



**Original operating instructions
150 000 156 01 us**

Self-propelled Forage Harvester

BiG X 700 -1

BiG X 850 -1

BiG X 1100 -1

(Machine No. 860 394 or higher)



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9.18.7	Every 250 operating hours	IX -81
9.18.8	Every 500 operating hours	IX -81
9.18.9	Every 1000 operating hours	IX -81
9.18.10	Every 1500 operating hours	IX -81
9.18.11	As required	IX -81
9.18.12	Annually	IX -81
9.18.13	Every two years	IX -81
9.19	Silage Agent System (Optional)	IX -82
9.19.1	Special Instructions for Using Silage Agents	IX -82
9.19.2	Cleaning Work on the Silage Agent System	IX -82
9.19.3	Dosing quantity of the Silage Agent System	IX -82
9.20	Cable Winch	IX -83
9.20.1	Replacing the Cable Winch	IX -83
9.21	Trailer Coupling	IX -83
9.22	Maintenance schedule	IX -84
10	List of parameters	X - 1
A1	Operation of the Internal Silage Agent System	A -1
A2	Error messages	A2 - 1

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

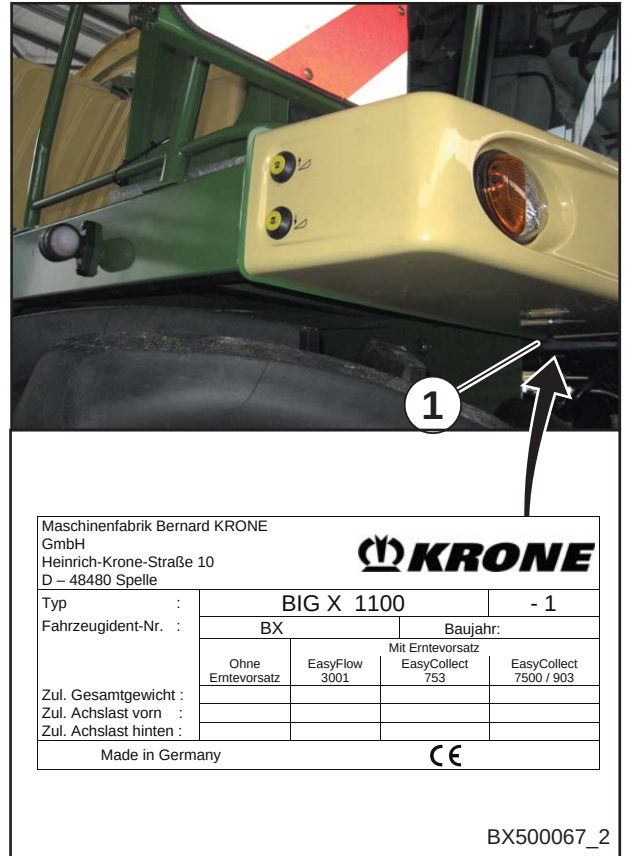
1.2.3 Declaration

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

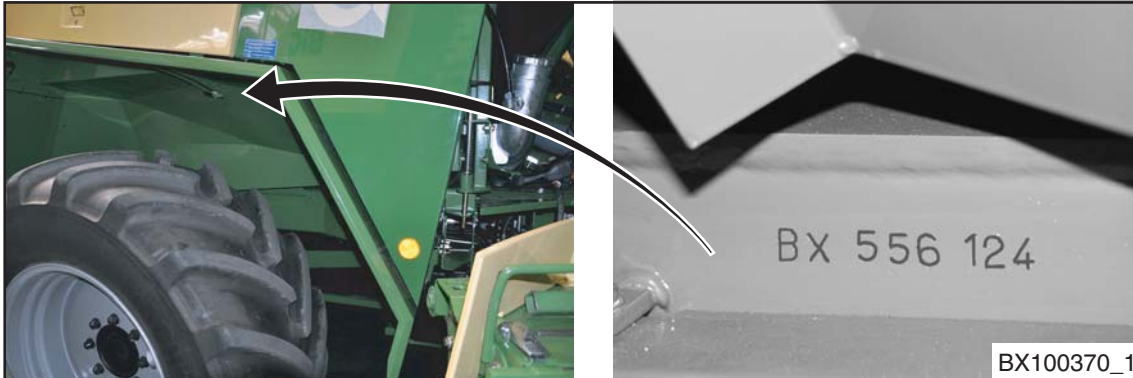
Tank cover key number



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

1.2.7.1 Machine Types

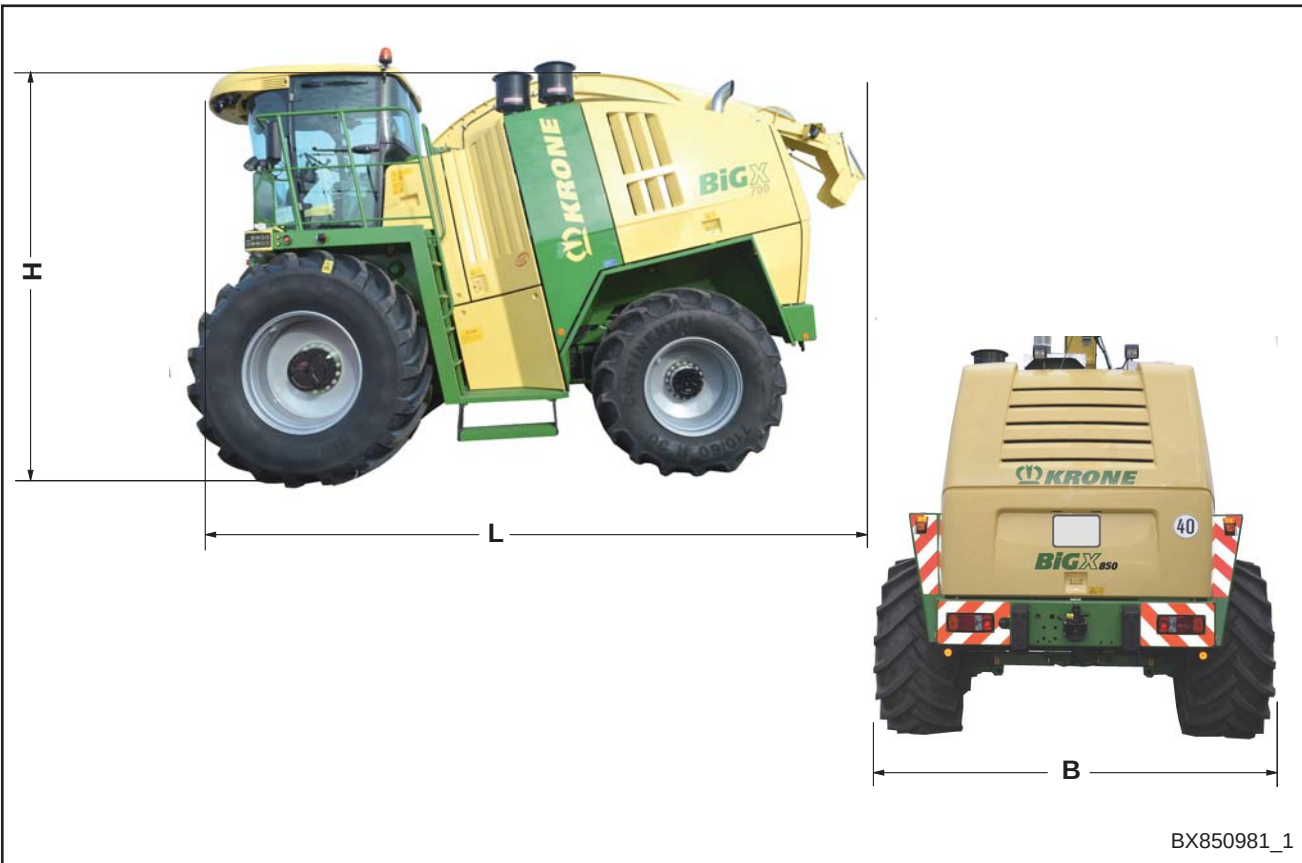
Type		BiG X 700 -1
Motor manufacturer		MAN
Type of engine		D 2868
Certified engine performance (ECE R120)	KW/HP	570/775
Max. cutting continuous output X Power	KW/HP	492/669
Max. cutting continuous output Eco Power	KW/HP	374/509
Cylinders		V-8
Stroke capacity	l	16,2
Harvesting attachment drive		Hydraulic, continuous
Feed drive rollers/front baling rollers		6
Feed drive rollers drive		Hydraulic
Cutting length	mm	5 - 29/4 - 21/2,5 - 15
Gathering drum width	mm	800
Diameter	mm	660
Speed	U/min	1.190
Cutter arrangement/number of cutters		V-shaped 20/28/40
Cuts/min		11.900/16.660/23.800
Swivel range of discharge		210°
Overload height	mm	approx. 6,000
Travelling gear		Hydrostatic
Vmax at engine speed 1550 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 using axial piston motors with epicyclic gear trains
Drive axle tyres air pressure, refer to the section on Maintenance - Tyres	Tread	710/75 R 34 650/75 R 32 800/65 R 32 800/70 R 38 900/60 R 32 900/60 R 38
Steering axle tyres air pressure, refer to the section on Maintenance - Tyres	Tread	540/65 R30 600/70 R 28 710/60 R30 710/55 R30 only for USA (Max.ballasting 3650 kg on 40 km/h/ 25mph)
Tightening torque for wheel nuts	Nm	525 drive axle/ 270 steering axle
Hydrostatic travelling gear (speeds)		Field mode: 0 to 25 km/h continuous Road travel: 0 to 40 km/h continuous
Drive pumps (double pump)		Absorption volume 145 ccm pressure 490 bar
Wheel motors, front		stepless 0/-115 ccm
Wheel motors, rear		stepless 0/-62 ccm
Feed drive pump		Absorption volume 105 ccm pressure 430 bar
Hydraulic engine feed drive		Absorption volume 75 ccm
Front attachment pump		Absorption volume 75 ccm pressure 430 bar
Hydraulic motor front attachment drive		Absorption volume 75 ccm

General Aspects

Type		BiG X 850 -1
Motor manufacturer		MAN
Type of engine		D 2862
Certified engine performance (ECE R120)	KW/HP	625/850
Max. cutting continuous output X Power	KW/HP	607/825
Max. cutting continuous output Eco Power	KW/HP	469/638
Cylinders		V-12
Stroke capacity	l	24,2
Harvesting attachment drive		Hydraulic, continuous
Feed drive rollers/front baling rollers		6
Feed drive rollers drive		Hydraulic
Cutting length	mm	5 - 29/4 - 21/2,5 - 15
Gathering drum width	mm	800
Diameter	mm	660
Speed	U/min	1.245
Cutter arrangement/number of cutters		V-förmig 20/28/40
Cuts/min		12.450/17.430/24.900
Swivel range of discharge		210°
Overload height	mm	ca. 6.000
Travelling gear		Hydrostatic
Vmax at engine speed app. 1550 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 using axial piston motors with epicyclic gear trains
Drive axle tyres air pressure, refer to the section on Maintenance - Tyres	Tread	710/75 R 34 650/75 R 32 800/65 R 32 800/70 R 38 900/60 R 32 900/60 R 38
Steering axle tyres air pressure, refer to the section Maintenance - Tyres	Tread	540/65 R30 600/70 R 28 710/55 R30 only for USA (Max.ballasting 3650 kg on 40 km/h/ 25mph)
Tightening torque for wheel nuts	Nm	525 drive axle / 270 steering axle
Hydrostatic travelling gear (speeds)		Field mode: 0 to 25 km/h continuous Road travel: 0 to 40 km/h continuous
Drive pumps (double pump)		Absorption volume 145 ccm pressure 490 bar
Wheel motors, front		stepless 0/-115 ccm
Wheel motors, rear		stepless 0/-62 ccm
Feed drive pump		Absorption volume 105 ccm pressure 430 bar
Hydraulic engine feed drive		Absorption volume 75 ccm
Front attachment pump		Absorption volume 75 ccm pressure 430 bar
Hydraulic motor front attachment drive		Absorption volume 75 ccm

Type		BiG X 1100 -1
Motor manufacturer		MAN
Type of engine		D 2868
Certified engine performance (ECE R120)	KW/HP	793/1.078
Max. cutting continuous output X Power	KW/HP	758/1.031
Max. cutting continuous output Eco Power	KW/HP	469/638
Cylinders		V-12
Stroke capacity	l	24,2
Harvesting attachment drive		Hydraulic, continuous
Feed drive rollers/front baling rollers		6
Feed drive rollers drive		Hydraulic
Cutting length	mm	5 - 29/4 - 21/2,5 - 15
Gathering drum width	mm	800
Diameter	mm	660
Speed	U/min	1.245
Cutter arrangement/number of cutters		V-shaped 20/28/40
Cuts/min		12.450/17.430/24.900
Swivel range of discharge		210°
Overload height	mm	approx. 6.000
Travelling gear		Hydrostatic
Vmax at engine speed 1550 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 using axial piston motors with epicyclic gear trains
Drive axle tyres air pressure, refer to the section on Maintenance - Tyres	Tread	710/75 R 34 650/75 R 32 800/65 R 32 800/70 R 38 900/60 R 32 900/60 R 38
Steering axle tyres air pressure, refer to the section on Maintenance - Tyres	Tread	540/65 R 30 600/70 R 28 710/55 R 30 only for USA (Max.ballasting 3650 kg on 40 km/h/ 25mph)
Tightening torque for wheel nuts	Nm	525 drive axle/ 270 steering axle
Hydrostatic travelling gear (speeds)		Field mode: 0 to 25 km/h continuous Road travel: 0 to 40 km/h continuous
Drive pumps (double pump)		Absorption volume 145 ccm pressure 490 bar
Wheel motors, front		stepless 0/-115 ccm
Wheel motors, rear		stepless 0/-62 ccm
Feed drive pump		Absorption volume 105 ccm pressure 430 bar
Hydraulic engine feed drive		Absorption volume 75 ccm
Front attachment pump		Absorption volume 75 ccm pressure 430 bar
Hydraulic motor front attachment drive		Absorption volume 75 ccm

1.2.7.2 Dimensions



Length L (mm)		Width B (mm)		Height H (mm)	
Depending on version					
min	max	min	max	min	max
8335	9440	3000	3455	3920	4000

1.2.7.3 Front Attachments

The following front attachments can be installed on the machine

		Big X 700 -1	Big X 850-1	Big X 1100-1
Direct cutting system	X- Disc 6200	X	X	X
Maize header	EasyCollect 6000	X	X	X
	EasyCollect 7500	X	X	X
	EasyCollect 9000	X	X	X
	EasyCollect 753	X	X	X
	EasyCollect 903	X	X	X
	EasyCollect 1053	X	X	X
Pick-up	EasyFlow 300	X	X	X
	EasyFlow 380	X	X	X



The front attachment Pick-up EasyFlow 380 cannot be used in all countries.

1.2.7.4 Trailer Coupling

Permissible D-value	78,2 kN
Permissible supported load on the coupling point	max. 2.000 kg
Max. trailing load	11.000 kg

Trailer Coupling for Italy

Permissible supported load on the coupling point	max. 1.500 kg
Max. trailing load	6.000 kg

1.2.7.5 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

1.2.7.6 Vibration Values of the Machine

The determined values are below the values the Occupational Safety Regulation 2002/44/EC requires.

- The vibration values for hand-arm vibrations are under 2.5 m/s².
- The triggering value of 0.5 m/s² is not exceeded with regard to whole-body vibrations.

1.2.7.7 Noise Emission Values of the Machine

The values have been determined following the EU directive 2000/14/EC.

Machine Type	Noise Level
BiG X 700 -1	75,7 dB
BiG X 1100 -1	76,6 dB

General Aspects

1.2.8 Weights

BiG X 700-1 (2 axles)

	Without/ with pick-up front attachment Easy Flow3001	With maize header			
		EasyCollect 6000	EasyCollect 7500	EasyCollect 753	EasyCollect 903
Permissible total weight:	18.000 kg	20.550 kg	20.850 kg	20.850 kg	22.000 kg
Permitted axle load, front:	11.500 kg	12.300 kg	12.600 kg	12.600 kg	13.000 kg
Permissible axle load, rear:	8.250 kg	8.250 kg	8.250 kg	8.250 kg	9.300 kg

BiG X 850-1/1100-1 (2 axles)

	Without attachment drive	With front attachment		
		EasyFlow 3001	EasyCollect 753	EasyCollect 7500/903
Permissible total weight:	18.000 kg	18.000 kg	22.500 kg	23.000 kg
Permitted axle load, front:	10.500 kg	11.500 kg	12.500 kg	13.000 kg
Permissible axle load, rear:	9.300 kg	9.300 kg	10.000 kg	10.000 kg

BiG X 700-1 (3 axles)

	Without front attachment or with pick-up front attachment	With maize header depending on the set-up condition
Permissible total weight:	18.000 kg	21.300 - 21.700
Permitted axle load, front:	11.500 kg	11.500 kg
Permissible axle load, rear:	8.250 kg	8.250 kg
Permissible axle load additional axle:	not permitted	1.950 kg

BiG X 850-1 (3 axles)

	Without front attachment	With front attachment	
		EasyFlow 300	EasyCollect 7500/753/903
Permissible total weight:	18.000 kg	18.000 kg	23.000 kg
Permitted axle load, front:	10.500 kg	11.500 kg	11.500 kg
Permissible axle load, rear:	9.300 kg	9.300 kg	9.300 kg
Permissible axle load additional axle:	not permitted		2.200 kg

BiG X 1100-1 (3 axles)

	Without front attachment	With maize header			
		EasyFlow 300	EasyCollect 7500	EasyCollect 753	EasyCollect 903
Permissible total weight:	18.000 kg	18.000 kg	23.000 kg		
Permitted axle load, front:	10.500 kg	11.500 kg	11.500 kg		
Permissible axle load, rear:	9.300 kg	9.300 kg	9.300 kg		
Permissible axle load additional axle:	not permitted		2.200 kg		

1.2.9 Consumables

	Quantities Litres	Filtered oils Brand name	Bio-degradable lubricants Brand name
Diesel tank	Approx. 960	European Standard EN 590 DIN EN 590 (Germany) ASTM D 975 No. 1 D (USA) BS 2869 Part 1 Class A 1 (Great Britain) Please observe the engine manufacturer's consumables list!	
Engine oil	*	Use only engine oils approved by the MAN factory standard. Please observe the engine manufacturer's consumables list!	
Hydraulic oil	Approx. 150	HLP 46	HE 46 (on request)
Coolant	Approx. 90 (BiG X 700) Approx. 130 (BiG X 850/ BiG X 1100)	Ratio of antifreeze mixing ratio 50:50 with water BiG X 700: 45 l:45l BiG X 850/1100: 65 l:65l Please observe the operating instructions of the engine manufacturer!	
Gear of power	Approx. 15.0	Gear oil Mobil SHC 630 ISO viscosity Class (220) take off	
Distributor gearbox	8.0	Gear oil Mobil SHC 630 ISO viscosity Class (220)	
Roller gearbox, bottom left	Approx. 2.0	Gear oil API-GL5-SAE85W-90	
Roller gearbox, bottom, tower top left	Approx. 0.5	Gear oil API-GL5-SAE85W-90	
Roller gearbox, top right	3.6	Gear oil API-GL5-SAE85W-90	
tower gearbox on the upper discharge chute	1,0	Gear oil API-GL5-SAE85W-90	
Wheel gearboxes	front: approx. 3.0 rear: approx. 1.5	Transmission oil SHELL SPIRAX S4 CX 50	



* See accompanying documents (MAN)

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. You may carry passengers during operation and transport on the working implement only if they use the passenger seat provided.
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 Foraging unit machine

- Dangerous cutting tools are located under the protective equipment of the machine. These cutting tools coast after the drive has been switched off. Thus a sufficient safety distance from the machine must be kept up to the standstill of all aggregates.
- Do only work on the machine when the audio coastdown alarm is finished and a visual inspection with regard to the standstill of the aggregates has been made.
- 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. 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!

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 whether the autopilot shuts down by an abrupt moving of the steering wheel and by leaving the driver's seat (via seat switch contact).
 - Check for proper operating condition -
 - i. e. free of mechanical damages and leaks
 - of row tracers, of the steering angle transmitter as well as of all visible hoses and wirings.
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! The audio coastdown alarm, which is sounded after the main drive is switched off, must be finished.

2.2.8 PTO shaft

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. Always make sure that the PTO shafts are mounted correctly and secured properly!
6. Secure the PTO shaft guard against turning by hooking in the chains!
7. Cleaning, lubricating or adjusting PTO driven implements or the PTO shaft only with PTO disengaged, engine switched off and ignition key withdrawn!

8. Place the uncoupled PTO shaft on the holder provided!
9. Immediately repair any damage before working with the implement!

2.2.9 Hydraulic system

1. The hydraulic system is pressurised! Special care at hydraulic systems with accumulators. Hydraulic systems with accumulators are under high pressure! Repair work to the hydraulic system must only be performed by service centres.
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 work and electrical welding work on the machine, always switch off the engine and disconnect the power supply via the main switch of the battery.
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.

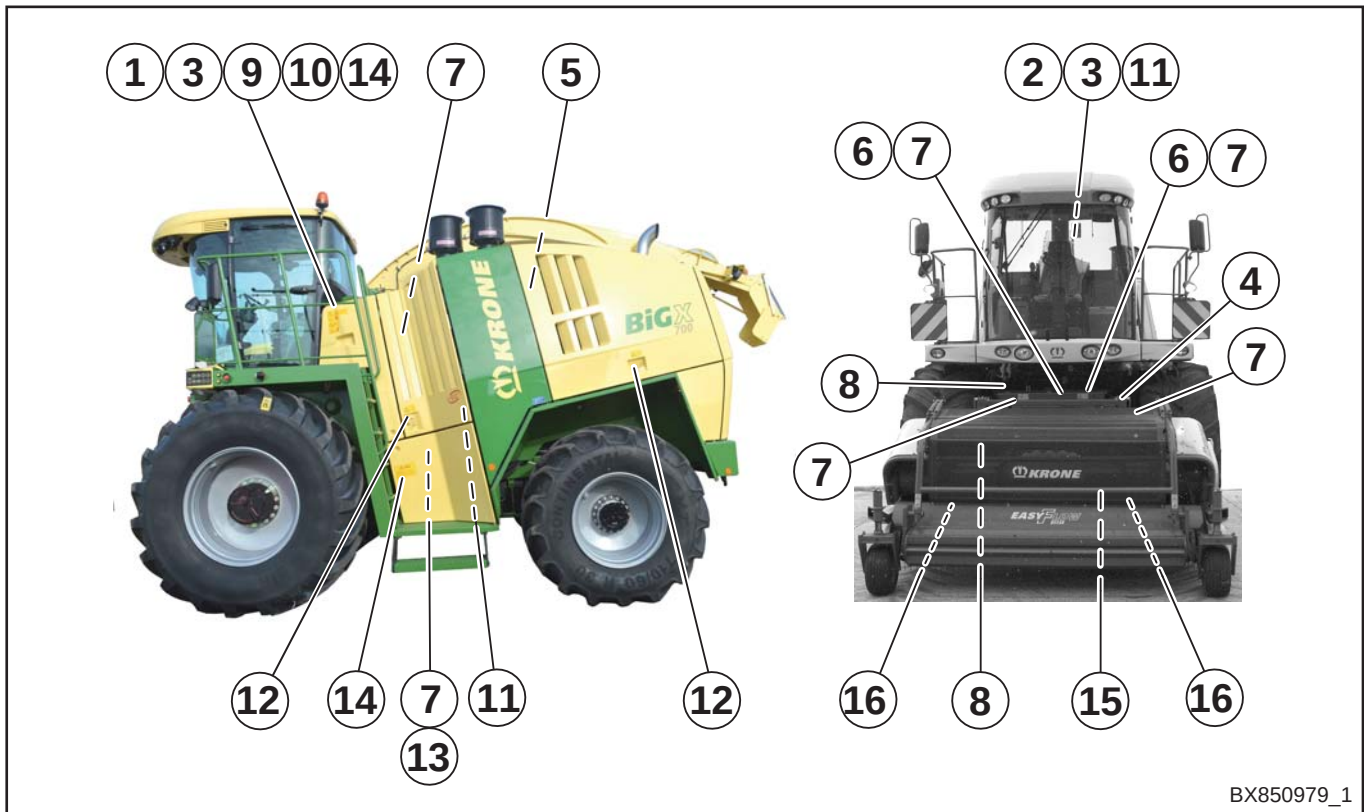
We have implemented the hazard warnings in the form of warning pictograms.

In the following, you will find important information on the locations of these warning pictograms and an associated description/supplementation!



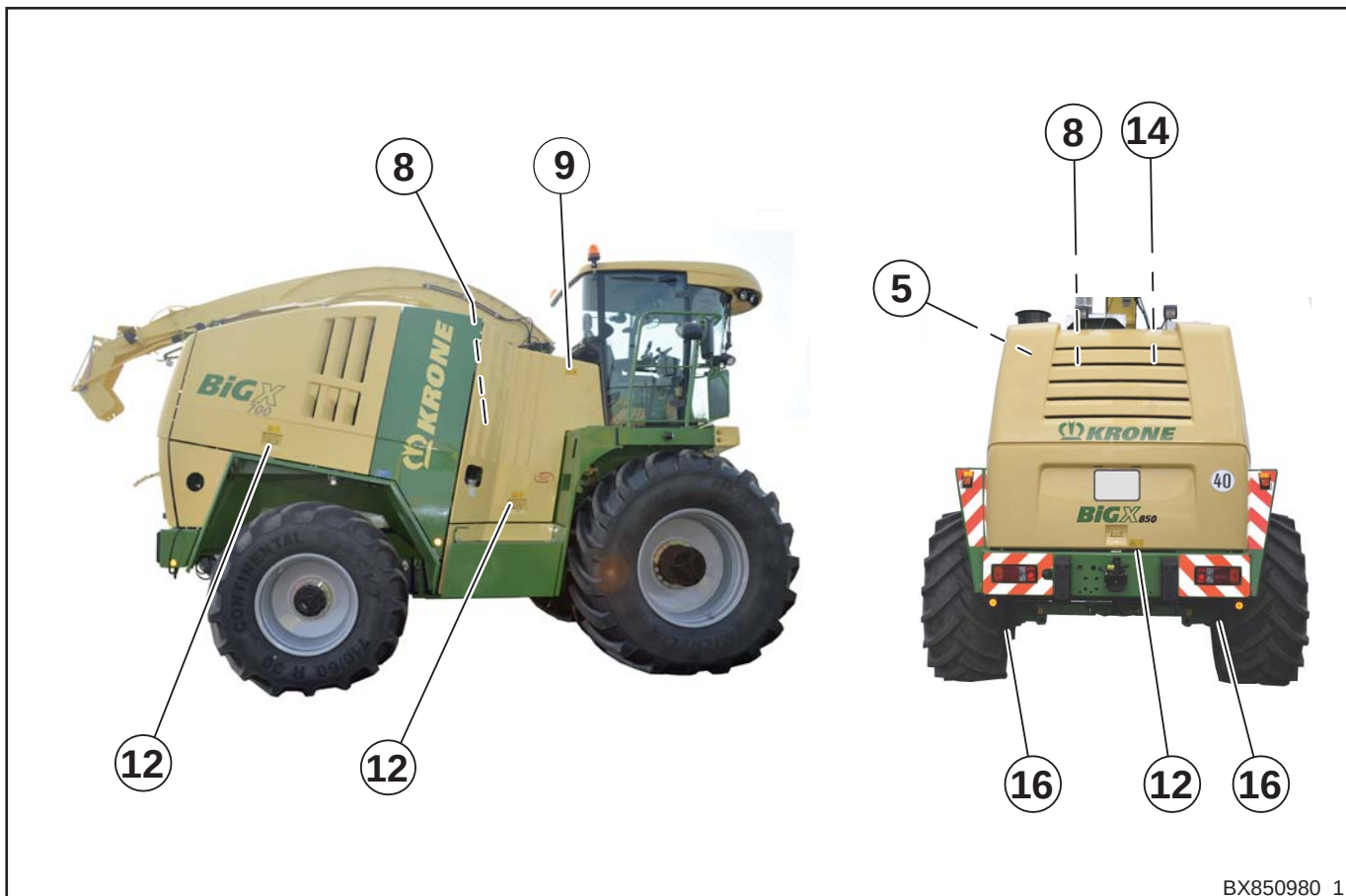
Familiarise yourself with the statement of the warning pictograms. The adjacent text and the selected location on the machine provide information on the special danger spots on the machine.

2.3.1 Location of the warning pictograms on the machine



BX850979_1

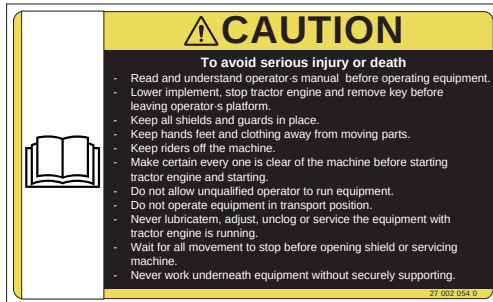
Left-hand side and front of the machine



BX850980_1

Right-hand side and rear of the machine

1



Order No. 27 002 054 0 (1x)

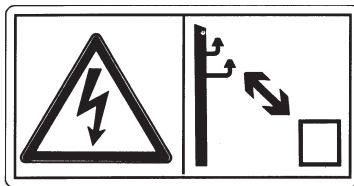
2



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)

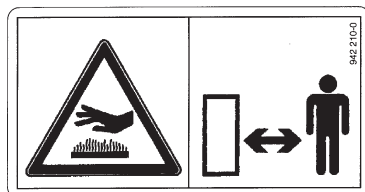
4



Keep sufficient distance to rotating machine parts.

Order No. 942 200-1 (1x)

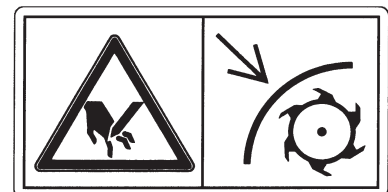
5



Burning hazard! Hot surface, keep sufficient distance.

Order No. 942 210-0 (2x)

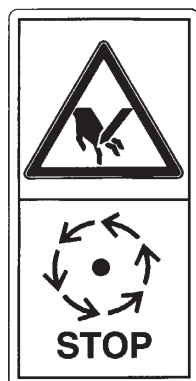
6



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

Order No. 942 294-0 (2x)

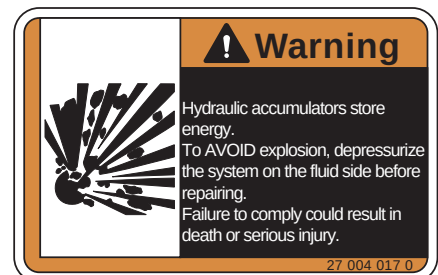
7



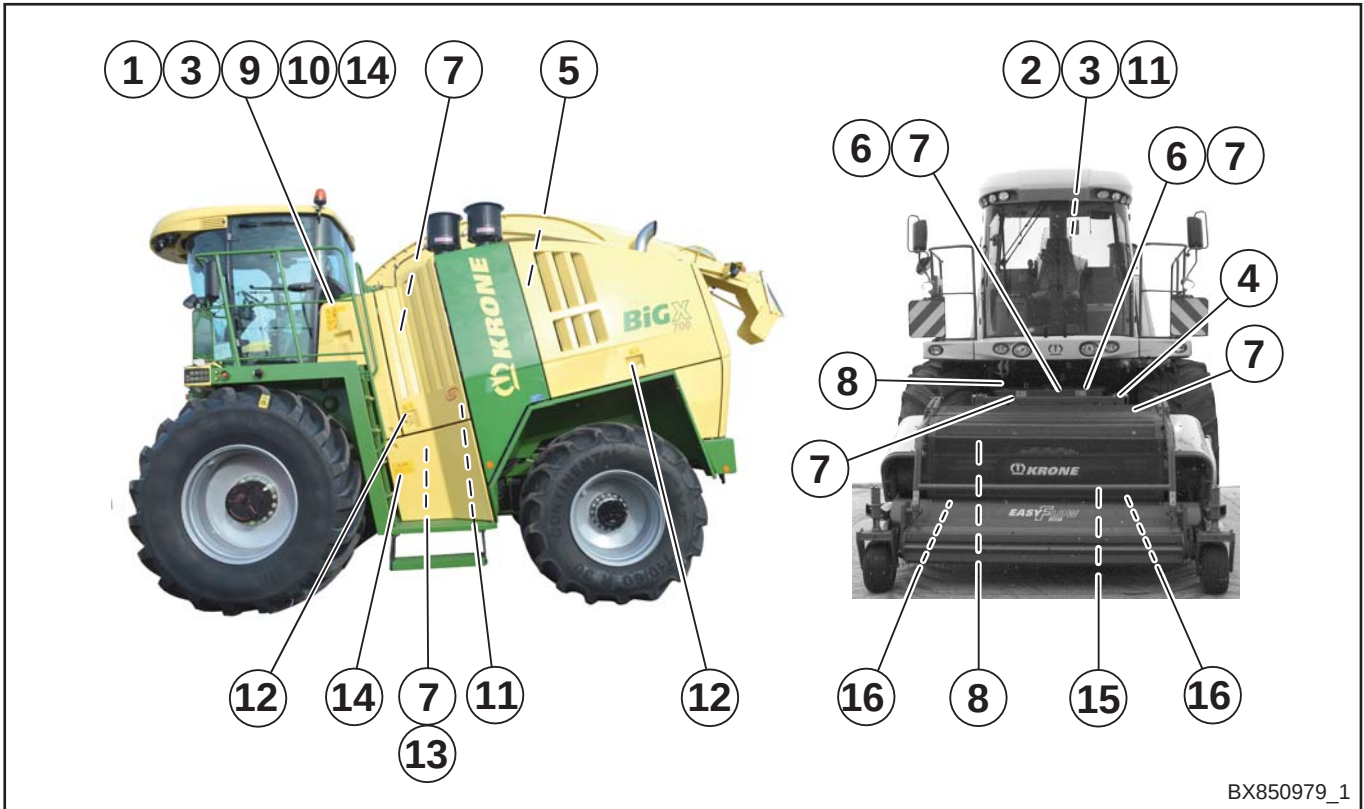
Never touch any moving machine parts. Wait until they have come to a complete stop.

Order No. 939 410-2 (6x)

8

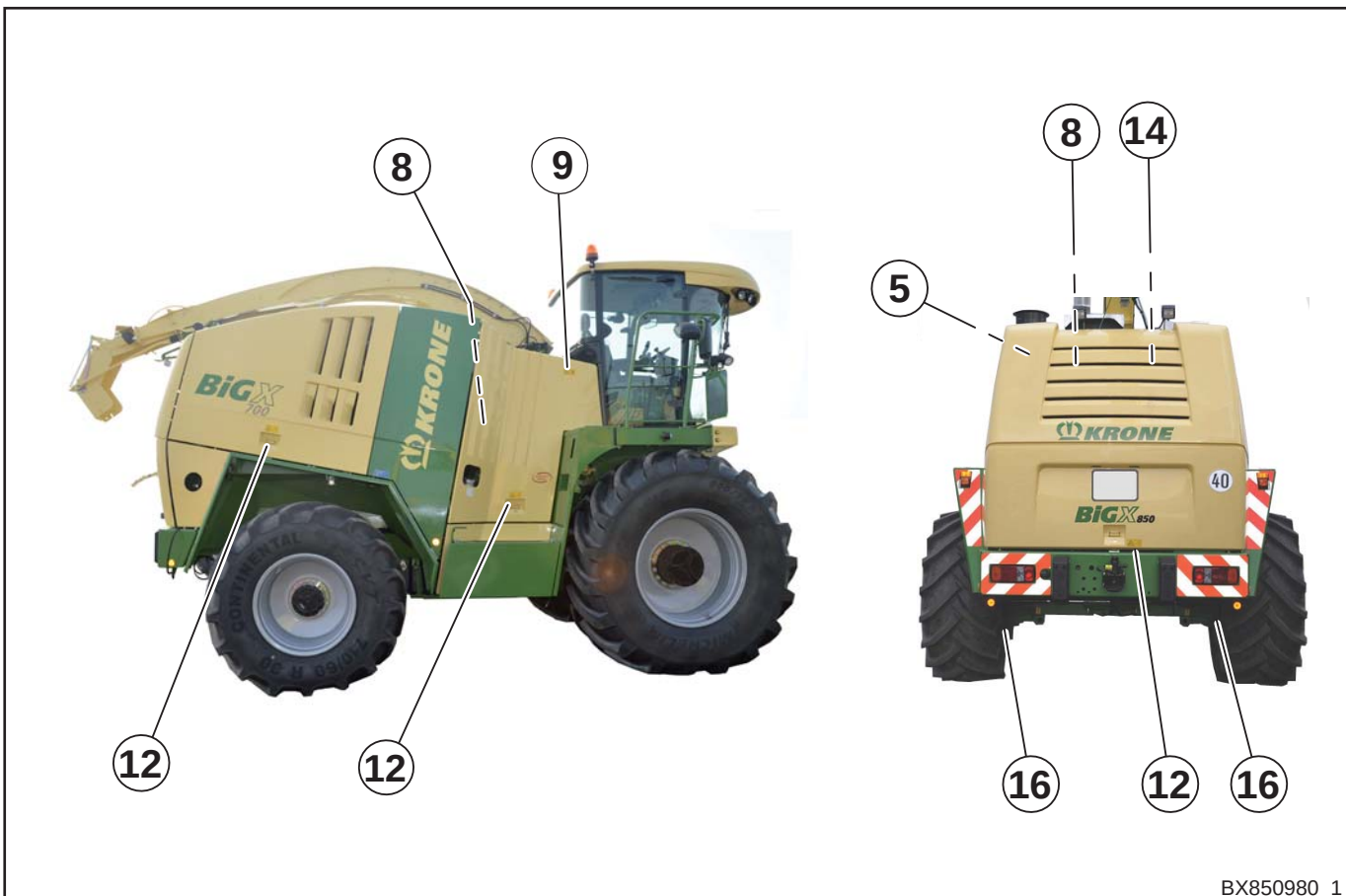


Order No. 27 004 017 0 (1x)



BX850979_1

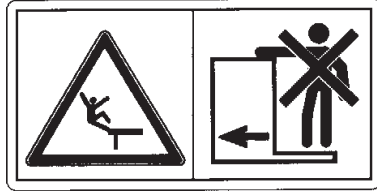
Left-hand side and front of the machine



BX850980_1

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)

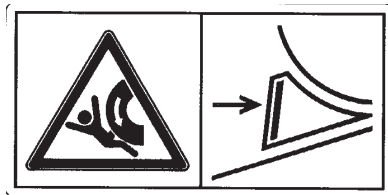
10



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

Order No. 942 290-0 (1x)

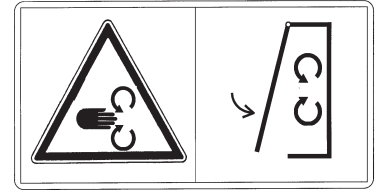
11



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

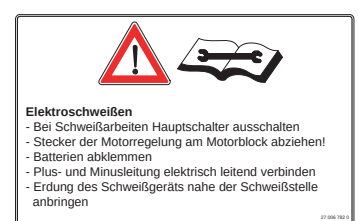


Electric welding

- Switch off main switch during welding work
- Remove plug of engine control on engine block!
- Disconnect battery
- Connect the plus and minus lines as electroconductive
- Place the grounding of the welding apparatus close to the weld

Order No. 27 006 782 0 (1x)

14

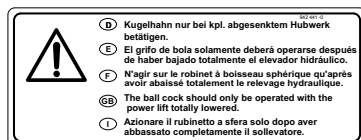


Electric welding

- Switch off main switch during welding work
- Remove plug of engine control on engine block!
- Disconnect battery
- Connect the plus and minus lines as electroconductive
- Place the grounding of the welding apparatus close to the weld

Order No. 27 006 780 0 (1x)

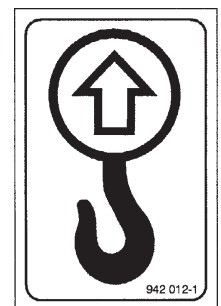
15



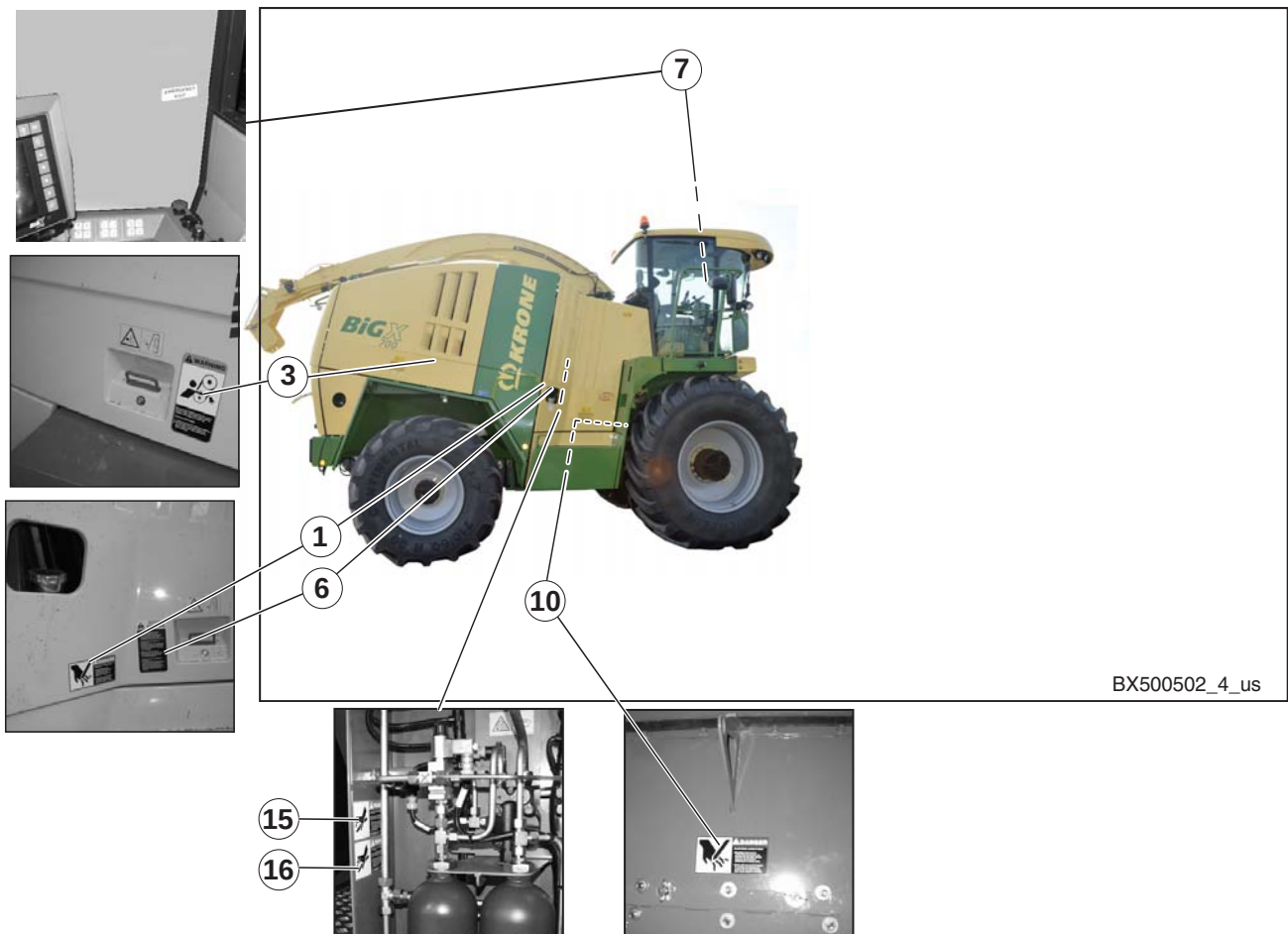
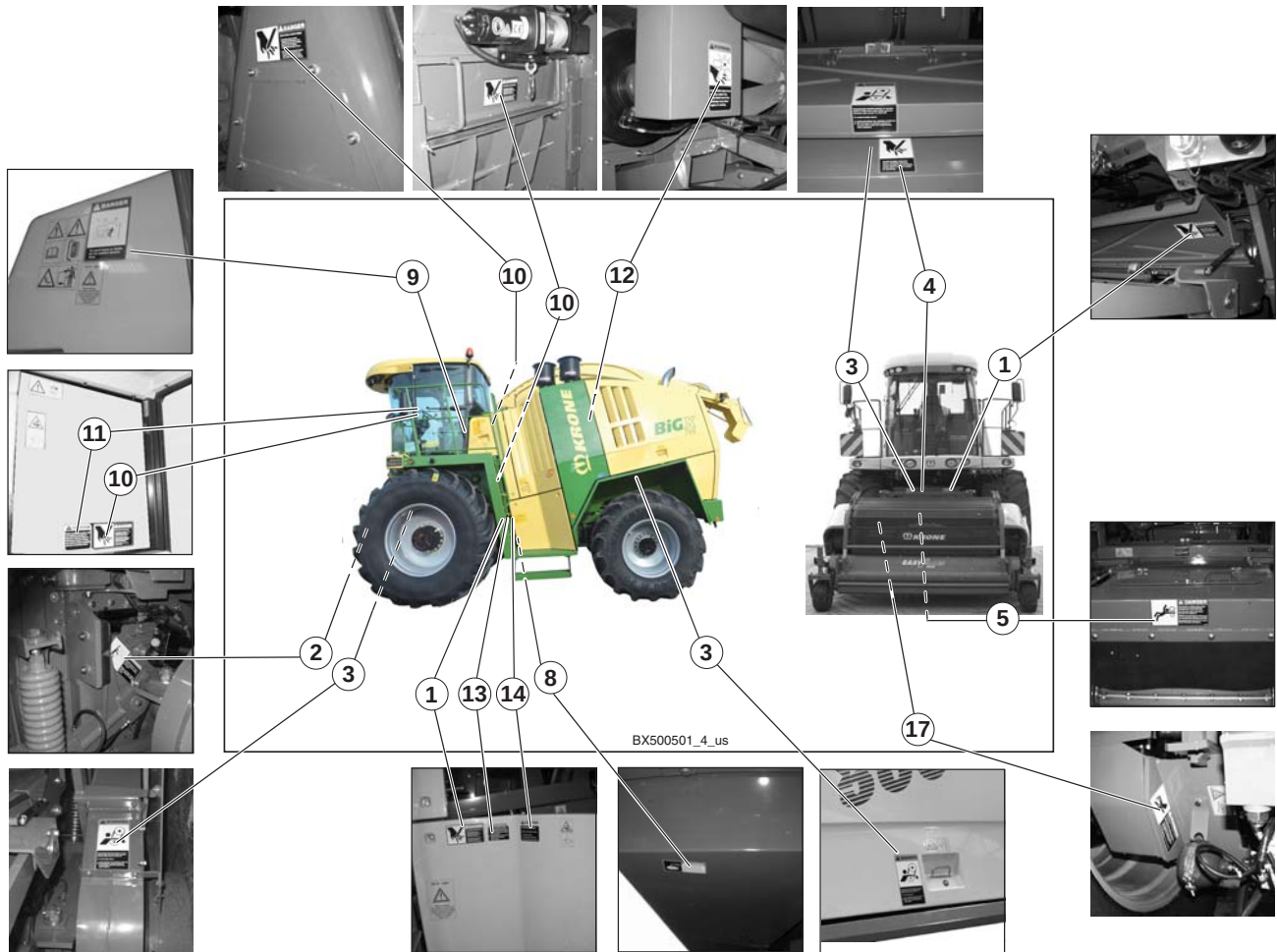
Order No. 942 441-0 (1x)

16

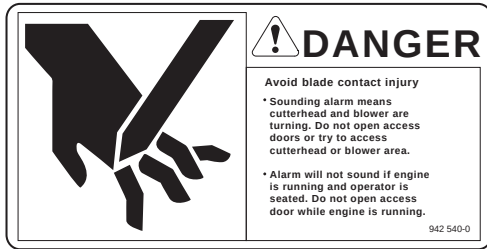
Stop points



Order No. 942 012-1 (4x)

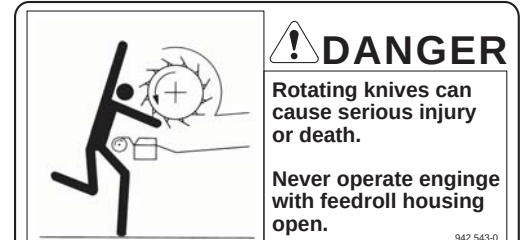


1



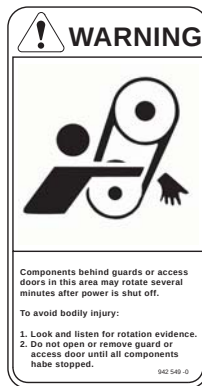
942 540 -0
(3) Required

2



942 543 -0
(1) Required

3



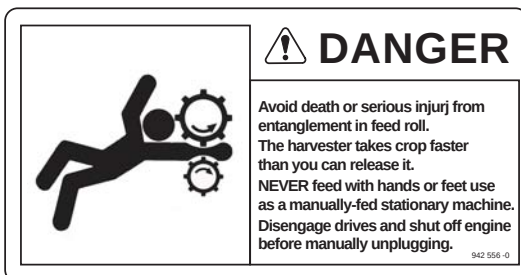
942 549 -0
(3) Required

4



942 536 -0
(1) Required

5



942 556 -0
(1) Required

6



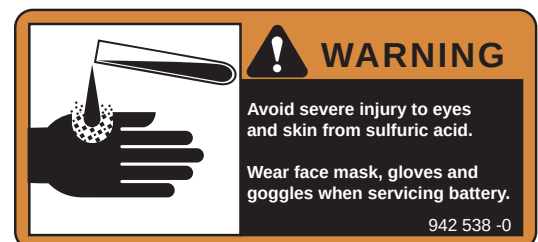
942 550 0
(1) Required

7

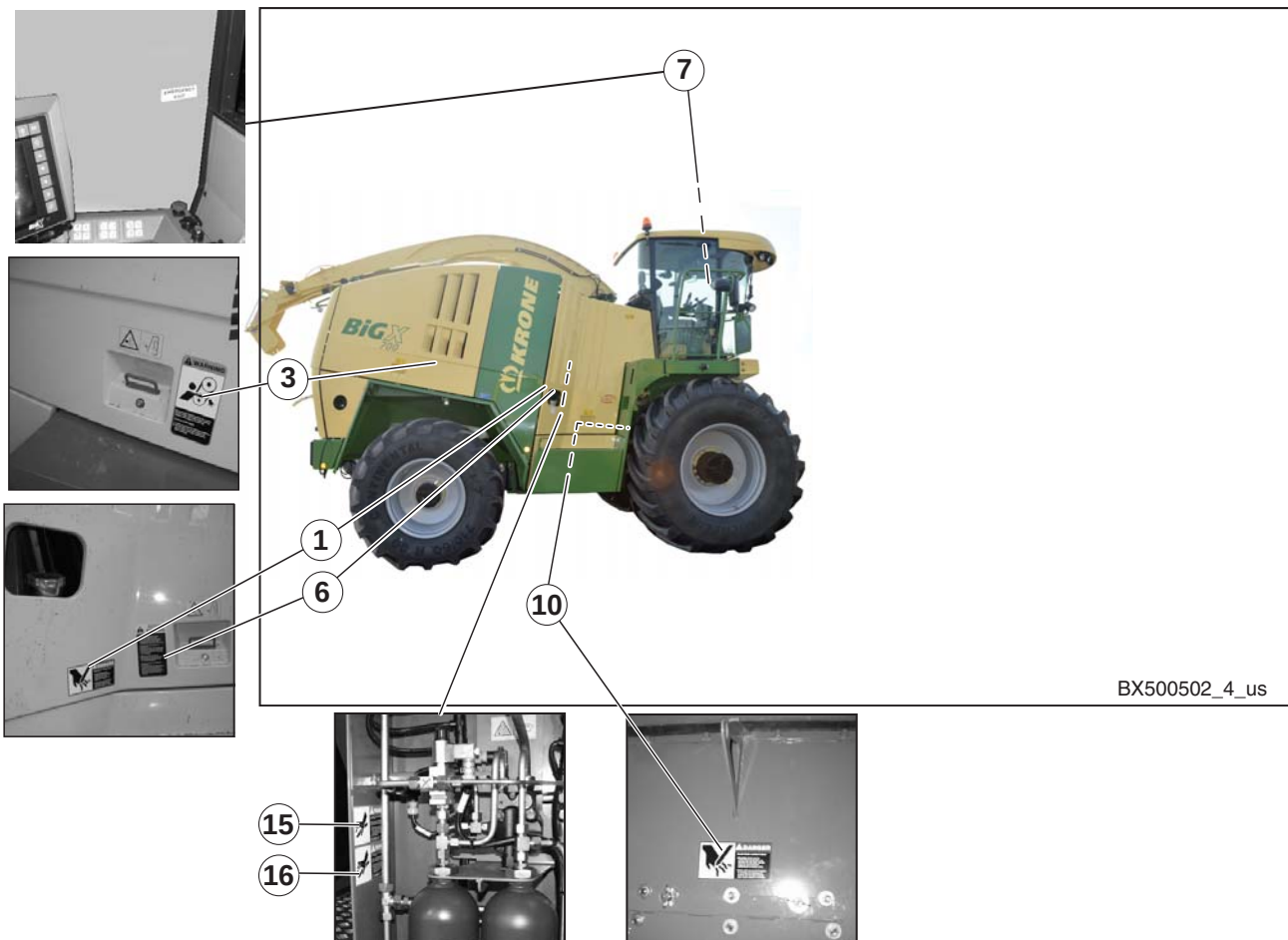
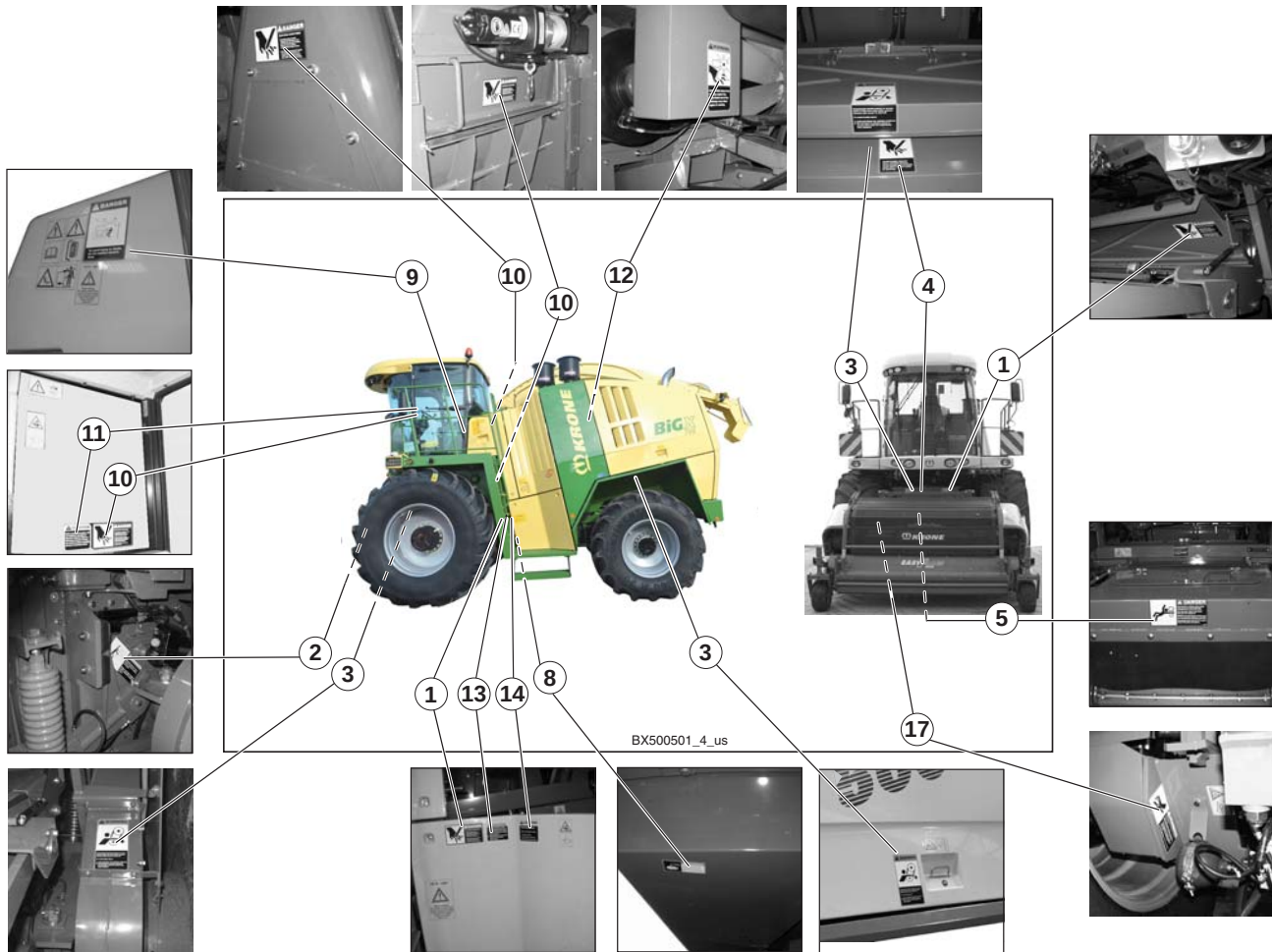


942 537 -0
(1) Required

8



942 538 -0
(1) Required

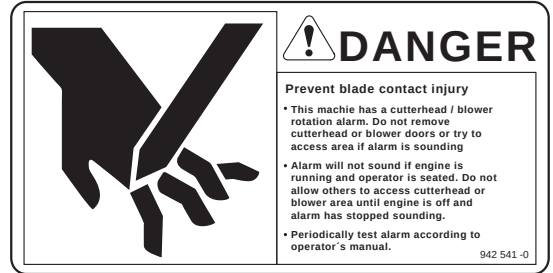


9



942 547 -0
(1) Required

10



942 541 -0
(5) Required

11



942 542 -0
(1) Required

12



942 546 -0
(2) Required

13



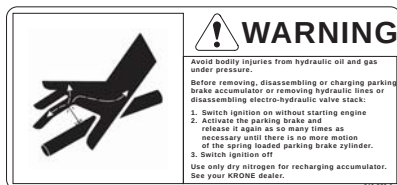
942 551 -0
(1) Required

14



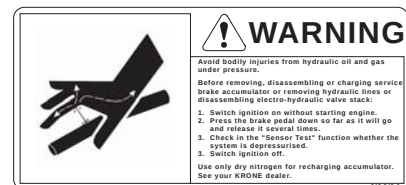
942 552 -0
(1) Required

15

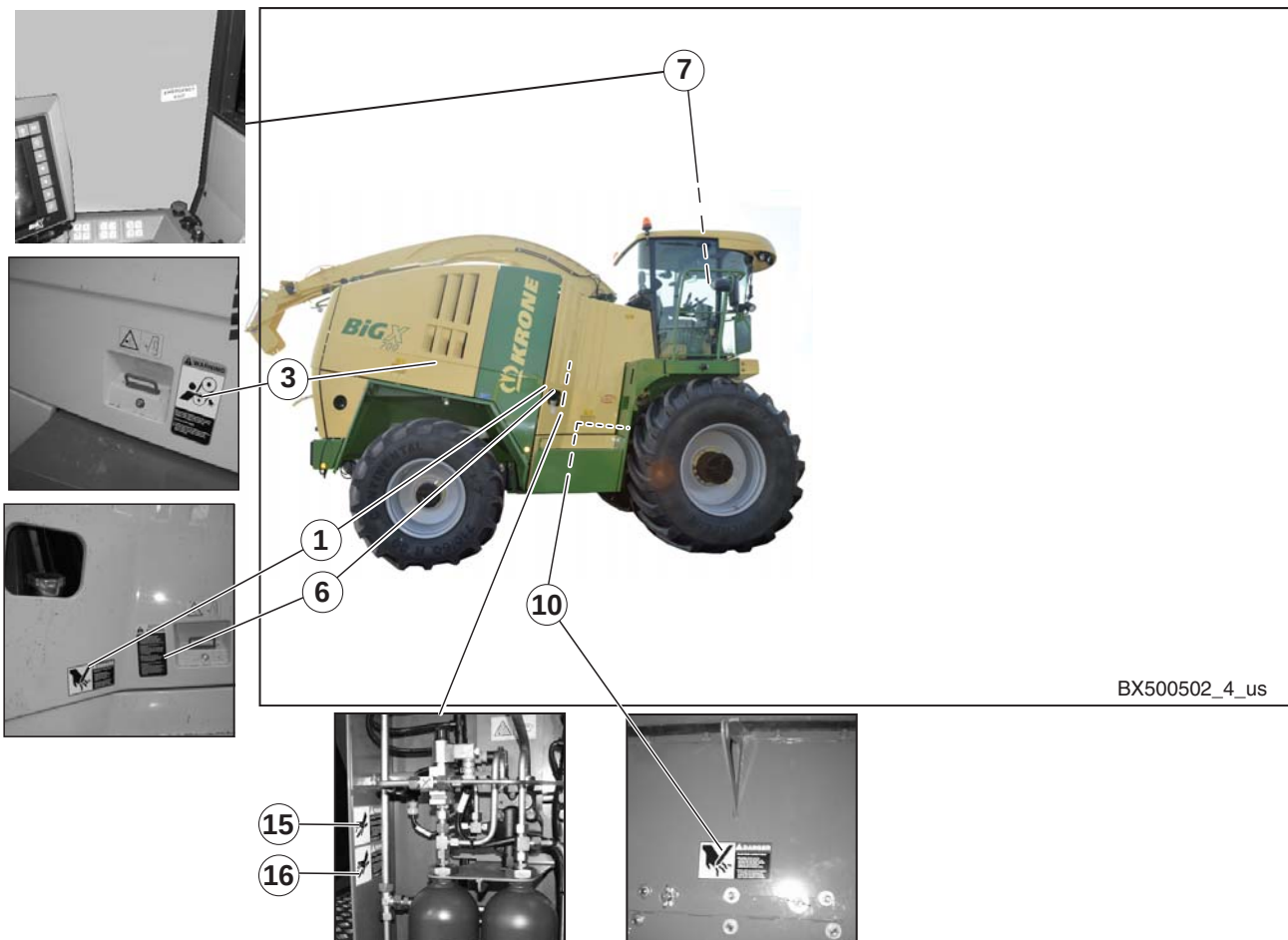
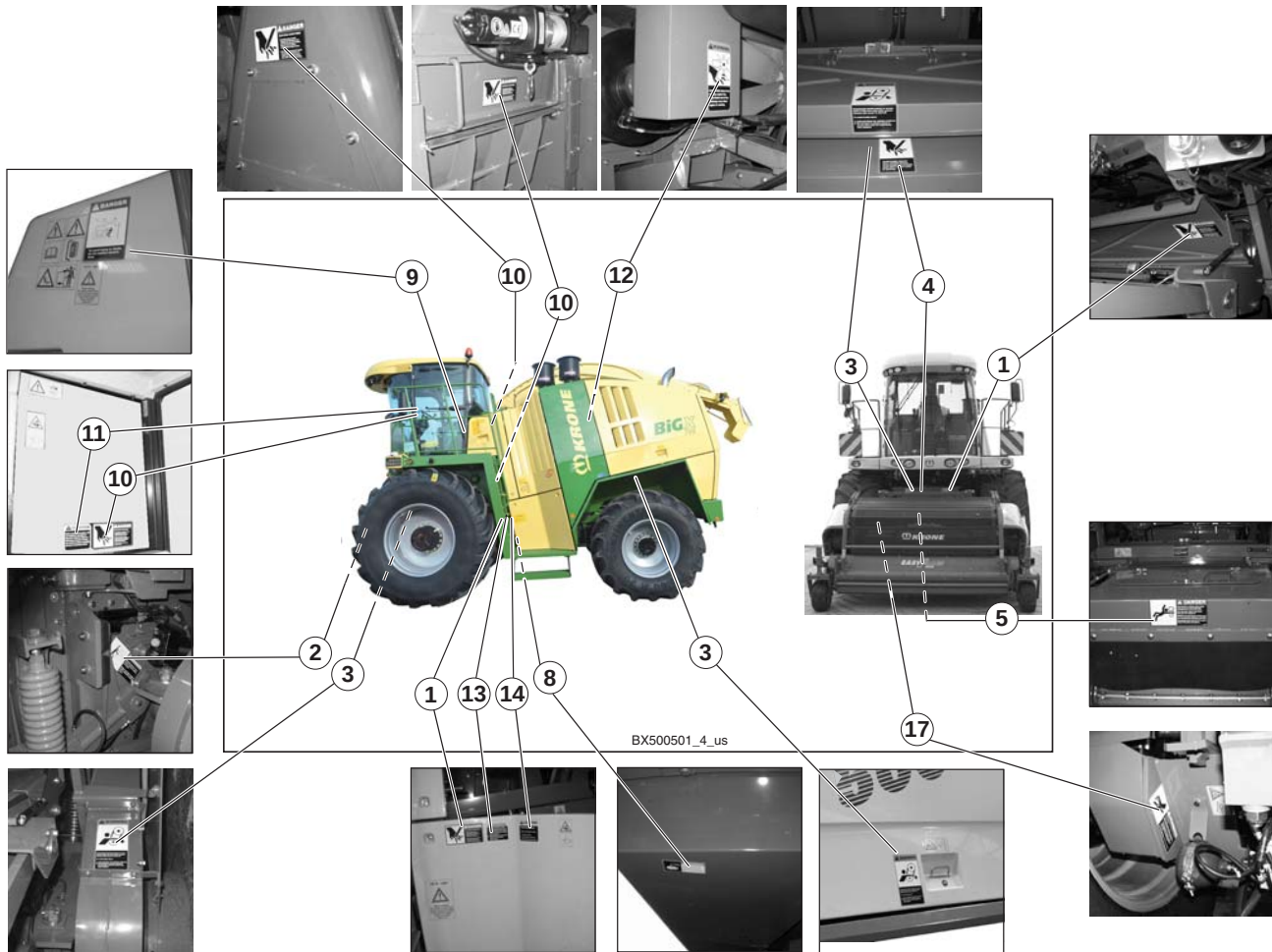


942 539 -0
(1) Required

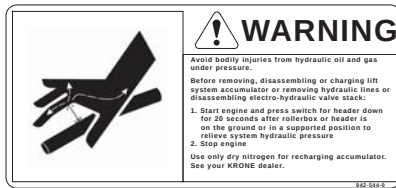
16



942 545 -0
(1) Required

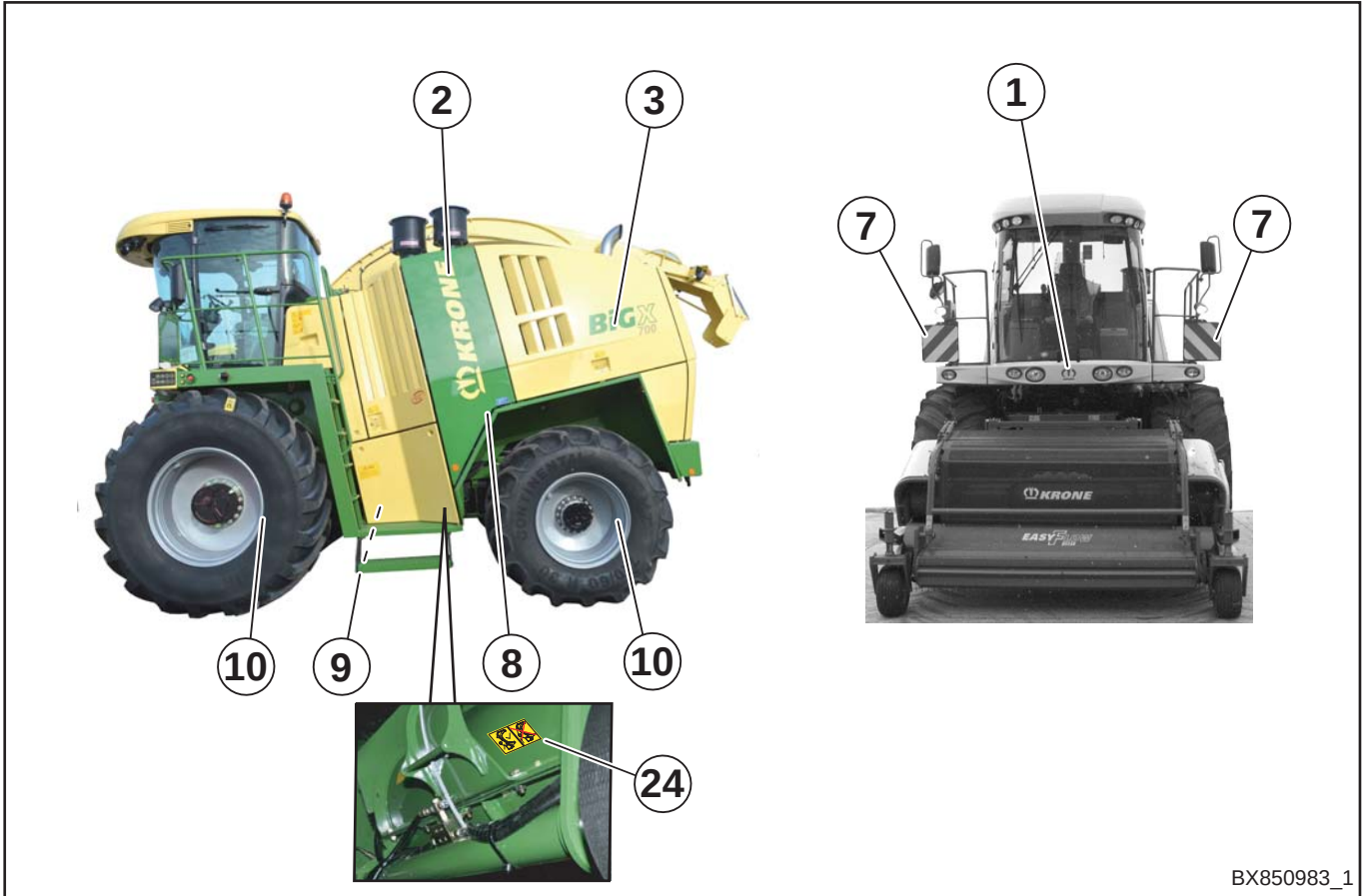


17



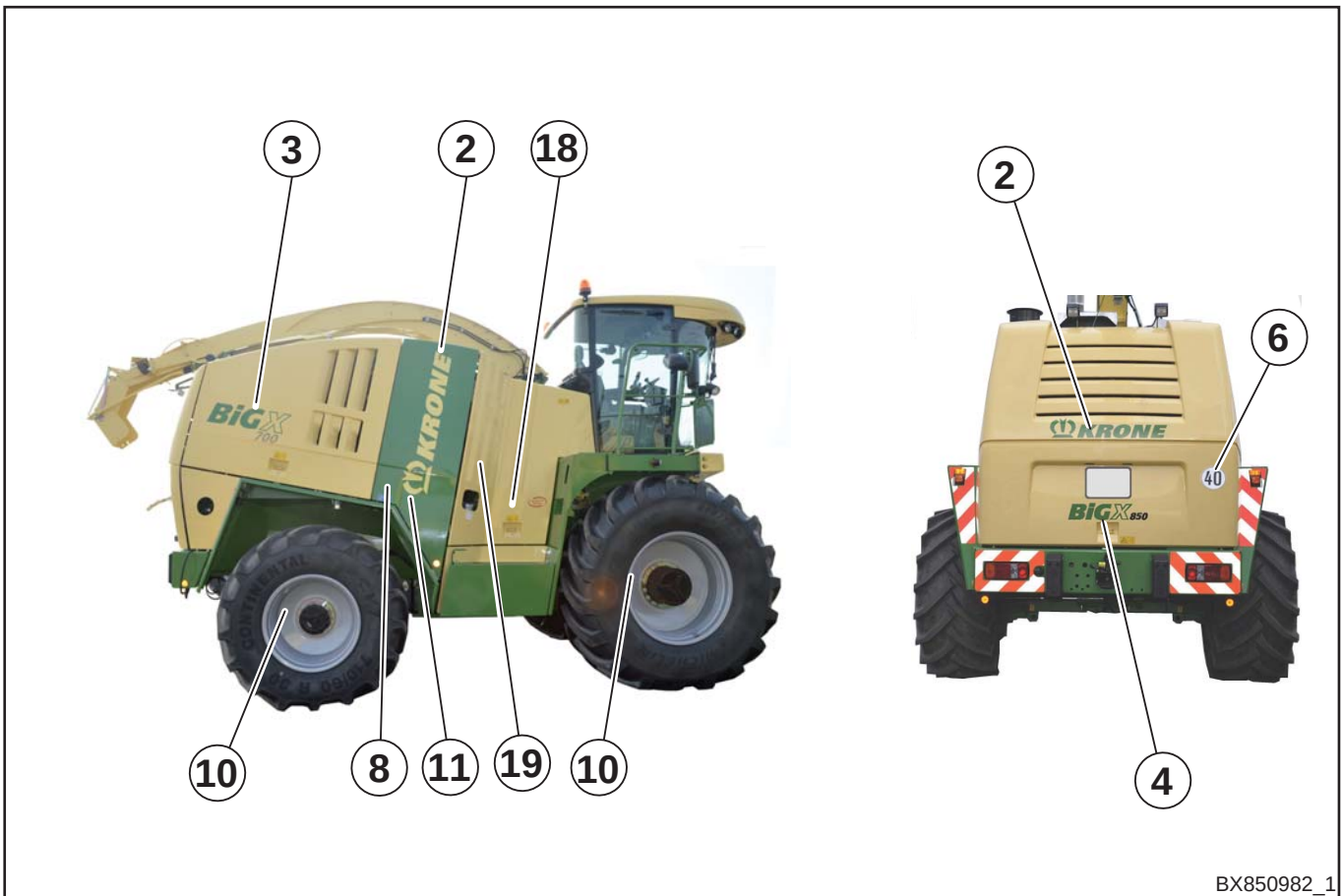
942 544 -0
(1) Required

2.3.2 Location of general labels on the machine



BX850983_1

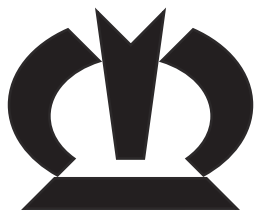
Left-hand side and front of the machine



BX850982_1

Right-hand side and rear of the machine

①



942 434 0 (1x)

②



942 341 1 (2x), length of 895, beige
285 059 0 (1x), length of 895, green

③

BiGX₇₀₀ 27 007 147 0 (2x) 800 length
BiGX₈₅₀ 27 007 149 0 (2x) 800 length
BiGX₁₁₀₀ 27 007 151 0 (2x) 800 length

④

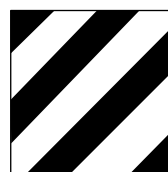
BiGX₇₀₀ 27 007 148 0 (1x) 140 high
BiGX₈₅₀ 27 007 150 0 (1x) 140 high
BiGX₁₁₀₀ 27 007 152 0 (1x) 140 high

⑥



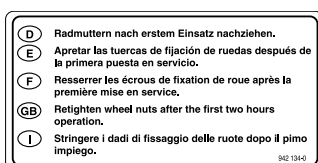
939 145 1 (1x)

⑦



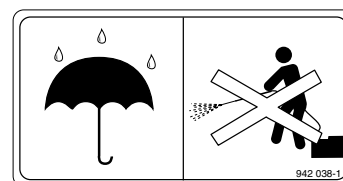
924 569 0 (4x)

⑧



942 134 0 (2x)

⑨



942 038 1 (3x)

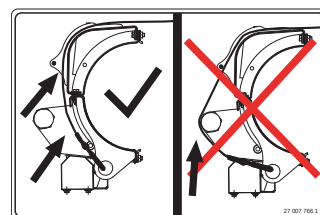
⑩

3,0 bar

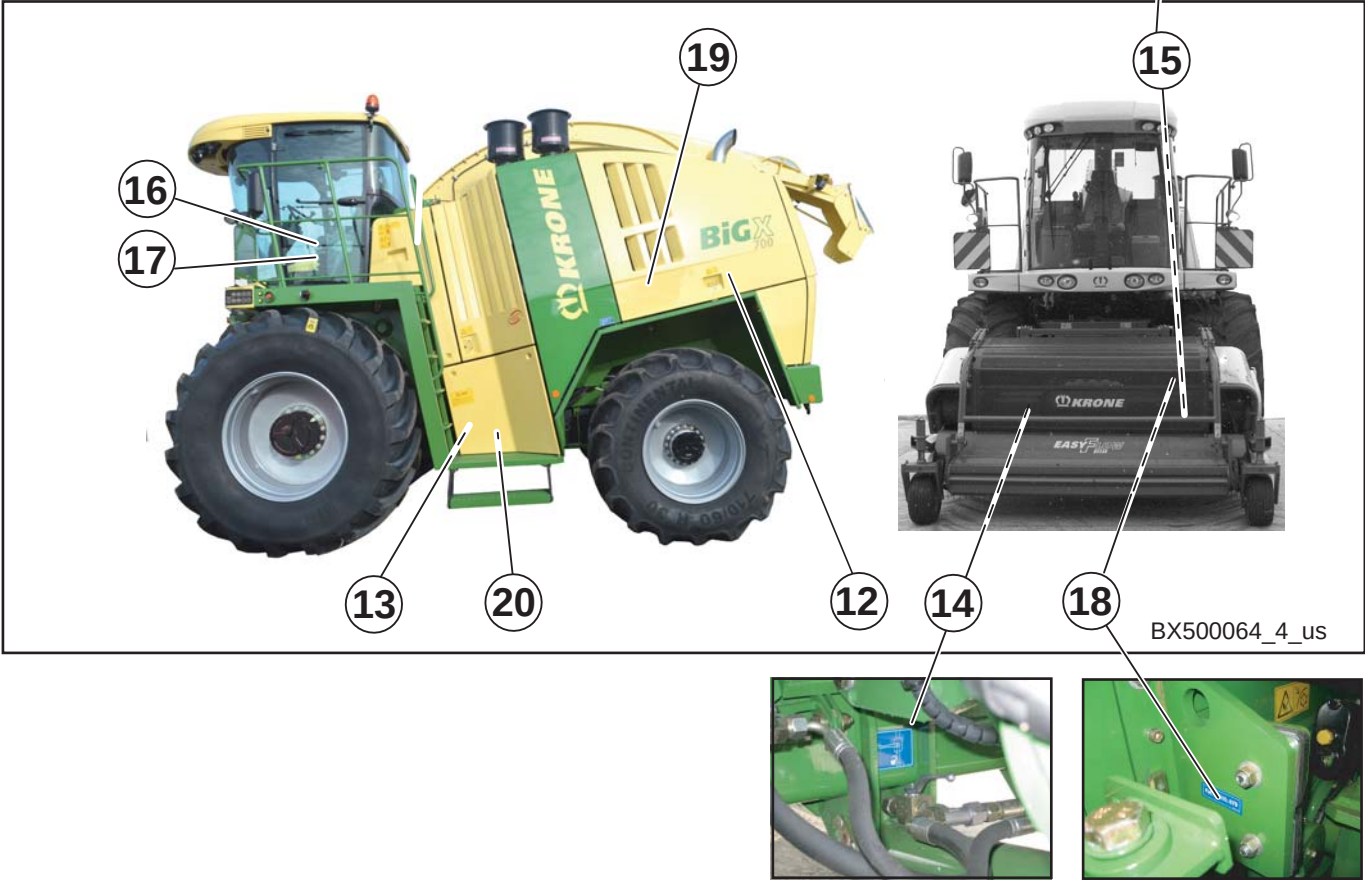
(4x)
Also refer to
Technical Data

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

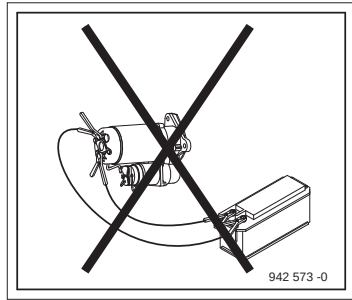
⑫



27 007 766 1 (1x)

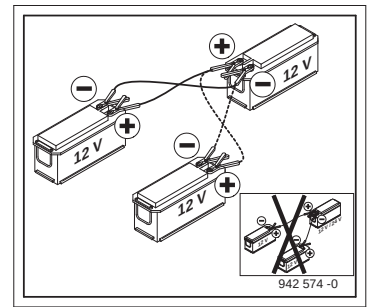


12



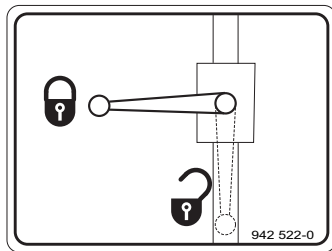
942 573-0 (1x)

13



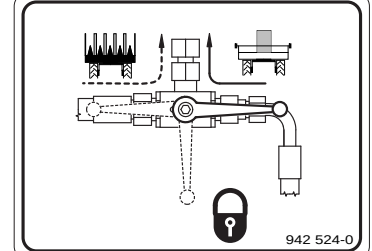
942 574-0 (1x)

14



942 522-0 (1x)

15



942 524-0 (1x)

16

Pat. 6, 594, 979

942 453-0 (1x)

17

Pat. 6, 638, 153

942 475-0 (1x)

18

Pat. 6, 510, 679

942 447-0 (1x)

19

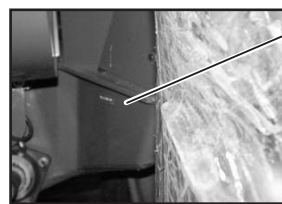
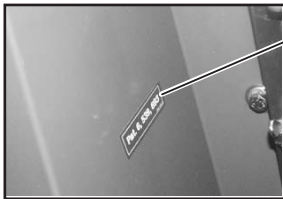
12 V

942 572-0 (1x)

20

12V / 24 V

942 570-0 (1x)



BX500670_4_us

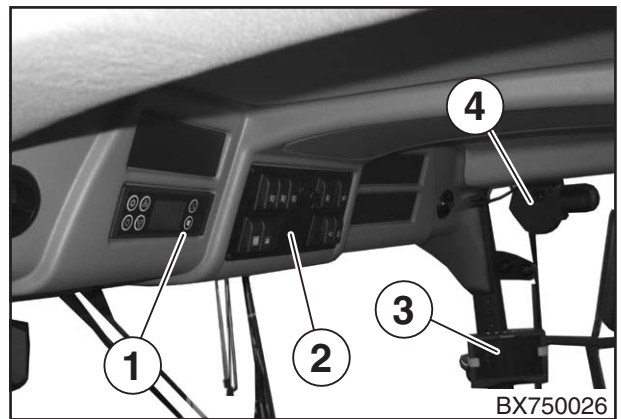
[illegible]



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



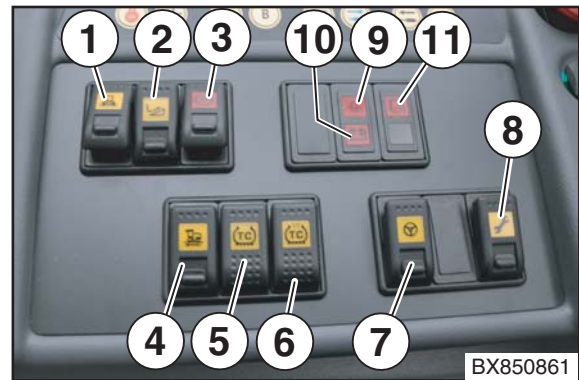
3.2 Switch panel

- 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 - Pushbutton TC (Traction Control) on/off
- 6 - Pushbutton TC I / II sensitivity (switching grass / maize)
- 7 - Release switch - maintenance
- 8 - Pilot lamp - engine oil pressure
- 9 - Charge indicator light
- 10 - Pilot lamp - coolant temperature



5 - Pushbutton TC (Traction Control) on/off

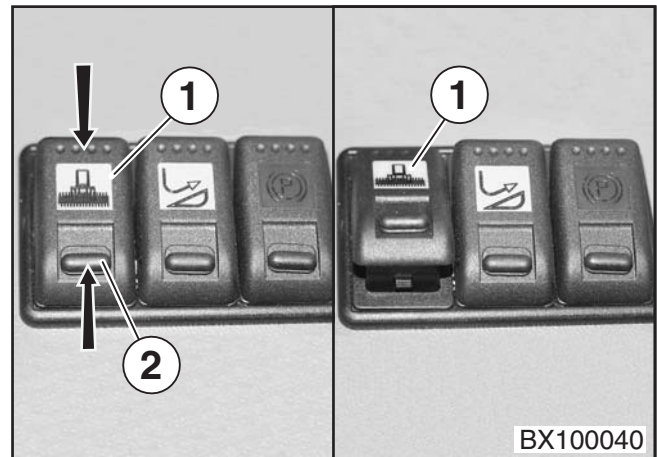
6 - Pushbutton TC I / II sensitivity (switching grass / maize)

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.



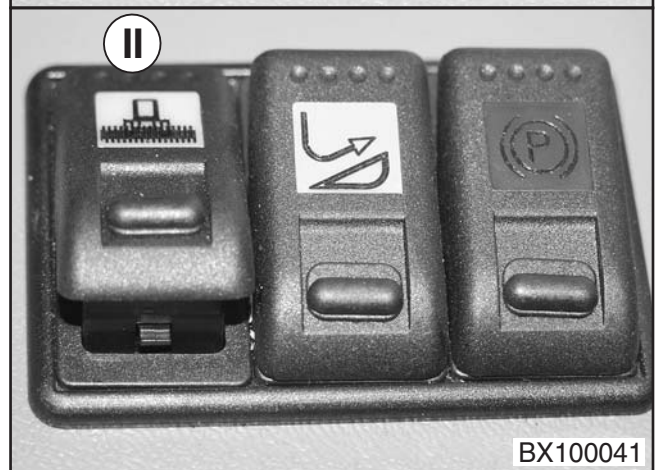
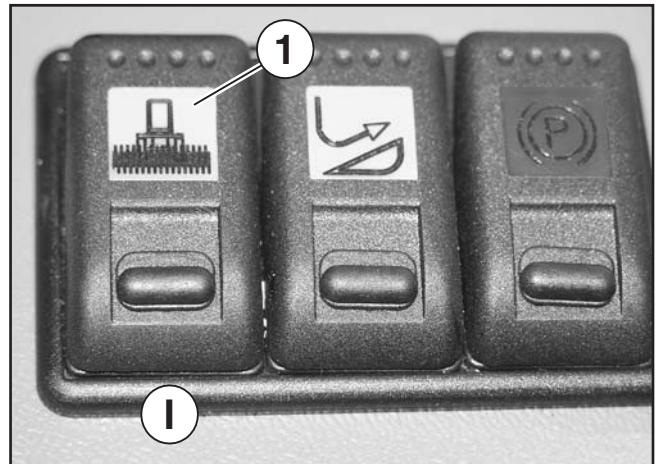
3.2.2 Release switch – road/field



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



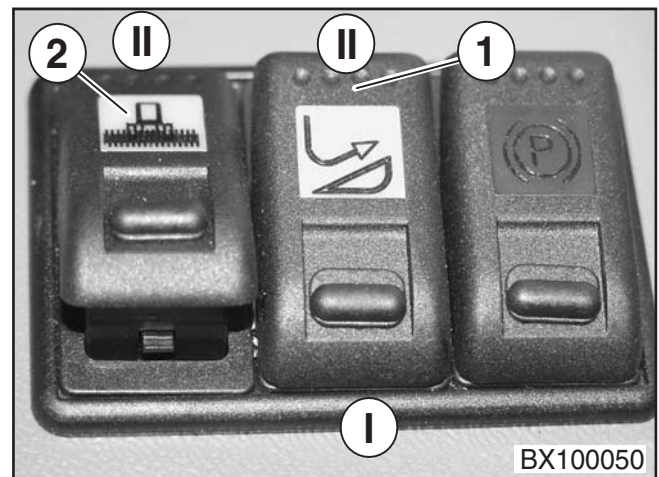
BX100041

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



BX100050

3.2.4 Release switch – holding brake



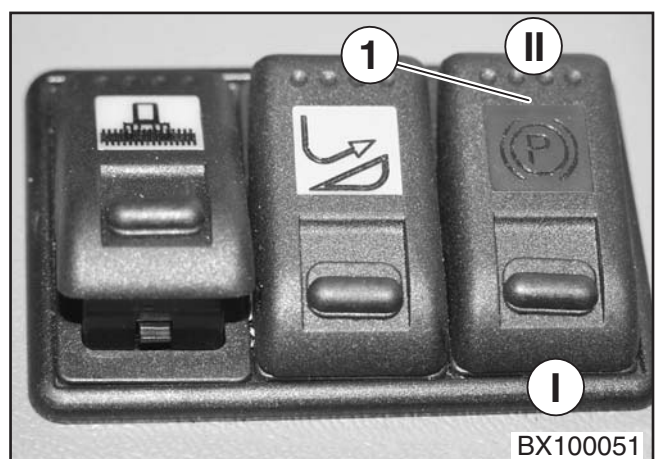
Driving for an extended period of time with the holding brake applied will result in overheating of the brake.

- I - Holding brake released
- II - Holding brake applied

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



Check the status of the parking brake in the display:
The parking brake has been applied if the symbol  appears in the display.



BX100051

3.2.5 Release switch – travelling gear

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

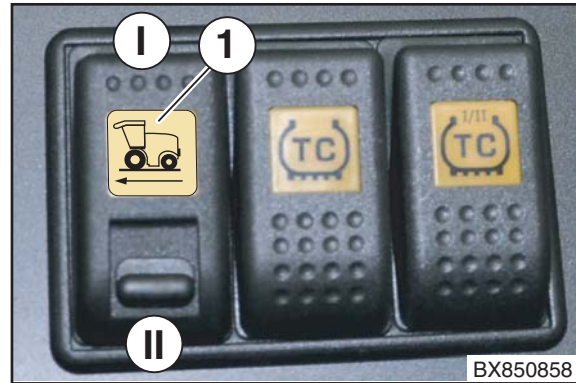


No persons may be present in the direct hazardous area of the machine when the travelling gear release switch is actuated!



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 Pushbutton TC (Traction Control) On/Off



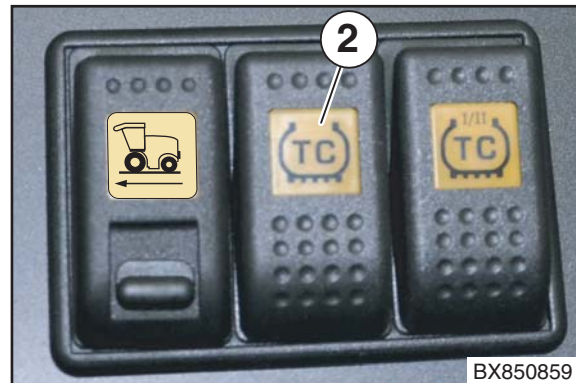
The Traction Control (TC) is an anti-slip system that prevents wheel spin in certain situations. It can be set to one of two stages.



Turning the ignition on automatically switches the traction control on.

- Pressing the TC button (2) repeatedly switches the traction control off or back on.

The status of the traction control is shown in the display (in the travelling gear data section (III) of the Info Centre, see Basic Screen chapter).



3.2.7 Pushbutton TC I / II Sensitivity (Switching Grass / Maize)

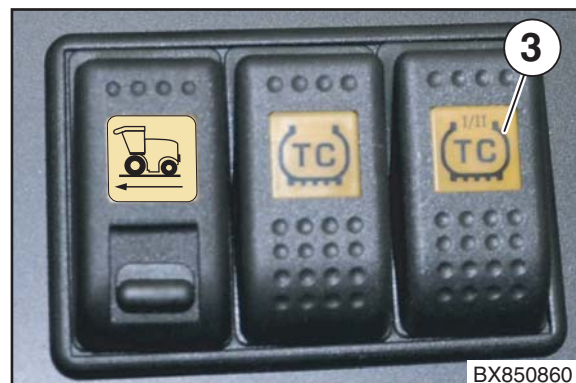
The TC I / II pushbutton (3) sets the sensitivity level of the traction control. There are two sensitivity levels: level I for grass and level II for maize.

- Pressing the TC I / II button (3) repeatedly switches the TC between the two sensitivity levels.

The sensitivity level of the traction control is shown in the display (in the travelling gear data section (III) of the Info Centre, see Basic Screen chapter).



The last set sensitivity is retained even after the ignition is turned off.



3.2.8 Release switch – autopilot

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

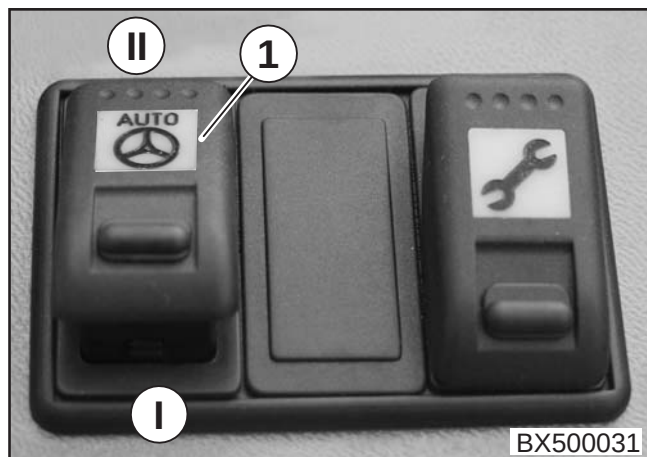


The autopilot is available only in maize operation when the EasyCollect maize header has been attached.

- 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



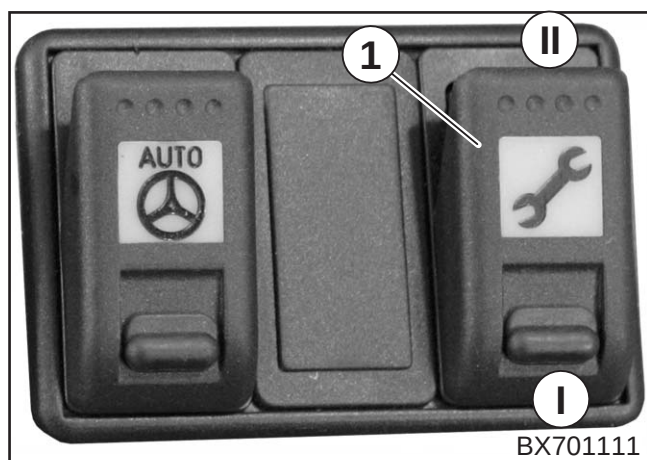
3.2.9 Release switch - maintenance

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 Pilot lamp of engine oil pressure

The pilot lamp of engine oil pressure (1) illuminates, if the engine oil pressure is too low.



Switch off engine immediately.

- Check level of motor oil

3.2.11 Charge indicator light

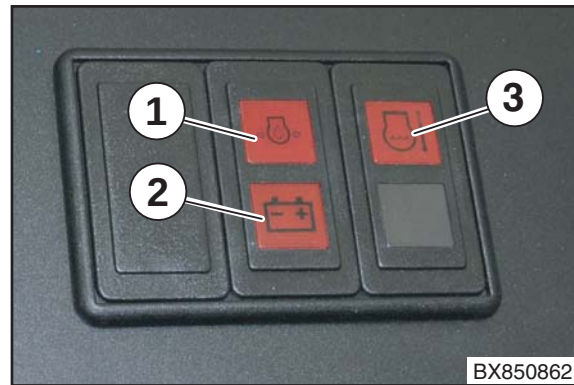
The charge indicator light (2) will light up, if the output voltage of the three-phase generator is not sufficient to charge the batteries.

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

3.2.12 Pilot lamp of coolant temperature

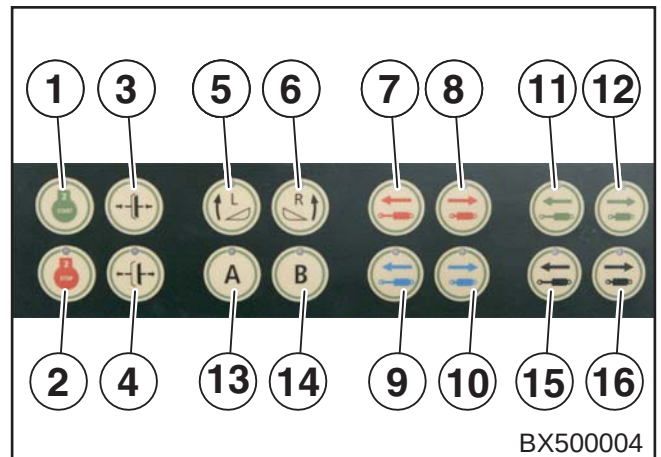
The pilot lamp of coolant temperature (3) illuminates, if the cooling water temperature reaches the critical area.

- Check level of coolant
- Check state and fastening of cooling water intake hose as well as air intake hose



3.2.13 Keyboards

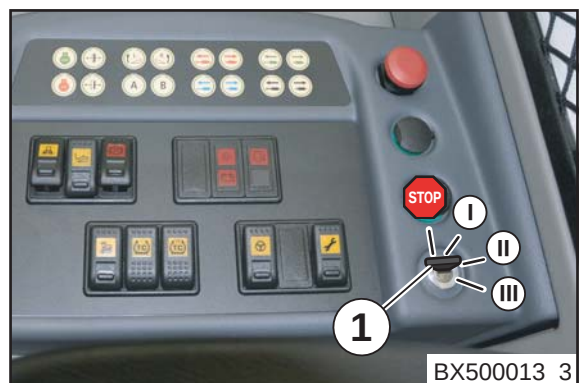
- 1 - not taken
- 2 - not taken
- 1 - Start diesel engine II (BiG X 800, 1000)
- 2 - Switch off diesel engine II (BiG X 800, 1000)
- 3 - Main coupling on
- 4 - Main coupling off
- 5 - Pendulum frame - swing up to the left
- 6 - Pendulum frame - swing up to the right
- 7 - (red) pick-up = lift roller-type 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 hydraulic unit I-A
- 12 - (green) optional for additional hydraulic unit I-B
- 13 - A = optional for additional control
- 14 - B = optional for additional control
- 15 - (black) optional for additional hydraulic unit II-A
- 16 - (black) optional for additional hydraulic unit II-B



3.2.14 Ignition lock

The ignition lock (1) has four positions:

-  - Off
- I - Electric circuit for electronics is switched on
- II - The ignition is switched on
- III - Start position



Operators controls

3.2.15 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.



BX850806_1

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.

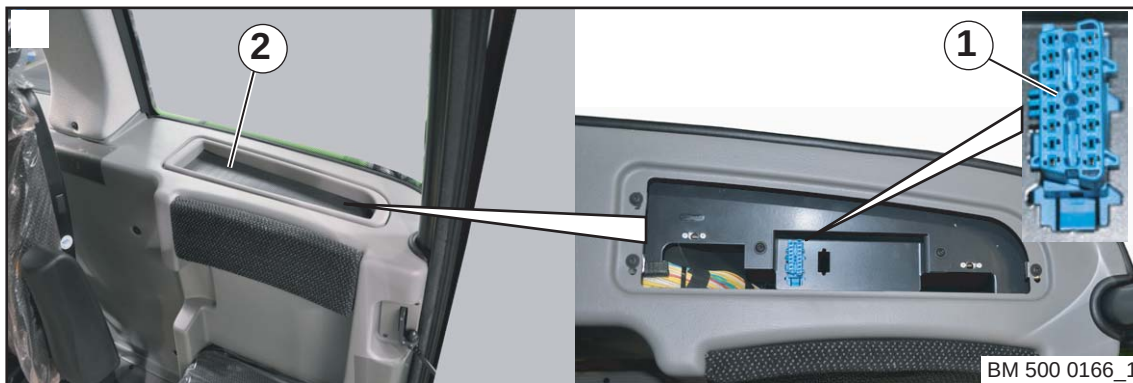
When the instantaneous stop switch (2) is actuated, all work functions are stopped.

- Press the instantaneous stop switch (1 or 2)
Quick stop button (1) stops all drives and the travelling gear Quick stop button (2) stops just all drives.
- 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.



BX500007_2

3.2.17 OBD diagnostics plug (On-Board-plug)



BM 500 0166_1

The OBD diagnostics plug (1) is located in the cabin, behind the instructional seat and below the storage surface (2).

3.2.18 Diagnostics socket

- CAN interface (1)



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

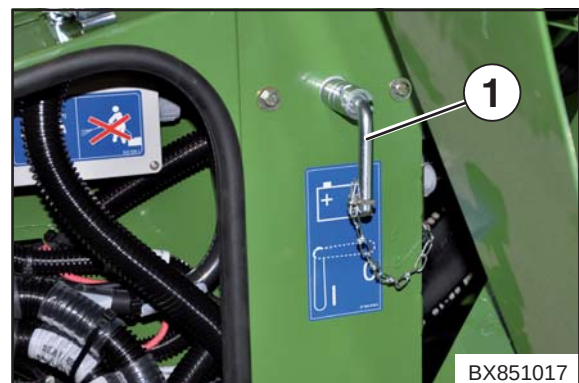


3.3 Main Battery Switch

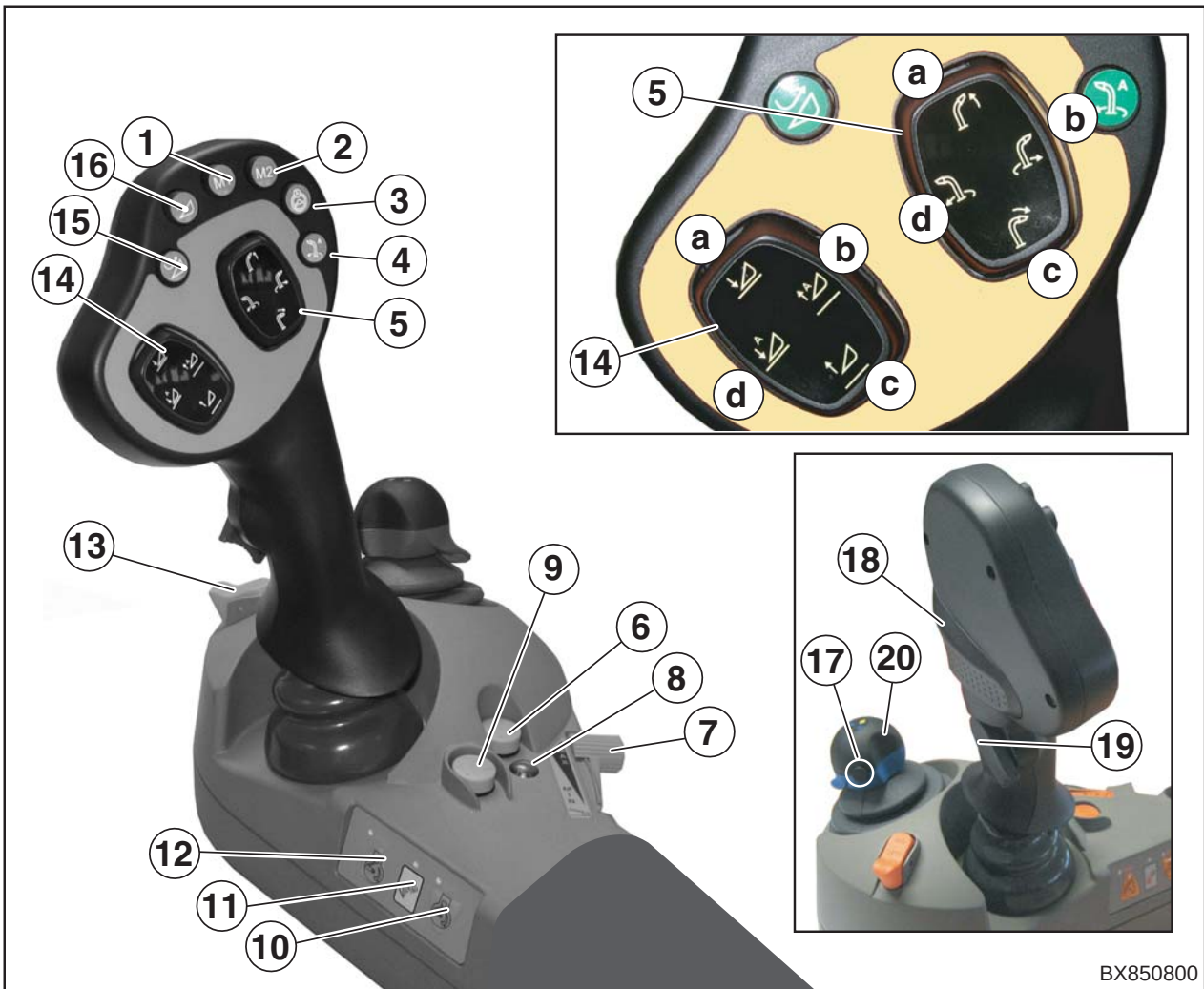
The main battery switch (1) is located on the left-hand machine side behind the cover (2).

The main battery switch (1) is used to turn on or interrupt the machine's power supply.

- Main battery switch (1) in position „I“ - electric circuit closed.
- Main battery switch (1) in position „0“ - electric circuit interrupted.



3.4 Multi-function lever



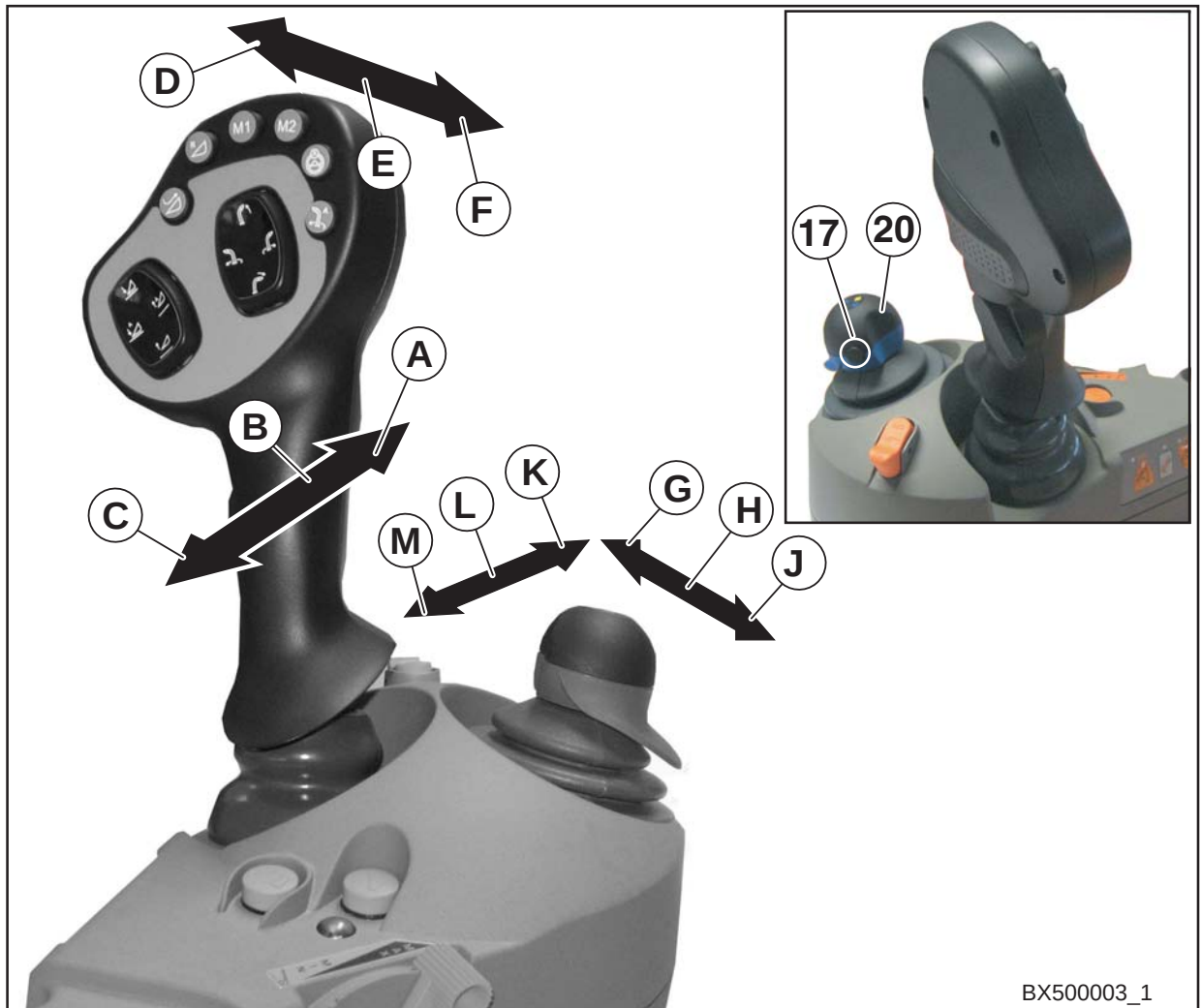
BX850800

- 1 - Memory keys (M1)
- 2 - Memory keys (M2)
- 3 - Autopilot (field operation of maize header only)
- 4 - Mirror upper discharge chute (with main coupling switched on)
discharge chute to transport setting (with main coupling turned off)
- 5a - Ejector flap up
- 5b - Turn discharge chute right
- 5c - Ejector flap down
- 5d - Turn discharge chute left
- 6 - Memory key for adjustment process - lifting gear
- 7 - Speed discharge chute
- 8 - Pilot lamp - travelling gear on
- 9 - Without function
- 10 - Reduce the engine speed
- 11 - Switch from nominal speed to idle speed and vice versa



Possible assignment of the keys M1 and M2, see section General Machine Settings „Joystick-Memory-Keys“.

- 12 - Increase engine speed
- 13 - Switching operating mode diesel engine (optional) (power split)
- 14a - Lower the lifting gear (step mode)
- 14b - Raise the lifting gear up to top (sensing mode) Save height
- 14c - Raise the lifting gear (step mode)
- 14d - Automatic header contour (sensing mode) Save height
- 15 - Feed drive/front attachment ON - OFF
- 16 - Reverse feed drive/front attachment
- 17 - Save the cutting length
- 18 - Actuation key for travelling gear
- 19 - Selector switch - acceleration ramp
- 20 - Joystick

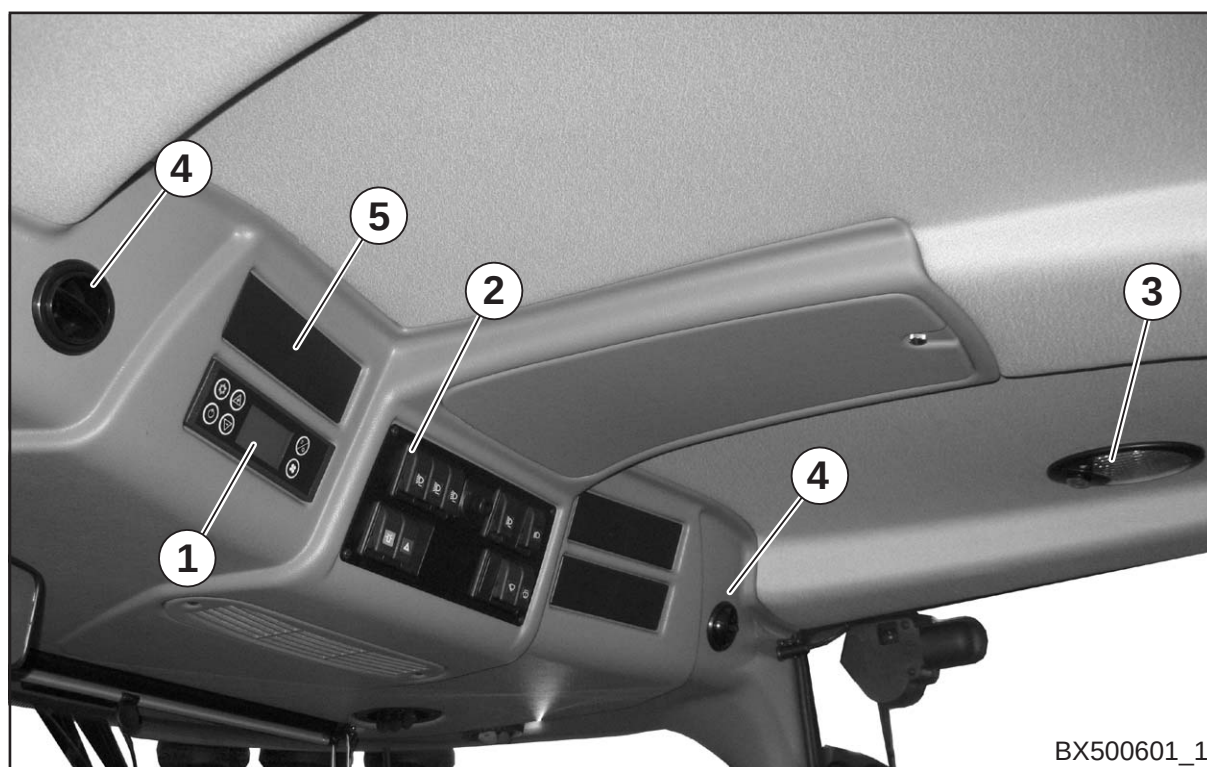


- | | |
|--|---|
| <p>A - Acceleration (in forward travel)
Deceleration (in reverse)
Start travelling gear with actuation key (18) pressed</p> <p>B - Multi-function lever – centre position</p> <p>C - Acceleration (in reverse)
Deceleration (in forward travel)
Start travelling gear with actuation key (18) pressed</p> <p>D - Deceleration to 0 km/h
Fast reversing with actuation key (18) pressed (field operation only)</p> <p>E - Multi-function lever – centre position</p> <p>F - Switch on cruise control (in forward travel only)
Save present speed for cruise control – Press actuation key (18) and move multi-function level in direction F</p> <p>- In field mode, the load limit control "Constant Power" (option) will be activated by briefly pressing the driving lever twice to the right.(option)</p> <p>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)</p> | <p>H - Central position</p> <p>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)</p> <p>K - Lower discharge chute (optional: fold in upper discharge chute extension for EasyCollect EC 1053 (14 rows)
When button (17) is pressed, press joystick forwards (20).</p> <p>L - Central position</p> <p>M - Lift upper discharge chute</p> <p>M - Raise discharge chute (optional: fold out upper discharge chute extension for EasyCollect EC 1053 (14 rows)
When button (17) is pressed, press joystick (20) back.</p> |
|--|---|



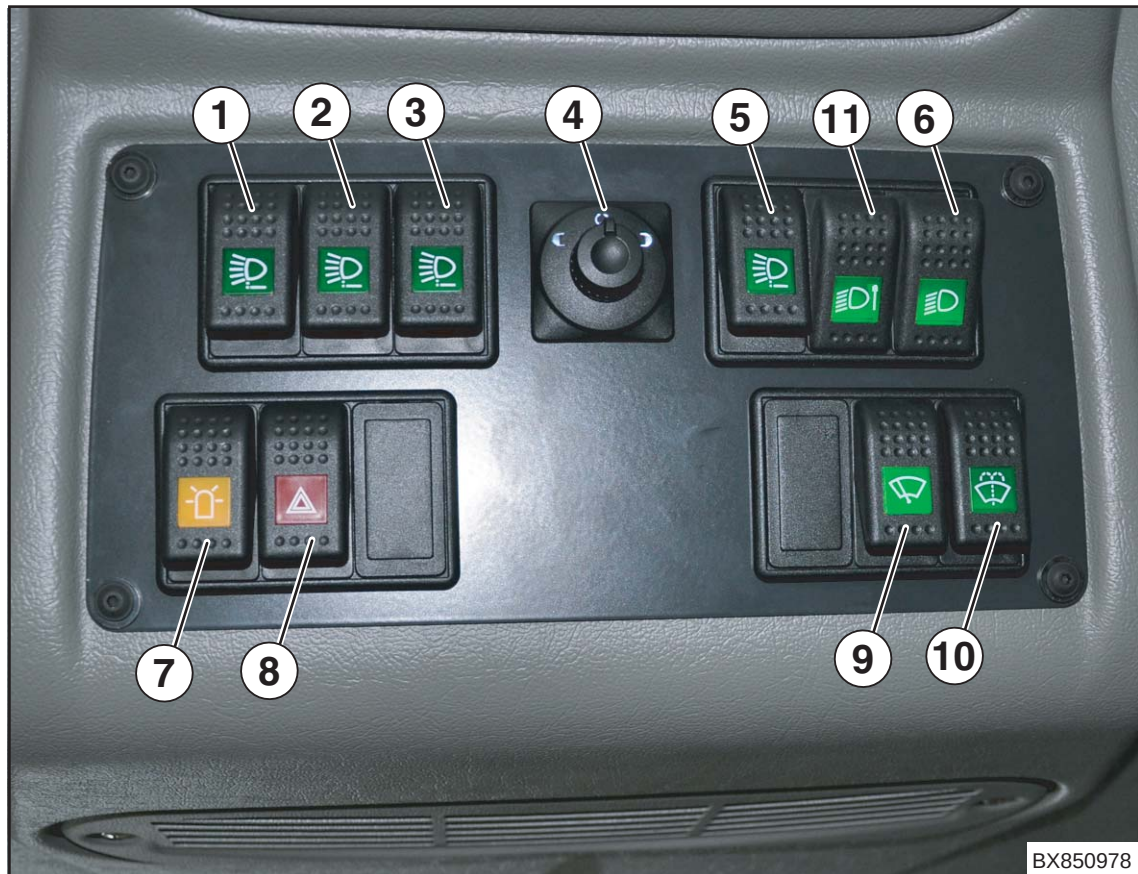
If the discharge chute flap is lifted, the folding in of the upper discharge chute extension defers by approx. 2 seconds, because the discharge chute flap was being lowered automatically before. During folding in and folding out the discharge chute flap can't be actuated.

3.5 Roof console



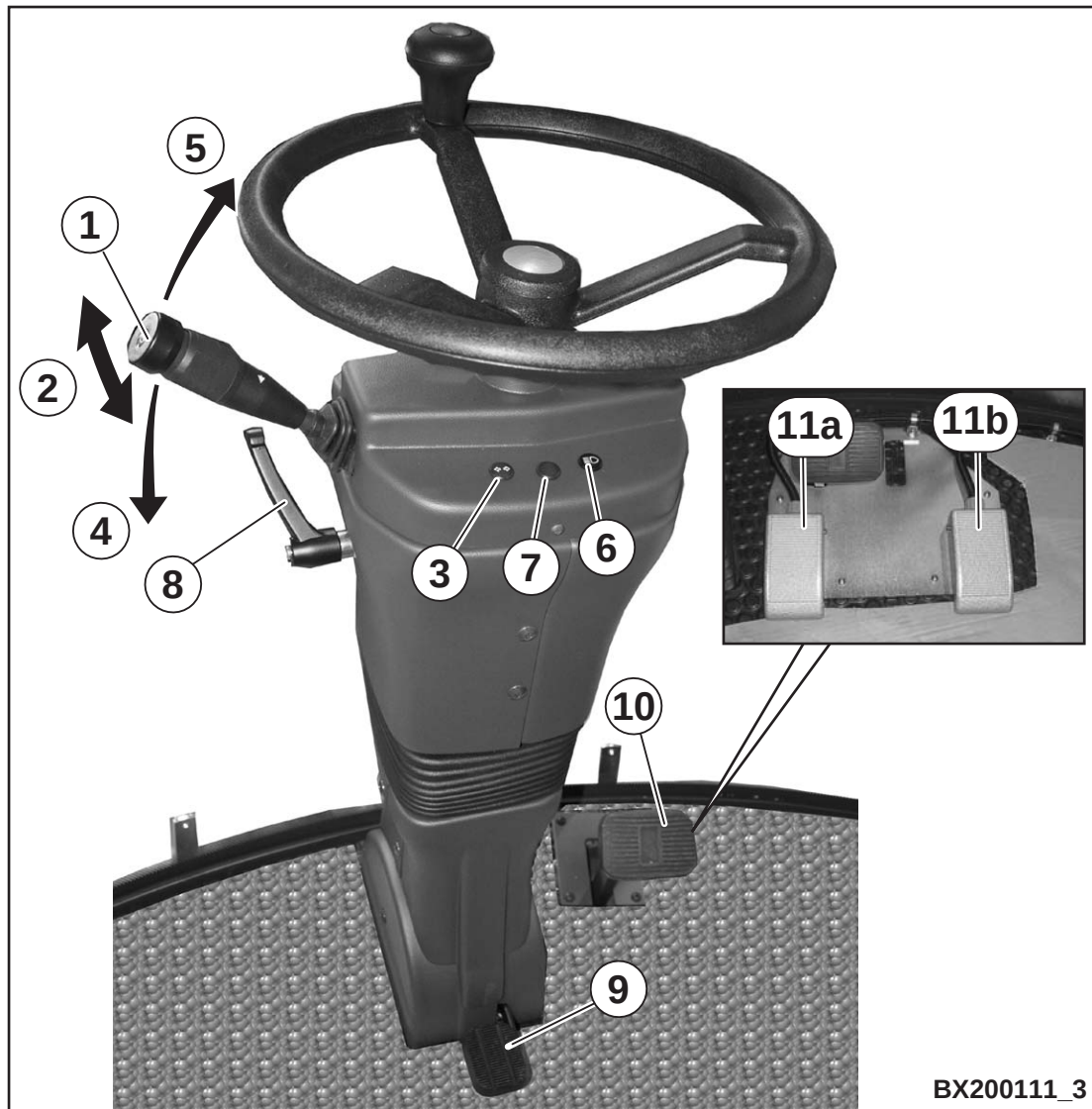
- 1 - Switch – air conditioning/heating
- 2 - Switch group – roof panel
- 3 - Interior lighting
- 4 - Cooling compartment - cool bag
- 5 - ISO compartment for radio

3.6 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
- 11 - Switching between driving headlights onto guardrail and onto lamp carrier (only for EasyCollect 753/903/1053).

3.7 Steering column and foot pedals



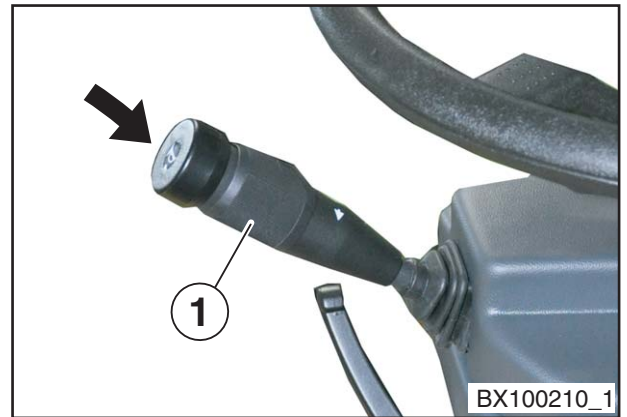
BX200111_3

- 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)

3.7.1 Horn

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



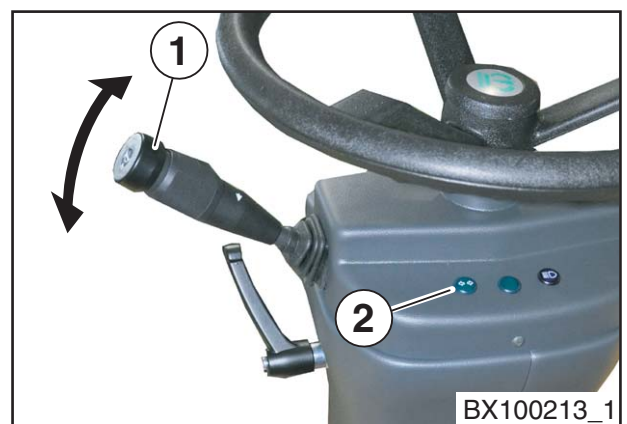
3.7.2 Indicator switch



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.



3.7.3 Full beam



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

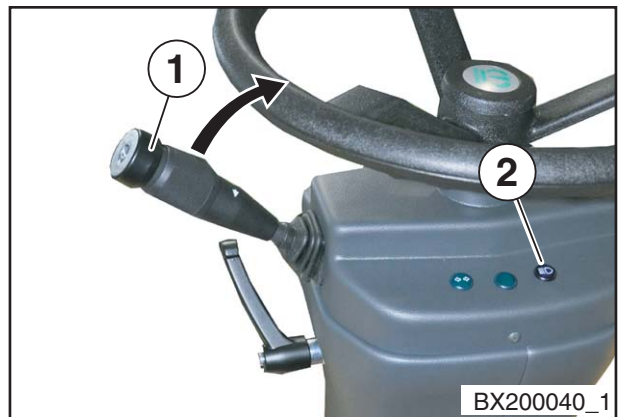
- Switching high beam on – press lever (1) down.
- Switching high beam off – press lever (1) up.

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



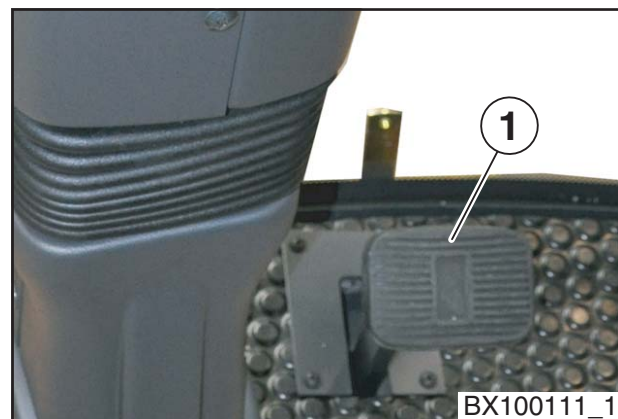
3.7.4 Headlamp flasher

- Pull the headlamp flasher lever (1) up.

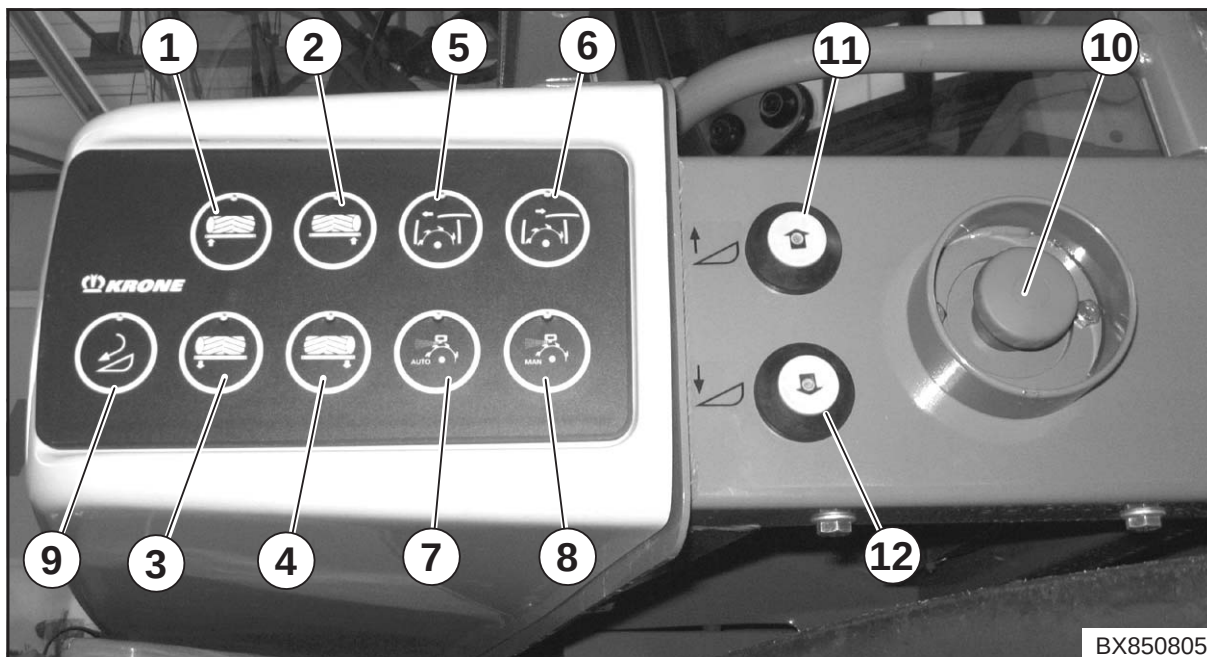


3.7.5 Foot Brake

- Apply the brake pedal (1) - the vehicle slows down.
The braking effect reinforces due to increasing pressure on the brake pedal (1).



3.8 Manual operation on the platform (left)



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 (Only actuate with switched on main coupling)
- 2 - Move the left counterblade to blade drum (Only actuate with switched on main coupling)
- 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 (Only actuate with switched on main coupling)
- 10 - Instantaneous stop switch
- 11 - Raise lifting gear
- 12 - Lower lifting gear

3.9 Control unit for measuring the humidity of the foraged crops (option)

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



- 1 - Display
- 2 - ON / OFF key
- 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  to  (1 - 8)
- III = Keys  to  (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.

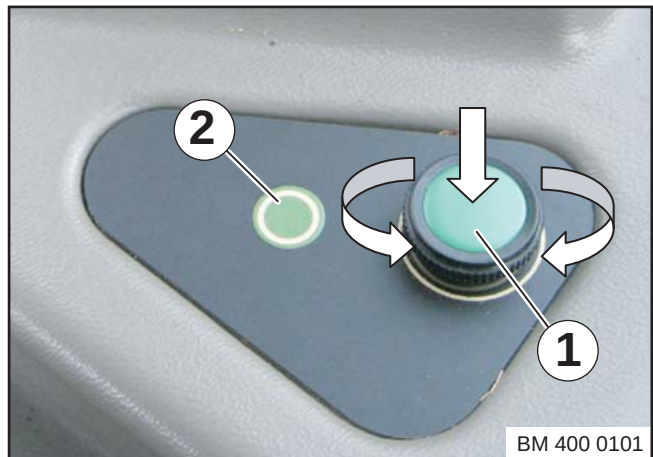
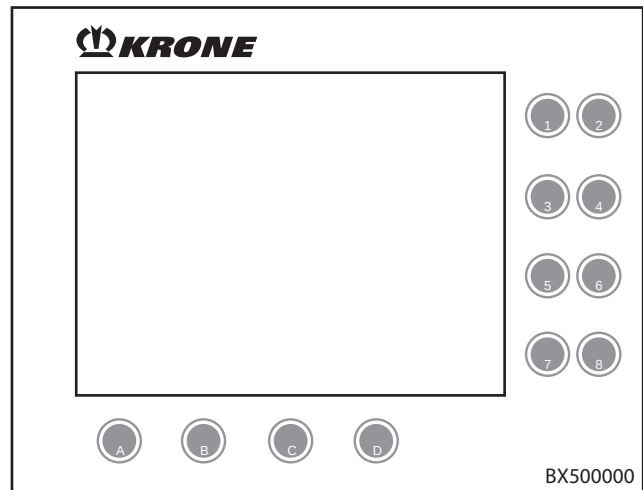
Rotary potentiometer (1)

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.

Menu key (2)

You can use the (1) 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.

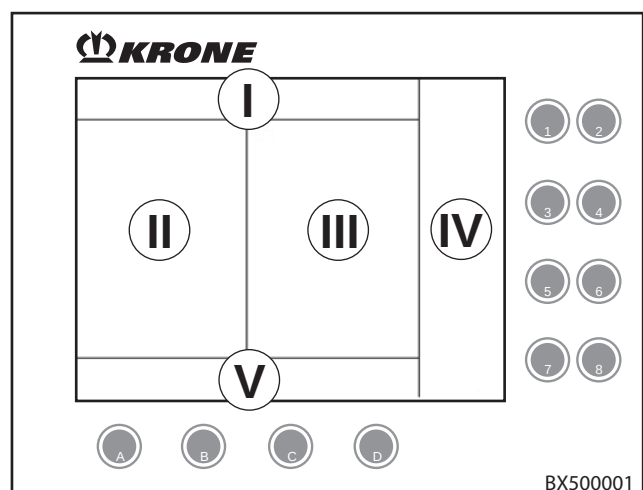


Display (screen display)

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)



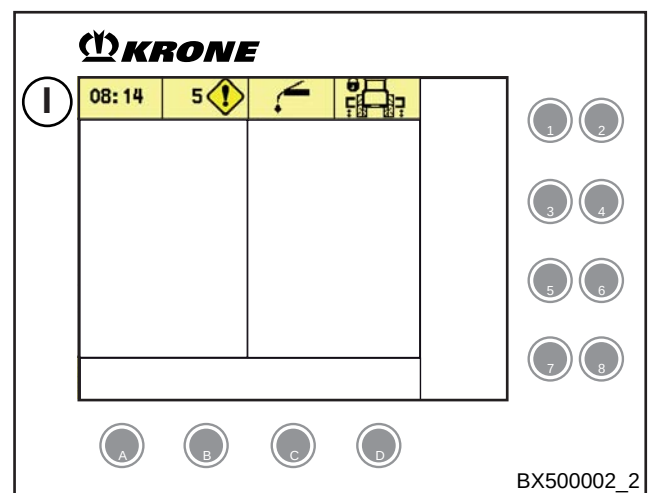
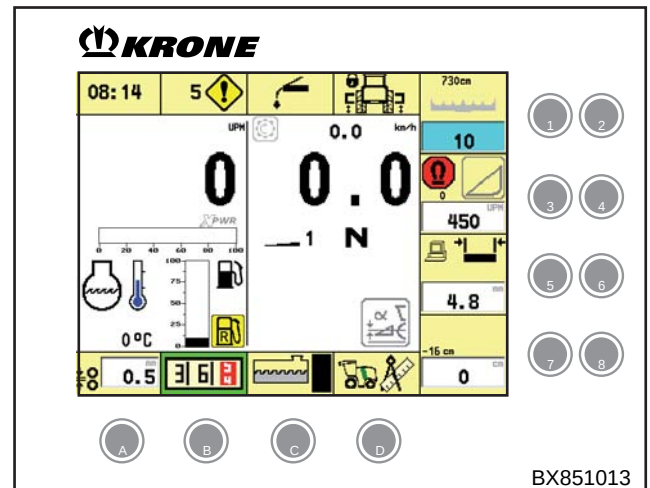
4.1 Information Section

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

4.1.1 Basic Screen

Status line (I):

-  = Error; at 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)
 -  = Central lubrication inactive (yellow)
- Feed drive cleaning system
 -  = Feed drive cleaning system active (green)
 -  = Error cleaning system (red)
 -  = Cleaning system inactive (yellow)
- 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

Coloured Display of the Engine Speed (1)

Black

On BiG X 700/850 over 1800 rpm, on BiG X 1100 over 1850 rpm.

- The diesel engine is not in its optimal speed working range.

Green

On BiG X 700/850 between 1700 and 1800 rpm, on BiG X 1100 between 1750 and 1850 rpm.

- The diesel engine is in its optimal speed working range.

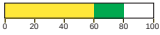
Red

On BiG X 700/850 under 1700 rpm, on BiG X 1100 under 1750 rpm.

- The diesel engine is in a critical speed working range. It should immediately be relieved.



Speeds may vary depending on the diesel engine.

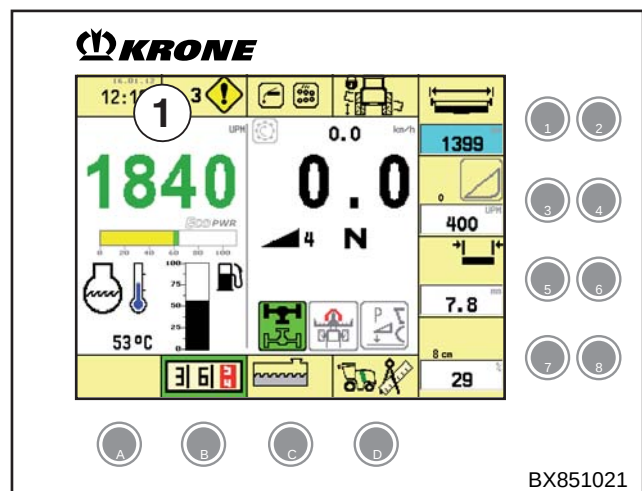
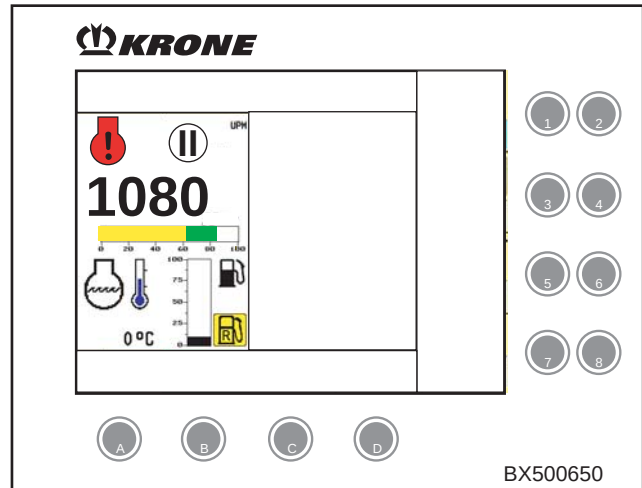
-  Engine capacity as %

-  Fault indicator lamp red (engine fault) **Stop immediately!**
Inform the KRONE dealer or the KRONE customer service

-  Fault indicator lamp yellow (engine fault)
Consult a qualified specialist workshop as soon as possible

-  Cooling water temperature display
If the cooling water temperature reaches the critical range, the background of the cooling water temperature display changes to yellow .

-  Fuel gauge
-  reserve display of fuel



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 - 18 km/h (BiG X 700)
0 - 25 km/h (BiG X 850 / BiG X 1100)

- Acceleration ramp of travelling gear

 1 = lowest acceleration ramp

 2 = ...

 3 = ...

 4 = highest acceleration ramp

- Direction of travel



= Forward travel



= Neutral (standstill)



= Reverse travel

- Traction Control TC



= Traction Control TC active



= Traction Control TC inactive

- Traction Control TC I / II Sensitivity



= Traction Control TC I (grass) activ



= Traction Control TC I r (grass) ready for operation



= Traction Control TCI II (maize) active



= Traction Control TC II (maize) ready for operation



= Parking brake is applied



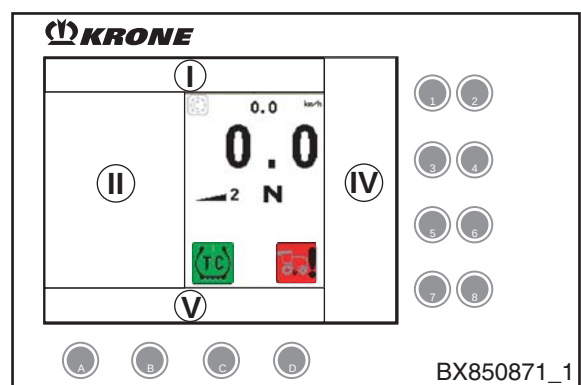
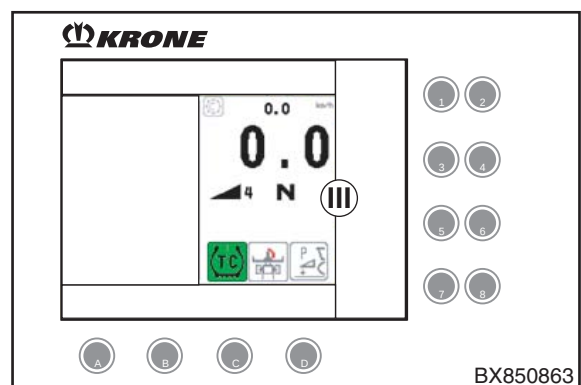
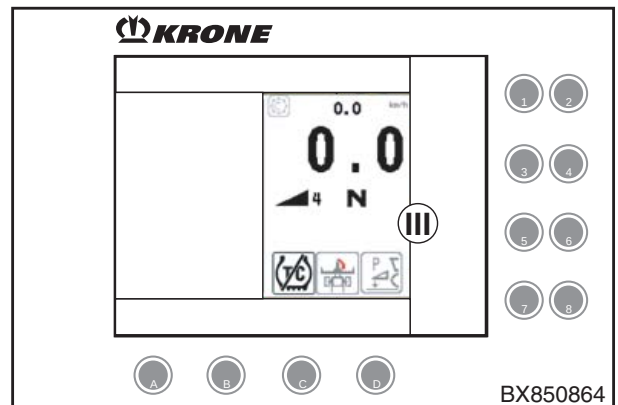
If the machine is running with the parking brake engaged, the parking brake indicator flashes and a horn sounds at intervals of about 30 seconds.



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



= Error on additional axle



- 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



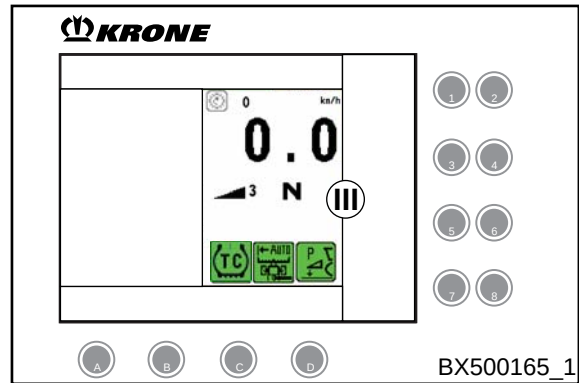
= The lifting gear distance control is inactive



= 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

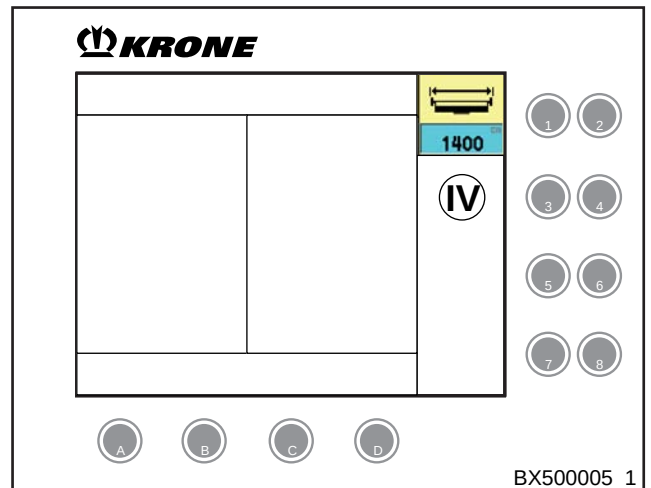
4.2.1 Working Width

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  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

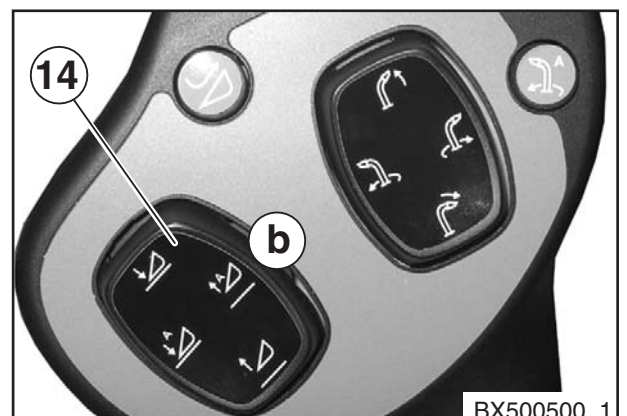
- Pressing the  key decreases the working width; if the  key is held down for a longer time, the working width will decrease faster.
- Pressing the  key increases the working width (up to the maximum for the fixed set width). If the  key is held down for a longer time, the working width will increase 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 ((14b) = 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.

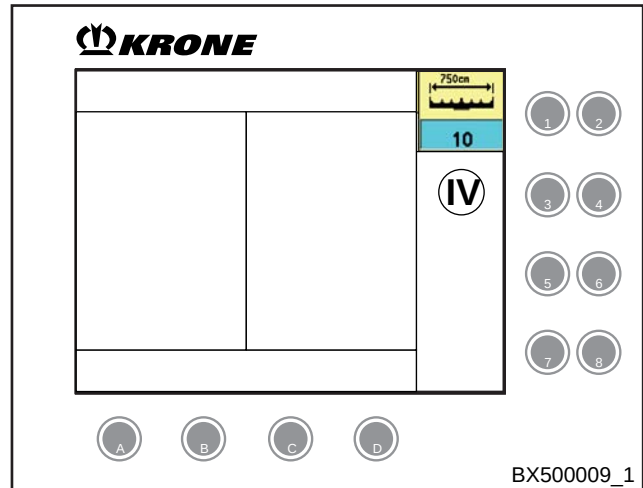
- Pressing the  key decreases the number of rows; if the  key is held down for a longer time, the number decreases faster.
- Pressing the  key increases the number of rows (up to the maximum for the fixed set number). If the  key is held down for a longer time, the number will increase faster.

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

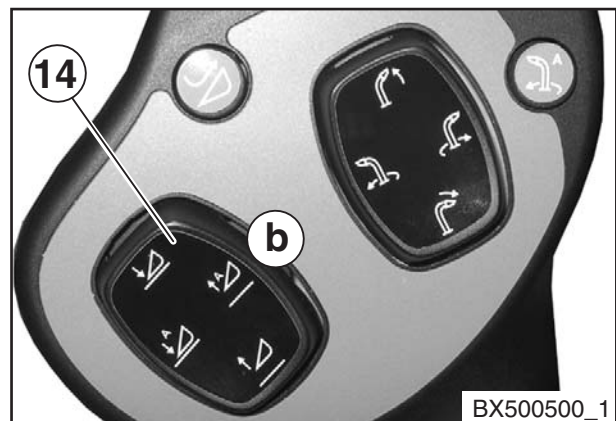
- You can use the rotary potentiometer to select the setting for the working width. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can adjust the desired number of rows with the rotary potentiometer (up to a maximum for the fixed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



Activating the key on the multifunction lever ((14b) = raise lifting gear up to top) causes the system to switch back to the permanently set working width.



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

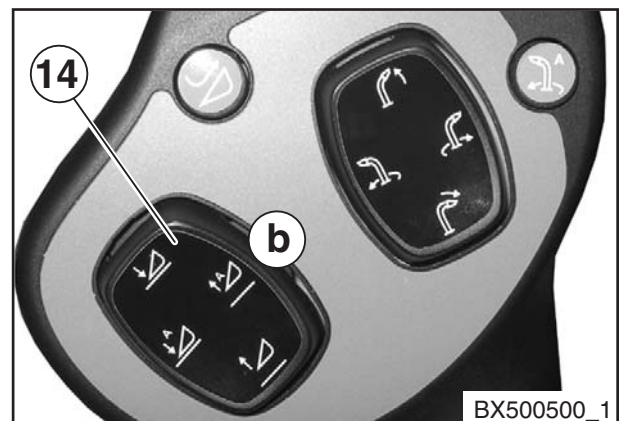
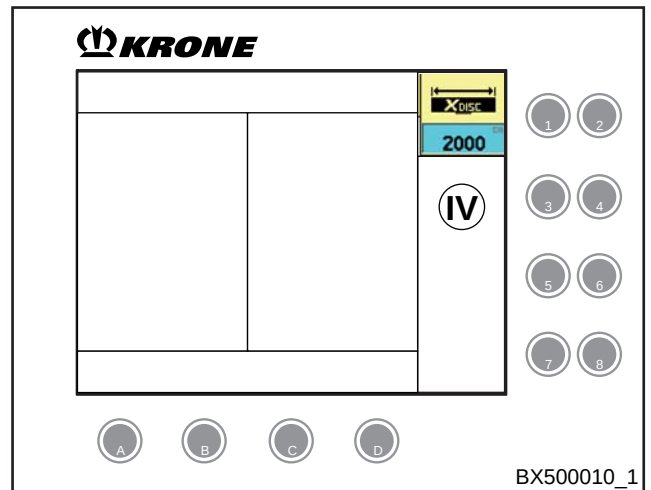
- Pressing the  key decreases the working width; if the  key is held down for a longer time, the working width will decrease faster.
- Pressing the  key increases the working width (up to the maximum for the fixed set width). If the  key is held down for a longer time, the working width will increase 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 ((14b) = raise lifting gear up to top) causes the system to switch back to the permanently set working width.

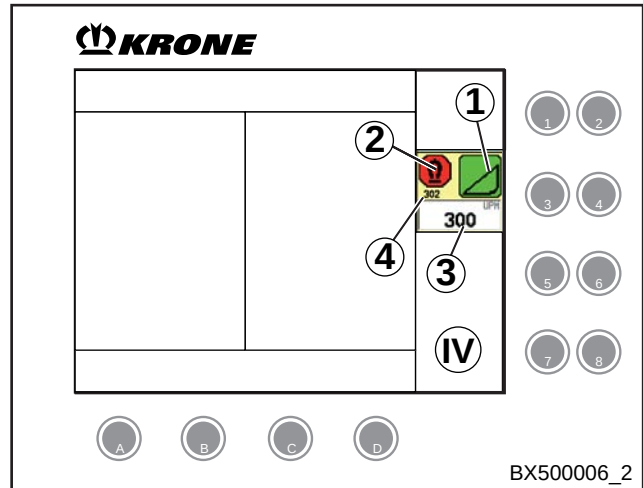


4.3 Front Attachment

The status and the set target speed of the front attachment will be shown in the settings (IV) info area in the menu field front attachment.

4.3.1 Status (1)

-  = Front attachment not OK
-  = Front attachment standstill
-  = 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

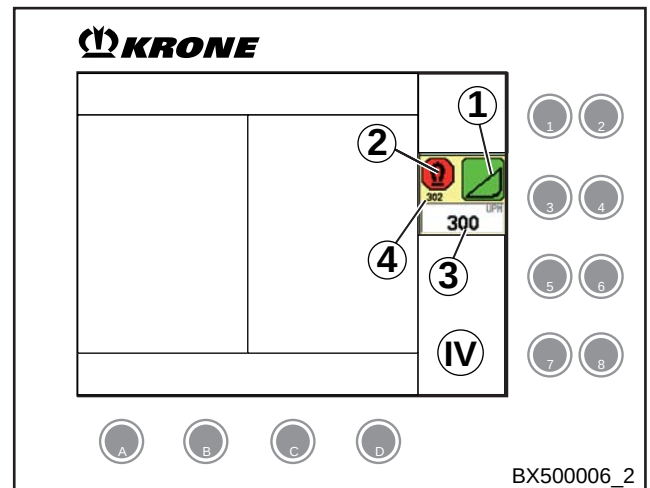
-  = A rock was detected in the feed drive.
-  = An error has occurred in RockProtect.
-  = An error has occurred in metal detection and RockProtect.

4.3.3 Setting the Setpoint Speed (3)

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

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

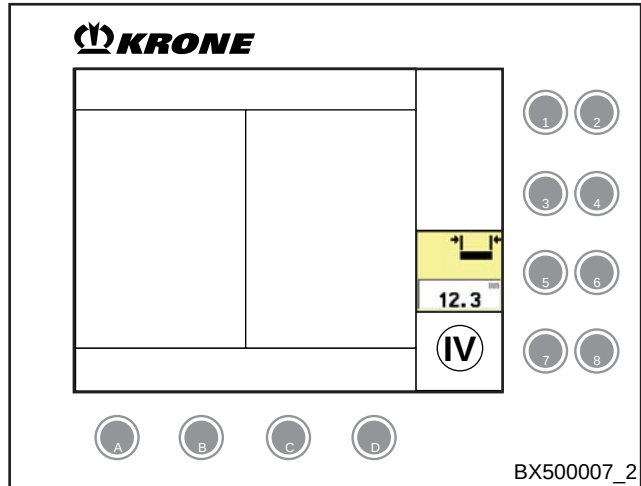
- Pressing the  key decreases the cutting length;
if the  key is held down for a longer time, the cutting length will decrease faster.
- Pressing the  key increases the cutting length;
if the  key is held down for a longer time, the cutting length will increase faster.

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

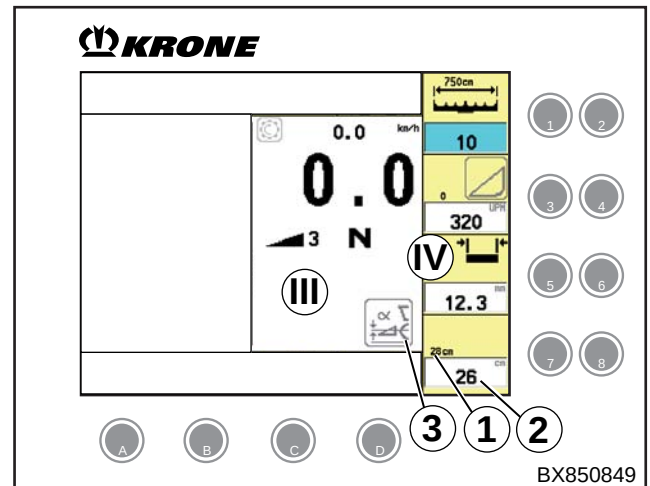
In field mode, the current lifting gear control is displayed in the Drive data info area (II). The actual height of the lifting gear and the corresponding setpoint pressure or the setpoint height is displayed in the Settings info area (IV) in the Lifting gear menu field.

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

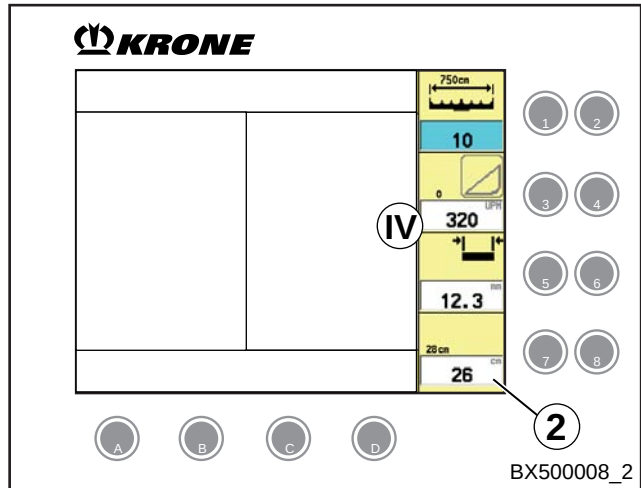
- Pressing the  key decreases the setpoint value; if the  key is held down for a longer time, the setpoint value will decrease faster.
- Pressing the  key increases the setpoint value; if the  key is held down for a longer time, the setpoint value will increase faster.

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 (see chapter operation " Multifunction lever ").



4.6 General Machine Settings

4.6.1 Joystick-Memory-Keys

In the delivery state, no functions are assigned to the keys M1 and M2 on the joystick.

In this case the setting mask „Joystick Memory Keys“ can be called via the menu point 1-10 or via activating

the key .

The following functions can be assigned to the joystick memory keys.

- Raise/lower plant divider (just in maize)/ holding down device (just in grass)
- Increase/decrease working width
- Retrieve saved cutting lengths 1 or 2
- Increase/decrease front attachment speed
- Turn pendulum frame left/right

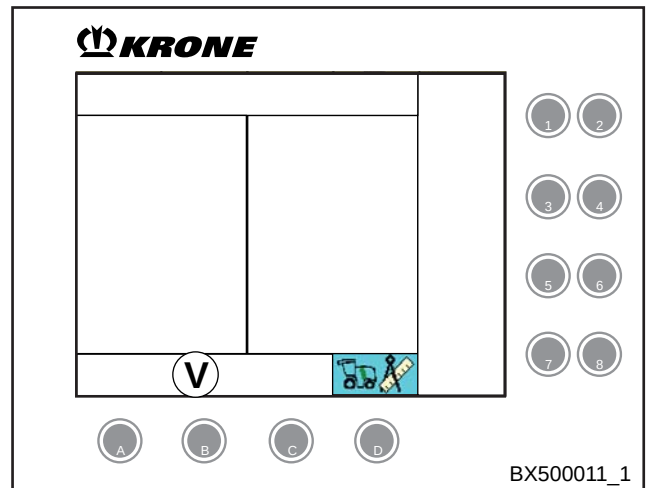
4.6.1.1 Allocate the assignment joystick-memory-keys

- Use the rotary potentiometer to select M1 and M2. The selection box is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the selection box.
- Set the required function with the rotary potentiometer.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection box.
- Activating the key  accepts the settings.

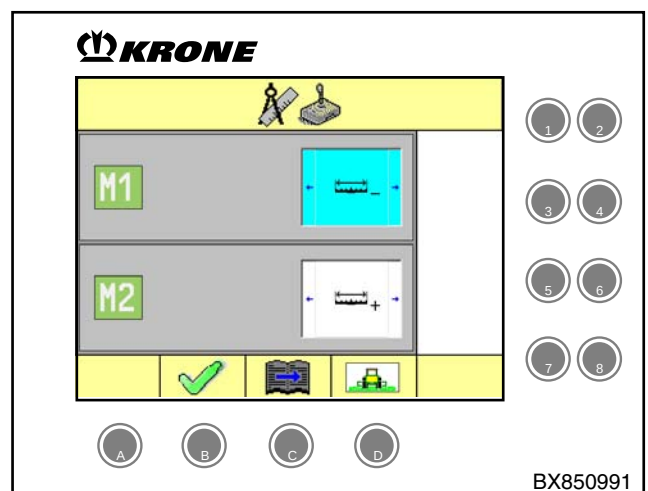


If the mask has not been actuated with the key „“, the set functions will be locked and symbolized via a „lock“ symbol in the fields M1/M2.

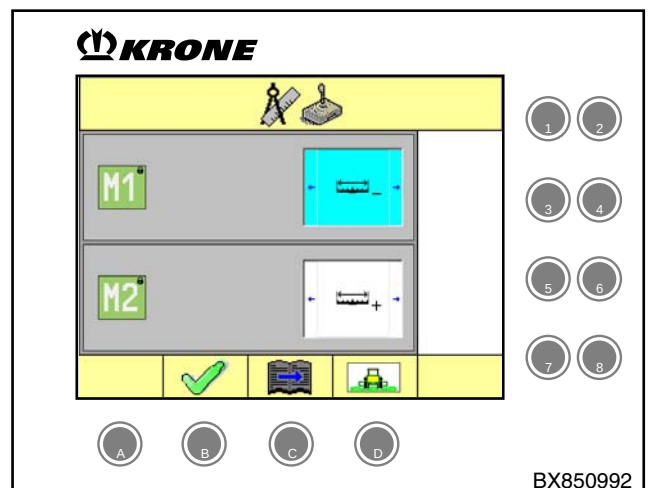
- Activating the key  brings up the basic screen.
- Activating the key  brings up the general machine settings.
- Pressing the key  on the rotary potentiometer takes you one menu level back.



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BX850991

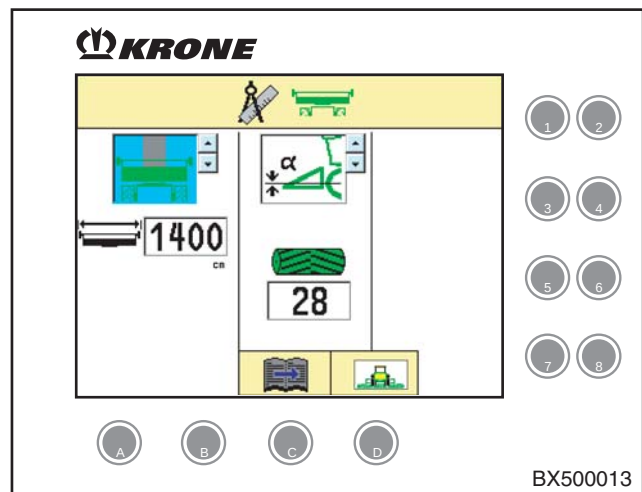


BX850992

4.6.2 General machine settings - grass pickup

4.6.2.1 Setting the grass pick-up operating mode

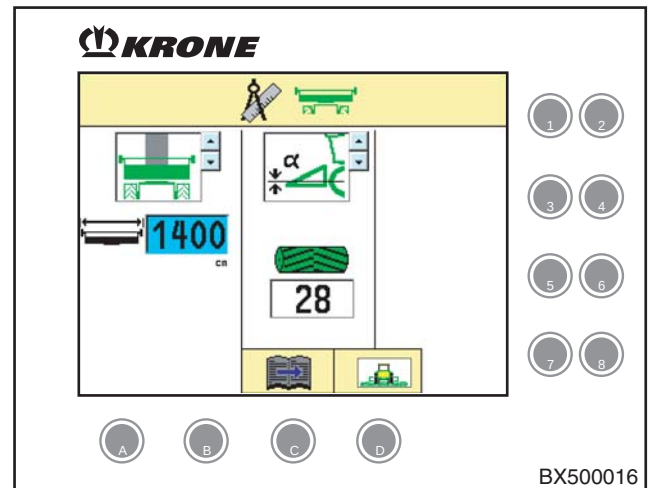
-  = Grass pickup
- You can use the rotary potentiometer to select the setting for the operating mode. The selection box is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the selection box.
- You can use the rotary potentiometer to adjust the operating mode of the grass pickup.
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection box.
- Activating the  key brings up the basic screen.
- Activating the key  brings up the settings load limit control (option).
- Pressing the  key on the rotary potentiometer takes you one menu level back.



4.6.2.2 Setting the grass pick-up working width

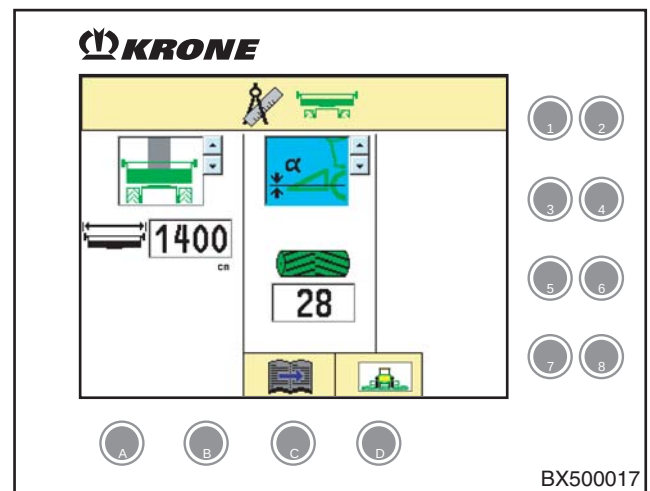
Working width = swath width

- 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  key brings up the basic screen.
- Activating the key  brings up the settings load limit control (option).
- Pressing the  key on the rotary potentiometer takes you one menu level back.



4.6.2.3 To adjust the lifting gear control

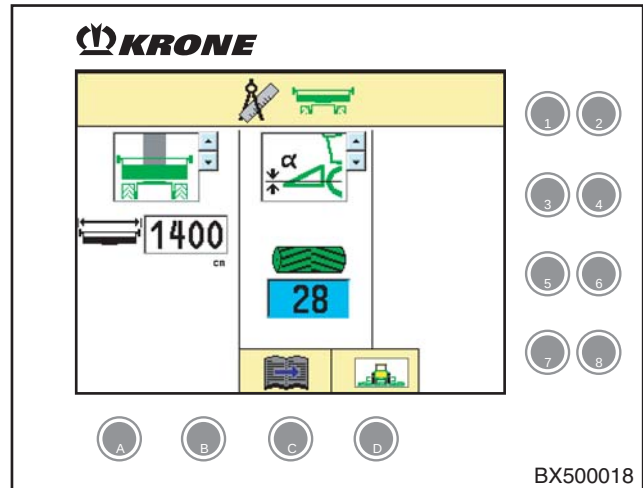
-  = Lifting gear pressure control; the control sets the pressure on the ground to a constant value.
-  = Lifting gear position control; the control sets the height constant relative to the machine.
-  = Lifting gear distance control (optional, only in conjunction with distance sensors); the control sets the height constant relative to the ground (only with EasyCollect).
- You can use the rotary potentiometer to select the setting for the lifting gear control. The selection box is highlighted in colour (only with EasyCollect).
- 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  key brings up the basic screen.
- Activating the key  brings up the settings load limit control (option).
- 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  key brings up the basic screen.
- To open the settings for load limit control, press the  key.
- Pressing the  key on the rotary potentiometer takes you one menu level back.



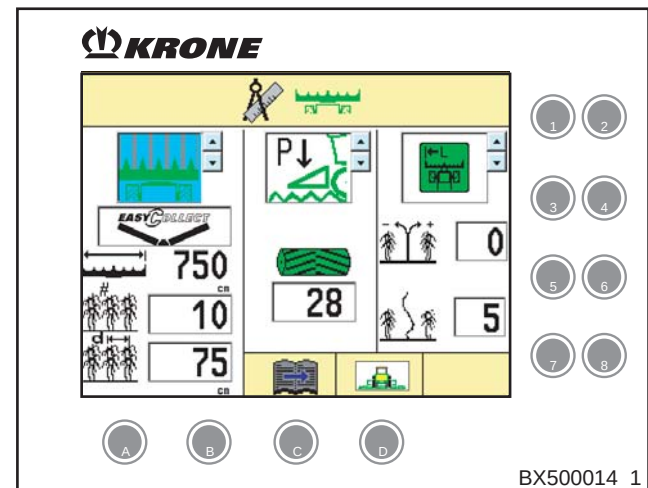
4.6.3 General machine settings - maize header

4.6.3.1 To set the operating mode of the maize header

-  = Maize header

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: Maschinentyp:

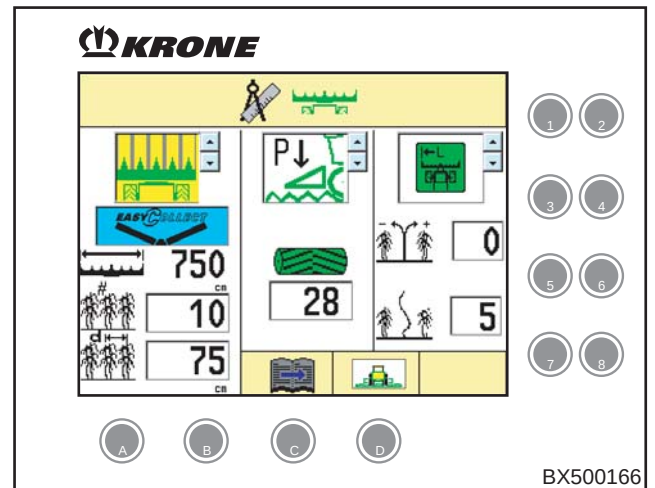
-  = KRONE-EasyCollect (6000,7500,9000)
-  = KRONE-EasyCollect (753, 953,1053)
-  = kein KRONE-Fabrikat
- You can use the rotary potentiometer to select the setting for the machine type. The selection box is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the selection 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  key brings up the basic screen.
- To open the settings for AutoScan, press the  key.
- Pressing the  key on the rotary potentiometer takes you one menu level back.

4.6.3.2 Setting the maize header working width

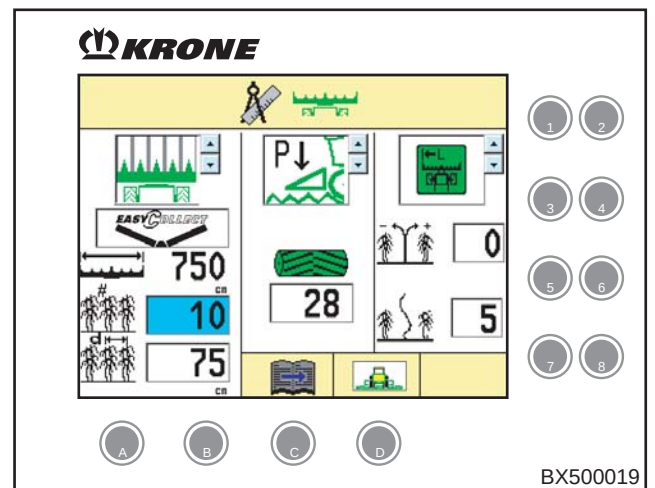
- You can use the rotary potentiometer to select the setting for the number of rows. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- Use the rotary potentiometer to adjust the desired number of rows.
- To exit the input field again, 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  key brings up the basic screen.
- To open the settings for AutoScan, press the  key.
- Pressing the  key on the rotary potentiometer takes you one menu level back.



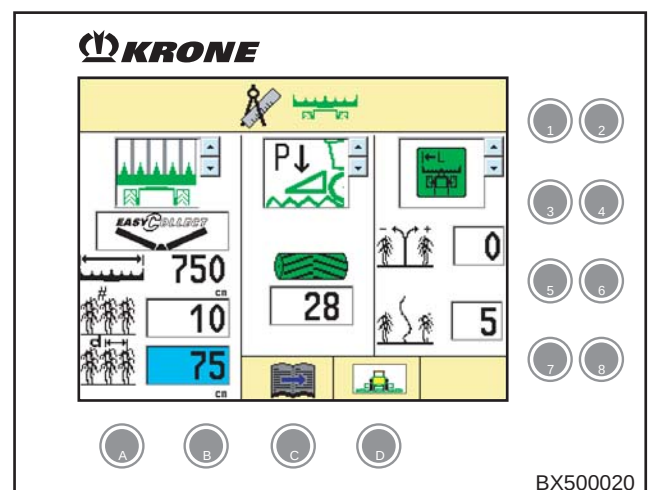
The resulting working width is calculated directly from the row spacing and the number of rows and the result is displayed.



BX500166



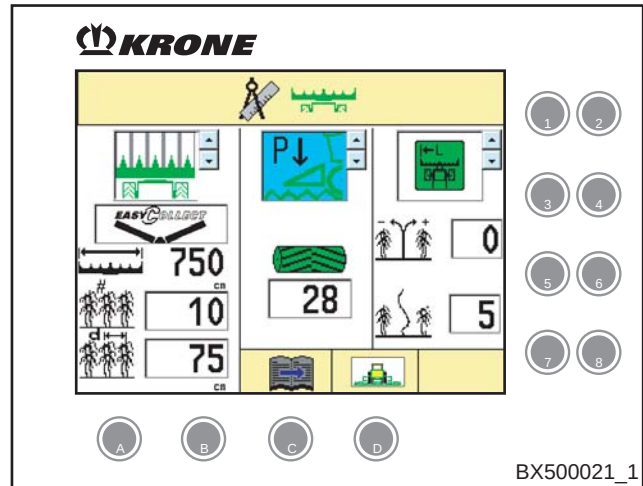
BX500019



BX500020

4.6.3.3 Adjusting the lifting gear control

-  = Lifting gear pressure control; the control sets the pressure on the ground to a constant value.
-  = Lifting gear position control; the control sets the height constant relative to the machine.
-  = 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  key brings up the basic screen.
- To open the settings for AutoScan, press the  key.
- Pressing the  key on the rotary potentiometer takes you one menu level back.

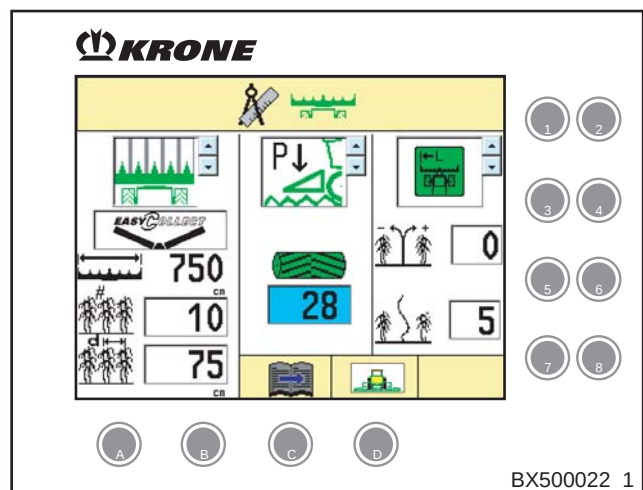


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4.6.3.4 Setting the number of blades

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



BX500022_1

4.6.3.5 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. Chaffing should preferably be in row tracer mode left or right, with both row tracers mode.

-  = Row tracer left is evaluated.
-  = Row tracer right is evaluated.
-  = Both row tracers are evaluated.
-  = Row tracer is automatically evaluated.

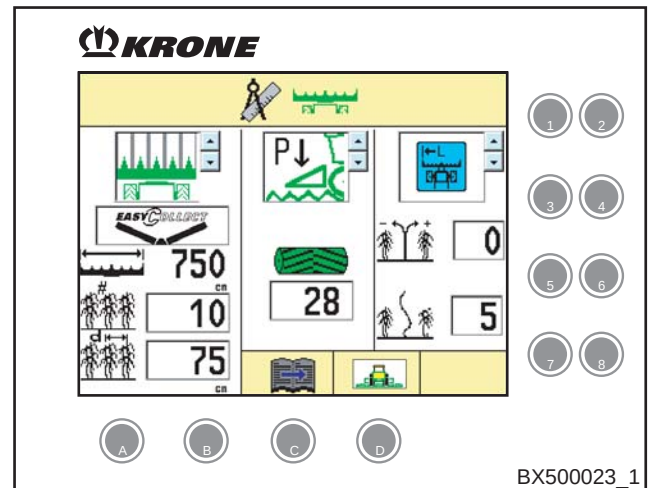
The row tracer selection is made automatically based on the position of the upper discharge chute.
Upper discharge chute left = row tracer left
Upper discharge chute right = row tracer right

-  = 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.



BX500023_1

4.6.3.6 Setting the row tracer

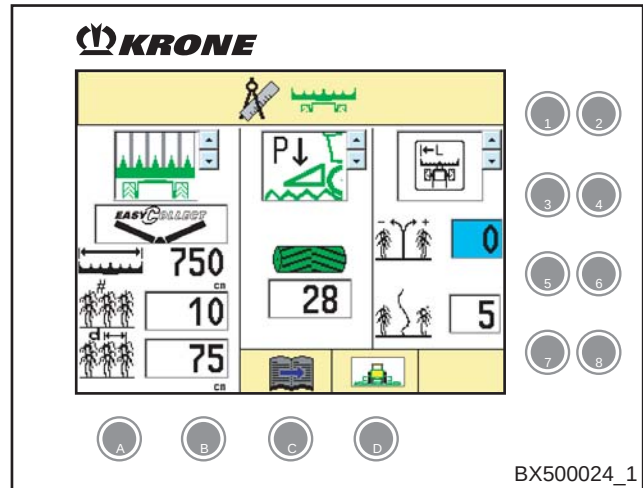
- You can use the rotary potentiometer to select the setting for the row tracer. The selection box is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the selection box.
- You can use the rotary potentiometer to set the desired mode.
- Pressing the rotary potentiometer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

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



4.6.3.8 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.

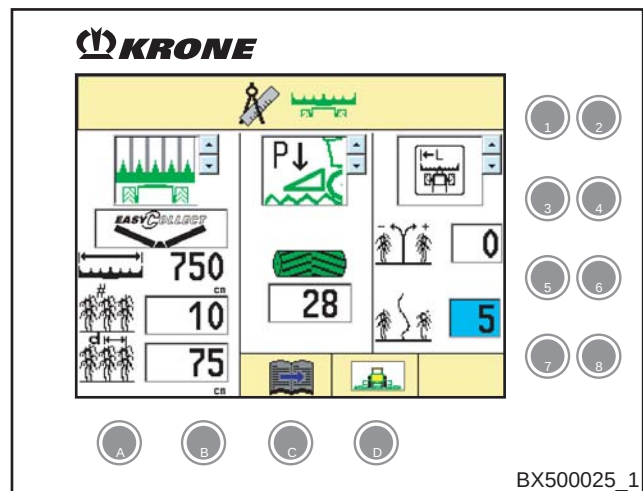
With an uneven crop edge, faster driving speed and moist ground conditions, a higher (faster) response sensitivity should be set.

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.

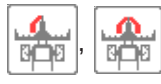


- Activating the  key brings up the basic screen.
- To open the settings for AutoScan, press the  key (only for setting of maize mode).
- Pressing the  key on the rotary potentiometer takes you one menu level back.

4.6.3.9 Selection of the Steering Input

- You can use the rotary potentiometer to select the setting for the ISOBUS steering. The input field is highlighted in colour.
- Press the rotary potentiometer to jump to the input field.

When selecting the front attachment EasyCollect:

-  Steering via ISOBUS steering commands active
-  ,  , Steering via conventional buttons
-  ,  on the EasyCollect

When selecting the front attachment EasyFlow, XDisc or of other manufacturers:

-  Steering via ISOBUS steering commands active
-  Steering via ISOBUS inactive (steering via row sensors)
- Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection field.

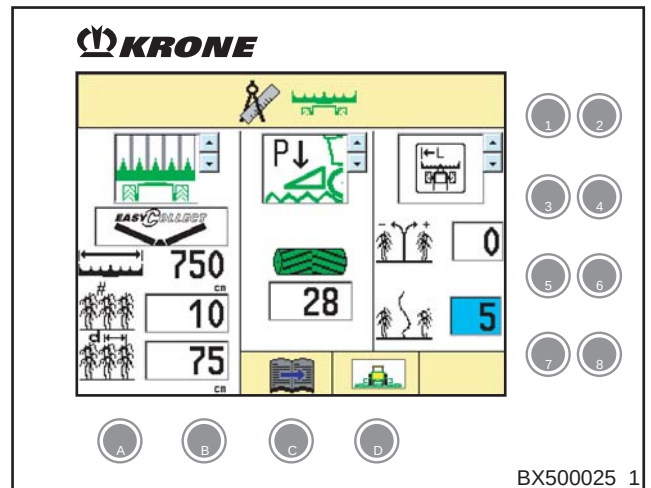
Activating the  key brings up the basic screen.

The basic screen displays the accordingly adjusted steering input through the symbol of the autopilot.

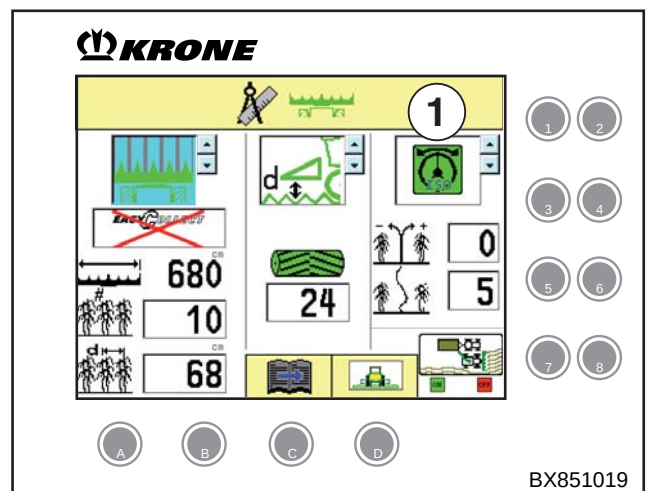
4.6.3.10 Automatic setting of the cutting length by maturity detection on the on the maize plant (AutoScan)

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.

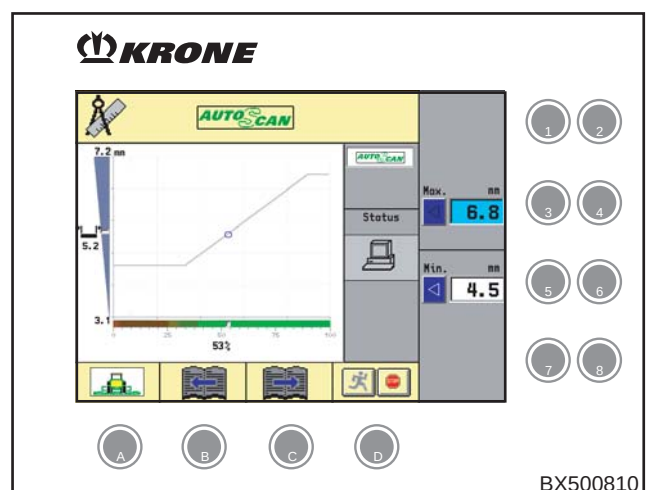
- To open the „AutoScan“ settings menu, press the  key (only for setting of maize header operating mode).



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BX851019



BX500810

(1) Enter the maximum possible cutting length.

The entry is also possible via button  (Reduce adjusted value) as well as  (Increase adjusted value).

This entered cutting length will be controlled by the AutoScan sensor from a degree of maturity of about 66% on. (This value is adjustable in professional mode)

(2) Enter the maximum possible cutting length.

The entry is also possible via button  (Reduce adjusted value) as well as  (Increase adjusted value).

This entered cutting length will be controlled by the AutoScan sensor from a degree of maturity underneath approx. 33 %. (This value is adjustable in professional mode).

(3) Graphic display of settings.

(4) Setting if the degree of maturity sensor "AutoScan" is present (effective after restart).



: sensor available



: sensor not available

(5) Status for automatic adjustment of cutting length



: Automatic adjustment of cutting length is active. The AutoScan sensor accepts the adjustment of the cutting length in the specified area.



: Manual adjustment of the cutting length active.

Use the key "D" in order to switch on or switch off the automatic adaption of cutting length.



: Activation automatic mode

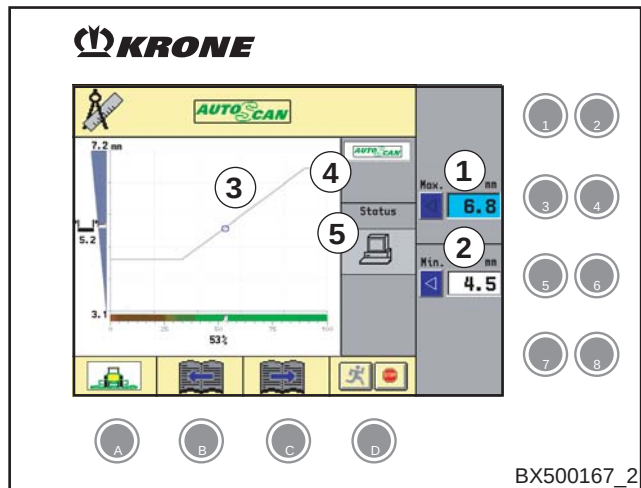


: Deactivation automatic mode



: No adjustment possible (AutoScan is not connected)

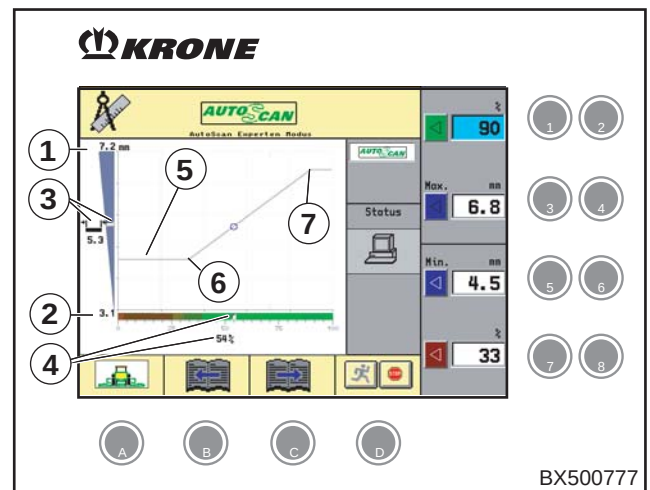
After having entered the values for the minimum and maximum cutting length these are being checked for plausibility. In case the value for max. is changed to 4.6mm and the min. value is 4.7mm for example, the min. value will automatically change to 4.5mm.



BX500167_2

Graphical display of the adjustments of the AutoScan sensor:

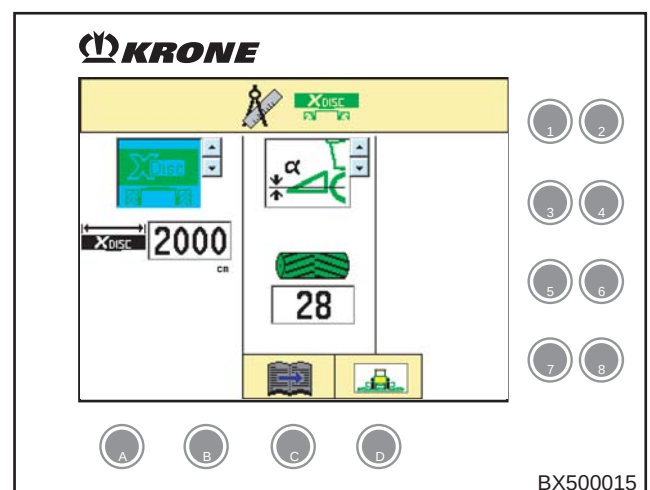
- (1) Theoretical, maximum cutting length when the degree of maturity mounts up to 100 %. The cutting length will not be further increased above a degree of maturity of about 66%, since a degree of maturity above 66% is not realistic in practice.
This value is automatically determined by the min. and max. cutting lengths entered by the user (value is adjustable in professional mode).
- (2) Theoretical, minimum cutting length when the degree of maturity is 0%. The cutting length will not be further decreased below a degree of maturity of about 33%, since a degree of maturity below about 33% is not realistic in practice. This value is automatically determined by the min. and max. cutting lengths entered by the user (value is adjustable in professional mode).
- (3) Current cutting length
- (4) Currently determined degree of maturity. If the display stops at 50%, the sensor will not detect a valid maturity.
- (5) The current position on the characteristic line in the working range.
- (6) The minimum cutting length specified by the user.
- (7) The maximum cutting length specified by the user.



4.6.4 General machine setting - direct cutting system

Set the operating mode to direct cutting system

-  = 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  key brings up the basic screen.
- Activating the key  brings up the settings load limit control (option).
- Pressing the  key on the rotary potentiometer takes you one menu level back.

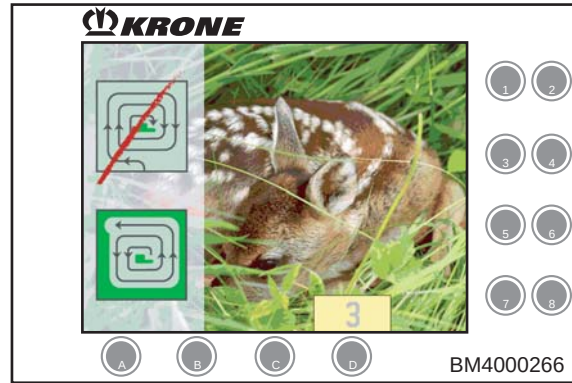


4.6.4.1 Info mask game animal protection

If the mode XDisc is adjusted, an information picture with the correct mowing performance appears temporarily on the display.

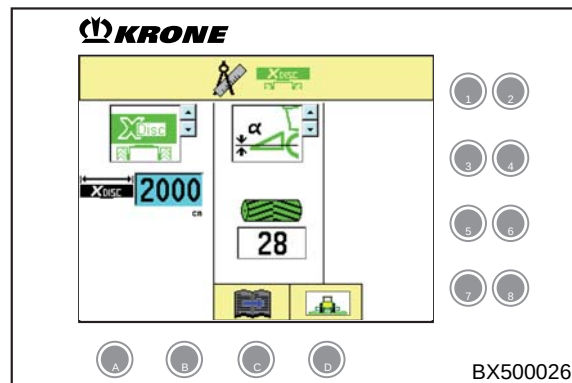
When mowing from "outside to inside", the animals are slowly forced from the safe boundary area into the center of the area, which makes the possibility for a life-saving escape for the animal more difficult or takes it away.

A remedy for this issue is the mowing method from "inside to outside" of the area. In doing so, you drive directly into the center of the parcel without mowing the boundary area and mow anticlockwise from "inside to outside". Therefore the animal can leave the field in compliance with its flight behaviour without any harm.



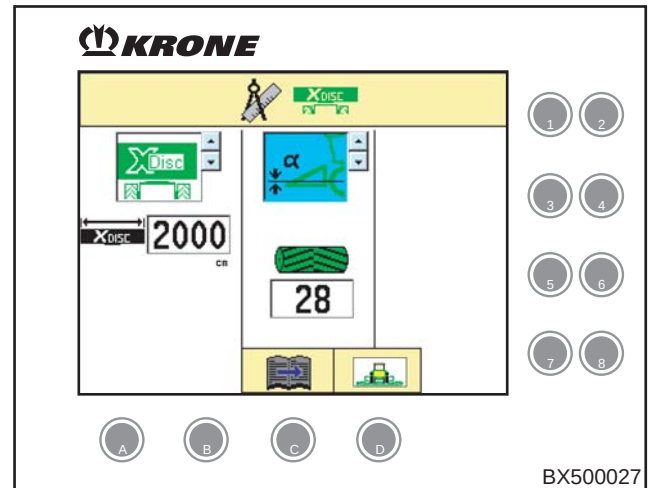
4.6.4.2 To set the working width of the direct cutting system

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



4.6.4.3 To adjust the lifting gear control

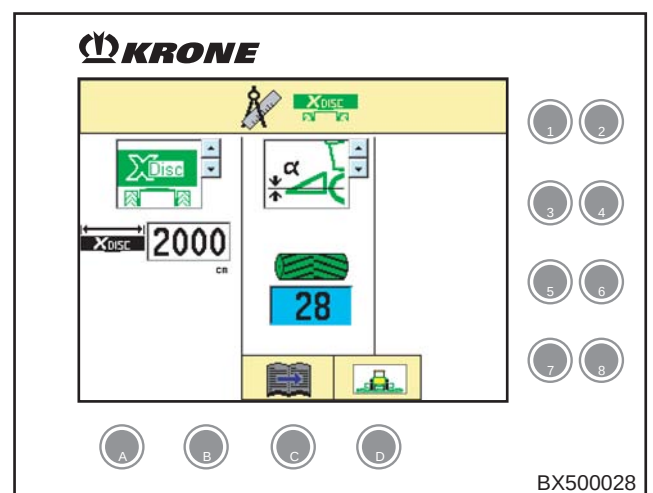
-  = Lifting gear pressure control; the control sets the pressure on the ground to a constant value.
-  = Lifting gear position control; the control sets the height constant relative to the machine.
-  = Lifting gear distance control (optional, only in conjunction with distance sensors); the control 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  key brings up the basic screen.
- To open the settings for load limit control, press the  key.
- Pressing the  key on the rotary potentiometer takes you one menu level back.



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



4.6.5 Customer Data Counter

- To bring up the Customer counter, activate the  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)



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)

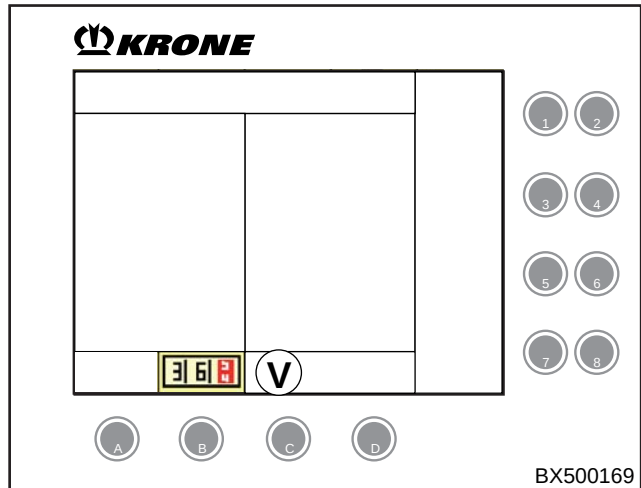
Counter (active counters are highlighted in colour)

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

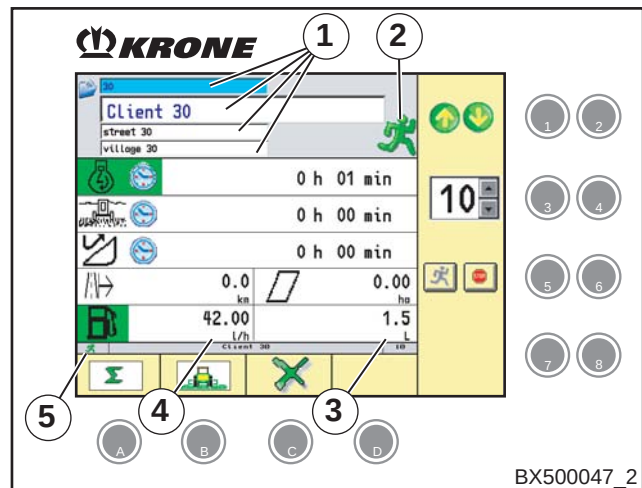
(3)= absolute fuel consumption (can be deleted with  key)

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

(5) = Display of currently activated counters



BX500169



BX500047_2

4.6.5.1 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  key.

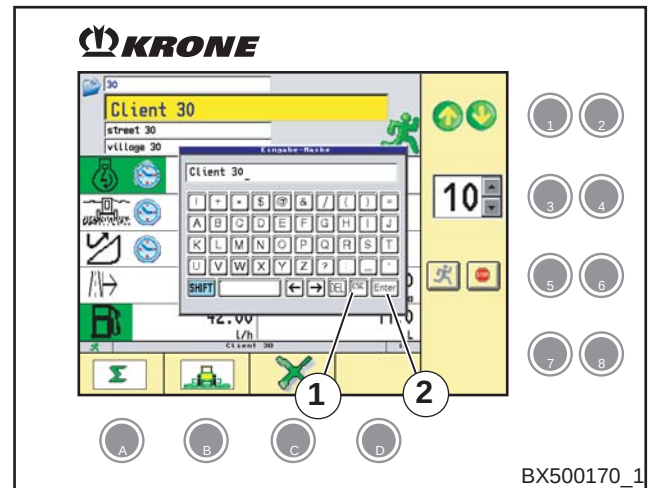
and  keys.

- 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.

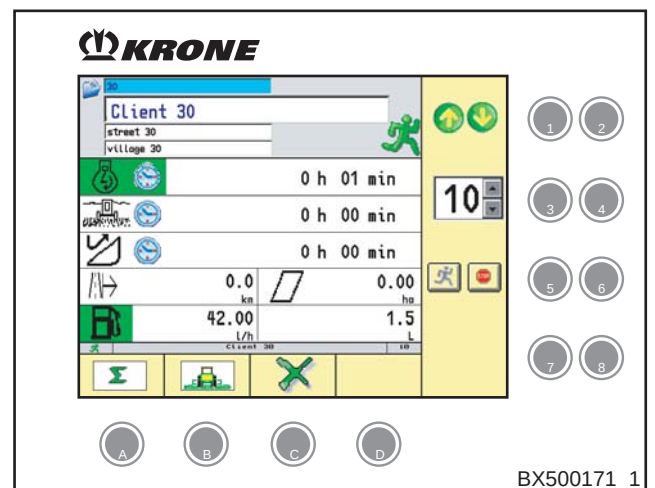
- Pressing the  key on the rotary potentiometer also takes you one menu level back.



BX500170_1

4.6.5.2 Switching the counter on or off

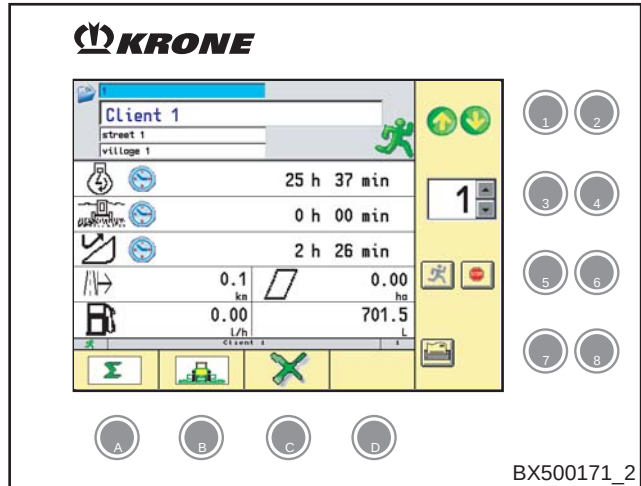
- Use the  and  keys to switch the counter on  or off .
- Activating the  key brings up the basic screen.
- Pressing the  key on the rotary potentiometer takes you one menu level back.



BX500171_1

4.6.5.3 Deleting the customer counter

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



4.6.5.4 Switching to general counters (machine data counters)

- Pressing the  key under the  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 (option). For additional information, please refer to chapter "Printing Customer Data"

4.6.6 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)

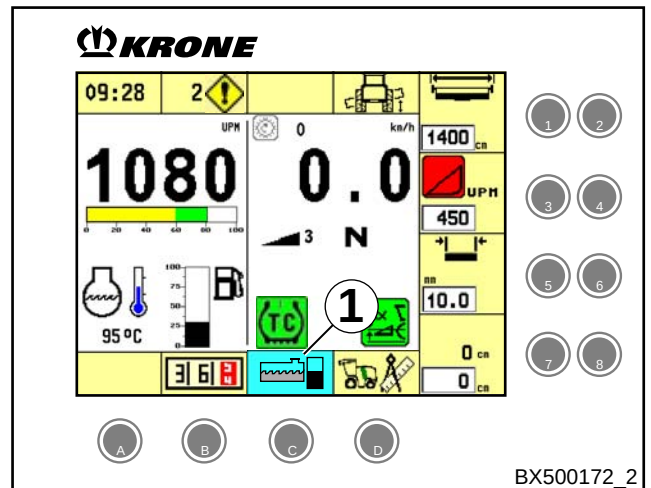
-  = Automatic mode switched on, silage fodder addition active.
-  = Automatic mode switched on, silage fodder addition inactive.
-  = silage fodder addition is deactivated.
-  = silage fodder addition is always active.
-  = filling level indicator for silage agent addition (optional)
- Activating the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

Conditions for release not met

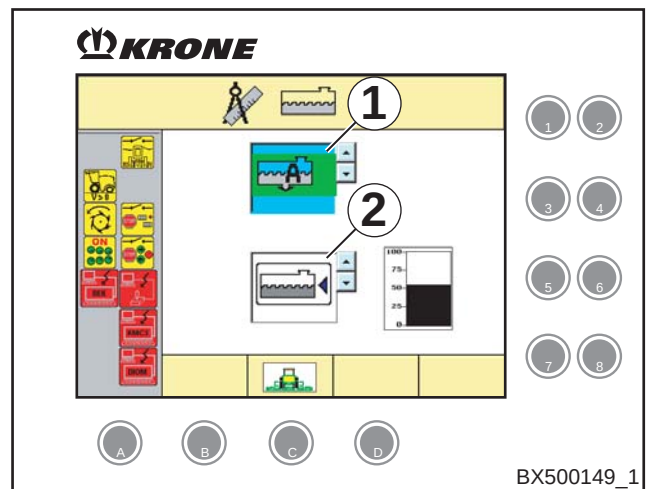
-  = lower lifting gear
-  = vehicle moving
-  = Main coupling on
-  = feed drive on
-  = Release switch – road/field
-  = Maintenance release switch
-  = Stop switch for control unit console
-  = stop switch for manual operation

Fault

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



BX500172_2

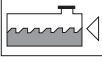


BX500149_1

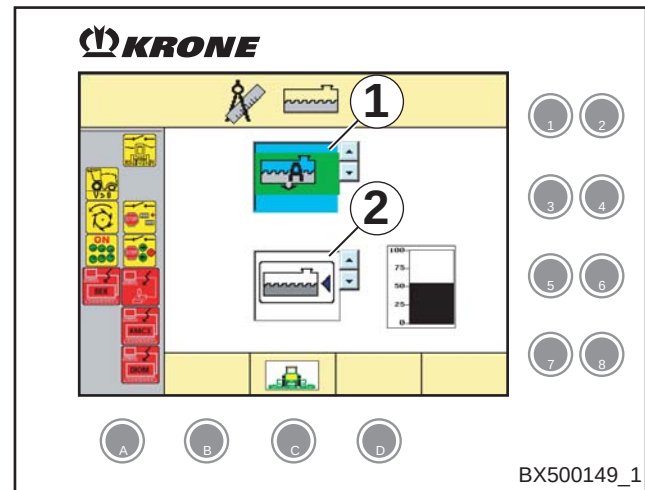
Silage fodder addition (1)

-  = 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  key brings up the basic screen.
- Press the  key on the rotary potentiometer to open the menu.

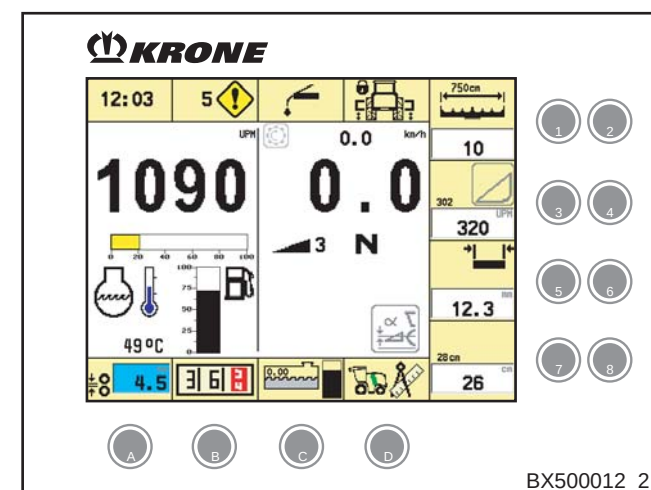


BX500149_1

4.6.7 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.



BX500012_2



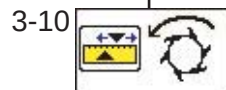
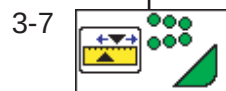
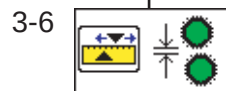
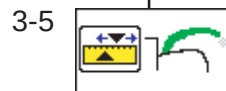
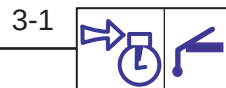
The currently set target distance is approached automatically.

Calibrating the grain conditioner

(See chapter on Grain Conditioner Calibration).

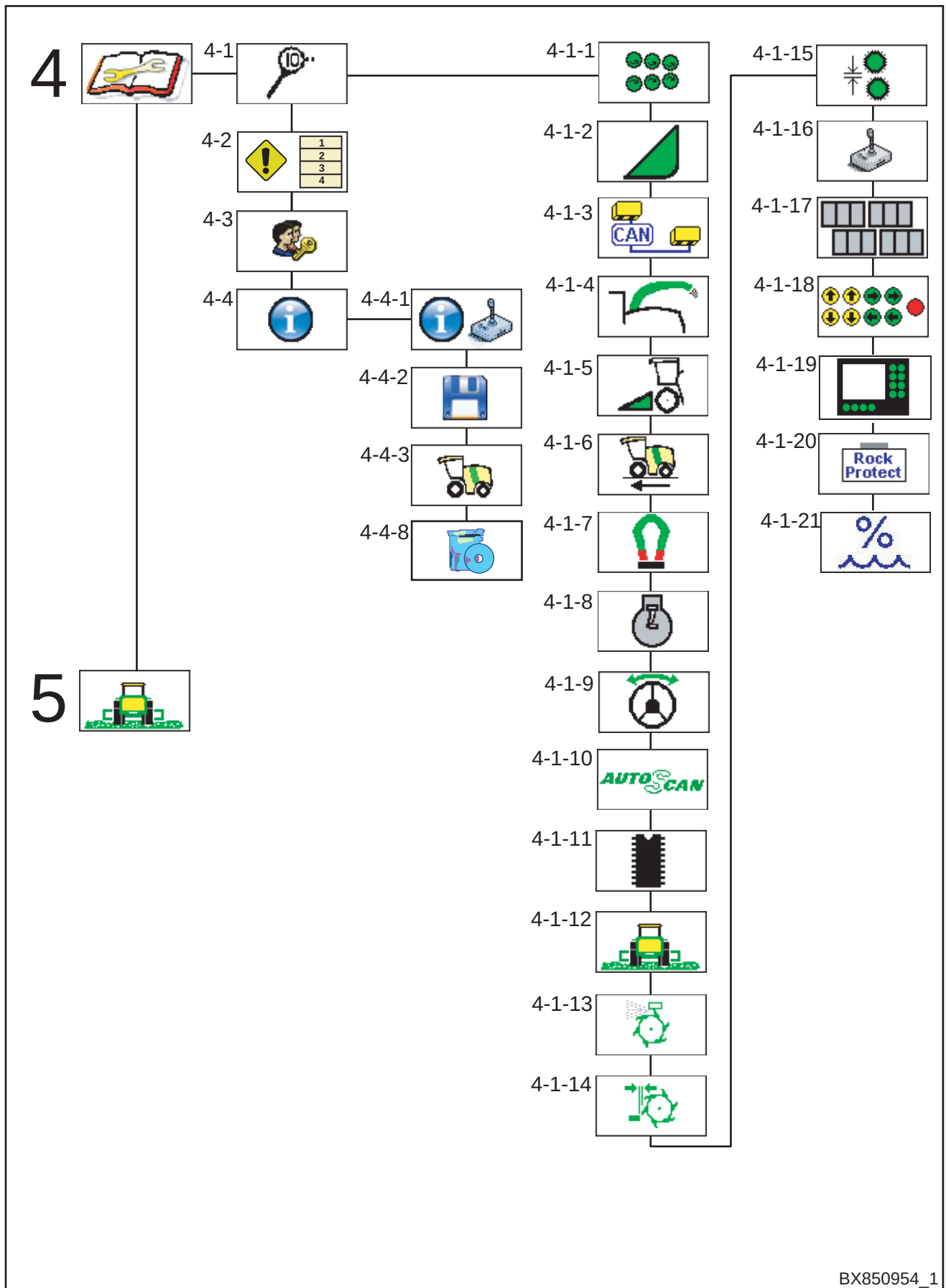
Menu level 3 (maintenance)

3



BX850953

Menu level 4 (service) and menu level 5 (return to basic screen)



BX850954_1

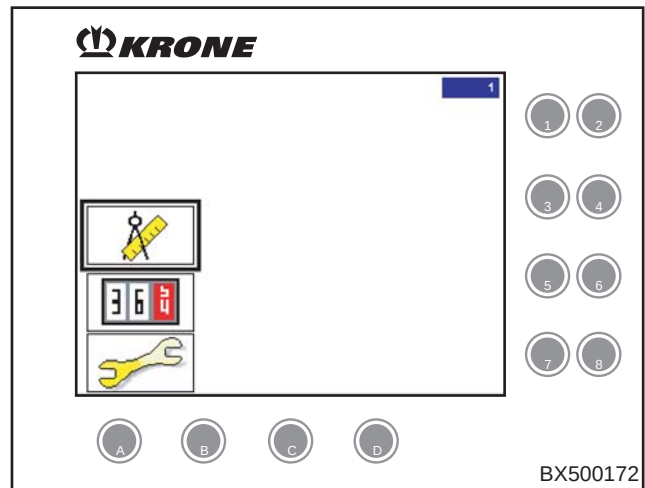
4.7.1 Bringing up a Menu Level

- 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 five 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“

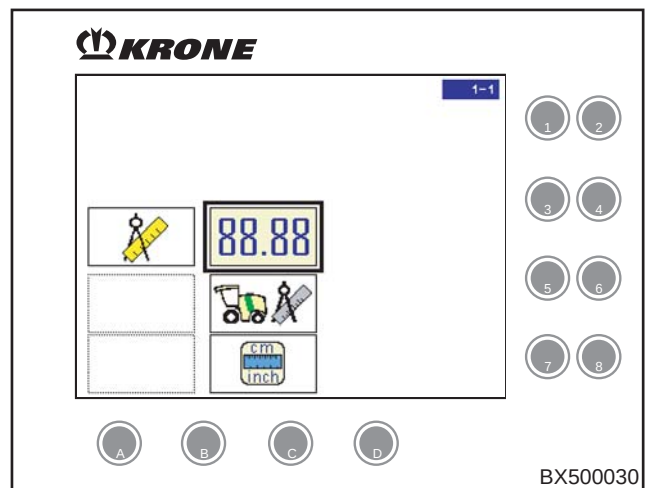
The main menu level is active.

- 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 1-4 „Diesel engine PowerSplit“ (option)
-  = Menu 1-5 „Language“
-  = Menu 1-7 „Display“
-  = Menu 1-8 „Date/time“
-  = Menu 1-9 „Contractor address“
-  = Menu 1-10 „Joystick-Memory-Keys“
- 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.

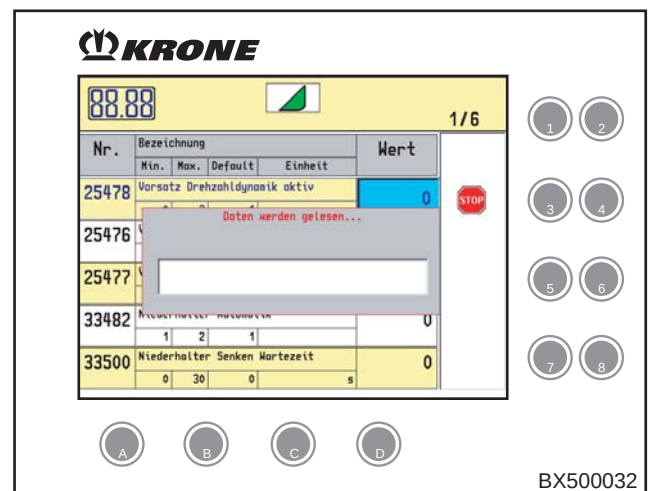
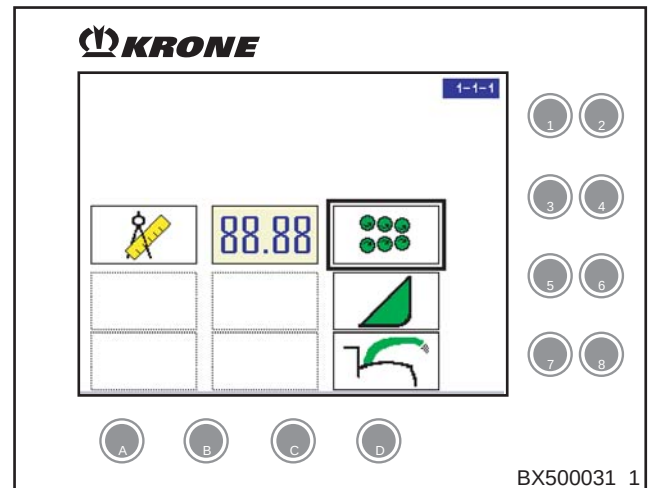
- Select menu 1-1 „Parameters“ with the rotary potentiometer.
- Press the rotary potentiometer.

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“
-  = Menu 1-1-4 „Grinding“
-  = Menu 1-1-5 „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“
-  = Menu 1-1-20 „Autoscan“
-  = 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.



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.

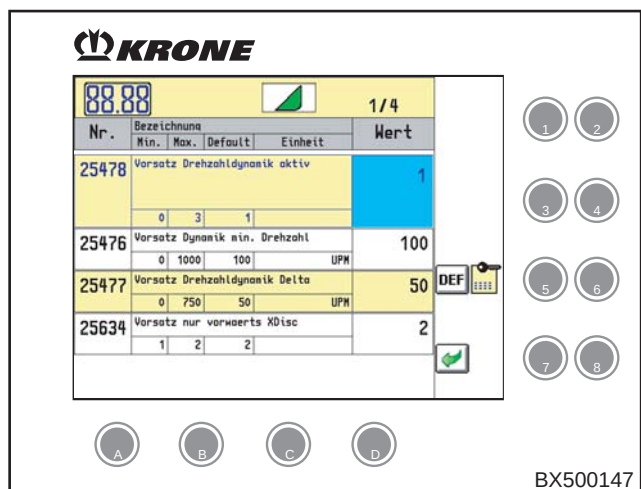
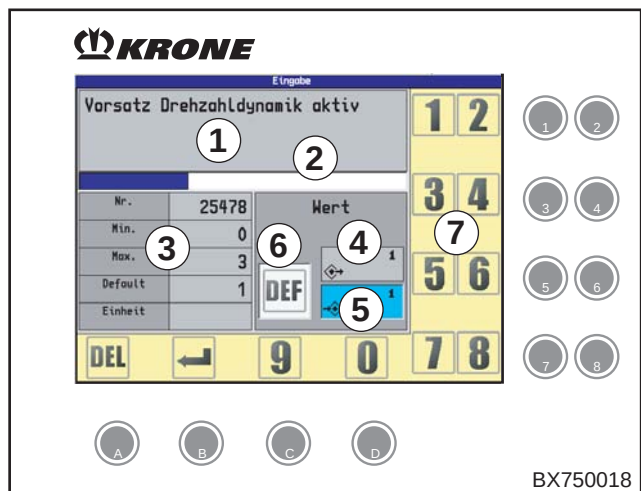
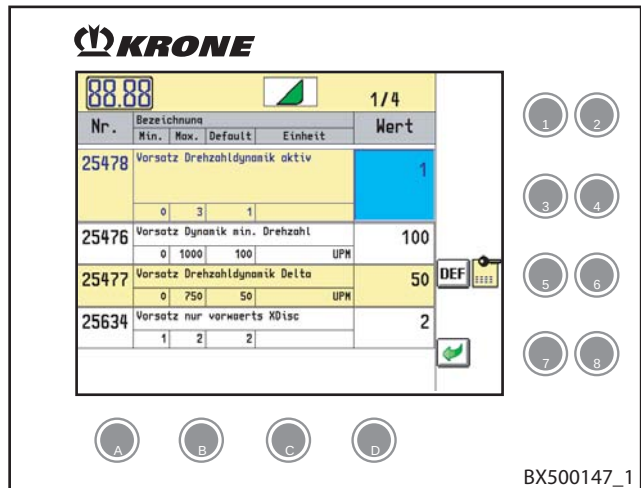
- Enter the new setpoint value in the input field (5) with the rotary potentiometer or keyboard (7).
- You can reset to the default setting value in the input field (6) (non-locking function).
- To delete the setpoint value, press the  key.
- To accept the modified value and/or parameter input mask, press the  key.
- To apply the default setting values, press the  key next to the **DEF** softkey.
- To jump back to the screen that was previously displayed, press the  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“.



The menu 1-2 "Setting Machine" is selectable via the basic screen and described in the section "General Machine Settings".



4.7.4 Menu 1-3 "System of Units Setting"

Das Hauptmenü „Einstellungen“ ist aufgerufen.

The main menu "Settings" is active.

- Activate the rotary potentiometer to activate menu 1-3 "System of Units Setting".

The display shows four selection windows. The measuring unit for different measurement sizes can be changed here.

The metric or the imperial system of units can be selected in this menu:

-  = metric system of units
-  = imperial system of units

Global Settings in the Selection Window (1)

Measurement size	Unit	
	metric	imperial
Surface	ha	acres
Route	km	miles
Fuel consumption	l	gal
Height lifting gear	cm	inch
Working width	cm	inch

Setting the Cutting Length in the Selection Window (2)

Setting the display in mm or inch.

Setting the Gap Distance of the Corn Conditioner in the Selection Window (3)

Setting the display in mm or inch.

Setting the Travelling Speed, the Cruise Control Speed and the Load Limit Control (4)

Setting the display in km/h or miles/h.

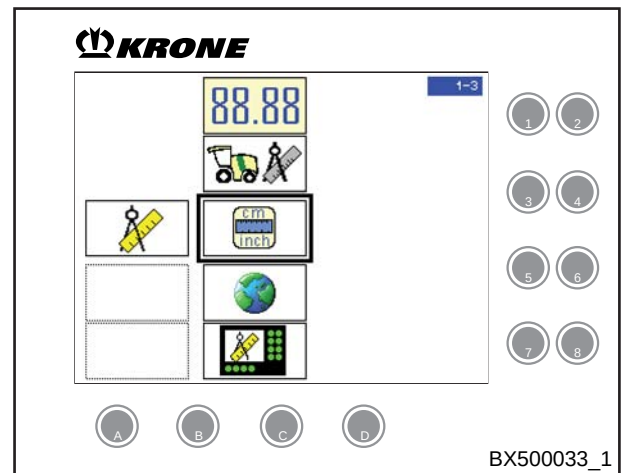
Setting the Units

- Select the desired selection window with the rotary potentiometer, 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 set the desired measuring unit.
- To exit the selection field, press the rotary potentiometer.
- The menu level is called by pressing the menu key

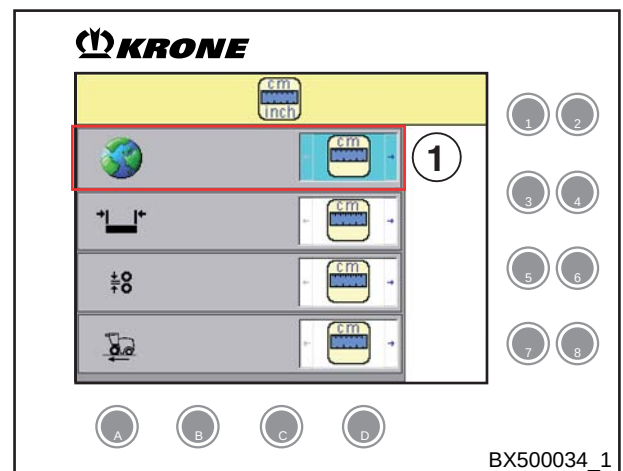
 next to the rotary potentiometer.

Example (BX851005):

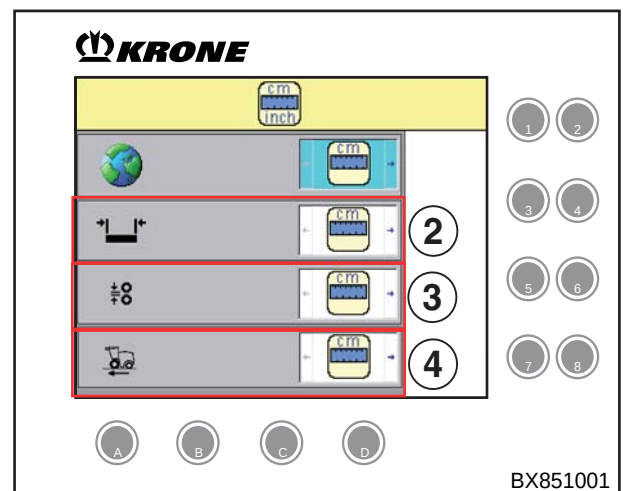
Basic screen with the displays of measurement sizes in different systems of units.



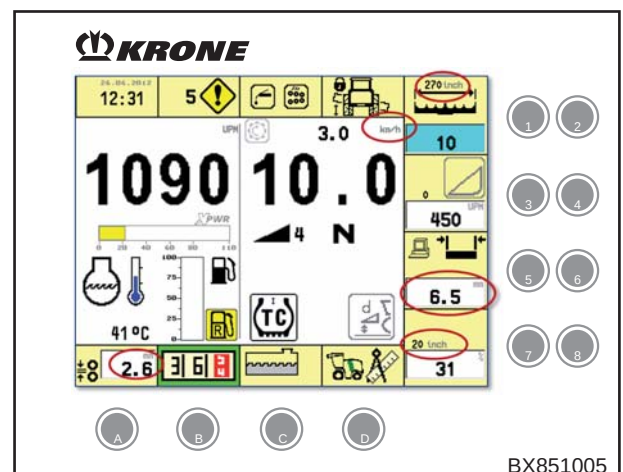
BX500033_1



BX500034_1



BX851001



BX851005

4.7.5 Menü 1-4 „PowerSplit“ (option)

Power management with MAN engines (from SW 200814613 on)

The current operating mode of the diesel engine for the parameters 33515 and 33518 is marked in the basic screen as follows:



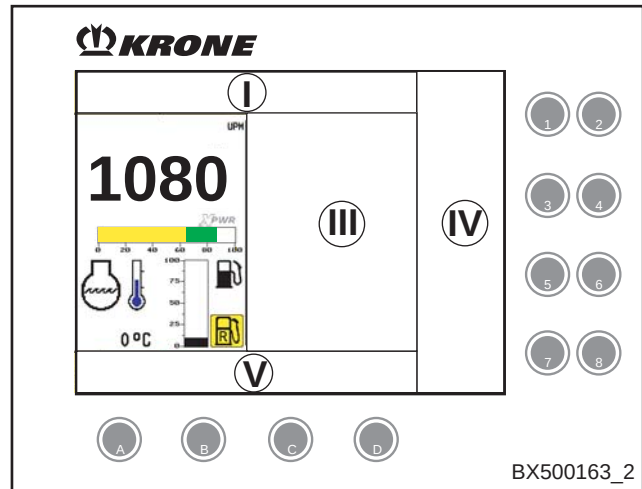
: diesel engine in max. power mode (parameter is set to 2 = full performance).



: diesel engine in eco mode (parameter is set to 3 = reduced performance).



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



Automatic switchover between ECO power and X power.

Automatic switchover between ECO power and X power.:

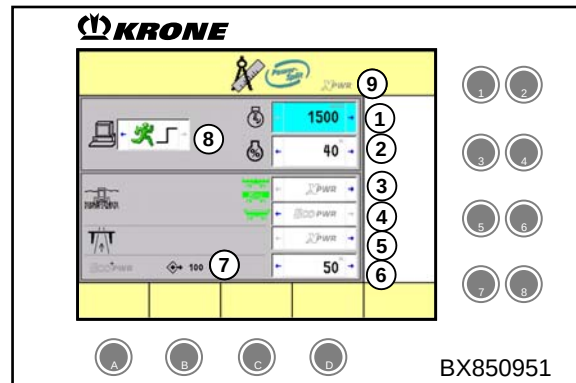
 : Abrupt switchover when speed is set

 : Steady switchover, starts about 100 rpm before set speed

The switchover back to the ECO mode is always abrupt when the engine capacity is set, provided the X power mode has been set by the automatic. In case the X power mode has been selected manually, the automatic is only on standby and does not interfere any longer.

Graphic display of the settings of PowerSplit

- (1) Diesel engine speed at which an automatic switchover from ECO power to X power shall begin to take place.
- (2) Diesel engine capacity at which an automatic switchover from X power to ECO power shall begin to take place.
- (3) Start setting for X-Disc and maize operation
- (4) Start setting for grass operation
- (5) Start setting for road operation
- (6) Setting for the automatic switchover between activating/deactivating ECO power and X power and switchover course.
- (7) Current performance mode



Statusanzeige



: Automatic switchover inactive



: Automatic switchover active

The automatic is only active when the setpoint diesel engine speed exceeds 1900 rpm.

4.7.6 Menu 1-5 „Language“

The main menu „Settings“ is active.

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

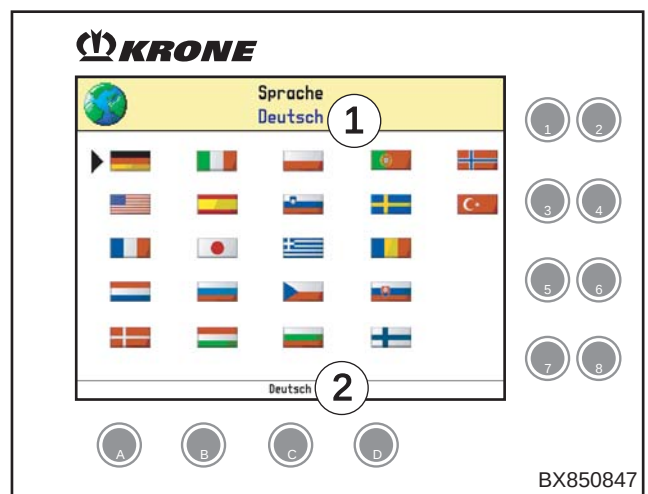
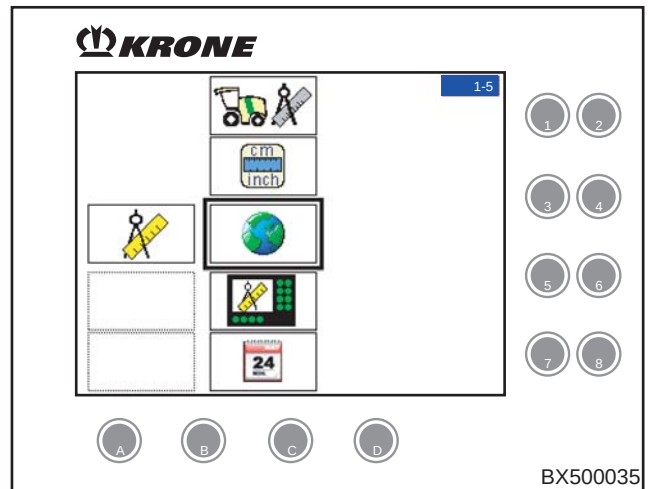
The display shows the language selection.

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.



4.7.7 Menu 1-7 „Display“

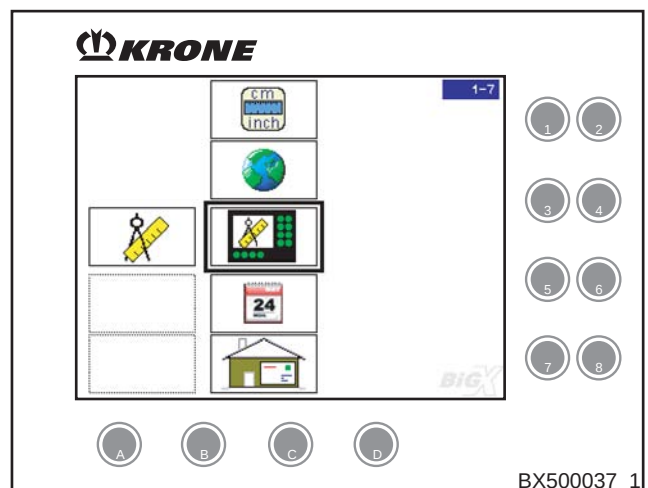
The main menu „Settings“ is active.

- 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 the following:

-  = Menu 1-7-1 "Contrast/brightness"
-  = Menu 1-7-2 „Beeper“
-  = menu 1-7-4 „Direction of Rotation“
-  = Menü 1-7-5 „Settings basic screen fields “
- Pressing the  key on the rotary potentiometer takes you one menu level back.



4.7.8 Menu 1-7-1 day/night mode

Menu „display“ is called up.

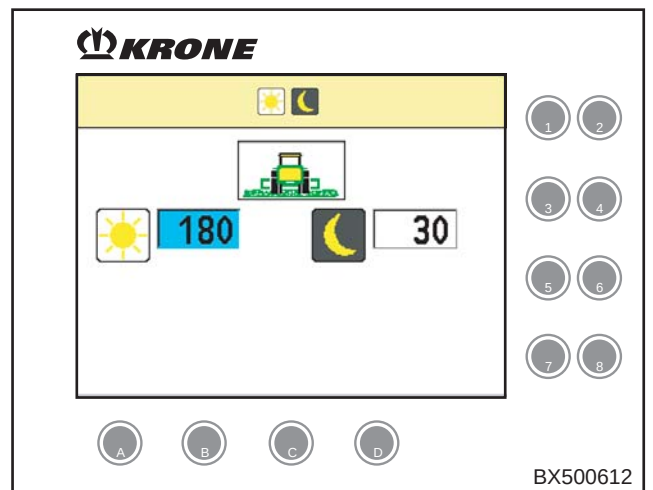
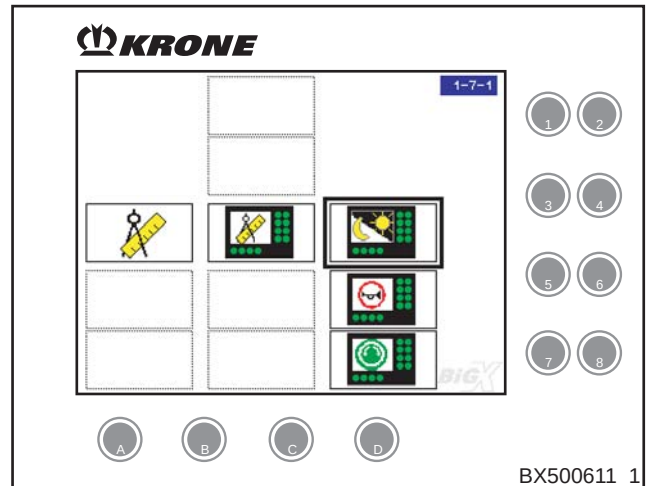
- Select menu 1-7-1 „Day/night mode“ via the rotary potentiometer.
- Press rotary potentiometer.

The display shows the settings for day and night.

-  = day
-  = night

Adjust day/ night mode

- 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.



4.7.9 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
-  = Alarm
-  = Note

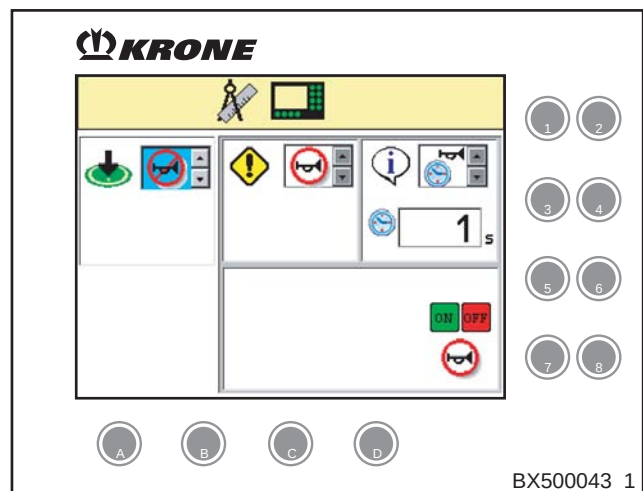
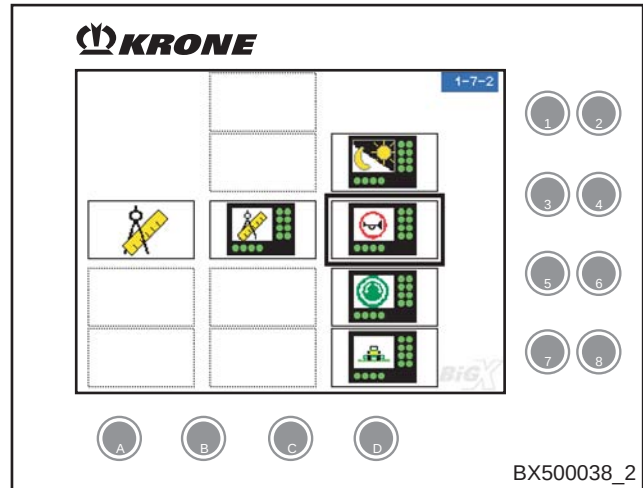
Beeper function

-  = 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  key.
- To turn off the beeper, press the  key.
- Pressing the  key on the rotary potentiometer takes you one menu level back.



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

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

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

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

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

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

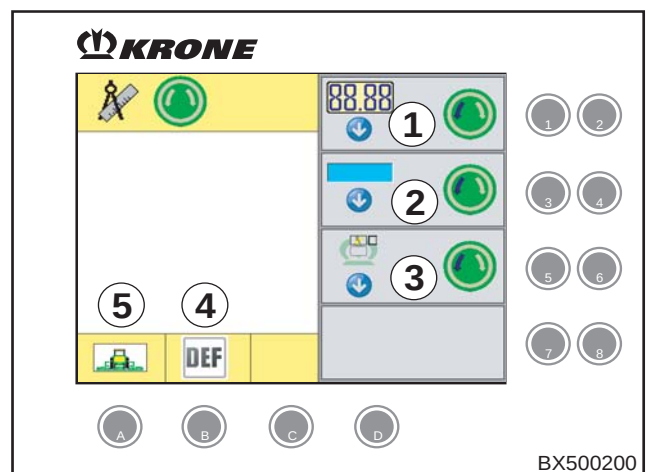
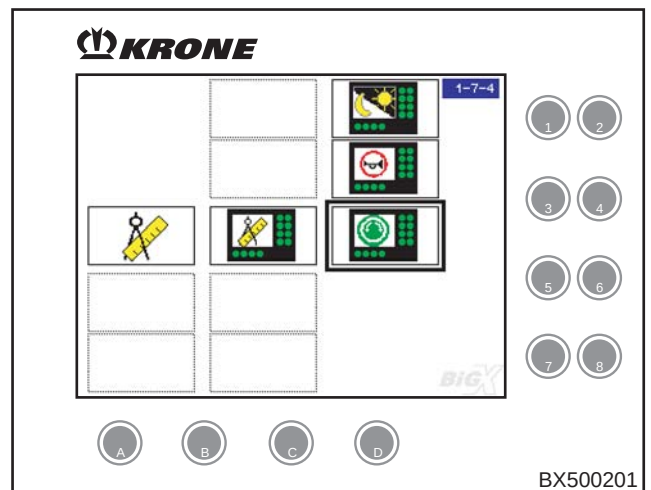
(5) Press the softkey  to return to the basic screen.



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.



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4.7.11 Menü 1-7-5 ESettings basic screen fields

The „Display“ menu is active.

- Select menu 1-7-5 „Settings basic screen fields“ with the rotary potentiometer
- Press the rotary potentiometer

The display shows the options of displays

The currently displayed measurement value is highlighted by a contour (the current time in this example).

Change display in the basic screen:

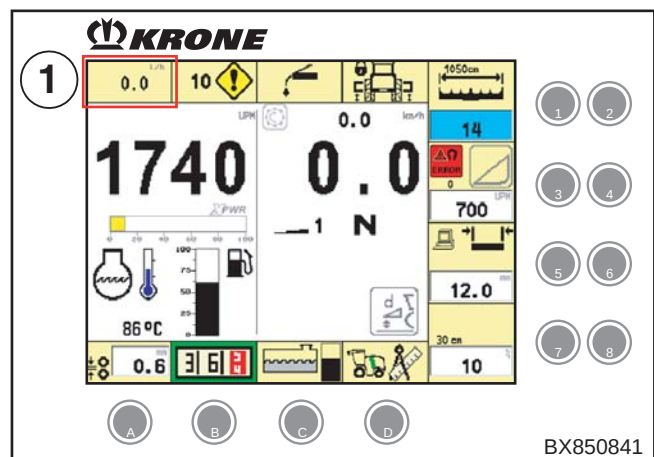
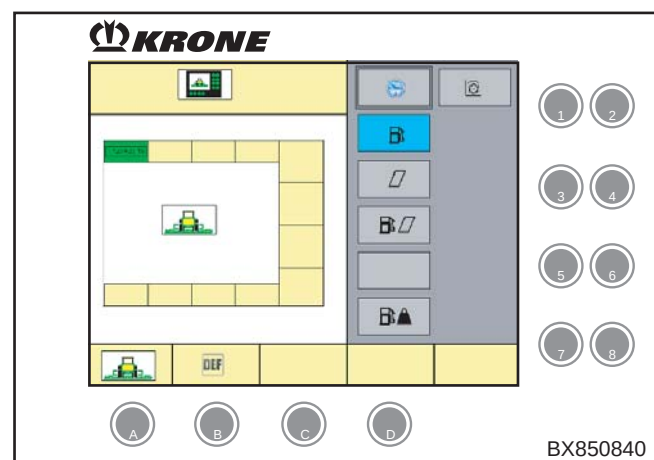
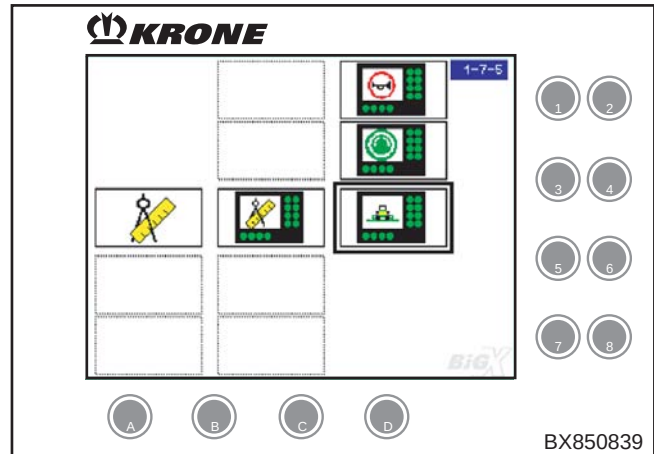
- You can use the rotary potentiometer to select the desired display, the input box is highlighted in colour
- Press the rotary potentiometer to confirm the selected display (in the example: „current fuel consumption“)

The saved setting (1) is now shown in the basic screen (in the example: current fuel consumption)

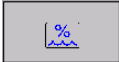
The following displays are selectable in the basic screen:

	Present time/Date
	Current fuel consumption
	Cutting drum speed
	Acreage output
	Current fuel consumption referring to acreage
	moisture value of the crop the NIR sensor has measured
	Current fuel consumption with regard to the crop yield in (only possible in connection with the yield recording CropControl) (option)

- Change into basic screen .
- By pressing the key  the display will be set back to factory setting (time).



4.7.11.1 NIR-Sensor

- Select the display  with the rotary potentiometer, the input field is highlighted in colour.
- Confirm the selection by pressing the rotary potentiometer.

The basic screen shows the actual moisture value (1) of the crop when the NIR sensor is active.

If the following conditions have been met, then the NIR sensor is active:

- The main coupling is switched on (refer to chapter 3 "Control Elements")
- The maintenance release switch is switched off (refer to chapter 3 "Control Elements")
- The feed drive/front attachment release switch is switched on (refer to chapter 3 "Control Elements").

- The basic screen displays the status display  "Front Attachment Forward Active".
- The setpoint engine speed exceeds 1500 rpm (constant value, cannot be changed).

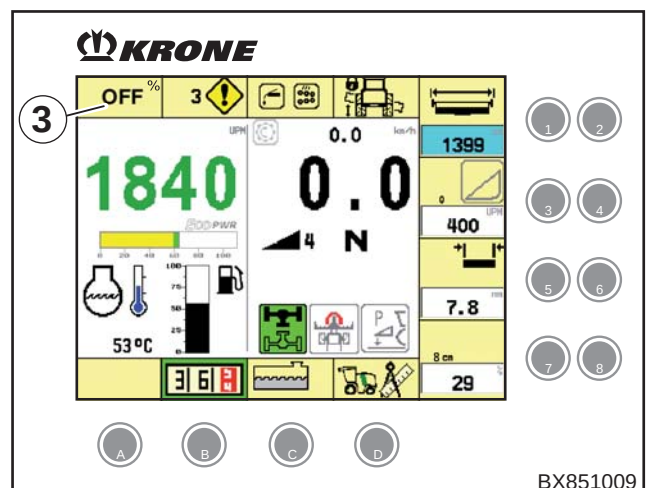
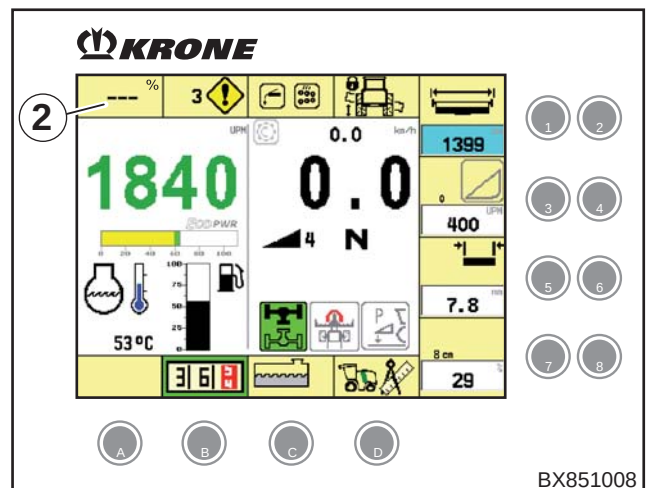
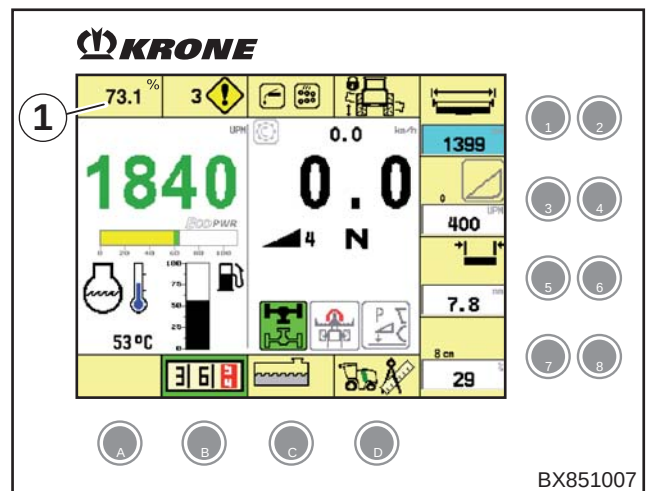
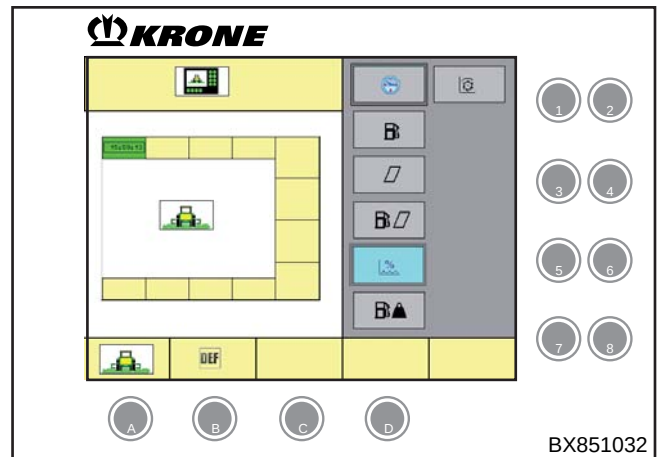
If the following conditions have been met, then the NIR sensor carries out an automatic calibration:

- The operating hours counter from the NIR sensor to the next calibration shows less than 5 hours.
- The maintenance release switch is switched on (refer to chapter 3 "Control Elements").
- The setpoint engine speed is 800 rpm or higher (constant value, cannot be changed).

The calibration is interrupted if the condition "NIR sensor active" is fulfilled again.

The "---" display (2) appears in the basic screen after 10 seconds if the NIR sensor is defective or if a measurement value is outside the measuring range.

The "OFF" display (3) appears in the basic screen if the sensor is not active (one or more conditions for the operating state "active" are not met).

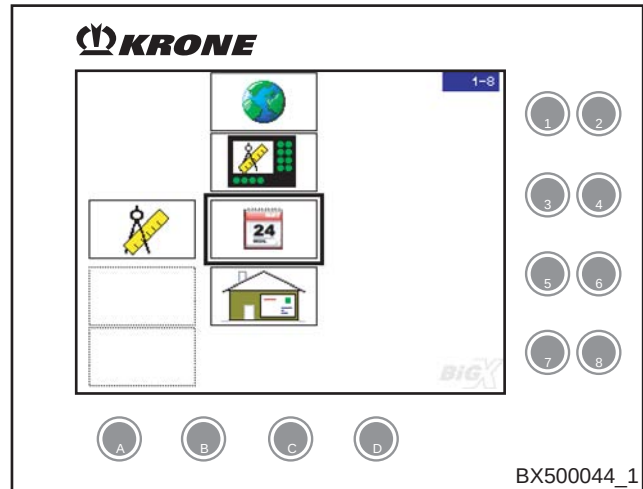


4.7.12 Menu 1-6 „Date/time“

The main menu „Settings“ is active.

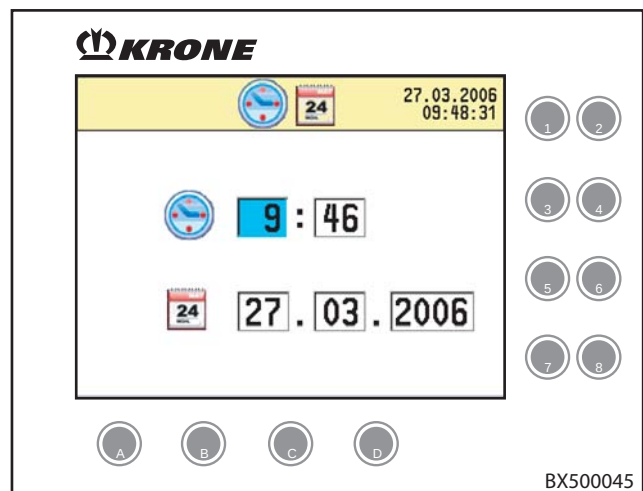
- Select menu 1-8 „Date/time“ with the rotary potentiometer.
- Press the rotary potentiometer.

The display shows the date and the time.



To set date/time

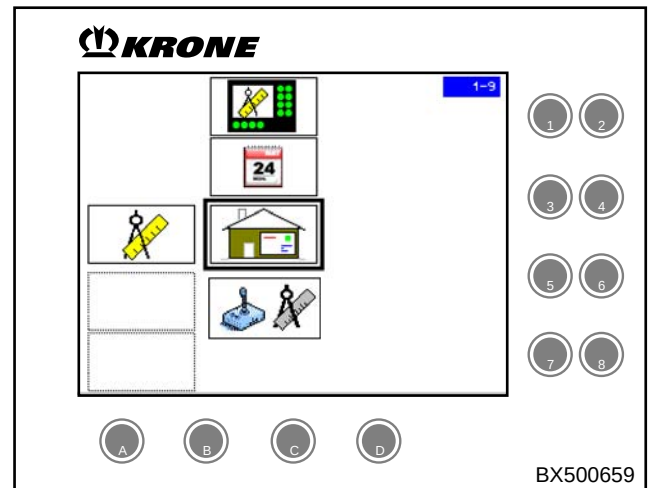
- You can use the rotary potentiometer to select the desired setting. The entry box is highlighted in colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- Set the desired date/time with the rotary potentiometer.
- Pressing the rotary potentiometer causes the setting to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



4.7.13 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.



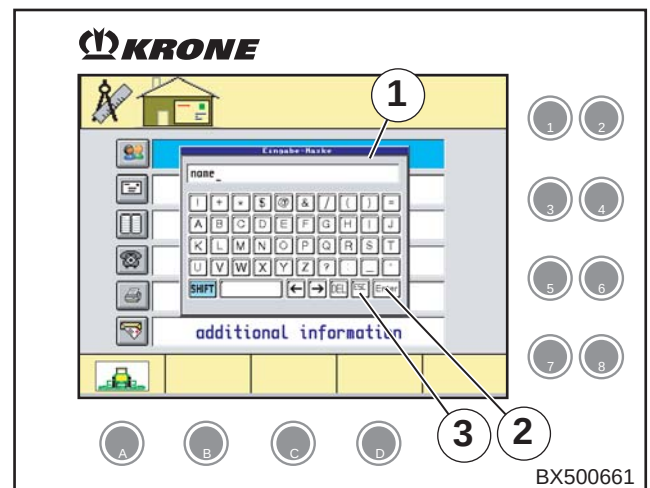
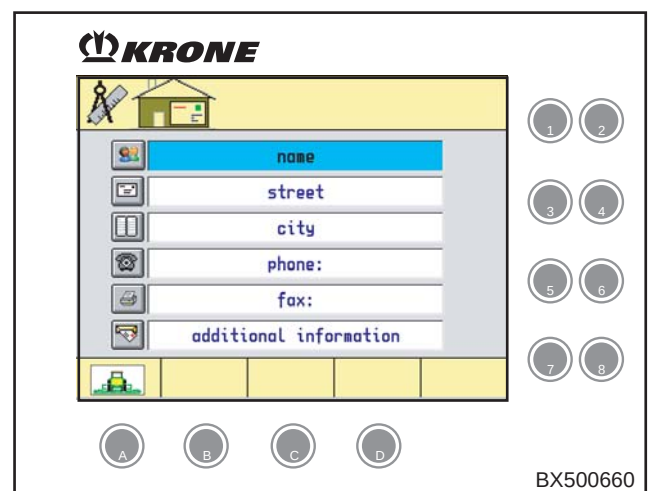
A maximum of 6x30 characters can be entered. The information is used each time a print job is sent to the CAN printer (option). If a line contains no characters (including no spaces), that line will not be considered for printing (option).

- 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.



4.7.14 Menu 1-10 "Joystick-Memory-Keys"

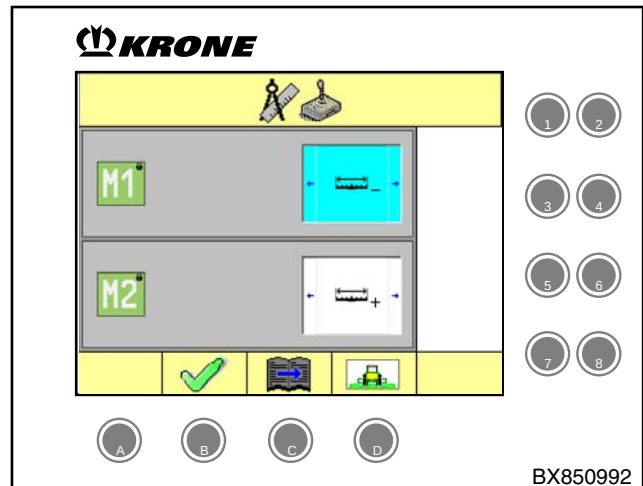
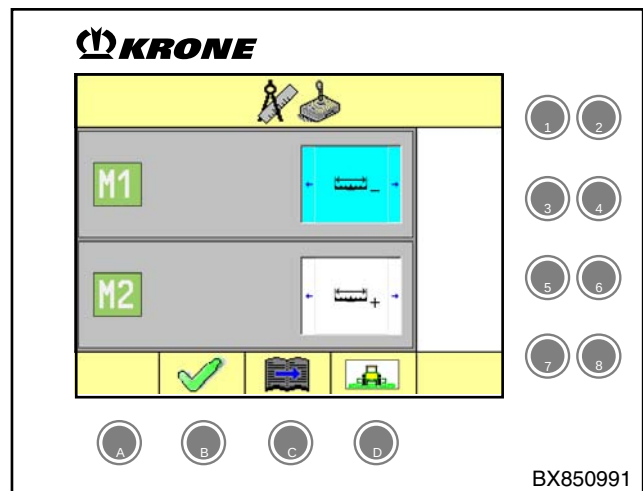
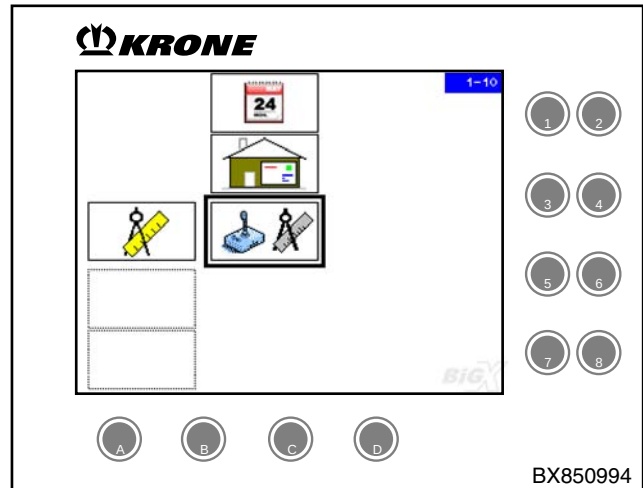
The main menu "settings" is active.

- " You can use the rotary potentiometer to select the menu 1-10 "Joystick-Memory-Keys".
- " You can use the rotary potentiometer to select M1 or M2. The selection box is highlighted in colour.
- " Pressing the rotary potentiometer allows you to jump to the selection box.
- " Set the required function with the rotary potentiometer.
- " Pressing the rotary potentiometer causes the setting to be applied and returns you from the selection box.
- " Activating the key  saves the settings.



If the mask has not been actuated with the key "", the set functions will be locked and symbolized via a "lock" symbol in the fields M1/M2.

- " 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)

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

4.8.1 Machine Data Counter

(Active counters are highlighted in colour)

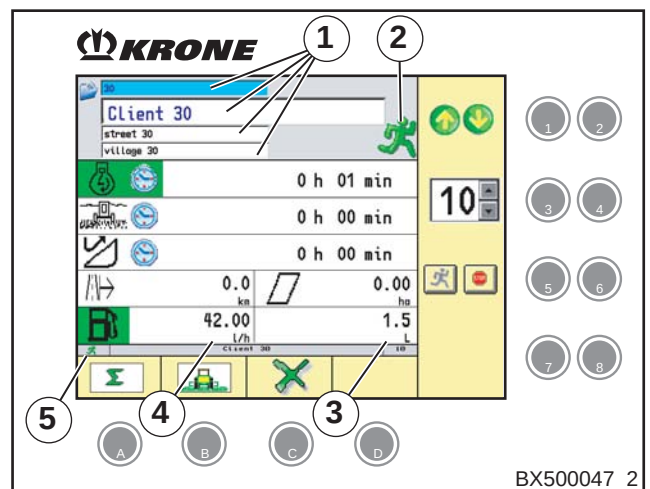
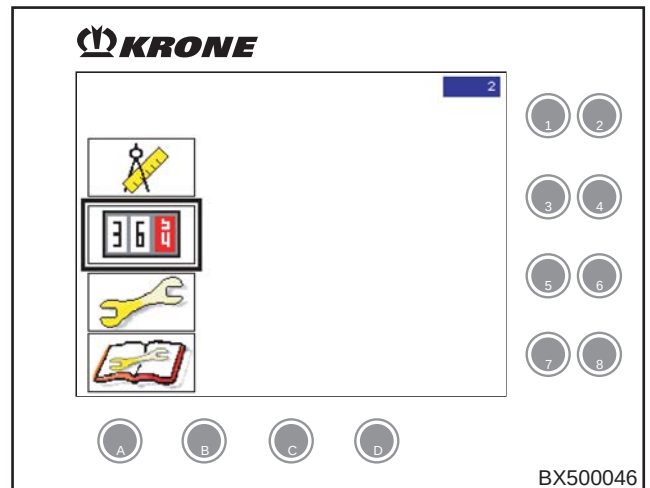
-   = Operating hours counter
 -   = Drum hours counter
 -   = Working hours counter
 -  = Surface counter
 -  = Odometer (both street and field mode) (km)
 -  = Fuel consumption meter
- (3)= absolute fuel consumption (can be deleted with  key)
- (4)= current average consumption (l/h)
- (5) = Display of currently activated counters

To set the counter level

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

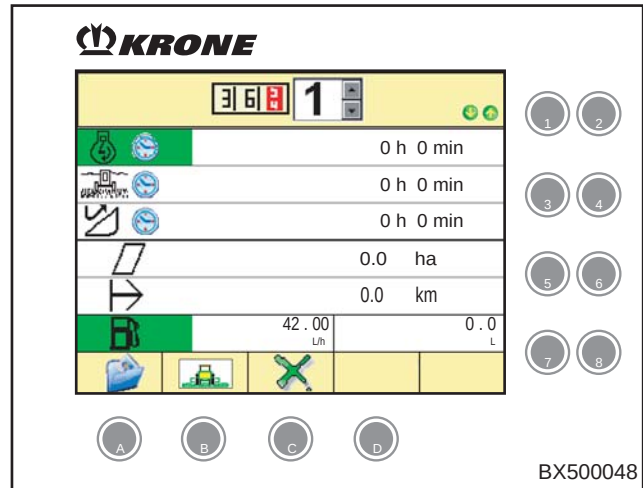
It is also possible to make a setting with the rotary potentiometer:

- 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  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  key under the  softkey brings up the basic screen.



4.8.3 Switching to Customer Data Counters

- Pressing the  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“.

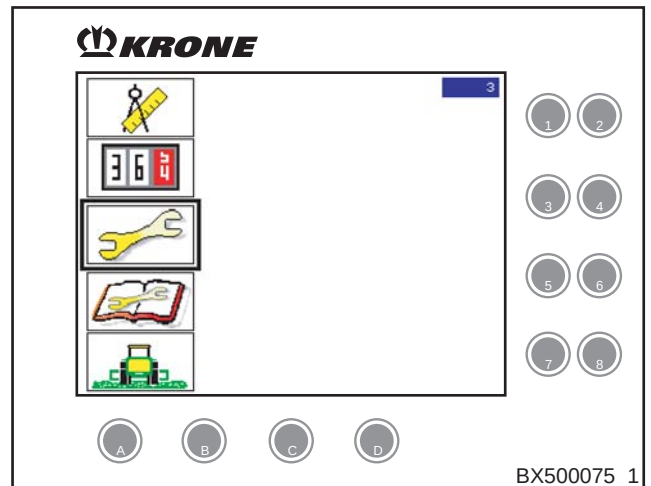
The main menu „Maintenance“ is divided up into six menus:

-  = 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 „Maintenance 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/ cleaning of the engine compartment"

The main menu "Maintenance" is active.

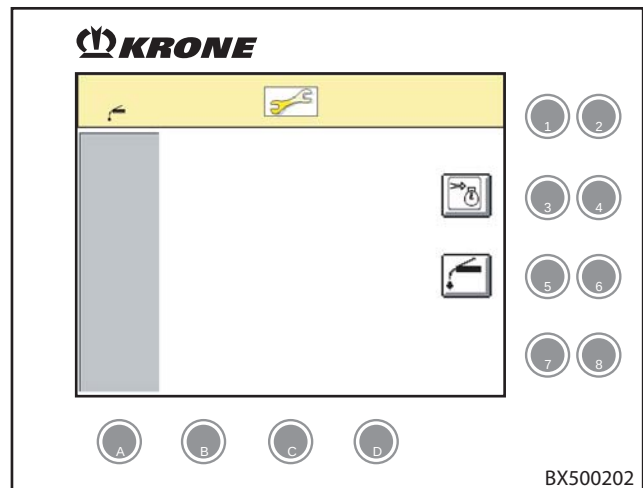
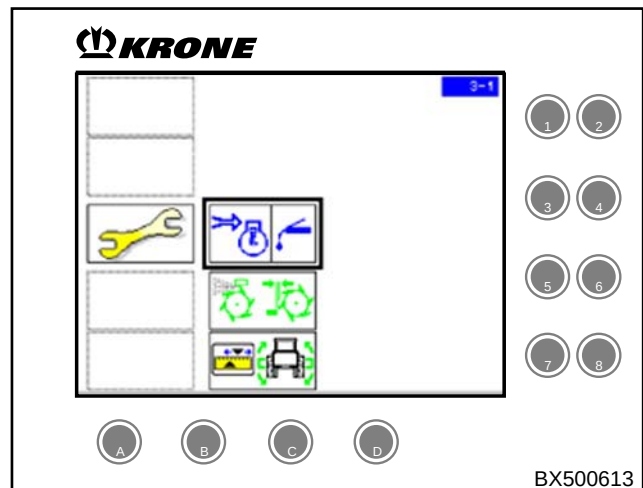
- Select menu 3-1 "Central lubrication/cleaning the engine compartment" with the rotary potentiometer.
- Press the rotary potentiometer.

The display shows the „Clean central lubrication/engine compartment“ mask.

- Press the  key to initiate the „Intermediate lubrication“ function.
- Initiate the function "feed drive cleaning" by activating the key  (standard).



The feed drive cleaning can be reconstructed optionally for cleaning the motor.



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“

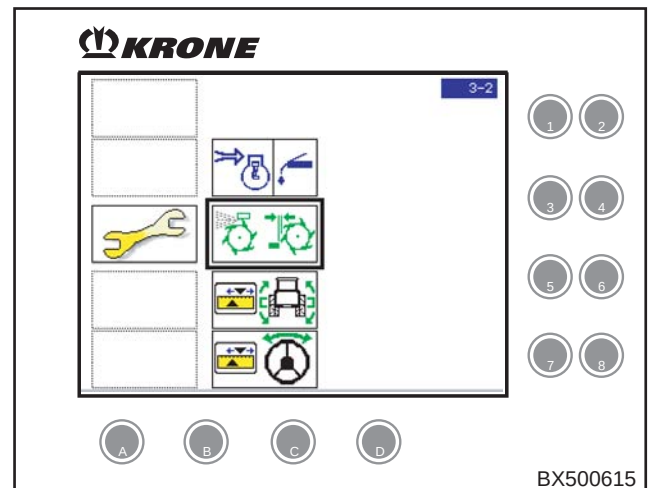
The main menu „Maintenance“ is active.

- 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).

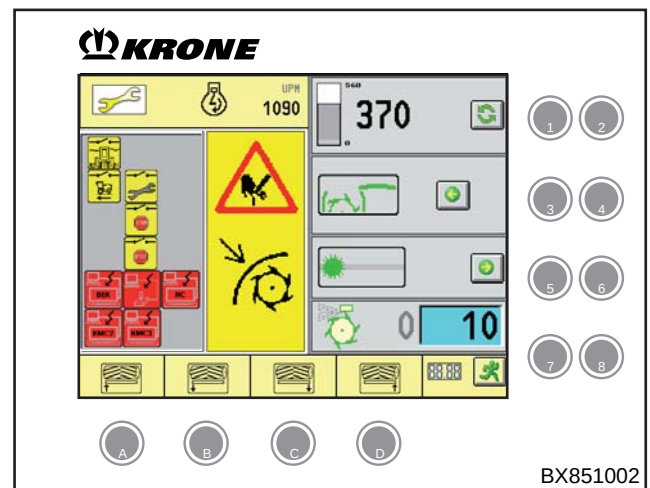
- Actuating the  key takes you to a parameter input box for the grinding of the counterblade.



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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



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Malfunction

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

Status Displays Grinding Operation

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
-  = Grinding stone moves to the left



The display with arrow is available in different positions, which show the direction of movement of the grinding stone.

-  = 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). (Depending on the number of adjusters).

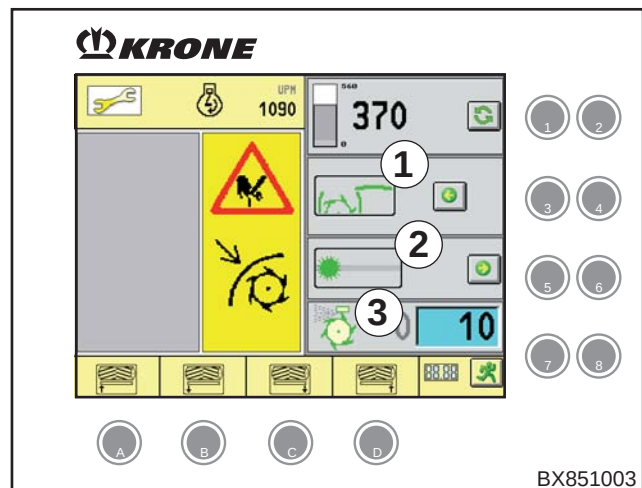
Status of the Remaining Grinding Cycles up to the Grinding Stone Readjustment (4)

- (4) = Counter "Remaining grinding cycles up to the grinding stone readjustment"; since the counter has been loaded to the maximum number (5) of grinding cycles by activating  key.

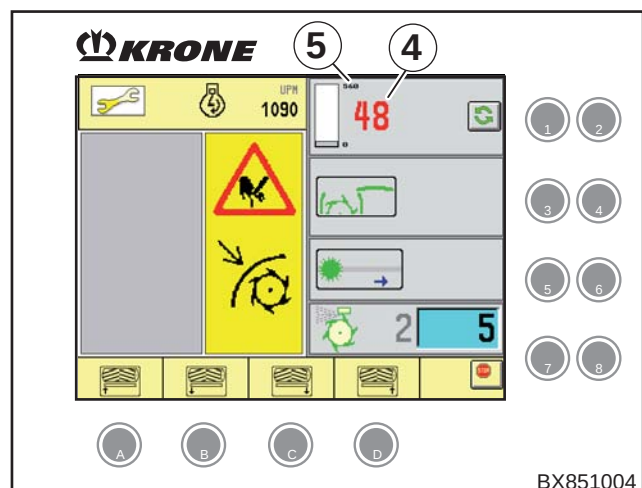


If the number of the remaining grinding cycles falls below 10% of the maximum number (5) of the grinding cycles, then the display is shown in red.

- To set the counter (4) "Remaining grinding cycles up to grinding stone readjustment" to the maximum number of grinding cycles, press  key.



BX851003



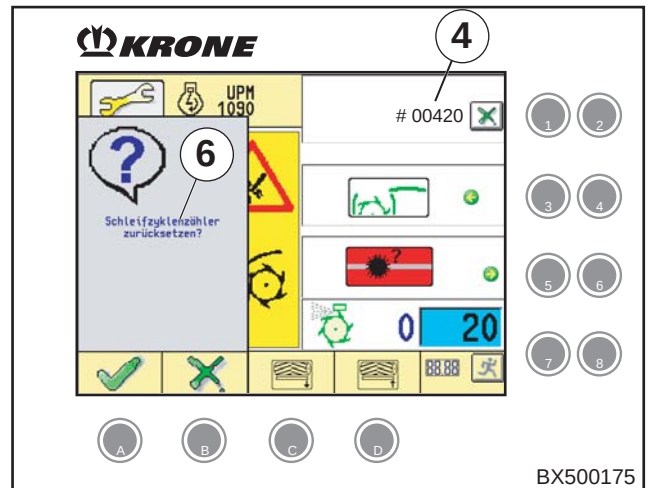
BX851004

Acknowledging the error message

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

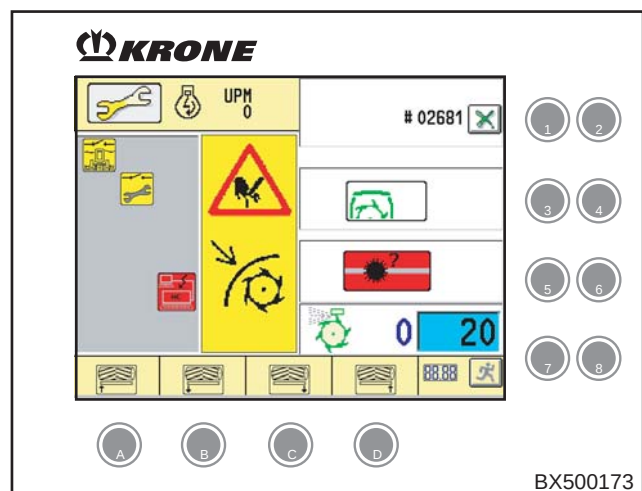
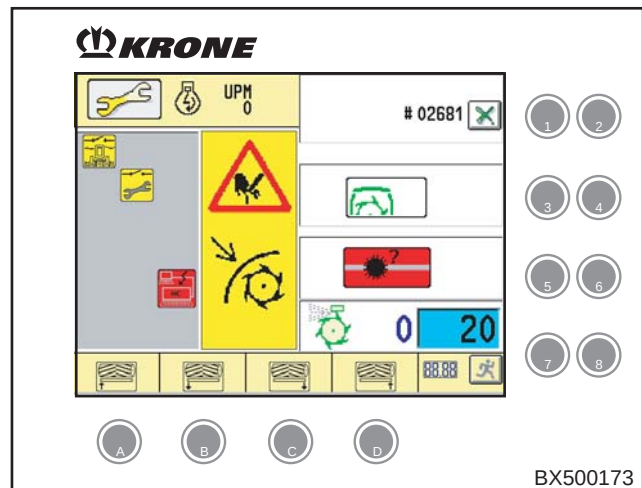
Adjusting the number of grinding cycles (Factory setting 20)

- 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  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  key takes you to a parameter input box for counterblade adjustment.



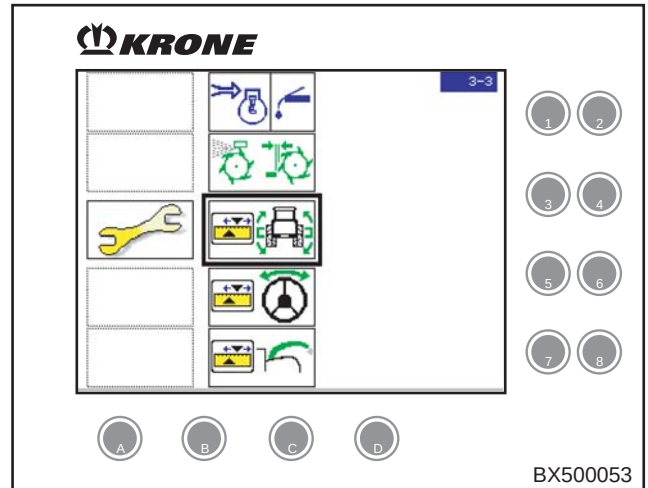
4.9.3 Menu 3-3 „Calibration of Pendulum Frame and Absolute Lifting Gear Height“



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.

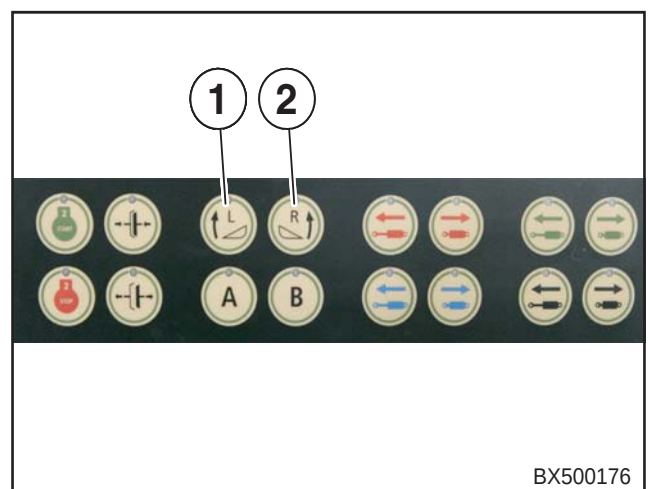
The „Calibration of pendulum frame and absolute lifting gear height“ menu appears.

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

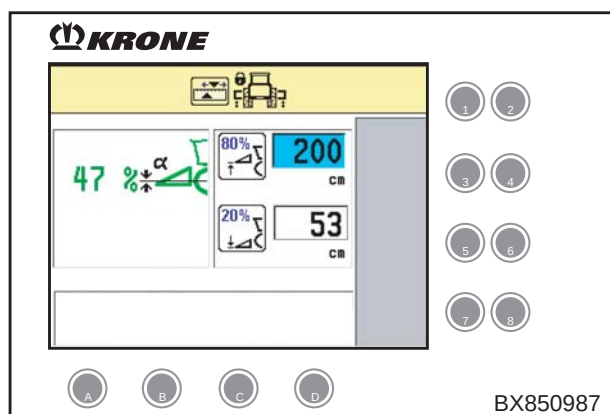
Malfunction

-  = 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 .



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.

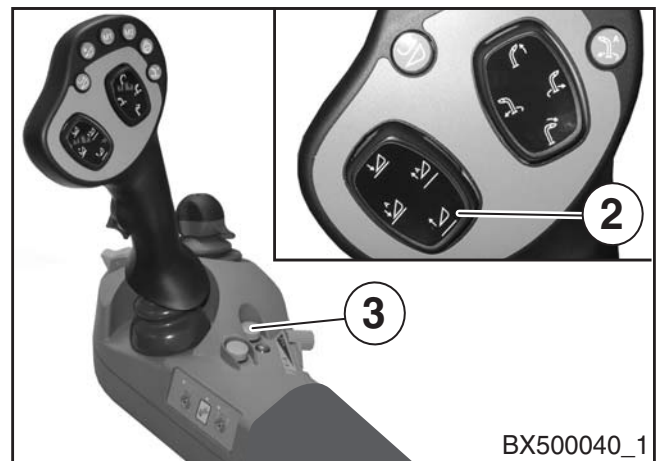
Prerequisites

- Lifting gear adjusted (see chapter „Adjusting the lifting gear“).
- Release switch field mode ON
- Travelling gear release switch off.
- Front attachment unit connected.
- oRelease switch field mode ON
- Adjust the connected front attachment to match grass pick-up or maize header X-Disc 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.

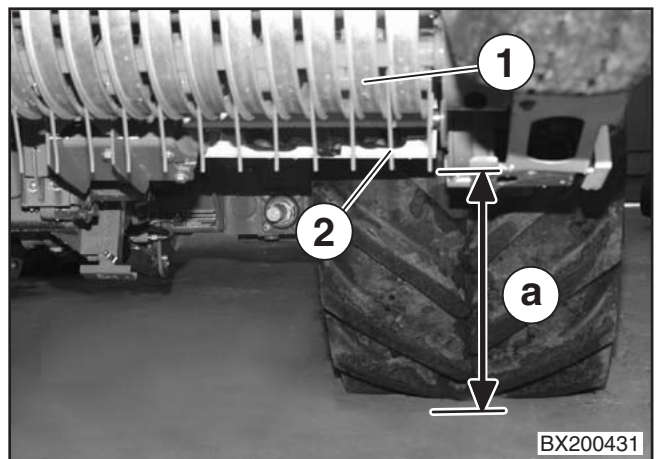
Calibrate the upper lifting gear height

- Press the lift lifting gear key (2) until the current lifting height is 80% with the symbol .
- 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.

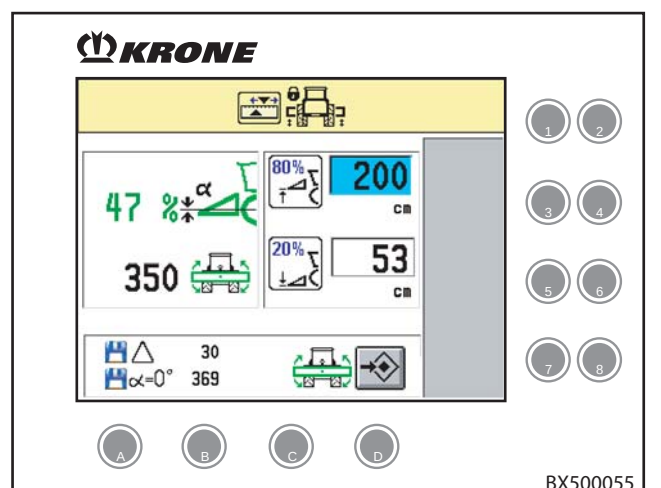


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- With the rotary potentiometer, select the setting  „Save the absolute height of lifting gear at 80 %“. The input field is highlighted in the colour.
- Pressing the rotary potentiometer allows you to jump to the input field.
- You can use the rotary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



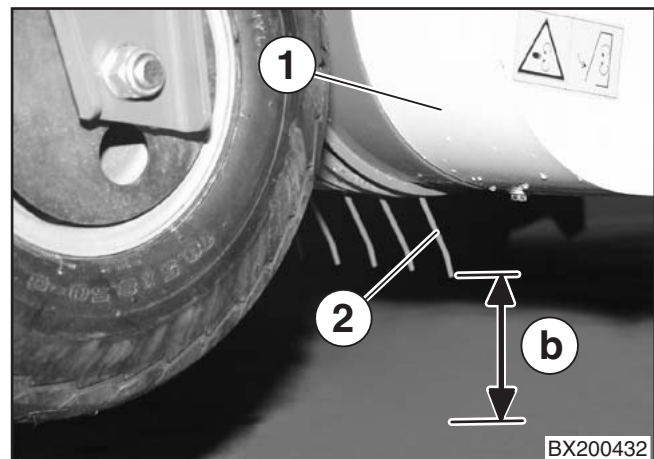
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To calibrate the lower lifting gear height

- 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 %.



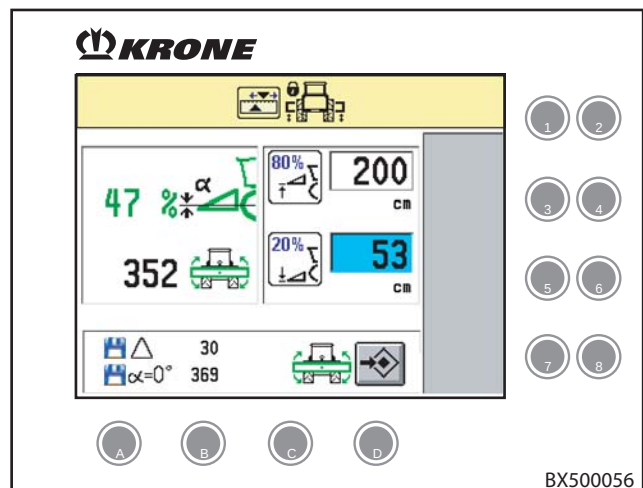
- For pick-up (1), measure the distance „b“ between the ground and the lowest point under spring tine (2).
For the maize header, measure the distance between the ground and the cutter blade.



- 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.

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>.



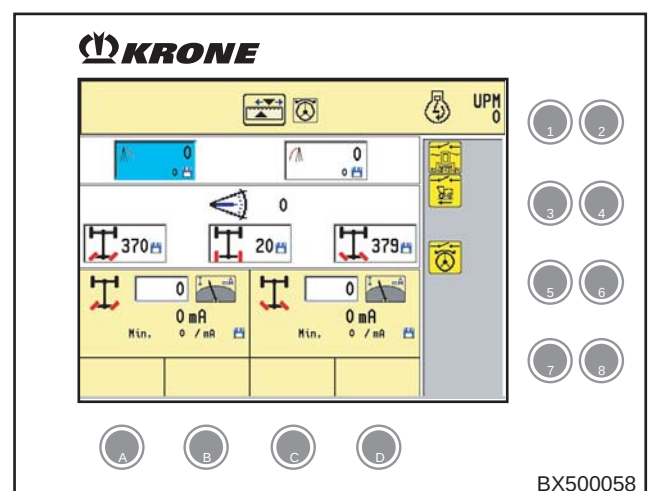
If one of these conditions is not fulfilled, the right side of the screen will display a corresponding message. Release conditions are highlighted in yellow; errors are highlighted in red.

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

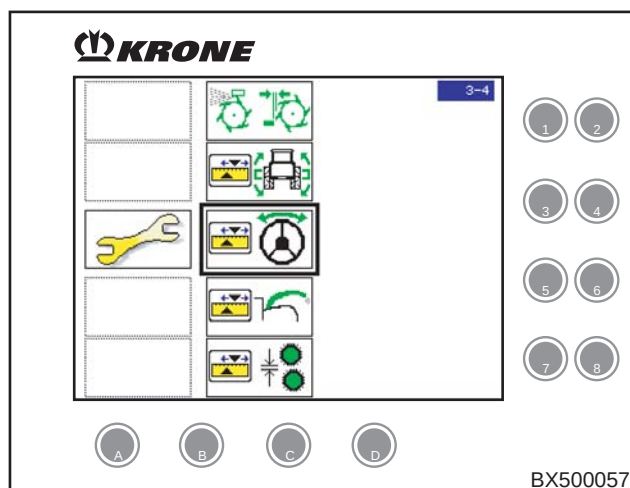
Malfunction

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



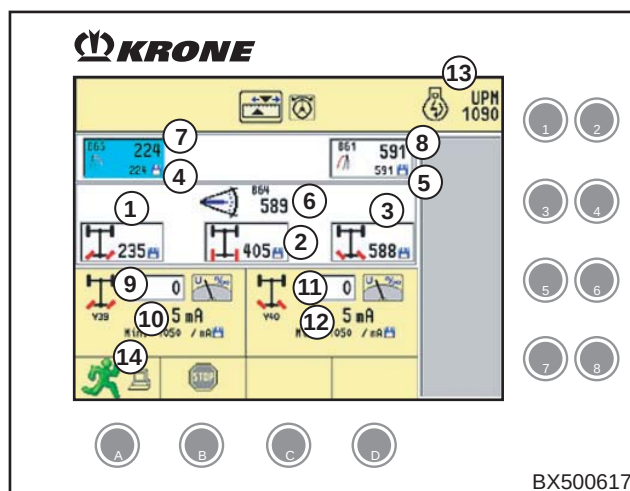
BX500058

2. Calling up the calibration screen on the terminal

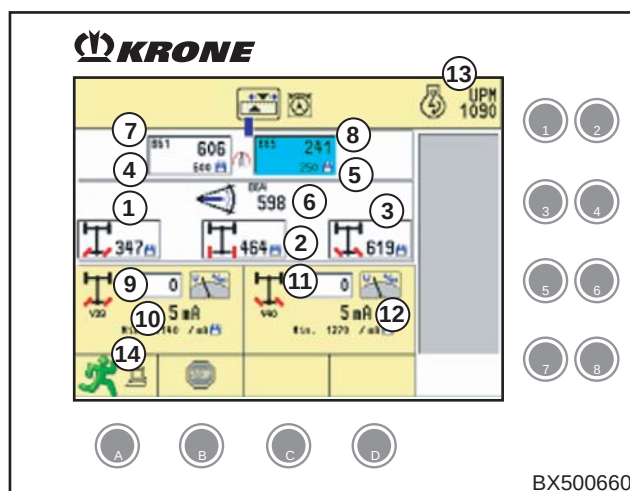


It is displayed the picture "Calibration of Autopilot"

- 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



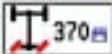
by the calibrated value. The value can't be saved.

3. Calibrating the steering angle sensor



The actual value of the steering angle sensor should be about 400 +/- 10 when driving straight ahead.

3.1 Calibrate steering angle left max.

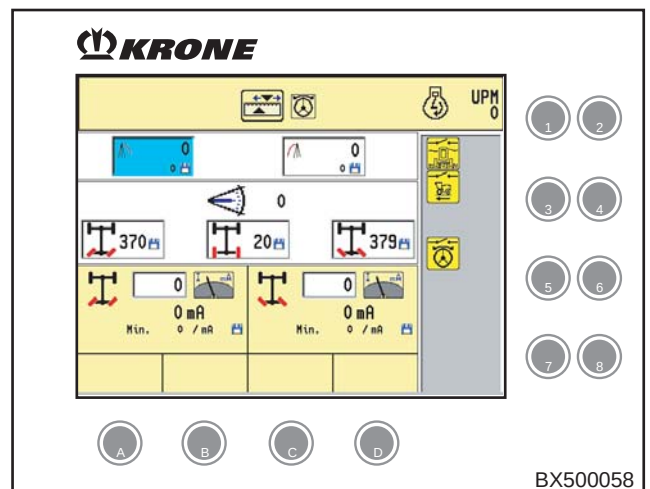
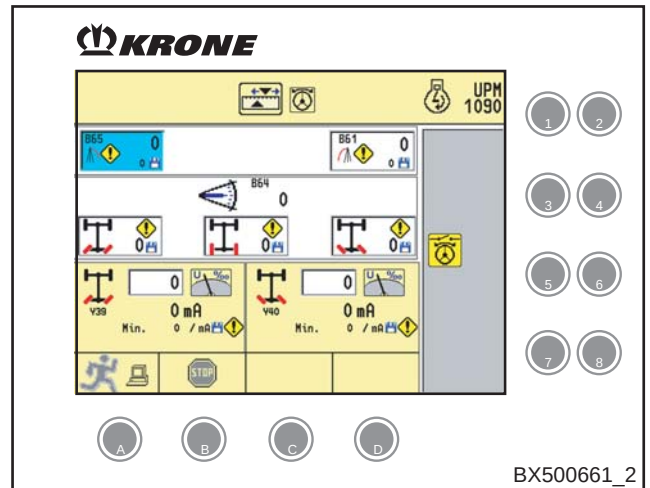
- Move the steering angle to the max. left position (move it to the left until the steering angle has gone as far as it can).
- Use the rotary potentiometer to select  <saved value, maximum steering angle, left>. The input field is highlighted in colour.
- Pressing the rotary potentiometer allows you 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.
- If the actual value is lower than 220, the KRONE customer service must be contacted.

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.
- If the actual value is greater than 630, the KRONE customer service must be contacted.



4. Calibrate and select row tracer

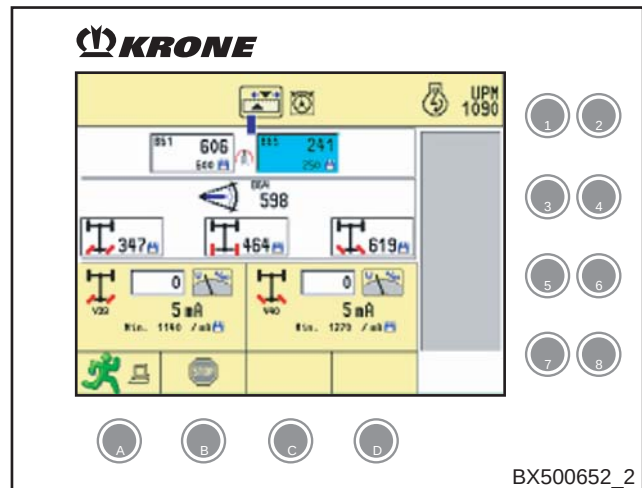


The two row tracers right/left must be calibrated together.

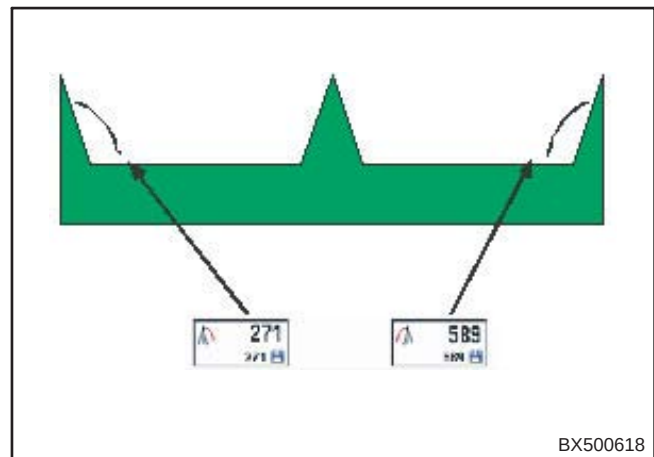


Since the program does not know which sensor brackets are attached to the machine, the row tracers are shown reversed right/left with the central tip (see Fig. BX500618).

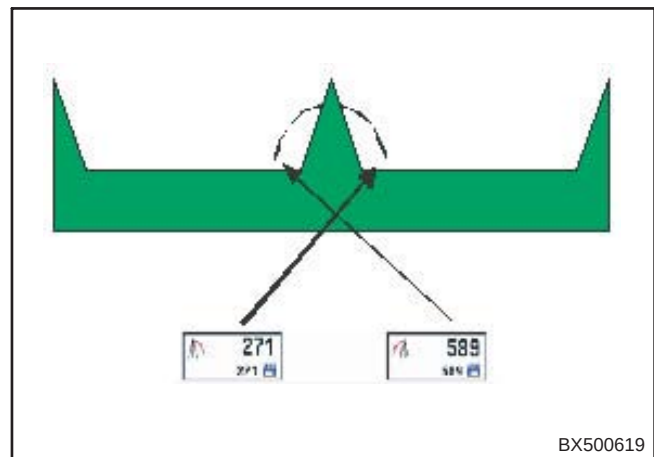
Fig. BX500619 shows the display with external sensors.



BX500652_2



BX500618



BX500619

Selection of row tracer

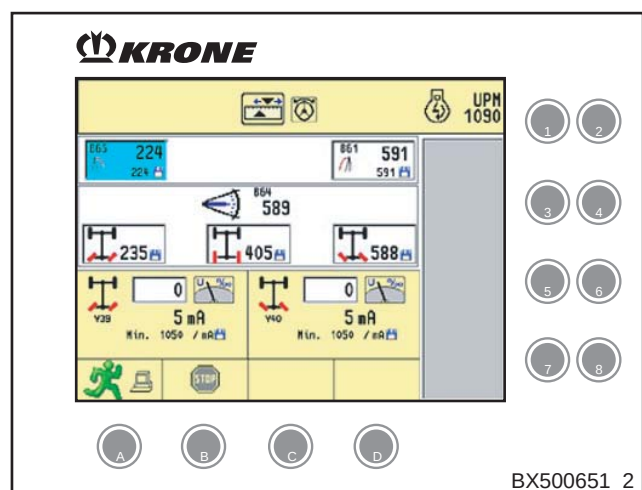


The row tracer in the central tip or in the outside tips can be selected.

- 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.



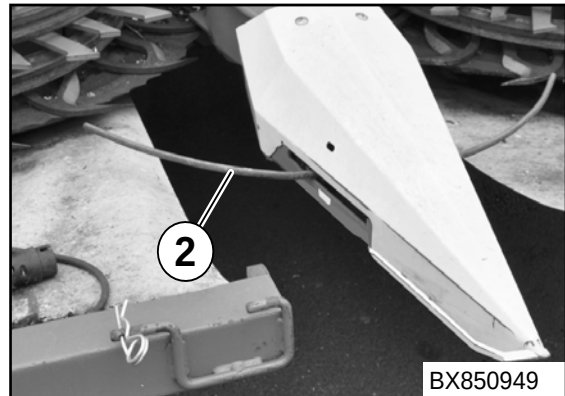
BX500651_2

4.1 Calibrate row tracer left

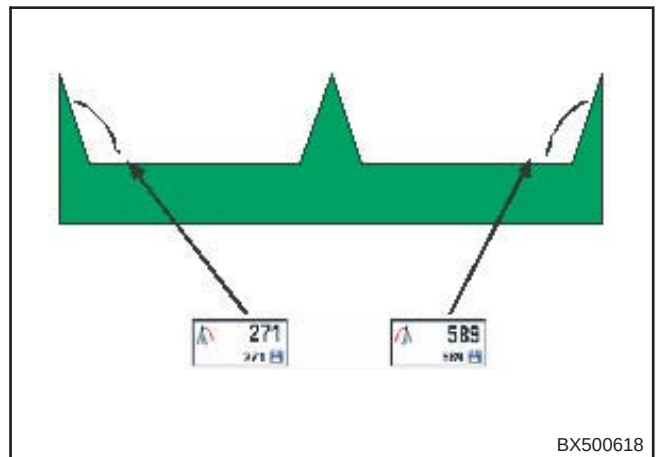


The left row tracer must be in its basic position and must not be actuated.

- 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.

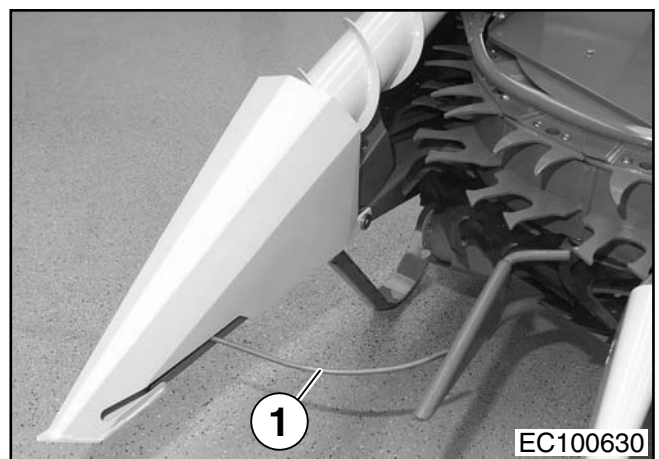


4.2 Calibrate row tracer right

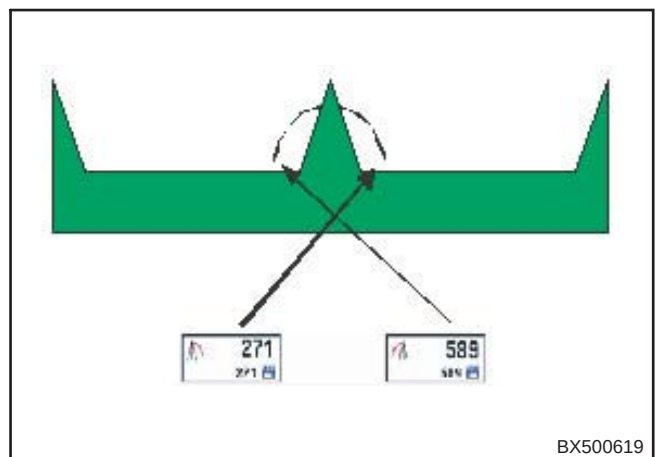


The right row tracer must be in its basic position and must not be actuated.

- 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.



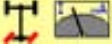
BX500619

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.

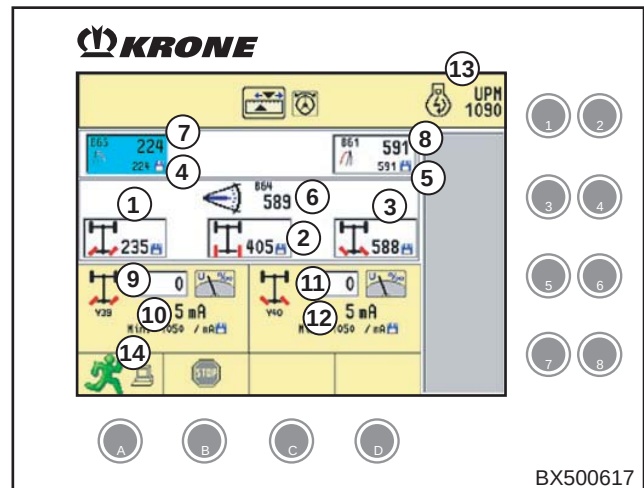
The saved minimum current value for the right valve



is updated.

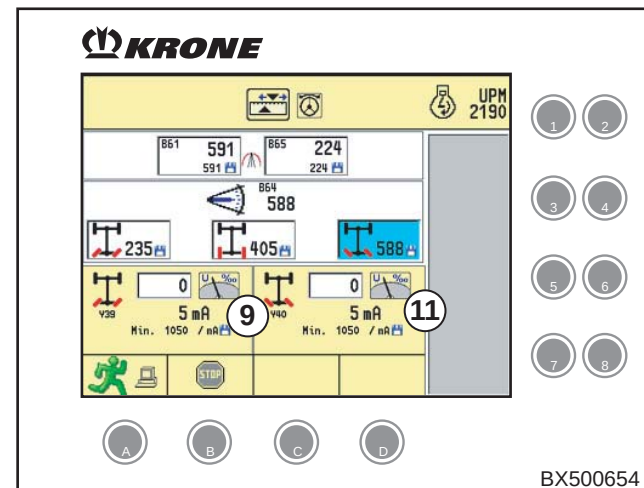
- Activating the  key under the rotary potentiometer cancels the process.

Calibration with outside tip



BX500617

Calibration with centre tip



BX500654

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.

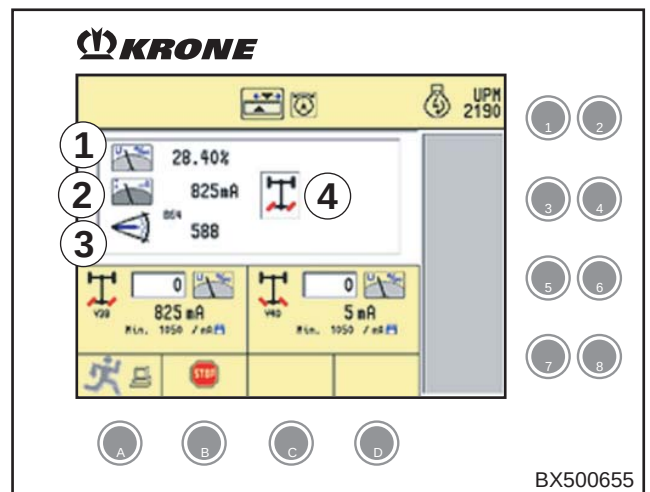


Correct calibration of the steering angle sensor is required to start automatic calibration.

Start the automatic calibration process with the



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
5	If an error occurs, the corresponding error number appears.

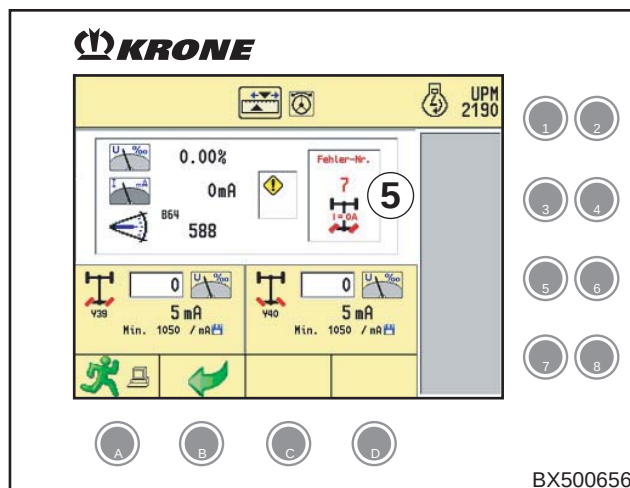
Then the valves are immediately controlled automatically. The steering axle moves accordingly.

- The process can be interrupted at any time with the  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 (5) appears.

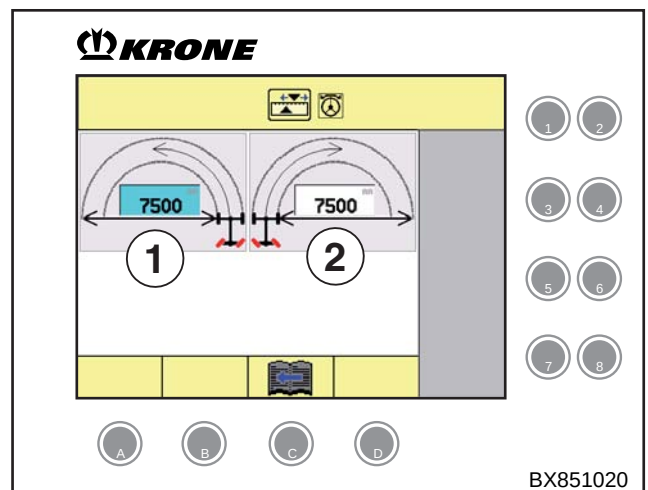


Error number	Icon	Meaning	Cause / remedy
1		The value of steering angle sensor B64 is less than the calibrated value "Steering full left"	Recalibrate steering angle sensor B64 left, centre and right.
2		The value of steering angle sensor B64 is greater than the calibrated value "Steering full right"	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 → 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 → 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. Calibrating the Turning Circle of the Machine

- Measure the turning circle of the machine, to the left and to the right. The reference point is the front axle.
- Select the input window **7500** for <Turning circle left> (1) or <Turning circle right> (2) with the rotary potentiometer, the input field is highlighted in colour.
- Press the rotary potentiometer to jump to the input field.
- Enter the values (in mm) for the turning circle left and right into the appropriate input window (1) or (2).
- Press the rotary potentiometer to save the current turning circles right and left and to leave the input field.



8. Functional check of the autopilot

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.

4.9.5 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.

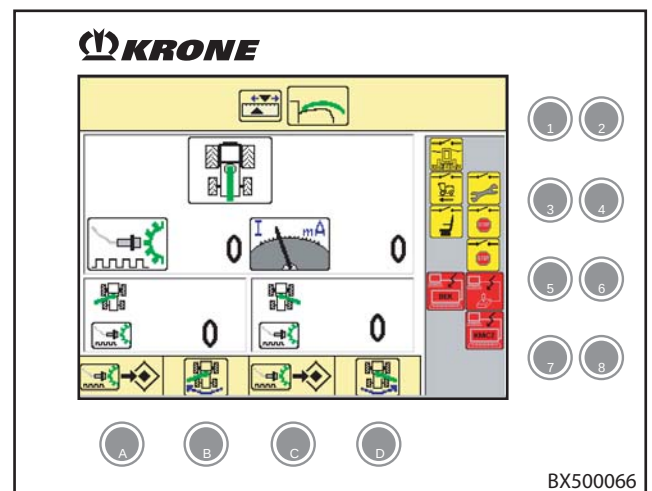
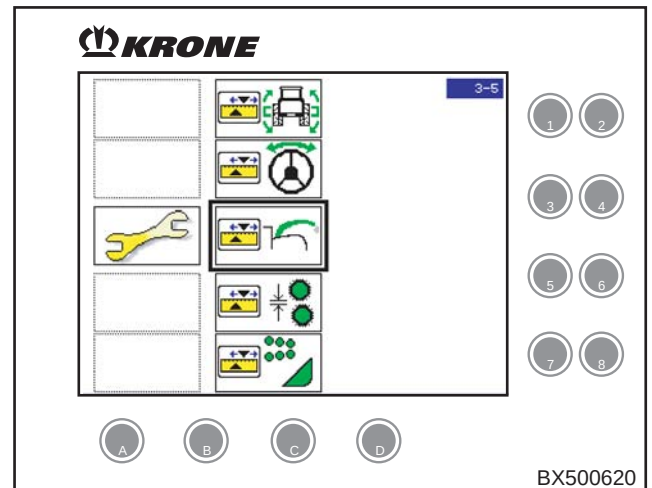
„Calibration of upper discharge chute“ appears.

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

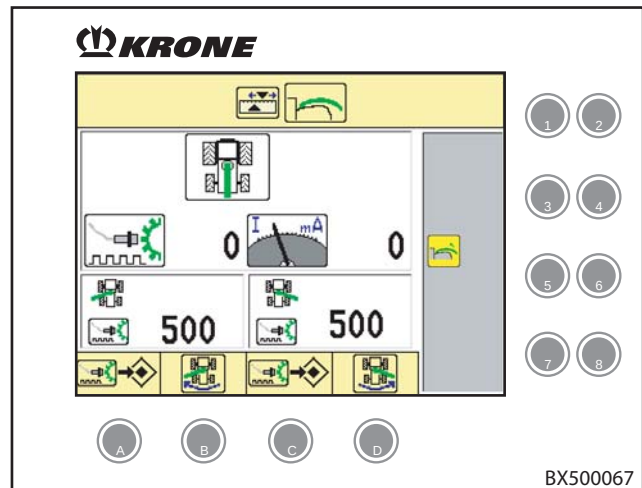
Malfunction

-  = 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  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 discharge chute is at the stop, turn the discharge chute back somewhat with the  key so that the discharge chute is not constantly moving up against the mechanical stop.

- To start calibration, activate the  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  key to continue turning.

Turning is performed at minimum current.

Softkey display:



= Upper discharge chute left turning active

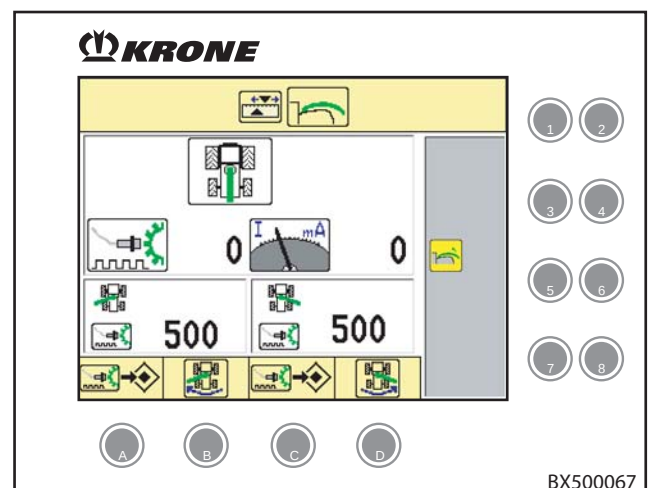
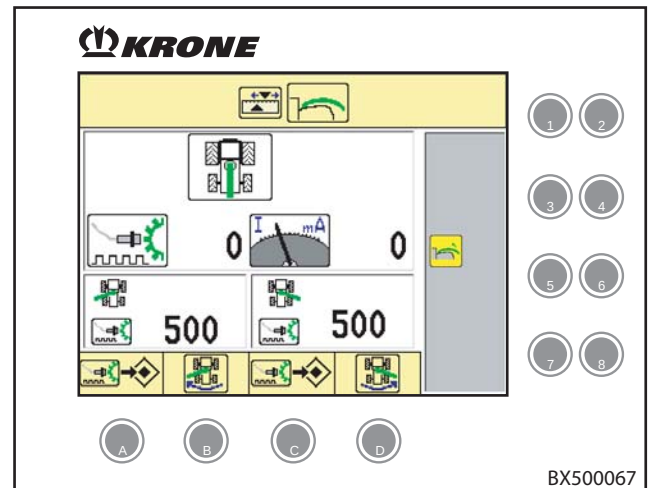


= Upper discharge chute left turning inactive



= Upper discharge chute left turning error

- If the discharge chute is at the stop, turn the discharge chute back somewhat with the  key so that the discharge chute is not constantly moving up against the mechanical stop.



- To start calibration, activate the  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.

4.9.6 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.

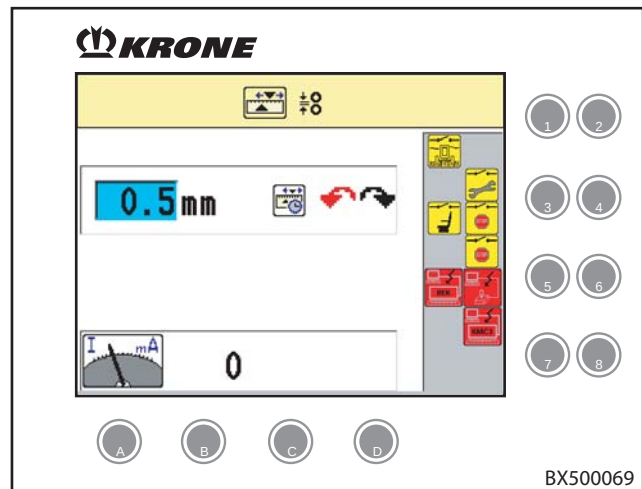
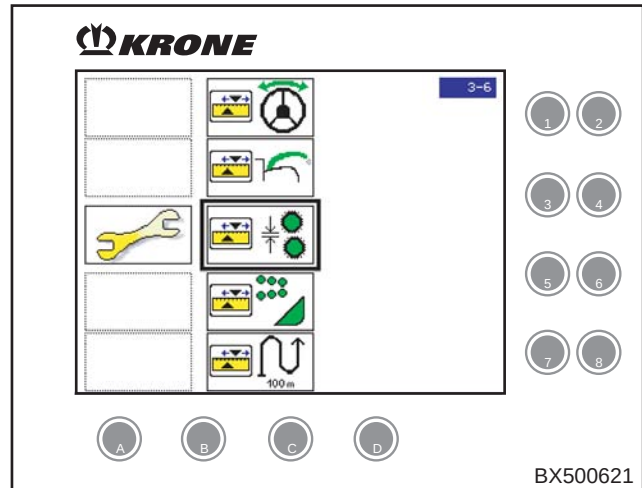
„Calibration of grain conditioner“ appears.

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

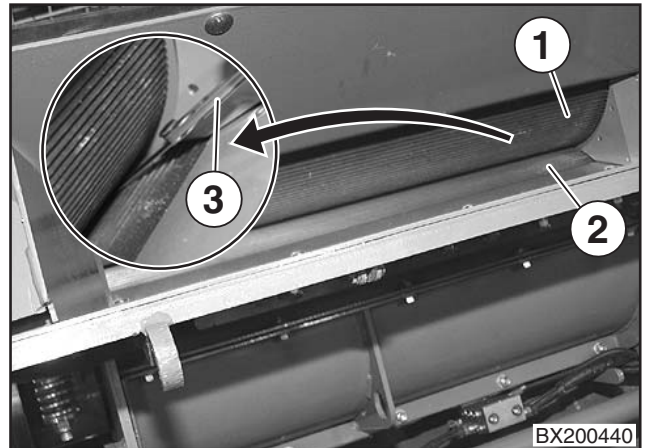
-  = CU
-  = Joystick
-  = KMC2
-  = KMC3



Calibrating the grain conditioner

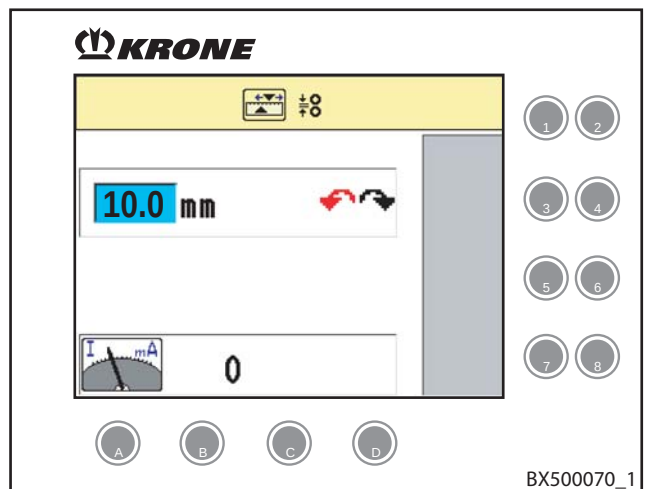
The grain conditioner should only be calibrated when the grain conditioner is being installed or if the actual value of the grain conditioner distance is significantly different than the setpoint value.

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 conditioner distance 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“ and  = „Calibration process successfully completed“.
- Press the  or  key to decrease or increase or reduce the grain conditioner distance.
- Pressing the  key on the rotary potentiometer takes you one menu level back.



4.9.7 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):

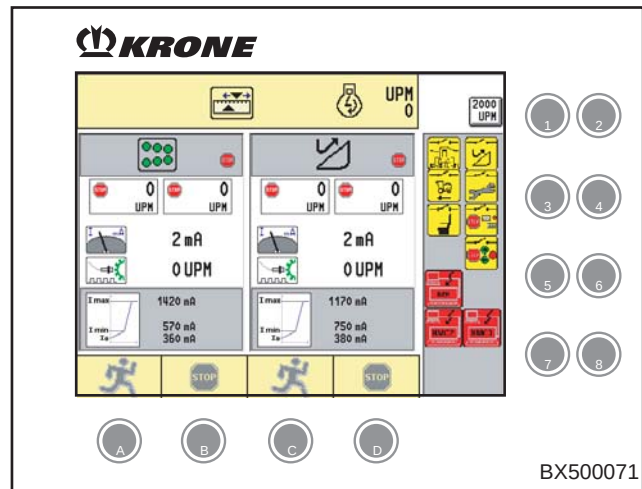
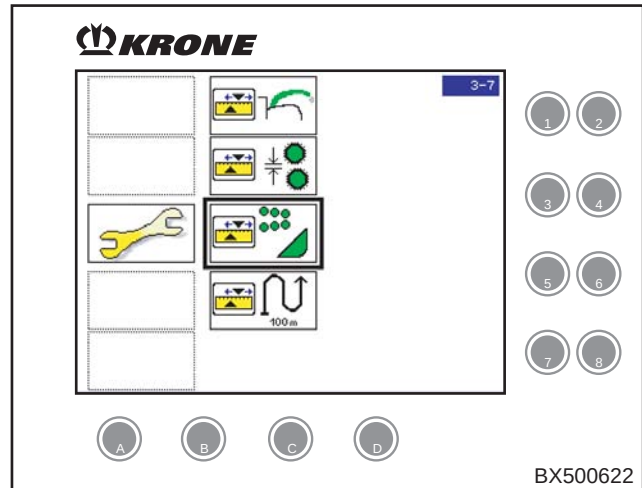
-  = Central lubrication active (green)
-  = Error in central lubrication (red)
-  = Central lubrication inactive (yellow)

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



For calibration of the front attachment the main coupling must always be switched in.



The lifting gear must be in working position (not lifted) for 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

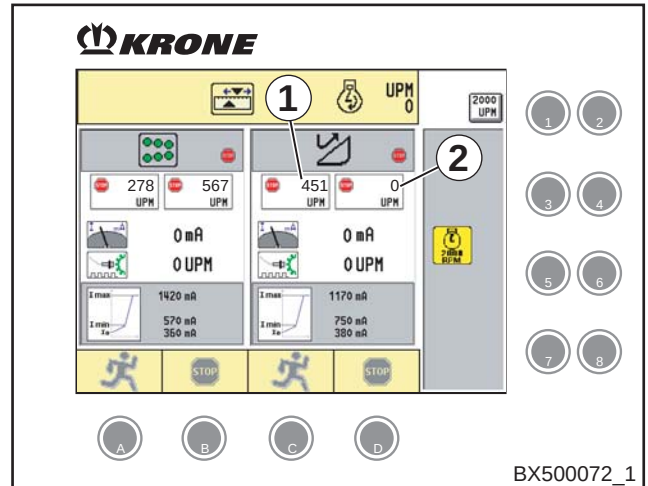
- Travelling gear release switch off
- Release switch for feed drive/front attachment on
- Release switch road/field ON



The front attachment must be stopped. The engine speed must be 1950 rpm. You can increase the engine speed to

1950 rpm with the  key.

Depending on the type of diesel engine, the setpoint speed may deviate during calibration.



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- To start calibration for the front attachment, activate the  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  or  key under the softkey to abort the calibration.
- The progress display after the icon for the front attachment  indicates the status:
 -  = 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

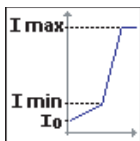


= Calibration 2 was not successful

Display stopped; current power consumption and engine speed are at 0.

The calibration is complete.

- The power consumption display is updated:

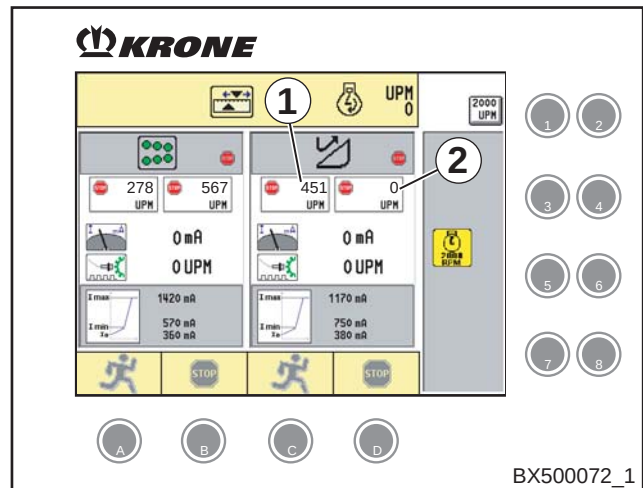


I_0 = Power consumption when turning is started.

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.



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Calibrating the feed drive



For calibration of the feed drive the main coupling must always be switched in.

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
- Release switch road/field ON



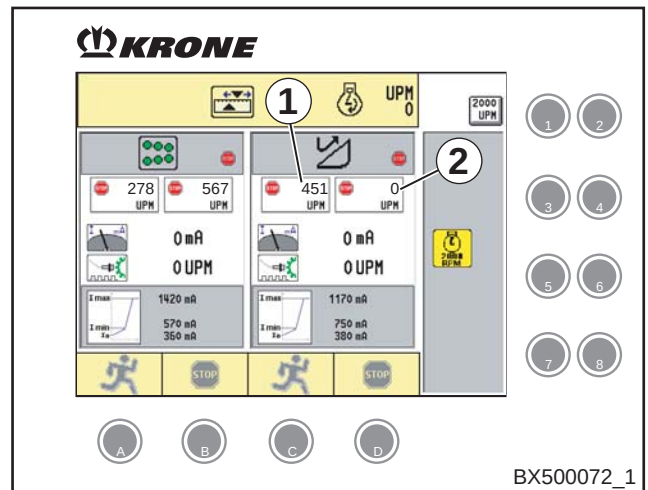
The front attachment must be stopped. The engine speed must be 1950 rpm. You can increase the engine speed to

1950 rpm with the  key.

Depending on the type of diesel engine, the setpoint speed may deviate during calibration.



The lifting gear must be in working position (not lifted) for calibrating of the feed drive.



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- To start calibration for the feed drive, activate the  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  or  key under the softkey to abort the calibration.
- The display after the icon for the feed drive  indicates the status:
 -  = 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



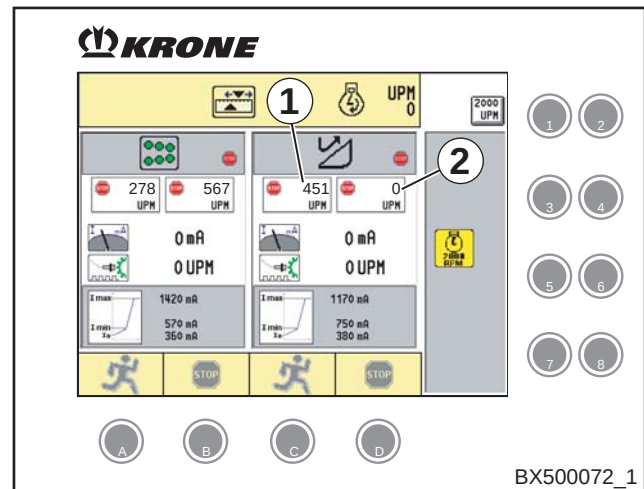
= Calibration 2 is running



= Calibration 2 was successful



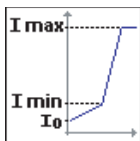
= Calibration 2 was not successful



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.

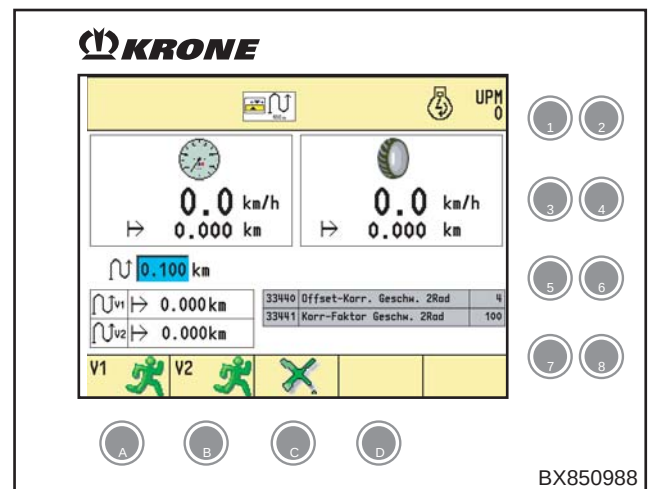
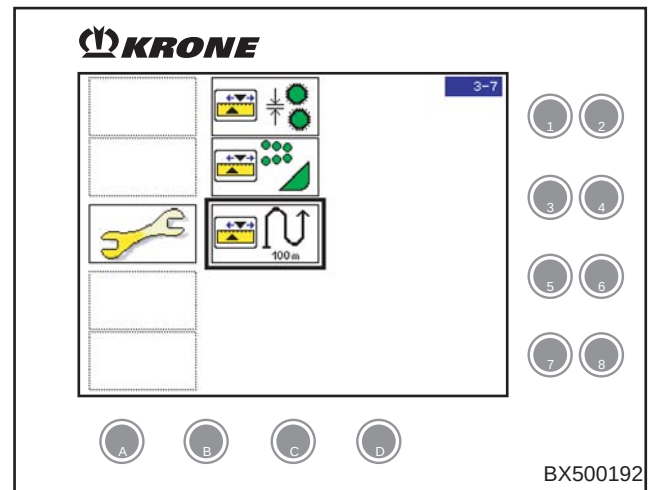
4.9.8 Menu 3-8 „Calibration of Travel Path“

The main menu „Maintenance“ is active.

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



A calibration of the travel path is not required if a Bosch-traction drive exists.



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!

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.

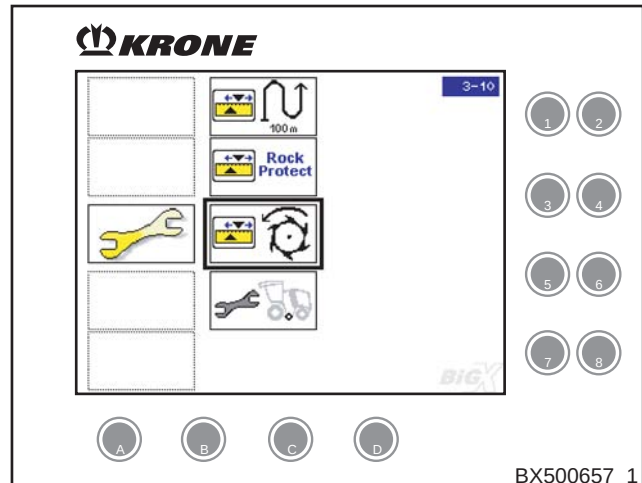
Work steps:



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

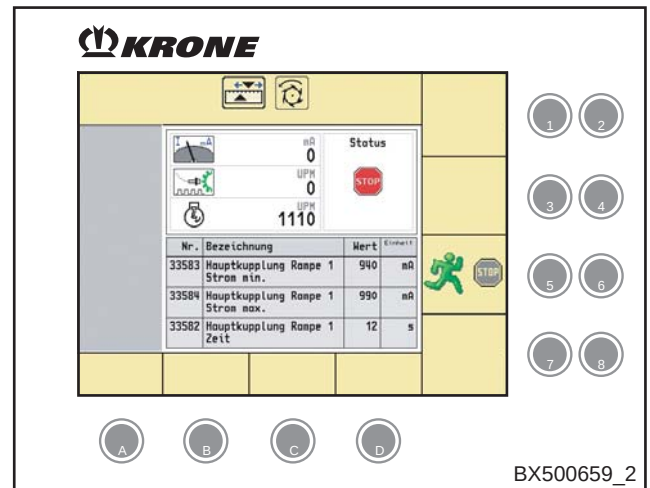
The main menu "Maintenance" is active.

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  key.



0 mA

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.

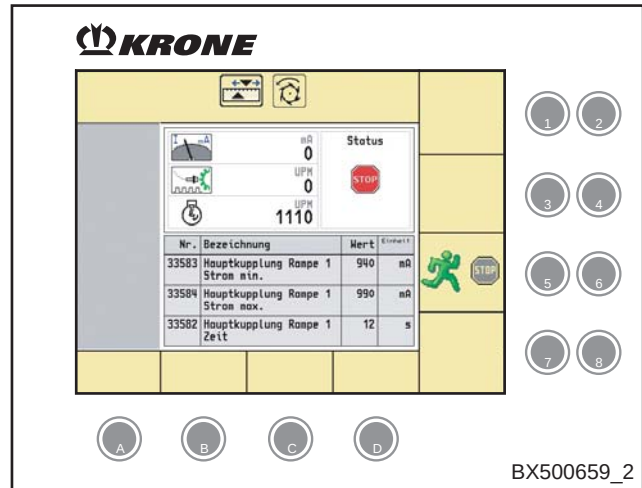


If no speed is detected on the cutting drum, the automatic calibration process is stopped at 1400 mA.



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  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  below.

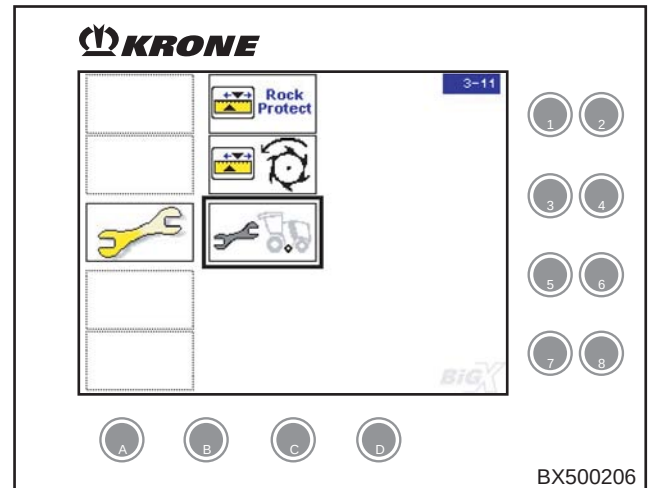


The calibration process is running and can be stopped with the key below. No values are saved.
or:
The calibration process cannot be started because e.g. one or more conditions have not been fulfilled.

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.



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

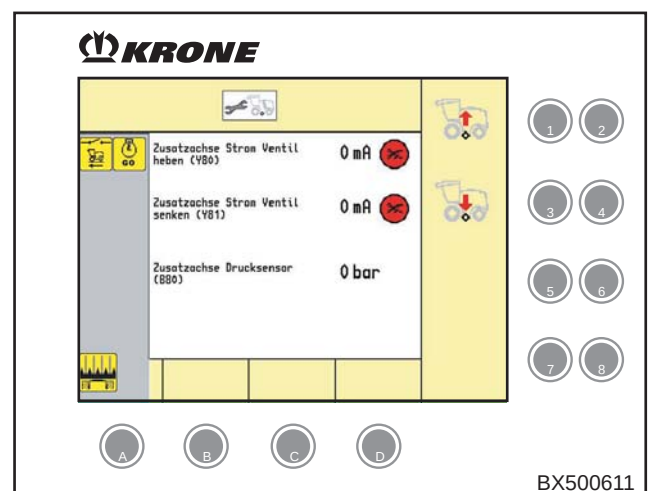
- The diesel engine must be running.
- Release for the travelling gear must be turned off.

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

The additional axle can now be raised or lowered manually:

- Raise the additional axle with the  or  keys.
- Lower the additional axle with the  or  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
-  Wrong type of operation (maize is not adjusted)
- Pressing the key  on the rotary potentiometer takes you one menu level back.

4.10 Main Menu 4 Service

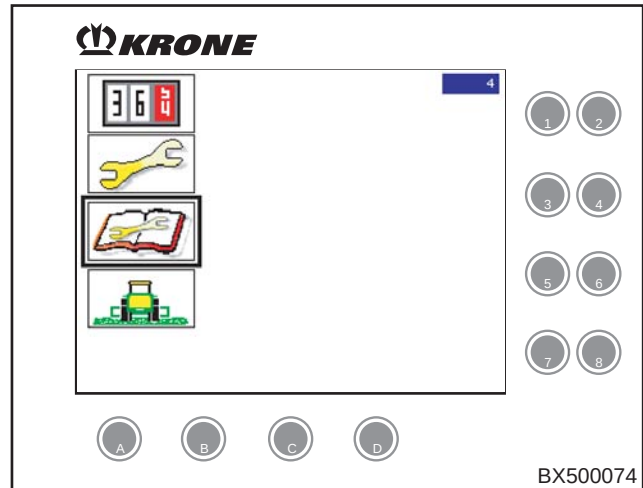
The main menu level is active.

- 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 4 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“

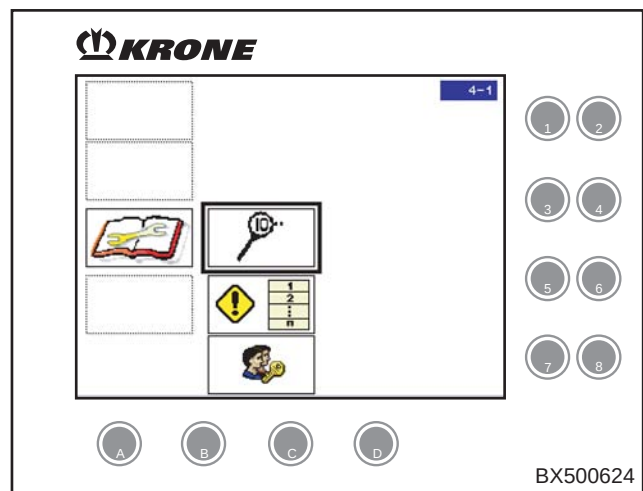
The main menu level is active.

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

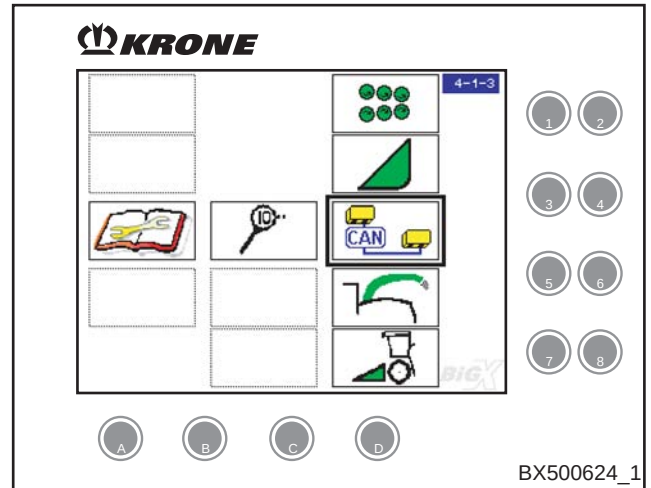
The display shows menu level 4-1 „Diagnostics“.

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“



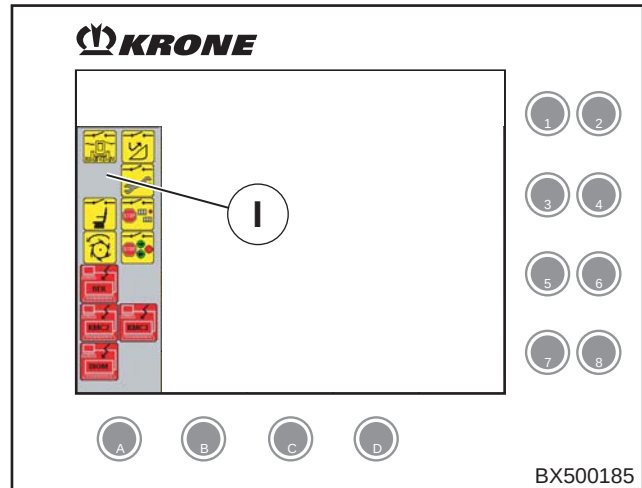
-  = Menu 4-1-10 „Autoscan“
-  = Menu 4-1-11 „Electronics“
-  = Menu 4-1-12 „Work“
-  = Menu 4-1-13 „Grinding“
-  = Menu 4-1-14 „Counterblade“
-  = Menu 4-1-15 „Grain conditioner“
-  = Menu 4-1-16 „Joystick“
-  = Menu 4-1-17 „Control unit console“
-  = Menu 4-1-18 „Manual operation“
-  = Menu 4-1-19 „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 engine speed not at 1950 rpm
-  = Diesel engine has not been started
-  = Diesel engine is not off
-  = Diesel engine idle speed of 1100 UPM not reached
-  = Speed of vehicle is not correct
-  = Switch the release switch autopilot 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

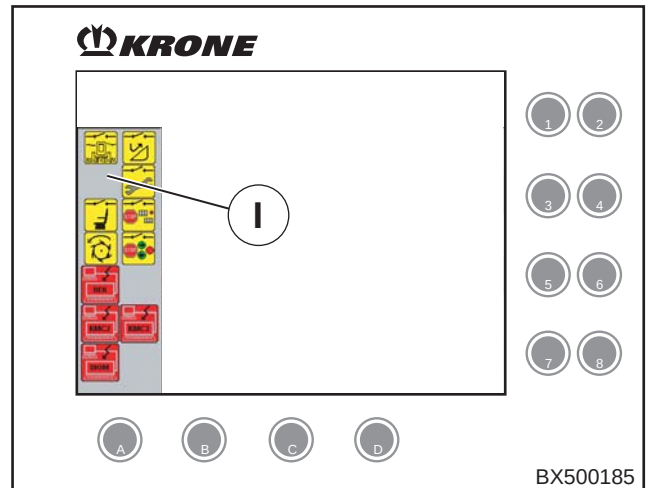


-  = Cutting drum running / not running
-  = Cutting drum stopped / not stopped
-  = Pendulum frame not in horizontal position
-  = Grinding flap closed
-  = Grinding flap open
-  = Front attachment not folded out
-  = Front attachment not folded in
-  = Front attachment off / not off
-  = Front attachment 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/MFR
-  = Error CAN to ADM 2
(Only double engine)
-  = 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 DRC



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:

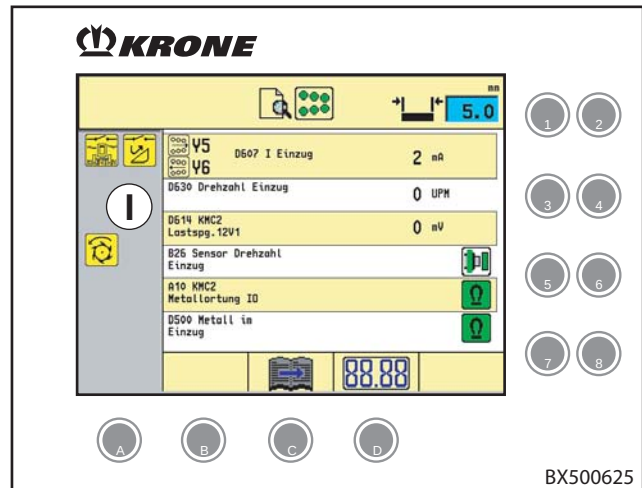
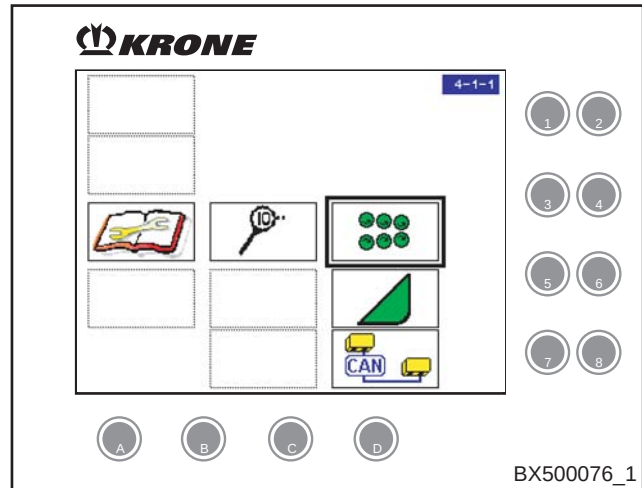
Page 1: Sensor test

Page 2: Actuator test

Sensor test (page 1)

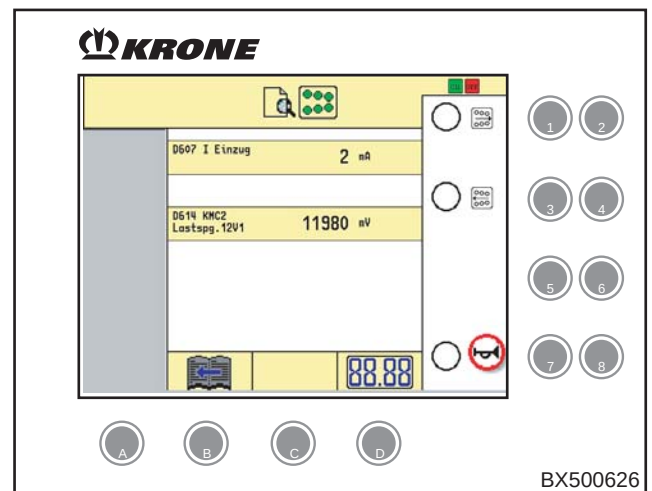
-  = Error (symbol will be displayed after the incorrect position)
-  = Broken cable sensor
-  = Sensor alive
-  = Sensor not alive
-  = Sensor short circuit
-  = Metal detection inactive (no medal in the feed drive)
-  = Metal detection active (metal in the feed drive)

Press the  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
-   = Horn on (green)
-   = Horn broken cable (red)
-   = Horn short circuit (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  key and  key.
- To turn the reverse feed drive on and off, use the  key and  key.
- To turn the horn on and off, use the  key and  key.
- The parameter list is called by activating the key  under the  softkey.
- Press the  key under the  softkey to go back to page 1 <Sensor test> of the „Feed drive“ menu.
- Pressing the  key on the rotary potentiometer takes you one menu level back.

4.10.3 Menu 4-1-2 „Front attachment“

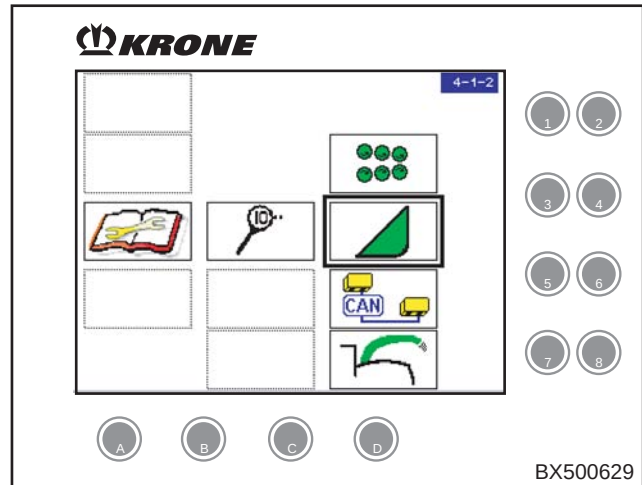
The main menu „Diagnostics“ is active.

- 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:

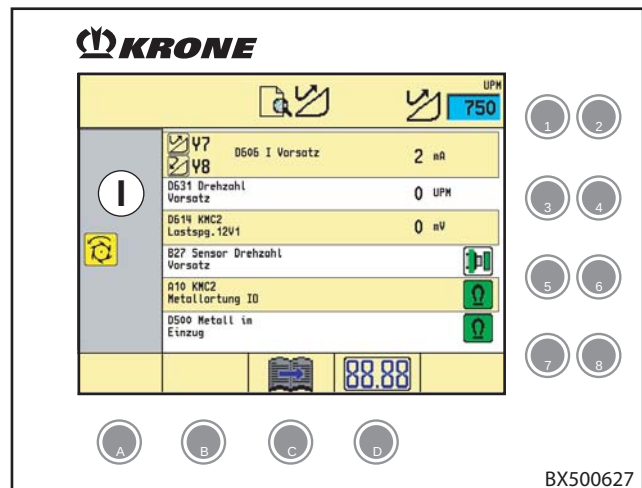
Page 1: Sensor test

Page 2: Actuator test

Sensor test (page 1)

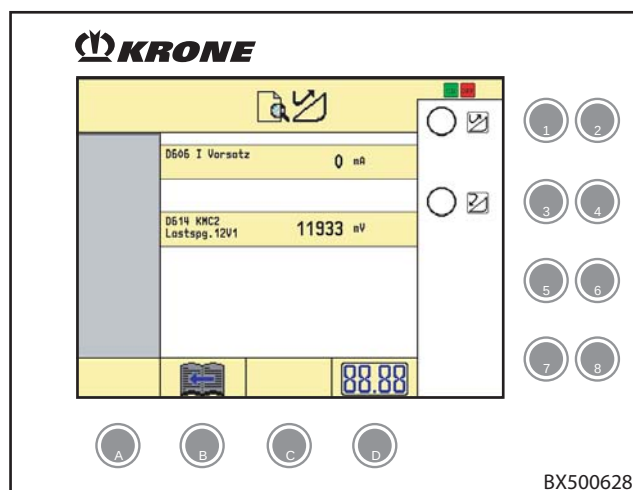
-  = Error (symbol will be displayed after the incorrect position)
-  = Broken cable sensor
-  = Sensor alive
-  = Sensor not alive
-  = Sensor short circuit
-  = Metal detection inactive (no medal in the feed drive)
-  = Metal detection active (metal in the feed drive)

Press the  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  key and  key.
- To turn the reverse feed drive on and off, use the  key and  key.
- The parameter list is called by activating the key  under the **88.88** softkey.
- Press the  key under the  softkey to go back to page 1 <Sensor test> of the „Feed drive“ menu.
- Pressing the  key on the rotary potentiometer takes you one menu level back.

4.10.4 Menu 4-1-3 „CAN Bus“

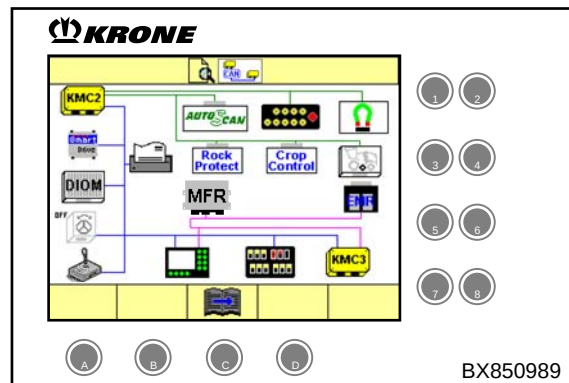
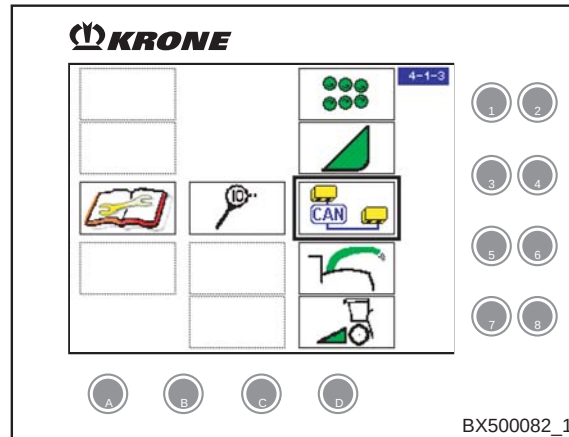
The main menu „Diagnostics“ is active.

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

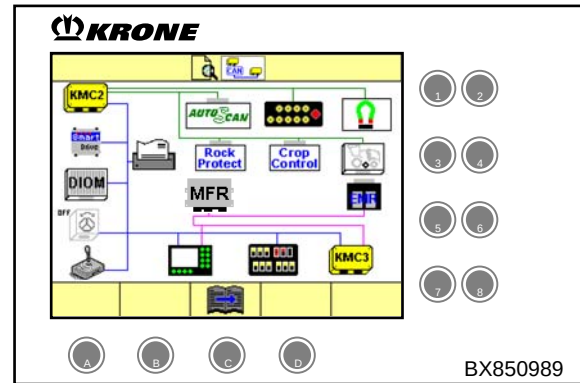
Diagnostics „CAN bus“ appears.

CAN bus user:

-  = KMC2 active
-  = KMC2 inactive or disconnected from CAN bus
-  = DRC active
-  = DRC 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
-  = Printer active



-  = ADM1/MFR active
-  = ADM1/MFR inactive or disconnected from CAN bus or CAN bus disconnected from Diesel engine
-  = 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
-  = CropControl active
-  = CropControl inactive or divided from CAN-Bus



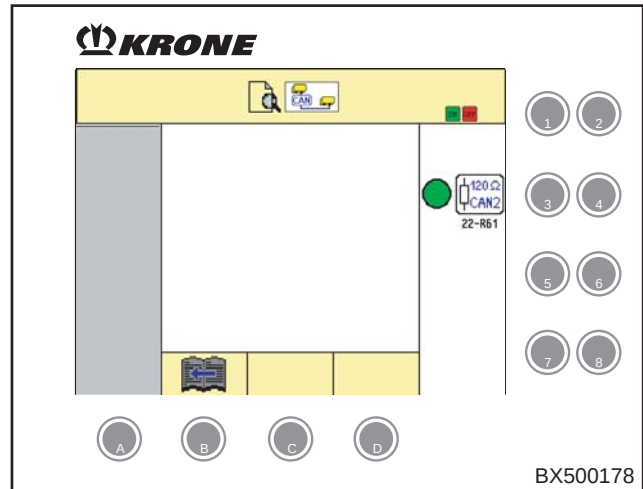
- Press the  key on the rotary potentiometer to open the menu level.
- Press the  key to bring up the second page of the „Can bus“ menu.

Switching terminating resistors

-   = Terminating resistor active
-   = Terminating resistor inactive

Press the  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.



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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.

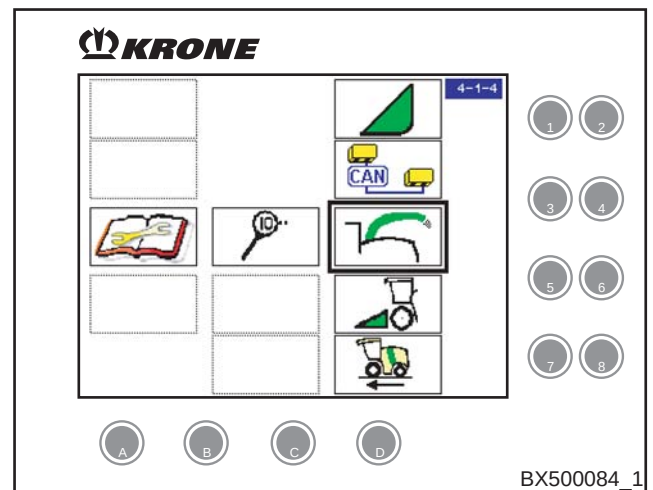
For release conditions (1) not met see chapter „Display of Release Conditions Not Met for Diagnostics“.

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

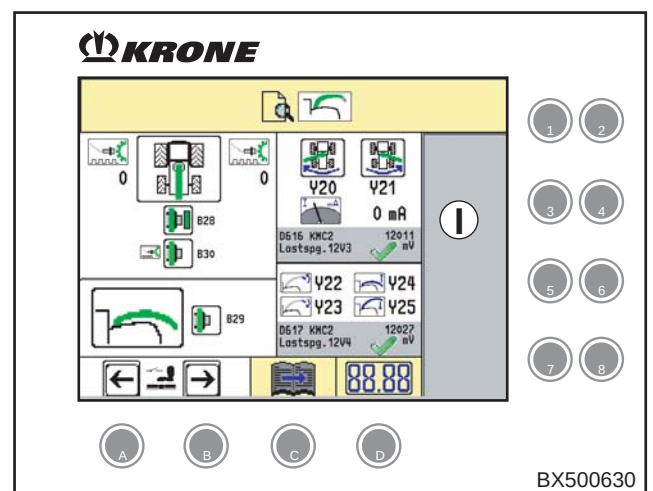
Sensor test for upper discharge chute (1) (page 1)

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

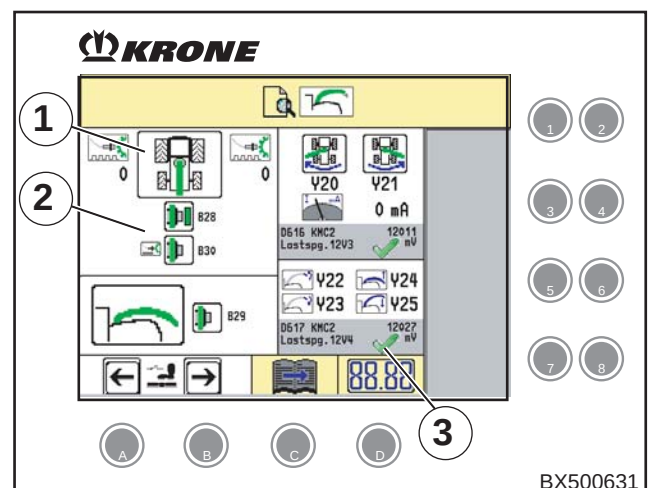
-  = Upper discharge chute position left
-  = Upper discharge chute position centre
-  = Upper discharge chute position right
-  = Upper discharge chute position unknown, sensor position centre or defective
-  = Upper discharge chute up
-  = Upper discharge chute down
-  = Position of upper discharge 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



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BX500630



BX500631

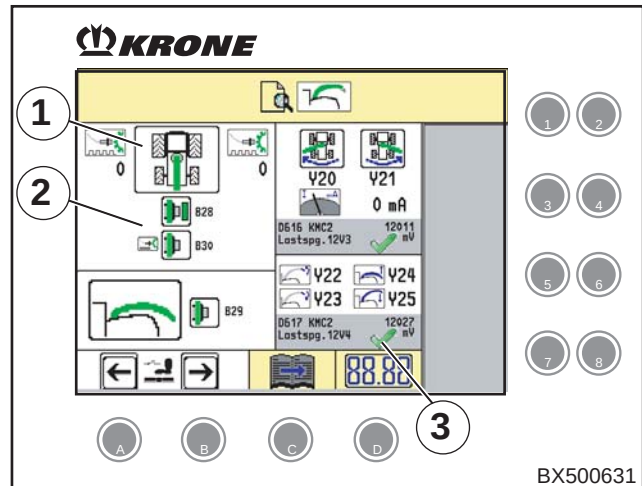
Status display of general sensors (2)

-  = 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.



BX500631

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:

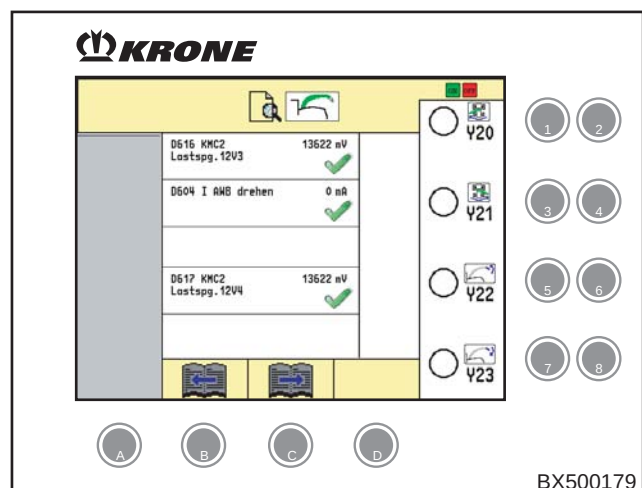
Press the  key under the  softkey to bring up the next page of the „Upper discharge chute/actuator test“ menu.

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

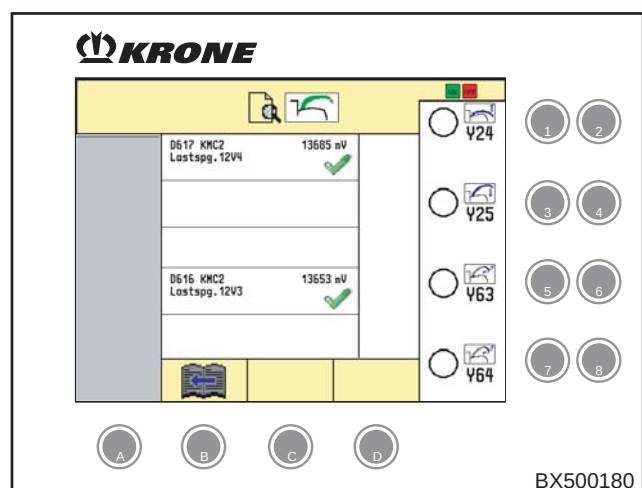


If an actuator is turned on, the next or previous page cannot be called. (If necessary, turn the actuator off and repeat the process)

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



BX500179



BX500180

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  key

Possible status display of the selected actuator



Actuator turned off



Actuator turned on



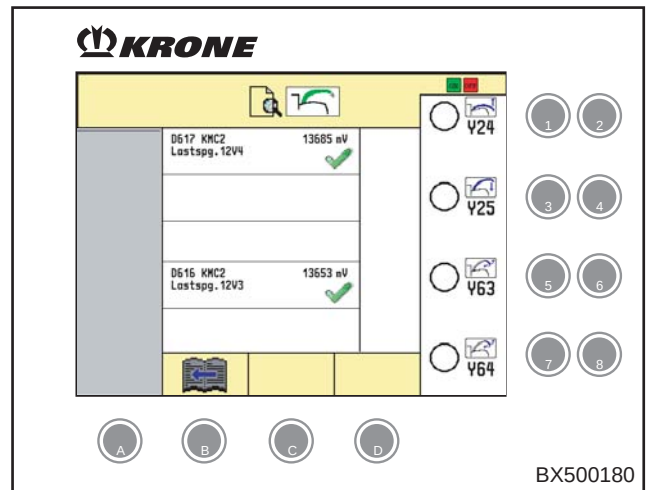
Broken cable



Short circuit



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



BX500180

Valve	Icon	Description	Turn on the actuator	Turn off the actuator
Y20		Upper discharge chute rotate left		
Y21		Upper discharge chute rotate right		
Y22		Raise ejector flap		
Y23		Lower ejector flap		
Y24		Lift upper discharge chute		
Y25		Lower upper discharge chute		
Y63		Fold in upper discharge chute		
Y64		Fold out upper discharge chute		

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.

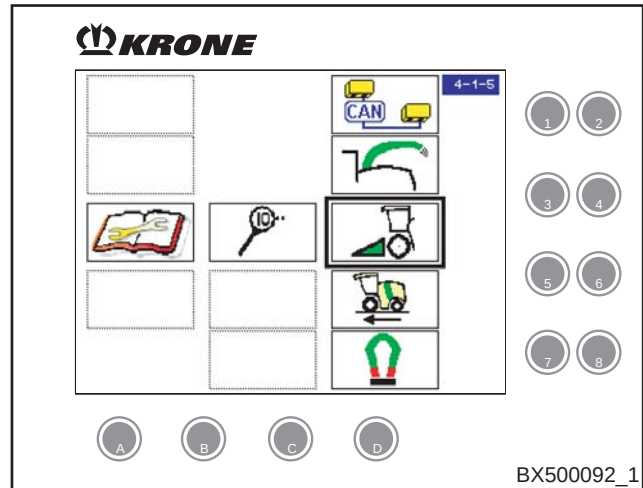
For release conditions (1) not met see chapter

„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



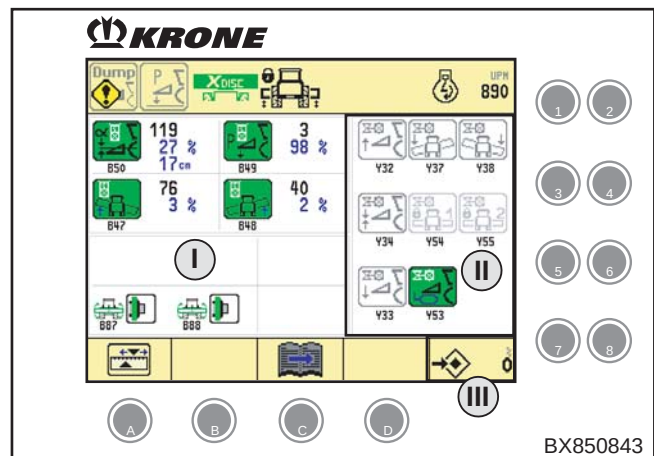
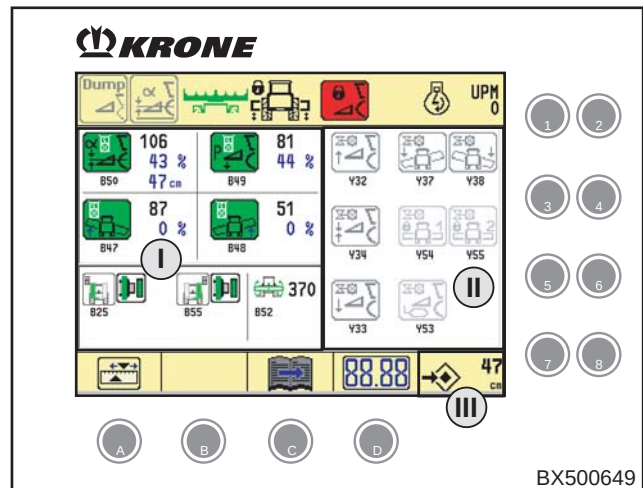
Menu overview – information page (page 1) 2

- 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  key under the  softkey to bring up page 4 <Calibration display> of the „Lifting gear“ menu.

The display in the display varies according to design of the feed drive/front attachment.



Lifting gear sensor test (page 1)

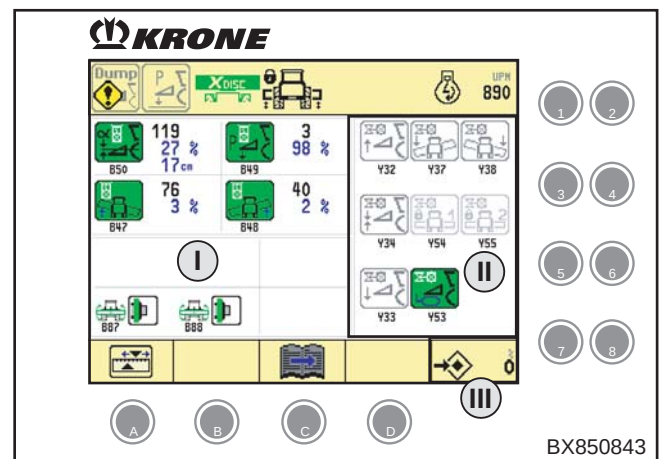
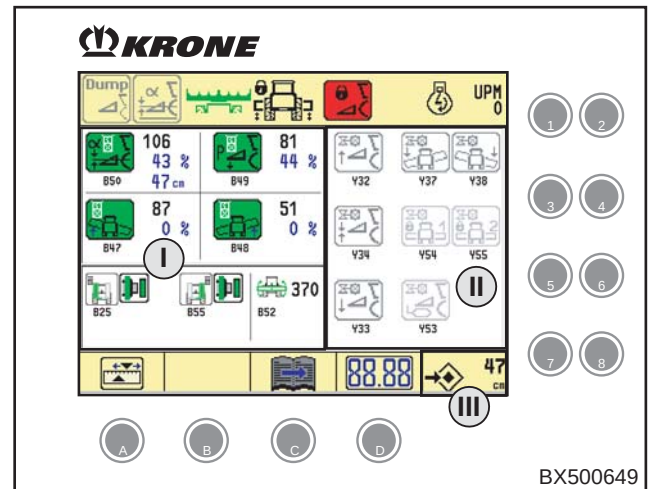
The Diagnostics menu is used to test whether the sensor responds when a function is performed.

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
 -  = Front attachment folded out left (only on two-piece EasyCollect)
 -  = Front attachment folded out right (only on two-piece EasyCollect)
 -  = Position of pendulum frame (varies according to design of the feed drive/front attachment)
 -  = Broken cable sensor
 -  = Sensor alive
 -  = Sensor not alive
 -  = Sensor short circuit
 -  = Dumping active
 -  = Dumping inactive
- Dumping = oscillation absorption for road travel
- Press the  key under the  softkey to bring up page 2 <Actuator test> of the "Lifting gear" menu.

The display in the display varies according to design of the feed drive/front attachment.



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  key under the  softkey to bring up page 1 <Information page> of the "Lifting gear" menu.
- Press the  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)

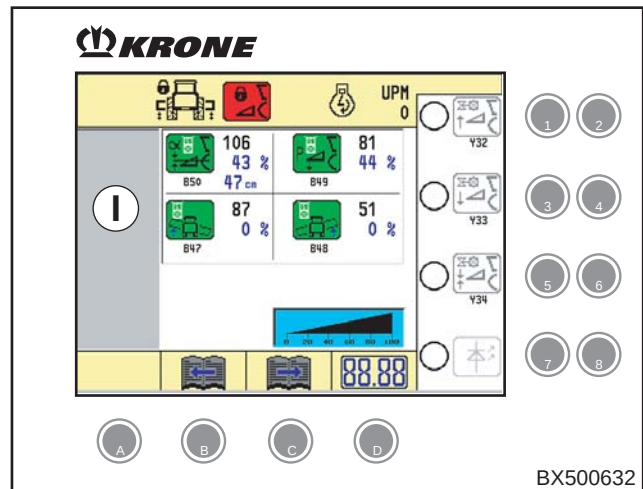
Pre-requisite: Conditions for release must be met.
(**See chapter** „Display of Release Conditions Not Met for Diagnostics“)

Actuator turn on/off

- To turn <Raise lifting gear> on and off, use the  key and  key.
- To turn <Lower lifting gear> on and off, use the  key and  key.
- To turn <Lifting gear accumulator> on and off, use the  key and  key.
- To turn the LED on the EMR on and off, use the  key and  key.

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

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



BX500632

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



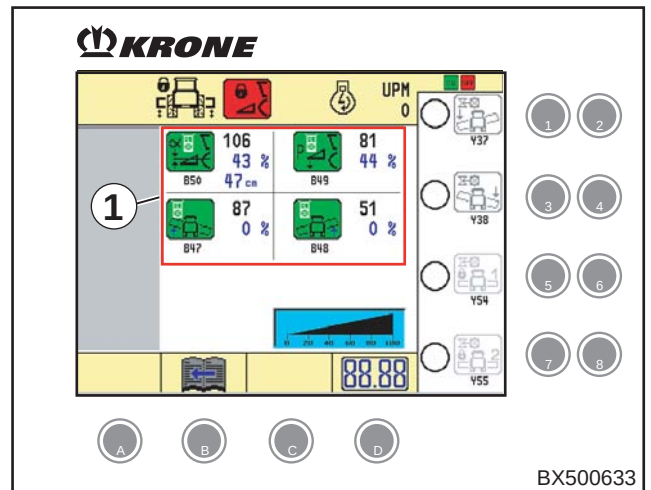
Short circuit

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  key and  key.
- To turn <Turn pendulum frame to the right> on and off, use the  key and  key.
- To turn <Pendulum frame locked horizontally> on and off, use the  key and  key.
- To turn <Pendulum frame locked horizontally> on and off, use the  key and  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

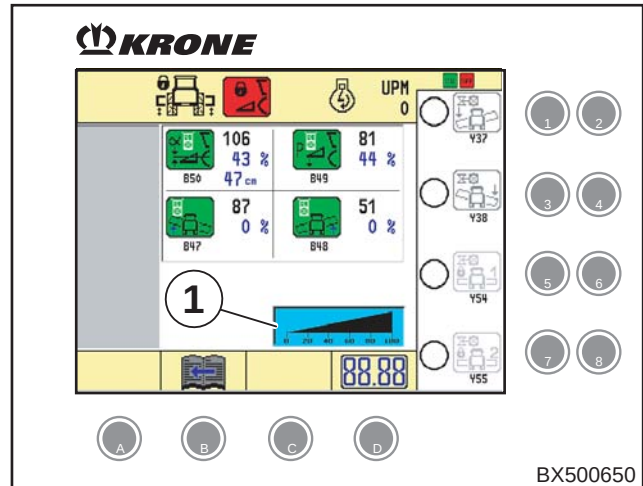
Menu control

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

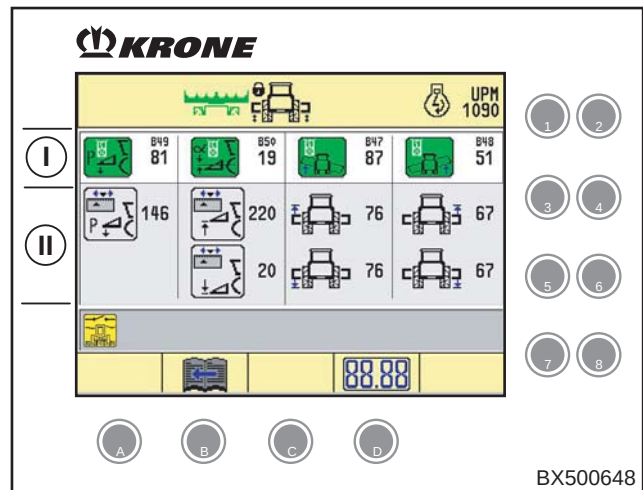
To increase/reduce the PWM value

On the bar graph (1), you can adjust in percentage terms how far the control valve opens (PWM value).

- 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	Calibration display (I)	Notes (III)
Lifting Gear			Lower lifting gear must be floating freely (no contact with ground)
Top pressure control			
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  key under the softkey  to bring up page 1 <Information page> of the „Lifting gear“ menu.
- Pressing 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

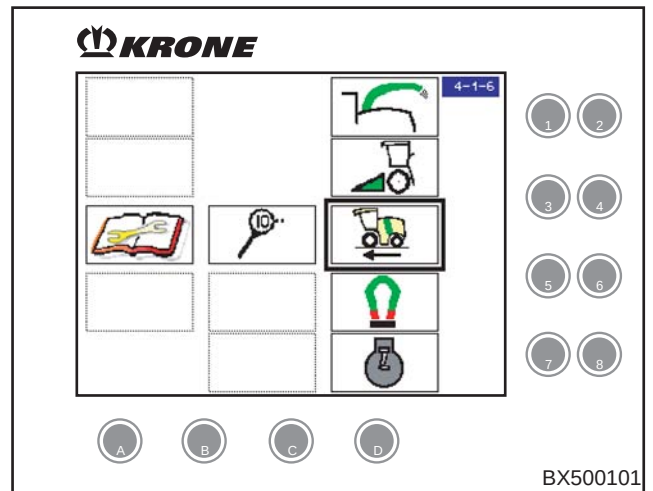
The „Diagnostics“ main menu is active.

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

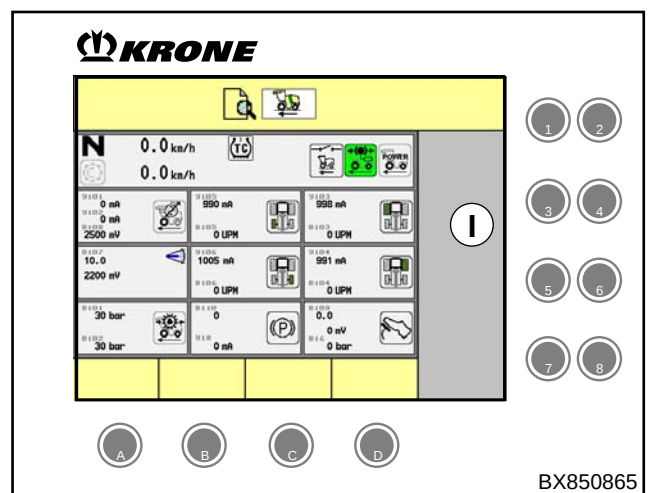
„Drive diagnostics“ appears.

Drive switch

-  = Release switch – road/field
-  = Release switch – road/field activated
-  = Travelling gear release switch
-  = Travelling gear release switch activated



BX500101



BX850865

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

Drive(1)

- 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

-  = Traction Control TC I (grass) active



= Traction Control TC I (grass) ready for operation

-  = Traction Control TCI II (maize) active



= Traction Control TC II (maize) ready for operation

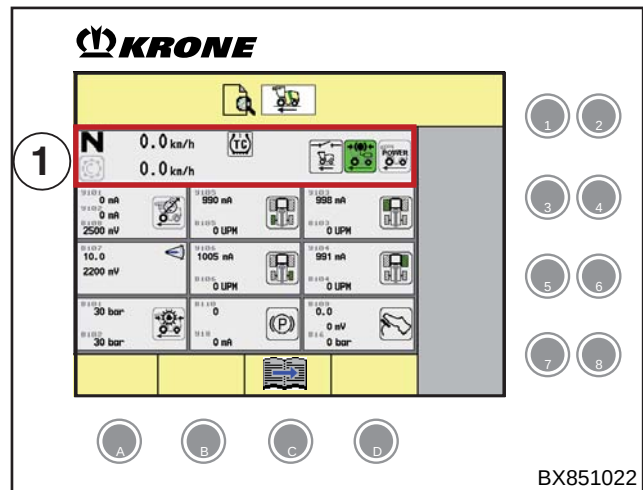
-  = Power limitation active

-  = Power limitation inactive

-  = Brake tank pressure OK

-  = Brake tank pressure not OK

-  = Brake pedal switch unknown



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

- Press the  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  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  key to turn on the „Lift additional axis“ actuator.

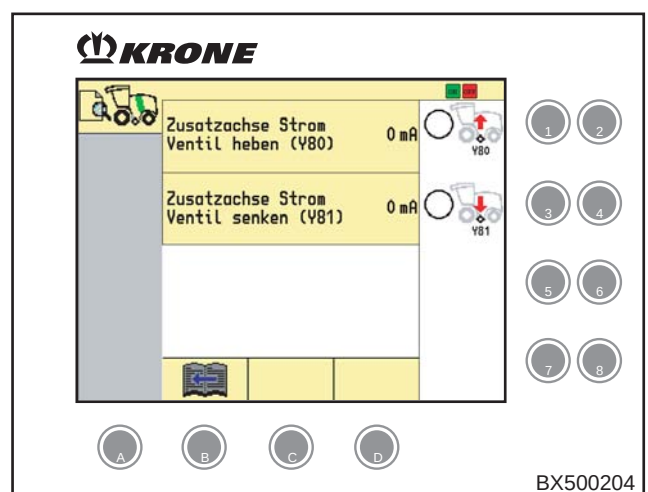
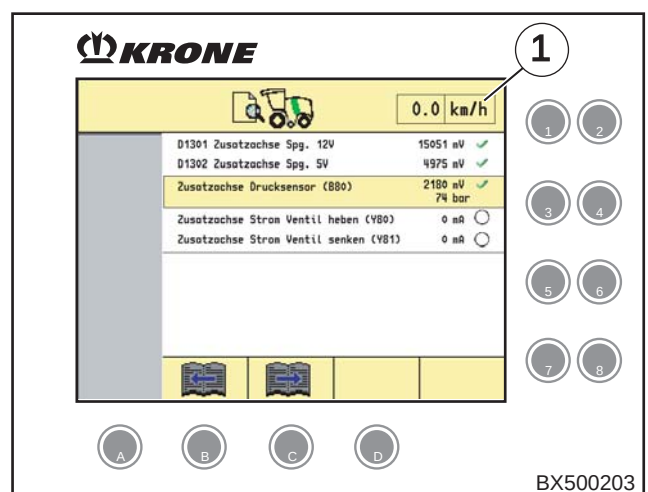
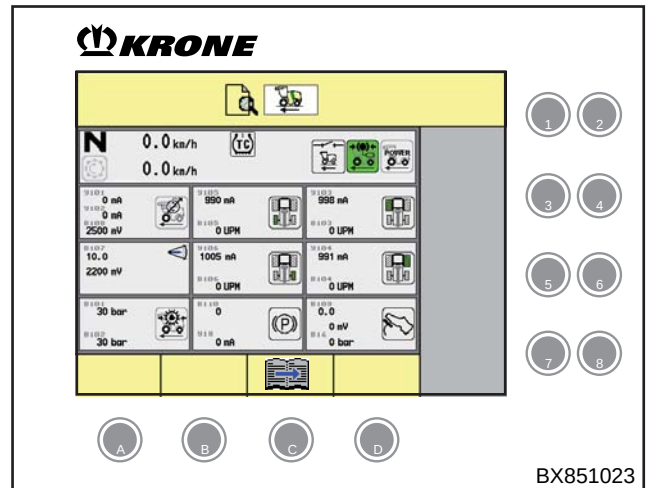
Use the  key to turn off the „Lift additional axis“ actuator.

Use the  key to turn on the „Lower additional axis“ actuator.

Use the  key to turn on the „Lower additional axis“ actuator.

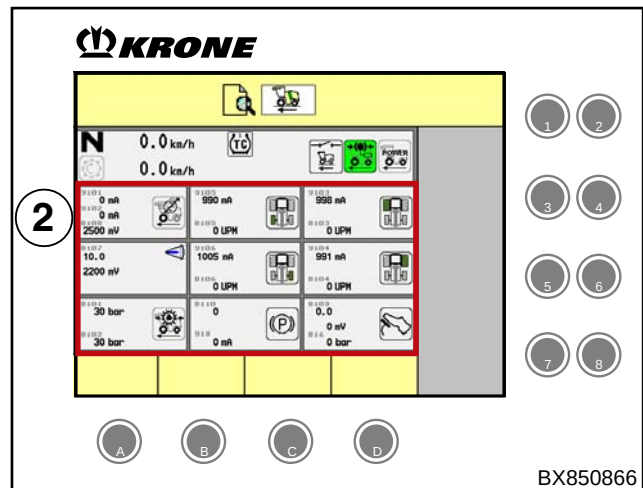
Menu control

- Press the  key under the softkey  to scroll back to the previous page.
- Pressing the  key on the rotary potentiometer takes you one menu level back.



Type of drive (2)

-  = Pivoting angle pump
-  = Pivoting angle pump OK
-  = Pivoting angle pump not OK
-  = Pivoting angle pump unknown
-  = Angle / electric power steering angle rear axle, left side
-  = 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.



-  = Angle / electric power steering angle rear axle, left side
-  = Electric power / speed rear left-hand wheel
-  = Electric power / speed rear right-hand wheel
-  = Electric power / speed rear right-hand wheel
-  = Percent (%) excursion/electric power / brake pedal pressure (bar)

- Press the  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



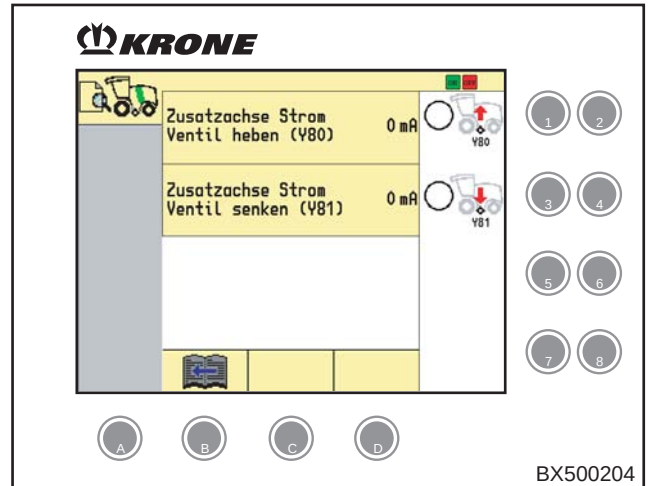
Actuators are controlled during the actuator test. This may result in the machine performing unexpected actions. Because of this, the test must only be performed from a safe position outside the area that is affected by machine parts moved by the actuators.

Selecting an actuator:

- Use the  key to turn on the „Lift additional axis“ actuator.
- Use the  key to turn off the „Lift additional axis“ actuator.
- Use the  key to turn on the „Lower additional axis“ actuator.
- Use the  key to turn on the „Lower additional axis“ actuator.

Menu control

- Press the  key under the softkey  to scroll back to the previous page.
- Pressing the  key on the rotary potentiometer takes you one menu level back.



BX500204

4.10.8 Menu 4-1-7 „Metal Detection“

The main menu „Diagnostics“ is active.

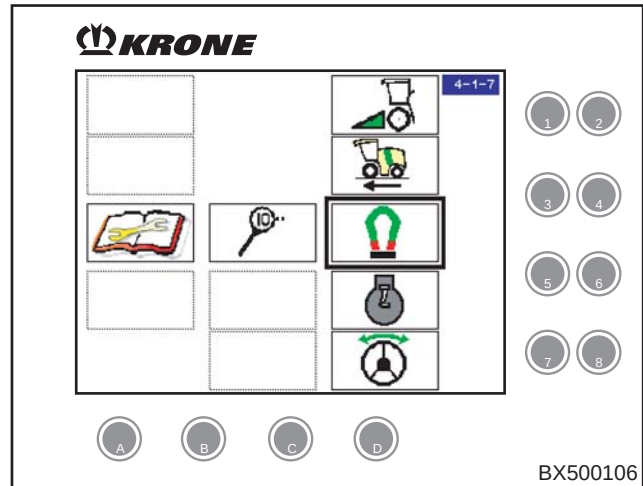
- Select menu 4-1-7 „Metal detection“ with the rotary potentiometer.
- Press the rotary potentiometer.

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

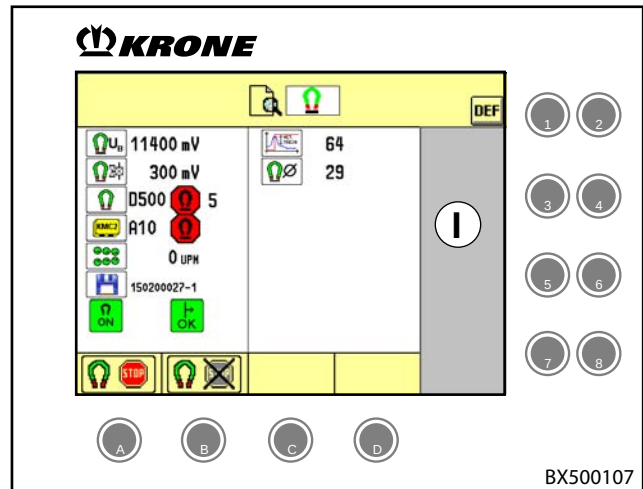
For faults (1) see chapter „Display of Possible Faults for Diagnostics“

Metal detection

-  = 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
-  = Status of the KMC2 input, which is also switched through the metal detection output.
 = No metal in feed drive
 = Metal in feed drive
 = Error

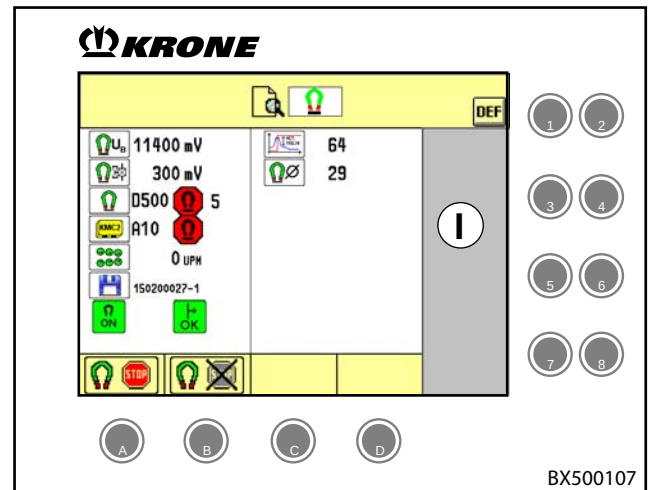


BX500106



BX500107

-  = 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



BX500107

To switch actuator on/off

- A test stop for metal detection can be triggered by activating the  key under the  softkey.
- To release metal detection again, activate the  key under the  softkey.
- To apply the default setting values, press the  key next to the  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

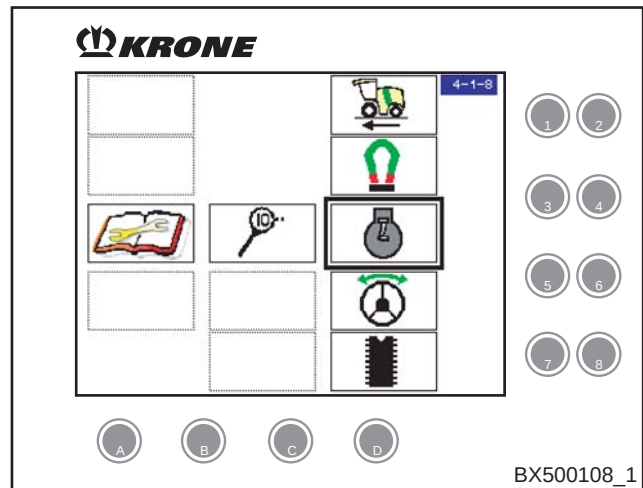
-  = Engine speed
-  = Engine cooling water temperature
-  = Engine cooling water level

Two separate oil circuits in the engine require two oil gauges:

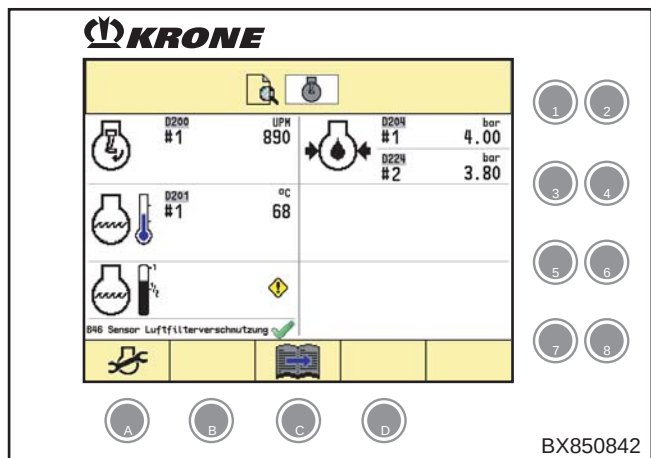
-  **D204 #1** = oil pressure EDC master (master control unit)
-  **D224 #2** = oil pressure EDC slave
- Activating the  key for  causes the next page to be displayed.
- Activating the  key for  causes the next maintenance interval to be displayed

Diesel engine page 2

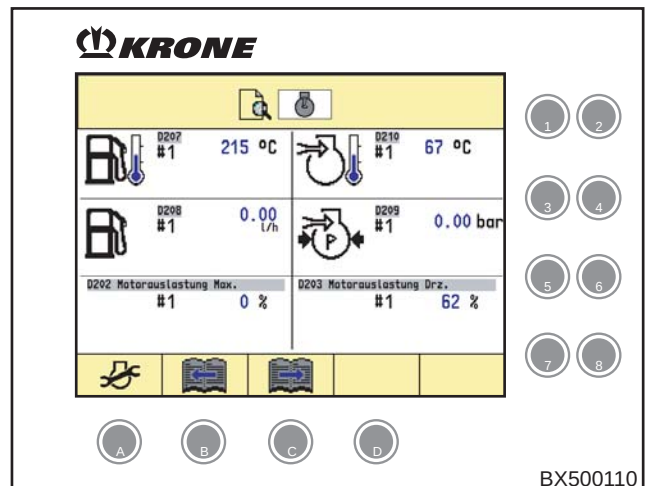
-  = Temperature fuel
-  = Diesel fuel consumption
-  = Temperature of air intake
-  = charge air pressure
- Maximum engine capacity
- Engine capacity, speed
- Activating the  key for  causes the next maintenance interval to be displayed.
- Activating the  key for  causes the previous page to be displayed.
- Activating the  key for  causes the next page to be displayed.
- Activating the  key for  causes the diesel engine Diagnostics to be displayed.
- Pressing the  key on the rotary potentiometer takes you one menu level back.



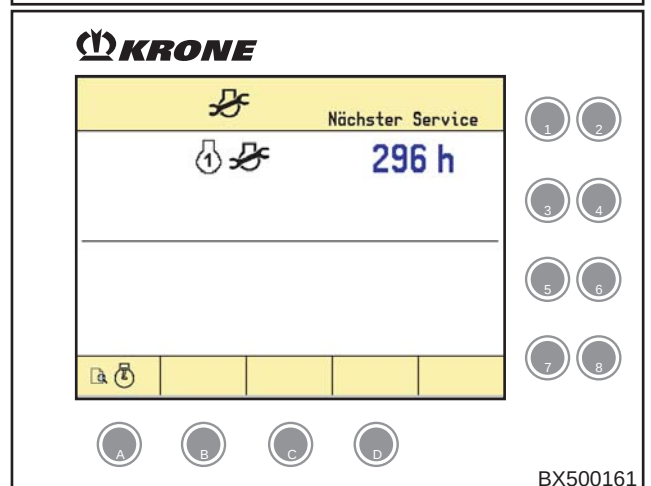
BX500108_1



BX850842



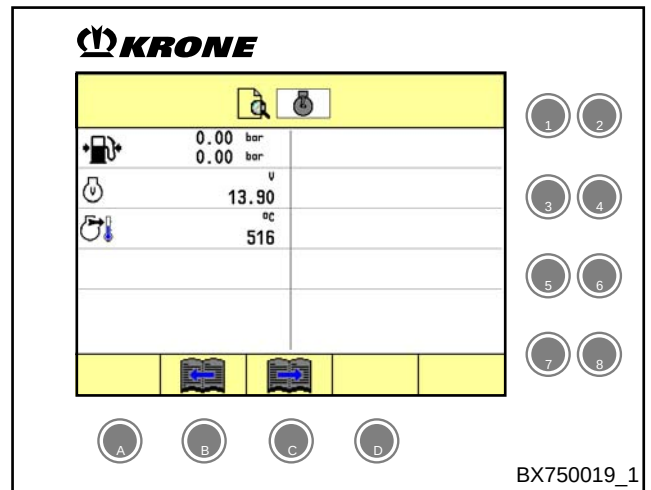
BX500110



BX500161

Diesel engine page 3

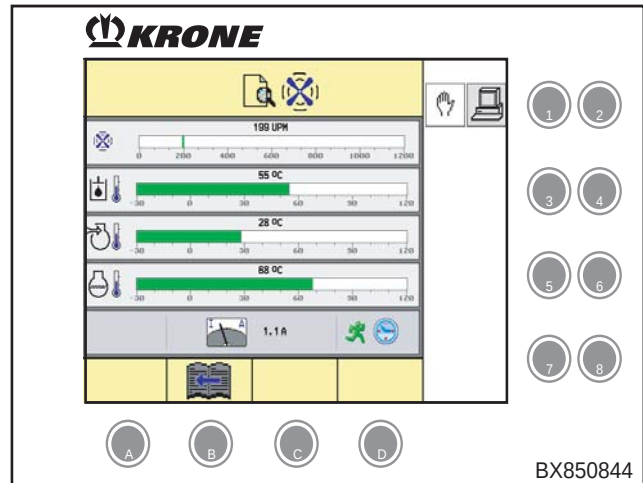
-  = Fuel pressure EDC-Master
Fuel pressure EDC-Slave
-  = Engine control unit voltage
-  = Exit gas temperature
- Press the  key for  to display the previous page.
- Press the  key for  to display the next page.
- Press the  key on the rotary potentiometer to open the menu level.

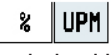
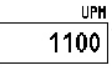


Diesel engine page 4

Hydrostatic ventilator

-  = Hydraulic oil temperature
-  = Load air temperature
-  = Engine cooling water temperature
-  = Engine fan speed (calculated)



-  In manual mode the setting can be switched back and forth between RPM and % with the  and  keys. The currently active unit is shown in grey.
-  The value can be adjusted with the  and  keys (max. 1100 or 100%).



When you exit the mask, the mode automatically switches to Automatic.

- Press the  key for  to display the previous page.
- You can use the  and  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.
- The symbol  identifies the current power consumption of the engine fan.

Possible status displays (1)



The ventilator is located in automatic mode.



The ventilator is located in manual mode.

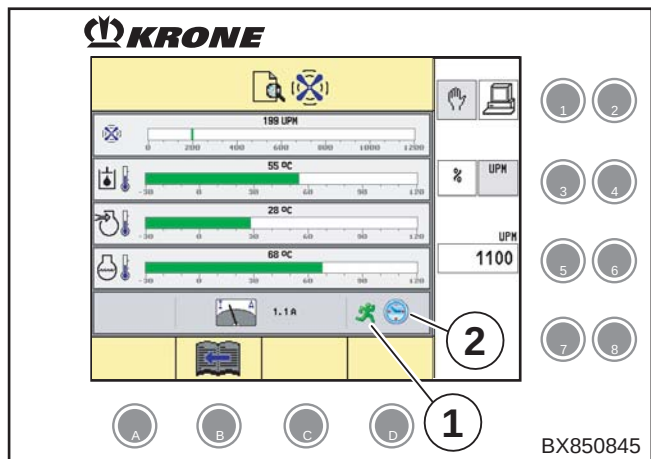
When you are leaving the diagnostics page, automatic mode is retrieved.



Error condition



State of cleaning



Possible status displays (2)



Standby position



= Hydraulic oil temperature



= Load air temperature



= Engine cooling water temperature

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.

Sensor test for upper discharge chute (page1)

Actuator test (page 2)

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“



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 Autopilot.

Menu control:

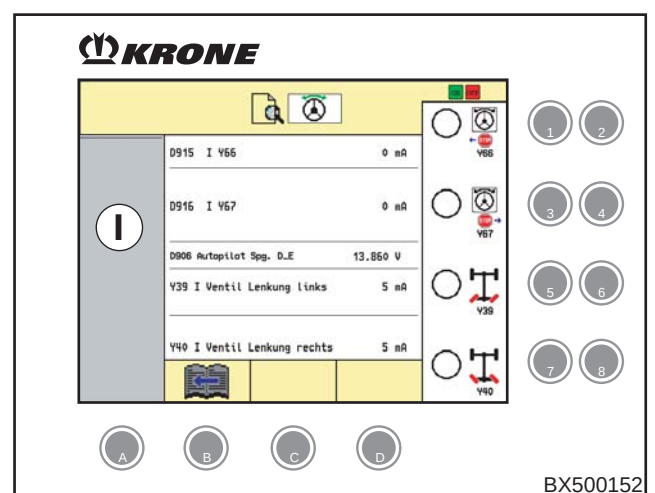
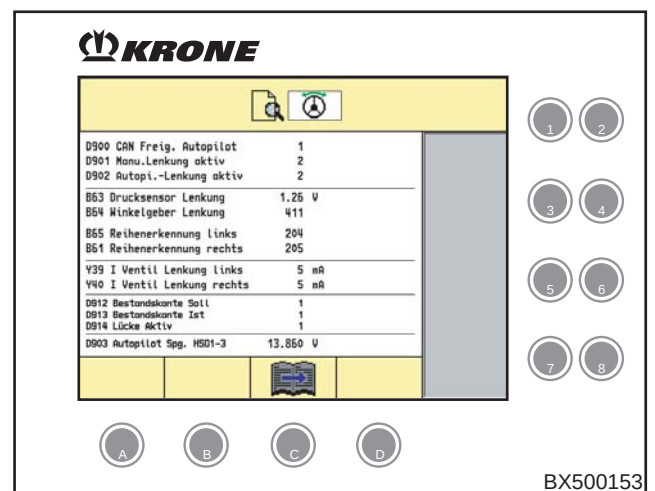
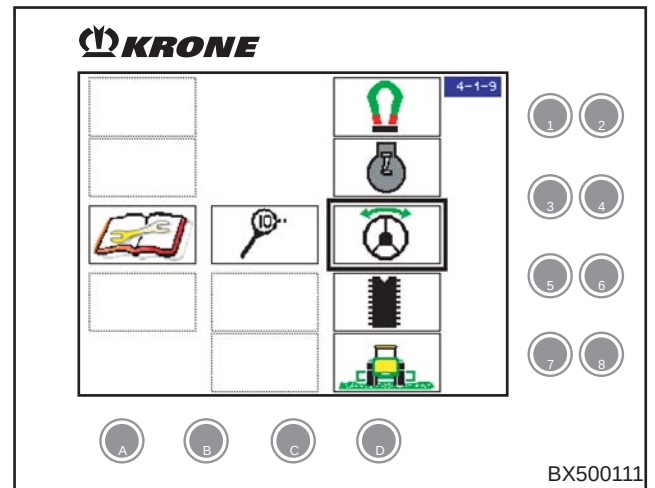
Press the  key under the softkey to bring up the next page of the „Autopilot/actuator test“ menu.

Press the  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“)



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  key

Possible status display of the selected actuator

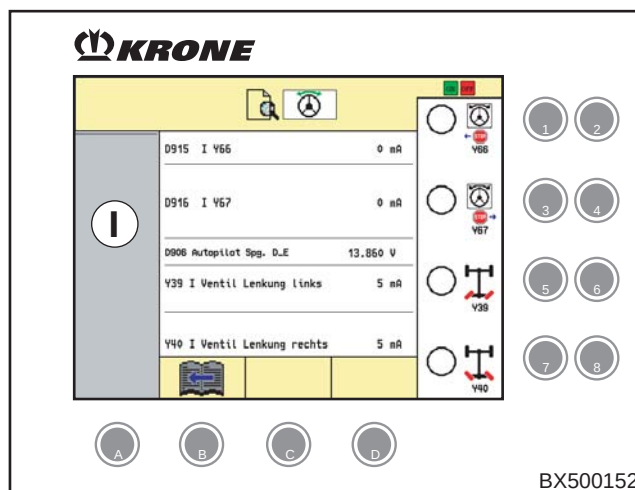
 Actuator turned off

 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)		
Y67		Disable steering (II)		
Y39		Steering left		
Y40		Steering right		

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.

AutoScan

(1) = AutoScan operating voltage

(2) = Signal LED1

(3) = Signal LED2

(4) Set max. cutting length

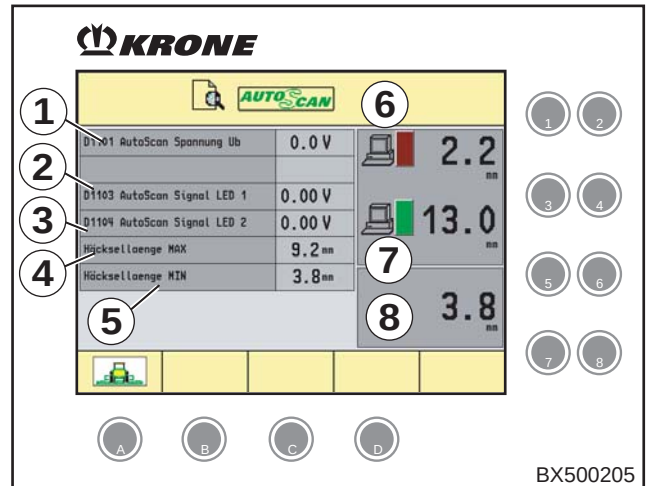
(5) Set min. cutting length

(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.



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4.10.12 Menu 4-1-11 „Electronics“

The main menu „Diagnostics“ is active.

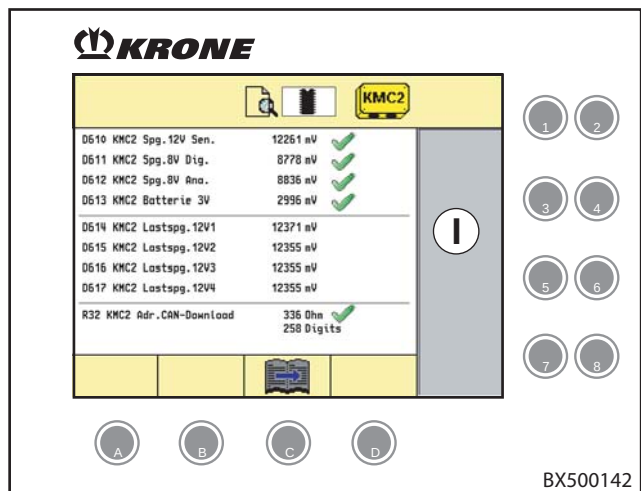
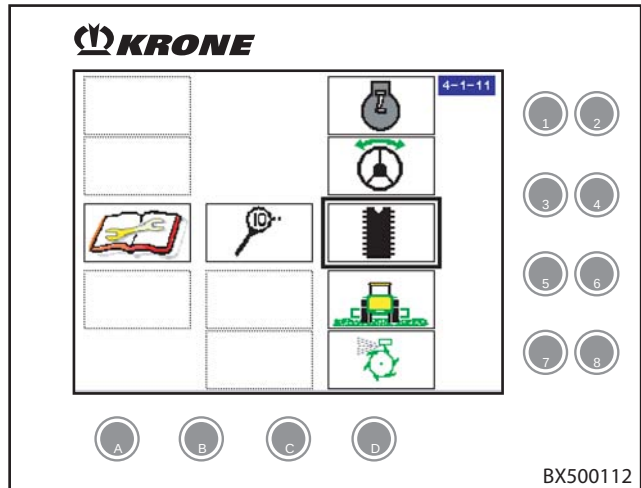
- Select menu 4-1-11 „Electronics“ with the rotary potentiometer.
- Press the rotary potentiometer.

„Electronics Diagnostics“ appears.

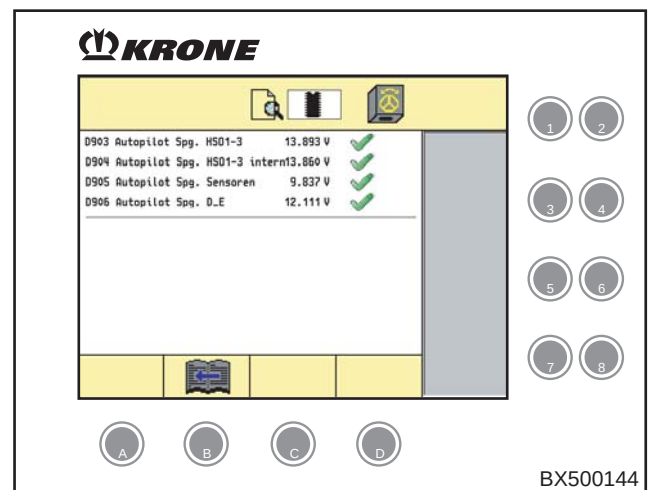
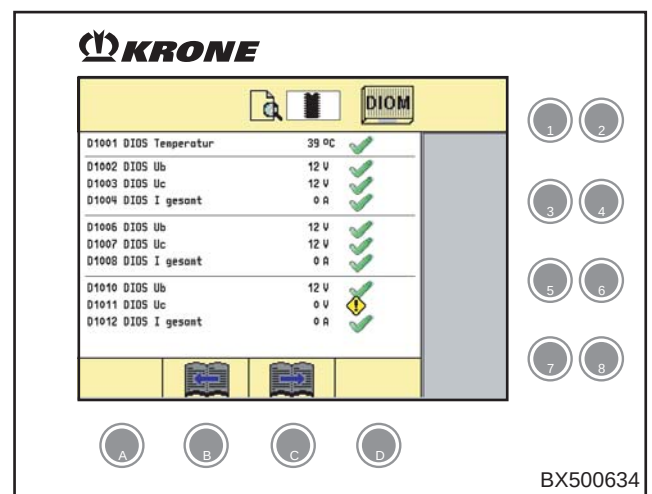
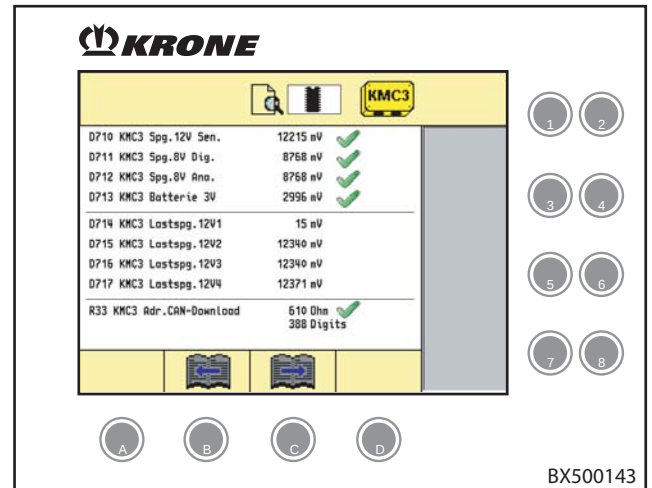
For release conditions (1) not met see chapter „Display of Release Conditions Not Met for Diagnostics“

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  key. To scroll backward , use the  key.
- Pressing the  key on the rotary potentiometer takes you one menu level back.



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“

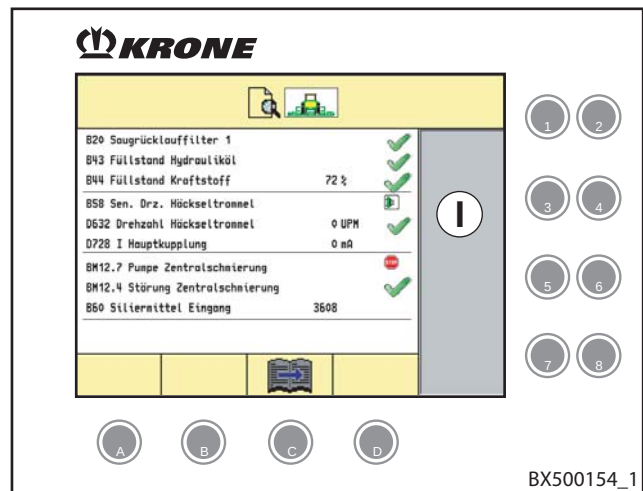
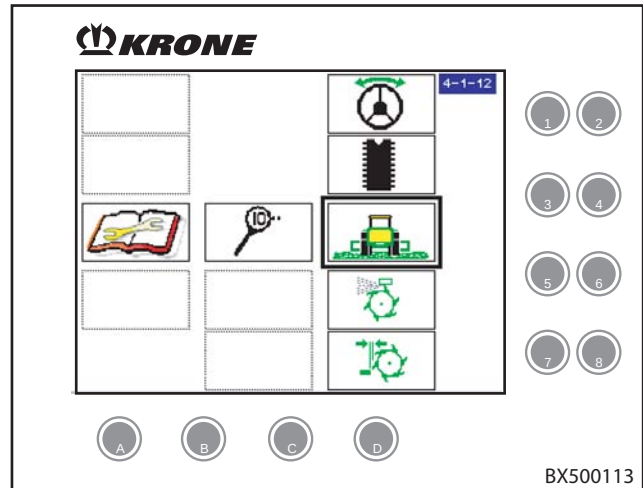
For faults (1) see chapter „Display of Possible Faults for Diagnostics“

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  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  key to bring up the next page of the „Actuator test/Work“ menu.

Press the  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  key, turn on the „Main coupling“ actuator.

Possible status display of the selected actuator


Actuator turned off



Actuator turned on



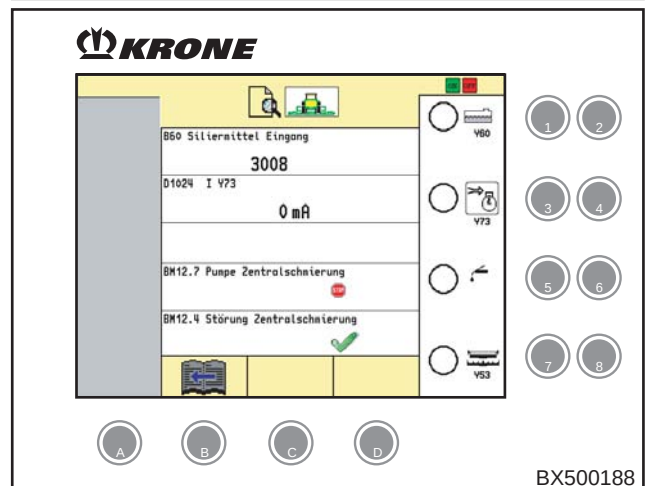
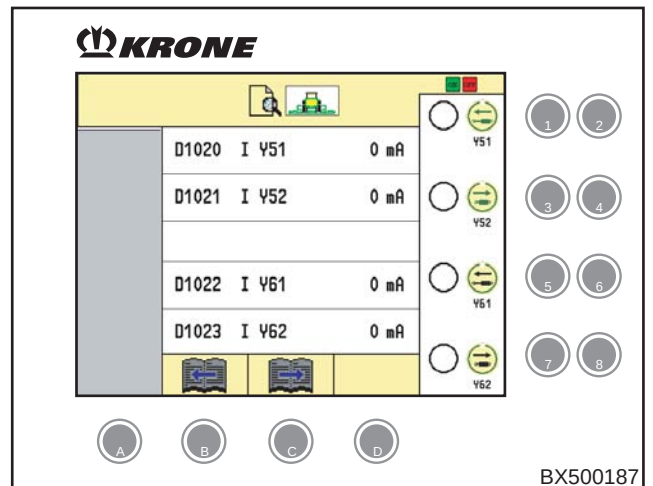
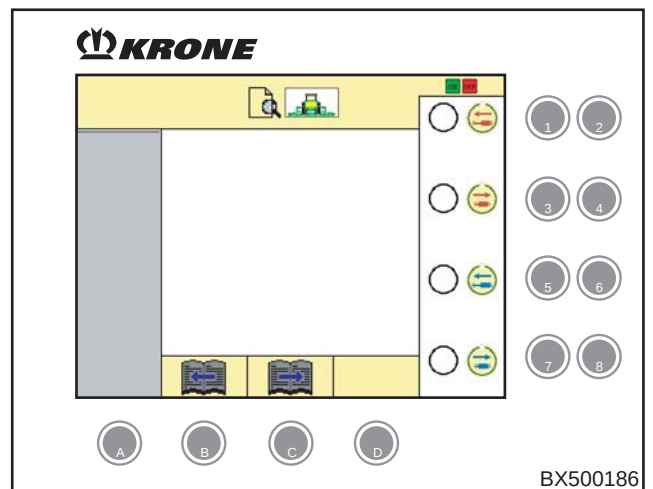
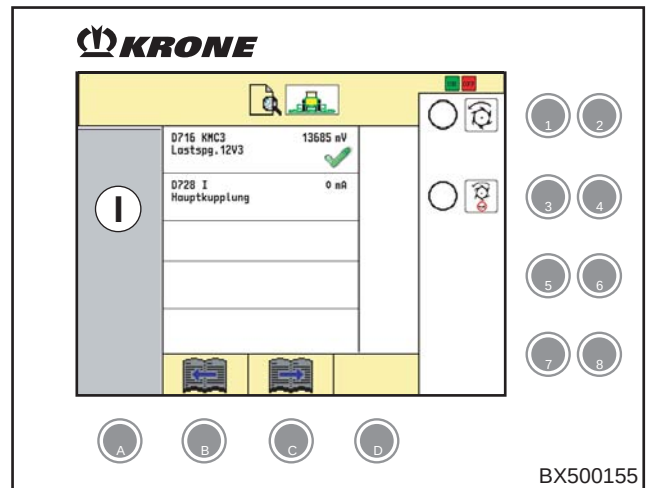
Broken cable



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		
H61		Main coupling acoustic signal		
Y26		Fold in front attachm.		
Y27		Extend front attachm.		
Y29		Lower plant divider / Supporting wheel out		
Y28		Raise plant divider / Supporting wheel in		
Y51		(green) optional for additional hydraulic unit I-A		
Y52		(green) optional for additional hydraulic unit I-B		
Y61		(black) optional for additional hydraulic unit II-A		
Y62		(black) optional for additional hydraulic unit II-B		
Y60		Molasses addition		
M16		Silage agent pump		
Y73		Additional valve for engine cleaning/compressed air		
M12		electric power supply Central lubrication		
Y53		Storage switch grass / maize		

4.10.14 Menu 4-1-13 „Grinding“

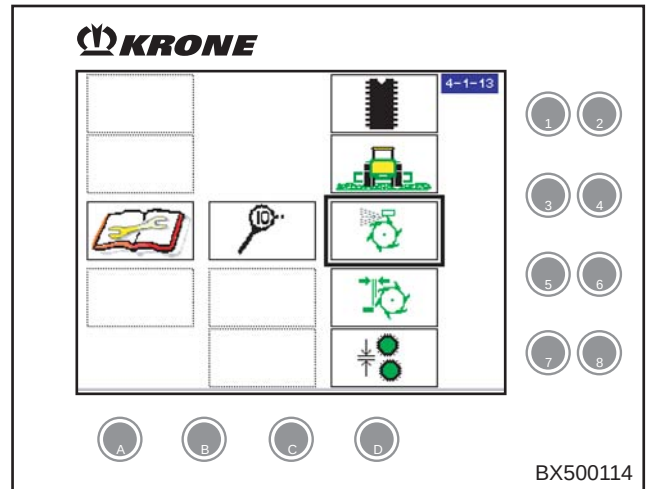
The main menu „Diagnostics“ is active.

- 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

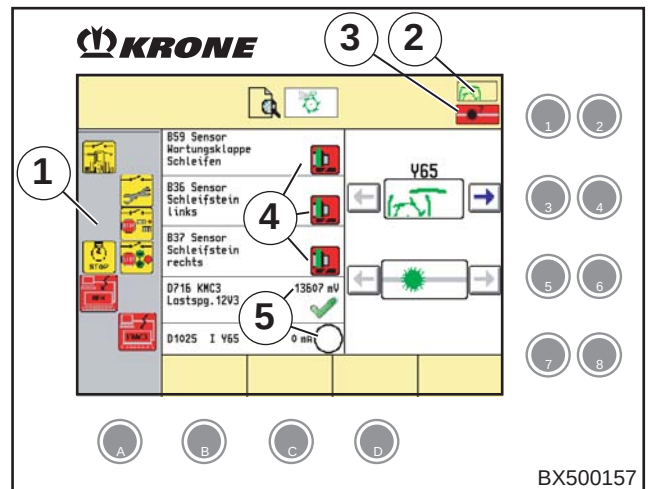
Status of the grinding stone (3)

-  = Grinding stone is on the left
-  = Grinding stone is in the centre
-  = Grinding stone is on the right
-  = Grinding stone moves to the left



The display with arrow is available in different positions, which show the direction of movement of the grinding stone.

-  = 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



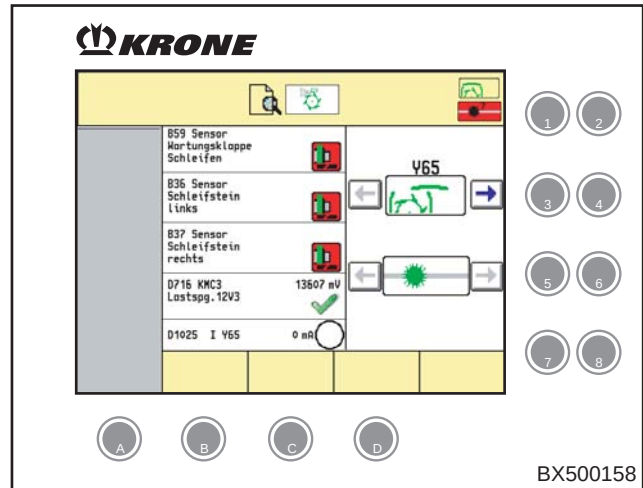
Actuators are controlled during the actuator test. This may result in the machine performing unexpected actions. Because of this, the test must only be performed from a safe position outside the area that is affected by machine parts moved by the actuators.

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  key and  key.
- The valves for the grinding stone are controlled by the  key and the  key.
- Pressing the  key on the rotary potentiometer takes you one menu level back.



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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
-  = Grinding stone moves to the left

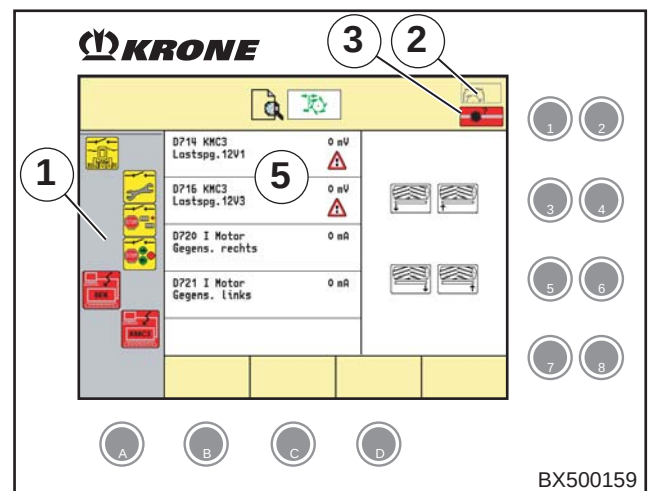
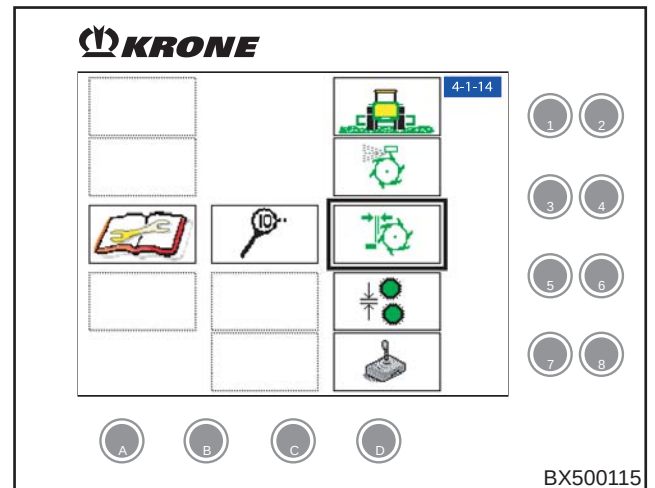


The display with arrow is available in different positions, which show the direction of movement of the grinding stone.

-  = 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



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Actuator test

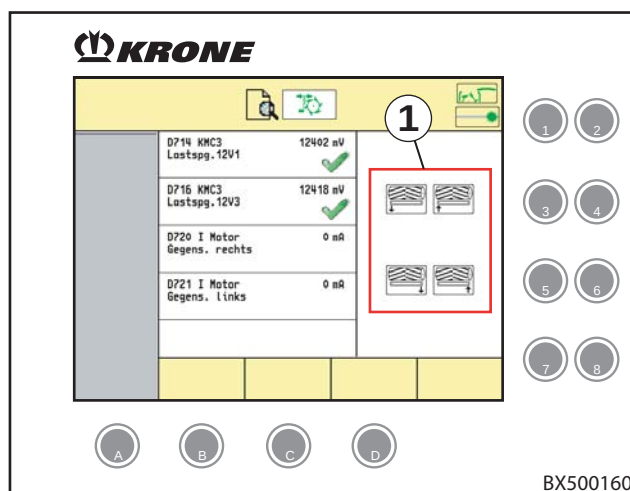


Actuators are controlled during the actuator test. This may result in the machine performing unexpected actions. Because of this, the test must only be performed from a safe position outside the area that is affected by machine parts moved by the actuators.

The actuator test is used to test actuators that have been attached to the machine for the counterblade function.

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

- You can use the  key to move away from the counterblade on the right and the  key to approach it.
- You can use the  key to move away from the counterblade on the left and the  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.

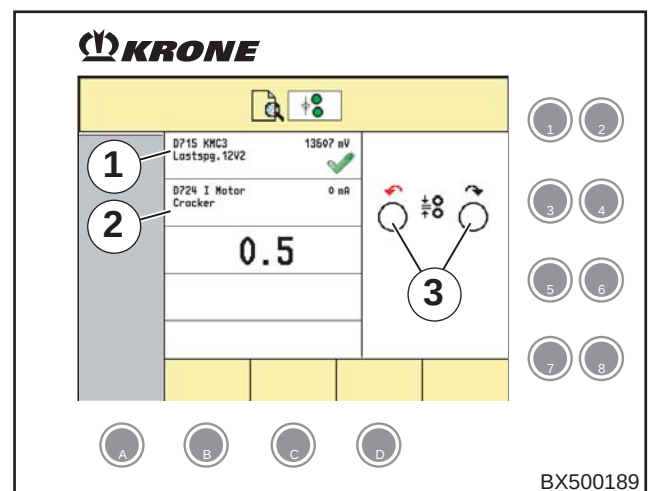
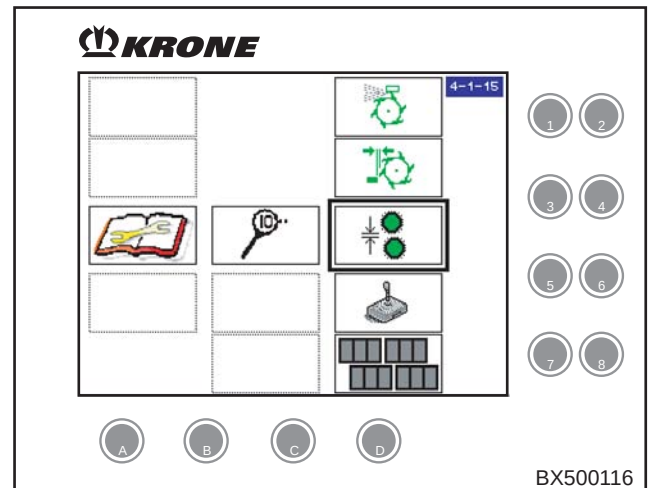
- Pressing the  key on the rotary potentiometer takes you one menu level back.

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 have been attached to the machine for the function of the grain 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  key under the  softkey brings up the basic screen.

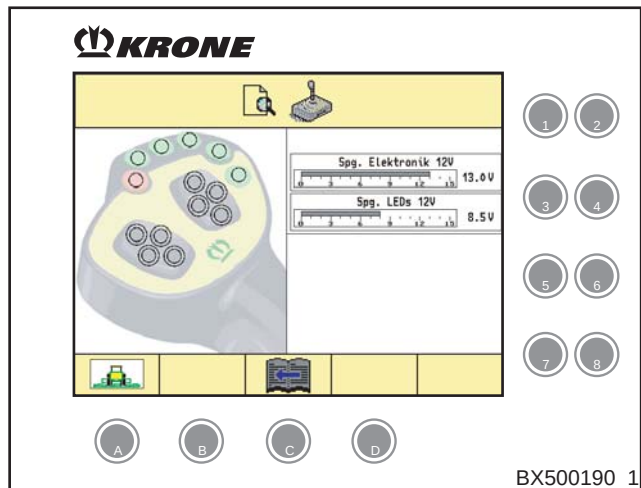
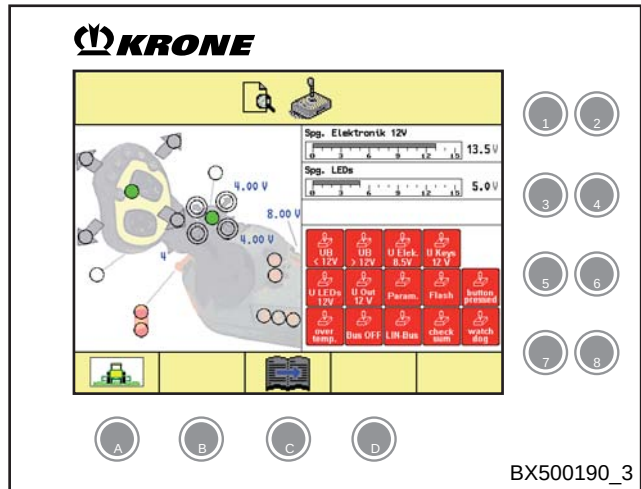
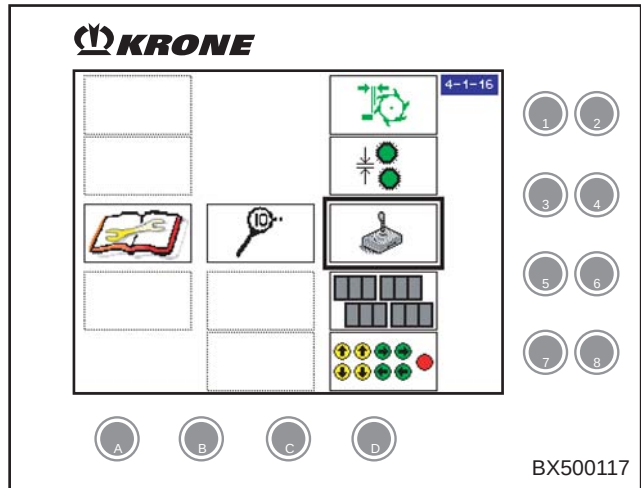
Press the  key under the  softkey to bring up the next page of the „Joystick“ menu.

Press the  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.

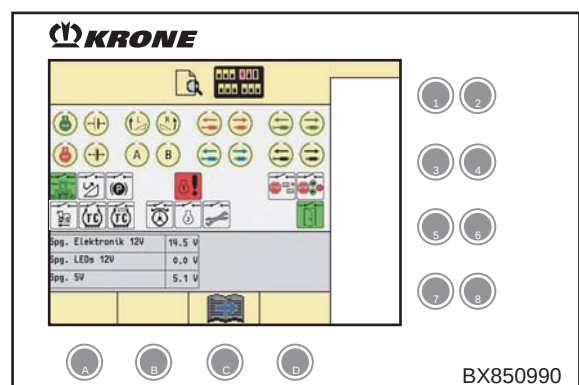
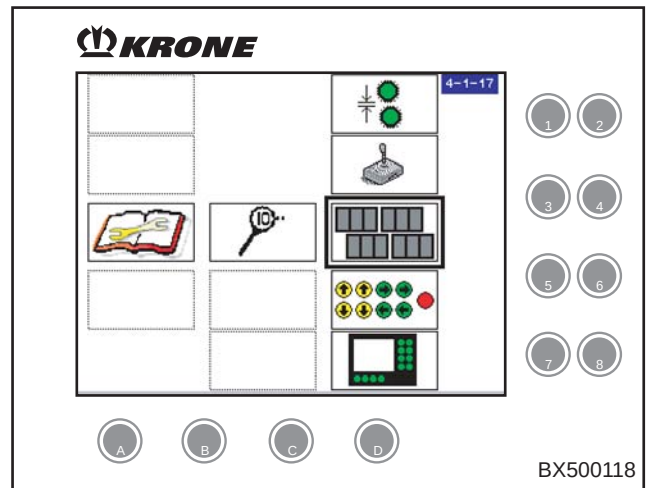
The „Diagnostics“ main menu is active.

- Select menu 4-1-17 „Control unit console“ with the rotary potentiometer.
- Press the rotary potentiometer.

„Control unit console Diagnostics“ appears.

Malfunction

-  = Störung Dieselmotor



Pressing the key  under the softkey  brings up the next page of the „Control unit console“ menu. The mask „Diagnostics seat switch“ is shown in the display (depending on configuration the CU (1) may not be shown).

Mögliche Statusanzeige der betätigten Taste



Seat switch not actuated



Seat switch actuated



Broken cable

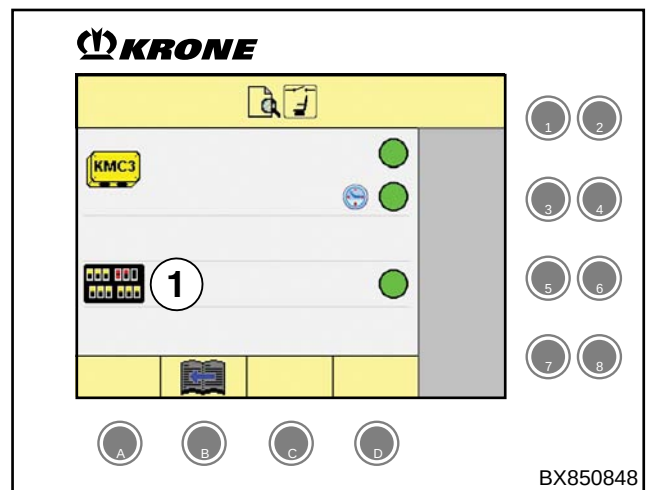


Short circuit



with time delay

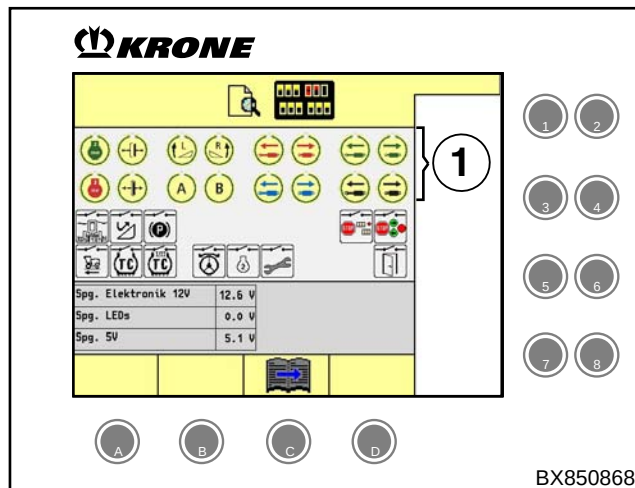
Pressing the key  under the softkey  brings up the page of the menu „Control unit console“ again.



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Release switch

Activated	Inactive	Release switch
		Road/field
		Feed drive/front attachment
		Parking Brake
		Travelling gear
		Traction Control TC
		Traction Control TC Sensitivity I (grass) or II (maize)
		Autopilot
		Maint.
		Seat switch
		Door switch
		Stop switch CU
		Stop switch for manual operation



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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



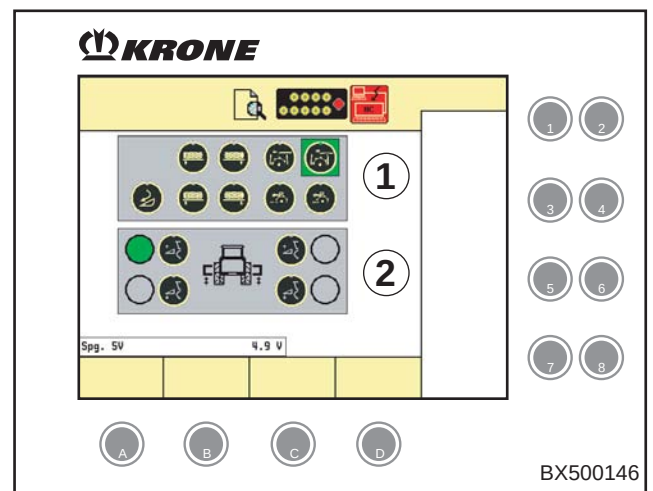
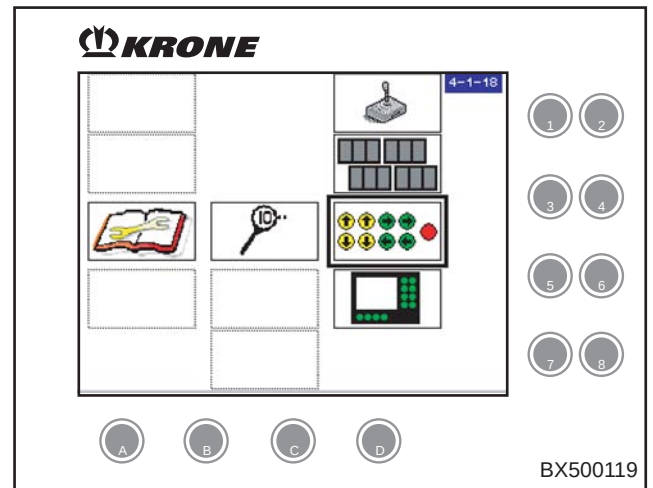
Key activated.



Broken cable



Short circuit



4.10.20 Menü 4-1-19 „Terminal“

A function test of the keys can be accomplished in the diagnostics menu „Terminal“.

The main menu „Diagnostics“ is active.

- Select menu 4-1-19 „Terminal“ with the rotary potentiometer.
- Press the rotary potentiometer.

The „Terminal“ setting appears.

- Actuate all the keys one after the other.

Possible status display of the activated key

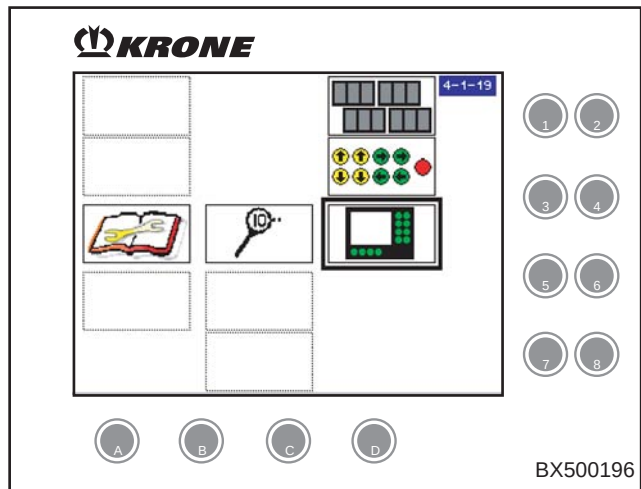


Key not functional

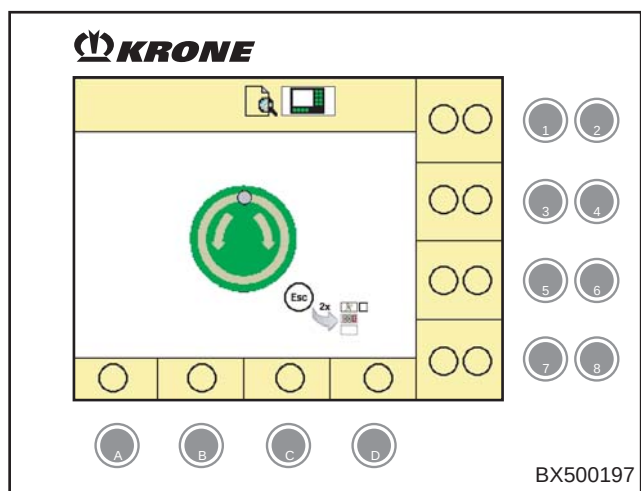


Key functional

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



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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)

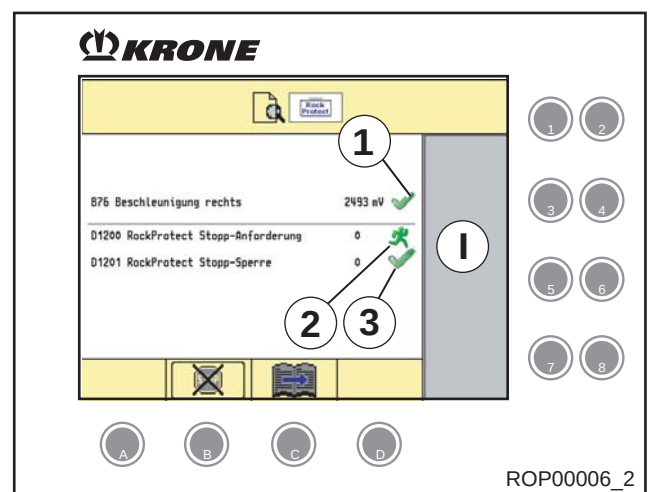
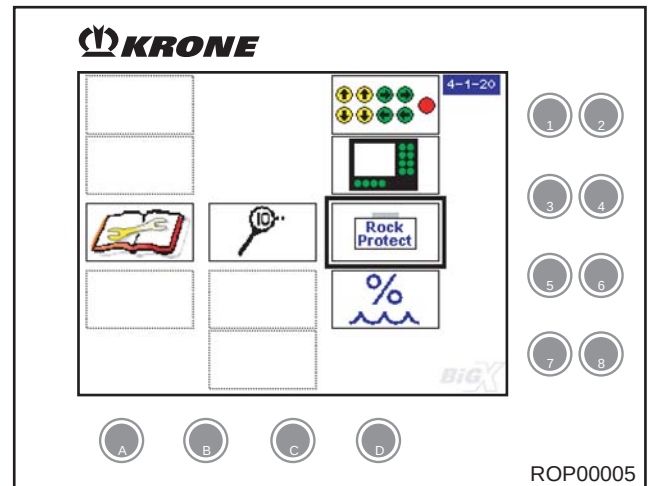
-  = Stop was requested
-  = Normal Operation, no stop

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  softkey to switch the output for the stop valve on or off. The target status of the output is displayed on the  icon next to the icon.

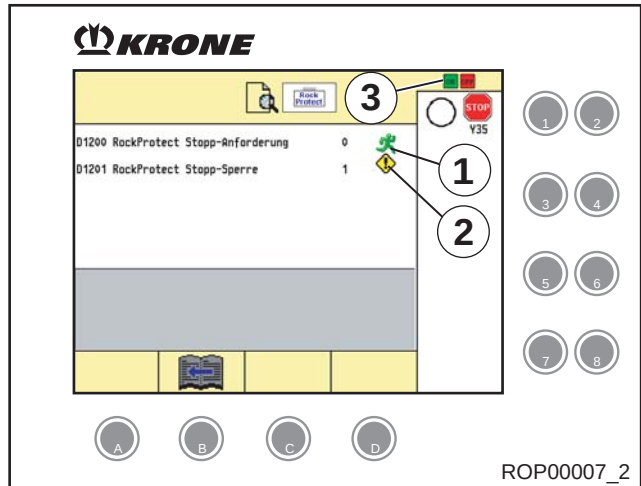


= Output is not switched.



= Output is switched.

- If for any reason no diagnostics may be performed the 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"

Current errors

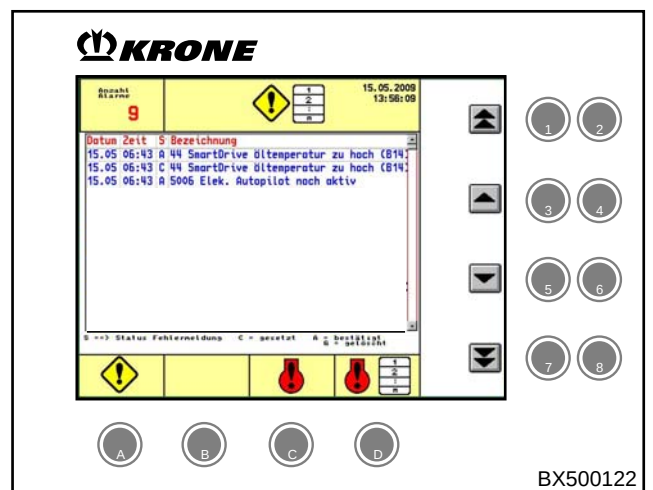
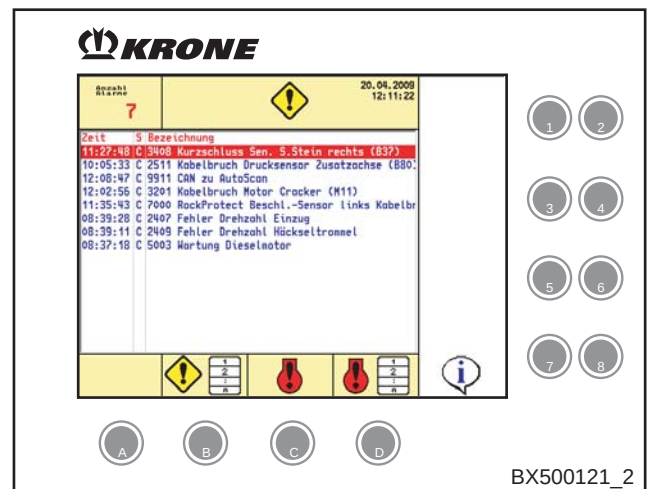
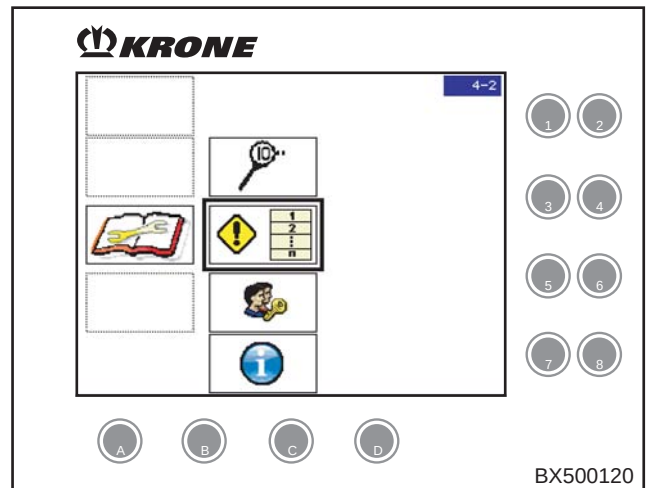
The display shows the error list with the current errors. The time, status, error number and designation are shown.

- Status
C = Error has come (Come)
G = Error has gone (Gone)
A = Error acknowledged
- To display fault storage, activate the  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  key next to the  softkey to scrolls one page up.
- Press the  key next to the  softkey to scrolls one line up.
- Press the  key next to the  softkey to scrolls one line down



- Press the  key next to the  softkey to scrolls one page down
- Press the  key next to the  softkey to display current errors of the diesel engine.

Current diesel engine errors

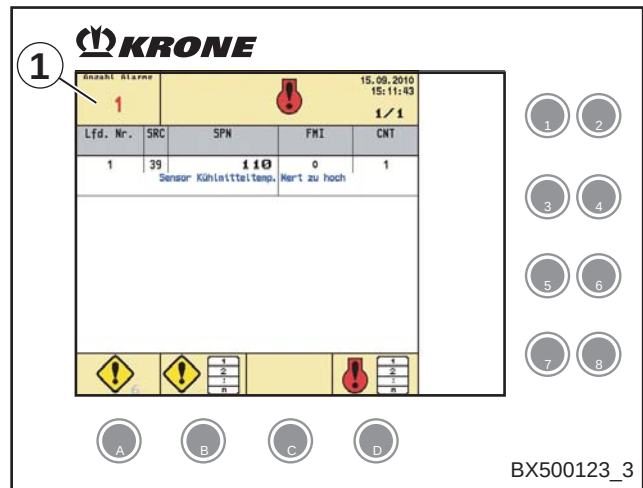
The display shows the error list with the current errors of the diesel engine.

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

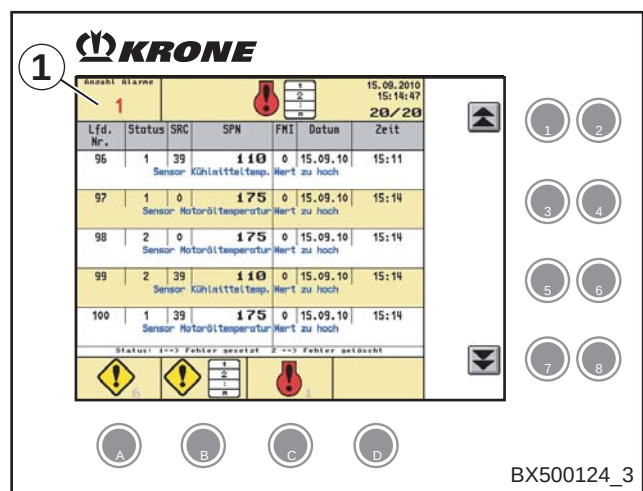
- To scroll to the  end of a list, use the  key.

To scroll to the  top, use the  key.

- To display current errors, activate the  key

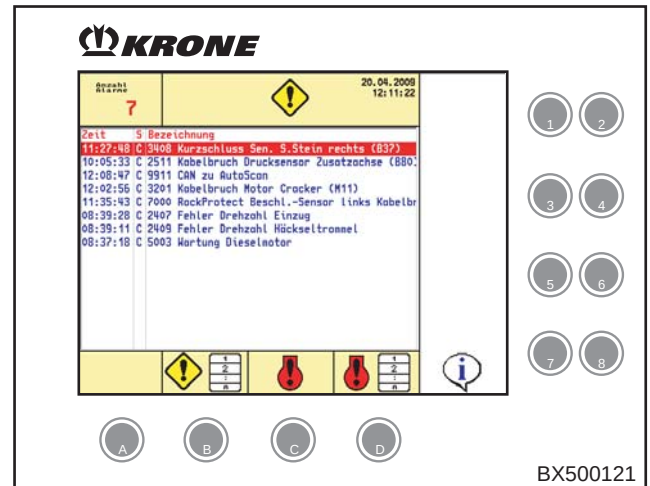
under the  softkey.

- Press the  key on the rotary potentiometer to open the menu level.



Error list „Informative events“

The „Current errors“ menu appears.



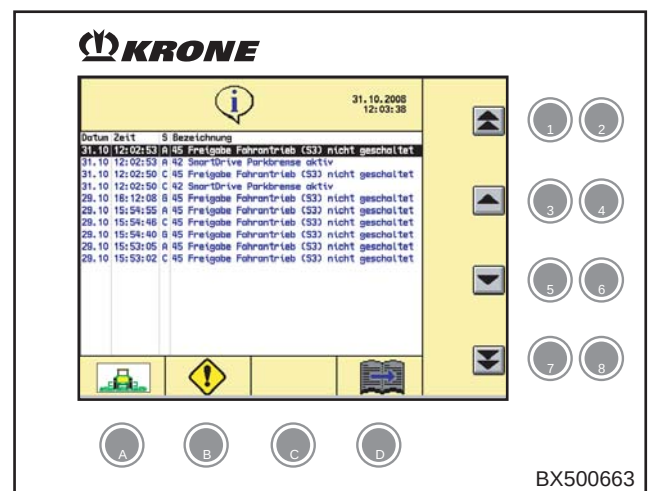
- Activating the  key calls the „Informative events“ menu.

The „Informative events“ menu records the following messages:

- 3507 Diesel engine maintenance
- 3508 Air filter contamination
- 3509 Hydraulic oil filling level
- 4301 Metal in feed drive!
- 7016 Stone detected!
- 42 DRC parking brake active
- 45 Travelling gear release (S3) not switched

Menu control:

- Activating the  key under the  softkey brings up the basic screen.
- Activating the  key under the  softkey brings up the current alarm list.
- Activating the  key next to the  softkey scrolls one page up
- Activating the  key next to the  softkey scrolls one line up
- Activating the  key next to the  softkey scrolls one line down
- Activating the  key next to the  softkey scrolls one page down
- Activating the  key under the  softkey brings up the „Service events“ menu.



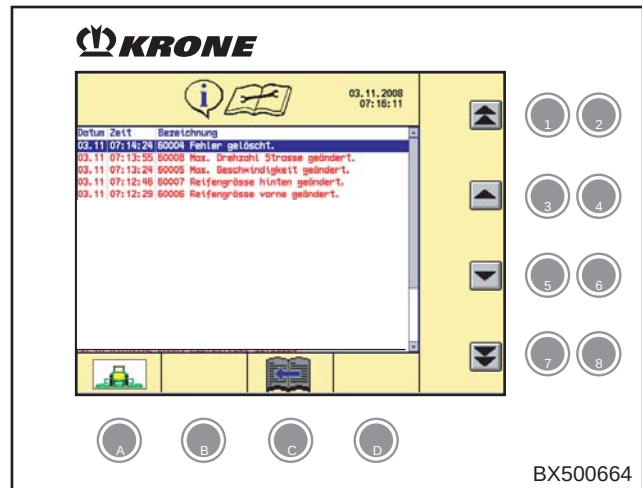
Error list "Service events"

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 DRC software updated
- 60010 DRC parameter set updated
- 60011 ERR-INIT

Menu control:

- Activating the  key under the  softkey brings up the basic screen.
- Activating the  key next to the  softkey scrolls one page up
- Activating the  key next to the  softkey scrolls one line up
- Activating the  key next to the  softkey scrolls one line down
- Activating the  key next to the  softkey scrolls one page down
- Pressing the  key next to the  softkey takes back you to the "Informative Events" menu.



BX500664

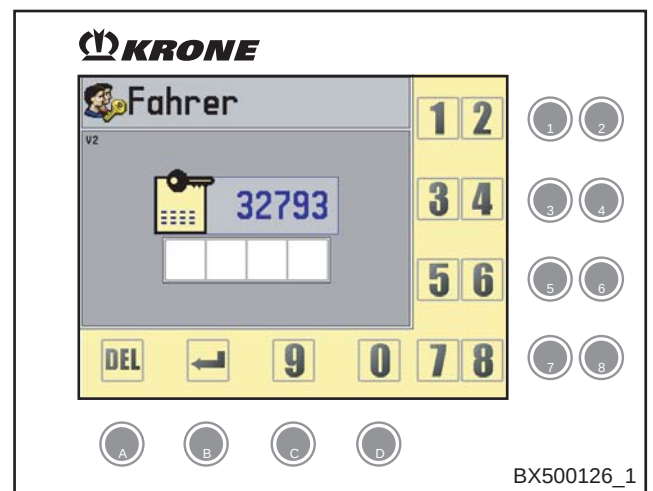
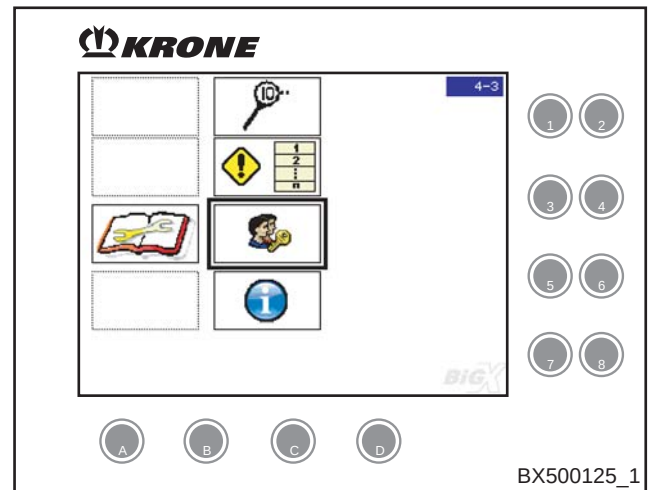
4.12 Menu 4-3 „Service level“

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.



4.13 Menu 4-4 „Information“

The main menu level is active.

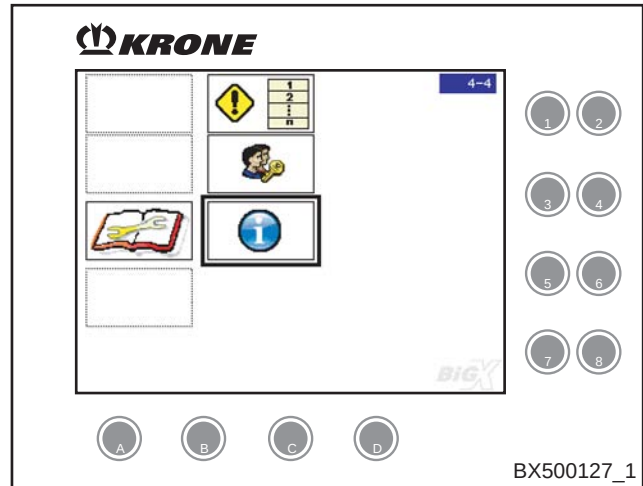
- Select main menu 4-4 with the rotary potentiometer.
- Press the rotary potentiometer.

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.



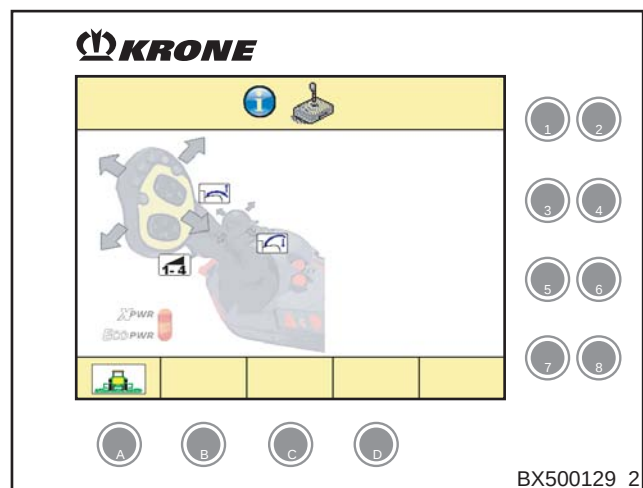
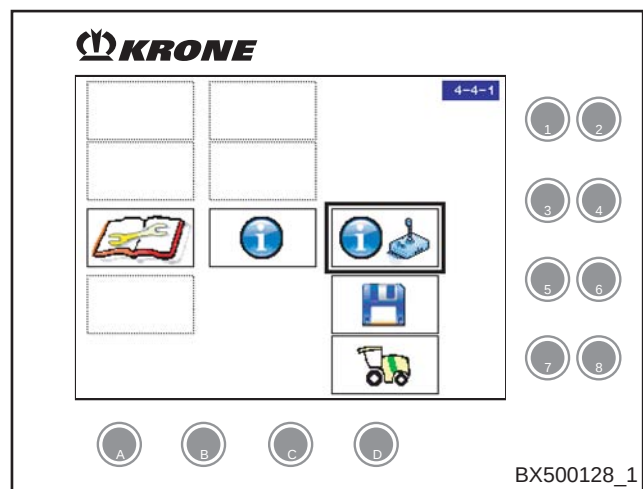
4.13.1 Menu 4-4-1 „Joystick“

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.

-  = DRC
-  = KMC2
-  = KMC3

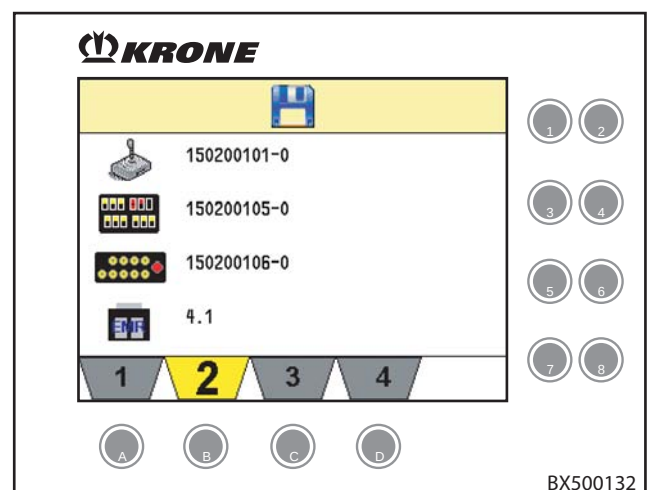
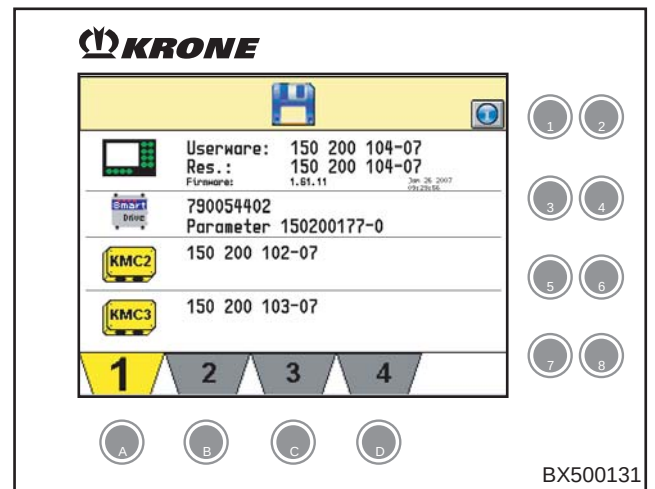
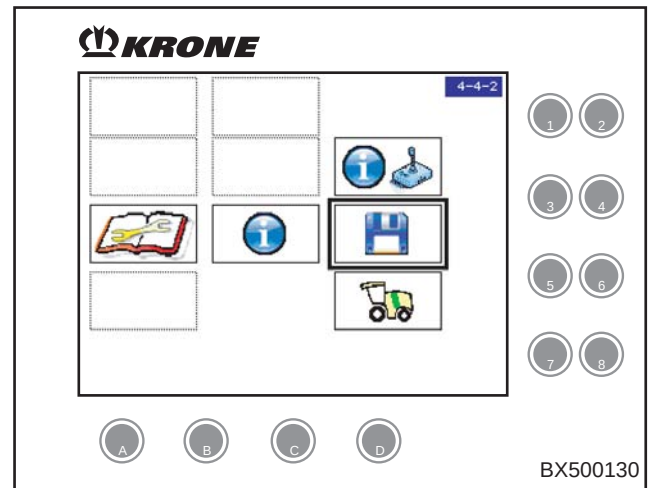
If the KMC2 and KMC3 software is not designed for your machine type, the version numbers appear in red

- Activating the  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  or .

Page 2

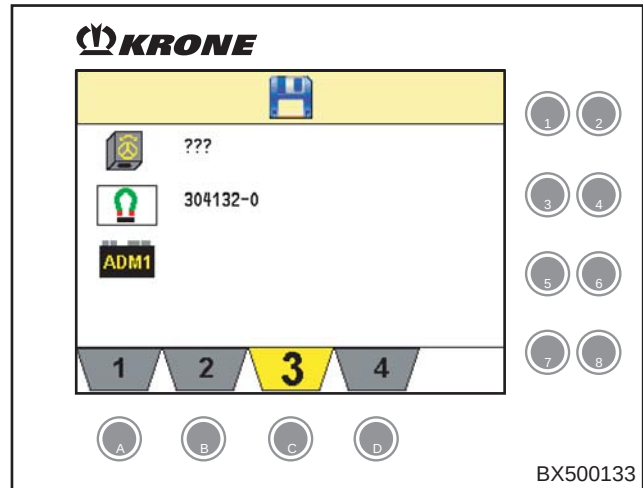
-  = Joystick
-  = CU
-  = Manual operation
-  = EMR

- Activating the  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  or .



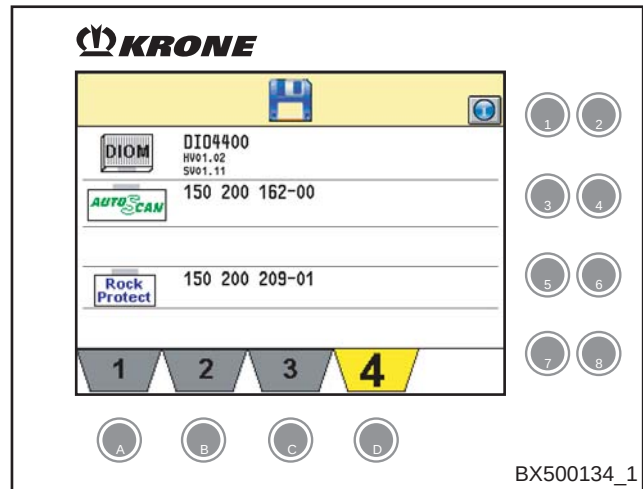
Page 3

-  = Autopilot
-  = Metal detection
-  = ADM1 (Daimler-Motor) / MFR (MAN-Motor)
-  = ADM2 (Daimler-Motor Big X 800/1000)
- Activating the  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  or .



Page 4

-  = DIOM
-  = AutoScan (optional)
-  = RockProtect (optional)
- Activating the  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  or .



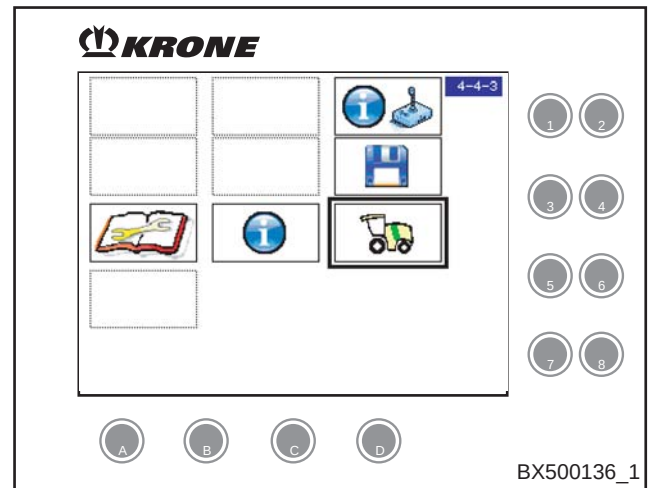
4.13.3 Menu 4-4-3 „Machine“

The main menu „Information“ is active.

- Select menu 4-4-3 „Machine“ with the rotary potentiometer.
- Press the rotary potentiometer.

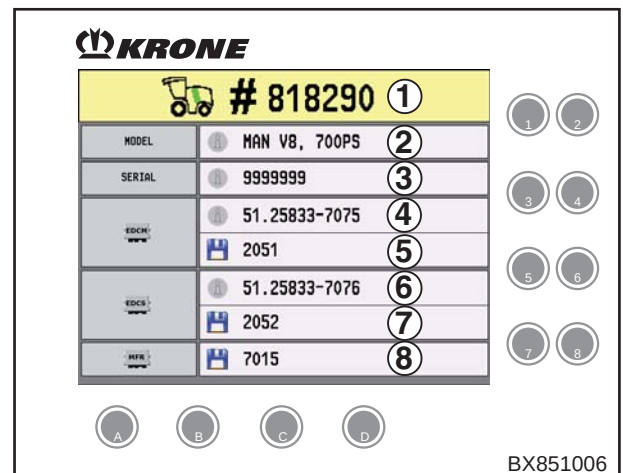
„Machine information“ appears.

The display shows machine information.



BX500136_1

- (1) Machine number
- (2) Engine setting
- (3) Engine number
- (4) Reference number EDC Master
- (5) Software version EDC Master
- (6) Reference number EDC Slave
- (7) Software version EDC Slave
- (8) Software version MFR



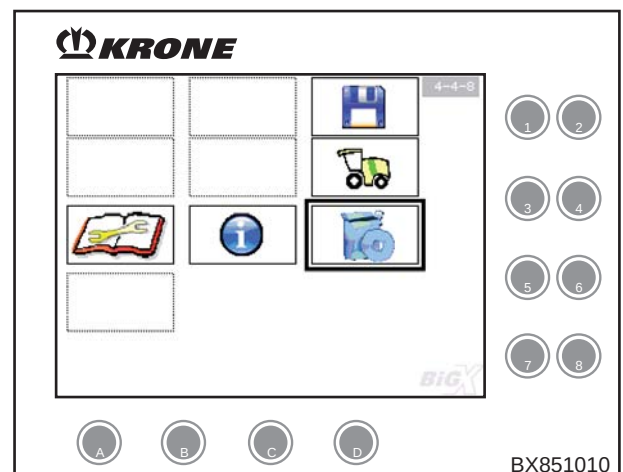
BX851006

4.13.4 Menu 4-4-8 "Display Software Packages"

The main menu "Information" is active.

- Select menu 4-4-8 "Display Software Packages" with the rotary potentiometer.
- Press the rotary potentiometer.

The "Display Software Packages" is shown.



BX851010

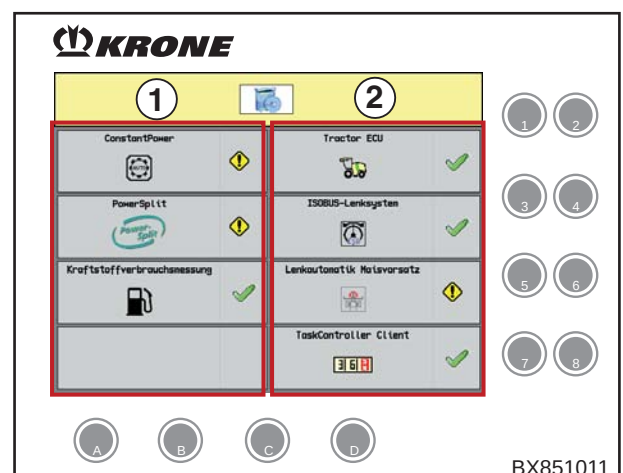
The display shows the software packages of the machine:

- (1) BiG X FuelSave or BiG X FuelSave Advanced
- (2) BiG X ISOBUS ECU

Status Displays

 Option is released

 Option is not released



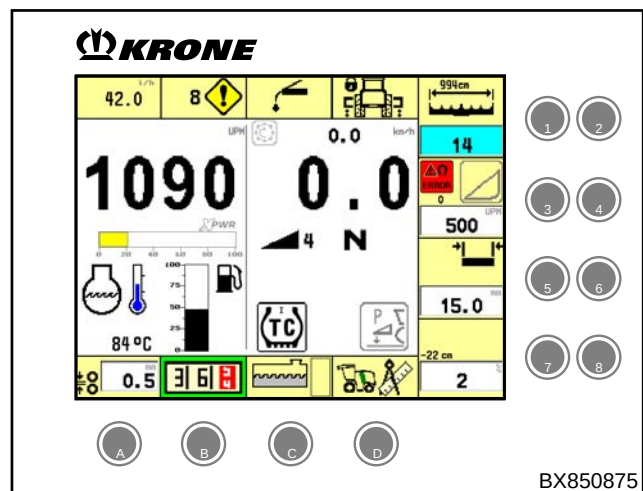
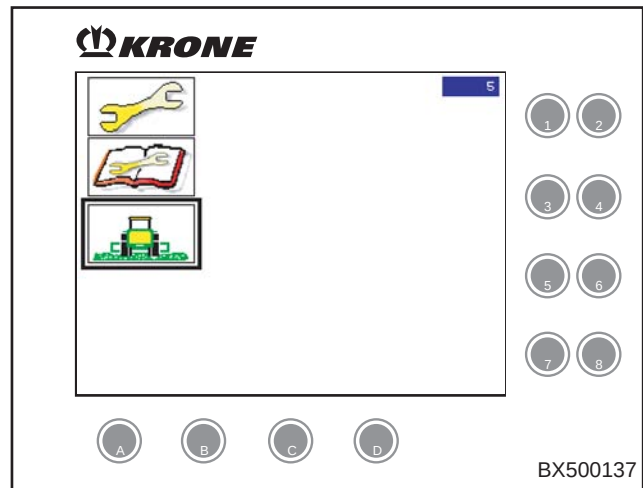
BX851011

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.

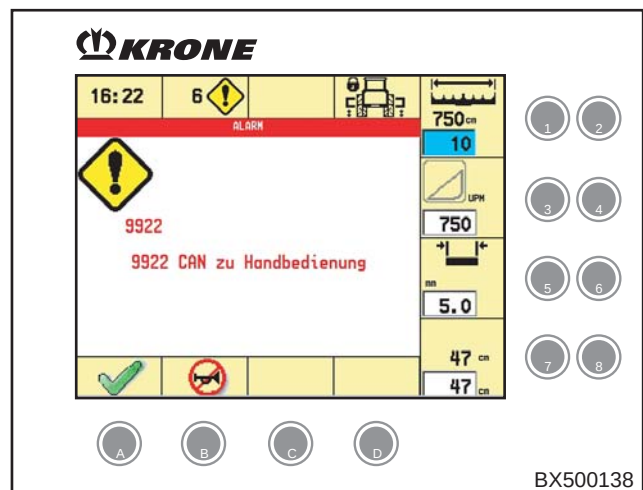


4.14.1 error message

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  key under softkey .
- The acoustic signal can be turned off with the  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. Error messages of the diesel engine will possibly not be displayed with an error message, but by a flashing of the engine fault light .

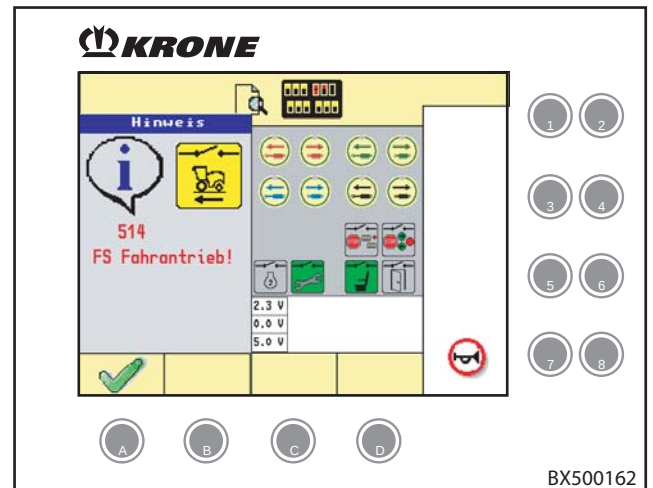
4.14.2 Information message

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  key under softkey .



BX500162

4.15 Printer Connection (option)

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 (see chapter 3 „Diagnostics socket“) in the console.
- Insert the paper as explained in the printer's operating instructions.
- The printer is now ready for operation.

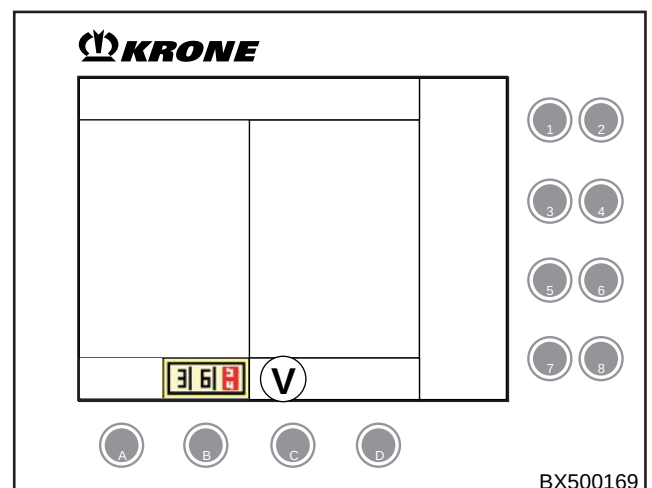
4.15.1 Printing Customer Data

To print customer records, activate the  key under the  softkey to switch to the „Customer data counter“ submenu

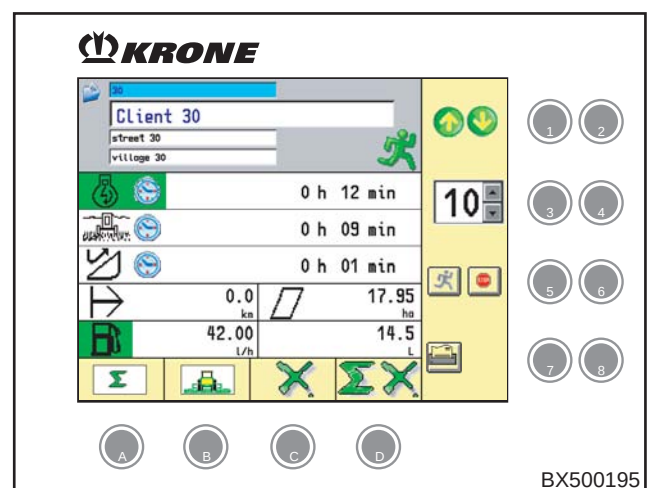
 **If there is no printer available, or no printer ready for operation, the  symbol does not appear.**

- Press the  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.**



BX500169



BX500195

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:

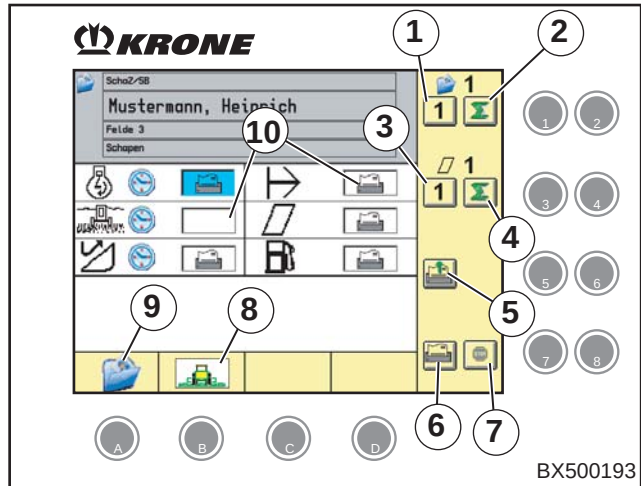


The customer record to be printed must previously be selected in the „Customer data counter“ menu. (If necessary switch to the customer data counter menu with the \$\$\$ key and select the desired customer data record)

- 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

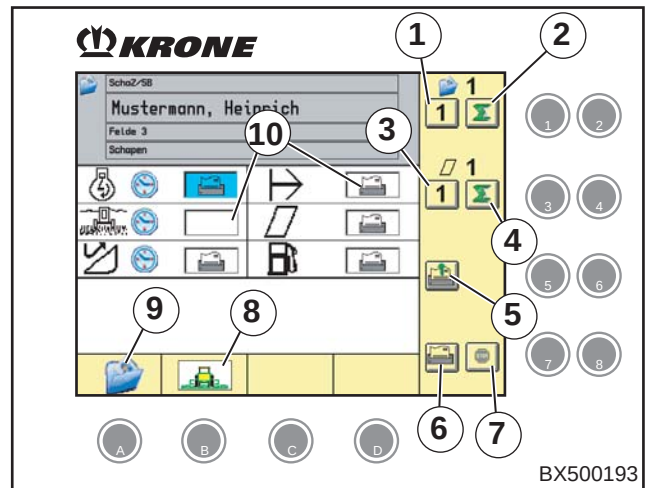
- Use the  key to select the last selected cultivated area counter or the one that was entered in the „Customer data counter“ menu for printing. Start the print process with the  key
- You can use the  key to select all cultivated area counters of a customer record. Start the print process with the  key.

Printing all customer records and all cultivated area counter states

- First press the  key.
- Then activate the  key and start printing with the  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.

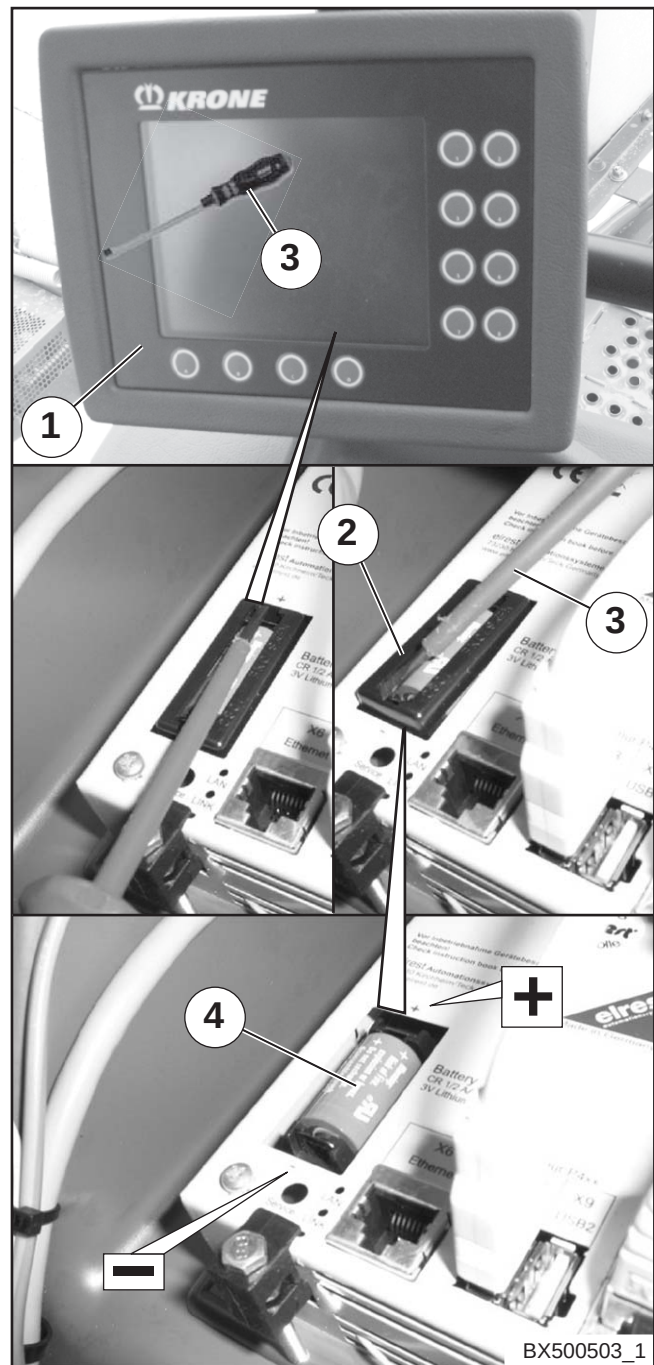
4.16.1 Procedure for Replacing the Battery

- Turn on the ignition to ignition stage 2.
- Wait until the Work icon appears in the terminal.
- Lever the cover out off the frame and remove it of the terminal (1) by using a little screw driver (3).
- 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).
- Reinsert the cover of the terminal.



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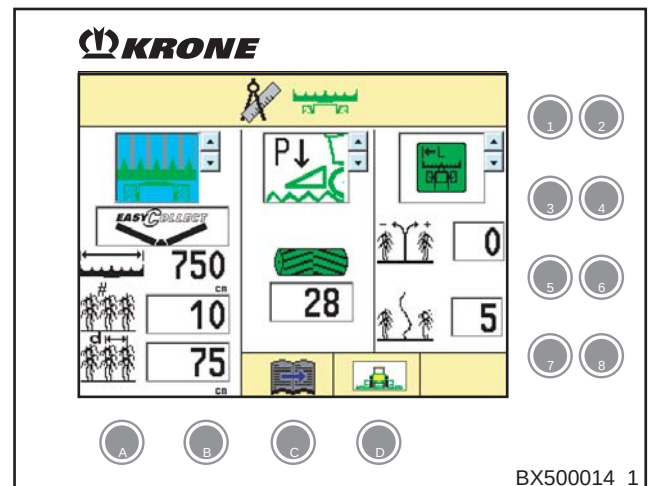
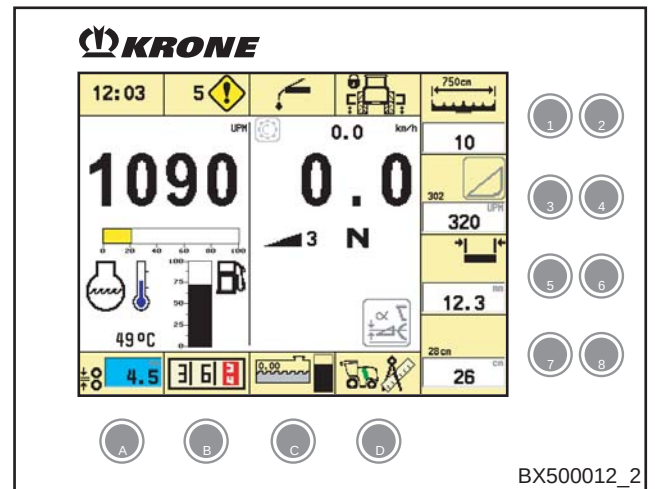
4.17 "Setting of the constant power load limit control" menu appears (option)

- Press the key  on the basic screen to change to the mask "Joystick-Memory-Keys"/"Machine Settings".



**The changes become effective immediately.
In doing so, the forage harvester can be adapted to the respective circumstances during its use.**

- Press the  key to bring up the next page „Settings of the load limit control“. (In maize mode, press the  key twice, because additional settings can be made).



Entering the degree of speed reduction



Speed reduction can be set dependent on speed and engine duty.

Speed-dependent entry:

Selection is effected via activation of the key:

 = speed dependent (1)

- 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:

Selection is effected via activation of the key:

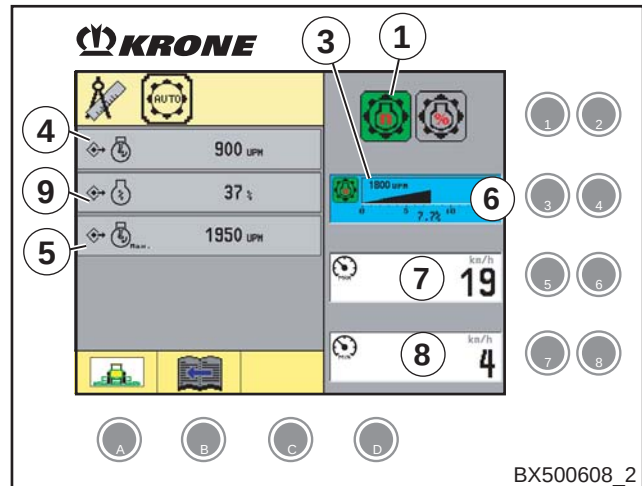
 = dependent on engine capacity utilization (2)

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.

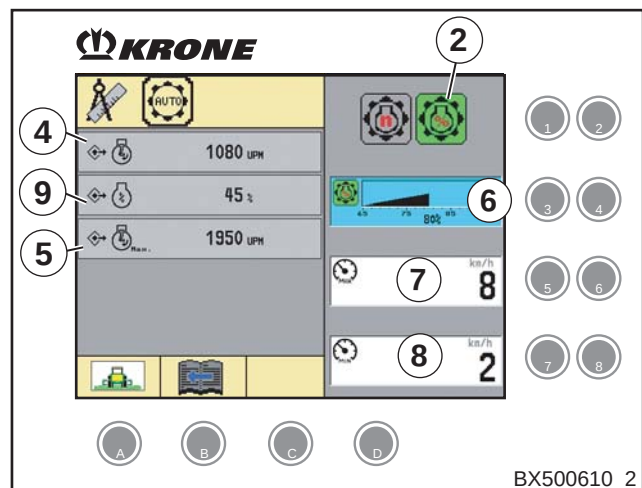


The changes become effective immediately. In doing so, the forage harvester can be adapted to the respective circumstances during its use.



In the screen mask for speed-dependent motor spinning the following values are displayed:

- Switching speed control/ torque control (1) (current setting)
- Setpoint engine speed (just for speed control) (3)
- Actual speed diesel engine (4)
- Nominal speed (5)
- Setpoint motor spinning or setpoint moment (6)
- Maximum speed (7)
- Minimum speed (8)
- Engine capacity (9)



Setting the maximum speed

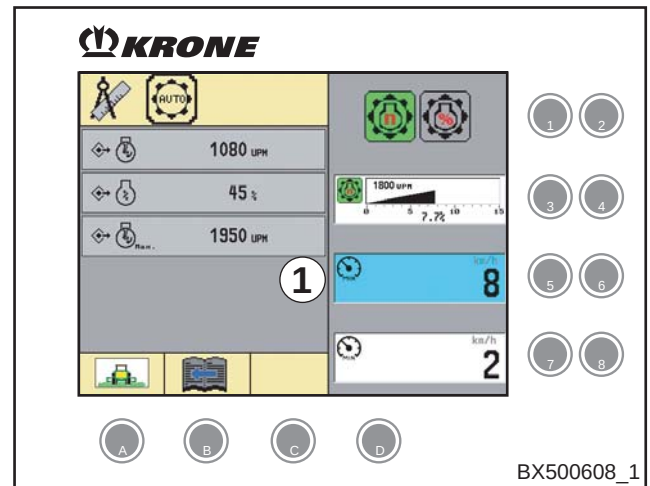
Press the rotary potentiometer to select the input field for the maximum speed.

- 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_1

Setting the minimum speed

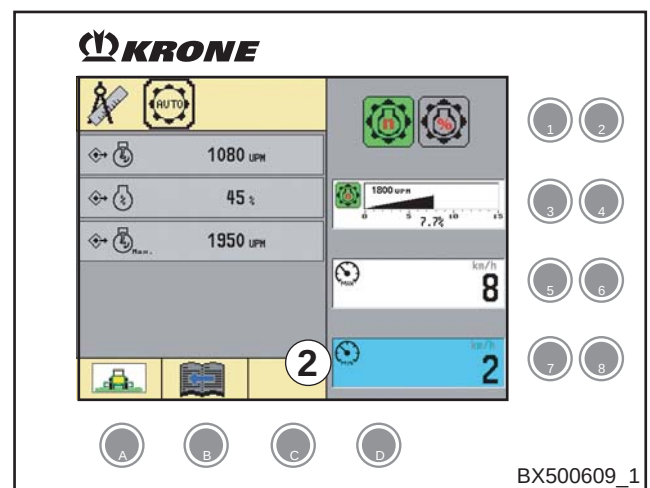
Press the rotary potentiometer to select the input field for the maximum speed.

- Pressing the rotary potentiometer once will mark the input field.
The colour of the background will change to yellow, and the value of the 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_1

4.18 CropControl control unit

4.18.1 General Description

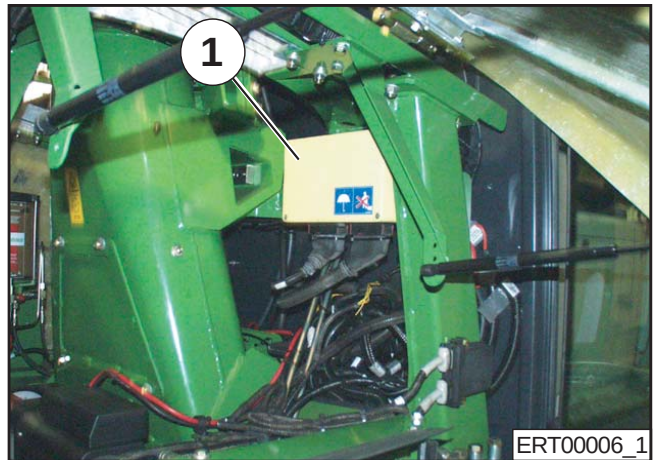
The electronic equipment of the CropControl system consists essentially of the job computer along with the control unit and the sensors.

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.



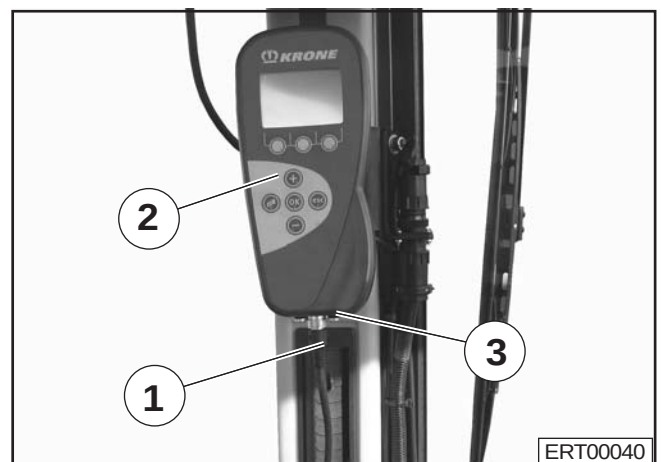
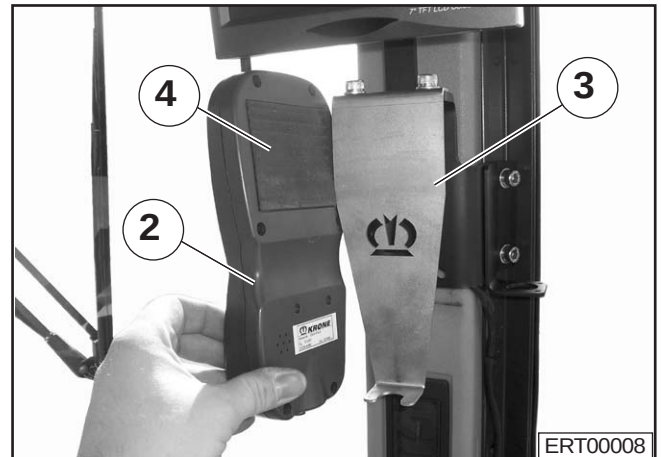
The control unit (2) must be protected against water.

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

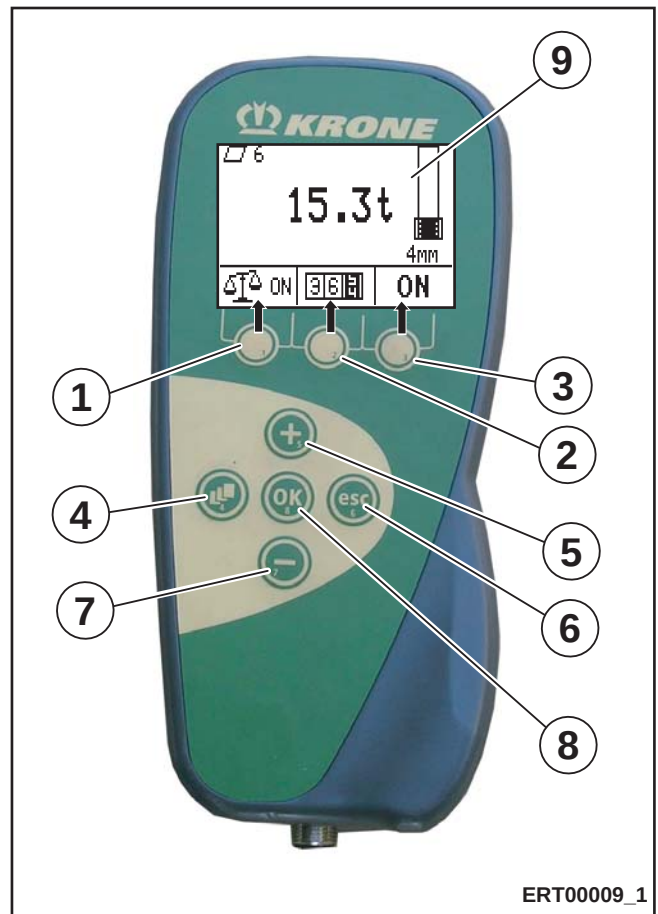
5 "+" key

6 Esc key

7 "-" key

8 OK key

9 Display



ERT00009_1

CropControl Operating Instructions

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

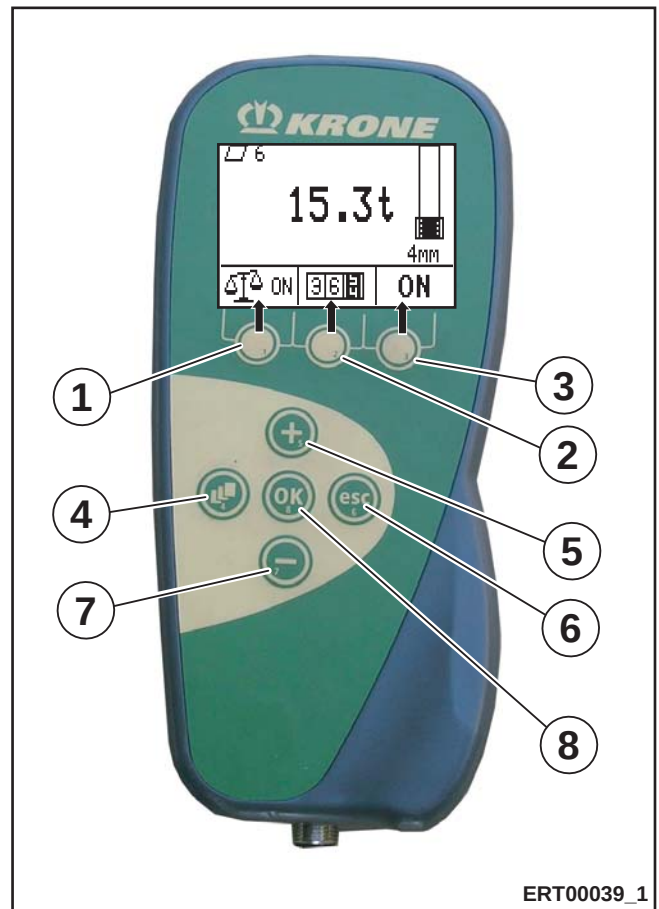
Use the  and  keys to change the settings and to select the desired menu at the menu level.

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).



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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.



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CropControl Operating Instructions

4.18.5 Brief instruction

Start yield recording:

Switch on control, press keys  and  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.

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.

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.

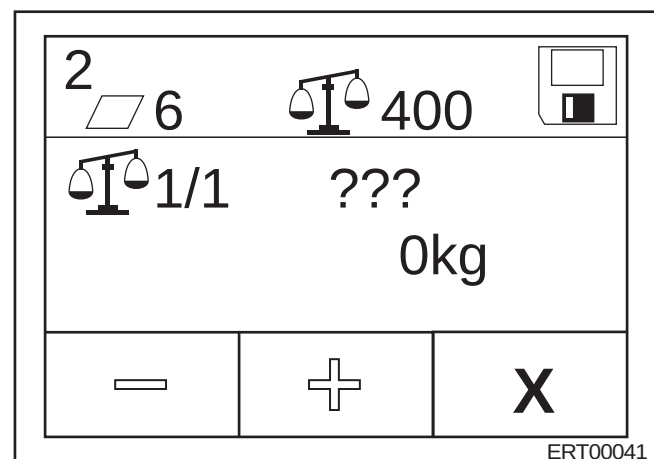
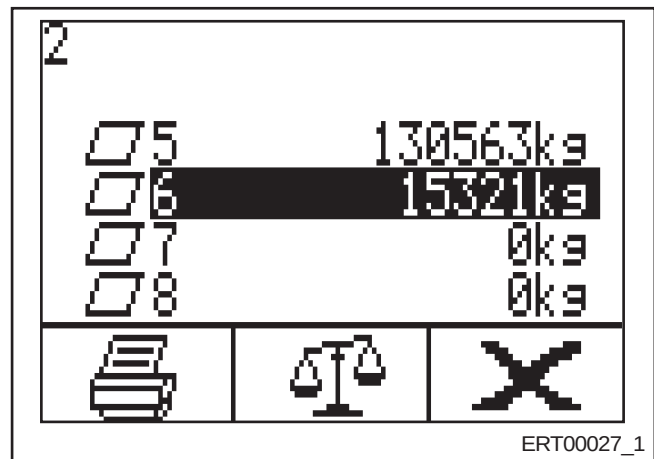
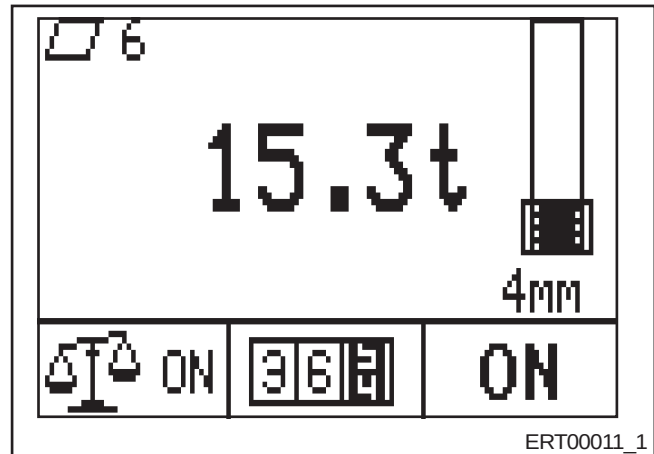
Use the softkeys  and  to enter the value of

the control weighing and save it using the key .

The calibration factor will then be recalculated and the measured mass will be corrected retrospectively for the entire field.

Pressing the  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  key for softkey " ON".

For more information see Section "Control weighing and calibration"

-  Call yield counter

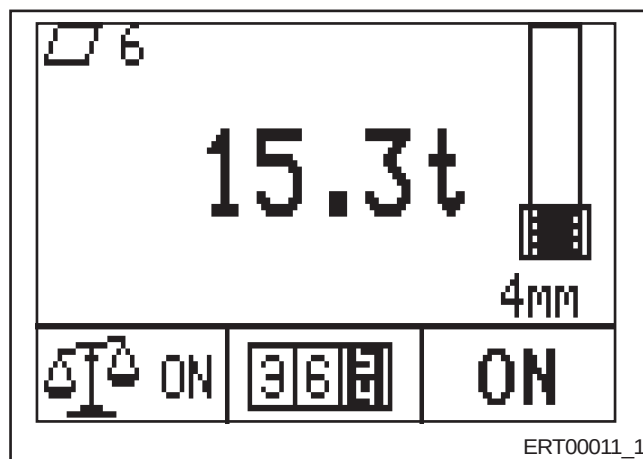
Call yield counter

- Press the  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  key for softkey "ON".

For further information, see the "Starting / stopping yield counter" chapter.

Chose between display formats

Click  to select display of recorded yield in the basic screen. You can chose between display formats t, t/h and t/ha.

CropControl Operating Instructions

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.

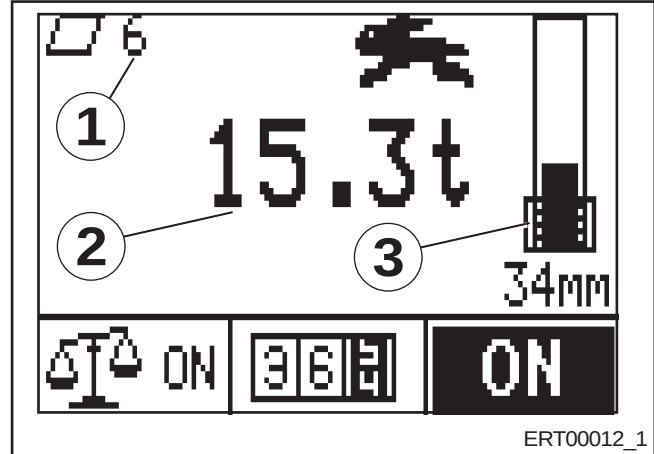
- Depending on the selection, the value (2) shows the current weight of the selected cultivated area in t, the current machine throughput in t/h or the current yield in t/ha. Throughput and current yield are only shown when the yield counter is started.
- The display "3" indicates the current excursion 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

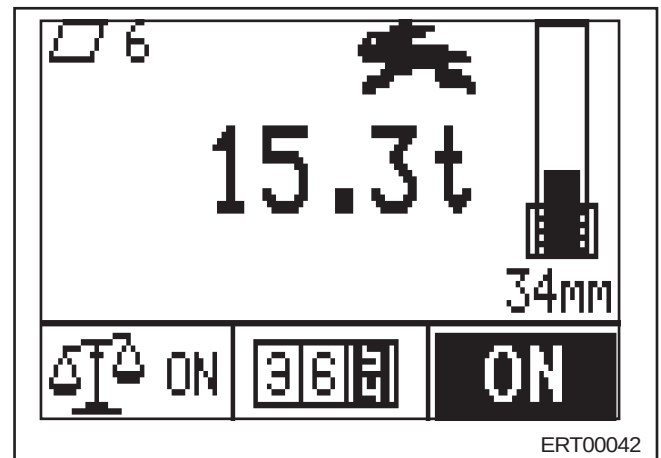
Start yield counter:

ON Yield counter has been stopped

ON Yield counter has been started

- Press the  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.

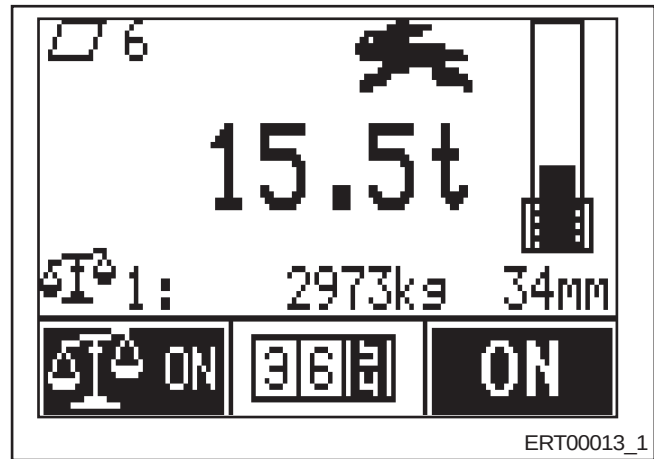
4.18.9 Control weighing and calibration

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  key for softkey **ΔI¹ ON**.
(Softkey " **ΔI¹ 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  once again will stop the control weighing, (softkey " **ΔI¹ 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".

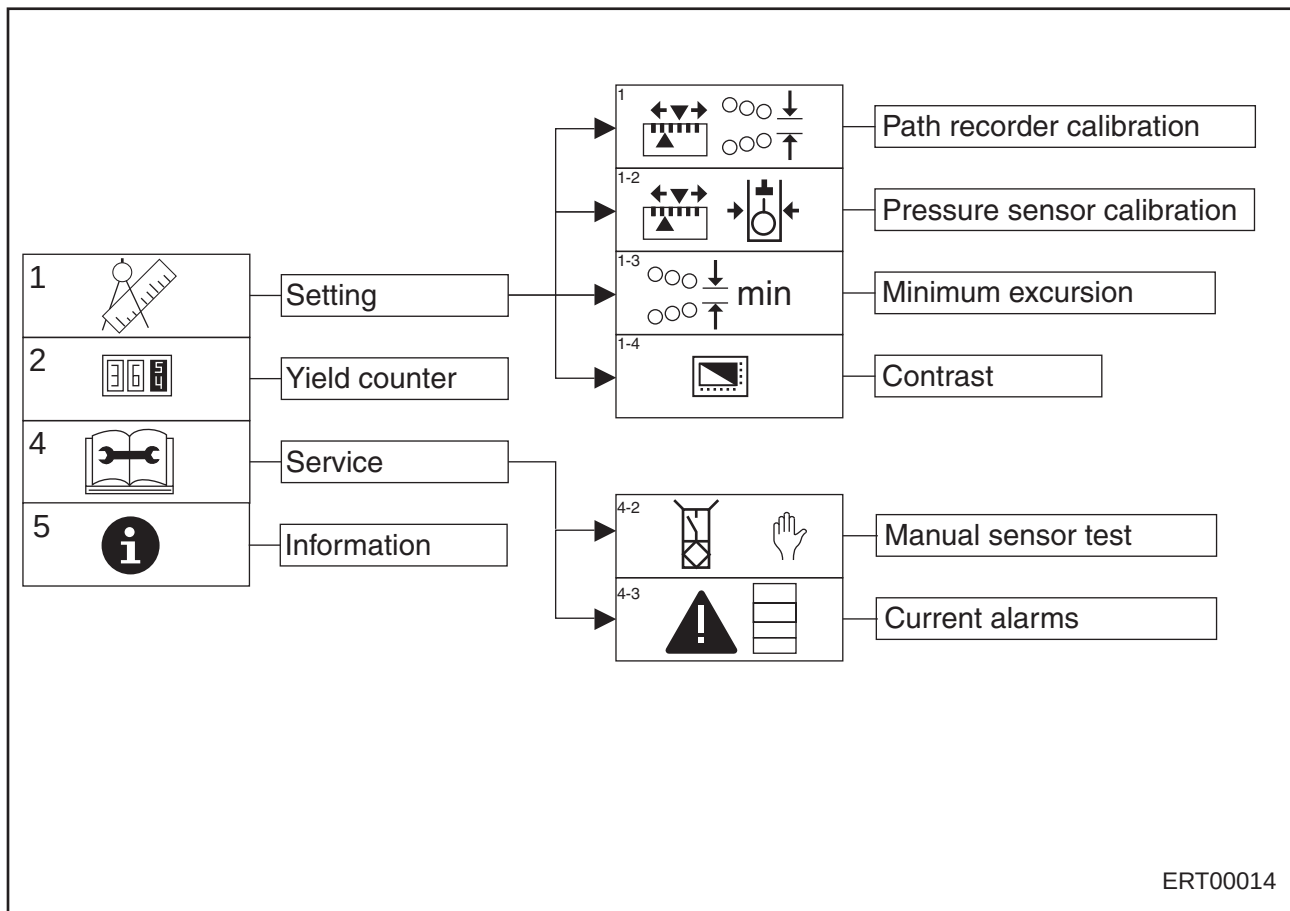


Cutting can continue normally while you wait for the value of the weighing. It is still possible to start a second control weighing directly.

CropControl Operating Instructions

4.18.10 Menu Level

4.18.10.1 Overview

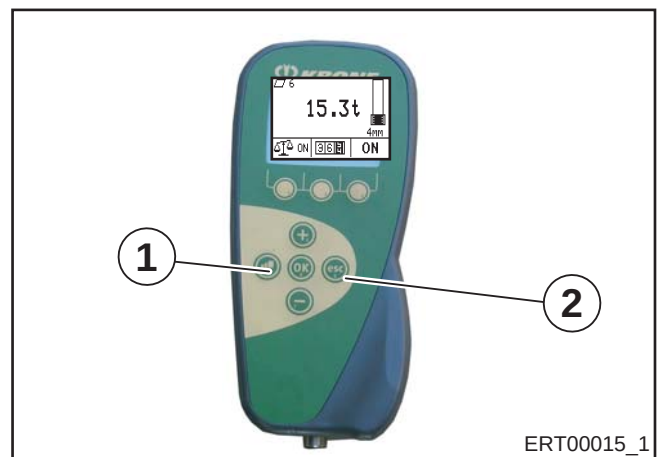


4.18.10.1.1 Bringing up a Menu Level

- Press the  key (1).

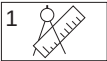
The menu level is shown in the display.

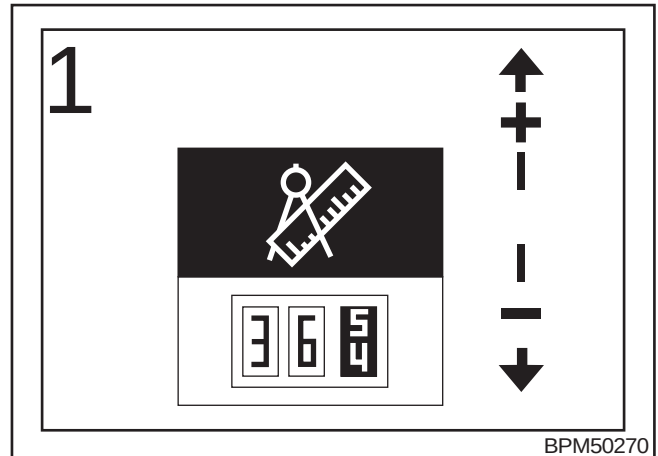
You can exit the menu level again with the  key (2).



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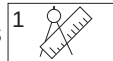
The menu level is divided into 4 main menus:

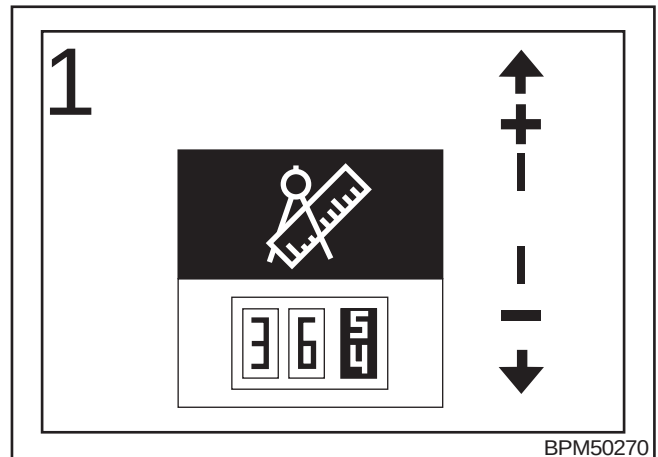
-  = Main menu 1 "Settings"
-  = Main menu. 2 "Yield counter"
-  = Main menu 4 "Service"
-  = Main Menu 5 „Information“
- You can use the  and  keys to select the main menus. The selected icon is shown in reverse colours.
- Pressing the  key brings up the menu level of the main menu that is selected.
- Use the  key to close the menu currently displayed.



4.18.10.2 Main menu 1 "Settings"

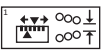
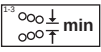
Calling the main menu

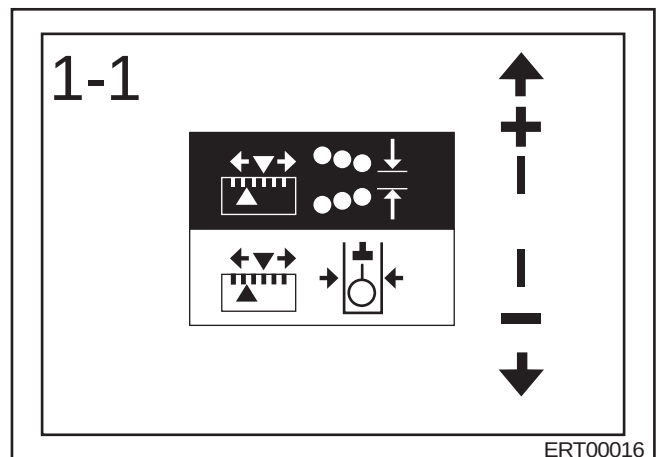
- Call the main menu with the  key.
- You can select main menu 1 "Settings"  with the  or  keys. The icon is shown in reverse colours.
- Press the  key.



The display shows menu level 1 "Settings".

Menu level 1 "Settings" is divided into 4 menus:

-  = Menu 1-1 "Calibration of path recorder"
-  = Menu 1-2 "Calibration of pressure sensor"
-  = Menu 1-3 "Minimum excursion setting"
-  = 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  and  keys to select menu 1.1
 "Calibration of path recorder". The icon is shown in reverse colours.
- Press the  key.

The display shows menu 1-1 "Calibration of path recorder".

The  icon in the upper line indicates that the displayed values are saved.

- Press the  key for softkey . The icon appears in reverse colours for a short while. The calibration value of the path recorder is displayed; the symbol  in the upper line will disappear.

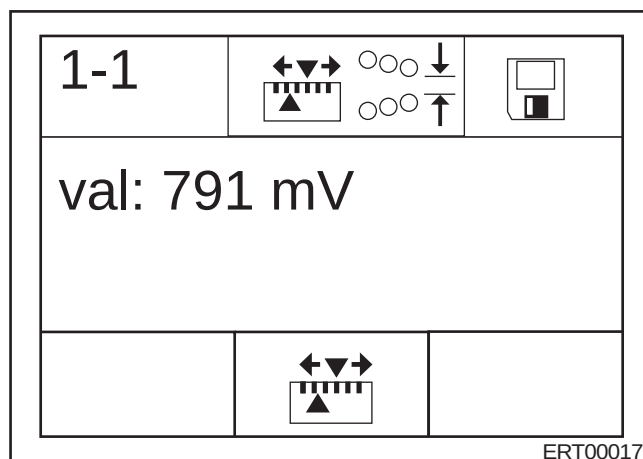
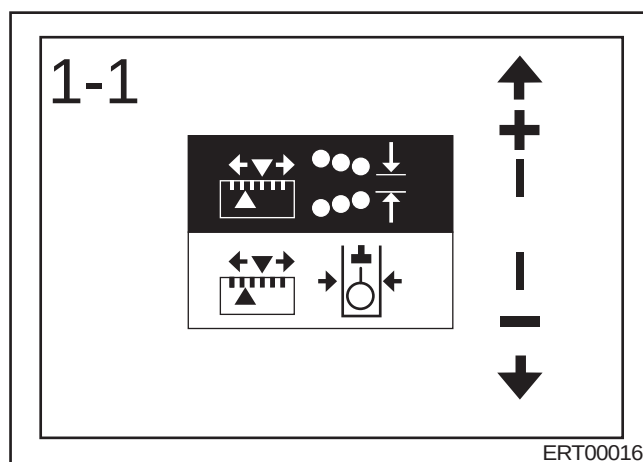


The calibration value must be between 500 mV and 1000 mV.

- Press the  key. The calibration value is saved and the  icon appears in the upper line.
- 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.



CropControl Operating Instructions

4.18.10.2.2 Menu 1-2 "Calibration of pressure sensor"

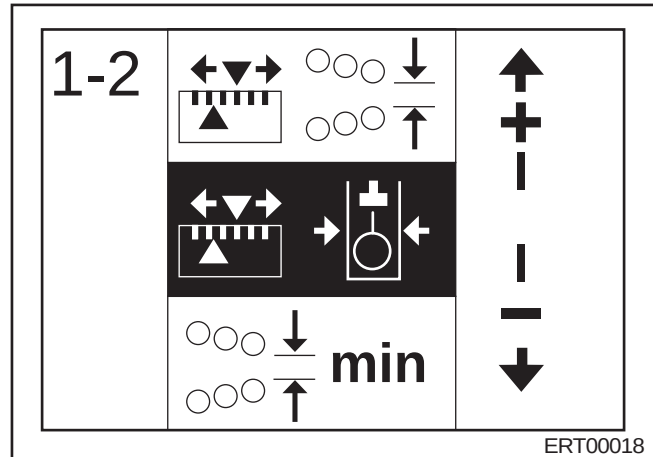
The pressure sensor must be calibrated before placing the machine in service the first time, after any assembly work and weekly during operation. For this, it must be ensured that no crops are in the feed drive and that the pre-compression rollers have been moved to the bottom limit stop.

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  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".

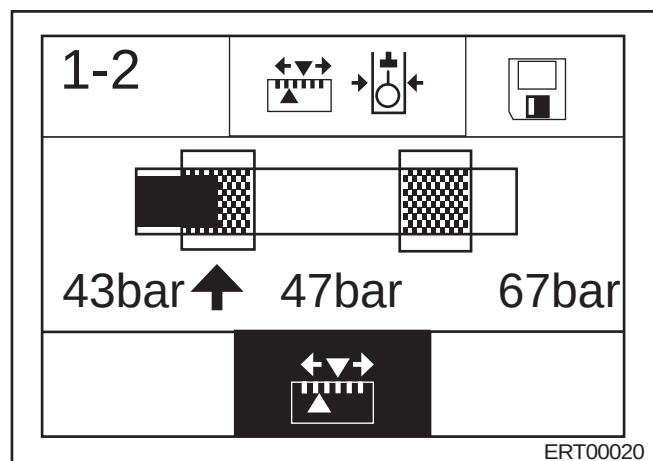
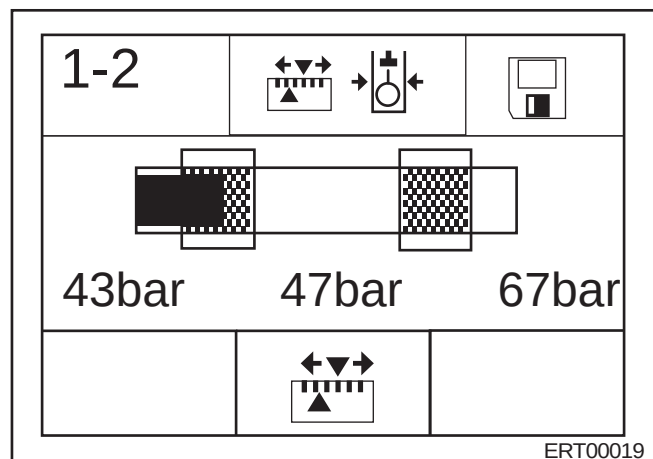
To calibrate the pressure sensor, proceed according to the following steps one after the other:

- Set the lifting gear to working position (not lifted)
- Switch on cutting drum
- Switch on feed drive
- Adjust engine to working speed (1950 rpm)
- Set chop length to minimum possible value

- Press the  key for softkey , the symbol is shown in reverse colours.

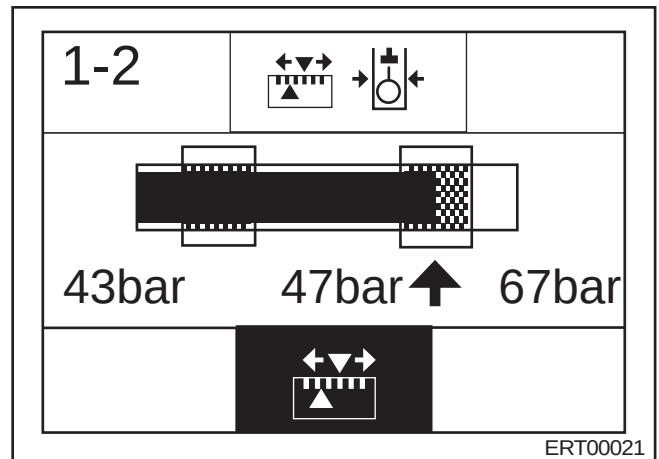
The symbol  in the upper line will disappear and calibration is started. An arrow will appear underneath the hatching on the left.

- Slowly increase chop length until the bar is within the hatching on the left.
- Wait for a short time



CropControl Operating Instructions

- 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  key. The calibration values are saved and the  icon appears in the upper line.
- 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.

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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

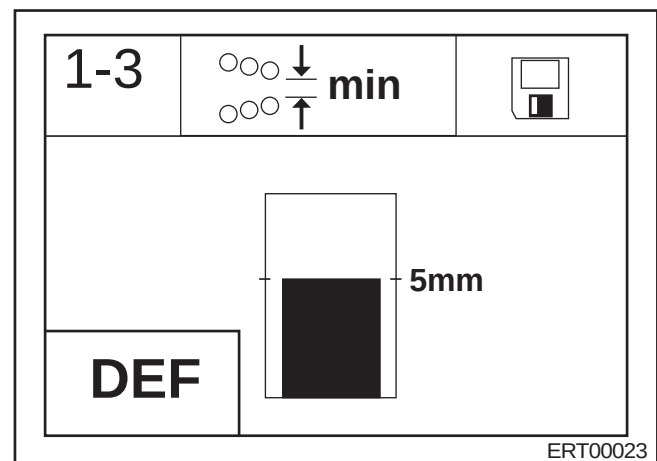
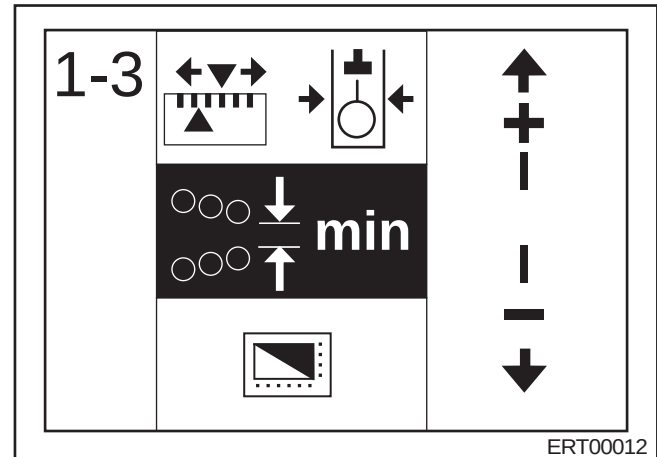
- Use the  and  keys to select menu 1.3 "Calibration of minimum excursion". The icon is shown in reverse colours.
- Press the  key.

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  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  key. The minimum excursion is saved and the  icon appears in the upper line.

- Use the  key to close the menu currently displayed.

The display shows menu level 1 "Settings".

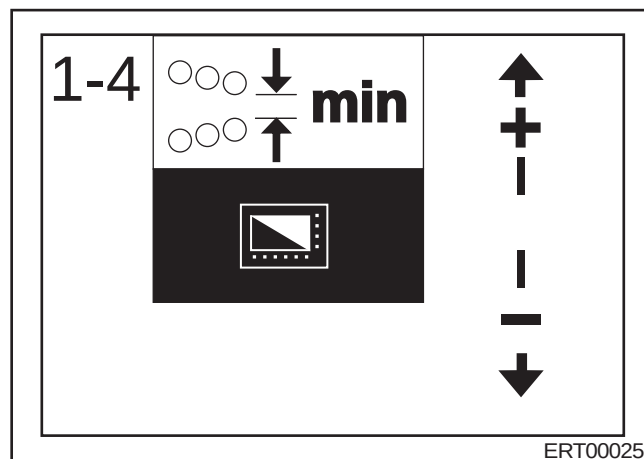
- Pressing the  key twice brings up the basic screen.

4.18.10.2.4 Menu 1-4 "Contrast"

Displaying the menu

Main menu 1 "Settings" appears

- Use the  and  keys to select menu 1-4
 "Contrast", the icon will be in reverse colours.
- Press the  key.



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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.

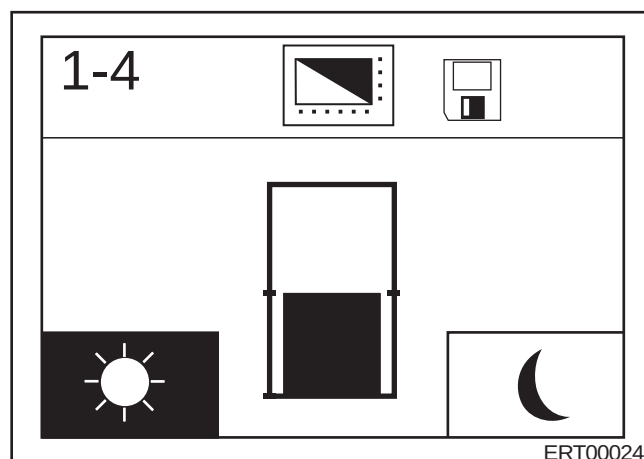
Setting and saving the contrast

The higher the bar, the stronger the contrast in the display.

- Use the  and  keys to set the contrast. The  icon in the top line goes out.
- Press the  key, the set contrast value will be saved, the icon  the upper line will disappear.
- 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.



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Day/night design

Switching from day to night design reduces background lighting.

Night design:

- Press the  key for softkey .

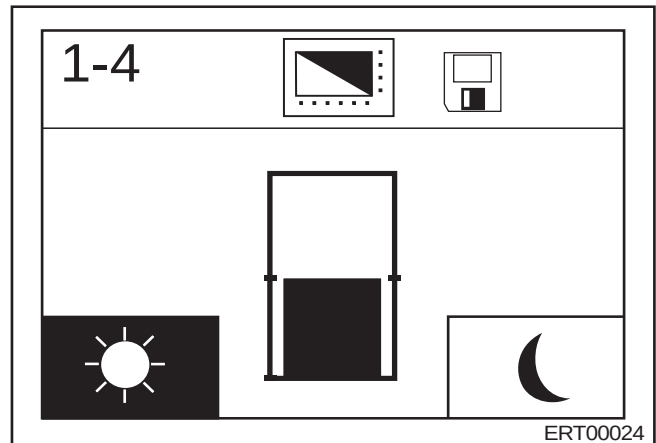
Background lighting is reduced.

Day design:

- Press the  key for softkey .

Background lighting is increased.

- Use the  key to close the menu currently displayed menu.
- Pressing the  key twice brings up the basic screen.

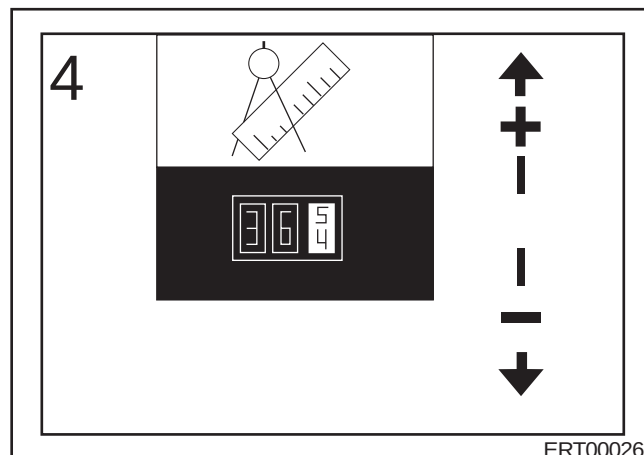


4.18.10.3 Main menu. 2 "Yield counter"

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".



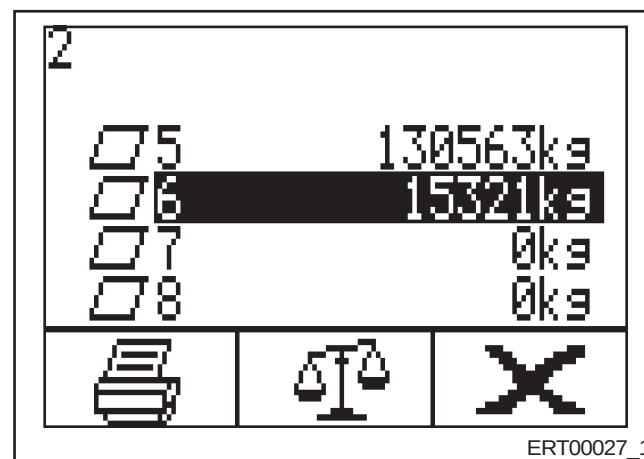
ERT00026

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.



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4.18.10.3.2 Printing the values

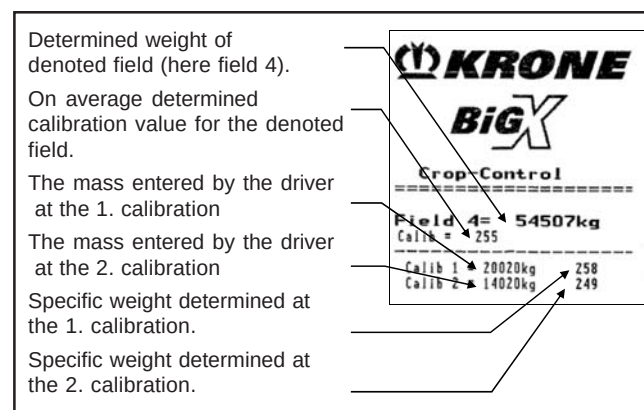
If a CAN printer is connected to the diagnostics interface of the machine, the values of the yield counter can be printed.

- 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.

4.18.10.3.3 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.

Description of print out of CropControl



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.

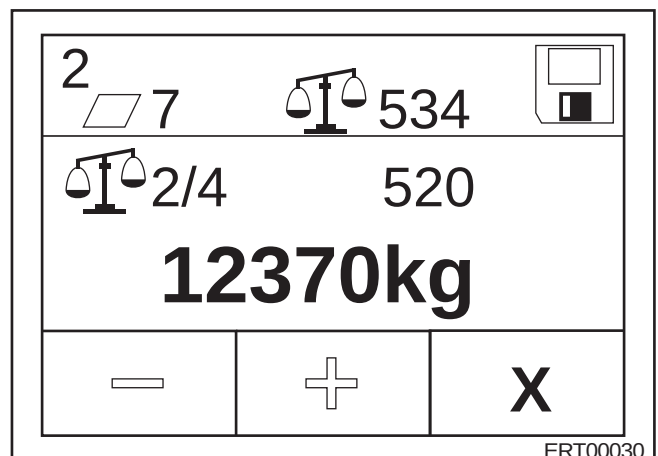
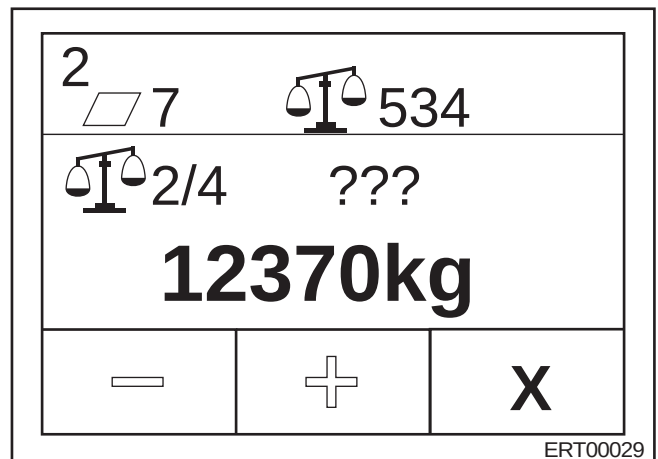
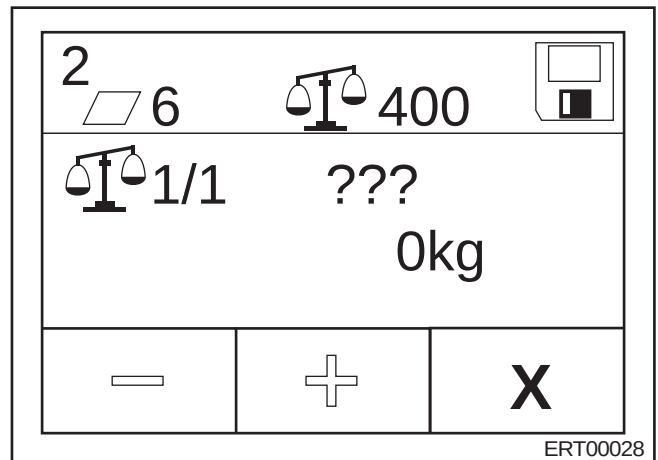
 **As long as no calibration factor has been saved for the displayed field, the factor from the previous field is displayed and is used for calculating the mass.**

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  key for softkey  to delete the value for the selected control weighing. The symbol  in the upper line will disappear.
- Press the  key. The change is saved, the calibration factor is recalculated and the  icon appears in the upper line.
- Use the  key to close the menu currently displayed.

The display shows menu 2 "Yield counter".

- Pressing the  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  key for softkey  or key .

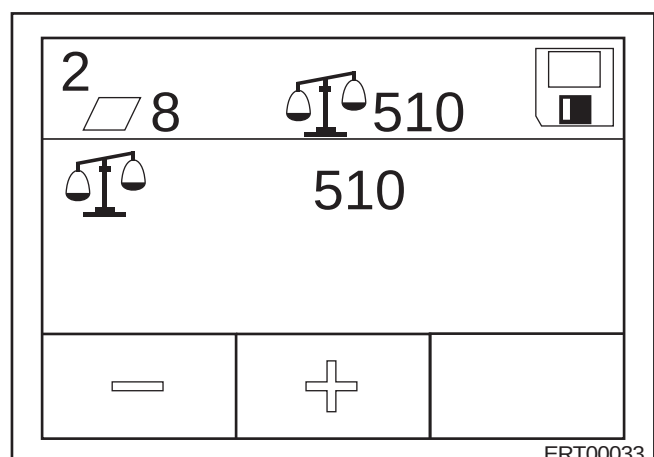
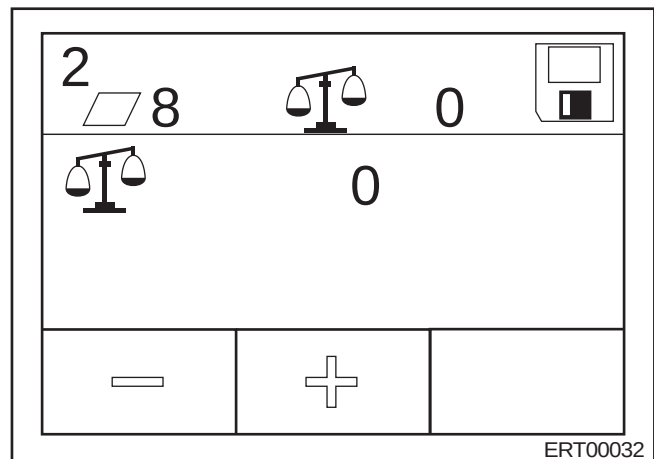
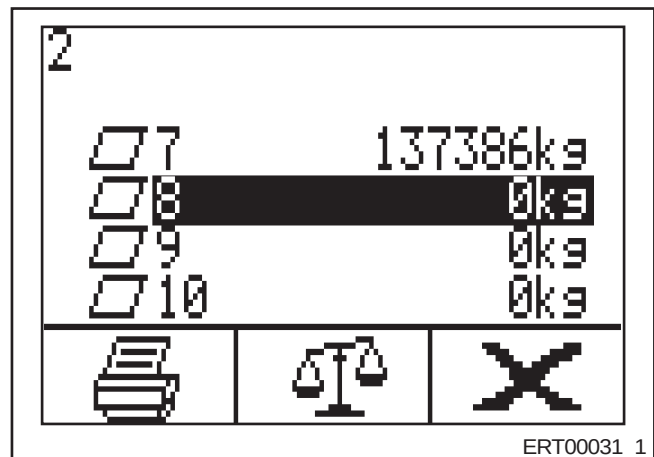
The display shows the menu "Entering the calibration factor".

The  icon in the upper line indicates that the displayed values are saved.

- Use the keys  for softkey  and  for softkey  to enter the calibration factor for the selected field. The symbol  in the upper line will disappear.
- Press the  key. The calibration factor is saved and the  icon appears in the upper line.
- Use the  key to close the menu currently displayed.

The display shows menu 2 "Yield counter".

- Pressing the  key twice brings up the basic screen.



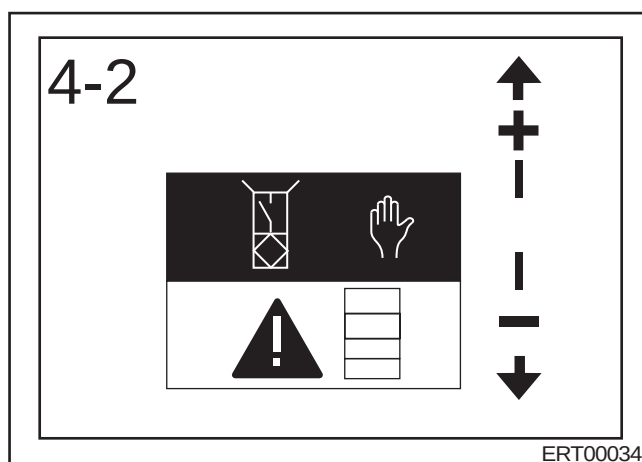
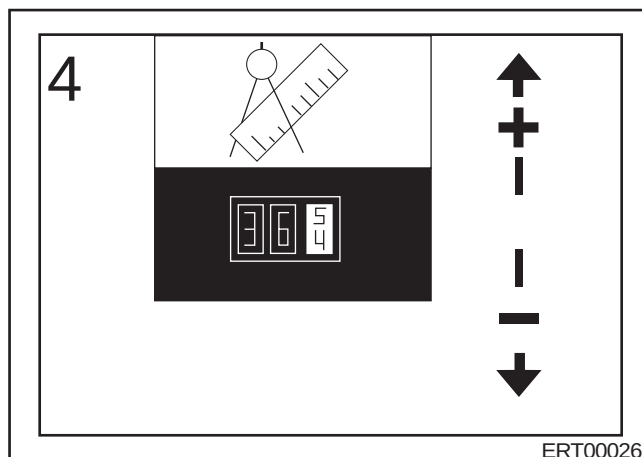
4.18.10.4 Main menu 4 "Service"

Calling the main menu

- You can select main menu 4 "Service" with the  or  keys. The icon is shown in reverse colours.
- Press the  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.

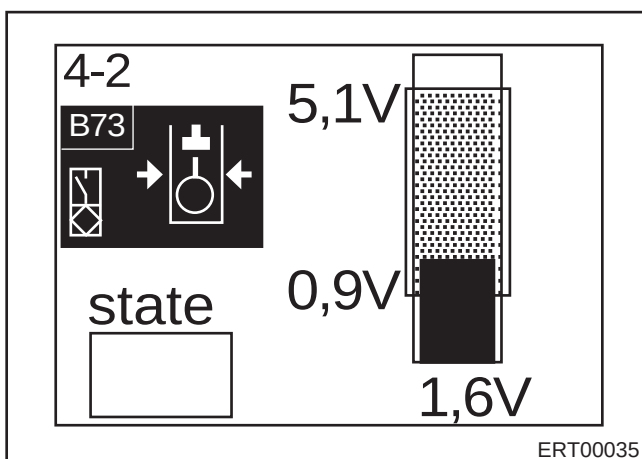
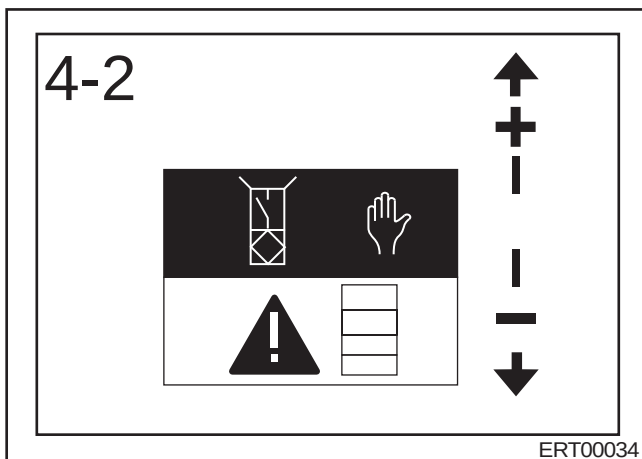
- You can select the menu 4-2 "Manual sensor test" with the   keys. The icon is shown in reverse colours.
- Press the  key.

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):

-  = Broken cable or short circuit
-  Error = Defect in the sensor or job computer

Setting values:

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

Analogue Sensors

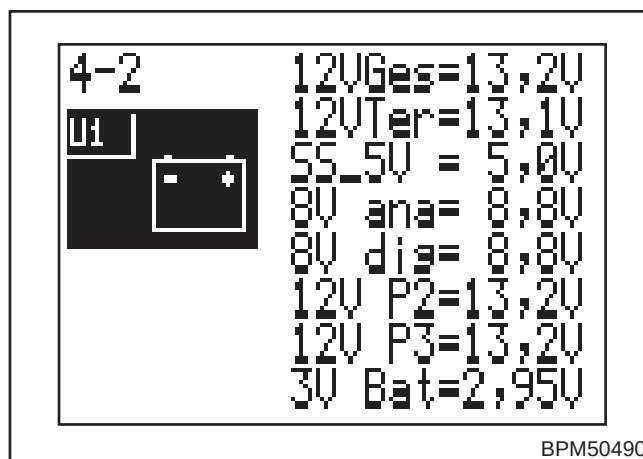
No.	Icon	Description
B72		Path recorder (must always be in the marked area).
B73		Pressure sensor (must always be in the marked area).

Diagnostics power supply voltages

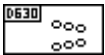
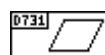
Nominal voltages:

- 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



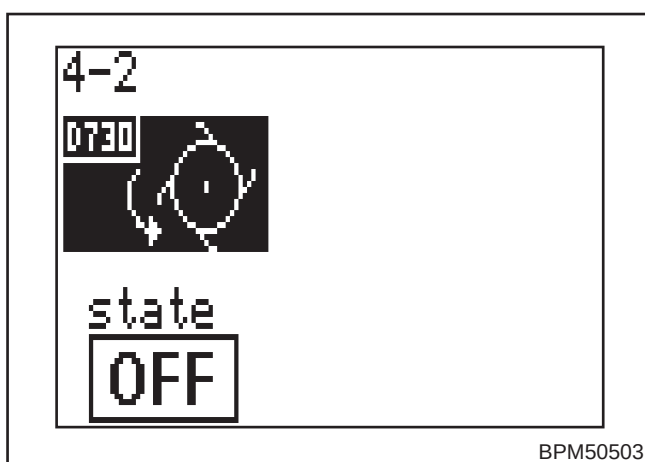
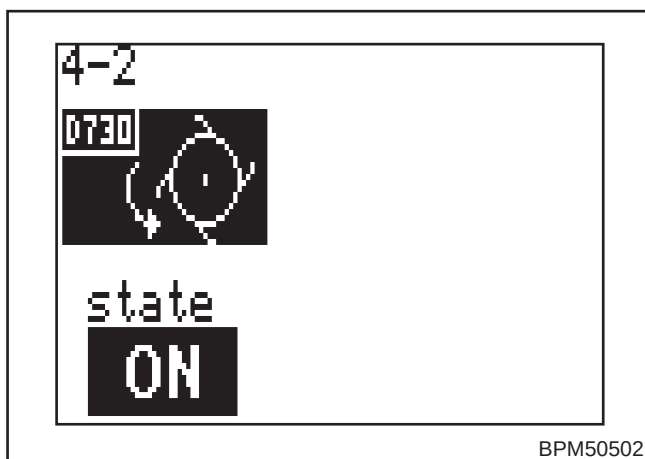
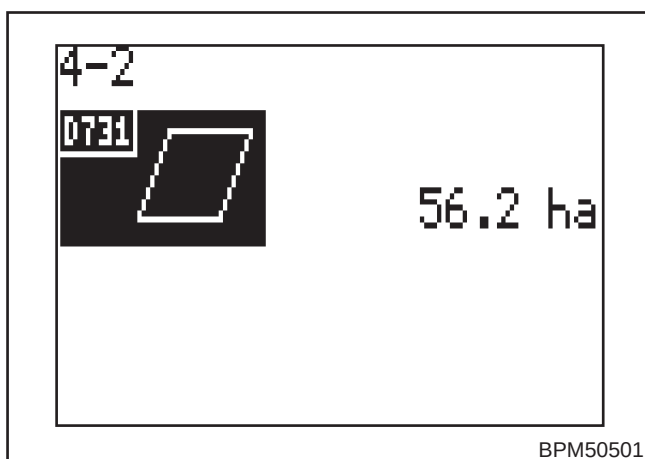
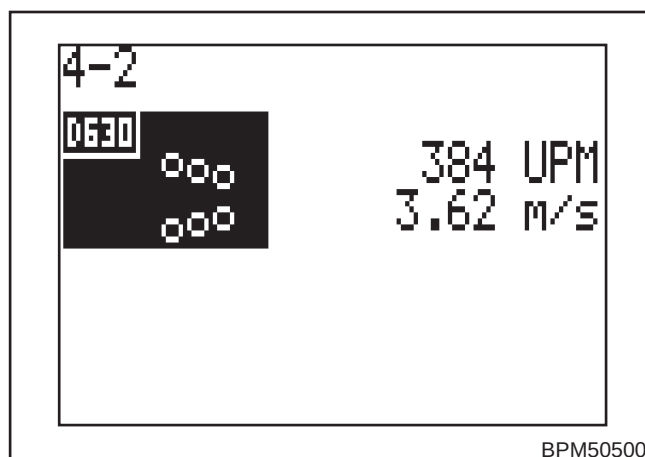
Diagnostic dates

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  key to close the menu currently displayed menu.

The display shows menu level 4 "Service".

- Pressing the  key twice brings up the basic screen.



CropControl Operating Instructions

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.

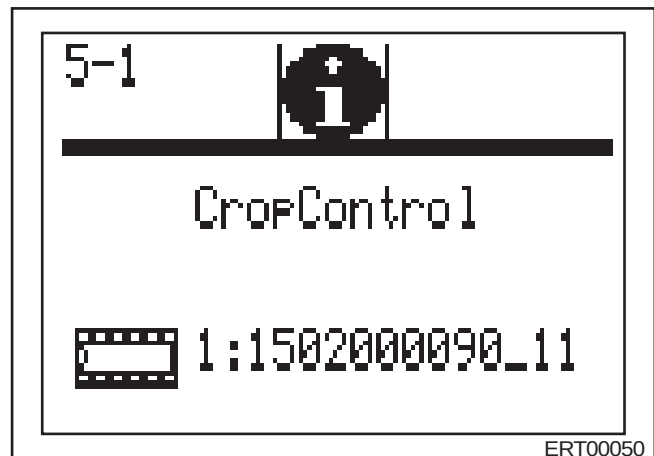
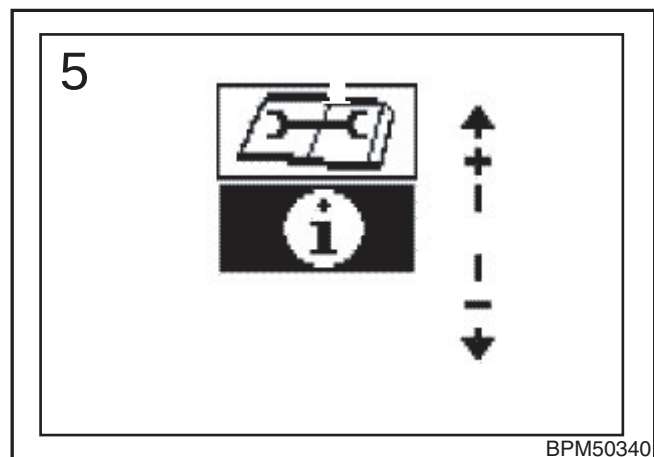
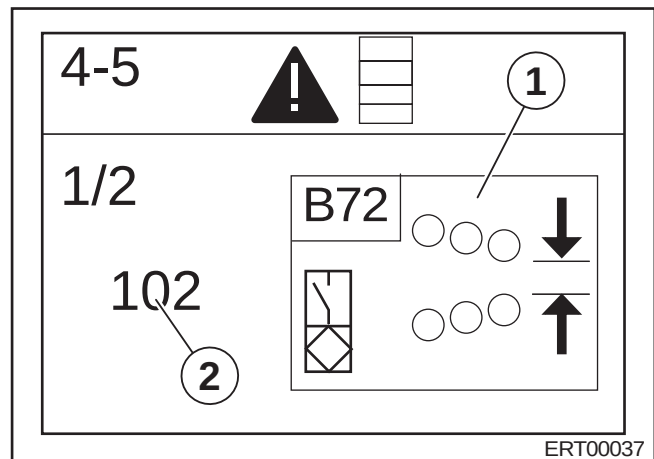
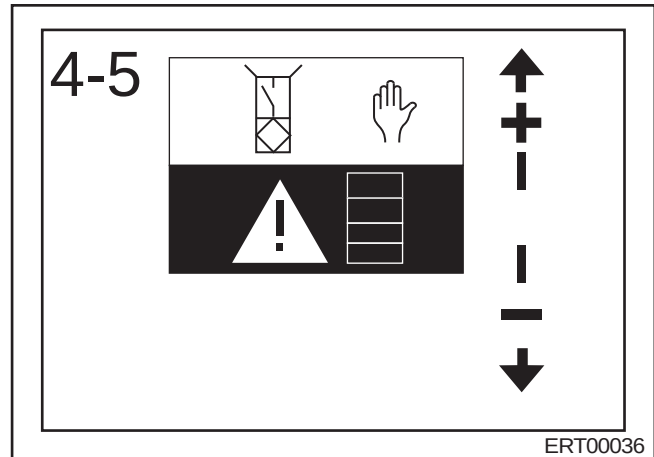
4.18.10.4.3 Main Menu 5 "Info"

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".

-  = 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  key for softkey .

To reset alarm:

- Press the  key for softkey , the alarm is reset and the audio signal stops.

If the malfunction occurs again, the alarm message will appear again.

To delete an alarm:

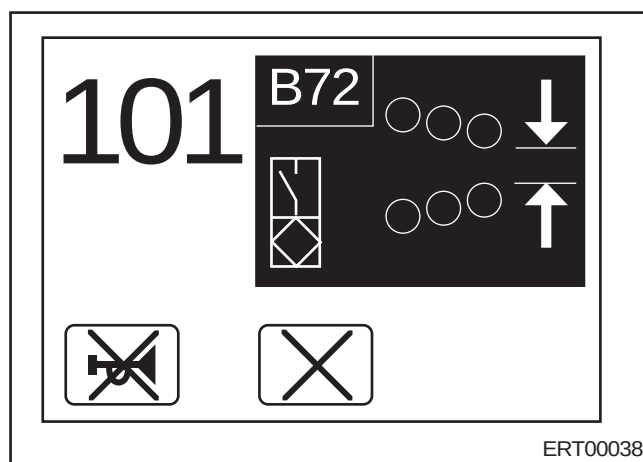


Alarms should only be deleted in emergency situations.

Press the  key for softkey  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.



ERT00038

CropControl Operating Instructions

4.19.1 General Messages

No.		Description	Possible cause	Remedy
A01		Computer internal fuse 2 defective (only yellow job computer)	Short circuit in case of the supply via FU2	Check wiring for short circuit. Replace the fuse (just the yellow job computer), replace the job computer, if necessary
A02		Fuse 3 defective (self-repairing)	Short circuit in case of the supply via 3A	Check wiring for short circuit, replace job computer, if necessary
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	Fuse -22F39 defective	Replace fuse
A15		Overvoltage	Dynamo defective	Check the dynamo
A16		RAM error	Defective back-up battery Job computer defective	Check the back-up battery and replace it, if necessary Replace the job computer, if necessary
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.**

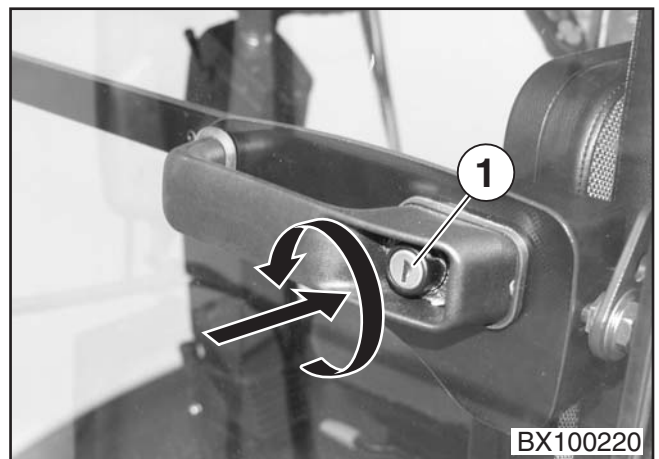
- Ladder (1) to the driver's cab.
- Steps (2) to the roof.



BX100460

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.

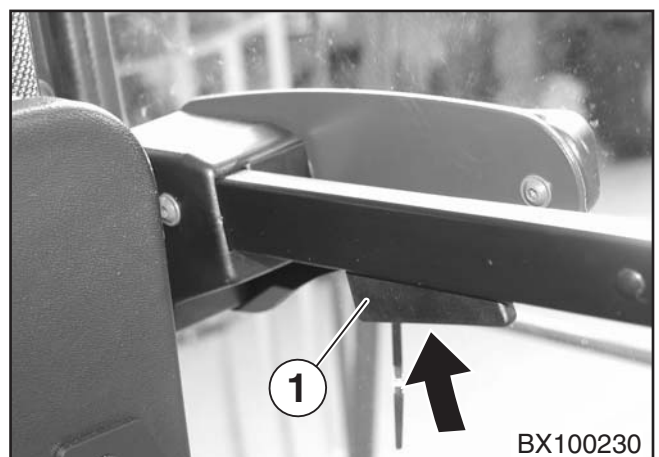


BX100220

- **From the inside:** Lift the door opening lever (1) and open the door.



The cab door must be closed during operation.



BX100230

5.3 The air comfort seat



After the adjustment of the comfort seat, the right armrest and the steering column adjustment, check the free mobility of the multi-function lever into all directions. Should this not be the case, the settings need to be readjusted.

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



The adjustment devices of the comfort 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

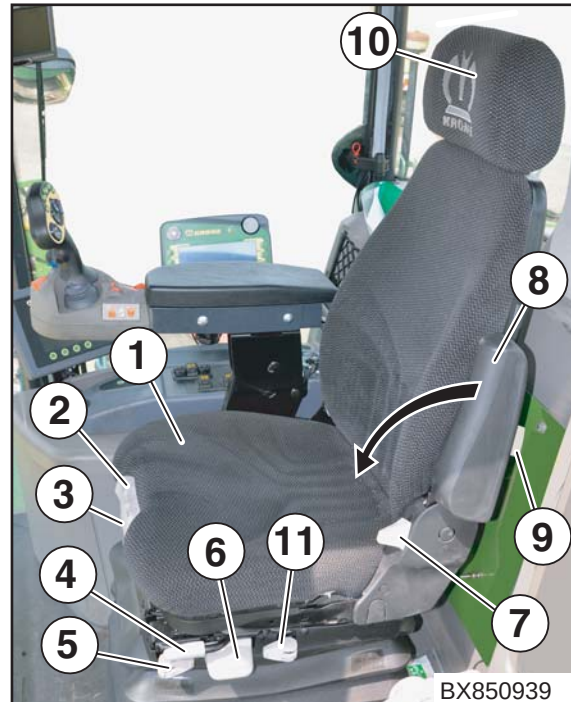
The height can be adjusted continuously by means of the hydraulic system. In order to prevent damage, actuate the compressor for a maximum of 1 minute.

- Pull the lever (6) upwards completely (position I) to move the driver's seat (1) up; press the lever (6) down completely (position II) to move the driver's seat (1) down. When the upper or lower end position of the height adjustment mechanism is 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.

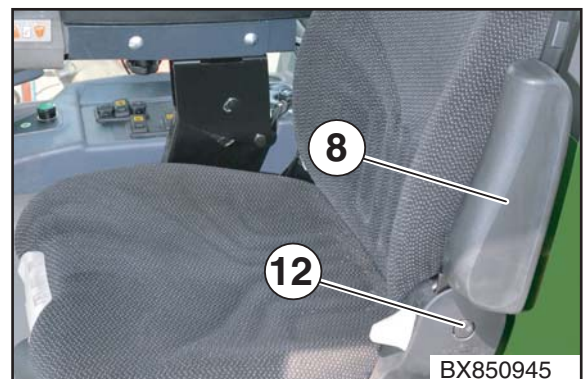
Setting the left armrest

- 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 (12) onto the hexagon nut again.

Adjustable damper

The oscillating behaviour of the driver's seat can be adjusted to each driving situation via the adjustable damper stepless from "soft" to "hard".

- Pull lever (11) up (seating comfort: soft)
- Press lever (11) down (seating comfort: hard)



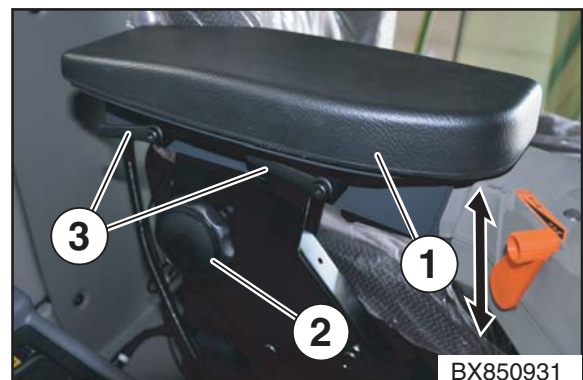
The damper must always be set so tightly that a snap through of the seat is prevented, also in case of a bad road, and that a contact to the pedals is always given.

5.3.1 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.
- The angle of inclination and the height at the right armrest can be adjusted by activating the lever (3).



5.4 Steering column adjustment



After the adjustment of the comfort seat, the right armrest and the steering column adjustment, check the free mobility of the multi-function lever into all directions. Should this not be the case, the settings need to be readjusted.



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

Horizontal and vertical steering column adjustment

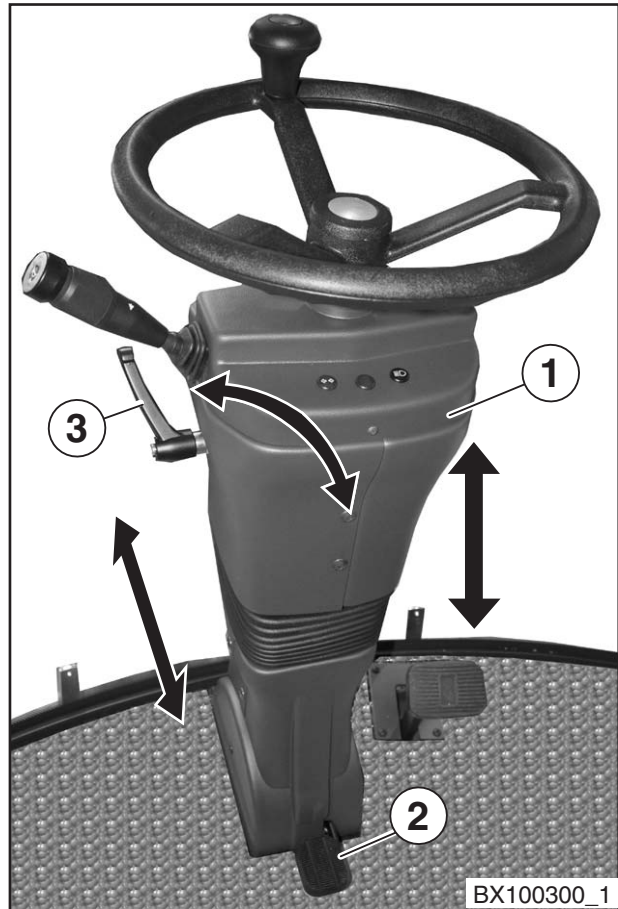


The steering column (1) is held in vertical position by spring pressure. Before actuating the pedal (2), hold the steering wheel with both hands.

- 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.

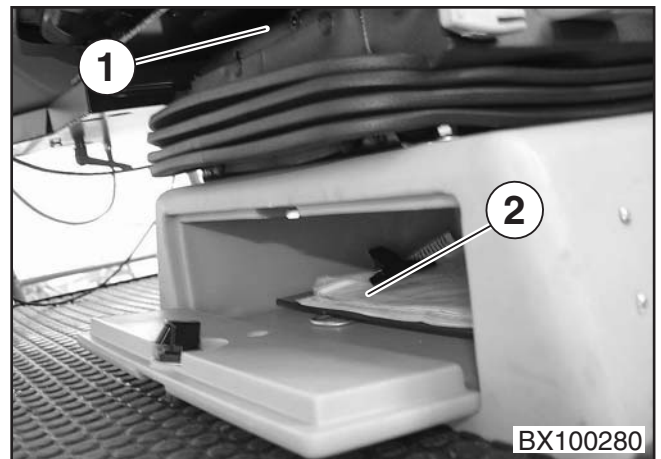
Horizontal steering column adjustment

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



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).

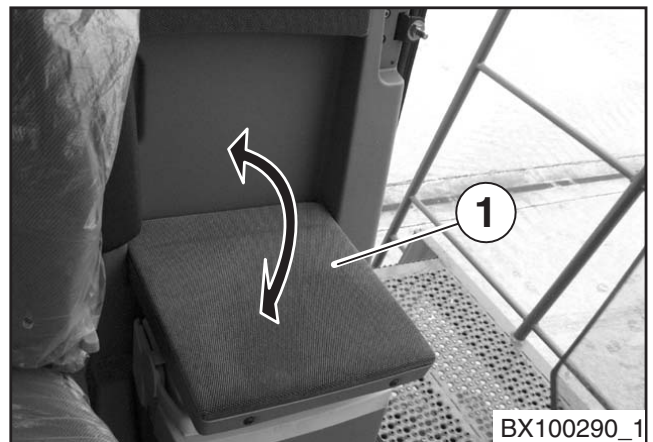


5.6 Passenger seat (optional)



Apart from the driver, only one additional person may be present in the driver's cab during operation.

- Folding down the passenger's seat (1).



5.7 Inside mirror

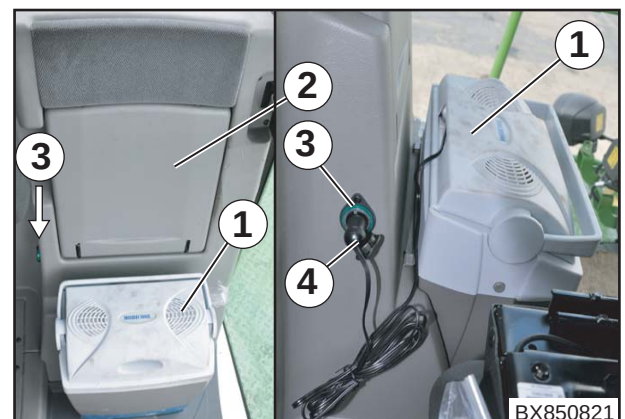
Set the interior mirror (1) according to the requirements of operation.

- Set the interior mirror (1) by hand.



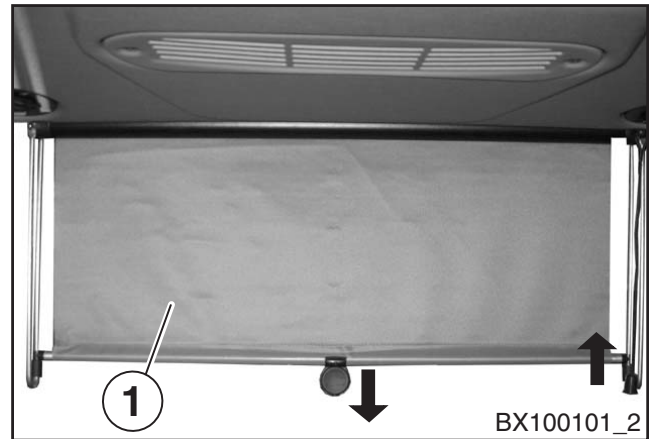
5.8 Cold box

The cold box (1) is underneath the passenger seat (2) in the cab. With the help of 12 V of the plug (4) the cold box leaves itself to the 12 V plug socket (3) right beside the passenger seat to attach.



5.9 Sun visor

- Set the sun visor (1) as required.



5.10 Outside mirrors

Left outside mirror

- Set the left outside mirror by hand.



Right outside mirror and anti-collision mirror

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

Setting the anti-collision mirror (2)

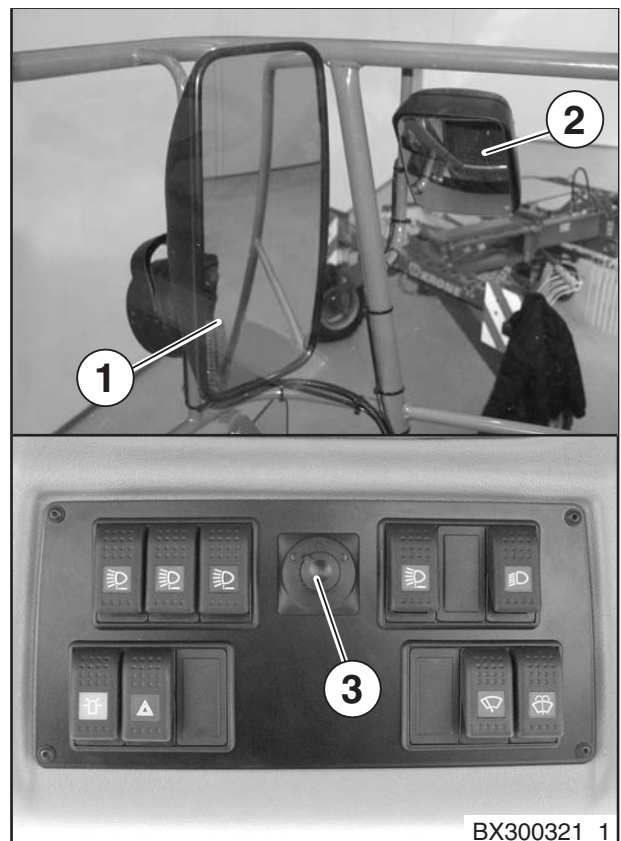


Set the anti-collision mirror (2) in such a way that the ground area next to the right front wheel can be checked prior to starting.

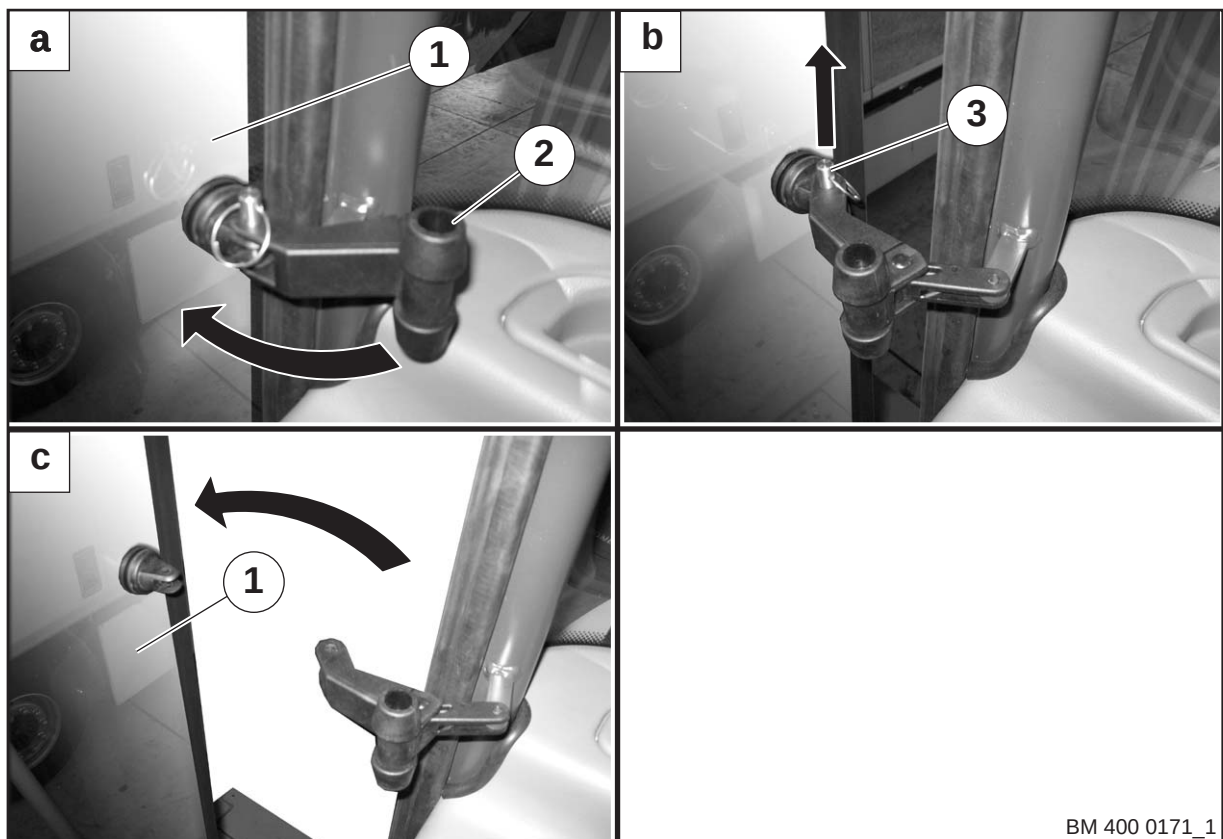
- Turn the switch (3) to the left (arrow to the left).
- Press the switch (3) up, down and to the side until the anti-collision mirror (2) is set correctly.

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.



5.11 Emergency exit



WARNING

The escape route is obstructed by a blocked emergency exit! In an emergency, the right side window serves as emergency exit.

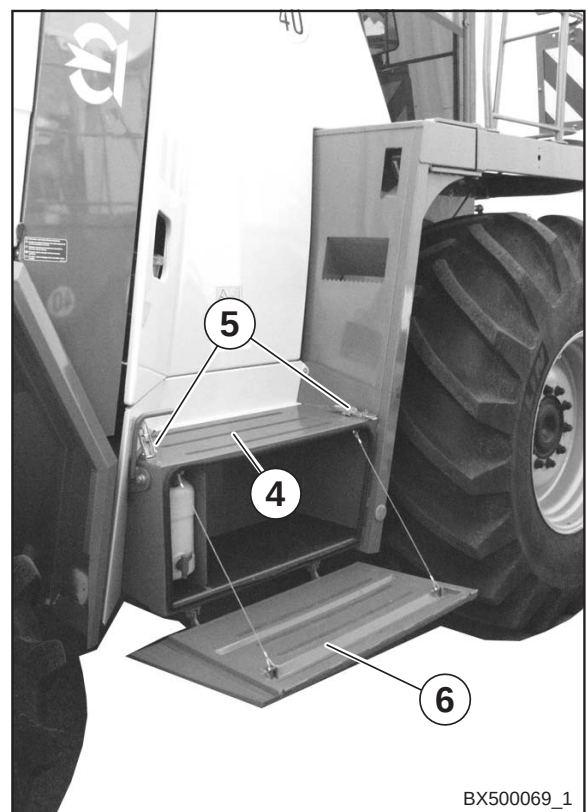
If the side window cannot be opened without hindrance, then the escape route for the operator is blocked.

- Make sure the right platform remains free. Thus the right side window can swivel open unimpeded in case of an emergency.

In case of an emergency, the side window (1) 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:

- Swing lever (2) forwards up to the catching point
- Pull out the hinged cotter pin at the bolt (3) and remove the bolt
- Open the side window (1) completely
- Climb onto the tool box (4). To do this, use the handrail and the emergency exit above the right platform.
- Open locking (5) of the tool box and fold down cover (6).
- Leave the machine by using cover (6).



5.12 Windshield wipers

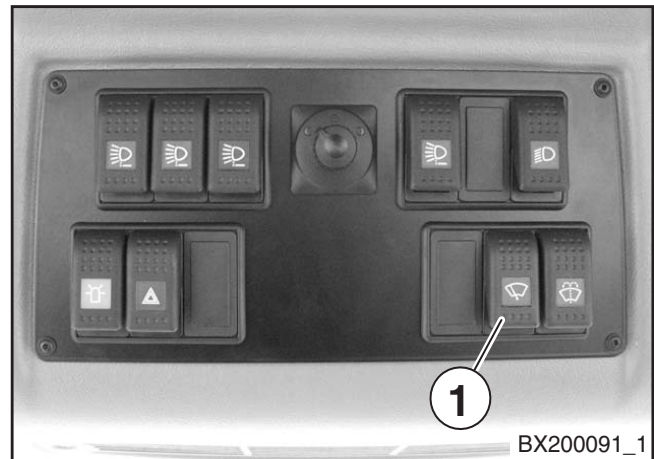
The rocker switch (1) for the windshield wipers is located in the roof panel.

The switch has three positions:

- I - Off
- II - Interval
- III - Continuous operation

Switching on the windshield wipers

- Actuate the rocker switch (1).



5.13 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).

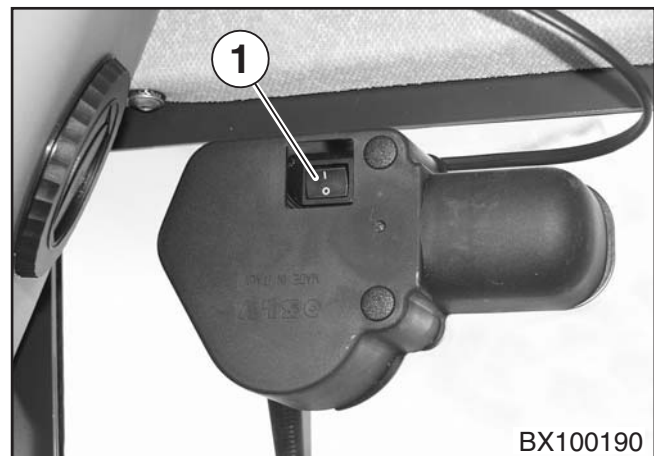


5.14 Side window washer (optional)

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.



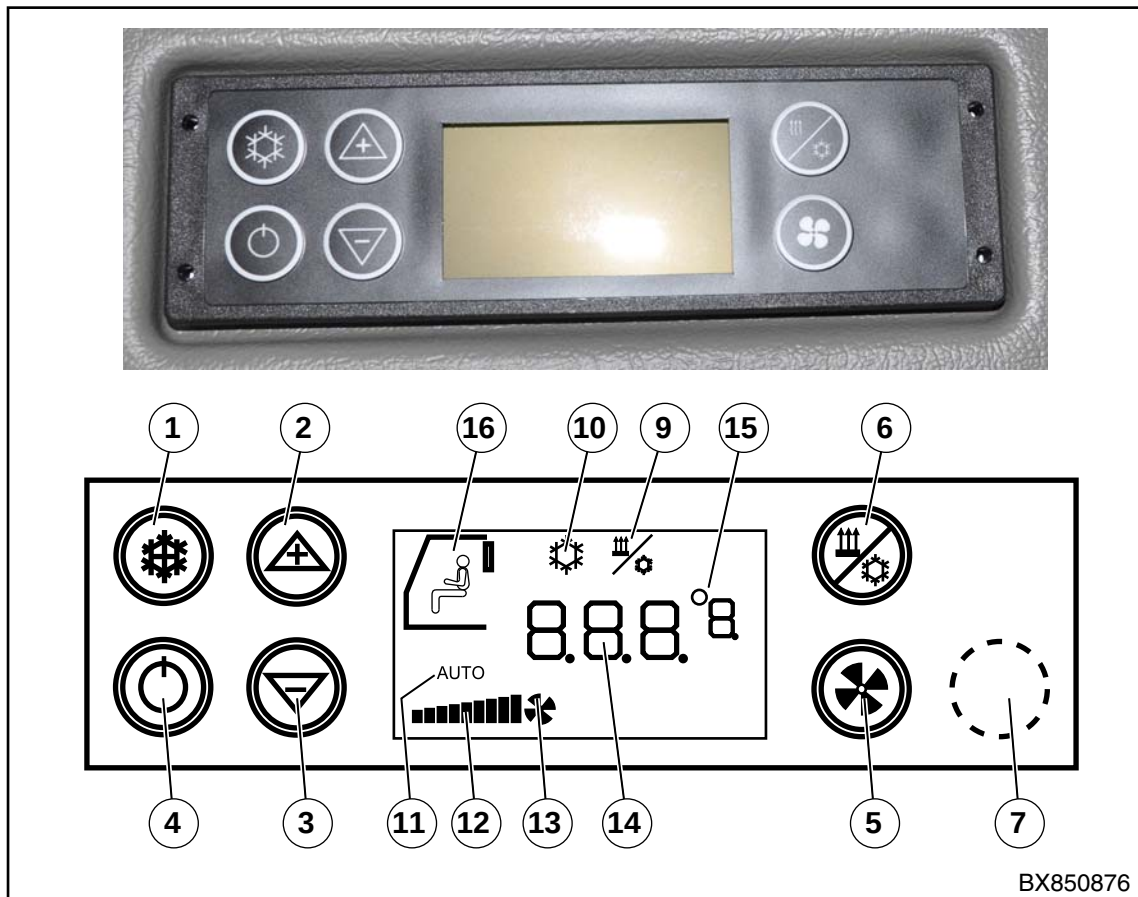
5.15 Climatronic / Heating

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.



BX850876

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“ "Speed up"
- 3 Key for adjusting the desired cabin temperature down.
Alternative: manual adjustments „down“ "Speed 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 Blind key for switching the temperature display to ° Fahrenheit

LCD Function of LCD-display

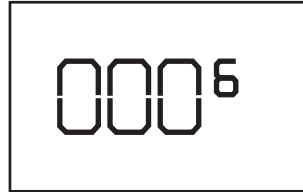
- 9 Symbol indicates REHEAT – operation on
- 10 Symbol indicates air conditioning on
- 11 Symbol indicates that fully automatic control is switched on
- 12 Bar indicates the fan speed during manual operation
- 13 Symbol indicates manual fan operation
- 14 4-digit seven segment display indicates set value or error code
- 15 Symbol indicates temperature unit (°)
- 16 Indicates symbol for the vehicle cabin

5.15.2 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.:



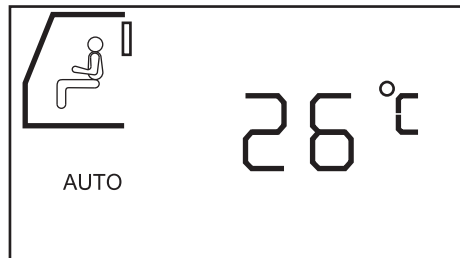
Afterwards the hours of operation of the air conditioning system are displayed for about 5 sec.:
(e.g. 6 hours of operation)

Afterwards the last saved setting is shown in the display.

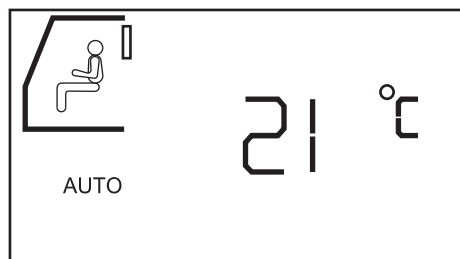
5.15.3 Setting the desired cabin temperature

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)



5.15.4 Switching air conditioning operation on/off

Switching air conditioning on with the key .

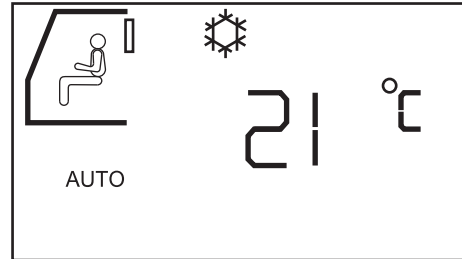
The air conditioning is now operating, this symbol  indicates the air conditioning operating.



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.



5.15.5 Switching REHEAT - operation on and off

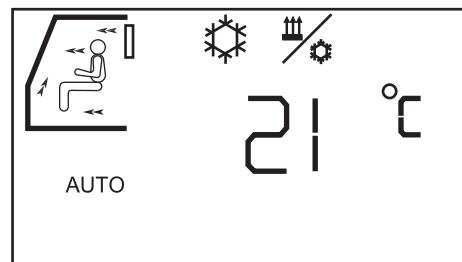
REHEAT-operation = (dehumidify cabin air)

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.

5.15.6 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%).

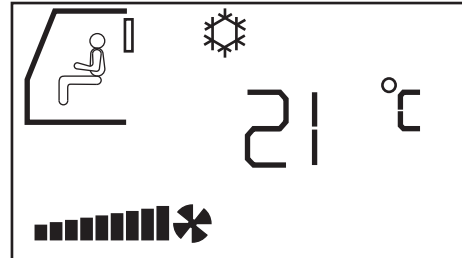
The symbol **AUTO** is no longer shown.

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.



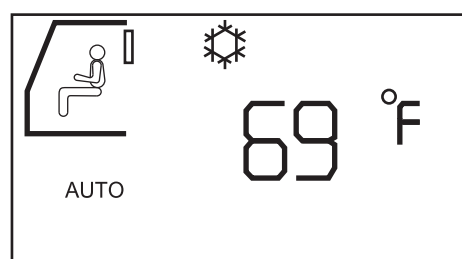
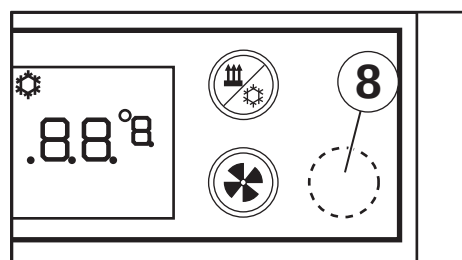
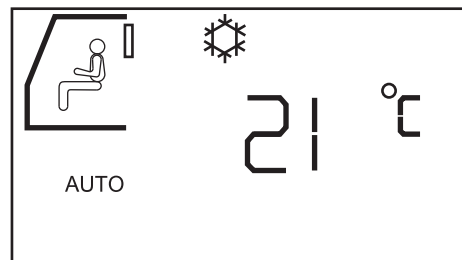
5.15.7 Switching the temperature display to ° Fahrenheit

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.



5.15.8 Showing errors on the display

Error code (F0)

Error room temperature sensor is shown with blinking display (F0) .

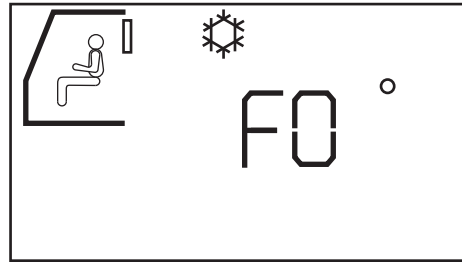


The control received an error of the room temperature sensor, the function is inoperable.

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 (F1)

Error blow out-temperature sensor is shown with blinking display (F1).

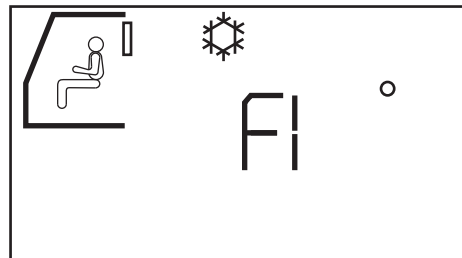


The control received an error of the blow out-temperature sensor, the function is inoperable.

Cause of the sensor error:

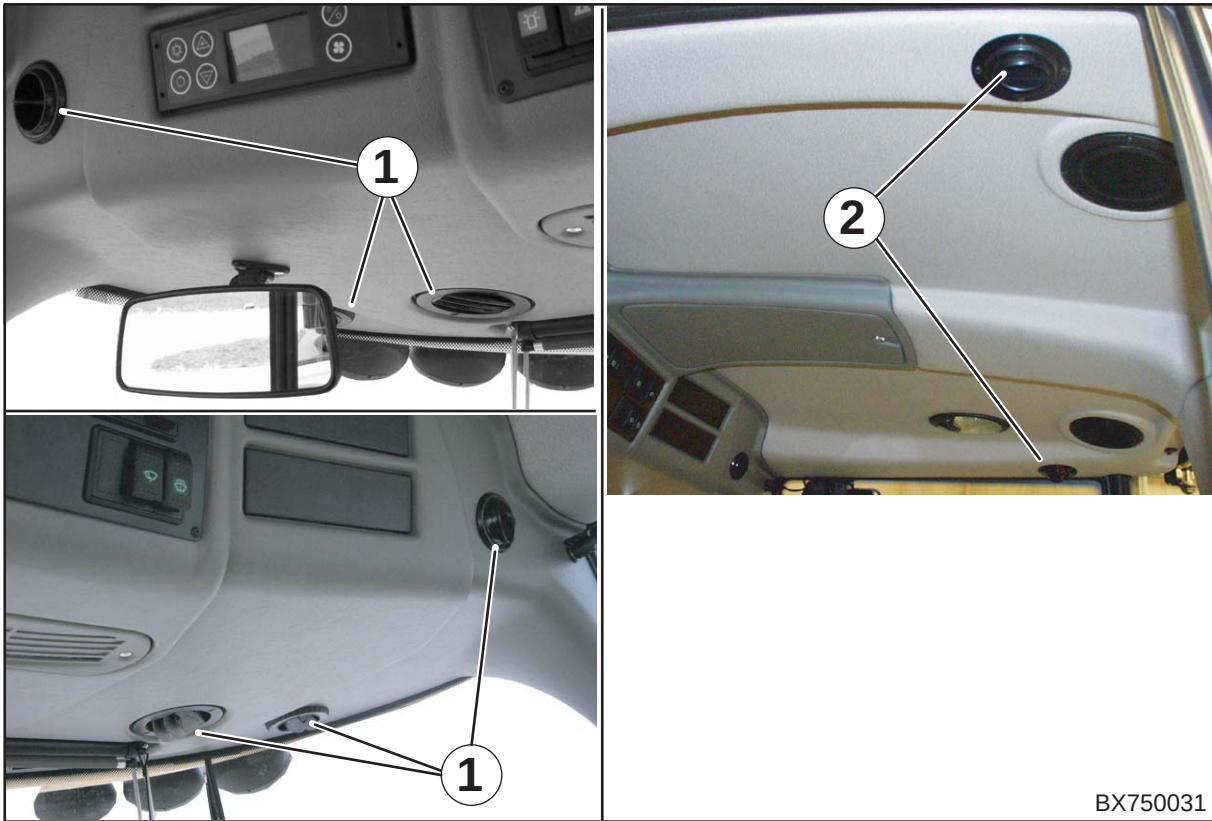
Short circuit or interruption of the sensor line, plug connection on the sensor or control, temperature sensor damaged.

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



BX750031

- Six manually adjustable air nozzles (1) are located in the front roof area of the cabin.
- Two manually adjustable air nozzles (2) are located in the rear area of the cabin.



The intensity of the flow of air of the air conditioning system is regulated in the „AUTO“ mode via engine speed. The flow of air can be adjusted

manually via the  key (refer to chapter 5 „Manual Adjustment of the Evaporator Fan Speed“).



Set the louvers in such a way that the panes do not mist up.

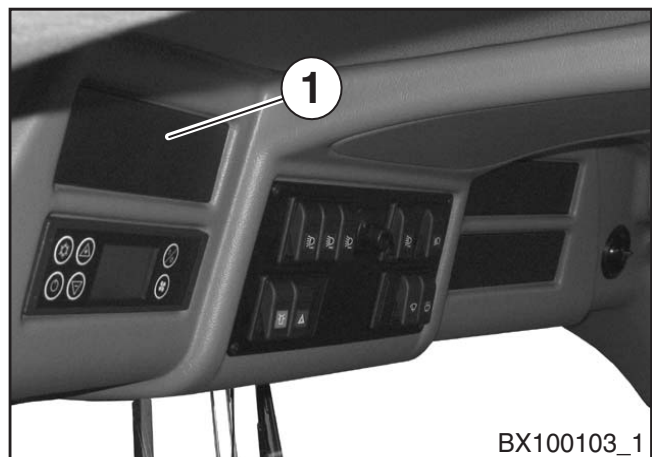
5.17 Radio

An ISO compartment for radio (1) is located in the roof console.

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.



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5.18 Ladders



Always make certain the ladders and steps are clean. Before starting work, remove the impurities.

5.18.1 Ladder to the radiator compartment

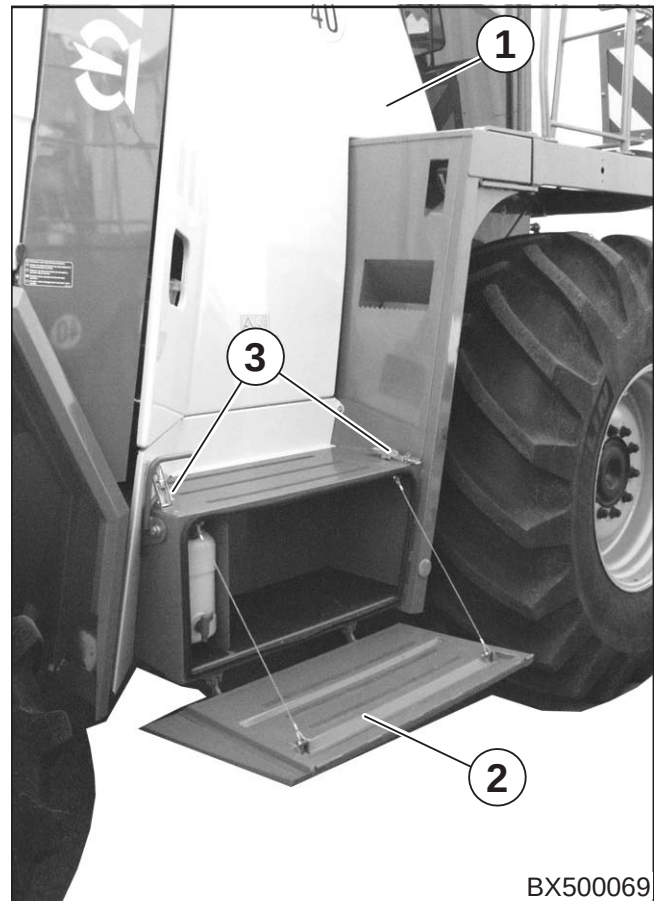
Left-hand side of the machine

- Open the flap (1).



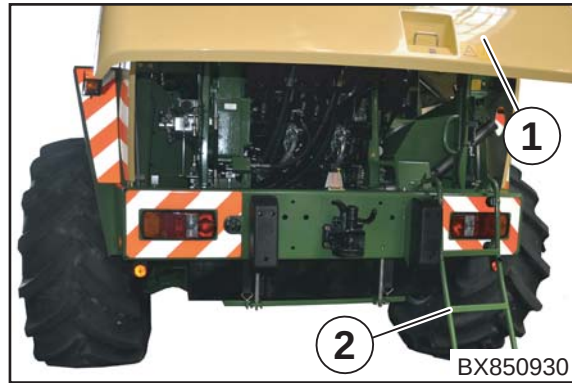
Right-hand side of the machine

- Rotate the flap (1) upward.
- Open the lock (3) of the tool box and fold down the lid (2).



5.18.2 Ladder to the motor compartment

- Open the rear flap (1).
- Fold down the ladder (2).



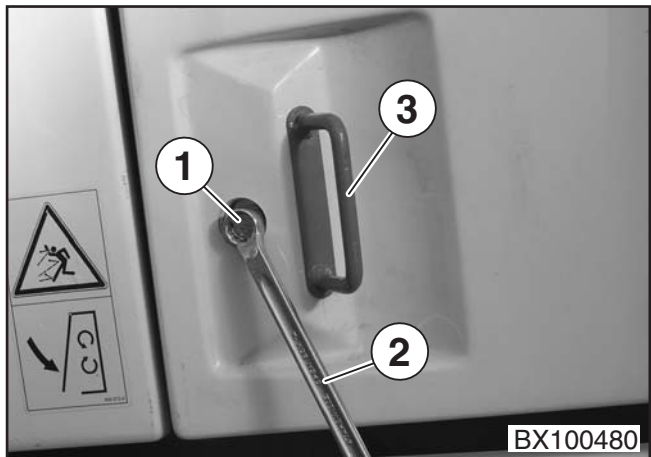
5.18.3 Flaps with safety locks

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).



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).

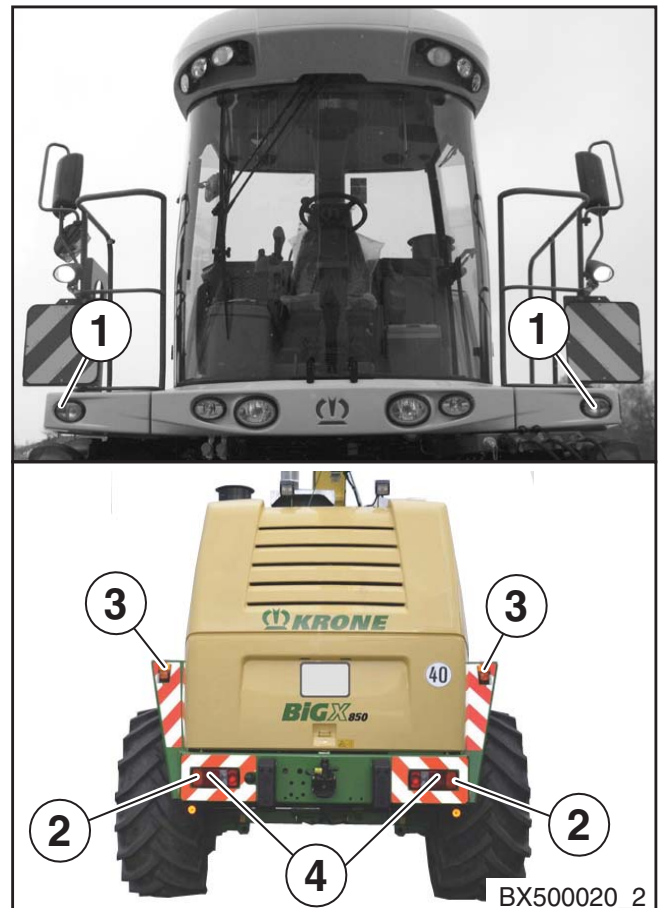
Hazard warning flasher

When the hazard warning flasher has been switched on, all indicators (1, 2, 3) will flash at the same time.

Brake light

The stop lamps (4) light up, if:

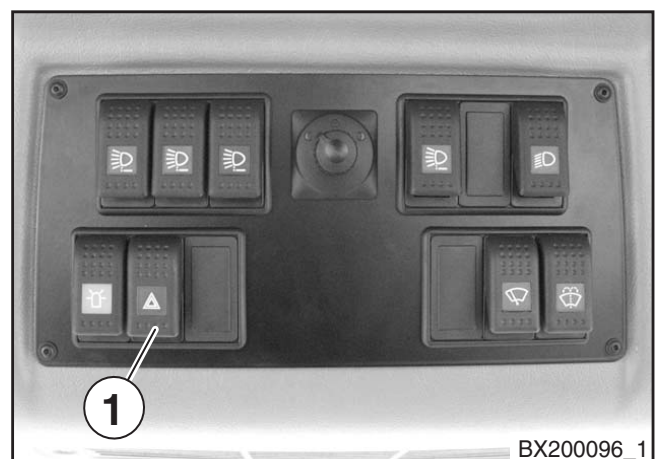
- the service brake is activated with ignition switched on
- it is broken via the control lever



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.



Lighting

The following lamps will light up when the parking light is switched on:

- 1 - Front side lamps.



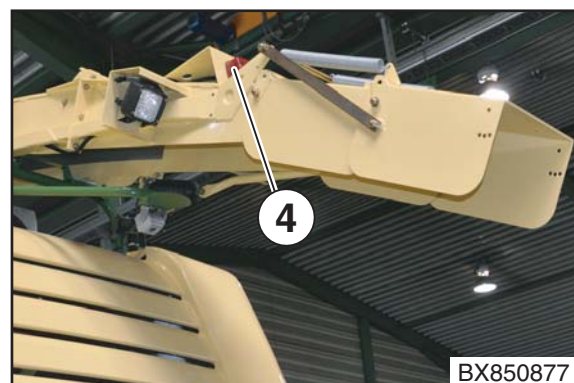
Depending on the size of tyres on the axle tyre, the additional attached clearance lamps illuminate on both sides of the platform.



- 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

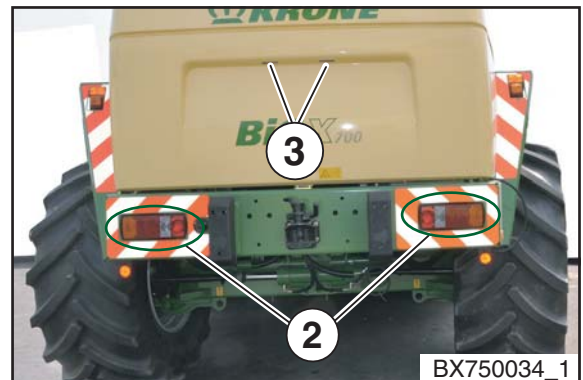
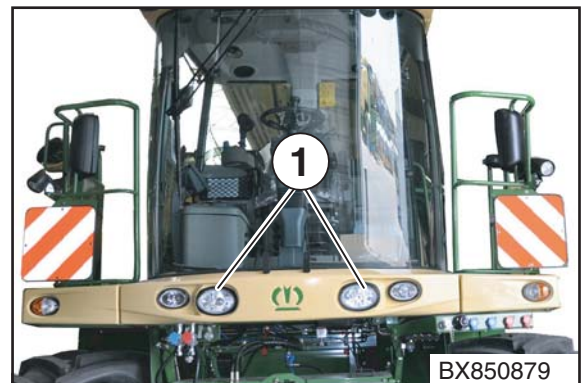


The dipped beam can be switched on only when the ignition has been switched on.

- 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



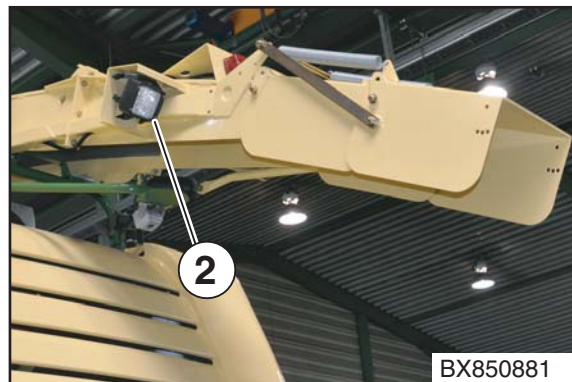
The front working floodlights I can be set by hand. They have an on/off switch on the rear side.

- 1 - Front working floodlights I

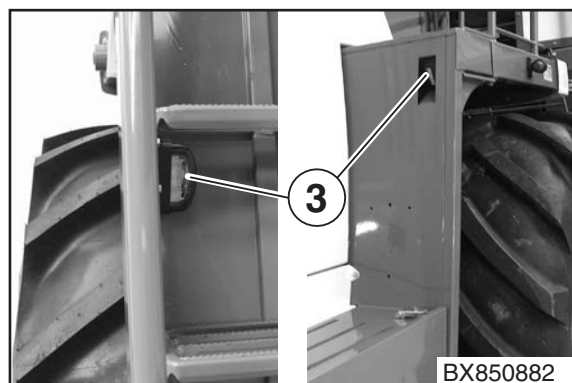


Working floodlight – cab roof and upper discharge chute

- 2 - Working floodlights of the ejector



- 3 - Right and left rear wheel lights



- 1 - Cab roof working floodlights



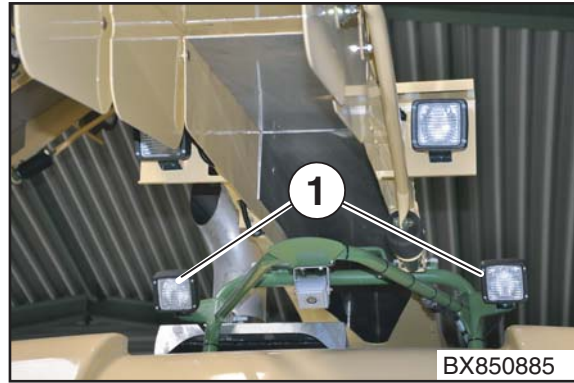
Front working floodlights II

- 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.

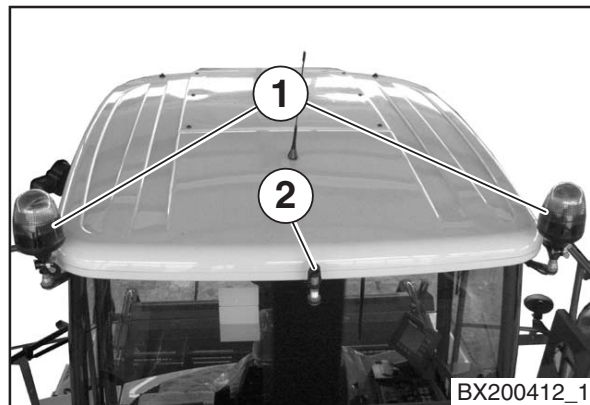
- Actuate the rocker switch (1). The orange pilot lamp in the switch (1) will light up.



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



WARNING

Danger to life due to rolling away of the unlocked machine!

When parking the machine, all measures that prevent the machine from rolling back must be taken to ensure that no persons are endangered.

- Set parking brake release switch to "Applied" position
- Move the "Travelling gear" release switch to "OFF" position.
- Switch off the engine and remove the ignition key.
- Secure the machine against the possibility of rolling back with wheel chocks.

7.1.1 Dirt deposits in the engine and machine compartment

Engine compartment (1)

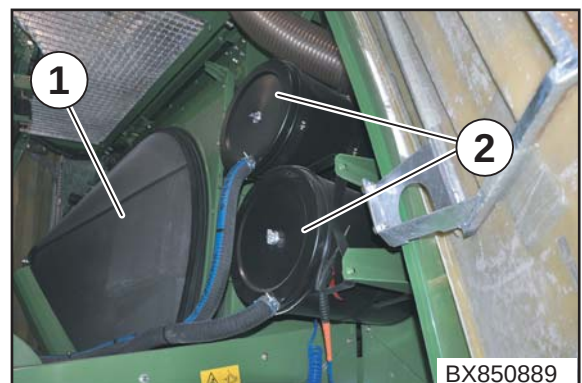


A mixture of dust, oil, grass and chaff in the engine compartment is a source of fire and means an increased fire hazard.

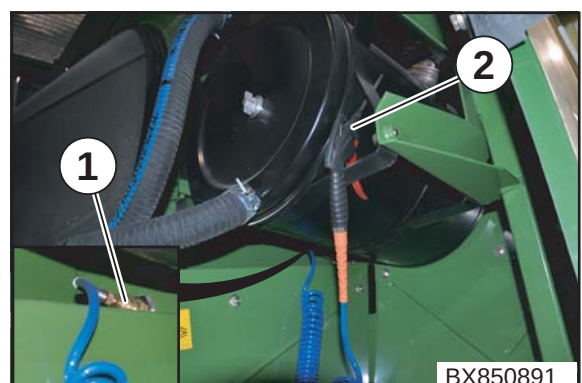
- Always keep the engine and engine compartment (1) clean.
- Blow off dirt with compressed air.
- Wipe off oil deposits.

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.



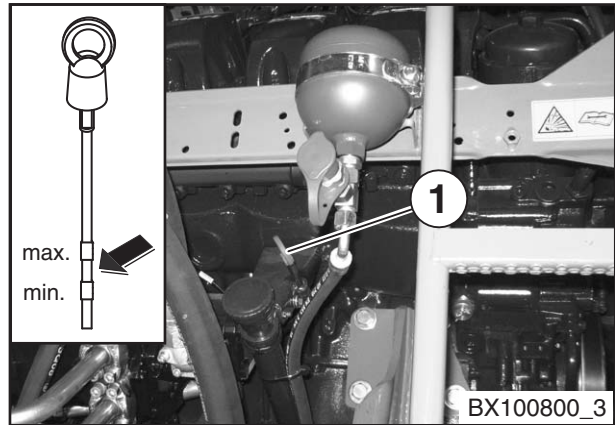
7.1.2 Engine - oil level check

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).

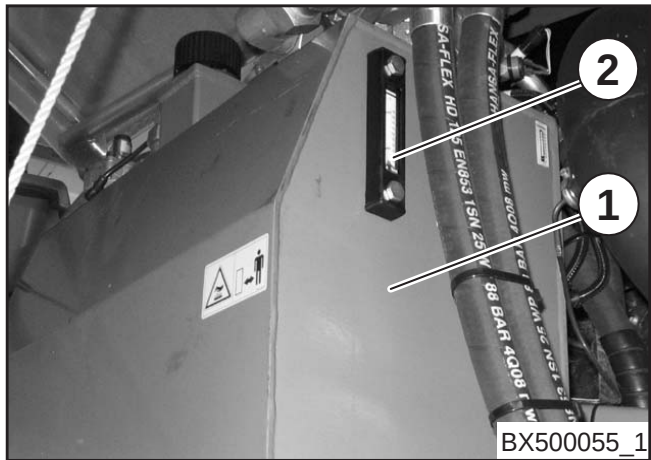


7.1.3 Hydraulic oil level check

- 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

Control:

- 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)



In case of a contact with hot liquids or machine parts, a danger of burns exists.

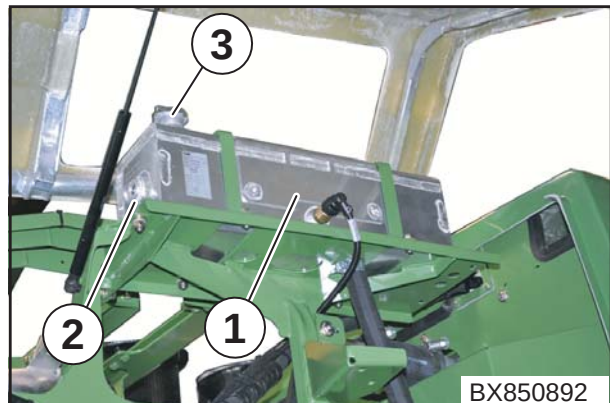
- Wear appropriate protective clothing
- Allow the liquids or machine parts to cool down

Filling:

- Turn the cap (3) to the first notch and wait until the overpressure reduces



**Do not fill cold coolant into the warm motor.
In order to prevent machine damages, allow the diesel engine to cool down before the coolant is topped up.**



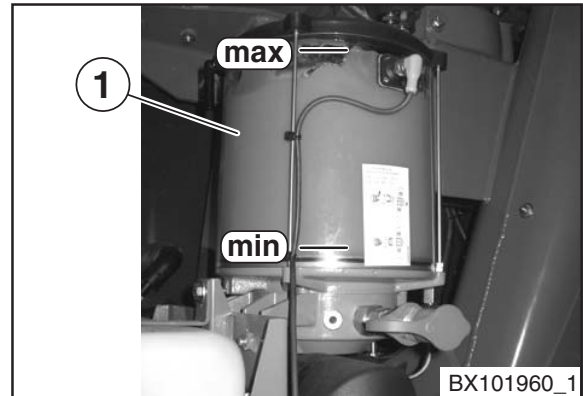
- Fully open the cap (3) and top up the engine coolant to the middle of the control eye (2)
- Close the cover again (3)

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 Foot brake



Warning

Danger to life, injuries or damage to the machine by reason of accident

- The footbrake must take effect beginning with the first third of pedal travel.
- Check the brake linings regularly.

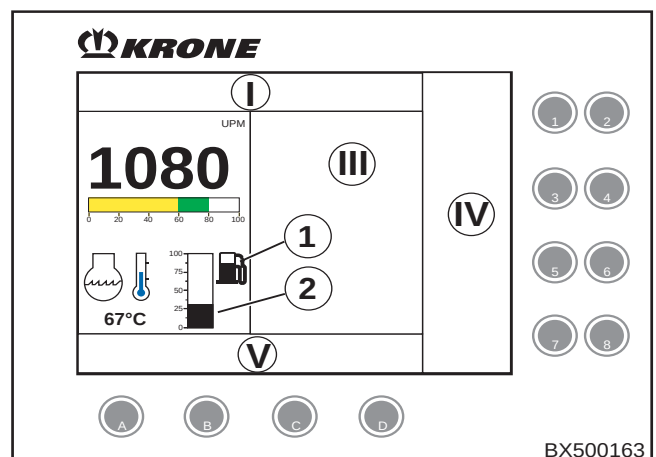
- Check the functioning of the operating brake before the start of every journey.

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.

7.1.10 Setting Mirror and Monitor for Camera Monitoring (Option)

- Prior to travel or before starting work, adjust the inside mirror and the outside mirrors as well as the monitor for camera monitoring so that the roadway and the lateral and rear working ranges can be seen completely (for the adjustment of the mirrors, refer to chapter 5 "Driver's Cab").



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 (MAN) and the
operating regulations (MAN).**

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).
- Open the tank cover.
- Fill the fuel tank. (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 (MAN).

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 (1) 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



Before starting the diesel engine, make certain there are no persons/ children or objects in the danger zone. Activate the horn as a warning signal.

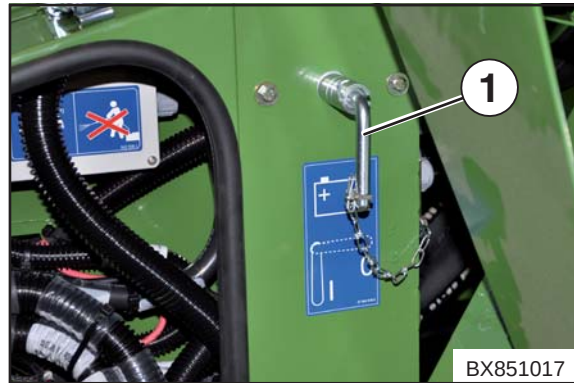


**Danger, toxic exhaust!
Never allow the engine to run in closed rooms without an extraction unit. Ensure sufficient ventilation. Inhaling exhaust fumes can kill.**

7.3.3 Starting the engine

Prerequisites

- Turn the main battery switch (1) to the "I" position.



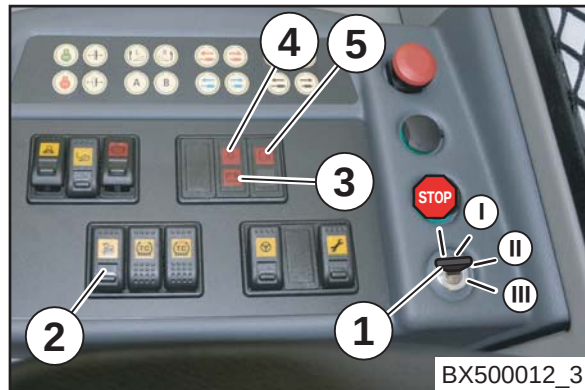
- Set traction drive release switch (2) to "Off" position.

Switching on the electronics circuit

- Turn the ignition key (1) clockwise to I position, the electric circuit for the electronics is turned on.

Switching on the ignition

- Turn the ignition key (1) clockwise to II position, the ignition is switched on.

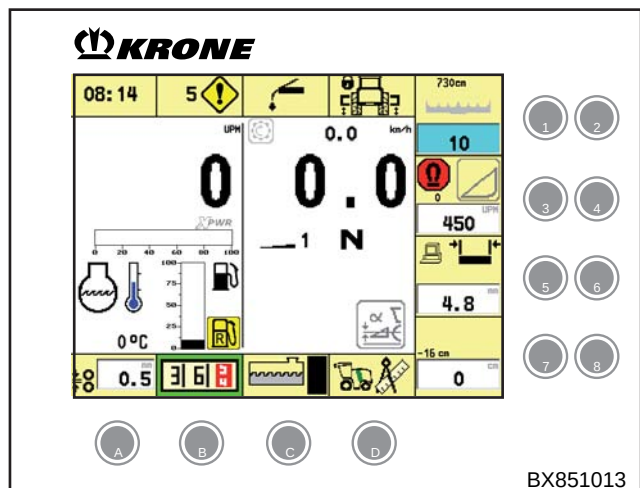


The charging pilot lamp (3) lights up. It must go out after the engine starts.

The engine oil pressure pilot light (4) shines for approx. 2 seconds.

The coolant temperature pilot light (5) 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



Before starting the engine after a longer service life, make certain there are no loose parts in the front attachment or in the foraging unit. Only start the engine from the driver's seat.



If the engine does not start within the 20 seconds, wait for at least 2 minutes before trying to start it again.

- 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.

After the engine is started, the engine fault indicator lamp (4) shines briefly.

Check whether the indicator lamp goes out.

If this is not the case, switch off the engine immediately or call KRONE customer service.

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.
- Press key (14a). Lower the front attachment completely onto the ground.
- Turn the ignition key (1) counter-clockwise  to position.



Always pull out the ignition key (1) before leaving the driver's cab. The holding 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

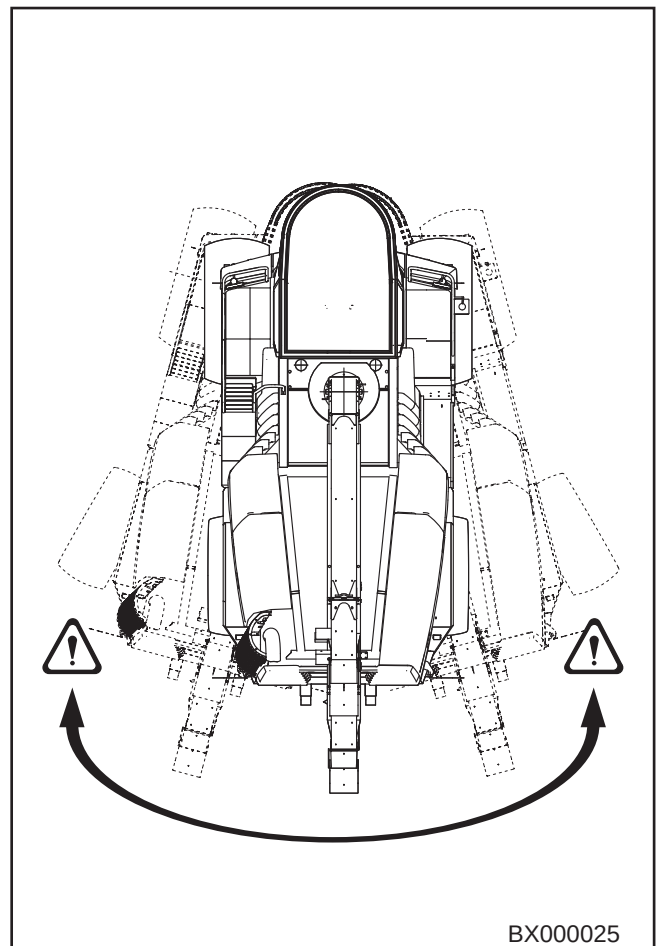
The forage harvester is easy to steer due to the hydrostatic steering with the rear axle.



Take care when driving on roads and tight corners, the forage harvester swings out at the rear!

Emergency steering forces

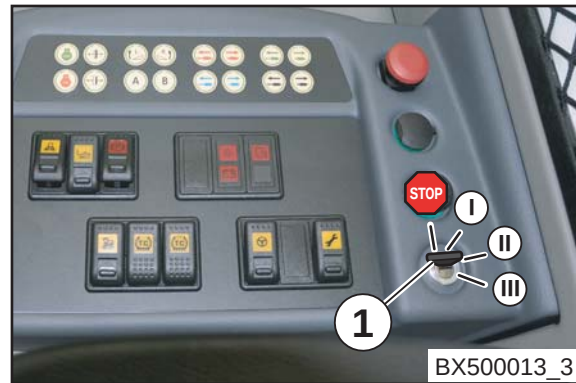
The steering also operates when the engine has stopped. However, considerably more force must be applied.



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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

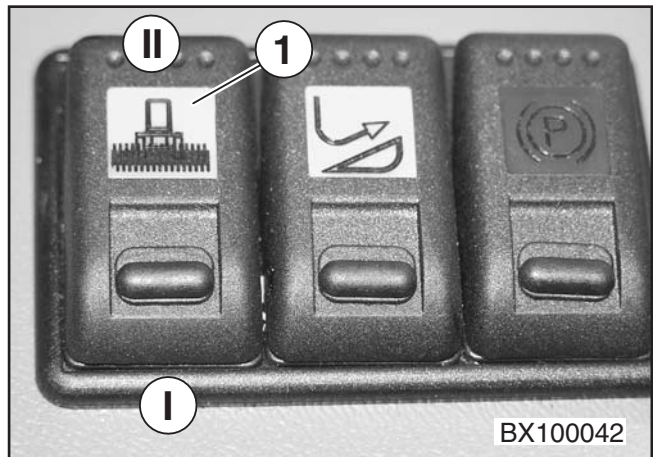
- Bring the lifting gear into the transport position.



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.

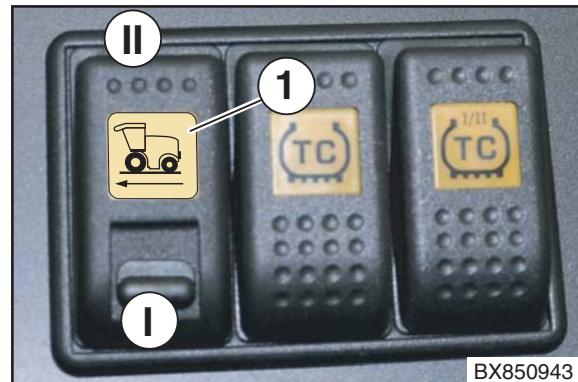


7.4.5 Switching the travelling gear on



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

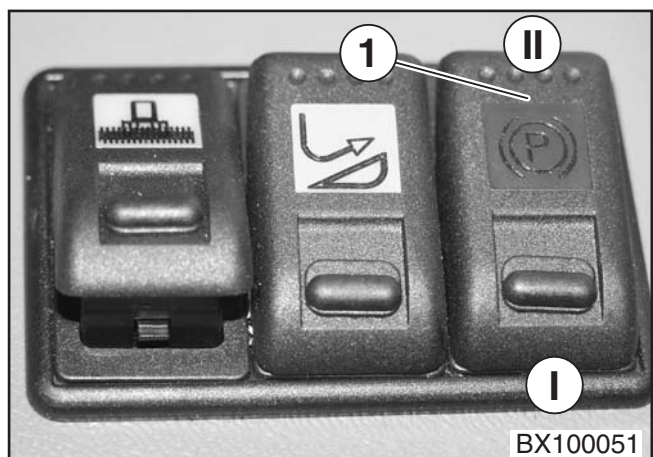


Danger due to a reduced brake capacity!
Driving for an extended period of time with the parking brake applied will result in overheating of the brake.



The parking brake is applied automatically:

- When switching off the ignition,
- When the machine is at a standstill and the driver leaves the seat.
- To release the parking brake after a restart of the machine, activate foot brake first. Then the parking brake release switch (1) must be set to I position.



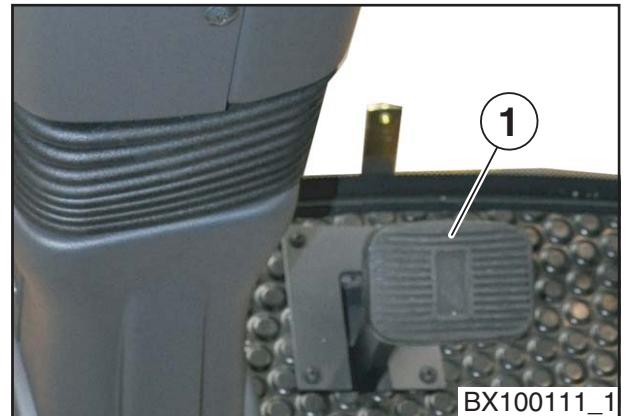
7.4.7 Operating brake

In road traffic

- The hydrostat decelerates automatically when the operating brake (1) is operated.



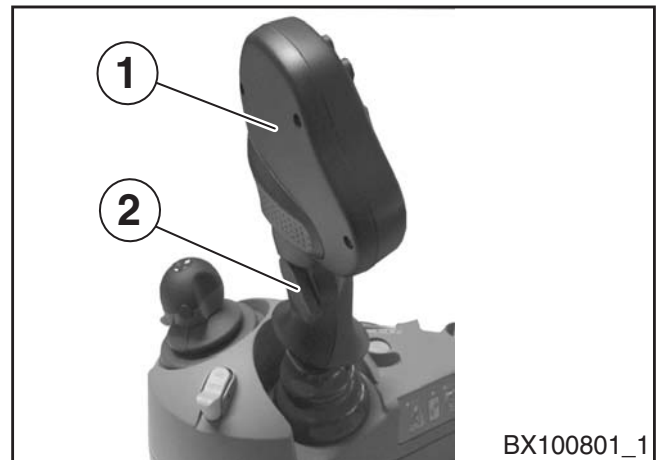
Check the brake function before every journey.



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

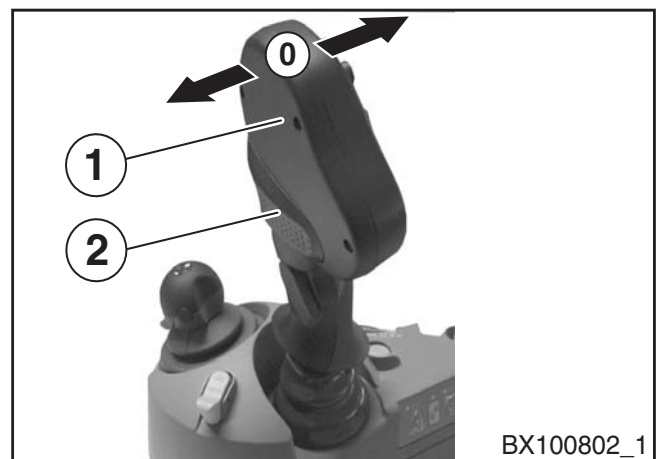


Always adapt the travelling speed of the forage harvester on road and field to the given conditions.

Starting forwards from standstill

After the engine has been started up and the travelling gear is released, the machine is ready to start.

- 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.
- The forage harvester decelerates if the multi-function lever (1) is moved backwards while driving. It is braked until it comes to a stop.



7.4.10 Reversing

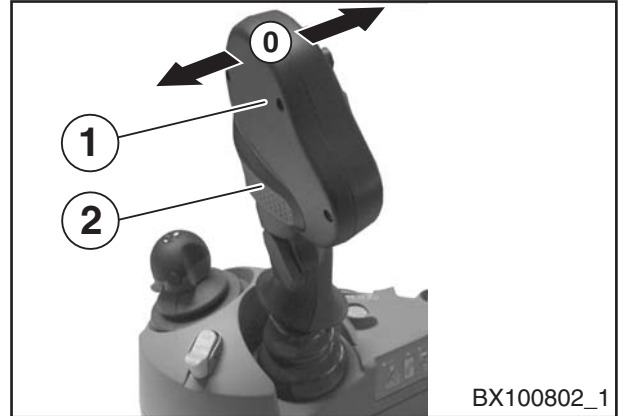


An acoustic warning signal sounds when reversing.

Starting in reverse from standstill

After the engine has been started up and the travelling gear is released, the machine is ready to start.

- 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.
- The forage harvester decelerates if the multi-function lever (1) is moved backwards while driving. It is braked until it comes to a stop.

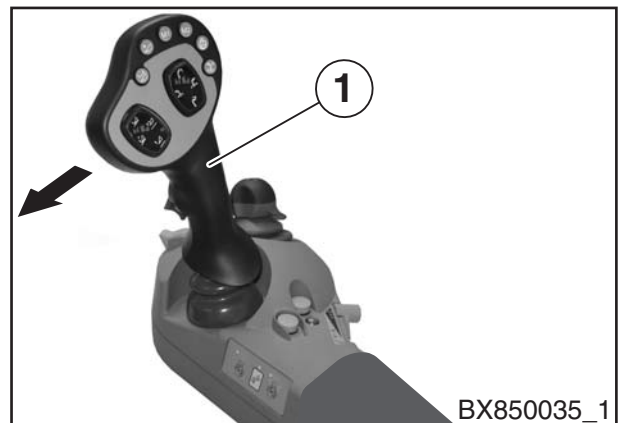


7.4.11 Quick stop

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)

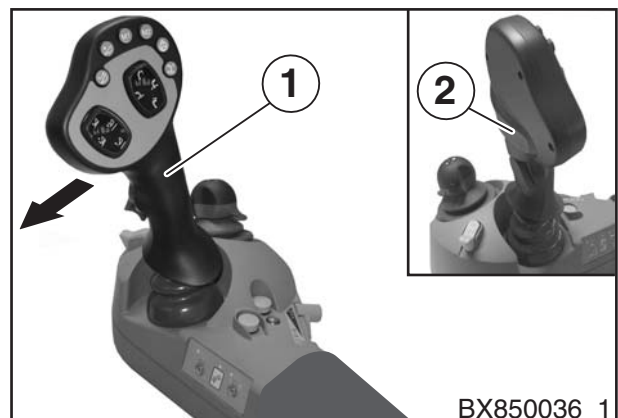


Fast reversing is possible only in the field mode.

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.

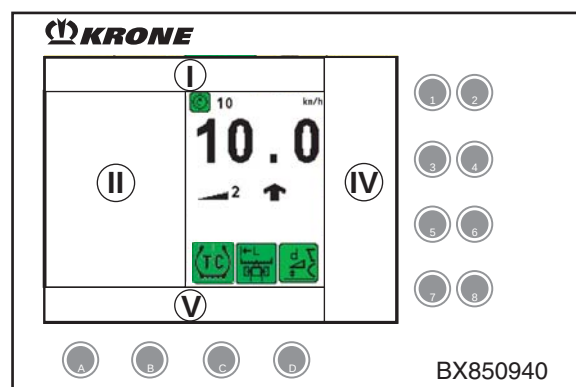
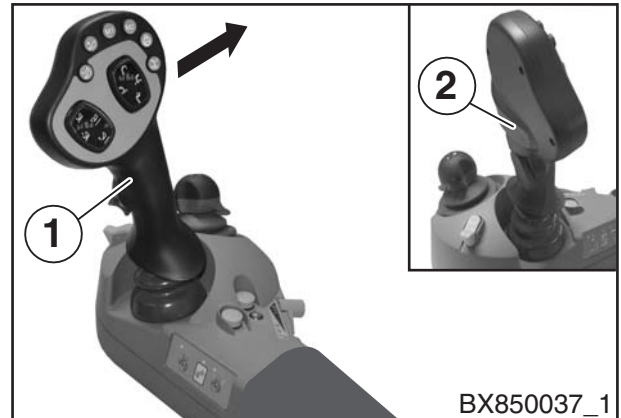
Storing the speed for the cruise control mode

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.

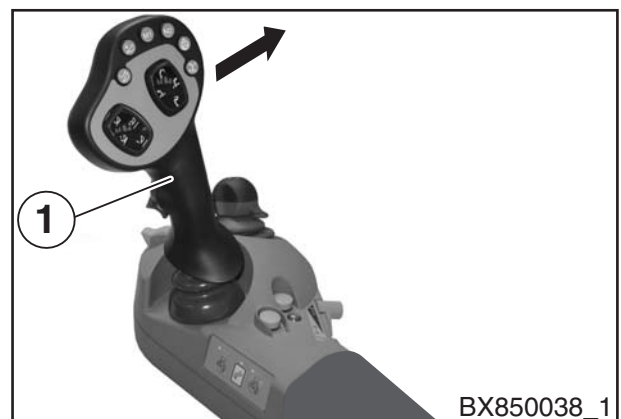
The stored speed (1) is displayed in the display of the Info centre in the travelling gear data Info area.



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.

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.

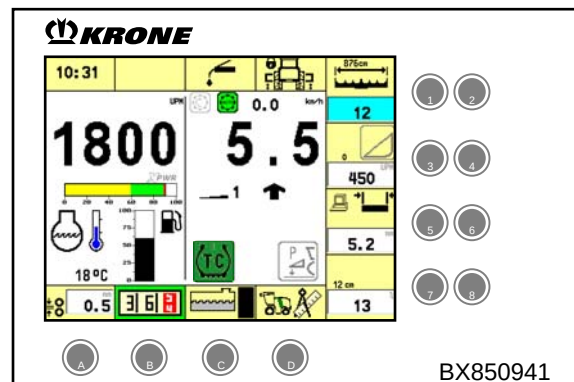


- The green Symbol  (1) on the display indicates that the load limit control is active and the travelling speed is automatically adjusted to the speed reduction of the motor.

Deactivating the load limit control

The following operations will deactivate the load limit control:

- Actuating the driving lever (Increasing/ Reducing)
- 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:

- Check whether the autopilot shuts down:
by an abrupt movement of the steering wheel and leaving the driver's seat (via seat switch contact).
- Check for proper operating condition - i.e. free of mechanical damages and leaks - row tracers, steering angle transmitter as well as all visible hoses and wirings.



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.

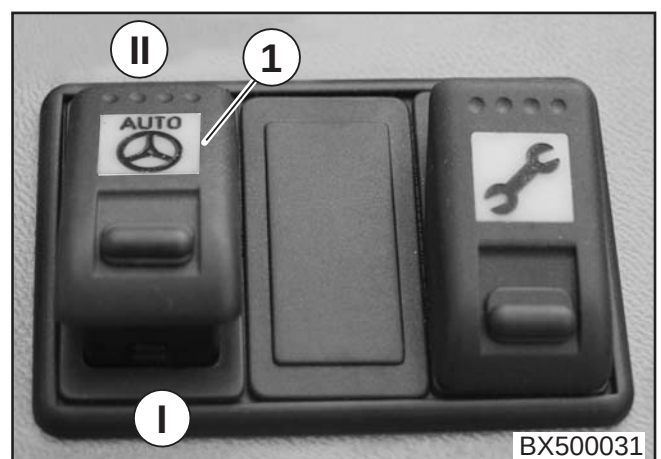
After the autopilot has been in operation and before leaving the field, the autopilot must always be switched off on the autopilot release switch on the console.

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:

- Engine runs.
- 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.
- The machine is on a level surface.



Chaffing should preferably be in row tracer mode left or right.

Now, the following modes can be used:

- Both row tracers
- 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

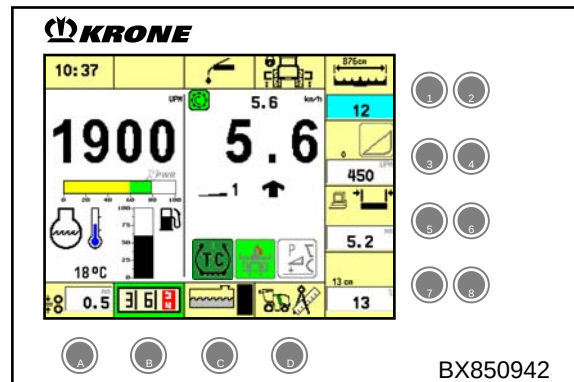
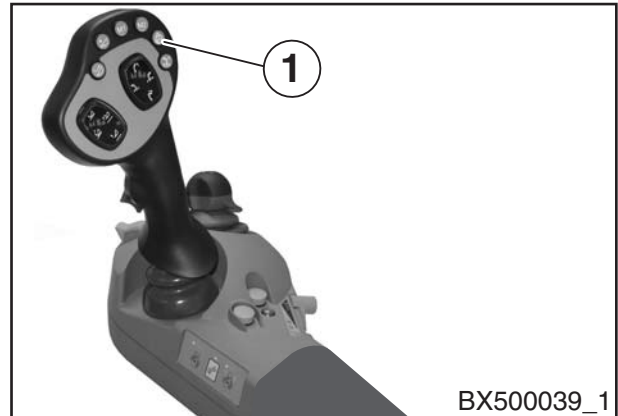
Autopilot now takes over the task of guiding the forage harvester along the row of plants with the selected row tracer on the maize header. In the case of short gaps in the maize crop the autopilot ensures straight-ahead travel of the forage harvester.

Deactivating the autopilot

- If you move the steering wheel abruptly, the autopilot will be deactivated.

The autopilot is also automatically deactivated if:

- The driver's seat is left (via seat switch contact)
- 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.

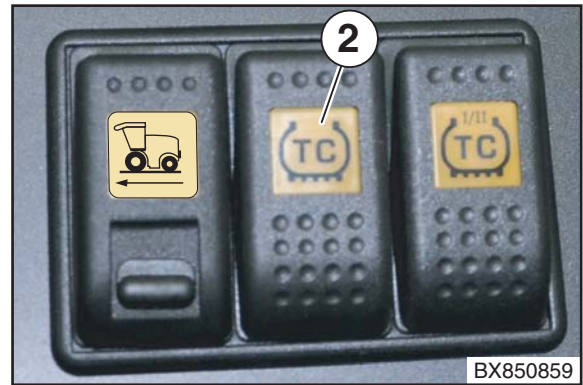


The deactivation of the autopilot is indicated by an audio warning tone.

7.4.16 Traction Control TC

- Pressing the TC button (2) repeatedly switches the traction control off or back on.

The status of the traction control is shown in the display (in the travelling gear data section (III) of the Info Centre, see Basic Screen chapter)

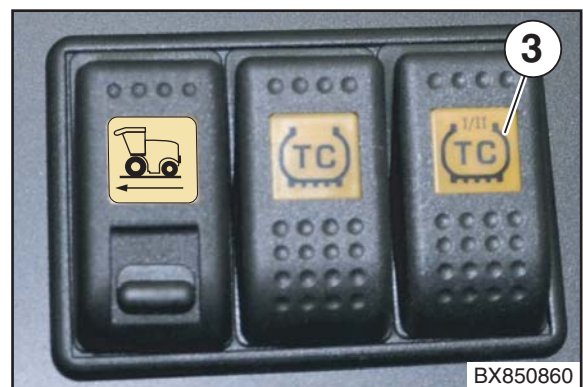


7.4.17 TC Sensitivity Switchover

The TC I / II pushbutton (3) sets the sensitivity level of the traction control. There are two sensitivity levels: level I for grass and level II for maize.

- Pressing the TC I / II button (3) repeatedly switches the TC between the two sensitivity levels.

The sensitivity level of the traction control is shown in the display (in the travelling gear data section (III) of the Info Centre, see Basic Screen chapter).



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.

7.4.19 Towing



Serious machine damage.

Only tow the machine if this is absolutely required.

Tow the machine only out of the danger zone. Never tow over longer distances.

Observe that steering and braking are impeded if the engine is off.

Only tow the machine when the gear is not engaged.

Only perform towing process by pushing the machine with towing rod.

Tow the machine with max. 0.5 km/h.

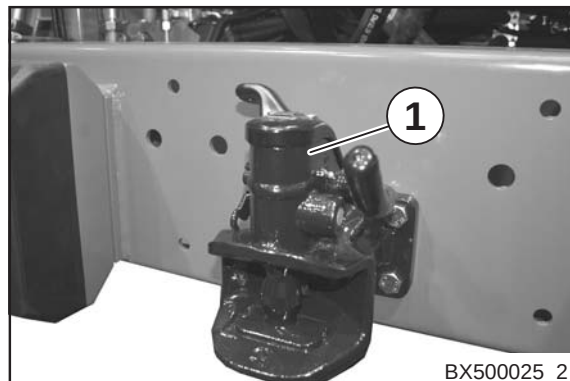
For towing choose either the hitch coupling (1) or according to fitted front attachment suitable towing points at the front of the forage harvester. If the machine no longer builds up the necessary oil pressure for releasing the holding brake, then the holding brake must be released manually.

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.

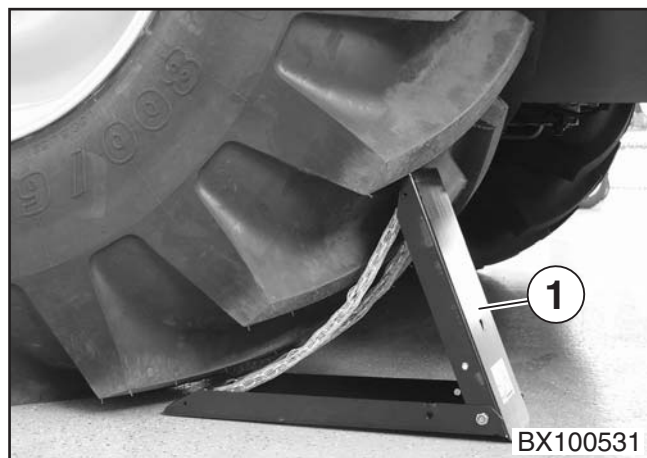
Releasing the holding brake manually



Remove the ignition key and secure the forage harvester from being placed in operation or rolling away unintentionally.

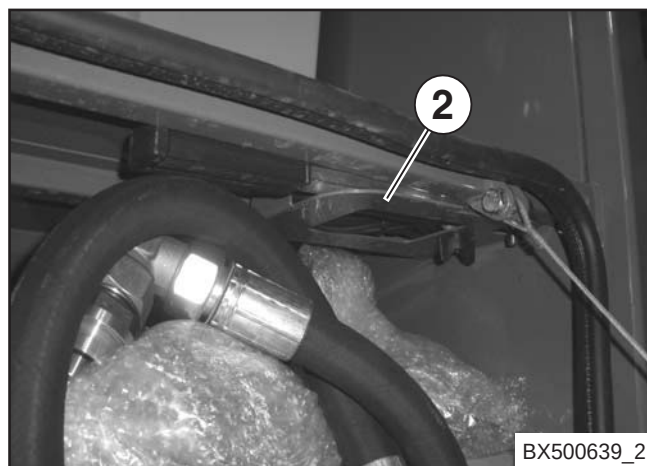
Fitting wheel chocks

- 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.

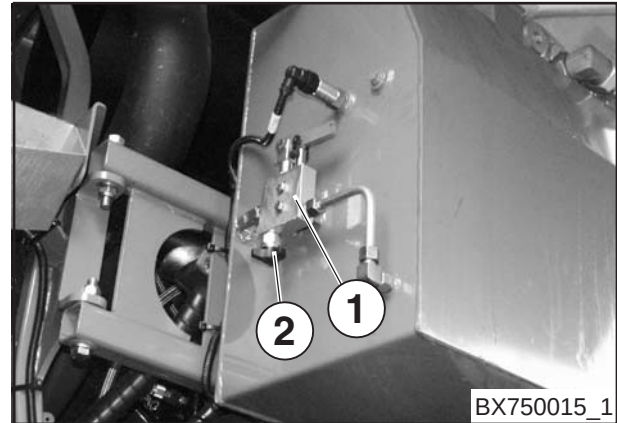


Preparation

- The parts kit consists of the pump lever and the connecting hose.
- The parts are fastened in the support (2) under the upper cover of the tool box.



- Close the drain valve (2) on the pump.
- Mount the pump lever and the connecting hose on the hand pump.
- Fill the connecting hose by activating the hand pump until oil emerges free of blow holes from the line.



Release parking brake

- Screw the measuring line (4) to the measuring coupling.
- Set the lever (5) of the shut-off valve to (II) (closed) and use the hand pump to release the brake (when the resistance of the pump becomes noticeably stronger, move the machine to check whether or not the brake is released far enough).



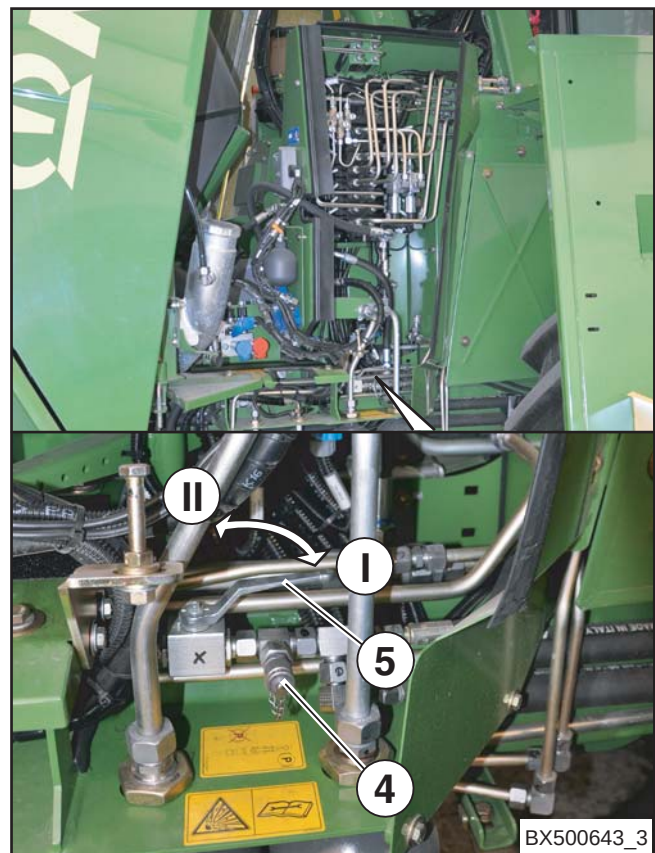
Before removing the connecting hose, release the pressure of the system by opening the drain valve of the hand pump.

- The function of the brake is restored by removing the connecting hose and turning the lever of the shut-off valve (5) back to (I) (open).
- 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.

- Put down parts kit (hand lever and connection hose) in the support in the tool box.

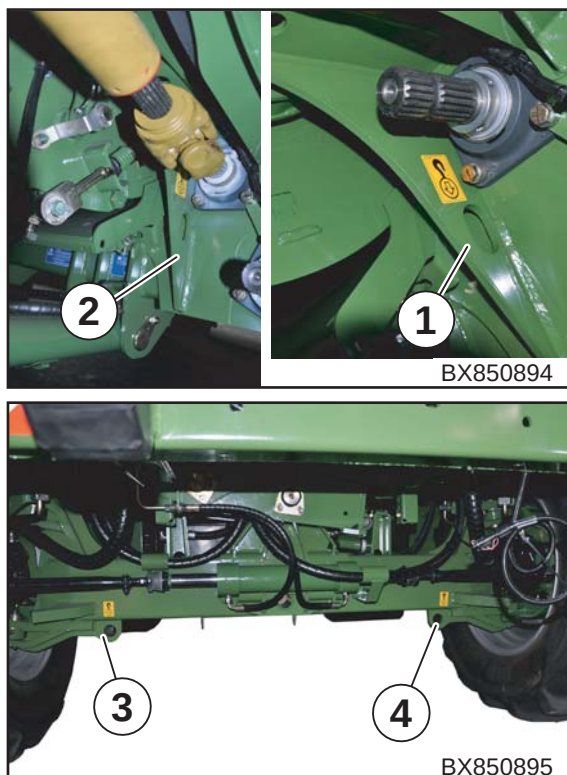


Transporting on a low loader



The forage harvester must be properly secured in place to be transported on a low loader.

- 1 - Lashing point left front
- 2 - Lashing point right front
- 3 - Lashing point left rear
- 4 - Lashing point right rear



7.4.20 Parking the Machine



DANGER! - Leaving the machine without protection
Effect: Danger to life, serious injuries or serious damages to the machine.

- Set down the front attachments on the ground.
- Switch on „Road Travel“  (refer to chapter 2 „Control Elements“).
- Apply the parking brake.
- Switch off „Traction Drive“  (refer to chapter 3 „Control Element“).
- Switch off the engine.
- Remove the ignition key.

7.5 Operation with Front Attachments



WARNING

Danger to life, injuries due to unpredictable moving of the lifting gear when folding in and folding out the front attachment.

- No individuals are allowed in the area of the lifting gear during folding in and out of the front attachment!



WARNING

Danger to life, injuries due to unpredictable moving of the lifting gear when attaching and removing the front attachment.

- Special care is required when fitting and detaching the attachment!
The specifications in the operating instructions of the front attachment unit must be observed.
- Fit and detach the front attachment on a level surface with load bearing ground; make certain in this process there is sufficient space on the side for manoeuvring the machine.

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.



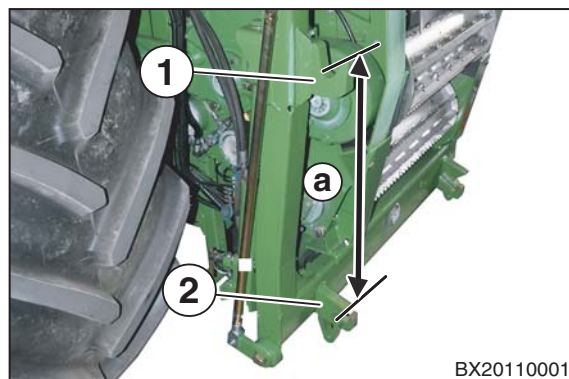
Depending on the equipment, the machine is equipped ex works with different front attachments. The necessary conversion work on the machine for use with the corn conditioner is described in Section 7.5.7.

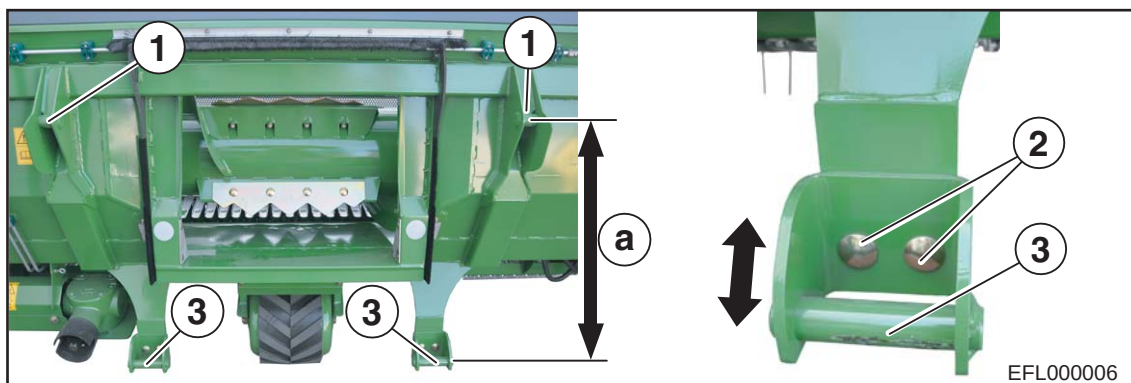
7.5.1 Adjusting the adapter frame



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.





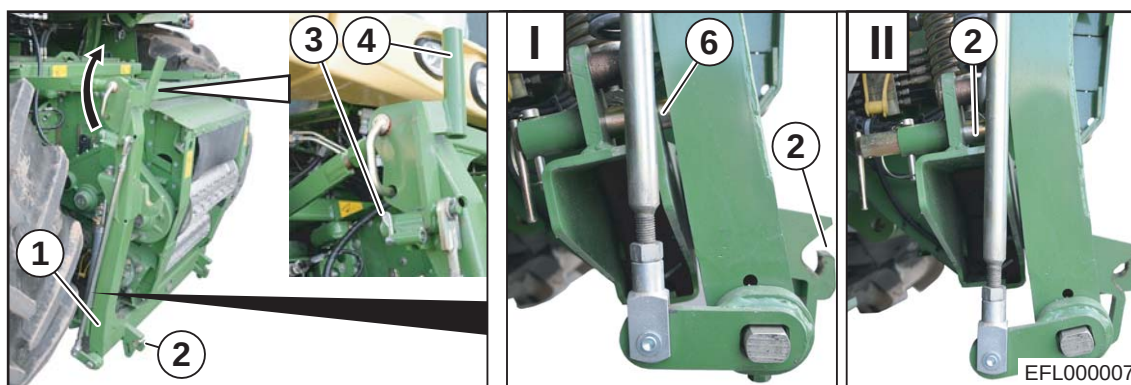
- Check the axle base "a" between the holding bolt (1, 3) of the adapter frame on the front attachment and if necessary adapt it to the size of the pendulum frame.



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 the lifting gear (1) of the forage harvester all the way
- Align the lifting gear (1) of the forage harvester horizontally
- The locking hooks (2) must be opened, open them via the locking lever (4), if necessary.
- Loose the lock of the locking lever (3) and swing the lever upwards by activating the spring-mounted bar (3)
- The lifting gear (1) must be locked, the locking bolt (6) must be in position I (locked).

7.5.3 Fitting and Detaching the Front Attachment



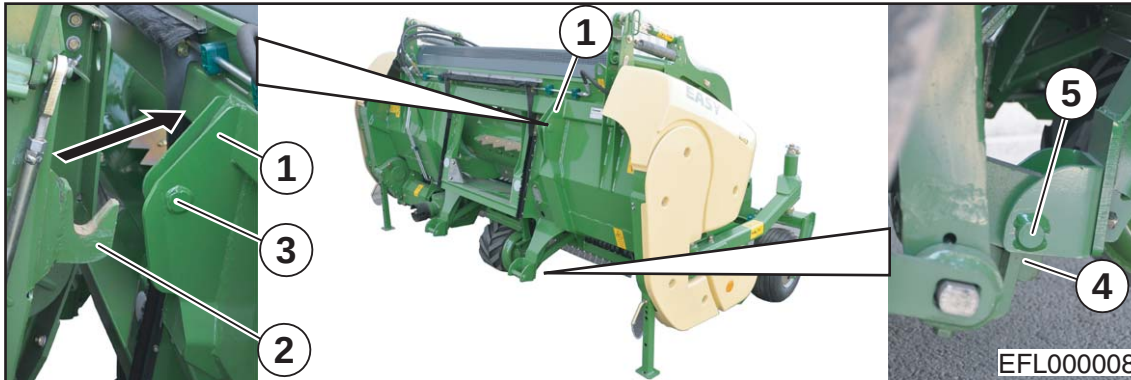
An operating manual is included with delivery for the respective front attachment. All relevant work steps and safety regulations are described in detail in this document.

7.5.3.1 Fitting the Front Attachment

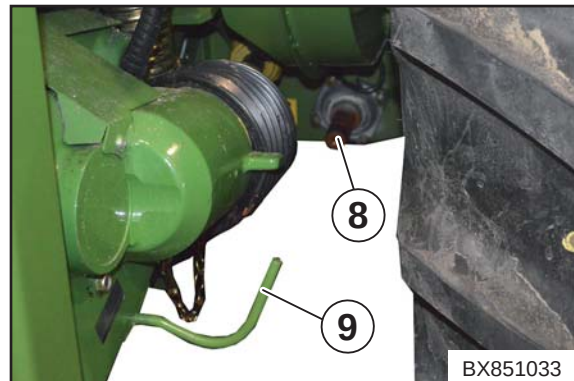
Fitting the front attachment is explained by using EasyFlow 300 as an example. This principle is the same for all KRONE front attachments.



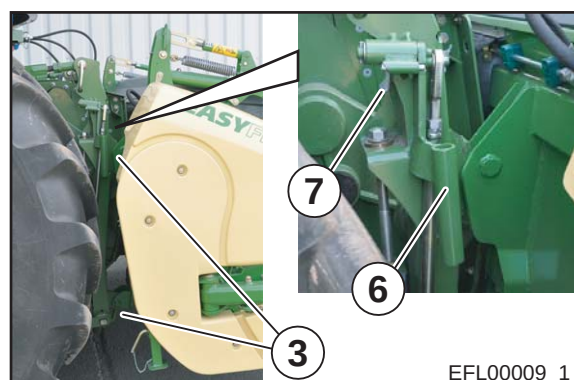
WARNING
 Danger to life or serious injuries when connecting.
 Be certain there is no one between the machine and the front attachment when making the connection.



- Attach the universal shaft included with delivery of the front attachment onto the P.T.O. shaft (8) and secure it with the sliding pin.
- Put down the universal shaft onto the support (9) provided for that purpose.
- Drive the machine up to the front attachment so that the pendulum frame of the forage harvester 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 lifting gear until the locking hooks (4) in the pendulum frame holder (5) rest on the adapter frame.
- Stop the front attachment.
- Swivel down locking lever (6) and secure it with spring-mounted bar (7).



Note
 Check that the pendulum frame hooks correctly into the holding bolts (3) and the locking hooks on both sides.



7.5.3.2 Connecting the Hydraulic Lines



Warning! - Connecting the hydraulic line

Effect: Serious injuries due to hydraulic oil penetrating the skin.

- When connecting the hydraulic hoses to the forage harvester hydraulics, ensure that the system is depressurised on both sides!
- When searching for leaks, use suitable aids because of the risk of injury and wear safety goggles.
- Seek medical help immediately should injuries occur! Danger of infection.
- Before uncoupling the hoses and before performing work on the hydraulic system, relieve the pressure!
- Check the hydraulic hose lines at regular intervals and replace them if damaged or worn! The replacement hoses must fulfill the technical requirements set by the equipment manufacturer.



CAUTION! - Soiling of the hydraulic system

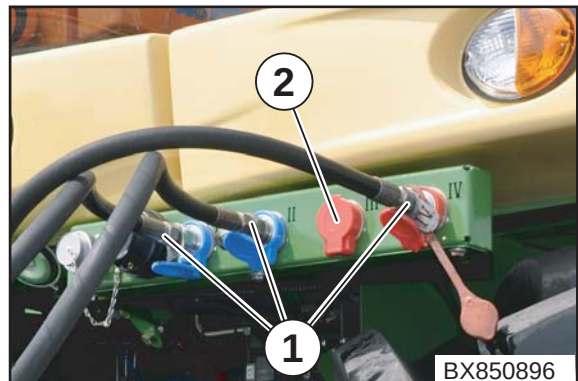
Effect: Damage to the machine

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



Depending on the front attachment, different plug-in connectors are used on the forage harvester (see separate operating instructions of the front attachment).

- Connect the hydraulic hoses (1) to the plug-in connections provided for this purpose on the forage harvester.
- Close not needed plug-in connectors with dust caps (2).



Start-up

Connecting hydraulic hoses and electrical connection cables

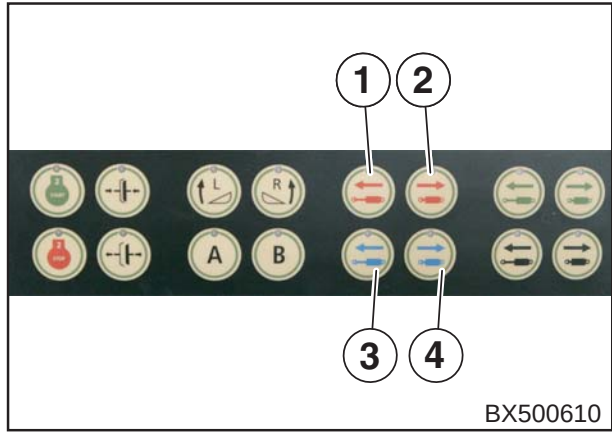
Prior to connecting the hydraulic hoses, depressurise the system on both sides.

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.



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Grass pick-up

- I - Extend roller feelers
- II - Retract roller feelers
- IV - Roller-type crop guard

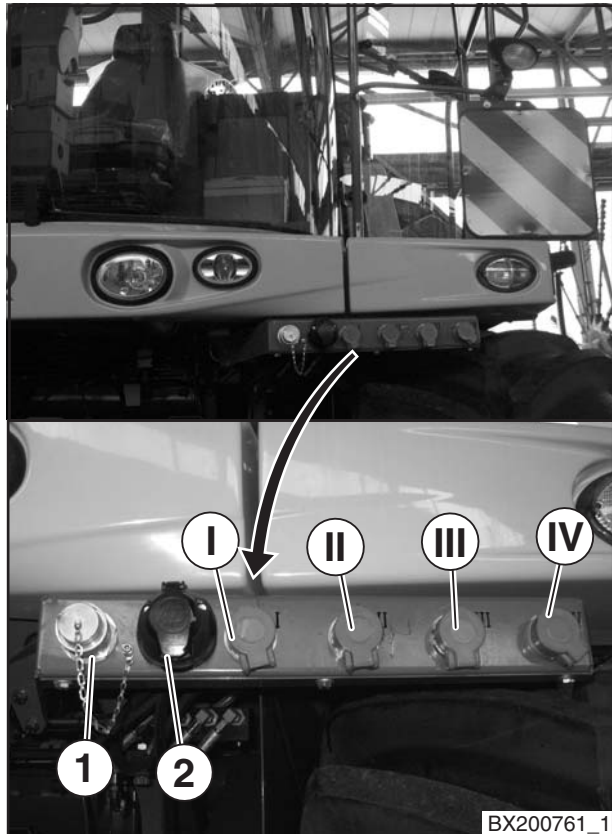
Maize header

- I - Raise plant divider
- II - Lower plant divider
- 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.



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7.5.3.3 Removing the Front Attachment


Note

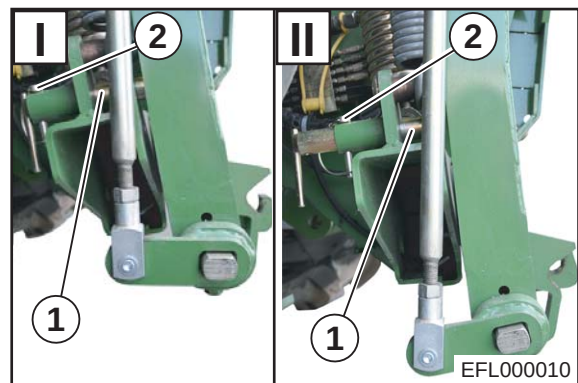
Please also refer to the operating instructions of the attachment concerned.


Danger! - Unexpected movement of the machine Effect: Danger to life, serious injuries

- There must be nobody between the machine and the front attachment.
- Keep all persons clear of the swivel range while the machine is being swivelled from transport into working position or vice-versa.
- Place the machine on solid and level ground only and with the parking supports extended.
- Switch off the engine, remove the ignition key and secure the machine against the possibility of rolling back.
- Wait until all machine parts have come to a complete stop.
- Before working under or on the raised attachment, support the attachment securely.

The pendulum frame must be locked.

- If necessary, move the locking bolt (1) from position II (unlocked) to position I (locked) and secure with spring cotter pin (2).

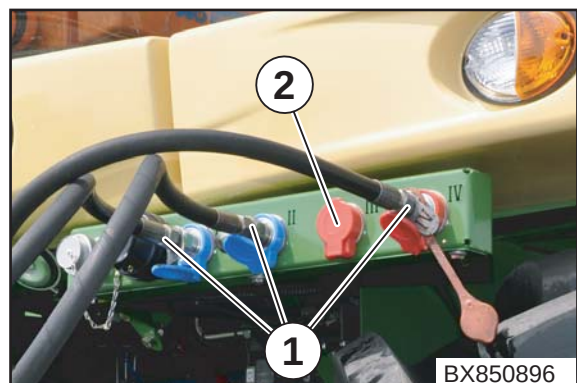

Caution! - Danger of accident and damage!

Lay hydraulic hoses (1) on top of the front attachment.

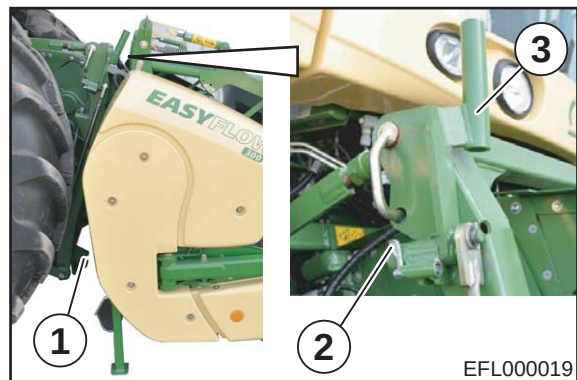

Note

Before disconnecting the hydraulic hoses (1), depressurise the system on both sides.

- Detach the hydraulic lines (1) from the hydraulic couplings and seal using dust caps (2).



- Open the locking hook (1): Swivel the locking lever (3) upwards and secure with the spring-mounted bar (2)
- Lower the pendulum frame of the forage harvester until the holding claws are below the holding bolts
- Move the forage harvester back

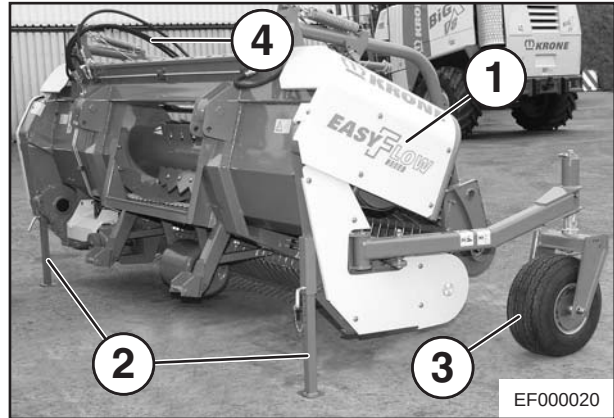


7.5.3.4 Parking the Front Attachment



Note
See also the operating instructions of the front attachment.

- Set down the front attachment (1) with the parking supports (2) extended and supporting wheels (3) unfolded on a solid and level surface.
- When parking, lay down the hydraulic hoses (4) on the front attachment (1).



7.5.4 Attaching the Rear Weight



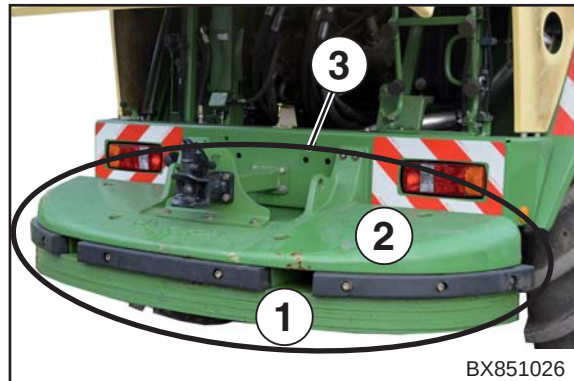
Note
Attaching a rear weight is only necessary on machines with EasyCollect front attachment.



WARNING
Danger to life and risk of injury when the machine lifts off during braking and when driving on slopes.

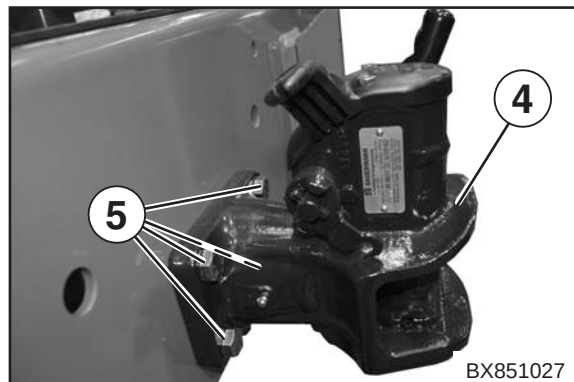
- In road traffic as well as when using the machine for work, only use the machine when the specified rear weight and the front attachment are assembled.

The number of the required additional weights (1) depends on the machine type as well as on the type of the front attachment. The additional weights are installed on the cast weight (2) (for information about installation and the table of the additional weights, refer to the operating instructions of the front attachment). The cast weight and the additional weights form the rear weight (3) which is installed on the machine.

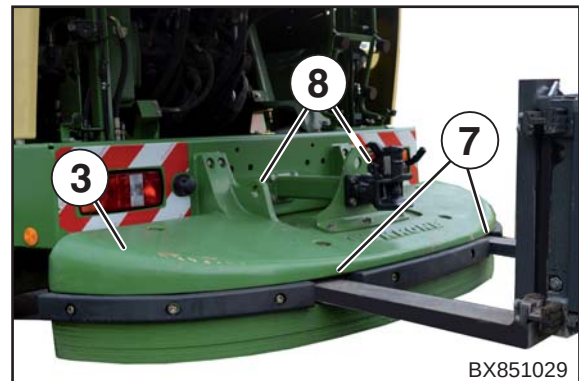
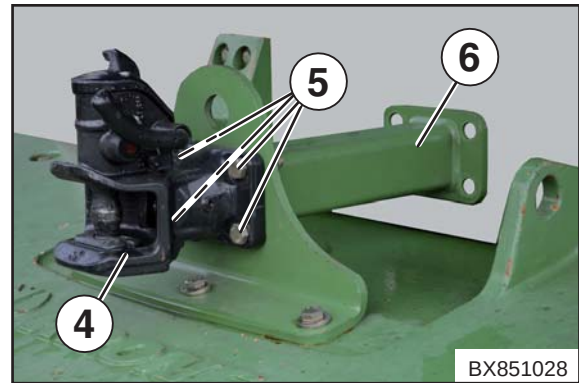


Assembly of the rear weight:

- Unscrew the four screws (5) and remove the trailer coupling (4).



- Install the trailer coupling (4) with the four existing screws (5) on the coupling support (6) of the rear weight (3).
- Position the rear weight (3) onto the rear of the machine by using a suitable lifting gear so that the connecting screws can be assembled.
To do this, use:
 - The openings (7) for a forklift,
 - Suspension points (8) for a lifting traverse.
- Make sure the hooks of the chains of the lifting gear are attached correctly on the suspension points.

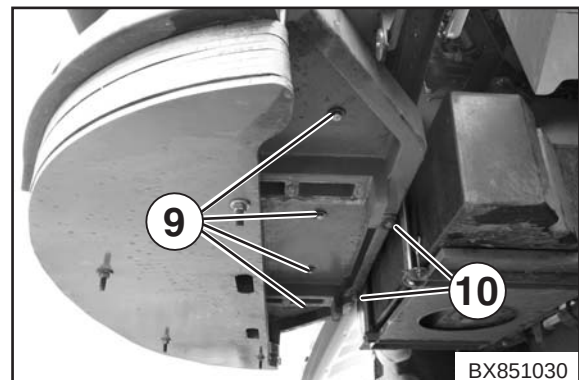


- Install the rear weight (3) with the screw connections (9) and (10) under the rear of the machine (for information regarding screw connection material, refer to the parts list in the operating instructions of the front attachment).



WARNING
Injuries or damage to the machine due to falling down loads!

- Do not step under the suspended load.

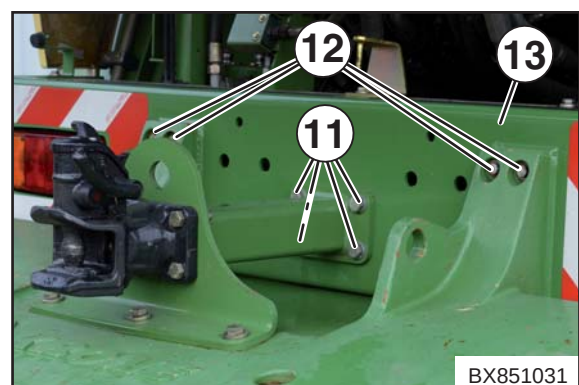


- Install the rear weight (3) with the screw connections (11) and (12) onto the bumper (13) of the machine (for information regarding screw connection material, refer to the parts list in the operating instructions of the front attachment).



WARNING
Risk of accident caused by wrong tyre pressure!

- After assembling the rear weight, the tyre pressure must always be checked.

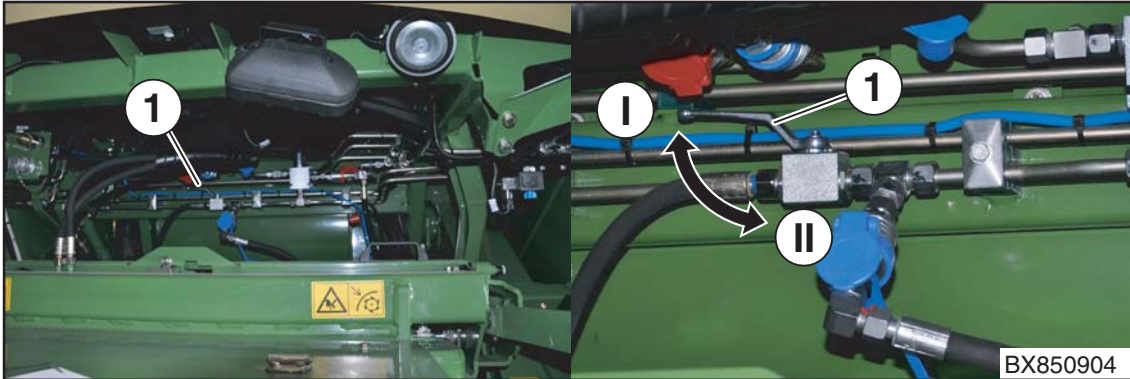


- Measure the tyre pressure with a tyre gauge and adjust the tyre pressure to the specified values, if necessary (for tyre pressure specifications, refer to chapter "Maintenance - Tyres").

7.5.5 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.



When using the corn conditioner:

The shut-off valve (1) for the grain conditioner tensioning roller must be in the position I (closed).

- If necessary close the shut-off valve (1) (I position).

The shut-off valve for the grain conditioner tensioning roller (1) must be in the 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 |

Gras-pick up

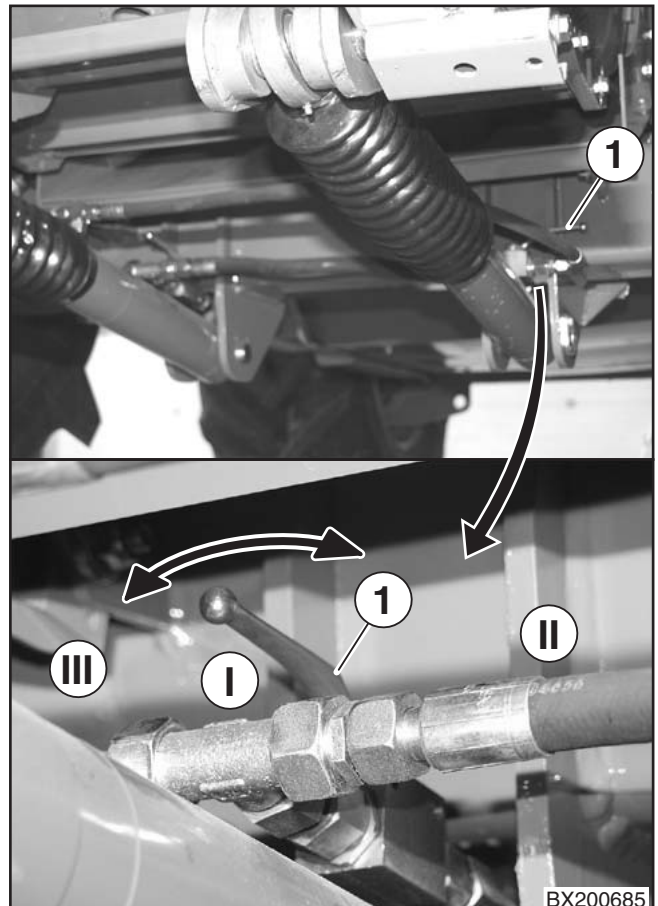
The three-way valve (1) for the lifting hydraulics must be in position II.

- If necessary turn the three-way valve (1) into position II.

Corn-Conditioner

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.



7.5.6 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.

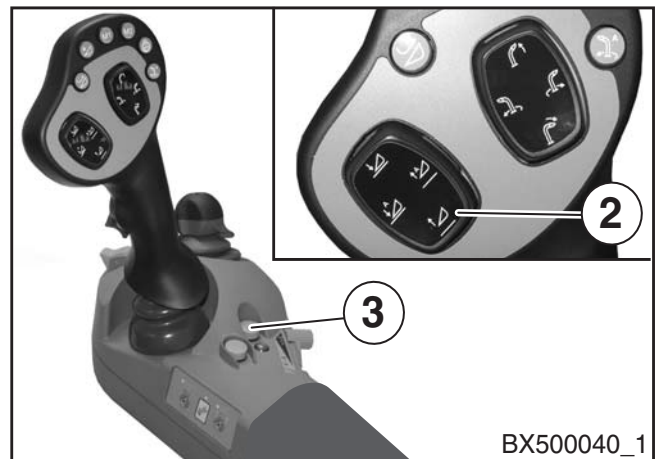
Adjusting procedure 3 "Upper height"

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"

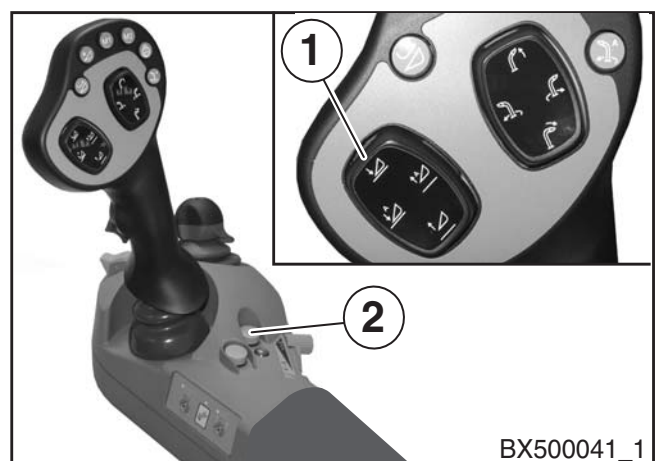
Calibration of the lifting gear pressure.

- Press the lifting gear button (1) until the front attachment unit is not touching the ground at all. The EasyCollect is an exception. The glide skids must touch the ground.

The lifting gear does not need to be raised to calibrate the lifting gear pressure. (The position is approached from above) 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.

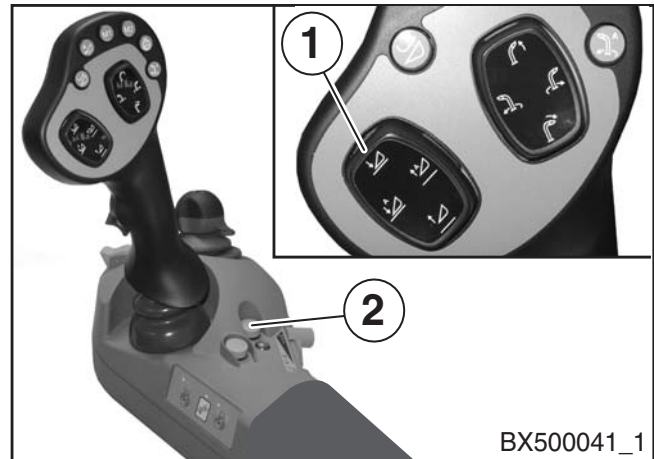


Adjusting procedure 1 "Lower height"

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 message **"EMR adjusting procedure 1 OK"** appears in the status line of the Info centre.



BX500041_1



After the lifting gear has been adjusted, the actual lifting gear pressure must be verified  in Field 1.

To do this:

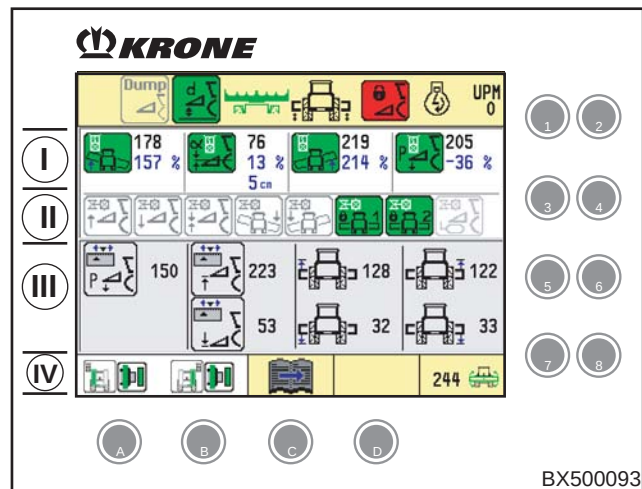
Call the „Diagnostics“ main menu.

- 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.

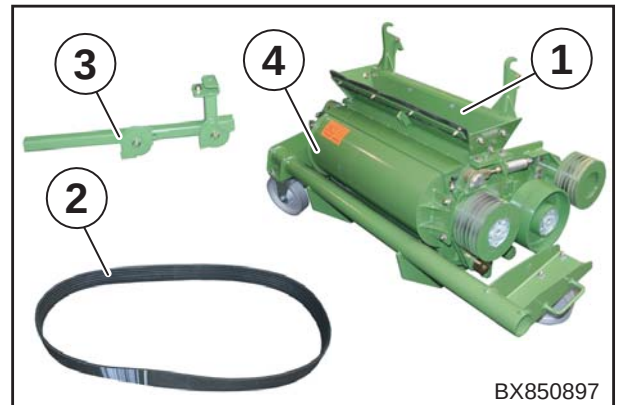


BX500093

7.5.7 Converting the grass channel grain conditioner

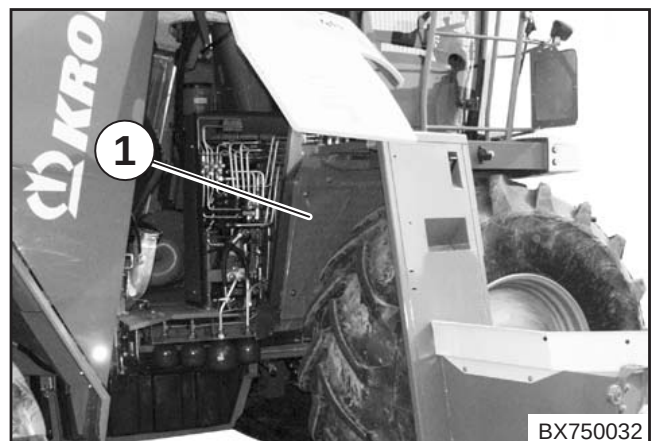
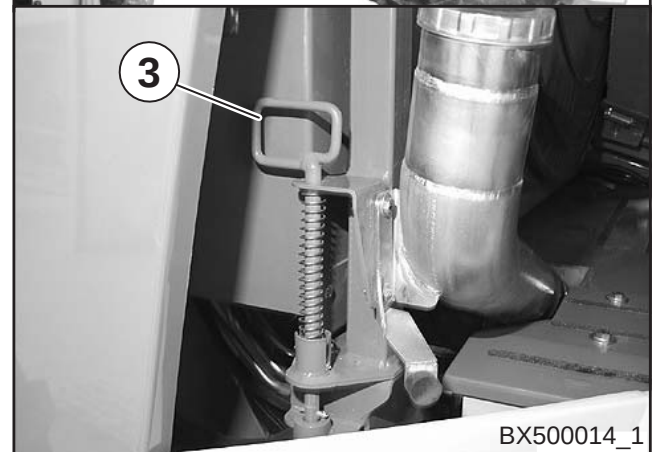
Conversion kit

- 1 - Grain conditioner
- 2 - V-belts
- 3 - Cable deflection
- 4 - Transport frame for grain conditioner



7.5.7.1 Preparations

- 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).



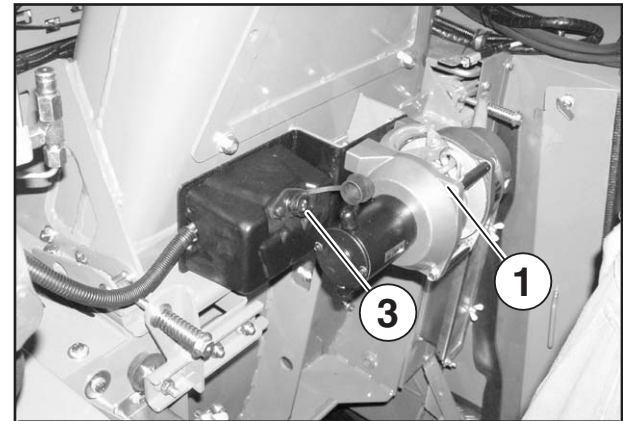
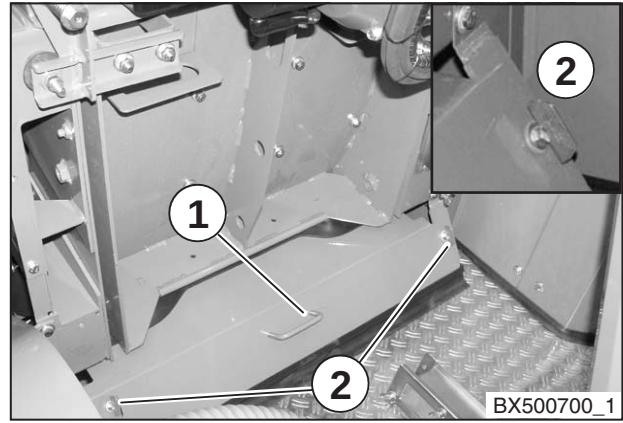
- Unlock the locks (2) of the cover (1) under the discharge accelerator and take out the cover (1).

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) (is in the tool box) 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

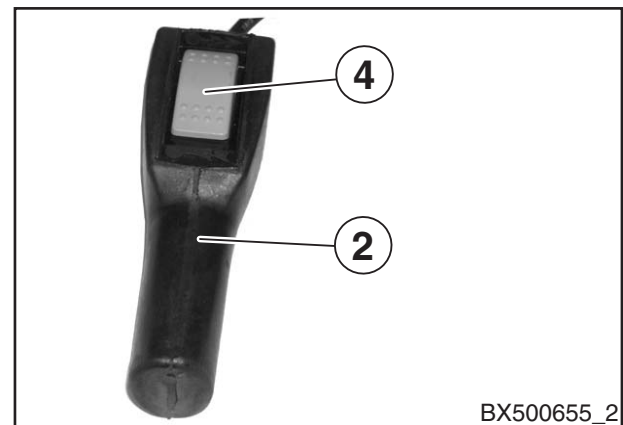
To let out the rope from the cable winch:

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.

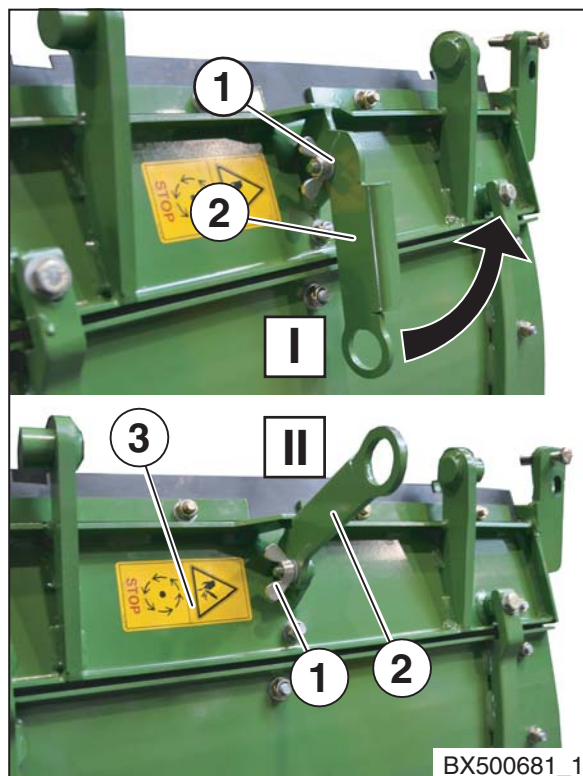


7.5.7.2 Kranlasche ausklappen



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).



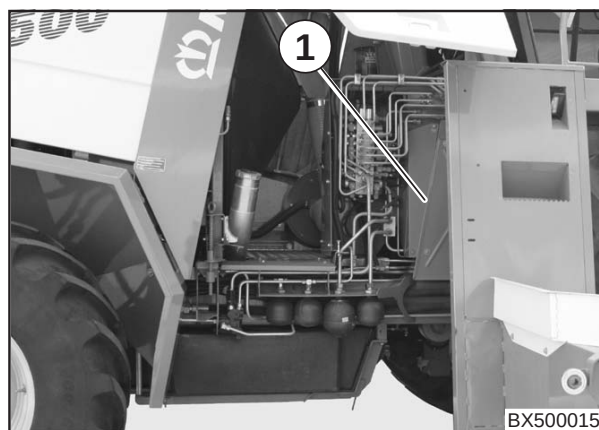
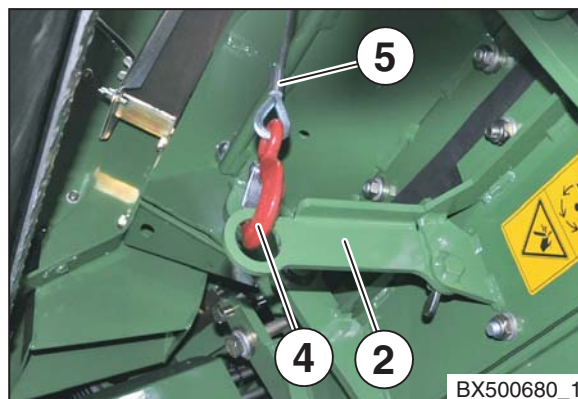
7.5.7.3 Demontage Graskanal

- Unwind cable (5) from cable winch.
- Catch the hook (4) of the cable winch in the eye of the 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.
- Remove the cover (1).

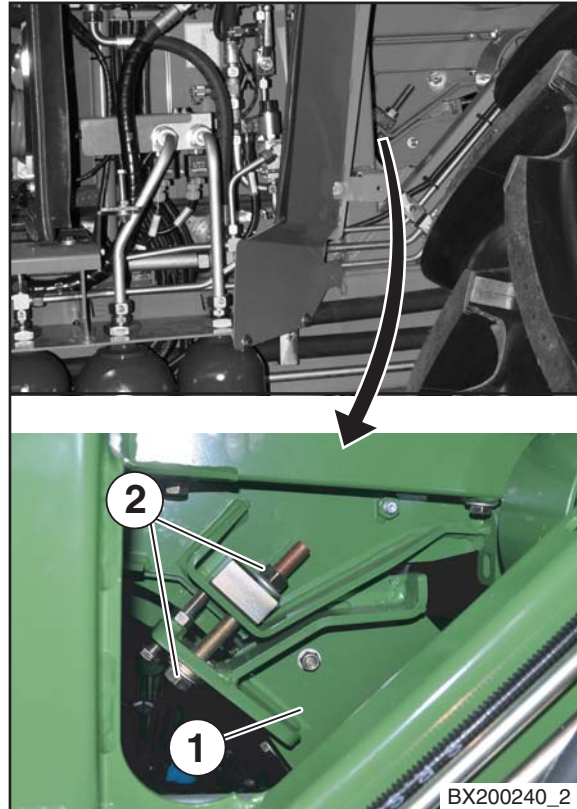


Start-up



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.

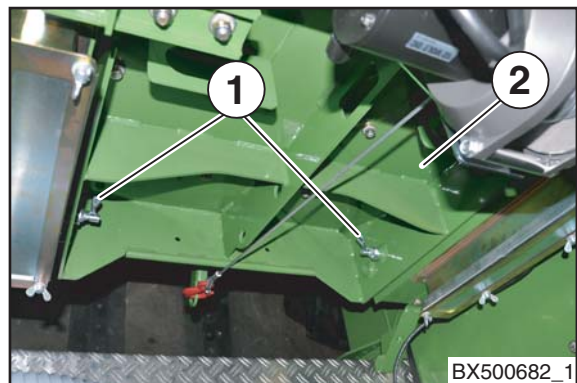
- Loosen the screw connection (2) on either side of the grass channel (1). In doing so, remove the left screw at first. The right screw can be removed from the outside or from above.



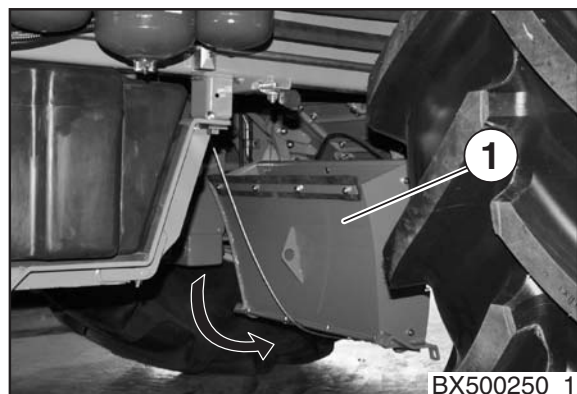
Danger! - Load falling down.
Effect: Injuries or damage to the machine.

- Do not step under the suspended load!

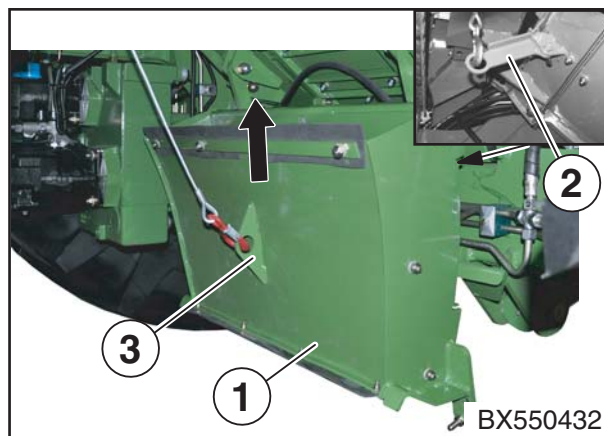
- Turn the spring-mounted bars (1) in that way that they can engage.
- Let the grass channel down with the cable winch until the oblong holes of the tubes in the rear wall and the bore holes of the discharge accelerator housing lie on top of each other. As soon as the corresponding bores are in alignment, the spring pressure causes the spring-mounted bars (1) to engage automatically.



- Unwind cable from cable winch, the grass channel (1) swivels down.

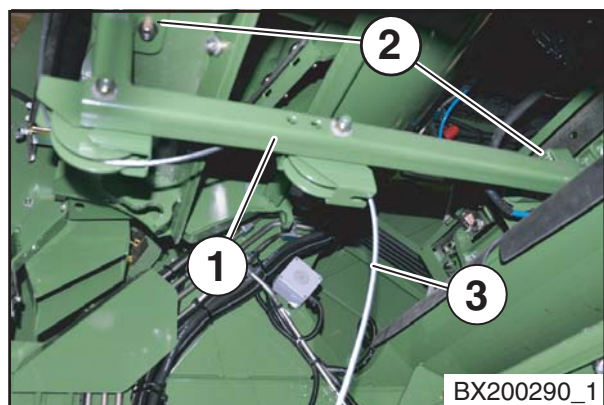


- Remove the hook of the cable winch from the pivoted lever (2) on the grass channel (1) and engage it on the eye (3) on the grass channel (1)



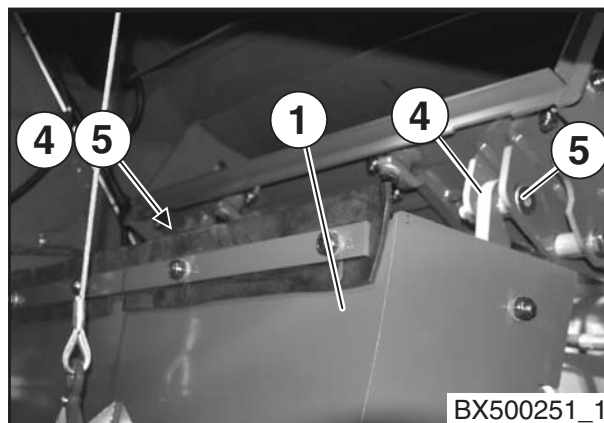
Installation of cable guide:

- 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. (in driving direction right bore hole)
- Lead cable (3) corresponding to the description in the graphic BX200290 round the guide roller.



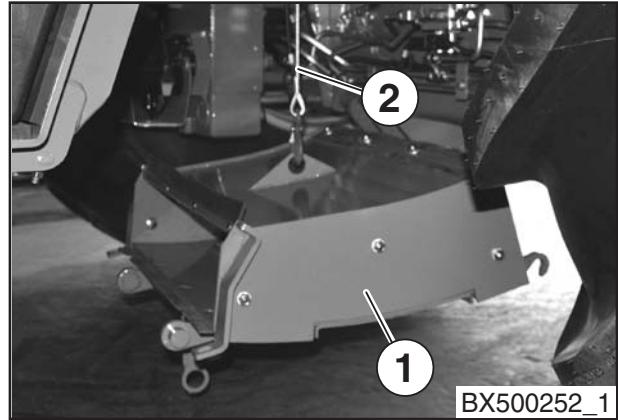
Danger! - Load falling down.
Effect: Injuries or damage to the machine.
 • Do not step under the suspended load!

- 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.

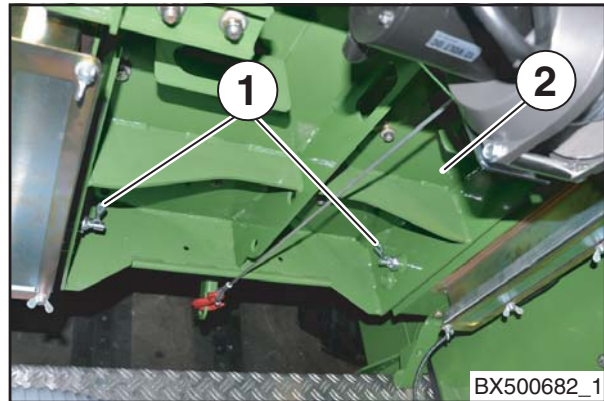


Start-up

- 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.



The spring-mounted bars (1) must remain locked, otherwise the rear wall (2) will no longer be fixed.



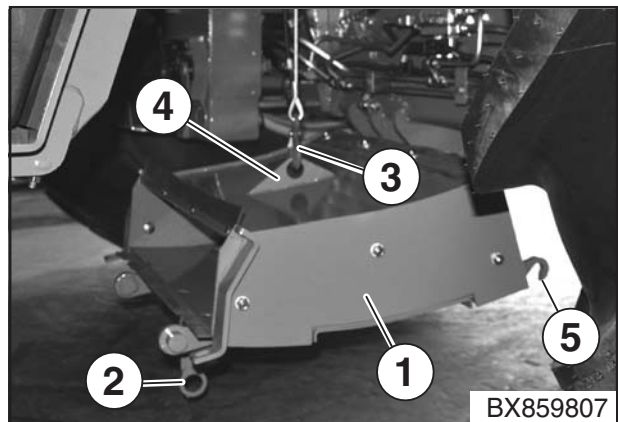
7.5.7.4 Installation of grass channel

- Rotate the crane splice (2) up to the edge guide upwards in position (II) (see chapter „Fold out crane splice“).
- 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.

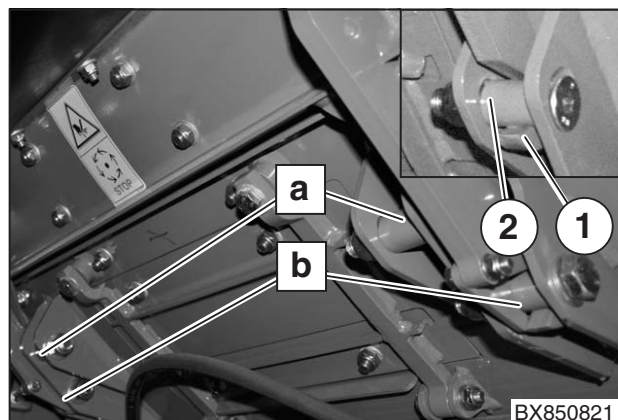
- **Always use the cable winch to hook in the grass channel.**
- **It must be ensured that there are no persons in the range of movement.**



- 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.

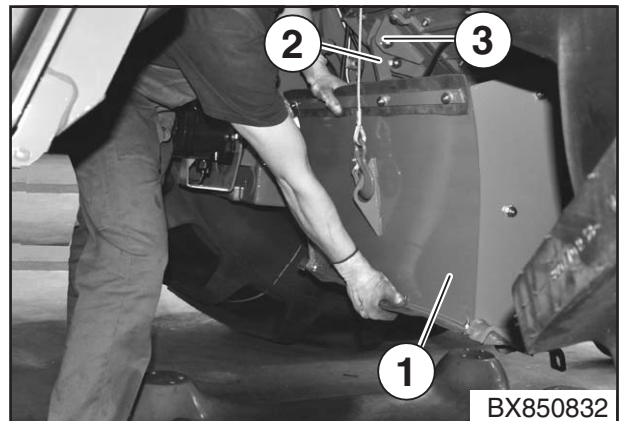


- Tilt grass channel manually towards the front, so that the receiving hooks (2) engage into the holders (3).

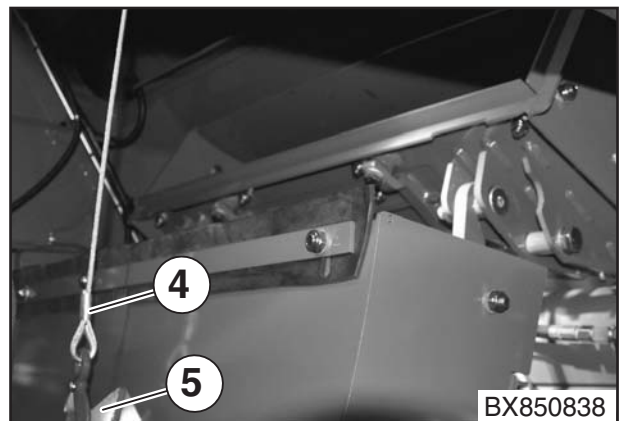


DANGER! - Load falling down.
Effect: Injuries or damage to the machine.

- 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.



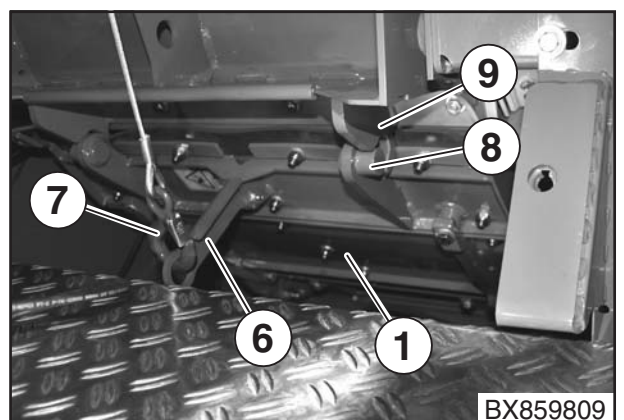
- Let out cable (4) from the cable winch until the grass channel is hanging downwards and the cable (4) can be unhooked.
- Unhook the hook of the cable (4) out of the eye (5).



- Disassemble the rope deflection (10).

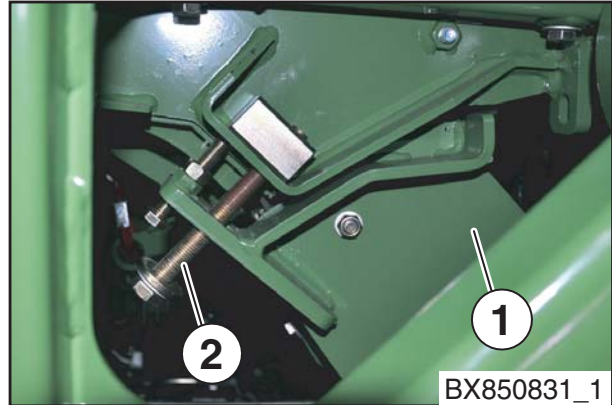


- Swing crane strap (6) up to the stop upwards in position (II) (see chapter "Fold out crane strap").
- Fasten hook (7) of cable winch at the crane splice.
- Pull up grass channel (1) via cable winch until bolt (8) is inserted into the holders (9) of the rear wall at the grass channel.



Start-up

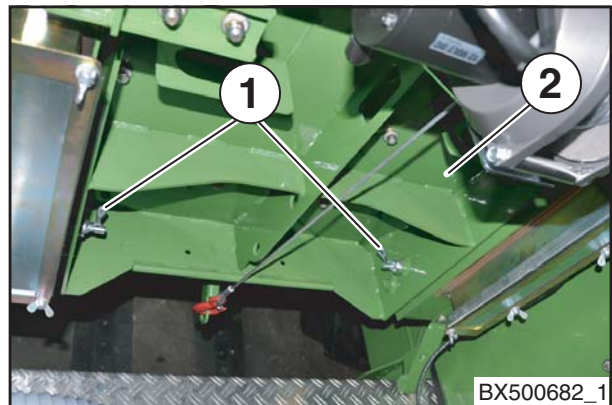
- After swivelling up, assemble the grass channel (1) with the fastening screws (2) on both sides to the frame of the forage harvester starting on the right machine side. Place the grass channel (1) in the correct mounting position by using fastening screws if necessary.



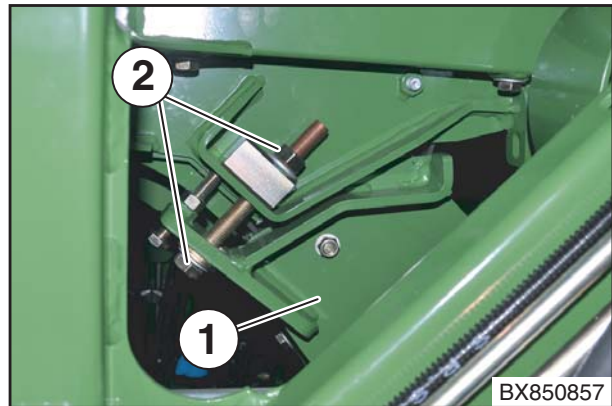
- Actuate the spring-mounted bars (1) to release the lock on the rear wall (2).



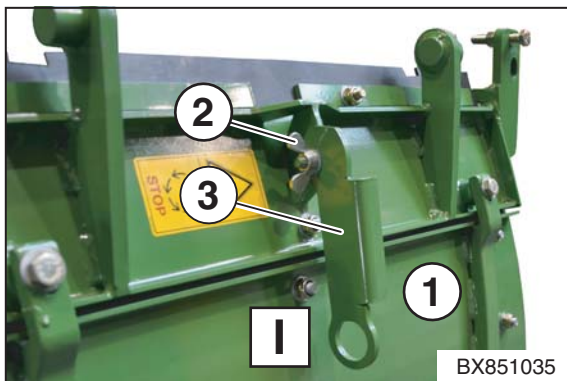
The spring-mounted bars (1) must always be released, otherwise the grass channel will not reach the working position.



- 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.



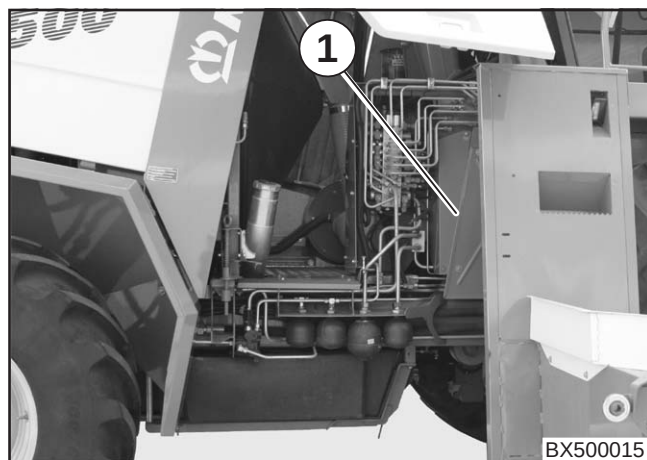
- Loosen the wing nut (2) on the crane splice (3) of the grass channel (1).
- Swivel the crane splice (3) as far down as it will go to position (I) and tighten the wing nut (2) to lock it in place.



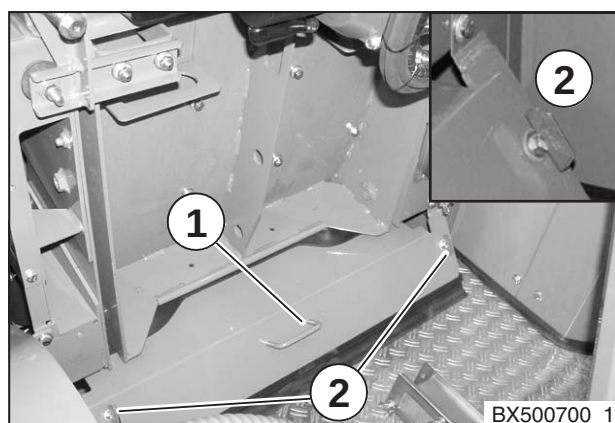


After the installation of the grass channel the following settings need to be checked and, if necessary, readjusted.

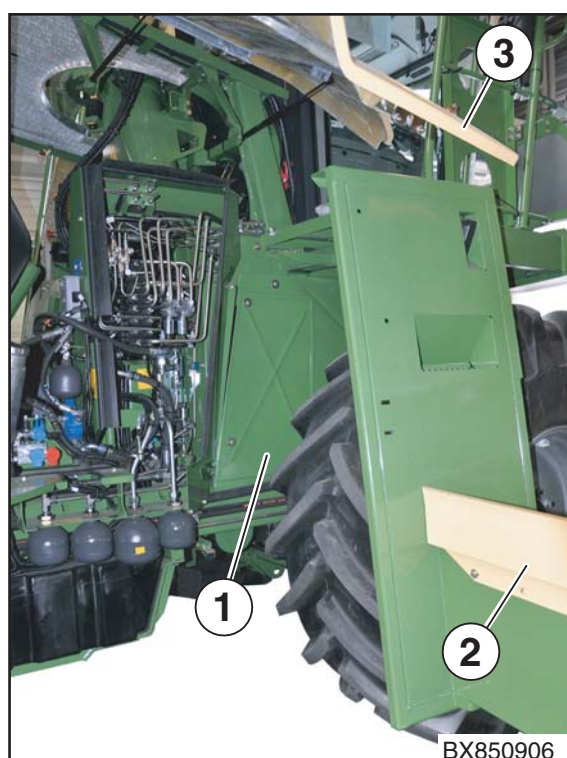
1. Setting Pick-up (When working with Pick Up).
The position and the height of the holding-down device roller as well as the following baffle plate must be adapted to the swath height, so that the roller crop guide does not pile up the swath. (refer to operating instructions Pick-up chapter 3.6.3 Setting 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).



- Fit the cover (1) and close the locks (2) of the cover (1) under the discharge accelerator.



- Close the toolbox (2) and the flap (3) 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.

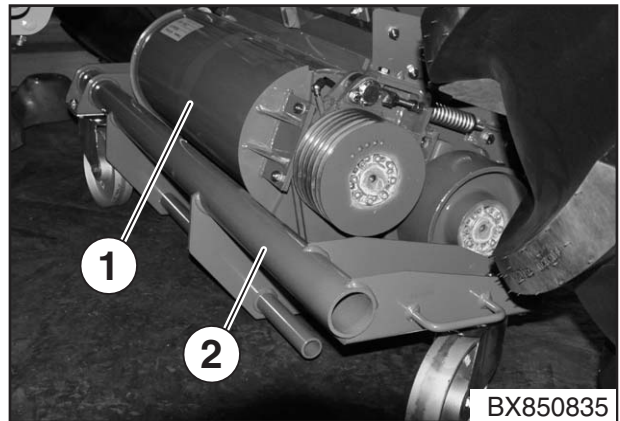
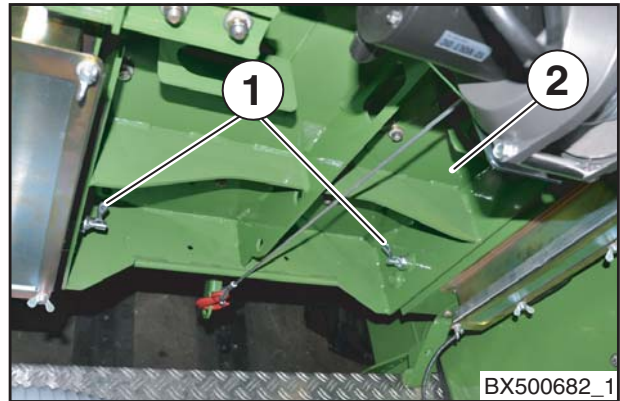


7.5.6.5 Installation of the corn conditioner



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 whether the rear wall is secured by both spring-mounted bars.
- 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.

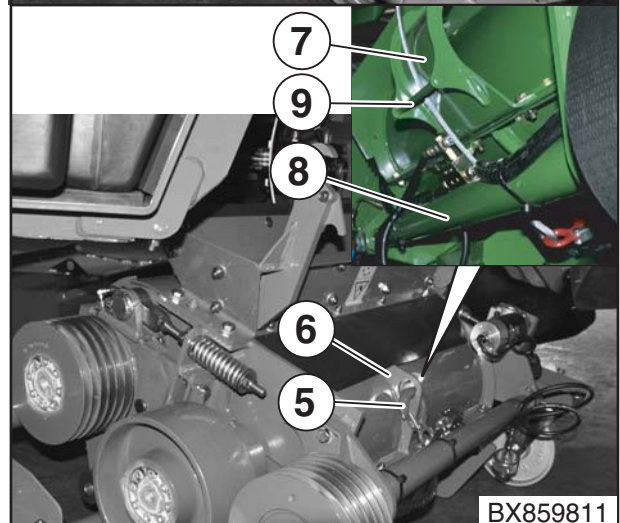
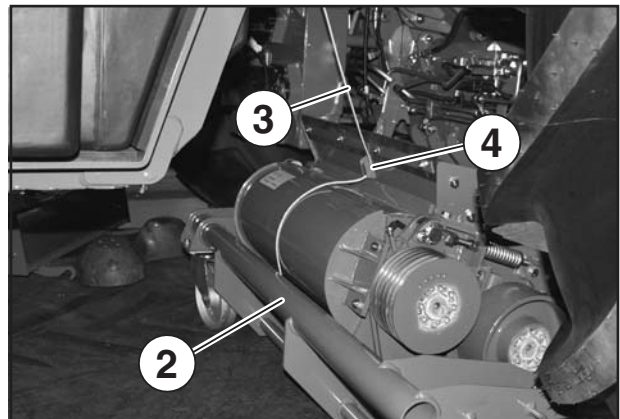


- Set cable winch cable (3) into the hook (4) of the corn conditioner and guide it via roller panel downwards.
- Guide the cable (3) further over the cable guide (7), under the round bar (9) and then further along under the axle (8) upwards to the holder (6).



To prevent that the cable (3) glides off, it must always be guided along between cable guide (7) and round bar (9). Do not in any case guide the cable (3) outside over the axle (8) or the round bar (9).

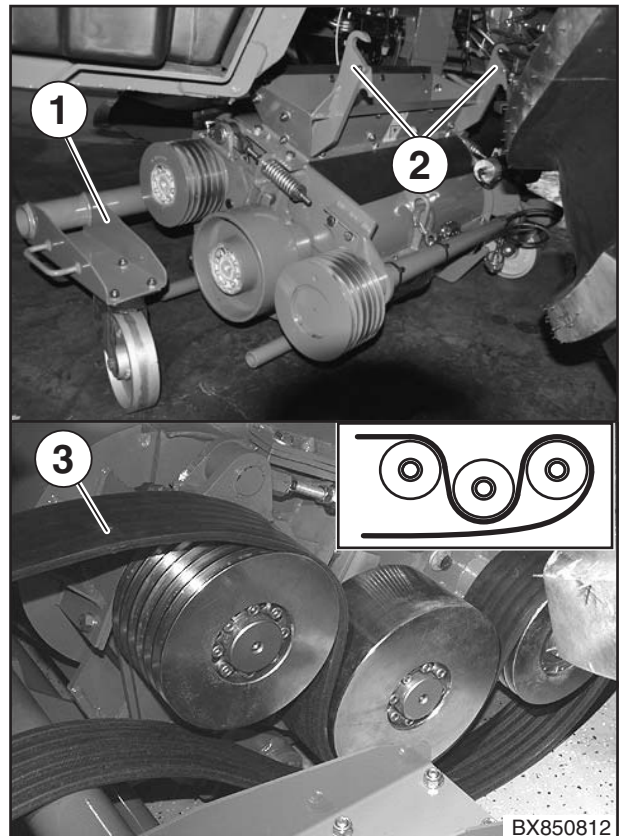
- Hook the cable winch hook (5) into the holder of the corn conditioner (6).



- Put the V-belt (3) in place as shown in the diagram.
- Align the corn conditioner with transport frame (1) and fitted V-belt under the forage harvester so that the receiving hooks of the corn conditioner (2) are in front of the holders of the forage harvester.



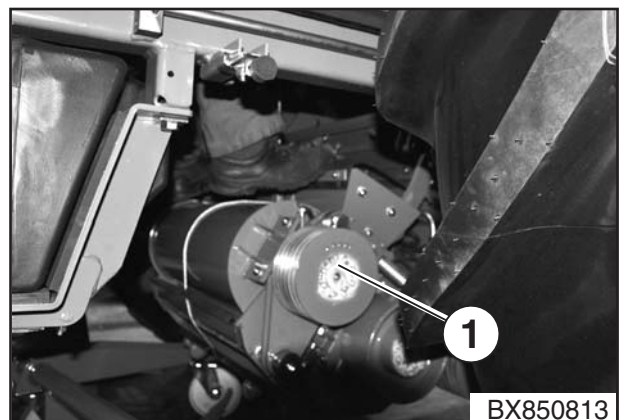
Danger! - Load falling down
Effect: Injuries or damage to the machine.
Do not step under the suspended load!



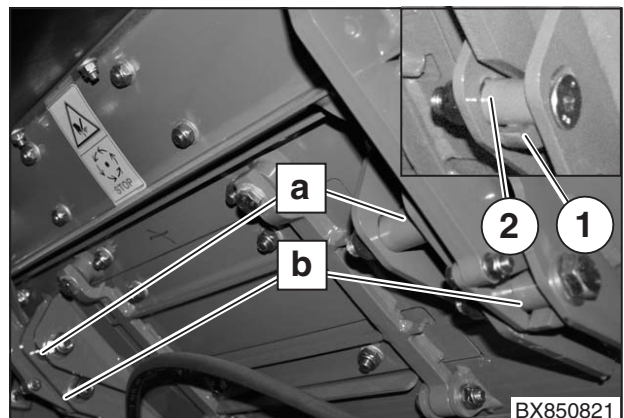
- Pull corn conditioner (1) up with the aid of a cable winch until the receiving hooks (1) of the corn conditioner are located further up than the holders (2) at the transfer shaft.



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.

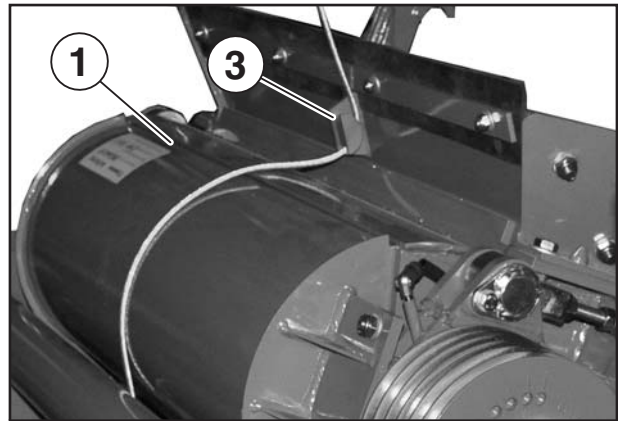




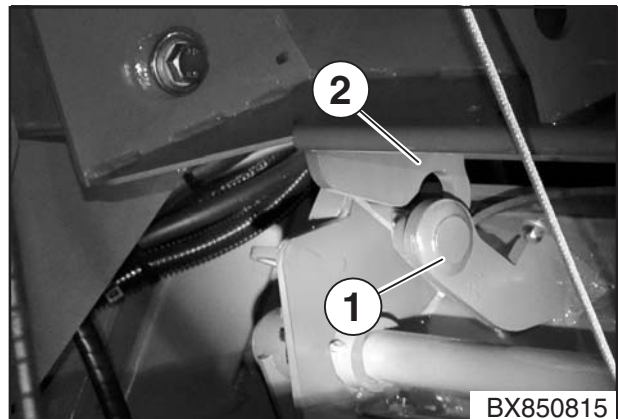
Danger! - Load falling down.
Effect: Injuries or damage to the machine.

- **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.

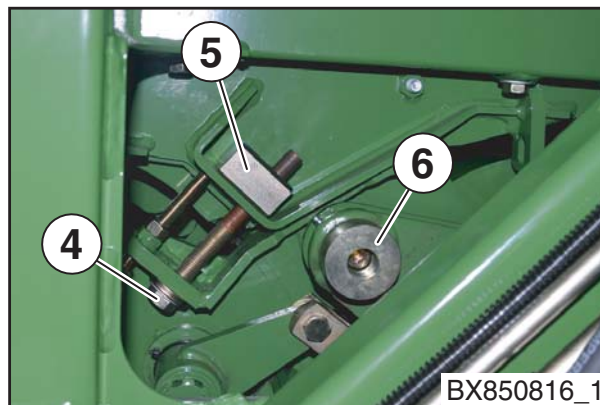


- Exit danger zone and pull corn conditioner (1) up via cable winch until the bolts (1) are inserted into the locking hooks (2) at the rear wall of the corn conditioner.

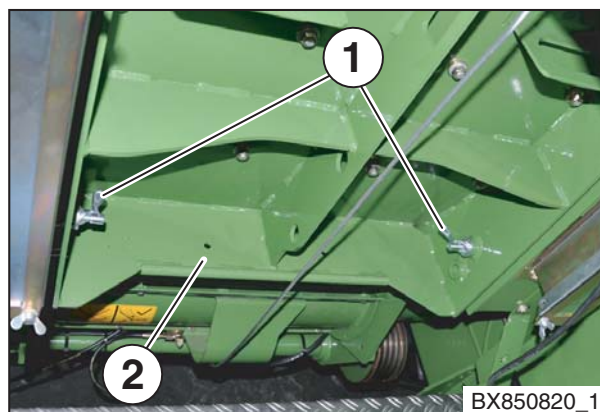


Pre-assemble attachment bolt (4) on the right-hand side of the machine (screw in threading until thread mounting (5) is full).

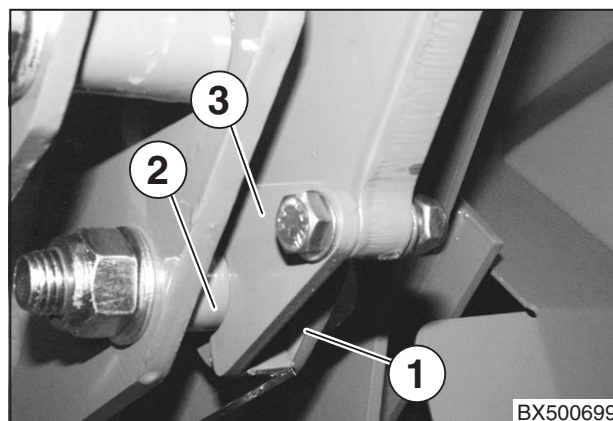
- Then pre-assemble attachment bolt on the left-hand side of the machine accordingly.



- Actuate the spring-mounted bars (1) to release the lock on the rear wall (2).
- 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.
- Remove transport frame
- Loosen cable winch hooks and retract cable winch completely.

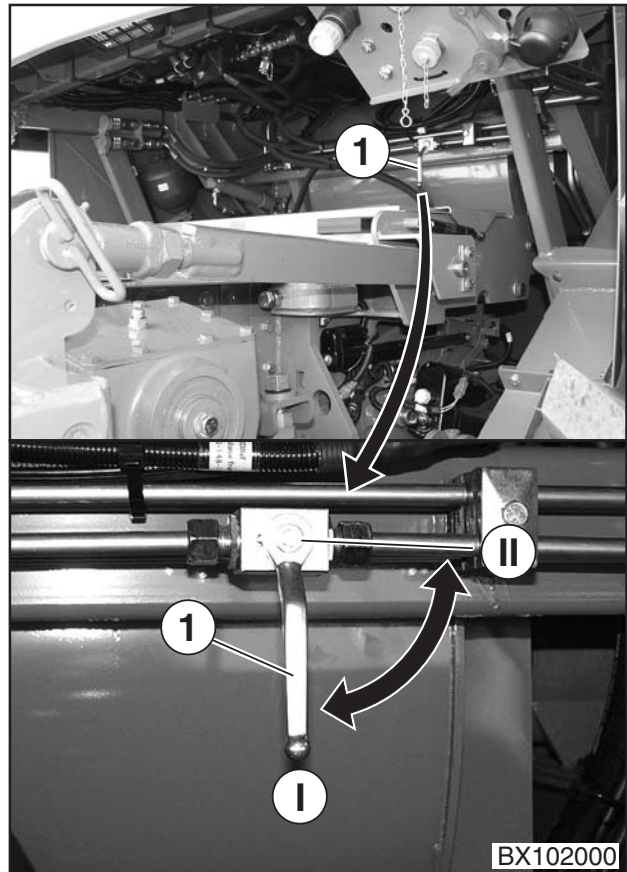


- Fix the position of the receiving hooks (1) (left/right) in the holding bolts (2) by installing the link (3). Secure with screw, washer and nut.
- Remove connection of remote control out of the cable winch, remove remote control and keep it in the drawer under the driver's seat in order to avoid unwarranted use.

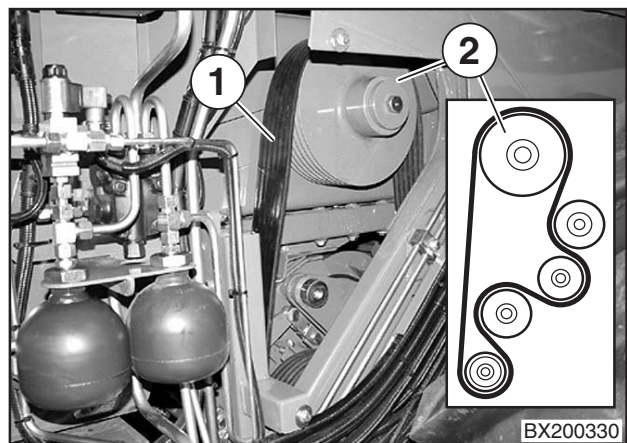


Start-up

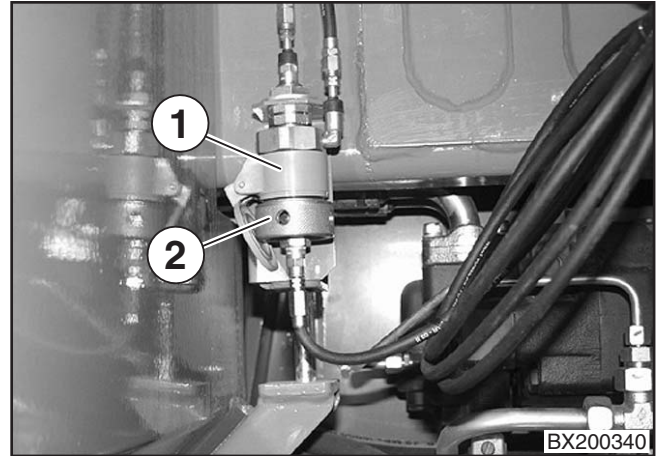
- Open the shut-off valve for the grain conditioner tensioning roller (1) (position II).



- Place belts (1) over drive roller (2). Press tension roller back manually, if necessary.



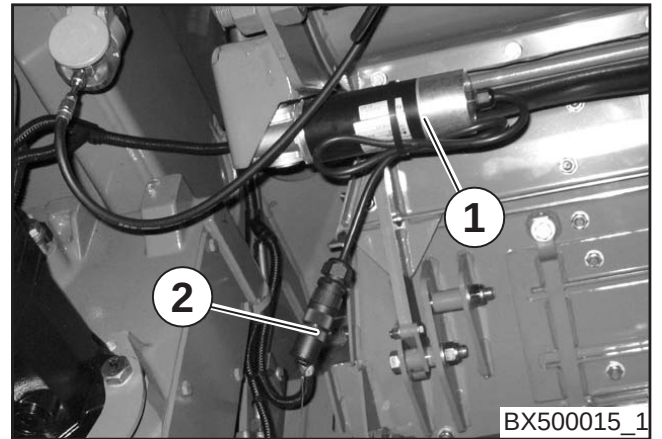
- Connect the central lubrication plug (2) of the grain conditioner onto the central lubrication coupling (1).



- 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).



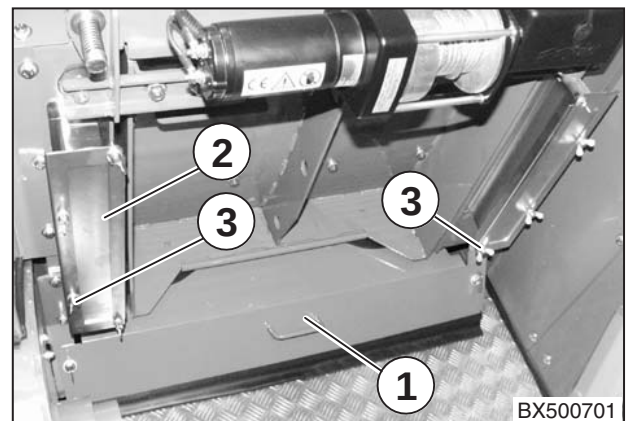
After dismantling the corn conditioner, place the protective caps back on the connections.



- Close and lock the maintenance flap (1).
- Loosen the wing nuts (3) and remove the covering plates (2) of the additional venting slots.

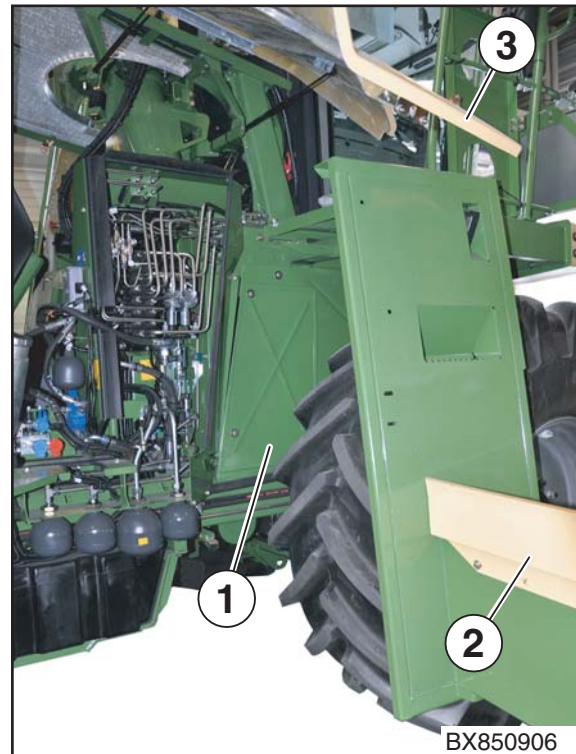


For further measures for optimising the crop route, see Section 8.2.6.



- Install the cover (1).

- Close the toolbox (2) and the flap(3) for the machine compartment on the right hand side.



7.5.7.6 Demontage Corn-Conditioner

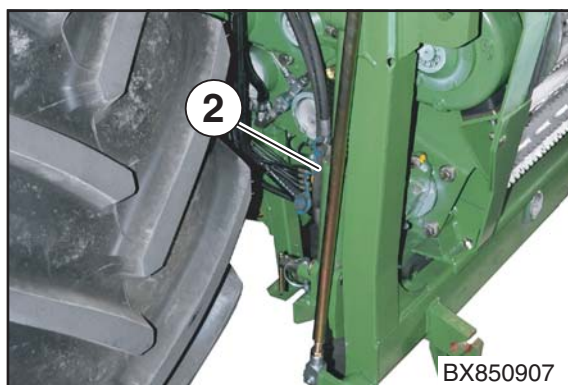
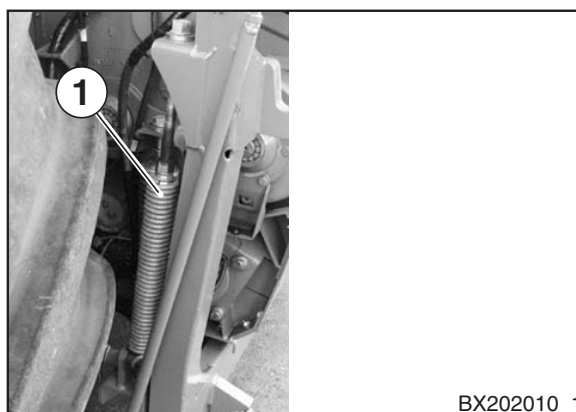


Note
Remove the grain conditioner in
reverse order to the installation
procedure.

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.

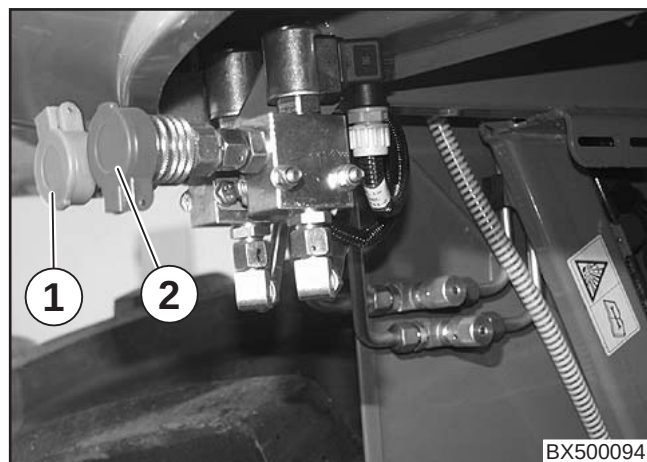
- Release the tension on the compression spring (1) and remove it.
- Dismount the hydraulic cylinder (2).



- 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:

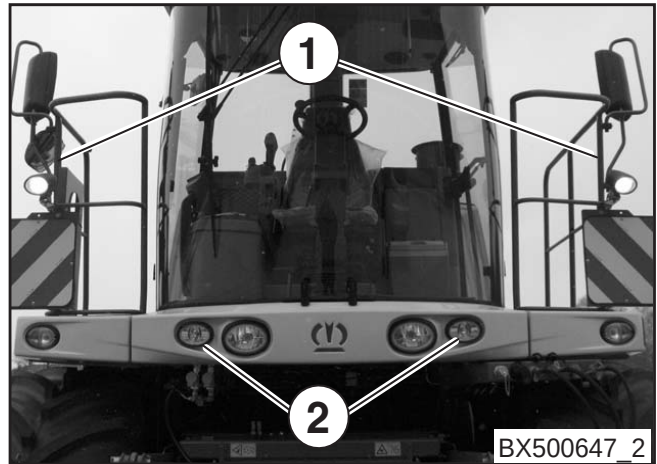
- Refitting the cutting blade - see Section 9.
- Feed drive grain capture plates
- Refitting the conveyor bars on the front baling rollers - see Sect. 9.
- Replace shearbar - see chapter 9
- Adjusting the lifting gear - see Sect. 4.

Start-up

- 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



For further refitting jobs see operating instructions EASYCOLLECT 903/1053..



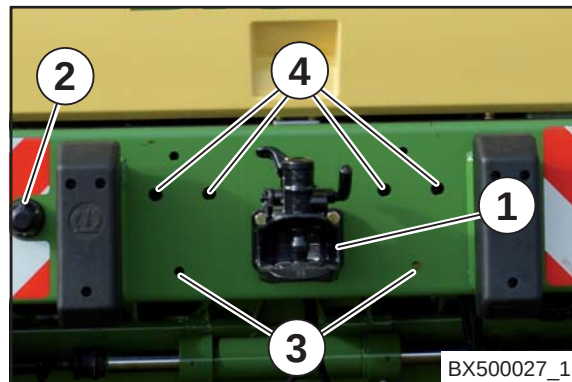
7.6 Trailer operation

The forage harvester is equipped as standard with a hitch coupling (1).



**Connect the trailer only to the trailer hitch.
Observe the information in the operating license of the machine.**

- 1 - Hitch coupling
- 2 - Power socket for lighting
- 3 - Compressed air connections for two-line brake (optional)
- 4 - Additional hydraulics (optional)



In road traffic connect the lighting of the trailer to the power socket (2) and check it for functioning.

7.6.1 Connecting the Trailer



Danger to life or serious injuries!

- The permissible noseweights and axle loads of machine and trailer must not be exceeded.
- Make sure the trailer is secured against rolling away.
- When connecting the trailer, do not stand between machine and trailer.

- Secure the trailer against the possibility of rolling back.
- Make certain the towing eye and the trailer coupling are on the same height.
- To open the trailer coupling, press the hand lever (1) upwards until the snap-in point is reached.
- Clean the trailer coupling with a suitable aid.
- Move back the machine slowly until the towing eye engages in the trailer coupling.



Danger to life or serious injuries!

The bolt (2) must be locked in place completely to ensure that the trailer does not detach itself from the trailer coupling.

- Check whether the inspection pin (3) is closed off flushed with the surface of the housing.
- Crank the trailer supporting wheel (if available) up.
- Connect the plugs for power supply and check lighting system.
- Connect the compressed air hoses, if a compressed air connection (optional) is available.

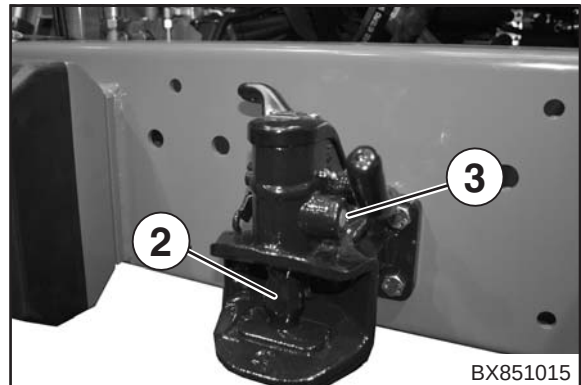
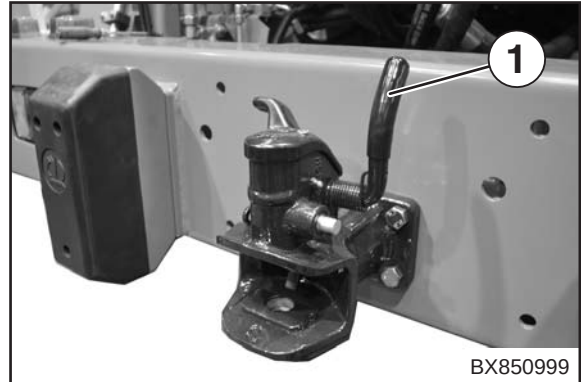


There is a risk of accident caused by the use of defective compressed air couplings.

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.

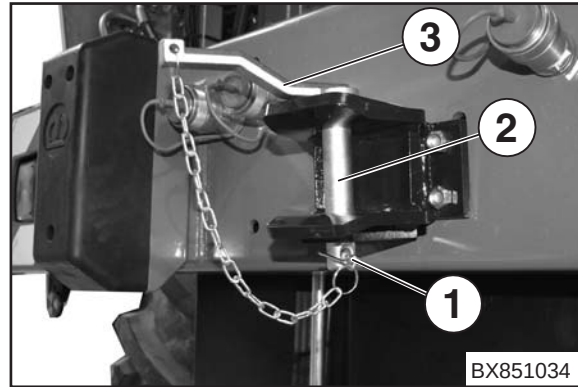


Connecting Trailer for Italy

**Danger to life or serious injuries!**

- The permissible noseweights and axle loads of machine and trailer must not be exceeded.
- Make sure the trailer is secured against rolling away.
- When connecting the trailer, do not stand between machine and trailer.

- Secure the trailer against the possibility of rolling back.
- Make certain the towing eye and the trailer coupling are on the same height.
- Pull cotter pin (1) out of the bolt (2) and lift the bolt with the handle (3) mounting up and out.
- Clean the trailer coupling with a suitable aid.
- Move machine back slowly until the towing eye is in the trailer coupling.
- Connect towing eye and trailer coupling with bolt (2) and secure with cotter pin (1).

**Danger to life or serious injuries!**

Ensure that the bolt (2) is secured with the cotter pin (1). Otherwise there is a risk that the trailer detaches from the trailer coupling.

- Crank the trailer supporting wheel (if available) up.
- Connect the plugs for power supply and check lighting system.
- Connect the compressed air hoses, if a compressed air connection (optional) is available.

**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.

7.6.2 Disconnecting the Trailer



Danger to life or serious injuries!

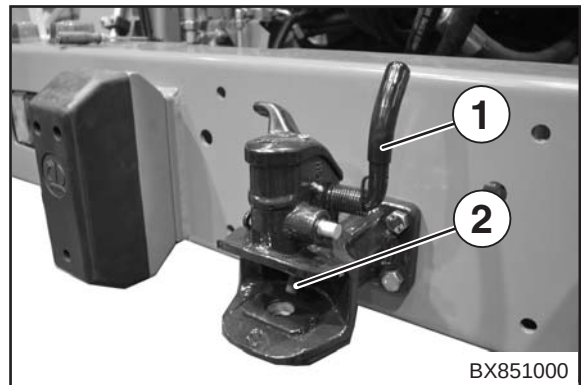
- **Make sure the trailer is secured against rolling away.**
- **When disconnecting the trailer, do not stand between the machine and the trailer.**

- Secure the trailer against the possibility of rolling back.
- Remove the plugs for power supply.
- Disconnect the compressed air hoses, if a compressed air connection (optional) is available.
- Crank the trailer supporting wheel down (if available).
- Press the hand lever (1) upwards until the snap-in point is reached.
- Move forward the machine slowly until the towing eye is removed from the trailer coupling.



Risk of injury of the limbs in the area of the trailer coupling!

- **Do not lock the trailer hitch manually by activating the trigger lever (2). The spring-loaded locking bolt springs back.**



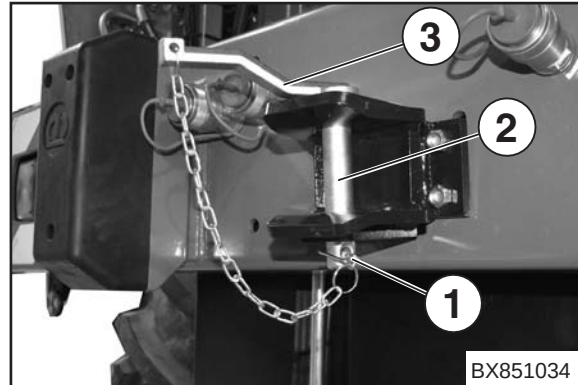
- Turn the trailer coupling down to lock it by pressing lever (1). Thus it will be avoided that the holder opening of the locking bolt becomes soiled.

Disconnecting Trailer for Italy

**Danger to life or serious injuries!**

- **Make sure the trailer is secured against rolling away.**
- **When disconnecting the trailer, do not stand between the machine and the trailer.**

- Secure the trailer against the possibility of rolling back.
- Remove the plugs for power supply.
- Disconnect the compressed air hoses, if a compressed air connection (optional) is available.
- Crank the trailer supporting wheel down (if available).
- Pull cotter pin (1) out of the bolt (2) and lift the bolt with the handle (3) mounting up and out.
- Move forward the machine slowly until the towing eye is removed from the trailer coupling.
- Plug bolt (2) into the trailer coupling and secure with cotter pin (1).

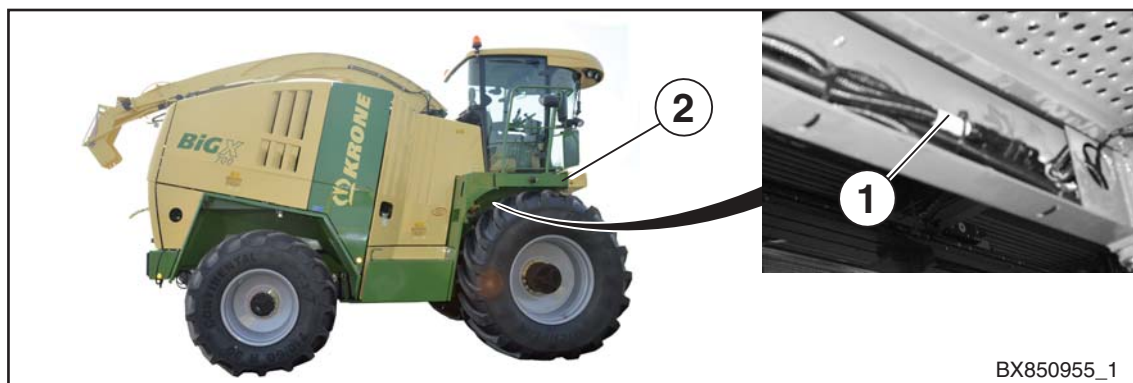


7.7 Registration plates



- Install the front registration plate to both support brackets (1) at the front skirt (2) of the driver's cab.
- Install the rear registration plate into the recess provided for that purpose centrally above the lettering, under the registration plate lighting (3) on the tailgate.

7.8 Connecting an additional silage agent dosing unit (external)



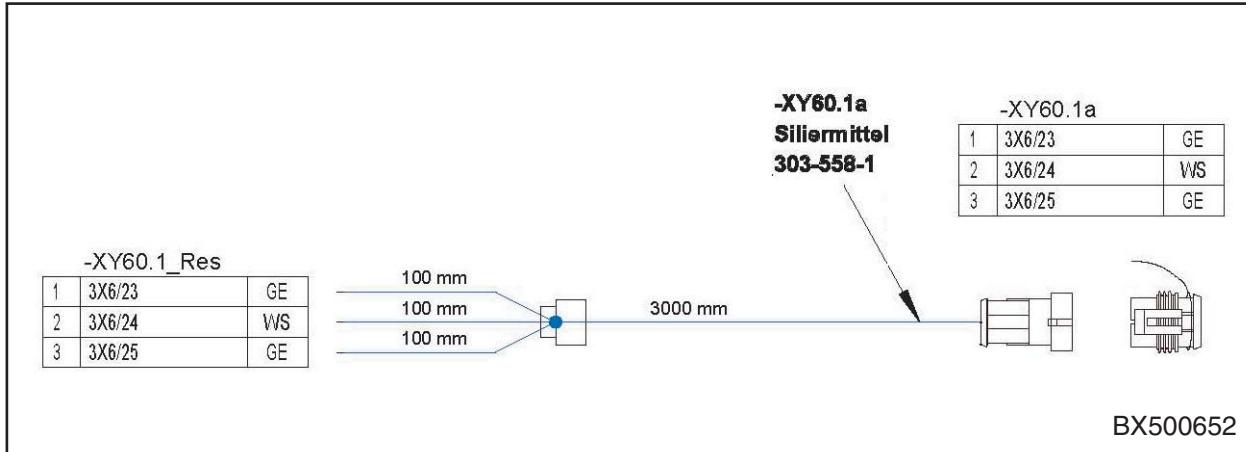
BiG X offers the option of connecting an additional silage agent dosing unit.
When this unit is in operation, the electronics controls the dosing unit completely automatically.

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



For information on operating the silage agent equipment, see Chapter 4 "Silage Fodder Addition"

7.9 Plugs included with delivery depending on version of the silage agent dosing unit (internal/external)

Plug	Assignment	Silage agent dosing unit	Storage location
XM16	Pump silage agent	Regulated internally/ unregulated internally	Above the right front wheel
XB77	Flow sensor	Regulated internally	Behind the cab
XY60	Molasses	Unregulated internally	Above the right front wheel
XB60	Filling level add. tank	Regulated internally/ Unregulated internally/ externally	Above the right front wheel



The operation of the internal silage agent system is described in the appendix.

8 Operation



DANGER! - Tilting of the machine

Effect: Danger to life or serious injuries.

- The driver of the machine must be qualified to operate the machine in every usual situation of use without causing an accident.



DANGER! - Working range of the machine

Effect: Danger to life or serious injuries, property damages.

- Before reverse travel, the driver of the machine must make certain there are no persons or objects behind the machine.

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 be adapted to local conditions.



Driving downhill:

The maximum permissible speed of 40 km/h must not be exceeded even when driving downhill! On steep slopes it may occur that the driver has to take care - by manual intervention - that the maximum permissible speed will not be exceeded. Reducing the travelling speed can be performed by means of the control lever or by applying the foot brake (in the order of listing).

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.
- Set the discharge chute (1) to the transport position using the multi-function lever (see chapter Setting the Cutting Length and Discharge Chute Position).



For the EasyCollect EC1053 (and optionally for the EasyCollect EC 903), the discharge chute must also be folded back manually for road travel (See function „K“).



For further adjustment jobs see operating instructions EasyCollect 903/1053.



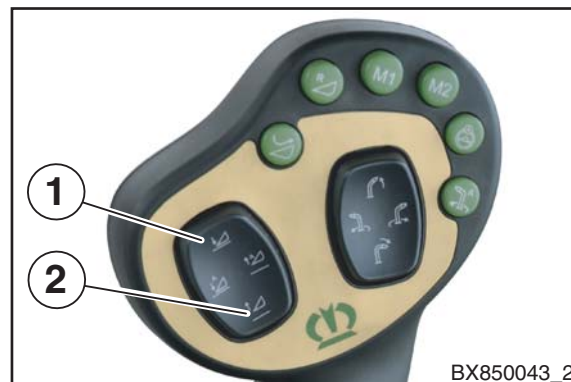
Feed drive/front attachment in transport position



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.

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:

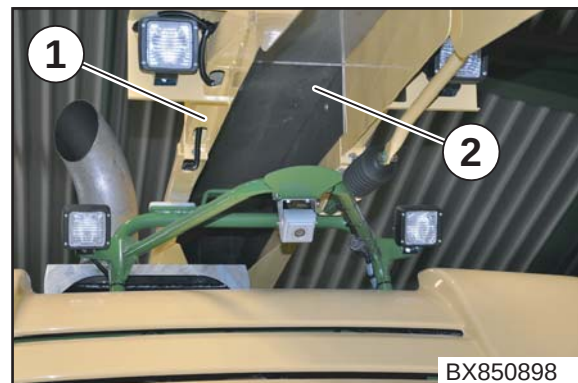
- The driver's seat must be occupied.
- Engine is started.
- Road/field release switch must be in the field mode position.
- Main coupling off.
- Press the "Upper discharge chute in transport position" (1) push-button.

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).



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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.

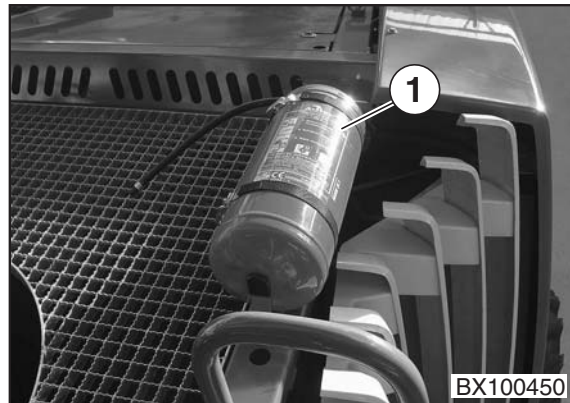


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- Check whether the fire extinguisher (1) is in a ready-to-use condition in the holder provided on the machine roof.



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.

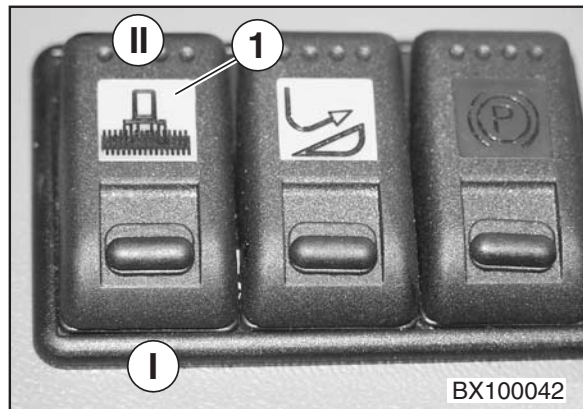


8.1.3 Travel



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



DANGER! - Working range of the machine

Effect: Danger to life or serious injuries.

- Before starting work in the field, make certain there is no person in the direct area around the machine.
- When working near ditches or shores, make certain the distance of the machine to the border is larger than the ditch or the shore.



For special instructions on the use of the respective front attachment fitted, please refer to the separate 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 Field Mode on Slopes



DANGER! - Tilting of the Machine

Effect: Danger to life or serious injuries.

- In field operation on slopes, the ground must be level. Furthermore a sufficient grip of the tyres on the ground must be ensured.
- Do only turn downhill, with reduced speed and by driving a large curve.
- The machine must not be used if the angle of inclination of the terrain is larger than the specified one.

When driving uphill or downhill, the working implement:

- Must always be directed up slope,
- Must be held as close to the ground as possible.

The angle of inclination of the terrain on which the machine is operated must not exceed the following maximum values:

- Uphill and downhill 25% (15°) at the most
- Lateral 50% (30°) at the most

8.2.2 Working in the Vicinity of Power Transmission Lines

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



WARNING

Danger to life and danger to fire if the machine comes into contact with an electrical high voltage cable.

- When folding out and folding in the discharge chute, keep sufficient distance to the power transmission lines.

If the machine touches an electrical high voltage cable, proceed as follows:

- Stop the machine immediately.
- Apply the parking brake.
- Third parties are not allowed to approach the machine. Moreover they are not permitted to touch it. Warn approaching persons (by honking, by making suitable gestures) and request professional rescue workers.
- Try to move the machine out of the danger zone.
- Switch off the engine if this is not possible.
- Do not leave the cabine, if this is possible. When running, a step voltage can arise due to the distance of the feet. The consequence of such a step voltage is a fatal current pulse.

8.2.3 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.

- If it is not possible to move the machine out of the danger zone, but if it must be left (for example in the event of fire), jump off the lowest platform (if possible) of the machine with completely closed feet without touching parts of the machine when reaching the ground.



For leaving the cabin, use the emergency exit, if necessary (refer to chapter 5 "Emergency Exit").

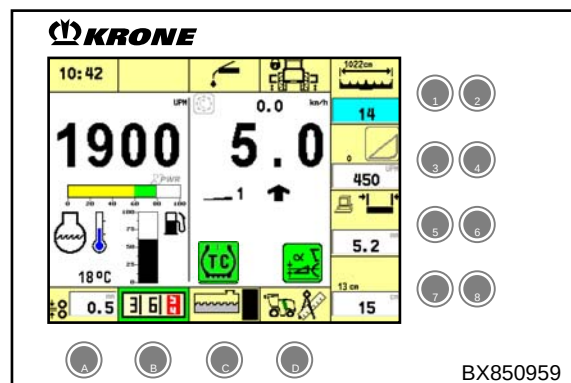
- Move away from the machine with very small steps.
- Block off the scene of accident in an area of 20 m.
- Inform the network operator immediately to cause the lines to be switched off.



WARNING

A contact with the machine can cause an electric shock and may be lethal.

- Before starting salvage work of the machine, the disconnection of the affected overhead pipeline must be confirmed by the network operator.



- 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.

Modify and save the setpoint height (working position) on 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 lifting gear" (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 key "Automatic lifting gear" (3).

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.

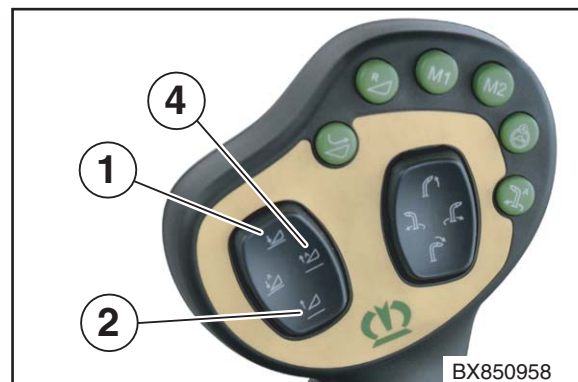
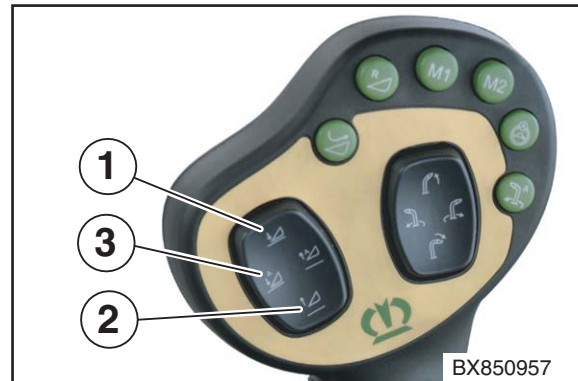
Change the lifting height by new setting and saving.

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.

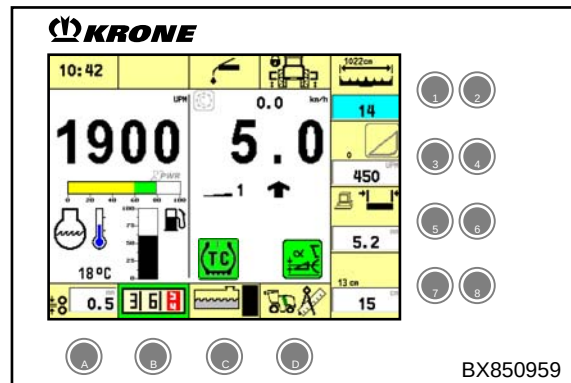
The lifting gear is lifted to the lifting height set.



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.



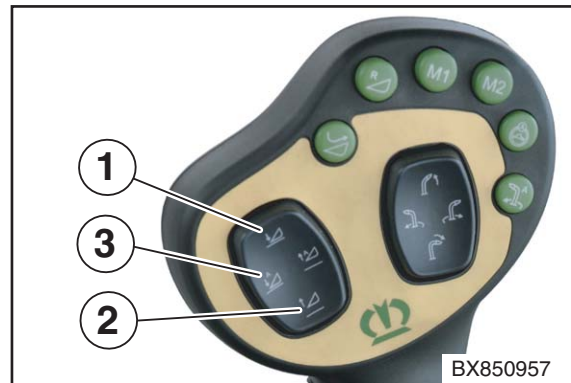
Lifting and lowering the lifting gear in case of lifting gear top pressure control

- 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. Press key "Automatic lifting gear" (3) for activation of lifting gear top pressure control.

- Press key "Automatic lifting gear" (3). (Active swinging).

The lifting gear is lowered to the ground and is automatically set to the lifting gear top pressure control.

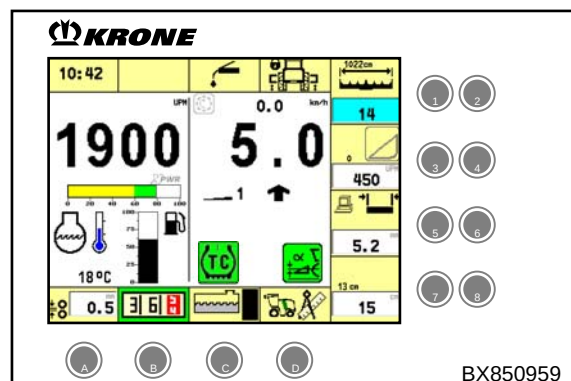


Activating the lifting gear spacing control (optional)

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.



8.2.4 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".

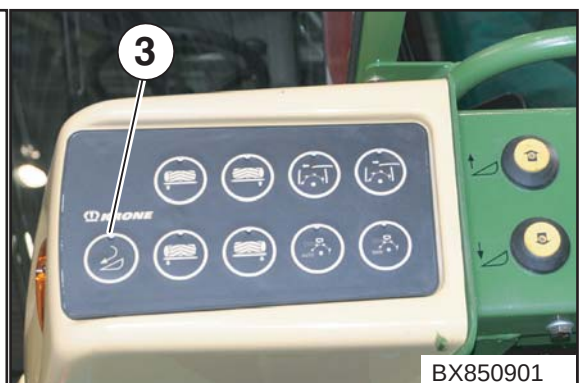
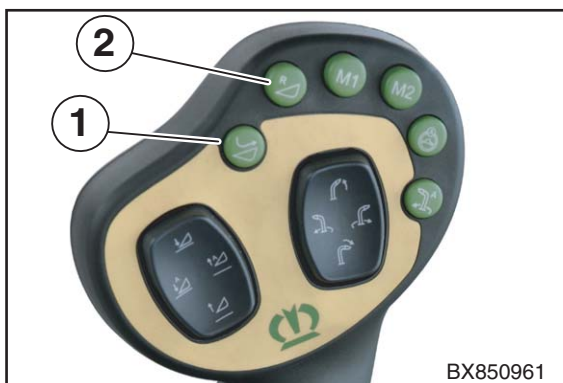
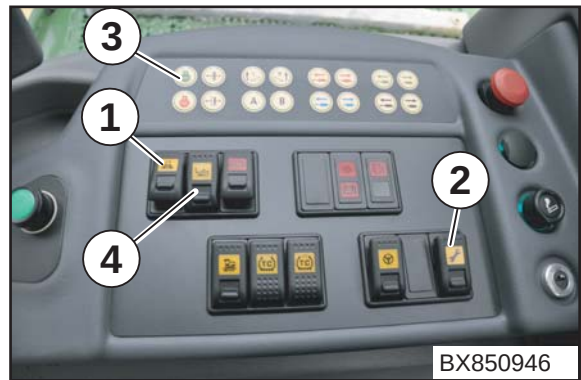
Switching the feed drive/front attachment on



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" key (2) on the multifunction lever or on the manual operation key (3) on the platform for a short time.
- Press the "Feed drive/front attachment on - off" (1) push-button on the multifunction lever or on the manual operation on the platform.

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 key "feed drive/front attachment on - off" (1) on the multi-function lever a second time.

The front attachment units and the feed drive rollers are switched off.

Reversing the feed drive/front attachment

In case of blockages and malfunctions in the crop flow, feed drive/front attachment can be reversed.



Reversing of feed drive/front attachment is only possible with switched on main coupling.

Reversing of feed drive/front attachment is also possible if the cutting drum is not switched on. The cutting drum may start up suddenly if an error occurs.



**It must be ensured that there are no persons in the area of the cutting drum and other components for crop flow when reversing feed drive/front attachment.
Effect: Danger to life, injuries.**

- 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.

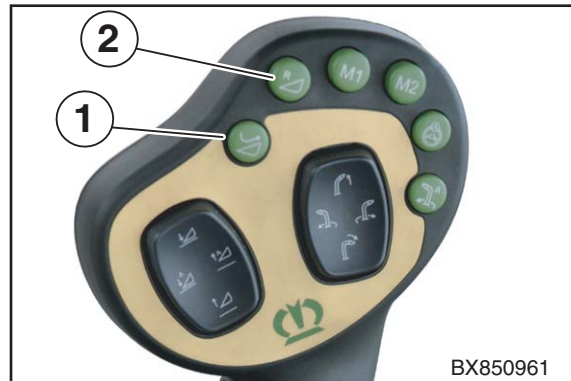
The traction drive release switch must be in position "OFF" when reversing outside the cabin (Use the key (3) on the manual operation on the platform).

8.2.5 Setting the Cutting Length and Discharge Chute Position

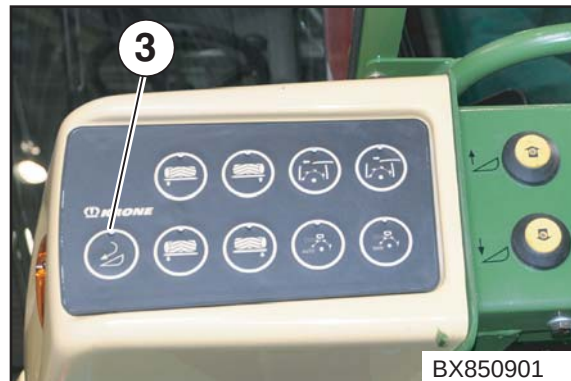
Two cutter lengths can be saved and brought up on the multifunction lever.

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.



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BX850901

Metal detection

When starting the metal detection, feed drive/front attachment stops instantaneously.

- Acknowledge the fault message.
- Permit the feed drive/front attachment to reverse.
- Stop the machine. Remove the metal.

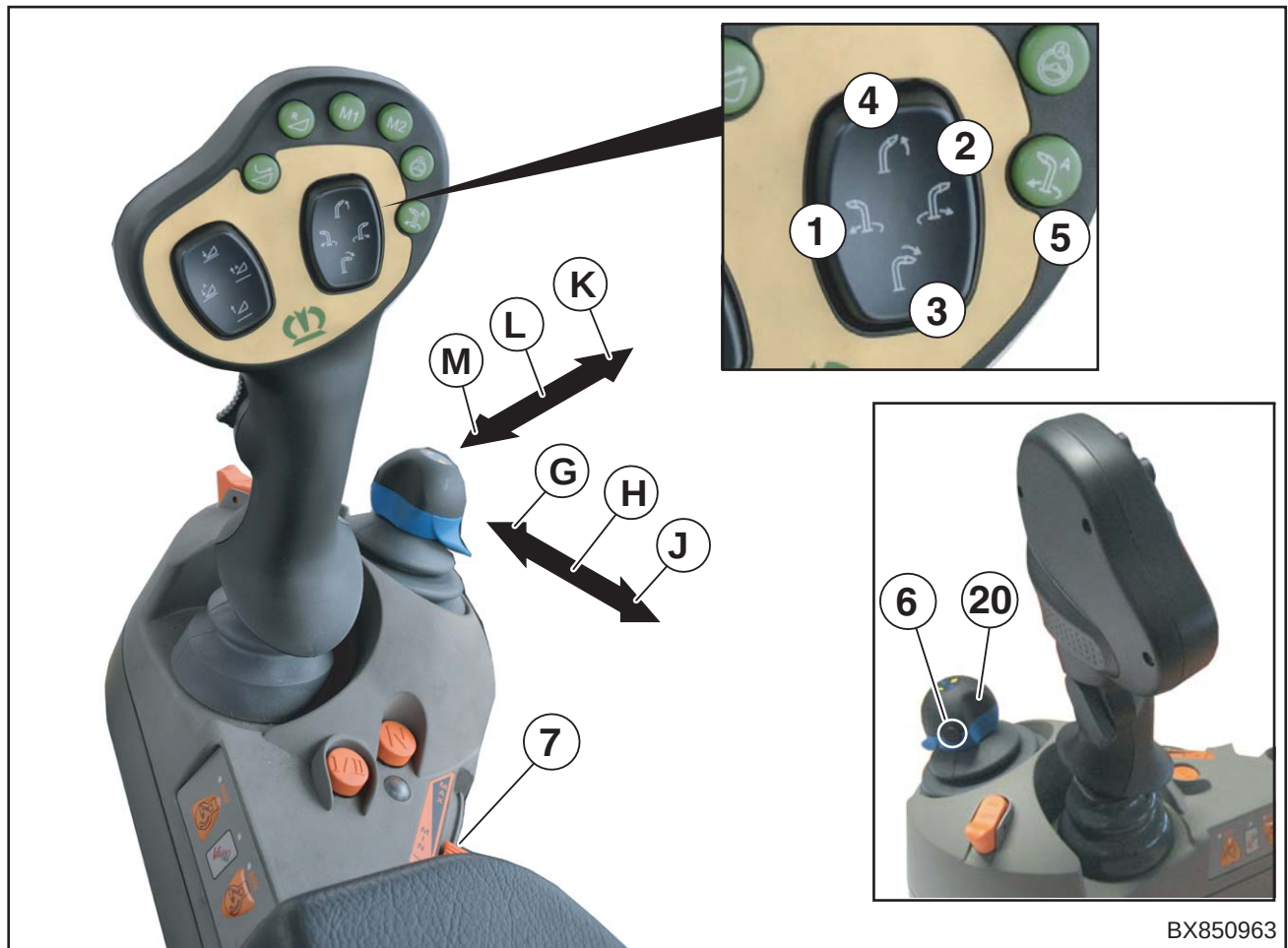
RockProtect

The feed drive/front attachment stops instantaneously when a larger foreign object (for example stone) has been detected in the feed drive.

- Acknowledge the error message.
- Permit the feed drive/front attachment to reverse.
- Stop the machine. Remove foreign objects.



BX850962



BX850963

- 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)



For the EasyCollect EC1053 (and optionally for the EasyCollect EC 903), the discharge chute must also be folded back manually for road travel (See function „K“).

- K - Pull the joystick (20) forward while holding down the button (6): Lower discharge chute, fold in discharge chute extension simultaneously (if available) for EasyCollect EC 1053 (14 rows) (the order can vary).
- L - Central position
- M - Pull the joystick (20) backward while holding down the button (6): Lift discharge chute, fold out discharge chute extension simultaneously (if available) for EasyCollect EC 1053 (14 rows) (the order can vary).



If the discharge chute flap is lifted, the folding in of the upper discharge chute extension defers by approx. 2 seconds, because the discharge chute flap was being lowered automatically before. During folding in and folding out the discharge chute flap can't be actuated.

- 6 - Save the cutting length
- 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)

8.2.6 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.

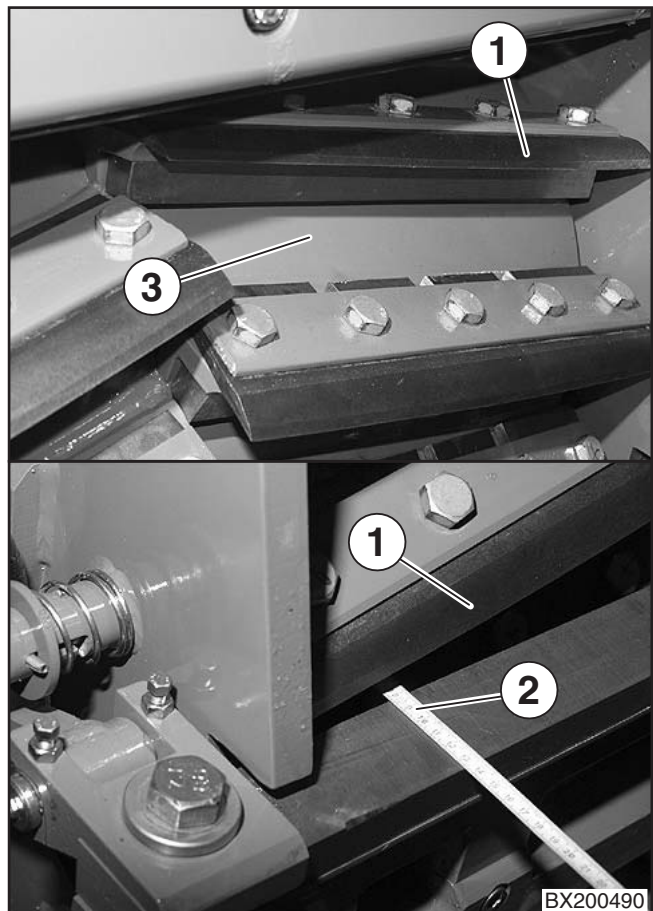
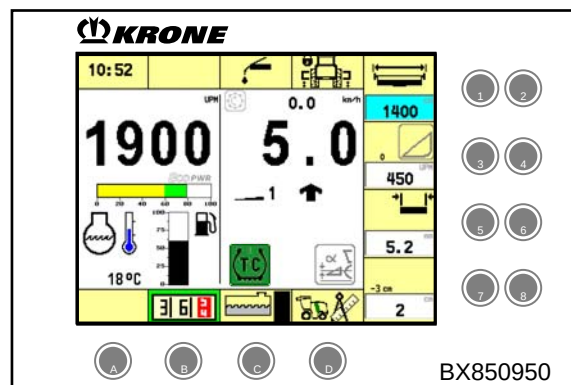
Depending on how far the cutter (1) extends beyond the blade carrier (3) there will be correspondingly more or less wind = discharge output.

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 6-7 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.

To reduce the gap dimension between the drum base and blade:

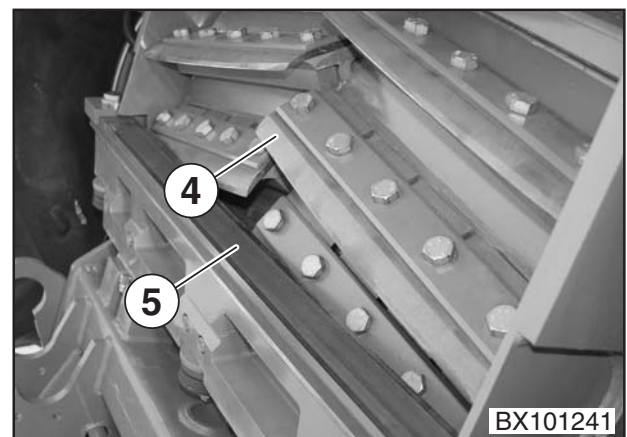
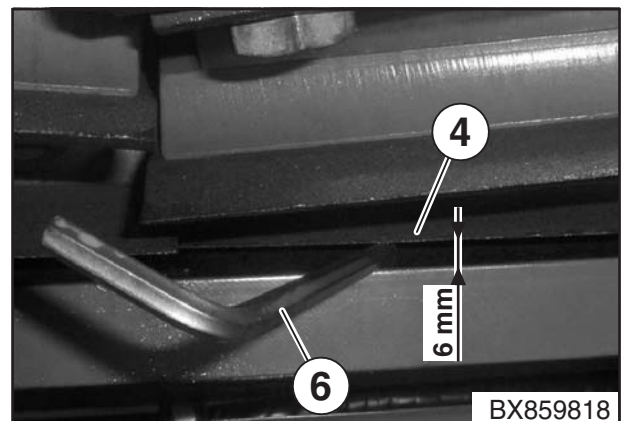
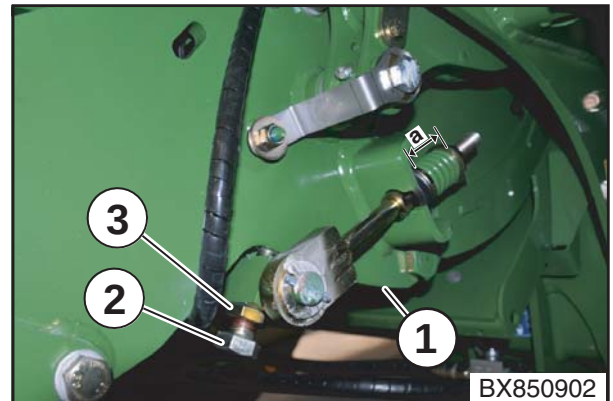
- Loosen the counter nuts (3).
- Remove the screw (2), the distance of the drum base (1) minimises.
- Tighten the counter nuts (3).

To increase the gap dimension between the drum base and blade:

- Loosen the counter nuts (3).
- Screw in the screw (2), the distance of the drum base (1) increases.
- Tighten the counter nuts (3).



After the drum base is adjusted, check dimension „a“ and reset it to 48 mm if necessary.



Operation

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:

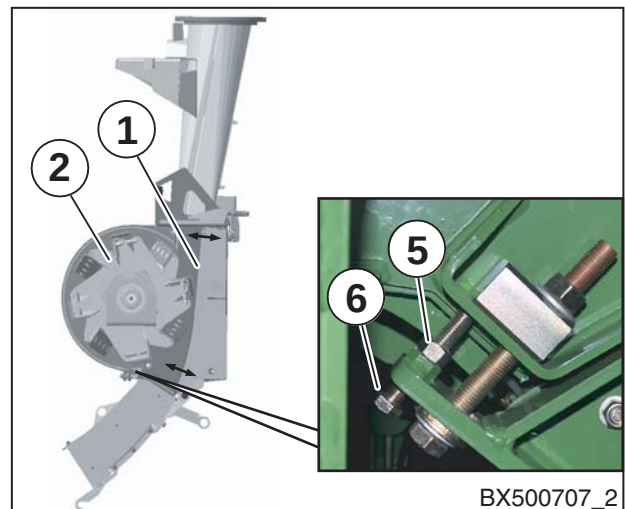
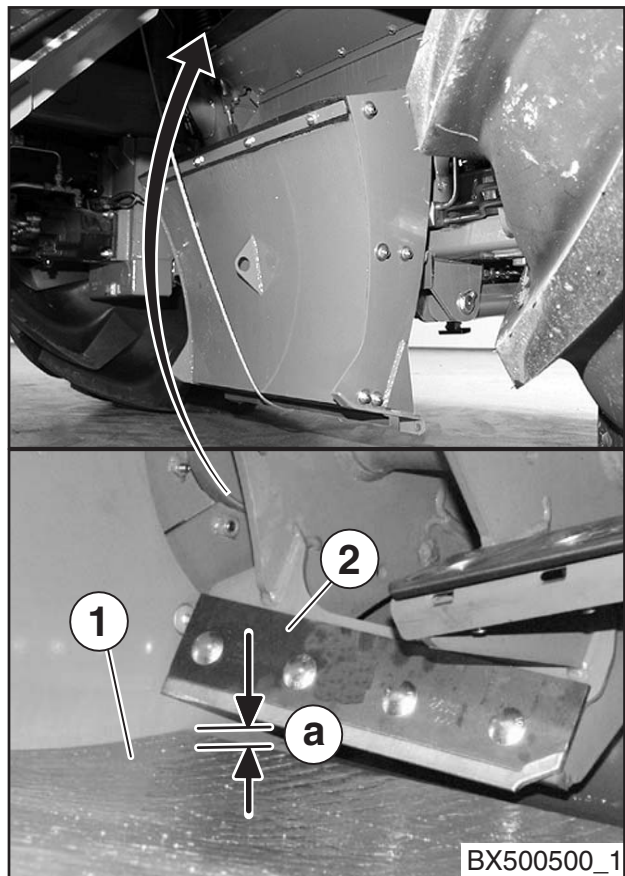
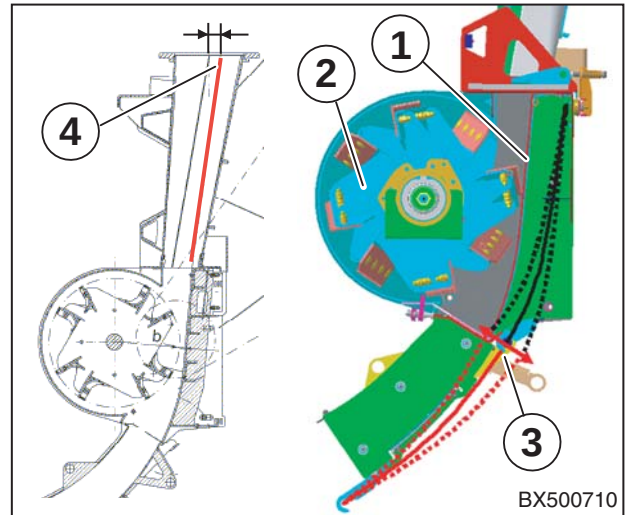
- Loosen the counter nut (5).
- Unscrew the adjusting screw (6) - the lower distance between the discharge accelerator (2) and rear wall (1) increases.

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.

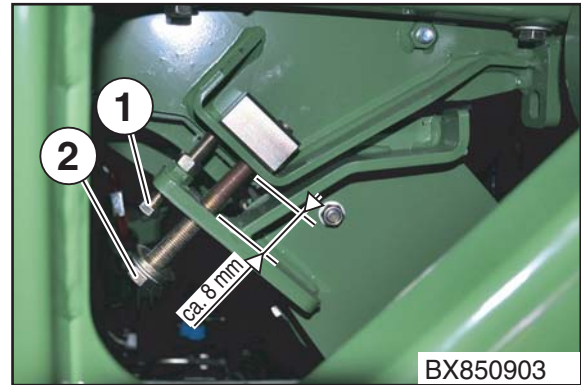


The setting must be uniform on both adjusting screws (6) right and left.



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

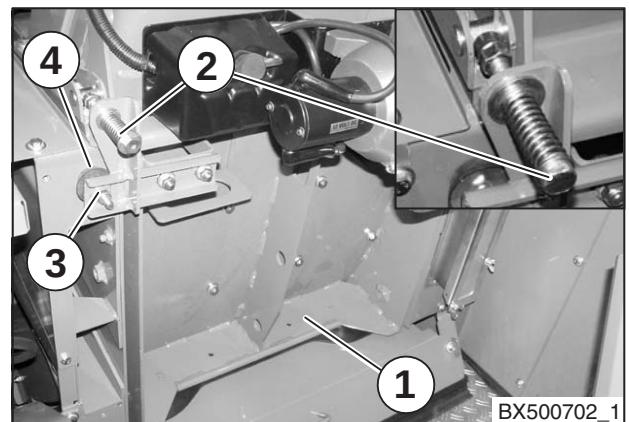
To receive a discharge performance as well as possible during chopping of grass, the rear wall needs to be brought as close as possible to the throw shovels (distance approx. 2 mm). Due to the springs the rear wall can easily give way to the back when having pile ups in the crop flow (VariStream effect).

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.

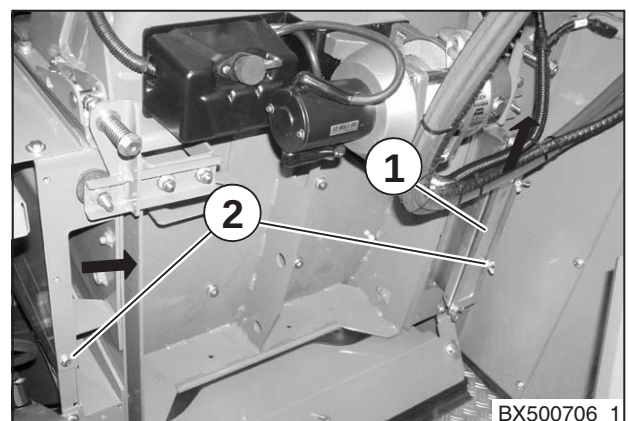
With lower or drier crop the louvres on the discharge accelerator should be opened half way.

Basic factory setting:

- without corn conditioner 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.)
- with corn conditioner 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).



8.2.7 Grinding the cutting blade



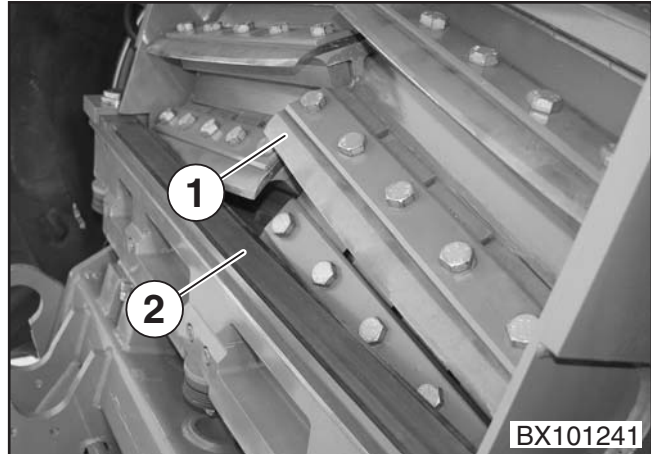
Sharp tools - risk of injury!
Always wear gloves when working with the blade drum.



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.



The grinding stone must not be wetted with water. If water penetrates and then freezes, the grinding stone could break while it is being used. Keep the covering hood of the grinding device closed except for maintenance work. When cleaning make certain that the grinding stone stays dry.

Checking and cleaning the grinding stone and grinding channel

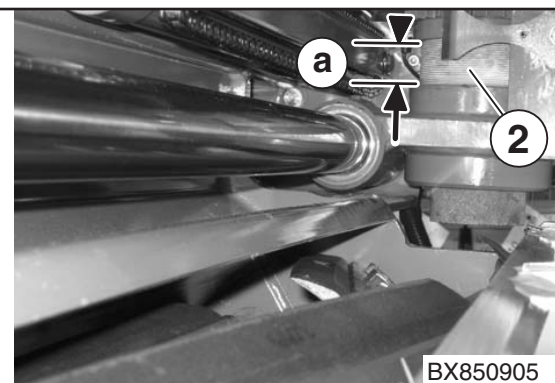
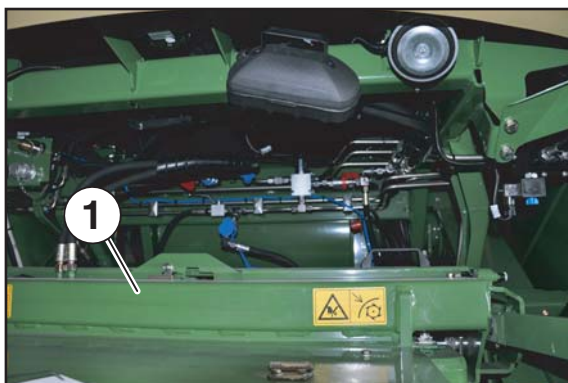
- Remove the ignition key and secure the forage harvester from being placed in operation or rolling away unintentionally.



Before opening the covering hood (1) the blade drum must come to a complete stop.



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.



- 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.

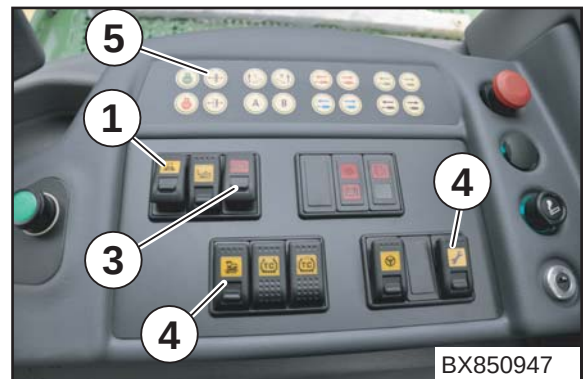
Activation of manual operation on the platform

The following requirements have to be met for activation of the manual operation:

- 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.
- Main coupling (5) switched on.

Working steps:

- In order to release the machine, lower the front attachment by activating the key (14a) until it rests to the ground completely.
- 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.



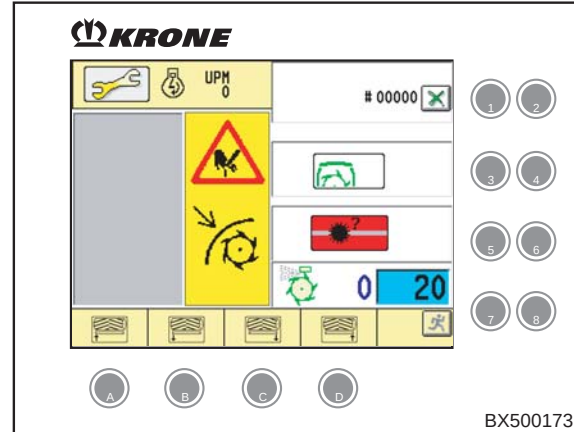
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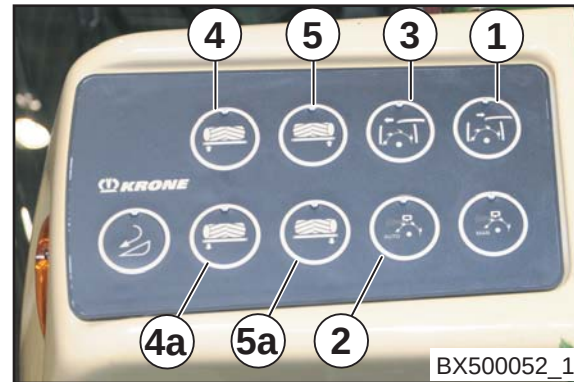
Adjusting the numbers of grinding circles (Factory setting 20)

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 counterblade 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 a very short time.
- If there is a noise when adjusting one of the sides (right/left) (cutters touch the shearbar!) let go of the key immediately and press the appropriate key "Move counterblade away from blade drum" (4a or 5a) for a very short time.
- Block the counterblade on the other side using the same procedure.



After you have blocked the counterblade, the blade drum must run without making any noise.

- Lift front attachment.



Depending on the front attachment, readjusting of the counterblade can be necessary.

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)

8.2.8 Moisture Measuring of the Crop with the Moisture Measuring Device (Option)

Switching ON



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.

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 setting of the crop, the moisture measuring starts.

- 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.

8.2.9 Setting the moisture calibration on the moisture measuring device

The moisture calibration can be individually set for each scale (lucerne and maize) about 8 moisture points (percentages) up or down.



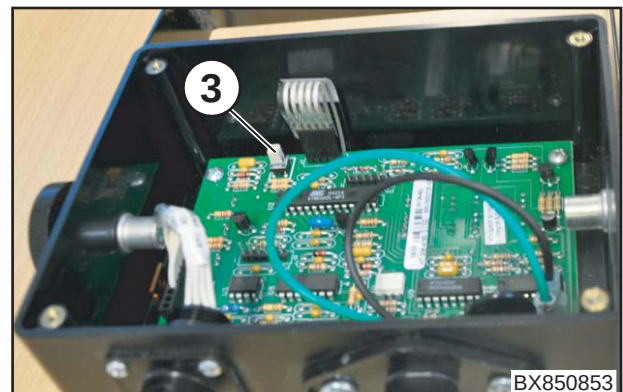
While setting, the crop must not get in contact with the sensors.

Setting:

1. Remove the rear cover.
2. Switch on moisture measuring device via ON/OFF key (2)
3. Select the crop where the setting is necessary (lucerne or maize).
4. Press the calibration button (1) down
The display (1) shows the number of settings starting with „0“ up to „+8“ via „-8“ up to „0“ in an infinite loop as long as the button is being pressed. The currently displayed setting is kept when letting the calibration button go (3).
5. To save this value the device must be switched off once via the ON/OFF key (2).

Example:

In case the measurements are 3 percentage points higher than the actual moisture, the required setting will be -3. Press and hold the button until the display (1) shows the value „-3“, now **let the calibration button (3) go**. The setting is on hold for the whole scale of moisture measurements, but only for the one harvest.



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:

- Road/field release switch on the operating panel must be switched on.
- Quick stop switch must not be activated.

8.4 Additional Axle (option)

8.4.1 Maize Operating Mode

Road mode

As soon as the machine exceeds 10 km/h forward speed, the additional axle will be lowered automatically, if necessary. The hydraulic pressure of the additional axle is then also adjusted automatically.

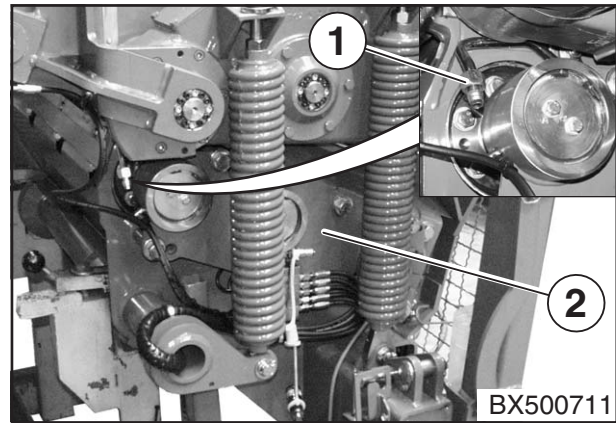
If the required hydraulic pressure cannot be built up, an error message is output.

As soon as the machine is driven in reverse faster than 0 km/h in road mode, the additional axle is raised automatically.

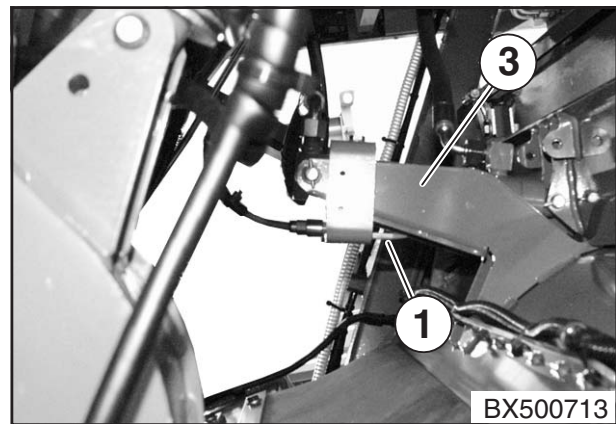
Field mode

As soon as the machine is driven faster than 0 km/h in field mode, whether forward or in reverse, the additional axle is raised automatically.

Right-hand side



Grinding device



8.4.2 Grass Operating Mode

In „grass“ operating mode, control over the additional axle is not possible.

Diagnostics or maintenance of the additional axle is also not possible. Likewise, automatic mode is also disabled.

8.4.3 XDisc Operating Mode

In „XDisc“ operating mode, control over the additional axle is not possible.

Diagnostics or maintenance of the additional axle is also not possible. Likewise, automatic mode is also disabled.

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.

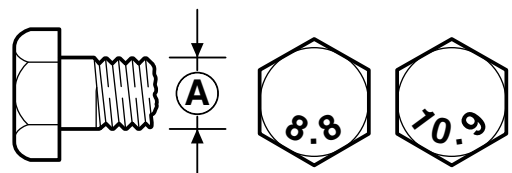


Self-locking nuts must always be replaced.

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).

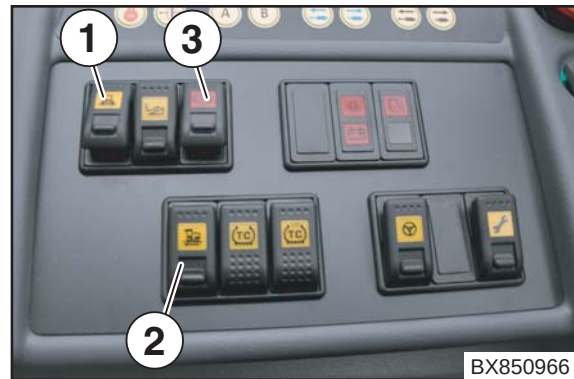


BP380-7-073

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.

BiGX 700-1/BiGX 850-1/BiGX 1100-1



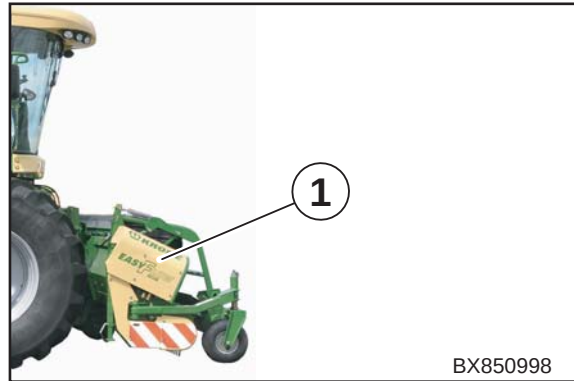
9.3 Maintenance of the supply system

9.3.1 Detaching the feed drive housing

You can detach the feed drive housing with the front attachment connected.
For EasyCollect 6000, 7500 and 9000, 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.



- Set down the feed drive housing with the front attachment (1) 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



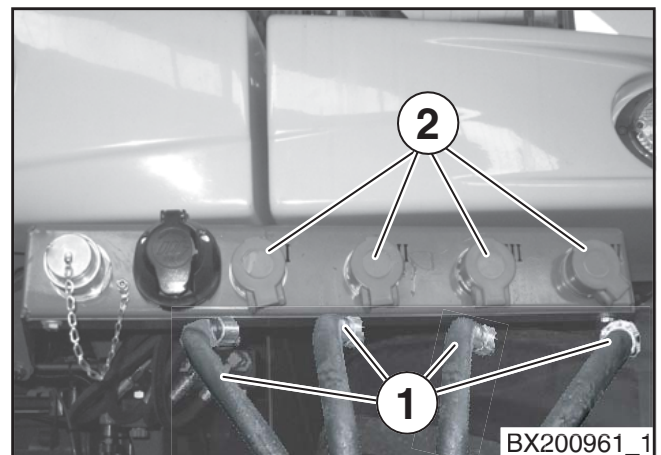
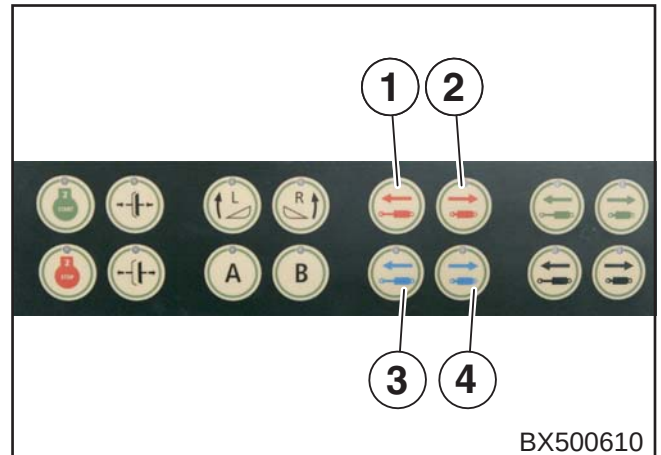
Warning!

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.

To relieve all pressure on both sides of the system:

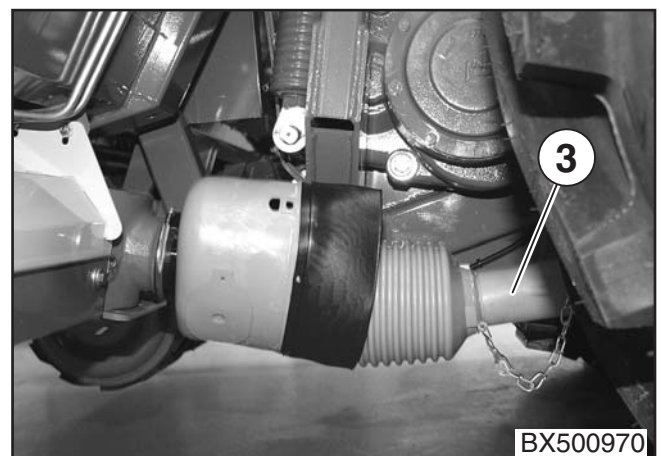
- Press the keys (1) and (2) (red) simultaneously (the first hydraulic circuit is depressurised).
- Press the keys (3) and (4) (blue) simultaneously (the second hydraulic circuit is depressurised).
- Disconnect the hydraulic lines (1) at the hydraulic couplings and close off with dust caps (2).
- Disconnect the lighting cable and connection line for the sensors (maize header front attachment).



Front attachment for PTO shaft

Left-hand side of the machine

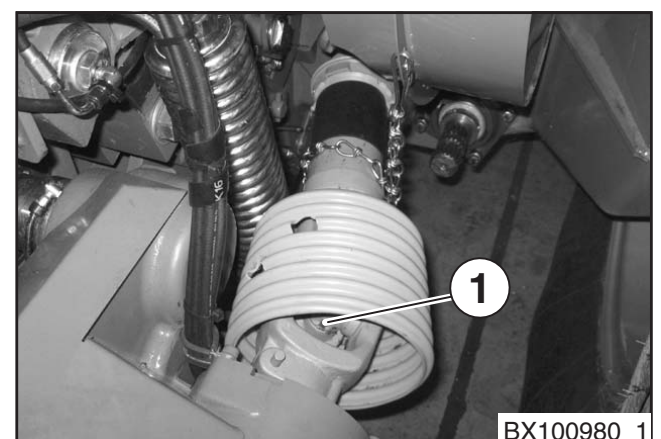
- Completely dismount the PTO shaft (3) for the front attachment drive.



Feed drive PTO shaft

Left-hand side of the machine

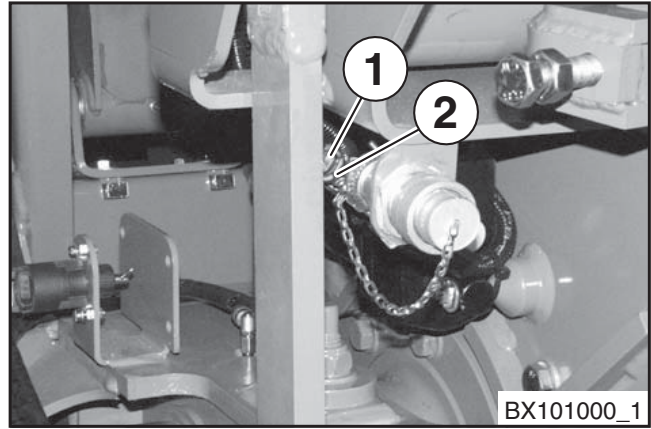
- Completely dismount the PTO shaft (1) for the feed drive.



Connection of metal detection sensor and pendulum frame

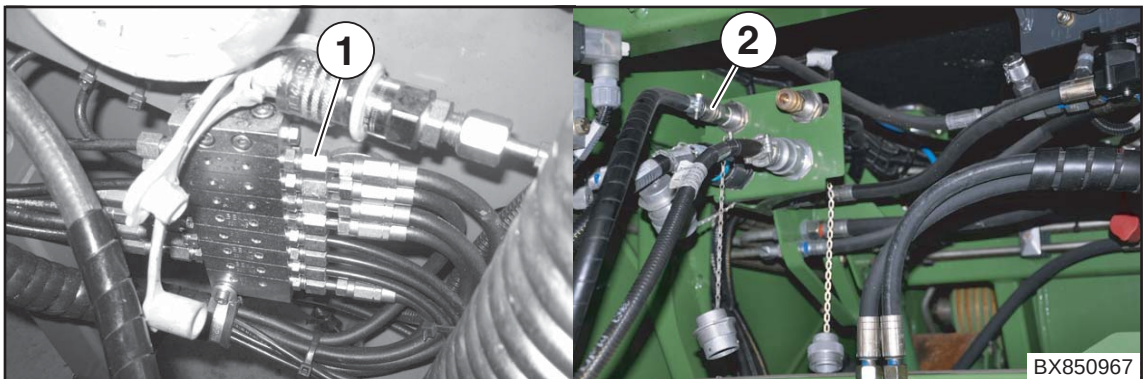
right-hand side of the machine

- 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).
- Remove connection line compressed air cleaning (2)

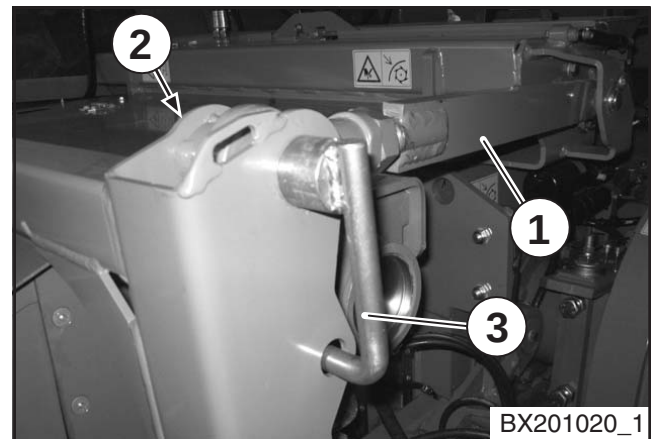
Coupling rods

Right and left side of the machine



Move lifting gear to working position before starting work.

- Loosen the hinged cotter pin (2) and dismount the bolts (3).
- Lift the coupling rod (1) out of the bearing and rotate it downward.



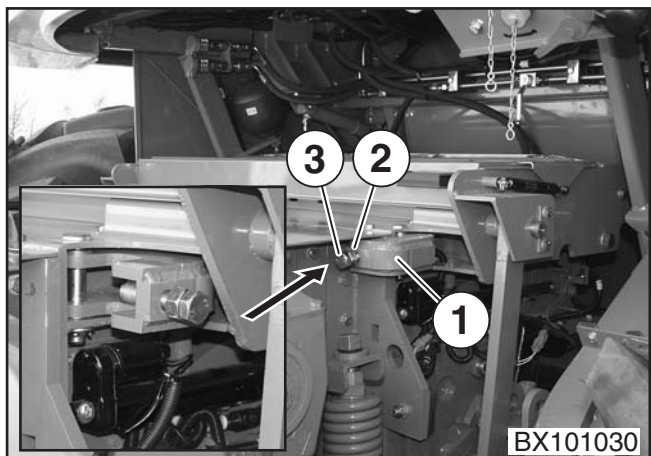
Interlocking claws up

Right and left side of the machine



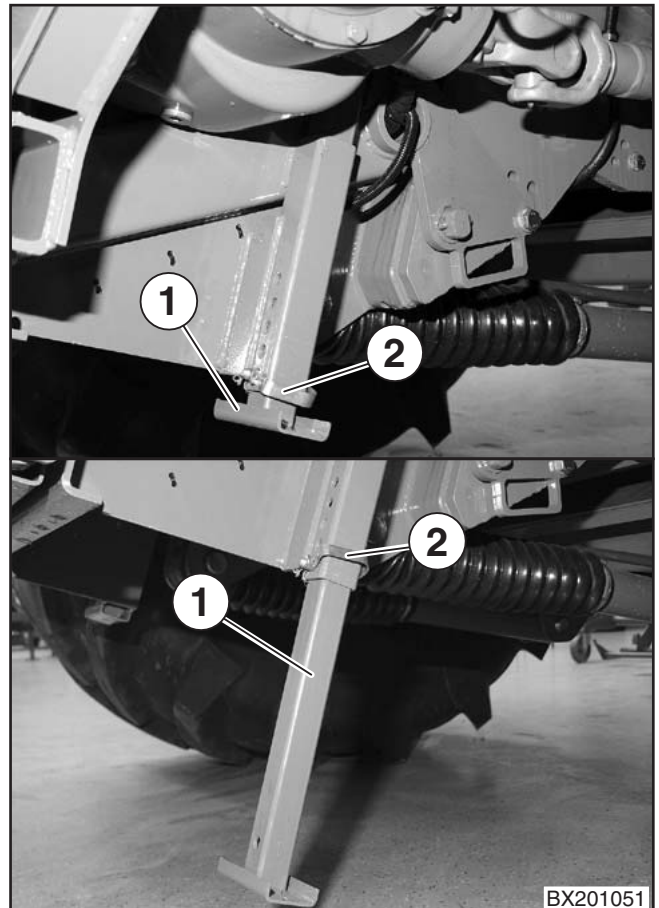
Move lifting gear to working position before starting work.

- Loosen the counter nut (2) and turn back the hexagonal screw (3).
- Swivel open the interlocking claws (1).



Support base

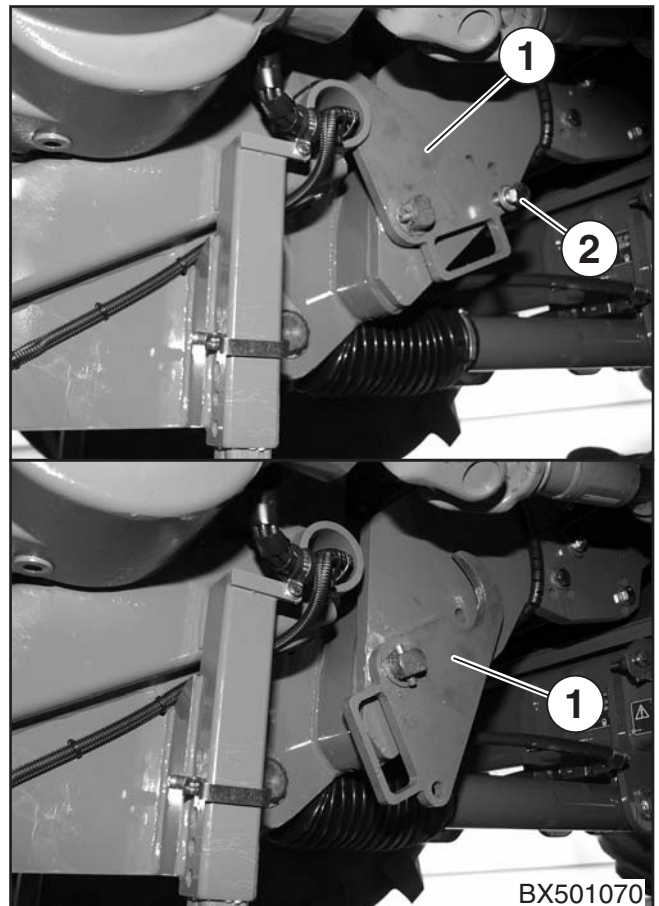
- Raise the lifting gear until the distance between the feed drive housing and the cutter drum housing is about 200 mm (see Section 9.3.3 "Folding down the feed drive housing").
- Disassemble the locking bolts (2) of the support base (1), pull out the support base (1) to the ground and secure in place with locking bolts (2).



Interlocking down

Left side of the machine

- Screw out the hexagonal screw (2) and swivel the interlocking (1) back.

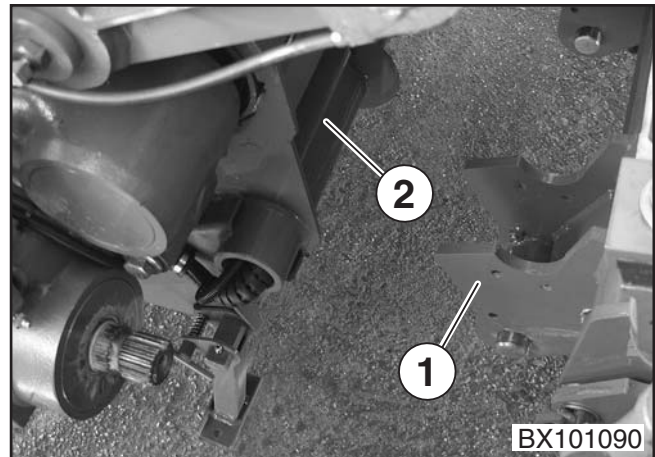


Connection of metal detection sensor and pendulum frame

right-hand side of the machine

- Remove the connection cable plug (1, 2) for the metal detection plug and pendulum frame.

- 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.

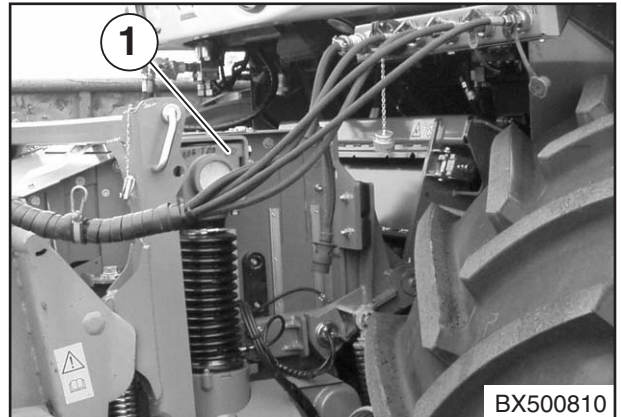
9.3.3 Fold down the feed drive housing

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
- Compressed air cleaner feed drive
- 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.

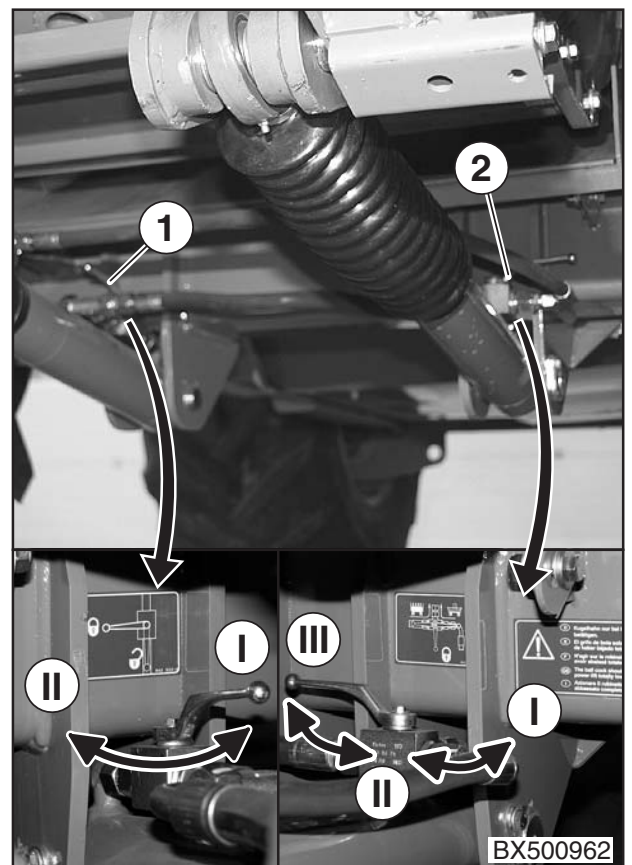
Shut-off valve (1)

Operating position - position I = open
Maintenance jobs - position II = closed

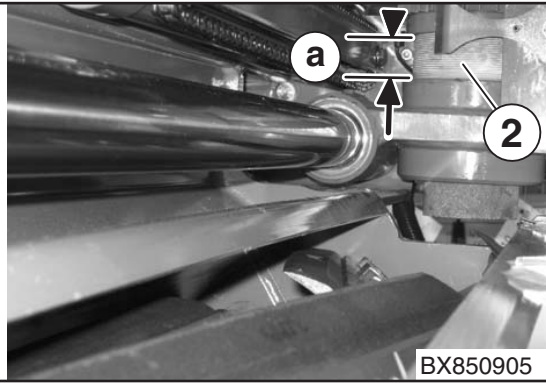
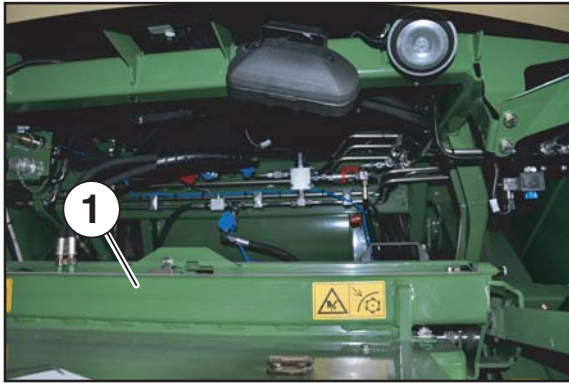
Three-way valve (2)

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

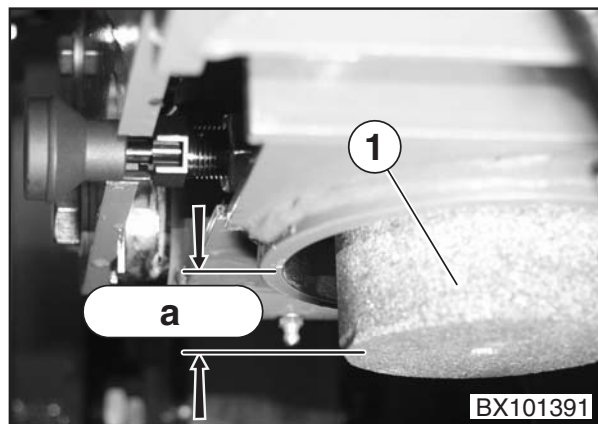


The visible length of threading on the grinding mechanism (dimension "a") must be at least 5 mm. The grinding stone can be adjusted approximately twice. After that the grinding stone must be replaced.

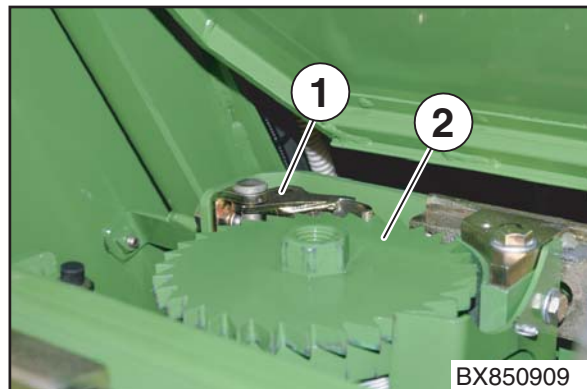


Before opening the covering hood (1) the blade drum must come to a complete stop.

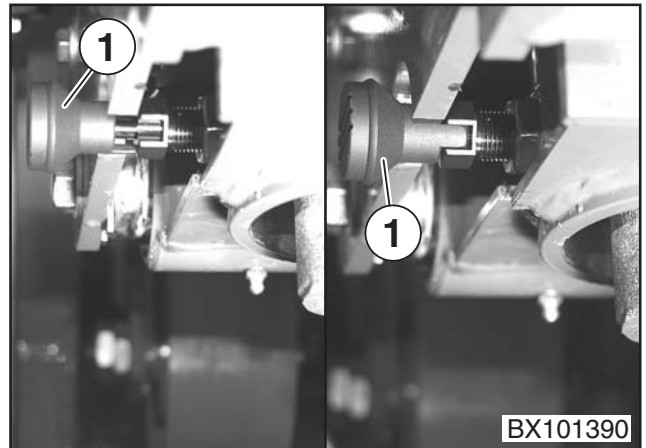
- Remove the ignition key and secure the forage harvester from being placed in operation or rolling away unintentionally.
- Open the covering hood (1) of the grinding mechanism (2).
- Clear out dirt and residue in the grinding channel (for example blow it out using compressed air).
- Determine the distance "a" from the lower edge of the grindstone (1) to the upper edge of the grinding housing. If dimension "a" is less than 5 mm, the grinding stone must be adjusted or replaced.



- 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.

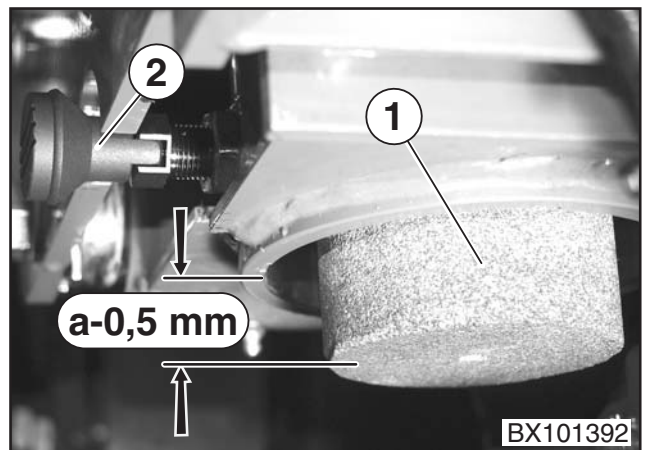
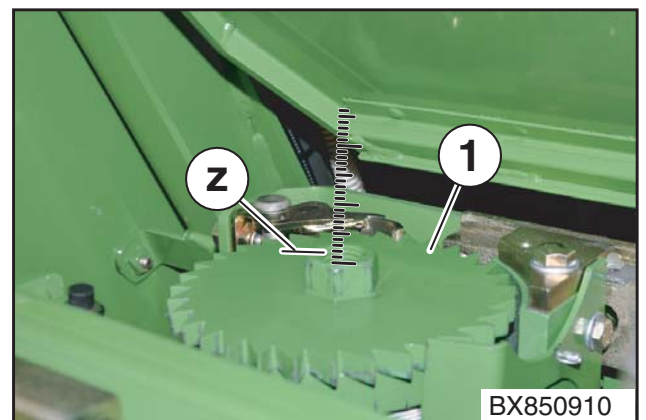


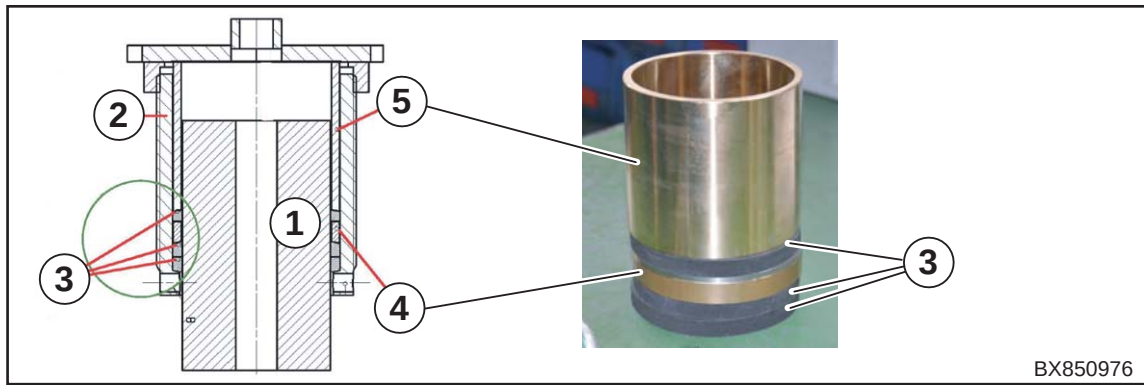
- Measure the distance "z" from the upper edge of the grindstone to the upper edge of the hexagonal nut on the catch wheel (1).



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.



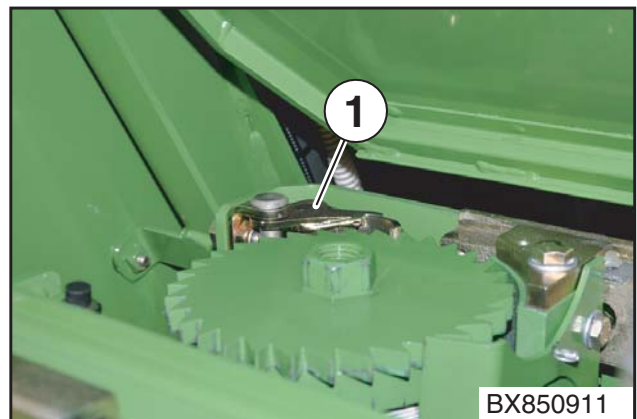


- At every grinding stone changing, replace the clamping rings (3).



When installing a new grinding stone (1), ensure the correct position of the clamping rings (3) as well as of the intermediate ring (4) and of the sleeve (5) in the threaded sleeve (2). The bevelled edges of the intermediate ring (4) and the sleeve (5) must show downwards. (See detail fig. BX850976).

- Fasten the catch lock (1).
- Close the grinding mechanism flap protection.
- Check once again if the dimension is "a - 0.5 mm".
- Reset the grinding cycles counter in the terminal.



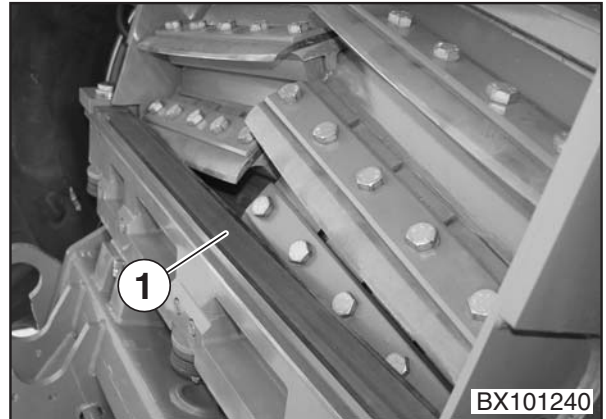
9.3.6 Adjust or change the cutting blades

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 8, blade 1 and blade 6, blade 1 and blade 11). Which blades form a pair is depending on the total number of blades on the cutting drum.

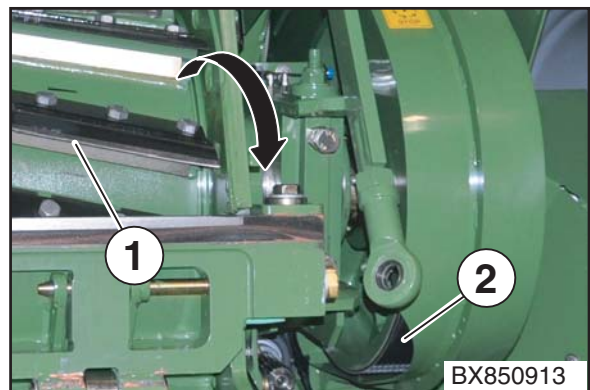


Turning the blade drum



**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

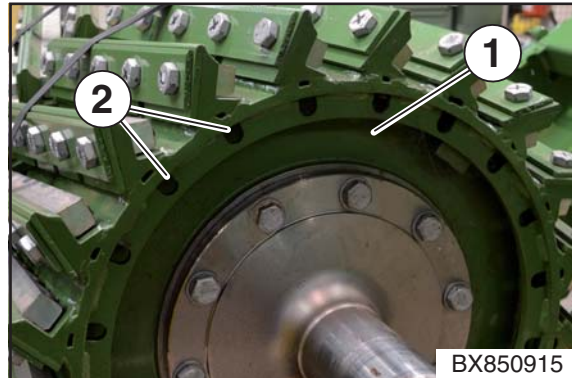
The locking mechanism is located on the right-hand side of the machine.



DANGER! - Risk of cuts due to sharp blades!

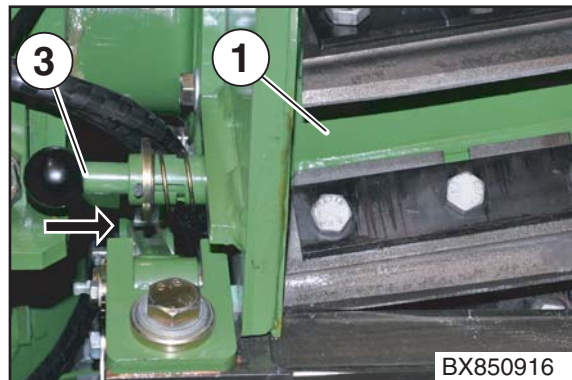
Serious injuries; especially to hands.

- **Fix the cutting drum when working on it.**
- **Wear protective gloves when performing any work in the area of the blades to avoid being cut by them.**

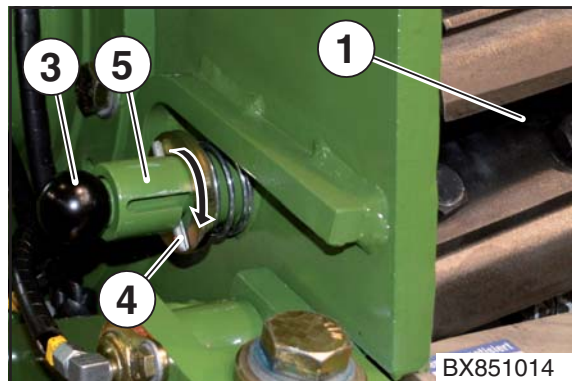


The cutting drum (1) is equipped for each working position with one bore hole (2).

- Rotate the cutting drum (1) to the desired working position and push the fastening bolt (3) to the front into the bore hole of the cutting drum (1).



- Secure the fastening bolt (3) by turning with the roll pin (4) in the groove of the clamping sleeve (5).



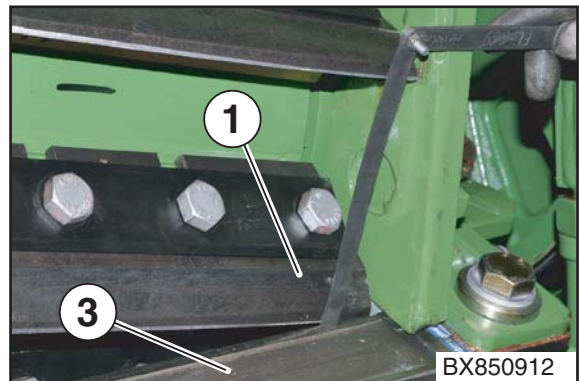
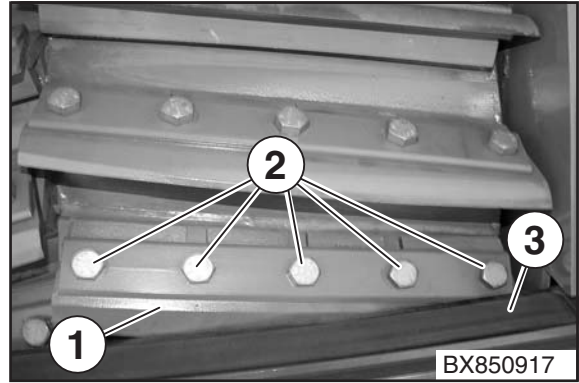
Adjusting the cutting blade

In order to sharpen the blades completely with as few grinding cycles as possible, they must be optimally adjusted to the grinding device.



Use new screws for every change of blades.

1. Grind the blades on the cutting drum (refer to Chapter 8 "Grinding The Cutting Blades").
2. Move the shearbar (3) away from the cutting drum (must rotate) via the manual operation on the platform on both sides by using servomotors (refer to Chapter "Operation-Grinding Cutting Blades"). Extend both motors again approx. 5 mm to have still play to the shearbar after adjusting the blades.
3. Align the shearbar (3) in parallel to the ground back of the blade on the shearbar support.
4. Unscrew all hexagonal screws (2).
5. Readjust the blade to the counterblade (3).
6. Tighten all hexagonal screws (2) with the torque wrench (tightening torque min. 270 Nm).
7. Loosen the blade drum locking, turn the blade drum one blade row further and lock it in place again.
8. Adjust the next blade row.
9. Continue in this manner until all blade rows of the blade drum are adjusted evenly.
10. Loosen the locking of the blade drum.
11. Adjust the grinding stone in that way that a distance of 0.5 mm exists between the back of the blade and the grinding stone.
12. Attach the feed drive housing and fold it in.
13. Grind the cutting blade.
14. Adjust the counterblade.



Replace the cutting blade



Sharp tools – risk of injury!
Always wear gloves when working with the blade drum.



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 8, blade 1 and blade 6, blade 1 and blade 11).

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)!



Caution machine damages!
When screwing polluted cutting blades, blade holding surfaces and pressure plates (4) there is a risk that the cutting blades unscrew from the blade drum. Clean all parts before inserting.

- Screw out the hexagonal head screws (2a), (2b), (3a), (3b) and (3c).
- Remove the cutting blade (1) towards the front.
- Clean the blade holding surface (7) and pressure plate (4) and set a new cutting blade in place.
- Replace pressure plates (4) if they are damaged or heavily worn.



Use new screws for every change of blades.



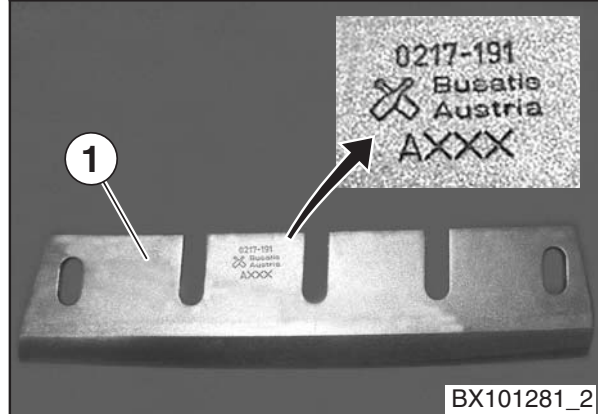
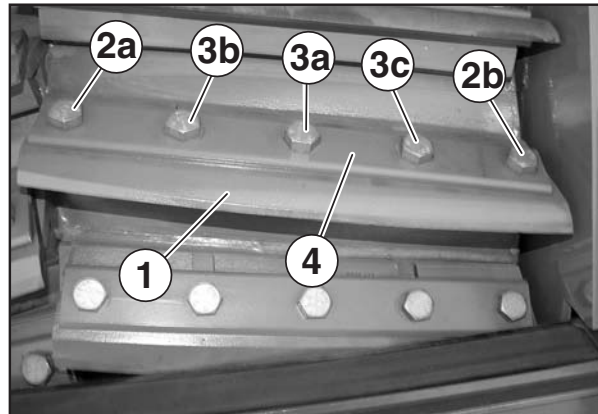
For safety reasons, replace the pressure plate (4) with new ones once a year.

- Insert a new cutting blade.
- Fasten the cutting blade (1) with the new screws in the order 3a; 3b; 3c; 2a; 2b (from the inside to the outside) on the blade holding surface (7) and the pressure plate (4).

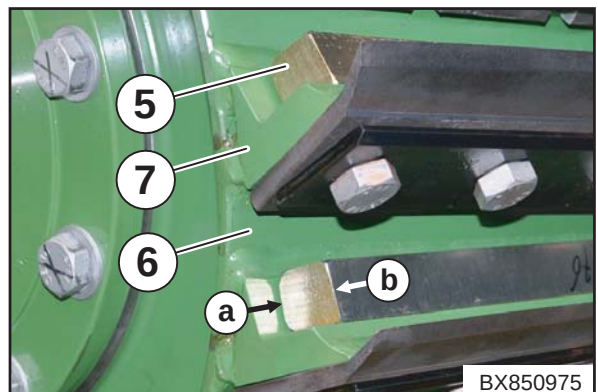


When inserting the cutting blades (1), observe the mounting direction of the screw-on strips (5).
Surface (a) with the rounded corners must rest on the cutting drum (6), whereas surface (b) must point away from the cutting drum (6).

- Accomplish further proceeding as described under setting the cutting blades, work steps 2. to 14.



BX101281_2



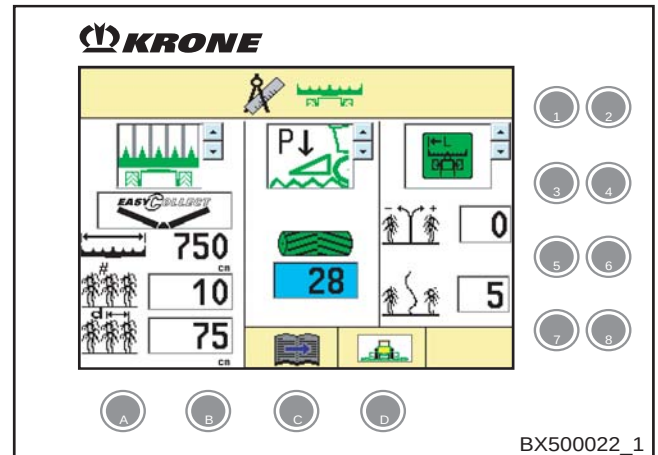
BX850975

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 adjustable cutting length range is not sufficient (cutting length is too short), the number of the cutting blades can be reduced to the 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 „Setting the number of blades“).



9.3.8 Turning or replacing the counterblade



Sharp tools – risk of injury!
Always wear gloves when working with the blade drum.

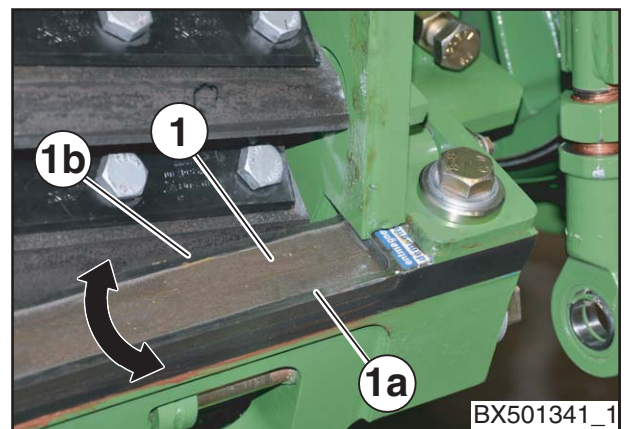


The counterblade should not be turned or replaced until the satisfactory cutting quality can no longer be achieved even with the cutting gap correctly adjusted and with the blades intact.

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.

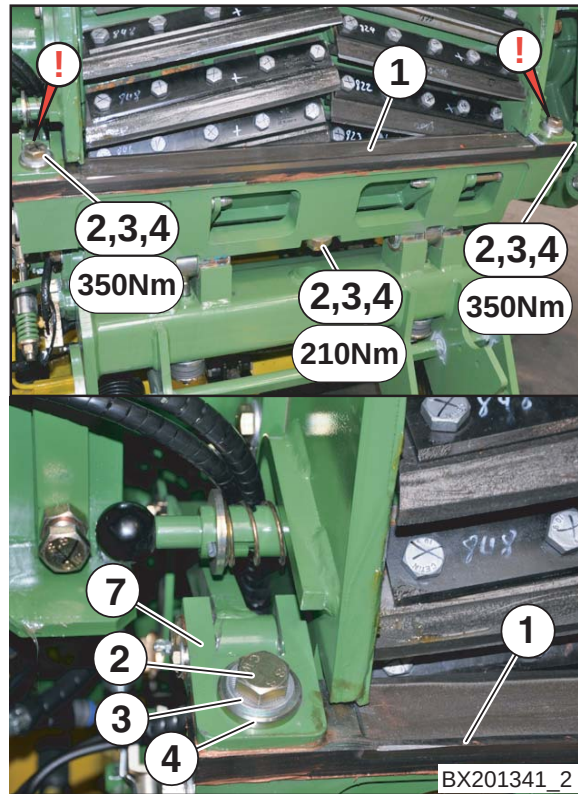
When turning the counterblade, clean the underside of the counterblade.

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.



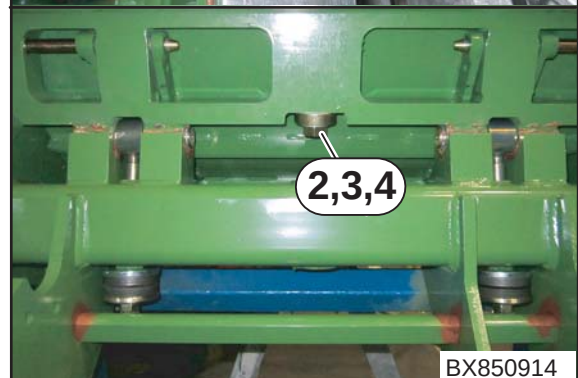
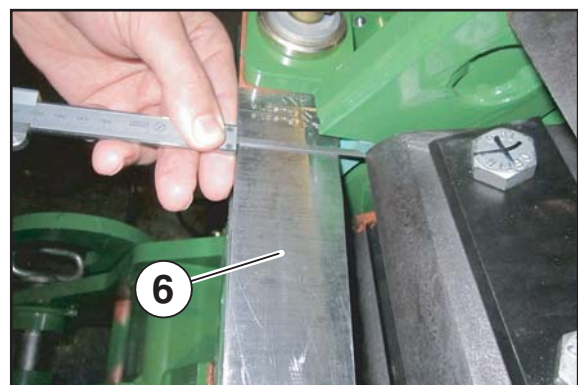
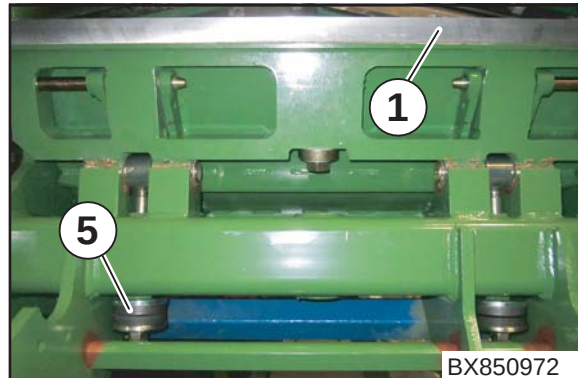
Turning/Replacing shearbar

- Grind the blades on the cutting drum (refer to Chapter 8 "Grinding The Cutting Blades").
- Move the shearbar (1) away from the cutting drum (must rotate) via the manual operation on the platform on both sides by using servomotors (refer to Chapter "Operation-Grinding Cutting Blades"). Extend both servomotors again approx. 5 mm to have still play to the shearbar after adjusting the blades.
- Disconnect the feed drive housing.
- Remove the ignition key and secure the forage harvester from being placed in operation or rolling away unintentionally.
- Remove the hexagon head screws (2), detent edged washers (3) and discs (4).
- Loosen the spring assembly (5). Thus the shearbar support gets free of tension. Tighten the spring assembly again afterwards with a torque of 75 Nm.
- Pull the shearbar (1) out of the supports towards the front.
- Clean the contact surface and the lower side of the shearbar.
- Turn shearbar or assemble new shearbar.



Assembly of a new shearbar

- Place the new shearbar (6) onto the shearbar support and assemble hand-tight with hexagonal head screw (2), detent edged washers (3) and discs (4) centre bottom.
- Align the shearbar (6) in parallel to the ground back of the blade on the shearbar support.
- Move the servomotors in that way that the outer hexagonal head screws (2) with detent edged washers (3) and discs (4) can be screwed in free of tension with the draw shackle (7).
- Tighten all three screw connections of the shearbar with the specified torque (see Fig. BX201341_2).



Use only new self-locking nuts.



Secure those screw connections medium tight with LOCTITE right hand and left hand on the machine which

are marked with !.

- 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.

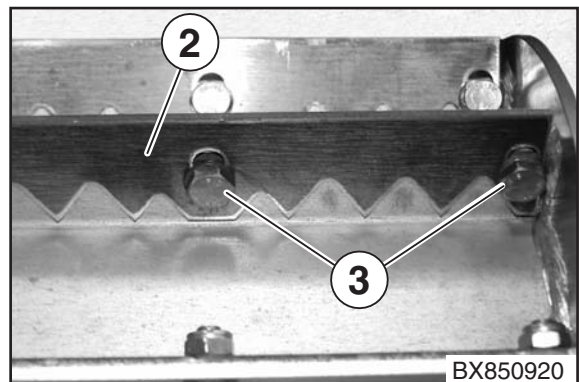
Experience shows that the smooth side works well for use in grass silage while the toothed side works well with maize.

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).



Bottom pre-compression roller (option)

The bottom pre-compression roller (4) is also fitted with conveyor bars. They are used to protect the roller against wear, but they cannot be turned.



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.

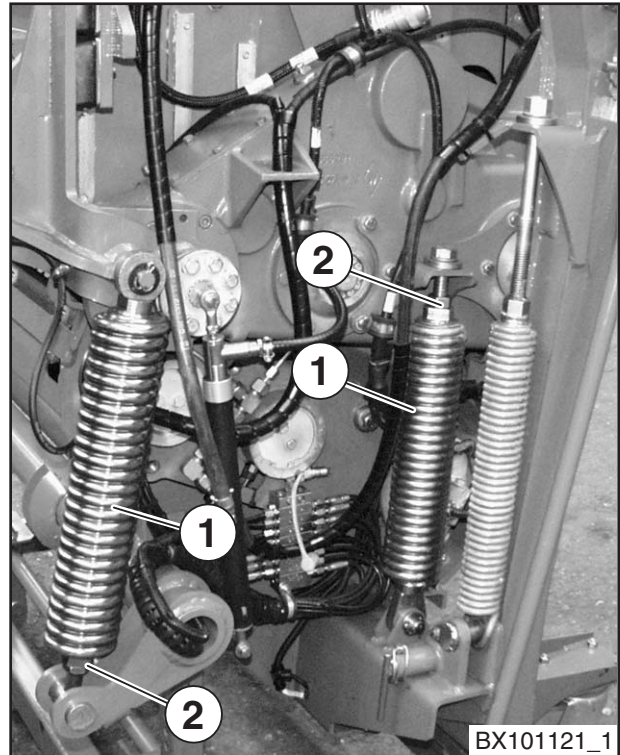
Distance from scraper to smooth roller = 0 - 0.3 mm.



Adjust the scraper so that it 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.

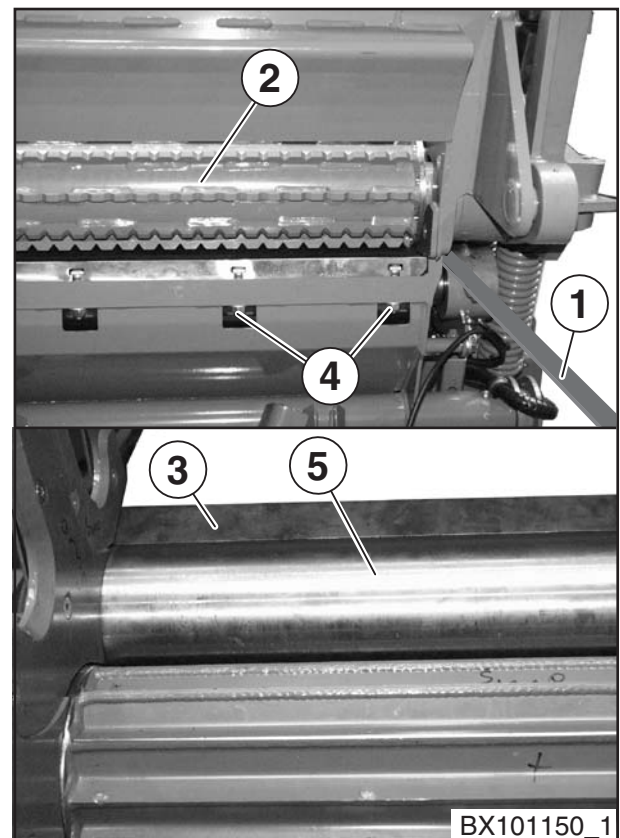
- Release the tension on the compression springs (1) on both sides of the feed drive housing by loosening the counter nuts (2).



BX101121_1

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)



BX101150_1

9.3.11 Adjusting the baling roller - scraper

The adjustment should be made when the feed drive housing is folded down or disconnected.

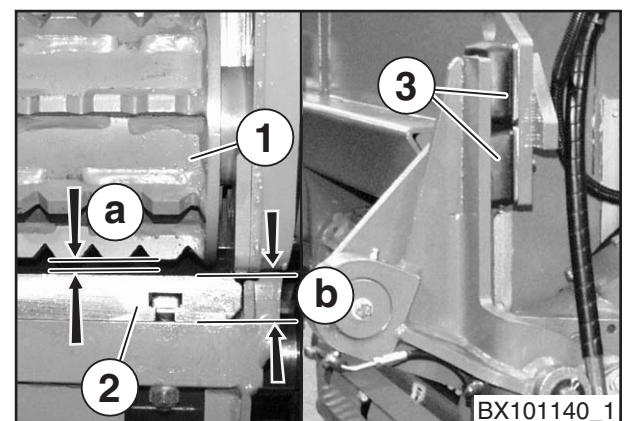
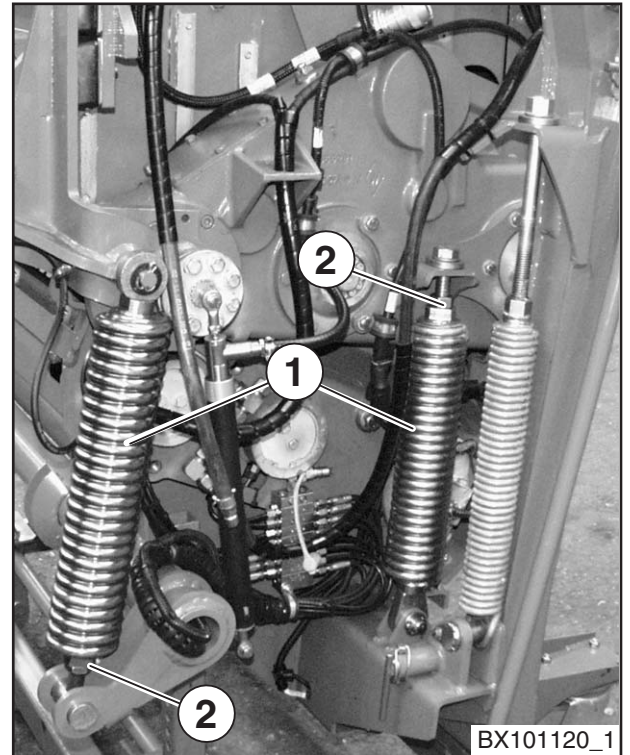
- Release the tension on the compression springs (1) on both sides of the feed drive housing by loosening the counter nuts (2).

Adjusting the distance from the baling roller to the scraper

- The distance between the baling roller (1) and the scraper (2) should be "a = 3-8 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 24 mm, it has to be replaced.

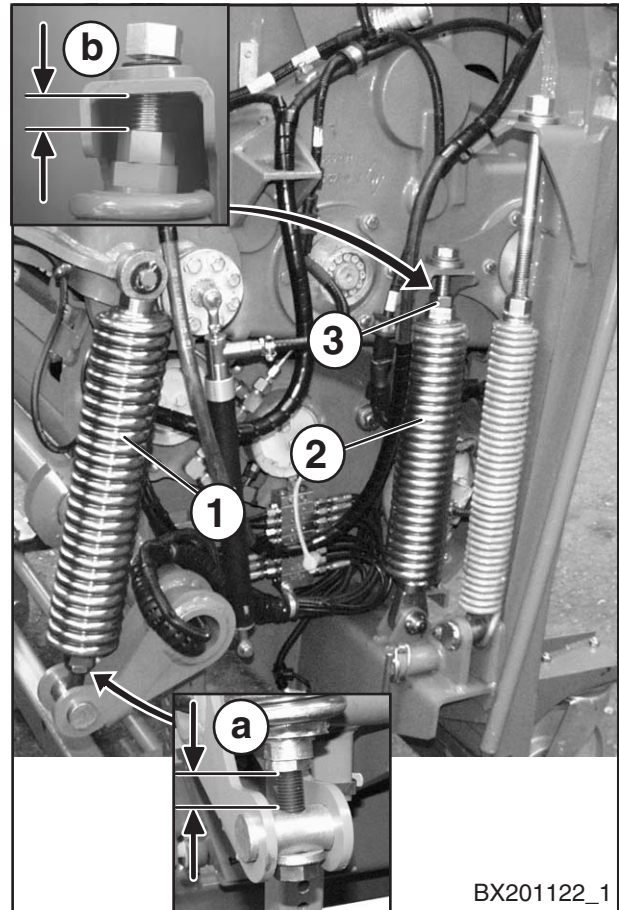


9.3.12 Adjusting the feed drive housing tension springs

The tension springs (1, 2) must be pre-tensioned on both sides of the feed drive housing.

Adjusting the pretension

- Adjust on the two front tension springs (2) hex nut (3) to a distance of „a = 50 mm“.
- Adjust on the two rear tension springs (1) hex nut (3) to a distance of „b = 30 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

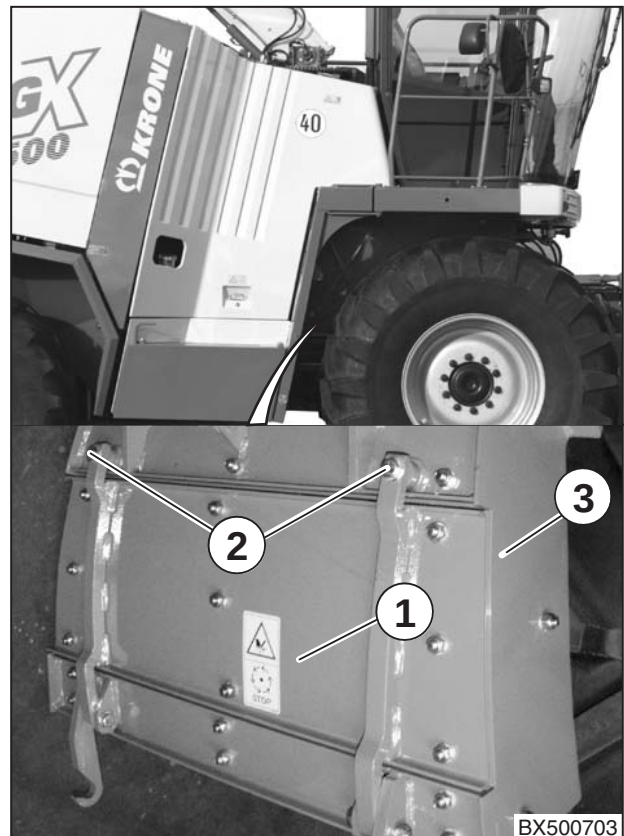
- Remove the ignition key and secure the forage harvester from being placed in operation or rolling away unintentionally.



Caution - risk of accidents!
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!

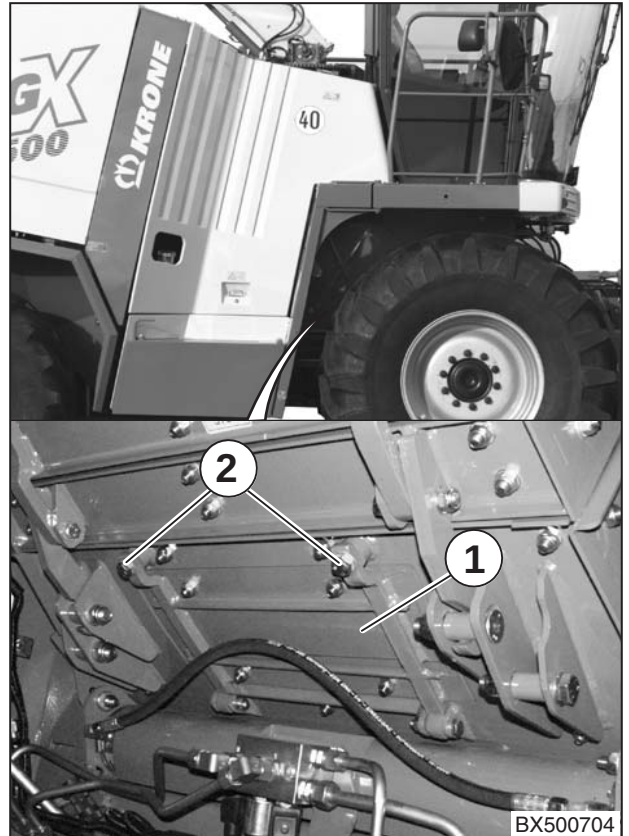
Maintenance flap in the grass channel

- 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).

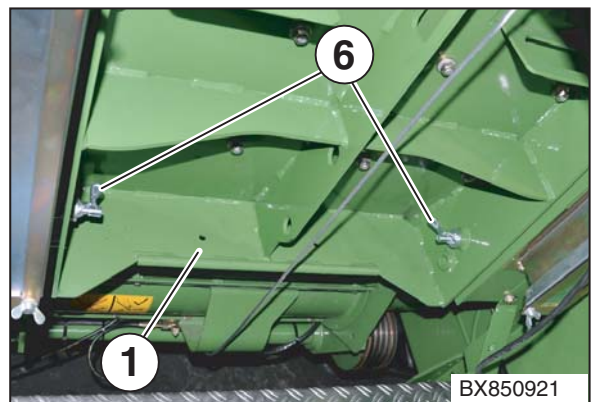


Rear wall of the blower

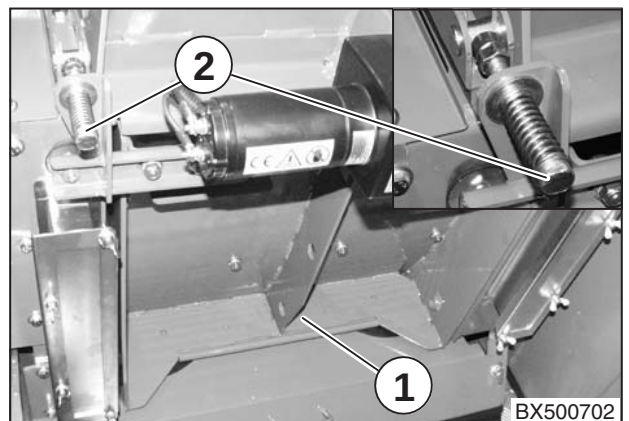
- Drain corn conditioner in the grass channel



Before dismantling the rear wall (1), the two spring-mounted bars (6) right and left on the rear wall must be loosened.

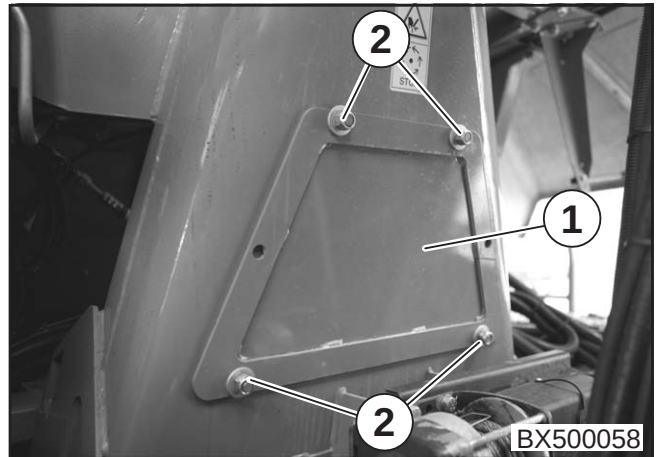


- Remove the two hexagonal head screws (2) on the right and left of the rear wall.
- Take off the rear wall (1).



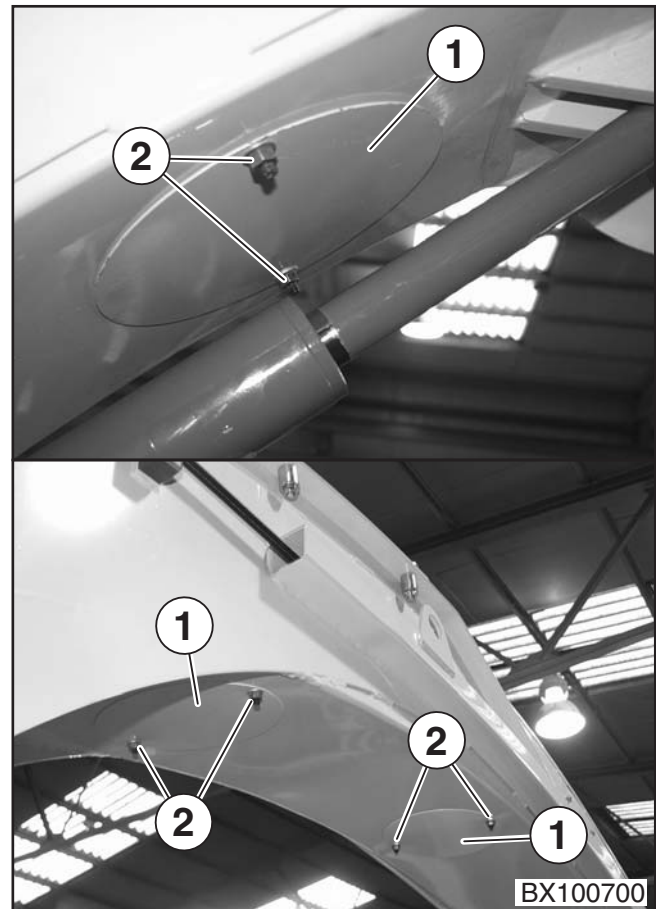
Maintenance flap in the impact area of the tower

- Loosen the hexagonal nuts (2).
- Remove the maintenance flap (1) upwards.



Maintenance flaps in the upper discharge chute

- Loosen the hexagonal nuts (2).
- Remove the maintenance flap (1).



9.5 Engine maintenance

9.5.1 Excerpt from overview of maintenance (MAN)

The purpose of this overview of maintenance is to provide quick orientation. Information is not considered binding. The information in the operating instructions and list of consumables is authoritative.

Only consumables approved in the MAN list of consumables may be used.

Engine maintenance schedule

- All maintenance work on the engine must be performed according to the intervals of the maintenance schedule in the MAN operating instructions.

Oil change intervals

- See maintenance schedule accompanying document MAN

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 due to hot liquids or machine parts!

- **Wear protective gloves.**
- **Collect used oil in a suitable container.**
- **Allow the liquids or machine parts to cool off, if necessary.**

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.

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 (MAN) and requirements for operating materials (MAN).

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" (MAN).



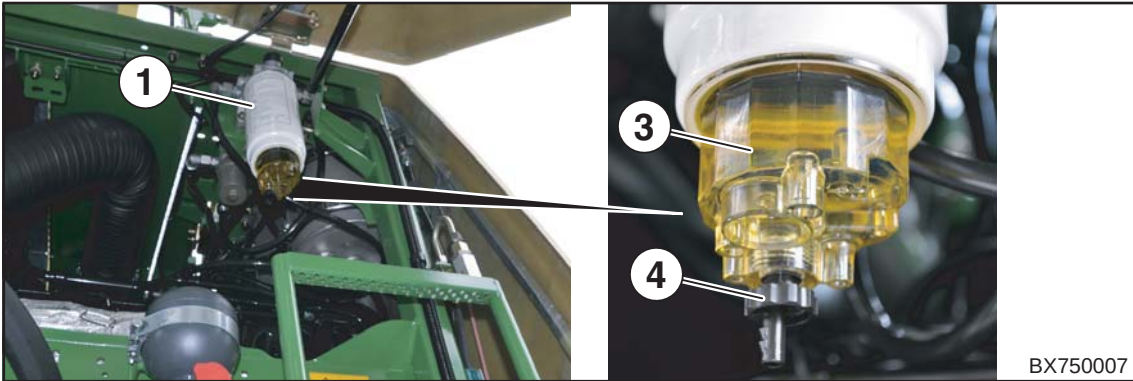
Refuel the machine only from the platform on the right.

Avoid skin contact with diesel fuel. Remove possibly contaminated clothes and clean affected skin parts with water and soap. In case of contact with eyes, clean the eyes under flowing water and seek medical help. Swallowing diesel fuel can lead to lung damages and poisonings. Seek medical help immediately.



9.5.4 Fuel filter/water separator

BiG X 700 -1/850 -1/1100 -1



Replacing the fuel filter

- 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.

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.
- Tighten drain plug (4) again.

9.5.5 Fuel filter

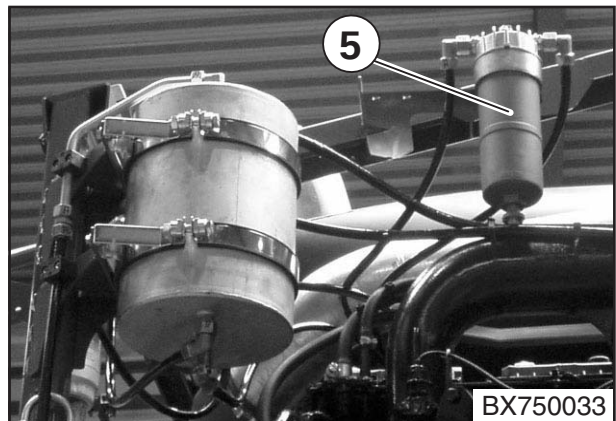
The fuel filter (5) removes even the finest pieces of dirt from the fuel.

Replacing the fuel filter insert

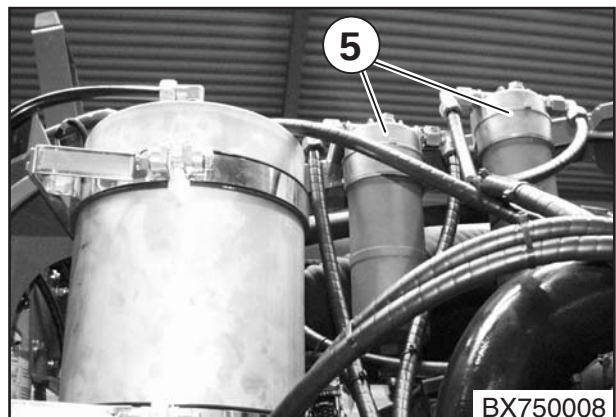
- Open drain plug underneath on filter.
- Allow the fuel to run out into a suitable vessel.
- Close drain plug again.
- Unscrew and clean the filter cover with round sealing ring.
- Remove the filter insert.
- Insert new filter insert into housing.
- Install new round sealing ring on filter cover.
- Screw in and tighten filter cover. Tightening torque is 25 Nm.
- Vent the fuel system.

For more information, please refer to the operating instructions of the engine in the chapter titled "Maintenance" (MAN).

BiG X 700 -1

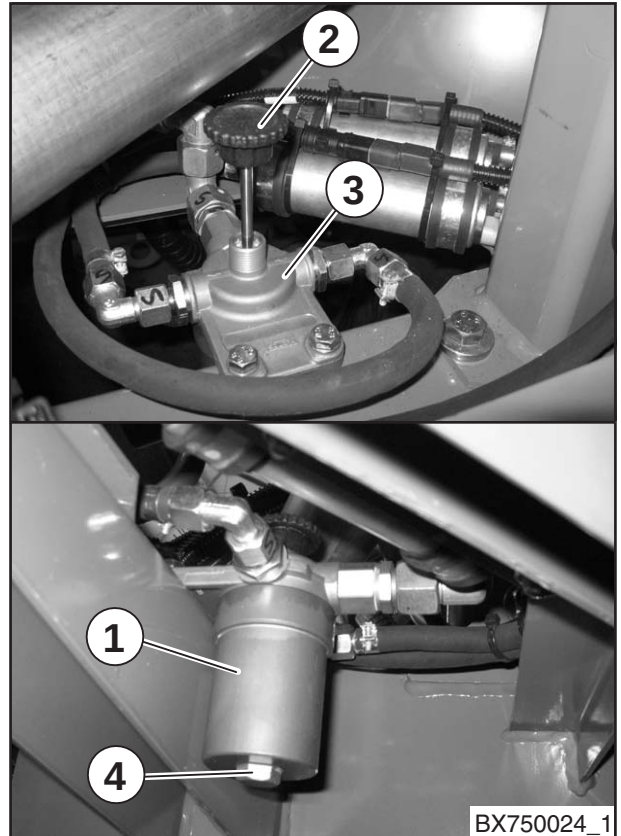


BiG X 850 -1/1100 -1



Replacing the filter (1) in the hand pump (3)

- Unscrew the handwheel for fuel supply (2) (turn to the left)
- Unscrew the handwheel for fuel supply (2) (turn to the left)
- Loosen the bottom screw (4) on the filter pan (1).
- Remove 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
- Push handwheel (2) down again to release the fuel supply
- Make pump movements with the handwheel (2) for venting
- Screw handwheel (2) again



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9.5.6 Engine oil



The specifications in the operating instructions of the engine manufacturer (MAN) 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

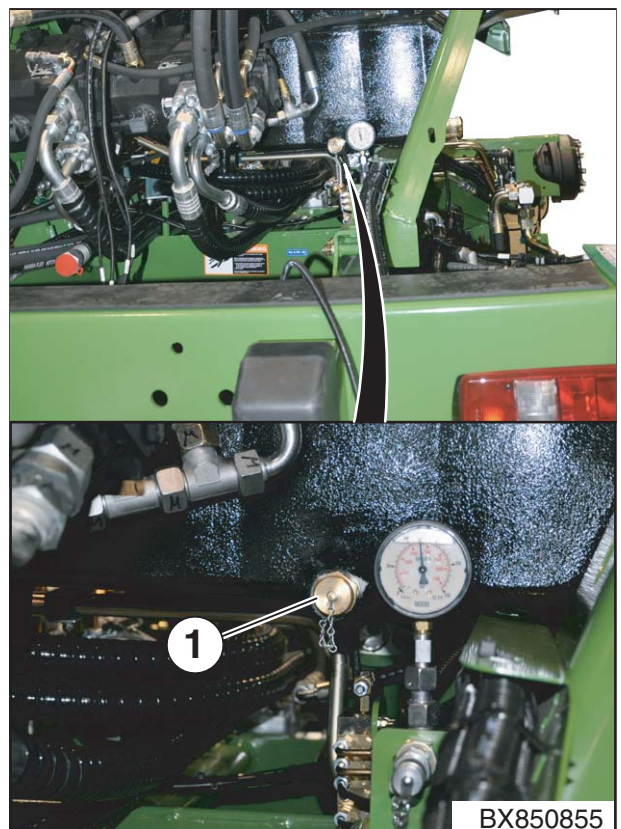


Exercise caution when draining hot oil - danger of burns due to hot liquids or machine parts!

- **Wear protective gloves.**
- **Collect used oil in a suitable container.**

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.
- Take the drain hose out off the tool box of the machine and insert it on the drain pipe (1)
- Capture the old oil in a sufficiently large container.
- Screw on the oil filter (see Replacing the oil filter).
- Remove the drain hose and deposit it in the tool box again
- Tighten nut on drain plug (1) hand-tight.

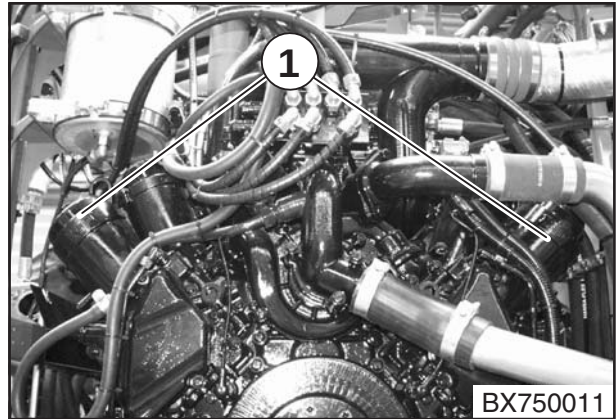


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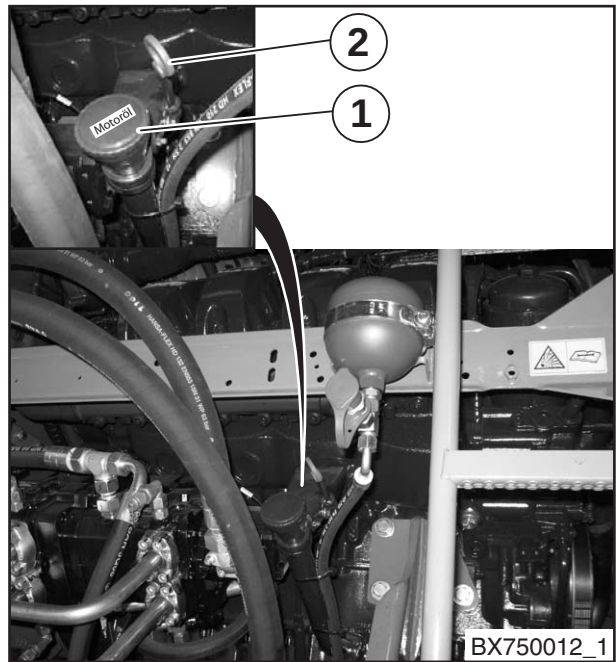
Replacing the oil filter

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 (2).
- 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 (MAN) 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.

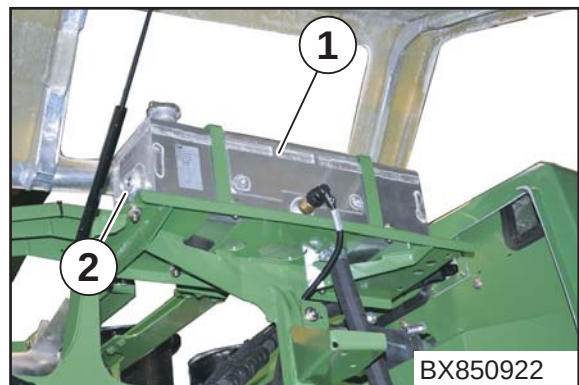


No cooling system sealing additives may be used.

- 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 the middle of the control eye (2).
- Top off with coolant if necessary.



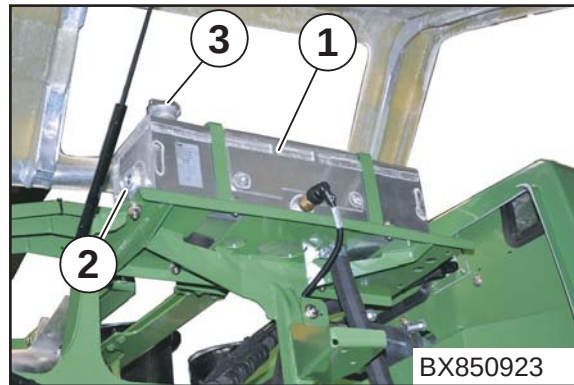
Filling with coolant



Danger of burns!
Never open the cover (3) of the overflow container (1) when the engine hot.

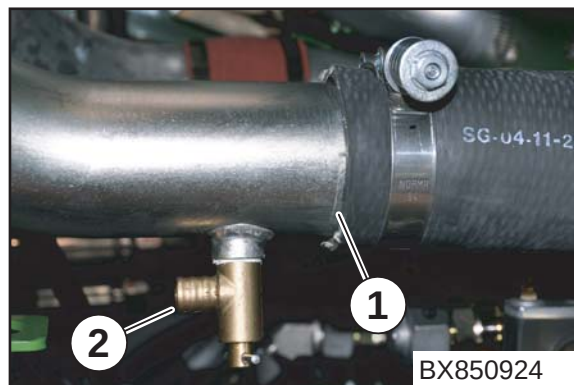
- Switch off the engine and wait until it has cooled down.
- Wear protective gloves.

- Turn the cover (3) on the overflow container (1) to the right catch point and allow residual pressure to escape slowly.
- Open the cover (3) completely and fill with engine coolant up to the middle of the viewing pane (2) .
- 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.

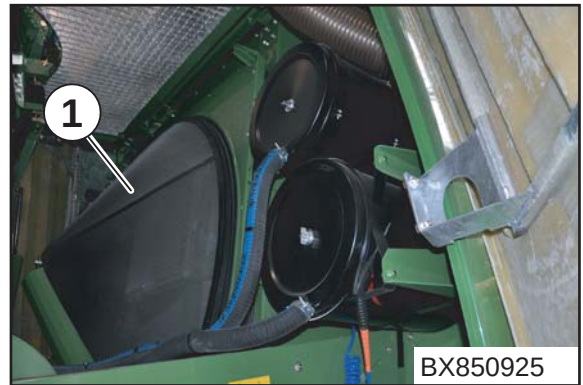


Water cooler, oil cooler and charging air cooler

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



The operation of the machine with soiled or damaged air filter can lead to engine damage.

- Damaged air filters must be replaced immediately.

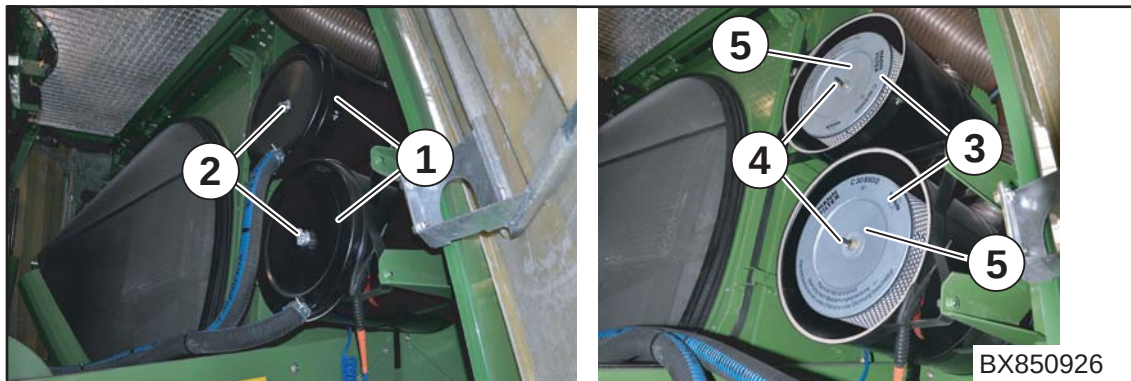


Perform air filter maintenance daily, but at least when the error message for a dirty air filter appears in the Info



Centre 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.

Change safety cartridge (5)



Safety cartridges must not be cleaned and used again!

- Remove air filter.
- Pull the old safety cartridge (5) out off the housing.
- Attach the new safety cartridge.
- Install air filter.

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.



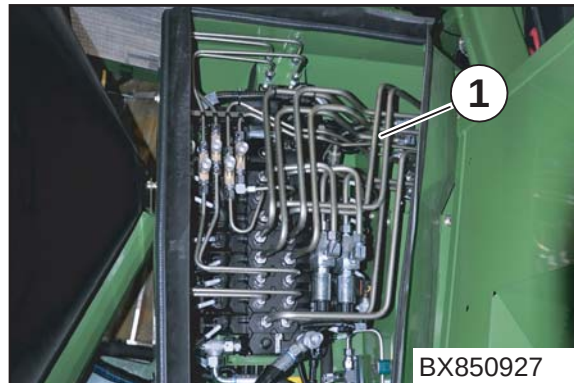
Check the hydraulic hose lines annually and replace them if damaged or worn!

Replacement lines must meet the technical requirements of the device manufacturer.

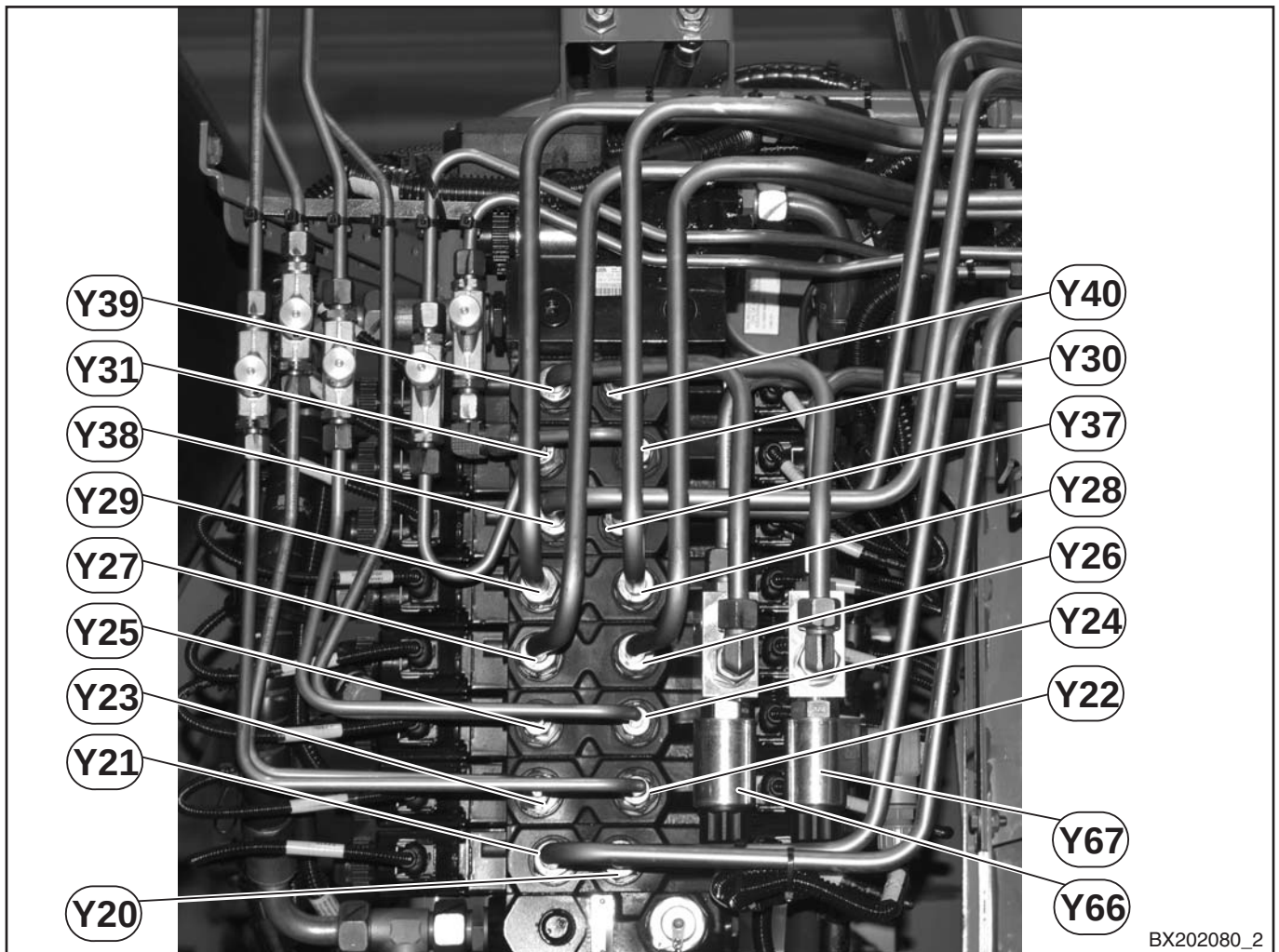
9.6.2 System layout of work and brake hydraulics

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



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- | | |
|--|--------------------------------------|
| Y20 - Turn discharge "left" | Y31 - Grinding device "Cylinder out" |
| Y21 - Turn discharge "right" | Y37 - Pendulum frame "rotate left" |
| Y22 - "Raise" ejector flap | Y38 - Pendulum frame "rotate right" |
| Y23 - "Lower" ejector flap | Y39 - Auto-steering left |
| Y24 - "Raise" upper discharge chute | Y40 - Auto-steering right |
| Y25 - "Lower" upper discharge chute | Y66 - arrest steering left |
| Y26 - Fold in front attachment "Transport" | Y67 - arrest steering right |
| Y27 - Fold out front attachment "Work" | |
| Y28 - Retract supporting wheels/swivel in feed drive/Raise plant divider | |
| Y29 - Extend supporting wheels/swing out feed drive/Lower plant divider | |
| Y30 - Grinding device "Cylinder in" | |

Pressure control valve

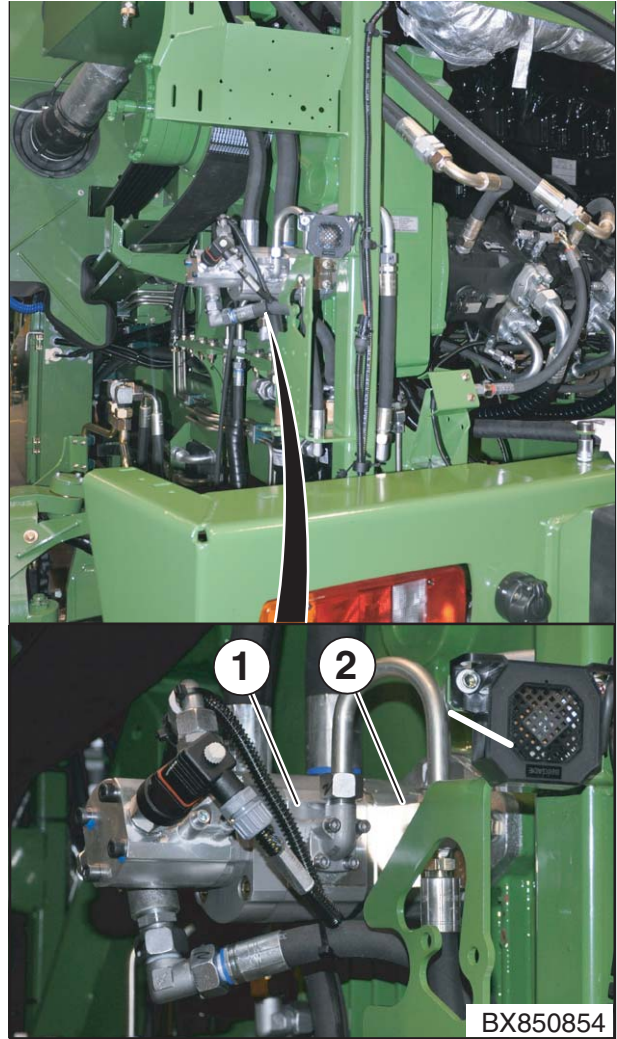


The valve blocks have been equipped with pressure control valves. These valves were set at the factory and must not be changed.

Work on the over-pressure valve must be carried out only by the customer service department.

Pumps

- 1 - Steering pump
- 2 - Work hydraulics



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	HEPG VG 46	HLP VG 46
Manufacturer		
ADDINOL		Hydraulic oil HLP 46
AGIP		OSO 46
ARAL	BAF-46Vitam	Aral Vitam GF 46
ASEOL	Aqua VG 46	
AVIA	Avia Hydrosynth 46	AVILUB RSL 46 Avia Fluid ZAD 46
BECHEM	Hydrostar UWF 46	
BP	Biohyd PEG 46	Energol HLP 46
CASTROL		HYSPIN AWS 46
COFRAN		Cofraline extra 46 S
DEA	Econa PG 46	Astron HLP 46
ELF		ELFOLNA 46 ELFOLNA DS 46
ENGEN		Engen TQH 20/46
ESSO	Hydraulic oil PGK 46	NUTO H 46
FINA	Hydraulic oil D3031.46	HYDRAN 46

ISO viscosity Class	HEPG VG 46	HLP VG 46
Manufacturer		
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

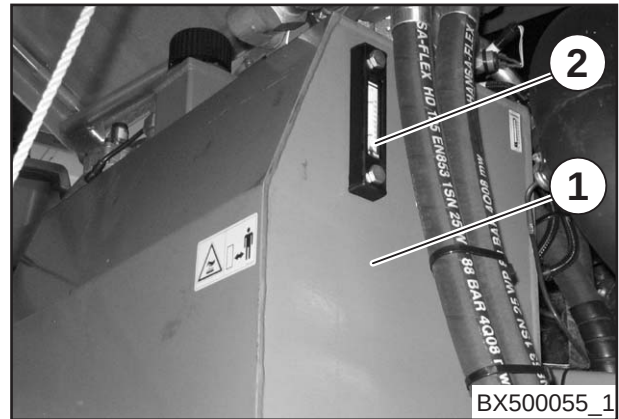
Checking the hydraulic fluid level

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

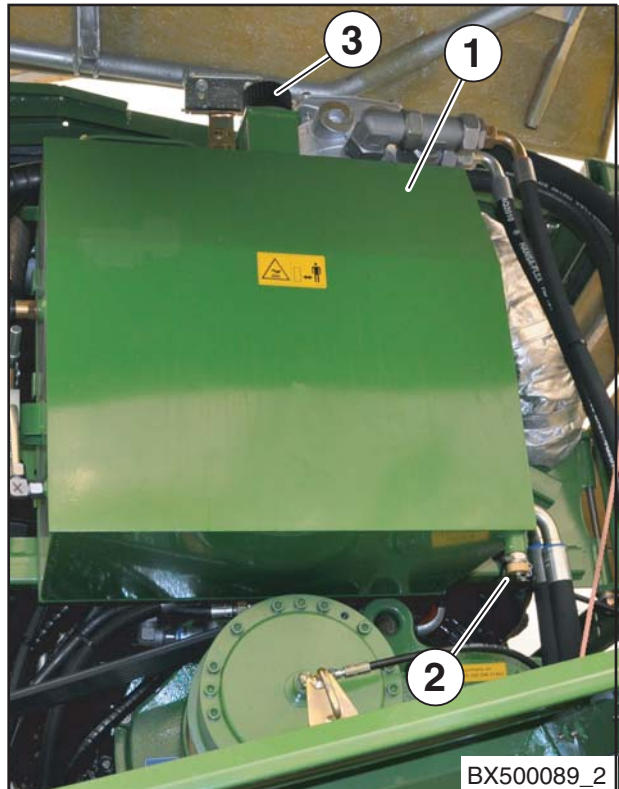


Exercise caution when draining hot oil - danger of burns due to hot liquids or machine parts!

- **Wear protective gloves.**
- **Collect the used oil in a suitable container.**
- **Before changing hydraulic oil, consult with the KRONE customer service department.**

Change hydraulic fluid after 500 h.

- Connect the drain hose (is included in the scope of delivery of the machine) with a clamping connector to 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.
- Check charge pressures.

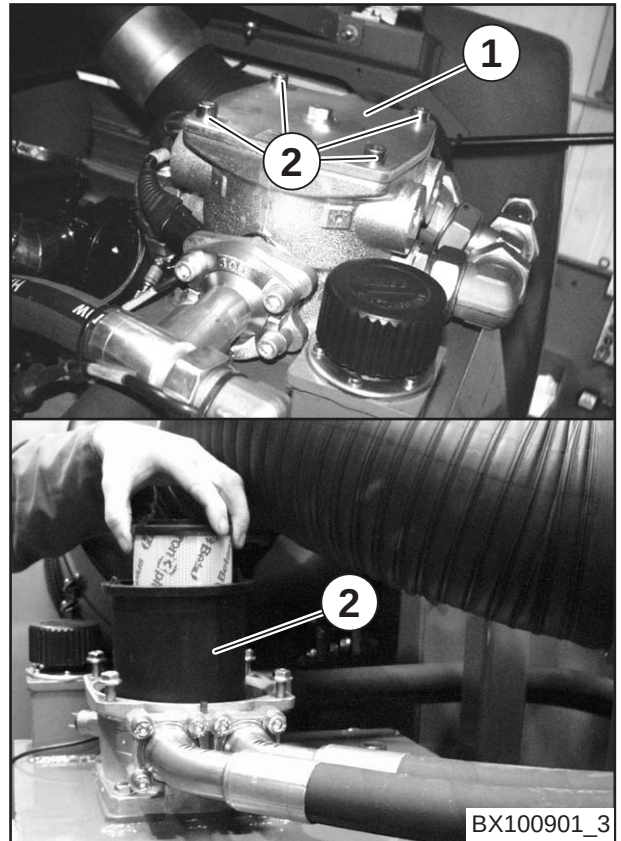


Replacing the hydraulic fluid filter

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.

- Release and remove the four screws (2) on the cover via Allen key
- Remove 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.
- Re-fit the cover (1) and fasten it with the aid of the four screws (2)



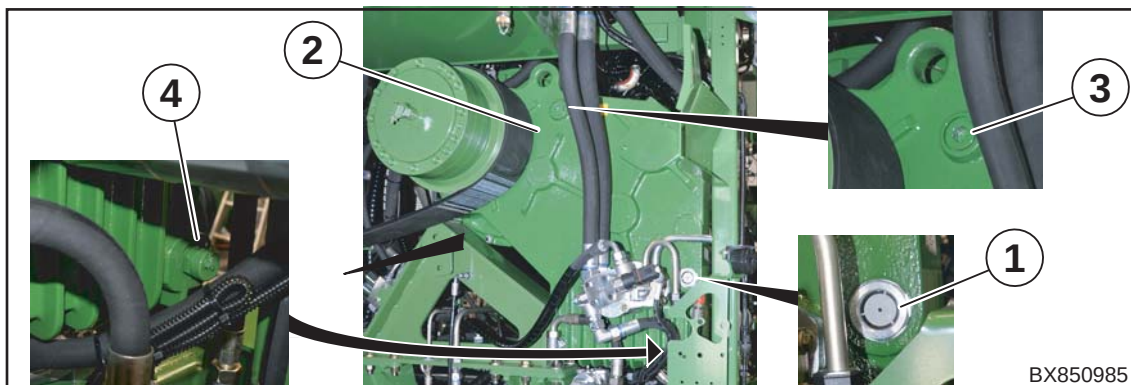
9.7 Gearbox maintenance

- 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



Refill or change gear oil with original KRONE gear oil (Mobil SHC 630) only. If there is no original KRONE gear oil available, consult KRONE customer service.



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).



Check the oil level about 3 to 4 hours after the engine is turned off while the machine is in a horizontal position.

Changing the oil

- Take the drain hose out of the toolbox of the machine and turn onto the drain plug (4).
- Capture the old oil in a sufficiently large container.
- Remove drain hose and lodge in toolbox again.
- Remove drain hose and lodge in toolbox again.
- Unscrew the cover screw (3) on the engine drive (2) gearbox.
- Add oil.
- Screw in the cover screw (3) again.



Exercise caution when draining hot oil
- danger of burns due to hot liquids or machine parts!

- Wear protective gloves.
- Collect used oil in a suitable container.



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 (7) for the circulating oil lubrication of the transmission

Always perform the filter replacement together with the change of the transmission oil after 1000 operating hours or at the end of the season.

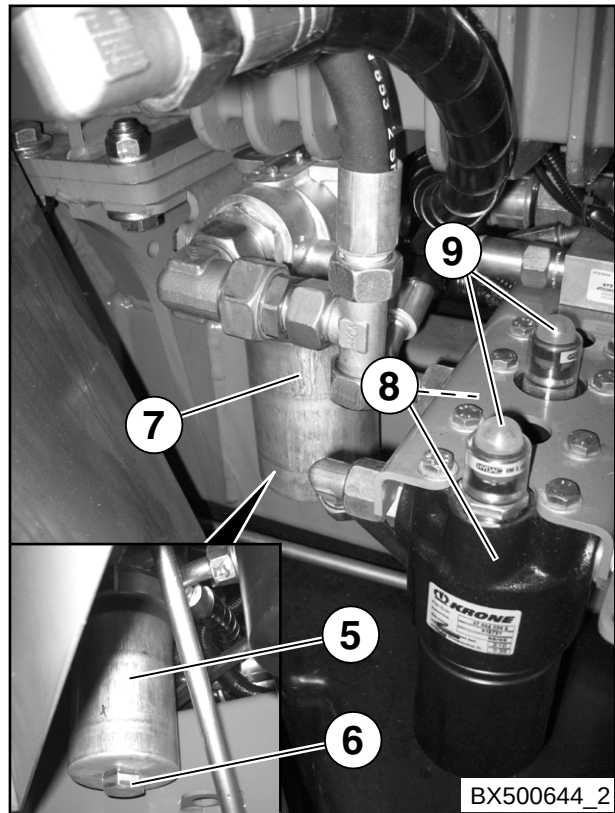
- Unscrew the filter housing (5) on the welded nut (6) by using a wrench (W/F 32).
- Replace the old filter with a new one.
- Screw the filter housing (5) back into position by using a wrench (W/F 32).

High-pressure filter (8)

The filter takes up depositions of solid particles of the hydraulic system. The filtering of the hydraulic circuit serves as a prevention of damages on components of the circuit. The filter is equipped with an optical contamination indicator (9). The contamination indicator (9) informs optically about the degree of contamination of the filter. When starting in cold condition, the button of the contamination indicator (9) can hop out. Only press the button back in after achieving the operating temperature. In case it immediately hops out again, the filter element must be changed.



Check the contamination indicator before the machine is used and exchange the contaminated filter element if necessary. If the contamination indicator does not act, the filter element must be replaced once a year or each time when the oil is changed.

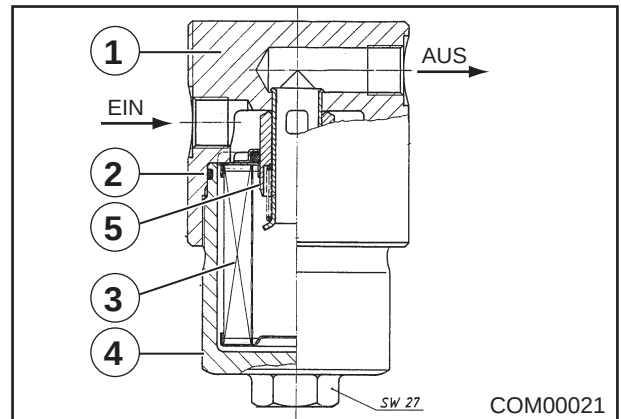


Replacing the Filter Element (8)



Store or dispose used oil and oil filters according to statutory provisions.

- Relieve all pressure from the hydraulic system.
- Screw bottom of the filter (4) off the filter head piece (1) and clean it
- Remove the filter element (3) and replace by a new filter element with identical characteristics
- Push a new filter element (3) onto the valve sleeve (5)
- Check the O-ring seal (2) and replace it, if necessary, by O-ring seal with identical characteristics
- Screw bottom of the filter (4) back onto the filter head piece
- Charge the hydraulic system with pressure and check for leaks



9.7.2 Checking the oil level and changing the oil on the distributor gearbox



Exercise caution when draining hot oil - danger of burns due to hot liquids or machine parts!

- Wear protective gloves.
- Collect used oil in a suitable container.
- Allow the liquids or the machine parts to cool off, if necessary.



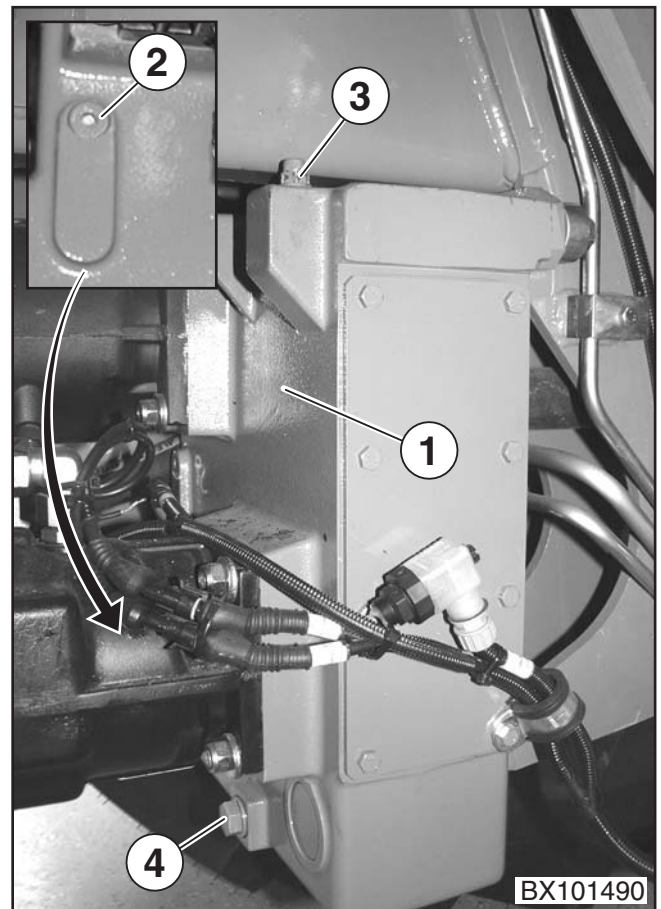
Refill or change gear oil with original KRONE gear oil (Mobil SHC 630) only. If there is no original KRONE gear oil available, consult KRONE customer service.

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 lower roller gearbox



Exercise caution when draining hot oil - danger of burns due to hot liquids or machine parts!

- Wear protective gloves.
- Collect used oil in a suitable container.
- Allow the liquids or the machine parts to cool off, if necessary.



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 - Angular gear left top, tower above
- 2 - Lower roller gear

Oil level check angular gear left top, tower top (1)

- Clean the area of the oil dip stick (3) thoroughly.
- Unscrew oil dip stick (3) and wipe oil residues away.
- Screw oil dip stick (3) in and then back out.
- Read oil level - Oil level must be between the markings max. and min.
- Screw oil dip stick back in.

Oil change angular gear left top, tower top (1)

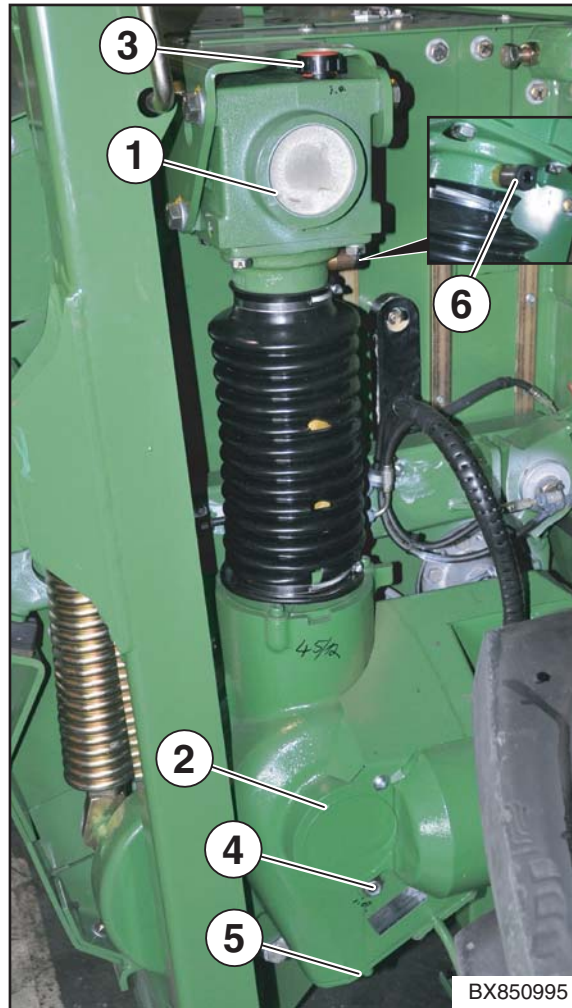
- Unscrew oil drain plug (6) on the angular gear left top, tower top (1) with a suitable Allen key. Collect the used oil in a suitable container.
- Screw oil drain plug (6) back in.
- Screw out oil dip stick (3).
- Add oil.
- Screw oil dip stick back in.

Checking the oil level at lower roller gearbox

- Read the oil level on the sight glass (4).
- If the oil level is falling below half in sight glass, the oil has to be topped up up to this level (see oil change).

Checking the oil level at lower roller gearbox (2)

- Unscrew the oil drain plug (5) on the lower roller gearbox. Collect the used oil in a suitable container.
- Screw in the oil drain plug (5) again.
- Unscrew the cover screw with ventilation filter (6)
- Fill in oil.
- Screw in the cover screw (6) again.



9.7.4 Checking the oil level and changing the oil on the upper roller gearbox

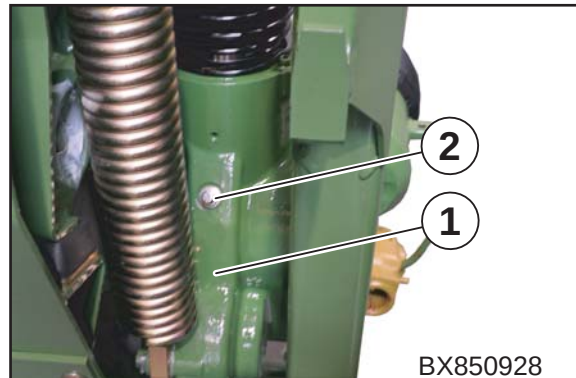


Exercise caution when draining hot oil - danger of burns due to hot liquids or machine parts!

- Wear protective gloves.
- Collect used oil in a suitable container.
- Allow the liquids or the machine parts to cool off, if necessary.



Perform oil level check and change the oil while the forage harvester is in a horizontal position!

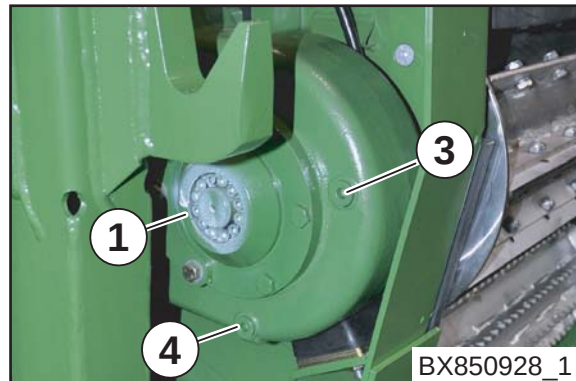


Checking the oil level

- 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.



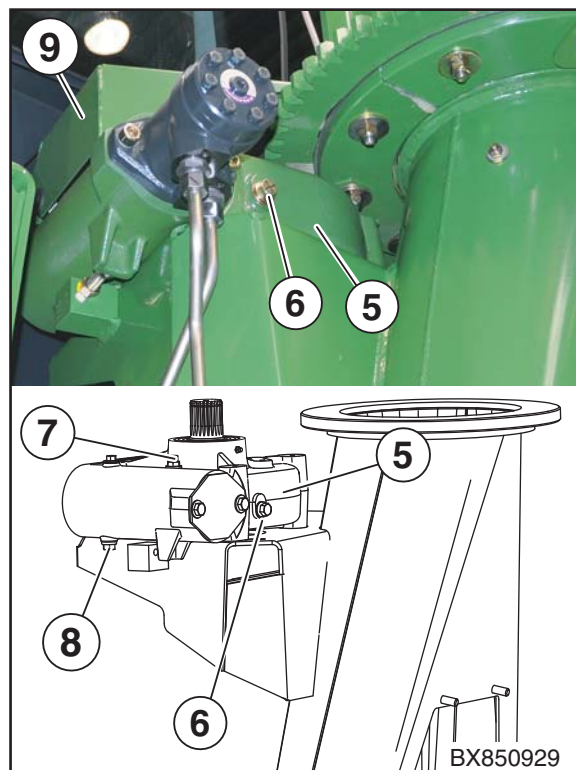
9.7.5 Oil level check and oil change on the tower gearbox of the upper discharge chute

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 (9) 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 install the protective guard (9).



9.7.6 Checking the Oil Level and Changing the Oil of the Wheel Gearboxes



Exercise caution when draining hot oil
- danger of burns due to hot liquids or machine parts!

- Wear protective gloves.
- Collect used oil in a suitable container.
- Allow the liquids or the machine parts to cool off, if necessary.



When topping up or changing the transmission oil, use only SHELL SPIRAX S4 CX 50.
If this particular transmission oil is not available, please consult KRONE customer service.

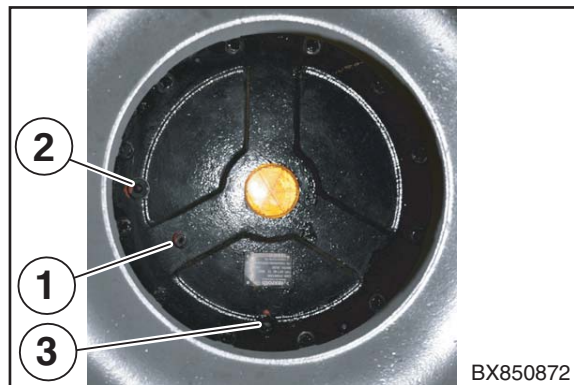
Front wheel gearboxes

Oil level check

- Unscrew the oil level control screw (1) on the front gearbox.
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 (1) again.

Oil change

- Unscrew the oil drain plug (3). Collect the used oil in a suitable container.
- Screw in the oil drain plug (3) again.
- Unscrew the oil filler plug (2).
- Fill in oil. The oil level must reach up to the control hole (1).
- Screw the oil filler plug (2) back in again.



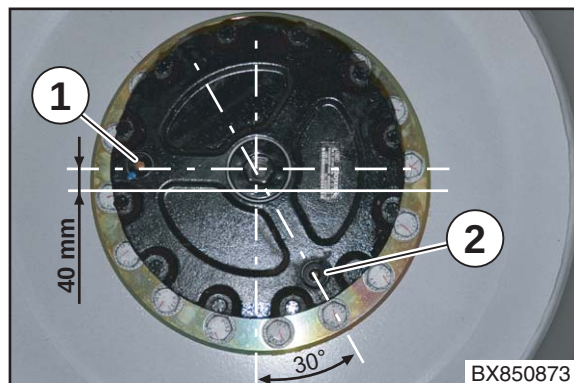
Rear wheel gearboxes

Oil level check

- Turn the wheel until the oil filler plug (1) of the gearbox is horizontally level with the hub of the wheel.
- Unscrew the oil filler plug (1).
- The oil level must be about 40 mm below the wheel hub (visual inspection is adequate).
- If necessary, top up the oil (see Oil change).
- Screw the oil filler plug (1) back in again.

Oil change

- After checking the oil level, turn the wheel 30° downward.
- Unscrew the oil drain plug (2). Collect the used oil in a suitable container.
- Screw in the oil drain plug (2) again.
- Turn the wheel upward 30°.
- Unscrew the oil filler plug (1).
- Fill in oil. The oil level must be about 40 mm below the wheel hub.
- Screw the oil filler plug (1) back in again.



9.8 Maintenance - Belt drives



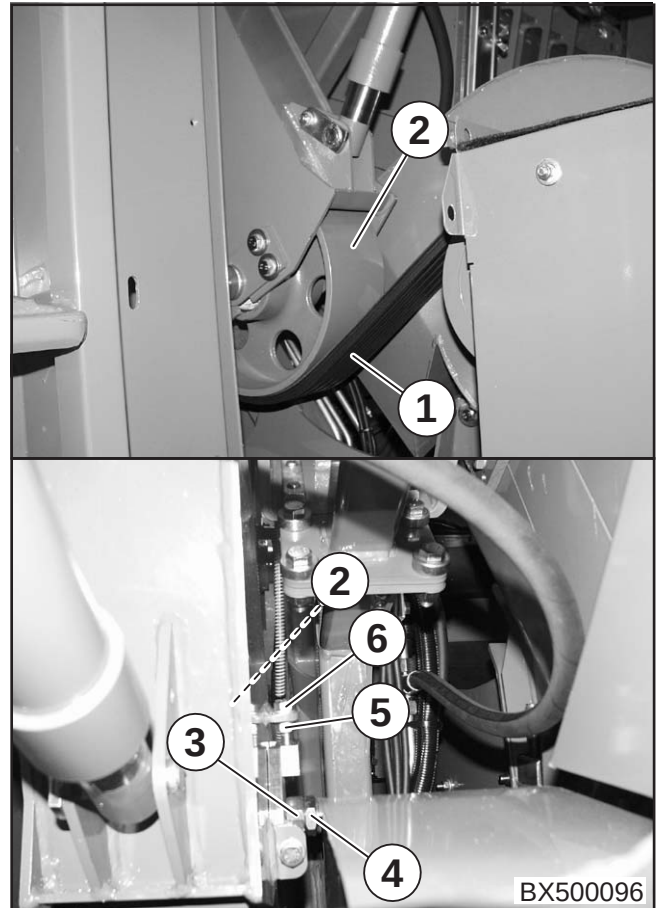
**Check the tension and condition of drive belts for all belt drives after the first 10 operating hours, and after that every 100 operating hours.
Replace damaged or worn drive belts.**

9.8.1 Main belt drive

Belt tension over the hydraulic cylinder.

Correcting belt motion

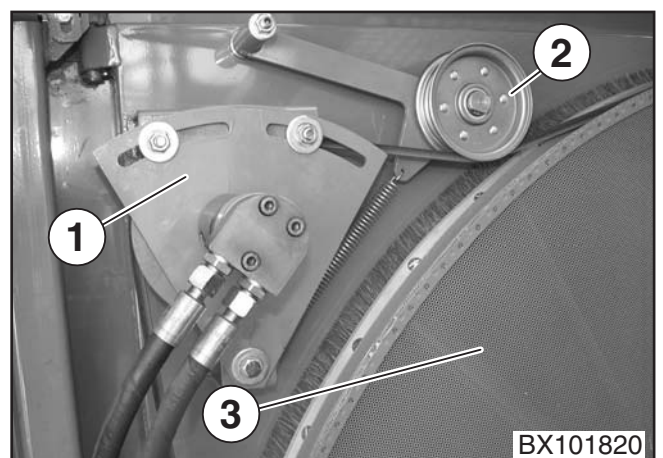
- Check to make certain the belt is running in the guides of the v-notch pulley (1) with no problems.
- If necessary, correct the belt motion by changing the position of the tension roller (2).
- Loosen the counter nut (3) and loosen the hexagonal nut (4) somewhat.
- Loosen the counter nut (5) and adjust 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).



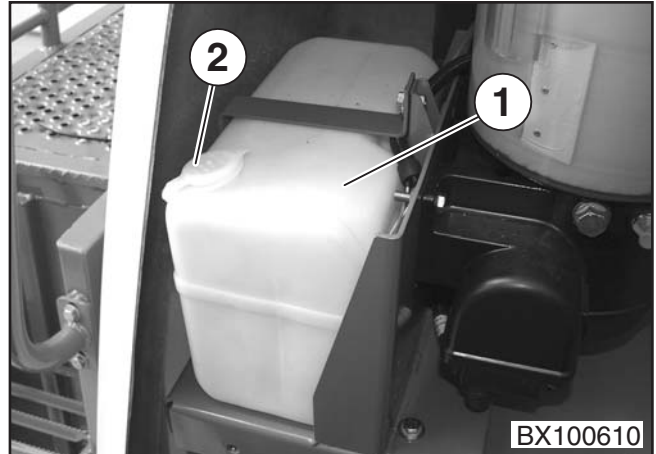
9.9 Windscreen washer system

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.



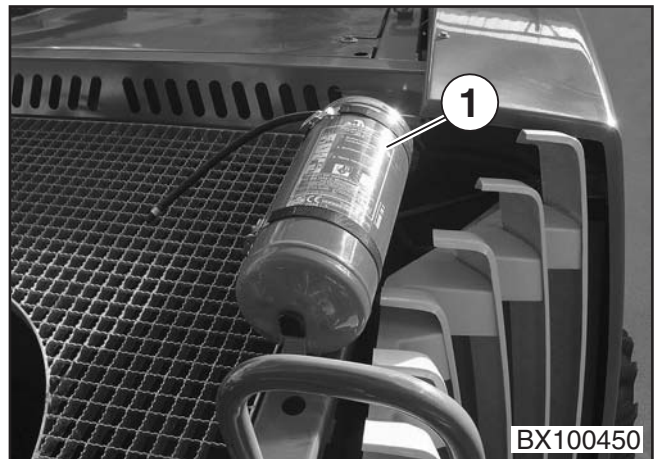
Empty the windscreen washer system in winter or fill a special anti-freeze agent.



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.

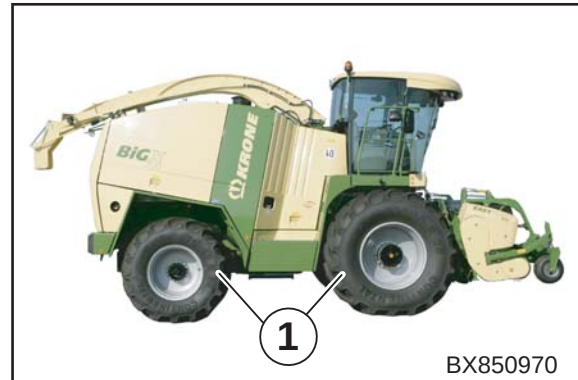
The inspection intervals may differ from one country to another. In this case, the instructions on the fire extinguisher (1) of the respective countries shall be applicable.



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.



BX850970

Reifenluftdruck / tyre pressure									
			BiG X 700	BiG X 850	BiG X 1100				
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	
650/75 R 32 172A8	40	25	3,2	3,2	3,2	3,2	3,2	Vorderachse front axle	
	10	6	1,8	1,8	1,8	1,8			
710/75 R 34 178A8	40	25	2,1	2,4	2,4	2,1	2,4		
	10	6	1,2	1,4	1,4	1,4			
710/70 R 42 173A8	40	25	1,8	2,4	2,4	1,8	2,4		
	10	6	1,2	1,4	1,4	1,2			
800/65 R 32 172A8	40	25	1,9	2,4	2,4	1,9	2,4		
	10	6	1,2	1,4	1,4	1,6			
800/70 R 38 173B	40	25	1,4	1,6	1,6	1,4	1,6		
	10	6	1,0	1,0	1,0	1,0			
900/60 R 32 176A8	40	25	1,7	2,0	2,0	1,7	2,0		
	10	6	1,0	1,2	1,2	1,0			
900/60 R 38 175A8	40	25	1,2	1,4	1,4	1,2	1,4		
	10	6	1,0	1,0	1,0	1,0			
540/65 R 30 168A8	40	25	2,4	2,4	2,4	2,4	2,4	Hinterachse rear axle	
	10	6	2,4	2,4	2,4	2,4			
600/70 R 28 157A8 (Michelin)	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 (Trelleborg)	40	25	2,8	2,8	2,8	2,8	2,8		
	10	6	1,8	1,8	1,8	1,8			
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			
710/55 - 34 155A8	40	25	1,8	1,8	1,8	1,8	1,8		
	10	6	1,4	1,4	1,4	1,4			
710/60 R 30 165A8	40	25	2,1	2,1	2,1	2,1	2,4		
	10	6	1,4	1,4	1,4	1,4			
* = Strassenfahrt ohne/Transport on road without EasyCollect 9000 / 1053									
** = Vmax: 25km/h / 15mp / h									
27 006 781 0									

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

** = Vmax: 25km/h / 15mp / h

27 006 781 0

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.

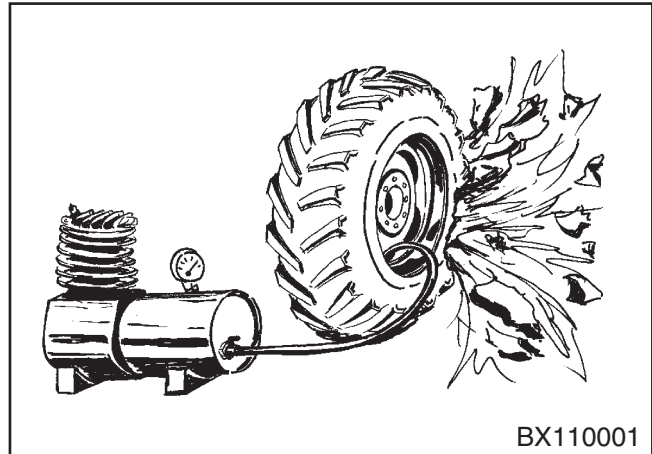
When mounting the tyre on the wheel rim never exceed the highest permissible pressure stated by the tyre manufacturer, otherwise the tyre or even the wheel rim may explode.

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!



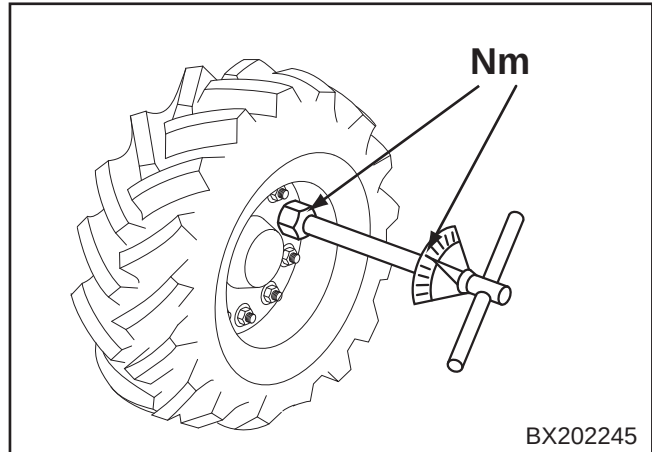
9.11.3 Wheel mounting

- After the first and then after 20 to 25 hours of operation, retighten the wheel lug nuts.
Tightening torque of the drive axle wheel lug nuts = 525 Nm
Tightening torque of the steering axle wheel lug nuts = 270 Nm

9.11.4 Fitting different tyres



If a change of the tyre size is intended, please apply to KRONE customer service.



9.12 Maintenance – electrical system



WARNING

Danger to life due to rolling away of the unlocked machine, unpredictable moving of the lifting gear and start-up of the machine!

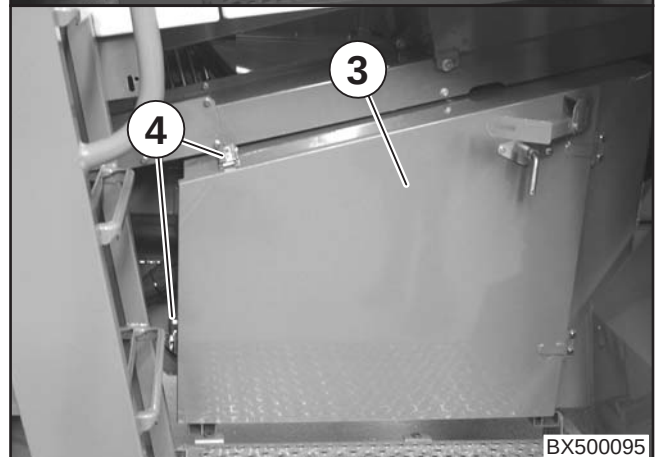
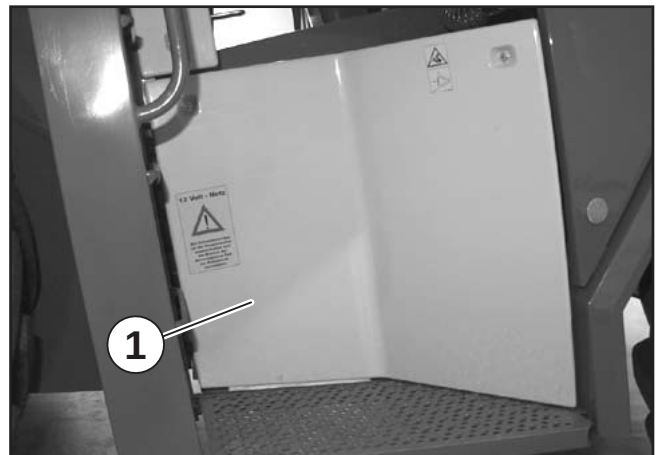
- Always make certain that the drive and the engine are switched off before doing any repairs, maintenance or cleaning. Remove the ignition key!
- Secure the machine against accidental start-up and rolling.
- When making repairs (welding work), always interrupt the electric circuit with the main battery switch and remove the socket connector (1) from the control unit (EDC control device)!

9.12.1 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.



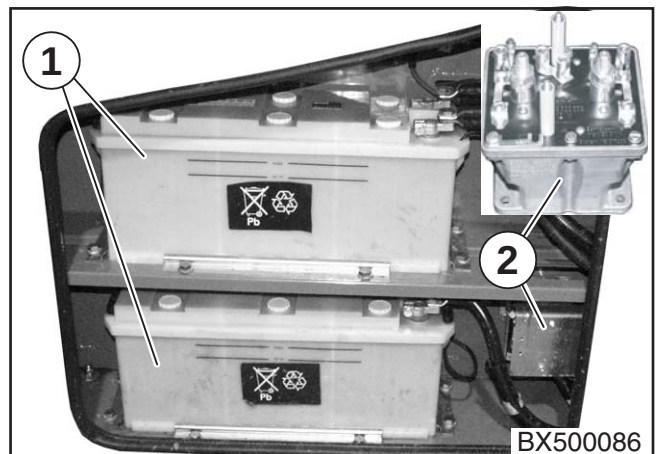
The forage harvester has been fitted with two batteries (1) of 12 V (135 Ah) each, which are connected in series (24 V) for starting.

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.



9.12.2 Main battery switch

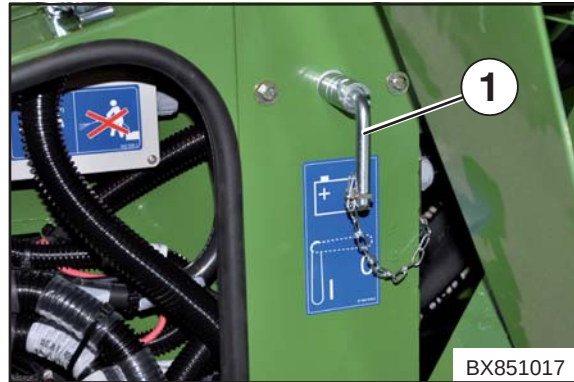


Do not switch off the main battery switch (1) with the engine running. For repairs, in emergencies and at the end of use, interrupt the electric circuit by turning the main battery switch (1) into "0" position.

- Switch off the engine
- Turn main battery switch (1) to "0" position to interrupt the electric circuit.



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.

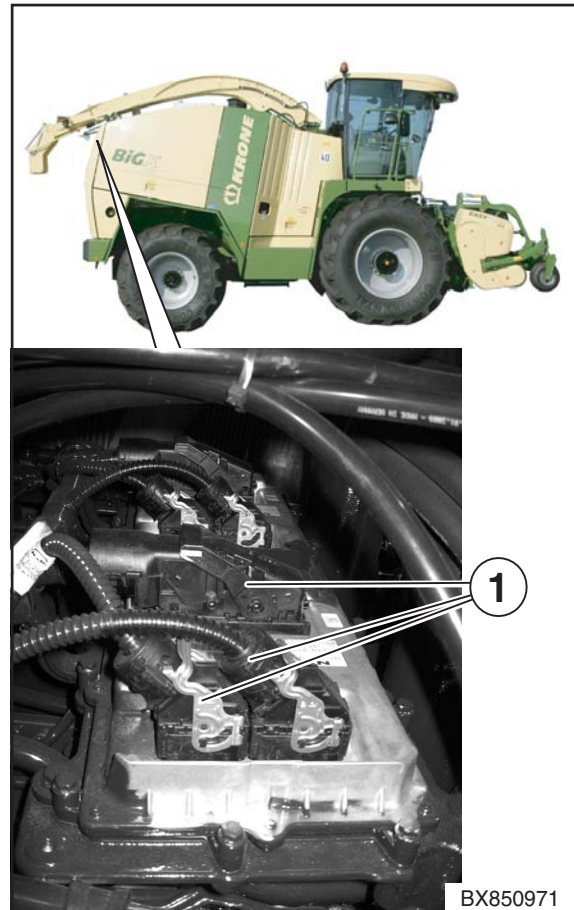


Removing the socket connector (1) from the control unit (EDC-control device).

- 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 EDC control device by swivelling.
- When fitting the socket connector (1) swivel the safety bracket upwards and lock into place.



The socket connector (6 plugs altogether) is twice available on the EDC control unit of the BiGX850 -1/ 1100-1.



9.12.3 Battery – hazards when handling

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 turn the main battery switch (1) to „0“ position.

Quick charge:

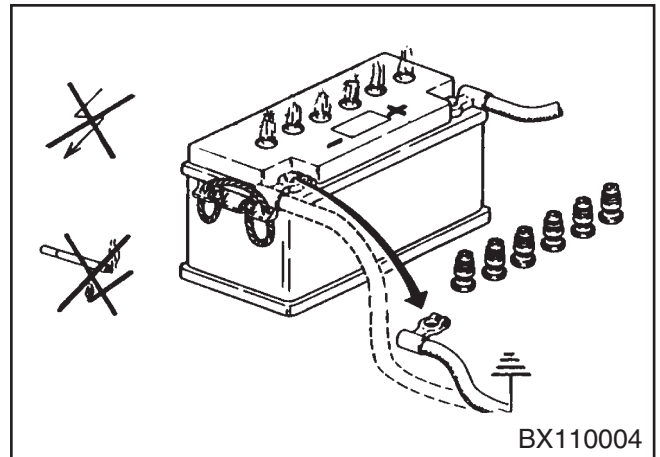
When carrying out a quick charge, disconnect the minus cable from the battery and open all battery cells in order to prevent damage to the electric system.



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.



9.12.4 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.

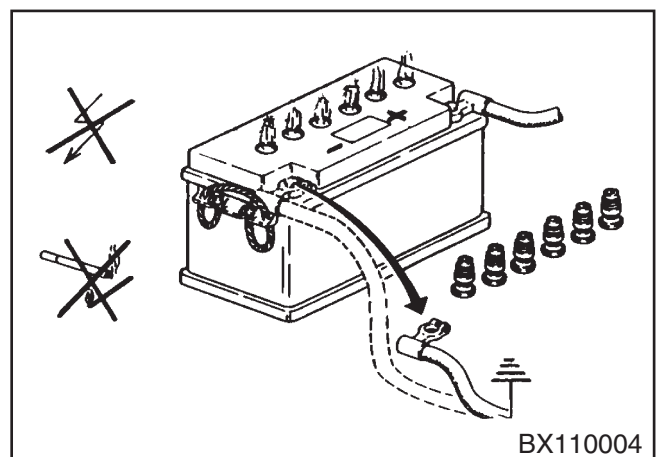
9.12.5 Battery – checking the acid level



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.

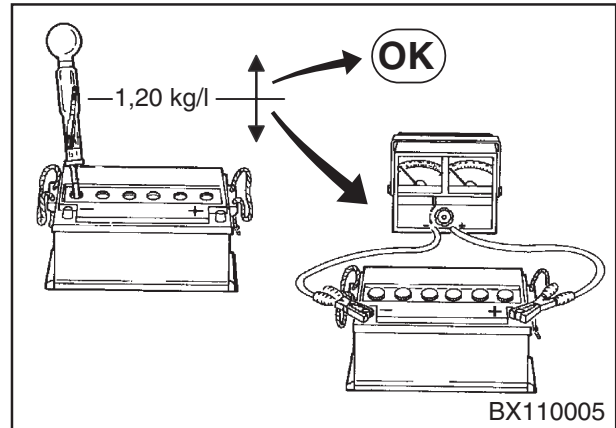


9.12.6 Battery – measuring the acid density

- 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.



9.12.7 Installing Batteries and Connecting Poles Correctly



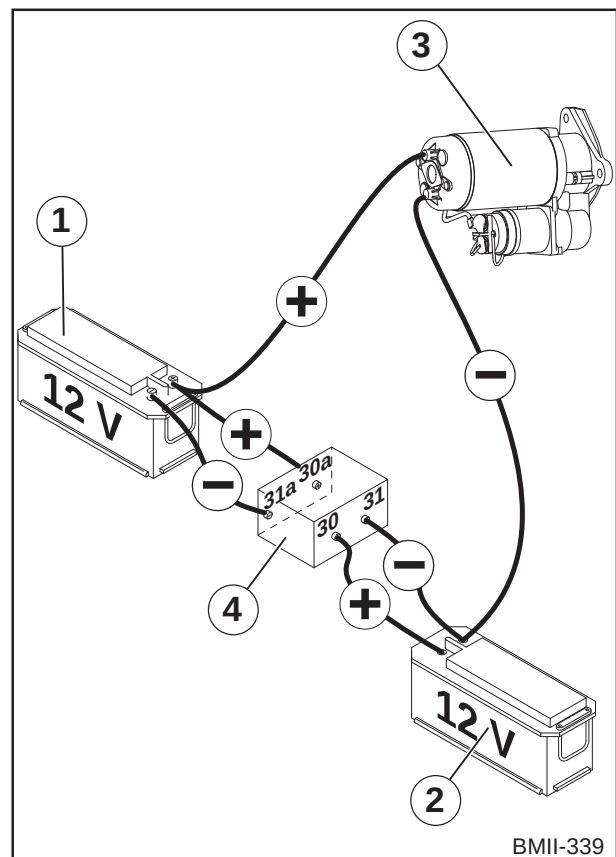
Always connect the battery poles correctly:

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.



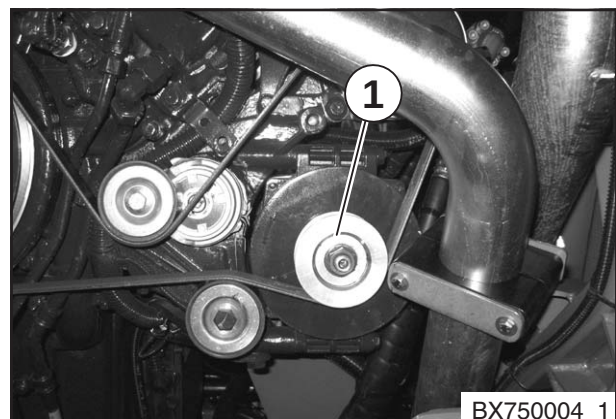
9.12.8 Three-phase generator



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.



9.12.9 Starter

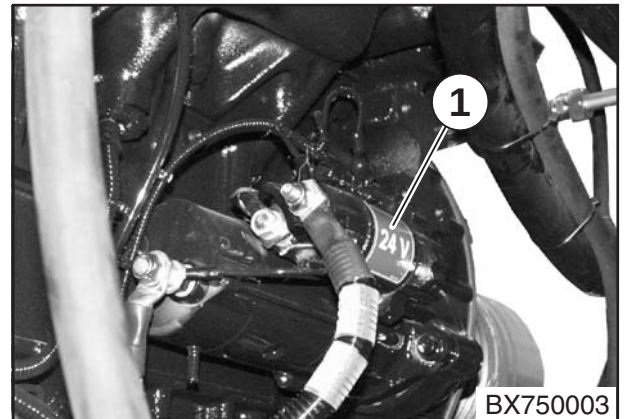


When working on the electrical system, always remove the positive cables from the batteries and switch off the main battery switch to avoid damage.

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.

9.12.10 Lights

Lamp overview (voltage/capacity and type of lamp):

licence plate lamp	12 V/5 W	cab roof floodlights	12 V/55 W H3
rear lamps	12 V/10 W	floodlights - upper discharge chute	12 V/55 W H3
rear lamps - fender	12 V/5 W	cab roof working floodlights	12 V/55 W H3
clearance lamps - front	12 V/5 W	working floodlights – front lamp carrier	12 V/55 W H3
rear wheel light	12 V/5 W	rear working floodlights	12 V/55 W H3
lamps - tyres	12 V/5 W	lighting – grinding device	12 V/55 W H3
rear lamp – upper discharge chute	12 V/10 W	indicator – fender/rear/front	12 V/21 W
dipped/high beam	12 V/55/60 W H4	reversing lights	12 V/21 W
		brake lights – rear/upper discharge chute	12 V/21 W
		allround lights	12 V/55 W H1

9.12.11 Control units and fuses



Have work on the electronic system carried out by KRONE after-sales service or KRONE dealer only!

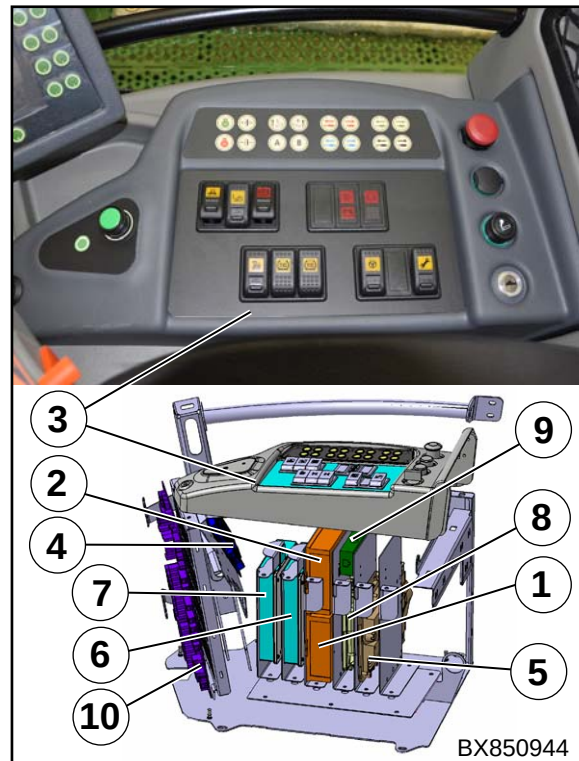
The following listed control units are located behind the cover (1) of the operator console of the driver's cab.

- 1 DIOM output module
- 2 Autopilot (optional)
- 3 BEK- control unit console
- 4 Potential distributor circuit board
- 5 Drive control DRC
- 6 KMC 3
- 7 KMC 2
- 8 MFR (engine guidance computer)
- 9 Switchbox video camera
- 10 Relay circuit board

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.

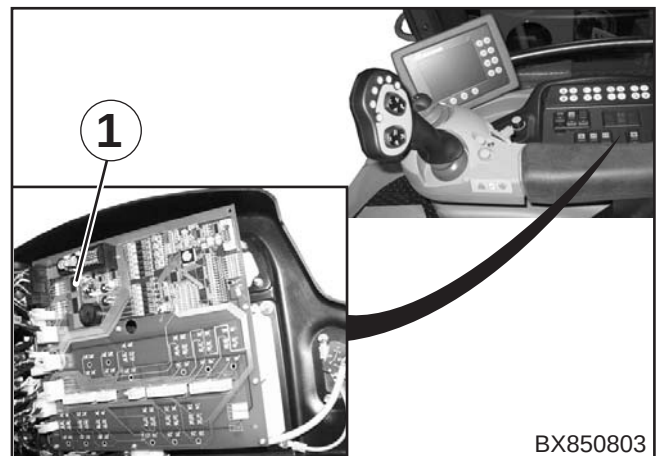
For console board overview see page IX-54.



EDC-engine control

The EDC-engine control (1) is located in driving direction left front of the motor.

EDC-engine control (1). For more information, please refer to the operating instructions of the engine (MAN).



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-54.



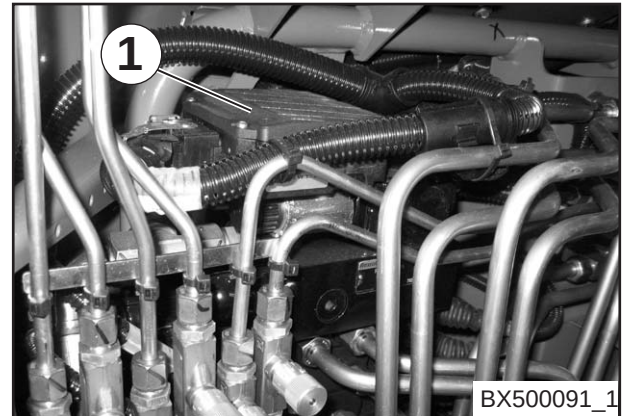
EMR lifting gear control

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-54.



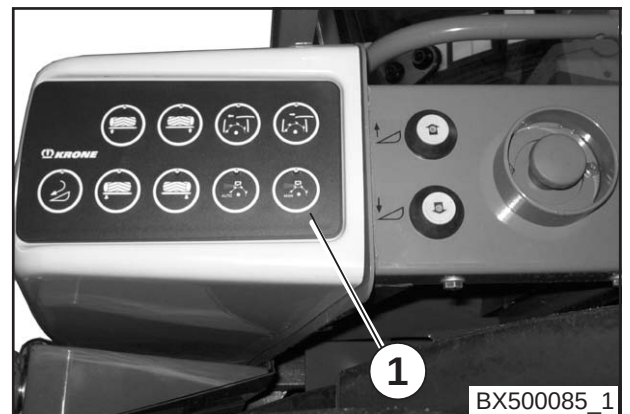
Manual operation on the platform

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-54.

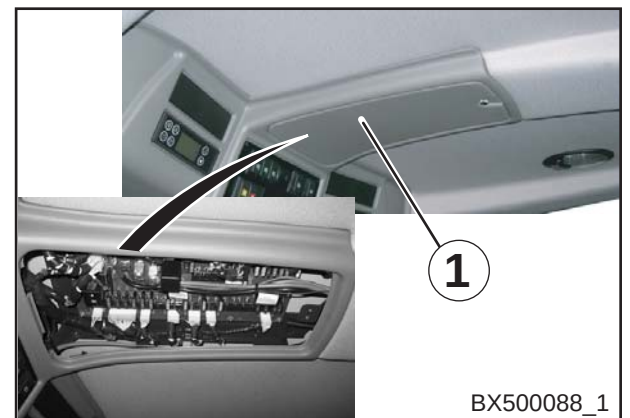


Cabin-relay board

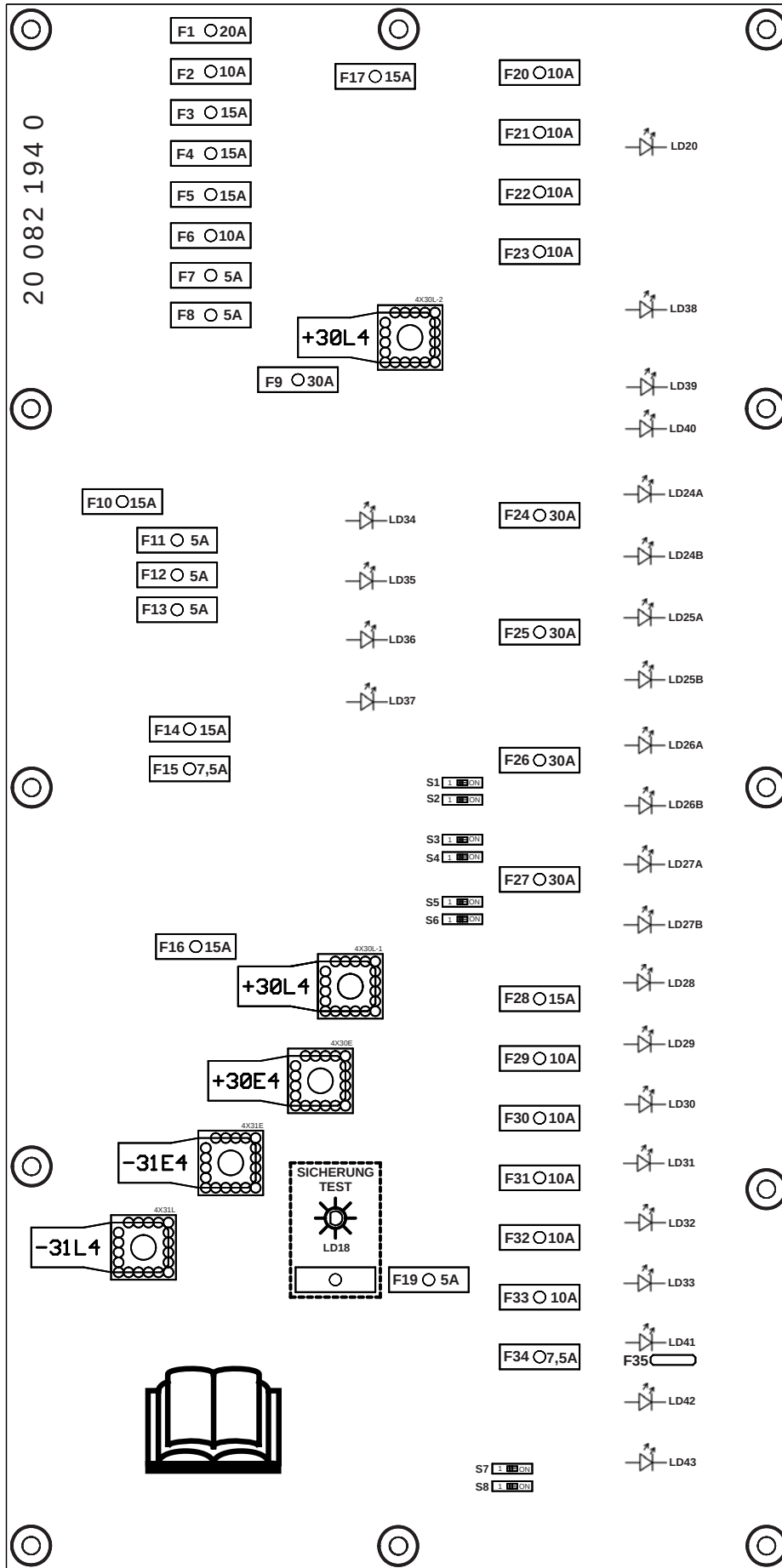
The designations of the fuses, relays, as well as the LEDs for the **cabin** are located on the cabin-relay board.

The cabin-relay board is located behind the cover (1) on the cabin rear panel.

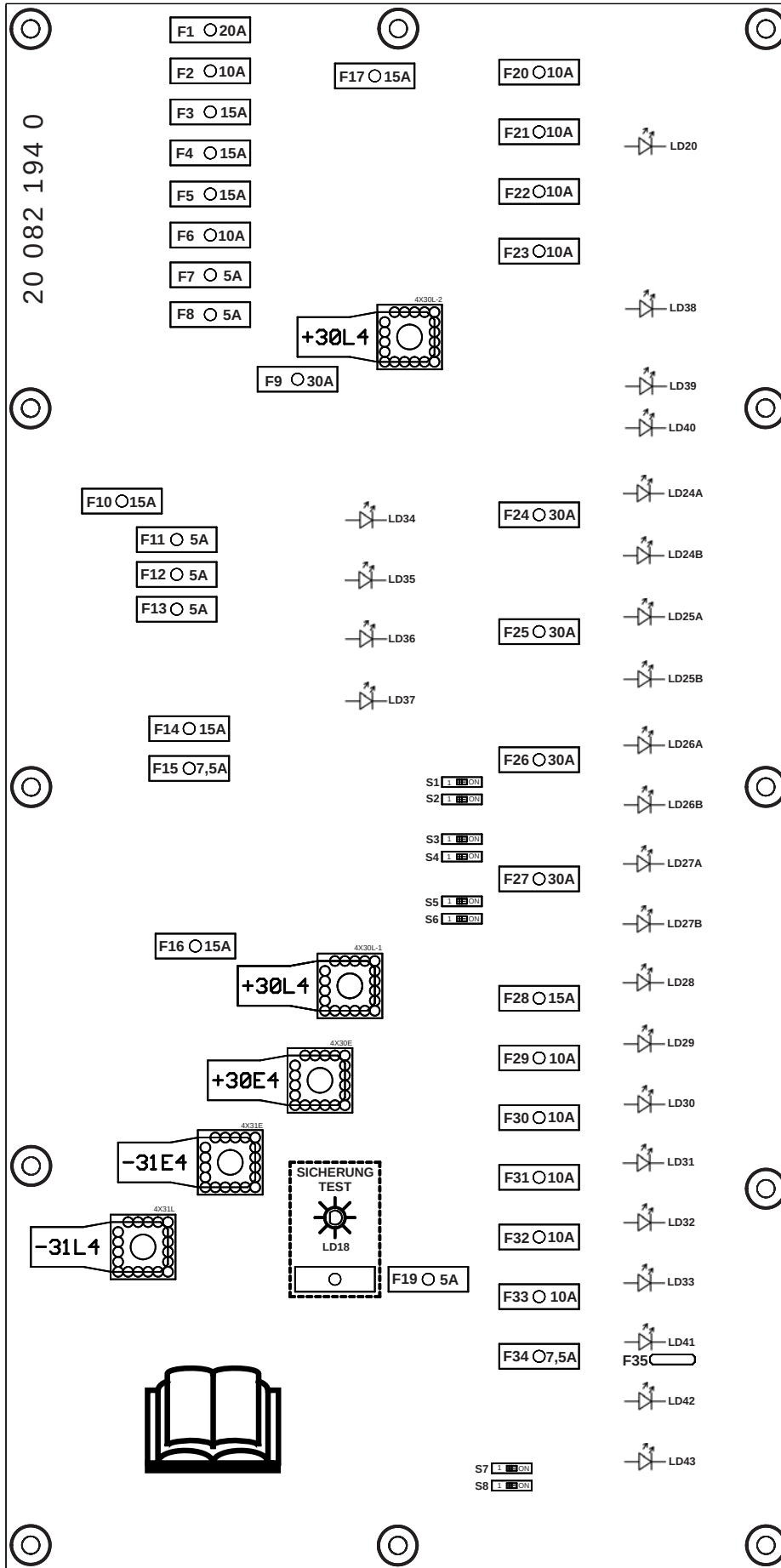
For cabin-board overview see page IX-53.



9.12.12 Cab circuit board

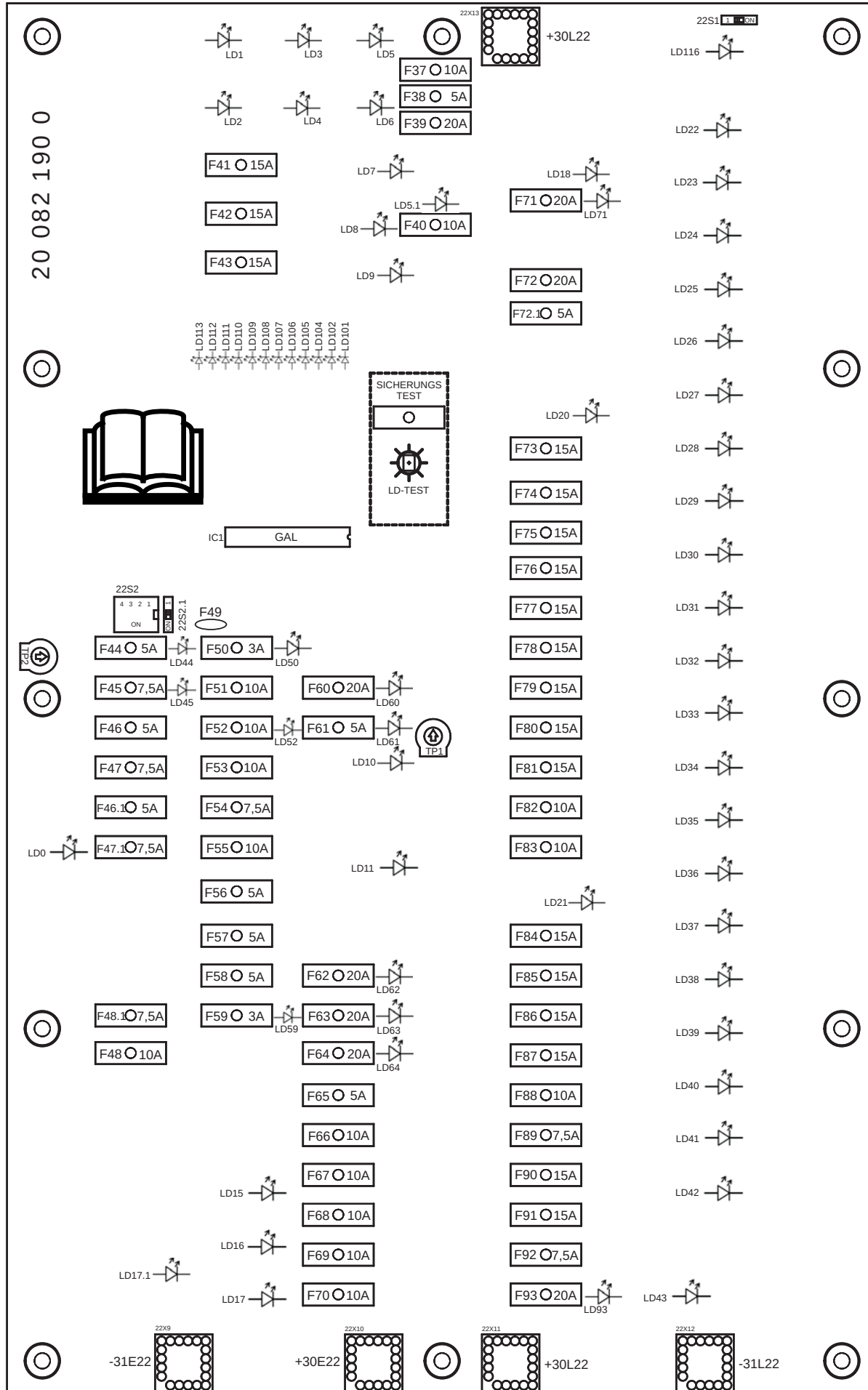


Fuse	Value	Designation
F1	20A	Allround lights
F2	10A	Cutting drum lighting
F3	15A	Seat compressor
F4	15A	Side windscreen washers
F5	15A	Front windscreen washers, water pump
F6	15A	Travel direction indicator
F7	5A	Horn, headlamp flasher
F8	5A	Mirror adjustment
F9	30A	PWM module fan
F10	15A	Cooling box
F11	5A	Control unit for climate control
F12	5A	GPS antenna, reserve
F13	5A	Air conditioning compressor
F14	15A	Radio/CB/GPS/GSM ignition stage 1
F15	7,5A	Radio/CB/GPS/GSM continuous voltage
F16	15A	Hazard warning lights
F17	15A	Comfort seat, reserve
F18		Fuse test for all connector locks used on the circuit board
F19	5A	Interior lighting, spotlight
F20	10A	Dipped beam right
F21	10A	Dipped beam left
F22	10A	Full beam left
F23	10A	Full beam right
F24	30A	Working floodlights cabin roof centre
F25	30A	Working floodlights cabin roof left/right outside
F26	30A	Working floodlights discharge chute, rear
F27	30A	Working floodlights platform, rear wheel light
F28	15A	Working floodlights lamp carrier bottom
F29	10A	Reversing horn, reversing lights
F30	10A	Brake light
F31	10A	Side light/ perimeter light left
F32	10A	Side light/ perimeter light right
F33	10A	Locator lighting
F34	7,5A	Control voltage, full beam

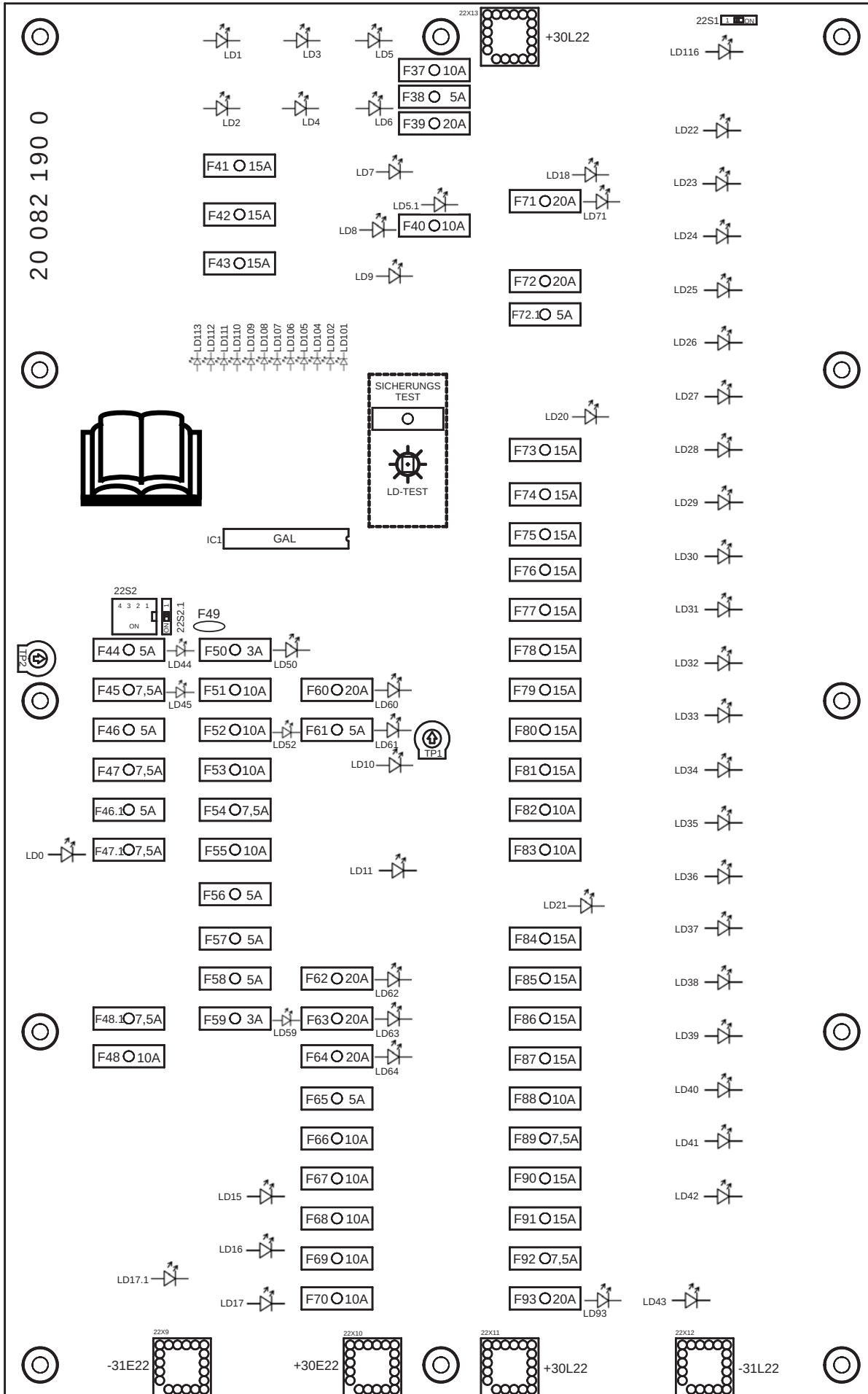


LED	Designation
LD18	Fuse test for all connector locks used on the circuit board
LD20	Dipped/high beam switching top/bottom
LD24A	Working floodlight cabin roof centre
LD24B	Working floodlight cabin roof centre
LD25A	Cab roof left working floodlight
LD25B	Cab roof right working floodlight
LD26A	Working floodlight - discharge chute
LD26B	Rear working floodlight
LD27A	Working floodlight platform
LD27B	Rear wheel light
LD28	Working floodlight lamp carrier bottom
LD29	Reversing horn, reversing lights
LD30	Brake light
LD31	Lighting left
LD32	Lighting right
LD33	Locator lighting
LD34	Ignition stage 2
LD35	Radio, climate control
LD36	Windscreen washer, horn
LD37	Cutting drum lighting, side windscreen washer
LD38	Headlamp flasher
LD39	Full beam
LD40	Dipped beam
LD41	Seat switch
LD42	Door switch
LD43	Delay lights control signal

9.12.13 Console circuit board

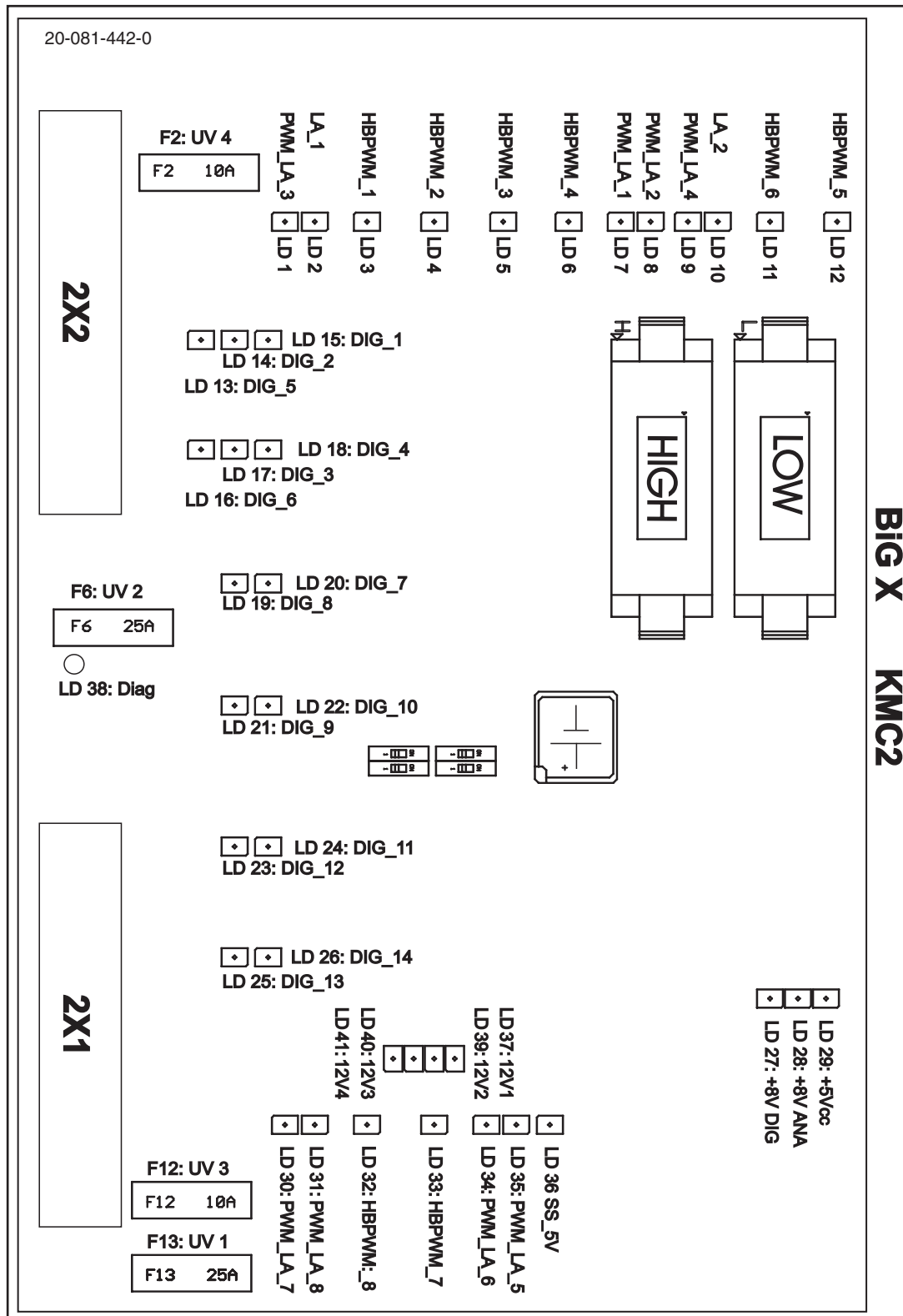


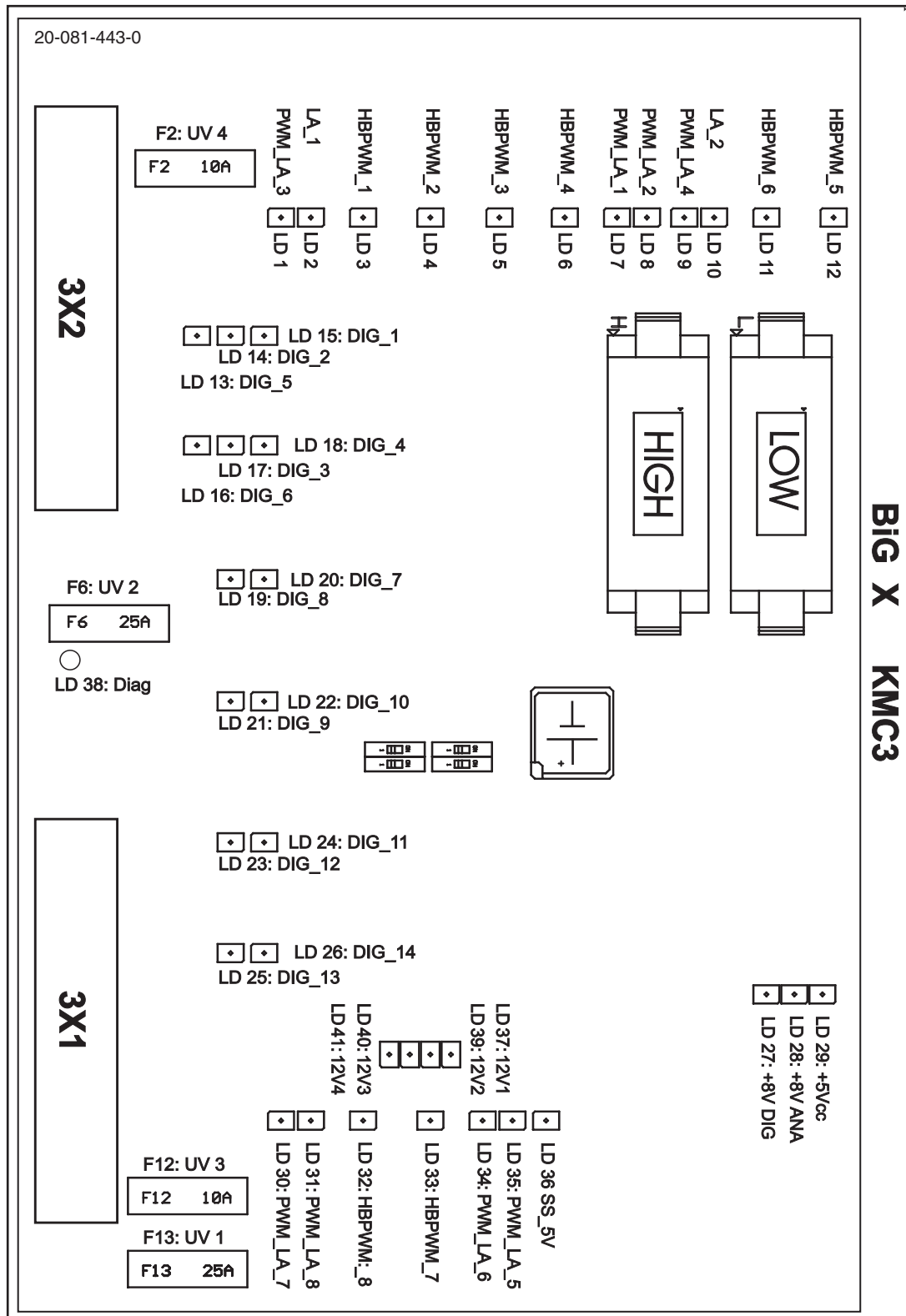
Fuse	Value	Designation
22F37	10A	DIN socket / reserve
22F38	5A	Traction drive
22F39	20A	Yield recording output
22F40	10A	Yield recording electronics
22F41	15A	Ignition stage 1 moisture measuring
22F42	15A	Ignition stage 2 moisture measuring
22F43	15A	Moisture measuring
22F44	5A	KMC 3 electronics
22F45	7,5A	Ignition stage 1 Teleservice
22F46	5A	Terminal (slow release)
22F46.1	5A	Terminal (slow release 0...16h)
22F47	7,5A	Ignition stage 1 CU
22F47.1	7,5A	Continuous voltage Teleservice
22F48	7,5A	Ignition stage 2 CU
22F48.1	10A	Ignition stage 2 diagnostics socket
22F50	3A	Autopilot electronics
22F51	10A	Steering wheel pressure
22F52	10A	EMR
22F53	10A	CAN diagnostics socket
22F54	7,5A	Video system
22F55	10A	Metal detection
22F56	5A	Manual operation
22F57	5A	Joystick ignition stage 1
22F58	5A	Degree of maturity (AutoScan)
22F59	3A	DIOM electronics
22F60	20A	Ignition stage 1 electronics (slow release)
22F61	5A	KMC 2 electronics
22F62	20A	Ignition stage 1 electronics (slow release)
22F63	20A	Ignition stage 1 electronics
22F64	20A	Ignition stage 2 electronics
22F65	5A	Continuous voltage joystick
22F66	10A	Reserve
22F67	10A	Continuous voltage CAN diagnostics socket
22F68	10A	Continuous voltage MFR
22F69	10A	Traction drive sensors
22F70	10A	Ignition stage 2 MFR/EDC
22F71	20A	Ignition stage 1 output
22F72	20A	Reserve
22F72.1	5A	Reserve
22F73	15A	DIOM voltage
22F74	15A	Molasses
22F75	15A	Reserve
22F76	15A	Autopilot voltage
22F77	15A	Reserve
22F78	15A	Voltage V3 KMC 3
22F79	15A	Voltage V4 KMC 3
22F80	15A	Voltage V2 KMC 3
22F81	15A	Voltage V1 KMC 3
22F82	10A	Cigarette lighter 2
22F83	10A	Cigarette lighter 1
22F84	15A	Voltage V4 KMC 2
22F85	15A	Voltage V3 KMC 2
22F86	15A	Voltage V2 KMC 2
22F87	15A	Voltage V1 KMC 2
22F88	10A	Starting engine
22F89	7,5A	Central lubrication
22F90	15A	Traction drive
22F91	15A	Traction drive
22F92	7,5A	Continuous voltage ignition lock
22F93	20A	Control signal starting engine



LED	Designation
LD0	Terminal (slow release 0...16h)
LD1	Reserve
LD2	Reserve
LD3	Ignition stage 1
LD4	Ignition stage 1 electronics yield recording
LD5	Ignition stage 2 electronics yield recording
LD5.1	Ignition stage 2 yield recording
LD6	Ignition stage 1 yield recording
LD7	Reserve
LD8	Reserve
LD9	Reserve
LD10	Output horn coastdown alarm
LD11	Ignition stage 1 (slow release)
LD15	Signal resistance CAN2 KMC2
LD16	Traction drive sensors
LD17	Ignition stage 2 MFR/EDC
LD17.1	Brake signal
LD18	Switching signal horn metal detection
LD20	Reserve
LD21	Cigarette lighters 1 + 2
LD22	Reserve
LD23	Reserve
LD24	Reserve
LD25	Reserve
LD26	Reserve
LD27	DIOM voltage
LD28	Silage agent switching signal
LD29	Reserve
LD30	Autopilot voltage
LD31	Reserve
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
LD37	Voltage V3 KMC 2
LD38	Voltage V2 KMC 2
LD39	Signal starter relay selection
LD40	Voltage V1 KMC 2
LD41	Starting engine
LD42	Central lubrication

LED	Designation
LD43	Enable ground drive
LD44	KMC 3 electronics
LD45	Ignition stage 1 Teleservice
LD50	Autopilot electronics
LD52	Steering wheel pressure
LD59	DIOM electronics
LD60	Ignition stage 1 electronics (slow release)
LD61	KMC 2 electronics
LD62	Ignition stage 1 electronics (slow release)
LD63	Ignition stage 1 electronics
LD64	Ignition stage 2 electronics
LD71	Ignition stage 1 output
LD93	Control signal starting engine
LD101	Real. feed drive / front attachment voltage
LD102	Reserve
LD104	Seat switch
LD105	Door switch
LD106	Reserve
LD107	Quick stop
LD108	Reserve
LD109	Enable maintenance
LD110	Enable feed drive / front attachment
LD111	Enable ground drive
LD112	Enable automatic steering
LD113	Road/field mode release
LD116	Reserve





9.13 Maintenance – compressed air system

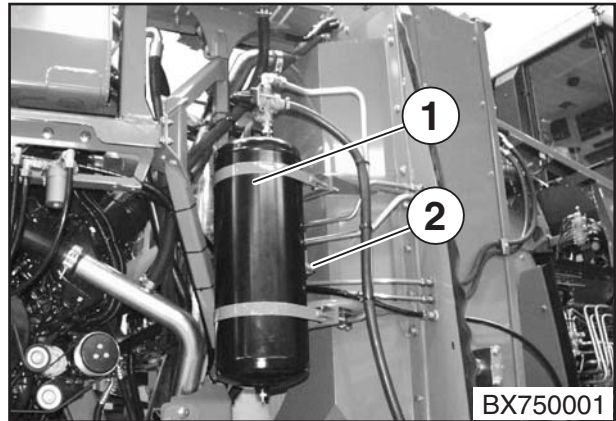
9.13.1 Compressed air storage tank

Condensation water settles in the compressed air storage tank (1). The condensation water may cause malfunctions.

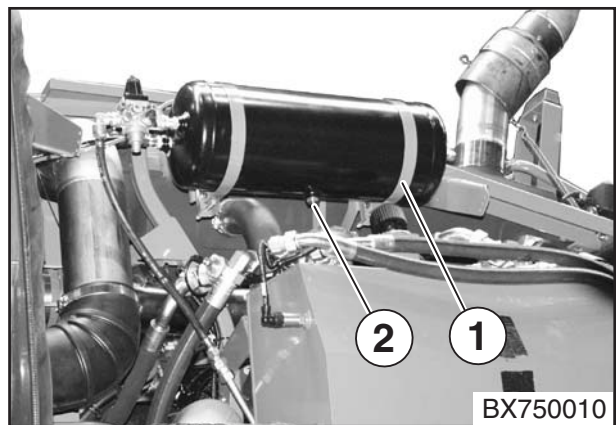
Drain the condensation water once a week.

- Use the drain valve (2) to drain the condensation water collected in the compressed air storage tank (1) into a container.

BiG X 700 -1



BiG X 850 -1, BiG X 1100 -1



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 - 65) 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

- | | |
|--|--|
| <p>A Compressor
on the right-hand side on the engine in direction of travel, driven by V belt</p> <p>B Capacitor
behind the radiator screen in the machine compartment</p> <p>C drier/collector
behind the radiator screen in the machine compartment – bottom right</p> <p>D Evaporator
in the cab roof</p> | <p>E Manometric switch
on drier</p> <p>F Expansion valve
at the evaporator inlet</p> <p>G Air conditioning/heating rotary switch
in cab, roof panel</p> |
|--|--|

9.14.3 Data sheet of refrigerant R134a (extract)

Refrigerant R 134a:	
Chemical designation:	1,1,1,2-tetrafluoroethane
Chemical formula:	CH ₂ FCF 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 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.



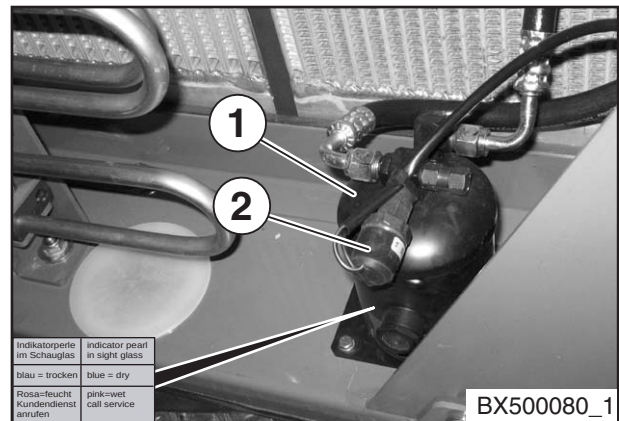
Nonetheless, the refrigerant must not be drained; it must be collected at a recycling plant. For this reason do not sever any connecting pipes. Have maintenance and repair work on the air conditioning system carried out only by your Krone dealer with a suitable disposal and recycling equipment.

9.14.6 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).



9.14.7 Fresh air fan and circulation mode (cabin)

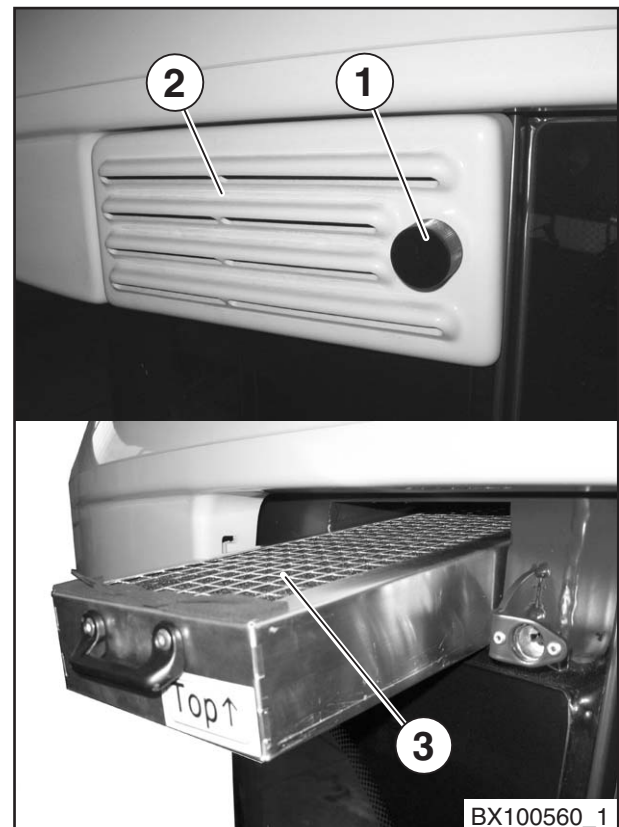
Fresh air fan

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.



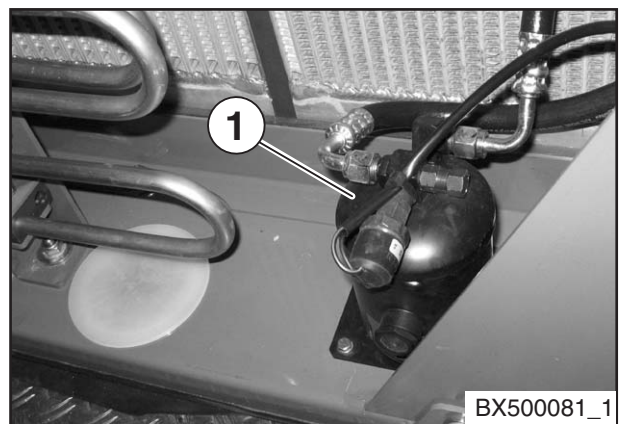
9.14.8 Collector/Drier



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 $p \times l$.



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.

9.14.9 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).



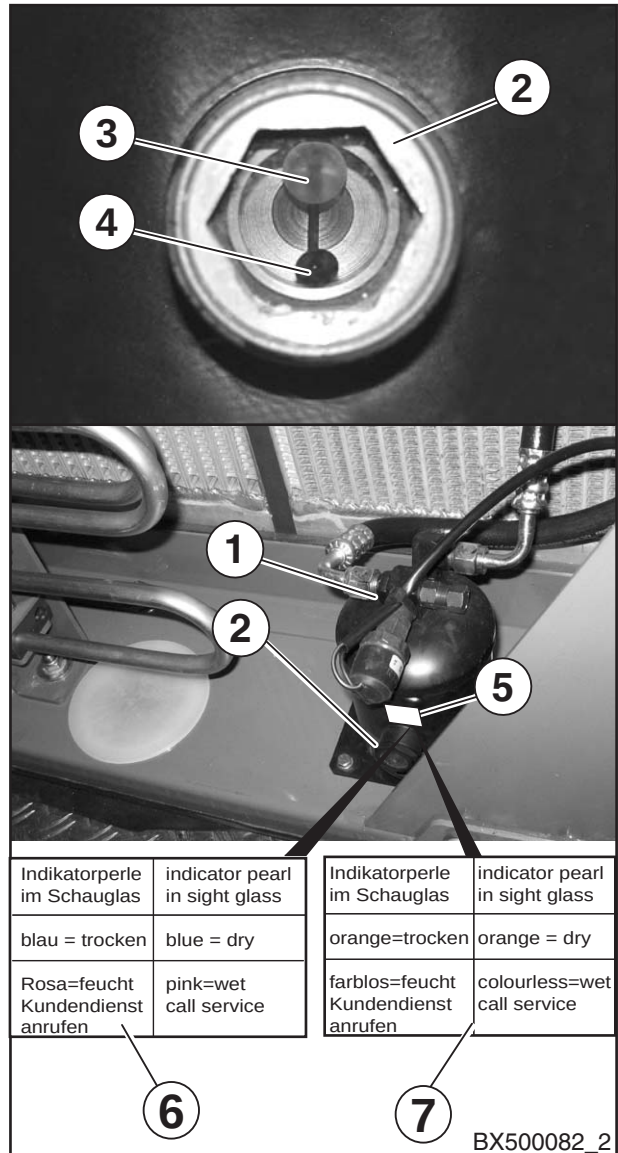
Observe the notice on the sticker (5) on the dryer (1).

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)

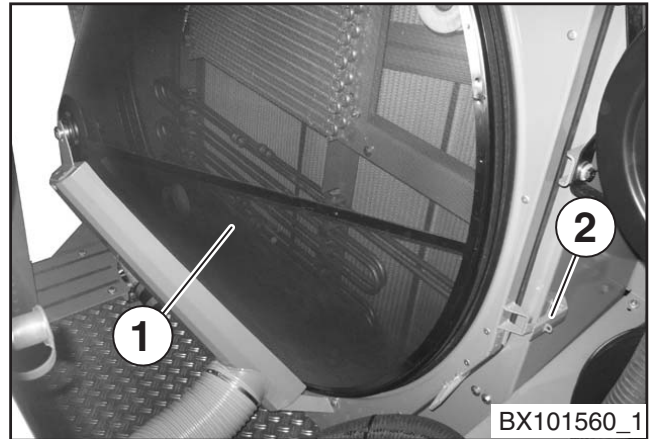


9.14.10 Capacitor

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.

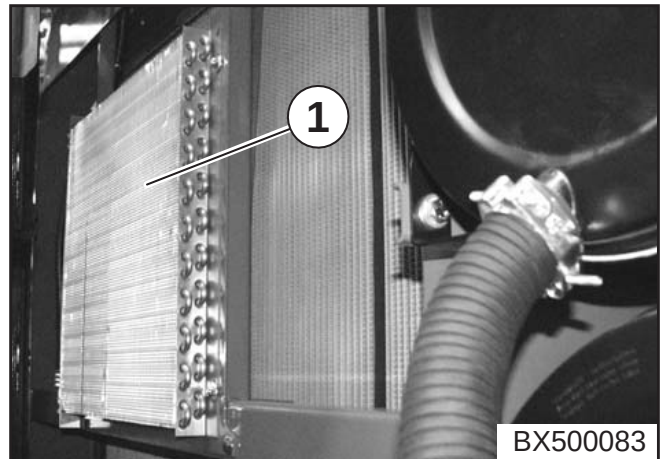
Opening the radiator screen

- 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 (BEKA-MAX)

Lubricant fill

Hydraulic-type lubricating nipple

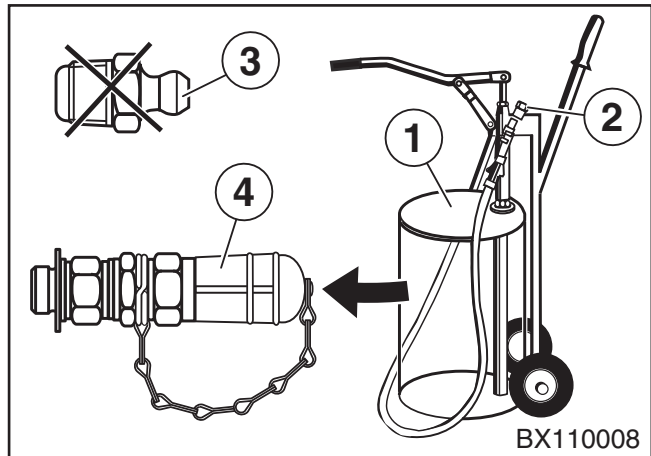
The lubricant is filled through the hydraulic-type lubricating nipple (1) by means of a commercially available grease gun.

- 1 - Hydraulic-type lubricating nipple
- 2 - Additional Mounting Connection



Fill coupling

- Remove the lubricating nipple (3) and replace by filler neck 27 001 594 0 (4).
- The coupling box 27 001 595 0 (2) must be fitted to the filling pump (1).



Filling cylinder

- Remove the M20x1.5 closure screw (3) and replace by filler socket 940 392 0 (2).
- For filling remove the protective cap on the socket (2) and the filling cylinder 940 393 0 (1).



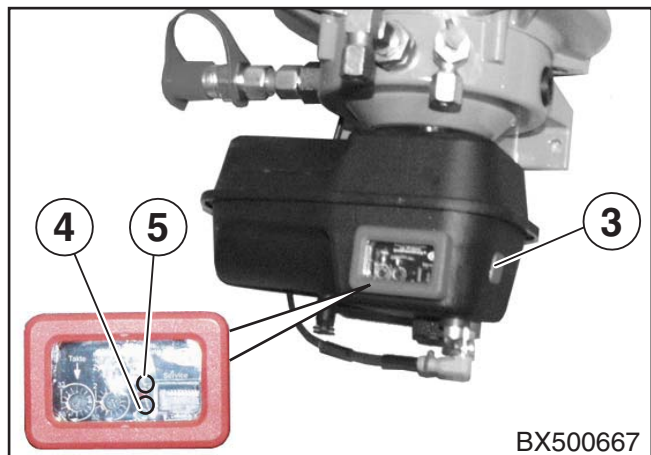
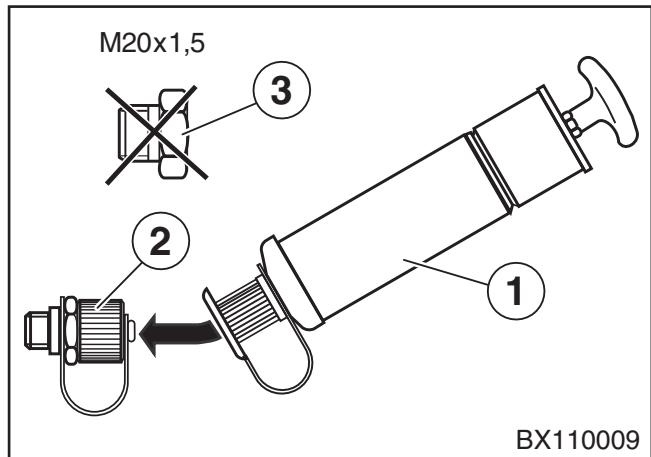
Use clean lubricant with a suitable tool only!
Soiled lubricants will lead to severe system failures!

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

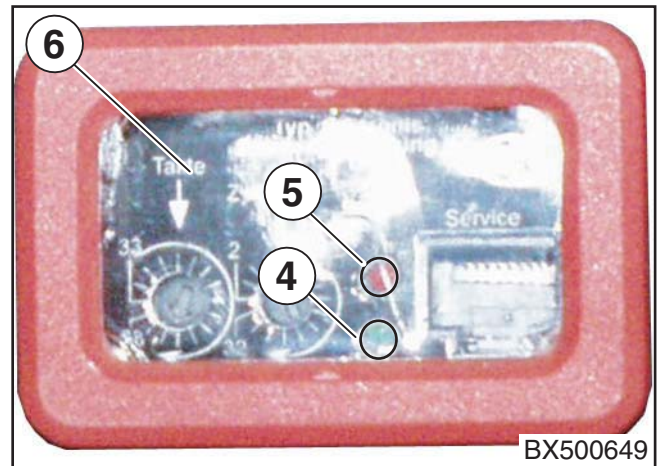
- By pressing the interim lubrication button (3), the pump will restart a lubrication sequence.

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

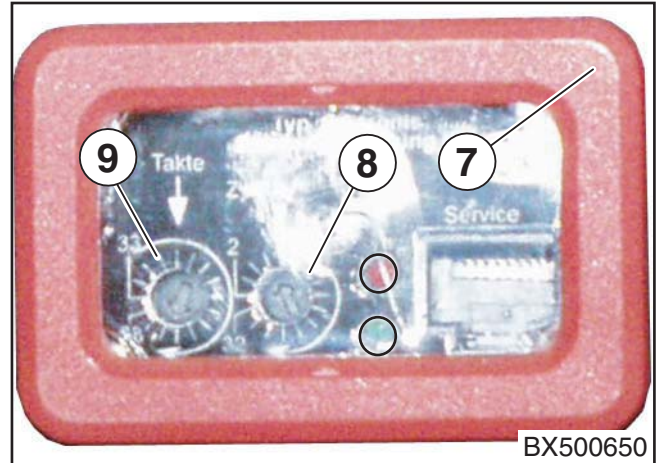
LED	Signal display	Description
Red green	ON Ready for operation: 1.5 sec. OFF ON OFF	Display of functional readiness
Red green	ON OFF ON During the entire lubrication process OFF	Program run of a lubrication process
Red green	ON 1 sec. OFF 1 sec. ON OFF	Cycle error on the progressive distributor
Red green	ON Until the lubricant reservoir is re-filled OFF ON OFF	Error grease level; grease level too low
Red green	ON 1 sec. OFF 1 sec. ON OFF	Error pump motor speed
Red green	ON 0.5 sec. OFF 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: 8 min

Lubrication duration: 34 cycles

Before making any changes to settings, note the following instructions:

- To increase the amount of grease, increase the number of cycles per lubrication cycle.
- To reduce the amount of grease, reduce the number of cycles per lubrication cycle.



The change in the amount of grease is about 3% for each cycle more or less.

Example:

- With a setting of 33 cycles, lubricating grease consumption is reduced by 3%.
- With a setting of 48 cycles, lubricating grease consumption is increased by 42%.

Adjusting the amount of grease by the cycle time is not recommended.

Grease level control



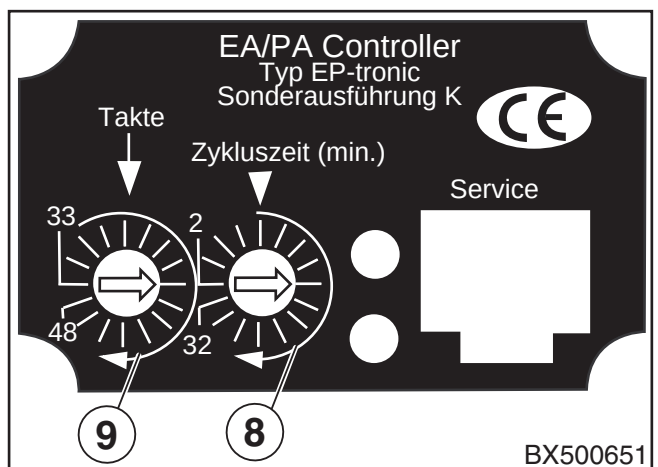
As long as enough grease is available in the reservoir of the pump, the proximity switch that is installed in the reservoir transmits a signal to the control system. If the grease level drops below minimum, the proximity switch will turn off the signal.

If the grease level drops below the minimum:

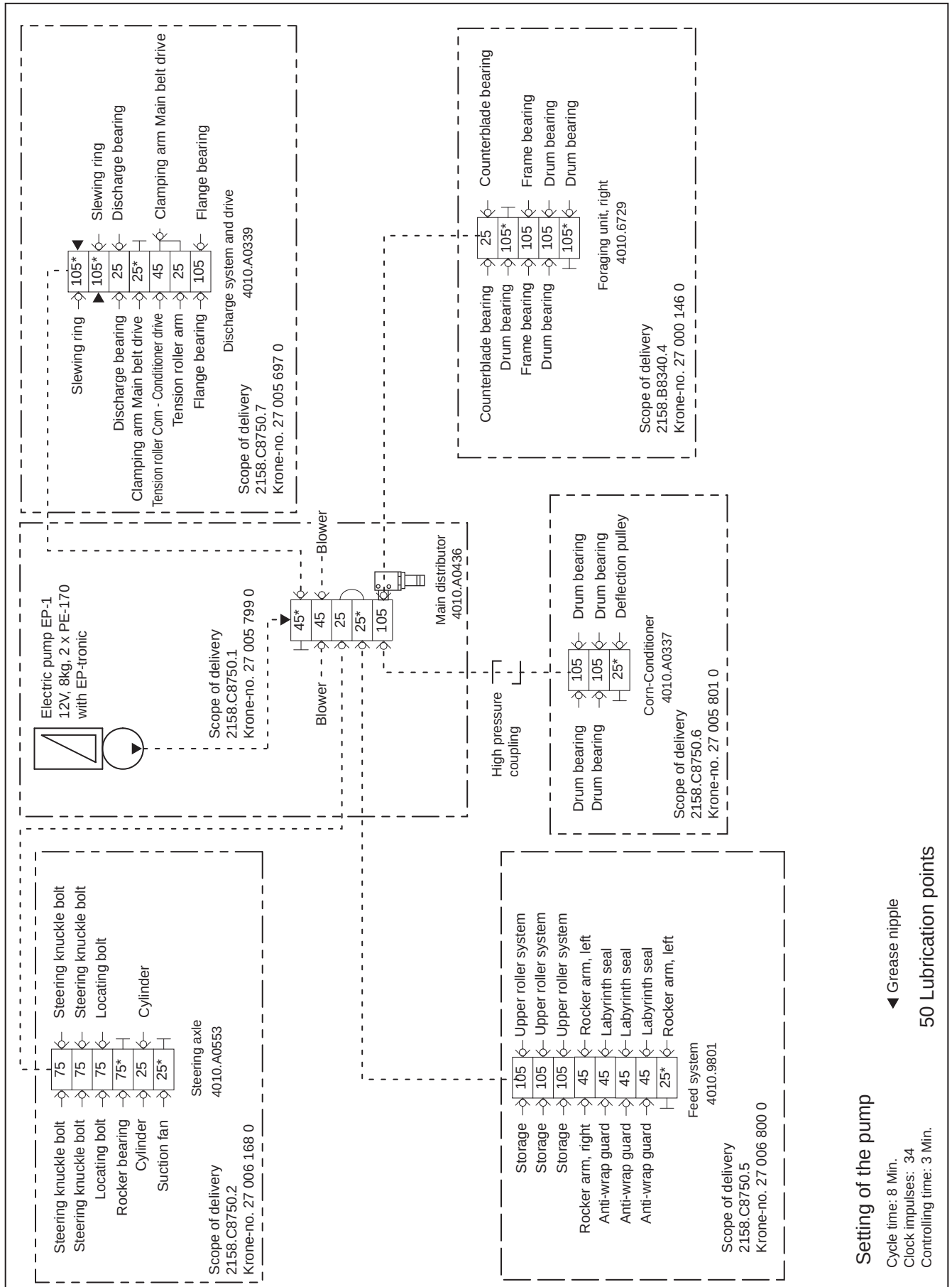
- the control system will switch off the pump.
- the red LED in the viewing window of the control system on the protective motor housing of the pump or a possibly installed red signal lamp lights up.
- Top up grease (refer to "Lubricant fill").
Once a sufficient grease level has been established, the control system automatically starts to work again.



The reduction of the quantity of lubricant is not recommended, as serious damage to the machine can arise. In this case, the warranty will be void.



Overview lubrication system BEKA-MAX



Jam in the system or at a connected lubricating point

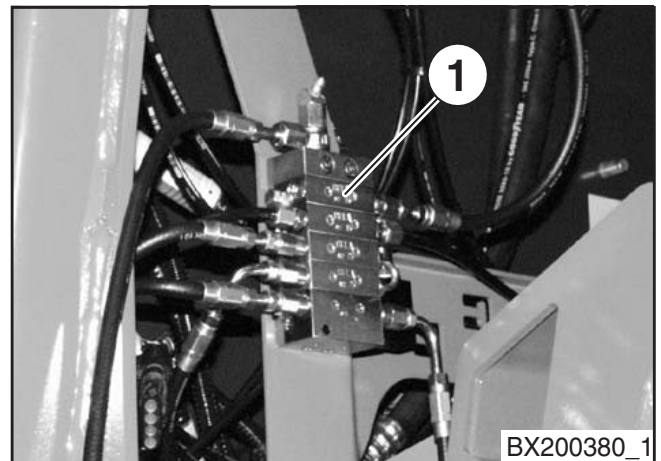
Troubleshooting

- 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.

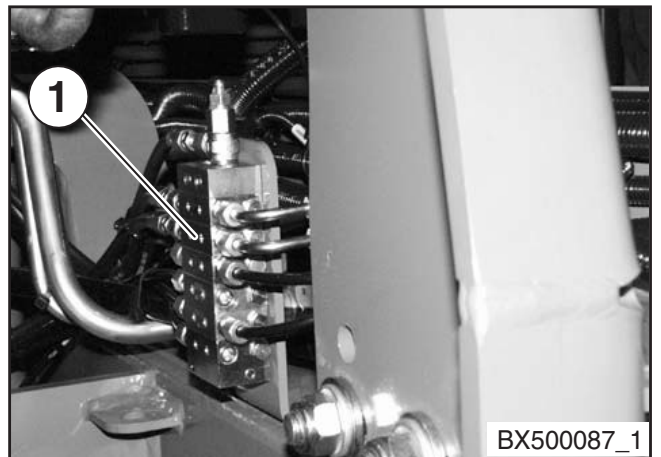
- Unscrew the outlet screw connections of the blocked subdistributor.
If lubricant suddenly exits under pressure when unscrewing one of the outlet screw connections, the connected lubricating point is blocked.
If lubricant does not exit from any of the outlet screw connections, the main distributor is blocked.
Clean the blocked subdistributor or replace it.

- Remove the blockage at the lubricating point.

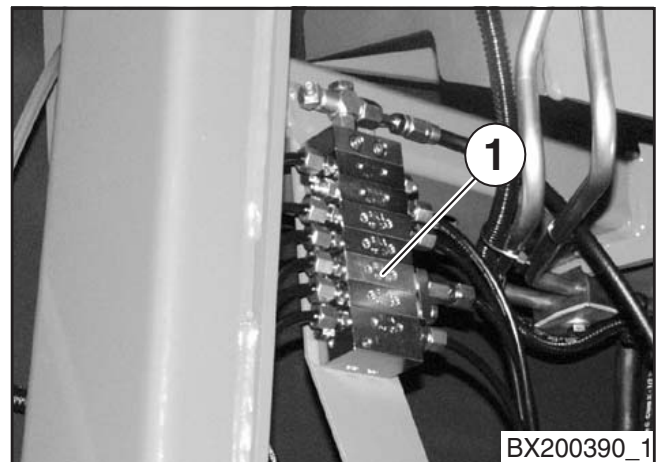
Main distributor (1)



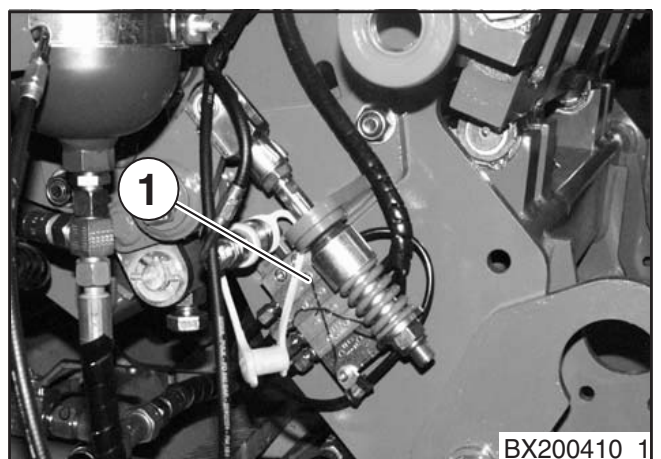
Auxiliary distributor, left steering axle (1)



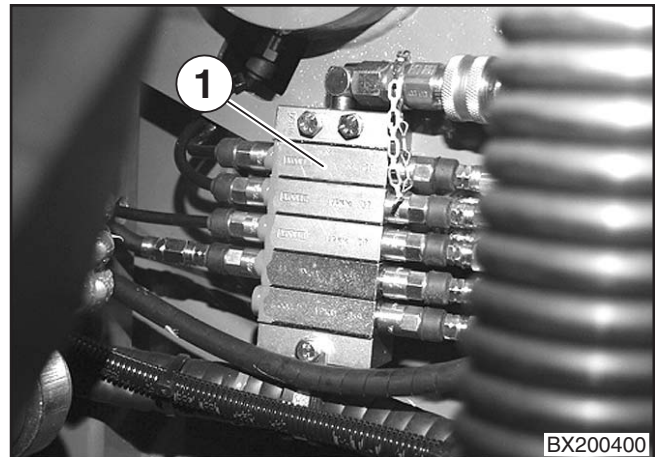
Auxiliary distributor for discharge system and drive (1)



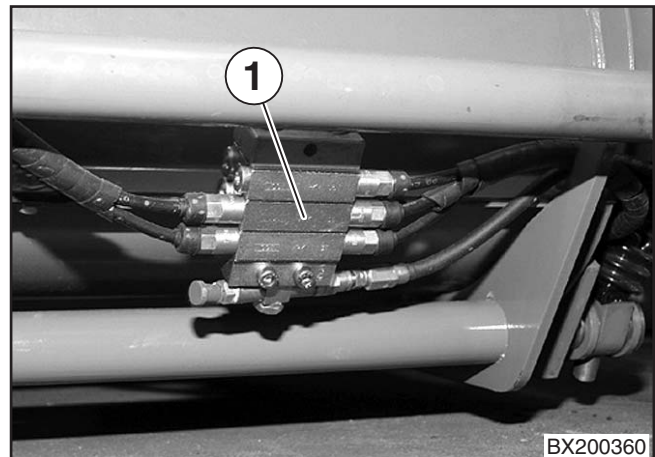
Auxiliary distributor, right foraging unit (1)



Auxiliary distributor, supply system (1)



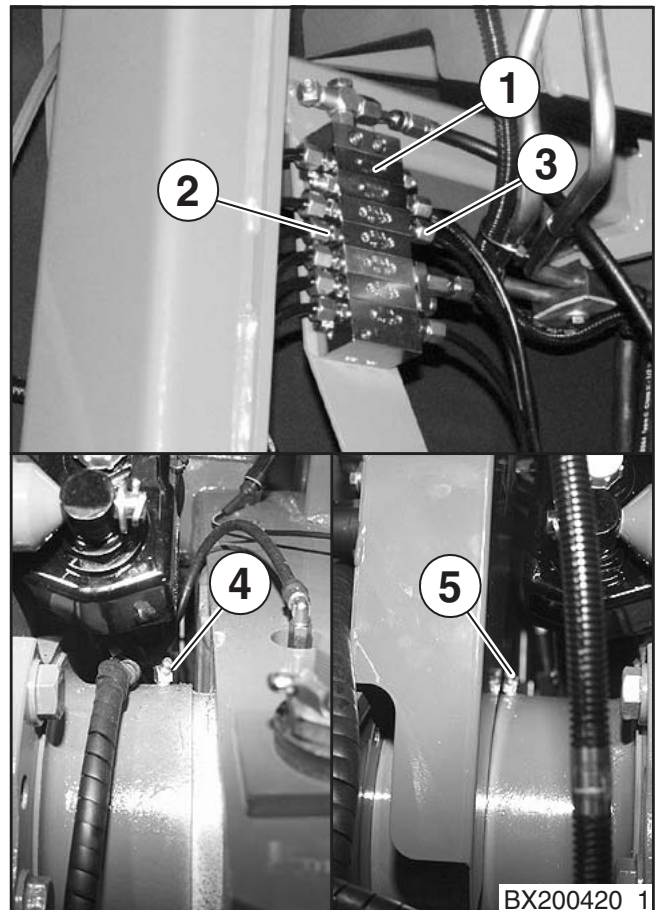
Auxiliary distributor, grain conditioner (1)



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 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 and 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, NLGI Class 2

Manufacturer	Type designation	With soap	Minimum operating temperature [$^{\circ}\text{C}$]
AGIP	Autol Top 2000	Spez. Ca	-10
ARAL	Long-term grease H	Li	-25
BEICHEM	High-Lub L4742	Li	-20
BP	Energearse LS EP 9346	Li	-25
	Energearse LS EP2	Li	-20
CASTROL	Spheerol EP L2	Li	-20
ESSO	Exxon Multi-purpose grease	Li	-20
ELF	ELF Multi 2	Li	-20
FINA	Multi-purpose grease EP	Li	-20
FUCHS	LZR 2	Li	-25
KROON OIL	Lithec Grease	Li	-10
MOBIL	Mobilux EP 2	Li	-15
Mobilgrease	MB 2	Li	-20
MOGUL	LV 1 EP	Li	-25
ÖMV	ÖMV Signum M283	Li/Ca	-25
OPTIMOL	Olit EP 2	Li	-25
SHELL	Retinax EP L2	Li	-20
TEXACO	Multifak EP2	Li	-15
TOTAL	Multis EP2	Li	-20
Zeller & Gmelin	Divinol Multi-purpose grease 2	Li	-20

Lubrication greases with fast bio-degradable times

ARAL	BAB EP 2	Li/Ca	-20
AVIA	Syntogrease	Li	-25
BEICHEM	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

9.17 Lubrication chart

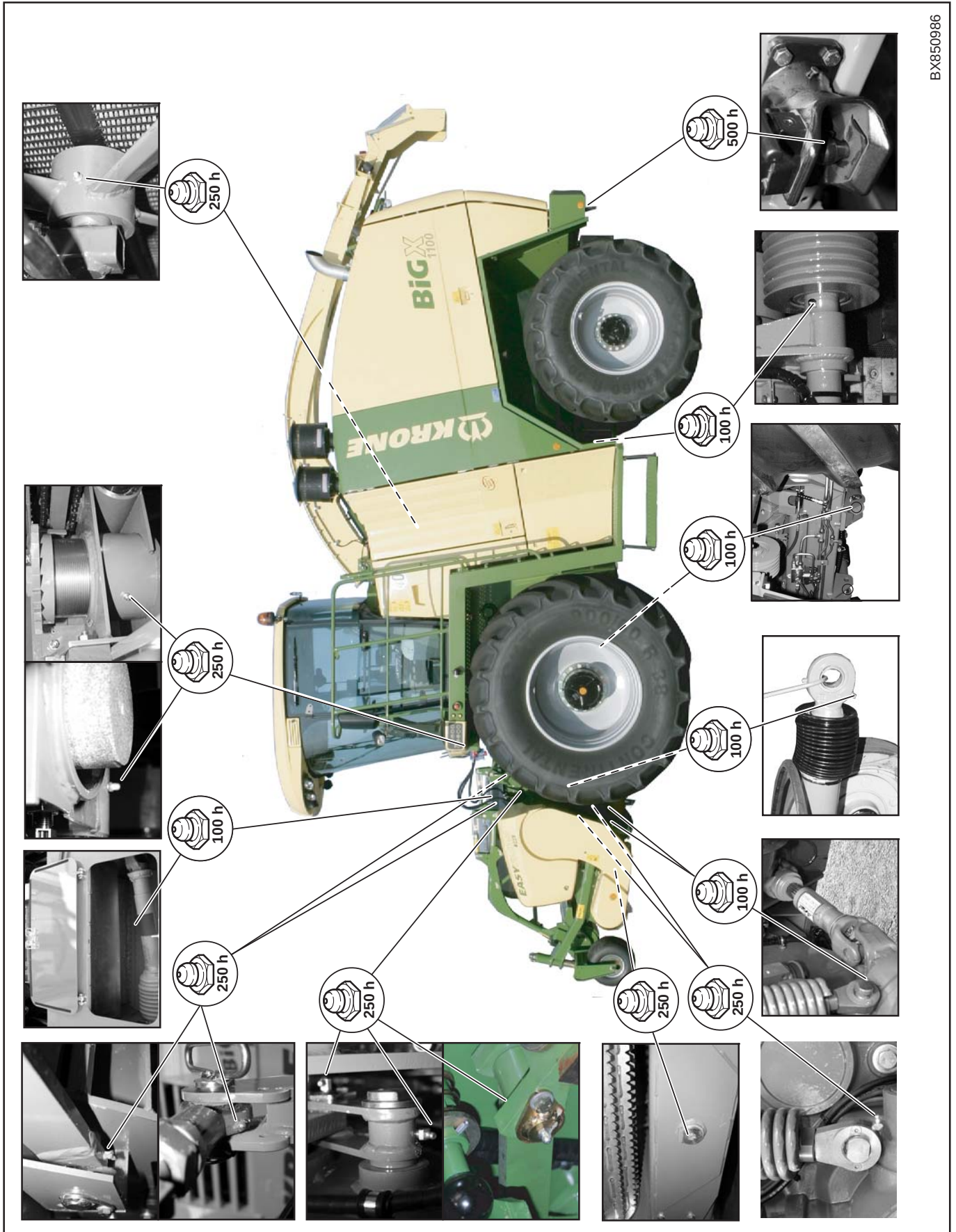
Lubricating points

- 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	250



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9.18 Periodic maintenance

9.18.1 Maintenance during the running-in period



For exact maintenance instructions for the engine, please refer to the MAN operating instructions included with delivery (section on maintenance work).

During the first 100 operating hours (running-in period)

- Carry out maintenance daily or after every ten operating hours (please refer to this chapter and to the „MAN operating instructions“).
- 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, select the oil viscosity according to seasonal requirements and the instructions in the MAN consumables list.
- 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.

9.18.2 Every 10 operating hours

- Engine – Check the oil level.
- Engine – Check the coolant level.
- Engine – Check air filter contamination.
- Drain condensation water from the fuel filter and preliminary filter.
- hydraulic system level check
- tyres
- check of the pilot lamps
- light functions

9.18.3 After the first ten operating hours only

- Tighten the fastening screws of the track rod.

9.18.4 Up to the first fifty operating hours

- Retighten the wheel lug nuts.
(Tightening torque see chapter "Wheel mounting").
- Engine – Check V-belt tension and retighten or replace if necessary.
- Engine – Check loose connecting elements to make certain they are securely seated and retighten them if necessary.
- Engine – Check valve play and adjust if necessary.
- Clean the fuel prefilter.
- Drain the engine oil from the crankcase, and fill new engine oil.
- Replace the engine oil filter.

9.18.5 Every 100 operating hours

- Lubrication in keeping with the lubricating chart (fill lubricating grease until it penetrates at the lubricating point).

9.18.6 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.
- Change gearbox oil wheel drive front/rear.

9.18.7 Every 250 operating hours

Includes the work listed under "Every ten operating hours".

- Retighten the wheel lug nuts.
(Tightening torque see chapter "Wheel mounting").
- 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.
- 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.

9.18.8 Every 500 operating hours

Includes the work listed under "Every ten operating hours".

- Engine – Check V-belt tension and retighten or replace if necessary.
- Engine – Check loose connecting elements to make certain they are securely seated and retighten them if necessary.
- Engine – Check valve play and adjust if necessary.
- Drain the fluid of the hydraulic system and replace with new fluid.
- Clean the fuel prefilter.
- Change the gear oil of the central gearbox.
- Replace the fuel filter.
- Drain the engine oil from the crankcase, and fill new engine oil.
- Replace the engine oil filter.
- Clean the mechanical oil delivery pump..
- Clean the mechanical fuel delivery pump.
- Service and clean the air filter or replace it if necessary (earlier than specified if necessary).

9.18.9 Every 1000 operating hours

- Engine – Use the MAN-Cats testing and programming system to read errors from EDC (electronically controlled diesel injection) and MFR (engine guidance computer). Eliminate errors and delete them from memory (see MAN operating instructions).
- Engine – Perform compression test and start-up test.
- Engine – Check connecting elements that can be loosened and cable harness for damage and repair if necessary.
- Change the gearbox oil of the central gearbox (or once a year).

9.18.10 Every 1500 operating hours

- Replace the dry air filter insert and the safety element of the air filter.

9.18.11 As required

- Replace both air filter elements.
- Replace the cab air filter.
- Clean the preliminary filter.
- Replace the hydraulic oil filter.
- Replace the fuel filter.
- Clean the batteries.

9.18.12 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.

9.18.13 Every two years

- Have the coupling elements of the main drive train checked.
- Engine – Replace coolant

9.19 Silage Agent System (Optional)

9.19.1 Special Instructions for Using Silage Agents



The silage agent system cannot be used for all silage agents without restrictions.



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 9.19.2).

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 9.19.2).



Silage agent solutions containing fine particles can be used conditionally in the system if cleaning is performed according to specifications (see Section 9.19.2).

9.19.2 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

9.19.3 Dosing quantity of the Silage Agent System

The dosing quantity (l/min) is specified by the nozzle

Sparep. No.	colour coding	Dosing quantity on 1,8 bar
940 512 0	nozzle orange	0,66 l/min
940 515 0	nozzle red	0,93 l/min
940 517 0	nozzle blue	1,88 l/min

9.20 Cable Winch

9.20.1 Replacing the Cable Winch



Danger to injuries!
Never step under suspended loads.

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

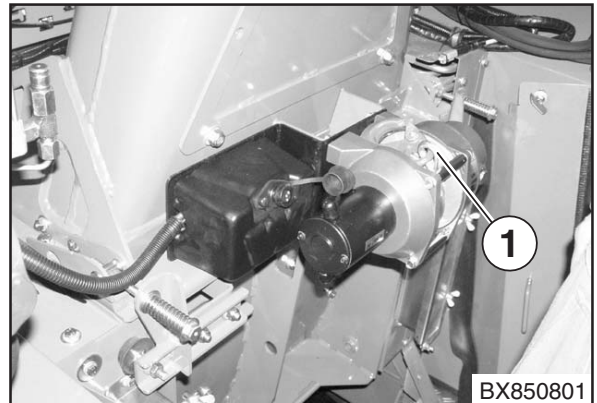


The rope must be mounted so that it coils and uncoils between the rope coil and the base plate. Otherwise the winch will not work.



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.



9.21 Trailer Coupling

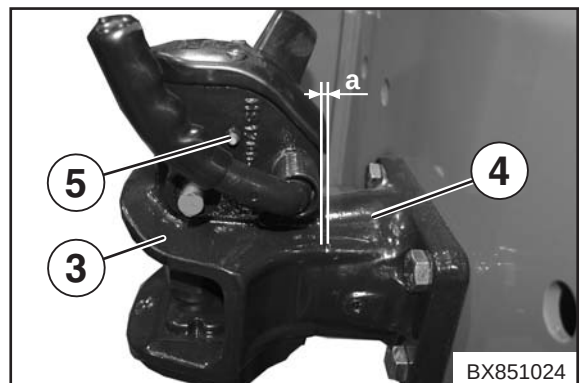
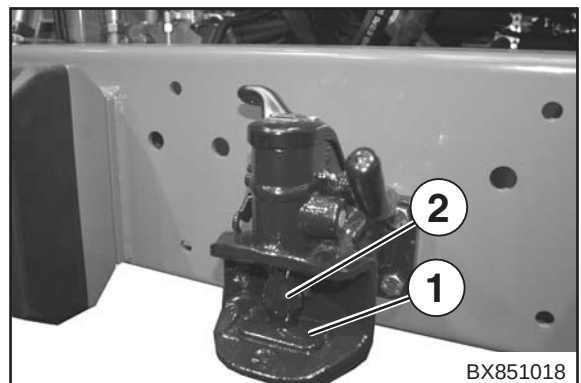


Danger to life or serious injuries!
• **Make sure the trailer is secured against rolling away.**

- Check the thickness of the wear plate (1) regularly. As soon as the wear plate (1) is less than 6 mm, it has to be replaced by an authorised workshop.
- Measure the diameter on the thickest point of the coupling bolt (2). As soon as the diameter is less than 37 mm, the coupling bolt (2) has to be replaced by an authorised workshop.
- If the coupling gap is worn out more than 1.5 mm or the gap (a) is larger than 3 mm on any point between connecting jaw (3) and coupling support (4), then the trailer coupling has to be replaced.
- Check the rotatability of the connecting jaw (3) every three months.

If the connecting jaw (3) is sluggish:

- Unscrew screw (5).
- Lubricate the grease nipple (6).
- Turn the connecting jaw (3) one rotation and tighten the screw (5) with a torque of 35-50 Nm.



9.22 Maintenance schedule

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 3 rd 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	Gear oil Mobil SHC 630	Viewing glass
5	transfer gearbox	x		x				As needed	Gear oil Mobil SHC 630	Filling level screw
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	Quantities/lubrication oil Diesel Engine see Sect. 9.6							See accompanying documents (MAN)		Measuring rod
3										
4	gear of power take-off					x		approx. 13.5 l / 23 l	Gear oil Mobil SHC 630	Viewing glass
5	transfer gearbox					x		approx. 8,0 l	Gear oil Mobil SHC 630	Filling level screw
7	Wheel gearboxes, front/rear					x		approx. 3,0 l/ approx. 1,5 l	SHELL SPIRAX S4 CX 50	Filling level screw
8	lower roller gear					x		approx. 5,0 l	Gear oil API-GL5-SAE85W-90	Filling level screw
9	lower roller gearbox, upper tower					x		approx. 1,6 l	Gear oil API-GL5-SAE85W-90	Filling level screw
10	upper roller gear					x		approx. 3,6 l	Gear oil API-GL5-SAE85W-90	Filling level screw
11	tower gearbox					x		approx. 1,0 l	Gear oil API-GL5-SAE85W-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

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10 List of parameters

Parameter BiG X 700/I, 850/I, 1100/I

Software-Version: 150 200 104-27

Driver

Dated: 2012/11/15

Legend:

"r" = allowed to read

"w" = allowed to write

Color black = not modified

Color blue = deleted

Color green = new

Color red = modified



Joystick

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
25227	Joystick turn discharge chute mode 2nd stage 0=Joy	rw	0	1	1	1	0			Setting as the second stage of the joystick to rotate the AWB should be treated. 0 = the speed in both stages is dictated by the lever on the joystick. 1 = The rate for the second stage is given by parameter 25215.

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front attachment

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
25476	Minimal rpm front attachement 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 at 0 km/h. If the set speed on the terminal is greater than this, the set speed is actuated on the terminal.
25477	Front attachment rpm dynamic rpm differenz per km/	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.
25478	Front attachment rpm dynamic active 0=OFF, 1=maize	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.
25634	Front attachment forward only XDisc 1=Front attach	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.



Feed drive

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
25626	Maize reduce speed feed drive path drive in	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 speed feed drive time drive out	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 value reduce speed feed drive drive in/out	rw	50	100	100	0	%	The speed will be reduced less.	The speed will be reduced more.	Reduced speed for lifted XDisc.

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RockProtect

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
27500	RockProtect Sensitivity 0=Insensitive, 100%=Very s	rw	0	100	50	0	%			Sensitivity from the RockProtect . 0% ==> RockProtect deaktiv, 100 % ==> more Sensitivity from the RockProtect.



Humidity measurement

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
30043	Correction offset	rw	800	1200	1000	0				
34019	Humidity measurement type (0= nor Sensor or Harves	rw	0	2	0	0				



Main Drive

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
33440	Offset correction 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 correction 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 correction 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.

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Chute

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
33480	Discharge chute check park. pos. active 0=OFF, 1=R	rw	0	2	1	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 (independent of release switch Field and Transmission).

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Grass mode / EasyFlow

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
33482	Holding-dwn dev. automatic 1=On, 2=OFF	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.
34051	Lifting gear Position 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	Manual speed 1 raise lifting gear 1=slow, 20=fast	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	Manual speed 2 raise lifting gear 1=slow, 20=fast	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	Manual speed 1 lower lifting gear 1=slow, 20=fast	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	Manual speed 2 lower lifting gear 1=slow, 20=fast	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
34075	Raise lifting gear when reversing travelling gear	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

Parameter BiG X 700/I, 850/I, 1100/I

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
34076	Pendulum frame float position auto with header con	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	Pendulum frame horizontal automatic with lifting g	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	Front attachment fold automatic 1=Automatic, 0=Ma	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	Active lateral levelling deact. 1=deactiv, 2=activ	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 activate adaptation to ground contours)

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Grinding

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
33495	Maximum rpm maintenance 40 - 36 blades	r	1100	1700	1100	0	UPM	The maximum speed is decreased.	The maximum speed is increased.	Maximum revolutions of diesel engine that can be set in field operation and with maintenance switch on with 40-36 blades.
33499	Max.rpm maintenance 28 blades	r	1100	1700	1100	0		The maximum speed is decreased.	The maximum speed is increased.	Maximum revolutions of diesel engine that can be set in field operation and with maintenance switch on with 28 blades.
33504	Max.rpm maintenance 10-20 blades	r	1100	1700	1100	0		The maximum speed is decreased.	The maximum speed is increased.	Maximum revolutions of diesel engine that can be set in field operation and with maintenance switch on with 10-20 blades.
33657	Grinding stone adaption	rw	1	2	1	0				The number how much the grinding stone in the complete grinding cycle with the adaption readjusted. A grinding cycle means the complete moving to the left side and return to the right side to the beginning. 1 = only one Grinding stone adaption (left or right) 2 = two Grinding stone adaptations (left and right).
34014	Grinding stone adaption number teeth	rw	1	100	36	0				The number of teeth from the grinding stone adaption: 24 teeth ==> Year of Manufactory till 2009 36 teeth ==> Year of Manufactory from 2010



Diesel engine

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
33515	Power mode diesel engine road (2=X-Power 3= EcoPow	rw	2	3	3	0				Setting, witch Parameterset for the intermediate speed control parameter is set for the MAN diesel engine. 2=X-Power ==> full power in street mode, 3=EcoPower ==> reduced power.
33516	Auto PowerSplit (0 = off, 1 = on)	rw	0	1	0	0				Automatic adjustment of the engine power mode.
33517	Power mode diesel engine maize/X-Disc (2=X-Power	rw	2	3	2	0				Setting, witch Parameterset for the intermediate speed control parameter is set for the MAN diesel engine. 2=X-Power ==> full power in maize/X-Disc 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 parameter is set for the MAN diesel engine. 2=X-Power ==> full power in grass mode, 3=EcoPower ==> reduced power.
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.



Metal detection

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
33611	Time control horn with metal/stone recog.	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.



Shearbar

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
33614	Mot. counterblade 2nd 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 Motor counterblade left down	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 Motor counterblade left up	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 Motor counterblade right down	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 Motor counterblade right up	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)



Common working functions

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
33651	Blow valve Feed drive off time	rw	1	3600	600	0	s			The time interval in which the blow valve Y73 (engine space/intake cleaning compressed air) is activated.
33652	Blow valve Feed drive on time	rw	0	600	5	0	s			The duration how long the valve Y73 (engine space cleaning/intake compressed air) is activated.
33765	Blow valve engine on time	rw	0	600	5	0				The time how long the blow valve Y109 (engine space cleaning compressed air) is activated.
33766	Blow valve engine off time	rw	1	3600	600	0				The time how long the blow valve Y109 (engine space cleaning compressed air) is deactivated.
34005	Info messages 1=all ON, 2=All OFF, 3=important inf	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)

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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	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.



AutoScan

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
34020	AutoScan settings in terminal expert mode 1=Expert	rw	0	1	0	0				Setting, whether the advanced settings in the AutoScan mask should be available.



Maize mode / EasyCollect

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
34251	Lifting gear Position 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.
34275	Raise lifting gear when reversing travelling gear	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	Pendulum frame float position auto with header con	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. http://truckmanuals.hilb.com/
34277	Pendulum frame horizontal automatic with lifting g	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	Front attachment fold automatic 1=Automatic, 0=Ma	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	Active lateral levelling deact. 1=deactiv, 2=activ	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)



XDiSC mode

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
34451	Lifting gear Position 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.
34475	Raise lifting gear when reversing travelling gear	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	Pendulum frame float position auto with header con	rw	0	1	1	0				http://truckmanuals.de/ 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	Pendulum frame horizontal automatic with lifting g	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	Front attachment fold automatic 1=Automatic, 0=Ma	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	Active lateral levelling deact. 1=deactiv, 2=activ	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)

gelöscht / deleted

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
31027	AutoScan LED type		0	1	1	1	0			AutoScan LED type. 0 = 200802871, 1 = 200802872.



List of parameters

A-1 Operation of the Internal Silage Agent System



Note

Prior to initial operation of the silage agent system, read these Operating Instructions carefully and observe the safety instructions for safe use.



CAUTION!

In case of abnormal handling, the chemicals used in the silage agent system can cause damage to health.

- The silage agent system may only be operated by persons who are familiar with these Operating Instructions and the silage agent manufacturer's safety data sheet. The safety instructions issued by the silage agent manufacturer must be observed.
- The operating personnel must be instructed in the safe handling of the chemicals used.

1.1 Technical Data

System	
Drive:	electrical 12 V d.c. voltage
Max. power consumption	8 A
Pump head material, external	Polypropylene (PP)
Pump head material, internal	Viton, Santoprene
Bypass idle pressure	3.15bar
Max. liquid temperature	77°C
Delivery rate (discharge chute injection point):	0.5 - 3.2 l/min 30 - 192 l/h
Max. suction height:	3.1 m
Type of application / Duration	Continuous operation
Max. motor temperature	65°C

Flow sensor	
Material	Ryton / PVDF
Temperature range	-10 °C to +100 °C
Measuring range	0.1235 l/min to 8.3893 l/min

Nozzle				
	Outlet bore [mm]	Volume flow [l/min]		
		0.2 bar	1 bar	4 bar
TK-SS7.5	2.3	1.5	3.4	6.8

Appendix

1.2 Operation of the Internal Silage Agent System

The following prerequisites must be met for operating the silage agent system:

- Quick-stop switch – panel: OFF
- Quick-stop switch – manual operation: OFF
- Road/field switch: ON

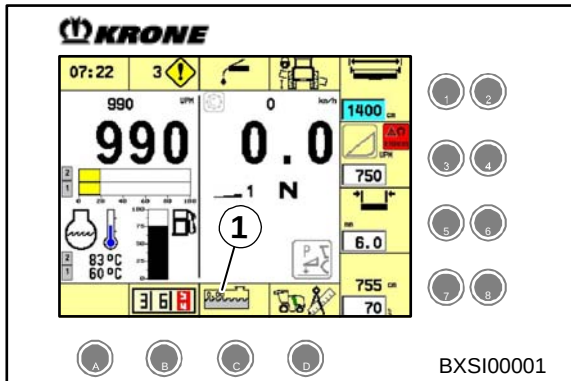


Fig. 1

If an internal silage agent system has been set, an additional display (1) is shown in the main screen. This additional display provides information on the current silage agent throughput rate in l/min.

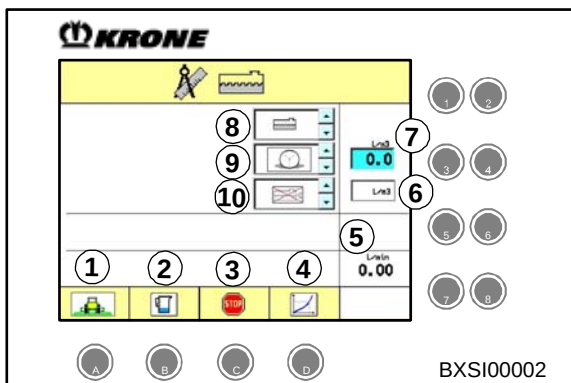


Fig. 2

- Press the Terminal button  in the main screen. The setting options available for the internal silage agent system are displayed:

- 1 Button : Finish the settings and call up the main screen
- 2 Button : Calibrate the internal silage agent system
- 3 Button : Cancel the currently executed function of the silage agent system
- 4 Button : Record the characteristic line of the silage agent system
- 5 Current silage agent throughput rate in L/min
- 6 Unit of silage agent dosing
- 7 Silage agent dosing
- 8 Define the status of the silage agent system
- 9 Define the flow sensor status
- 10 Activate/deactivate the fill level indicator of the silage agent system (optional)

1.3 Calibration of the Internal Silage Agent System

The silage agent system should be calibrated prior to each use in order to achieve maximum precision.



CAUTION!

In case of abnormal handling, the chemicals used in the silage agent system can cause damage to health.

- The safety instructions issued by the silage agent manufacturer must be observed.

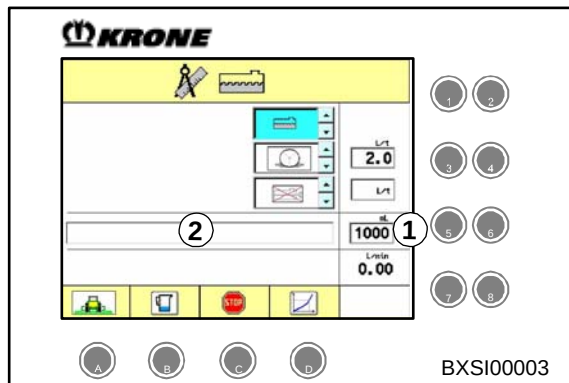


Fig. 3

1. Press the  button to switch off the silage agent system .
2. Remove the quick-release coupling from the hose of the silage agent system.
3. Switch to Permanent mode (see Chap. "Permanent Mode") and operate the system in this mode until the liquid leaks from the quick-release coupling.
4. Press the  button to switch off the silage agent system.
5. During calibration, collect the liquid in a measuring cup (min. 2 litres).
6. Press the  button to start the calibration. Use a measuring cup to collect the liquid leaking from the quick-release coupling.
The calibration process stops automatically as soon as the progress bar (2) has reached 100%.
7. In the field (1) which pops up, enter the silage agent quantity collected in the measuring cup in millimetres and then press the rotary potentiometer to confirm your entry. The calibration is now complete.



Note

The calibration can be cancelled at any time by pressing the  button.

Appendix

1.4 Recording the Characteristic Line

The characteristic line can only be recorded by means of an existing flow sensor.

The characteristic line should be recorded after each change to the silage agent system (e.g. changing the injection point or nozzle) or silage agent.

The quick-release coupling must not be opened whilst the characteristic line is recorded.



CAUTION!

In case of abnormal handling, the chemicals used in the silage agent system can cause damage to health.

- The safety instructions issued by the silage agent manufacturer must be observed.

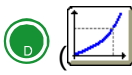


Note

Collect any silage agent escaping whilst the characteristic line is recorded and dispose of it correctly.

- Switch to Permanent mode (see Chap. "Permanent Mode") until liquid leaks from the nozzle.

- Press the  button to switch off the silage agent system.

- Press the  button to start the recording of the characteristic line.
The characteristic line record is terminated automatically after approximately 1 or 2 minutes.



Note

The characteristic line record can be cancelled at any time by pressing the  button.

1.4.1 Usage

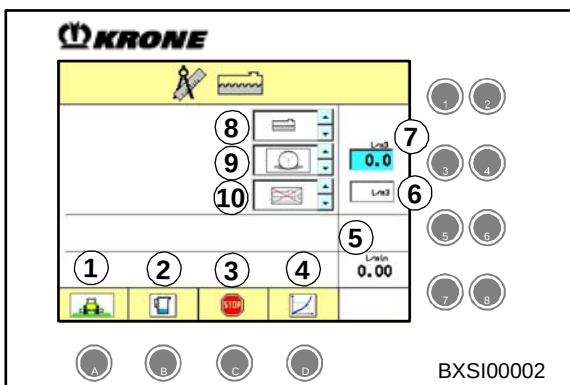
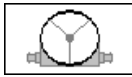
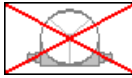


Fig. 4

The flow sensor monitors the flow of silage agent through the silage agent system. If the flow sensor is not ready for use, it must be switched off in the settings of the silage agent system (input box 9).

To set the flow sensor status:


Flow sensor existing



Flow sensor not existing

If the flow sensor status is set to Not Existing, the characteristic line of the last characteristic line record serves as a basis to control the pump.


Note

If the flow sensor status is set to Not Existing, the silage agent system cannot determine whether silage agent is actually pumped through. In this case it must be ensured that a sufficient quantity of silage agent is available in order to prevent the pump running dry (which can lead to damage of the pump).

Setting the Silage fodder addition mode (input box 8):

The following states are possible:



Silage fodder addition deactivated



Silage fodder addition permanently activated



Silage fodder addition Automatic mode

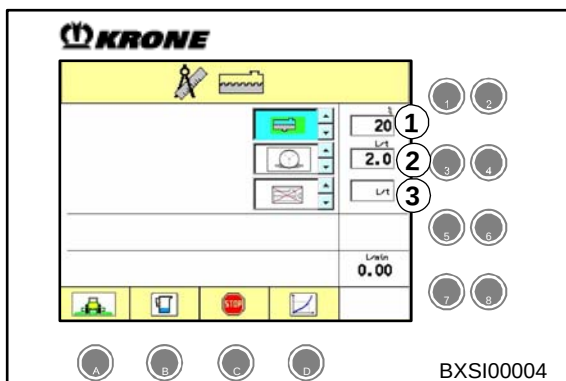
1.4.2
Permanent Mode


Fig. 5

In Permanent mode, the delivery rate of the silage agent pump can be directly adjusted via a displayed input box (1). The dosing information (input boxes 2 and 3) are not considered in Permanent mode.

The flow sensor monitors the flow of silage agent through the silage agent system. If the flow sensor is not ready for use, it must be switched off in the settings of the silage agent system (input box 9).

Appendix

1.4.3 Automatic Mode

In Automatic mode, the silage agent is dosed depending on the time or product throughput rate (only in combination with CropControl). Here, the pumping of silage agent is switched off whilst the machine does not cut.

The active pumping of silage agent is indicated by a green background colour in the status display.



Automatic mode active. Silage agent pumping inactive.



Automatic mode active. Silage agent pumping active.

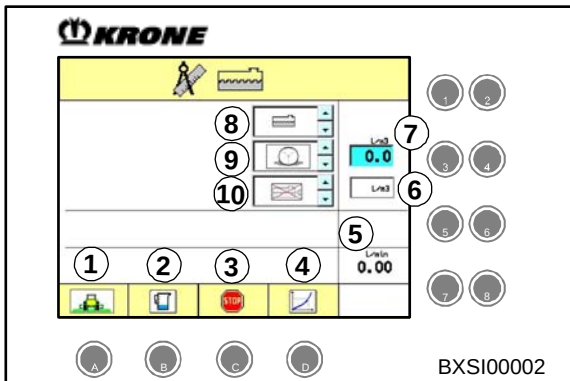


Fig. 6

In Automatic mode, the dosing of silage agents can be influenced by adjusting the entries in input boxes 6 and 7.

In input box 6, the unit for dosing the silage agents can be defined first.

The following settings are possible:

L/min	Litres per minute
L/t	Litres per tonne of product (only in combination with CropControl)
L/m3	Litres per cubic metre of product (only in combination with CropControl)

The required dosing of the silage agent system is determined on the basis of the value in input box 7 combined with the unit in input box 6.

The actual delivery rate must therefore be defined in input box 7. The setting in input box 7 can also be modified using the  and  buttons.



Note

The maximum delivery rate of the silage agent system must not be exceeded.

1.5 Error Messages

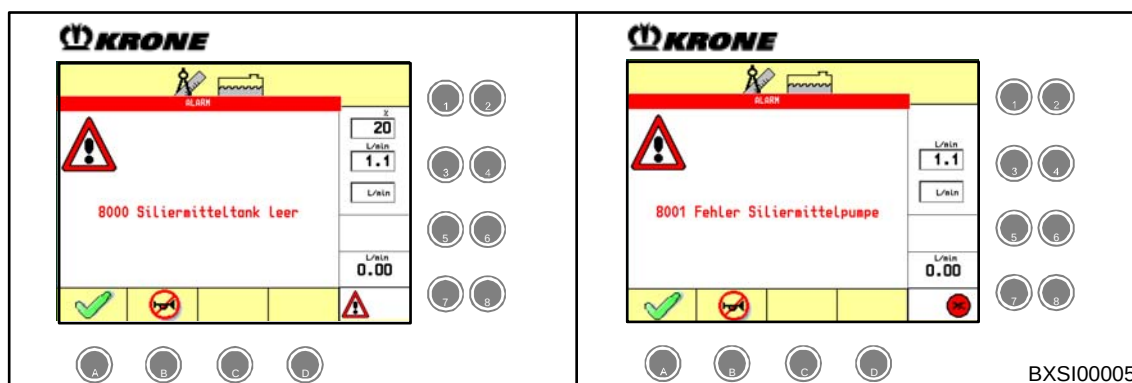


Fig. 7

The "8000 silage agent tank empty" error message can have the following causes:

- No silage agent in the tank
- The flow sensor is mechanically or electrically defective
- The electrical connections of the flow sensor are defective
- The pump mechanism of the silage agent pump is defective
- The intake pipe or the pump filter of the silage agent system is soiled
- The pressure pipe or the nozzle unit is soiled

The "8001 silage agent pump error" error message can have the following causes:

- Interruption of the pump electrics
- The cable harness towards the pump is damaged
- The power output of the job computer is overloaded and switched off
- Power supply failure (V2- KMC3)

Appendix

1.6 Cleaning and Maintenance



Danger! - When performing repair, maintenance or cleaning work on the machine , or in the case of technical intervention, drive elements may start moving.

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

- Switch off the engine and remove the ignition key.
- Secure the machine against accidental start-up and against rolling!
- The cutter blades can continue to rotate after the drive has been switched off. Only approach the machine once the work tools have come to a complete standstill!
- After completing maintenance work reattach all safety devices properly.
- Avoid skin contact with oil and grease.
- Seek medical help immediately should injuries caused by oil escaping under pressure occur.

The silage agent system must be cleaned after each use:

1. Empty the silage agent tank and fill it with 10 litres of clear water.
2. Afterwards, activate the pump in order to pump the water out of the silage agent system (see Chap. "Permanent Mode").



Note

The silage agent residues and the rinsing water must be disposed of properly (refer to the silage agent manufacturer's instructions in the separate Operating Instructions).

In case of poor flow rates, the pipe filter insert and the nozzle filter must be cleaned.



CAUTION!

Machine damage.

- The flow sensor must not on no account be cleaned with compressed air.



Note

The silage agent system must be stored in such a way that it is protected against frost damage in winter or filled with antifreezing agent.

A2 Error messages

Error descriptions BiG X 500-1100



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
1	1 overvoltage - SmartDrive	Error: SmartDrive supply voltage too high.	The controller of the dynamo is defective	While engine is running, measure on batteries. Voltage must not be over 14.8V	Replace the dynamo
			Dynamo defective	Check the dynamo	Replace the dynamo
			Battery change-over relay defective (500, 800, and 1000)	Test function of the relays according to circuit diagram	Replace battery change-over relay
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
			SmartDrive power supply voltage too low	LED +22-LD31 not lit	Check fuse +22-F77
2	2 undervoltage - SmartDrive	Error: SmartDrive power supply voltage too low	Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD60 not lit	Check fuse +22-F60
				LED +22-LD11 not lit	Check fuse +22-F92
				Check the cables.	Replace cabling
			Battery dead	Measure battery voltage	Charge battery, change battery
				Check battery acid	
			Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Charge indicator lamp defective	Check charge indicator lamp	Change charge indicator lamp

Error descriptions BiG X 500-1100



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3	3 Malfunction sensor volt 12V - SmartDrive	Error: 12 V sensor supply voltage too low	Internal SmartDrive error	Check the cables.	Replace cabling
			12-sensors power supply too low	See Remedial action	Replace SmartDrive
			Central electrical power supply voltage defective	LED +22-LD31 not lit	Check fuse +22-F77
				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
4	4 Malfunction sensor volt 5V - SmartDrive	Error: 5 V sensor supply voltage too low	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
			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 500-1100



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
8	8 Malfunction speed wheel rear right - SmartDrive	From the speed sensor in the hydraulic engine rear right, no signals can be detected	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
			No speed sensor is installed in the hydraulic engine rear right. However, a number of pulses is indicated as parameter 22049 \\\\"number of pulses per revolution of the rear wheel\\\". If 0 pulses are indicated, this means that no wheel sensor is installed.	Make certain a wheel sensor is installed rear right on the machine.	If no sensor is installed, the value 0 must be entered in the parameter 22049.
			Cable harness defective	Check the power supply from the sensor. To do this, measure the voltage in plug XB90 from sensor B90 speed wheel with a multimeter. Contact 1 = + 12 V, contact 3 = earth. Voltage must be greater than 11 V.	Check the following steps; if they are not OK, replace the cable harness
				Check the wiring between sensor and control unit SmartDrive	Remedy the fault in the wiring or replace the cable harness

Error descriptions BiG X 500-1100



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Sensor supply voltage from the wheel sensor defective	Measure the power supply from the sensor directly on the control unit Voltage must be greater than 11 V	Check the following steps; if these steps are OK, replace control unit SmartDrive
				Disconnect all further sensors which are supplied via this sensor supply voltage and measure the sensor supply voltage directly on the control unit (pull the plug on the respective sensor). The following sensors are supplied via this supply voltage: -Service brake pressure (B16) -High pressure of front axle (B13) -Service brake switch (B40)	If OK, replace the appropriate sensor that is responsible for the short circuit.
				Check / measure the wiring of the sensor supply voltage for cable break / short circuit	Remedy the fault in the wiring or replace the wiring
				Measure signal line in the cable harness between control unit and sensor for cable break / short circuit	Remedy the fault in the wiring or replace the cable harness
				Install replacement sensor	Install new sensor
				Install replacement SmartDrive	Install new SmartDrive
				Check software version	Load parameter file in SmartDrive
16	16 parameter set invalid - SmartDrive	Error: EEPROM checksum	No update of new parameters performed		

Error descriptions BiG X 500-1100



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
17			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
			Incorrect parameter file downloaded	Check parameter file	Transfer parameter file onto Smart Drive
18	17 parameter value impermissible - SmartDrive	Error: MIN/MAX parameters	Incorrect values in EEPROM	Check parameters	Transfer parameter file onto Smart Drive
			EEPROM defective	See Remedial action	Replace SmartDrive
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
19	18 internal Malfunction - SmartDrive	Error: EEPROM	EEPROM defective	See Remedial action	Replace SmartDrive
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
19	19 internal Malfunction - SmartDrive	Error: Digital Pot	Internal SmartDrive error	See Remedial action	Replace SmartDrive
20	20 internal Malfunction - SmartDrive	Error: EV DAC	Internal SmartDrive error	See Remedial action	Replace SmartDrive
21	21 internal Malfunction - SmartDrive	Error: I2C Bus	Internal SmartDrive error	See Remedial action	Replace SmartDrive
30	30 Malfunction control loop front axis pump 1 - SmartDrive	Error: Control loop for drive pump 1 front axle - Maximum speed of remaining pump possible	Short circuit/broken cable in wiring for pump valves	Check wiring to pump valves	Replace wiring

Error descriptions BiG X 500-1100



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
31	31 Malfunction control loop rear axis pump 2 - SmartDrive	Error: Control loop for drive pump 2 rear axle - Maximum speed of remaining pump possible	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
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
			Valve plug defective	Check valve plug	Replace valve plug
			Short circuit/broken cable in wiring for pump valves	Check wiring to pump valves	Replace wiring to pump valves
			Valve plug defective	Check valve plug	Replace valve plug
			Coil for solenoid valves defective	Test coil	Replace coil
			Solenoid valve defective	See Remedial action	Replace the solenoid valve
			The charge pressure is too low	Check charge pressure	Change charge pressure valve (30+/-3bar)
			The drive pump 2 is defective	See Remedial action	Replace the drive pump 2
			Internal SmartDrive error	See Remedial action	Replace SmartDrive

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Error descriptions BiG X 500-1100



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
32	32 Malfunction swivel angle sensor B38 pump front axis SmartDrive	Error: Pivoting angle of drive pump 1 front axle - Signal out of range - Maximum speed of remaining pump possible	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
			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	32 Malfunction swivel angle sensor B39 pump rear axis - Smart Drive	Error: Pivoting angle of drive pump 2 rear axle - Signal out of range - Maximum speed of remaining pump possible	Values incorrectly set	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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
34	34 swivel angle sensor B38 pump front axis signal change implausible - SmartDrive	Error: Pivoting angle of drive pump 1 front axle - Pivoting angle is changing too quickly - Maximum speed of remaining pump possible	Values incorrectly set	Run travelling gear diagnostics	Correctly set voltage values
			Dirt in the hydraulics (actuator valves, for example)	Check hydraulics for contamination	Remove dirt
			Calibration of the pivoting angle sensor not correct	Measure voltage in neutral position	Set the sensor pivoting angle. There must be a signal of approx. 2.5 volts present in neutral position
			Short circuit/broken cable in wiring for pivoting angle sensors	Check the wiring to the sensors for the pivoting angle	Replace wiring to the pivoting angle sensors
			Sensor plug for pivoting angle defective	Check sensor plugs	Replace sensor plug
35	35 swivel angle sensor B39 pump rear axis signal change implausible - SmartDrive	Error: Pivoting angle of drive pump 2 rear axle - Pivoting angle is changing too quickly - Maximum speed of remaining pump possible	Pivoting angle sensor defective	Measure voltage on the sensor	Replace and adjust the sensor pivoting angle. There must be a signal of approx. 2.5 volts present in neutral position
			Values incorrectly set	Run travelling gear diagnostics	Correctly set voltage values
			Dirt in the hydraulics (actuator valves, for example)	Check hydraulics (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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
36	36 brake pressure sensor B16 and brake pedal switch B40 signal change implausible - SmartDrive	Error: Brake pressure sensor - For road travel: Maximum speed / 4	Sensor plug for pivoting angle defective	Check sensor plugs	Replace sensor plug
			Pivoting angle sensor defective	Measure voltage on the sensor	Replace and adjust the sensor pivoting angle. There must be a signal of approx. 2.5 volts present in neutral position
			Values incorrectly set	Run travelling gear diagnostics	Correctly set voltage values
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
37	37 pump speed/diesel motor speed too low - SmartDrive	Error: Pump speed too slow	Brake pressure defective	Check brake pressure	Set brake pressure
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
			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 brake tank pressure B18 too low - SmartDrive	Error: Brake tank pressure too low - For road travel: Maximum speed / 4	The brake tank pressure is too low	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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
39	39 Malfunction CAN1 communication - SmartDrive	Error: CAN bus communication	Internal SmartDrive error	See Remedial action	Replace 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-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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
40	40 Malfunction high press.sens. B13 - SmartDrive	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 park brake active - SmartDrive	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
43	43 charge pressure too low - SmartDrive	Error: The charge pressure is too low	Internal SmartDrive error	See Remedial action	Replace SmartDrive
			No engine speed or speed too slow	Check engine speed	Start engine or increase speed

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
44	44 oil temp too high B14 - Smart Drive	Error: Oil temperature too high - For road travel: Maximum speed / 1,5	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
			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
45	45 release travelling gear S3 missing - SmartDrive	Error: Attempt to move without travelling gear release - Maximum speed possible	Flush valve temperature sensor defective	Check flush valve temperature sensor	Replace the temperature sensor flush valve
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
			Release travelling gear switch is not actuated	Check travelling gear release switch	Switch on the travelling gear switch
					Perform operating panel diagnostics

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
46			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
			Short circuit/broken cable in wiring for coil	Check wiring to valve	Replace wiring to valve
47	46 Valve coil Y1 Malfunction pump 1 front axis - SmartDrive	Error: Coil 1, pump 1	Coil defective	Check coil	Replace coil
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
			Short circuit/broken cable in wiring for coil	Check wiring to valve	Replace wiring to valve
			Coil defective	Test coil	Replace coil
48	47 Valve coil Y2 Malfunction pump 1 front axis - SmartDrive	Error: Coil 1, pump 2	Internal SmartDrive error	See Remedial action	Replace SmartDrive
			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	48 Valve coil Y3 Malfunction pump 2 rear axis - SmartDrive	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
	49 Valve coil Y4 Malfunction pump 2 rear axis - SmartDrive	Error: Coil 2, pump 2	Internal SmartDrive error	See Remedial action	Replace SmartDrive
			Short circuit/broken cable in wiring for coil	Check wiring to valve	Replace wiring to valve

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
50	50 Malfunction joystick - SmartDrive Joystick error	Error: Driving lever - Signal incorrect/faulty - Maximum speed / 4	Coil defective	Test coil	Replace coil
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
			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
60	60 Valve coil Y1 current implaus.pump 1 front axis - SmartDrive	Error: actuator valve 1 drive pump 1 - Maximum speed of remaining pump possible	Driving lever defective	LED +22-LD11 not lit	Check fuse +22-F92
				Test functions of the driving lever	Replace driving lever
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
			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
61	61 Valve coil Y2 current implaus.pump 1 front axis - SmartDrive	Error: actuator valve 2 drive pump 1 - Maximum speed of remaining pump possible	Coil for solenoid valves defective	Test coil	Replace coil
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
62	62 Malfunction valve coil Y69 stop valve pump 1 front axis - SmartDrive	Error: Stop valve for drive pump 1 - Front axle - Maximum speed of remaining pump possible	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
			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
63	63 Valve coil Y3 current implausible pump 2 rear axis - SmartDrive	Error: actuator valve 1 drive pump 2 - Maximum speed of remaining pump possible	Coil for solenoid valve defective	Test coil	Replace coil
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
			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
64	64 Valve coil Y4 current implausible pump 2 rear axis - SmartDrive	Error: actuator valve 2 drive pump 2 - Maximum speed of remaining pump possible	Internal SmartDrive error	See Remedial action	Replace SmartDrive
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
65	65 Malfunction valve coil Y70 stop valve pump 2 rear axis - SmartDrive	Error: Stop valve for drive pump 2 - Rear axle - Maximum speed of remaining pump possible	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
			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
70	70 Malfunction seat switch - SmartDrive	The control unit for the traction drive (SmartDrive) has detected a cable break or a short circuit on the diagnostics-capable seat switch. If the voltage from seat switch is between 0 - 1.2 volts, a cable break is detected. If the voltage from seat switch is between 3.8 - 5 volts, a short circuit is detected. The faulty voltage must be present for at least 0.5 seconds before the error message is displayed. Voltage between 1.2 volts - 2.2. Volts ==> Driver on the seat Voltage between 2.8 - 3.8 volts ==> No driver on the seat Voltage between 2.2 volts - 2.8 volts ==> Undefined area If the fault has occurred, the	Coil for solenoid valve defective	Test coil	Replace coil
			Internal SmartDrive error	See Remedial action	Replace SmartDrive

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
		traction drive changes to Limp mode and only limited driving is possible Road operation max. 25 km/h Field mode max. 5 km/h. The diagnostics-capable seat switch is installed on BiG X 700, 850 and 1100.	Parameter for the setting for the seat switch installed is wrongly indicated	Check parameter "33659 \"Seat switch hardware\" in the parameter group \"General work.	Adapt the parameter accordingly. Note: On machine with a new cabine, a diagnostics-capable seat switch is installed.
			Seat switch defective	Check the seat switch in the diagnostics of the terminal	See next check
			https://truckmanualshub.com/	Measure the resistance from the seat switch with multimeter	Replace seat switch and/or wiring in the seat
				Measure resistance from seat switch with multimeter on the plug from seat between contact 21X1.12 (earth) and 21X1.11 (+5 V).	Replace wiring in the seat
				Driver on the seat = seat switch closed = 1.5 kilohm	Replace seat switch
				No driver on the seat = seat switch open = 3 kilohm	Replace wiring
			Wiring to the seat switch defective	Check seat switch with diagnostics in the terminal	See next check
				Measure wiring from seat switch to control unit from traction drive and KMC3 with multimeter for cable break and short circuit	Remedy the fault in the wiring or replace the cable harness

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
71	71 Seat switch value implausible - SmartDrive	The seat switch is parallelly evaluated by the control unit for the traction drive (SmartDrive) and by the control unit KMC3. These two states are compared by the traction drive. If the state is not the same for more than 3 seconds, this fault is shown. If the error has occurred, the traction drive changes to Limp mode and only limited driving is possible Road operation max. 25 km/h Field operation max. 5 km/h.			
			SmartDrive defective	Install replacement SmartDrive	Replace SmartDrive
			KMC3 defective	Install replacement KMC3	Install new KMC3
			The parameter 33659 \\\\\"Seat switch hardware\\\\\\" for the setting for the seat switch installed is wrongly indicated.	Check parameter 33659 \\\\\"Seat switch hardware\\\\\\" in the parameter group \\\\\"General work. Note: On machines with new cab, a diagnostics-capable seat switch is installed. 0 = closer 1 = diagnostics-capable 5 volts (new cab Poclain traction drive) 2 = diagnostics-capable 10 volts (new cab Bosch traction drive)	Adapt the parameter accordingly.
			Wiring defective	Measure wiring of the seat switch to SmartDrive and KMC3 with multimeter for cable break and short circuit	Remedy the fault in the wiring or replace the cable harness
			SmartDrive defective	Install replacement SmartDrive	Install new SmartDrive
			KMC3 defective	Install replacement KMC3	Install new KMC3

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Error No.	Description	Meaning	Possible Reason	Recommend action	Remedial measure
95	95 foot brake permanent activated / Malfunction brake pressure sensor B16 - SmartDrive	Error: Brake valve	Brake was applied continuously (for example braking pressure greater than 10 bar and longer than 3 min; terminal version 150200104-13 or later: braking pressure greater than 5 bar)	See Remedial action	Remove foot from the brake
96 	96 Malfunction CAN1 between terminal and SmartDrive / DRC	Error: CAN bus communication - SmartDrive to terminal.	Brake valve defective or jammed	Check brake valve	Replacing the Brake Valve
			Internal SmartDrive error	See Remedial action	Replace SmartDrive
			Determine via the terminal	Perform CAN diagnostics.	
			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
			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

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Error No.	Description	Meaning	Possible Reason	Recommend action	Remedial measure
			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 Unknown error - SmartDrive	Error: Internal error in SmartDrive	Internal error in SmartDrive	See Remedy	Replace SmartDrive
113	113 Undervoltage 12V - joystick	Error: 12 V supply voltage too low	Determine via the terminal	Perform joystick diagnostics	https://truckmanualshub.com/
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
114 	114 Overvoltage 12V - joystick	Error: 12 V supply voltage too high	Internal joystick error	See Remedial action	Replace joystick
			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
			Battery change-over relay defective (500, 800, and 1000)	Test function of the relays according to circuit diagram	Replace battery change-over relay
115 	115 Undervoltage 8V - joystick	Error: 8.5 V joystick supply voltage too low	Internal joystick error	See Remedial action	Replace joystick
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Charge indicator lamp defective	Check charge indicator lamp Check the cables.	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Test dynamo	Replace the dynamo
			Internal joystick error	See Remedial action	Replace joystick
116	116 Malfunction Button voltage 12V - joystick	Error: 12 volt button voltage - voltage out of range	Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Charge indicator lamp defective	Check charge indicator lamp Check the cables.	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Test dynamo	Replace the dynamo
			Internal joystick error	See Remedial action	Replace joystick
117	117 Malfunction Voltage supply LED - joystick	Error: 12 volt supply voltage LED out of range	Determine via the terminal	Perform joystick diagnostics	
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Charge indicator lamp defective	Check charge indicator lamp Check the cables.	If required, replace charge indicator lamp and/or Replace cabling
			Dynamo defective	Test dynamo	Replace the dynamo

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
118	118 Malfunction Voltage supply outputs - joystick	Error: 12 volt supply voltage for outputs - voltage out of range	Internal joystick error	See Remedial action	Replace joystick
119	119 Internal Malfunction - joystick	Error: Min/Max parameters	Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
120	120 Internal Malfunction - joystick	Error: FLASH checksum	Charge indicator lamp defective	Check charge indicator lamp, Check the cables.	If required, replace charge indicator lamp and/or renew cabling
121	121 Internal Malfunction - joystick	Error: Internal fault in the joystick	Dynamo defective	Test dynamo	Replace the dynamo
			Internal joystick error	See Remedial action	Replace joystick
			Incorrect values in EEPROM		
			EEPROM defective	See Remedial action	Replace joystick
			EEPROM defective	See Remedial action	Replace joystick
			Download was interrupted	See Remedial action	Repeat download
			FLASH defective	See Remedial action	Replace joystick
			Internal joystick error	See Remedial action	Replace joystick
			Internal fault in the joystick	See Remedy	Replace joystick
				Siehe Abhilfe	Joystick tauschen

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
					Es wurde KEINE Taste vom Fahrer betätigt, die Fehlermeldung erscheint jedoch nach jedem Neustart der Maschine ==> Fahrhebel tauschen
					Die Umgebungstemperatur ist auch > 75° C ==> Kabine abkühlen lassen und Maschine neu starten
					Es sind
					Maschine neustarten
					CAN-Verkabelung kontrollieren
					Joystick tauschen
					Bei eingeschalteter Zuendung wurde der Batterie Hauptschalter ausgeschaltet ==> Neustart der Maschine
				Fehlercode: 0000 0200: ==> Restart durch Watchdog ==> Joystick wurde nicht ordnungsgemäss ausgeschaltet. Z.B. bei eingeschalteter Zuendung den Batterie Hauptschalter ausgeschaltet.	Wackelkontakt in der Spannungsversorgung vom Joystick ==> Verkabelung und Spannungsversorgung vom Joystick kontrollieren

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
124 	124 Undervoltage 12V - CU	Error: 12 V supply voltage too low			Interner Fehler im Joystick ==> Joystick tauschen
			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
			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
			Determine via the terminal	Perform operating panel diagnostics	
125 	125 Overvoltage 12V - CU	Error: 12 V supply voltage too high			

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
126 	126 Undervoltage 5V electronics - CU	Error: 5 V electronics supply voltage too low	The controller of the dynamo is defective	While engine is running, measure on batteries. Voltage must not be over 14.8V	Replace the dynamo
			Dynamo defective	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
			Determine via the terminal	Perform operating panel diagnostics	
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	Replace charge indicator lamp
127	127 Overvoltage 5V electronics - CU	Error: 5 V electronics supply voltage too high	Dynamo defective	Check the dynamo	Replace the dynamo
			Internal error, operating panel	See Remedial action	Replace operating panel
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
129 	129 Voltage 12V LEDs too high - CU	Error: 12 V LED supply voltage too high	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
			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
130 	130 Parameter value imperm. - CU	Error: Min/Max parameters	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
			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 Internal Malfunction - CU	Error: FLASH checksum	Download was interrupted	Check whether the download is complete	Repeat download
			FLASH defective	See Remedial action	Replace CU

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Internal error, operating panel	See Remedial action	Replace operating panel
132	132 Key actuated / Malfunction keyboard console - CU	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 Undervoltage 12V - manual operation	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
			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 Overvoltage 12V - manual operation	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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Dynamo defective	Test dynamo	Replace the dynamo
			Battery change-over relay defective (500, 800, and 1000)	Test function of the relays according to circuit diagram	Replace battery change-over relay
			Internal error, manual operation	See Remedial action	Replace manual operation
137 	137 Internal voltage 5V too low - manual operation	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
			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 Internal voltage 5V too high - manual operation	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

Error descriptions BiG X 500-1100



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, manual operation	See Remedial action	Replace manual operation
139 	139 Supply voltage LEDs too low - manual operation	Error: 12 V voltage for LEDs too low	Power supply voltage for 12 V LEDs too low	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 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
			The controller of the dynamo is defective	While engine is running, measure on batteries. Voltage must not be over 14.8V	Replace the dynamo
140 	140 Supply voltage LEDs too high - manual operation	Error: 12 volt voltage for LEDs too high			

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Dynamo defective	Test dynamo	Replace the dynamo
			Battery change-over relay defective (500, 800, and 1000)	Test function of the relays according to circuit diagram	Replace battery change-over relay
			Internal error, manual operation	See Remedial action	Replace manual operation
141	141 Parameter value impermissible - manual operation	Error: Min/Max parameters	Incorrect values in EEPROM	Check parameters	Update parameters
			EEPROM defective	See Remedial action	Replace manual operation
			Internal error, manual operation	See Remedial action	Replace manual operation
142	142 Internal Malfunction - manual operation	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 Key actuated / Malfunction keyboard or external key - manual operation	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	Instantaneous stop switch console	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
505 	Instantaneous stop switch manuell controll	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			
508 	Release switch Maintenance	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			https://truckmanualshub.com/
511 	Release switch Road/Field!	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			
512 	Release switch feed drive / front attachment!	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
514 	Release switch Transmission!	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			
517 	Release switch AutoPilot!	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			https://truckmanualshub.com/
520 	Switch axis seperation!	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			
521 	Release switch all-wheel!	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
522 	Release switch 2nd Diesel engine!	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			
523 	release switch Parking brake!	The according switch has a wrong position in order to start the desired function. In case the switch is activated, it must not be activated to start the function. In case the switch is not activated, it must be accordingly activated.			https://truckmanualshub.com/
524 	Machine driving!	The vehicle is moving or standing. In order to start the desired function the machine must, however, stand when it is still driving, or drive when it is still standing.			
526	Cruise control active!				
527 	Driver NOT on seat!	The seat switch has a wrong position in order to start the desired function. In case the switch is activated (driver on the seat), it must not be activated to start the function. In case the switch is not activated (driver not			

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
		on the seat), it must be accordingly activated.			
528	Press break pedal!	The brake pedal must be pressed for the requested function!	Brake pedal not pressed	See Remedy	Press the brake pedal
			Operating brake sensor (B40) not adjusted	Check setting of the sensor (B40)	Make adjustment
			Operating brake sensor (B40) faulty	Measure voltage on sensor (B40)	Replace operating brake sensor (B40)
529	Door OPEN! 	The accordant switch (door switch) has a wrong position in order to start the desired function. In case the switch is activated (door closed), it must not be activated to start the function (door open). In case the switch is not activated (door open), it must accordingly be activated (door closed).			https://truckmanualshub.com/
531	Engine NOT running! 	The diesel engine is operating or not operating. In order to start the desired function the diesel engine must not be in operation or must be in operation. When diesel engine is turning, it must not be turning. When diesel engine is not turning, it must be turning.			

Error descriptions BiG X 500-1100



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
532 	Engine running!	The diesel engine is operating or not operating. In order to start the desired function the diesel engine must not be in operation or must be in operation. When diesel engine is turning, it must not be turning. When diesel engine is not turning, it must be turning.			
533 	Engine NOT low idle!	For starting the desired function the diesel engine must run with idle speed.			
534 	Engine does not have any nominal rpm	In order to start the desired function the diesel engine must run with nominal speed (standard 2000 rpm).			
535 	Value out of range - set to minimum!	The changed parameter or setting value has been set under the minimum value. Therefore, the parameter or setting value has automatically been adjusted to the minimum limit value.			
536 	Value out of range - set to maximum!	The changed parameter or setting value has been set under the minimum value. Therefore, the parameter or setting value has automatically been adjusted to the minimum limit value.			

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
537 	Engine speed too high!	To start the desired function the engine speed is too high, so it can not be started.			
538 	Position Saved	The desired position or value (e.g. cutting length #1 and #2 on the small joystick) has been saved.			
539 	All pending errors reset!	An initialize operation was carried out (no significance for driver)			https://truckmanualshub.com/
540 	front attachment Control NOT Active	It has been tried to move the lifting gear manually or automatically. But the steering of the lifting gear (EMR) is not active, since the diesel engine is not running.	The error message appears despite the diesel engine running and a software update has been accomplished before.	see remedy	Restart the machine Lift the lifting gear manually.
541 	EMR Adjustment 1 (bottom position) OK	The adjustment/calibration 1 (position below) of the lifting gear has been successfully completed.			
542 	EMR Adjustment 2 (Pressure lifting gear) OK	The adjustment/calibration 2 (pressure lifting gear when lifting gear is floating freely) of the lifting gear has been successfully accomplished for weight determination.			

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
543 	EMR Adjustment 3 (top position) OK	The adjustment/calibration 3 (top position) of lifting gear has been successfully accomplished.			
544 	Auto lifting gear Active	for the future			
545 	Distance Mode EMR active	for the future			
546 	Lifting gear too high	In order to start the desired function the position of the lifting gear is too high.			
547 	Lifting gear too low	For starting the desired function the position of the lifting gear is too low			
548 	Distance Mode EMR deactivate	An error has been detected on the sensors of the header contour \\\"B47 and/or B48) or a front attachment without ground skids has been installed. Therefore, the function \\\"Header contour\\\" can not be started from the lifting gear. In order that the errors are not being displayed anymore, the other control function (pressure regulation or position control) must be selected from the lifting gear.			

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
549 	Lifting gear position saved	The position of the lifting gear (top position, ground pressure, position below with position control or header contour) has been successfully saved and can afterwards be recalled.			
550 	Cutting drum stopped!	For starting the desired function the cutting drum must be running, but there was no speed detected on the cutting drum.			
551 	Cutting drum turning!	For starting the desired function the cutting drum must be at standstill, but it is still running.			
552	Check EMR adjustment!	Void values are saved for the calibration of the set front attachment.	EMR control unit exchanged	see remedy	Accomplish the adjustment 1 - 3 of the lifting gear again
			Front attachment exchanged and there has not been an adjustment for the new front attachment	see remedy	Accomplish adjustment 1 - 3 of the lifting gear with new front attachment
553	Invalid sensor/actuator value	The value of the sensor or one actuator are inadmissible	When calibrating the row sensor or the steering axle this note appears	The accordant sensor is displayed in the mask calibration autopilot of which the sensor value is inadmissible, because it has for example been installed in a wrong way.	Install the sensor according to the installation instructions and connect it electrically

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				The sensors of the row sensor left and right are interchanged connected to the cable harness	Exchange plugs on the sensors
554	Lifting gear position saved, set to minimum value!	for the future			
555	Lifting gear position saved, set to maximum value!	for the future			
556	Engine protection mode active!	Diesel engine is in protective mode - speed is reduced	The engine oil level is too low	Check engine oil level	Refill engine oil
			The oil pressure is too low	Perform engine diagnostics	Consult KRONE Service
			Determined via the terminal	Perform engine diagnostics	
			Engine parameters not OK	Run diagnostics using the engine diagnostic device	Consult KRONE Service
557	Main clutch protection mode active!	For the future			
558	Begin reversing feed drive/front attachment	Information for the driver: reversing of feed drive and front attachment will start in a few seconds as the main belt must previously be released and the main coupling must be connected. Message is only displayed if the feed drive or the			

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
		front attachment is reversed without cutting drum being activated. Reversing without cutting drum being activated is possible on machines with Bosch traction drive from YOM 2012.			
559	Overrun not yet complete!	After the function "Reversing feed drive/front attachment without the cutting drum being activated" has been exited, this function cannot be started again for 7 seconds. If the driver starts this function again, this information message is displayed. Wait for 7 seconds and start the function once again.			https://truckmanualshub.com/
560	front attachment NOT Folded IN!	To start the desired function the front attachment must be folded in, but it is folded out	The front attachment is folded out	see remedy	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	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

Error descriptions BiG X 500-1100



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				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	Lifting gear Raised!	In order to start the desired function the front attachment must be below or on top. In case the front attachment is below, the front attachment must be on top. In case the front attachment is on top, it must be located below.			https://truckmanualshub.com/
563	front attachment Lowered!	In order to start the desired function the front attachment must be below or on top. In case the front attachment is below, the front attachment must be on top. In case the front attachment is on top, it must be located below.			
564	front attachment NOT Turning!	To start the desired function the front attachment must be running or at standstill. When the front attachment is at standstill, the front attachment must run in order to start the function. When the front attachment is running, the front attachment must be at standstill in order to start the function.			



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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
565 	front attachment IS Turning!	To start the desired function the front attachment must be running or at standstill. When the front attachment is at standstill, the front attachment must run in order to start the function. When the front attachment is running, the front attachment must be at standstill in order to start the function.			
566 	Feed drive NOT Turning!	To start the desired function the front attachment must be running or at standstill. When the front attachment is at standstill, the front attachment must run in order to start the function. When the front attachment is running, the front attachment must be at standstill in order to start the function.			https://truckmanualshub.com/
567 	Feed drive IS Turning!	For starting the desired function the feed drive must be running or at a standstill. When the feed drive is at a standstill, the feed drive must be running in order to start the function. When the feed drive is running, the feed drive must be at standstill in order to start the function.			

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
568 	Pendulum Frame NOT Horizontal	For starting the desired function the pendulum frame must be horizontal, but the pendulum frame is not yet horizontal.	The pendulum frame is not horizontal	Position the pendulum frame horizontally Check the calibration of the position \\\\"Pendulum frame horizontal\\\\" Check sensors	Position the pendulum frame horizontally Accomplish calibration of pendulum frame Set sensor correctly and accomplish calibration
570 	Speed diesel engines not synchron.	When switching on the 2. diesel engine the speeds of engine1 and engine2 are identical, therefore the control unit was also not able to switch on the engine coupling	ADM of engine 1 or engine 2 defective	The KMC3 unit has been exchanged and the pendulum frame has not been calibrated	Exchange sensor
				Check, if the speed of engine 1 can be readjusted?	Check the power supply of the ADM1 of engine 1
					Check CAN connection from control unit KMC3 to ADM of engine 1
					Check parameter of ADM or install again. ADM engine 1 and ADM engine 2 have separate parameters and can not be interchanged.
					Change ADM of engine 1.
					Change PLD of engine 1.

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
					Check CAN connection from ADM of engine 2 to the PLD of engine 2
				Check, if the speed of engine 2 can be readjusted?	Check the power supply of the ADM1 of engine 2
					Check CAN connection from control unit KMC3 to ADM of engine 2.
					Check CAN connection from ADM of engine 2 to the PLD of engine 2
					Check parameter of ADM or install again. ADM engine 1 and ADM engine 2 have separate parameters and can not be interchanged.
					Change ADM of engine 2.
					Change PLD of engine 2.
571	Check feed drive wiring! (Power suppression cutting drum active)	Feed drive wiring is not ok. Switch-on suppressor mechanism for blade drum is active!	Cables for feed drive not/incorrectly connected	Check parameter for the actuation of the diesel engine	
				Check wiring for feed drive	Connect cables for feed drive

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Plug for feed drive faulty	Check plug for feed drive	Replace plug for feed drive
			Cables for metal detection not connected	Check cables for metal detection	Replace cables for metal detection
			CAN connection KMC3 to KMC2	See error 2600 "CAN to KMC2	
			KMC 3 has no CAN connection to metal sensor	See error 9924 "CAN to metal detection"	
			Internal error KMC2/3	See Remedy	Replace KMC2/3
572	Engine clutch 2	For starting the desired function the diesel engine 2 must be coupled or uncoupled. When diesel engine 2 is coupled, it must be uncoupled in order to start the function. When diesel engine 2 is uncoupled, it must be coupled in order to start the function.			
573	Download to EMR!	The control unit for the lifting gear control will be re-flashed. There is currently no download taking place on the EMR.			
574	Terminal Software inconsistent!!	The software versions of the single control units on the machine do not fit together. Malfunctions cannot be excluded.	A software version of a control unit is not up to date. Example: Software version 150 200 104-12 is on the terminal and version 150 200 102-10 is on control unit KMC2 and the version is on		

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
580 	Discharge chute in park position	For starting the desired function the current position of the discharge chute is faulty.	The discharge chute is parked, but must not be in parking position	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.
				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
581 	Discharge chute not parked!	For starting the desired function the current position of the discharge chute is faulty.	The discharge chute is parked, but must not be in parking position	Exchange control unit KMC2	Exchange control unit KMC2
				Check if the discharge chute is in parking position.	Lift the discharge chute all the way up so that it is no longer parking position.

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
582 	Discharge chute not at top!	For starting the desired function the current position of the discharge chute is faulty.	The discharge chute is parked, but must not be in parking position	Check 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 \\\\"Diagnosics discharge chute\\\\"
					Set the sensor mechanically correct
					Check the sensor electrically
					Exchange sensor
					Exchange control unit KMC2
				Check if the discharge chute is in parking position.	Lift the discharge chute all the way up so that it is no longer parking position.
				Check if discharge chute is in parking position.	Move discharge chute to central position and put it all the way down
				Check sensor B29 \\\\"Discharge chute position below\\\\"	Check sensor B29 in the mask \\\\"Diagnosics discharge chute\\\\"
					Check the sensor electrically

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
					Exchange sensor
					Exchange control unit KMC2
590	Shearbar Auto OK!	For the future			
591	Shearbar OK!	For the future			
592	Shearbar Adj. in operation	For the future			
593	Cracker motor in Zero Pos.	For the future			
594	Sharpen flap CLOSED	In order to start the desired function the grinding flap has a wrong position.	The grinding flap is closed, but must be opened to start the function	Check, if the grinding flap is closed.	Close the grinding flap
				Check, if the grinding flap is open.	Open the grinding flap
595	Sharpen flap or service flap OPEN	In order to start the desired function the grinding flap has a wrong position.	The grinding flap is closed or open. In order to start the desired function the grinding flap must have the accordant other position.	Check, if the grinding flap is closed.	Close the grinding flap
				Check, if the grinding flap is open.	Open the grinding flap
596	Sharpening in operation!	For starting the desired function, the function \\\\"Grinding\\\\" must not be active.	The function \\\\"Grinding\\\\" is active.	see remedy	In order to start the other desired function the function \\\\"Grinding\\\\" must be cancelled or closed.

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
597	Sharpening stone parked! 	In order to start the desired function \\\'Grinding\\\' the function must be active			
598	Caution: adjust grindstone!	The max number of total grinding cycles is reached. The grinding stone must be readjusted and the grinding cycle counter in the terminal must be reset	The max number of total grinding cycles is reached. The grinding stone must be readjusted and the grinding cycle counter in the terminal must be reset	Readjust the grinding stone and check the number of grinding cycles in the terminal	Reset the number of grinding cycles in the terminal.
600	600 Internal error - DRC	Internal error in DRC control unit	DRC control unit faulty	Effect:- Vehicle stop via error mode #1 - Sending error message (shown on display)- Emergency mode #1	- Contact Krone service - Replace control unit Replace DRC control unit
601	601 Malfunction valve coil Y101 pump forwards - DRC	Fault on valve Y101 pump forward	Short circuit on valve Y101	Check cable harness-Check magnet	Replace cable harness-Replace magnet
602	602 Malfunction valve coil Y102 pump backwards - DRC	Fault on valve Y102 pump backwardEffects:- Short circuit on valve Y102- Interruption - Faulty magnet	- Short circuit- Interruption - Faulty magnet	- Check cable harness- Check magnet	- Replace cable harness- Replace magnet
603	603 Malfunction valve coil Y106 rear axis right - DRC	DRC fault on valve Y106 Rear axle rightEffects:- Vehicle deceleration via error mode #2b- Sending error message (shown on display)- Emergency mode #2	- Short circuit on valve Y106- Interruption - Faulty magnet	- Check cable harness- Check magnet	- Replace cable harness- Replace magnet
604	604 Malfunction valve coil Y105 rear axis left - DRC	DRC fault on valve Y105 Rear axle leftEffects:- Vehicle deceleration via error mode #2b- Sending error message (shown on display)- Emergency mode #2	- Short circuit- Interruption - Faulty magnet	- Check cable harness- Check magnet	- Replace cable harness- Replace magnet

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
605	605 Malfunction valve coil Y104 front axis right - DRC	DRC fault on valve Y104 front axle right Effects:- Vehicle deceleration via error mode #2b - Sending error message (shown on display)- Emergency mode #2	- Short circuit- Interruption - Faulty magnet	- Check cable harness- Check magnet	- Replace cable harness- Replace magnet
606	606 Malfunction valve coil Y103 front axis left - DRC	DRC fault on valve Y103 front axle left Effects:- Vehicle stop via error mode #2b - Sending error message (shown on display)- Emergency mode #2	- Short circuit- Interruption - Faulty magnet	- Check cable harness- Check magnet	- Replace cable harness- Replace magnet
607	607 Malfunction valve coil Y18 parking brake - DRC	Current to the valve Y18 is defective Effects: limited operation (emergency mode) Plausibility check control of the parking brake deactivated	Short circuit on the valve Y18 Interruption Defective magnet	- Check cable harness - Check magnet	- Replace cable harness - Replace magnet
608	608 Malfunction joystick - DRC	DRC malfunction on the joystick Effects: Standstill of the vehicle via stop ramp	Fault in the multifunction joystick. At the same time, the error message appears	See error message 121	
609	609 Malfunction pressure sensor B101 - DRC	DRC fault on pressure sensor B101 Effects:- Vehicle deceleration via error mode #2b- Sending error message (shown on display)- Emergency mode #2	- CAN bus interruption Multi-function lever/joystick defective Sensor voltage too high or too low	- Check cable harness - Check multi-function lever - Check cable harness- Check sensor	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
610	610 Malfunction pressure sensor B102 - DRC	DRC fault on pressure sensor B102	Sensor voltage too high or too low	- Check cable harness- Check sensor B102	
611	611 Undervoltage - DRC	DRC undervoltageEffects:- Vehicle stop via error mode #2a- Sending error message (shown on display)- Emergency mode #1	- Battery voltage too low (below 7V). - Take starting phase of Diesel engine into account.	- Check cable harness- Check battery voltage- Take starting phase of Diesel engine into account	
612	612 Overvoltage - DRC	DRC overvoltageEffects:- Vehicle stop via error mode #2a- Sending error message (shown on display)- Emergency mode #1	Battery voltage too high (above 17V)	- Check cable harness- Check battery voltage	
613	613 Check rel.switch travelling gear and quick stop - DRC	DRC check FS (release switch) Travelling gear and emergency stopEffects:- Vehicle stop via error mode #1 - Sending error message (shown on display)- Emergency mode #2	Travelling gear release missing	- Activate Travelling gear release- Deactivate emergency stop panel	https://truckmanualshub.com/
614	614 Malfunction speed sensor B106 rear axis right - DRC	DRC fault speed sensor B106 rear axle rightEffects:- Vehicle deceleration via error mode #2c- Sending error message (shown on display)- Emergency mode #3- ASR (Traction Control) disabled- ABS disabled	Speed 0 although travel condition fulfilled	- Check cable harness- Check sensor	
615	615 Malfunction speed sensor B105 rear axis left - DRC	DRC fault speed sensor B105 rear axle leftEffects:- Vehicle deceleration via error mode #2c- Sending error message (shown on display)- Emergency mode #3- ASR (Traction Control) disabled- ABS disabled	Speed 0 although travel condition fulfilled	- Check cable harness- Check sensor B105	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
616	616 Malfunction speed sensor B104 front axis right - DRC	Fault on speed sensor B104 front axle rightEffects:- Vehicle deceleration via error mode #2c - Sending error message (shown on display)- Emergency mode #3- ASR (Traction Control) disabled- ABS disabled	Speed 0 although travel condition fulfilled	- Check cable harness- Check sensor B104	
617	617 Malfunction speed sensor B103 front axis left - DRC	DRC fault on speed sensor B103 front axle leftEffects:- Vehicle deceleration via error mode #2c - Sending error message (shown on display)- Emergency mode #3- ASR (Traction Control) disabled- ABS disabled	Speed 0 although travel condition fulfilled	- Check cable harness- Check sensor B103	https://truckmanualshub.com/
618	618 CAN3 communication to diesel engine - DRC	DRC faultEffects:	- CAN bus interruption- Diesel control unit faulty	- Check cable harness- Check diesel control unit	
619	619 CAN1 communication to joystick - DRC	DRC Fault CAN Timeout driving lever Multifunction joystickEffects:- Vehicle stop via error mode #2a- Sending error message (shown on display)- Emergency mode #1	- CAN bus interruption- KKC (Krone Console Controller) faulty	- Check cable harness- Check driving lever Multifunction joystick	
620	620 CAN1 communication to CU - DRC	DRC Fault CAN Timeout control unit console switchEffects:- Vehicle deceleration via error mode #2b- Sending error message (shown on display)- Emergency mode #2- Road mode only	- CAN bus interruption- Control unit console faulty	- Check cable harness- Check control unit console	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
621	621 CAN1 communication to KMC3 - DRC	DRC Fault KMC communication CAN Timeout Effect:- Vehicle stop via error mode #2a- Sending error message (shown on display)In case of KMC Timeout and if KSM message (engine speed control) is missing as well the travelling gear needs to take over control of the Diesel engine. Only in emergency mode #2 with a reduced characteristic line of the engine	- CAN bus interruption- KMC faulty	- Check cable harness- Check KMC	https://truckmanualshub.com/
622	622 Malfunction outputs - DRC	DRC Fault outputs supplied externallyEffect:- Vehicle stop via error mode #1- Sending error message (shown on display)- Emergency mode #1	One or more outputs are supplied externally (before switching on the main switch one of the outputs is energized from the battery)	Check cable harness	
623	623 Malfunction steering angle sensor B107 - DRC	DRC Fault on the steering angle sensor B107Effect:- Sending error message (shown on display)- ASR (Traction Control) function restricted- ABS function restricted	Sensor voltage too high or too low	- Check cable harness- Check sensor	
624	624 Malfunction seat switch S69 - DRC	DRC Fault on the seat switch sensorEffect:- Vehicle stop via error mode #2b- Sending error message (shown on display)- Emergency mode #2	- Short circuit on sensor - Broken cable	No check possible	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
625	625 Seat switch open (driver has left seat) - DRC	DRC Fault seat switch open			
626	626 Internal error - DRC	DRC Hardware Fault monitor emergency modeEffect:- Vehicle stop via error mode #2- Sending error message (shown on display)- Error acknowledgement followed by emergency mode #1			
627	627 Malfunction brake press.sensor B16 - DRC	DRC Fault on brake pressure sensor B16Effect:- Vehicle deceleration via error mode #2b- Sending error message (shown on display)- Error acknowledgement followed by emergency mode #2	- Sensor voltage too high or too low- Plausibility check with angle sensor of foot brake pedal (angle present but no pressure)	- Check cable harness- Check sensor B16	https://truckmanualshub.com/
628	628 Malfunction brake pedal sensor B109 - DRC	DRC Fault on foot brake pedal sensor B109Effect:- Vehicle deceleration via error mode #2b- Sending error message (shown on display)- Emergency mode #2	- Sensor voltage too high or too low- Plausibility check with angle sensor of foot brake pedal (pressure present but no angle)	- Check cable harness- Check sensor	
629	629 Sensors brake pedal B16/B109 not plausible - DRC	DRC Fault on brake pedal not plausibleEffect:- Error message via CAN	Brake pedal not plausible compared to brake pressure	No check possible	
630	630 Malfunction swivel angle sensor B108 - DRC	DRC Fault on pivoting angle sensorEffect:- Vehicle stop via error mode #2c- Sending error message (shown on display)- Emergency mode #3	Sensor voltage too high or too low	- Check cable harness- Check sensor	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
631	631 Malfunction brake tank pressure B18 - DRC	DRC Fault on manometric switch for brake tank pressure Effect: Sending error message (shown on display)	- Manometric switch for brake tank pressure faulty - Brake tank faulty	- Check cable harness- Check sensor- Check pressure accumulator	
632	632 Malfunction output revers.signal K29 - DRC	DRC malfunction reversing light Effect: Send the error message (shown in the display)	Short circuit, interruption reversing light	Check cable harness Check reversing light	Replace cable harness, reversing light
633	633 Malfunction output brake light sig.K30 - DRC	DRC malfunction output brake light Effect: Send the error message (shown in the display)	Short circuit, interruption brake light	Check cable harness Check brake light	Replace cable harness, brakelight
634	634 Malfunction pressure sensor B110 parking brake - DRC	DRC malfunction of parking brake manometric switch Effect: Limited operation (emergency mode)	Manometric switch of parking brake defective	Check parking brake, manometric switch, cable harness	Replace parking brake, manometric switch or cable harness
635	635 Control parking brake not plausible - DRC	DRC malfunction control of the parking brake is not plausible Effect: Limited operation (emergency mode)	Control of the parking brake not plausible	Check parking brake, manometric switch, cable harness	Replace parking brake, manometric switch, cable harness
636	636 Pump control not plausible - DRC Malfunction	Pump control not plausible Effect: Standstill of the vehicle (switching off the outputs)	The signal of the pivoting angle sensor does not match the actual control of the pump via solenoid valves.	Check pump, pivoting angle sensor, cable harness	Replace pump, pivoting angle sensor or cable harness
637	637 Malfunction reserve DRC	Reserve			

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
638	638 Malfunction reserve DRC	Reserve			
639	639 Malfunction reserve DRC	Reserve			
640	640 Unexpected movement of machine - DRC	SR1 unexpected start-up: The pivoting angle sensor on the drive pump has detected that the pump is not in neutral position. Effects: Standstill of the vehicle (switching-off the outputs)	SR1 unexpected start-up: Hydraulic pump defective (swivels out actually) pump is controlled by mistake (swivels out actually) Wiring of pivoting angle sensor is defective Pivoting angle sensor defective Pivoting angle sensor defective Input on DRC defective	Measure high-pressures MA and MB	Contact KRONE customer service
641	641 Unintentional release of parking brake - DRC	Parking brake of the manometric switch indicates pressure although the parking brake valve is not controlled Effects: Standstill of the vehicle (switching-off the outputs)	Manometric switch of the parking brake is defective, valve of the parking brake is defective, short circuit wiring manometric switch	Check manometric switch of parking brake, check parking brake valve, check short circuit wiring manometric switch	
642	642 Malfunction reserve DRC	Reserve			
643	643 Malfunction reserve DRC	Reserve			
644	644 Malfunction reserve DRC	Reserve			
645	645 Malfunction reserve DRC	Reserve			

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
646	646 Malfunction reserve DRC	Reserve			
647	647 Malfunction reserve DRC	Reserve			
648	648 Driving lever not in neutral position - DRC	Start condition not met Effects: Standstill of the vehicle	Control lever not in neutral position	Check the position of the control lever	Move control lever to neutral position
			Internal fault driving lever	See remedy	Replace control lever
649	649 Internal Malfunction - DRC	Reaction to another fault (see possible cause) Effects: Standstill of the vehicle	Fault 600 or 622 active	Refer to the respective fault	Refer to the respective fault
650	650 Malfunction output pump forwards - DRC	Reaction to another fault (see possible cause) Effects: Standstill of the vehicle	Fault 601 active	Refer to the respective fault	Refer to the respective fault
651	651 Malfunction output pump backwards - DRC	Reaction to another fault (see possible cause) Effects: Standstill of the vehicle	Fault 602 active	Refer to the respective fault	Refer to the respective fault
652	652 Internal Malfunction - DRC	Reaction to another fault (see possible cause) Effects: Standstill of the vehicle	Fault 608 and/or further faults active	Refer to the respective fault	Refer to the respective fault
653	653 Internal Malfunction - DRC	Reaction to another fault (see possible cause) Effects: Standstill of the vehicle/limited operation	Fault 603 and/or further faults active	Refer to the respective fault	Refer to the respective fault
654	654 Release travelling gear - DRC	Start condition is not fulfilled Effects: limited operation, emergency mode active	Release travelling gear not met	Check release traction drive switch	Actuate release traction drive switch
			Determination via terminal	\"Carry out operating console diagnostics \"	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Short circuit / broken cable in the wiring of the switch	"Check wiring to switch Traction drive release"	Replace wiring to switch Traction drive release
			"Traction drive release switch defective"	"Check the shifting behavior of the switch via pass-through measurement"	"Replace traction drive release switch"
655	655 Requested speed too high - DRC	Maximum pump speed has been exceeded	Speed of the diesel engine is too high	See remedy	Contact KRONE customer service
656	656 No driver on seat - DRC	Fault: When starting, no driver on the seat	Seat switch not actuated	Check seat switch wiring	Replace seat switch wiring
				Check seat switch	Replace seat switch
1300	1300 Malfunction valve coil Y32 raise lifting gear	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 Malfunction valve coil Y33 lower lifting gear	Error: Lower lifting gear valve	Determine via the terminal	Perform lifting gear diagnostics	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
1302	1302 Malfunction EMR voltage	Error: Supply voltage too low (less than 10V)	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
			Internal EMR error	See Remedial action	Replace the EMR
			Power supply voltage for EMR too low	LED +22-LD52 not lit	Check fuse +22-F52
			Wiring defective	Check the cables.	Replace cabling
			Battery dead	Check battery acid 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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
1303	1303 electronics EMR not active!!!	Error: EMR has not received any CAN messages for at least 1 minute, or it has been deactivated	Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD11 not lit	Check fuse +22-F92
			The KMC3 control has been switched off manually (e.g. plug has been removed)	Check plugs are secure	Place the plug and switch the ignition off and on again
			The maintenance switch has been switched on	Check whether switch is switched on	Switch off the maintenance switch
			Short circuit / broken cable in the wiring for the CAN3 bus	Check wiring	Replace wiring
			CAN3 terminating resistors defective	Check wiring and terminating resistors	If required, rewire or replace terminating resistors
1304	1304 Malfunction lifting gear position sensor B50	Error: Sensor position lifting gear - wrong signal	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
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
1305	1305 Malfunction lifting gear pressure sensor B49	Error: Pressure sensor for lifting gear - wrong signal	Lifting gear position sensor plug defective	Check sensor plugs	Replace sensor plug
			Lifting gear position sensor defective	Measure voltage on the sensor	Replace lifting gear position sensor
			Short circuit in the wiring to another EMR sensor	Check wiring	Replace wiring
			Internal EMR error	See Remedial action	Replace the EMR
			Determine via the terminal	Perform lifting gear diagnostics	
1306	1306 Malfunction sensor B47 header contour left	Error: Height of left lifting gear sensor - wrong signal	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 Malfunction sensor B47 header contour left	Error: Height of left lifting gear sensor - wrong signal	The height of left lifting gear sensor has not been fitted, because the grass pick-up has been fitted, or corn operation has been set, but no skids are present	See Remedial action	Deactivate the distance adjustment if no skids are fitted, or switch the machine to maize operation on the display, if the ground skids are fitted

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
1307	1307 Malfunction sensor B48 header contour right	Error: Height of right lifting gear sensor - wrong signal	Front attachment plug not inserted	Check the front attachment plug	Plug in front attachment plugs
			Height of left lifting gear sensor not adjusted	Check setting of the sensor	Make adjustment
			Short circuit / broken cable in wiring for height of the left lifting gear sensor	Check wiring to sensor for height of left lifting gear	Replace wiring to sensor for height of left lifting gear
			Height of the left lifting gear sensor plug defective	Check sensor plugs	Replace sensor plug
			Height of the left lifting gear sensor defective	Measure voltage on the sensor	Replace height of lifting gear left sensor
			Short circuit in the wiring to another EMR sensor	Check wiring	Replace wiring
			Internal EMR error	See Remedial action	Replace EMR.
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
1308	1308 Valve coil Y37 pendulum left broken cable	Error: Turn pendulum frame to the left valve	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
			Internal EMR error	See Remedial action	Replace the EMR
			Determine via the terminal	Perform lifting gear diagnostics	https://truckmanualshub.com/
1309	1309 Valve coil Y38 pendulum right broken cable	Error: Turn pendulum frame valve clockwise	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
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
1310	1310 Malfunction Valve coil Y37 pendulum left	Error: Turn pendulum frame valve left - current too high	Internal EMR error	See Remedial action	Replace the EMR
			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
			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
1311	1311 Malfunction Valve coil Y38 pendulum right	Error: Turn pendulum frame valve right - current too high	Internal EMR error	See Remedial action	Replace the EMR
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2101  <10V/12V	2101 Electronics undervoltage - KMC2	Error: Electronics voltage KMC2 too low	Determine via the terminal	Run electronics diagnostics	
			Power supply voltage of KMC2 too low	LED +22-LD61 not lit	Check fuse +22-F61
			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 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
2102  >16V/12V	2102 Electronics overvoltage - KMC2	Error: Electronics voltage KMC2 too high	Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Internal error KMC2	See Remedial action	Replace KMC2
			Determine via the terminal	Run electronics diagnostics	
			The controller of the dynamo is defective	While engine is running, measure on batteries. Voltage must not be over 14.8V	Replace the dynamo

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2103 	2103 Malfunction Voltage V1 - KMC2	Error: KMC2 output voltage of V1	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
			Determine via the terminal	Run electronics diagnostics	
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2104  V2 <10V/12V	2104 Malfunction Voltage V2 - KMC2	Error: KMC2 output voltage of V2	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
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2105  V3 <10V/12V	2105 Malfunction Voltage V3 - KMC2	Error: KMC2 output voltage of V3	GAL component defective	See Remedial action	Replace GAL component
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Internal error KMC2	See Remedial action	Replace KMC2
			Output voltage of V2 defective.	LED +22-LD38 not lit	Check fuse +22-F86
			Determine via the terminal	Run electronics diagnostics	
			Output voltage of V3 defective.	LED +22-LD37 not lit	Check fuse +22-F85
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
 2106  <10V/12V	2106 Malfunction Voltage V4 - KMC2		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
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Internal error KMC2	See Remedial action	Replace KMC2
			Determine via the terminal	Run electronics diagnostics	
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2107	2107 Malfunction Voltage 12V digital sensors - KMC2	Error: 12V voltage of digital sensors	Fuse F2 in KMC2 defective	Check fuse F2 in KMC2	Replace fuse F2 in KMC2
			Wiring of release switch defective	Check wiring	Replace cabling
			Release switch defective	Test function of the release switch	Replace release switch
			GAL component release logic wrong (wrong GAL component)	Check release logic	If required, change GAL component
			GAL component defective	See Remedial action	Replace GAL component
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Internal error KMC2	See Remedial action	Replace KMC2
			Short circuit in the wiring to a digital sensor	Check wiring	Replace wiring
			Digital sensor defective	Test function of the sensors	Replace sensors
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2108	2108 Malfunction Voltage 8V digital sensors - KMC2	Error: 8V voltage of digital 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 the wiring, replace the dynamo	Replace the dynamo
			Internal error KMC2	See Remedial action	Replace KMC2
			Short circuit in the wiring to a digital sensor	Check wiring	Replace wiring
				Digital sensor defective	
				Test function of the sensor	Replace the sensor
			Battery dead	Check battery acid	Charge battery
				Check battery voltage	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.
2109	2109 Malfunction Voltage 8V analogue sensors - KMC2	Error: 8 V voltage of analogue sensors	Internal error KMC2.	See Remedial action	Replace KMC2.
			Short circuit in the wiring to an analogue sensor	Check wiring	Replace wiring

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2110			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.
			Dynamo defective.	Check the excitation voltage, check wiring	https://truckmanualshub.com/
			Internal error KMC2.	See Remedial action	Replace KMC2
2112	2110 Voltage battery 3V too low - KMC2	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	
			Job computer KMC2 was replaced	none	none
2201	2112 RAM initialised (Check 3V battery) - KMC2	Error: Re-initialization of the battery backup RAM in KMC2	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 Valve coil Y5 feed drive forward broken cable	Perform feed drive diagnostics	
			Error: Minimum current feed drive forward valve has fallen below the normal level		

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2202	2202 Valve coil Y6 feed drive backward broken cable	Error: Minimum current feed drive backward valve has fallen below the normal level	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
			Determine via the terminal	Perform feed drive diagnostics	https://truckmanualshub.com/
			Broken cable in the wiring for feed drive backward valve	Check wiring	
2203	2203 Valve coils Y5/Y6 feed drive short circuit	Error: Maximum current of the feed drive forward or feed drive backward valves has been exceeded	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
			Determine via the terminal	Perform feed drive diagnostics	
			Short circuit in the wiring for feed drive forward/feed drive backward valve	Check wiring	
			Valve plug defective	Check valve plugs and contacts	
			Coil for solenoid valve defective	Test coil	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2204	2204 Valve coil Y7 front attachment forward broken cable	Error: Minimum current front attachment forward valve has fallen below the normal level	Internal error KMC2	See Remedial action	Replace KMC2
			Determine via the terminal	Perform feed drive diagnostics	
			Broken cable in the wiring for front attachment forward valve	Check wiring	Replace wiring
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil
			Internal error KMC2	See Remedial action	Replace KMC2
2205	2205 Valve coil Y8 front attachment backwards broken cable	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
			Determine via the terminal	Perform front attachment diagnostics	
2206	2206 Valve coils Y7/Y8 front attachment short circuit	Error: Maximum current of the front attachment forward or front attachment backward valves has fallen below the normal level	Short circuit in the wiring for front attachment forward/front attachment valve backward	Check wiring	Replace wiring

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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
			Internal error KMC2	See Remedial action	Replace KMC2
2207	2207 Reserve alarm - KMC2				
2208	2208 Reserve alarm - KMC2				https://truckmanualshub.com/
2209	2209 Valve coil Y21 discharge chute turn right broken cable	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 Valve coil Y63 precontrol valve A broken cable	Error: Current for pilot control discharge chute valve left or lift (Y63) has fallen below minimum level (Hydac valve block)	Determined via the terminal	Perform discharge chute diagnostics	
			Broken cable in the wiringPilot control discharge chute valve left or lift (Y63)	Check wiring	Replace wiring

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2211	2211 Valve coil Y64 precontrol valve B broken cable	Determined via the terminal	Valve plug defective	Check valve plug and contacts	Replace valve plug
			Coil for solenoid valve defective	Check coil	Replace coil
			Internal error KMC2	See Remedy	Replace KMC2
			Determined via the terminal	Perform discharge chute diagnostics	
			Broken cable in the wiringPilot control discharge chute valve right or lower (Y64)	Check wiring	Replace wiring
2301	2301 Valve coil Y21 discharge chute turn right short circuit	Error: Maximum current to turn discharge chute valve to the right exceeded	Valve plug defective	Check valve plug and contacts	Replace valve plug
			Coil for solenoid valve defective	Check coil	Replace coil
			Internal error KMC2	See Remedy	Replace KMC2
			Determine via the terminal	Perform discharge chute diagnostics	
			Short circuit in wiring to turn discharge chute valve right	Check wiring	Replace wiring
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2302	2302 Valve coil Y20 turn discharge chute left broken cable	Error: Minimum current turn discharge chute to the left valve has fallen below the normal level	Internal error KMC2	See Remedial action	Replace KMC2
			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
2303	2303 Valve coil Y20 turn discharge chute left short circuit	Error: Maximum current to turn discharge chute valve to the left exceeded	Internal error KMC2	See Remedial action	Replace KMC2
			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
2304	2304 Malfunction Valve coil Y24 raise discharge chute	Error: Lift discharge chute valve	Internal error KMC2	See Remedial action	Replace KMC2
			Determine via the terminal	Perform discharge chute diagnostics	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2305	2305 Malfunction Valve coil Y25 lower discharge chute	Error: Lower discharge chute valve	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
			Determine via the terminal	Perform discharge chute diagnostics	
			Function to lower discharge chute valve defective	Check the function using manual operation on the hydraulic block valve. Ensure easy motion and no noises in the discharge chute!	Change lower discharge chute valve
			Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2306	2306 Malfunction Valve coil Y22 raise ejector flap	Error: Raise discharge chute flap valve	Solenoid valve defective	Test function of solenoid valve	Replace the solenoid valve
			Internal error KMC2	See Remedial action	Replace KMC2
			Determine via the terminal	Perform discharge chute diagnostics	
			Function to 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
			Determine via the terminal	Perform discharge chute diagnostics	
2307	2307 Malfunction Valve coil Y23 lower ejector flap	Error: Lower discharge chute flap valve	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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2308	2308 Discharge chute not at top	Error: Discharge chute not up	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
			Discharge chute is not up	Check position of the discharge chute	Lift discharge chute
			Determine via the terminal	Perform discharge chute diagnostics	
			Discharge chute centre position or discharge chute lower position sensor not adjusted correctly	Check setting of the sensors	Correct setting of the sensors
			Wiring to one of the sensors discharge chute centre position or discharge chute lower position defective	Check wiring and plug	Replace cabling and plugs
			Sensor for discharge chute centre position or discharge chute lower position defective	Measure voltage on the sensors	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2400	2400 discharge chute not in parking position	Error: Discharge chute not in parking position	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
2401	2401 Sensor B28 discharge chute centre signal too low	Error: Broken cable - discharge chute centre position sensor	Internal error KMC2	See Remedial action	Replace KMC2
			Determine via the terminal	Perform discharge chute diagnostics	
			Broken cable in the wiring to the discharge chute 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
2402	2402 Sensor B28 discharge chute centre signal too large	Error: Short circuit - discharge chute centre position sensor	Internal error KMC2	See Remedial action	Replace KMC2
			Determine via the terminal	Perform discharge chute diagnostics	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2403	2403 Sensor B29 discharge chute top signal too low	Error: Broken cable - discharge chute top position sensor	Short circuit in the wiring to the discharge chute centre position sensor	Check wiring and plug	Replace wiring and plugs
			Discharge chute centre position sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2
			Determine via the terminal	Perform discharge chute diagnostics	
			Broken cable in the wiring to the discharge chute top position sensor	Check wiring and plug	Replace wiring and plugs
			Discharge chute top position sensor defective	Measure voltage on the sensor	Replace the sensor
2404	2404 Sensor B29 discharge chute top signal too large	Error: Short circuit - discharge chute top position sensor	Internal error KMC2	See Remedial action	Replace KMC2
			Determine via the terminal	Perform discharge chute diagnostics	
			Short circuit in the wiring to the discharge chute top position sensor	Check wiring and plug	Replace wiring and plugs
			Discharge chute top position sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2405	2405 Sensor B30 discharge chute impulse signal too low	Error: Broken cable discharge chute moments of momentum sensor	Determine via the terminal	Perform discharge chute diagnostics	
			Broken cable in the wiring to the discharge chute moments of momentum sensor	Check wiring and plug	Replace wiring and plugs
			Discharge chute moments of momentum sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2
					https://truckmanualshub.com/
2406	2406 Sensor B30 discharge chute impulse signal too large	Error: Short circuit discharge chute moments of momentum sensor	Determine via the terminal	Perform discharge chute diagnostics	
			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
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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2408	2408 Fault front attachment speed	Error: Front attachment speed	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
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2409	2409 Fault cutting drum speed	Error: Cutting drum speed	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
			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
			Determine via the terminal	Perform work diagnostics	
			Cutting drum speed sensor not adjusted properly	Check setting of the sensor	Correct setting of the sensor

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2410			Cutting drum attachment speed sensor defective	Measure voltage on the sensor	Replace the sensor
			Main belt for cutting drum defective	Check main belt	Change main belt
			Main coupling defective	Check main coupling	Replace main coupling
			Internal error KMC2	See Remedial action	Replace KMC2
			Determine via the terminal	Perform work diagnostics	
2411	2410 Sensor B58 cutting drum signal too low	Error: Broken cable cutting drum speed sensor	Broken cable in the wiring to the cutting drum speed sensor	Check wiring and plug	Replace wiring and plugs
			Cutting drum attachment speed sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2
			Determine via the terminal	Perform work diagnostics.	
			Short circuit in the wiring to the cutting drum speed sensor	Check wiring and plug	Replace wiring and plugs
2412	2411 Sensor B58 cutting drum signal too large	Error: Short circuit cutting drum speed sensor	Cutting drum attachment speed sensor defective	Measure voltage on the sensor	Replace sensor.
			Internal error KMC2	See Remedial action	Replace KMC2.
			Incorrect default setting	Perform metal detection diagnostics	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2413	2413 Malfunction sensor B28 discharge chute centre	Error: Time exceeded when parking or mirroring the discharge chute up to which discharge chute centre position sensor should have been alive	Conditions output metal detection, and input KMC2 deviate from each other	Check wiring between the metal detection and the KMC2	Perform test stop in metal detection diagnostics display
			Metal detection output defective	Test function of metal detection	Replace the metal detection system
			KMC2 input defective	See Remedial action	Replace KMC2
			Determine via the terminal	Perform discharge chute diagnostics	
			Wiring to the discharge chute centre position sensor defective	Check wiring and plug	Replace wiring and plugs
			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
2414	2414 Malfunction sensor B29 discharge chute top	Error: Discharge chute not up when attempting to park or mirror	Internal error KMC2	See Remedial action	Replace KMC2
			Discharge chute is not up	Check position of the discharge chute	Lift discharge chute
			Determine via the terminal	Perform discharge chute diagnostics	
			Discharge chute top position sensor is not adjusted properly	Check setting of the sensors	Correct setting of the sensors

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2415	2415 Malfunction sensor B30 discharge chute impulse	Error: Sensor, discharge chute, moments of momentum	Internal error KMC2	See Remedial action	Replace KMC2
			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 Sensor B55 front attachment left signal too low	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
			Front attachment left sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2
			Short circuit in the wiring to the front attachment left sensor	Check wiring and plug	Replace wiring and plugs
2501	2501 Sensor B55 front attachment left signal too large	Error: Short circuit front attachment left sensor	Front attachment left sensor defective	Measure voltage on the sensor	Replace the sensor

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2502	2502 Sensor B25 front attachment right signal too low	Error: Broken cable front attachment right sensor	Internal error KMC2	See Remedial action	Replace KMC2
			The setting of the front attachment in the display does not agree with the actually mounted front attachment	Check setting on the display	Correct setting on the display
			Broken cable in the wiring to the front attachment right sensor	Check wiring and plug	Replace wiring and plugs
			Front attachment right sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2	See Remedial action	Replace KMC2
2503	2503 Sensor B25 front attachment right signal too large	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
2506	2506 Release switch S1 field OFF - KMC2	Error: Action cannot be performed, or was terminated, because the field release switch is, or was, turned off	Field release switch 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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2507	2507 Release switch S5 maintenance OFF - KMC2	Error: Action cannot be performed, or was terminated, because the maintenance release switch is, or was, turned on	Internal error, operating panel	See Remedial action	Replace operating panel
			Internal error KMC2	See Remedial action	Replace KMC2
			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
2508	2508 Quick stop S90 or S91 ON - KMC2	Error: Action cannot be performed, or was terminated, because the quick stop switch is, or was, turned on	Internal error KMC2	See Remedial action	Replace KMC2
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2509	2509 Valve coil Y80 raise add.axis broken cable	Error: Current to lift additional axle valve is below minimum value (Y80)	Internal error, operating panel	See Remedial action	Replace operating panel
			Internal error KMC2	See Remedial action	Replace KMC2
			Determined via the terminal	Run travelling gear diagnostics	
			Broken cable in the wiringAdditional axle valve (Y80)	Check wiring	Replace wiring
			Valve plug defective	Check valve plug and contacts	Replace valve plug
			Coil for solenoid valve defective	Check coil	Replace coil
2510	2510 Valve coil Y81 lower add.axis broken cable	Error: Current to lower additional axle valve is below minimum value (Y81)	Internal computer error - additional axle control	See Remedy	Replace additional axle control computer
			Determined via the terminal	Run travelling gear diagnostics	
			Broken cable in the wiring for the additional axle valve (Y81)	Check wiring	Replace wiring
			Valve plug defective	Check valve plug and contacts	Replace valve plug
			Coil for solenoid valve defective	Check coil	Replace coil
			Internal computer error - additional axle control	See Remedy	Replace additional axle control computer
2511	2511 Pressure sensor B80 add.axis signal too low	Error: Broken cable for additional axle pressure sensor (B80)	Determined via the terminal	Run travelling gear diagnostics	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2512 	2512 Malfunction during lowering of add. axis	An error occurred while lowering the additional axle! Stop machine immediately and eliminate the error!	Broken cable in the wiring to the additional axle sensor (B80)	Check wiring and plug	Replace wiring and plugs
			Additional axle sensor (B80) faulty	Measure sensor supply voltage	Replace the sensor
			Internal computer error - additional axle control	See Remedy	Replace additional axle control computer
			Determined via the terminal	Run travelling gear diagnostics	
			Fault in the additional axle area	Switch off the machine and check the additional axle	Switch off the machine and remedy the fault
2513	2513 Malfunction CAN2 between add.axis and KMC2	Error: CAN bus communication from additional axle control computer to the terminal	Broken cable/short circuit in wiring for the additional axle	Check wiring and plug	Replace wiring and plugs
			Internal computer error - additional axle control	See Remedy	Replace additional axle control computer
			Determined via the terminal	Run CAN and travelling gear diagnostics	
			Additional axle set but not available	See Remedy	Check the travelling gear settings
			Power supply voltage for additional axle control computer faulty	Check fuse +22-F51	Replace fuse +22-F51
			Central electrical power supply voltage defective	LED +22-LD60 not lit	Check/replace fuse +22-F60

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2514	2514 Malfunction voltage 12V - add.axis	Error: Power supply voltage for additional axle computer too low / too high		LED +22-LD11 not lit	Check fuse +22-F92
			Short circuit/broken cable in the wiring for the CAN2 bus	Check wiring	Replace wiring
			Internal computer error - additional axle control	See Remedy	Replace additional axle control computer
			Determined via the terminal	Run travelling gear diagnostics	
			Power supply voltage for additional axle control computer faulty	Check fuse +22-F51	Replace fuse +22-F51
2515	2515 Malfunction voltage 5V - add.axis	Error: Switching voltage of additional axle too low/too high	Central electrical power supply voltage defective	LED +22-LD60 not lit	Check/replace fuse +22-F60
				LED +22-LD11 not lit	Check fuse +22-F92
			Internal computer error - additional axle control	See Remedy	Replace additional axle control computer
2600	2600 Malfunction CAN1 between terminal and KMC2	Error: CAN bus communication - KMC2 to terminal	Determined via the terminal	Run travelling gear diagnostics	
			Internal computer error - additional axle control	See Remedy	Replace additional axle control computer
			KMC2 power supply defective	Perform CAN diagnostics	
				LED +22-LD61 not lit.	Check fuse +22-F61



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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2601			Central electrical power supply defective.	LED +22-LD60 not lit.	Check fuse +22-F60
			Short circuit/broken cable in the wiring for the CAN1 bus	LED +22-LD11 not lit.	Check fuse +22-F92
				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
			Determined via the terminal	Run travelling gear diagnostics	
2602	2601 sensor B91 leak oil pressure signal too low	Error: Leakage oil pressure sensor (B91) has broken cable	Broken cable in the wiring to the sensor (B91)	Check wiring and plug	Replace wiring and plugs
			Sensor for leakage oil pressure (B91) faulty	Measure sensor supply voltage	Replace the sensor
			Internal error KMC2	See Remedy	Replace KMC2
			Determined via the terminal	Run travelling gear diagnostics	
			Short circuit in the wiring to the sensor (B91)	Check wiring and plug	Replace wiring and plugs
			Sensor for leakage oil pressure (B91) faulty	Measure sensor supply voltage	Replace the sensor
			Internal error KMC2	See Remedy	Replace KMC2

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
2603	2603 leak oil filter soiled	Error: Leakage oil filter dirty	Leakage oil filter dirty	Clean leakage oil filter	Replace leakage oil filter if necessary
			Short circuit/broken cable in wiring for leakage oil filter sensor (B91)	Check wiring to the leakage oil filter sensor (B91)	Replace wiring to the leakage oil filter sensor (B91)
			Sensor for leakage oil pressure (B91) faulty	Measure sensor supply voltage	Replace the sensor
			Internal error KMC2	See Remedy	Replace KMC2
			Leakage oil filter dirty	Clean leakage oil filter	Replace leakage oil filter if necessary
2604	2604 leak oil filter very soiled	Error: Wheel motors faulty	Sensor for leakage oil pressure (B91) faulty	Measure sensor supply voltage	Replace the sensor
			Short circuit/broken cable in wiring for leakage oil filter sensor (B91)	Check wiring to the leakage oil filter sensor (B91)	Replace wiring to the leakage oil filter sensor (B91)
			Wheel motors faulty	Check wheel motors	Consult KRONE Service
			Internal error KMC2	See Remedy	Replace KMC2
			Leakage oil filter dirty	Clean leakage oil filter	Replace leakage oil filter if necessary
3100	3100 Voltage electronics - KMC3	Error: Electronic voltage - voltage out of range	Determine via the terminal	Run electronics diagnostics.	
			KMC3 power supply defective	LED +22-LD44 not lit	Check fuse +22-F44
			Central electrical power supply voltage defective	LED +22-LD62 not lit	Check fuse +22-F62

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3101  <10V/12V	3101 Undervoltage electronics - KMC3	Error: Electronics voltage too low		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
			Determine via the terminal	Run electronics diagnostics	
			Power supply voltage of KMC3 too low	LED +22-LD44 not lit	Check fuse +22-F44

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Central electrical power supply voltage defective	LED +22-LD62 not lit	Check fuse +22-F62
			Wiring defective	LED +22-LD11 not lit	Check fuse +22-F92
				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
			Power supply voltage of KMC3 too high	Run electronics diagnostics	
			Wiring defective	Check the cables.	Replace cabling



3102 Overvoltage electronics - KMC3

Error: Electronics voltage too high

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3103  V1 <10V/12V	3103 Malfunction Voltage V1 - KMC3	Error: KMC3 output voltage of V1	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
			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
				LED +22-LD60 not lit	Check fuse +22-F60
				LED +22-LD11 not lit	Check fuse +22-F92

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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.
			Determine via the terminal	Run electronics diagnostics	
			Output voltage of V2 defective.	LED +22-LD34 not lit	Check fuse +22-F80
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD60 not lit	Check fuse +22-F60



3104 Malfunction Voltage V2 - KMC3

Error: KMC3 output voltage of V2

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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
			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



3105 Malfunction Voltage V3 - KMC3

Error: KMC3 output voltage of V3

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3106 	3106 Malfunction Voltage V4 - KMC3	Error: KMC3 output voltage of V4		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
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Internal error KMC3	See Remedial action	Replace the KMC3
			Determine via the terminal	Run electronics diagnostics	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
			Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Internal error KMC3	See Remedial action	Replace the KMC3

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3107	3107 Malfunction Voltage 12V digital sensors - KMC3	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
3108	3108 Malfunction Voltage 8V digital sensors - KMC3	KMC3 Spg. 8V dig.sensors	Internal error KMC3	See Remedial action	Replace the KMC3
			Determine via the terminal	Run electronics diagnostics	
			Short circuit in the wiring to a digital sensor	Check wiring	Replace wiring
			Digital sensor defective	Check sensors	If required, replace sensors
			Charge indicator lamp defective	Check charge indicator lamp, Check wiring	Replace cabling

Error descriptions BiG X 500-1100



Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3109	3109 Malfunction Voltage 8V analogue sensors - KMC3	Error: 8 V voltage of analogue sensors	Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Internal error KMC3	See Remedial action	Replace the KMC3
			Determine via the terminal	Run electronics diagnostics	
			Short circuit in the wiring to 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
			Internal error KMC3	See Remedial action	Replace the KMC3
3110	3110 Voltage battery 3V too low - KMC3	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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3111	3111 Cutting drum no speed!	Error: No cutting drum speed!	Determined via the terminal	Perform work diagnostics	
			Short circuit/broken cable in wiring for cutting drum speed sensor (B58)	Check wiring to the cutting drum speed sensor (B58)	Replace wiring to the cutting drum speed sensor (B58)
			Cutting drum speed sensor (B58) faulty	Check sensor	Replace the sensor
			Internal error KMC2	See Remedy	Replace KMC2
3112	3112 Joystick not correct!	Error: Joystick type set incorrectly	Current joystick type not set	Check settings	Set joystick type
3200	3200 Short circuit cracker motor 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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3201	3201 Broken cable cracker motor M11	Error: Minimum current engine cracker has fallen below the normal level	Internal error KMC3	See Remedial action	Replace the KMC3
			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 minimum distance reached	Error: When reducing the cracker gap, the current is monitored for the zero position of the cracker rollers. The current has a value between the normal and the maximum current	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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3203	3203 Malfunction cracker sensor 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.
3301	3301 Motor M9 counterblade left short circuit	Error: Maximum current left counterblade engine has been exceeded	Determine via the terminal	Check that corn conditioner moves easily	Check whether corn conditioner is mechanically jammed
				Perform counterblade diagnostics	
				Check mechanism for contamination	Remove the dirt; grease the mechanics
				Check parameters	Run default setting parameters
				Check wiring	Replace wiring

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3302	3302 Motor M9 counterblade left broken cable	Error: Minimum current left counterblade engine has fallen below the normal level	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
			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 Motor M10 counterblade right maximum current	Error: Maximum current right counterblade engine has been exceeded	Determine via the terminal	Perform counterblade diagnostics	
			Power consumption too high due to sluggish mechanics	Check mechanics	Remove the dirt; grease the mechanics

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3304	3304 Motor M10 counterblade right short circuit	Error: Maximum current right counterblade engine has been exceeded	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
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3305	3305 Motor M10 counterblade right broken cable	Error: Minimum current right counterblade engine has fallen below the normal level	Internal error KMC3	See Remedial action	Replace the KMC3
			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 Valve coil Y12 main coupling broken cable	Error: Minimum current main coupling valve has fallen below the normal level	Determine via the terminal	Perform work diagnostics	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3400			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
			Short circuit in the wiring to the sensor (B84)	Check wiring and plug	Replace wiring and plugs
3401	3400 Sensor B84 external temperature signal too large	Error: Short circuit in external temperature sensor (B84)	External temperature sensor (B84) faulty	Measure sensor supply voltage	Replace the sensor
			Internal error KMC3	See Remedy	Replace the KMC3
			Broken cable in the wiring to the sensor (B84)	Check wiring and plug	Replace wiring and plugs
			External temperature sensor (B84) faulty	Measure sensor supply voltage	Replace the sensor

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3402	3402 Sensor B85 hydraulic oil temperature signal too large	Error: Short circuit in hydraulic oil temperature sensor (B85)	Internal error KMC3	See Remedy	Replace the KMC3
			Determined via the terminal	Perform engine diagnostics	
			Short circuit in the wiring to the sensor (B85)	Check wiring and plug	Replace wiring and plugs
			Hydraulic oil temperature sensor (B85) faulty	Measure sensor supply voltage	Replace the sensor
			Internal error KMC3	See Remedy	Replace the KMC3
3403	3403 Sensor B85 hydraulic oil temperature signal too low	Determined via the terminal	Perform engine diagnostics	Perform engine diagnostics	
			Broken cable in the wiring to the sensor (B85)	Check wiring and plug	Replace wiring and plugs
			Hydraulic oil temperature sensor (B85) faulty	Measure sensor supply voltage	Replace the sensor
			Internal error KMC3	See Remedy	Replace the KMC3
3404	3404 Engine fan speed too high	Error: Maximum speed of engine fan exceeded	Determined via the terminal	Perform engine diagnostics	
			Short circuit in the wiring to the hydraulic fan control valve (Y82)	Check wiring	Replace wiring
			Valve plug defective	Check valve plug and contacts	Replace valve plug
			Coil for solenoid valve defective	Check coil	Replace coil

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3405	3405 Engine fan speed too low	Error: Engine fan speed below minimum value	Internal error DIOM	See Remedy	Replace DIOM
			Determined via the terminal	Perform engine diagnostics	
			Broken cable in the wiring-Hydraulic fan control valve (Y82)	Check wiring	Replace wiring
			Valve plug defective	Check valve plug and contacts	Replace valve plug
			Coil for solenoid valve defective	Check coil	Replace coil
3406	3406 Sensor B36 grinding stone left signal too large	Error: Short circuit left position grinding stone sensor	Internal error DIOM	See Remedy	Replace DIOM
			Determine via the terminal	Perform grinding diagnostics	
			Short circuit in the wiring to the left position grinding stone sensor	Check wiring and plug	Replace wiring and/or plugs
			Left grinding stone sensor position defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC3	See Remedial action	Replace the KMC3
3407	3407 Sensor B36 grinding stone left signal too low	Error: Broken cable left position grinding stone sensor	Determine via the terminal	Perform grinding diagnostics	
			Broken cable in the wiring to the left position grinding stone sensor	Check wiring and plug	Change wiring and/or plugs

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3408			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
			Determine via the terminal	Perform grinding diagnostics	
			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
3409			Internal error KMC3	See Remedial action	Replace the KMC3
			Determine via the terminal	Perform grinding diagnostics	
			Broken cable in the wiring to the right position grinding stone sensor	Check wiring and plug	Check wiring and/or plugs Screw
			Right grinding stone position sensor defective	Measure voltage on the sensor	Replace the sensor
			Power supply for digital sensors incorrect	Check power supply voltage	
			Internal error KMC3	See Remedial action	Replace the KMC3

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3410	3410 Sensor B59 maintenance flap grinding device signal too large	Error: Short circuit grinding device maintenance flap sensor closed	Determine via the terminal	Perform grinding diagnostics	
			Short circuit in the wiring to the grinding device maintenance flap sensor closed	Check wiring and plug	Replace wiring and/or plugs
			Grinding device maintenance flap closed sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC3	See Remedial action	Replace the KMC3
3411	3411 Sensor B59 maintenance flap grinding device signal too low	Error: Broken cable grinding device maintenance flap sensor closed	Determine via the terminal	Perform grinding diagnostics	
			Broken cable in the wiring to the grinding device maintenance flap sensor closed	Check wiring and plug	If required, replace wiring and/or plugs
			Grinding device maintenance flap closed sensor defective	Measure voltage on the sensor	Replace the sensor
			Power supply for digital sensors incorrect	Check power supply voltage	Set supply voltage
			Internal error KMC3	See Remedial action	Replace the KMC3
3500	3500 chute not in parking position!	Error: Discharge chute not in parking position	The discharge chute is not in parking position	Check whether discharge chute is in parking position	Move discharge chute into parking position
			Discharge chute centre or lower position sensor defective	Perform discharge chute diagnostics	
			Discharge chute centre position or discharge chute lower position sensor not adjusted correctly	Check setting of the sensors	Correct setting of the sensors

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3501			Wiring to one of the sensors discharge chute centre position or discharge chute lower position defective	Check wiring and plug	Replace cabling and/or plugs
			Sensor for discharge chute centre position or discharge chute lower position defective	Measure voltage on the sensor	Replace the sensor
			Internal error KMC2.	See Remedial action	Replace KMC2
			Error: Speed of 2nd diesel engine below minimum value	Perform engine diagnostics	
3504	3504 Malfunction sensor B52 pendulum frame		Determined by the diagnostic unit	Run diagnostics via MiniDiag	Consult KRONE Service
			Engine control of second engine faulty	See Remedy	Replace engine control of second engine
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3505	3505 SmartDrive safety signal missing	Error: Safety signal - Smart Drive to KMC3	Internal error KMC3	See Remedial action	Replace the KMC3
3506	3506 Malfunction Sensor B44 tank sensor	Error: Filling level fuel tank sensor	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
			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
3507	3507 Diesel engine maintenance	Note: Maintenance work must be performed	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
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3508 	3508 Air filter contaminat.	Error: Air filter contamination (800 and 1000 have 2 air filters)	Determine via the terminal	Perform engine diagnostics	
			Air filter dirty	Cleaning the Air Filter	If required, change air filter
			Short circuit/broken cable in wiring for air filter contamination sensor	Check wiring to air filter contamination sensor	Replace wiring to air filter contamination sensor
			Air filter contamination sensor defective	Measure voltage on the sensor	Replace air filter contamination sensor
			Internal error KMC3	See Remedial action	Replace the KMC3
3509 	3509 Fill level hydraulic oil control	Error: Hydraulic tank filling level	The hydraulic oil level is too low	Check hydraulic fluid level	If required, top up hydraulic fluid
			Short circuit/broken cable in the wiring for the hydraulic oil level sensor	Check wiring	Replace wiring
			Determine via the terminal	Perform work diagnostics	
			Hydraulic oil level sensor defective	Check hydraulic tank filling level sensor	If required, replace hydraulic tank filling level sensor
			Power supply voltage for analogue sensors incorrect	Check power supply voltage	Correct supply voltage
			Short circuit in the wiring to another KMC3 sensor	Check wiring	Replace wiring
			Internal error KMC3	See Remedial action	Replace the KMC3

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3510 	3510 Fault suct. return filter 1	Error: Suction return filter 1 filling level	Suction return filter 1 dirty	Clean suction return filter 1	If required, change suction return filter 1
			Determine via the terminal	Perform work diagnostics	
			Short circuit/broken cable in the wiring for the suction return filter 1 sensor	Check wiring	Replace wiring
			Suction return filter 1 sensor defective	Measure voltage on the sensor	Replace suction return filter 1 sensor
			Internal error KMC3	See Remedial action	Replace the KMC3
3511	3511 Malfunction M12 central lubrication	Error: Central lubrication IMPORTANT: All malfunction messages from the central lubrication system must be confirmed and deleted using the DK key on the central lubrication system. This will simultaneously delete any intermediate lubrication. Before deleting the error message, determine the cause of the error, and eliminate it. See also Central Lubrication System in the operating instructions.	Power supply voltage for central lubrication defective	LED +22-LD42 not lit	Check fuse +22-F89
			No grease present	Check grease filling level	See also Central Lubrication System in the operating instructions
					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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
3512	3512 Malfunction B43 sensor filling level hydraulic oil	Error: Hydraulic oil filling level	Short circuit / broken cable in the wiring to the sensor	Check wiring	Replace wiring
			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 Malfunction CAN1 between terminal - KMC3	Error: CAN bus communication - KMC3 to terminal	Determine via the terminal	Perform CAN diagnostics	
			KMC3 power supply defective	LED +22-LD44 not lit	Check fuse +22-F44
			Central electrical power supply voltage defective	LED +22-LD62 not lit	Check fuse +22-F62
				LED +22-LD11 not lit	Check fuse +22-F92
			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 deactivated!!!	Alarm: Metal detection has been switched off	Metal detection has been switched off	Perform metal detection diagnostics	Change metal detection settings
4001	4001 Malfunction voltage 10V - metal detection	Error: Power supply voltage for metal detection	Power supply voltage for metal detection defective	Check fuse +22-F55	Replace fuse +22-F55

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
4002 	4002 Malfunction voltage 8V - metal detetction	Error: Power supply voltage too low (<8V)	Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
			Wiring defective	LED +22-LD11 not lit	Check fuse +22-F92
				Check the cables.	Replace cabling
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Dynamo defective	Test function of dynamo	Replace the dynamo
			Metal detection internal error	See Remedial action	Replace the metal detection system
			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

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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
4003	4003 Metal detection activated!!!	Note: Metal detection has been turned on	none	none	none
4010	4010 stop valve Y35 broken cable - metal detection	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 stop valve Y35 short circuit - metal detection	Error: Short circuit in quick stop valve	Error: Short circuit in quick stop valve	LED +22-LD71 glowing	Check fuse +22-F71
			Central electrical power supply voltage defective	LED +22-LD11 not lit	Check fuse +22-F92
			Short circuit in the wiring for the valve	Check wiring to valve	Replace wiring to valve

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Coil for solenoid valve defective	Test coil	Replace coil
			Metal detection internal error	See Remedial action	Replace the metal detection system
4012 	4012 stop valve Y35 - metal detection	Error: Overload quick stop valve	Quick stop valve overload	LED +22-LD71 glowing	Check fuse +22-F71
			Central electrical power supply voltage defective	LED +22-LD11 not lit	Check fuse +22-F92
			Wiring to the valve defective	Check wiring to valve	Replace wiring to valve
			Coil for solenoid valve defective	Test coil	Replace coil
			Metal detection internal error	See Remedial action	Metal detection internal error
4013 	4013 internal malfunction - metal detection	Error: Quick stop valve output defective	Parameters for metal detection system incorrect	Check parameters	Set the factory settings of the metal detection in the display of the metal detection diagnostics
			Output defective	Perform metal detection diagnostics	Replace the metal detection system
			Metal detection internal error	See Remedial action	Replace the metal detection system
4032 	4032 internal malfunction - metal detection	Error: Metal detection internal	Parameters for metal detection system incorrect	Check parameters	Set the factory settings of the metal detection in the display of the metal detection diagnostics

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Metal detection internal error	See Remedial action	Replace the metal detection system
4033 	4033 internal malfunction - metal detection	Error: Metal detection internal	Parameters for metal detection system incorrect	Check parameters	Set the factory settings of the metal detection in the display of the metal detection diagnostics
			Metal detection internal error	See Remedial action	Replace the metal detection system
4034 	4034 internal malfunction - metal detection	Error: Metal detection internal	Parameters for metal detection system incorrect	Check parameters	Set the factory settings of the metal detection in the display of the metal detection diagnostics
			Metal detection internal error	See Remedial action	Replace the metal detection system
4048 	4048 internal malfunction - metal detection	Error: Metal detection internal	Parameters for metal detection system incorrect	Check parameters	Set the factory settings of the metal detection in the display of the metal detection diagnostics
			Metal detection internal error	See Remedial action	Replace the metal detection system
4049 	4049 internal malfunction - metal detection	Error: Metal detection internal	Parameters for metal detection system incorrect	Check parameters	Set the factory settings of the metal detection in the display of the metal detection diagnostics
			Metal detection internal error	See Remedial action	Replace the metal detection system

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
4050 	4050 internal malfunction - metal detection	Error: Metal detection internal	Parameters for metal detection system incorrect Metal detection internal error	Check parameters See Remedial action	Set the factory settings of the metal detection in the display of the metal detection diagnostics Replace the metal detection system
4220 	4220 Malfunction CAN2 communication - metal detection	Error: Metal detection internal	Parameters for metal detection system incorrect Metal detection internal error	Check parameters See Remedial action	Set the factory settings of the metal detection in the display of the metal detection diagnostics Replace the metal detection system
4222 	4222 internal Malfunction (parameter error) - metal detection	Error: Metal detection internal	Parameters for metal detection system incorrect Metal detection internal error	Check parameters See Remedial action	Set the factory settings of the metal detection in the display of the metal detection diagnostics Replace the metal detection system
4224	4224 Internal malfunction - metal detection	Error: Fault in metal detection or data saving	Determined via the terminal Restore factory settings for metal detection	Perform metal detection diagnostics See Remedy	Restore factory settings for metal detection in metal detection diagnostics. Replace the metal detection system

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
4301	4301 METAL DETECTED!!!	Error: Metal detected in feed drive	Metal in feed drive	Check whether there is metal in the feed drive	Remove metal and then reverse feed drive/front attachment
4302	4302 Malfunction metal detection	Error: Fault, metal detection	Incorrect default setting	Check default setting	Perform default setting in the display in the metal detection diagnostics
4400	4400 pressure sensor steer B63 signal too low	Error: Broken cable steering wheel pressure sensor	Conditions output metal detection, and input KMC2 deviate from each other	Check wiring between the metal detection and the KMC2	Perform test stop in metal detection diagnostics display
			Metal detection output defective	Perform metal detection diagnostics	Replace the metal detection system
			KMC2 input defective	Run KMC2 diagnostics	Replace KMC2
			Short circuit/broken cable in the wiring for the CAN2 bus	Check wiring	Replace wiring
			CAN2 terminating resistors defective	Check wiring and terminating resistors	If required, replace wiring and terminating resistors
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
4401	4401 pressure sensor steer B63 signal too high	Error: Short circuit steering wheel pressure sensor	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
			Determine via the terminal	Perform autopilot diagnostics	
			Steering pressure sensor function defective	Check the function using manual operation on the hydraulic block valve. Ensure easy motion and no noises in the steering!	Replace pressure sensor
			Steering hydraulic pressure defective	Check steering hydraulic pressure (0 - 200 bar)	Set steering hydraulic pressure
			Short circuit in the wiring to the sensor	Check wiring to sensor	Replace wiring to the sensor
			Sensor plug defective	Check sensor plugs	Replace sensor plug
			Sensor defective	Measure voltage on the sensor	Replace the sensor
			Short circuit in the wiring to another autopilot sensor	Check wiring	Replace wiring
			Internal error autopilot	See Remedial action	Replace autopilot

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
4402	4402 sensor steer.axis B64 signal too low	Error: Broken cable steering axle angle sensor	Determine via the terminal	Perform autopilot diagnostics	
			Broken cable in the wiring to the sensor	Check wiring to sensor	Replace wiring to the sensor
			Sensor plug defective	Check sensor plugs	Replace sensor plug
			Sensor defective	Measure voltage on the sensor	Replace the sensor
			Internal error autopilot	Measure voltage on the sensor	Replace autopilot
4403	4403 sensor steer.axis B64 signal too high	Error: Short circuit steering axle angle sensor	Determine via the terminal	Perform autopilot diagnostics	
			Short circuit in the wiring to the sensor	Check wiring to sensor	Replace wiring to the sensor
			Sensor plug defective	Check sensor plugs	Replace sensor plug
			Sensor defective	Measure voltage on the sensor	Replace the sensor
			Short circuit in the wiring to another autopilot sensor	Check wiring	Replace wiring
			Internal error autopilot	See Remedial action	Replace autopilot
4404	4404 sensor row-tracer left B65 signal too low	Error: Broken cable sensor row tracer left	Determine via the terminal	Perform autopilot diagnostics	
			Broken cable in the wiring to the sensor	Check wiring to sensor	Replace wiring to the sensor

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
4405	4405 sensor row-tracer left B65 signal too high	Error: Short circuit sensor row tracer left	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
			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
4406	4406 sensor row-tracer right B61 signal too low	Error: Broken cable sensor row tracer right	Internal error autopilot	See Remedial action	Replace autopilot
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
4407	4407 sensor row-tracer right B61 signal too high	Error: Short circuit sensor row tracer right	Internal error autopilot	See Remedial action	Replace autopilot
			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 valve coil Y39 steering axis left broken cable	Error: Broken cable steering axle valve left	Determine via the terminal	Perform autopilot diagnostics	
			Broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plug	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil
			Internal error autopilot	See Remedial action	Replace autopilot
4409	4409 valve coil Y39 steering axis left short circuit	Error: Short circuit steering axle valve left	Determine via the terminal	Perform autopilot diagnostics	

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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
			Central electrical power supply voltage defective	LED +22-LD30 not lit	Check fuse +22-F76
				LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD11 not lit	Check fuse +22-F92
			Wiring defective	Check the cables.	Replace cabling
			Battery dead	Check battery acid	Charge battery
				Check battery voltage	Change battery
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
4413	4413 Malfunction sensor voltage - Autopilot	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 Malfunction reserve 0/14 - Autopilot				https://truckmanualshub.com/
4415	4415 Malfunction reserve 0/15 - Autopilot				
4432	4432 Malfunction CAN between terminal - Autopilot	Error: CAN bus communication - autopilot to KMC3.	Determine via the terminal	Perform diagnostics for autopilot and CAN	
			Power supply voltage for autopilot incorrect	LED +22-LD50 not lit	Check fuse +22-F50
				LED +22-LD30 not lit	Check fuse +22-F76
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD11 not lit	Check fuse +22-F92

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
5000			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 empty	Error: Backup battery voltage	Discharge the backup battery	Check battery voltage	Replace backup battery in display
5001	5001 KMC2 software wrong machine type	Error: Wrong software	Internal error display	See Remedial action	Replace display
			Wrong software loaded	Check software version	Load new software
5002	5002 KMC3 software wrong machine type	KMC3 software - incorrect machine type	Wrong software loaded	Check software version	Load new software
5003	5003 Diesel engine maintenance	Note: Maintenance work must be performed	The maintenance interval has elapsed	Check whether the maintenance interval has expired	Have maintenance performed at the intended factory, and have the maintenance reminders reset
					Perform engine diagnostics
5004	5004 Diesel engine maintenance	Note: Maintenance work must be performed	The maintenance interval has elapsed	Check whether the maintenance interval has expired	Have maintenance performed at the intended factory, and have the maintenance reminders reset
					Perform engine diagnostics
5005	5005 Software inconsistent	The installed software versions of the individual control units are not compatible.	One or more control units on the machine have an incorrect software version.	Display the software versions on the terminal of the machine on the "Software Info" screen and compare with the software	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
5006	5006 Electronic Autopilot still active	Note: Autopilot electronics still active	Determined via the terminal	information in the KroneDownloadCenter. The control unit where the incorrect software version has been transferred, transfer correspondingly new software	
5007	5007 Recalibrate cracker	Note: Calibration work must be performed	Autopilot release switch turned on	Perform autopilot diagnostics	Turn off Autopilot release switch
5008	5008 Memory for error list full	Error: Wait queue for saving data full	Check whether calibration is required	Run grain conditioner diagnostics	
5009	5009 Diesel engine oil pressure too low	Error: Diesel engine oil pressure has fallen below minimum value	Calibration required	See Remedy	Perform calibration
5010	5010 Cooling water temperature too high	Error: Cooling water temperature too high!	Wait queue for saving data full	See Remedy	Consult KRONE Service
			Determined via the terminal	Perform engine diagnostics	
			Determined by the diagnostic unit	Run diagnostics using the engine diagnostic device	Consult KRONE Service
			Engine control faulty	See Remedy	Replace engine control
			The cooling water temperature is too high	Check radiator to ensure it is clean	Clean the radiator
			Determined via the terminal	Perform engine diagnostics	
			Determined by the diagnostic unit	Run diagnostics using the engine diagnostic device	Consult KRONE Service

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
5011	5011 Check diesel engine type setting	Fault: Diesel engine type lost	Setting of diesel engine not available	Check engine type setting in the terminal	Contact KRONE customer service
7000	7000 Acceleration sensor left BXX signal too low - RockProtect	Error: Acceleration sensor left broken cable	Broken cable in the wiring to the left acceleration sensor	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 Acceleration Sensor left BXX overvoltage - RockProtect	Error: Acceleration sensor left voltage too high	Short-circuit of operating voltage for acceleration sensor left	Check wiring and plug	Replace wiring and/or plugs
			Left acceleration sensor defective	Measure voltage on the sensor	Replace left sensor
			Internal error - KMC4	See Remedial action	Replace KMC4
7002	7002 Malfunction acceleration sensor left BXX - RockProtect	Error: RockProtect acceleration sensor left	Determined via the terminal	Run RockProtect diagnostics	
			Acceleration sensor faulty	Measure sensor supply voltage	Replace the sensor
			Internal error KMC4 (RockProtect)	See Remedy	Replace KMC4 (RockProtect)
7003	7003 Acceleration sensor B76 right signal too low - RockProtect	Error: Acceleration sensor right broken cable	Broken cable in the wiring to the right acceleration sensor	Check wiring and plug	Replace wiring and plugs
			Right acceleration sensor defective	Measure voltage on the sensor	Replace left sensor
			Internal error - KMC4	See Remedial action	Replace KMC4

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
7004	7004 Overvoltage acceleration sensor B76 signal too high - RockProtect	Error: Acceleration sensor right voltage too high	Short-circuit of operating voltage for acceleration sensor right	Check wiring and plug	Replace wiring and/or plugs
			Right acceleration sensor defective	Measure voltage on the sensor	Replace right sensor
			Internal error - KMC4	See Remedial action	Replace KMC4
7005	7005 Malfunction acceleration sensor B76 right - RockProtect	Error: RockProtect acceleration sensor right	Determined via the terminal	Run RockProtect diagnostics	
			Acceleration sensor (B75) faulty	Measure sensor supply voltage	Replace the sensor
			Internal error KMC4 (RockProtect)	See Remedy	Replace KMC4 (RockProtect)
7006	7006 Path sensor BXX signal too low - RockProtect	Error: Broken cable - path sensor	Broken cable in the wiring to the path sensor	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 Path sensor BXX overvoltage - RockProtect	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 Path sensor BXX Malfunction - RockProtect	Error: RockProtect distance sensor	Determined via the terminal	Run RockProtect diagnostics	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
7009	7009 Stop valve Y35 broken cable - RockProtect	Error: Valve current is below the minimum level	Distance sensor (B72) faulty	Measure voltage on sensor	Replace the sensor
			Internal error KMC4 (RockProtect)	See Remedy	Replace KMC4 (RockProtect)
			Broken cable 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
7010	7010 Stop valve Y35 short circuit - RockProtect	Error: Maximum valve current exceeded	Internal error - KMC4	See Remedial action	Internal error - KMC4
			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 Malfunction valve coil Y35 - RockProtect	Determined via the terminal	Run RockProtect diagnostics	Run RockProtect diagnostics	
			Internal error KMC4 (RockProtect)	See Remedy	Replace KMC4 (RockProtect)
7012	7012 Undervoltage electronics - RockProtect	Error: Voltage in KMC4 is too low	Wiring defective	Check the cables.	Replace cabling

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
7013	7013 Overvoltage electronics - RockProtect	Error: Voltage in KMC4 is too high	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
			Internal error - KMC4	See Remedial action	Replace KMC4
			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
7014	7014 Undervoltage sensors - RockProtect	Error: Voltage on sensors too low	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
			Wiring defective	Check the cables.	Replace cabling
			Wiring to a 12 V sensor defective	Check wiring	Replace wiring

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
7015	7015 Overvoltage sensors - RockProtect	Error: Voltage on sensors too high	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
			The controller of the dynamo is defective	While engine is running, measure on batteries. Voltage must not be over 14.8V	Replace the dynamo
7016	7016 Rock detected!!	Error: Rock detected in the feed drive	Dynamo defective	Test dynamo	Replace the dynamo
			Battery change-over relay defective (500, 800, and 1000)	Test function of the relays according to circuit diagram	Replace battery change-over relay
			Internal error - KMC4.	See Remedial action	Replace KMC4
7016	7016 Rock detected!!	Error: Rock detected in the feed drive	Rock in feed drive	Check whether stone in feed drive	Remove rock and then reverse feed drive/front attachment
8000	8000 ensilage tank empty	Error: silage tank empty	Silage tank empty	Check tank	Fill tank
			Sensor (B60) defective	Measure sensor supply voltage	Replace sensor (B60)

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
8001	8001 Error ensilage pump	Error: Silage agent pump defective	Wiring faulty	Check wiring and plug	If required, replace wiring and/or plug
			Internal error KMC2/3	See Remedy	Replace KMC2/3
			Determined via the terminal	Perform work diagnostics	
			Short circuit/broken cable in the silage agent pump wiring	Check wiring	Replace wiring
			Silage agent pump faulty	Check silage agent pump	Replace silage agent pump
			Short circuit/broken cable in wiring for the silage agent flow sensor (B77)	Check wiring	Replace wiring
			Silage agent flow sensor (B77) faulty	Measure sensor supply voltage	Replace sensor (B77)
			Internal error KMC3	See Remedy	Replace the KMC3
9611	9611 Overvoltage - AutoScan	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
			Battery change-over relay defective (500, 800, and 1000)	Test function of the relays according to circuit diagram	Replace battery change-over relay

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9612	9612 Undervoltage 10V - AutoScan	Error: Supply voltage too low (	Internal error - AutoScan	See Remedial action	Replace AutoScan
			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
9613	9613 Undervoltage 8V - AutoScan	Error: Supply voltage too low (	Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Test function of dynamo	Replace the dynamo
			Internal error - AutoScan	See Remedial action	Replace AutoScan
			Determine via the terminal	Perform AutoScan diagnostics	
			AutoScan power supply voltage too low	Check fuse +22-F58	Change fuse +22-F58

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Central electrical power supply voltage defective	LED +22-LD63 not lit.	Check fuse +22-F63
			Wiring defective	LED +22-LD11 not lit	Check fuse +22-F92
				Check the cables.	Replace cabling
				Check battery acid	Charge battery
			Battery dead	Check battery voltage	Change battery
9614	9614 Glass scratched - AutoScan	Error: AutoScan glass scratched	Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Test function of dynamo	Replace the dynamo
			Internal error - AutoScan	See Remedial action	Replace AutoScan
			Determine via the terminal	Perform AutoScan diagnostics	
			AutoScan glass scratched	Check AutoScan for scratches	Replace AutoScan
9615	9615 Malfunction LED 1 - AutoScan	Error: AutoScan LED1 defective	Determine via the terminal	Perform AutoScan diagnostics	
			AutoScan LED 1 defective	Test function of LED	Replace AutoScan
9616	9616 Malfunction LED 2 - AutoScan	Error: AutoScan LED2 defective	Determine via the terminal	Perform AutoScan diagnostics	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			AutoScan LED 2 defective	Test function of LED	Replace AutoScan
9617	9617 Malfunction Photo diode - AutoScan	Error: AutoScan photo diode defective	AutoScan photo diode defective	See Remedial action	Replace AutoScan
9618	9618 Internal Malfunction (parameter error) - AutoScan	Error: AutoScan wrong parameters	Wrong AutoScan parameters	Check parameters	Correct parameters
9907	9907 Malfunction CAN2 between KMC2 and Rock Protect	Error: CAN bus communication - RockProtect to KMC2	Determined via the terminal	Run diagnostics for RockProtect and CAN	
			RockProtect supply voltage faulty	LED +22-LD4 not lit	Check fuse +22-F40
				LED +22-LD6 not lit	Check fuse +22-F39
				LED KMC4 not lit/not flashing	Check fuse for KMC4 (RockProtect)
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD60 not lit	Check fuse +22-F60
			Short circuit/broken cable in the wiring for the CAN2 bus	LED +22-LD11 not lit	Check fuse +22-F92
				Check wiring and resistance values.	Replace wiring
			Internal error KMC4 (RockProtect)	See Remedy	Replace KMC4 (RockProtect)
9910	9910 Malfunction CAN2-communication between KMC2 - NIR-Sensor (A37)	Fault: Communication between KMC2 and NIR sensor	Determination via terminal	Carry out CAN diagnostics	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9911 	9911 Malfunction CAN2 between KMC2 and Autoscan	Error: CAN bus communication - AutoScan to terminal	Power supply NIR sensor defective	Check LED LD7 on relay circuit board console	Check/replace fuse F41 on relay circuit board console
			Short circuit / broken cable in the wiring for the CAN2 bus	Check wiring and plug	Replace wiring and plug
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
			Internal error - KMC2 or NIR sensor	See remedy	Replace KMC2 or NIR sensor
			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
			Internal error - AutoScan	See Remedial action	Replace AutoScan

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9920 	9920 Malfunction CAN1 between terminal and joystick	Error: CAN bus communication - joystick to terminal	Determine via the terminal	Perform CAN diagnostics	
			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
9921 	9921 Malfunction CAN1 between terminal and CU	Error: CAN bus communication - CU to terminal	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
			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
				LED +22-LD64 not lit	Check fuse +22-F64

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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, change wiring and/or terminating resistors
			Internal error, operating panel	See Remedial action	Replace operating panel
9922 	9922 Malfunction CAN2 between KMC2 and manual operation.	Error: CAN bus communication - manual operation to KMC2	Determined via the terminal	Perform CAN diagnostics	https://truckmanualshub.com/
			Power supply voltage for manual operation defective	Check fuse +22-F56	Replace fuse +22-F56
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD60 not lit	Check fuse +22-F60
				LED +22-LD11 not lit	Check fuse +22-F92
			Short circuit/broken cable in the wiring for the CAN2 bus	Check wiring and resistance values.	Replace wiring
			Determine via the terminal	Perform CAN diagnostics	
9923 	9923 Malfunction CAN3 between terminal and EMR	Error: CAN bus communication - EMR to terminal	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

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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 CAN3 bus	Check wiring	Replace wiring
			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
9924 	9924 Malfunction CAN2 between KMC2 and metal detection	Error: CAN bus communication - metal detection to terminal	Determine via the terminal	Perform CAN diagnostics	https://truckmanualshub.com/
			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 Malfunction CAN1 between terminal and DIOM	Error: CAN bus communication - DIOM to terminal	Determine via the terminal	Perform CAN diagnostics	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9926 	9926 Malfunction CAN3 between terminal - ADM1/MFR	Error: CAN bus communication - ADM1 to terminal	Power supply voltage DIOM defective	LED +22-LD59 not lit	Check fuse +22-F59
			Central electrical power supply voltage defective	LED +22-LD27 not lit	Check fuse +22-F73
				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
			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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9945	9945 hardware restart KMC2	Error: Restart KMC2 hardware		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
			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
			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
9946	9946 hardware restart Autopilot	Error: Restart autopilot hardware	Internal error KMC2	See Remedial action	Replace KMC2
			Power supply voltage for autopilot incorrect	LED +22-LD50 not lit	Check fuse +22-F50

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9947	9947 hardware restart RockProtect	Error: Restart RockProtect hardware		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
			Internal error autopilot	See Remedial action	Replace autopilot
			RockProtect supply voltage faulty	LED +22-LD4 not lit	Check fuse +22-F40
				LED +22-LD6 not lit	Check fuse +22-F39
9950	9950 Restart hardware NIR-Sensor (A37)	Fault: Electrical power supply interrupted, restart of the hardware	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 plug
			Internal error KMC4 (RockProtect)	See Remedy	Replace KMC4 (RockProtect)
			Power supply NIR sensor defective	Check LED LD7 on relay circuit board console	Check/replace fuse F41 on relay circuit board console

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9951	9951 hardware restart maturity detection	Error: Restart AutoScan hardware	Wiring faulty	Check wiring and plug	Replace wiring and plug
			Internal error NIR sensor	See remedy	Replace NIR sensor
			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
9953	9953 hardware restart KMC3	Error: Restart KMC3 hardware	Wiring faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Internal error - AutoScan	See Remedial action	Replace AutoScan
			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
9960	9960 hardware restart joystick	Error: Restart joystick hardware	Wiring faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Internal error KMC3	See Remedial action	Replace the KMC3
			Joystick power supply defective	Check fuse +22-F57	Change fuse +22-F57

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9961	9961 hardware restart CU	Error: Restart CU hardware			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
			Power supply voltage CU defective	Check fuse +22-F47	Change fuse +22-F47
9962	9962 hardware restart manual operation	Error: Restart manual operation hardware			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
9962	9962 hardware restart manual operation	Error: Restart manual operation hardware	Power supply voltage for manual operation defective	Check fuse +22-F56	Change fuse +22-F56

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9963				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
			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
9964	9963 hardware restart EMR	Error: Restart EMR hardware		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
			Power supply voltage for metal detection defective	LED +16-LD1 not lit	Check fuse +22-F55
9964	9964 hardware restart met. detect.	Error: Restart metal detection hardware	Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63
			Wiring faulty	Check wiring and plug	If required, replace wiring and/or plugs

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Metal detection internal error	See Remedial action	Replace the metal detection system
9965	9965 Restart hardware DIOM	Error: Restart DIOM hardware	Power supply voltage DIOM defective	LED +22-LD59 not lit	Check fuse +22-F59
				LED +22-LD27 not lit	Check fuse +22-F73
			Central electrical power supply voltage defective	LED +22-LD60 not lit	Check fuse +22-F60
				LED +22-LD63 not lit	Check fuse +22-F63
				LED +22-LD11 not lit	Check fuse +22-F92
9966	9966 hardware restart ADM1 / MFR	Error: Restart ADM1 hardware	Wiring faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Internal error DIOM	See Remedial action	Replace DIOM
			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
				LED +22-LD64 not lit	Check fuse +22-F64
				LED +22-LD11 not lit	Check fuse +22-F92

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9967	9967 hardware restart ADM engine2	Error: Restart ADM2 hardware (800 and 1000)	Wiring faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Internal error ADM1	See Remedial action	Replace ADM1
			Power supply voltage ADM2 defective	Check fuse +22-F66	Change fuse +22-F66
				LED +22-LD16 not lit	Check fuse +22-F69
9982	9982 CAN1-Communication SmartDrive/DRC restored	Error: Interruption in CAN communication to SmartDrive	Wiring faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Internal error ADM2	See Remedial action	Replace ADM2
			Short circuit/broken cable in the wiring for the CAN1 bus	Check wiring	Replace wiring
			CAN1 terminating resistors defective	Check wiring and terminating resistors	If required, replace wiring and/or terminating resistors
9985	9985 CAN1-Communication KMC2 restored	Error: Error - interruption of the CAN communication to KMC2	Internal SmartDrive error	See Remedial action	Replace 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 error KMC2	See Remedial action	Replace KMC2

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
9986	9986 CAN1-Communication Autopilot restored	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 CAN-Communication RockProtect restored	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 CAN-Communication AutoSCAN-Sensor (A40) restored	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 CAN1-Communication KMC3 restored	Error: Error - interruption of the CAN communication to KMC3	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 KMC3	See Remedial action	Replace the KMC3

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
10000	10000 Overvoltage 12V - NIR sensor	Fault: 12V power supply voltage is too high	Determination via terminal	Carry out moisture measuring diagnostics	Read voltage values
			Power supply NIR sensor defective	Check LED LD7 on relay circuit board console	Check/replace fuse F41 on relay circuit board console
			Controller of the dynamo is defective	Measure on batteries while the engine is running. The voltage may not exceed 14,8V	Replace the dynamo
			Dynamo defective	Check the dynamo	Replace the dynamo
			Internal error NIR sensor	See remedy	Replace NIR sensor
10001	10001 Undervoltage 12V - NIR sensor	Fault: 12 V power supply voltage is too low	Determination via terminal	Carry out moisture measuring diagnostics	Read voltage values
			Discharge battery	! "Check battery voltage/ Check battery voltage!"	Charge battery/ replace battery
			Power supply NIR sensor defective	Check LED LD7 on relay circuit board console	Check/replace fuse F41 on relay circuit board console
			Power supply voltage additional electrical system defective	Check LED LD4 on relay circuit board console	Check/replace fuse F40 on relay circuit board console
			Dynamo defective	Check the dynamo	Replace the dynamo
10002	10002 Internal Malfunction - NIR sensor	Fault: internal malfunction NIR sensor, no troubleshooting possible	Internal error NIR sensor	See remedy	Replace NIR sensor
			Internal error NIR sensor	See remedy	Replace NIR sensor

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
10003	10003 Internal Malfunction - NIR sensor	Fault: internal malfunction NIR sensor, no troubleshooting possible	Internal error NIR sensor	See remedy	Replace NIR sensor
10004	10004 Internal Malfunction - NIR sensor	Fault: internal malfunction NIR sensor, no troubleshooting possible	Internal error NIR sensor	See remedy	Replace NIR sensor
10005	10005 Internal Malfunction - NIR sensor	Fault: internal malfunction NIR sensor, no troubleshooting possible	Internal error NIR sensor	See remedy	Replace NIR sensor
10006	10006 Internal Malfunction - NIR sensor	Fault: internal malfunction NIR sensor, no troubleshooting possible	Internal error NIR sensor	See remedy	Replace NIR sensor
10100	10100 Malfunction Temperature element - NIR sensor	Fault: Power supply NIR sensor defective	Determination via terminal	Carry out moisture measuring diagnostics	Check temperature display
			Internal error NIR sensor	See remedy	Replace NIR sensor
10101	10101 Internal Malfunction - NIR sensor	Fault: internal malfunction NIR sensor, no troubleshooting possible	Internal error NIR sensor	See remedy	Replace NIR sensor
10102	10102 Internal Malfunction - NIR sensor	Fault: internal malfunction NIR sensor, no troubleshooting possible	Internal error NIR sensor	See remedy	Replace NIR sensor
10103	10103 Internal Malfunction - NIR sensor	Fault: internal malfunction NIR sensor, no troubleshooting possible	Internal error NIR sensor	See remedy	Replace NIR sensor
10107	10107 Malfunction calibration - NIR sensor	Fault: Automatic calibration failed	Determination via terminal	Carry out moisture measuring diagnostics	Carry out restart of the machine
			Internal error NIR sensor	See remedy	Replace NIR sensor
15000	15000 CAN1-Communication Joystick restored	Error: Interruption in CAN communication to Joystick	Short circuit/broken cable in the wiring for the CAN1 bus	Check wiring	Replace wiring
			CAN1 terminating resistors defective	Check wiring and terminating resistors	If required, replace wiring and/or terminating resistors

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
15001	15001 CAN1-Communication CU restored	Error: Interruption in CAN communication to CU	Internal joystick error	See Remedial action	Replace 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	
			Internal error, operating panel	See Remedial action	Replace operating panel
15002	15002 CAN-Communication manual operation restored	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 CAN-Communication EMR restored	Error: Interruption in CAN communication to EMR	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 EMR error	See Remedial action	Replace the EMR
15004	15004 CAN-Communication metal detection restored	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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			Metal detection internal error	See Remedial action	Replace the metal detection system
15005	15005 CAN1-Communication DIOM restored	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 CAN-Communication ADM/MIFR restored	Error: Interruption in CAN communication to ADM1	Short circuit / broken cable in the wiring for the CAN3 bus	Check wiring	Replace wiring
			CAN3 terminating resistors defective	Check wiring and terminating resistors	If required, replace wiring and/or terminating resistors
			Internal error ADM1	See Remedial action	Replace ADM1
15007	15007 CAN-Communication ADM engine 2 restored	Error: Interruption in CAN communication - ADM2 to terminal (800 and 1000)	Short circuit / broken cable in the wiring for the CAN3 bus	Check wiring	Replace wiring
			CAN3 terminating resistors defective	Check wiring and terminating resistors	If required, replace wiring and/or terminating resistors
			Internal error ADM2	See Remedial action	Replace ADM2
16000	16000 DIOM CAN1 communication - DIOM	Error: Communication - DIOM to CAN	Determine via the terminal	Perform CAN diagnostics	
			Power supply voltage DIOM defective	LED +22-LD59 not lit	Check fuse +22-F59

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16001				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
16002	16001 Malfunction temperature - DIOM	Error: DIOM temperature too high	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
			DIOM has overheated	See Remedial action	Allow DIOM to cool down
			Internal error DIOM	See Remedial action	Replace DIOM
			Determine via the terminal	Run electronics diagnostics	
16002	16002 Malfunction internal voltage - DIOM	Error: Internal voltage in DIOM incorrect	Internal voltage in DIOM incorrect	LED +22-LD59 not lit	Check fuse +22-F59
				LED +22-LD27 not lit	Check fuse +22-F73
			Central electrical power supply voltage defective	LED +22-LD63 not lit	Check fuse +22-F63

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16003	16003 Malfunction operating voltage - DIOM	Error: DIOM UB voltage incorrect		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
			Determine via the terminal	Run electronics diagnostics	https://truckmanualshub.com/
			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
16004	16004 Malfunction total current - DIOM	Error: DIOM overall current incorrect	Wiring faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Internal error DIOM	See Remedial action	Replace DIOM
			Determine via the terminal	Run electronics diagnostics	

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			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
16005	16005 Malfunction current at output - DIOM		Wiring faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Internal error DIOM	See Remedial action	Replace DIOM
			Internal DIOM error	See Remedy	Consult KRONE Service
16006	16006 Malfunction hardware - DIOM	Error: DIOM hardware defective	Short circuit/broken cable in the wiring	Check wiring	Replace wiring
			Internal error DIOM	See Remedial action	Replace DIOM
16007	16007 Malfunction internal voltage UC - DIOM	Error: DIOM UC voltage incorrect	Determine via the terminal	Run electronics diagnostics	
			Power supply voltage DIOM defective	LED +22-LD59 not lit	Check fuse +22-F59
				LED +22-LD27 not lit	Check fuse +22-F73

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16008	16008 Malfunction voltage 7.5V - DIOM	Error: DIOM 7.5 V voltage incorrect	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
			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
16009	16009 Internal error - DIOM	Error: EEPROM defective	Wiring faulty	Check wiring and plug	If required, replace wiring and/or plugs
			Internal error DIOM	See Remedial action	Replace DIOM
			EEPROM defective	See Remedial action	Replace DIOM

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16010	16010 Overcurrent valve coil Y66 steering lock left - DIOM	Error: Maximum current on left steering valve	Internal error DIOM	See Remedial action	Replace DIOM
			Determine via the terminal	Perform DIOM diagnostics	
			Short circuit/broken cable in the wiring for the valve	Check wiring to valve	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
			Determine via the terminal	Perform DIOM diagnostics	
16011	16011 Overcurrent valve coil Y67 steering lock right - DIOM	Error: Maximum current on right steering 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 solenoid valve	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16012	16012 Overcurrent valve coil Y62 additive hydraulic 2 DOWN - DIOM	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
					https://truckmanualshub.com/
16013	16013 Overcurrent valve coil Y63 additive hydraulic 2 UP - DIOM	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
			Coil for solenoid valve defective	Test coil	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM
16014	16014 Overcurrent valve coil Y51 additive hydraulic 1 hitch UP - DIOM	Error: Over-current in additional hydraulics 1 UP	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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16015	16015 Overcurrent valve coil Y52 additive hydraulic 1 hitch DOWN - DIOM	Error: Over-current in additional hydraulics 1 DOWN	Coil for solenoid valve defective	Test coil	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM
			Determine via the terminal	Perform work diagnostics	
			Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM
16016	16016 Overcurrent relay K28 molasses - DIOM	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
16017	16017 Overcurrent valve coil Y56 coupling 2nd diesel engine - DIOM	Error: Over-current in coupling for 2nd diesel engine	Short circuit/broken cable in the wiring for the 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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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16018	16018 Malfunction output valve coil Y66 steering lock left - DIOM	Error: Status of PWM1 on left steering valve defective	Short circuit/broken cable in the wiring for the valve	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 Malfunction output valve coil Y67 steering lock right - DIOM	Error: Status of PWM2 on right steering valve defective	Short circuit/broken cable in the wiring for the valve	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
16020	16020 Malfunction output valve coil Y62 additive hydraulic 2 DOWN - DIOM	Error: Status of PWM3 on additional hydraulics 2 defective	Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			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 Malfunction output valve coil Y63 additive hydraulic 2 UP - DIOM	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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16022	16022 Malfunction output valve coil Y51 additive hydraulic 1 hitch UP - DIOM	Error: Status of DI on additional hydraulics 1 hitch UP defective	Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM
			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
16023	16023 Malfunction output valve coil Y52 additive hydraulic 1 hitch DOWN - DIOM	Error: Status of DI on additional hydraulics 1 hitch DOWN defective	Determine via the terminal	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

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16024	16024 Malfunction output relay K28 molasses - DIOM	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 Malfunction output valve coil Y56 coupling 2nd diesel engine - DIOM	Error: Status of DI on coupling for 2nd diesel engine defective	Short circuit/broken cable in the wiring for the valve	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 current				
16042	16042 reserve DIOM PWM7 current				
16043	16043 reserve DIOM PWM8 current				
16044	16044 Overcurrent relay K15 terminating resistor CAN2 KMC2 - DIOM	Error: Terminating resistor CAN2 KMC2 over-current	Determine via the terminal	Perform CAN diagnostics.	
			Short circuit / broken cable in the wiring for the resistor	Check wiring.	Replace wiring.

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16045	16045 Overcurrent valve coil Y73 engine cleaning comp.air - DIOM	Error: Over-current - compressed air for engine cleaning	Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM
16046	16046 Overcurrent valve coil Y75 pressure relief front attachment - DIOM				https://truckmanualshub.com/
16047	16047 Reserve DIOM DIG8 current				
16048	16048 Reserve DIOM PWM5 state	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
16049	16049 Reserve DIOM PWM6 state				
16050	16050 reserve DIOM PWM7 state				

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16051	16051 reserve DIOM PWM8 state				
16052	16052 Malfunction output relay K15 terminating resistor CAN2 KMC2 - DIOM	Error: Terminating resistor CAN2 KMC2 status D	Determine via the terminal	Perform CAN diagnostics	
			Short circuit / broken cable in the wiring for the resistor	Check wiring	Replace wiring
16053	16053 Malfunction output valve coil Y73 engine cleaning comp.air - DIOM	Error: Compressed air for engine cleaning status D	Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM
16054	16054 Malfunction output valve coil Y75 pressure relief front attachment - DIOM				
16055	16055 reserve DIOM DIG8 state				
16071	16071 reserve DIOM PWM10 current				

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16072	16072 reserve DIOM PWM11 current				
16073	16073 reserve DIOM PWM12 current				
16074	16074 Overcurrent 12/24V changeover K41 - DIOM	Error: Over-current 12/24-V switching relay	Central electrical power supply voltage defective	LED +22-LD41 not lit	Check fuse +22-F88
					Check fuse +22-F93
				LED +22-LD11 not lit	Check fuse +22-F92
16075	16075 Overcurrent rel.voltage feed drive/front attachment - DIOM	Error: Over-current feed drive/front attachment	Short circuit/broken cable in the wiring for the valve	Check wiring	Replace wiring
16076	16076 Overcurrent horn metal detection K18 - DIOM	Error: Over-current metal detection horn	Short circuit / broken cable in the wiring for the horn	Check wiring	Replace wiring
16077	16077 Overcurrent valve coil Y65 grind.flap open/closed - DIOM	Error: Over-current grinding flap open/closed	Determine via the terminal	Perform grinding diagnostics	
			Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM

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Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
16078	16078 Overcurrent valve coil Y82 hydraulic air regulation - DIOM				
16079	16079 reserve DIOM PWM10 state				
16080	16080 reserve DIOM PWM11 state				
16081	16081 Reserve DIOM PWM12 state				
16082	16082 Malfunction output relay K41 12/24V changeover - DIOM	Error: Over-current 12/24-V switching relay	Central electrical power supply voltage defective	LED +22-LD41 not lit	Check fuse +22-F88
					Check fuse +22-F93
				LED +22-LD11 not lit	Check fuse +22-F92
16083	16083 Malfunction release voltage feed drive/front attachment - DIOM	Error: Release voltage feed drive/front attachment	Short circuit/broken cable in the wiring for the valve	Check wiring	Replace wiring
16084	16084 Malfunction output relay K18 horn metal detection - DIOM	Error: Horn metal detection	Short circuit / broken cable in the wiring for the horn	Check wiring	Replace wiring
16085	16085 Malfunction valve coil Y65 grinding flap open/closed - DIOM	Error: Grinding flap open/closed	Short circuit/broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve

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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 the solenoid valve
			Internal error DIOM	See Remedial action	Replace DIOM
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