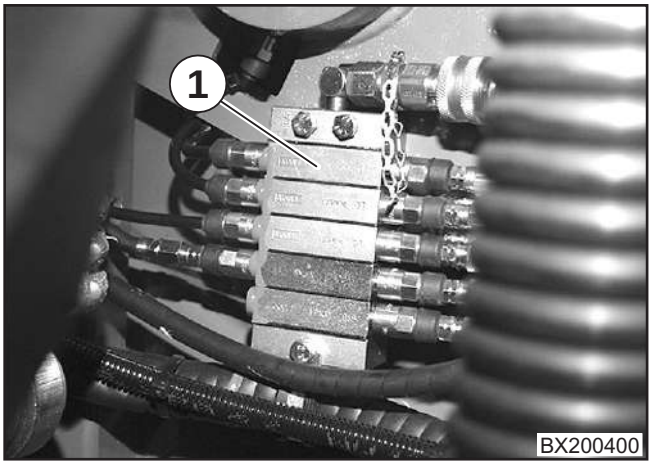
Auxiliary distributor for discharge system and drive (1)



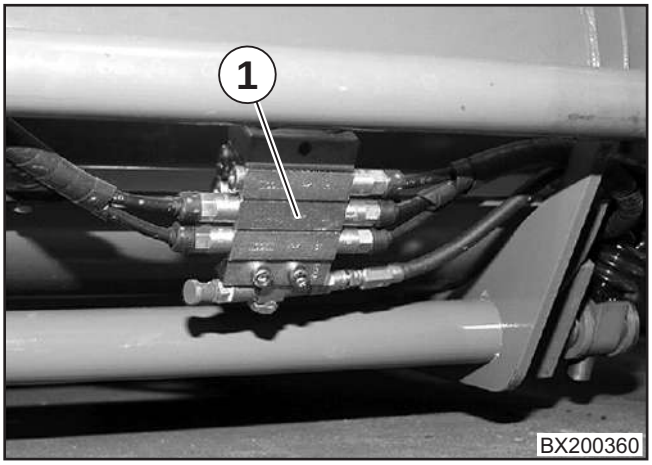
Auxiliary distributor, right foraging unit (1)



Auxiliary distributor, supply system (1)



Auxiliary distributor, grain conditioner (1)



Emergency lubricating points for use if the central lubricating system fails

Auxiliary distributor, discharge system (1)

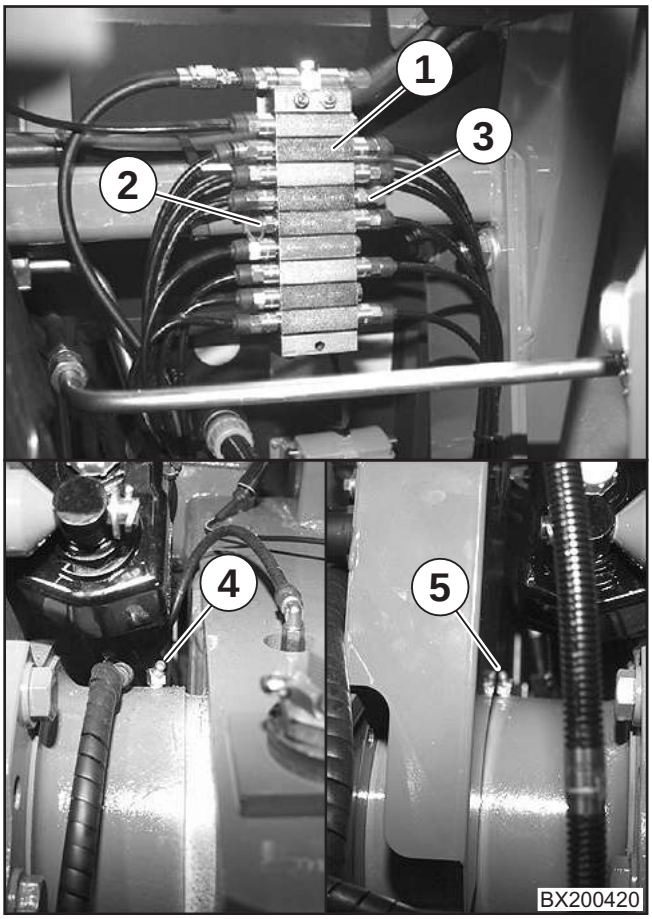
1 - Discharge accelerator – right bearing

2 - Discharge accelerator – left bearing

and

3 - Discharge accelerator – cutting drum

4 - Cutting drum – left bearing



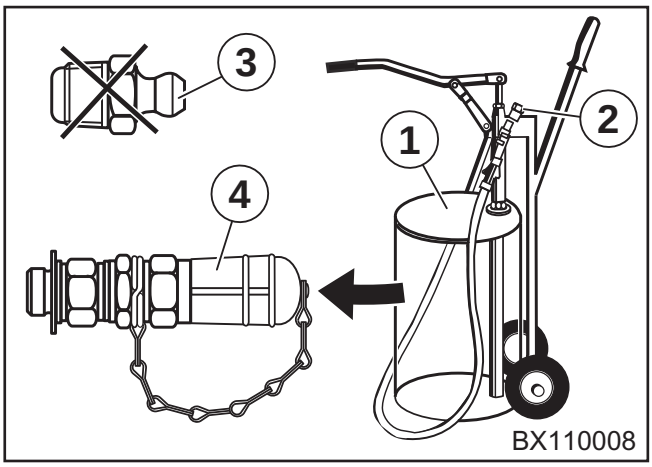
9.16 Maintenance – central lubrication system (BEKA-MAX)

Lubricant fill

Hydraulic-type lubricating nipple

The lubricant is filled through the hydraulic-type lubricating nipple (1) by means of a commercially available grease gun.

1 - Hydraulic-type lubricating nipple
2 - Additional Mounting Connection

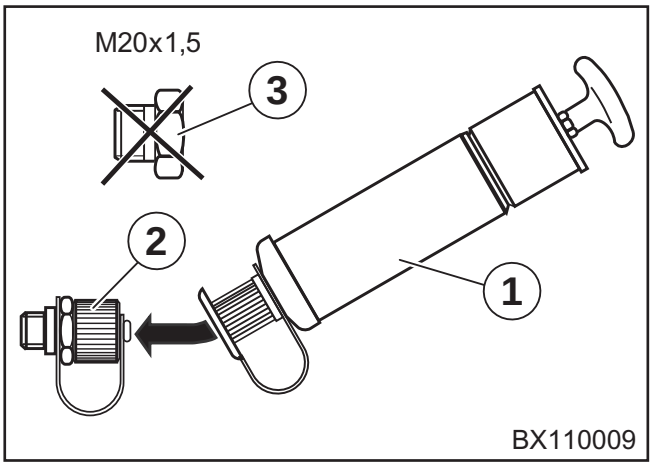


Fill coupling

- Remove the lubricating nipple (3) and replace by filler neck 995-000-705 (4).
- The coupling box 995-001-500 (2) must be fitted to the filling pump (1).

Filling cylinder

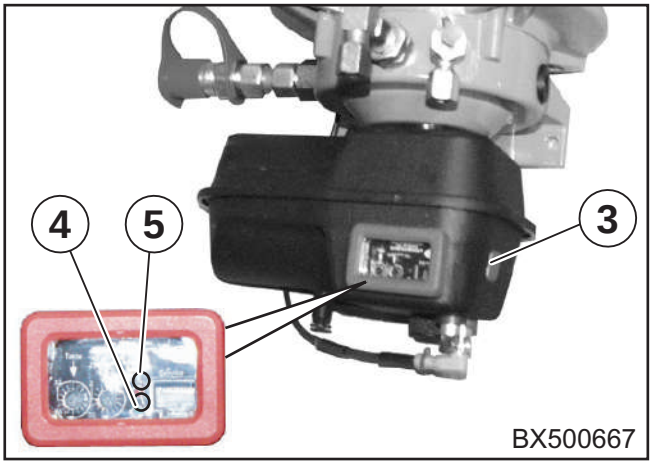
- Remove the M20x1.5 closure screw (3) and replace by filler socket 169-000-170 (2).
- For filling remove the protective cap on the socket (2) and the filling cylinder 169-000-171 (1).



Use clean lubricant with a suitable tool only!
Soiled lubricants will lead to severe system failures!

Operational sequence

- Switch on the ignition.
  The green (4) and red (5) LEDs light up for approx. 1.5 s (independently of the set program) and indicate that the control of the lubrication system is operational.



If the ignition is interrupted during a lubrication sequence or in the course of the cycle time, the time will be stopped and stored in the data memory.
When the ignition is turned on again, the remaining lubrication or cycle time stored in the memory will be re-activated and the sequence of operations will be continued at that point where it was interrupted before.

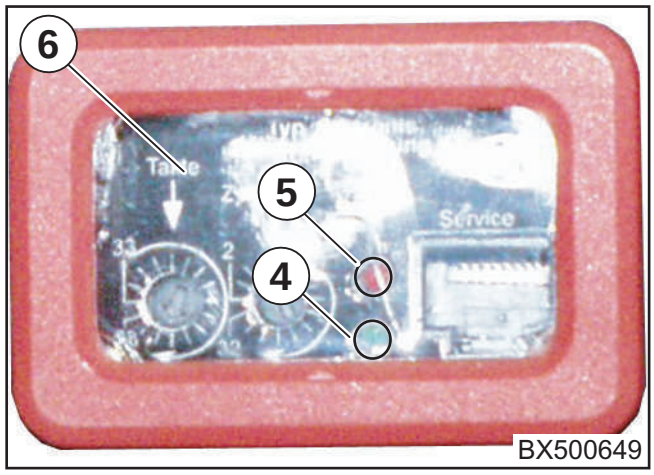
Malfunction

- By pressing the interim lubrication button (3), the pump will restart a lubrication sequence.

Signal displays

The function of the pump is displayed via two control LEDs (green (4)/red (5)) in the viewing window (6) for the motor half shell of the pump.

The red LED always displays a malfunction in the program sequence.

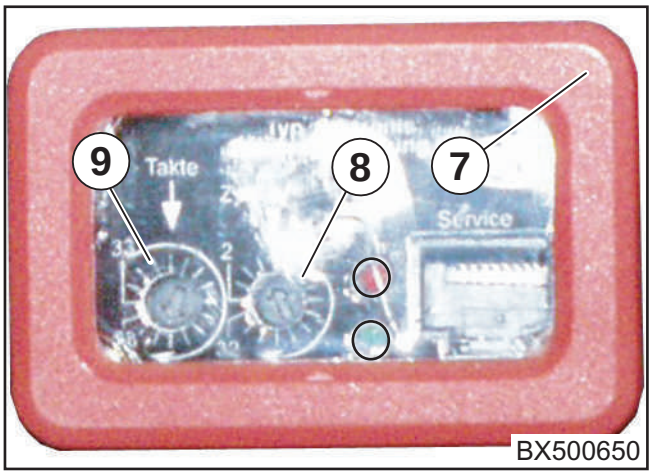


Description of the signal displays

LED	Signal display	Description
Red green	Ready for operation: 1.5 sec. ON / OFF ON / OFF	Display of functional readiness
Red green	ON / OFF ON / OFF During the entire lubrication process	Program run of a lubrication process
Red green	ON / OFF 1 sec. 1 sec. ON / OFF	Cycle error on the progressive distributor
Red green	ON / OFF Until the lubricant reservoir is re-filled ON / OFF	Error grease level; grease level too low
Red green	ON / OFF 1 sec. 1 sec. ON / OFF	Error pump motor speed
Red green	ON / OFF 0,5 sec. 0,5 sec. ON / OFF	Error CPU/ accumulator

Setting of the parameters

- Use a flat screw driver to remove the red frame (7) on the protective motor housing of the pump.
- Unscrew the four cross-head screws and lift off the transparent protective cover.
- Use a flat screwdriver to set the cycle time (8) / lubrication duration (9).
- Reposition the transparent protective cover and secure it with the four cross-head screws.
- Securely attach the red frame (7) to the protective motor housing of the pump.



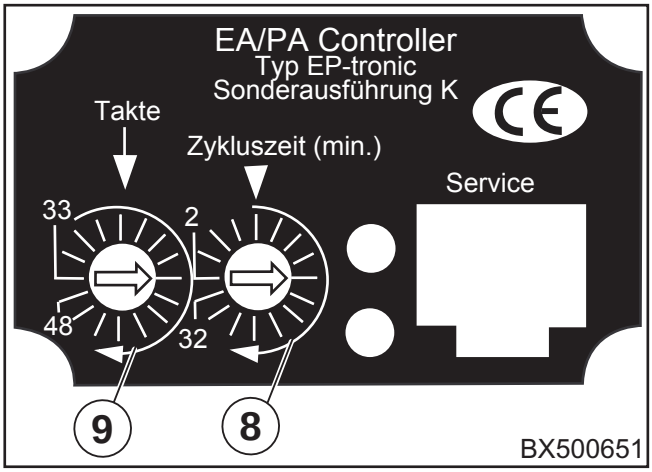
If the cover is not properly closed, water can penetrate the system, which then may be destroyed. In this case, the warranty will be void.

Cycles:
33 to 48 cycles (16 notches at 1 cycle each)

Factory settings:
Cycle time: 10 min
Lubrication duration: 37 cycles

Before making any changes to settings, note the following instructions:

- One cycle more or less on the grid switch (9) corresponds to 0.5% lubricant.
- Two minutes of cycle time more on the grid switch (8) corresponds to 20% less lubricant.
- Two minutes of cycle time less on the grid switch (8) corresponds to 20% more lubricant.



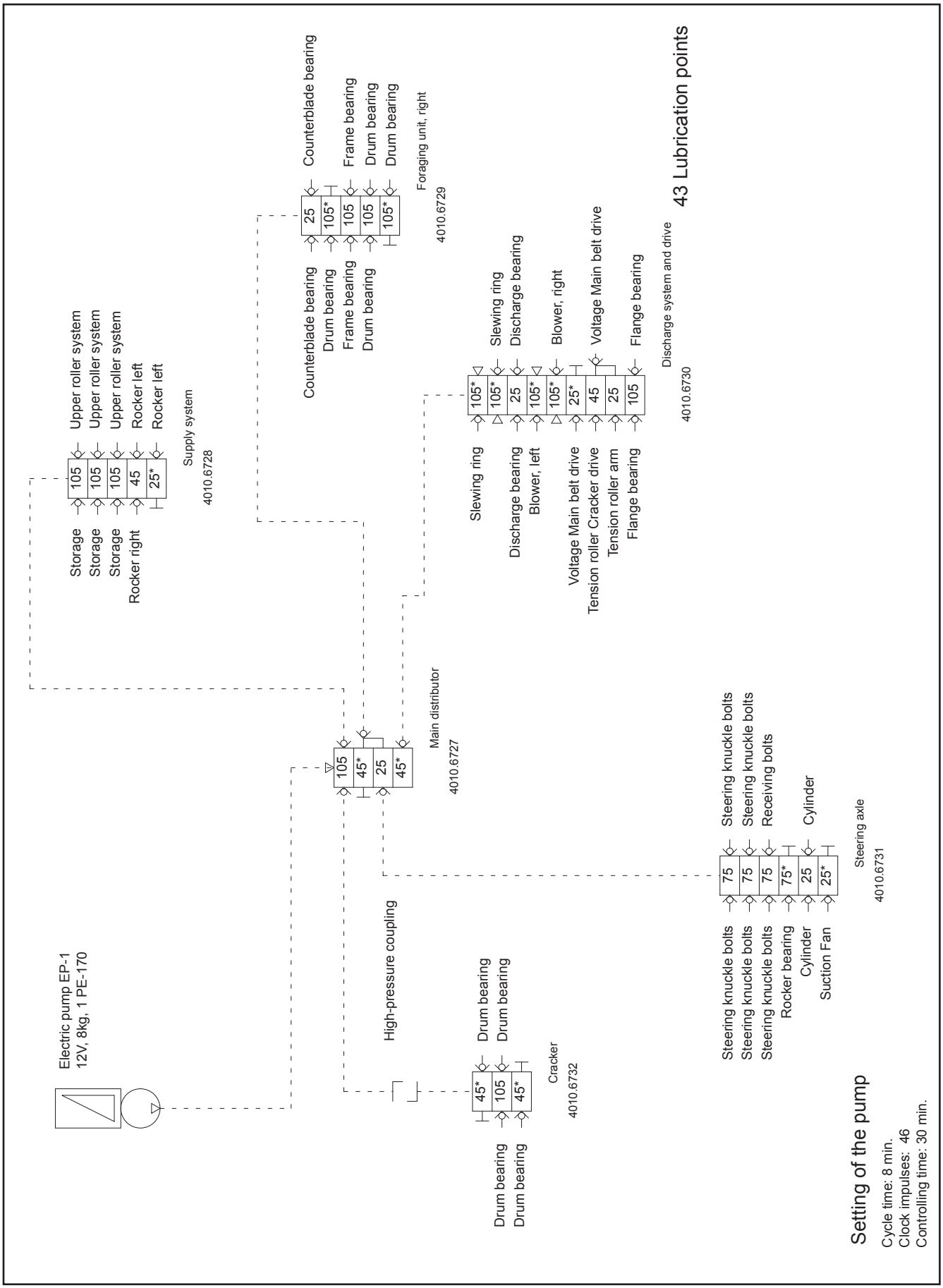
An increase in the grease quantity can be achieved by an increase in the cycles or a reduction in the cycle time. If the cycle time is set to 6 min or less, the system is permanently in operation.

Grease level control

As long as enough grease is available in the reservoir of the pump, the proximity switch that is installed in the reservoir transmits a signal to the control system. If the grease level drops below minimum, the proximity switch will turn off the signal.

If the grease level drops below the minimum:
- the control system will switch off the pump.
- the red LED in the viewing window of the control system on the protective motor housing of the pump or a possibly installed red signal lamp lights up.
- Top up grease (refer to "Lubricant fill").
  Once a sufficient grease level has been established, the control system automatically starts to work again.

Overview lubrication system BEKA-MAX



9.17 Lubricant

To ensure continuous problem-free operation of the central lubrication system, we recommend using the following greases that we have tested. (Greases with sodium soap must not be used in either the on-road or off-road area because they are soluble in water.)

To ensure the system works properly, be careful no impurities enter the system when refilling lubricant. Dirt will cause malfunctions in the central lubrication system and will damage or destroy parts an friction points.

Grease can be changed from conventional grease to bio-degradable greases (and vice-versa) for the products listed here without resulting disadvantage.

Standard commercial greases or greases recommended by the manufacturer of the vehicle or grease should be used as**lubricants**. Greases should still exhibit adequate suction and flowing behaviour at –25 °C (max. flow pressure 700 mb).

They must not have a tendency to bleed out, since this can result in blockages during extended operation. MoS2 greases (up to 5 % molybdenum disulphide) can be distributed and pumped with VOGEL progressive pumps.

Warning!
Use of incorrect lubricants - effect: Bearing damage to the machine. Use only the lubricants listed here. The central lubrication must never under any circumstances be filled with fluid grease.

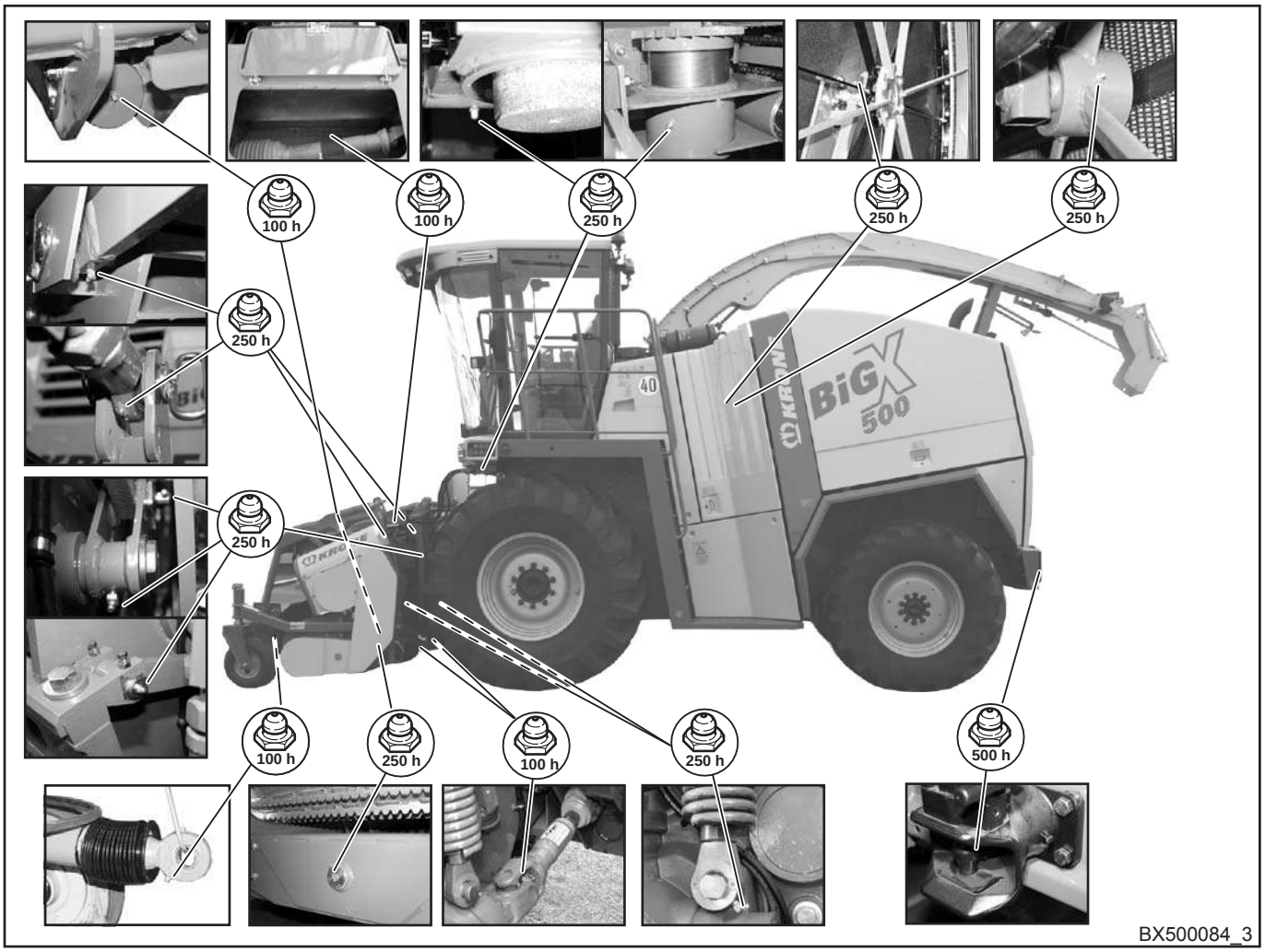
Grease types, NLGIClass 2

Manufacturer	Type designation	With soap	Minimum operating temperature [°C]
AGIP	Autol Top 2000	Spez. 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-purposegrease	Li	–20
ELF	ELF Multi 2	Li	–20
FINA	Multi-purpose grease EP	Li	–20
FUCHS	LZR 2	Li	–25
KROON OIL	Lithep 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	DivinolMulti-purpose grease2	Li	–20

Lubrication greases with fast bio-degradable times

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	Biolical 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

9.18 Lubrication chart



Lubricating points

- The lubricating points mentioned must be lubricated according to specified number of operating hours.

PTO shafts

- All propeller shafts have to be lubricated after 250 operating hours in keeping with the data in the operating instructions of the manufacturer of the propeller shaft.

Components	Subgroup/Part	Number of lubrication points	Lubrication intervals Operating hours
Drive system	PTO shaft W 2500 (VS)	3	100
	PTO shaft W 2500 (ZW)	3	100
Cooling system	Flange bearing	1	250
Screen drum	Flange bearing	1	250
Supply system	PTO shaft	3	100
	Remote cylinder	4	100
	Pendulum frame	1	250
	Tension springs, bottom left	2	250
Counterblade adjustment	Tension anchor	2	250
	Point of rotation of swinging arm	2	250
	Coupling rods	4	250
Grinding device	Slide	2	250
	Grinding stone	1	250
Hitch coupling		1	500

9.19 Periodic maintenance

9.19.1 Maintenance during the running-in period

During the first 100 operating hours

- Carry out maintenance daily or after every ten operating hours (please refer to this chapter and to "Consumables and filling quantities").
- Do not unnecessarily operate the engine in idle run.
- Make continuous checks on the temperature of the refrigerant.
- Check the engine oil and refrigerant frequently. Watch for signs of leaks.
- If and when it is necessary to top up the engine oil during the running-in period, the oil viscosity has to be selected according to the annual requirements and the instructions rendered in the chapter titled "Consumables and fill quantities" of DaimlerChrysler.
- Check that the hoses and hose clamps in the air suction system are tightly fitting.
- Check the drive belts and adjust as and when necessary.

9.19.2 Every 10 operating hours

- engine oil level check
- hydraulic system level check
- tyres
- check of the pilot lamps
- light functions

9.19.3 After the first ten operating hours only

- Tighten the fastening screws of the guide cylinder anchor on the rear axle.
- Tighten the fastening screws of the guide cylinder anchor on the wheel hubs.
- Tighten the fastening screws of the track rod.

9.19.4 Up to the first fifty operating hours

- Retighten the wheel lug nuts.
  Tightening torque for wheel lug nuts of the drive axle = 485 Nm
  Tightening torque for wheel lug nuts of the steering axle = 485 Nm

9.19.5 Every 100 operating hours

- lubrication in keeping with the lubricating chart (fill lubricating grease until it penetrates at the lubricating point).

9.19.6 After the first 100 operating hours

Carry out all maintenance work listed in the chapter titled "Every ten operating hours".

- Other intervals, please refer to the **operating instructions** for the engine.
- Check and/or set the tension of the drive belt.
- Check hoses and hose clamps of the air suction and cooling system for tight fit.
- Check the coolant level.
- Check the fuel injection pipe for loose connections.
- Change the gear oil of the central gear.

9.19.7 Every 250 operating hours

Includes the work listed under "Every ten operating hours".

- Retighten the wheel lug nuts.
  Tightening torque for wheel lug nuts of the drive axle = 485 Nm
  Tightening torque for wheel lug nuts of the steering axle = 485 Nm
- Tighten the fastening screws of the steering cylinder.
- Tighten the fastening screws on the track rod.
- Check the acid density of the battery; charge the battery, if and when necessary, and top up with distilled water.
- Clean the valve lid vents.
- Drain the engine oil from the crankcase, and fill new engine oil.
- Check the anti-freeze in the radiator; top up with anti-freeze, if and when necessary.
- Check the foot brake setting.
- Check the turbo charger screw connections and hose connections for tight fit.
- Clean the paper filter elements in the cab.
- Check the oil level of the central gear.

9.19.8 Every 400 operating hours

- Replace the fuel filter.

- Replace the engine oil filter.
- Replace the oil separator of the engine.

For detailed maintenance instructions, please refer to the operating instructions rendered in the "DaimlerChrysler Maintenance Manual" (chapter on maintenance work).

9.19.9 Every 500 operating hours

Includes the work listed under "Every ten operating hours".

- Drain the fluid of the hydraulic system and replace with new fluid.
- Replace the hydraulic fluid filter.
- Clean the mechanical fuel delivery pump.

9.19.10 Every 1500 operating hours

- Replace the dry air filter insert and the safety element of the air filter.

9.19.11 As required

- Replace both air filter elements.
- Replace the cab air filter.
- Clean the preliminary filter.
- Replace the hydraulic fluid filter.
- Replace the fuel filter.
- Clean the batteries.

9.19.12 Annually

- Have the starter checked.
- Have the three-phase generator checked.
- Check the hose connections on the air suction system.
- Check the air conditioning system.

9.19.13 Every two years

- Have the coupling elements of the main drive train checked.

9.20 Silage Agent System (Optional)

9.20.1 Special Instructions for Using Silage Agents

The silage agent system cannot be used for all silage agents without restrictions.

The following instructions must be observed for the silage agent that is used.

Water-based silage agent solutions with bacterial additives can be used in the system without any restrictions if cleaning is performed according to specifications (see Section 9.18.2).

Silage agent solutions containing acid can be used in a pH-value range between 6 and 10 if cleaning is performed according to specifications (see Section 9.18.2).

Silage agent solutions containing fine particles can be used conditionally in the system if cleaning is performed according to specifications (see Section 9.18.2).

9.20.2 Cleaning Work on the Silage Agent System

Whenever the silage agent system is cleaned, rinse it with potable water until the water that emerges is colourless.

The following cleaning intervals must be strictly observed to prevent damage to the silage agent system.

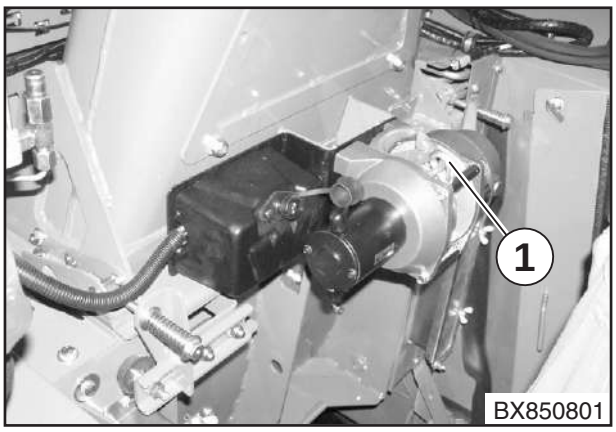
Silage agent	Cleaning interval
Water-based silage agent solutions with bacterial additives	monthly
Solution containing acid	weekly
Solution containing fine particles	after each use

9.21 Cable Winch

9.21.1 Replacing the Cable Winch

Danger! - Load falling down.
Effect: Injuries or damage to the machine.
- **Do not step under the suspended load!**

Before working on the cable winch, disconnect the electrical power circuit with the main battery switch.



- Unroll the old rope to within about two remaining revolutions.
- Loosen the hexagonal socket head screw.
- Remove the old rope (1).
- Guide in the new rope, which must be of comparable quality, and secure with hexagonal socket head screw.

Recommended rope:
- Diameter: 5 mm
- Max. length: 17 m

Recommended rope construction:
- 16 x 9 FE, 1960 N/mm2

The rope must be mounted so that it coils and uncoils between the rope coil and the base plate. Otherwise the winch will not work.

Never coil or uncoil from the upper side of the rope coil!

When using a rope with reduced breaking force, there is risk of injury.

Seq. No.	Name	Maintenance interval						Quantity of consumables	Designation	Check point
		Before beginning of harvest	After 10 h or daily	After 100 h	After 500 h	After the harvest or 1000 h	After every 3rd season			
	Check oil level									
1	oil tank		x					As needed	Hydraulic oil HLP 46	Inspection glass
2	engine crankshaft housing	x	x					As needed	Follow the operating instructions of the engine manufacturer	Measuring rod
3										
4	gear of power take-off	x		x				As needed	as needed, transmission oil PGLP DIN 51502	Viewing glass
5	transfer gearbo	x		x				As needed	as needed, transmission oil PGLP DIN 51502	Filling level screw
6	fan gear	x		x				As needed	Gear oil API-GL5-SAE85W-90	Filling level screw
7										
8	lower roller gear	x		x				As needed	Gear oil API-GL5-SAE85W-90	Filling level screw
9	lower roller gearbox, upper tower	x		x				As needed	Gear oil API-GL5-SAE85W-90	Filling level screw
10	upper roller gear	x		x				As needed	Gear oil API-GL5-SAE85W-90	Filling level screw
11	tower gearbox on the upper discharge chute	x		x				As needed	Gear oil API-GL5-SAE85W-90	Filling level screw
	Changing the oil									
1	hydraulic oil tank				x			approx. 150 l	Hydraulic oil HLP 46	Viewing glass
2	Quantitieslubrication oil Diesel Engine see Sect. 9.6							See accompanying documents (DaimlerChrysler)		Measuring rod
3										
4	gear of power take-off					x		approx. 13,5 l /23 l	Gear oil PGLP DIN 51502	Viewing glass
5	transfer gearbox					x		approx. 8,0 l	Gear oil PGLP DIN 51502	Filling level screw
6	fan gear					x		approx. 1,7 l	Gear oil API-GL5-S AE85W-90	Filling level screw
7										
8	lower roller gear					x		approx. 5,0 l	Gear oil API-GL5-S AE85W-90	Filling level screw
9	lower roller gearbox, upper tower					x		approx. 1,6 l	Gear oil API-GL5-S AE85W-90	Filling level screw
10	upper roller gear					x		approx. 3,6 l	Gear oil API-GL5-S AE85W-90	Filling level screw
11	tower gearbox					x		approx. 1,0 l	Gear oil API-GL5-S AE85W-90	Filling level screw
	Coolant check									
1	Engine cooling system		x					As needed	Anti-freeze/water Mixing ratio 50:50	Viewing glass, overflow container, on-board computer
	Coolant change									
	Engine cooling system						x	As needed	Anti-freeze/water Mixing ratio 50:50	overflow container

Seq. No.	Name	Maintenance interval						Quantity of consumables	Designation	Check point
		Before beginning of harvest	After 10 h or daily	After 100 h	After 500 h	After the harvest or 1000 h	After every 3rd season			
	Air conditioning system									
1	coolant check			x					Refilling by specialist workshop	viewing glass on the drier
2	coolant change							According to sep. requirement	To be changed b y specialist centre	
	Drives									
1	fan drive			x					check belt tension	
2	screen drum drive			x					check belt tension	
3	drive air conditioning system			x					check belt tension	
	Air filter system									
1	Replace all non-metal parts in the suction system and charge cooling						x			
2	Clean air intake screen							as needed		
3	Clean main cartridge								if the warning system engages	
4	Replace main cartridge					x	x			
5	Replace safety cartridge						x		after the main cartridge has been cleaned 5 times	
	Battery									
1	check voltage, recharge if necessary	x								
	Compressed air system									
1	Drain out water from condensation	x				x				water discharge valve
2	Clean air filters	x						as needed		

10 List of parameters

Software-Version: 150 200 104-12

Chute

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
33480	Spout check park. pos. active	rw	0	2	1	0				The check as to whether the upper discharge chute is in the park position when switching to road operation. 0 = no check 1=check, only in Road-mode 2=check, when main clutch is switching off 3=check, when main clutch OFF and machine is driving (independet of release switch Field and Transmission).

Intake

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
25626	Maize reduce dist. (into)	rw	0	100	0	0	m	The speed will be reduced less.	The speed will be reduced more.	Reduced speed for lifted grass pickup.
25627	Maize reduce time (outof)	rw	0	60	3	0	s	The speed will be reduced less.	The speed will be reduced more.	Reduced speed for lifted maize front attachment.
25628	Maize reduce value	rw	50	100	100	0	%	The speed will be reduced less.	The speed will be reduced more.	Reduced speed for lifted XDisc.

Metal detection

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
33611	Time Metal horn	rw	0	20	5	0	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.

Header

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
25478	Header speed dynamic active	rw	0	3	1	0				The dynamic attachment speed actuation function can be activated/deactivated. If dynamic attachment is deactivated the speed set by terminal will be used. 0 = dynamic attachment speed is deactivated 1 = dynamic attachment speed for Mais active 2 = dynamic attachment speed for Gras/XDisc active 3 = dynamic attachment speed for Gras/XDisc and Mais active.
25476	Min. Header speed dynamic	rw	0	1000	100	0	UPM	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 Attachment? is the speed of the attachment a 0 km/h. If the set speed on the terminal is greater than this, the set speed is actuated or the terminal.
25477	Delta Header speed/km/h dyn	rw	0	750	50	0	UPM	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.
25634	Frt att forward only XDisc	rw	1	2	2	0				The "Front attachment reverse" function is only possible if the front attachment is moving forward. 1 = The "Front attachment reverse" function is not possible 2 = Normal operation. "Front attachment reverse" is available.

Grinding

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
33657	Grinding stone adaption	rw	1	2	1	0				The number how much the ginding stone in the complete grinding cycle with the adaption readjusted. A grinding cycle means the complete moving to the left side and return to te right side to the beginning. 1 = only one Grinding stone adaption (left or right) 2 = two Grinding stone adaptions (left and right).
34014	Grindstone adaption pulses	rw	1	100	32	0				The number of tooths from the grinding stone adaption: 24 tooths ==> Year of Manufactory till 2007 36 tooths ==> Year of Manufactory from 2007

Shearbar

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
33614	Mot. Shearbar Time 2. Speed	rw	0	200	2	0	s	The time when the shear bar changes into the 2nd speed stage is shortened.	The time when the shear bar changes into the 2nd speed stage is lengthened.	Setting of the time in seconds after which the shear bar motor changes from the reduced speed into the 2nd speed stage (100%). The speed of the 2nd stage cannot be adjusted currently. The speed of the 1st stage is set with the parameters 7616 - 7619.
33616	PWM Shearbar motor IN Left	rw	200	1000	1000	0	0	The speed of the shear bar in the 1st stage is reduced.	The speed of the shear bar in the 1st stage is increased.	Setting of the speed with which the shear bar motor should be driven in the 1st stage. 0% ==> 0 V 100 % ==> 12-14 V (Max. speed)
33617	PWM Shearbar motor ON Left	rw	200	1000	1000	0	0	The speed of the shear bar in the 1st stage is reduced.	The speed of the shear bar in the 1st stage is increased.	Setting of the speed with which the shear bar motor should be driven in the 1st stage. 0% ==> 0 V 100 % ==> 12-14 V (Max. speed)
33618	PWM Shearbar motor IN Right	rw	200	1000	1000	0	0	The speed of the shear bar in the 1st stage is reduced.	The speed of the shear bar in the 1st stage is increased.	Setting of the speed with which the shear bar motor should be driven in the 1st stage. 0% ==> 0 V 100 % ==> 12-14 V (Max. speed)
33619	PWM Shearbar motor ON Right	rw	200	1000	1000	0	0	The speed of the shear bar in the 1st stage is reduced.	The speed of the shear bar in the 1st stage is increased.	Setting of the speed with which the shear bar motor should be driven in the 1st stage. 0% ==> 0 V 100 % ==> 12-14 V (Max. speed)

Diesel engine

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
33543	Increment RPM Field Grass	rw	1	200	50	0	UPM	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 operation grass.
33573	Increment RPM Field Maize	rw	1	200	50	0	UPM	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 operation maize.
33515	Power mode diesel engine road (2=X-Power 3= EcoPow	rw	2	3	3	0				Setting, witch Parameterset for the intermediate speed control paramter is set for the MAN diesel engine. 2=X-Power ==> full power in street mode, 3=EcoPower ==> reduced power.
33518	Power mode diesel engine grass (2=X-Power 3= EcoP	rw	2	3	3	0				Setting, witch Parameterset for the intermediate speed control paramter is set for the MAN diesel engine. 2=X-Power ==> full power in grass mode, 3=EcoPower ==> reduced power.

Common working functions

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
33651	blow valve on time	rw	1	3600	600	0	s			The time interval in which the blow valve Y73 (engine space cleaning compressed air) is activated.
33652	blow valve interval time	rw	0	600	0	0	s			The duration how long the valve Y73 (engine space cleaning compressed air) is activated.
34005	Info Messages	rw	1	3	1	0				Setting, which infomessages are displayed in the terminal. 1 = all infos are displayed. (Errors, instruction etc. 2 = unimportant instructions are not displayed. 3= only the important instructions are displayed (eg. the Infos for the Header Calibration)

Grass mode / EasyFlow

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
33482	Crop Feed Roller-Auto	rw	1	2	1	0				The automatic lift setting for the hold-down device on the pickup when reversing the feed drive and attachment: 1=automatic switched on 2= automatic switched off
33500	Reduce hold-down offset time	rw	0	30	0	0	s	The time up to lowering is decreased.	The time up to lowering is increased.	Delay time of the holding-down device before it is automatically lowered after the travel drive is started.
33501	Reduce hold-down time	rw	0	30	10	0	s	The duration of lowering is decreased.	The duration of lowering is increased.	The time during which the holding-down device will be controlled during automatic lowering. 0 = Automatic deactivated.
34075	Raise lifting gear Auto	rw	0	1	0	0				Setting whether the lifting gear should be lifted up automatically when reversing the travelling gear. 1 = lifting gear is lifted up automatically on reversing 0 = lifting gear is not lifted up automatically on reversing
34076	Header Frame automatic	rw	0	1	1	0				Setting as to whether the pendulum frame is automatically enabled when the ?adapt to ground contours? function is active. (Switched on and off by pressing the ?cross-adapt to ground contours? right and left buttons at the same time, or by manual override.
34077	Header Frame autom. horiz	rw	0	1	0	0				Setting as to whether the pendulum frame is automatically set to horizontal position when the ?lifting gear to up? function is triggered.
34078	Header fold automatic	rw	0	1	0	0				Setting as to whether the attachment can be retracted automatically or not. 1=automatic possible 2=automatic not possible
34079	Lateral levelling deact.	rw	1	2	1	0				Setting as to whether active ?adapt to ground contours? is active when sensor hooks are attached. 1= Adapt to ground contours not active (passive adaptation with the float setting) 2= Adapt to ground contours active (sensor hooks actuate adaptation to ground contours)

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
34051	Header Pos. Work	rw	20	70	40	0	%	The nominal height in the distance control and in the position control of the lifting gear is decreased.	The nominal height in the distance control and in the position control of the lifting gear is increased.	Set-point position for position control and distance control. The saved position at which the lifting gear should actuate under position control/distance control. The value can also be set using the driving lever and in the information panel.
34065	Man. lift slow speed	rw	0	20	5	0		The speed of the lifting gear becomes less	The speed of the lifting gear becomes greater	Speed to raise lifting gear 1st stage in grass mode
34066	Man. lift fast speed	rw	0	20	20	0		The speed of the lifting gear becomes less	The speed of the lifting gear becomes greater	Speed to raise lifting gear 2nd stage in grass mode
34067	Man. lower slow speed	rw	0	20	5	0		The speed of the lifting gear becomes less	The speed of the lifting gear becomes greater	Speed to lower lifting gear 1st stage in grass mode
34068	Man. lower fast speed	rw	0	20	9	0		The speed of the lifting gear becomes less	The speed of the lifting gear becomes greater	Speed to lower lifting gear 2nd stage in grass mode

Autopilot

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
34016	Autopilot row tracer to central tip 1=central tip	rw	0	1	0	0				Setting, if the RowTracer for the Autopilot in the middle tip or in the left / right tip: (It is only needed for display the sensor values by the autopilot calibration in the terminal. 0 = row tracers in the left / right tip 1 = row tracers in the middle tip.

Main Drive

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
33440	Offset corr. speed 2whl	rw	0	20	4	0				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	Offset corr. speed 4whl	rw	0	20	1	0				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	Offset corr. speed road	rw	0	20	0	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.
22001	Front wheel circumference	r	500	650	546	0	cm			The circumference from the front wheel
22002	Rear wheel circumference	r	400	550	444	0	cm			The circumference from the Rear wheel
22006	Maximum forward speed in road	r	150	400	400	0	0			Maximum forward speed in road

Maize mode / EasyCollect

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
34275	Raise lifting gear Auto	rw	0	1	0	0				Setting whether the lifting gear should be lifted up automatically when reversing the travelling gear. 1 = lifting gear is lifted up automatically on reversing 0 = lifting gear is not lifted up automatically on reversing
34276	Header Frame automatic	rw	0	1	1	0				Setting as to whether the pendulum frame is automatically enabled when the ?adapt to ground contours? function is active. (Switched on and off by pressing the ?cross-adapt to ground contours? right and left buttons at the same time, or by manual override.
34277	Header Frame autom. horiz	rw	0	1	1	0				Setting as to whether the pendulum frame is automatically set to horizontal position when the ?lifting gear to up? function is triggered.
34278	Header fold automatic	rw	0	1	1	0				Setting as to whether the attachment can be retracted automatically or not. 1=automatic possible 2=automatic not possible
34279	Lateral levelling deact.	rw	1	2	2	0				Setting as to whether active ?adapt to ground contours? is active when sensor hooks are attached. 1= Adapt to ground contours not active (passive adaptation with the float setting) 2= Adapt to ground contours active (sensor hooks actuate adaptation to ground contours)
34251	Header Pos. Work	rw	20	70	40	0	%	The nominal height in the distance control and in the position control of the lifting gear is decreased.	The nominal height in the distance control and in the position control of the lifting gear is increased.	Set-point position for position control and distance control. The saved position at which the lifting gear should actuate under position control/distance control. The value can also be set using the driving lever and in the information panel.

XDisc mode

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
34475	Raise lifting gear Auto	rw	0	1	0	0				Setting whether the lifting gear should be lifted up automatically when reversing the travelling gear. 1 = lifting gear is lifted up automatically on reversing 0 = lifting gear is not lifted up automatically on reversing
34476	Header Frame automatic	rw	0	1	1	0				Setting as to whether the pendulum frame is automatically enabled when the ?adapt to ground contours? function is active. (Switched on and off by pressing the ?cross-adapt to ground contours? right and left buttons at the same time, or by manual override.
34477	Header Frame autom. horiz	rw	0	1	0	0				Setting as to whether the pendulum frame is automatically set to horizontal position when the ?lifting gear to up? function is triggered.
34478	Header fold automatic	rw	0	1	0	0				Setting as to whether the attachment can be retracted automatically or not. 1=automatic possible 0=automatic not possible
34479	Lateral levelling deact.	rw	1	2	2	0				Setting as to whether active ?adapt to ground contours? is active when sensor hooks are attached. 1= Adapt to ground contours not active (passive adaptation with the float setting) 2= Adapt to ground contours active (sensor hooks actuate adaptation to ground contours)
34451	Header Pos. Work	rw	20	70	40	0	%	The nominal height in the distance control and in the position control of the lifting gear is decreased.	The nominal height in the distance control and in the position control of the lifting gear is increased.	Set-point position for position control and distance control. The saved position at which the lifting gear should actuate under position control/distance control. The value can also be set using the driving lever and in the information panel.

AutoScan

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
34020	AutoScan expert mode	rw	0	1	0	0				Setting, whether the advanced settings in the AutoScan mask should be available.

11 Error messages

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
1	1 SmartDrive overvoltage!	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. SmartDrive undervoltage!	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
			Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Charge indicator lamp defective	Check charge indicator lamp	Change charge indicator lamp

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				Check the cables.	Replace cabling
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
3	3. SmartDrive voltage 12 V sensors	Error: 12 V sensor supply voltage too low	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
				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
			Short circuit in the wiring to a 12V sensor	Check wiring to the 12V sensors	Replace cabling
			Short circuit in a 12V sensor	Check 12V sensors	Change 12V sensor
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
4	4. SmartDrive voltage 5V sensors	Error: 5 V sensor supply voltage too low	5-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
				LED +22-LD11 not lit	Check fuse +22-F92

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Wiring defective	Check the cables.	Replace cabling
			Battery dead	Measure battery voltage Check battery acid	Charge battery Change battery
			Short circuit in the wiring to a 5V sensor	Check wiring to the 5V sensors	Replace wiring to the 5V sensors
			Short circuit in a 5V sensor	Check 5V sensors	Change 5V sensors
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
16	16 SmartDrive CS parameters	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 SmartDrive parameter min/max	Error: MIN/MAX parameters	Incorrect parameter file downloaded	Check parameter file	Transfer parameter file onto Smart Drive
			Incorrect values in EEPROM	Check parameters	Transfer parameter file onto Smart Drive
			EEPROM defective	See Remedial action	Replace SmartDrive

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
18	18 SmartDrive EEPROM	Error: EEPROM	EEPROM defective	See Remedial action	Replace SmartDrive
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
19	19 SmartDrive digital potentiometer	Error: Digital Pot	Internal SmartDrive error	See Remedial action	Replace SmartDrive
20	20 SmartDrive EV DAC	Error: EV DAC	Internal SmartDrive error	See Remedial action	Replace SmartDrive
21	21 SmartDrive I2C error	Error: I2C Bus	Internal SmartDrive error	See Remedial action	Replace SmartDrive
30	30 SmartDrive pump 1 control loop	Error: Control loop drive pump 1 front axle	Short circuit/broken cable in wiring for pump valves	Check wiring to pump valves	Replace wiring
				Valve plug defective	
				Check valve plug	Replace valve plug
			Coil for solenoid valves defective	Test coil	Replace the solenoid valve
			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

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
31	31 SmartDrive pump 2 control loop	Error: Control loop drive pump 2 rear axle	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
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
32	32 SmartDrive feedback sensor 1(B38)	Error: Pivoting angle drive pump 1 front axle - signal out of range	Values incorrectly set	Run travelling gear diagnostics	Correctly set voltage values
			Calibration of the pivoting angle sensor not correct	Remeasure 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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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 SmartDrive feedback sensor 2(B39)	Error: Pivoting angle drive pump 2 rear axle - signal out of range	Values incorrectly set	Run travelling gear diagnostics	Correctly set voltage values
			Calibration of the pivoting angle sensor not correct	Measure voltage on the sensor	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	Replace and adjust the sensor pivoting angle. There must be a signal of approx. 2.5 volts present in neutral position
34	34 SmartDrive feedback sensor 1 (B38) drift too high	Error: Pivoting angle drive pump 1 front axle - pivoting angle changes too quickly	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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
			Kurzschluss/Kabelbruch in der Verdrahtung Schwenkwinkel Sensoren	Verdrahtung zu den Sensoren Schwenkwinkel ueberpruefen	Verdrahtung zu den Sensoren Schwenkwinkel erneuern
			\"Sensorstecker Schwenkwinkel defekt\"	Sensorstecker ueberpruefen	Sensorstecker tauschen
			Schwenkwinkelsensor defekt	Spannung am Sensor messen	Sensor Schwenkwinkel tauschen und einstellen; in Neutralstellung muss ein Signal von ca. 2,5 Volt anliegen
35	35 SmartDrive feedback sensor 2 (B39) drift too high	Error: Pivoting angle drive pump 2 rear axle - pivoting angle changes too quickly	Values incorrectly set	Run travelling gear diagnostics	Correctly set voltage values
			Dirt in the hydraulics (actuator valves, for example)	Check hydraulics (e.g. actuator valves) 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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
36	36 SmartDrive brake pressure sensor (B16/B40)	Error: Brake pressure sensor	Values incorrectly set	Run travelling gear diagnostics	Correctly set voltage values
			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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Brake pressure defective	Check brake pressure	Set brake pressure
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
37	37 SmartDrive pump speed too low (B11)	Error: Pump speed too slow	Engine speed too low	Check engine speed	Set engine speed
			Internal error KMC3	See Remedial action	Replace the KMC3
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
38	38 SmartDrive brake tank pressure (B18)	Error: The brake tank pressure is too low	The brake tank pressure is too low	See Remedial action	Start diesel engine so that the accumulator is filled
			Values incorrectly set	Run travelling gear diagnostics	Correctly set voltage values
			Accumulator charging valve defective	Check valve	Replace accumulator charging valve
			Accumulator defective	See Remedial action	Replace accumulator
			Short circuit/broken cable in wiring for brake tank pressure sensor	Check the wiring to the brake tank pressure sensor	Replace wiring to the brake tank pressure sensor
			Sensor plug for brake tank pressure defective	Check sensor plugs	Replace sensor plug
			Sensor for brake tank pressure defective	See Remedial action	Replace brake tank pressure sensor

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
39	39 SmartDrive CAN error	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
				LED +22-LD11 not lit	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	Replace terminating resistors
			Joystick power supply defective	Check fuse +22-F65	Replace fuse +22-F65
			Internal joystick error	See Remedial action	Replace joystick
			KMC3 power supply defective	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 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
40	40 SmartDrive high pressure sensor (B13)	Error: High pressure sensor - signal out of range	Short circuit/broken cable in the wiring for the high pressure sensor	Check wiring to high pressure sensor	Replace wiring to high pressure sensor
			Sensor plug, high pressure - defective	Check sensor plugs	Replace sensor plug
			High pressure sensor defective	Measure voltage on the sensor	Replace high-pressure sensor
			High pressure incorrect	Check high pressure (420 bar)	If required, re-adjust high pressure
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
42	42 SmartDrive parking brk. act.	Error: Attempt to move against the parking brake	Parking brake switch is actuated	Check whether parking brake is actuated	Switch off the parking brake switch
				Check fuse +22-F72.1	Replace fuse +22-F72.1
			Short circuit in the wiring of the switch	Check the wiring to the parking brake switch	Replace wiring to the parking brake switch
			Parking brake switch defective	Remeasure whether switch actuates	Replace parking brake switch
			Broken cable in the wiring bridge of the parking brake pressure input at the SmartDrive	Check wiring bridge at the parking brake pressure input	Replace wiring bridge at the parking brake pressure input
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
43	43 SmartDrive charge pressure too low	Error: The charge pressure is too low	No engine speed or speed too slow	Check engine speed	Start engine or increase speed

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Hydraulic leakage	Check hydraulics for leaks	Repair the leakage
			Supply pump defective	Test charge pressure	Change charge pump (30+/-3bar)
			Supply pressure valve defective	Test function of charge pressure valve	Replace the supply pressure valve
			Short circuit/broken cable in the wiring for the supply pressure sensor	Check the wiring for the temperature sensor flush valve	Replace wiring for the flush valve temperature sensor
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
44	44 SmartDrive oil temperature too high (B14)	Error: Oil temperature too high	Hydraulic oil too hot	Check that radiator is clean	Clean the radiator
			Short circuit/broken cable in wiring for the temperature sensor flush valve	Check the wiring for the temperature sensor flush valve	Replace wiring for the flush valve temperature sensor
			Flush valve temperature sensor defective	Check flush valve temperature sensor	Replace the temperature sensor flush valve
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
45	45 Release travelling gear (S3) not actuated	Error: Attempt to move without release travelling gear	Release travelling gear switch is not actuated	Check travelling gear release switch	Switch on the travelling gear switch
					Perform operating panel diagnostics

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
			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
46	46 SmartDrive pump 1 coil 1 (Y1)	Error: Coil 1, pump 1	Short circuit/broken cable in wiring for coil	Check wiring to valve	Replace wiring to valve
			Coil defective	Check coil	Replace coil
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
47	47 SmartDrive pump 1 coil 2 (Y2)	Error: Coil 1, 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
48	48 SmartDrive pump 2 coil 1 (Y3)	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 SmartDrive pump 2 coil 2 (Y4)	Error: Coil 2, pump 2	Short circuit/broken cable in wiring for coil	Check wiring to valve	Replace wiring to valve

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Coil defective	Test coil	Replace coil
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
50	50 SmartDrive joystick error	Error: Driving lever - signal incorrect/faulty	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
				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 SmartDrive current pump 1 coil 1 (Y1)	Error: Actuator valve 1 drive pump 1 - front axle forward	Short circuit/broken cable in the wiring for actuator valve 1 pump 1	Check wiring to actuator valve 1 pump 1	Replace wiring to actuator valve 1 pump 1
			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
61	61 SmartDrive current pump 1 coil 2 (Y2)	Error: Actuator valve 2 drive pump 1 - front axle backward	Short circuit/broken cable in the wiring for actuator valve 2 pump 1	Check wiring to actuator valve 2 pump 1	Replace wiring to actuator valve 2 pump 1

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
62	62 SmartDrive cabling pump 1 coil 3 (Y69)	Error: Stop valve drive pump 1 - front axle	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 SmartDrive current pump 2 coil 1 (Y1)	Error: Actuator valve 1 drive pump 2 - rear axle forward	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 SmartDrive current pump 2 coil 2 (Y2)	Error: Actuator valve 2 drive pump 2 - rear axle backward	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

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
65	65 SmartDrive cabling pump 2 coil 3 (Y70)	Error: Stop valve drive pump 2 - rear axle	Short circuit/broken cable in the wiring for stop valve pump 2	Check wiring to stop valve for pump 2	Replace wiring to stop valve for pump 2
			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
95	95 Brake valve fault	Error: Brake valve	Brake was applied continuously (for example braking pressure greater than 10 bar and longer than 3 min.)	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 CAN to SmartDrive	Error: CAN bus communication - SmartDrive to terminal.	Determine via the terminal	Perform CAN diagnostics.	
			SmartDrive power supply defective	LED +22-LD31 not lit	Check fuse +22-F77

Turn Page please!

Error descriptions BiG-X 500-1000

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-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
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
			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.
98	98 SmartDrive internal error				
113 	113 Joystick undervoltage 12V	Error: 12 V supply voltage too low	Determine via the terminal	Perform joystick diagnostics	

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
114 	114 Joystick overvoltage 12V	Error: 12 V supply voltage too high	Determine via the terminal	Perform joystick 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

Turn Page please!

Error descriptions BiG-X 500-1000

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 joystick error	See Remedial action	Replace joystick
115 	115 Joystick undervoltage 8V	Error: 8.5 V joystick 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
			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
116 	116 Joystick button voltage 12V	Error: 12 volt button voltage - voltage out of range	Battery dead	Check battery acid Check battery voltage	Charge battery Change battery

Turn Page please!

Error descriptions BiG-X 500-1000

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
117 	117 Joystick power supply LED	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
			Dynamo defective	Test dynamo	Replace the dynamo
			Internal joystick error	See Remedial action	Replace joystick
118 	118 Joystick power supply outputs	Error: 12 volt supply voltage for outputs - 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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal joystick error	See Remedial action	Replace joystick
119 	119 Joystick parameter error	Error: Min/Max parameters	Incorrect values in EEPROM		
			EEPROM defective	See Remedial action	Replace joystick
			EEPROM defective	See Remedial action	Replace joystick
120 	120 Joystick checksum error FLASH	Error: FLASH checksum	Download was interrupted	See Remedial action	Repeat download
			FLASH defective	See Remedial action	Replace joystick
			Internal joystick error	See Remedial action	Replace joystick
124 	124 CU undervoltage 12V	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
			Wiring defective	Check the cables.	Replace cabling

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Battery dead	Check battery acid Check battery charge	Charge battery Replace battery
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	Replace charge indicator lamp, if required also replace cabling
			Dynamo defective	Check the dynamo	Replace the dynamo
			Internal error, operating panel	See Remedial action	Replace operating panel
125 	125 CU overvoltage 12V	Error: 12 V supply voltage too high	Determine via the terminal	Perform operating panel 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
			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, operating panel	See Remedial action	Replace operating panel
126 	126 CU vlt. 5V electronics too low	Error: 5 V electronics supply voltage too low	Determine via the terminal	Perform operating panel diagnostics	
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	Replace charge indicator lamp
			Dynamo defective	Check the dynamo	Replace the dynamo
			Internal error, operating panel	See Remedial action	Replace operating panel
127	127 CU vlt. 5V elctrncs too high	Error: 5 V electronics supply voltage too high	Determine via the terminal	Perform operating panel 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
			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, operating panel	See Remedial action	Replace operating panel
129 	129 CU vlt. 12V LEDs too high	Error: 12 V LED supply voltage too high	Determine via the terminal	Perform operating panel 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
			Battery change-over relay defective (500, 800, and 1000)	Test function of the relays according to circuit diagram	Replace battery change-over relay

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal error, operating panel	See Remedial action	Replace operating panel
130 	130 CU parameter err	Error: Min/Max parameters	Incorrect values in EEPROM	Check parameters	Set parameters
			EEPROM defective	See Remedial action	Replace CU
			Internal error, operating panel	See Remedial action	Replace operating panel
131 	131 CU checksum error FLASH	Error: FLASH checksum	Download was interrupted	Check whether the download is complete	Repeat download
			FLASH defective	See Remedial action	Replace CU
			Internal error, operating panel	See Remedial action	Replace operating panel
132 	132 CU keyboard error (A16)	Error: Keyboard error (at least one key is pressed continuously)	Keyboard defective	at least one key is pressed continuously	Replace keyboard
			Internal error, operating panel	See Remedial action	Replace operating panel
135 	135 man. operation undervoltage 12V	Error: 12 V supply voltage too low	Power supply voltage for manual operation too low	Check fuse +22-F56	Change fuse +22-F56
				LED +4-LD33 not lit	Check fuse +4-F33
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD11 not lit	Check fuse +22-F92

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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 dynamo	Replace the dynamo
			Internal error, manual operation	See Remedial action	Replace manual operation
136 	136 man. operation overvoltage 12V	Error: 12 V 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	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
137 	137 man. operation vlt. 5V too low	Error: 5 V voltage too low	Determine via the terminal	Perform diagnostics for manual operation	
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery

Turn Page please!

Error descriptions BiG-X 500-1000

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 error, manual operation	See Remedial action	Replace manual operation
138 	138 man. operation vlt. 5V too high	Error: 5 V voltage too high	Determine via the terminal	Perform diagnostics for manual operation	
			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
139 	139 man. operation vlt. 12V LEDs too low	Error: 12 V voltage for LEDs too low	Power supply voltage for 12 V LEDs too low	Check fuse +22-F56	Change fuse +22-F56
				LED +4-LD33 not lit	Check fuse +4-F33
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63

Turn Page please!

Error descriptions BiG-X 500-1000

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 dynamo	Replace the dynamo
			Internal error, manual operation	See Remedial action	Replace manual operation
140 	140 man. operation vlt. 12V LEDs too high	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 man. operation parameter err.	Error: Min/Max parameters	Incorrect values in EEPROM	Check parameters	Update parameters
			EEPROM defective	See Remedial action	Replace manual operation

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal error, manual operation	See Remedial action	Replace manual operation
142 	142 man. operation checksum error FLASH	Error: FLASH checksum	Download was interrupted	See Remedial action	Repeat download
			FLASH defective	See Remedial action	Replace manual operation
			Internal error, manual operation	See Remedial action	Replace manual operation
143 	143 Manual operation Keyboard error	Error: Keyboard error (at least one key is pressed continuously)	Keyboard defective	Check keyboard	Replace manual operation
			Internal error, manual operation	See Remedial action	Replace manual operation
502 	FS Stop 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.			
505 	FS Stop manual operation!	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 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
508 	FS 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 	FS 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.			
512 	FS 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 	FS Travelling gear!	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 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
517 	FS 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.			
520 	FS Axle Separation!	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 	FS 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 	FS 2. 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 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
523 <pic not found>	FS 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 <pic not found>	Vehicle moving!	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	Automotive driving active!				
527 <pic not found>	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.			
529 <pic not found>	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			

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
		activated to start the function (door open). In case the switch is not activated (door open), it must accordingly be activated (door closed).			
531 	Diesel engine at standstill!	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 	Diesel 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 NO idle!	For starting the desired function the diesel engine must run with idle speed.			
534 	Engine not 2000 rpm	In order to start the desired function the diesel engine must run with nominal speed (standard 2000 rpm).			

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
535 <pic not found>	Out of range - set to MIN!	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 <pic not found>	Out of range - set to MAX!	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 <pic not found>	Engine revs too high	To start the desired function the engine speed is too high, so it can not be started.			
538 <pic not found>	Position saved	The desired position or value (e.g. cutting length #1 and #2 on the small joystick) has been saved.			
539 <pic not found>	ERR-INIT released!				
540 <pic not found>	Lifting gear 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			

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
		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 <pic not found>	EMR adjustment 1 OK	The adjustment/calibration 1 (position below) of the lifting gear has been successfully completed.			
542 <pic not found>	EMR adjustment 2 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 <pic not found>	EMR adjustment 3 OK	The adjustment/calibration 3 (top position) of lifting gear has been successfully accomplished.			
544 <pic not found>	Lifting gear automatic operation active	for the future			
545 <pic not found>	Spacing autom. EMR active	for the future			
546 <pic not found>	Lifting gear too high	In order to start the desired function the position of the lifting gear is too high.			

Error descriptions BiG-X 500-1000

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 	Deactivate distance mode	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 	Position lifting gear 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.			
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.			

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
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	Sensor/actuator value inadmissible	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
				The sensors of the row sensor left and right are interchanged connected to the cable harness	Exchange plugs on the sensors
554	Position of lifting gear saved, set to min value.	for the future			
555	Position of lifting gear saved, set to max value	for the future			

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
560 <pic not found>	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	Fold in front attachment
				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	Reset the distance of the sensor, change sensor if necessary
561 <pic not found>	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	Fold out front attachment
				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	Reset the distance of the sensor, change sensor if necessary
562	Front attachment top!	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.			
563	Front attachment below!	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 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
564 	Front attachment at standstill!	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 rotating!	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.			
566 	Feed drive at standstill!	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 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
567 	Feed drive rotating!	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	Position the pendulum frame horizontally
				Check the calibration of the position \\\"Pendulum frame horizontal\\\"	Accomplish calibration of pendulum frame
				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
570 	Speed of diesel engines not synchronous	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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
					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.
					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.

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
					Change ADM of engine 2.
					Change PLD of engine 2.
				Check parameter for the actuation of the diesel engine	
572 <pic not found>	Coupling engine 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.			
573 <pic not found>	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 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
580 <pic not found>	Chute in park position!	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
				Check sensor B29 \\\"Discharge chute position below\\\"	Check sensor B29 in the mask \\\"Diagnostics discharge chute\\\"
					Set the sensor mechanically correct
					Check the sensor electrically
					Exchange sensor
					Exchange control unit KMC2
581 <pic not found>	Chute not in park position	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
				Check sensor B29 \\\\\\\"Discharge chute position below\\\\\\\"	Check sensor B29 in mask \\\\\\\\\\\\\"Diagnostics discharge chute\\\\\\\\\\\\\"

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
					Set the sensor mechanically correct
					Check the sensor electrically
					Exchange sensor
					Exchange control unit KMC2
582 <pic not found>	Chute not up	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
				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
590	Counterblade auto OK!	For the future			

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
591	Counterblade OK	For the future			
592	Counterblade in operation	For the future			
593 <pic not found>	Engine cracker in zero position	For the future			
594 <pic not found>	Grinding 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
				Check, if the grinding flap is open.	Open the grinding flap
595 <pic not found>	Grinding 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.	Close the grinding flap
				Check, if the grinding flap is open.	Open the grinding flap
596 <pic not found>	Grinding stone working!	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 <pic not found>	Grinding stone in park position!	In order to start the desired function \\\"Grinding\\\" the function must be active			
598	Attention: Readjust the grinding stone!	The max number of total grinding cycles is reached. The grinding stone must be readjusted and the grinding cycle counter in the			

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
		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.
1300	1300 Raise lifting gear valve (Y32) defective	Error: Raise lifting gear valve	Determine via the terminal	Perform lifting gear diagnostics	
			Function to raise 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
			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
1301	1301 Lower lifting gear valve (Y33) defective	Error: Lower lifting gear valve	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
			Work pressure defective	Check work pressure (0 - 200 bar)	Set work pressure
			Coil for solenoid valve defective	See Remedial action	Replace the EMR

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal EMR error	See Remedial action	Replace the EMR
1302	1302 EMR voltage fault!	Error: Supply voltage too low (less than 10V)	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 Check battery voltage	Charge battery 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
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD11 not lit	Check fuse +22-F92 pruefen
1303	1303 EMR/OBE not active!!!	Error: EMR has not received any CAN messages for at least 1 minute, or it has been deactivated	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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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 Lifting gear position sensor (B50) defective	Error: Sensor position lifting gear - wrong signal	Sensor position of lifting gear not adjusted	Specify position of the sensor	Make adjustment
					Perform lifting gear diagnostics
			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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal EMR error	See Remedial action	Replace the EMR
1305	1305 Lifting gear pressure sensor (B49) defective	Error: Pressure sensor for lifting gear - wrong signal	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
			Short circuit in the wiring to another EMR sensor	Check wiring	Replace wiring
			Internal EMR error	See Remedial action	Replace the EMR
1306	1306 Header contour sensor left (B47)	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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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.
1307	1307 Header contour sensor right (B48)	Error: Height of right lifting gear sensor - wrong signal	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	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 the right lifting gear sensor not adjusted	Check position of the sensor	Make adjustment
			Short circuit / broken cable in wiring for height of right lifting gear sensor	Check wiring to sensor for height of right lifting gear	Replace wiring to sensor for height of right lifting gear
			Height of right lifting gear sensor plug defective	Check sensor plugs	Replace sensor plug
			Height of right lifting gear sensor defective	Measure voltage on the sensor	Replace height of right lifting gear sensor defective
			Short circuit in the wiring to another EMR sensor	Check wiring	Replace wiring

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal EMR error	See Remedial action	Replace the EMR
1308	1308 Valve oscillating left (Y37) broken cable	Error: Turn pendulum frame to the left valve	Determine via the terminal	Perform lifting gear 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
			Internal EMR error	See Remedial action	Replace the EMR
1309	1309 Valve oscillating right (Y38) broken cable	Error: Turn pendulum frame valve clockwise	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 Valve oscillating left (Y37) error	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

Turn Page please!

Error descriptions BiG-X 500-1000

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 Valve oscillating right (Y38) error	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 KMC2 elctr. vlt. too low	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
			Central electrical power supply voltage defective	LED +22-LD60 not lit	Check fuse 22-F60
				LED +22-LD11 not lit	Check fuse +22-F92

Turn Page please!

Error descriptions BiG-X 500-1000

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
			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
2102 	2102 KMC2 elctr. vlt. too high	Error: Electronics voltage KMC2 too high	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
			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 KMC2	See Remedial action	Replace KMC2
2103 	2103 KMC2 vlt. V1 defective!	Error: KMC2 output voltage of V1	Determine via the terminal	Run electronics diagnostics	

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Output voltage of V1 defective	LED +22-LD40 not lit	Check fuse +22-F87
			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
			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 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

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2104 	2104 KMC2 vlt. V2 defective!	Error: KMC2 output voltage of V2	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
			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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal error KMC2	See Remedial action	Replace KMC2
			Output voltage of V2 defective.	LED +22-LD38 not lit	Check fuse +22-F86
2105 	2105 KMC2 vlt. V3 defective!	Error: KMC2 output voltage of V3	Determine via the terminal	Run electronics diagnostics	
			Output voltage of V3 defective.	LED +22-LD37 not lit	Check fuse +22-F85
			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 Check battery voltage	Charge battery Change battery

Turn Page please!

Error descriptions BiG-X 500-1000

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	Check the excitation voltage, check wiring	Replace the dynamo
			Internal error KMC2	See Remedial action	Replace KMC2
2106 	2106 KMC2 vlt. V4 defective!	Error: KMC2 output voltage of V4	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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
2107	2107 KMC2 vlt. 12V dig.sensors	Error: 12V voltage of digital sensors	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 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 the wiring, replace the dynamo	Replace the dynamo
			Internal error KMC2	See Remedial action	Replace KMC2

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2108	2108 KMC2 vlt. 8V dig.sensors	Error: 8V voltage of digital sensors	Short circuit in the wiring to a digital sensor	Check wiring	Replace wiring
				Digital sensor defective	
				Test function of the sensor	Replace the sensor
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			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.
2109	2109 KMC2 vlt. 8V ana.sensors	Error: 8 V voltage of analogue sensors	Short circuit in the wiring to an analogue sensor	Check wiring	Replace wiring
			Analogue sensor defective	Test function of the sensor	Replace the sensor
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Charge indicator lamp defective	Check charge indicator lamp, check wiring.	If required, change charge indicator lamp and/or replace cabling.

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Dynamo defective.	Check the excitation voltage, check wiring	
			Internal error KMC2.	See Remedial action	Replace KMC2
2110	2110 KMC2 vlt. batt. 3V too low	Error: Backup battery voltage 3 V too low	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	
2112	2112 KMC2 RAM initialised!	Error: Re-initialization of the battery backup RAM in KMC2	Job computer KMC2 was replaced	none	none
			3V backup battery voltage too low	Measure voltage on the battery	Replace backup battery in KMC2
			Internal error KMC2	See Remedial action	Internal error KMC2
2201	2201 Broken cable feed drive valve forwards (Y5)	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

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2202	2202 Broken cable feed drive valve backwards (Y6)	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
2203	2203 Short-circuit feed drive valves (Y5/Y6)	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
2204	2204 Broken cable front attachment valve forwards (Y7)	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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Coil for solenoid valve defective	Test coil	Replace coil
			Internal error KMC2	See Remedial action	Replace KMC2
2205	2205 Broken cable front attachment valve backwards (Y8)	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
2206	2206 Short-circuit front attachment valves (Y7/Y8)	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
			Internal error KMC2	See Remedial action	Replace KMC2

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2207	2207 Reserve alarm				
2208	2208 Reserve alarm				
2209	2209 Brkn.cble valve Rotate discharge chute right (Y21)	Error: Minimum current turn discharge chute to the right valve has fallen below the normal level	Determine via the terminal	Perform discharge chute diagnostics	
			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
2210	2210 Brkn.cble valve Precontrol A (Y63)				
2211	2211 Brkn.cble valve Precontrol B (Y64)				
2301	2301 Shrt circuit valve Rotate discharge chute right (Y21)	Error: Maximum current to turn discharge chute valve to the right exceeded	Determine via the terminal	Perform discharge chute diagnostics	

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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 Brkn.cble valve Rotate discharge chute left (Y20)	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
2303	2303 Shrt circuit valve Rotate discharge chute left (Y20)	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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal error KMC2	See Remedial action	Replace KMC2
2304	2304 Lift discharge chute valve (Y24) defective	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
			Solenoid valve defective	Test function of solenoid valve	Replace the solenoid valve
			Internal error KMC2	See Remedial action	Replace KMC2
2305	2305 Lower discharge chute valve (Y25) defective	Error: Lower discharge chute valve	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

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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 Lift ejector flap valve (Y22) defective	Error: Raise discharge chute flap valve	Determine via the terminal	Perform discharge chute diagnostics	
			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 Lower ejector flap valve defective (Y23) defective	Error: Lower discharge chute flap valve	Determine via the terminal	Perform discharge chute diagnostics	

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
			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
2308	2308 Chute NOT_up	Error: Discharge chute not up	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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
2400	2400 UDC not in park. position	Error: Discharge chute not In parking position	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
			Internal error KMC2	See Remedial action	Replace KMC2
2401	2401 Broken cable discharge chute sensor centre (B28)	Error: Broken cable - discharge chute centre position sensor	Determine via the terminal	Perform discharge chute diagnostics	
			Broken cable in the wiring to the discharge chute centre position sensor	Check wiring and plug	Replace wiring and plugs

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Discharge chute centre position sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2
2402	2402 Short-circuit discharge chute sensor centre (B28)	Error: Short circuit - discharge chute centre 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
2403	2403 Broken cable discharge chute sensor top (B29)	Error: Broken cable - discharge chute top position sensor	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
			Discharge chute top position sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2
2404	2404 Short-circuit discharge chute sensor top (B29)	Error: Short circuit - discharge chute top position sensor	Determine via the terminal	Perform discharge chute diagnostics	

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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 Broken cable discharge chute sensor pulses (B30)	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 Short-circuit discharge chute sensor pulses (B30)	Error: Short circuit discharge chute moments of momentum sensor	Determine via the terminal	Perform discharge chute diagnostics	
			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

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2407	2407 Fault feed drive speed	Error: Feed drive speed	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
			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

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2408	2408 Fault fr. attch. speed	Error: Front attachment speed	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	
			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
			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

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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	
			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
2410	2410 Broken cable cutting drum sensor (B58)	Error: Broken cable cutting drum speed sensor	Determine via the terminal	Perform work diagnostics	
			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
2411	2411 Short-circuit cutting drum sensor (B58)	Error: Short circuit cutting drum speed sensor	Determine via the terminal	Perform work diagnostics.	

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Short circuit 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 sensor.
			Internal error KMC2	See Remedial action	Replace KMC2.
2412	2412 Metal detection defective (A10)	Error: Metal detection defective	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
2413	2413 Fault discharge chute sensor centre (B28)	Error: Time exceeded when parking or mirroring the discharge chute up to which discharge chute centre position sensor should have been alive	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
			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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal error KMC2	See Remedial action	Replace KMC2
2414	2414 Fault discharge chute sensor top (B29)	Error: Discharge chute not up when attempting to park or mirror	Discharge chute is not up	Check position of the discharge chute	Lift discharge chute
			Determine via the terminal	Perform discharge chute diagnostics	
			Discharge chute top position sensor is not adjusted properly	Check setting of the sensors	Correct setting of the sensors
			Internal error KMC2	See Remedial action	Replace KMC2
2415	2415 Fault discharge chute sensor pulses (B30)	Error: Sensor, discharge chute, moments of momentum	Determine via the terminal	Perform discharge chute diagnostics	
			Short circuit / 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
2500	2500 Broken cable front attachment sensor left (B55)	Error: Broken cable 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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Front attachment left sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2
2501	2501 Short-circuit front attachment sensor left (B55)	Error: Short circuit front attachment left 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
2502	2502 Broken cable front attachment sensor right (B25)	Error: Broken cable front attachment right 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 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
2503	2503 Short-circuit front attachment sensor right (B25)	Error: Short circuit front attachment right sensor	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

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2506	2506 KMC2 FS field OFF! (S1)	Error: Action cannot be performed, or was terminated, because the field release switch is, or was, turned off	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
			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
2507	2507 KMC2 FS maintenance OFF! (S5)	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

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2508	2508 KMC2 quick stop ON (S90/S91)	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
			Internal error KMC2	See Remedial action	Replace KMC2
2509	2509 Broken cable raise additional axle valve (Y80)				
2510	2510 Broken cable lower additional axle valve (Y81)				
2511	2511 Broken cable additional axle pressure sensor (B80)				
2512 	2512 Error when lowering the additional axle				

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2513	2513 CAN to additional axle				
2514	2514 Additional axle voltage 12V defective!				
2515	2515 Additional axle voltage 5V defective!				
2600 	2600 CAN to KMC2	Error: CAN bus communication - KMC2 to terminal	Determine via the terminal	Perform CAN diagnostics	
			KMC2 power supply defective	LED +22-LD61 not lit.	Check fuse +22-F61
			Central electrical power supply defective.	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 CAN1 bus	Check wiring	Replace wiring
			CAN1 terminating resistors defective	Check wiring and terminating resistors	If required, replace wiring and/or terminating resistors
			Internal error KMC2	See Remedial action	Replace KMC2
3100	3100 KMC3 fault vlt. Electronics	Error: Electronic voltage - voltage out of range	Determine via the terminal	Run electronics diagnostics.	

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
			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, 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

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3101 	3101 KMC3 elctr. vlt. too low	Error: Electronics voltage too low	Determine via the terminal	Run electronics diagnostics	
			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
				LED +22-LD11 not lit	Check fuse +22-F92
			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, 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

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3102 	3102 KMC3 elctr. vlt. too high	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 KMC3 vlt. V1 defective!	Error: KMC3 output voltage of V1	Determine via the terminal	Run electronics diagnostics	
			Output voltage of V1 defective	LED +22-LD35 not lit	Check fuse +22-F81
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				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.
3104 	3104 KMC3 vlt. V2 defective!	Error: KMC3 output voltage of V2	Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD60 not lit	Check fuse +22-F60

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				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	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
			Ermittlung ueber das Terminal		
			Determine via the terminal	Run electronics diagnostics	
			Output voltage of V2 defective.	LED +22-LD34 not lit	Check fuse +22-F80

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3105 	3105 KMC3 vlt. V3 defective!	Error: KMC3 output voltage of V3	Determine via the terminal	Run electronics diagnostics	
			Output voltage of V3 defective	LED +22-LD32 not lit	Check fuse +22-F78
			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 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
			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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Internal error KMC3	See Remedial action	Replace the KMC3
3106 	3106 KMC3 vlt. V4 defective!	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
			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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
3107	3107 KMC3 vlt. 12V dig.sensors	Error: 12 volts - voltage of digital sensors	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
			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
3108	3108 KMC3 vlt. 8V dig.sensors	KMC3 Spg. 8V dig.sensors	Determine via the terminal	Run electronics diagnostics	
			Short circuit in the wiring to a digital sensor	Check wiring	Replace wiring

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
3109	3109 KMC3 vlt. 8V ana.sensors	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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal error KMC3	See Remedial action	Replace the KMC3
3110	3110 KMC3 vlt. batt. 3V too low	Error: Backup battery voltage 3 volts too low	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 Speed of cutting drum missing!				
3200	3200 Short-circuit Cracker engine (M11)	Short-circuit Cracker engine (M11)	Error: Maximum current engine cracker has been exceeded		
			Determine via the terminal	Perform cracker diagnostics	
			Power consumption too high due to sluggish mechanics	Check mechanism for contamination	Remove the dirt; grease the mechanics
			Wrong parameter value for maximum current of cracker engine	Check parameters	If required, increase current
			Short circuit in the engine cracker wiring	Check wiring	Replace wiring
			Plug defective	Check plug	Replace plug
			Engine cracker defective	Check Cracker engine	Replace the engine cracker

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal error KMC3	See Remedial action	Replace the KMC3
3201	3201 Broken cable Cracker engine (M11)	Error: Minimum current engine cracker has fallen below the normal level	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
3202	3202 Cracker motor 0-setting 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	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
			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

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3203	3203 Cracker sensor fault (B42)	Error: Sensor cracker position detected	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.
				Check that corn conditioner moves easily	Check whether corn conditioner is mechanically jammed
3301	3301 Short-circuit counterblade engine left (M9)	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

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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 Broken cable counterblade engine left (M9)	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
			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 Max current counterblade engine right (M10)	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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
			Internal error KMC3	See Remedial action	Replace the KMC3
3304	3304 Short circuit counterblade engine right (M10)	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 engine	Replace right counterblade engine

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal error KMC3	See Remedial action	Replace the KMC3
3305	3305 Broken cable counterblade engine right (M10)	Error: Minimum current right counterblade engine has fallen below the normal level	Determine via the terminal	Perform counterblade diagnostics	
			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 Broken cable main coupling valve (Y12)	Error: Minimum current main coupling valve has fallen below the normal level	Determine via the terminal	Perform work diagnostics	

Turn Page please!

Error descriptions BiG-X 500-1000

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 Reserve alarm				
3401	3401 Reserve alarm				
3402	3402 Reserve alarm				
3403	3403 Reserve alarm				

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3404	3404 Reserve alarm				
3405	3405 Reserve alarm				
3406	3406 Short-circuit grinding stone sensor left (B36)	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 Broken cable grinding stone sensor left (B36)	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
			Internal error KMC3	See Remedial action	Replace the KMC3
3408	3408 Short-circuit grinding stone sensor right (B37)	Error: Short circuit right position grinding stone sensor	Determine via the terminal	Perform grinding diagnostics	

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
3409	3409 Broken cable grinding stone sensor right (B37)	Error: Broken cable right position grinding stone sensor	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
3410	3410 Short-circuit maintenance sensor (B59)	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
			Grinding device maintenance flap closed sensor defective	Measure voltage on the sensor	Replace the sensor

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal error KMC3	See Remedial action	Replace the KMC3
3411	3411 Broken cable maintenance sensor (B59)	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
3500 	3500 UDC not in park. 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
			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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal error KMC2.	See Remedial action	Replace KMC2
3504	3504 Fault pendulum frame sensor (B52)	Error: Sensor for transversal inclination position	Sensor for transversal inclination position not adjusted	Check setting on sensor	Make adjustment
			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 Tank sensor (B44) defective	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

Turn Page please!

Error descriptions BiG-X 500-1000

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 eng. maint.	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	
3508 	3508 Air filter contamination	Error: Air filter contamination (800 and 1000 have 2 air filters)	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
3509 	3509 Fill level hydr. oil	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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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. rtn. 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
			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 Central lubrication fault (M12)	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			

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
		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 Fill level hydr. oil	Error: Hydraulic oil filling level	Short circuit / broken cable in the wiring to the sensor	Check wiring	Replace wiring
			Sensor defective	Measure voltage on the sensor	Replace the sensor
3513	3513 oil pressure main gearbox!	Error: Main gearbox oil pressure	Short circuit / broken cable in the wiring to the sensor	Check wiring	Replace wiring
			Sensor defective	Measure voltage on the sensor	Replace the sensor
3600 	3600 CAN to KMC3	Error: CAN bus communication - KMC3 to terminal	Determine via the terminal	Perform CAN diagnostics	

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
			Short circuit/broken cable in the wiring for the CAN1 bus	Check wiring	Replace wiring
			CAN1 terminating resistors defective	Check wiring and terminating resistors	Replace wiring and/or terminating resistors
			Internal error KMC3	See Remedial action	Replace the KMC3
4000	4000 Metal Detection switched off!				
4001 	4001 Metal detection error voltage 10V!	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
				LED +22-LD11 not lit	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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
4002 	4002 Metal detection error voltage 8V!	Error: Power supply voltage too low (<8V)	Power supply voltage for metal detection too low	Check fuse +22-F55	Change 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
			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 switched on!	Note: Metal detection has been turned on	none	none	none

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
4010 	4010 Metal detection valve (Y35) broken cable!	Error: Broken cable - quick stop valve	Quick stop valve - broken cable	LED +22-LD71 glowing	Check fuse +22-F71
			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 Metal detection valve (Y35) short-circuit!	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 Metal detection output (Y35) overload	Error: Overload quick stop valve	Quick stop valve overload	LED +22-LD71 glowing	Check fuse +22-F71
			Central electrical power supply voltage defective	LED +22-LD11 not lit	Check fuse +22-F92

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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 Metal detct. output dfctv.	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 Metal detection error Auto Zero 1	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
4033 	4033 Metal detection error Auto Zero 2	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 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
4034 	4034 Metal detection error Auto Zero 3	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
4048 	4048 Metal detct. chnl. 1 dfctv.	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
4049 	4049 Metal detct. chnl. 2 dfctv.	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
4050 	4050 Metal detct. chnl. 3 dfctv.	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
4220 	4220 Metal detection EEPROM CAN set error	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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Metal detection internal error	See Remedial action	Replace the metal detection system
4222 	4222 Metal detection EEPROM parameter error	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
4224	4224 Metal detection programme CRC-error				
4301	4301 Metal in feed drive!!!	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 Metal detection (A10) fault!	Error: Fault, metal detection	Incorrect default setting	Check default setting	Perform default setting in the display in the 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	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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			CAN2 terminating resistors defective	Check wiring and terminating resistors	If required, replace wiring and terminating resistors
4400	4400 Steering pressure sensor (B63) < MIN	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
			Sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error autopilot	See Remedial action	Replace autopilot
4401	4401 Steering pressure sensor (B63) > MAX	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

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
4402	4402 Steering axle sensor (B64) < MIN	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 Steering axle sensor (B64) > MAX	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

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
4404	4404 Row tracer left (B65) < MIN	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 Row tracer left (B65) > MAX	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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal error autopilot	See Remedial action	Replace autopilot
4406	4406 Row tracer right (B61) < MIN	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 Row tracer right (B61) > MAX	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
4408	4408 Broken cable steering axle valve left (Y39)	Error: Broken cable steering axle valve left	Determine via the terminal	Perform autopilot diagnostics	

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
			Internal error autopilot	See Remedial action	Replace autopilot
4409	4409 Short-circuit steering axle valve left (Y39)	Error: Short circuit steering axle valve left	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
			Internal error autopilot	See Remedial action	Replace autopilot
4410	4410 Broken cable steering axle valve right (Y40)	Error: Broken cable steering axle valve right	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 plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil
			Internal error autopilot	See Remedial action	Replace autopilot

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
4411	4411 Short-circuit steering axle valve right (Y40)	Error: Short circuit steering axle valve right	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
			Internal error autopilot	See Remedial action	Replace autopilot
4412	4412 - Autopilot electronics voltage Error (Sensor power supply error)	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
				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
			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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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 - Autopilot sensor voltage Error (Sensor power supply error)	Error: Power supply voltage too low	Determine via the terminal	Perform diagnostics for autopilot and electronics	
			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 Reserve Autop. Error 0/14				
4415	4415 Reserve Autop. Error 0/15				
4432 	4432 CAN to Autopilot	Error: CAN bus communication - autopilot to KMC3.	Determine via the terminal	Perform diagnostics for autopilot and CAN	

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
			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
			Internal error autopilot	See Remedial action	Replace autopilot
5000	5000 Display battery empt	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 - incorrect machine type	Error: Wrong software	Wrong software loaded	Check software version	Load new software
5002	5002 KMC3 software - incorrect machine type	KMC3 software - incorrect machine type	Wrong software loaded	Check software version	Load new software
5003	5003 Diesel eng. maint.	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

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
					Perform engine diagnostics
5004	5004 Diesel eng. maint.	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 unts 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 Elec. Autopilot still active				
5007	5007 Re-calibrate Cracker				
5008	5008 Error queue for saving full				
5009	5009 Diesel engine oil pressure too low!				

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
5010	5010 Cooling water temperature too high!				
7000	7000 RockProtect acceleration sensor left broken cable	Error: Acceleration sensor left broken cable	Broken cable in the wiring to the left acceleration sensor	Check wiring and plug	Renew wiring and plugs
			Left acceleration sensor defective	Measure voltage on the sensor	Replace left sensor
			Internal error - KMC4	See Remedial action	Replace KMC4
7001	7001 RockProtect acceleration sensor left voltage too high	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 RockProtect acceleration sensor left error				
7003	7003 RockProtect acceleration sensor right broken cable	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 RockProtect acceleration sensor right voltage too high	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

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Right acceleration sensor defective	Measure voltage on the sensor	Replace right sensor
			Internal error - KMC4	See Remedial action	Replace KMC4
7005	7005 RockProtect acceleration sensor right error				
7006	7006 RockProtect path sensor broken cable	Error: Broken cable - path sensor	Broken cable in the wiring to the path sensor	Check wiring and plug	Replace wiring and/or plugs
			Path sensor defective	Measure voltage on the sensor	Replace sensor
			Internal error - KMC4	See Remedial action	Replace KMC4
7007	7007 RockProtect path sensor voltage too high	Error: Path sensor voltage too high	Short-circuit of operating voltage path sensor right	Check wiring and plug	Replace wiring and plugs
			Path sensor defective	Measure voltage on the sensor	Replace sensor
			Internal error - KMC4	See Remedial action	Replace KMC4
7008	7008 RockProtect path sensor error				
7009	7009 RockProtect valve broken cable	Error: Valve current is below the minimum level	Broken cable in the wiring for the valve	Check wiring	Replace wiring
			Valve plug defective	Check valve plugs and contacts	Replace valve plug

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Coil for solenoid valve defective	Check coil	Replace coil
			Internal error - KMC4	See Remedial action	Internal error - KMC4
7010	7010 RockProtect valve short-circuit	Error: Maximum valve current exceeded	Short circuit in the wiring for the valve	Check wiring	Replace wiring
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Check coil	Replace coil
			Internal error - KMC4	See Remedial action	Replace KMC4
7011	7011 RockProtect valve error				
7012	7012 RockProtect voltage Ub too low	Error: Voltage in KMC4 is too low	Wiring defective	Check the cables.	Replace cabling
			Short circuit in the wiring to a 12V sensor	Check wiring	Replace wiring
			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	Check the excitation voltage, check wiring	Replace the dynamo

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal error - KMC4	See Remedial action	Replace KMC4
7013	7013 RockProtect voltage Ub too high	Error: Voltage in KMC4 is 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 - KMC4	See Remedial action	Replace KMC4
7014	7014 RockProtect voltage Sensors too low	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 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 check cabling
			Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Internal error - KMC4	See Remedial action	Replace KMC4

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
7015	7015 RockProtect voltage Sensors too high	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
			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 Stone 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 Silage agent tank empty				
8001	8001 Fault silage agent pump				
9611	9611 AutoScan overvoltage	Error: Power supply voltage too high	Determine via the terminal	Perform AutoScan 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	Test function of dynamo	Replace the dynamo

Turn Page please!

Error descriptions BiG-X 500-1000

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 - AutoScan	See Remedial action	Replace AutoScan
9612	9612 AutoScan undervoltage 10V	Error: Supply voltage too low (	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
			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
9613	9613 AutoScan undervoltage 8V	Error: Supply voltage too low (	Determine via the terminal	Perform AutoScan diagnostics	

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
			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
9614	9614 AutoScan glass scratched	Error: AutoScan glass scratched	Determine via the terminal	Perform AutoScan diagnostics	
			AutoScan glass scratched	Check AutoScan for scratches	Replace AutoScan
9615	9615 AutoScan LED 1 defective	Error: AutoScan LED1 defective	Determine via the terminal	Perform AutoScan diagnostics	
			AutoScan LED 1 defective	Test function of LED	Replace AutoScan

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9616	9616 AutoScan LED 2 defective	Error: AutoScan LED2 defective	Determine via the terminal	Perform AutoScan diagnostics	
			AutoScan LED 2 defective	Test function of LED	Replace AutoScan
9617	9617 AutoScan photo diode defective	Error: AutoScan photo diode defective	AutoScan photo diode defective	See Remedial action	Replace AutoScan
9618	9618 AutoScan parameter error	Error: AutoScan wrong parameters	Wrong AutoScan parameters	Check parameters	Correct parameters
9907 	9907 CAN to RockProtect				
9911 	9911 CAN to AutoScan	Error: CAN bus communication - AutoScan to terminal	AutoScan selected, even though there is no AutoScan available	Check whether Autoscan is available	Deactivate AutoScan in the display
					Perform CAN diagnostics
			AutoScan power supply voltage defective	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
			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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal error - AutoScan	See Remedial action	Replace AutoScan
9920 	9920 CAN to joystick	Error: CAN bus communication - joystick to terminal	Determine via the terminal	Perform CAN diagnostics	
			Joystick power supply defective	Check fuse +22-F57	Change fuse +22-F57
					Check 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
			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
			Internal joystick error	See Remedial action	Replace joystick
9921 	9921 CAN to CU	Error: CAN bus communication - CU to terminal	Determine via the terminal	Perform CAN diagnostics	
			Power supply voltage operating panel defective	Check fuse +22-F47	Change fuse +22-F47
				Check fuse +22-F48.1	Change fuse +22-F48.1
			Central electrical power supply voltage defective	LED +22-LD62 not lit	Check fuse +22-F62

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				LED +22-LD64 not lit	Check fuse +22-F64
				LED +22-LD11 not lit	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, change wiring and/or terminating resistors
			Internal error, operating panel	See Remedial action	Replace operating panel
9922 	9922 CAN to man. operation				
9923 	9923 CAN to EMR	Error: CAN bus communication - EMR to terminal	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
			CAN3 terminating resistors defective	Check wiring and terminating resistors	If required, replace wiring and/or terminating resistors

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal EMR error	See Remedial action	Replace the EMR
9924 	9924 CAN to metal detct.	Error: CAN bus communication - metal detection to terminal	Determine via the terminal	Perform CAN diagnostics	
			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
9925 	9925 CAN to DIOM	Error: CAN bus communication - DIOM to terminal	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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				LED +22-LD11 not lit	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
			Internal error DIOM	See Remedial action	Replace DIOM
9926 	9926 CAN to ADM1	Error: CAN bus communication - ADM1 to terminal	Determine via the terminal	Perform CAN diagnostics	
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD64 not lit	Check fuse +22-F64
				LED +22-LD11 not lit	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
				LED +22-LD17 not lit	Check fuse +22-F70

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9927 	9927 CAN to ADM2	Error: CAN bus communication - ADM2 to terminal (800 and 1000)	Determine via the terminal	Perform CAN diagnostics	
			Power supply voltage ADM 2 defective	Check fuse +22-F66	Change fuse +22-F66
				LED +22-LD16 not lit	Check fuse +22-F69
			Wrong machine type selected	Check machine type in the display	Select correct machine type
			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
9942	9942 hardw. restart to SmartDrive	Error: Restart hardware SmartDrive	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
				LED +22-LD60 not lit	Check fuse +22-F60
				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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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 hardw. 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
9946	9946 hardw. 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
			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 faulty	Check wiring and plug	If required, replace wiring and/or plugs

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal error autopilot	See Remedial action	Replace autopilot
9947	9947 Restart Hard RockProtect				
9951	9951 Restart Hard AutoScan	Error: Restart AutoScan hardware	AutoScan power supply voltage defective	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 faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Internal error - AutoScan	See Remedial action	Replace AutoScan
9953	9953 hardw. restart KMC3	Error: Restart KMC3 hardware	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
			Wiring faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Internal error KMC3	See Remedial action	Replace the KMC3

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9960	9960 hardw. restart joystick	Error: Restart joystick hardware	Joystick power supply defective	Check fuse +22-F57	Change fuse +22-F57
					Check 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 faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Internal joystick error	See Remedial action	Replace joystick
9961	9961 hardw. restart CU	Error: Restart CU hardware	Power supply voltage CU defective	Check fuse +22-F47	Change fuse +22-F47
					Check 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
				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

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9962	9962 hardw. restart man. 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
			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 faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Internal error, manual operation	See Remedial action	Replace manual operation
9963	9963 hardw. restart EMR	Error: Restart EMR hardware	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
			Wiring faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Internal EMR error	See Remedial action	Replace the EMR
9964	9964 hardw. restart metal detect.	Error: Restart metal detection hardware	Power supply voltage for metal detection 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 500-1000

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 hardw. restart 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	If required, replace wiring and/or plugs
			Internal error DIOM	See Remedial action	Replace DIOM
9966	9966 hardw. restart ADM1	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
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				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 ADM1	See Remedial action	Replace ADM1
9967	9967 hardw. restart ADM2	Error: Restart ADM2 hardware (800 and 1000)	Power supply voltage ADM2 defective	Check fuse +22-F66	Change fuse +22-F66
				LED +22-LD16 not lit	Check fuse +22-F69
			Wiring faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Internal error ADM2	See Remedial action	Replace ADM2
9982	9982 restart CAN to SmartDrive	Error: Interruption in CAN communication to SmartDrive	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
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
9985	9985 restart CAN to KMC2	Error: Error - interruption of the CAN communication to KMC2	Short circuit/broken cable in the wiring for the CAN1 bus	Check wiring	Replace wiring

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			CAN1 terminating resistors defective	Check wiring and terminating resistors	If required, replace wiring and/or terminating resistors
			Internal error KMC2	See Remedial action	Replace KMC2
9986	9986 restart CAN to Autopilot	Error: Interruption in CAN communication to autopilot	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
			Internal error autopilot	See Remedial action	Replace autopilot
9987	9987 Restart CAN to RockProtect	Error: Interruption in CAN communication to RockProtect	Short circuit/broken cable in the wiring for the CAN2 bus	Check wiring	Replace wiring
			CAN2 terminating resistors defective	Check wiring and terminating resistors	Replace wiring and terminating resistors
			Internal RockProtect error	See Remedial action	Replace RockProtect
9991	9991 Restart CAN to AutoScan	Error: Interruption in CAN communication to AutoScan	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
			Internal error - AutoScan	See Remedial action	Replace AutoScan
9993	9993 restart CAN to KMC3	Error: Error - interruption of the CAN communication to KMC3	Short circuit/broken cable in the wiring for the CAN1 bus	Check wiring	Replace wiring

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			CAN1 terminating resistors defective	Check wiring and terminating resistors	If required, replace wiring and/or terminating resistors
			Internal error KMC3	See Remedial action	Replace the KMC3
15000	15000 restart CAN to joystick	Error: Interruption in CAN communication to Joystick	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
			Internal joystick error	See Remedial action	Replace joystick
15001	15001 restart CAN to CU	Error: Interruption in CAN communication to CU	Short circuit/broken cable in the wiring for the CAN1 bus	Check wiring	Replace wiring
			CAN1 terminating resistors defective	Check wiring and terminating resistors	
			Internal error, operating panel	See Remedial action	Replace operating panel
15002	15002 restart CAN to man. operation	Error - interruption of the CAN communication to the manual operation.	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
			Internal error, manual operation	See Remedial action	Replace manual operation
15003	15003 restart CAN to EMR	Error: Interruption in CAN communication to EMR	Short circuit / broken cable in the wiring for the CAN3 bus	Check wiring	Replace wiring

Turn Page please!

Error descriptions BiG-X 500-1000

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
15004	15004 restart CAN to metal detct.	Error: Interruption in CAN communication to metal detection	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
15005	15005 restart CAN to DIOM	Error: Interruption in CAN communication to DIOM	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
			Internal error DIOM	See Remedial action	Replace DIOM
15006	15006 restart CAN to ADM1	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 restart CAN to ADM2	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

Turn Page please!

Error descriptions BiG-X 500-1000

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 error ADM2	See Remedial action	Replace ADM2
16000	16000 DIOM communication	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
				LED +22-LD11 not lit	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
			Internal error DIOM	See Remedial action	Replace DIOM
16001	16001 DIOM temperature	Error: DIOM temperature too high	DIOM has overheated	See Remedial action	Allow DIOM to cool down
			Internal error DIOM	See Remedial action	Replace DIOM

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Determine via the terminal	Run electronics diagnostics	
16002	16002 DIOM voltage In-company	Error: Internal voltage in DIOM incorrect	Internal voltage in DIOM 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
16003	16003 DIOM voltage UB	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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				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
16004	16004 DIOM total current	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 Current at the output				

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16006	16006 DIOM hardware	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 DIOM voltage UC	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.
			Internal error DIOM	See Remedial action	Replace DIOM
16008	16008 DIOM voltage 7.5V	Error: DIOM 7.5 V voltage incorrect	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

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				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
16009	16009 DIOM EEPROM	Error: EEPROM defective	EEPROM defective	See Remedial action	Replace DIOM
			Internal error DIOM	See Remedial action	Replace DIOM
16010	16010 Lock steering left (Y66) overcurrent DIOM PWM1	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
			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
16011	16011 Lock steering right (Y67) overcurrent DIOM PWM2	Error: Maximum current on right steering valve	Determine via the terminal	Perform DIOM diagnostics	

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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	16012 Additional hydr. 2 DOWN (Y62) overcurrent DIOM PWM3	Error: Over-current in additional hydraulics 2 DOWN on PWM3	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 solenoid valve	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM
16013	16013 Additional hydr. 2 UP (Y63) overcurrent DIOM PWM4	Error: Over-current in additional hydraulics 2 UP on PWM4	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

Error descriptions BiG-X 500-1000

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
16014	16014 Additional hydr. 1 Hitch UP (Y51) overcurrent DIOM DIG1	Error: Over-current in additional hydraulics 1 UP	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
16015	16015 Additional hydr. 1 Hitch DOWN (Y52) overcurrent DIOM DIG2	Error: Over-current in additional hydraulics 1 DOWN	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
16016	16016 Molasses relay (K28) overcurrent DIOM DIG3	Error: Over-current DIG3	Power supply voltage molasses relay defective	LED +22-LD28 not lit	Check fuse +22-F74

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Short circuit / broken cable in the wiring for the relay	Check wiring	Replace wiring
16017	16017 Coupling 2nd diesel engine (Y56) overcurrent DIOM DIG4	Error: Over-current in coupling for 2nd diesel engine	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
16018	16018 Lock steering left (Y66) status DIOM PWM1	Error: Status of PWM1 on left steering valve defective	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 in DIOM	See Remedial action	Replace DIOM
16019	16019 Lock steering right (Y67) status DIOM PWM2	Error: Status of PWM2 on right steering valve defective	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 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16020	16020 Additional hydr. 2 DOWN (Y62) status DIOM PWM3	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
			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
16021	16021 Additional hydr. 2 UP (Y63) status DIOM PWM4	Error: Status of PWM4 on additional hydraulics 2 defective	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
16022	16022 Additional hydr. 1 Hitch UP (Y51) status DIOM DIG1	Error: Status of DI on additional hydraulics 1 hitch UP defective	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 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16023	16023 Additional hydr. 1 Hitch DOWN (Y52) status DIOM DIG2	Error: Status of DI on additional hydraulics 1 hitch DOWN defective	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	Coil defective	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM
16024	16024 Molasses relay (K28) status DIOM DIG3	Error: Over-current DIG3	Power supply voltage molasses relay defective	LED +22-LD28 not lit	Check fuse +22-F74
			Short circuit / broken cable in the wiring for the relay	Check wiring	Replace wiring
16025	16025 Coupling 2nd diesel engine (Y56) status DIOM DIG4	Error: Status of DI on coupling for 2nd diesel engine defective	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
16041	16041 Reserve DIOM PWM6 overcurrent				
16042	16042 Reserve DIOM PWM7 overcurrent				

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16043	16043 Reserve DIOM PWM8 overcurrent				
16044	16044 Terminating resistor CAN2_KMC2 (K15) overcurrent DIOM DIG5	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 Engine cleaning compressed air (Y73) overcurrent DIOM DIG6	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
			Coil for solenoid valve defective	Test coil	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM
16046	16046 Reserve DIOM DIG7 overcurrent				
16047	16047 Reserve DIOM DIG8 overcurrent				
16048	16048 Silage agent pump (M16) status DIOM PWM5	Error: Silage agent pump defective	Short circuit / broken cable in the wiring for the pump	Check wiring	Replace wiring
			Silage agent pump defective	Check silage agent pump	If required, change silage agent pump

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16049	16049 Reserve DIOM PWM6 status				
16050	16050 Reserve DIOM PWM7 status				
16051	16051 Reserve DIOM PWM8 status				
16052	16052 Terminating resistor CAN2_KMC2 (K15) status DIOM DIG5	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 Engine cleaning compressed air (Y73) status DIOM DIG6	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 Reserve DIOM DIG7 status				

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16055	16055 Reserve DIOM DIG8 status				
16071	16071 Reserve DIOM PWM10 overcurrent				
16072	16072 Reserve DIOM PWM11 overcurrent				
16073	16073 Reserve DIOM PWM12 overcurrent				
16074	16074 12/24V switchover (K41) overcurrent DIOM DIG9	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
16075	16075 Release voltage Feed drive/front attachment overcurrent DIOM DIG10	Error: Over-current feed drive/front attachment	Short circuit/broken cable in the wiring for the valve	Check wiring	Replace wiring
16076	16076 Metal detection horn (K18) overcurrent DIOM DIG11	Error: Over-current metal detection horn	Short circuit / broken cable in the wiring for the horn	Check wiring	Replace wiring
16077	16077 Grinding flap open/closed (Y65) overcurrent DIOM DIG12	Error: Over-current grinding flap open/closed	Determine via the terminal	Perform grinding diagnostics	

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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 Reserve DIOM PWM9 status				
16079	16079 Reserve DIOM PWM10 status				
16080	16080 Reserve DIOM PWM11 status				
16081	16081 Reserve DIOM PWM12 status				
16082	16082 12/24V switchover (K41) DIOM DIG9	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

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				LED +22-LD11 not lit	Check fuse +22-F92
16083	16083 Release voltage Feed drive/front attachment DIOM DIG10	Error: Release voltage feed drive/front attachment	Short circuit/broken cable in the wiring for the valve	Check wiring	Replace wiring
16084	16084 Metal detection horn (K18) DIOM DIG11	Error: Horn metal detection	Short circuit / broken cable in the wiring for the horn	Check wiring	Replace wiring
16085	16085 Grinding flap open/closed (Y65) DIOM DIG12	Error: Grinding flap open/closed	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

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