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!

1.2.9 Consumables

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

*** See accompanying documents (DaimlerChrysler)**

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

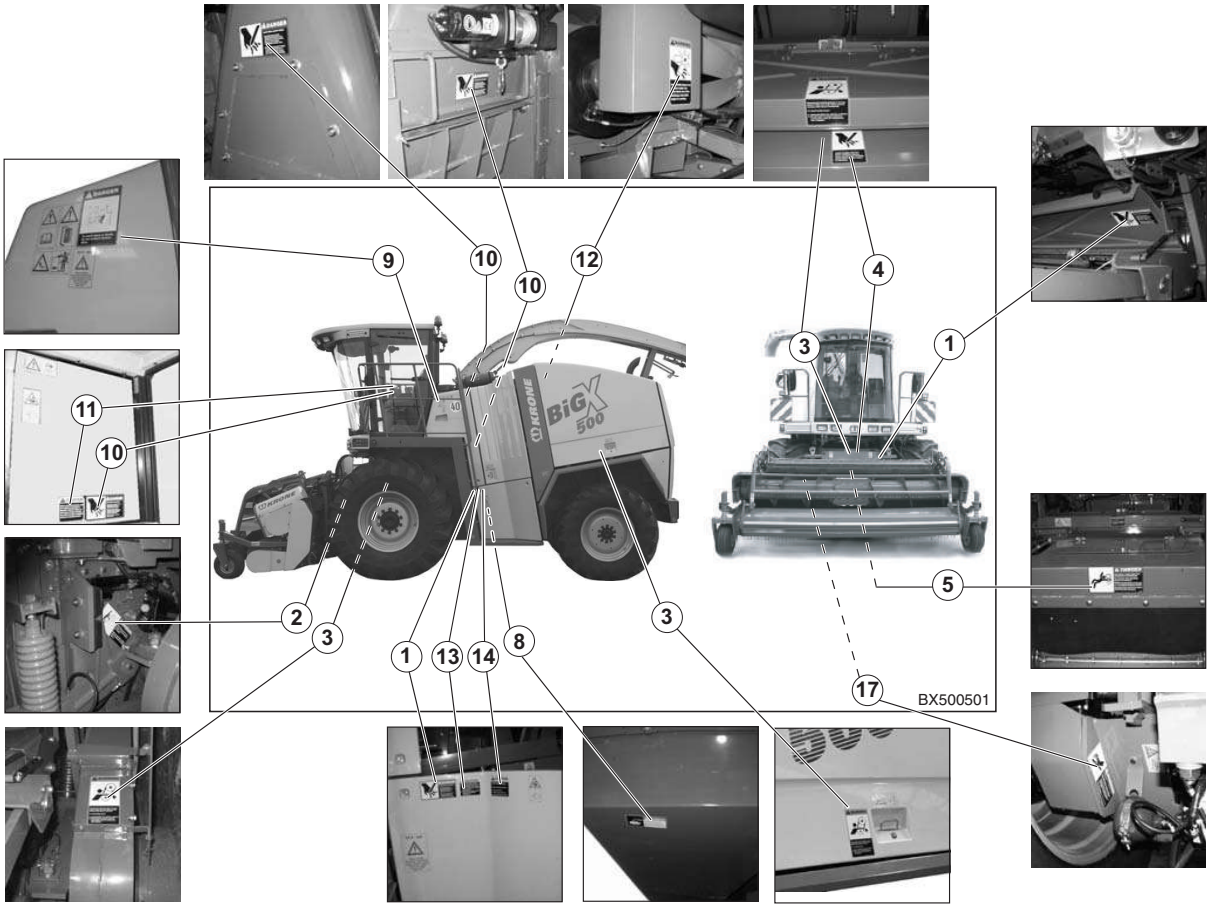
As a general rule, the oils listed in the chapter on maintenance/hydraulic can be used as well.

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

1.2.10 Accompanying documents

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

All information, illustrations and technical data in this operating manual are in keeping with the latest state of technology at the point of publication. Design subject to modifications at any time without any stated reason.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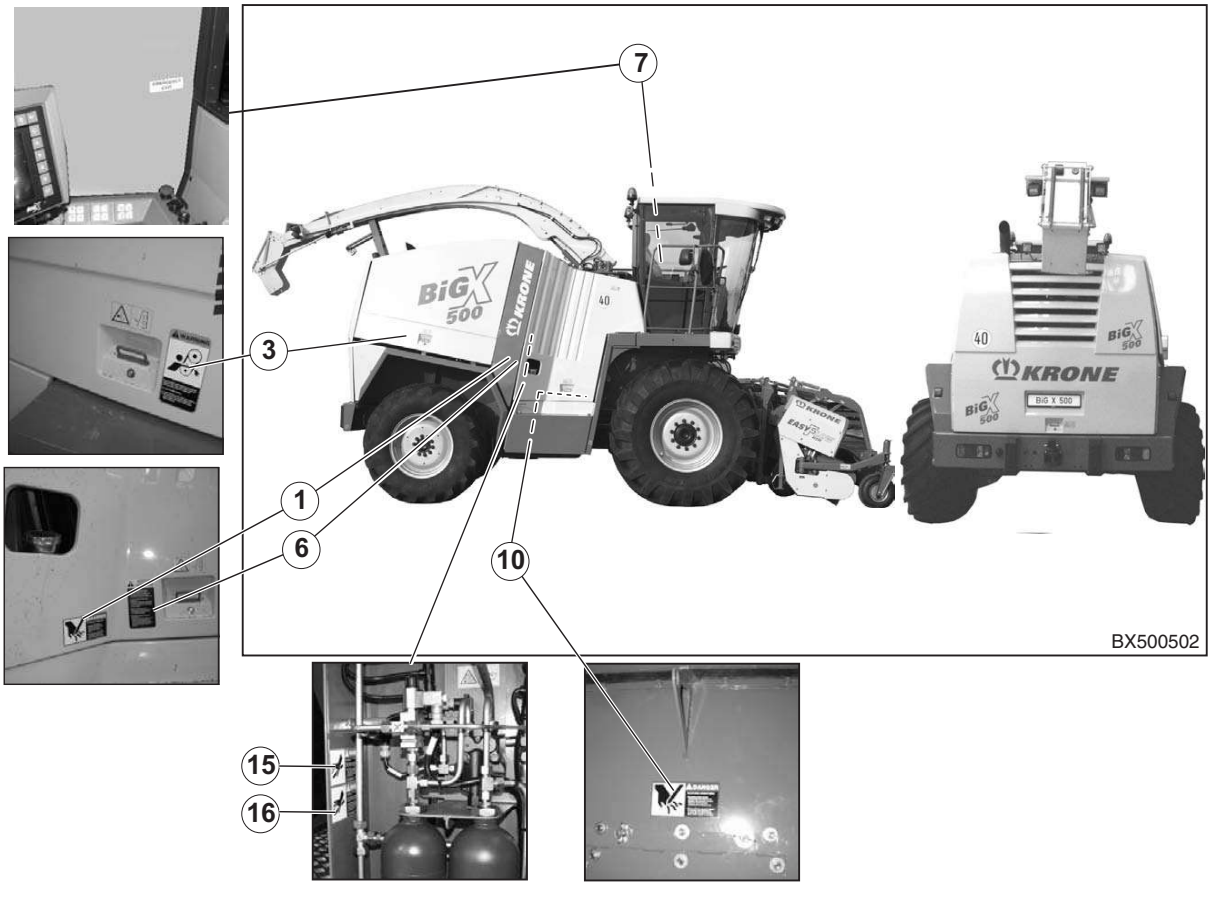
BX500501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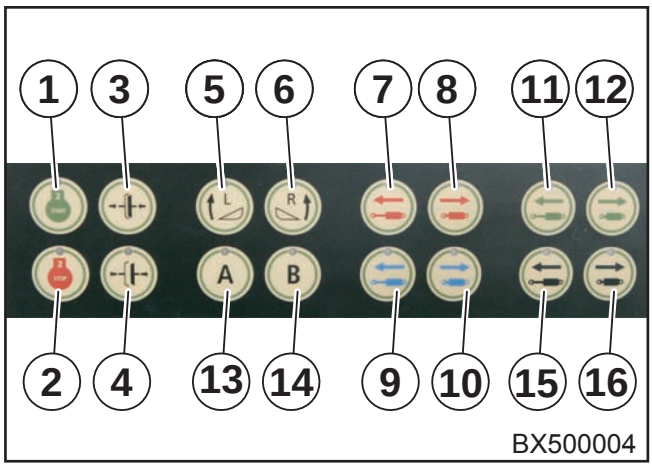
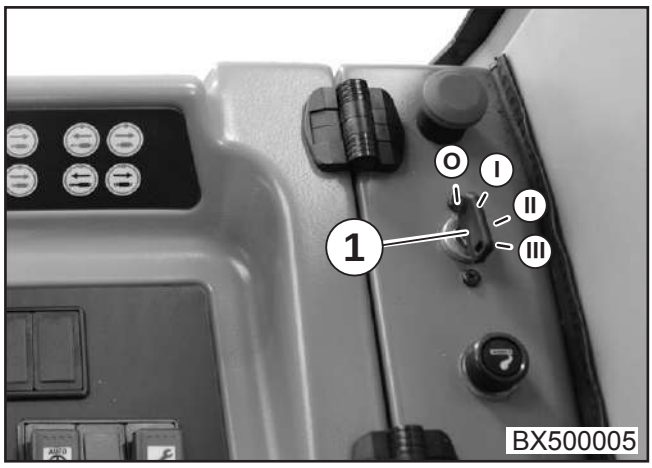
BX500502

3.2.12 Keyboards



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

3.2.13 Ignition lock



The ignition lock (1) has four positions:

0 - Off

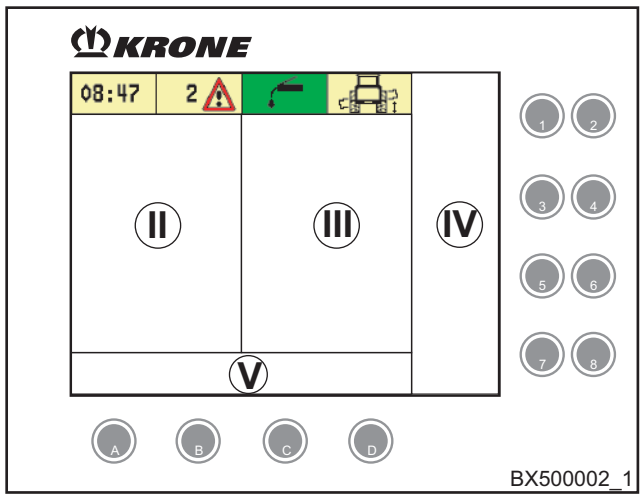
I - Electric circuit for electronics is switched on

II - The ignition is switched on

III - Start position

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)

- Pendulum frame

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

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

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

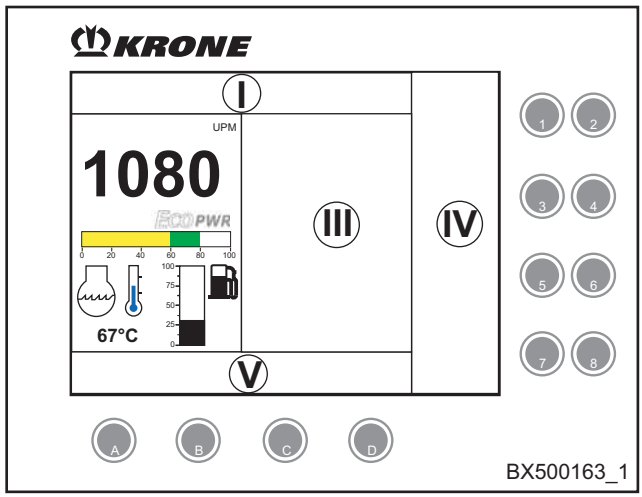
  = Position of pendulum frame unknown because pendulum frame sensor is defective or not calibrated.

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

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

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

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



Engine data information section (II):

1080

- Engine speed

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

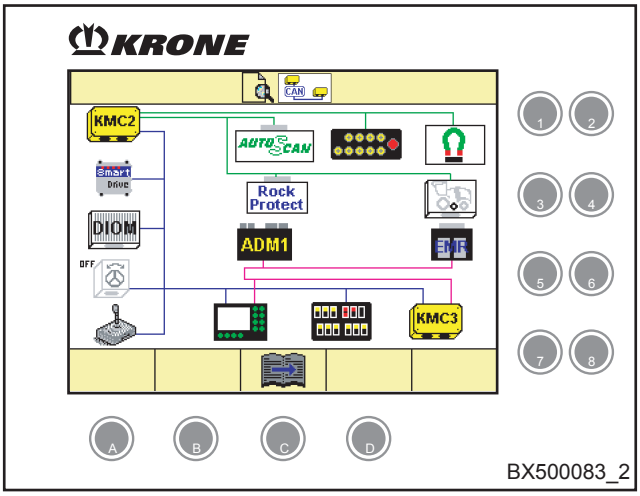
Speeds may vary depending on the diesel engine.

- Engine capacity as %

- Cooling water temperature display

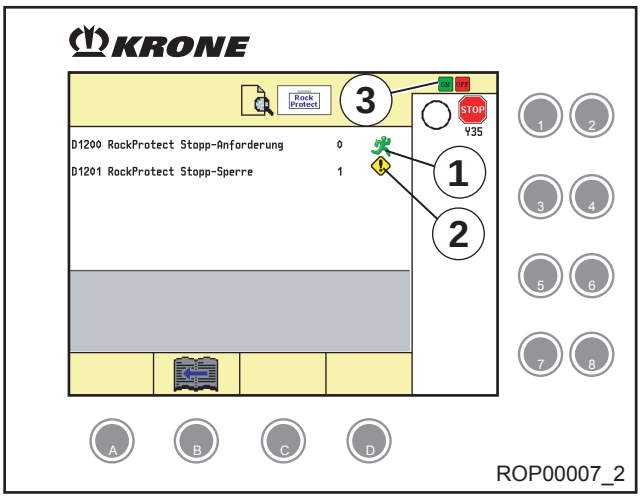
If the cooling water temperature reaches the critical range, the background of the cooling water temperature display changes to red.

- Fuel gauge



-  = ADM1 active
-  = ADM1 inactive or disconnected from CAN bus
-  = Not assigned
-  = Not assigned
-  = EMR active
-  = EMR inactive or disconnected from CAN bus
-  = Manual operation active
-  = Manual operation inactive or disconnected from CAN bus
-  = Metal detection active
-  = Metal detection inactive or disconnected from CAN bus
-  = (optional) AutoScan active
-  = (optional) AutoScan inactive or disconnected from CAN bus
-  = (optional) RockProtect active
-  = (optional) RockProtect inactive or disconnected from CAN bus
-  = (optional) Additional axis active
-  = (optional) Additional axis inactive or disconnected from CAN bus

RockProtect Diagnostics Page 2
Any release conditions that have not been fulfilled are displayed in the area highlighted in grey, if applicable.



Status display of the stop request (1)

= Stop was requested

= Normal Operation, no stop

Status display of the stop lock (2)

It indicates whether the stop lock is set. It is always active in reverse drive.

= Stop lock inactive, normal operation

= Stop lock active, no rock detection

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

  = Output is not switched.

  = Output is switched.

- If for any reason no diagnostics may be performed, the ON OFF icons will not **(3)** appear

- To show the previous page, press the key under the softkey.

Setting the maximum speed

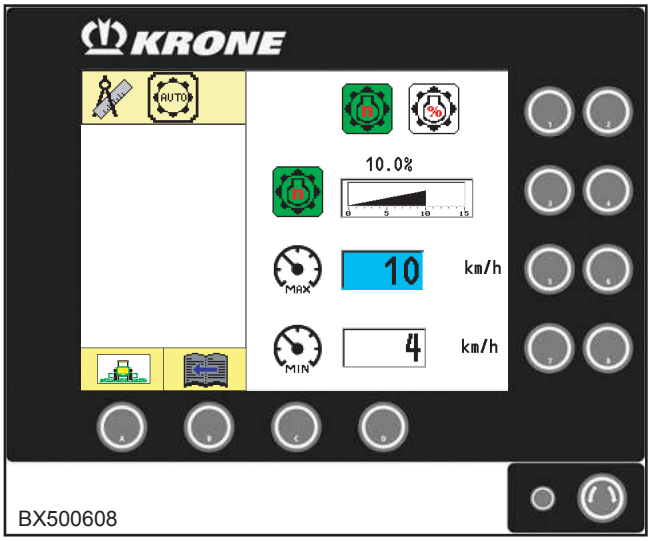
Press the rotary potentiometer to select the input field for the maximum speed  .

- Pressing the rotary potentiometer once will mark the input field.
  The colour of the background will change to yellow, and the value of the maximum speed can be increased or decreased by turning the rotary potentiometer to the left or to the right.

- To accept and save the value, press the rotary potentiometer again.
  The colour of the background will change to light blue again.

The load limit control will now accelerate the travelling gear up to the speed at which it is set.

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



BX500608

Setting the minimum speed

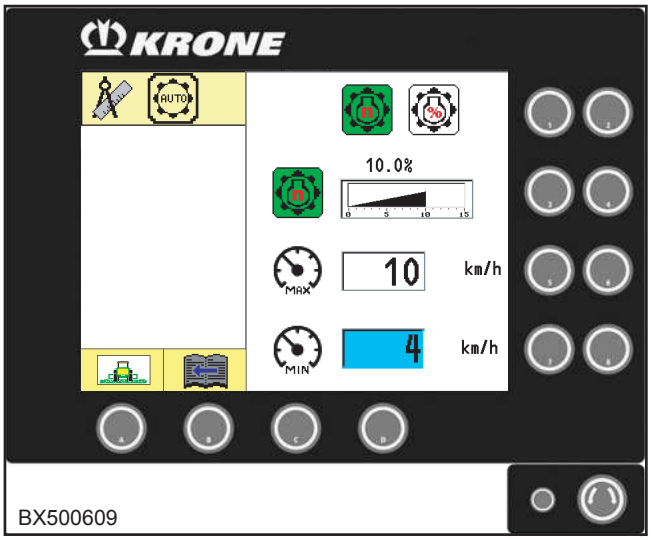
Press the rotary potentiometer to select t he input field for the minimum speed  .

- Pressing the rotary potentiometer once will mark the input field.
  The colour of the background will change to yellow, and the value of the minimum speed can be reduced or increased by turning the rotary potentiometer to the left or to the right.

- To accept and save the value, press the rotary potentiometer again.
  The colour of the background will change to light blue again.

The load limit control will now delay the travelling gear to the speed at which it is set.

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



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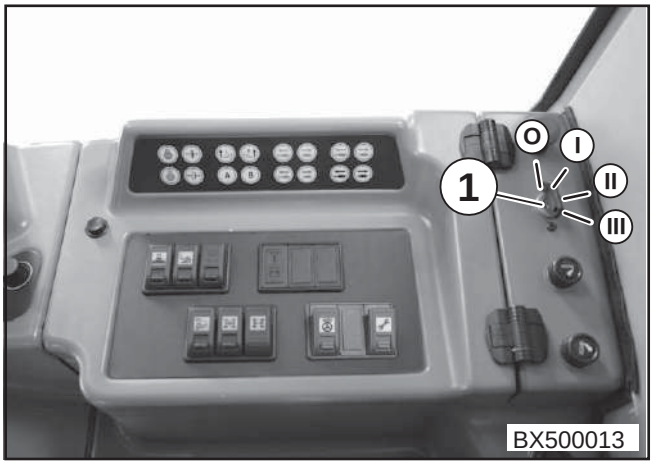
7.3.8.6 Switching off the engines

- Run the engines under no load for 1-2 minutes in the lower idling speed range to allow all the main engine components to cool down.
- Turn the ignition key (1) to the 0 position.

Always remove the ignition key (1) before leaving the driver's cab. The parking brake is applied automatically.



7.4 Driving

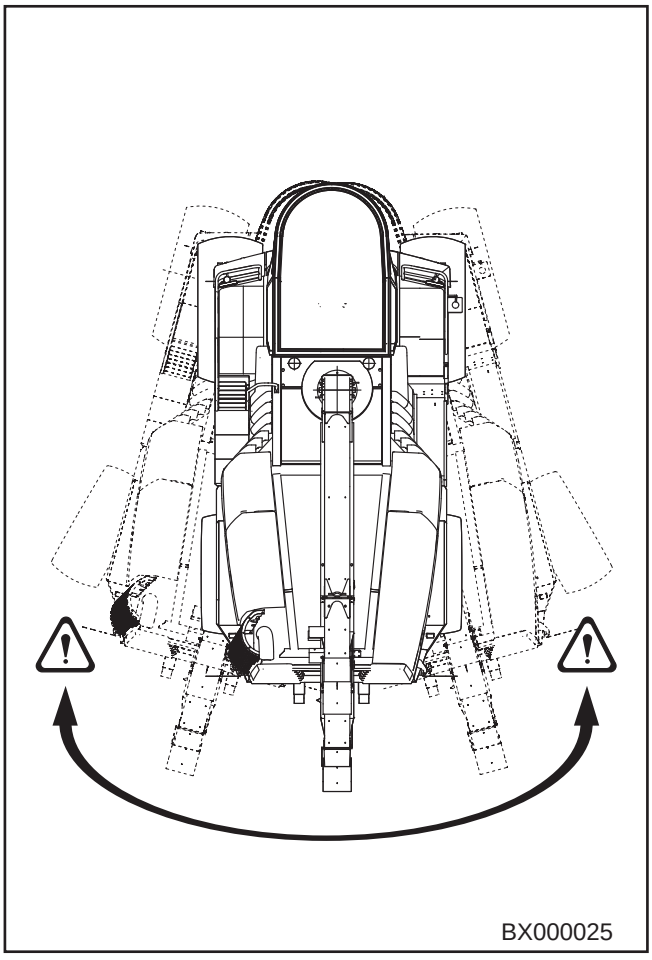
7.4.1 General aspects of driving

The following notes must be observed when driving the forage harvester:

- Handling the forage harvester requires a certain amount of practice because of the rear steering.
- Handling on the road and in the field differs.
- In the case of an error message in the Info centre immediately stop and remove the error.
  If this is not possible, inform the Krone customer service or your Krone dealer.

Handling characteristics

The handling characteristics of the forage harvester are influenced e.g. by the roadway and by the fitted front attachment.
Therefore the style of driving must be adapted to the relevant ground and soil conditions.
Special care is required when working and turning on a slope!



7.4.2 Steering

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

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

Emergency steering forces

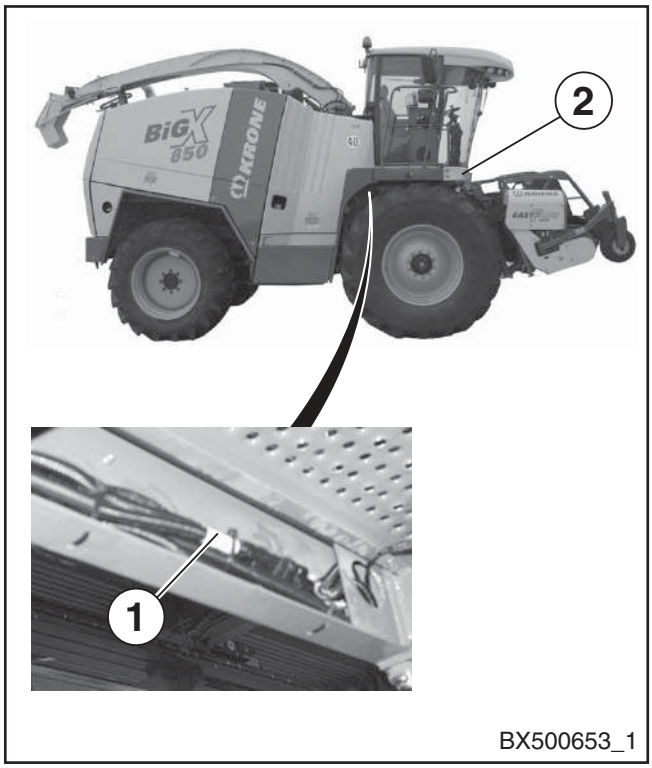
The steering also operates when the engine has stopped. However, considerably more force must be applied.

7.8 Connecting an Additional Silage Agent Dosing Unit

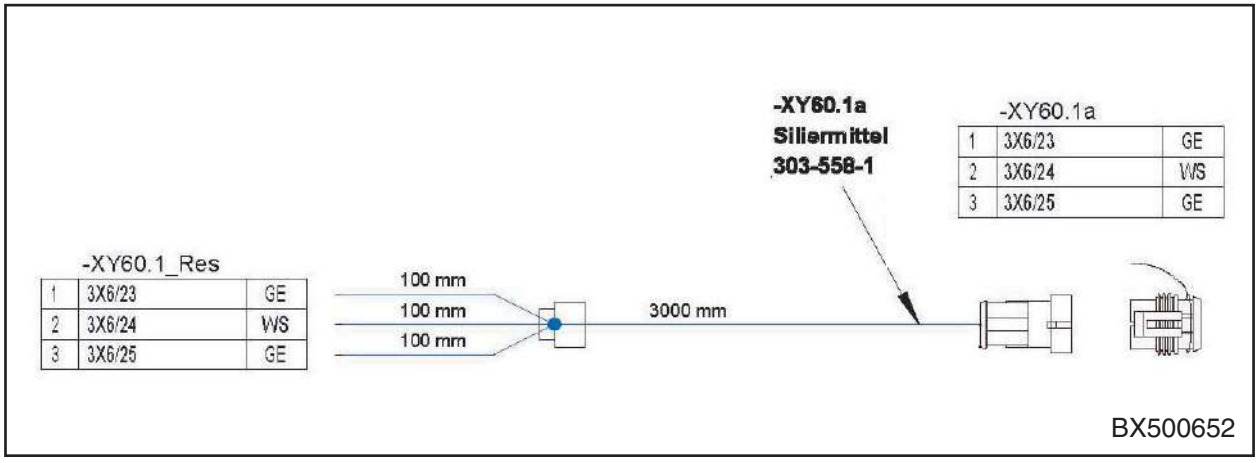
BiG X offers the option of connecting an additional silage agent dosing unit. When this unit is in operation, the electronics controls the dosing unit completely automatically.

The electrical connection (1) for the dosing unit is located above the right front wheel under the platform or in the right lamp carrier (2). It is a 3-pin plug identified as XY60.

The matching connection cable (Material No. 303-558-1, length about 3 m) is included with the machine.



Connection assignment of the cable



- XY 60 contact 1: +12 volts switched max. 15 amps through fuse 22-F74
- XY60 contact 2: Earth
- XY60 contact 3: +12 volts continuous voltage, max. 15 amps through fuse 22-F74

There is another connection plug above the right front wheel identified as XB60.
This plug is intended for an additional sensor for silage agent.

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

9.14.6 Refrigerant

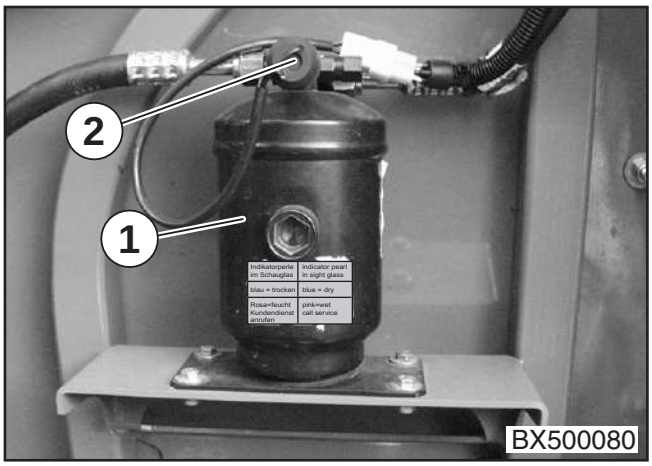
The air conditioning system is operated with 2200 g of refrigerant R134a (tetrafluoroethane). This substance does not contain any chlorine atoms, and thus is inoffensive to the ozone in the atmosphere of the environment.

Nonetheless, the refrigerant must not be drained; it must be collected at a recycling plant. For this reason do not sever any connecting pipes. Have maintenance and repair work on the air conditioning system carried out only by your Krone dealer with a suitable disposal and recycling equipment.

9.14.7 Manometric switch

When the fan speed is at the highest still pleasant performance, set the cooling performance of the air conditioning system to an average value. Let the air conditioning system not operate at the lowest fan speed and highest cooling performance.

The air conditioning system has been fitted with a manometric switch (2) which shuts down the system in case of over or under pressure (on the collector/drier (1) behind the combined radiator on the left hand side in direction of travel).



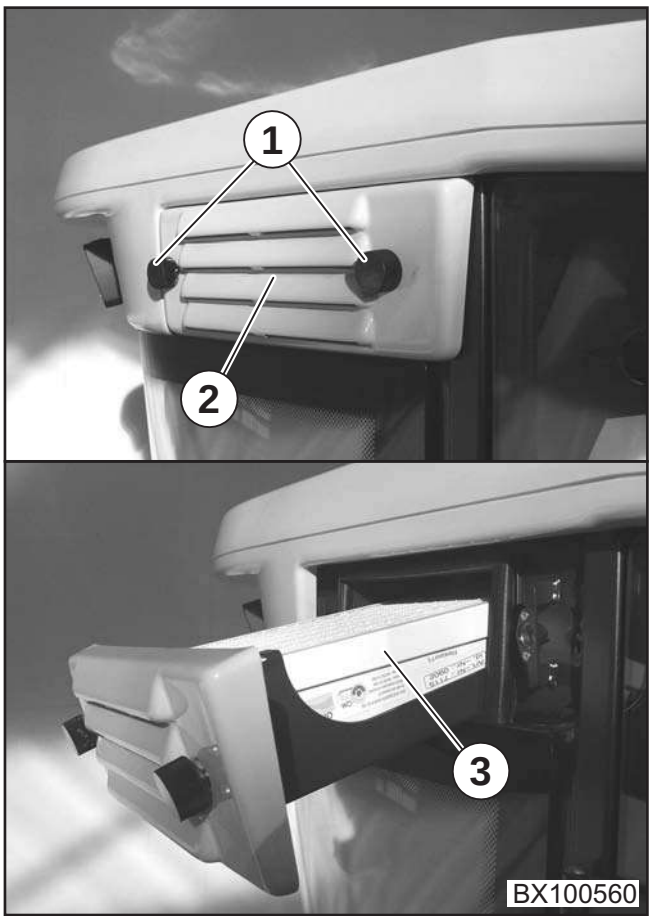
9.14.8 Fresh air fan and circulation mode (cabin)

Fresh air fan

A fresh air filter (3) in the form of a wedge filter cell is located in the upper cab area behind the gill screen (2) on the left hand side in direction of travel. This filter (3) protects the driver in the cab against dust or airborne dirt, which is outside the cab.
Check the filter for soiling prior to any operation.

If filters are not properly maintained they may become very soiled, no longer ensuring that sufficient fresh air is passed into the cab.

- Open the closing device (1) by turning 90° clockwise.
- Pull the gill screen (2) out; check the wedge filter cell (3) for soiling and clean, if and when necessary.
- Shake out the filter (3); never use compressed air. In case of severe soiling, the filter (3) has to be replaced.



Grass mode / EasyFlow

No.	Name	Rights	Min.	Max.	Default	Step	Unit	Lowering	Raising	Description
33482	Crop Feed Roller-Auto	rw	1	2	1	0				The automatic lift setting for the hold-down device on the pickup when reversing the feed drive and attachment: 1=automatic switched on 2= automatic switched off
33500	Reduce hold-down offset time	rw	0	30	0	0	s	The time up to lowering is decreased.	The time up to lowering is increased.	Delay time of the holding-down device before it is automatically lowered after the travel drive is started.
33501	Reduce hold-down time	rw	0	30	10	0	s	The duration of lowering is decreased.	The duration of lowering is increased.	The time during which the holding-down device will be controlled during automatic lowering. 0 = Automatic deactivated.
34075	Raise lifting gear Auto	rw	0	1	0	0				Setting whether the lifting gear should be lifted up automatically when reversing the travelling gear. 1 = lifting gear is lifted up automatically on reversing 0 = lifting gear is not lifted up automatically on reversing
34076	Header Frame automatic	rw	0	1	1	0				Setting as to whether the pendulum frame is automatically enabled when the ?adapt to ground contours? function is active. (Switched on and off by pressing the ?cross-adapt to ground contours? right and left buttons at the same time, or by manual override.
34077	Header Frame autom. horiz	rw	0	1	0	0				Setting as to whether the pendulum frame is automatically set to horizontal position when the ?lifting gear to up? function is triggered.
34078	Header fold automatic	rw	0	1	0	0				Setting as to whether the attachment can be retracted automatically or not. 1=automatic possible 2=automatic not possible
34079	Lateral levelling deact.	rw	1	2	1	0				Setting as to whether active ?adapt to ground contours? is active when sensor hooks are attached. 1= Adapt to ground contours not active (passive adaptation with the float setting) 2= Adapt to ground contours active (sensor hooks actuate adaptation to ground contours)

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
				LED +22-LD11 not lit	Check fuse +22-F92
			Wiring defective	Check the cables.	Replace cabling
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Test dynamo	Replace the dynamo
			Internal error, manual operation	See Remedial action	Replace manual operation
140 	140 man. operation vlt. 12V LEDs too high	Error: 12 volt voltage for LEDs too high	The controller of the dynamo is defective	While engine is running, measure on batteries. Voltage must not be over 14.8V	Replace the dynamo
			Dynamo defective	Test dynamo	Replace the dynamo
			Battery change-over relay defective (500, 800, and 1000)	Test function of the relays according to circuit diagram	Replace battery change-over relay
			Internal error, manual operation	See Remedial action	Replace manual operation
141 	141 man. operation parameter err.	Error: Min/Max parameters	Incorrect values in EEPROM	Check parameters	Update parameters
			EEPROM defective	See Remedial action	Replace manual operation

Turn Page please!

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
			GAL component defective	See Remedial action	Replace GAL component
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Check the excitation voltage, check wiring	Replace the dynamo
			Internal error KMC2	See Remedial action	Replace KMC2
2107	2107 KMC2 vlt. 12V dig.sensors	Error: 12V voltage of digital sensors	Short circuit in the wiring to a digital sensor	Check wiring	Replace wiring
			Digital sensor defective	Test function of the sensors	Replace sensors
			Battery dead	Check battery acid Check battery voltage	Charge battery Change battery
			Charge indicator lamp defective	Check the charge indicator lamp, check the wiring	If required, replace charge indicator lamp and/or renew cabling
			Dynamo defective	Check the excitation voltage, check the wiring, replace the dynamo	Replace the dynamo
			Internal error KMC2	See Remedial action	Replace KMC2

Error descriptions BiG-X 500-1000

Error No.	Description	Meaning	Possible Reason	Recommend Check	Remedial measure
4010 	4010 Metal detection valve (Y35) broken cable!	Error: Broken cable - quick stop valve	Quick stop valve - broken cable	LED +22-LD71 glowing	Check fuse +22-F71
			Central electrical power supply voltage defective	LED +22-LD11 not lit	Check fuse +22-F92
			Broken cable in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Valve plug defective	Check valve plugs and contacts	Replace valve plug
			Coil for solenoid valve defective	Test coil	Replace coil
			Metal detection internal error	See Remedial action	Replace the metal detection system
4011 	4011 Metal detection valve (Y35) short-circuit!	Error: Short circuit in quick stop valve	Error: Short circuit in quick stop valve	LED +22-LD71 glowing	Check fuse +22-F71
			Central electrical power supply voltage defective	LED +22-LD11 not lit	Check fuse +22-F92
			Short circuit in the wiring for the valve	Check wiring to valve	Replace wiring to valve
			Coil for solenoid valve defective	Test coil	Replace coil
			Metal detection internal error	See Remedial action	Replace the metal detection system
4012 	4012 Metal detection output (Y35) overload	Error: Overload quick stop valve	Quick stop valve overload	LED +22-LD71 glowing	Check fuse +22-F71
			Central electrical power supply voltage defective	LED +22-LD11 not lit	Check fuse +22-F92

Turn Page please!