Original Operating Instructions

Document no.: 150000768_00_en
BX404-30

Precision Forage Harvester

BiG X 880

From machine no.: 976393
Contact

Maschinenfabrik Bernard Krone GmbH & Co. KG
Heinrich-Krone-Straße 10
48480 Spelle
Germany

Telephone switchboard + 49 (0) 59 77/935-0
Telefax switchboard + 49 (0) 59 77/935-339
Telefax spare parts warehouse domestic + 49 (0) 59 77/935-239
Telefax spare parts warehouse export + 49 (0) 59 77/935-359
Internet www.landmaschinen.krone.de
www.mediathek.krone.de/

Information for enquiries and orders

<table>
<thead>
<tr>
<th>Type</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle identification number</td>
<td></td>
</tr>
<tr>
<td>Year of manufacture</td>
<td></td>
</tr>
</tbody>
</table>

Contact data of your dealer
Contents

1 Information on This Document................................................................................................................. 12
  1.1 Validity .................................................................................................................................................. 12
  1.2 Re-ordering......................................................................................................................................... 12
  1.3 Applicable documents.......................................................................................................................... 12
  1.4 Target group of this document............................................................................................................ 12
  1.5 How to use this document................................................................................................................... 12
  1.5.1 Directories and references ............................................................................................................. 12
  1.5.2 Information on direction ............................................................................................................... 13
  1.5.3 Term “machine” ........................................................................................................................... 13
  1.5.4 Figures ........................................................................................................................................... 13
  1.5.5 Scope of the document ................................................................................................................... 13
  1.5.6 Means of representation ................................................................................................................. 13
  1.5.7 Conversion table ............................................................................................................................ 15
2 Safety ...................................................................................................................................................... 18
  2.1 Intended use ....................................................................................................................................... 18
  2.2 Reasonably foreseeable misuse......................................................................................................... 18
  2.3 Service life of the machine ................................................................................................................. 19
  2.4 Basic safety instructions ..................................................................................................................... 19
    2.4.1 Importance of operating instructions ........................................................................................ 19
    2.4.2 Personnel qualification of the operating personnel ................................................................. 19
    2.4.3 Personnel qualification of the technicians .............................................................................. 20
    2.4.4 Children in danger .................................................................................................................... 20
    2.4.5 Connecting the machine .......................................................................................................... 20
    2.4.6 Structural modifications on the machine .................................................................................. 20
    2.4.7 Additional equipment and spare parts .................................................................................... 21
    2.4.8 Jobs on the machine ............................................................................................................... 21
    2.4.9 Operational safety: Technically sound condition .............................................................. 21
    2.4.10 Danger zones ........................................................................................................................... 22
    2.4.11 Ensuring functionality of safety devices ............................................................................... 25
    2.4.12 Personal protective equipment .............................................................................................. 25
    2.4.13 Safety markings on the machine ............................................................................................. 25
    2.4.14 Road safety ............................................................................................................................. 26
    2.4.15 Parking the machine safely .................................................................................................... 27
    2.4.16 Consumables ........................................................................................................................... 27
    2.4.17 Chemicals .................................................................................................................................. 28
    2.4.18 Dangers arising from environment .......................................................................................... 28
    2.4.19 Sources of danger on the machine ......................................................................................... 29
    2.4.20 Dangers in connection with certain activities: climbing up and down .................................. 31
    2.4.21 Dangers in connection with certain activities: Working on the machine ................................. 31
    2.4.22 Dangers in connection with certain activities: checking and charging batteries .................. 33
    2.4.23 Dangers in connection with certain activities: working on wheels and tyres ....................... 33
    2.4.24 Behaviour in dangerous situations and in case of accidents ................................................ 33
    2.5 Safety routines ................................................................................................................................ 34
    2.5.1 Shutting down and safeguarding the machine ....................................................................... 34
    2.5.2 Securing raised machine and machine parts against lowering ............................................. 34
    2.5.3 Securing raised machine and machine parts against lowering ............................................. 34
    2.5.4 Safety performing oil level check, oil change and filter element change ............................. 35
    2.5.5 Running actuator test .............................................................................................................. 35
    2.6 Safety labels on the machine .......................................................................................................... 36
    2.7 Safety equipment ........................................................................................................................... 55
    2.7.1 Ladders ....................................................................................................................................... 55
    2.7.2 Main battery switch ................................................................................................................... 56
    2.7.3 Fire extinguisher ....................................................................................................................... 56
    2.7.4 Emergency exit .......................................................................................................................... 57
    2.7.5 Wheel chocks ............................................................................................................................ 58
    2.7.6 Seat switch in driver's seat ....................................................................................................... 58
    2.7.7 Quick-stop switch ..................................................................................................................... 58
    2.7.8 Quick-stop switch grinding control unit .................................................................................. 59
    2.7.9 Lighting on ladder cabin and ladder right .............................................................................. 60
    2.7.10 SMV emblem .......................................................................................................................... 61
3 Data memory ........................................................................................................................................... 62
8 Terminal machine functions ................................................................. 113
8.1 Status line .................................................................................. 114
8.2 Malfunctions indicated on malfunction warning panel ................... 119
8.2.1 Warning lights - Filling level urea tank ........................................ 119
8.2.2 Warning lights - urea quality, errors or manipulation on the urea system .................................................................................. 120
8.3 Keys in the title bar ..................................................................... 121
8.3.1 “Counters” menu ..................................................................... 121
8.3.2 “Error” menu ......................................................................... 130
8.3.3 Main menu ............................................................................. 134
8.4 Direct input “Field mode” ............................................................ 135
8.4.1 Temporarily change working width or number of rows ............. 135
8.4.2 Changing the header speed ....................................................... 136
8.4.3 Change chop length ................................................................ 136
8.4.4 Changing the lifting unit control default value ......................... 137
8.4.5 Changing Corn Conditioner Roller Distance ............................ 137
8.5 Information area ......................................................................... 138
8.6 Engine and driving data display range ......................................... 138
8.7 Traction drive indicator lights ....................................................... 142
9 Terminal - Menus ........................................................................... 145
9.1 Menu structure ......................................................................... 145
9.2 Bringing up menu level ............................................................... 153
9.3 Navigating in menus .................................................................. 154
9.3.1 Changing/saving parameter.......................................................... 154
9.4 “Diagnostics” menu explanation ................................................. 154
9.5 "Machine" menu ....................................................................... 156
9.5.1 "Tanks" menu ..................................................................... 157
9.5.2 "Cabin lift" menu .................................................................. 158
9.6 "Cabin" menu ........................................................................... 159
9.6.1 "Terminal" menu .................................................................. 161
9.6.2 "Armrest" menu ................................................................... 162
9.6.3 "Control Lever" menu ............................................................. 163
9.6.4 "Background Lighting" menu ................................................... 165
9.6.5 "Control Unit Versions" menu .................................................. 165
9.6.6 "Printer" menu ..................................................................... 166
9.6.7 "Automatic climate control" menu ............................................ 167
9.6.8 "Remote maintenance" menu ................................................... 169
9.6.9 "Wiper" menu ...................................................................... 170
9.6.10 "Lighting" menu .................................................................. 171
9.6.11 "Camera system" menu .......................................................... 172
9.7 "Lubrication" menu ................................................................... 172
9.7.1 "Central lubrication" menu ....................................................... 173
9.7.2 "Intermediate gearbox" menu .................................................... 175
9.8 "Crop flow" menu .................................................................... 175
9.8.1 "Header" menu .................................................................... 178
9.8.2 "Header Drive" menu ............................................................... 179
9.8.3 "AutoScan" menu ................................................................. 179
9.8.4 "Intake" menu ..................................................................... 180
9.8.5 "Foreign object detection" menu .............................................. 181
9.8.6 "Lifting Unit" menu ................................................................. 182
9.8.7 "Grinding device and counterblade" menu ...................... 183
9.8.8 "Main Coupling" menu ............................................................ 185
9.8.9 "Corn Conditioner" menu ......................................................... 186
9.8.10 "Discharge Accelerator" menu ................................................ 188
9.8.11 "CropControl" menu ............................................................. 189
9.8.12 "Silage additives units" menu ............................................... 190
9.8.12.1 "External silage additives unit" menu ................................ 191
9.8.12.2 "Silage additives unit fine dosing" menu ..................... 191
9.8.12.3 "Silage additives unit coarse dosing" menu ............. 192
9.9 "Spout" menu ........................................................................ 193
9.10 "Engine" menu ..................................................................... 195
10 Initial operation ....................................................................................................................... 208
10.1 Checklist for initial operation ............................................................... 208
10.2 Mounting warning panels in operating position .................................. 209
10.3 Mounting fire extinguisher ................................................................. 209
10.4 Mounting licence plate ....................................................................... 210
10.5 Connecting side tank to main tank .................................................... 210
11 Start-up ......................................................................................................................... 212
11.1 Check before start-up ........................................................................ 212
11.2 Setting driver’s seat ........................................................................... 213
11.2.1 Air-cushioned comfort seat ......................................................... 213
11.2.1.1 Operating air-cushioned comfort seat (for "Standard" version) . 214
11.2.1.2 Operating air-cushioned comfort seat (for "ACTIVO" version) . 216
11.2.1.3 Turning the driver’s seat (for the "Swivel seat adapter" design) . 220
11.2.2 Steering column adjustment .......................................................... 221
11.2.3 Setting the terminal ........................................................................ 221
11.2.4 Monitor for camera monitoring .................................................... 222
11.2.5 Sun visor ..................................................................................... 223
11.2.6 Adjustable air nozzles ................................................................. 224
11.2.7 Inside rear mirror ......................................................................... 224
11.3 General aspects .................................................................................. 224
11.3.1 Instructional seat .......................................................................... 224
11.3.2 Cooler ....................................................................................... 225
11.3.3 Drawer for first-aid kit and operating instructions ...................... 225
12 Start-up – Grass mode/direct cut header .................................................. 226
12.1 Removing the corn conditioner ......................................................... 227
12.2 Installing the grass channel .............................................................. 230
12.3 Adjusting ventilation slot ................................................................. 231
12.4 Setting Lifting Unit Hydraulics .......................................................... 232
12.5 Removing grain capture sheet ........................................................... 233
12.6 Disconnecting the side and additional tanks from the main tank .... 233
12.6.1 Disconnecting the side tank from the main tank .......................... 234
12.6.2 Disconnecting the additional tank from the main tank .............. 234
12.7 Removing rear weight ...................................................................... 235
12.8 Removing spout extension ................................................................. 236
13 Start-up – Maize mode .............................................................................. 239
13.1 Removing the grass channel .............................................................. 240
13.2 Installing the corn conditioner ........................................................... 241
13.3 Adjusting ventilation slot ................................................................. 245
13.4 Mounting grain capture sheet ............................................................ 246
13.5 Connecting the side and additional tanks from the main tank ....... 246
13.5.1 Connecting the side tank to the main tank ................................. 247
13.5.2 Connecting the additional tank to the main tank ...................... 247
13.6 Mounting spout extension ................................................................. 247
13.7 Attach rear weight ........................................................................... 252
14 Start-up – Attaching and removing EasyFlow .......................................... 256
14.1 Mounting EasyFlow ................................................................. 257
14.1.1 Preparing the intake .......................................................... 257
14.1.2 Connecting EasyFlow ....................................................... 258
14.1.3 Checking seal on adapter frame ........................................ 260
14.1.4 Connecting hydraulic hoses ............................................. 260
14.1.5 Moving parking jacks on right/left into transport position 261
14.2 Removing EasyFlow ............................................................. 261
14.3 Putting Down EasyFlow ....................................................... 263

15 Start-up – Attaching and removing EasyCollect .......................... 265
15.1 Mounting EasyCollect ............................................................ 266
15.1.1 Preparing the intake .......................................................... 266
15.1.2 Connecting EasyCollect ................................................... 267
15.1.3 Connecting hydraulic hoses ............................................. 269
15.1.4 Moving parking jacks on right/left into transport position 270
15.2 Removing EasyCollect .......................................................... 271
15.3 Putting down EasyCollect ...................................................... 274

16 Start-up – Attaching and removing XDisc .................................... 275
16.1 Mounting XDisc ..................................................................... 276
16.1.1 Preparing the intake .......................................................... 276
16.1.2 Connecting XDisc ............................................................. 277
16.1.3 Moving parking jacks on right/left into transport position 279
16.2 Removing XDisc ................................................................. 279
16.3 Putting down XDisc ............................................................. 281

17 Driving and Transport ............................................................. 282
17.1 Transport/road travel ............................................................ 282
17.2 Starting engine ................................................................. 282
17.2.1 Observing warning lights ............................................... 284
17.3 Behaviour after the engine has stalled ................................. 285
17.4 Starting up machine ............................................................ 285
17.4.1 Setting the acceleration behaviour ................................. 285
17.4.2 Notes on driving the machine ......................................... 286
17.4.3 Driving forwards and stopping ..................................... 286
17.4.3.1 Cruise control ............................................................ 287
17.4.4 Driving backward and stopping .................................... 288
17.5 Stopping the machine .......................................................... 288
17.5.1 Stopping machine by using control lever ....................... 289
17.5.2 Stopping machine with the service brake ...................... 290
17.6 Applying parking brake ...................................................... 290
17.7 Switching off the engine ..................................................... 292
17.8 Parking the machine ........................................................... 292
17.9 Preparing the machine for road travel ................................. 293
17.9.1 Transport position .......................................................... 293
17.9.2 Moving header to transport position ............................... 294
17.9.3 Moving intake into transport position ............................. 296
17.9.4 Swivelling spout into transport position ......................... 296
17.10 Towing the machine .......................................................... 297
17.10.1 Releasing the parking brake manually ......................... 298
17.11 Preparing the machine for shipment .................................. 299
17.11.1 Lashing points ............................................................. 299

18 Operation device .................................................................... 300
18.1 Raising and lowering lifting unit ......................................... 300
18.2 Aligning pendulum tube horizontally ................................... 301
18.3 Releasing header locking .................................................... 302
18.4 Trailer operation ............................................................... 303
18.4.1 Connecting trailer .......................................................... 304
18.4.2 Disconnecting trailer ...................................................... 305
18.5 Silage additives unit ....................................................... 305
18.5.1 Internal silage additives unit coarse dosing (for "Controlled silage additives unit" design) ... 306

BiG X 880
Original Operating Instructions 150000768_00_en
<table>
<thead>
<tr>
<th>Section</th>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.2.2</td>
<td>Setting drum base</td>
<td>340</td>
</tr>
<tr>
<td>18.2.3</td>
<td>Setting the rear wall discharge accelerator</td>
<td>343</td>
</tr>
<tr>
<td>20.1.6</td>
<td>Maintenance – Once after 1000 km</td>
<td>350</td>
</tr>
<tr>
<td>20.1.4</td>
<td>Maintenance – Once after 50 hours</td>
<td>349</td>
</tr>
<tr>
<td>20.1.3</td>
<td>Maintenance – 6 times after every 10 hours</td>
<td>349</td>
</tr>
<tr>
<td>20.1.7</td>
<td>Maintenance – Prior to the beginning of the season</td>
<td>350</td>
</tr>
<tr>
<td>20.1.9</td>
<td>Maintenance – Every 10 hours, at least daily</td>
<td>351</td>
</tr>
<tr>
<td>20.1.8</td>
<td>Maintenance – At the beginning of the cold season</td>
<td>351</td>
</tr>
<tr>
<td>20.1.10</td>
<td>Maintenance – Every 10 hours, at least daily</td>
<td>351</td>
</tr>
<tr>
<td>20.1.11</td>
<td>Maintenance – Weekly</td>
<td>353</td>
</tr>
<tr>
<td>20.1.12</td>
<td>Maintenance – Every 50 hours</td>
<td>353</td>
</tr>
<tr>
<td>20.1.13</td>
<td>Maintenance – Every 100 hours</td>
<td>353</td>
</tr>
<tr>
<td>20.1.14</td>
<td>Maintenance – Monthly</td>
<td>354</td>
</tr>
<tr>
<td>20.1.15</td>
<td>Maintenance – Every 250 hours</td>
<td>354</td>
</tr>
<tr>
<td>20.1.16</td>
<td>Maintenance – Every 500 hours</td>
<td>354</td>
</tr>
<tr>
<td>20.1.17</td>
<td>Maintenance – Every 1,000 hours, at least after the season</td>
<td>356</td>
</tr>
<tr>
<td>20.1.18</td>
<td>Maintenance – After each season</td>
<td>357</td>
</tr>
<tr>
<td>20.1.19</td>
<td>Maintenance – Every 1500 hours, at least before the beginning of the season</td>
<td>357</td>
</tr>
<tr>
<td>20.1.20</td>
<td>Maintenance – Every 2,000 hours, at least once a year</td>
<td>357</td>
</tr>
<tr>
<td>20.1.21</td>
<td>Maintenance – Every 3 years</td>
<td>357</td>
</tr>
<tr>
<td>20.1.22</td>
<td>Maintenance – Every 4,000 hours, at least every four years</td>
<td>357</td>
</tr>
<tr>
<td>20.1.23</td>
<td>Maintenance – As needed</td>
<td>358</td>
</tr>
<tr>
<td>20.2</td>
<td>Tightening torques</td>
<td>359</td>
</tr>
<tr>
<td>20.3</td>
<td>Compressed air connections to clean with compressed air</td>
<td>362</td>
</tr>
<tr>
<td>20.4</td>
<td>Swivel the ladder to the cabin to the side</td>
<td>363</td>
</tr>
<tr>
<td>21</td>
<td>Before the beginning of the new season</td>
<td>365</td>
</tr>
<tr>
<td>22</td>
<td>Maintenance - Engine</td>
<td>366</td>
</tr>
<tr>
<td>22.1</td>
<td>Overview of engine</td>
<td>366</td>
</tr>
<tr>
<td>22.2</td>
<td>Dirt deposits in engine compartment</td>
<td>367</td>
</tr>
<tr>
<td>22.2.1</td>
<td>Cleaning engine compartment with compressed air</td>
<td>368</td>
</tr>
</tbody>
</table>
25.1 Removing intake unit with mounting cart ................................................................................. 397
25.2 Mounting intake unit with installation cart ............................................................................. 400
25.3 Removing intake unit with header .......................................................................................... 402
25.4 Mounting intake unit with header .......................................................................................... 404
25.5 Grinding chopping blades ...................................................................................................... 406
25.6 Readjusting or replacing grinding stone .................................................................................. 412
25.6.1 Checking grinding stone ..................................................................................................... 412
25.6.2 Readjusting grinding stone ................................................................................................. 413
25.6.3 Replacing grinding stone .................................................................................................... 415
25.7 Readjusting or changing chopping blades .............................................................................. 417
25.8 Working with half the number of chopping blades ................................................................. 429
25.9 Turning or replacing counterblade .......................................................................................... 430
25.10 Operating the mounting cart of the chopper unit (for "Chopper unit mounting cart" design) ... 432

24.1 Checking/refilling windscreen washer system ......................................................................... 384
24.2 Maintaining air conditioning and heating .................................................................................. 385
24.2.1 Components of air conditioning .......................................................................................... 385
24.2.2 Replacing/cleaning fresh air filter ........................................................................................ 386
24.2.3 Replacing/cleaning circulation filter ..................................................................................... 386
24.3 Cleaning cooler and cooler compartment .................................................................................. 387
24.4 Draining coolant ...................................................................................................................... 388
24.5 Maintaining chassis ................................................................................................................ 388
24.5.1 Checking attachment of steering cylinder ......................................................................... 388
24.5.2 Checking fitting of track rod ............................................................................................... 389
24.5.3 Checking the hub cover of the rear axle, with front wheel drive version ............................. 389
24.5.4 Checking the hub bearing of the rear axle, for the front-wheel drive version ...................... 390
24.5.5 Checking attachment of wheel hub gearbox ....................................................................... 390
24.6 Maintaining brake (Bosch) ...................................................................................................... 391
24.7 Maintaining belt drives .......................................................................................................... 392
24.7.1 Checking kraftband ............................................................................................................ 393
24.7.2 Checking pulley .................................................................................................................. 393
24.8 Maintaining tyres and wheels .................................................................................................. 394
24.8.1 Checking/maintaining tyres ............................................................................................... 394
24.8.2 Retighten wheel nuts .......................................................................................................... 394
24.8.3 Running direction of tyres .................................................................................................. 395
24.8.4 Changing tyre size ............................................................................................................. 395
24.9 Maintaining tow coupling ...................................................................................................... 395
24.10 Checking the fire extinguisher ............................................................................................... 396

23 Maintenance – Compressed Air System..................................................................................... 382
23.1 Drain condensation water from the compressed air tank .......................................................... 382
23.1.1 Retighten tensioning straps at the compressed air tank ...................................................... 383

24 Maintenance – Basic Machine ................................................................................................ 384
24.1 Checking/refilling windscreen washer system ......................................................................... 384
24.2 Maintaining air conditioning and heating .................................................................................. 385
24.2.1 Components of air conditioning .......................................................................................... 385
24.2.2 Replacing/cleaning fresh air filter ........................................................................................ 386
24.2.3 Replacing/cleaning circulation filter ..................................................................................... 386
24.3 Cleaning cooler and cooler compartment .................................................................................. 387
24.4 Draining coolant ...................................................................................................................... 388
24.5 Maintaining chassis ................................................................................................................ 388
24.5.1 Checking attachment of steering cylinder ......................................................................... 388
24.5.2 Checking fitting of track rod ............................................................................................... 389
24.5.3 Checking the hub cover of the rear axle, with front wheel drive version ............................. 389
24.5.4 Checking the hub bearing of the rear axle, for the front-wheel drive version ...................... 390
24.5.5 Checking attachment of wheel hub gearbox ....................................................................... 390
24.6 Maintaining brake (Bosch) ...................................................................................................... 391
24.7 Maintaining belt drives .......................................................................................................... 392
24.7.1 Checking kraftband ............................................................................................................ 393
24.7.2 Checking pulley .................................................................................................................. 393
24.8 Maintaining tyres and wheels .................................................................................................. 394
24.8.1 Checking/maintaining tyres ............................................................................................... 394
24.8.2 Retighten wheel nuts .......................................................................................................... 394
24.8.3 Running direction of tyres .................................................................................................. 395
24.8.4 Changing tyre size ............................................................................................................. 395
24.9 Maintaining tow coupling ...................................................................................................... 395
24.10 Checking the fire extinguisher ............................................................................................... 396

25 Maintenance – Feed System .................................................................................................... 397
25.1 Removing intake unit with mounting cart ................................................................................. 397
25.2 Mounting intake unit with installation cart ............................................................................. 400
25.3 Removing intake unit with header .......................................................................................... 402
25.4 Mounting intake unit with header .......................................................................................... 404
25.5 Grinding chopping blades ...................................................................................................... 406
25.6 Readjusting or replacing grinding stone .................................................................................. 412
25.6.1 Checking grinding stone ..................................................................................................... 412
25.6.2 Readjusting grinding stone ................................................................................................. 413
25.6.3 Replacing grinding stone .................................................................................................... 415
25.7 Readjusting or changing chopping blades .............................................................................. 417
25.8 Working with half the number of chopping blades ................................................................. 429
25.9 Turning or replacing counterblade .......................................................................................... 430
25.10 Operating the mounting cart of the chopper unit (for "Chopper unit mounting cart" design) ... 432
1 Information on This Document

1.1 Validity

This document is valid for machines of type:
BX404-30 (BiG X 880)
All information, illustrations and technical data in this document correspond to the latest state at the time of publication.
We reserve the right to make design changes at any time and without notification of reasons.

1.2 Re-ordering

If this document has become unusable in whole or in part, you can order a replacement, quoting the document number on the cover sheet. The document can additionally be downloaded via the KRONE Media Center http://www.mediathek.krone.de/.

1.3 Applicable documents

To ensure that the machine is used safely and as intended, observe the following further applicable documents.
• Operating instructions diesel engine, Liebherr Machines Bulle S.A.
• Operating instructions header, KRONE
• Circuit diagram, KRONE
• Spare parts list, KRONE

1.4 Target group of this document

This document aims at the operator of the machine who fulfills the minimum requirements of personnel qualification, refer to page 19.

1.5 How to use this document

1.5.1 Directories and references

Contents/headers

The contents and headers in this document ensure quick orientation in the chapters.

Index

The index contains catchwords in alphabetical order which enable to find information on a desired topic easily. The index can be found on the last pages of this document.

Cross references

Cross references to another place in the document or to another document are in the text with page number.
Examples:

- Check all screws on the machine for firm attachment, refer to page 13. (INFORMATION: If you use this document in electronic form, you get to the link to the stated page by clicking with the mouse.)
- For further information, refer to the operating instructions of the universal shaft manufacturer.

1.5.2 Information on direction

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

1.5.3 Term “machine”

Throughout the rest of this document, the “exact forage harvester” will also be referred to as the “machine”.

1.5.4 Figures

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

1.5.5 Scope of the document

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

1.5.6 Means of representation

Icons in the text

The following means of representation (icons) are used to present the text more clearly:

- This arrow characterizes an action step. Several arrows in a row identify a sequence of actions to be performed step by step.
- This icon identifies a prerequisite that has to be fulfilled to perform an action step or a sequence of actions.
- This arrow marks the intermediate result of an action step.
- This arrow identifies the result of an action step or sequence of actions.
- This bullet point identifies an enumeration. If the bullet point is intended, it identifies the second level of the enumeration.

Icons in figures

The following icons can be used in the figures:
Information on This Document

1.5 How to use this document

Warning signs

Warnings of dangers are separated from the remaining text as warning signs and are identified with a danger sign and signal words.

The warning signs must be read and the measures must be observed in order to prevent personal injury.

Explanation of danger sign

⚠️

This is the danger sign that warns of a risk of injury.

Please observe all notes marked with the danger sign in order to avoid injuries or death.

Explanation of signal words

⚠️ **DANGER**

The signal word DANGER warns of a hazardous situation which will result in serious injuries or death if the warning sign is ignored.

⚠️ **WARNING**

The signal word WARNING warns of a hazardous situation which will result in serious injuries or death if the warning sign is ignored.

⚠️ **CAUTION**

The signal word CAUTION warns of a hazardous situation which will result in minor to moderate injuries if the warning sign is ignored.

Example of a warning sign:
WARNING

Eye damage caused by flying dirt particles
When cleaning with compressed air, dirt particles are ejected at high speed and could get into the eyes. Therefore eyes could be hurt.
  ▶ Keep people away from the working area.
  ▶ Wear personal protective equipment when performing cleaning work with compressed air (e.g. eye protection).

Warnings of property damage/environmental damage

Warnings of property damage/environmental damage are separated from the remaining text and marked with “Note”.

Example:

NOTICE

Gearbox damage due to low oil level
The gearboxes could be damaged when the oil level is too low.
  ▶ Check gearbox oil level at regular intervals and top up oil, if necessary.
  ▶ Check gearbox oil level approx. 3 to 4 hours after the machine has been switched off. Check oil level only when machine is in horizontal position.

Notes with information and recommendations

Additional information and recommendations for trouble-free and productive operation of the machine are separated from the remaining text and marked with “Information”.

Example:

INFORMATION

Each safety label is provided with an order number and can be ordered directly from the manufacturer or from the authorized specialist dealer.

1.5.7 Conversion table

The following table can be used to convert metric units into US units.

<table>
<thead>
<tr>
<th>Size</th>
<th>SI units (metric)</th>
<th>Factor</th>
<th>Inch-pound units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unit name</td>
<td>Abbreviation</td>
<td></td>
</tr>
<tr>
<td>Area</td>
<td>Hectare</td>
<td>ha</td>
<td>2.47105</td>
</tr>
<tr>
<td>Volume flow</td>
<td>Litres per minute</td>
<td>L/min</td>
<td>0.2642</td>
</tr>
<tr>
<td></td>
<td>Cubic metres per hour</td>
<td>m³/h</td>
<td>4.4029</td>
</tr>
<tr>
<td>Force</td>
<td>Newton</td>
<td>N</td>
<td>0.2248</td>
</tr>
<tr>
<td>Length</td>
<td>Millimetre</td>
<td>mm</td>
<td>0.03937</td>
</tr>
<tr>
<td></td>
<td>Metre</td>
<td>m</td>
<td>3.2808</td>
</tr>
<tr>
<td>Power</td>
<td>Kilowatt</td>
<td>kW</td>
<td>1.3410</td>
</tr>
<tr>
<td>Size</td>
<td>SI units (metric)</td>
<td>Factor</td>
<td>Inch-pound units</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------</td>
<td>--------</td>
<td>---------------------------</td>
</tr>
<tr>
<td></td>
<td>Unit name</td>
<td>Abbreviation</td>
<td>Unit name</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure</td>
<td>Kilopascal</td>
<td>kPa</td>
<td>0.1450</td>
</tr>
<tr>
<td></td>
<td>Megapascal</td>
<td>MPa</td>
<td>145.0377</td>
</tr>
<tr>
<td></td>
<td>bar (non-SI)</td>
<td>bar</td>
<td>14.5038</td>
</tr>
<tr>
<td>Torque</td>
<td>Newtonmeter</td>
<td>Nm</td>
<td>0.7376</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8.8507</td>
</tr>
<tr>
<td>Temperature</td>
<td>Degrees Celsius</td>
<td>°C</td>
<td>°C×1.8+32</td>
</tr>
<tr>
<td>Velocity</td>
<td>Metres per minute</td>
<td>m/min</td>
<td>3.2808</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3.2808</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.6215</td>
</tr>
<tr>
<td>Volumes</td>
<td>Litres</td>
<td>L</td>
<td>0.2642</td>
</tr>
<tr>
<td></td>
<td>Millilitre</td>
<td>ml</td>
<td>0.0338</td>
</tr>
<tr>
<td></td>
<td>Cubic centimetre</td>
<td>cm³</td>
<td>0.0610</td>
</tr>
<tr>
<td>Weight</td>
<td>Kilogram</td>
<td>kg</td>
<td>2.2046</td>
</tr>
</tbody>
</table>
2 Safety

2.1 Intended use

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

- a KRONE EasyCollect harvested stem-like crops,
- a KRONE XDisc mown stalk and leaf crops,
- a KRONE EasyFlow collected stalk and leaf crops,
- a header for smallwood crops from cut groves.

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

- all safety devices are available according to the operating instructions and are located in the protective position.
- all the safety instructions of the operating instructions must be observed and complied with, both in chapter “Basic safety instructions”, refer to page 19 and directly in the chapters of the operating instructions.

The machine may be used only by people who satisfy the personnel qualification requirements designated by the machine manufacturer, refer to page 19.

These operating instructions are part of the machine and must therefore be carried along while the machine is used. The machine may be operated only when the operator has received training and in compliance with these operating instructions.

If the machine is used for applications which are not described in these operating instructions, this may result in serious injuries or death and damage to the machine and other property.

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

The intended use shall also include the adherence to the operating, maintenance and repair conditions set by the manufacturer.

2.2 Reasonably foreseeable misuse

Any use beyond the intended use refer to page 18 is regarded as improper use and is therefore misuse according to the Machinery Directive. The manufacturer is not liable for damage resulting from this, the user alone bears the risk.

Such misuse is for example:

- Processing of crops which are outside the intended use of the machine, refer to page 18
- Transport of people
- Transport of goods
- Exceeding the permitted technical gross weight
- Non-compliance with the safety labels on the machine and safety notes in the operating instructions
- Performing troubleshooting, setting, cleaning, repair and maintenance work contrary to the information in the operating instructions
- Unauthorized modifications to the machine
- Attachment of unauthorized or unapproved additional equipment
- Use of spare parts which are not KRONE original spare parts
- Stationary operation of the machine

Unauthorized modifications to the machine may affect the properties of the machine or disrupt proper operation. For this reason, unauthorized modifications will exclude any liability of the manufacturer for consequential damage.
2.3 **Service life of the machine**

- The service life of this machine depends on its proper operation and maintenance as well as the operating and harvesting conditions.
- By heeding the instructions and information in these operating instructions, permanent operational readiness and a long service life of the machine can be achieved.
- After each operating season, inspect the entire machine for wear and other damage.
- Replace damaged and worn components before recommissioning the machine.
- Carry out a full technical inspection of the machine after five years of machine operation and make a decision on further machine usage taking the results of this inspection into account.

2.4 **Basic safety instructions**

**Non-compliance with the safety instructions and warnings**

Non-compliance with the safety instructions and warnings may result in injuries and damage to the environment and property.

2.4.1 **Importance of operating instructions**

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

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

- Before using the machine for the first time, read and follow all the "Basic safety instructions".
- Before working, also read and observe the respective sections in the operating instructions.
- Keep the operating instructions easily accessible for the machine user at all times.
- Hand over the operating instructions to subsequent users.

2.4.2 **Personnel qualification of the operating personnel**

If the machine is not used properly, people may be seriously injured or killed. To avoid accidents, each person who works with the machine must satisfy the following minimum requirements:

- He is physically capable of controlling the machine.
- He can work safely with the machine in accordance with these operating instructions.
- He understands the method of operation of the machine within the scope of his work and can identify and avoid the dangers associated with the work.
- He has read the operating instructions and can implement the information in the operating instructions accordingly.
- He is familiar with driving vehicles safely.
- For road travel he has adequate knowledge of the highway code and has the stipulated driving licence.
2.4.3 Personnel qualification of the technicians

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

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

2.4.4 Children in danger

Children are not in a position to assess dangers and behave unpredictably. Thus children are particularly at risk.

- Children are especially at risk when climbing up and down the machine.
- There is no possibility to secure children sufficiently on the self-propelled machine.
- Vibrations can be particularly harmful to children's bodies.
- Children may initiate dangerous movements of the machine.
- Never take children on the self-propelled harvester.
- Keep children away from the machine.
- Keep children away from consumables.
- Make sure that there are no children in the danger zone, especially when starting and triggering machine movements.

2.4.5 Connecting the machine

If headers or trailers not connected properly to the forage harvester, serious accidents could be caused.

- When connecting, observe the following operating instructions:
  - the header operating instructions
  - the trailer operating instructions
  - the machine operating instructions
  - the universal shaft operating instructions
- Follow the coupling instructions:
  - for headers refer to page 256 und refer to page 265.
  - for trailers refer to page 303
- Observe the changed driving behaviour of the combination.

2.4.6 Structural modifications on the machine

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

Structural changes and enhancements are not permitted.
2.4.7 Additional equipment and spare parts

Additional equipment and spare parts that do not correspond to the requirements of the manufacturer may affect the operational safety of the machine and cause accidents.

- To ensure operational safety, use original parts or standard parts which correspond to the requirements of the manufacturer.

2.4.8 Jobs on the machine

Control of moving machine

The moving machine requires that the driver/operator is able to react quickly at any time. Otherwise, the machine may move uncontrollably and cause serious injuries and death.

- Start the engine from the driver's seat only.
- While the vehicle is travelling, never leave the driver's seat.
- Never climb in or out of the machine while the machine is moving.

Control of the machine during operation

While the machine is in operation, always ensure that the drivers/operators can intervene quickly at any time in the machine control. Otherwise, the machine may move in an uncontrolled manner and seriously injure or kill people.

While the machine is in operation, the driver/operator must be in the cabin or near the grinding control unit.

On-board instructors when using the machine for work (passenger seat)

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

- Never use the passenger seat for road travel.
- Use the passenger seat for instruction purposes during operation in the field only.

Passengers

Passengers can be seriously injured by the machine or fall from the machine and be overrun. Ejected objects may strike and injure passengers.

- As a result, make sure that no one except the operator is on the machine.

2.4.9 Operational safety: Technically sound condition

Operation is only allowed after proper start-up

The operational safety of the machine is not ensured when it is not started up properly according to these operating instructions. Thus accidents may be caused and persons may be seriously injured and killed.

- Only use the machine after proper start-up, refer to page 212.
Technically sound state of the machine

Improper maintenance and setting could influence the operational safety of the machine and cause accidents. Thus there is a risk of serious injuries or death.

- All maintenance and setting work must be performed according to the chapters “Maintenance and Setting”.
- Before performing any maintenance and setting work, shut down and safeguard the machine, refer to page 34.

Danger resulting from damage to the machine

Damage to the machine may impair the operational safety of the machine and cause accidents. As a result, people may be seriously injured or killed. The following parts of the machine are particularly important for safety:

- Brakes
- Steering
- Safety Devices
- Connecting devices
- Lighting equipment
- Hydraulics
- Tyres
- Universal shaft

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

- Shut down and secure the machine, refer to page 34.
- Immediately eliminate potential causes of damage, for example heavy soiling, or tighten slack screws.
- Determine the cause of damage according to these operating instructions and repair the damage, if possible, refer to page 489.
- In case of damage which may affect operational safety and cannot be repaired according to these operating instructions: Have damage repaired by a qualified service centre.

Technical limit values

If the technical limit values of the machine are not observed, the machine may be damaged. As a result, accidents may occur and people may be seriously injured or killed. Observance of the following technical limit values is particularly important for safety:

- Maximum permitted total weight
- Maximum permitted axle loads
- Maximum permitted trailer load
- Maximum permitted drawbar load
- Maximum permitted transport height and width
- Maximum permitted speed

- Observe the limits, refer to page 66.

2.4.10 Danger zones

If the machine is switched on, its surrounding can present a danger zone. Avoid entering the danger zone of the machine by observing the minimum safety distance.
If the safety distance is not observed, people may be seriously injured or killed.

- Do not switch on the drives and engine if the minimum safety distance has not been observed.
- If people fail to observe the minimum safety distance, switch off the drives.
- Switch the machine off in shunting and field mode.

The safety distance is:

<table>
<thead>
<tr>
<th>For machine in shunting operation and field mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>In front of the machine</td>
</tr>
<tr>
<td>Behind the machine</td>
</tr>
<tr>
<td>Laterally to the machine</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>With machine switched on without driving motion</th>
</tr>
</thead>
<tbody>
<tr>
<td>In front of the machine</td>
</tr>
<tr>
<td>Behind the machine</td>
</tr>
<tr>
<td>Laterally to the machine</td>
</tr>
</tbody>
</table>

The safety distances specified here are minimum distances in terms of intended use. If necessary, these safety distances must be increased according to the operating and ambient conditions.

- Before working in the danger zone of the machine: Shut down and secure the machine, refer to page 34. This also applies to brief inspection work.
- Consider the information in all relevant operating instructions:
  - The operating instructions of the machine
  - The operating instructions of the universal shaft
  - The operating instructions of the header
  - The operating instructions of the transport wagon

**Danger zone universal shaft**

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

- Observe operating instructions of universal shaft.
- Ensure sufficient overlap of section tube and universal shaft guards.
- Make sure that the universal shaft guards are mounted and that they are fully functional.
- Allow the universal shaft locks to engage.
- Attach chains to prevent the universal shaft guards from rotating with the shaft.
- Make sure that there is no one in the danger zone of PTO shaft and universal shaft.
- Ensure that the selected speed and direction of rotation of the PTO shaft of the self-propelled harvester match the permitted speed and direction of rotation of the header.
- Switch off the PTO shaft when the angles between the universal shaft and the PTO shaft are too large. The machine may be damaged. Parts may be hurled up and cause injury to people.

**Danger zone PTO shaft**

People may be caught, pulled in and seriously injured by the PTO shaft and driven parts.
Before switching on the PTO shaft:
- Ensure that all protective devices are mounted and brought into protective position.
- Make sure that there is no one in the danger zone of PTO shaft and universal shaft.
- Switch off drives in case they are not needed.

Danger zone between precision forage harvester and header
People staying between precision forage harvester and header could be seriously hurt or killed caused by precision forage harvester rolling away, carelessness or machine movements.
- Prior to all work between precision forage harvester and header: Shut down and safeguard the machine, refer to page 34. This also applies to brief inspection work.
- If the lifting unit has to be actuated, keep all people away from the range of movement of the header.

Danger zone when drive is switched on
When drive is switched on, there is danger to life caused by moving machine parts. People must not stay in the danger zone of the machine.
- Before starting the machine, instruct all persons to leave the danger zone of the machine.
- In case of dangerous situations, immediately switch off drives and instruct persons to leave the danger zone.

Danger zone quick coupler
People may be caught, pulled in and seriously injured by the quick coupler and the driven components.
Before switching on the quick coupler:
- Mount all safety devices and move them to protective position.
- Ensure that there is no one in the danger zone of machine or universal shaft.
- Switch off drives in case they are not needed.

Danger zone due to coasting machine parts
If machine parts coast, people could be seriously injured or killed.
After the drives have been switched off, the following machine parts will continue to run:
- Universal shaft
- Drive belt
- Ventilator
- Rotating screen
- Chopping drum
- Header
- Intake rollers
- Corn conditioner
- Discharge accelerator
As long as the machine parts are coasting, an alarm sounds.
On machines with a built-in main drive brake, an alarm only sounds if the drives have not come to a standstill 10 seconds after switching off.
When machine parts are coasting, people may be seriously injured or killed.

- Shut down and safeguard the machine, refer to page 34.
- Do not approach the machine until all machines parts have come to a complete stop.

### 2.4.11 Ensuring functionality of safety devices

If safety devices are missing or damaged, moving machine parts could seriously hurt or kill persons.

- Replace damaged safety devices.
- Mount dismounted safety devices and machine parts again before start-up and move them to protective position.
- When there are doubts whether all safety devices are functional and have been correctly installed, instruct a specialist workshop to check this.

### 2.4.12 Personal protective equipment

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

Personal protective equipment is for example:

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

### 2.4.13 Safety markings on the machine

Safety labels on the machine caution against dangers at danger areas and represent an important part of the safety equipment of the machine. Missing safety labels increase the risk of serious and fatal injuries.

- Clean dirty safety labels.
- Make sure every time after cleaning the safety labels that they are complete and legible.
- Immediately replace missing, damaged and unrecognizable safety labels.
- Provide spare parts with intended safety labels.

Descriptions, explanations and order numbers of safety labels, refer to page 36.
2.4.14 Road safety

**Dangers for road travel**

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

- Before driving on roads, ensure that the maximum permitted dimensions, weights and axle, drawbar and trailer loads are not exceeded which apply to driving on public roads according to national law.
- Before driving on roads, switch on the road travel lighting and ensure that it functions properly.
- Before driving on roads, move the main mode switch to the “road mode” position.

**Danger when driving on road and field**

The self-propelled machine has special driving properties which also depend on the operating state and on the ground. If changed handling characteristics are not considered, the driver may cause accidents.

- Observe measures for driving on road and field, refer to page 282.

**Danger due to machine which is not prepared properly for road travel**

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

- Before driving on roads, prepare the machine for road travel, refer to page 293.

**Dangers when cornering with trailed trailer**

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

- Consider the larger swivel range.
- Consider people, oncoming traffic and obstacles when turning.

**Dangers when operating the machine on slopes**

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

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

An improperly parked machine may move uncontrollably or tip over. People may be injured or killed.

- Park the machine on a horizontal and level ground capable of bearing the load.
- Before adjusting, repairing, servicing and cleaning the machine, ensure that it is securely positioned.
- Note section “Parking the Machine” in chapter Driving and Transport, refer to page 292.

Unattended parking

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

- Before leaving the machine: Shut down and safeguard the machine, refer to page 34.

2.4.16 Consumables

Unsuitable consumables

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

- Use only consumables which comply with the requirements of the manufacturer.

For requirements on consumables, refer to page 70.

Fuel is harmful

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

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

Environmental protection and disposal

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

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

**Keep cabin free of chemicals**

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

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

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

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

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

2.4.18 Dangers arising from environment

**Danger of fire**

Flammable materials may accumulate in the machine due to operation or animals, for example rodents or nesting birds.

In case of dry usage conditions, dust, impurities and crop residues may inflame on hot parts and the resulting fire could seriously hurt people or kill them.

▶ Check and clean the machine every day before using it for the first time.
▶ Check and clean the machine regularly during the working day.
▶ Regularly check hydraulic oil lines for proper condition and position with sufficient clearance to sharp edges.
▶ Regularly check exhaust systems, tubes and turbocharger of engine system. Remove crop residues.
▶ While refuelling, do not smoke and do not place the machine near naked flames or explosive sparks.
Life-threatening electric shock from overhead lines

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

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

Behaviour in case of voltage flashover of overhead lines

 Electroconductive parts of the machine could be subject to high electrical voltage caused by voltage flashover. A voltage drop where major voltage differences are present is created on the ground around the machine in case of voltage flashover. Due to major voltage differences in the ground, you could be killed by electric shocks when you make big steps, lay on the ground or support yourself with your hands.

- Do not leave the cabin.
- Do not touch any metal parts.
- Do not establish any conductive connection to the ground.
- Warn persons: Do not approach the machine. Electrical voltage on the ground may lead to severe electric shocks.
- Wait for help from professional rescue teams. The overhead line must be switched off.

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

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

2.4.19 Sources of danger on the machine

Noise may damage your health

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

- Before starting up the machine, estimate the risk caused by noise. Depending on the ambient conditions, working hours and the working and operating conditions of the machine, specify and use suitable hearing protection. In doing so, consider continuous sound pressure level, refer to page 68.

- Specify rules for the use of hearing protection and for the working time.
- During operation keep windows and doors of cabin closed.
- Remove hearing protection for road travel.
2 Safety
2.4 Basic safety instructions

Liquids under high pressure
The following liquids are under high pressure:
- Hydraulic oil
- Diesel fuel
- Engine coolant
- Refrigerant for the air conditioning system

Liquids escaping under high pressure may penetrate through the skin and cause severe injuries.
- Shut down and safeguard the machine and contact qualified specialist workshop upon suspicion of damaged pressure system.
- Never detect leaks with bare hands. Even a very pin-sized hole may lead to serious injuries.
- When searching for leaks, use suitable aids, e.g. a piece of cardboard to avoid injuries.
- Keep body and face away from leaks.
- Consult a doctor immediately if liquid has penetrated in the body. The liquid must be removed from the body as quickly as possible.

Hot liquids
If hot liquids are drained, people may burn and/or scald themselves.
- When draining hot consumables, wear personal protective equipment.
- Before performing any repair, maintenance or cleaning work, allow liquids and machine parts to cool off, if necessary.

Damaged compressor unit
Damaged compressed air hoses of compressor unit may tear off. Hoses that move uncontrollably may hurt people seriously.
- If it is suspected that the compressor unit is damaged, immediately contact a specialist workshop.
- Shut down and safeguard the machine, refer to page 34.

Damaged hydraulic hoses
Damaged hydraulic hoses can tear off, burst or cause oil leaks. As a result, the machine may be damaged and people may be seriously injured.
- Shut down and safeguard the machine, refer to page 34.
- If it is suspected that hydraulic hoses are damaged, immediately contact a service centre,.

Toxic exhaust gases
Exhaust gases may cause serious health problems or result in death.
- While the engine is running, provide adequate ventilation to prevent prolonged exposure to exhaust gases.
- Do not leave the engine running in a closed room unless there is a suitable extraction unit.
Hot surfaces

The following components may become hot during operation and may burn people:

- Engine
- Exhaust system
- Cooling hoses
- Hydraulic system
- Wheel hub gearbox
- Distributor gearbox and intermediate gearbox
- Intermediate gear of drive pump

- Maintain a sufficient distance from hot surfaces.
- Leave machine parts to cool down and wear protective gloves.

2.4.20 Dangers in connection with certain activities: climbing up and down

Climbing up and down safely

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

Dirt as well as operating fluids and lubricants may impair surefootedness and stability.

- Always keep ladder steps and platforms clean and in proper condition so that you can step and stay safely.
- Never climb up and down while the machine is moving.
- Always climb up and down with the face towards the machine.
- When climbing up and down, maintain a three-point contact with the steps and hand rails (always two hands and one foot or two feet and one hand on the machine).
- When climbing up and down, never use operating elements as handles. Inadvertent activation of the operating elements may cause functions to be unintentionally actuated which could be hazardous.
- When climbing down, never jump off the machine.
- Climb up and down using only the steps and platforms designated in these operating instructions, refer to page 55.

2.4.21 Dangers in connection with certain activities: Working on the machine

Only perform work when the machine is at standstill

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

- Before carrying out any repair, maintenance and cleaning work on the machine, shutdown and safeguard it, refer to page 34.
Maintenance and repair work
Improper maintenance and repair work endanger operational safety. Thus there is a risk of accidents, serious injuries or death.

- Only perform work which is described in this operating instructions. Prior to any work, stop and safeguard the machine, refer to page 34.
- All other maintenance and repair work must only be performed by qualified specialist workshop.

Raised machine and machine parts
The raised machine and machine parts may fall or tilt unintentionally. People may be seriously injured or killed, as a result.

- Do not stay under the raised machine or machine parts which are not safely supported, refer to page 34.
- Prior to all work on raised machines or machine parts, lower the machine or machine parts.
- Before performing any work under raised machines or machine parts, secure the machine or machine parts with rigid safety support or with hydraulic shut-off device or by supporting against lowering.

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

- Never perform welding work on the following components:
  - Engine
  - Gearboxes
  - Components of the hydraulics
  - Components of the electronics
  - Frame or supporting components
  - Running gear
- Before carrying out welding work on the machine, obtain consent by KRONE customer service and, if required, identify alternatives.
- Before performing welding work on headers, disconnect the header from the forage harvester. Follow the operating instructions for the header.
- Have welding work performed by experienced technicians only.
- Attach the earthing of the welding device near the welding points.
- Caution when performing welding work near electric and hydraulic parts, plastic parts and pressure accumulators. The parts may be damaged, endanger people or cause accidents.

Before performing welding work on the forage harvester:
- Switch off main battery switch.
- Pull engine control plug out of the engine block.
- Disconnect batteries.
- Connect positive and negative cables of the machine by an electrical connection.
2.4.22 Dangers in connection with certain activities: checking and charging batteries

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

- Use a suitable voltmeter to check the condition of the battery.
- Charge the battery only in well ventilated rooms with the battery compartment cover open.
- To charge the battery, follow these operating instructions, refer to page 464.
- Keep fire, sparks and naked flames away from the battery.
- To prevent acid from leaking, transport the battery in the installation position only.

2.4.23 Dangers in connection with certain activities: working on wheels and tyres

Improper assembly or disassembly of wheels and tyres will endanger the operational safety. As a result, accidents may occur and people may be seriously injured or killed.

The fitting of wheels and tyres requires adequate knowledge and approved mounting tools.

- If there is a lack of knowledge, have the wheels and tyres fitted by the KRONE dealer or by a qualified tyre service.
- When fitting tyres on the rims, never exceed the maximum permitted pressure specified by KRONE, otherwise the tyre or even the rim may explode, refer to page 66.
- When mounting the wheels, mount the wheel nuts with the specified tightening torque, refer to page 394.

2.4.24 Behaviour in dangerous situations and in case of accidents

Any measures not taken or incorrect measures in dangerous situations can make it difficult or impossible to rescue exposed persons. Due to the impeded conditions of rescue, the chances to help and heal injured people deteriorate.

- As a matter of principle: Park the machine.
- Get an overview of the existing danger and identify the reason.
- Secure the accident site.
- Save persons from the danger zone.
- Leave danger zone and do not enter it again.
- Alarm rescue workers and seek help, if possible.
- Carry out immediate lifesaving actions.
2.5 Safety routines

2.5.1 Shutting down and safeguarding the machine

**WARNING**

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

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

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

To shut down and safeguard the machine:

- Park the machine on a stable, horizontal and level ground.
- Switch off the drives and wait until coasting parts have come to a complete stop.
- Lower the header fully to the ground.
- Secure the self-propelled machine against rolling away by applying the parking brake.
- Switch off the engine, remove the ignition key and take it with you.
- Switch off the main battery switch, refer to page 56.
- Use wheel chocks to secure the self-propelled machine against rolling away.

2.5.2 Securing raised machine and machine parts against lowering

**WARNING**

Crushing hazard due to movement of machine or machine parts

If the machine or machine parts are not secured against lowering, the machine or machine parts may roll, fall or sag. Thus people could be squeezed or killed.

- Lower the raised machine parts.
- Shut down and safeguard the machine, refer to page 34.
- Before working on or under raised machine parts: Secure machine or machine parts against lowering by means of hydraulic shut-off device (e.g. stop cock) on machine side.
- Before working on or under raised machine parts: Safely support machine or machine parts.

In order to safely support the machine or machine parts:

- To support, only use suitable and sufficiently dimensioned materials that do not break or yield.
- Bricks and hollow blocks are not suitable for safely supporting the machine and machine parts. Therefore they must not be used.
- Car jacks are also not suitable for safely supporting the machine and machine parts. They must not be used, as well.
2.5.3 Safely performing oil level check, oil change and filter element change

**WARNING**

Carrying out oil level checks and oil and filter element changes safely

If oil level checks and oil and filter element changes are not carried out safely, the operational safety of the machine may be impaired. This can lead to accidents.

- Carry out oil level checks and oil and filter element changes safely.

To carry out oil level checks and oil and filter element changes safely:
- Lower raised machine parts or secure them against falling, refer to page 34.
- Shut down and secure the machine, refer to page 34.
- Observe the intervals for checking the oil level and for changing oil and filter elements, refer to page 349.
- Use only the oil grades and quantities specified in the consumables table, refer to page 70.
- Clean the area around the components (e.g. gearbox and high-pressure filter), and ensure that no foreign objects get into the components or the hydraulic system.
- Check seal rings for damage and replace if required.
- Collect leaking or waste oil in a container designated for the purpose and dispose of it properly, refer to page 27.

2.5.4 Running actuator test

**WARNING**

Run actuator test safely

When actuators are energised, functions are carried out directly and without a safety prompt. This may cause the unintentional movement of machine parts, trapping and seriously or fatally injuring persons.

- Only persons familiar with the machine are permitted to perform the actuator test.
- The person performing the test must know which machine parts are activated by controlling the actuators.
- Run the actuator test safely.

To run the actuator test safely:
- Lower raised machine parts or secure them against falling, refer to page 34.
- Shut down and secure the machine, refer to page 34.
- Cordon off the danger zone of the actuated moving machine parts in a clearly visible manner.
- Ensure that there is nobody in the danger zone of the actuated moving machine parts.
- Switch on the ignition.
- The actuator test must only be performed from a safe position outside the area that is affected by machine parts moved by the actuators.
2.6 Safety labels on the machine

Every safety label is provided with an order number and can be ordered directly from the authorised KRONE dealer. Immediately replace missing, damaged and unrecognisable safety labels.

When attaching safety labels, the contact surface on the machine must be clean and free of dirt, oil and grease to ensure optimum adhesion of the labels.
<table>
<thead>
<tr>
<th>Safety</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety labels on the machine</td>
<td>2.6</td>
</tr>
</tbody>
</table>
2 Safety
2.6 Safety labels on the machine

Position and meaning of safety labels

Ladder to the cabin

 BX001-752
1. Order no. 27 022 557 0 (1x)

<table>
<thead>
<tr>
<th>Image</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Safety Label" /></td>
<td>This safety label includes the following warnings:</td>
</tr>
<tr>
<td><img src="image2" alt="Safety Label" /></td>
<td>Danger due to incorrect operation and lack of knowledge</td>
</tr>
<tr>
<td><img src="image3" alt="Safety Label" /></td>
<td>Incorrect operation and lack of knowledge of the machine as well as incorrect behaviour in hazardous situations is risking the life of the operator and third parties.</td>
</tr>
<tr>
<td><img src="image4" alt="Safety Label" /></td>
<td>Before starting up the machine, read and follow the operating instructions and safety instructions.</td>
</tr>
<tr>
<td><img src="image5" alt="Safety Label" /></td>
<td>Danger due to falling objects</td>
</tr>
<tr>
<td><img src="image6" alt="Safety Label" /></td>
<td>If treads or platforms fall while the machine is moving, people may be injured.</td>
</tr>
<tr>
<td><img src="image7" alt="Safety Label" /></td>
<td>Before driving the machine, always ensure that there is nobody on the steps or platforms.</td>
</tr>
<tr>
<td><img src="image8" alt="Safety Label" /></td>
<td>Danger due to the machine starting up unintentionally</td>
</tr>
<tr>
<td><img src="image9" alt="Safety Label" /></td>
<td>Risk of injury due to movement of the machine or machine parts.</td>
</tr>
<tr>
<td><img src="image10" alt="Safety Label" /></td>
<td>Before leaving the cabin, switch off the engine, remove the ignition key and take it with you.</td>
</tr>
<tr>
<td><img src="image11" alt="Safety Label" /></td>
<td>Danger due to electric shock</td>
</tr>
<tr>
<td><img src="image12" alt="Safety Label" /></td>
<td>Life-threatening injuries due to voltage flashover if machine parts come too close to overhead lines.</td>
</tr>
<tr>
<td><img src="image13" alt="Safety Label" /></td>
<td>Maintain the prescribed safety distance from overhead power lines.</td>
</tr>
</tbody>
</table>
### Danger due to the machine rolling away

If the machine has not been secured against rolling away, it may start moving and cause injuries.

- Before parking the machine, secure it with wheel chocks to prevent it from rolling away.

### Danger due to fire

Risk of injury due to fire on the machine.

- Do not operate the machine unless there is a functional fire extinguisher available.

### Danger due to high-pressure liquid

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

- When searching for leaks, use suitable aids to avoid the risk of injury.
- Keep body and face away from leaks. Never search for leaks with bare hands.
- If liquids penetrate the body, immediately consult a doctor. The liquid must be removed from the body as quickly as possible, as there is a risk of infection.
2 Safety

2.6 Safety labels on the machine

Area around intake and chopping drum
### 1. Order no. 942 294 0 (2x)

<table>
<thead>
<tr>
<th>Safety labels on the machine</th>
<th>Danger from rotating chopping drum</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Safety label" /></td>
<td>While grinding the blades, there is risk of injury.</td>
</tr>
<tr>
<td></td>
<td>- Before grinding process is started, move protective equipment to protective position.</td>
</tr>
<tr>
<td></td>
<td>- While grinding process is performed, leave protective equipment in protective position.</td>
</tr>
</tbody>
</table>

### 2. Order no. 27 017 245 0 (1x)

<table>
<thead>
<tr>
<th>Safety labels on the machine</th>
<th>Danger due to sharp-edged components</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Safety label" /></td>
<td>When removing crop blockages, there is an increased risk of injury from the sharp-edged components of the crop flow.</td>
</tr>
<tr>
<td></td>
<td>- When eliminating blockages, wear protective gloves.</td>
</tr>
</tbody>
</table>

### 3. Order no. 27 018 003 0 (1x)

<table>
<thead>
<tr>
<th>Safety labels on the machine</th>
<th>Danger from rotating machine parts</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Safety label" /></td>
<td>After the machine has been switched off, there is risk of injury due to coasting machine parts.</td>
</tr>
<tr>
<td></td>
<td>- Do not touch any moving parts of the machine.</td>
</tr>
<tr>
<td></td>
<td>- Wait until the machine parts have come to a complete stop.</td>
</tr>
</tbody>
</table>

### 4. Order no. 939 410 2 (2x)

<table>
<thead>
<tr>
<th>Safety labels on the machine</th>
<th>Danger from turning machine parts</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Safety label" /></td>
<td>After the machine has been switched off, there is risk of injury due to coasting machine parts.</td>
</tr>
<tr>
<td></td>
<td>- Do not touch any moving parts of the machine.</td>
</tr>
<tr>
<td></td>
<td>- Wait until the machine parts have come to a complete stop.</td>
</tr>
</tbody>
</table>

### 5. Order no. 27 018 053 0 (1x)

<table>
<thead>
<tr>
<th>Safety labels on the machine</th>
<th>Danger from rotating machine parts</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Safety label" /></td>
<td>When approaching the danger zone, there is a danger of being drawn in by rotating machine parts.</td>
</tr>
<tr>
<td></td>
<td>- Keep sufficient distance from rotating machine parts</td>
</tr>
</tbody>
</table>
6. Order no. 27 021 764 0 (3x)

<table>
<thead>
<tr>
<th>Danger due to rotating universal shaft</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is a danger of being pulled in or caught by the rotating universal shaft.</td>
</tr>
<tr>
<td>▶ Never reach into the rotating universal shaft.</td>
</tr>
<tr>
<td>▶ Maintain an adequate distance from moving machine parts.</td>
</tr>
</tbody>
</table>

7. Order no. 942 200 1 (2x)

<table>
<thead>
<tr>
<th>Danger from rotating machine parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>When approaching the danger zone, there is a danger of being drawn in from rotating machine parts.</td>
</tr>
<tr>
<td>▶ Keep sufficient distance from rotating machine parts.</td>
</tr>
</tbody>
</table>
2 Safety

2.6 Safety labels on the machine

Left-hand machine side
1. Order no. 27 018 010 0 (2x)

**Danger due to high-pressure liquid**

Hydraulic pressure tanks contain pressurised oil and gas. Risk of injury due to incorrect removal of a pressure tank or improper repairs to a hydraulic system.

- Removal of a pressure tank or repairs to a hydraulic system may be carried out by a service centre only.

2. Order no. 27 018 053 0 (1x)

**Danger from rotating machine parts**

When approaching the danger zone, there is a danger of being drawn in by rotating machine parts.

- Keep sufficient distance from rotating machine parts

3. Order no. 27 017 981 0 (1x)

**Danger due to rotating fan blades**

When the fan is rotating, there is a risk of injury from the moving fan blades.

- Do not reach into the running fan.
- Wait until the fan has come to a standstill.

4. Order no. 27 021 177 0 (1x)

**Danger from high-pressure liquid**

The pressure accumulator is under gas and oil pressure. There is a risk of injury when the pressure accumulator is not removed or repaired properly.

- Observe the notices in the operating instructions before removing and repairing the pressure accumulator.
- The pressure accumulator must only be removed and repaired by a specialist workshop.
2 Safety
2.6 Safety labels on the machine

Right-hand machine side

1
2
3
4
5
6

BX001-753
## Safety labels on the machine 2.6

1. **Order no. 942 210 0 (2x)**  
   **Danger from hot surfaces**  
   There is a risk of burns when touching hot surfaces.  
   - Keep sufficient distance as long as the surfaces are hot.

2. **Order no. 27 017 981 0 (1x)**  
   **Danger due to rotating fan blades**  
   When the fan is rotating, there is a risk of injury from the moving fan blades.  
   - Do not reach into the running fan.  
   - Wait until the fan has come to a standstill.

3. **Order no. 27 018 003 0 (3x)**  
   **Danger from rotating machine parts**  
   After the machine has been switched off, there is risk of injury due to coasting machine parts.  
   - Do not touch any moving parts of the machine.  
   - Wait until the machine parts have come to a complete stop.

4. **Order no. 939 410 2 (1x)**  
   **Danger from turning machine parts**  
   After the machine has been switched off, there is risk of injury due to coasting machine parts.  
   - Do not touch any moving parts of the machine.  
   - Wait until the machine parts have come to a complete stop.

5. **Order no. 942 291 0 (1x)**  
   **Danger from fall**  
   People may be injured when they fall off ladder steps or platforms while the machine is moving.  
   - Before driving the machine, always ensure that there is nobody on the steps or platforms.
### Safety

#### 2.6 Safety labels on the machine

<table>
<thead>
<tr>
<th>6. Order no. 27 021 177 0 (1x)</th>
<th><strong>Danger from high-pressure liquid</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Safety label" /></td>
<td>The pressure accumulator is under gas and oil pressure. There is a risk of injury when the pressure accumulator is not removed or repaired properly.</td>
</tr>
<tr>
<td><img src="image" alt="Safety label" /></td>
<td>▶ Observe the notices in the operating instructions before removing and repairing the pressure accumulator.</td>
</tr>
<tr>
<td><img src="image" alt="Safety label" /></td>
<td>▶ The pressure accumulator must only be removed and repaired by a specialist workshop.</td>
</tr>
</tbody>
</table>
2 Safety
2.6 Safety labels on the machine

Rear area

BX001-755
### Safety labels on the machine

#### 1. Ord. no. 942 210 0 (3x)

<table>
<thead>
<tr>
<th>![Safety symbol]</th>
<th><strong>Danger from hot surfaces</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>There is a risk of burns when touching hot surfaces.</td>
</tr>
<tr>
<td></td>
<td>▶ Keep sufficient distance as long as the surfaces are hot.</td>
</tr>
</tbody>
</table>

#### 2. Order no. 27 018 053 0 (1x)

<table>
<thead>
<tr>
<th>![Safety symbol]</th>
<th><strong>Danger from rotating machine parts</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>When approaching the danger zone, there is a danger of being drawn in by rotating machine parts.</td>
</tr>
<tr>
<td></td>
<td>▶ Keep sufficient distance from rotating machine parts</td>
</tr>
</tbody>
</table>

---

**BiG X 880**

Original Operating Instructions 150000768_00_en
On top of the machine
1. Order no. 27 018 010 0 (1x)

Danger due to high-pressure liquid
Hydraulic pressure tanks contain pressurised oil and gas. Risk of injury due to incorrect removal of a pressure tank or improper repairs to a hydraulic system.
- Removal of a pressure tank or repairs to a hydraulic system may be carried out by a service centre only.

For version with “Hydraulics auxiliary tank”:
2. Order no. 942 210 0 (1x)

Danger from hot surfaces
There is a risk of burns when touching hot surfaces.
- Keep sufficient distance as long as the surfaces are hot.

2.7 Safety equipment

2.7.1 Ladders

To safely climb up to the cabin, ascend the machine only via the steps of the ladder (1) and the standing areas (2). In doing so, use the handrails (3).
2.7 Safety equipment

2.7.2 Main battery switch

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

- After using the machine, in emergencies and for repairs, interrupt the power supply.

The main battery switch (2) is designed as a pushbutton with integrated LED and is located in the battery compartment (1) in the rear bumper.

The power supply is automatically interrupted after 24 hours.

If the main battery switch is pressed for not longer than 1 second, the power supply is automatically interrupted after a delay of about 120 seconds. This ensures the run-down time (cleaning) for the urea system.

If the main battery switch is pressed for longer than 2 seconds, the power supply is interrupted immediately. There is no run-down time (cleaning) for the urea system.

NOTICE! Damage to the urea system. Do not press the main battery switch for longer than 1 second.

- Open the battery compartment flap (1).
- To switch on or interrupt the power supply, press the main battery switch (2):
  - When the LED is lit, the power supply is switched on
  - When the LED is flashing, the run-down time (about 120 seconds) for cleaning the urea system is in progress.
  - When the LED is not lit, the power supply is interrupted.
- To interrupt the power supply as quickly as possible in an emergency, press the main battery switch for 2 seconds.
  - The power supply is interrupted immediately.

2.7.3 Fire extinguisher

NOTICE! Damage to the urea system. Do not press the main battery switch for longer than 1 second.

- Open the battery compartment flap (1).
- To switch on or interrupt the power supply, press the main battery switch (2):
  - When the LED is lit, the power supply is switched on
  - When the LED is flashing, the run-down time (about 120 seconds) for cleaning the urea system is in progress.
  - When the LED is not lit, the power supply is interrupted.
- To interrupt the power supply as quickly as possible in an emergency, press the main battery switch for 2 seconds.
  - The power supply is interrupted immediately.
**INFORMATION**

The machine must not be operated without an on-board fire extinguisher which contains at least 6 kg of extinguishing agent.

The manufacturer recommends a powder fire extinguisher for fire classes A, B and C.

The support (1) for the fire extinguisher is on the left-hand ladder to the platform.

Have the fire extinguisher registered. So you can be sure that maintenance is carried out regularly and in good time (according to EN 3 at the latest every two years) and can be proven.

- Prior to starting up the machine, check that the fire extinguisher is attached and ready for use, refer to page 396.
- Consider the operating instructions of the fire extinguisher and the web page of the manufacturer of the fire extinguisher.
- Check fire extinguisher for external damage. In the event of anomalies, inform responsible maintenance company.

The inspection intervals in other countries may be different. In such a case, the prescribed inspection intervals of the country of operation apply.

- Observe the provisions of the corresponding countries.

### 2.7.4 Emergency exit

In case of an emergency (1), the side window on the right-hand side in the direction of travel, next to the driver’s seat, can be opened as an exit door.

- Swivel the lever (2) forwards until it locks into position.
- Pull the cotter pin (3) and remove it.
- Open the side window (1) all the way.
2 Safety

2.7 Safety equipment

---

**WARNING**

**Danger to life due to blocked escape route**

If the right side window cannot be opened without obstruction, the escape route for the driver is obstructed.

- Make sure prior to travel that the right platform is free.

---

2.7.5 Wheel chocks

BXG000-003

The machine is equipped with two wheel chocks (1) located behind the ladder to the cabin (3) and behind the right ladder (2).

- Ensure that the wheel chocks (1) are always carried along.
- When parking, secure the machine against rolling away using both wheel chocks (1).
- Place the wheel chocks (1) tightly up against the wheels, either in front of or behind them, to prevent the machine from rolling away.

---

2.7.6 Seat switch in driver's seat

The seat switch fitted in the driver's seat is used to query whether the driver's seat is occupied.

When the driver leaves the driver's seat, intake and header are switched off after 7 s. They cannot be switched on again while the driver's seat is unoccupied.

When the driver's seat is occupied again, intake and header can be switched on. If this is not possible, the seat switch could be defective.

---

2.7.7 Quick-stop switch

BXG000-006

---
The quick-stop switch (1) in the cabin is used to stop the working functions of the machine. The diesel engine continues running.

- To actuate it, press down the quick-stop switch (1) until it locks into position.
- The working functions are stopped. The switch is locked.

To release it, turn the quick-stop switch (1) clockwise until the home position is reached.
- The working functions are activated. The switch is released.

### 2.7.8 Quick-stop switch grinding control unit

The quick-stop switch (1) on the grinding control unit is used to stop the working functions of the machine. The diesel engine and the traction drive continue running.

- To actuate it, press down the quick-stop switch (1) until it locks into position.
- The working functions are stopped. The switch is locked.

To release it, turn the quick-stop switch (1) clockwise until the home position is reached.
- The working functions are activated. The switch is released.
2.7.9 Lighting on ladder cabin and ladder right

The steps can be lit so that even in darkness the steps on the ladder to the cabin and on the ladder on the right can be clearly identified.

Press the “Ladders lighting” (3) key to switch on the lighting on the ladder to the cabin (1) and on the ladder on the right (2).

The lighting on the ladder to the cabin (1) and on the ladder on the right (2) comes on.

At the same time the working lights II (4) and the rear working lights (5) also come on.

The lights (1), (2), (4) and (5) are also switched on when the ignition key is switched to the “STOP” position.

The lights (1), (2), (4) and (5) are switched off after a delay so that the machine can be left safely even in darkness.
2.7.10 SMV emblem

For the version with “SMV emblem”

The SMV emblem (Slow-Moving Vehicle) (1) can be mounted on slow-moving machines or vehicles. The country-specific specifications must be observed.

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

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

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

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

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

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

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

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

4.1 Machine overview

1. Fire extinguisher
2. Ladder
3. Grinding control unit
4. Quick-stop switch grinding control unit
5. Connections for header
6. Spout
7. Filler neck fuel tank
8. Filler neck urea tank
9. Ladder right
10. Battery compartment
11. Main battery switch
12. Tow coupling (for "Automatic tow coupling" version)
13. Storage compartment
14. Engine
15. Intake unit
16. Grinding unit
17. Central electrical system circuit board
18. Cabin
4.2 Labelling

**INFORMATION**

The entire identification plate represents a legal document and should not be altered or rendered illegible!
The machine data are rendered on the type plate (1). The type plate is on right-hand machine side in the rear wheel case.

**Information for enquiries and orders**

If you have any further queries on the machine or if you want to order spare parts, always enter type designation, vehicle identification number and year of manufacture of the corresponding machine. To ensure that these data are always available, we recommend to enter them in the fields on the front cover page of these operating instructions.

### 4.3 Function description chopping crops

**Grass mode with pick-up**

To use the machine in grass mode, it must be fitted with a suitable header, approved by the manufacturer. The crops must lay cut in a swath.

The header picks up the crops from the field and transports them in front of the intake in the middle of the machine.

The intake pulls in the crops with its rollers, compresses them and transports them to the chopper unit.

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

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

**Maize mode**

To use maize mode, the machine must be fitted with a maize header approved by the manufacturer.

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

The intake draws in the crops with its rollers, compresses them and transports them to the foraging unit.

The foraging unit chops up the crops with the blades on its rotating cutting drum and conveys them to the corn conditioner.

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

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

**Dimensions in transport position**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total length L</td>
<td>8,000-9,000 mm</td>
</tr>
<tr>
<td>Total width B (tyre width 680 at front wheels)</td>
<td>3,197 mm</td>
</tr>
<tr>
<td>Total width B (tyres 710/70R42 on the front wheels)</td>
<td>3,172 mm</td>
</tr>
<tr>
<td>Total width B (tyres 710/75R42 on the front wheels)</td>
<td>3,232 mm</td>
</tr>
<tr>
<td>Total width B (tyres 800/65R32 on the front wheels)</td>
<td>3,241 mm</td>
</tr>
<tr>
<td>Total width B (tyres 800/70R38 on the front wheels)</td>
<td>3,284 mm</td>
</tr>
<tr>
<td>Total width B (tyre width 900 at front wheels)</td>
<td>3,470 mm</td>
</tr>
<tr>
<td>Total height H</td>
<td>3,915-3,980 mm</td>
</tr>
<tr>
<td>Centre distance X</td>
<td>3,400 mm</td>
</tr>
</tbody>
</table>

1 Depending on the version, the header used and the use of a spout extension.

2 Depending on the tyres fitted.

**Dimensions in working position**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum working height Y</td>
<td>6,450-7,200 mm</td>
</tr>
</tbody>
</table>

1 Depending on the tyres fitted and the use of a spout extension.

**Engine data**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>Liebherr Machines Bulle SA</td>
</tr>
<tr>
<td>Engine type</td>
<td>D9508 A7</td>
</tr>
<tr>
<td>Design</td>
<td>8 cylinder V-arrangement</td>
</tr>
<tr>
<td>Emissions level</td>
<td>IV (EU)</td>
</tr>
<tr>
<td>Displaced volume</td>
<td>16.2 l</td>
</tr>
</tbody>
</table>
### Engine data

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous engine performance</td>
<td>660 kW [898 HP]</td>
</tr>
<tr>
<td>Continuous chopping output X-Power</td>
<td>632 kW (860 HP)</td>
</tr>
<tr>
<td>Cooling system</td>
<td>Liquid cooling</td>
</tr>
<tr>
<td>Diesel injection process</td>
<td>Common Rail injection</td>
</tr>
<tr>
<td>Starter voltage</td>
<td>24 V</td>
</tr>
<tr>
<td>Starter power</td>
<td>7.0 kW</td>
</tr>
<tr>
<td>Alternator voltage</td>
<td>24 V</td>
</tr>
<tr>
<td>Alternator current intensity</td>
<td>150 A</td>
</tr>
</tbody>
</table>

### Traction drive

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Hydrostatic traction drive with axial piston adjusting motors in wheel hub gearboxes</td>
</tr>
<tr>
<td>Forward speed in work mode</td>
<td>0-25 km/h</td>
</tr>
<tr>
<td>Forward speed in transport mode</td>
<td>0-40 km/h</td>
</tr>
<tr>
<td>Four-wheel</td>
<td>Option</td>
</tr>
<tr>
<td>Traction control system</td>
<td>Series</td>
</tr>
</tbody>
</table>

### Axles

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steering</td>
<td>Rear axle</td>
</tr>
<tr>
<td>Lock angle rear axle</td>
<td>50°</td>
</tr>
<tr>
<td>Suspension rear axle</td>
<td>hydraulic</td>
</tr>
</tbody>
</table>

### Tow coupling (HSM - M9617)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>permitted D-value</td>
<td>78.2 kN</td>
</tr>
<tr>
<td>permitted drawbar load at the coupling point</td>
<td>max. 2,000 kg(^1\cdot)(^2)</td>
</tr>
<tr>
<td>max. trailer load (overrun brake)</td>
<td>8,000 kg</td>
</tr>
<tr>
<td>Permitted drawbar eyes</td>
<td>DIN11026, 11043, 74054</td>
</tr>
</tbody>
</table>

\(^1\) Observe maximum permitted rear axle load!

\(^2\) When installing an additive tank at the rear of the machine, observe the maximum permitted drawbar load and the maximum permitted rear axle load!

### Electrical system

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternator voltage</td>
<td>24 V</td>
</tr>
<tr>
<td>Alternator amperage</td>
<td>180 A</td>
</tr>
<tr>
<td>Number of batteries</td>
<td>2</td>
</tr>
<tr>
<td>Battery voltage</td>
<td>24 V (2x12 V)</td>
</tr>
<tr>
<td>Battery capacity</td>
<td>(2x) 154 Ah</td>
</tr>
</tbody>
</table>
### Air conditioning

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaporator</td>
<td>Refrigerating capacity 6,500 W</td>
</tr>
<tr>
<td>Heating unit</td>
<td>Heating output 12,000 W</td>
</tr>
<tr>
<td>Fan</td>
<td>1160 m³/h free blowing</td>
</tr>
<tr>
<td>Voltage</td>
<td>24 V</td>
</tr>
<tr>
<td>Power consumption</td>
<td>8.6 A</td>
</tr>
</tbody>
</table>

1 Measured at +30 °C ambient temperature (manufacturer's specifications).

### Vibration values

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

- The vibration values for hand-arm vibrations are below 2.5 m/s².
- Concerning whole body vibrations the action value of 0.5 m/s² is not exceeded.

### Noise in the operator station

- The noise in the operator station is 78 dB L_pA with cabin closed.

### Ambient temperature

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature range for machine operation</td>
<td>-5 to +45°C</td>
</tr>
</tbody>
</table>

### Maximum speed

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum permitted speed</td>
<td>40 km/h</td>
</tr>
</tbody>
</table>

1) Depending on the legal requirements in the country of use.

### Machine components

#### Intake

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-compression roller opening</td>
<td>Funnel-shaped</td>
</tr>
<tr>
<td>Service position</td>
<td>Quick release fastener</td>
</tr>
<tr>
<td>Number of rollers / metal detector / number of coils</td>
<td>6/series/6</td>
</tr>
<tr>
<td>Distance between metal detector and counterblade</td>
<td>820 mm</td>
</tr>
<tr>
<td>Baling force</td>
<td>3,660 kg</td>
</tr>
<tr>
<td>Volume roller opening</td>
<td>160 l</td>
</tr>
<tr>
<td>Chop length adjustment</td>
<td>From the cabin (in 0.5 mm intervals)</td>
</tr>
</tbody>
</table>

#### Chopper unit

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drum width / drum diameter</td>
<td>800 mm / 660 mm</td>
</tr>
<tr>
<td>Blade arrangement</td>
<td>V-shaped</td>
</tr>
<tr>
<td>Stepless drum setting / suspension of the drum base</td>
<td>Standard</td>
</tr>
<tr>
<td>Number of blades 20</td>
<td>Chopping length range 5-31 mm</td>
</tr>
<tr>
<td>Number of blades 28</td>
<td>Chopping length range 4-22 mm</td>
</tr>
</tbody>
</table>
### Chopper unit

<table>
<thead>
<tr>
<th>Number of blades</th>
<th>Chopping length range</th>
</tr>
</thead>
<tbody>
<tr>
<td>36</td>
<td>3-17 mm</td>
</tr>
<tr>
<td>40</td>
<td>2.5-15 mm</td>
</tr>
<tr>
<td>48</td>
<td>2-12 mm</td>
</tr>
</tbody>
</table>

For "VariLOC chop length gearbox" version

<table>
<thead>
<tr>
<th>Number of blades in gearbox position</th>
<th>Chopping length range</th>
</tr>
</thead>
<tbody>
<tr>
<td>28 in gearbox position I (1:1)</td>
<td>4-22 mm</td>
</tr>
<tr>
<td>28 in gearbox position II (1:1.5)</td>
<td>10-30 mm</td>
</tr>
<tr>
<td>36 in gearbox position I (1:1)</td>
<td>3-17 mm</td>
</tr>
<tr>
<td>36 in gearbox position II (1:1.5)</td>
<td>10-24 mm</td>
</tr>
</tbody>
</table>

### Corn conditioner

- Rollers with 105 teeth: Saw tooth profile / chrome-plated saw tooth profile
  Option / option
- Rollers with 123 teeth: Default profile / chrome-plated saw tooth profile
  Option / option
- Rollers with 144 teeth: Default profile / chrome-plated saw tooth profile
  Option / option
- Rollers with 166 teeth: Saw tooth profile
  Option
- Speed difference
  20% (default), 30% (optional), 40% (optional)
- Space adjustment from the cabin and coupling to central lubrication system
  Standard
- Roller width/roller diameter/roller distance
  710 mm/250 mm/0.5-7 mm

### Discharge accelerator

- Diameter / width / number of discharge scoops
  560 mm / 710 mm / 8
- Discharge scoop arrangement
  V-shaped
- Rotational speed
  2,280 rpm
- Infinitely variable setting of the rear wall / suspension of the rear wall
  Standard

### Spout

- Angle of rotation
  210 °
- Overload height
  6,000 mm
- Dimensions cross section
  340 mm x 320 mm
- Automatic mirror function
  Standard
- Stepless rotating speed
  Standard
- Drive for rotation
  Gearbox
- Wear plates in the entire spout
  Standard
## 5.1 Consumables

Biodegradable consumables can be used on request.

### 5.1.1 Oils

<table>
<thead>
<tr>
<th>Designation</th>
<th>Filling quantity</th>
<th>Specification</th>
<th>Initial filling ex works</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine oil (diesel engine)</td>
<td>60 l</td>
<td>Chevron Texaco URSA TDX, optional: Fuchs Titan Cargo MC or: Shell Rimula R6M or: Total Rubia Tir 8600</td>
<td>Fuchs Titan Cargo MC 10W-40</td>
</tr>
<tr>
<td>Hydraulic oil tank</td>
<td>52 l</td>
<td>Hydraulic oil HLP 46</td>
<td>SRS Wiolan HS 46</td>
</tr>
<tr>
<td>Entire hydraulic system</td>
<td>120 l</td>
<td>Hydraulic oil HLP 46</td>
<td>SRS Wiolan HS 46</td>
</tr>
<tr>
<td>Main gearbox</td>
<td>9.5 l</td>
<td>Gear oil Renolin Unisyn CLP220 or: Gear oil Mobile SHC 630</td>
<td>Gear oil Renolin Unisyn CLP220</td>
</tr>
<tr>
<td>Transfer gearbox</td>
<td>3.2 l</td>
<td>Gear oil Renolin Unisyn CLP220 or: Gear oil Mobile SHC 630</td>
<td>Gear oil Renolin Unisyn CLP220</td>
</tr>
<tr>
<td>Intermediate gearbox intake</td>
<td>0.5 l</td>
<td>Gear oil API-GL4-SAE90</td>
<td>Gear oil API-GL4-SAE90</td>
</tr>
<tr>
<td>Lower roller gearbox</td>
<td>3.0 l</td>
<td>Gear oil API-GL4-SAE90</td>
<td>Gear oil API-GL4-SAE90</td>
</tr>
<tr>
<td>Upper roller gearbox</td>
<td>1.5 l</td>
<td>Gear oil API-GL4-SAE90</td>
<td>Gear oil API-GL4-SAE90</td>
</tr>
<tr>
<td>Rotary drive gearbox spout</td>
<td>1.5 l</td>
<td>Gear oil Mobil Glygoyle 460</td>
<td>Gear oil Mobil Glygoyle 460</td>
</tr>
<tr>
<td>Wheel hub gearbox at front</td>
<td>3.5 l</td>
<td>Gear oil Shell Spirax S4 CX 50</td>
<td>Gear oil Shell Spirax S4 CX 50</td>
</tr>
<tr>
<td>Wheel hub gearbox at rear</td>
<td>1.5 l</td>
<td>Gear oil Shell Spirax S4 CX 50</td>
<td>Gear oil Shell Spirax S4 CX 50</td>
</tr>
<tr>
<td>VariLOC chop length gearbox</td>
<td>3.3 L</td>
<td>Gear oil Renolin Unisyn CLP220 or: Gear oil Mobile SHC 630</td>
<td>Gear oil Renolin Unisyn CLP220</td>
</tr>
</tbody>
</table>

The filling quantities of the gearboxes are guide values. The correct values result from oil change/oil level check, refer to page 453.
List of mineral oils of quality class HLP (HM) and environmentally friendly, rapidly biodegradable HEPG pressure fluids allowed to be used for hydraulic oil tank:

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

<table>
<thead>
<tr>
<th>Designation</th>
<th>Filling quantity</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central lubrication system</td>
<td>8.0 l</td>
<td>Lubricating grease to DIN 51818 of NLGI class 2, Li soap with EP additives</td>
</tr>
<tr>
<td>Manual lubrication points</td>
<td>As required ¹)</td>
<td></td>
</tr>
</tbody>
</table>

¹ Lubricate the manual lubrication point until grease escapes at the bearing position. After lubricating, remove the grease escaping from the bearing position.

5.1.3 Coolant

Consumables/Initial filling at the factory

<table>
<thead>
<tr>
<th>Designation</th>
<th>Filling quantity</th>
<th>Specification</th>
<th>Initial filling at the factory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine coolant</td>
<td>90 L¹ + 90 L²</td>
<td>See Liebherr</td>
<td>• Glysantin G40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Fully demineralised water</td>
</tr>
</tbody>
</table>

¹ Glysantin G40
² fully demineralised water

5.1.4 Refrigerant (air conditioning)

<table>
<thead>
<tr>
<th>Designation</th>
<th>Filling quantity</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerant</td>
<td>1,600 g</td>
<td>R134a</td>
</tr>
<tr>
<td>Oil</td>
<td>100 g</td>
<td>PAG</td>
</tr>
</tbody>
</table>

Data sheet for refrigerant R134a (excerpt)

**Refrigerant R 134a**
- Chemical designation: 1,1,1,2 tetrafluoroethane
- Chemical formula: \(\text{CH}_2\text{F CF}_3\)
- Molecular weight: 102.0 g/mol
- Boiling point (at 1.013 bar): -26.1 °C
- Freezing point: -101.0 °C
- Critical temperature: -101.1 °C
- Critical pressure: 40.60 bar
- Density (liquid at +25 °C): 1206 kg/m³
- Limits of flammability in the air: not inflammable

**Environmental data FKW 134a**
- ODP – Ozone depletion potential: ODP=0
- CLP – Chlorine load potential: CLP=0
- PCR – Photochemical reactivity: PCR=0.5
- GWP – Greenhouse effect: 1,430
- \(\text{CO}_2\) equivalent: 2,288 kg
5.1.5 Fuel/urea

<table>
<thead>
<tr>
<th>Designation</th>
<th>Filling quantity</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel tank</td>
<td>930 l</td>
<td>See shipped operating instructions from LIEBHERR</td>
</tr>
<tr>
<td>Additional fuel tank</td>
<td>400 l</td>
<td>See shipped operating instructions from LIEBHERR</td>
</tr>
<tr>
<td>Side tank</td>
<td>170 l</td>
<td>See shipped operating instructions from LIEBHERR</td>
</tr>
<tr>
<td>Urea tank</td>
<td>150 l</td>
<td>See shipped operating instructions from LIEBHERR</td>
</tr>
</tbody>
</table>

5.2 Tyres

<table>
<thead>
<tr>
<th>Tyres</th>
<th>Equipment</th>
<th>Tyre dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front axle</td>
<td>Default¹</td>
<td>680/85R32</td>
</tr>
<tr>
<td></td>
<td>Option¹</td>
<td>710/70R42</td>
</tr>
<tr>
<td></td>
<td>Option¹</td>
<td>710/75R42</td>
</tr>
<tr>
<td></td>
<td>Option¹</td>
<td>800/65R32</td>
</tr>
<tr>
<td></td>
<td>Option¹</td>
<td>800/70R38</td>
</tr>
<tr>
<td></td>
<td>Option¹</td>
<td>900/60R32</td>
</tr>
<tr>
<td></td>
<td>Option¹</td>
<td>900/60R42</td>
</tr>
<tr>
<td>Rear axle</td>
<td>Default¹</td>
<td>540/65R30</td>
</tr>
<tr>
<td></td>
<td>Option¹</td>
<td>620/70R30</td>
</tr>
<tr>
<td></td>
<td>Option¹</td>
<td>710/60R30</td>
</tr>
</tbody>
</table>

¹ Restricted use depending on harvesting work

Before working on a slope, increase the tyre pressure in the front wheels by 0.5 bar more than indicated in the following table. After working on the slope, the tyre pressure must be set to the values in the table.

Before storing the machine at the end of the harvesting season, set the tyre pressure to the maximum permitted value. Before starting the new harvesting season, the tyre pressure must be set to the values in the table suitable for the header.

<table>
<thead>
<tr>
<th>Tyre type</th>
<th>[km/h]</th>
<th>EasyFlow or Solo machine</th>
<th>EasyCollect 450-2</th>
<th>EasyCollect 600-2</th>
<th>EasyCollect 600-3</th>
<th>EasyCollect 750-2</th>
<th>EasyCollect 750-3</th>
<th>EasyCollect 900-3</th>
<th>Max. permissible tyre pressure</th>
<th>Axle</th>
</tr>
</thead>
<tbody>
<tr>
<td>680/85R32</td>
<td>40</td>
<td>1.8</td>
<td>1.8</td>
<td>2.0</td>
<td>2.4</td>
<td>2.4</td>
<td>2.4</td>
<td>2.4</td>
<td>4.1</td>
<td>Front axle</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>710/70R42</td>
<td>40</td>
<td>1.4</td>
<td>1.4</td>
<td>1.6</td>
<td>1.8</td>
<td>1.8</td>
<td>1.8</td>
<td>1.8</td>
<td>2.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>0.8</td>
<td>0.8</td>
<td>1.0</td>
<td>1.0</td>
<td>1.1</td>
<td>1.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>710/75R42</td>
<td>40</td>
<td>1.2</td>
<td>1.2</td>
<td>1.4</td>
<td>1.6</td>
<td>1.6</td>
<td>1.6</td>
<td>1.6</td>
<td>2.8</td>
<td></td>
</tr>
</tbody>
</table>
### 5.3 Total weights and axle loads

Depending on machine type, used additional axle and used header, the following results from the front axle load:

- the rear axle load
- the total weight
- the required counter weight behind the rear axle (with base weight, intermediate plates and end plate)

**INFORMATION**

The permitted front axle load can be found in the TÜV report of the machine.

**INFORMATION**

If a forage harvester with a maize header is used, the forage harvester must be additionally weighed down by a rear weight. The number of intermediate plates for the rear weight depends on the machine type, the permitted front axle load and the type of maize header.

If there are no suitable values for the number of intermediate plates in the technical data of these operating instructions for the combination of forage harvester and maize header, this information can be found in the sample report for the combination of forage harvester and maize header.

<table>
<thead>
<tr>
<th>Tyre type</th>
<th>Tyre pressure</th>
<th>EasyFlow or Solo machine</th>
<th>EasyCollect</th>
<th>Max. permissible tyre pressure</th>
<th>Axle load</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[km/h]</td>
<td>450-2</td>
<td>600-2</td>
<td>600-3</td>
<td>750-2</td>
</tr>
<tr>
<td>710/75</td>
<td>10</td>
<td>0.8</td>
<td>0.8</td>
<td>0.9</td>
<td>1.0</td>
</tr>
<tr>
<td>R42</td>
<td>800/65</td>
<td>40</td>
<td>1.8</td>
<td>1.8</td>
<td>2.2</td>
</tr>
<tr>
<td>R32</td>
<td>10</td>
<td>1.1</td>
<td>1.1</td>
<td>1.2</td>
<td>1.2</td>
</tr>
<tr>
<td>800/70</td>
<td>40</td>
<td>1.1</td>
<td>1.1</td>
<td>1.2</td>
<td>1.4</td>
</tr>
<tr>
<td>R38</td>
<td>10</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>900/60</td>
<td>40</td>
<td>1.6</td>
<td>1.6</td>
<td>1.6</td>
<td>1.9</td>
</tr>
<tr>
<td>R32</td>
<td>10</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.2</td>
</tr>
<tr>
<td>900/60</td>
<td>40</td>
<td>1.1</td>
<td>1.1</td>
<td>1.2</td>
<td>1.3</td>
</tr>
<tr>
<td>R42</td>
<td>10</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>540/65</td>
<td>40</td>
<td>1.6</td>
<td>1.8</td>
<td>2.0</td>
<td>2.2</td>
</tr>
<tr>
<td>R30</td>
<td>10</td>
<td>1.6</td>
<td>1.8</td>
<td>2.0</td>
<td>2.2</td>
</tr>
<tr>
<td>620/70</td>
<td>40</td>
<td>1.5</td>
<td>1.8</td>
<td>1.8</td>
<td>2.0</td>
</tr>
<tr>
<td>R30</td>
<td>10</td>
<td>0.9</td>
<td>1.0</td>
<td>1.1</td>
<td>1.2</td>
</tr>
<tr>
<td>710/60</td>
<td>40</td>
<td>1.5</td>
<td>1.8</td>
<td>2.0</td>
<td>2.2</td>
</tr>
<tr>
<td>R30</td>
<td>10</td>
<td>1.0</td>
<td>1.2</td>
<td>1.2</td>
<td>1.4</td>
</tr>
</tbody>
</table>
**INFORMATION**

If a combination of forage harvester and attached maize header is deployed for on-road use, this combination must be entered in the vehicle papers of the forage harvester. If the maize header has not yet been entered in the vehicle documents, the details in the vehicle papers must be supplemented accordingly.

* Ask for the required sample report from your sales partner for this purpose.

---

**Precision forage harvester with 2 axles**

**Ballasting on a front axle load of 11,500 kg**

<table>
<thead>
<tr>
<th></th>
<th>Without header / With EasyFlow¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permitted axle load</td>
<td>10,000</td>
</tr>
<tr>
<td>at rear [kg]</td>
<td></td>
</tr>
<tr>
<td>Permitted gross</td>
<td>18,000</td>
</tr>
<tr>
<td>weight [kg]</td>
<td></td>
</tr>
<tr>
<td>Basic weight [number]</td>
<td>-</td>
</tr>
<tr>
<td>Additional plate [num-</td>
<td>-</td>
</tr>
<tr>
<td>ber]</td>
<td></td>
</tr>
</tbody>
</table>

¹ Series version in the vehicle papers

**Weight to ballast front axle load of 12,000 kg**

<table>
<thead>
<tr>
<th></th>
<th>Without header/With EasyFlow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permissible axle load</td>
<td>See in table &quot;Ballasting on a front axle load of 11,500 kg&quot;</td>
</tr>
<tr>
<td>at rear [kg]</td>
<td>10,000</td>
</tr>
<tr>
<td>Permissible total</td>
<td>21,000</td>
</tr>
<tr>
<td>weight [kg]</td>
<td></td>
</tr>
<tr>
<td>Basic weight [quantity]</td>
<td>1</td>
</tr>
<tr>
<td>Additional plate [quantity]</td>
<td>3</td>
</tr>
</tbody>
</table>

² If this setup condition has still not been entered in the vehicle papers, the vehicle papers must be changed.

---

**Precision forage harvester with 3 axles**

**Ballasting on a front axle load of 11,500 kg**

<table>
<thead>
<tr>
<th></th>
<th>Without header/With EasyFlow</th>
<th>EasyCollect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permitted axle load</td>
<td>See in table &quot;Ballasting on a front axle load of 11,500 kg&quot;</td>
<td>BV301-10 (XCollect 600-3)²</td>
</tr>
<tr>
<td>at rear [kg]</td>
<td>10,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Permitted axle load</td>
<td>10,000</td>
<td>BV301-20 (XCollect 750-3)²</td>
</tr>
<tr>
<td>additional axe [kg]</td>
<td>2,400</td>
<td>2,400</td>
</tr>
<tr>
<td></td>
<td>10,000</td>
<td>BV301-30 (XCollect 900-3)²</td>
</tr>
<tr>
<td></td>
<td>2,400</td>
<td>2,400</td>
</tr>
<tr>
<td></td>
<td>10,000</td>
<td>2,400</td>
</tr>
</tbody>
</table>
### 5.4 Released headers

The following headers have been technically released for operation.

The national law must be observed for authorisation to travel on the road.

<table>
<thead>
<tr>
<th>Header type</th>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maize header</td>
<td>EasyCollect 600-2</td>
</tr>
<tr>
<td></td>
<td>EasyCollect 750-2</td>
</tr>
<tr>
<td></td>
<td>BV301-10 (XCollect 600-3)²</td>
</tr>
<tr>
<td></td>
<td>BV301-20 (XCollect 750-3)²</td>
</tr>
<tr>
<td></td>
<td>BV301-30 (XCollect 900-3)²</td>
</tr>
<tr>
<td>Pick-up</td>
<td>EasyFlow 300 S</td>
</tr>
<tr>
<td></td>
<td>EasyFlow 380 S (use is not</td>
</tr>
<tr>
<td></td>
<td>authorised in all countries)</td>
</tr>
<tr>
<td>Direct cut header</td>
<td>XDisc 620</td>
</tr>
</tbody>
</table>

A transport trailer can be connected to some of the headers.
6 Control and Display Elements

6.1 Overview of operating elements

1 Light Control Unit, refer to page 86
2 Switch for interior lighting/illumination for control lever, refer to page 93
3 Terminal, refer to page 108
4 Keypad, refer to page 97
5 Additional keypad, refer to page 102
6 Ignition lock, refer to page 101
7 Navigation module, refer to page 100
8 Main Mode Switch, refer to page 99
9 Control lever, refer to page 94
10 Brake pedal, refer to page 85
11 Steering column with steering wheel, refer to page 80

6.2 Opening doors and windows of cabin

Opening right side window
To fully open the window on the right next to the driver’s seat:
6 Control and Display Elements
6.2 Opening doors and windows of cabin

BM000-067

► Swivel the lever (1) forwards until it locks into position.

BM000-176

► Pull the cotter pin (2) and remove it.

BM000-177

► Open the side window (3) all the way.

Opening the cabin door
Opening the cabin door from outside
Unlock the door lock (1) with the door key.
Press in the door lock (1) and open the door.

Opening the cabin door from inside

Press up the door opening lever (1) and open the door outwards.
6 Control and Display Elements

6.3 Control and display elements on the steering column

6.3.1 Steering column switch

6.3.1.1 Activating horn

To actuate the horn, press the momentary switch (1) for the horn on the steering column switch (2).

* As long as the momentary switch is pressed, the horn sounds.
6.3.1.2 Switching direction indicators on/off

▶ To switch on the right direction indicator, move the steering column switch (1) forwards.
▶ The direction indicator on the right is switched on.
▶ To switch on the left direction indicator, push the steering column switch (1) backwards.
▶ The direction indicator on the left is switched on.

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

▶ To switch off the direction indicator when the steering wheel is not turned, move the steering column switch (1) in the opposite direction.

The warning light for direction indicator lights up when the direction indicator lamps have been switched on, refer to page 84.

6.3.1.3 Switching parking light/dipped beam on/off

The lighting setting ring gauge (2) on the steering column switch (1) can be turned to the following positions:
6 Control and Display Elements
6.3 Control and display elements on the steering column

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td><img src="image" alt="Icon I" /></td>
<td>Switches the light off.</td>
</tr>
<tr>
<td>II</td>
<td><img src="image" alt="Icon II" /></td>
<td>Switches the parking light on.</td>
</tr>
<tr>
<td>III</td>
<td><img src="image" alt="Icon III" /></td>
<td>Switches dipped beam on.</td>
</tr>
<tr>
<td>IV</td>
<td><img src="image" alt="Icon IV" /></td>
<td>Switches work lighting on.</td>
</tr>
</tbody>
</table>

To switch on the parking light, turn the lighting setting ring gauge (2) one notch forwards to position II.

- Front and rear parking lights are lit, refer to page 87.
- The ignition has been switched on, refer to page 101.

To switch on the dipped beam, turn the lighting setting ring gauge (2) to the second notch forwards to position III.

- The green warning light for dipped beam is lit, refer to page 84.
- Dipped beam, front parking light, licence plate lamp and tail lamp are on, refer to page 87.

To switch on the working lights, turn the lighting setting ring gauge (2) to the third notch forwards to position IV.

- The working lights switched on via the light control unit are lit.

To switch off the parking light and dipped beam along with the working lights, turn the lighting setting ring gauge (2) to the last notch backwards to position I.

- All the lights have been switched off.

### 6.3.1.4 Switching full beam on/off

![Image of switch](image)

BM000-057

- The dipped beam has been switched on, refer to page 81.

To switch on full beam, press the steering column switch (1) downwards.

- The steering column switch locks in this position and full beam is switched on.
- The blue warning light full beam is on, refer to page 84.

To switch off full beam, move the steering column switch (1) to the neutral position.
6.3.1.5 Actuating headlamp flasher

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

As long as the steering column switch is pulled upwards, the full beam and the blue warning light full beam light up, refer to page 84.

6.3.1.6 Switching windshield wipers on/off

The setting ring gauge (2) for the windshield wiper on the steering column switch (1) can be turned to the following positions:
6 Control and Display Elements

6.3 Control and display elements on the steering column

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Icon</th>
<th>Explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>![icon]</td>
<td>Switches the windscreen wiper off.</td>
</tr>
<tr>
<td>II</td>
<td>![icon]</td>
<td>Switches on interval mode of the windscreen wiper.</td>
</tr>
<tr>
<td>III</td>
<td>![icon]</td>
<td>Switches on continuous operation of the windscreen wiper.</td>
</tr>
<tr>
<td>IV</td>
<td>![icon]</td>
<td>Switches on the windscreen washer system.</td>
</tr>
</tbody>
</table>

- To switch on the wiper in interval mode, turn the setting ring gauge (2) one notch forwards to position II.
- The windshield wiper operates in interval mode.
- To switch on the wiper in continuous operation, turn the setting ring gauge (2) to the second notch forwards to position III.
- The windshield wiper operates in continuous operation.
- To switch on the windscreen washer system, turn the setting ring gauge (2) to the third notch forwards to position IV.
- The windscreen washer system is operating.
- To switch off the wiper, turn the setting ring gauge (2) to the last notch backwards to position I.
- The wiper returns to the rest position and stops.

6.3.2 Warning lights

![Warning lights diagram]

1 Warning light for direction indicator left
2 Warning light for full beam
3 Warning light for dipped beam
4 Charging warning light
5 not assigned
6 Warning light for direction indicator on right
6.3.3 Switching the flashing warning light on/off

To switch on the flashing warning light, press the flashing warning light switch (1) to position II.

When the flashing warning light is switched on, all direction indicators flash simultaneously and the warning lights for the direction indicators on the left and right are lit, refer to page 84.

To switch off the flashing warning light, press the flashing warning light switch (1) to position I.

The warning lights for direction indicators on the left and right go out.

6.4 Actuating service brake

WARNING

Risk of accident due to defective service brake!

If the service brake has a restricted function, the machine cannot be brought to a standstill in time. Thus there is a risk of serious injuries or death.

Before starting the machine, always check service brake and ensure its functionality.

Before driving, check the service brake, drive the machine at low speed one metre forwards and actuate the brake pedal (1).

If the machine brakes, the service brake is functioning correctly.

If the machine does not brake, stop driving the machine.

Shut down and secure the machine, refer to page 34.

Have a technician check and repair the service brake.
6.5 Lighting

6.5.1 Light control unit

The Light Control Unit is used to switch the working lights, mirror heating and the wipers on and off and to adjust the outside mirrors.

If one of the functions is active, an LED above the corresponding key lights up.

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&quot;Mirror heater&quot; key</td>
<td>Switches the heating on/off for the outside mirrors and the anti-collision mirror.</td>
</tr>
<tr>
<td>2</td>
<td>not assigned</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>&quot;Warning beacon&quot; key</td>
<td>Switches the warning beacons on/off.</td>
</tr>
<tr>
<td>4</td>
<td>&quot;Side working light mirror&quot; key</td>
<td>Switches the side working lights mirror on/off.</td>
</tr>
<tr>
<td>5</td>
<td>&quot;Maintenance lighting&quot; key</td>
<td>Switches the maintenance lighting on/off.</td>
</tr>
<tr>
<td>6</td>
<td>not assigned</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>not assigned</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>&quot;Left windscreen wiper&quot; key</td>
<td>Switches the left wiper on/off</td>
</tr>
<tr>
<td>9</td>
<td>&quot;Rear windscreen wiper&quot; key</td>
<td>Switches rear windscreen wiper on/off.</td>
</tr>
<tr>
<td>10</td>
<td>&quot;Right windscreen wiper&quot; key</td>
<td>Switches the right windscreen wiper on/off.</td>
</tr>
<tr>
<td>11</td>
<td>&quot;Spout working light&quot; key</td>
<td>Switches the spout working lights on/off.</td>
</tr>
<tr>
<td>12</td>
<td>&quot;Rear working light&quot; key</td>
<td>Switches the working light rear and the headlights spout basic on/off</td>
</tr>
<tr>
<td>13</td>
<td>&quot;Side rear working light&quot; key</td>
<td>Switches the rear working lights on/off.</td>
</tr>
<tr>
<td>14</td>
<td>&quot;Memory&quot; key</td>
<td>Switches a programmed combination of working lights on/off, refer to page 89</td>
</tr>
</tbody>
</table>

BiG X 880

Original Operating Instructions 150000768_00_en
<table>
<thead>
<tr>
<th>Pos.</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>&quot;Rear working light mirror arm&quot; key</td>
<td>Switches the rear working light mirror arm on/off.</td>
</tr>
<tr>
<td>16</td>
<td>&quot;Working light on cabin roof and front guard&quot; key</td>
<td>Switches the working light on cabin roof and front guard on/off.</td>
</tr>
<tr>
<td>17</td>
<td>&quot;Platform working lights&quot; key</td>
<td>Switches the platform working lights on/off.</td>
</tr>
<tr>
<td>18</td>
<td>&quot;All working lights&quot; key¹</td>
<td>Switches all working lights on/off.</td>
</tr>
<tr>
<td>19</td>
<td>&quot;Right outside rear-view mirror&quot; key</td>
<td>Activates the right outside rear-view mirror for mirror adjustment.</td>
</tr>
<tr>
<td>20</td>
<td>not assigned</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>&quot;Left outside rear-view mirror&quot; key</td>
<td>Activates the left outside rear-view mirror for mirror adjustment.</td>
</tr>
<tr>
<td>22</td>
<td>&quot;Mirror adjustment&quot; control panel</td>
<td>Adjusts the reflecting surface of the mirror which has a lit warning light.</td>
</tr>
</tbody>
</table>

¹ The "All working lights" key switches the working lights on/off only if the parking light has been switched on.

### 6.5.1.1 Road travel lighting

![Diagrams of the control and display elements with labels for road travel lighting.]
### Control and Display Elements

#### 6.5 Lighting

<table>
<thead>
<tr>
<th>1</th>
<th>Side direction indicator/flashing warning lamp</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Dipped beam/full beam</td>
</tr>
<tr>
<td>3</td>
<td>Spout tail lamp/brake lamp</td>
</tr>
<tr>
<td>4</td>
<td>Position lamp</td>
</tr>
<tr>
<td>5</td>
<td>Front direction indicator/flashing warning lamp</td>
</tr>
<tr>
<td>6</td>
<td>Tail lamp/rear parking light</td>
</tr>
<tr>
<td>7</td>
<td>Rear direction indicator/flashing warning lamp</td>
</tr>
<tr>
<td>8</td>
<td>Brake lamp</td>
</tr>
<tr>
<td>9</td>
<td>Reversing light</td>
</tr>
<tr>
<td>10</td>
<td>Top rear direction indicator/flashing warning lamp</td>
</tr>
<tr>
<td>11</td>
<td>Licence plate lamp</td>
</tr>
<tr>
<td>12</td>
<td>Warning beacon</td>
</tr>
</tbody>
</table>

**INFORMATION**

As long as the lighting cable is connected for an EasyCollect maize header, the front direction indicators will not be illuminated (5).

#### 6.5.1.2 Working lights

**WARNING**

**Risk of accident from dazzling working lights**

If the working lights are not switched off during road travel, road users may be blinded.

▶ Switch the working lights off during road travel.

---

**Diagram with labels:**

- **1. Working light cabin roof**
- **2. Working light mirror arm**
- **3. Working light side mirror**
- **4. Side working light rear**
- **5. Working light spout basic**
- **6. Working light spout**
- **7. Rear working light**
- **8. Working light platform**
- **9. Front guard working light**

---

**Image Reference:** BX001-790
6.5.1.3 Switching and saving working lights via “Memory” key

The "Memory" key (2) can be used to combine several working lights (1) into one lighting scenario so that they can be switched on or off simultaneously.

- To save a lighting scenario with different working lights, switch on the required working lights (1) with the corresponding keys and press the "Memory" key (2) for 3 seconds.

- The lighting scenario is saved. For monitoring purposes the LED above the "Memory" key (2) flashes.

- To switch on the working lights (1) of the saved lighting scenario, press the "Memory" key (2).

- The working lights (1) of the saved lighting scenario light up. For monitoring purposes the LEDs are lit above the keys which belong to the lighting scenario.

- To switch off the working lights (1) of the saved lighting scenario, press the "Memory" key (2).

- The working lights (1) of the saved lighting scenario go out. For monitoring purposes the LEDs go out above the keys which belong to the lighting scenario.

- To save a new lighting scenario, repeat the saving process with different working lights (1).

- The previous lighting scenario is overwritten.

6.5.1.4 Warning beacons

INFORMATION

In some countries the warning beacons must be switched on for road travel. Observe the respective national statutory regulations.
The warning beacons (2) are automatically switched on when the main mode switch is set to "road mode".

- To manually switch off the warning beacons (2), press the "Warning beacons" key (1) on the light control unit.
- The LED above the key (1) goes out.

6.5.1.5 Maintenance lighting

Maintenance lighting (for "LED package 2" and "LED package 3" version)
6.5.1.6 Wiper on left/on right

To switch on the left wiper, press the "Left wiper" key (1) on the light control unit.
- The left wiper wipes, the LED above the key is lit.
- To switch off the left wiper, press the "Left wiper" key (1).
- The left wiper goes into park position, LED above the key goes out.

To switch on the right wiper, press the "Right wiper" key (2) on the light control unit.
- The right wiper wipes, the LED above the key is lit.
- To switch off the right wiper, press the "Right wiper" key (2).
- The right wiper goes into park position, LED above the key goes out.

6.5.1.7 Rear wipers

To switch on the rear windshield wipers, press the "Rear windshield wipers" key (1) on the Light Control Unit.
- The rear windshield wiper wipes, the LED above the key is illuminated.
- To switch off the rear windshield wiper, press the "Left wiper" key (1).
- The rear windshield wiper goes into park position, LED above the key goes out.
6.5.1.8 Setting mirror

Adjusting outside rear-view mirrors

**WARNING**

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

If the outside rear-view mirrors are not correctly set, the driver does not have a proper view of the area around the machine, possibly placing people in danger when the machine is being driven.

- Before driving the machine, set the outside rear-view mirrors so that the rear area is fully visible to the driver from the driver’s seat.

![Image of control panel](BXG000-052)

- In order to adjust the left outside rear-view mirror, press the “Left outside rear-view mirror” key (3).
  - The LED above the key lights up.
- Press the “Mirror adjustment” control panel (1) in the direction in which the selected mirror is to be adjusted.
- The area of the left outside rear-view mirror swivels in the desired direction.
- In order to adjust the right outside rear-view mirror, press the “Right outside rear-view mirror” key (2).
  - The LED above the key lights up.
- Press the “Mirror adjustment” control panel (1) in the direction in which the selected mirror is to be adjusted.
- The surface of the right outside rear-view mirror swivels in the desired direction.

Setting the anti-collision mirror

**WARNING**

Danger to life of persons on right next to the machine as the driver only has an impaired view!

If the anti-collision mirror has not been set correctly, the driver does not have a proper view of the ground area next to the right front wheel, possibly placing people in danger when the machine is being driven.

- Before starting to drive, set the anti-collision mirror so that the ground area next to the right front wheel is fully visible to the driver from the driver’s seat.
Manually set the anti-collision mirror (1) in such a way that the ground area next to the right front wheel can be checked prior to starting.

Switching mirror heating on/off

To heat the outside mirrors and the anti-collision mirror, press the "Mirror heating" key (1).

The LED above the key lights up. The heating for the outside mirrors and the anti-collision mirror has been switched on.

To switch off the heating for the outside mirrors and the anti-collision mirror, press the "Mirror heating" key (1).

The LED above the key goes out. The heating for the outside mirrors and the anti-collision mirror has been switched off.

6.5.2 Interior lighting

The interior lamp (2) is located on the cab roof and is switched with the switch (3).
The switch has 3 positions:

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>The interior lamp has been switched on.</td>
</tr>
<tr>
<td>II</td>
<td>The interior lamp is switched via the door contact switch.</td>
</tr>
<tr>
<td>III</td>
<td>The interior lamp has been switched off.</td>
</tr>
</tbody>
</table>

Switching logic when the switch (3) is in position II:

- When the cab door is opened, the interior lamp (2) is switched on and is switched off again after a delay.
- When the cabin door is being opened, the interior lamp (2) is switched on. As soon as ignition stage II is switched on, refer to page 283, the interior lamp (2) goes out.
- After the diesel engine has been switched off, the interior lamp (2) is switched on and goes out after a short time.

In addition to the interior lamp (2), the lighting for the control lever (1) is switched on as soon as the parking, dipped or full beam has been switched on.

### 6.6 Operating elements on control lever

The control lever is used to make important settings and issue commands for road and field mode of the machine.
The keys on the control lever are used to run machine functions. The keys are assigned either to sensing mode, step mode or 2-stage operation. Depending on the particular key operating mode involved, there are 2 methods of running the machine functions:

- Sensing mode: The function is activated and completely run by tapping the key. The function is not stopped by releasing the key.
- Step mode: The function is run for as long as the key is pressed.

In the description below only the keys that are used for sensing mode are identified; all other keys are used for step mode.

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&quot;Intake/header&quot; key</td>
<td>Switches the intake/header on/off (sensing mode).</td>
</tr>
<tr>
<td>2</td>
<td>&quot;Reversing intake/header&quot; key</td>
<td>Reverses the intake/header.</td>
</tr>
<tr>
<td>3</td>
<td>&quot;M1&quot; key</td>
<td>Freely assignable memory key.</td>
</tr>
<tr>
<td>4</td>
<td>&quot;M2&quot; key</td>
<td>Freely assignable memory key.</td>
</tr>
<tr>
<td>5</td>
<td>&quot;Automatic steering system&quot; key</td>
<td>Switches the automatic steering system (optional) on/off (only for field mode with EasyCollect) (sensing mode).</td>
</tr>
<tr>
<td>6</td>
<td>&quot;Reversing/parking spout&quot; key</td>
<td>When main coupling is switched on: Reverses the position of the spout (sensing mode). When main coupling is switched off: Swivels the spout into the transport position (sensing mode).</td>
</tr>
<tr>
<td>7.1</td>
<td>&quot;Spout flap up&quot; key</td>
<td>Raises the spout flap (2 stages).</td>
</tr>
<tr>
<td>7.2</td>
<td>&quot;Turn spout right&quot; key</td>
<td>Turns the spout to the right (2 stages).</td>
</tr>
<tr>
<td>7.3</td>
<td>&quot;Spout flap down&quot; key</td>
<td>Lowers the spout flap (2 stages).</td>
</tr>
<tr>
<td>7.4</td>
<td>&quot;Turn spout left&quot; key</td>
<td>Turns the spout to the left (2 stages).</td>
</tr>
<tr>
<td>8.1</td>
<td>&quot;Lower lifting unit manually&quot; key</td>
<td>Lowers the lifting unit to the lowest position (2 stages).</td>
</tr>
<tr>
<td>8.2</td>
<td>&quot;Raise lifting unit automatically&quot; key</td>
<td>Raises the lifting unit automatically to the headland position (sensing mode).</td>
</tr>
<tr>
<td>8.3</td>
<td>&quot;Raise lifting unit manually&quot; key</td>
<td>Raises the lifting unit (2 stages).</td>
</tr>
<tr>
<td>8.4</td>
<td>&quot;Lower lifting unit automatically&quot; key</td>
<td>Lowers the lifting unit to the working position (sensing mode).</td>
</tr>
<tr>
<td>9</td>
<td>&quot;Traction drive&quot; activation key</td>
<td>Releases the traction drive.</td>
</tr>
<tr>
<td>10</td>
<td>&quot;Acceleration behaviour&quot; switch</td>
<td>Switches the value for the acceleration behaviour.</td>
</tr>
</tbody>
</table>
## Lever movements

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>For forward travel: Acceleration (when activation key pressed at the same time)</td>
</tr>
<tr>
<td></td>
<td>For reverse travel: Deceleration</td>
</tr>
<tr>
<td>II</td>
<td>Control lever in central position</td>
</tr>
<tr>
<td>III</td>
<td>For forward travel: Deceleration</td>
</tr>
<tr>
<td></td>
<td>For reverse travel: Acceleration (when activation key pressed at the same time)</td>
</tr>
<tr>
<td>IV</td>
<td>Deceleration to 0 km/h</td>
</tr>
<tr>
<td></td>
<td>In field mode when activation key pressed at the same time: fast reversing</td>
</tr>
<tr>
<td>V</td>
<td>Control lever in central position</td>
</tr>
<tr>
<td>VI</td>
<td>For forward travel: Switch on cruise control (when activation key pressed at the same time the current driving speed is saved)</td>
</tr>
<tr>
<td></td>
<td>2x taps in field mode: Activates the load limit control &quot;ConstantPower&quot;, refer to page 328.</td>
</tr>
</tbody>
</table>
6.7 Control and display elements on the keypad

- The keys that can be used to select functions light up.
- The top left LED in each key flashes on and off or lights up when the selected function is executed.

The keys on the control lever are used to run machine functions. The keys are assigned either to sensing mode, step mode or 2-stage operation. Depending on the particular key operating mode involved, there are 2 methods of running the machine functions:

- Sensing mode: The function is activated and completely run by tapping the key. The function is not stopped by releasing the key.
- Step mode: The function is run for as long as the key is pressed.

In the description below only the keys that are used for sensing mode are identified; all other keys are used for step mode.

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&quot;Main coupling on&quot; key</td>
<td>Switches the main coupling on.</td>
</tr>
<tr>
<td>2</td>
<td>&quot;Main coupling off&quot; key</td>
<td>Switches the main coupling off.</td>
</tr>
<tr>
<td>3</td>
<td>&quot;Hydraulic circuit 1&quot; keys</td>
<td>For maize header: Folds out the maize header.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For pick-up: Swivels out the guide wheels.</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>For maize header: Folds in the maize header.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For pick-up: Swivels in the guide wheels.</td>
</tr>
<tr>
<td>Pos.</td>
<td>Designation</td>
<td>Explanation</td>
</tr>
<tr>
<td>------</td>
<td>-------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>5</td>
<td>&quot;Hydraulic circuit 2&quot; keys</td>
<td>For maize header: Lowers the plant divider. For pick-up: Lowers the crop press roller unit.</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>For maize header: Raises the plant divider. For pick-up: Raises the crop press roller unit.</td>
</tr>
<tr>
<td>7</td>
<td>&quot;Raise spout&quot; key</td>
<td>Raises the spout.</td>
</tr>
<tr>
<td>8</td>
<td>&quot;Lower spout&quot; key</td>
<td>Lowers the spout.</td>
</tr>
<tr>
<td>9</td>
<td>Key &quot;Fold in spout extension&quot;</td>
<td>Folds in the spout extension if installed.</td>
</tr>
<tr>
<td>10</td>
<td>Key &quot;Fold out spout extension&quot;</td>
<td>Folds out the spout extension if installed.</td>
</tr>
<tr>
<td>11</td>
<td>&quot;Increase diesel engine speed&quot; key</td>
<td>Increases the speed of the diesel engine.</td>
</tr>
<tr>
<td>12</td>
<td>&quot;Reduce diesel engine speed&quot; key</td>
<td>Reduces the speed of the diesel engine.</td>
</tr>
<tr>
<td>13</td>
<td>&quot;Diesel engine speed&quot; key</td>
<td>Switches between saved speed of the diesel engine and idle speed of the diesel engine (sensing mode).</td>
</tr>
<tr>
<td>14</td>
<td>&quot;Eco/X-Power&quot; key</td>
<td>Switches between Eco-Power mode and X-Power mode</td>
</tr>
<tr>
<td>15</td>
<td>&quot;Parking brake&quot; key</td>
<td>Applies the parking brake./ Releases the parking brake.</td>
</tr>
<tr>
<td>16</td>
<td>&quot;Traction control system&quot; key</td>
<td>Switches between TC I and TC II.</td>
</tr>
<tr>
<td>17</td>
<td>&quot;Raise rear axle&quot; key</td>
<td>Raises the rear axle.</td>
</tr>
<tr>
<td>18</td>
<td>&quot;Lower rear axle&quot; key</td>
<td>Lowers the rear axle.</td>
</tr>
<tr>
<td>19</td>
<td>&quot;Chop length 1&quot; key</td>
<td>Calls the chop length 1.</td>
</tr>
<tr>
<td>20</td>
<td>&quot;Chop length 2&quot; key</td>
<td>Calls the chop length 2.</td>
</tr>
<tr>
<td>21</td>
<td>&quot;Increase working width&quot; key</td>
<td>Increases the working width.</td>
</tr>
<tr>
<td>22</td>
<td>&quot;Reduce working width&quot; key</td>
<td>Reduces the working width.</td>
</tr>
<tr>
<td>23</td>
<td>&quot;Lower pendulum tube on left&quot; key</td>
<td>Lowers the pendulum tube on the left (sensing mode).</td>
</tr>
<tr>
<td>24</td>
<td>&quot;Lower pendulum tube on right&quot; key</td>
<td>Lowers the pendulum tube on the right (sensing mode).</td>
</tr>
</tbody>
</table>
Save speed of the diesel engine for "Diesel engine speed" key (13)

The speed of the diesel engine, which can be called via the "Diesel engine speed" key (13), is adjustable. The storable speed range is between 1700 rpm and 1900 rpm.

- Adjust the required speed of the diesel engine via the keys "Increase diesel engine speed" (11) and "Reduce diesel engine speed" (12).

- To save the adjusted rotational speed, press the "Diesel engine speed" key (13) for 3 seconds. An information message "Storage successful" appears.

Repeatedly pressing the "Diesel engine rotational speed" key (13) switches between the saved rotational speed and the idle rotational speed.

### 6.8 Main mode switch

![Main mode switch diagram]

The Main Mode Switch (8) is used to select the operating mode of the machine.

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Quick-stop switch</td>
<td>Stops the working functions. The diesel engine continues running.</td>
</tr>
<tr>
<td>2</td>
<td>Main Mode Switch tip</td>
<td>Indicates the selected operating mode.</td>
</tr>
<tr>
<td>3</td>
<td>&quot;Neutral mode&quot; switch position</td>
<td>Selects neutral mode.</td>
</tr>
<tr>
<td>4</td>
<td>&quot;Road mode&quot; switch position</td>
<td>Selects road mode.</td>
</tr>
<tr>
<td>5</td>
<td>&quot;Field mode&quot; switch position</td>
<td>Selects field mode.</td>
</tr>
<tr>
<td>6</td>
<td>&quot;Maintenance mode&quot; switch position</td>
<td>Selects maintenance mode.</td>
</tr>
<tr>
<td>7</td>
<td>Main Mode Switch unlocking device</td>
<td>Pressed unlocking device releases the rotary switch.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Released unlocking device locks the rotary switch.</td>
</tr>
<tr>
<td>8</td>
<td>Main Mode Switch</td>
<td>Selects the operating mode of the machine.</td>
</tr>
</tbody>
</table>

To select an operating mode with the Main Mode Switch (8):

- Press and hold down the unlocking device (7) on the Main Mode Switch (8) and simultaneously turn the Main Mode Switch (8) to the required operating mode.

- The tip (2) indicates the selected operating mode.

To stop the working functions in an emergency:

- Press the quick-stop switch (1).

To release the working functions again:

- Unlock the quick-stop switch (1) by slightly turning it clockwise.
6.9 Navigation module

The function keys (1-6) of the navigation module provide direct access to the most important keys on the display and the control unit of the automatic climate control.

The navigation scroll wheel (7) can be used to select the keys on the terminal, make settings on the machine and start and stop functions.

Description of the keys

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Icon</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>&quot;Step back&quot; key</td>
<td>Goes back one input step in the terminal.</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>&quot;Step forwards&quot; key</td>
<td>Goes forwards one input step in the terminal.</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>&quot;Home&quot; key</td>
<td>Switches to the working screen &quot;Road mode&quot; or &quot;Field mode&quot; in the terminal.</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>&quot;Cabin temperature&quot; key</td>
<td>Press navigation button in addition: Switches the manual setting of the cabin temperature on/off</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Turn navigation button in addition: Increases/lowers the cabin temperature</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>&quot;Air conditioning mode&quot; key</td>
<td>Press navigation button in addition: Switches the automatic climate control on/off</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>&quot;Fan speed&quot; key</td>
<td>Press navigation button in addition: Switches the manual setting of the fan speed on/off</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Turn navigation button in addition: Increases/lowers the fan speed</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Navigation scroll wheel</td>
<td>Operates the display and the automatic climate control</td>
</tr>
</tbody>
</table>
"Navigation scroll wheel" function

Besides inputting data through the touch display, the navigation scroll wheel can also be used to navigate on the terminal and change numerical values.

To do this, the "navigation scroll wheel" can be pressed, rotated and slid to the side.

Navigating on the terminal

• Turning: Changes the selection of keys on the terminal in the direction of rotation. The selected key has a yellow border.
• Pushing: Changes the selection of keys on the terminal in the sliding direction. The selected key has a yellow border.
• Pressing: Actuates the selected key.

Changing an adjustable numerical value

▶ To navigate to the required adjustable value, rotate or slide the "navigation scroll wheel" (1).
▶ The selected key has a yellow border.
▶ To switch the adjustable value to input mode, press the "navigation scroll wheel" (1).
▶ The key has an orange background.
▶ To change the value, rotate the "navigation scroll wheel" (1).
▶ To save the adjusted value, press the "navigation scroll wheel" (1).

6.10 Ignition lock

The ignition key (1) can be turned to 4 different positions in the ignition lock:
6 Control and Display Elements
6.11 Additional keypad

The additional keypad is located in the right armrest of the driver's seat.

To access the additional keypad, open the right armrest.

The keys on the control lever are used to run machine functions. The keys are assigned either to sensing mode, step mode or 2-stage operation. Depending on the particular key operating mode involved, there are 2 methods of running the machine functions:

- Sensing mode: The function is activated and completely run by tapping the key. The function is not stopped by releasing the key.
- Step mode: The function is run for as long as the key is pressed.

In the description below only the keys that are used for sensing mode are identified; all other keys are used for step mode.

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| 1    | "Preselect hopper/plus" key | • Selects the "Hopper" function.  
• Increases a value. |
| 2    | "Preselect hitch attachment/extend" key | • Selects the "Hitch attachment" function.  
• Locks a component.  
• Extends a component. |
| 3    | "Preselect additional axle/minus" key | • Selects the "Additional axle" function.  
• Reduces a value. |
| 4    | "Open/lift header locking" key | • Selects the "Header locking" function, for "Hydraulic header locking with quick-coupler" version.  
• Lifts a component. |
| 5    | "Adjust discharge distance/home" key | • Selects the "Adjust discharge distance" function, for "StreamControl" version. |
| 6    | Raise/lower cabin lift key "Lower" | • Selects the "Cabin lift" function, for "Cabin lift" design.  
• Lowers a component. |
To operate a function using the additional keypad:

- Select the function using keys (1) to (5) (e.g. the "Open header locking" function).
- The keys are automatically lit which are available to change a value or move a component.
- To change a value or move a component, press the corresponding key.
- To return to function selection, press the key (5).

**INFORMATION**

Step mode or continuous operation can be selected for the "Hopper" and "Hitch attachment" functions; to do this, set the required mode in the auxiliary hydraulics "Settings" menu, refer to page 201.

Continuous operation is only possible up to a machine driving speed of maximum 5 km/h.

### 6.12 Sockets

#### 6.12.1 Cigarette lighter 12 Volt

Located on the right cabin side next to the ignition lock are:

- Cigarette lighter (12 V) (1)

**WARNING**

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

During operation the cigarette lighter generates such high temperatures that it may cause burns.

- Do not held the cigarette lighter (1) in the depressed position.
- Hold the hot cigarette lighter (1) by the handle only.

- Press in the cigarette lighter (12 V) (1) to heat it up:
- When the required lighter temperature has been reached, the cigarette lighter (12 V) (1) jumps back out automatically.
6.12.2 12 V sockets

The 12 volt socket (1) is located behind the driver's seat.

6.12.3 12 V socket/24 V socket

Located on the right side of the cabin are:

- Socket (24 V) (1)
- 3-pin socket (12 V) (2)

Electrical consumers with 24 V and maximum 20 A can be connected to the socket (24 V) (1).
Electrical consumers with 12 V and maximum 15 A can be connected to the 3-pin socket (12 V) (2).

If the diesel engine has been switched off, the battery will be discharged.

6.12.4 Diagnostic socket ISOBUS/diagnostic socket KRONE
The following diagnostics interfaces are located behind the driver’s seat:

- Diagnostics socket ISOBUS (1)
- Diagnostics socket KRONE (2)
- Ensure that only devices authorised by KRONE are connected to the diagnostics interfaces.

6.12.5 In-cab diagnostics socket

Located on the right side of the cabin is:

- In-cab diagnostics socket (1)
- Ensure that only devices authorised by KRONE are connected to the diagnostics interfaces.

6.12.6 USB connection

The USB connection (1) is located in the right armrest.

6.13 Grinding control unit

The grinding control unit is located next to the platform at the front left side of the machine.

The grinding control unit can be used to perform a grinding process on the chopping blade and the lifting unit can be raised and lowered.
The keys on the control lever are used to run machine functions. The keys are assigned either to sensing mode, step mode or 2-stage operation. Depending on the particular key operating mode involved, there are 2 methods of running the machine functions:

- Sensing mode: The function is activated and completely run by tapping the key. The function is not stopped by releasing the key.
- Step mode: The function is run for as long as the key is pressed.

In the description below only the keys that are used for sensing mode are identified; all other keys are used for step mode.

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&quot;Raise lifting unit&quot; key</td>
<td>Raises the lifting unit.</td>
</tr>
<tr>
<td>2</td>
<td>&quot;Lower lifting unit&quot; key</td>
<td>Lowers the lifting unit.</td>
</tr>
<tr>
<td>3</td>
<td>&quot;Right counterblade towards&quot; key</td>
<td>Moves the right counterblade towards the cutter drum.</td>
</tr>
<tr>
<td>4</td>
<td>&quot;Right counterblade away&quot; key</td>
<td>Moves the right counterblade away from the cutter drum.</td>
</tr>
<tr>
<td>5</td>
<td>&quot;Left counterblade towards&quot; key</td>
<td>Moves the left counterblade towards the cutter drum.</td>
</tr>
<tr>
<td>6</td>
<td>&quot;Left counterblade away&quot; key</td>
<td>Moves the left counterblade away from the cutter drum.</td>
</tr>
<tr>
<td>7</td>
<td>&quot;Automatic grinding operation&quot; key</td>
<td>Starts an automatic grinding process (sensing mode).</td>
</tr>
<tr>
<td>8</td>
<td>&quot;Move grinding stone manually&quot; key</td>
<td>Moves the grinding stone.</td>
</tr>
<tr>
<td>9</td>
<td>&quot;Open/close grinding flap&quot; key</td>
<td>Opens or closes the grinding flap (sensing mode).</td>
</tr>
<tr>
<td>10</td>
<td>&quot;Reversing intake/header&quot; key</td>
<td>Reverses the intake/header.</td>
</tr>
</tbody>
</table>

The functions of the grinding control unit are available for different switching-on conditions. The following is generally applicable:

- The header is positioned fully on the ground.
- The machine has been safely parked, refer to page 27.
### Opening and closing side hoods and rear hood

#### WARNING

**Risk of injury from moving machine parts**

If the hoods for the engine compartment and crop flow are opened while the diesel engine is running, there is a risk of people being injured by moving machine parts.

- Do not open the side hoods and the rear hood until the diesel engine has stopped.
- Ensure that the side hoods and the rear hood are closed when starting the diesel engine.

Open the side hoods (2) and the rear hood (3):

- Unlock the lock (1) using a spanner (WAF 13) or a flat head screwdriver in anti-clockwise direction.
- Grab from underneath the hood and swing the hood open.

Close the side hoods (2) and the rear hood (3):

- Swing down the rear hood and press down without using a tool until the lock closes.
- To ensure that the rear hood is locked, grip under the rear hood and pull.
- If the hood cannot be opened, the rear hood is locked.
- If the hood can be opened, press down the hood again until the lock (1) closes.
7 Terminal

7.1 Display design

**WARNING**

Risk of injury to persons and damage to machines if error messages are ignored

If error messages are ignored without the fault being rectified injuries may occur to persons and/or severe damage to the machine.

- Rectify fault if error message is shown.
- If the fault cannot be rectified, contact KRONE service partner.

**INFORMATION**

The working screens and menus in the following chapters show all possible machine versions. Therefore, the working screen and the menus on the terminal of your machine may differ.

### 7.1 Display design

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Display</td>
<td>Touch display and input interface on the terminal.</td>
</tr>
</tbody>
</table>
| 2    | "On/Off" key | Switches the display on/off.  

As the terminal is switched on and off via the ignition, do not press the "On/Off" key until the terminal does not respond when the ignition is switched on/off.
7.2 Description display

EQG002-014

The display is used for displaying and entering data. It provides information about the current operating status of the machine. Settings can be made and different functions can be run. To provide menu guidance and entry of values/data, the terminal is equipped with a touch-capable display. Touching the display enables you to call up and change values.

- To run a specific function, press the appropriate key on the display.
- To change a value quicker, press the respective key for more than 2 seconds.
- To scroll in selection windows, drag a finger over the display.

7.3 Input window

If a parameter with a numerical value is selected in a menu, an input window opens. The input window can be used to enter and then to release a new setpoint value for the parameter via a keypad.

EQG000-008
## Operate input window

![Image of input window](image)

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Icon</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>![Cancel icon]</td>
<td>Cancel</td>
<td>Cancels the entry and closes the input window without saving the entry.</td>
</tr>
<tr>
<td>2</td>
<td>![Save icon]</td>
<td>Save</td>
<td>Saves the entered value and closes the input window.</td>
</tr>
<tr>
<td>3</td>
<td>![Value icon]</td>
<td>Value</td>
<td>Indicates the currently saved or newly entered value, in this example the value 50%.</td>
</tr>
<tr>
<td>4</td>
<td>![Delete last digit icon]</td>
<td>Delete last digit</td>
<td>Deletes the last digit of the value.</td>
</tr>
<tr>
<td>5</td>
<td>![Delete value icon]</td>
<td>Delete value</td>
<td>Deletes the input value.</td>
</tr>
<tr>
<td>6</td>
<td>![Standard value icon]</td>
<td>Standard value (example)</td>
<td>Sets the value to the preset standard value (in this example the value 50%).</td>
</tr>
<tr>
<td>7</td>
<td>![Point icon]</td>
<td>Point</td>
<td>Inputs a decimal point.</td>
</tr>
<tr>
<td>8</td>
<td>![Keys 0-9 icon]</td>
<td>Keys &quot;0&quot; to &quot;9&quot;</td>
<td>Input the numerical values 0 to 9.</td>
</tr>
<tr>
<td>9</td>
<td>![Plus/minus icon]</td>
<td>Plus/minus</td>
<td>Switches the algebraic sign of the value.</td>
</tr>
</tbody>
</table>
### 7.4 Selection window

If there are several selection options for an input field, a corresponding selection window opens.

### Table 7.4.1: Icons and Designations

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Icon</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td><img src="image1.png" alt="image" /></td>
<td>-100 (example)</td>
<td>• Each time the key is pressed, the current value is increased or reduced by the indicated value.</td>
</tr>
<tr>
<td>11</td>
<td><img src="image2.png" alt="image" /></td>
<td>-10 (example)</td>
<td>• If the key is pressed and held down, the value changes continuously by the indicated value.</td>
</tr>
<tr>
<td>12</td>
<td><img src="image3.png" alt="image" /></td>
<td>+10 (example)</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td><img src="image4.png" alt="image" /></td>
<td>+100 (example)</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>Minimum/maximum value</td>
<td>Indicates the minimum and maximum value of the parameter.</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>Parameter designation</td>
<td>Indicates the parameter designation, in this example &quot;sensitivity&quot;.</td>
</tr>
</tbody>
</table>

If a value is input which is less than the minimum value, the value cannot be saved and the minimum value (14) is shown in red.

If a value is input which is greater than the maximum value, the value cannot be saved and the maximum value (14) is shown in red.

- Input the required value via the keys (7, 8, 9, 10, 11, 12, 13).
  - The value appears in the "Value" display range (3).

- To save the entered value, press ![select](image5.png).

---

**EQG002-060**
### 7 Terminal

#### 7.4 Selection window

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Icon</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>![Down Icon]</td>
<td>Down</td>
<td>Moves the slide controller downwards.</td>
</tr>
<tr>
<td>5</td>
<td>![Possible Selection Icon]</td>
<td>Possible selection</td>
<td>Can be selected.</td>
</tr>
<tr>
<td>6</td>
<td>![Current Selection Icon]</td>
<td>Current selection</td>
<td>Indicates the selection made or the saved setting.</td>
</tr>
</tbody>
</table>

- To choose the required setting, press ![Possible Selection Icon].
- The chosen selection is highlighted with ![Current Selection Icon].
- To save the chosen selection, press ![Current Selection Icon].
Terminal machine functions

**WARNING**

Risk of injury to persons and damage to machines if error messages are ignored

If error messages are ignored without the fault being rectified injuries may occur to persons and/or severe damage to the machine.

- Rectify fault if error message is shown.
- If the fault cannot be rectified, contact KRONE service partner.

After switching on the ignition the working screen "Road mode" or the working screen "Field mode" is opened in the main window, depending on the position of the Main Mode Switch.

- The working screen "Road mode" shows the most-important engine and driving data.
- The working screen "Field mode" shows information about the field mode. Several settings for the field mode can be made when in the working screen.

The working screen is divided up into the following display ranges:

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Status line</td>
<td>Shows the current states of the machine, refer to page 114.</td>
</tr>
<tr>
<td>2</td>
<td>Malfunction warning panel</td>
<td>Indicates error status of malfunctions. Is only visible when malfunctions occur, refer to page 119.</td>
</tr>
<tr>
<td>3</td>
<td>Title bar</td>
<td>Keys for counter menu, error menu and main menu., refer to page 121.</td>
</tr>
<tr>
<td>4</td>
<td>Direct input field mode</td>
<td>Keys for direct input of the most important settings in field mode (on &quot;Field mode&quot; working screen only), refer to page 135.</td>
</tr>
<tr>
<td>5</td>
<td>Information section</td>
<td>Freely assignable keys, refer to page 138</td>
</tr>
<tr>
<td>6</td>
<td>Engine and driving data</td>
<td>Indicates the current fuel levels, engine and travelling gear data, Displaying malfunctions in the &quot;Engine and driving data&quot; display range.</td>
</tr>
</tbody>
</table>
8 Terminal machine functions

8.1 Status line

EQG002-044

The keys in the status line display the current status of the corresponding parts via colours and icons.

The status line only displays keys for the functions which are installed on the machine or released. This means that the status line could also include a smaller number of keys.

(1) Surface counter

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Icon" /></td>
<td>The customer counter is inactive.</td>
</tr>
<tr>
<td><img src="image2" alt="Icon" /></td>
<td>The customer counter is active.</td>
</tr>
<tr>
<td><img src="image3" alt="Icon" /></td>
<td>The surface counter is active.</td>
</tr>
</tbody>
</table>

When a key is pressed, the "Counter" menu opens, refer to page 121.

(2) CropControl (optional)

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image4" alt="Icon" /></td>
<td>No counterweighing has been performed.</td>
</tr>
<tr>
<td><img src="image5" alt="Icon" /></td>
<td>The counterweighing is completed (after entering the value of the counterweighing).</td>
</tr>
<tr>
<td><img src="image6" alt="Icon" /></td>
<td>Counterweighing has started.</td>
</tr>
<tr>
<td><img src="image7" alt="Icon" /></td>
<td>Counterweighing has stopped.</td>
</tr>
</tbody>
</table>

When a key is pressed, the CropControl "Counterweighing" menu opens.
(3) Header

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Icon" /></td>
<td>The header is inactive.</td>
</tr>
<tr>
<td><img src="image2" alt="Icon" /></td>
<td>The header is active.</td>
</tr>
<tr>
<td><img src="image3" alt="Icon" /></td>
<td>The header is active and reversed.</td>
</tr>
</tbody>
</table>

When a key is pressed, the header "Settings" menu opens, refer to page 178.

(4) Lifting unit control

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image4" alt="Icon" /></td>
<td>The lifting unit bearing pressure control is inactive.</td>
</tr>
<tr>
<td><img src="image5" alt="Icon" /></td>
<td>The lifting unit bearing pressure control is active. The control sets the pressure of the header on the ground to a constant value.</td>
</tr>
<tr>
<td><img src="image6" alt="Icon" /></td>
<td>The lifting unit distance control is inactive.</td>
</tr>
<tr>
<td><img src="image7" alt="Icon" /></td>
<td>The lifting unit distance control is active. The control constantly sets the height of the header relative to the ground (optional, only in conjunction with attached ground contour sensor system).</td>
</tr>
<tr>
<td><img src="image8" alt="Icon" /></td>
<td>The lifting unit position control is currently inactive.</td>
</tr>
<tr>
<td><img src="image9" alt="Icon" /></td>
<td>The lifting unit position control is active. The control constantly sets the height of the header relative to the machine.</td>
</tr>
</tbody>
</table>

When a key is pressed, the lifting unit "Calibration" menu opens, refer to page 182.

(5) Foreign object detection

The foreign object detection key shows the status of metal detection and of RockProtect (for the "RockProtect" design).
### 8 Terminal machine functions

#### 8.1 Status line

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Icon" /></td>
<td>The metal detection or RockProtect (for &quot;RockProtect&quot; version) are not available.</td>
</tr>
<tr>
<td><img src="image2.png" alt="Icon" /></td>
<td>The metal detection and RockProtect (for &quot;RockProtect&quot; version) are active.</td>
</tr>
<tr>
<td><img src="image3.png" alt="Icon" /></td>
<td>The metal detection detected metal in the intake or RockProtect (for the &quot;RockProtect&quot; design) detected a stone in the intake. The intake stops abruptly.</td>
</tr>
<tr>
<td><img src="image4.png" alt="Icon" /></td>
<td>The metal detection or RockProtect (for &quot;RockProtect&quot; version) are inactive. The intake continues to run if the metal detection detects metal in the intake of if RockProtect detects a rock in the intake.</td>
</tr>
</tbody>
</table>

When a key is pressed, the foreign object detection "Settings" menu opens.

### (6) Automatic steering system (option)

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5.png" alt="Icon" /></td>
<td>ISOBUS automatic steering system is inactive.</td>
</tr>
<tr>
<td><img src="image6.png" alt="Icon" /></td>
<td>ISOBUS automatic steering system is ready. The automatic steering system is ready when the associated release switches have been actuated.</td>
</tr>
<tr>
<td><img src="image7.png" alt="Icon" /></td>
<td>ISOBUS automatic steering system is active. The automatic steering system is ready when the associated release switches and the &quot;Automatic steering system&quot; key have been actuated.</td>
</tr>
<tr>
<td><img src="image8.png" alt="Icon" /></td>
<td>Row tracer automatic steering system is inactive.</td>
</tr>
<tr>
<td><img src="image9.png" alt="Icon" /></td>
<td>Row tracer automatic steering system is ready. The automatic steering system is ready when the associated release switches have been actuated.</td>
</tr>
<tr>
<td><img src="image10.png" alt="Icon" /></td>
<td>Row tracer automatic steering system is active. The automatic steering system is ready when the corresponding release switches and the &quot;Automatic steering system&quot; key have been actuated.</td>
</tr>
</tbody>
</table>

When a key is pressed, the automatic steering system "Settings" menu opens, refer to page 203.
(7) Silage additives unit

The silage additives unit key shows the status of the external silage additives unit, the silage additives unit fine dosing or the silage additives unit coarse dosing if one or more of these silage additives units are attached.

If only one silage additives unit is attached, the key for this silage additives unit is shown on the status line.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Icon]</td>
<td>The attached silage additives units are inactive.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>The attached silage additives units are active are in automatic mode</td>
</tr>
<tr>
<td>![Icon]</td>
<td>External silage additives unit is inactive.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>External silage additives unit is permanently active</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Automatic mode switched off, external silage additives unit is inactive</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Automatic mode switched on, external silage additives unit is active</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Silage additives unit fine dosing is inactive</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Silage additives unit fine dosing is permanently active</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Automatic mode switched on, silage additives unit fine dosing is inactive</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Automatic mode switched on, silage additives unit fine dosing is active</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Silage additives unit coarse dosing is inactive</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Silage additives unit coarse dosing is permanently active</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Automatic mode switched on, silage additives unit coarse dosing is inactive</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Automatic mode switched on, external silage additives unit coarse dosing is active</td>
</tr>
</tbody>
</table>

When a key is pressed, the "Silage additives unit" menu opens.
(8) VariLOC chop length gearbox

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>VariLOC chop length gearbox transmission ratio 1:1</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>VariLOC chop length gearbox transmission ratio 1:1.5</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Transmission ratio cannot be specified</td>
</tr>
</tbody>
</table>

(9) Assignment of control lever keys M1 and M2

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Key assignment M1 and M2 inactive</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Header: Raise/lower plant divider</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Pick-up: Raise/lower holding-down clamp</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Increase/reduce working width</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Change saved chop length</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Increase/reduce header speed</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Turn pendulum frame left/right</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Increase/reduce discharge distance of the discharge accelerator (for &quot;StreamControl&quot; design)</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Raise/lower spout</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Warning beacon (optional)/horn on</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Raise/lower hitch attachment (for &quot;Additional rear double-acting hydraulic connection&quot;)</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Raise/lower hopper (for &quot;Additional rear double-acting hydraulic connection&quot;)</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Raise/lower cabin (for &quot;Cabin lift&quot; design)</td>
</tr>
</tbody>
</table>

When a key is pressed, the control lever "Settings" menu opens, refer to page 163.
8.2 Malfunctions indicated on malfunction warning panel

The following warnings and faults may appear in the “Malfunction warning panel” display range:

<table>
<thead>
<tr>
<th>Icon</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Warning light urea system" /></td>
<td>Warning light urea system</td>
<td>Indicates the status of the urea system.</td>
</tr>
<tr>
<td><img src="image" alt="Yellow engine warning light" /></td>
<td>Yellow engine warning light</td>
<td>The engine electronics have detected a fault with the engine.</td>
</tr>
<tr>
<td><img src="image" alt="Red engine warning light" /></td>
<td>Red engine warning light</td>
<td>The engine electronics have detected a serious fault with the engine. ▶ Immediately stop the engine and eliminate the fault.</td>
</tr>
<tr>
<td><img src="image" alt="Warning light emergency mode" /></td>
<td>Warning light emergency mode.</td>
<td>If the control electronics establish a fault with the traction drive, the speed of the machine is limited to 0 to 20 km/h depending on the severity of the fault.</td>
</tr>
</tbody>
</table>

The warning lights on the malfunction warning panel are not visible unless the electronics detect a fault on the exhaust aftertreatment system, the engine or on the traction drive.

The warning lights are visible on all screens on the terminal, i.e. also in the main menu and the menus.

8.2.1 Warning lights - Filling level urea tank

If the status of the warning lights changes, an acoustic warning signal is emitted.

The combinations listed in the table of status display of warning lights display the drop in the filling level in the urea tank as a percentage.
8 Terminal machine functions

8.2 Malfunctions indicated on malfunction warning panel

Status of warning lights | Explanation
--- | ---
| on | 10 % ≥ urea tank filling level > 5 %
  | • 1. Warning
| off | 5 % ≥ filling level urea tank > 2.5 %
  | • The available torque is reduced to 80 % of the maximum torque.
| flashing | 2.5 % ≥ filling level urea tank > 2 %
  | • The available torque is reduced from 80 % to 20 % of the maximum torque.
| flashing | Filling level urea tank = 2 %
  | • The available torque is reduced to 20 % of the maximum torque.

To reach full engine performance and driving speed again, fill an adequate amount of urea in the specified quantity into the urea tank.

8.2.2 Warning lights - urea quality, errors or manipulation on the urea system

If the status of the warning lights changes, an acoustic warning signal is emitted.

The combinations of warning light status displays listed in the table indicate errors or manipulation on the urea system as well as inadmissible urea quality.

Status of the warning lights | Explanation
--- | ---
| on | Up to 60 min engine running time after a fault or manipulation to the urea system or impermissible urea quality has been detected.
  | • 1. Warning
| off | From 60 min – 170 min engine running time after the cause has been detected.
  | • The available torque is reduced to 80% of the maximum torque.
| flashing | From 170 min – 200 min engine running time after the cause has been detected.
  | • The available torque is reduced from 80% to 20% of the maximum torque.
| flashing | From 200 min engine running time after the cause has been detected.
  | • The available torque is reduced to 20% of the maximum torque.
| on | To reach full engine performance and driving speed again:
  | ▶ Add an adequate amount of urea of the specified quality to the urea tank.
  | ▶ Locate and eliminate the fault at the urea system. To do this, contact your KRONE service partner.
8.3 Keys in the title bar

<table>
<thead>
<tr>
<th>Icon</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Counter]</td>
<td>&quot;Counter&quot; menu</td>
<td>Opens the &quot;Counter&quot; menu.</td>
</tr>
<tr>
<td>![Error]</td>
<td>&quot;Error&quot; menu</td>
<td>Opens the &quot;Error&quot; menu.</td>
</tr>
<tr>
<td>![Main menu]</td>
<td>Main menu</td>
<td>Opens the main menu.</td>
</tr>
</tbody>
</table>

8.3.1 “Counters” menu

Current machine data can be retrieved via sub-menus in the “Counters” menu.

- The working screen is active.

  To open the menu, press ![Counter].

  The display shows the “Counters” menu with its sub-menus.
“Customer Counter” menu

Customer records can be created in the “Customer Counter” menu.

- The “Counters” menu is active.
- To open the menu, press .
- The list with the created customers is displayed.

Creating customer data record

- To create a customer data record, press .
  - The alphanumeric input field "Last name" opens.
- Enter or change the data of the customer in the alphanumeric input field.
Operation alphanumeric input field

- To change from capital letters to lower case letters and vice versa, press ▲.
- Press 123 to change from alphabetical to numerical keyboard.
- To change from numerical to alphabetical keyboard, press ABC.
- Press #= to enter special sign.
- To save the customer record, press ✓.
- To cancel the entry and keep the old setting, press ✗.

The menu with the input fields for the customer record is displayed.

To enter more customer data, press ।.

The menu with the input fields for the customer record is displayed.

To enter the customer data, press the appropriate key.
- Enter the data via the alphanumeric input field.
The created customer data records are indicated in a list on the customer counter.

To create another customer data record, press the [Add] button.

To select a customer data record, press the [Select] button.

To select the surface counter for a customer, press the [Surface Select] button.

The display shows the "Surfaces" overview for the particular customer.

One "Surface 01" is automatically created for each new customer.
Renaming surface

- To open the “Details surface” window, press

![Details window](image)

For example, EQG003-020

- To rename a surface, press the corresponding key; in this example, press

![Fläche 01](image)

- The alphanumeric input field opens.
- Rename the surface in the alphanumeric input field, refer to page 123.
- To delete the surface, press

![Löschen](image)

Creating a surface

- To create a surface for the customer, press

![Hinzufügen](image)

- The alphanumeric input field opens.
- Enter the name for the new surface in the alphanumeric input field, refer to page 123.
- The created surfaces are displayed in a table in the "Surfaces" window.

If several surfaces are created for a customer, a line with the total values for the created surfaces of the customer appears at the end of the table.
Deleting a surface

To delete one or more surfaces, press \( \text{Löschen} \).

A selection view opens.

Select the surface or the surfaces that are to be deleted in the square at the end of the line.

To delete the selected surfaces, press \( \text{Löschen} \).
Starting and stopping surface counter

To start the counter for each surface, press the "Start" button in the "Surfaces" window or the "Start" button in the "Surface details" window.

The counter starts and records the surface data until the counter is stopped again.

The currently recorded surface is shown in the "Customer counter" window and the "Surfaces" window in the "Active customer counter" area. The icon for the surface and for the customer is highlighted in green.

To stop the counter, press the "Stop" button in the "Surfaces" window or the "Stop" button in the "Surface details" screen.

**INFORMATION**

If the key is pressed for a surface, although the customer counter has been started for another surface, a direct change is made to the surfaces being recorded. In other words, the counter of the previously recorded surface is stopped and - at the same time - the counter for the other surface is started.

**Viewing current surface data**

The “Details surface” window displays the current surface data.
Exporting customer data

Plug a USB flash drive into the USB port (1) in the right armrest.

To export customer data to the USB flash drive, press Exportieren.

"Day counter" menu
The "Counter" menu has been selected.

To open the menu, press ▼.

Three day counters are shown that permanently record the current work and consumption data for the machine for the three working periods currently running. The date and the time show when the day counters were last reset.

To complete the work periods and to reset the day counter, press ▶️.

To select the values for a day counter in the corresponding line, press ▣.

The "Day counter details" window is opened.

EQG003-023

The "Day counter details" window shows the current data for the selected work period:

- Diesel engine operating hours
- Fuel consumption
- Odometer (road, field, total)
- Surface counter
- Operating hours of chopping drum
- Operating hours with header

The work periods can be individually reset so that the counters each start counting the data again from 0.

To complete the work periods and to reset the day counter, press ▶️.

“Total Counter” menu

EQG002-012
The “Counters” menu is active.

To open the menu, press \( \sum \).

The current work and consumption data of the machine is displayed.

The following current data is displayed:
- Operating hours of diesel engine, total number and depending on header.
- Chopping drum hours, total number and depending on header.
- Header hours, total number and depending on header.
- Surface counter, total number and depending on header.
- Fuel consumption and total consumption.
- Odometer (road, field, total distance).

**For the "CropControl" version**

The printer (1) can be used to print out customer, day or total counter.

Select the counter which is to be printed out.

To start printing, press \( \text{Drucken} \).

### 8.3.2 “Error” menu

The working screen is active.

To open the menu, press \( \text{\( \triangleright \)} \).

The display shows the “Errors” menu with its sub-menus.
“Active Errors” menu

The “Errors” menu is active.

❖ To open the menu, press ➡.
❖ The display shows the “Active Errors” menu with the active errors on the machine with error number and error designation.

❖ To call up information on an error, press ➡ next to the error message.

❖ The window for the error description is shown.

"Error history" menu

The error history can be emptied by a service technician only.
The "Error" menu appears.

To open the menu, press .

The display shows the "Error history" menu with error messages that have occurred since the error history was last cleared.

To call up information on an error, press next to the error message.

The window for the error description is shown.

To close the error description, press .

"Control units overview" menu

The "Control units overview" menu displays the control units of the machine on a diagram.
To open the overview, press .

The respective brief descriptions are on the squares for the control units. The status of the individual control units is indicated by the colour of the squares.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>Green square</td>
<td>CAN activity available, no errors</td>
</tr>
<tr>
<td>Yellow</td>
<td>Yellow square</td>
<td>CAN activity available, with one or more errors</td>
</tr>
<tr>
<td>Red</td>
<td>Red square</td>
<td>No CAN activity available, error can not be determined</td>
</tr>
</tbody>
</table>

To open the overview of the control units of the engine bus, press .

To open the overview of the control units of the AUX bus, press .
To call up information about a control unit, press the key on the respective control unit. The corresponding information screen is displayed.

To exit the information screen, press

8.3.3 Main menu

The working screen is active.

To open the main menu, press

For menu structure and navigation in the menus, Terminal - Menus.
8.4 **Direct input “Field mode”**

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Temporarily change working width or number of rows.</td>
<td>Temporarily change the working width (grass mode) or number of rows (maize mode).</td>
</tr>
<tr>
<td>2</td>
<td>Changing the header speed</td>
<td>Reduce or increase the specified speed for the header drive.</td>
</tr>
<tr>
<td>3</td>
<td>Change chop length</td>
<td>Set the chop length manually or automatically with &quot;AutoScan&quot;.</td>
</tr>
<tr>
<td>4</td>
<td>Change the lifting unit default value.</td>
<td>Reduce or increase the default value for regulating the lifting unit.</td>
</tr>
<tr>
<td>5</td>
<td>Change the corn conditioner roller distance.</td>
<td>Reduce or increase the default value for the corn conditioner roller distance (only for maize header).</td>
</tr>
</tbody>
</table>

The "Direct input field mode" can be used to make settings directly from the "Field mode" working screen without having to open the submenu.

To change the specified setting values, press ![Down Arrow](image) or ![Up Arrow](image).

Pressing ![Down Arrow](image) reduces the set value:

- By a specified value each time the key is pressed.
- If the key is pressed and held down, the value is gradually reduced.
- If the key is held down for longer, the value is reduced more quickly.

Pressing ![Up Arrow](image) increases the set value:

- By a specified value each time the key is pressed.
- If the key is pressed and held down, the value is gradually increased.
- If the key is held down for longer, the value is increased more quickly.

### 8.4.1 Temporarily change working width or number of rows

The setting of the current working width is required to calculate the area.

Depending on the header enabled in the parameters, the icon shows up during direct input for the corresponding header and the enabled working width or the number of rows.

**Grass mode**
8 Terminal machine functions

8.4 Direct input “Field mode”

For “EasyFlow” grass pick-up and the “XDisc” direct cut header the working width in the upper field is in cm or inches (for pick-up: the raked width).

Maize mode

For the “EasyCollect” maize header the number of set rows is in the upper field.

- To temporarily change the default value for the working width, refer to page 135.
- The change is immediately accepted and displayed in the upper field as a temporarily changed value. The area is calculated with the temporarily set default value.

**INFORMATION**

The value "Working width" or "Number of rows" in the season settings is not modified with this adjustment.

If the lifting unit is raised in the headland position, the parameter is reset to the value for the season settings.

8.4.2 Changing the header speed

The upper field on the left indicates the actual value and in the centre is the setpoint value for the speed of the header drive in rpm.

- To temporarily change the default value for the rotational speed, refer to page 135.
- The change is immediately accepted and displayed on the left in the upper field.

8.4.3 Change chop length

Depending on the selected setting for the chop length (manually or via AutoScan), the icon for the corresponding chop length setting appears during direct input.

**Manual setting**

The upper field indicates the value for the chop length in mm or inches.

The default value for the chop length can be adjusted depending on the number of blades on the cutting drum and the diesel engine type.

The adjustment range with the minimum and maximum chop length in mm can be found in the following table.

<table>
<thead>
<tr>
<th>Number of blades</th>
<th>Minimum chop length</th>
<th>Maximum chop length</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>10.5 mm</td>
<td>62.7 mm</td>
</tr>
<tr>
<td>14</td>
<td>7.5 mm</td>
<td>44.8 mm</td>
</tr>
<tr>
<td>18</td>
<td>5.8 mm</td>
<td>34.8 mm</td>
</tr>
<tr>
<td>20</td>
<td>5.2 mm</td>
<td>31.4 mm</td>
</tr>
</tbody>
</table>
### Number of blades and Minimum/Maximum Chop Length

<table>
<thead>
<tr>
<th>Number of blades</th>
<th>Minimum chop length</th>
<th>Maximum chop length</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>3.7 mm</td>
<td>22.4 mm</td>
</tr>
<tr>
<td>36</td>
<td>2.9 mm</td>
<td>17.4 mm</td>
</tr>
<tr>
<td>40</td>
<td>2.5 mm</td>
<td>15 mm</td>
</tr>
</tbody>
</table>

- To temporarily change the default value for the chop length, refer to page 135.
- The change is immediately accepted and displayed on the left in the upper field.

### Setting via "AutoScan"

The default value for the chop length is continuously modified automatically depending on the degree of maturity of the maize with the setting via the "AutoScan" system.

- To switch from the setting via the "AutoScan" system to the manual setting, press or .

### 8.4.4 Changing the lifting unit control default value

Depending on the lifting unit control set in the parameters, the corresponding icon appears during direct input. The actual value (top left) and the setpoint value (top centre) for the lifting unit control is displayed in %.

**Lifting unit bearing pressure control**

The lifting unit ground pressure control regulates via control the pressure of header on the ground to a constant value.

- The setpoint value is stated as a percentage of the header dead weight.
  - For grass mode, the value can be set between -25 % (header sways over the ground) and 50 % (header presses with 50 % of its dead weight on the ground).
  - For maize mode, the value can be set between -25 % (header sways above the ground) and 25 % (header presses with 25 % of its dead weight on the ground).

**Lifting unit position control**

When the lifting unit position control is active, the control regulates the height of the header to a constant value relative to the machine.

**Lifting unit distance control**

Via the control, the lifting unit distance control constantly regulates the header height relative to the ground (only in connection with mounted ground tracers).

- To temporarily change the default value for the lifting unit control, refer to page 135.
- The change is immediately accepted and displayed on the left in the upper field.

### 8.4.5 Changing Corn Conditioner Roller Distance

(Only for maize header)
8 Terminal machine functions

8.5 Information area

**INFORMATION**
The direct input “Change corn conditioner roller distance” is only active when corn conditioner is mounted.

The upper field on the left indicates the actual value and in the centre is the setpoint value for the roller distance of the corn conditioner.

- To temporarily change the default value for the roller distance, refer to page 135.
- The change is immediately accepted and displayed on the left in the upper field.

### 8.5 Information area

The keys in the information section can be freely assigned via a selection box.

**Assigning keys**

- The working screen has been selected.
- Press the key to be assigned.
  - The selection box opens up.
- Select the required assignment.

- To save the assignment, press .
- To cancel the entry, press .

When the selection is saved, the existing assignment is overwritten.

### 8.6 Engine and driving data display range

The "Engine and driving data" display range shows the machine’s current fuel levels, engine and driving data.
Terminal machine functions

Engine and driving data display range

EQG002-016

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Coolant temperature display</td>
<td>Indicates the current coolant temperature in °C (digital and analogue).</td>
</tr>
<tr>
<td>2</td>
<td>Display fuel level</td>
<td>Indicates the current fuel level as a % (digital and analogue).</td>
</tr>
<tr>
<td>3</td>
<td>Display urea level</td>
<td>Indicates the current urea level as a % (digital and analogue).</td>
</tr>
<tr>
<td>4</td>
<td>Display speed in digital format</td>
<td>Indicates the current speed in digital format in km/h or mph.</td>
</tr>
<tr>
<td>5</td>
<td>Display speed in analogue format</td>
<td>Indicates the current speed in analogue format in km/h or mph (in &quot;Road mode&quot; working screen only).</td>
</tr>
<tr>
<td>6</td>
<td>Display engine speed in digital format</td>
<td>Displays the current engine speed in digital format in rpm.</td>
</tr>
<tr>
<td>7</td>
<td>Display engine speed in analogue format</td>
<td>Displays the current engine speed in analogue format in rpm.</td>
</tr>
<tr>
<td>8</td>
<td>Display engine load in digital format</td>
<td>Indicates the current engine load as % in digital format (in &quot;Field mode&quot; working screen only).</td>
</tr>
<tr>
<td>9</td>
<td>Display engine load in analogue format</td>
<td>Indicates the current engine load as % in analogue format (in &quot;Field mode&quot; working screen only).</td>
</tr>
<tr>
<td>10</td>
<td>Switchover rear-view camera</td>
<td>Shows the display range for the rear-view camera and the camera for the auto-loading system.</td>
</tr>
</tbody>
</table>

Warning lights for engine displays and fuel levels

Warning light for coolant temperature (1)

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Coolant temperature OK.</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Coolant temperature in critical range.</td>
</tr>
</tbody>
</table>

Warning light for fuel level (2)
### 8.6 Engine and driving data display range

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Fuel tank icon" /></td>
<td>Fuel tank level greater than 10%.</td>
</tr>
<tr>
<td><img src="image" alt="Fuel tank icon" /></td>
<td>Fuel tank level less than 10%.</td>
</tr>
</tbody>
</table>

#### Warning light for urea level (3)

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Urea tank icon" /></td>
<td>Urea tank level greater than 20%.</td>
</tr>
<tr>
<td><img src="image" alt="Display icon" /></td>
<td>Display is lit: Urea tank level less than 20%.</td>
</tr>
<tr>
<td><img src="image" alt="Display icon" /></td>
<td>Display flashes: The engine performance is reduced.</td>
</tr>
</tbody>
</table>

If the level has dropped below 20%, the warning lights on the malfunction warning panel warn of a reduction in the maximum driving speed and obtainable torque.

- To reach full engine performance and driving speed again, pour an adequate amount of urea, in the specified quality, into the urea tank, refer to page 373.

#### Display camera images on the terminal (10)

The camera images can be displayed on the terminal.

![Camera images on terminal](image)

To display the camera images on the terminal, press ![Camera icon](image). The terminal shows the camera image that was most recently selected.
Selecting the camera (1)

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image-url1" alt="Image" /></td>
<td>The image of the rear-view camera is selected.</td>
</tr>
<tr>
<td><img src="image-url2" alt="Image" /></td>
<td>The image of the rear-view camera is displayed.</td>
</tr>
<tr>
<td><img src="image-url3" alt="Image" /></td>
<td>The image of the spout camera is selected.</td>
</tr>
<tr>
<td><img src="image-url4" alt="Image" /></td>
<td>The image of the spout camera is displayed.</td>
</tr>
</tbody>
</table>

Displaying on the terminal (2)

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image-url5" alt="Image" /></td>
<td>The mirroring of the image of the spout camera is selected.</td>
</tr>
<tr>
<td><img src="image-url6" alt="Image" /></td>
<td>The image of the spout camera is displayed as a mirror image.</td>
</tr>
<tr>
<td><img src="image-url7" alt="Image" /></td>
<td>The display range for the camera image is increased.</td>
</tr>
<tr>
<td><img src="image-url8" alt="Image" /></td>
<td>The display range for the camera image is reduced.</td>
</tr>
</tbody>
</table>

EQ002-300

The camera image can be increased on the terminal.

- To increase the display range for the camera image, press ![Image](image-url9).

If the display range for the camera image is increased, the engine load (1), the speed (2) and the engine speed (3) is displayed digitally in the lower area of the display.

- To reduce the display range for the camera image, press ![Image](image-url10).
8 Terminal machine functions

8.7 Traction drive indicator lights

The indicator lamps in the main display area for traction drive inform about the current engine and driving data and warn of malfunctions on the engine and the drive.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low acceleration</td>
</tr>
<tr>
<td>2</td>
<td>Medium acceleration</td>
</tr>
<tr>
<td>3</td>
<td>High acceleration</td>
</tr>
<tr>
<td>4</td>
<td>Maximum acceleration</td>
</tr>
</tbody>
</table>

**Indicator lamp for direction of travel and parking brake (2)**

Indicates the direction of travel and the status of the parking brake.

To hide the camera image, press X.
### Terminal machine functions

#### Traction drive indicator lights

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>🚁</td>
<td>Direction of travel forwards</td>
</tr>
<tr>
<td>N</td>
<td>Neutral mode (idle)</td>
</tr>
<tr>
<td>🚁</td>
<td>Direction of travel backwards</td>
</tr>
<tr>
<td>🚫</td>
<td>Parking brake is applied</td>
</tr>
</tbody>
</table>

**Indicator lamp for engine management (3)**

Indicates the status of the Power mode.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| 🚁 | Manual "Eco-Power mode"  
The diesel engine works in energy saving mode. |
| 🚁 | Manual "X-Power mode"  
The diesel engine works in maximum power mode. |
| 🚁 | Automatic switchover between "Eco-Power mode" and "X-Power mode". |

**Indicator lamp for traction control system (TC) (4)**

Displays the status of the traction control system (TC).

<table>
<thead>
<tr>
<th>Icon</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>🚁</td>
<td>Traction control system (TC) inactive</td>
<td>The drive torque on the wheels is controlled.</td>
</tr>
</tbody>
</table>
| 🚁 | Traction control system (TC) stage I active | Traction control system (TC) stage I allows only low slip (spinning wheels).  
Connected traction control system (TC) stage I preserves the sward. |
| 🚁 | Traction control system (TC) stage I regulates actively | The drive torque on the wheels is controlled. |
| 🚁 | Traction control system (TC) stage II active | Traction control system (TC) stage II allows high slip (spinning wheels).  
Traction control system (TC) stage II ensures that sufficient traction is provided even under difficult conditions. |
Display for cruise control (5)

Indicates the status of the cruise control and the stored speed when operating with the cruise control.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Icon" /></td>
<td>Cruise control is inactive</td>
<td>The stored speed when the cruise control is operated is 12 km/h.</td>
</tr>
<tr>
<td><img src="image2" alt="Icon" /></td>
<td>Cruise control active is active</td>
<td></td>
</tr>
</tbody>
</table>
9 Terminal - Menus

### WARNING

**Risk of injury to persons and damage to machines if error messages are ignored**

If error messages are ignored without the fault being rectified injuries may occur to persons and/or severe damage to the machine.

- Rectify fault if error message is shown.
- If the fault cannot be rectified, contact KRONE service partner.

9.1 Menu structure

The menu structure is divided into the following menus depending on the machine configuration.

<table>
<thead>
<tr>
<th>Menu</th>
<th>Sub-menu</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Machine icon]</td>
<td>Machine</td>
<td>Machine</td>
</tr>
<tr>
<td>![Tanks icon]</td>
<td>Tanks</td>
<td>Tanks</td>
</tr>
<tr>
<td>![Configuration icon]</td>
<td>Configuration</td>
<td>Configuration</td>
</tr>
<tr>
<td>![Settings icon]</td>
<td>Settings</td>
<td>Settings</td>
</tr>
<tr>
<td>![Diagnostics icon]</td>
<td>Diagnostics</td>
<td>Diagnostics</td>
</tr>
<tr>
<td>![Cabin lift icon]</td>
<td>Cabin lift</td>
<td>Cabin lift</td>
</tr>
<tr>
<td>![Diagnostics icon]</td>
<td>Diagnostics</td>
<td>Diagnostics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Menu</th>
<th>Sub-menu</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Cabin icon]</td>
<td>Cabin, refer to page 159</td>
<td>Cabin, refer to page 159</td>
</tr>
<tr>
<td>![Terminal icon]</td>
<td>Terminal, refer to page 161</td>
<td>Terminal, refer to page 161</td>
</tr>
<tr>
<td>![Settings icon]</td>
<td>Settings</td>
<td>Settings</td>
</tr>
<tr>
<td>![Information icon]</td>
<td>Information</td>
<td>Information</td>
</tr>
<tr>
<td>![Armrest icon]</td>
<td>Armrest, refer to page 162</td>
<td>Armrest, refer to page 162</td>
</tr>
<tr>
<td>![Diagnostics icon]</td>
<td>Diagnostics</td>
<td>Diagnostics</td>
</tr>
<tr>
<td>Menu</td>
<td>Sub-menu</td>
<td>Designation</td>
</tr>
<tr>
<td>------</td>
<td>----------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Key test</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control lever, <em>refer to page 163</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Key test</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Background lighting, <em>refer to page 165</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control unit versions, <em>refer to page 165</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control unit versions software</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control unit versions hardware</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Printer, <em>refer to page 166</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Automatic climate control</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Graphic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Remote maintenance, <em>refer to page 169</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Remote maintenance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td>Menu</td>
<td>Sub-menu</td>
<td>Designation</td>
</tr>
<tr>
<td>------</td>
<td>----------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wiper, refer to page 170</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lighting, refer to page 171</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Key test</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Camera system</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Menu</th>
<th>Sub-menu</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lubrication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Central lubrication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intermediate gearbox lubrication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
</tbody>
</table>
### Terminal - Menus

#### 9.1 Menu structure

<table>
<thead>
<tr>
<th>Menu</th>
<th>Sub-menu</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Crop flow</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Header</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Header drive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Auto Scan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Graphic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td>Intake</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td>Foreign object detection</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td>Lifting unit</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td>Menu</td>
<td>Sub-menu</td>
<td>Designation</td>
</tr>
<tr>
<td>-----------</td>
<td>----------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Calibration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grinding device and counterblade</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Main coupling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calibration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corn conditioner</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calibration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discharge accelerator</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CropControl</td>
</tr>
</tbody>
</table>
### Menu Structure

<table>
<thead>
<tr>
<th>Menu</th>
<th>Sub-menu</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counterweighing</td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calibration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Silage additives units</td>
</tr>
<tr>
<td></td>
<td></td>
<td>External silage additives unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Silage additives unit fine dosing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Silage additives unit coarse dosing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calibration</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Menu</th>
<th>Sub-menu</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spout</td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calibration</td>
</tr>
<tr>
<td>Menu</td>
<td>Sub-menu</td>
<td>Designation</td>
</tr>
<tr>
<td>------</td>
<td>----------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Engine, <em>refer to page 195</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diesel engine, <em>refer to page 196</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ConstantPower</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hydrostatic fan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Compressed air cleaning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hydraulics, <em>refer to page 200</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Header locking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Working hydraulics, <em>refer to page 201</em></td>
</tr>
</tbody>
</table>
### Menu - Sub-menu - Designation

<table>
<thead>
<tr>
<th>Menu</th>
<th>Sub-menu</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Auxiliary hydraulics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Menu</th>
<th>Sub-menu</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Driving functions, <em>refer to page 202</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Automatic steering system, <em>refer to page 203</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Traction drive, <em>refer to page 204</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calibration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rear axle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calibration</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Menu</th>
<th>Sub-menu</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Season settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>User level, <em>refer to page 207</em></td>
</tr>
</tbody>
</table>
9.2 Bringing up menu level

Depending on how the machine is equipped, the main menu is divided into the following menus:

<table>
<thead>
<tr>
<th>Icon</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Machine" /></td>
<td>&quot;Machine&quot; menu</td>
</tr>
<tr>
<td><img src="image2" alt="Cabin" /></td>
<td>&quot;Cabin&quot; menu</td>
</tr>
<tr>
<td><img src="image3" alt="Central Lubrication" /></td>
<td>&quot;Central Lubrication&quot; menu</td>
</tr>
<tr>
<td><img src="image4" alt="Crop Flow" /></td>
<td>&quot;Crop Flow&quot; menu</td>
</tr>
<tr>
<td><img src="image5" alt="Spout" /></td>
<td>&quot;Spout&quot; menu</td>
</tr>
<tr>
<td><img src="image6" alt="Engine" /></td>
<td>&quot;Engine&quot; menu</td>
</tr>
<tr>
<td><img src="image7" alt="Auxiliary Hydraulics" /></td>
<td>&quot;Auxiliary Hydraulics&quot; menu</td>
</tr>
<tr>
<td><img src="image8" alt="Drive Functions" /></td>
<td>&quot;Drive Functions&quot; menu</td>
</tr>
<tr>
<td><img src="image9" alt="Season Settings" /></td>
<td>&quot;Season Settings&quot; menu</td>
</tr>
<tr>
<td><img src="image10" alt="User level" /></td>
<td>&quot;User level&quot; menu</td>
</tr>
</tbody>
</table>

**INFORMATION**

Touching the coloured parts of the machine illustration in the display directly opens the corresponding menus.

▶ To bring up the menu level from the working screen, press ![trailer](image11)
9.3 Navigating in menus

The functions of the terminal are divided into menus. Navigate through the menu structure by using the keys in the individual menus.

- To open the main menu from the working screen, press .
- To open a menu from the main menu, press the key of the corresponding menu.
- To open sub-menus from a menu, press the key of the corresponding sub-menu.
- To change from one sub-menu to another one, press the key of sub-menu in the footer.
- To leave the current menu, press.
- To open the main menu from a menu, press repeatedly until the main menu is selected.
- To go one step forwards again after a step back, press.
- To open the working screen from the main menu or a menu, press .

9.3.1 Changing/saving parameter

- To change a parameter, press the corresponding parameter key.
- A value input field or a selection box opens depending on the setting menu.
- If a value input field opens, change the value of the parameter.
- If a selection box opens, change the selection of the parameter.
- To save the setting, press .
- To cancel the entry and keep the old setting, press .

9.4 “Diagnostics” menu explanation

**INFORMATION**

The purpose of this chapter is to explain in general terms how to handle the diagnostics masks. The diagnostics masks which can be selected in the individual menus are no longer listed in detail.

The sensors/actuators and the readable process values of the menu component are listed in the “Diagnostics” menus.

The applied voltages/currents can be read off for these components/values.
To open the graphic display of a sensor or actuator, press

**INFORMATION**

This screen is needed in case of a contact with customer service as the service technician can conclude errors on the forage harvester from the values in this screen.

### Component type/process value

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Sensor icon" /></td>
<td>Sensor</td>
</tr>
<tr>
<td><img src="image" alt="Actuator icon" /></td>
<td>Actuator</td>
</tr>
<tr>
<td><img src="image" alt="Process value icon" /></td>
<td>Process value</td>
</tr>
</tbody>
</table>

### Sensor/actuator status displays

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Sensor/actuator active icon" /></td>
<td>Sensor/actuator active</td>
</tr>
<tr>
<td><img src="image" alt="Sensor/actuator inactive icon" /></td>
<td>Sensor/actuator inactive</td>
</tr>
<tr>
<td><img src="image" alt="Sensor attenuated icon" /></td>
<td>Sensor attenuated</td>
</tr>
<tr>
<td><img src="image" alt="Sensor attenuated inactive icon" /></td>
<td>Sensor attenuated inactive</td>
</tr>
<tr>
<td><img src="image" alt="Sensor unattenuated icon" /></td>
<td>Sensor unattenuated</td>
</tr>
</tbody>
</table>
9 Terminal - Menus

9.5 "Machine" menu

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor unattenuated inactive</td>
<td>Sensor unattenuated inactive</td>
</tr>
<tr>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>Not OK</td>
<td>Not OK</td>
</tr>
<tr>
<td>Button pressed, switch closed</td>
<td>Button pressed, switch closed</td>
</tr>
<tr>
<td>Button not pressed, switch not closed</td>
<td>Button not pressed, switch not closed</td>
</tr>
<tr>
<td>Cable break</td>
<td>Cable break</td>
</tr>
<tr>
<td>Short circuit</td>
<td>Short circuit</td>
</tr>
<tr>
<td>Broken cable / short circuit</td>
<td>Broken cable / short circuit</td>
</tr>
<tr>
<td>Other error</td>
<td>Other error</td>
</tr>
<tr>
<td>Status not available</td>
<td>Status not available</td>
</tr>
</tbody>
</table>

For The menu level is active, refer to page 153.

To open the "Machine" menu, press .

The display shows the "Machine" menu with its menus.
The "Machine" menu is divided up into the following menus depending on the machine configuration:
### 9.5.1 "Tanks" menu

**"Tanks configuration" menu**

In the menu, the filling quantity in the tanks can be read, the use of the side tank and the additional tank can be selected and the filled quantity of silage additive concentrate can be entered in the fine silage additive tank.
The "Machine" menu has been selected.

To open the menu, press first, then.

The display shows the "Machine configuration" menu.

To change the use of the side tank, press or and select the desired use using the selection window.

To change the use of the additional tank, press or and select the desired use using the selection window.

To enter the quantity of the silage additive concentrate in the fine silage additives tank, press and entered the filled quantity using the input window.

To switch to the "Settings" menu, press.

"Tanks settings" menu

The settings for the tank parameters are displayed in the menu and can be changed.

To change and save the parameter, refer to page 154.

To open the “Diagnostics” menu, press.

Further information, refer to page 154.

9.5.2 "Cabin lift" menu

"Cabin lift diagnostics" menu

The "Cabin lift diagnostics" menu displays the sensor and actuator data for the cabin lift.
The "Machine" main menu has been selected.

To open the menu, press first, then .

The display shows the "Cabin lift diagnostics" menu.

Further information, refer to page 154.

9.6 "Cabin" menu

For the menu level is active, refer to page 153.

To open the "Cabin" menu, press .

The display shows the "Cabin" menu with its menus.

The "Cabin" menu is divided up into the following menus depending on the machine configuration:

<table>
<thead>
<tr>
<th>Menu</th>
<th>Sub-menu</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Terminal icon]</td>
<td></td>
<td>Cabin, refer to page 159</td>
</tr>
<tr>
<td>[Graphical representation]</td>
<td></td>
<td>Terminal, refer to page 161</td>
</tr>
<tr>
<td>[Settings icon]</td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td>[Information icon]</td>
<td></td>
<td>Information</td>
</tr>
<tr>
<td>Menu</td>
<td>Sub-menu</td>
<td>Designation</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>Armrest</td>
<td></td>
<td>refer to page 162</td>
</tr>
<tr>
<td>Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Key test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control lever</td>
<td></td>
<td>refer to page 163</td>
</tr>
<tr>
<td>Background lighting</td>
<td></td>
<td>refer to page 165</td>
</tr>
<tr>
<td>Control unit versions</td>
<td></td>
<td>refer to page 165</td>
</tr>
<tr>
<td>Control unit versions software</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control unit versions hardware</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Printer</td>
<td></td>
<td>refer to page 166</td>
</tr>
<tr>
<td>Automatic climate control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graphic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Settings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remote maintenance</td>
<td></td>
<td>refer to page 169</td>
</tr>
<tr>
<td>Menu</td>
<td>Sub-menu</td>
<td>Designation</td>
</tr>
<tr>
<td>-------------</td>
<td>----------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[Gear] Remote maintenance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[Diagnostics]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[Gear] Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[Wiper, refer to page 170]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[Gear] Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[Lighting, refer to page 171]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[Gear] Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[Key test]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[Camera system]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[Gear] Settings</td>
</tr>
</tbody>
</table>

### 9.6.1 “Terminal” menu

#### “Terminal settings” menu

The current settings of the terminal for language, day/night design, units of measurement, date and time are displayed in the menu and can be changed.

The background colour of the display can be changed for the day/night design. In this way the driver can easily read the display without being dazzled even if the ambient light changes.
The "Cabin" menu has been selected.

To open the menu, press first, then .

The display shows the "Terminal settings" menu.

To change and save the parameter, refer to page 154.

"Terminal information" menu

The software version is displayed in the "Terminal information" menu.

The "Cabin" menu has been selected.

To open the menu, press first, then

The display shows the "Terminal information" menu.

"Armrest" menu

"Armrest diagnostics" menu

Data on the quick-stop switch in the cabin and on the quick-stop switch for the grinding control unit are indicated in the menu.

The "Cabin" menu has been selected.

To open the menu, press first, then

The display shows the "Armrest diagnostics" menu.

Further information refer to page 154.
"Armrest key test" menu

The keys on the keypad, the additional keypad, the main mode switch and the navigation module can be tested in the menu.

✓ The "Cabin" menu has been selected.

► To open the menu, press first, then .

► The display shows the "Armrest key test" menu.

<table>
<thead>
<tr>
<th>Name of the key</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key test KP1</td>
<td>Key test left half of the keypad</td>
</tr>
<tr>
<td>Key test KP2</td>
<td>Key test right half of the keypad</td>
</tr>
<tr>
<td>Key test AKP</td>
<td>Key test additional keypad</td>
</tr>
<tr>
<td>Key test MMS</td>
<td>Key test Main Mode Switch</td>
</tr>
<tr>
<td>Key test NM</td>
<td>Key test navigation module</td>
</tr>
</tbody>
</table>

► To select an operating element, which is to be tested, press the key for the corresponding operating element

⇒ The operating element is displayed on the terminal.

► Press the key, which is to be tested, and check the background colour of the key on the terminal.

The colours of the keys on the terminal indicate whether there is an error between the operating element and the control unit.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Key not pressed.</td>
</tr>
<tr>
<td></td>
<td>Key pressed.</td>
</tr>
<tr>
<td></td>
<td>Error recognized.</td>
</tr>
</tbody>
</table>

9.6.3 “Control Lever” menu

"Control lever settings" menu

The M1 and M2 memory keys on the control lever can be assigned with functions in the menu.
Possible assignments of the memory keys:

- Raise/lower plant divider (for maize header) or holding-down clamp (for pick-up)
- Increase/reduce working width
- Switch between value 1 and value 2 for the chop length
- Increase/reduce header speed
- Turn pendulum frame to the left/right
- Increase/reduce discharge distance of the discharge accelerator
- Raise/lower spout
- Warning beacon (optional) / horn on
- Raise/lower hitch attachment
- Raise/lower the hopper

✓ The "Cabin" main menu has been selected.

To open the menu, press .

The display shows the "Control lever settings" menu.

To change and save the parameter, refer to page 154.

To open the "Key test" menu, press .

"Control lever key test" menu

The keys of the control lever can be tested in the menu.

Press a key on the control lever and check the background colour of the depressed key on the terminal.

The colours of the keys on the terminal indicate whether there is an error between the control lever and the control unit.
### 9.6.4 “Background Lighting” menu

#### "Background lighting settings" menu

The "Background lighting settings" menu can be used to set the intensity of the background lighting of operating elements and control levers.

![Background Lighting Settings Menu](image)

EQG002-029

- The "Cabin" menu has been selected.
- To open the menu, press ![Icon](image).
- The display shows the "Background lighting settings" menu.
- To change and save the parameter, refer to page 154.

### 9.6.5 “Control Unit Versions” menu

#### "Control unit versions software" menu

The "Control unit versions software" menu displays the current software versions of the control units.
The "Cabin" menu has been selected.

To open the menu, press first, then .

The display shows the "Control unit versions software" menu.

"Control unit versions hardware" menu

The "Control unit versions hardware" menu displays the current hardware versions of the control units.

The "Cabin" menu has been selected.

To open the menu, press first, then .

The display shows the "Control unit versions hardware" menu.

"Printer" menu

"Printer settings" menu

The current printer type is shown in the "Printer settings" menu. The printer type can be changed.
The "Cabin" menu has been selected.

To open the menu, press .

The display shows the "Printer settings" menu.

To change and save the parameter, refer to page 154.

9.6.7 "Automatic climate control" menu

"Automatic climate control graphic" menu

The "Automatic climate control graphic" menu displays the setting of the automatic climate control and allows the automatic climate control to be operated.

The "Cabin" main menu has been selected.

To open the menu, press first and then .

The display shows the "Automatic climate control graphic" menu.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>The automatic climate control is switched off</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>The automatic climate control is switched on</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>The refrigerating compressor is switched off</td>
</tr>
</tbody>
</table>
9 Terminal - Menus

9.6 "Cabin" menu

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Icon" /></td>
<td>The refrigerating compressor is switched on</td>
</tr>
<tr>
<td><img src="image2.png" alt="Icon" /></td>
<td>The automatic ventilation is switched off</td>
</tr>
<tr>
<td><img src="image3.png" alt="Icon" /></td>
<td>The automatic ventilation is switched off</td>
</tr>
</tbody>
</table>

- To switch on automatic climate control, press 🟢.
  - The display shows the power of the ventilation, the setpoint temperature in the cabin and whether the air conditioning compressor and the automatic ventilation are switched on.

- To increase the ventilation power or the setpoint temperature in the cabin, press ➕.

- To lower the ventilation power or the setpoint temperature in the cabin, press ➖.

- To switch on the air conditioning compressor, press 🌞.

- To set the automatic ventilation and the air conditioning compressor, press ⚙.
  - Because the ventilation can no longer be set manually, the field for the manual setting of the ventilation is no longer active.

To switch to the "Settings" menu, press 🏷.

"Automatic climate control settings" menu

The settings for the automatic climate control parameters are displayed in the menu and can be changed.

EQ002-315

✓ The "Automatic climate control" menu has been selected.

- To open the menu, press 🌿 first, then 🏷.
The display shows the "Automatic climate control settings" menu.

- To change and save the parameter, refer to page 154.

- To open the “Diagnostics” menu, press 📡.

- Further information, refer to page 154.

9.6.8 "Remote maintenance" menu

"Remote maintenance" menu

In the "Remote maintenance" menu the same data, which is displayed on the terminal in the machine, can be displayed to a KRONE customer service employee on the screen at his place of work.

To do this, the machine must be equipped with "SmartConnect" (for the "Smart Connect" version) which connects to the KRONE customer service through the mobile network and transmits the data to it.

EQG003-052

✔ The "Cabin" menu has been selected.

- To open the menu, press 📡 first, then 🛠️ (Remote maintenance).

- The display shows the "Remote maintenance" menu.

- To start the remote maintenance, press 🛠️.

EQG002-046

During remote maintenance the mobile networks used and the reception quality are displayed with icons.
9 Terminal - Menus

9.6 “Cabin” menu

“Remote maintenance diagnostics” menu
✓ The "Cabin" menu has been selected.
► To open the menu, press first, then .
► The display shows the "Remote maintenance diagnostics" menu.
► Further information refer to page 154.

“Remote maintenance settings” menu
The settings for the remote maintenance parameters are displayed in the "Remote maintenance" menu and can be changed.

EQG002-072
✓ The "Cabin" menu has been selected.
► To open the menu, press first, then (Settings).
► The display shows the "Remote maintenance settings" menu.
► To change and save the parameter, refer to page 154.

9.6.9 "Wiper" menu

"Wiper settings" menu

EQG002-078
The "Cabin" menu has been selected.

To open the menu, press 

The display shows the "Wiper settings" menu.

To change and save the parameter, refer to page 154.

9.6.10 "Lighting" menu

"Lighting settings" menu

The "Lighting settings" menu can be used to set the time period for activation of the "Coming Home" and "Leaving Home" functions.

The "Cabin" menu has been selected.

To open the menu, press 

The display shows the "Lighting settings" menu.

To change and save the parameter, refer to page 154.

To open the "Key test" menu, press 

"Lighting key test" menu

The LED of the light control unit can be tested in the menu.

Press a key on the light control unit and check the background colour of the depressed key on the terminal.
The colours of the keys on the terminal indicate whether there is an error between the light control unit and the control unit.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Key not pressed.</td>
</tr>
<tr>
<td></td>
<td>Key pressed.</td>
</tr>
<tr>
<td></td>
<td>Error recognized.</td>
</tr>
</tbody>
</table>

9.6.11 "Camera system" menu

"Camera system settings" menu

EQ002-303 / EQ002-431

- The "Cabin" menu has been selected.

- To open the menu, press 🔄. The display shows the "Camera system settings" menu.
- To change and save the parameter, refer to page 154.

9.7 "Lubrication" menu

The lubricant quantity for the central lubrication can be changed in the menu and a lubrication process can be started.

The status can be displayed during lubrication of the intermediate gearbox and the central lubrication.
For the menu level is active, refer to page 153.

To open the "Lubrication" menu, press .

The display shows the "Lubrication" menu with its menus.

The "Lubrication" menu is divided up into the following menus depending on the machine configuration:

<table>
<thead>
<tr>
<th>Menu</th>
<th>Sub-menu</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Central lubrication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intermediate gearbox lubrication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
</tbody>
</table>

9.7.1 "Central lubrication" menu

"Central lubrication settings" menu

The lubricant quantity for a lubrication cycle of the central lubrication system can be adjusted in the menu.
The “Lubrication” menu has been selected.

To open the menu, press .

The display shows the "Central lubrication settings" menu.

To change and save the parameter, refer to page 154.

"Central lubrication maintenance" menu

The "Central lubrication maintenance" menu displays the maintenance status for the central lubrication. The Main Mode Switch is in the "Maintenance" position, refer to page 99.

The "Central lubrication" menu has been selected.

To open the menu, press .

The display shows the "Central lubrication maintenance" menu.

To start intermediate lubrication using the central lubrication system, press and follow the instructions on the dialogue menu step-by-step.

To open the “Diagnostics” menu, press .

Further information, refer to page 154.
9.7.2 "Intermediate gearbox" menu

"Intermediate gearbox diagnostics" menu
Data of the sensors and actuators of the intermediate gearbox is displayed in the menu.
✔ The "Lubrication" menu has been selected.

To open the menu, press.

The display shows the "Intermediate gearbox diagnostics" menu.
Data of the sensors and actuators of the intermediate lubrication is displayed in the "Intermediate gearbox diagnostics" menu.
Further information refer to page 154.

9.8 "Crop flow" menu
The components in the crop flow can be set in the menu.
Calibrations and maintenance work can be started on individual components in the crop flow.

For The menu level is active, refer to page 153.

To open the "Crop flow" menu, press.

The display shows the "Crop flow" menu with its menus.
The "Crop flow" menu is divided up into the following menus depending on the machine configuration:

<table>
<thead>
<tr>
<th>Menu</th>
<th>Sub-menu</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Crop flow</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Header</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
</tbody>
</table>
### 9 Terminal - Menus

#### 9.8 "Crop flow" menu

<table>
<thead>
<tr>
<th>Menu</th>
<th>Sub-menu</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Header drive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Auto Scan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Graphic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intake</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Foreign object detection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lifting unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calibration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grinding device and counterblade</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td>Menu</td>
<td>Sub-menu</td>
<td>Designation</td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
<td>----------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Main coupling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calibration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corn conditioner</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calibration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discharge accelerator</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CropControl</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Counterweighing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calibration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
</tbody>
</table>
### Menu | Sub-menu | Designation
--- | --- | ---
| | | Silage additives units
| | | External silage additives unit
| | | Settings
| | | Silage additives unit fine dosing
| | | Settings
| | | Diagnostics
| | | Silage additives unit coarse dosing
| | | Settings
| | | Diagnostics
| | | Calibration

### 9.8.1 “Header” menu

"Header settings" menu

The settings for header parameters are displayed in the "Header settings" menu and can be changed.
The "Crop flow" main menu has been selected.

To open the menu, press \( \text{[button]} \).

The display shows the "Header settings" menu.

To change and save the parameter, refer to page 154.

To open the “Diagnostics” menu, press \( \text{[button]} \).

Further information, refer to page 154.

### 9.8.2 “Header Drive” menu

"Header drive settings" menu

The settings for the header drive parameters are displayed in the menu and can be changed.

EQG003-055

The "Crop flow" main menu has been selected.

To open the menu, press \( \text{[button]} \).

The display shows the "Header drive settings" menu.

To change and save the parameter, refer to page 154.

To open the “Diagnostics” menu, press \( \text{[button]} \).

Further information, refer to page 154.

### 9.8.3 "AutoScan" menu

"AutoScan graphic" menu

The settings for the AutoScan are displayed as values and in a graphic in the menu. The settings can be changed.
The "Crop flow" main menu has been selected.

- To open the menu, press  
- The display shows the "AutoScan Graphic" menu.
- To change and save the parameter, refer to page 154.

To switch to the "Settings" menu, press  

"AutoScan settings" menu

The settings for AutoScan parameters are displayed in the menu and can be changed.

- To change and save the parameter, refer to page 154.

9.8.4 "Intake" menu

"Intake settings" menu

The settings for intake parameters are displayed in the menu and can be changed.
The "Crop flow" main menu has been selected.

To open the menu, press .

The display shows the "Intake settings" menu.

To change and save the parameter, refer to page 154.

To open the "Diagnostics" menu, press .

Further information, refer to page 154.

9.8.5 "Foreign object detection" menu

"Foreign object detection settings" menu

The settings for the foreign object detection parameters are displayed in the menu and can be changed.

The "Crop flow" main menu has been selected.

To open the menu, press .

The display shows the "Foreign object detection settings" menu.

To change and save the parameter, refer to page 154.

To open the “Diagnostics” menu, press .

Further information, refer to page 154.
9.8.6 “Lifting Unit” menu

"Lifting unit settings" menu

The settings for lifting unit parameters are displayed in the menu and can be changed.

The "Crop flow" main menu has been selected.

- To open the menu, press :
- The display shows the "Lifting unit settings" menu.
- To change and save the parameter, refer to page 154.
- To switch to the "Calibration" menu, press :

"Lifting unit calibration" menu

The menu is used to determine the upper and the lower end position of the lifting unit as well as the weight of the header.

WARNING

Risk of injury due to unexpected movement of parts

During the calibration process, there is risk of injury for persons staying in the area of the lifting unit, header and spout.

- Ensure that there is no one in the swivel range and range of movement of lifting unit, header and spout while the calibration process is performed.
The lifting unit must be calibrated only after working on the lifting unit or after replacing the electronics.

The calibration values are stored separately for the pick-up headers, maize header and direct cut header. Therefore the calibration must be run with each appropriate header.

- A header has been mounted.
- The "Pick-up" / "Maize header" / "Direct cut header" operating mode has been set according to the mounted header, refer to page 178.
- The Main Mode Switch is in the "Maintenance" position, refer to page 99.
- For maize header: The maize header is in the working position, see separate operating instructions for maize header.
- The header has been placed on the ground on an even surface and has been aligned horizontally, refer to page 301.

To run the calibration using the Dialogue menu, press the "Start calibration" key and follow the instructions in the Dialogue menu step by step.

The calibration process is supported by the terminal. Missing requirements for calibration are displayed in the terminal.

To open the “Diagnostics” menu, press .

Further information, refer to page 154.

9.8.7 "Grinding device and counterblade" menu

"Grinding device and counterblade settings" menu

The settings for the grinding device are displayed in the menu and can be changed.

The "Crop flow" main menu has been selected.

To open the menu, press .

To change and save the parameter, refer to page 154.

To switch to the "Maintenance" menu, press .
**"Grinding device and counterblade maintenance" menu**

The menu can be used to check the status of the grinding device and to start the grinding processes.

The complete grinding process is described in the chapter Maintenance – Feed system, refer to page 406.

![Image of grinding device and counterblade maintenance menu]

To reset the wear counter, press the “Reset wear counter” key.

To change to “Key Test GC”, first press and then 

**"Grinding device and counterblade key test GC" menu**

The keys of the grinding control unit can be tested in the menu.

![Image of grinding device and counterblade key test GC menu]

EQG003-065

2 people are required to run the test.

- The Main Mode Switch is in the "Maintenance mode" position.
- The parking brake is applied.
- The lifting unit is in the lower position.
- The main coupling is switched on

- An operator presses a key on the grinding control unit.
- A second operator checks the background colour of the depressed key on the terminal.

The colours of the keys on the terminal indicate whether there is an error between the grinding control unit and the control unit.
<table>
<thead>
<tr>
<th>Icon</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Icon" /></td>
<td>Key not pressed.</td>
</tr>
<tr>
<td><img src="image2.png" alt="Icon" /></td>
<td>Key pressed.</td>
</tr>
<tr>
<td><img src="image3.png" alt="Icon" /></td>
<td>Error recognized.</td>
</tr>
</tbody>
</table>

- To open the “Diagnostics” menu, press ![Icon](image4.png).
- Further information, refer to page 154.

**9.8.8 “Main Coupling” menu**

**"Main coupling settings" menu**

The menu can be used to adjust the transmission ratio of the VariLOC chop length gearbox.

![Menu Screen](image5.png)

EQG003-066

- The "Crop flow" main menu has been selected.

- To open the menu, press ![Icon](image6.png).

- The display shows the "Main coupling settings" menu.

- To change and save the parameter, refer to page 154.

- To switch to the "Calibration" menu, press ![Icon](image7.png).

**"Main coupling calibration" menu**

The "Main coupling calibration" menu is used to determine the coupling point of the main coupling.
9 Terminal - Menus

9.8 “Crop flow” menu

**WARNING**

Risk of injury due to unexpected start-up of the chopping drum

The chopping drum is switched on during the calibration process. This poses a risk of injury for people staying in the area of the chopping drum.

- Ensure that there is nobody in the area of the chopping drum during the calibration process.

- The quick-stop switch grinding control unit is released, [refer to page 59](#).
- The quick-stop switch armrest is released, [refer to page 99](#).
- The Main Mode Switch is in the "Field mode" position, [refer to page 99](#).
- The driver is sitting on the driver's seat.

To run the calibration using the Dialogue menu, press the "Start calibration" key and follow the instructions in the Dialogue menu step by step.

**INFORMATION**

The calibration process is supported by the terminal. Missing requirements for calibration are displayed in the terminal.

- To open the “Diagnostics” menu, press 🇺🇸.
- Further information, [refer to page 154](#).

9.8.9 “Corn Conditioner” menu

“Corn conditioner settings” menu

The settings for corn conditioner parameters are displayed in the menu and can be changed.
The "Crop flow" main menu has been selected.

To open the menu, press .

The display shows the "Corn conditioner settings" menu.

To change and save the parameter, refer to page 154.

To switch to the "Calibration" menu, press .

"Corn conditioner calibration" menu

**WARNING**

Danger of injury resulting from unintentional movement of machine parts

While actuating machine functions, the machine may carry out unexpected movements. As a result, people in the operating area of the machine parts may get hurt or objects could be damaged.

- Secure the machine against rolling away.
- Make sure that there are no people, objects or animals in the area that is affected by machine parts.
- Machine functions must only be actuated by qualified personnel.

The menu is used to equalise the setpoint and the actual distance between the rollers of the corn conditioner.

The corn conditioner must always be calibrated

- if the corn conditioner was removed and re-installed,
- if the corn conditioner was repaired,
- If the actual value of the roller distance deviates from the setpoint value.
The machine has been safely parked, refer to page 27.

The corn conditioner is in the rear position (moved from the working position to the rear).

The corn conditioner is electrically connected.

The "Corn conditioner calibration" menu has been selected.

Using a feeler gauge, measure the distance (X) between the rollers (1, 2) on the left and right.

To run the calibration using the Dialogue menu, press the "Start calibration" key and follow the instructions in the Dialogue menu step by step.

**INFORMATION**
The calibration process is supported by the terminal. Missing requirements for calibration are displayed in the terminal.

If the distance (X) between the rollers (1, 2) deviates from the specifications on the terminal or the distance (X) on the left and right is not the same, re-adjust the corn conditioner, refer to page 439.

To open the “Diagnostics” menu, press .

Further information, refer to page 154.

9.8.10 "Discharge Accelerator" menu

"Discharge accelerator settings" menu

The settings for discharge accelerator parameters are displayed in the menu and can be changed.
The "Crop flow" main menu has been selected.

To open the menu, press \( \text{\textbullet} \).

The display shows the "Discharge accelerator settings" menu.

To change and save the parameter, refer to page 154.

To open the "Diagnostics" menu, press \( \text{\textbullet} \).

Further information, refer to page 154.

9.8.11 "CropControl" menu

"CropControl counterweighing" menu

The menu can be used to run a counterweighing process and to enter the counterweighing value.

The complete counterweighing process is described in the chapter "Field mode operation", refer to page 330.

To switch to the "Settings" menu, press \( \text{\textbullet} \).
"CropControl settings" menu

The settings for CropControl parameters are displayed in the menu and can be changed.

EQG003-073

► To change and save the parameter, refer to page 154.

► To switch to the "Calibration" menu, press .

The menu is used to determine the zero position of the pre-compression rollers.

EQG003-074

► To calibrate using the dialogue menu, press and follow the instructions in the dialogue menu step-by-step.

INFORMATION

The calibration process is supported by the terminal. Missing requirements for calibration are displayed in the terminal.

► To switch to the "Diagnostics" menu, first press and then .

► Further information, refer to page 154.

9.8.12 "Silage additives units" menu

If only one silage additives unit is installed on the machine, the menu for the installed silage additives unit appears in the "Crop flow" menu.

If two or more silage additives units are installed, the "Silage additives unit" menu appears in the "Crop flow" menu.
9.8.12.1 "External silage additives unit" menu

"External silage additives unit settings" menu

The settings for external silage additives unit parameters are displayed in the menu and can be changed.

EQG003-075

✓ The "Crop flow" main menu or the "Silage additives unit" menu has been selected.

▷ To open the menu, press .

▷ The display shows the "External silage additives unit settings" menu.

▷ To change and save the parameter, refer to page 154.

9.8.12.2 "Silage additives unit fine dosing" menu

"Silage additives unit fine dosing settings" menu

The settings for parameters of fine dosing of the silage additives unit are displayed in the menu and can be changed.

EQ002-367 / EQ002-419
9 Terminal - Menus

9.8 "Crop flow" menu

✓ The "Crop flow" main menu or the "Silage additives unit" menu has been selected.

▶ To open the menu, press 🎈.

➢ The display shows the internal silage additives unit fine dosing "Settings" menu.

➢ To change and save the parameter, refer to page 154.

➢ To open the “Diagnostics” menu, press 🎈.

➢ Further information, refer to page 154.

9.8.12.3 "Silage additives unit coarse dosing" menu

"Silage additives unit coarse dosing settings" menu

The settings for parameters of coarse dosing of the silage additives unit are displayed in the menu and can be changed.

EQG003-076

✓ The "Crop flow" main menu or the "Silage additives unit" menu has been selected.

▶ To open the menu, press 🎈.

➢ The display shows the "Internal silage additives unit settings" menu.

➢ To change and save the parameter, refer to page 154.

➢ To switch to the "Calibration" menu, press 🎈.

"Silage additives unit coarse dosing calibration" menu

The menu is used to determine the released quantity of silage additives of coarse dosing.
**WARNING**

Risk of injury due to silage additives

If handled improperly, the chemicals used in the silage additives unit may cause damage to health.

- The silage additives unit may only be operated by persons who are familiar with these Operating Instructions and the safety data sheet of the manufacturer of the silage additives. The safety instructions issued by the silage additive manufacturer must be followed.
- The operator must be instructed in the safe handling of the chemicals used.

- The quick-stop switch grinding control unit is released, refer to page 59.
- The quick-stop switch armrest is released, refer to page 99.
- The Main Mode Switch is in the "Field mode" position, refer to page 99.
- The driver is sitting on the driver's seat.

- To run the calibration using the Dialogue menu, press the "Start calibration" key and follow the instructions in the Dialogue menu step by step.

**INFORMATION**

The calibration process is supported by the terminal. Missing requirements for calibration are displayed in the terminal.

- To open the “Diagnostics” menu, press 🎕
- Further information, refer to page 154.

### 9.9 "Spout" menu

The settings for spout parameters are displayed in the menu and can be changed.
9 Terminal - Menus

9.9 "Spout" menu

For the menu level is active, refer to page 153.

To open the "Spout" main menu, press .

The display shows the spout "Settings" menu.

The "Spout" menu is divided up into the following menus depending on the machine configuration:

<table>
<thead>
<tr>
<th>Menu</th>
<th>Sub-menu</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spout</td>
<td>Settings</td>
<td>Diagnostics</td>
</tr>
<tr>
<td>Calibration</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

"Spout settings" menu

To switch to the "Calibration" menu, press .

Spout "Calibration" menu

The spout "Calibration" menu is used to determine the left and the right end positions of the spout.
**WARNING**

Risk of injury due to unexpected movement of parts

During the calibration process, there is risk of injury for persons staying in the area of the lifting unit, header and spout.

- Ensure that there is no one in the swivel range and range of movement of lifting unit, header and spout while the calibration process is performed.

- The spout has been lifted.

- To run the calibration using the Dialogue menu, press the "Start calibration" key and follow the instructions in the Dialogue menu step by step.

**INFORMATION**

The calibration process is supported by the terminal. Missing requirements for calibration are displayed in the terminal.

- To open the “Diagnostics” menu, press 📊.

- Further information, refer to page 154.

**9.10 “Engine” menu**

- For The menu level is active, refer to page 153.

- To open the menu, press 📊.

- The display shows the "Engine" menu with its menus.
The "Cabin" menu is divided up into the following menus depending on the machine configuration:

<table>
<thead>
<tr>
<th>Menu</th>
<th>Sub-menu</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Engine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diesel engine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ConstantPower</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hydrostatic fan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Compressed air cleaning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance</td>
</tr>
</tbody>
</table>

### 9.10.1 “Diesel Engine” menu

**"Diesel engine settings" menu**

The settings for diesel engine parameters are shown in the "Diesel engine settings" menu where they can also be changed.
The "Engine" menu has been selected.

To open the menu, press first, then .

The display shows the "Diesel engine settings" menu.

To change and save the parameter, refer to page 154.

To open the "Diagnostics" menu, press .

Further information, refer to page 154.

Diesel engine "Maintenance" menu

The "Diesel engine maintenance" menu displays the remaining operating hours of the diesel engine until the next maintenance date.

The display counts down the operating hours of the diesel engine until the next maintenance date of the diesel engine.

The "Engine" menu has been selected.

To open the menu, press first, then .

The display shows the "Diesel engine maintenance" menu.
9.10 “Engine” menu

9.10.1 “Engine” menu

**NOTICE**

Next maintenance date

25 operating hours before reaching the next maintenance date, the terminal issues a warning in an information window. An information window is also displayed when the diesel engine has a residual runtime of less than 25 operating hours until the next maintenance date when the diesel engine starts.

9.10.2 “ConstantPower” menu

"ConstantPower settings" menu

The settings for parameters of the diesel engine load limit control are displayed in the menu and can be changed.

![ConstantPower settings menu](EQG002-033)

- The "Engine" main menu has been selected.
- To open the menu, press .
- The display shows the "ConstantPower settings" menu.
- To change and save the parameter, refer to page 154.

9.10.3 "Compressed air cleaning" menu

"Compressed air cleaning settings" menu

The settings for compressed air cleaning are displayed in the "Compressed air cleaning settings" menu and can be changed.

![Compressed air cleaning settings menu](EQG003-083)
The "Engine" main menu has been selected.

To open the menu, press 🔌.

The display shows the "Compressed air cleaning settings" menu.

To change and save the parameter, refer to page 154.

To switch to the "Maintenance" menu, press ⚒️.

"Compressed air cleaning maintenance" menu

The "Compressed air cleaning maintenance" menu can be used to check the time until the next cleaning and the set cleaning duration.

Compressed air cleaning of the engine can be started.

The main mode switch is in the "maintenance" position, refer to page 99.

To clean the engine with compressed air using the Dialogue menu, press the "Start cleaning" key.

To open the “Diagnostics” menu, press 🔌.

Further information, refer to page 154.
9.11  “Hydraulics” menu

To open the "Hydraulics" menu, press .

The display shows the "Hydraulics" menu with its menus.

The "Hydraulics" menu is divided up into the following menus depending on the machine configuration:

<table>
<thead>
<tr>
<th>Menu</th>
<th>Sub-menu</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Hydraulics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Header locking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Working hydraulics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Auxiliary hydraulics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diagnostics</td>
</tr>
</tbody>
</table>

9.11.1  “Header Locking” menu

"Header locking diagnostics" menu

Data of the sensors and actuators of the header locking is displayed in the "Header locking diagnostics" menu.
9.11.2 “Work Hydraulics” menu

"Working hydraulics diagnostics" menu

The "Working hydraulics diagnostics" menu displays the sensor and actuator data for the working hydraulics.

9.11.3 “Auxiliary Hydraulics” menu

Auxiliary hydraulics "Settings" menu

The settings for auxiliary hydraulics parameters are displayed in the menu and can be changed.
The “Hydraulics” menu has been selected.

To open the menu, press .

The display shows the auxiliary hydraulics “Settings” menu.

To change and save the parameter, refer to page 154.

To open the “Diagnostics” menu, press .

Further information, refer to page 154.

9.12 “Drive Functions” menu

The "Driving functions" menu can be used to make settings on the running gear components.

For The menu level is active, refer to page 153.

To open the menu, press .

The display shows the "Driving functions" menu with its menus.

The "Driving functions" menu is divided up into the following menus depending on the machine configuration:
<table>
<thead>
<tr>
<th>Menu</th>
<th>Sub-menu</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Driving functions, <em>refer to page 202</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Automatic steering system, <em>refer to page 203</em></td>
</tr>
<tr>
<td>Settings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traction drive</td>
<td></td>
<td><em>Traction drive, refer to page 204</em></td>
</tr>
<tr>
<td>Calibration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear axle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calibration</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 9.12.1 “Automatic Steering System” menu

"Automatic steering system settings" menu

The settings for automatic steering system parameters are displayed in the "Automatic steering system settings" menu and can be changed.

![Automatic steering system settings menu](EQG002-037)
9 Terminal - Menus

9.12 “Drive Functions” menu

✓ The “Driving functions” menu has been selected.

➤ To open the menu, press first, then.

➤ The display shows the "Automatic steering system settings" menu.

➤ To change and save the parameter, refer to page 154.

"Automatic steering system diagnostics" menu

✓ The “Driving functions” menu has been selected.

➤ To open the menu, press first, then.

➤ The display shows the "Automatic steering system diagnostics" menu.

➤ Further information refer to page 154.

9.12.2 “Traction Drive” Menu

"Traction drive calibration" menu

In the “Traction Drive Calibration” menu the brake pedal is checked for plausibility.

EQG002-038

✓ The “Driving functions” menu has been selected.

➤ To open the menu, press first, then.

➤ The display shows the "Traction drive calibration" menu.

➤ To run the calibration using the Dialogue menu, press the "Start calibration" key and follow the instructions in the Dialogue menu step by step.

INFORMATION

The calibration process is supported by the terminal. Missing requirements for calibration are displayed in the terminal.

✓ The “Driving functions” menu has been selected.

➤ To open the menu, press first, then.

➤ The display shows the "Traction drive diagnostics" menu.

➤ Further information refer to page 154.
9.12.3 “Rear Axle” menu

"Rear axle calibration central position" menu

The "Rear axle calibration central position" menu is used to determine the central position of the rear axle.

The "Driving functions" main menu has been selected.

To open the menu, press .

The display shows the "Rear axle calibration central position" menu.

To run the calibration of the central position using the Dialogue menu, press and follow the instructions in the Dialogue menu step by step.

INFORMATION

The calibration process is supported by the terminal. Missing requirements for calibration are displayed in the terminal.

To switch to the "Rear axle calibration end positions" menu, press .

"Rear axle calibration end positions" menu

The "Rear axle calibration end positions" menu is used to determine the upper and the lower end positions as well as the position of the rear axle in road mode.
9 Terminal - Menus
9.13 “Season Settings” menu

To run the calibration of the end positions using the Dialogue menu, press and follow the instructions in the Dialogue menu step by step.

**INFORMATION**
The calibration process is supported by the terminal. Missing requirements for calibration are displayed in the terminal.

To open the “Diagnostics” menu, press.

Further information, refer to page 154.

9.13 “Season Settings” menu

For The menu level is active, refer to page 153.

To open the menu, press.

The display shows the “Season settings” menu.
The values for the most important settings for header, lifting unit and intake are displayed in the “Season settings” menu and can be changed.

**INFORMATION**
The working width can also be changed temporarily via the quick access "Temporarily adjust working width". The setting of the working width in the season setting is not changed.
**INFORMATION**

If a pick-up or a direct cut header is enabled as a header, the working width is entered in cm or inches.

If a maize header is enabled as a header, the working width is determined by the number of rows and the row spacing. A value for the working width in cm or inches is not displayed and cannot be entered.

► To change and save the parameter, refer to page 154.

### 9.14 "User level" menu

EQG002-039

✓ For The menu level is active, refer to page 153.

► To open the menu, press .

► The display shows the "User level" menu.

**INFORMATION**

Changes in this mask can be made only by service technicians via a PIN.
10 Initial operation

10.1 Checklist for initial operation

**WARNING**

Risk of injury or damage to the machine due to faulty initial operation

If the initial operation is carried out incorrectly or incompletely, the machine may present defects. As a result, people may be injured or killed or the machine may be damaged.

- Initial operation must only be carried out by authorised technicians.
- Read in full and observe the "Personnel qualification of technicians", refer to page 20.

**WARNING**

Risk of injury due to non-observance of relevant safety instructions

If the relevant safety instructions are not observed, persons may be seriously injured or killed.

- To avoid accidents, the relevant safety instructions must be read and observed, refer to page 19.

**WARNING**

Risk of injury due to non-observance of safety instructions

If the relevant safety routines are not observed, persons may be seriously injured or killed.

- The safety routines must be read and observed to avoid accidents, refer to page 34.

---

### Checklist for initial operation

- There are no leakages present in the machine.
- All cable and plug connections are properly connected and laid.
- All hoses are properly laid.
- All the screws and nuts have been checked to make certain they are tight and tightened to the specified tightening torques, refer to page 359.
- The machine is completely lubricated, refer to page 472.
- The wheel chocks are at hand and ready to use, refer to page 55.
- The platforms, steps and standing areas are clean and in proper condition, refer to page 55.
- The fire extinguisher is mounted, refer to page 209.
- The licence plate is mounted, refer to page 210.
- The tyres have been checked and the pressure is set correctly, refer to page 394.
- The hub covers of the rear axle have been checked for damage and tight fit (for "front wheel drive" version), refer to page 389.
10.2 Mounting warning panels in operating position

If the warning panels (2) are not mounted due to transport purposes, they must be mounted in operating position before placing the machine in service the first time.

The hole pattern (3) for the screws enables 3 mounting positions.

To adapt the position of the warning panels to the width of the tyres:

- Determine the mounting position of the warning panels so that the distance from outside edge of machine to outside edge of warning panel does not exceed 100 mm.
- Mount the warning panels in the operating position on the supports (1), right-hand and left-hand machine side.

10.3 Mounting fire extinguisher

The machine is shut down and safeguarded, refer to page 34.

Insert the fire extinguisher (1) in the support on the ladder to the cabin so that the operating instructions on the type plate are legible and show outward.
10 Initial operation

10.4 Mounting licence plate

**WARNING! Risk of injury due to falling fire extinguisher!** In order to secure the fire extinguisher, adjust the tensioning straps with sufficient tension according to the circumference of the fire extinguisher.

- Adjust the length of the tensioning straps according to the circumference of the fire extinguisher.
- Shorten the length of the tensioning straps by a few millimetres and close the fasteners to guarantee that the closed tensioning straps are tensioned sufficiently.
- The tensioning straps have been properly adjusted if the fasteners can only be closed by means of an auxiliary tool (e.g. screwdriver).
- If it is possible to close the fasteners manually:
  - Shorten the length of the tensioning straps so far that the fasteners can only be closed by an auxiliary tool (e.g. screwdriver).

**Mounting licence plate**

Mount the front licence plate on both mounting brackets (1) on the left mirror arm (2) of the cabin.

Mount the rear licence plate in the designated indentation on the tailgate under the licence plate lighting (3).

**Connecting side tank to main tank**

The main tank (2) can be connected to the side tank (1) during maize operation to increase the tank volume for fuel.

If the side tank is to be used as a water or silage additives tank, the material needed for this purpose can be ordered under the accessories kit number 204289870.
In order to be able to connect the side tank to the main tank, the side tank (8) must be connected to the main tank (5) using connecting hoses (9, 10).

- The machine is shut down and secured.
- Remove the filler plugs (1, 2, 3, 4) from the screw connections on the side tank and the valves (6, 7).
- Remove the connecting hose (9) from the storage compartment and connect it to the screw connections on the side tank (8) and the shut-off valve (6) on the main tank (5).
- Remove the connecting hose (10) from the storage compartment and connect it to the screw connections on the side tank (8) and the valve (7).
11 Start-up

11.1 Check before start-up

**INFORMATION**
Compliance with the stipulated checks on the machine significantly increases the safety and the lifetime of the machine.

A machine with established defects must not be operated.

- If it is established that the machine has defects, shut down the machine and eliminate these defects or have them eliminated by technicians.
- Before starting up the machine, carry out the inspections listed below and the checks from the maintenance table "Every 10 hours, at least daily", refer to page 351.

**General**

- There are no leakages present in the machine.
- All cable and plug connections are properly connected and laid.
- All hoses are properly laid.
- The safety devices are mounted and checked for completeness and damage.
- The header is correctly attached and is fitted with the corresponding safety devices, EasyFlow refer to page 256, EasyCollect refer to page 265.
- The platforms, steps and standing areas are clean and in proper condition, refer to page 55.
- The wheel chocks are at hand and ready to use, refer to page 55.
- The horn is functioning properly, refer to page 80.
- The fire extinguisher is functioning properly, refer to page 396.

**Cabin**

- The position of the mirror and the camera are set, outside mirror refer to page 92, inside mirror and camera refer to page 213.
- The driver's seat is adjusted correctly, refer to page 213.
- All emergency exits are freely accessible and can be opened without obstruction, refer to page 57.
- All windows and mirrors are cleaned.
- All wiper blades are in good condition.
Lighting and labelling

- The lighting and warning beacon are adjusted correctly and functioning properly, refer to page 86.
- All red-white warning panels for making the machine visible are mounted in accordance with national laws.

### 11.2 Setting driver’s seat

#### 11.2.1 Air-cushioned comfort seat

<table>
<thead>
<tr>
<th><strong>WARNING</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Risk of injury due to movement of the machine or machine parts!</strong></td>
</tr>
<tr>
<td>When the control lever cannot be moved freely in all directions, it is not possible to execute all functions of the control lever. It may then not be possible to respond quickly and correctly to hazardous situations.</td>
</tr>
<tr>
<td>▶ After comfort seat, right armrest and steering column have been set, check whether the control lever can be moved freely in all directions.</td>
</tr>
<tr>
<td>▶ Adapt the setting when the control lever cannot be moved freely in all directions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>WARNING</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Risk of injury due to incorrectly set driver’s seat!</strong></td>
</tr>
<tr>
<td>When the driver’s seat is not adjusted individually to the driver, the driver may damage his health due to bad posture while working.</td>
</tr>
<tr>
<td>▶ Before starting up the machine, adjust the driver’s seat ergonomically and individually to the driver.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>WARNING</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Danger of injury resulting from unintentional movement of machine parts</strong></td>
</tr>
<tr>
<td>If the vibration damper has been set too softly, the seat may hit the floor when driving on a bad road and contact with the operating elements is no longer guaranteed. It may then not be possible to respond quickly and correctly to hazardous situations. Thus there is a risk of serious injuries or death.</td>
</tr>
<tr>
<td>▶ Always set the vibration damper of the comfort seat tightly enough to prevent the seat from hitting the floor even when driving on a bad road.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>WARNING</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Danger of accident due to brief distraction of the driver</strong></td>
</tr>
<tr>
<td>If the driver adjusts the driver’s seat while driving, he cannot pay adequate attention to his driving as a result. This can result in serious accidents.</td>
</tr>
<tr>
<td>▶ The driver’s seat must only be set when the machine has stopped.</td>
</tr>
</tbody>
</table>
Operating air-cushioned comfort seat (for "Standard" version)

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

### Height adjustment

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

- Pull lever (6) completely upward.
  - The driver's seat (1) is moved upwards.
- Press lever (6) completely down.
  - Move driver's seat (1) downwards.
- When the upper or lower end stop of the height adjustment mechanism is reached, 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.

- To activate horizontal suspension, reverse lever (5) to the front.
- To deactivate horizontal suspension, reverse lever (5) to the rear.
Longitudinal adjustment

- Pull locking lever (4) up, push driver's seat (1) forward or backward into the desired position and permit the locking lever (4) to lock in place.
- Check whether the locking is fitted into place correctly. The driver's seat must no longer be movable into another position.

Seat angle adjustment

- Pull the key (3) up and set the inclination of the seat base by simultaneously increasing or decreasing the pressure on the seat base.

Seat depth adjustment

- Pull key (2) up and move seat base to the desired position by moving it forward and backward simultaneously.

Adjustment of the backrest

- Pull locking lever (7) up, set the inclination of the backrest and allow the locking lever (7) to engage.
- Check whether the locking is fitted into place correctly. Make sure that the backrest cannot be moved.

Weight adjustment

In order to prevent damage to health, the individual driver's weight setting should be checked and adjusted prior to starting up the machine. The setting should be carried out whilst sitting absolutely stationary.

- Briefly pull the lever (6) upwards.

Headrest

The headrest has been optimally set when the upper edges of the head and headrest are at the same height.

- Pull out or push in the headrest (10) over the perceptible notches until the correct height has been reached.

Lumbar support

- Turn the hand wheel (9) to the left or right in order to individually adjust the height as well as the intensity of the arching in the backrest.

Adjusting the vibration damper

The vibration behaviour of the driver's seat can be optimally adjusted to each driving situation from "soft" to "hard" using the infinitely adjustable vibration damper.

- Pull (12) lever upwards to set soft seating comfort.
- Pull (12) lever downwards to set hard seating comfort.

Setting the left armrest

![Image of the left armrest with numbered parts]

- Pull locking lever (4) up, push driver's seat (1) forward or backward into the desired position and permit the locking lever (4) to lock in place.
- Check whether the locking is fitted into place correctly. The driver's seat must no longer be movable into another position.
- Pull the key (3) up and set the inclination of the seat base by simultaneously increasing or decreasing the pressure on the seat base.
- Pull key (2) up and move seat base to the desired position by moving it forward and backward simultaneously.
- Pull locking lever (7) up, set the inclination of the backrest and allow the locking lever (7) to engage.
- Check whether the locking is fitted into place correctly. Make sure that the backrest cannot be moved.
- Briefly pull the lever (6) upwards.
- The headrest has been optimally set when the upper edges of the head and headrest are at the same height.
- Pull out or push in the headrest (10) over the perceptible notches until the correct height has been reached.
- Turn the hand wheel (9) to the left or right in order to individually adjust the height as well as the intensity of the arching in the backrest.
- Pull (12) lever upwards to set soft seating comfort.
- Pull (12) lever downwards to set hard seating comfort.
11 Start-up
11.2 Setting driver’s seat

Tilt the armrest (8) up or down as requested.

- Remove cover cap (11) to adjust the armrest height.
- Loosen hexagon nut, move armrest into desired position and tighten hexagon nut.
- Press cover cap (11) on hexagon nut.

**Setting the right armrest**

The right armrest (13) and the control lever form a unit.

- To set the right armrest, raise lever (14).
- Fold right armrest up or down, forward or backward and release the lever (14).
- The setting remains the same.

11.2.1.2 Operating air-cushioned comfort seat (for "ACTIVO" version)

---

1 Air-cushioned comfort seat 8 Left armrest
2 Seat depth adjustment 9 Seat heating and air conditioning on/off
3 Seat angle adjustment 10 Headrest
4 Longitudinal adjustment 11 Cover cap armrest adjustment
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Horizontal suspension on/off</td>
<td>12</td>
</tr>
<tr>
<td>6</td>
<td>Weight and height setting</td>
<td>13</td>
</tr>
<tr>
<td>7</td>
<td>Adjustment of the backrest</td>
<td>14</td>
</tr>
</tbody>
</table>

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

**Height adjustment**

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

- Pull lever (6) completely upward.
  - The driver's seat (1) is moved upwards.
- Press lever (6) completely down.
  - Move driver's seat (1) downwards.
- When the upper or lower end stop of the height adjustment mechanism is reached, 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.

- To activate horizontal suspension, reverse lever (5) to the front.
- To deactivate horizontal suspension, reverse lever (5) to the rear.

**Longitudinal adjustment**

- Pull locking lever (4) up, push driver's seat (1) forward or backward into the desired position and permit the locking lever (4) to lock in place.
- Check whether the locking is fitted into place correctly. The driver's seat must no longer be movable into another position.

**Seat angle adjustment**

- Pull the key (3) up and set the inclination of the seat base by simultaneously increasing or decreasing the pressure on the seat base.

**Seat depth adjustment**

- Pull key (2) up and move seat base to the desired position by moving it forward and backward simultaneously.

**Adjustment of the backrest**

- Pull locking lever (7) up, set the inclination of the backrest and allow the locking lever (7) to engage.
- Check whether the locking is fitted into place correctly. Make sure that the backrest cannot be moved.

**Weight adjustment**

The weight is automatically adjusted when the seat is loaded by the driver.

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

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

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

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Soft damping</td>
</tr>
<tr>
<td>II</td>
<td>Medium damping</td>
</tr>
<tr>
<td>III</td>
<td>Hard damping</td>
</tr>
</tbody>
</table>

To set the vibration damper, turn lever (12) to desired stage and release it.

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

**Lumbar support**

The intensity of the arching of seat backrest can be adapted individually so that the spine is supported and the pressure on the back is relieved.

- In order to adapt the intensity of the arching in the upper area of the backrest, press „+“ or „-“ on switch (14) until the desired setting is reached.
- In order to adapt the intensity of the arching in the lower area of the backrest, press on “+” or “-” on switch (13) until the desired setting is reached.

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

The switch (9) has three positions:

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Seat heating and seat climate control OFF</td>
</tr>
<tr>
<td>I</td>
<td>Seat climate control ON (seat heating OFF)</td>
</tr>
<tr>
<td>II</td>
<td>Seat heating ON (seat climate control OFF)</td>
</tr>
</tbody>
</table>

- In order to switch on seat climate control, switch the switch (9) to position I.
- The left light indicates the operation of seat climate control.
- To switch on the seat heating, switch the switch (9) to position II.
- The right lamp indicates the operation of the seat heating.

**Setting the left armrest**

Tilt the armrest (8) up or down as requested.
- Remove cover cap (11) to adjust the armrest height.
- Loosen hexagon nut, move armrest into desired position and tighten hexagon nut.
- Press cover cap (11) on hexagon nut.

**Setting the right armrest**
11.2 Setting driver's seat

The right armrest (13) and the control lever form a unit.

- To set the right armrest, raise lever (14).
- Fold right armrest up or down, forward or backward and release the lever (14).
- The setting remains the same.

11.2.1.3 Turning the driver's seat (for the "Swivel seat adapter" design)

The swivel seat adapter can be used to rotate the driver's seat and lock it in 4 different positions to be able to monitor the work on the machine.

- Lift the locking lever (2) and rotate the seat (1).

**WARNING!** If the driver's seat is not locked in the straight-ahead position, the seat may rotate during road travel and therefore the driver can no longer safely operate the controls. Ensure that the driver's seat for road travel is in the straight-ahead position and that the locking lever has audibly engaged.

- Release the locking lever (2) and turn it until the required seat position (I–IV) has been reached and the seat locks.
11.2.2 Steering column adjustment

To adjust the inclination of the steering column around the lower pivot point (a), actuate the unlocking pedal (1) and move the steering column (3) into the required position.

To lock the steering column (3), release the unlocking pedal (1).

To adjust the height of the steering wheel (c) and the inclination of the steering column around the upper pivot point (b), release the release lever (2) and move the steering column (3) into the required position.

To lock the steering column (3), lock the release lever (2).

11.2.3 Setting the terminal

The position of the terminal can be adjusted to the driver and to the visible conditions of the header by turning the support (11) and the terminal.
11 Start-up
11.2 Setting driver’s seat

Adjusting the inclination of the terminal forwards/backwards:
- Loosen the lever (2) and adjust the inclination of the terminal forwards/backwards (8).
- Tighten the lever (2).

Adjusting the inclination of the terminal sideways:
- Loosen the screw (1) and adjust the inclination of the terminal sideways (7).
- Tighten the screw (1).

Rotating the terminal to the left/right:
- Loosen the screw (3) and rotate the terminal to the left/right (6).
- Tighten the screw (3).

Adjusting the height of the terminal:
- Loosen the screw (4) and rotate (10) the support (11) until the required height has been reached.
- Tighten the screw (4).

Swivelling the terminal to the left/right:
- Loosen the lever (5) and swivel the support (11) to the left/right (9).
- Tighten the lever (5).

11.2.4 Monitor for camera monitoring

For "Additional camera" version

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

POC function

The POC function (Power on Control) of the additional camera automatically switches on the monitor as soon as the ignition is turned to step "II". The POC function is activated in the factory and can be deactivated as necessary.

- Press on the monitor.
Press until "POC" (1) is selected.

To deactivate the POC function, press.

To select “Close” press.

To leave the menu, press.

To activate the POC function again, follow a similar procedure.

**INFORMATION**

Even if the POC function is deactivated, the monitor automatically switches on during reversing. After reversing is completed, the monitor automatically switches off.

For further information see the manufacturer's operating manual.

**11.2.5 Sun visor**

Manually adjust the position of the sun visor (1) as required.
11.2.6 Adjustable air nozzles

Adjust the air nozzles (1) to prevent the discs from misting over.

11.2.7 Inside rear mirror

Manually set the inside rear mirror (1) so that the required outside area is visible in the mirror.

11.3 General aspects

11.3.1 Instructional seat

**WARNING**

Danger of accident due to distraction of the driver

The driver may be distracted by a second person in the cabin, possibly causing him not to pay adequate attention to his driving. This may result in serious accidents with personal injury.

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

The cooler (1) is located under the guide’s seat (2) in the cabin.

To use the cooling box, connect the 12 V plug (4) to the 12 V socket (3) on the left next to the driver’s seat.

11.3.3 Drawer for first-aid kit and operating instructions

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

To remove the first-aid kit or the operating instructions, pull the drawer (2) forwards.
This chapter describes the conversion from maize mode to grass mode/direct cut header.

Prerequisite for grass mode:

- The corn conditioner has been removed,
- The clamping bar has been installed,
- The grass channel has been installed,
- The ventilation slot has been adjusted, refer to page 231.
- The hydraulic system has been set to grass mode, refer to page 232, for direct cut header: the hydraulic system has been set to operation with direct cut header, refer to page 232.
- The grain capture sheet has been removed, refer to page 233.
- The conveyor bars of the pre-compression roller have been fitted in such a way that the smooth side is used, refer to page 433.
- The chopping blades for grass mode have been fitted, refer to page 417.
- The counterblade for grass mode has been fitted, refer to page 430.
- The side tank and the additional tank are disconnected from the main tank and have been emptied, refer to page 233.
- The EasyFlow header has been fitted, refer to page 256.
- The season setting on the terminal has been set to grass mode, refer to page 206.
- The spout extension has been removed, refer to page 236.
- The rear weight has been removed, refer to page 235.
- The lifting unit has been calibrated, refer to page 182.

Removing the crop flow cover

To remove the cover (1), unlock the quarter turn fasteners (2).
Set down the cover (1) outside of the machine.

### 12.1 Removing the corn conditioner

**Overview**

1. Lock corn conditioner / grass channel
2. Kraftband
3. Connecting rod
4. Assembly equipment with roller chain
5. Central lubrication
6. Power supply

- The rear axle is in the top position.
- The machine is shut down and safeguarded, *refer to page 34.*

**Removing the crop flow cover**

- To remove the cover (1), unlock the quarter turn fasteners (2).

Set down the cover (1) outside of the machine.
12 Start-up – Grass mode/direct cut header

12.1 Removing the corn conditioner

The crank handle and the operation device (on the "Electric VariQuick" design) are in the machine’s tool box.

- Attach the crank handle (2) to the connecting rod (1).

**On the "Electric VariQuick" design**
- Connect the operation device (3) to the socket (4)

- Detach the cover (3).
- Detach the lubrication lines (2).
- Detach the plug connection (1) for the power supply.

- In order to be able to remove the kraftband (1), insert the manual lever (3) into the sleeve (4) on the tensioning arm (2) and press the belt tensioner (2) down towards the front.
- Remove the kraftband (2).
- Remove the manual lever (3).
Loosen the screws (2) on both sides and rotate the lock (1) to the side.

Turn the crank handle, or on the "Electric VariQuick" design, use the operation device, to rotate the corn conditioner (1) downward until there is a clearance of X=15 cm between the lock (2) and the stop (3).

Mount the wheels (4).

Rotate the corn conditioner (1) as far downward until the wheels of the corn conditioner reach the floor but do not touch it.

Attach the wheel (1).

Remove the kraftband (3) from the belt pulley (2).
12.2 Installing the grass channel

- The machine is shut down and safeguarded, refer to page 34.
- The crop flow cover is removed, refer to page 227.

- Make sure that the locking (1) on both sides are in horizontal position.
- Insert the grass channel (4) on the handles (3) until it reaches the stop.
- Rotate the locking (1) downward on both sides and secure them with the screws (2).
12.3 Adjusting ventilation slot

The ventilation slot is closed at the factory.

Open the ventilation slot no further than half way. If the ventilation slot's opening is too large, too much air is directed against the air flow in the chopping drum. This may impair the discharge capacity.

Adjusting the ventilation slot cover

- Loosen the wing nuts (1).
- Pull the cover sheet (2) backwards to the required position.
- Tighten the wing nuts (1).

Mounting the crop flow cover

- Attach the cover (1) and lock with the quarter turn fasteners (2).
12.4 Setting Lifting Unit Hydraulics

Switching the lifting unit to grass mode

The three-way ball cock (1) for switching between maize and grass mode is located under the left side hood.

- Position I = maize mode, operation with direct cut header
- Position II = grass mode

To switch the hydraulic system to grass mode:

- Bring the machine to a standstill.
- Lower the header to the ground.
- Move the three-way ball cock to position II.

Switching lifting unit to maize mode or to operation with direct cut header

The three-way ball cock (1) for switching between maize and grass mode is located under the left side hood.

- Position I = maize mode, operation with direct cut header
- Position II = grass mode

To switch the hydraulic system to maize mode or to operation with direct cut header:

- Bring the machine to a standstill.
- Lower the header to the ground.
- Move the three-way ball cock to position I
12.5 Removing grain capture sheet

To dismount the grain capture sheet:

- Loosen coach screws (3), discs, detent edged washers and locknuts to screw angle (2) and grain capture sheet (1).
- Unscrew the hexagon head screws, detent edged washers and discs (4) and remove the grain capture sheet.

Store the grain capture sheet with screw connection material in a safe place for subsequent reinstallation.

12.6 Disconnecting the side and additional tanks from the main tank

During grass operation, the side tank (1) and the additional tank (3) must not be filled.

Therefore, prior to grass operation, the connections between the main tank (2) and the side tank (1) or additional tank (3) are disconnected and both tanks are emptied.
12.6.1 Disconnecting the side tank from the main tank

To disconnect the side tank (1) from the main tank (4):

- The machine is shut down and secured.
- A suitable container is available for leaking fuel.
- Close the shut-off valve (3) on the main tank (4) and the valve (2).
- Set the container for the fuel below the drain sleeve (5) of the side tank (4).
- Remove the end cap of the drain sleeve (5).
- Remove the drain hose from the storage compartment and hold the open end in the container for the fuel.
- Screw on the screw connection for the drain hose onto the drain sleeve (5) of the side tank (4) and allow the fuel to flow into the container.
- Once the fuel has fully drained out of the side tank (1), remove the drain hose and place the end cap onto the drain sleeve (5).

12.6.2 Disconnecting the additional tank from the main tank

To disconnect the additional tank (4) from the main tank (2):

- The machine is shut down and secured.
- A suitable container is available for leaking fuel.
- Close the shut-off valve (1) on the main tank and the valve (3).
- Set the container for the fuel below the drain sleeve (5) of the additional tank (4).
- Remove the end cap of the drain sleeve (5).
Start-up – Grass mode/direct cut header

Removing rear weight

12.7

Remove the drain hose from the storage compartment and hold the open end in the container for the fuel.

- Screw on the screw connection for the drain hose onto the drain sleeve (5) of the additional tank (4) and allow the fuel to flow into the container.

- Once the fuel has fully drained out of the additional tank (1), remove the drain hose and place the end cap onto the drain sleeve (5).

**WARNING**

**Risk of injury from suspended load**

There is a danger for persons due to falling load.

- Pay attention to sufficient carrying load of the hoist.
- Do not stay under the suspended load.
- If work has to be performed under the load, securely support the load.

**WARNING**

**Risk of injury due to unexpected movements when operating the machine**

If the rear weight and the front-mounted EasyCollect header are not coordinated with each other, there is a risk that the machine may overturn when braked or when driving on slopes.

- Do not drive the machine on the road or use it for work unless the rear weight, stipulated for the combination of machine and fitted header, has been attached.

✓ The machine is shut down and safeguarded, refer to page 34.

![Diagram of the rear weight](BX001-983)

**The rear weight (1) has a maximum weight of approx. 1,600 kg depending on the number of weight plates.**

- List the rear weight (1) using a forklift or similar hoist. In doing so, use the forklift pockets (3).
- Make sure that the hoist correctly supports the rear weight (1) at the forklift pockets (3).
- Remove the screw connection material of the rear weight (1).
- Carefully drive the rear weight (1) backward and in the process, remove the rear weight (1) from the screw-on brackets (2).
- Safely set down the rear weight (1).
- Check the tyre pressure, refer to page 394.
Removing spout extension

**WARNING**
Risk of injury due to non-observance of relevant safety instructions
If the relevant safety instructions are not observed, persons may be seriously injured or killed.
- To avoid accidents, the relevant safety instructions must be read and observed, *refer to page 19.*

**WARNING**
Risk of injury due to non-observance of safety instructions
If the relevant safety routines are not observed, persons may be seriously injured or killed.
- The safety routines must be read and observed to avoid accidents, *refer to page 34.*

**WARNING**
Risk of injury from suspended load
There is a danger for persons due to falling load.
- Pay attention to sufficient carrying load of the hoist.
- Do not stay under the suspended load.
- If work has to be performed under the load, securely support the load.

Removing 8 / 10-row spout extension

BX001-633
- The spout is located on the right side of the machine and is fully lowered.
- The spout flap has been completely opened.
- The hydraulic circuits are depressurised.
- The machine is shut down and secured, *refer to page 34.*
- Unscrew the nut (2) and remove the cover (3).
- Detach the plug connection (1).
Disconnect the hydraulic hoses (5) from the hydraulic lines.

**NOTICE!** The weight of the "8-row spout extension" is approx. 80 kg. The weight of the "10-row spout extension" is approx. 112 kg. Pick up the spout extension (1) using a suitable load handling attachment.

- Remove the screws (4, 6).
- Detach the spout extension (1) from the supports (3) of the "spout basic" (2) and lift to the side.
- Attach the required spout extension, *refer to page 247.*

### Removing 12 / 14-row spout extension

- The spout is located on the right side of the machine and is fully lowered.
- The spout flap has been completely opened.
- The spout extension has been folded in.
- The hydraulic circuits are depressurised.
- The machine is shut down and secured, *refer to page 34.*
- Remove the nuts (2) and remove the cover (3).
- Detach the plug connection (1).
Disconnect the hydraulic hoses (4) from the hydraulic lines.

**NOTICE!** The weight of the "12-row spout extension" is approx. 165 kg. The weight of the "14-row spout extension" is approx. 180 kg. Pick up the spout extension (1) using a suitable load handling attachment.

- Remove the screws (2, 6).
- Detach the spout extension (1) from the supports (3) of the spout basic (5) and lift to the side.
- Attach the required spout extension, refer to page 247.
13 Start-up – Maize mode

⚠️ WARNING

Risk of injury due to non-observance of relevant safety instructions
If the relevant safety instructions are not observed, persons may be seriously injured or killed.
▶ To avoid accidents, the relevant safety instructions must be read and observed, refer to page 19.

⚠️ WARNING

Risk of injury due to non-observance of safety instructions
If the relevant safety routines are not observed, persons may be seriously injured or killed.
▶ The safety routines must be read and observed to avoid accidents, refer to page 34.

This chapter describes the conversion from grass mode to maize mode.

Prerequisites for maize mode:
- The power cable and the lubrication line have been attached,
- The clamping bar has been removed,
- The grass channel has been removed,
- The corn conditioner has been installed,
- The kraftband has been attached,
- The stop cock for the belt tensioner is open, refer to page 245.
- The hydraulic system has been set to maize mode, refer to page 232.
- The conveyor bars of the pre-compression roller have been fitted in such a way that the serrated side is used, refer to page 433.
- The chopping blades for maize mode have been fitted, refer to page 417.
- The counterblade for maize mode has been fitted, refer to page 430.
- The side tank and the additional tank are connected to the main tank, refer to page 246.
- The EasyCollect header has been fitted, refer to page 265.
- The season setting on the terminal has been adjusted to maize mode, refer to page 206.
- The lifting unit has been calibrated, refer to page 182.
- The spout extension has been attached, refer to page 247.
- The rear weight has been attached, refer to page 252.

Access to the corn conditioner/grass channel

The corn conditioner or the grass channel is accessed from the right side of the machine, behind the side hood on the right.

Prerequisites for installation and removal

- The side hood on the right is open.
- The rear axle has been completely raised using the keypad.
- The machine is shut down and secured, refer to page 34.
13 Start-up – Maize mode

13.1 Removing the grass channel

To remove the cover (1), unlock the quarter turn fasteners (2).
Set down the cover (1) outside of the machine.

The machine is shut down and safeguarded, refer to page 34.
The crop flow cover is removed, refer to page 241.

To unlock the grass channel (4) loosen the screws (2) on both sides and rotate the lock (1) to the side.
Pull out the grass channel (4) on the handles (3) and set it down to the side.
13.2 Installing the corn conditioner

Overview

1 Lock corn conditioner / grass channel
2 Kraftband
3 Connecting rod
4 Assembly equipment with roller chain
5 Central lubrication
6 Power supply

- The rear axle is in the top position.
- The machine is shut down and safeguarded, refer to page 34.

Removing the crop flow cover

- To remove the cover (1), unlock the quarter turn fasteners (2).
- Set down the cover (1) outside of the machine.
- The crank handle and the operation device (on the "Electric VariQuick" design) are in the machine’s tool box.
13 Start-up – Maize mode
13.2 Installing the corn conditioner

- Attach the crank handle (2) to the connecting rod (1).

**On the "Electric VariQuick" design**
- Connect the operation device (3) to the socket (4)

- Push the corn conditioner (1) from the right side of the machine and centre it under the assembly equipment (2).

- Position the retainer hooks (5) of the roller chain above the crank handle, or for the "Electric VariQuick" design above the operation device so that the retainer hooks (3) of the corn conditioner can be attached.

- Secure the retainer hooks (3) with a linch pin (6).

- Rotate the corn conditioner (1) as far upward until the wheels of the corn conditioner are exposed.

- Remove the wheel (1).

- Place the kraftband (3) onto the belt pulley (2).
NOTICE! The roller chain may be damaged by the wheels of the corn conditioner!

- Rotate the corn conditioner (1) upward until there is a \(X=15\) cm clearance between the lock (2) and the stop (3).
- Make sure that the locking (2) on both sides are in horizontal position.
- Remove the wheels (4).

Completely rotate the corn conditioner upward.
- Rotate the locking (1) downward on both sides and secure them with the screws (2).
- Release the strain on the roller chain by turning the crank handle (one turn).

**INFORMATION**

For the "Electric VariQuick" design, the strain release on the roller chain occurs automatically.

- Remove the crank handle and the operation device (on the "Electric VariQuick" design) and stow them in the machine’s tool box.
13 Start-up – Maize mode

13.2 Installing the corn conditioner

In order to be able to attach the kraftband (1), insert the manual lever (3) into the sleeve (4)
on the tensioning arm (2) and press the belt tensioner (2) down towards the front.

Attach the kraftband (2).

Remove the manual lever (3).

Establish the plug connection (1) for the power supply.

Connect the lubrication lines (2).

Connect the covers (3) to one another.

Mounting the crop flow cover

Attach the cover (1) and lock with the quarter turn fasteners (2).

Calibrating corn conditioner

Calibrate corn conditioner, refer to page 187
13.3 Adjusting ventilation slot

To ensure an adequate discharge capacity during maize mode, the cover of the ventilation slot should be removed.

**Removing**

- Loosen the wing nuts (1).
- Pull out the cover sheet (2) backwards.
- Tighten the wing nuts (1).

Store the cover sheet in a safe place for subsequent reinstallation, e.g. In the tool box.

**Mounting the crop flow cover**

- Attach the cover (1) and lock with the quarter turn fasteners (2).
13.4 Mounting grain capture sheet

To install the grain capture sheet:

- Loosely attach the bracket (2) to the grain capture sheet (1) using coach screw (3), disc, detent edged washer and locknut.
- Insert the grain capture sheet (1) in such a way that the front folded edge of the grain capture sheet is above the trough at the front.
- Attach the grain capture sheet to the intake unit using hexagon head screws, detent edged washers and discs (4).
- Tighten the screw connection for bracket (2) and grain capture sheet (1).

13.5 Connecting the side and additional tanks from the main tank

The main tank (2) can be connected to the side tank (1) and the additional tank (3) during maize operation to increase the tank volume for fuel.

If the side tank is to be used as a water or silage additives tank, the material needed for this purpose can be ordered under the accessories kit number 204289870.
13.5.1 Connecting the side tank to the main tank

To connect the side tank (1) to the main tank (4):
- The machine is shut down and secured.
- Open the shut-off valve (3) on the main tank (4) and the valve (2).
- Check the screw connections for leak-tightness.

13.5.2 Connecting the additional tank to the main tank

To connect the additional tank to the main tank (2):
- The machine is shut down and secured.
- Open the valve (3) and the shut-off valve (1) on the main tank.
- Check the screw connections for leak-tightness.

13.6 Mounting spout extension

**WARNING**

Risk of injury due to non-observance of relevant safety instructions

If the relevant safety instructions are not observed, persons may be seriously injured or killed.
- To avoid accidents, the relevant safety instructions must be read and observed, refer to page 19.
WARNING
Risk of injury due to non-observance of safety instructions
If the relevant safety routines are not observed, persons may be seriously injured or killed.
- The safety routines must be read and observed to avoid accidents, refer to page 34.

WARNING
Risk of injury from suspended load
There is a danger for persons due to falling load.
- Pay attention to sufficient carrying load of the hoist.
- Do not stay under the suspended load.
- If work has to be performed under the load, securely support the load.

Converting spout flap
When using the "8-row spout end piece", the following must be converted:

EasyFlow:
- Straight spout flap

EasyCollect and XDisc:
- Conical spout flap

Removing spout flap

1. The spout is located on the right side of the machine and is fully lowered.
2. The spout flap has been completely opened.
3. The hydraulic circuits are depressurised.
4. The machine is shut down and secured, refer to page 34.
5. Remove the cotter pin (8) and the bolt (7) and take the hydraulic cylinder (6) out of the holder.
6. Remove the screws (3) from the guidance (5).
7. Detach the springs (4).
8. Remove the screws (2) and remove the flap (1).

Attaching spout flap
Insert the flap (1) and attach the screws (2).
Hook in the springs (4).
Attach the guidance (5) with the screws (3).
Insert the hydraulic cylinder (6) into the holder, attach the bolt (7) and the cotter pin (8).

**Attaching 8 / 10-row spout extension**

- The spout is located on the right side of the machine and is fully lowered.
- The spout flap has been completely opened.
- The hydraulic circuits are depressurised.
- The spout extension has been removed, refer to page 236.
- The machine is shut down and secured, refer to page 34.

**NOTICE!** The weight of the "8-row spout extension" is approx. 80 kg. The weight of the "10-row spout extension" is approx. 112 kg. Pick up the pre-assembled spout extension (1) using a suitable load handling attachment.

- Hook the spout extension (1) into the supports (3) of the "spout basic" (2) and attach the screws (4, 6).
- Connect the hydraulic hoses (5) to the hydraulic lines.
13 Start-up – Maize mode

13.6 Mounting spout extension

- Attach the plug connection (1).
- Attach the cover (3) and screw on the nut (2).
- Adjust the start-up safety mechanism of the spout, refer to page 252.
- Make a setting on the terminal to ensure that a spout extension has been attached, refer to page 193.

Attaching 12 / 14-row spout extension

- The spout is located on the right side of the machine and is fully lowered.
- The spout flap has been completely opened.
- The hydraulic circuits are depressurised.
- The spout extension has been removed, refer to page 236.
- The machine is shut down and secured, refer to page 34.

NOTICE! The weight of the "12-row spout extension" is approx. 165 kg. The weight of the "14-row spout extension" is approx. 180 kg. Pick up the pre-assembled spout extension (1) using a suitable load handling attachment.

- Hook the spout extension (1) into the supports (3) of the "spout basic" (5) and attach the screws (2, 6).
Attach the plug connection (1).
Attach the cover (3) and screw on the nut (2).

Connect the hydraulic hoses (4) to the hydraulic lines.
Set the folding-in/folding-out speed, refer to page 251.
Adjust the start-up safety mechanism of the spout, refer to page 252.
Make a setting on the terminal to ensure that a spout extension has been attached, refer to page 193.

Setting the folding-in/folding-out speed of the 12 /14-row spout extension

To set the folding-out speed, turn the setting screw (1) on the throttle check valve.
To set the folding-in speed, turn the setting screw (2) on the throttle check valve.
Setting the start-up safety mechanism of spout

The start-up safety mechanism must be set via compression spring (6), matching the mounted spout extension. This prevents that the forces on the spout become too great if the start-up safety mechanism triggers.

The following table lists the setting values for the prestressing dimension X of the compression spring (6) depending on spout extension:

<table>
<thead>
<tr>
<th>Spout extension</th>
<th>Prestressing dimension X</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 rows extension</td>
<td>124 mm</td>
</tr>
<tr>
<td>10 rows extension</td>
<td>122 mm</td>
</tr>
<tr>
<td>12 rows extension</td>
<td>120 mm</td>
</tr>
<tr>
<td>14 rows extension</td>
<td>118 mm</td>
</tr>
</tbody>
</table>

Setting the prestressing dimension of the compression spring (6):

- Loosen the counter nut (1).
- Turn the nut (2) until the required prestressing dimension X is set. Measure the prestressing dimension X from upper side of the pressure sleeve (7) to holding sheet of the spring hanger (5).
- Tighten the counter nut (1).
- Check axial play of disc (4).
  - The disc (4) does not have any axial play and cannot be turned.
  - Set the axial play of the disc via the hexagon head screw (3) to 0-1 mm.

13.7 Attach rear weight

**INFORMATION**

After the rear weight has been attached, the roller guides for supporting the header can no longer be lowered as deeply as prior to when the rear weight was attached.

For example, it is possible that the header that was not previously detached can no longer be attached.

- Prior to removing the header, set the support jacks on the header to be somewhat longer than usual.
\begin{tabular}{|p{0.95\textwidth}|}
\hline
\textbf{WARNING} \\
\hline
\textbf{Risk of injury from suspended load} \\
There is a danger for persons due to falling load. \\
\begin{itemize}
  \item Pay attention to sufficient carrying load of the hoist.
  \item Do not stay under the suspended load.
  \item If work has to be performed under the load, securely support the load.
\end{itemize}
\hline
\end{tabular}

\begin{tabular}{|p{0.95\textwidth}|}
\hline
\textbf{WARNING} \\
\hline
\textbf{Risk of injury due to unexpected movements when operating the machine} \\
If the rear weight and the front-mounted EasyCollect header are not coordinated with each other, there is a risk that the machine may overturn when braked or when driving on slopes. \\
\begin{itemize}
  \item Do not drive the machine on the road or use it for work unless the rear weight, stipulated for the combination of machine and fitted header, has been attached.
\end{itemize}
\hline
\end{tabular}

When a header is being used, the machine may be ballasted with a rear weight behind the rear axle. The rear weight (1) consists of a basic weight (consisting of four weight plates and one intermediate plate) and a maximum of five additional weight plates. The number of required additional weights depends on the machine type, the permitted front axle load and on the type of header, refer to page 74.

\begin{itemize}
  \item The machine is shut down and secured, refer to page 34.
\end{itemize}

Screw fastening material for mounting, refer to parts list in the instructions for accessories kit “Rear Weight”.

\begin{itemize}
  \item BX001-901
\end{itemize}
13 Start-up – Maize mode
13.7 Attach rear weight

Attaching the basic weight

 BX001-902 / BX001-903

- Attach the basic weight consisting of four weight plates (1), one intermediate plate (2), 6 threaded pieces (3), 4 sleeves (4), 2 tongues (5), 2 forklift pockets (6) and 2 screw-on brackets (7) using the supplied screw connection material.

Attach the ramming protection to the basic weight

 BX001-904

- Attach the ramming protection (1) to the basic weight (2) using the supplied screw connection material.

 ✓ The rear weight is pre-assembled with the corresponding number of intermediate plates and the end plate, refer to instructions for accessories kit "rear weight".

Attach the rear weight to the forage harvester

 BX001-905 / BX001-906
The rear weight has a maximum weight of approx. 1,600 kg depending on the number of weight plates.

- Attach the two supports (1) for the basic weight to the main frame of the forage harvester.
- Lift the rear weight using a forklift or similar hoist, drive it to the machine from behind and push the screw-on brackets (2) onto the rear weight into the attached supports (1).
- Screw on the rear weight using the supplied screw connection material.
- Check the tyre pressure, refer to page 73.
### 14 Start-up – Attaching and removing EasyFlow

#### WARNING

**Risk of injury due to non-observance of relevant safety instructions**

If the relevant safety instructions are not observed, persons may be seriously injured or killed.

- To avoid accidents, the relevant safety instructions must be read and observed, refer to page 19.

#### WARNING

**Risk of injury due to non-observance of safety instructions**

If the relevant safety routines are not observed, persons may be seriously injured or killed.

- The safety routines must be read and observed to avoid accidents, refer to page 34.

#### WARNING

**Risk of injury due to unexpected movement of the header and moving components!**

There is an increased risk of injury when mounting and dismounting headers to or from the machine.

- Switch off the forage harvester engine, remove the ignition key and take it with you.
- Secure machine by means of wheel chocks against rolling away.
- Wait until all machine parts have come to a complete stop.
- Make sure that there is no one between forage harvester and header.
- Ensure that nobody reaches into the clearance between the header and machine.
- Before working under or on the raised header, support the header securely.
- There must be nobody in the swivel range while the header is being swivelled from the transport into the working position and vice versa.

#### NOTICE

**Damage to the machine by turning the quick connector without attached header**

If the quick connector is driven without the header attached, the machine may be damaged, as the clutch disc of the quick connector is not controlled.

- Ensure that the quick connector is not driven unless a header has been attached.
- If the intake is to be run without a header for maintenance purposes, remove the universal shaft from the forage harvester beforehand.

Only those headers may be attached which have been type tested by the manufacturer and approved for use, refer to page 76.

When operating the forage harvester with a header, read and follow the operating instructions supplied with the header before using it.

**Prerequisites for attaching and removing a header:**

- The machine has been safely parked, refer to page 27.
- There must be adequate room to manoeuvre the forage harvester.
- All prerequisites for grass mode / operation with the direct cut header refer to page 226 or maize mode refer to page 239 are met.
14.1 Mounting EasyFlow

14.1.1 Preparing the intake

To prepare the forage harvester for attachment of the header:

- Lower the intake (1) of the forage harvester all the way.
- Align the pendulum tube (2) horizontally on the intake.
- Remove the locking pins (3).

Prepare quick-coupler (for "Hydraulic comfortable header locking with quick-coupler" version)

To prepare the coupling for attachment of the header:

- Clean the clutch disc (1) on the header and lubricate the coupling surfaces with multi-purpose grease.
- Clean the coupling journal (2) on the machine and lubricate the coupling surfaces with multi-purpose grease.
14 Start-up – Attaching and removing EasyFlow

14.1 Mounting EasyFlow

14.1.2 Connecting EasyFlow

For "Mechanical header locking with universal shaft" version

CHECK LIST
- The intake is prepared for the attachment, refer to page 257.

WARNING! Crush hazard due to moving machine parts! Ensure that there is nobody between the machine and the header.

- Drive the machine up to the header until the roll guides (1) are under the pendulum crossbar (2).
- Slowly raise the lifting unit and ensure that the pendulum crossbar (2) is properly and completely supported by the roll guides (1).

During the lifting process the centring triangles (3) run into the locking sheets (4).

- Shut down and secure the machine, refer to page 34.
- Check whether the centring triangles (1) are on the contour (5) of the locking sheets (2) and whether the pendulum crossbar (7) is completely in the grooves of the roller guides (6).
- Fit the locking pins (3) and secure each one with a tube linchpin (4).
- Slide the universal shaft onto the drive journal of the header until the slider pin engages.
Start-up – Attaching and removing EasyFlow

Mounting EasyFlow

14

For "Hydraulic comfortable header locking with quick-coupler" version

✓ The intake is prepared for the attachment, *refer to page 257.*

**Crush hazard due to moving machine parts! Ensure that there is nobody between the machine and the header.**

- Drive the machine up to the header until the roll guides (1) are under the support chute (2).
- Unlock the header locking above the additional keypad, *refer to page 102.*
- Slowly raise the lifting unit and ensure that the pendulum crossbar (2) is properly and completely supported by the roll guides (1).

During the lifting process the centring triangles (3) run into the locking sheets (4).

- Release the "Open header locking" key.
  - Lock the locking pins (3).
- Shut down and secure the machine, *refer to page 34.*
- Check whether the centring triangles (1) are positioned on the locking sheets (2), the locking pin (3) is locked and the roll guides (4) are positioned on the pendulum crossbar (5).

BiG X 880
Original Operating Instructions 150000768_00_en
14 Start-up – Attaching and removing EasyFlow

14.1 Mounting EasyFlow

- Open the flap (1) on the protective cap.
- Check whether the clutch disc (2) of the main angular gearbox is positioned evenly on the coupling journal of the forage harvester (3).
  - The clutch disc is not positioned evenly.
- The main gearbox of the header must be adjusted, see operating instructions for the header – Initial start-up "Adjusting main gearbox".
- Close the flap (1) on the protective cap.

14.1.3 Checking seal on adapter frame

To prevent soiling, the seals (1) of header (3) must rest against intake housing (2) of precision forage harvester.

- Always check the seals (1) for damage before the machine is used.
- Replace damaged seals (1) before use.
- Ensure that the seals (1) of header (3) are positioned on the intake housing (2) after the precision forage harvester has been connected.

14.1.4 Connecting hydraulic hoses

**WARNING**

Risk of injury from unexpected movements of the header

If the hydraulic hoses are interchanged when connecting them, the header will not function correctly.

- Identify hydraulic connections (hose markings).
- Check that the hose connections are fitted correctly.
14.1.5 Moving parking jacks on right/left into transport position

- On both sides swivel the socket pin (3) of the support jacks (4) 180° upwards and pull it out.
- Push the support jacks (4) upwards and secure them in the borehole (5) with the socket pin (3). Lock the socket pins (3) by turning them 180° downwards.
- Fold in the support wheels.

14.2 Removing EasyFlow

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Risk of injury from movement of the header</strong></td>
</tr>
<tr>
<td>If people are in the area of the header when it is being raised or lowered and folded in or out, there is a risk that these people may be caught and injured by the header or the lifting unit.</td>
</tr>
</tbody>
</table>
- When the header is moving, ensure that there is nobody in the area of the header or the lifting unit. |
The machine is shut down and secured, refer to page 34.

- On both sides swivel the socket pins (3) of the support jacks (4) 180° upwards and pull them out.
- Pull out the support jacks (4) and lock with the socket pin (3) in the fifth hole from the bottom by turning it 180° downwards.
- Start the diesel engine.
- Fold out the support wheels and lower the pick-up onto the ground.

Shut down and safeguard the machine, refer to page 34.

- Press the locking pin of the universal shaft and remove the universal shaft from the drive journal of the header.
- Disconnect the hydraulic hoses (1) from the plug-in connections and place in the hose support (2) on the intake of the forage harvester.
- Disconnect the plug connection (3) from the machine and place with attached cover flap (4) in the hose support (2).
For "Mechanical header locking with universal shaft" version

- Remove the tube linchpins (4) and the locking pins (3).
- Start the diesel engine.
- Lower the lifting unit of the forage harvester until the roll guides (6) are not in contact with the pendulum crossbar (7).
- Move the forage harvester back.

For version with "Hydraulic comfort header locking with quick coupler"

- Start diesel engine.
- Unlock the locking pins (1) via additional keypad.
- Lower the lifting unit of the forage harvester so that the roll guides (2) cannot collide with the mounting chute (3).
- Move the forage harvester back.

14.3 Putting Down EasyFlow
Set the EasyFlow (1) down, with support jacks (2) extended, on a solid and level surface and in a dry and clean place.

- To bring the support jacks into working position: See the operating instructions for the header, chapter Operation – Dismantling the machine "Bring right/left support jacks into working position".
- Park the machine safely, refer to page 27.
### Start-up – Attaching and removing EasyCollect

#### WARNING

**Risk of injury due to non-observance of relevant safety instructions**

If the relevant safety instructions are not observed, persons may be seriously injured or killed.

- To avoid accidents, the relevant safety instructions must be read and observed, **refer to page 19**.

#### WARNING

**Risk of injury due to non-observance of safety instructions**

If the relevant safety routines are not observed, persons may be seriously injured or killed.

- The safety routines must be read and observed to avoid accidents, **refer to page 34**.

#### WARNING

**Risk of injury due to unexpected movement of the header and moving components!**

There is an increased risk of injury when mounting and dismounting headers to or from the machine.

- Switch off the forage harvester engine, remove the ignition key and take it with you.
- Secure machine by means of wheel chocks against rolling away.
- Wait until all machine parts have come to a complete stop.
- Make sure that there is no one between forage harvester and header.
- Ensure that nobody reaches into the clearance between the header and machine.
- Before working under or on the raised header, support the header securely.
- There must be nobody in the swivel range while the header is being swivelled from the transport into the working position and vice versa.

#### NOTICE

**Damage to the machine by turning the quick connector without attached header**

If the quick connector is driven without the header attached, the machine may be damaged, as the clutch disc of the quick connector is not controlled.

- Ensure that the quick connector is not driven unless a header has been attached.
- If the intake is to be run without a header for maintenance purposes, remove the universal shaft from the forage harvester beforehand.

Only those headers may be attached which have been type tested by the manufacturer and approved for use, **refer to page 76**.

When operating the forage harvester with a header, read and follow the operating instructions supplied with the header before using it.

#### Prerequisites for attaching and removing a header:

- The machine has been safely parked, **refer to page 27**.
- There must be adequate room to manoeuvre the forage harvester.
- All prerequisites for grass mode / operation with the direct cut header **refer to page 226** or maize mode **refer to page 239** are met.
15.1 Mounting EasyCollect

15.1.1 Preparing the intake

To prepare the forage harvester for attachment of the header:

- Lower the intake (1) of the forage harvester all the way.
- Align the pendulum tube (2) horizontally on the intake.
- Remove the locking pins (3).

Prepare quick-coupler (for "Hydraulic comfortable header locking with quick-coupler" version)

To prepare the coupling for attachment of the header:

- Clean the clutch disc (1) on the header and lubricate the coupling surfaces with multi-purpose grease.
- Clean the coupling journal (2) on the machine and lubricate the coupling surfaces with multi-purpose grease.
15.1.2 Connecting EasyCollect

For "Mechanical header locking with universal shaft" version

- The intake is prepared for the attachment, refer to page 257.

**WARNING!** Crush hazard due to moving machine parts! Ensure that there is nobody between the machine and the header.

- Drive the machine up to the header until the roll guides (1) are under the support chute (2).
- Slowly raise the lifting unit and ensure that the support chute (2) is properly and completely supported by the roll guides (1).

During the lifting process the centring triangles (3) run into the locking sheets (4).

- Shut down and secure the machine, refer to page 34.
- Check whether the centring triangles (1) are on the contour (5) of the locking sheets (2) and whether the pendulum crossbar (7) is completely in the grooves of the roller guides (6).
- Fit the locking pins (3) and secure each one with a tube linchpin (4).
- Slide the universal shaft onto the drive journal of the header until the slider pin engages.
For "Hydraulic comfortable header locking with quick-coupler" version

**WARNING**

**Risk of injury from rotating clutch disc**

If the protective cap does not overlap the quick-coupler housing following installation, there is a risk of people being injured by the rotating clutch disc.

- Ensure that the protective cap overlaps the quick-coupler housing.
- If this is not the case:
- Re-adjust the main gearbox of the header, see operating instructions for the header, chapter Initial start-up, "Adjusting main gearbox" so that the protective cap overlaps the quick-coupler housing and the clutch disc is positioned evenly on the coupling journal.

![Diagram BX001-535]

- The intake is prepared for the attachment, *refer to page 257.*

**Crush hazard due to moving machine parts! Ensure that there is nobody between the machine and the header.**

- Drive the machine up to the header until the roll guides (1) are under the support chute (2).
- Unlock the header locking above the additional keypad, *refer to page 102.*
- Slowly raise the lifting unit and ensure that the support chute (2) is properly and completely supported by the roll guides (1).

During the lifting process the centring triangles (3) run into the locking sheets (4).

![Diagram BX001-536]

- Release the "Open header locking" key.
Lock the locking pins (3).

- Shut down and secure the machine, refer to page 34.
- Check whether the centring triangles (1) are positioned on the locking sheets (2), the locking pin (3) is locked and the roll guides (4) are positioned on the pendulum crossbar (5).

Press the protective cap to the side and check whether the clutch disc (1) of the input gearbox is positioned evenly on the coupling journal of the forage harvester.

- The clutch disc is not positioned evenly.
- The main gearbox of the header must be adjusted, see operating instructions for the header – Initial start-up "Aligning clutch disc".

15.1.3 Connecting hydraulic hoses

**WARNING**

**Risk of injury from unexpected movements of the header**

If the hydraulic hoses are interchanged when connecting them, the header will not function correctly.

- Identify hydraulic connections (hose markings).
- Check that the hose connections are fitted correctly.

Connect the hydraulic hoses (1) to the corresponding plug-in connections on the EasyCollect. Connect the hydraulic hose 1 to the plug-in connection 1 etc.

Establish the plug connection (2) for the lighting and the sensors with the socket (3) on the maize header.
**INFORMATION**

The marking on the plug-in connections (I-IV) on the machine is also on the hydraulic hoses of the forage harvester.

### 15.1.4 Moving parking jacks on right/left into transport position

**EasyCollect 450-2, 600-2, 750-2**

Rear support jacks on the right/left
- Remove the spring locking pins (2) and pull the rear support jacks (4) out of the guidance.
- Push the rear support jacks (4) into the holders (5) of the lateral frames in such a way that no plant remnants can collect in the area (6) above the support jacks.
- Secure the position of the rear support jacks (4) with the spring locking pins (2).

Front support jacks on the right/left
- Remove the spring locking pins (2) and pull the front support jacks (1) out of the guidance.
- Push the foot of the front support jacks onto the guide pins (3) in the holders on the lateral frames.
- Secure the position of the front support jacks (1) with the spring locking pins (2).

**EasyCollect 600-3, 750-3, 900-3**

Rear support jacks on the right/left
- Remove the spring locking pins (2) and push in the rear support jacks (1).
- Secure the position of the rear support jacks (1) with the spring locking pins (2).
Front support jacks on the right/left
- Remove the spring locking pins (2) and pull the front support jacks (3) out of the insert pockets.
- Insert the front support jacks (3) into the insert pockets (4) on the base frame.
- Secure the position of the front support jacks (1) with the spring locking pins (2).

15.2 Removing EasyCollect

**WARNING**

**Risk of injury from movement of the header**

If people are in the area of the header when it is being raised or lowered and folded in or out, there is a risk that these people may be caught and injured by the header or the lifting unit.
- When the header is moving, ensure that there is nobody in the area of the header or the lifting unit.

Moving parking jacks on right/left into support position

**EasyCollect 450-2, 600-2, 750-2**

To ensure that the forage harvester can accommodate the maize header, the height of the roller guides on the forage harvester must be matched to the height of the pendulum crossbar on the maize header. For this purpose, the rear support jacks must be differently aligned depending on the tyre diameter.

- If the front axle tyres on the forage harvester are 34 inches or less, insert the spring locking pin into the upper hole pattern (1).
- If the front axle tyres on the forage harvester are 38 inches or more, insert the spring locking pin into the upper hole pattern (2).
Rear support jacks on the right/left

- Remove the spring locking pins (2) and pull the rear support jacks (4) out of the holders (5) on the lateral frame.
- Push the rear support jacks (4) into the rear guidances on the lateral frames.
- Secure the position of the rear support jacks (4) with the spring locking pins (2).

Front support jacks on the right/left

- Remove the spring locking pins (2) and pull the front support jacks (1) from the guide pins (3) and take out of the holders on the lateral frames.
- Push the front support jacks (1) into the front guidances on the lateral frames.
- Secure the position of the front support jacks (1) with the spring locking pins (2).

EasyCollect 600-3, 750-3, 900-3

- Remove the spring locking pins (2) and pull out the rear support jacks (1).
- Secure the position of the rear support jacks (1) with the spring locking pins.

Front support jacks on the right/left

- Remove the front support jacks (3) from the insert pockets (4) and place them in the front holders.
- Secure the position of the front support jacks (3) with the spring locking pins (2).
The maize header is folded in.
- The lifting unit has been completely raised.
- The machine is shut down and secured.
- Fold out the maize header (only EasyCollect 450-2, 600-2, 750-2).
- Lower the lifting unit completely onto the ground.
- Disconnect the hydraulic hoses (1) from the plug-in connections and place in the hose support (2) on the intake of the forage harvester.
- Disconnect the plug connection (3) and place with attached cover flap (4) in the hose support (2).

For "Mechanical header locking with universal shaft" version

- Remove the tube linchpins (4) and the locking pins (3).
- Start the diesel engine.
- Lower the lifting unit of the forage harvester until the roll guides (6) are not in contact with the pendulum crossbar (7).
- Move the forage harvester back.

For version with "Hydraulic comfort header locking with quick coupler"
15.3 Putting down EasyCollect

Set the EasyCollect (1) down, with support jacks (2) extended, on a solid and level surface and in a dry and clean place.

- To bring the support jacks into working position: See the operating instructions for the header, chapter Operation – Dismantling the machine "Bring right/left support jacks into support position".
- Park the machine safely, refer to page 27.
16 Start-up – Attaching and removing XDisc

**WARNING**

Risk of injury due to non-observance of relevant safety instructions
If the relevant safety instructions are not observed, persons may be seriously injured or killed.
▶ To avoid accidents, the relevant safety instructions must be read and observed, refer to page 19.

**WARNING**

Risk of injury due to non-observance of safety instructions
If the relevant safety routines are not observed, persons may be seriously injured or killed.
▶ The safety routines must be read and observed to avoid accidents, refer to page 34.

**WARNING**

Risk of injury due to unexpected movement of the header and moving components!
There is an increased risk of injury when mounting and dismounting headers to or from the machine.
▶ Switch off the forage harvester engine, remove the ignition key and take it with you.
▶ Secure machine by means of wheel chocks against rolling away.
▶ Wait until all machine parts have come to a complete stop.
▶ Make sure that there is no one between forage harvester and header.
▶ Ensure that nobody reaches into the clearance between the header and machine.
▶ Before working under or on the raised header, support the header securely.
▶ There must be nobody in the swivel range while the header is being swivelled from the transport into the working position and vice versa.

**NOTICE**

Damage to the machine by turning the quick connector without attached header
If the quick connector is driven without the header attached, the machine may be damaged, as the clutch disc of the quick connector is not controlled.
▶ Ensure that the quick connector is not driven unless a header has been attached.
▶ If the intake is to be run without a header for maintenance purposes, remove the universal shaft from the forage harvester beforehand.

Only those headers may be attached which have been type tested by the manufacturer and approved for use, refer to page 76.

When operating the forage harvester with a header, read and follow the operating instructions supplied with the header before using it.

**Prerequisites for attaching and removing a header:**

✔ The machine has been safely parked, refer to page 27.
✔ There must be adequate room to manoeuvre the forage harvester.
✔ All prerequisites for grass mode / operation with the direct cut header refer to page 226 or maize mode refer to page 239 are met.
16.1 Mounting XDisc

16.1.1 Preparing the intake

To prepare the forage harvester for attachment of the header:

- Lower the intake (1) of the forage harvester all the way.
- Align the pendulum tube (2) horizontally on the intake.
- Remove the locking pins (3).

Prepare quick-coupler (for "Hydraulic comfortable header locking with quick-coupler" version)

To prepare the coupling for attachment of the header:

- Clean the clutch disc (1) on the header and lubricate the coupling surfaces with multi-purpose grease.
- Clean the coupling journal (2) on the machine and lubricate the coupling surfaces with multi-purpose grease.
16.1.2 Connecting XDisc

For "Mechanical header locking with universal shaft" version

![Diagram of XDisc connection]

✓ The intake is prepared for the attachment, refer to page 257.

**WARNING!** Crush hazard due to moving machine parts! Ensure that there is nobody between the machine and the header.

- Drive the machine up to the header until the roll guides (1) are under the support chute (2).
- Slowly raise the lifting unit and ensure that the support chute (2) is properly and completely supported by the roll guides (1).

During the lifting process the centring triangles (3) run into the locking sheets (4).

- Shut down and secure the machine, refer to page 34.
- Check whether the centring triangles (1) are on the contour (5) of the locking sheets (2) and whether the pendulum crossbar (7) is completely in the grooves of the roller guides (6).
- Fit the locking pins (3) and secure each one with a tube linchpin (4).
- Slide the universal shaft onto the drive journal of the header until the slider pin engages.
For "Hydraulic comfortable header locking with quick-coupler" version

✓ The intake is prepared for the attachment, refer to page 257.

Crush hazard due to moving machine parts! Ensure that there is nobody between the machine and the header.

- Drive the machine up to the header until the roll guides (1) are under the support chute (2).
- Unlock the header locking above the additional keypad, refer to page 102.
- Slowly raise the lifting unit and ensure that the support chute (2) is properly and completely supported by the roll guides (1).

During the lifting process the centring triangles (3) run into the locking sheets (4).

- Release the "Open header locking" key.
  - Lock the locking pins (3).
- Shut down and secure the machine, refer to page 34.
- Check whether the centring triangles (1) are positioned on the locking sheets (2), the locking pin (3) is locked and the roll guides (4) are positioned on the pendulum crossbar (5).
Check whether the clutch disc (1) of the main gearbox is positioned evenly on the coupling journal of the forage harvester (2).

- The clutch disc is not positioned evenly.
- The main gearbox of the header must be adjusted, see operating instructions for the header – Initial start-up "Adjusting main gearbox".

### 16.1.3 Moving parking jacks on right/left into transport position

- On both sides swivel the socket pin (3) of the parking jacks (4) 180° upwards and pull it out.
- Push the parking jacks (4) upwards and secure them in the borehole (5) with the socket pin (3).
- Lock the socket pin (3) by turning it 180° downwards

### 16.2 Removing XDisc

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk of injury from movement of the header</td>
</tr>
<tr>
<td>If people are in the area of the header when it is being raised or lowered and folded in or out, there is a risk that these people may be caught and injured by the header or the lifting unit.</td>
</tr>
<tr>
<td>When the header is moving, ensure that there is nobody in the area of the header or the lifting unit.</td>
</tr>
</tbody>
</table>
The lifting unit is in the top position.
The machine is shut down and secured, refer to page 34.

- On both sides swivel the socket pin (3) of the parking jacks (4) 180° upwards and pull it out.
- Pull out the parking jacks (4) and lock with the socket pin (3) in the fifth hole from below by turning it 180° downwards.
- Press the slider pin of the universal shaft and remove the universal shaft from the drive journal of the header.

For "Mechanical header locking with universal shaft" version

Remove the tube linchpins (4) and the locking pins (3).
Start the diesel engine.
Lower the lifting unit of the forage harvester until the roll guides (6) are not in contact with the pendulum crossbar (7).
Move the forage harvester back.

For version with “Hydraulic comfort header locking with quick coupler”
Start diesel engine.
Unlock the locking pin (1) via additional keypad.
Lower the lifting unit of the forage harvester so that the roll guides (2) cannot collide with the mounting chute (3).
Move the forage harvester back.

16.3 Putting down XDisc

Set the XDisc (1) down on solid and level ground with the support jacks (2) extended and park it in a dry and clean place.
To bring the support jacks into working position: See the operating instructions for the header, chapter Operation – Dismantling the machine "Bring right/left support jacks into working position".
Park the machine safely, refer to page 27.
17 Driving and Transport

**17.1 Transport/road travel**

### WARNING

**Risk of injury due to non-observance of relevant safety instructions**

If the relevant safety instructions are not observed, persons may be seriously injured or killed.

- To avoid accidents, the relevant safety instructions must be read and observed, refer to page 19.

### WARNING

**Risk of injury due to non-observance of safety instructions**

If the relevant safety routines are not observed, persons may be seriously injured or killed.

- The safety routines must be read and observed to avoid accidents, refer to page 34.

---

### 17.1 Transport/road travel

**WARNING**

**Risk of injury when driving on public highways**

Due to the large dimensions of the machine, the unusual driving behaviour and the option of riding on the outside of the machine while it is being driven, the risk of accidents for machine personnel and third parties is increased.

- Swivel the header into the transport position.
- Swivel the spout into the transport position.
- When driving on public highways, observe the provisions of the Road Traffic Licensing Regulations (lighting, identification).
- Ensure that nobody is riding on the machine.
- Always adapt the driving speed of the machine on road and field to the given conditions.
- When driving down hills, on inclines or through obstacles, adjust driving behaviour to environmental conditions.
- Note that the machine swings out when cornering.

---

### 17.2 Starting engine

**WARNING**

**Risk of poisoning from toxic exhaust gases**

If the machine is operated in closed rooms without adequate ventilation, the pollutant load increases in the air.

Thus there is a risk of serious injuries or death.

- Never allow the engine to run in closed rooms.
- Vent the room sufficiently.
**WARNING**

Risk of people being struck and crushed in the vicinity of the machine due to the movement of the machine.

When the machine moves, people nearby are at risk of being run over and crushed by the machine.

- Only start the engine from the driver's seat.
- Make sure that there is no one in the danger zone of the machine.
- Actuate horn.

---

**WARNING**

Risk of injury during operation

If the driver is not protected from the engine noise while working, his hearing will be permanently damaged.

- Make sure that the doors and windows of the cabin are closed while the machine is used.

---

1. Press the main battery switch (1) to close the circuit, refer to page 56.
2. The main battery switch LED is lit.
3. The Main Mode Switch (2) is in the "Neutral" position (3), refer to page 99.

---

1. Turn the ignition key (1) in the ignition lock clockwise to position “II”.
2. The charging warning light (2) lights up.
3. Wait for at least 2 seconds, then turn the ignition key in the ignition lock into the position “III”.

---
When the engine starts:

- Immediately release the ignition key.
- The ignition key automatically jumps to the operating position.
- The charging warning light (2) goes out.
- Let engine run at idle until the coolant temperature display increases.

If the charging warning light (2) lights up:

- Switch off engine and eliminate the fault.

If the engine does not start within 30 seconds:

- Turn ignition key to “STOP” position.
- After one minute delay repeat the starting process.

If the engine still does not start:

- Turn the ignition key to the “STOP” position.
- Rectify the cause of the poor starting behaviour, see applicable engine manufacturer operating instructions.

### 17.2.1 Observing warning lights

**Charging warning light (1):**

The charging warning light is not lit at all when the ignition key is in ignition step I; it is lit steady in ignition step II and briefly after the diesel engine starts.

If the charging warning light is lit continuously, the output voltage of the alternator is not adequate to charge the batteries.

- Check the cables and connections on the alternator and the batteries, alternator refer to page 469, batteries refer to page 465.
- Check the V-belt on the alternator, refer to page 469.
17.3 Behaviour after the engine has stalled

**NOTICE**

**Heat accumulation after the engine has stalled**

If a warm engine stalls, the heat accumulation, caused by the lack of cooling, may damage the engine.

- Immediately start again when a warm engine is stalled.
- Before finally switching engine off, allow it to run at idle speed for at least 3 minutes.

17.4 Starting up machine

**WARNING**

**Danger to life by movements of the machine**

People are at risk from the large movements of the machine, unusual driving behaviour and the option of riding on the outside of the machine while it is being driven.

- Make sure that there is no second person on the machine when travelling.
- Adapt driving speed of machine on road and field to the given conditions.
- When driving down hills, on inclines or through obstacles, adjust driving behaviour to environmental conditions.
- Make sure when driving around curves that the machine does not swing out.

17.4.1 Setting the acceleration behaviour

Four different acceleration stages can be selected, even while driving, with the "Acceleration stage" switch (2) attached to the control lever (1).

If the control lever (1) is actuated constantly in one direction and at a constant engine speed, the driving speed will increase slowest in acceleration stage I and fastest in acceleration stage IV.

- Switch to the required acceleration stage using the "Acceleration stage" switch (2).
- The selected acceleration stage (3) is displayed on the working screen of the terminal.
17.4.2 Notes on driving the machine

- Adapt driving behaviour to the modified handling of the machine due to rear steering.
- Take into consideration the different ways the machine handles in acceleration stages 1 - 4.
- Respond to the different handling of the machine in road mode and field mode.
- If an error message is indicated on the terminal, immediately stop and eliminate the error. If this is not possible, inform a KRONE service partner.
- Adapt driving behaviour to the particular terrain and ground conditions, refer to page 315.

Emergency steering forces

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

17.4.3 Driving forwards and stopping
Driving forwards from standstill:

- Set the main mode switch to “road mode” or “field mode” position, refer to page 99.
- Release the parking brake, refer to page 290.
- Press and hold the activation key for traction drive (2).
- Push control lever (1) to the front.
- The machine moves forward and accelerates.
- Release the control lever (1) to keep the speed at constant level.
- The control lever automatically returns to the central position (0).
- To slow down the machine, pull the control lever (1) backward while driving.
- The machine is decelerated until it is at standstill.

### 17.4.3.1 Cruise control

The cruise control can be activated only when travelling forwards.

When cruise control is activated, the machine is accelerated or decelerated with the set acceleration stage to the speed saved for operation with the cruise control.

#### Saving speed for operation with cruise control

- Accelerate the machine to the desired speed.
- While driving, press and hold down the activation key for the traction drive (2) and at the same time, move the control lever (1) to the right and back to the central position.
- The current driving speed is saved.

The saved speed (3) is displayed on the working screen of the terminal display.

The speed is saved for the operating mode the machine is currently in. One speed each can be saved for road travel and field mode.

If the operating mode (“Road mode”/“Field mode”) is changed, the display switches to the value saved for the corresponding operating mode (road or field speed).

#### Activating cruise control

- While driving, actuate the control lever (1) to the right.
- The machine is started with the set speed.

The icon ![12.0 km/h](image) with the value of the set speed appears on the display.
Deactivating cruise control

Cruise control is deactivated by overriding the control lever, actuating the service brake or switching off the traction drive.

17.4.4 Driving backward and stopping

Reverse from standstill:

- Set the main mode switch to “road mode” or “field mode” position, refer to page 99.
- Release the parking brake, refer to page 290.
- Press and hold down the activation key for traction drive (2).
- Pull control lever (1) to the rear.
  - The machine moves backward and accelerates.
- Release the control lever (1) to keep the speed at constant level.
  - The control lever automatically returns to central position (0).
- To decelerate the machine, push control lever (1) to the front while driving.
  - The machine is decelerated until it is at standstill.

17.5 Stopping the machine

The machine can be stopped with both control lever and service brake.
17.5.1 Stopping machine by using control lever

Stopping from forward travel

Pull the control lever (1) backwards while driving.
The machine decelerates until it stops.

Stopping from reverse travel

Move the control lever (1) to the front while driving.
The machine decelerates until it stops.

Quickly braking the machine

To slow down the machine quickly, move the control lever (1) to the left while driving.
17.6 Applying parking brake

**WARNING**

Risk of injury due to the unsecured machine rolling away
If the unsecured machine starts moving, there is a risk of people being struck or run over.

► When the “Parking brake” key has been pressed, check the status of the parking brake on the terminal or via the LED in the “Parking brake” key.
**INFORMATION**

If the "Parking brake" key is pressed while driving, the traction drive is braked and, when the machine has stopped, the parking brake is applied.

The parking brake is automatically released or applied under certain operating conditions and can be manually actuated by pressing the "Parking brake" key (1).

---

To apply the parking brake manually via the keypad:

- Press the "Parking brake" key (1).

To release the parking brake manually via the keypad:

- When the diesel engine is running, depress the brake pedal.
- Press the "Parking brake" key (1).

The status of the parking brake is indicated by the LED in the "Parking brake" key:

- The parking brake has been applied when the LED is lit.
- The parking brake has been released when the LED is not lit.

---

The status of the parking brake is also displayed on the working screen of the terminal:

- The parking brake has been applied when the "Parking brake" indicator lamp appears on the terminal.
- The parking brake has been released when the "Parking brake" indicator lamp is not lit on the terminal.
17.7 Switching off the engine

**NOTICE**

**Engine will be damaged by heat accumulation**
If the engine is immediately switched off after operation under load, the heat accumulation, caused by the lack of cooling, may damage the engine.
► Before switching off the engine, let it run at idle speed for at least 3 minutes.

► Stop the machine, refer to page 288.
► To cool down the engine, leave the engine running for three minutes at a low idle speed.

**WARNING**

**Risk of injury due to the unsecured machine rolling away**
If the machine is not secured against rolling away when it has been switched off, there is a risk of people being injured by the machine rolling away in an uncontrolled manner.
► Park the machine safely and secure it against rolling away.

To park the machine safely and secure it against rolling away:
► Stop the machine on a level, solid surface.
► Place the header on the ground.
► Set the main mode switch to “neutral mode”.
► To tighten the parking brake, actuate the “Parking brake” key.
To allow the engine to cool off, let it run at lower idle for three minutes.

Turn the ignition key anti-clockwise to the “STOP” position, remove the ignition key and take it with you.

Mount the both wheel chocks.

### 17.9 Preparing the machine for road travel

Prepare the machine for road travel:

- If a maize header is front-mounted: Attach the guard and the lighting onto the header, see operating instructions for the header, and then swivel the header with the lifting unit into transport position, [refer to page 294](#).
- If a pick-up is front mounted: swivel the header with the lifting unit into transport position, [refer to page 294](#).
- If a direct cut header is front mounted: set down the direct cut header onto the transport wagon, attach the transport wagon and swivel the intake with the lifting unit into transport position, [refer to page 296](#).
- If no header is front mounted: swivel the intake with the lifting unit into transport position, [refer to page 296](#).
- Make sure that the spout is in transport position, [refer to page 296](#).
- Ensure that the wheel chocks have been removed from the wheels and place them in the supports at the rear of the machine.
- Ensure that the area around the machine can be seen; if required adjust the inner, outer and anti-collision mirrors.
- Ensure that there are no warning messages on the terminal.
- Turn the Main Mode Switch to “Road mode”.

### 17.9.1 Transport position

[Diagram of machine in transport position]

For road travel, the spout (1) and the attached header (3) or the intake (2) (without an attached header) must be in transport position.

- Bring the header (3) into the transport position, [refer to page 294](#).
- Bring the intake (2) into the transport position, [refer to page 296](#).
- Bring the spout (1) into the transport position, [refer to page 296](#).
17.9.2 Moving header to transport position

**WARNING**

**Risk of injury from movement of the header**

If people are in the area of the header when it is being raised or lowered and folded in or out, there is a risk that these people may be caught and injured by the header or the lifting unit.

- When the header is moving, ensure that there is nobody in the area of the header or the lifting unit.

- The driver's seat is occupied.
- The diesel engine has been started.
- The Main Mode Switch is in the "Field mode" position.
- There is adequate space for lifting and lowering.

**Pick-up**

- Press the "Manually raise lifting unit" (1) key until the dimension X=400-450 mm (distance from the lower edge of the header (2) to the ground) has been reached.
- Move the crop press roller unit (3) into the lower position.
- Completely fold in the guide wheels (4).

During road travel, active vibration damping operates continuously which is also active if the operator button has not been pressed after the diesel engine has been switched on.

**EasyCollect**

To ensure that the maize header can be folded in, the plant divider must be swivelled up and the pendulum tube horizontally aligned.
Swivelling up the plant divider

- Press the "Swivel up plant divider" key (3) on the keypad until the plant divider (1) has been completely swivelled up.

Folding in the maize header

The pendulum tube is automatically aligned horizontally when the "Fold in maize header" key is pressed.

- Hold down the "Fold in maize header" key (4) on the keypad until the side parts (5, 6) have been completely folded in.

- Attach the left and right guards and the front guard, see operating instructions for the header, chapter Operation, "From working position to transport position".

**INFORMATION**

If the pendulum tube is no longer horizontal during the folding-in process, an information message appears on the terminal and the folding-in process is interrupted.

To fold in the maize header when the pendulum tube is not horizontal:

- Press the "Fold in maize header" key on the keypad again and hold down.

  ☞ The maize header folds in.

---

To raise the header (3):

- Press and hold down the "Manually raise lifting unit" key (1).

  The header (3) is raised as long as the key is pressed.

When the maize header has been folded in, the lifting height is limited to 60% of the maximum lifting unit height.

To lower the header (3):

- Press and hold down the "Manually lowering lifting unit" key (2) on the control lever.

  The header (3) is lowered as long as the key is pressed.

During road travel, active vibration damping operates continuously which is also active if the operator button has not been pressed after the diesel engine has been switched on.
17.9.3 Moving intake into transport position

If the machine should be driven on roads without header, the lower edge of intake must be set to a height of \( X = 400 \text{ mm} \pm 100 \text{ mm} \).

- The driver's seat is occupied.
- The diesel engine has been started.
- The main mode switch is in the "Field mode" position.
- There is adequate space for lifting and lowering.
- There is nobody in the area of the intake.

Raise or lower the intake by using the "Manually raise lifting unit" and "Manually lower lifting unit" keys (1) until the dimension \( X = 400 \text{ mm} \pm 100 \text{ mm} \) from lower edge of intake to ground is reached.

Set the main mode switch to “road mode”.

17.9.4 Swivelling spout into transport position

**WARNING**

Crush hazard due to the moving spout

People, who are near the drive sprocket of the spout when the spout is being swivelled, may be injured.

- When swivelling the spout, ensure that there is nobody near the drive sprocket.

**WARNING**

Risk of injury caused by put down spout (with mounted spout extension)

With mounted spout extension (optional), the spout flap extends as far downward when spout is put down so that road users are endangered during road travel.

- When driving on roads, fold in the spout extension (optional), refer to page 321.

- The driver's seat is occupied
- The diesel engine has been started
- The Main Mode Switch is in the "Field mode" position
- The main coupling is off
To swivel the spout into the transport position:

- Press the "spout in transport position" key (1).
- The spout (2) moves automatically into the transport position.
- Visually check the exact parking position of the spout (2) on the support bearing (3).

If the spout (2) is not centred on the support bearing:

- Use the manual control to move the spout into the correct position, refer to page 321.

## 17.10 Towing the machine

**WARNING**

Risk of accident due to increased steering and braking forces.

If the machine is being towed a longer distance, there is a danger that the driver will lose control of the machine, because the diesel engine is stopped, which increases steering and braking forces. As a result, people may be seriously injured or killed.

- Ensure that there is nobody inside the danger zone.
- Tow the machine out of the danger zone only and never tow over prolonged distances.
- Note that steering and braking forces are increased when the diesel engine is stationary.

**NOTICE**

Damage to the machine due to incorrect operation

If the machine is not towed correctly, power transmission components or the diesel engine may be damaged.

- Do not tow the machine unless absolutely essential.
- Tow the machine by pushing it with the attached tow bar only.
- Tow the machine at maximum 8 km/h and for not longer than 45 min.
- Turn the Main Mode Switch to "Neutral mode".
- Release the parking brake, if required release manually, refer to page 298.
- Switch off the diesel engine.
- Switch on the ignition so that the direction indicators/flashing warning lamps and the brake lamps function.
- Pull out fuses F98 and F29 so that the hydraulic motors run at idle, refer to page 491.
For towing, choose either the tow coupling or, according to the fitted header, suitable suspension points at the front side of the machine.

- Remove the fuses F98 and F29, refer to page 491.
- Turn the Main Mode Switch to "Neutral mode".
- Release the parking brake.
- Switch off the diesel engine.
- Turn the ignition key in the ignition lock to the "I" position so that the direction indicators/flash warning lamps and the brake lamps function.

If the machine no longer builds up the oil pressure required for releasing the parking brake:

- Release the parking brake manually, refer to page 298.

### 17.10.1 Releasing the parking brake manually

The ladder to the cabin is swivelled to the side, refer to page 363.

![Diagram of parking brake mechanism](BXG000-062)

Securing the machine against rolling away:

- Shut down and secure the machine, refer to page 34
- Place the wheel chocks on the right and left, in front of and behind the wheels of the front axle.

The parking brake can be released with the hand pump (1):

- Swivel the stop cock (2) into the closed position (II).
- Insert the pump lever (3) into the pump holder (4) on the hand pump.
- Release the parking brake by pumping the hand pump.

If the effort during pumping increases considerably:

- Check whether the brake has been released by moving the machine.
- As long as the stop cock (2) is in the closed position (II), the parking brake is released.

Restoring the braking function on the parking brake:

- Swivel the stop cock (2) into the open position (I).
17.11 Preparing the machine for shipment

**NOTICE**

Damage to the exhaust gas aftertreatment system due to water penetrating through the exhaust pipe.

If the machine is being transported opposite to the direction of travel on an lorry trailer, rain water may penetrate into the exhaust pipe into the exhaust gas aftertreatment system and this may cause damage to the exhaust gas aftertreatment system.

- Only transport the machine on a lorry trailer facing in the direction of travel.

17.11.1 Lashing points

**WARNING**

Danger to life caused by machine movement

If the machine is not properly lashed when being transported on a truck or vessel, the machine may move unintentionally and endanger people.

- Before transporting the machine, secure it properly by using the provided lashing points and suitable lashing material.

Appropriate lashing points are provided on the machine for attachment of the lashing material.

[Diagram showing lashing points]

- 1 Front axle lashing point on right
- 2 Front axle lashing point on left
- 3 Rear lashing point on right
- 4 Rear lashing point on left
- 5 Rear axle lashing point on left
- 6 Rear axle lashing point on right
18 Operation device

18.1 Raising and lowering lifting unit

**WARNING**

**Risk of injury due to non-observance of relevant safety instructions**

If the relevant safety instructions are not observed, persons may be seriously injured or killed.

- To avoid accidents, the relevant safety instructions must be read and observed, refer to page 19.

---

**WARNING**

**Risk of injury due to non-observance of safety instructions**

If the relevant safety routines are not observed, persons may be seriously injured or killed.

- The safety routines must be read and observed to avoid accidents, refer to page 34.

---

**WARNING**

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

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

- Do not start the machine until all safety devices have been fitted and are in sound condition.
- Ensure that there is nobody in the danger zone of the machine (safety distance: 3 m at the side, 5 m behind the machine).

If people enter the danger zone:

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

Special instructions on the use of the particular header attached can be found in the operating instructions for the header.

The settings for field mode, such as operating mode, working width, header, intake, silage fodder addition, lifting unit, corn conditioner and customer data, refer to page 113 and refer to page 145.

---

18.1 Raising and lowering lifting unit

**WARNING**

**Risk of injury from movement of the header**

If people are in the area of the header when it is being raised or lowered and folded in or out, there is a risk that these people may be caught and injured by the header or the lifting unit.

- When the header is moving, ensure that there is nobody in the area of the header or the lifting unit.
The driver's seat is occupied.
The diesel engine has been started.
The Main Mode Switch is in the "Field mode" position.
There is adequate space for lifting and lowering.
There is nobody in the area of the intake.

To raise the header (3):

- Press and hold down the "Manually raising lifting unit" key (1) on the control lever.
  The header (3) is raised as long as the key is pressed.

When the pick-up is attached, the maximum height which can be reached is the upper position of the intake.
When the maize header is folded in, the lifting height is limited to 60% of the maximum lifting height of the intake.

To lower the header (3):

- Press and hold down the "Manually lowering lifting unit" key (2) on the control lever.
  The header (3) is lowered as long as the key is pressed.
The lowest height is reached when the header touches the ground.

18.2 Aligning pendulum tube horizontally

**INFORMATION**

The position and the status of pendulum tube can be displayed in the information area of the terminal, refer to page 138.

The pendulum tube can be raised and lowered on the left or right so that the movement of header can be adjusted to the ground contours.

The pendulum tube must be adjusted horizontally for attachment of header.
To lower the pendulum tube (3) on the left and raise it on the right:

- Press and hold down the “Lower pendulum frame on left” key (1) until the pendulum tube is aligned horizontally.

To lower the pendulum tube (3) on the right and raise it on the left:

- Press and hold down the “Lower pendulum frame right” key (2) until the pendulum tube has been aligned horizontally.

### 18.3 Releasing header locking

**For version with “Hydraulic comfort header locking with quick coupler”**

The header locking lock fixes the headers if they have been supported by the roll guides of the forage harvester.

The locking is implemented by locking pins which move into a hole pattern in the locking sheets of the headers.

When fitting header to the machine for the first time and whenever changing the header, check the position of the locking sheets and the coupling disc and adjust if required. To adjust, see the header operating instructions.

To attach and remove header, the locking bolts (1) must be retracted. When selecting the “Header locking” function, the pendulum frame is automatically aligned horizontally.

- The header drive is switched off.

To open header locking, first select “Header locking” function in the additional keypad:

- Press “Open header locking” (2) key.
  - The “Header locking” function is selected and the “Retract” key is lit.
- Press the “Retract” key (3) and hold it down.
  - After 4 seconds, the locking bolts are pulled towards the middle of the vehicle and the header locking is opened.

The header locking remains open as long as the “Retract” key is pressed.

To close header locking again:

- Release the “Retract” key (3).
- The locking pins move outwards and the header locking is locked.
18.4 Trailer operation

⚠️ WARNING

Risk of injury due to unauthorised trailer and incorrect connection
The risk of accidents is increased by unauthorised trailers and incorrect connection.

- Only connect trailer which has its own brake.
- Connect trailer to the tow coupling only.
- Observe the specifications in the operating instructions for the machine and trailer.
- When connecting and disconnecting a trailer, proceed particularly carefully and prudently.
- Ensure that the technical limit values are observed for the tow coupling, refer to page 22 and refer to page 67.

NOTICE

Damage to the tow coupling and the parts of the drive
If stuck vehicles are retrieved using the tow coupling or are towed over prolonged distances, parts on the machine may be damaged.

- Tow the machine using the tow coupling at maximum 6 km/h and for not longer than 50 min.
- Do not use the tow coupling to retrieve the stuck machine.
- Do not use the tow coupling to tow other vehicles.
- Do not use the tow coupling to retrieve stuck vehicles.

The forage harvester is equipped as standard with a trailer coupling. Only trailers which have their own brake system may be used.

![Diagram of trailer coupling with numbers and labels]

- 1 Trailer coupling
- 2 12 volt socket for lighting (optional)
- 3 Compressed air connections for dual line brake (optional)
- 4 Auxiliary hydraulics (optional)
18.4.1 Connecting trailer

**WARNING**

**Risk of injury due to non-roadworthy trailer/tractor combination**

If the support, axle and trailer loads are exceeded during operation, the trailer/tractor combination is no longer roadworthy.

- When operating with the trailer, ensure that the permitted support, axle and trailer loads are not exceeded.

**WARNING**

**Risk of injury due to unexpected movements of machine and trailer**

If there are people between the machine and trailer during the coupling process and if the uncoupled trailer moves in an uncontrolled manner, there is a risk of injury.

- Make sure that there is no one between machine and trailer.
- Secure trailer against rolling away.

---

To connect the trailer:

- Secure the trailer against rolling away.
- Adjust the drawbar eye of the trailer to the height of the tow coupling.
- To open the tow coupling, press the hand lever (1) upwards as far as the locking point.
- Clean the tow coupling.
- Slowly reverse the machine until the drawbar eye engages in the tow coupling.

**WARNING! Risk of injury due to insecurely locked trailer. After making the connection, ensure that the bolt (2) is completely engaged.**

- Check whether the control pin (3) locks flush with the surface of the housing.
- Connect the power supply plugs and check the lighting system of the trailer.

If the trailer has a supporting wheel:

- Raise the support wheel.
18.4.2 Disconnecting trailer

**WARNING**

Risk of injury due to unexpected movements of machine and trailer

If there are people between the machine and trailer during the coupling process and if the uncoupled trailer moves in an uncontrolled manner, there is a risk of injury.

- Make sure that there is no one between machine and trailer.
- Secure trailer against rolling away.

![Image of hand lever and release lever](BX001-591)

- Secure the trailer against rolling away.
- Remove the power supply plugs.

If the trailer has a supporting wheel:

- Lower the support wheel.

To disconnect the trailer:

- To open the tow coupling, press the hand lever (1) upwards as far as the locking point.
- Slowly move the machine forwards until the drawbar eye has been removed from the tow coupling.

**WARNING!** Injuries to hands caused by descending locking pin. Do not actuate the release lever (2) by hand. Actuate the tow coupling by hand using the hand lever (1) only.

To protect the aperture of the locking pin from soiling:

- Lock the tow coupling by pressing the hand lever (1) downwards.

18.5 Silage additives unit

**WARNING**

Risk of injury due to silage additives

If handled improperly, the chemicals used in the silage additives unit may cause damage to health.

- The silage additives unit may only be operated by persons who are familiar with these Operating Instructions and the safety data sheet of the manufacturer of the silage additives. The safety instructions issued by the silage additive manufacturer must be followed.
- The operator must be instructed in the safe handling of the chemicals used.
NOTICE

Damage to the silage additives unit due to low exterior temperatures
If there is any water left in the silage additives unit prior to it being stored for the winter, the unit is at risk of being damaged by frost.

- Fill the silage additives tank with a biological frost protection agent prior to storing it for the winter and allow the silage additives unit to pump in "Continuously active" mode for ten minutes with a dosing quantity of 75%.
- After the winter, before the season begins, fill the silage additives tank with clear water and allow the silage additives unit to pump in "Continuously active" mode for ten minutes with a dosing quantity of 75%.

18.5.1 Internal silage additives unit coarse dosing (for "Controlled silage additives unit" design)

NOTICE

Damage to the silage additives unit by using incorrect silage additives
If the silage additives unit is operated with aggressive or corrosive silage additives, parts of the silage additives unit may be damaged.

- Do not use aggressive or corrosive silage additives in the silage additives unit.

The internal silage additives unit coarse dosing is a controlled silage additives unit with a silage additives tank (1) on the right cabin platform. The pump, the valves and the filter of the silage additives unit are behind the flap (2) on the right side of the ladder.

For operating and setting the silage additives unit in the terminal, refer to page 192.

To get to the operating elements of the silage additives unit:

- Open the flap (2).

Technical data

<table>
<thead>
<tr>
<th>Pump</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical Connection</td>
<td>24 V direct voltage</td>
</tr>
<tr>
<td>Maximum power consumption</td>
<td>5 A</td>
</tr>
<tr>
<td>Enclosure material (of the components that come into contact with the silage additives)</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>Material of the gearwheels</td>
<td>Teflon</td>
</tr>
<tr>
<td>Maximum operating pressure of the pump</td>
<td>4 bar</td>
</tr>
</tbody>
</table>
### Pump

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material of the valves</td>
<td>Polypropylene</td>
</tr>
<tr>
<td>Maximum media temperature</td>
<td>+70° C</td>
</tr>
<tr>
<td>Delivery capacity (discharge accelerator injection point)</td>
<td>0.5 l/min to 7.2 l/min</td>
</tr>
<tr>
<td>Maximum suction height</td>
<td>1.5 m</td>
</tr>
<tr>
<td>Type of application/duration</td>
<td>Intermittent/continuous operation</td>
</tr>
</tbody>
</table>

### Flow sensor

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing/cover material</td>
<td>PVDF</td>
</tr>
<tr>
<td>Temperature range</td>
<td>0° C to +120° C</td>
</tr>
<tr>
<td>Measuring range</td>
<td>0.5 l/min to 10 l/min</td>
</tr>
<tr>
<td>Maximum operating pressure/bursting pressure</td>
<td>6 bar / &gt;16 bar</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-10° C to +120° C</td>
</tr>
</tbody>
</table>

### Operating internal silage additives unit

During normal operation, the silage additives pump (3) sucks the silage additives from the silage additives tank on the right platform.

- Set the three-way stopcock (1) on the tank in position II (RUN).
- Set the three-way stopcock (2) on the silage additives pump in position IV (RUN).
- The silage additives is pumped out of the silage additives tank on the right platform.

### Running the internal silage additives unit from the left side tank (for the "Side tank for silage additives use" design)

**INFORMATION**

**Bacterial in the silage additives die in the left side tank at high exterior temperatures**

Because the left side tank is not insulated, the bacteria in the silage additives may die at high exterior temperatures.

- At high exterior temperatures, use the insulated silage additives tank on the right cabin platform only.
If the silage additives should be pumped out of the side tank (3):

- Set the three-way stopcock (1) on the tank in position II (RUN).
- Set the three-way stopcock (2) on the silage additives pump in position III (FLUSH).
- The silage additives is pumped from the side tank (3).

**Empty silage additives tank on the right cabin platform**

**NOTICE**

**Damage to the environment caused by silage additives**

If the silage additives and the rinsing water leak into the ground or the surface water, the environment will be damaged

- Dispose of the silage additives residue and the rinsing water properly.

To empty the silage additives tank on the right cabin platform:

- Set a sufficiently large and adequate container below the silage additives drain (3) behind the right front wheel.
- Set the three-way stopcock (1) on the tank in position I (DRAIN).
- Set the three-way stopcock (2) on the silage additives pump in position IV (RUN).
- The silage additives run through a drain hose into the supplied container.
Cleaning internal silage additives unit

**NOTICE**

**Damage to the flow sensor due to incorrect cleaning**

If the flow sensor is cleaned with compressed air, components may be damaged.

- Do not clean flow sensor with compressed air.

The silage additives unit must be cleaned after each use. Clean the tank using fresh water that is either filled in the silage additives tank or that is pumped with the silage additives pump through a hose into the silage additives unit.

**Cleaning the internal silage additives unit with water from the silage additives tank**

- Fill 5 to 10 litres of fresh water into the silage additives tank (3) on the right platform.
- Set the three-way stopcock (1) on the tank in position II (RUN).
- Set the three-way stopcock (2) on the silage additives pump in position IV (RUN).

- Allow a dosing quantity of 75% to pump through the silage additives unit in "Continuously active" mode, refer to page 192.
Cleaning the internal silage additives unit with water from the connected hose

- Provide a tank containing 5 to 10 litres of fresh water.
- Set the three-way stopcock (1) on the tank in position II (RUN).
- Set the three-way stopcock (2) on the silage additives pump in position III (FLUSH).
- Connect a hose (4) to the hose connection (3).
- Hold the end of the hose (4) into the provided bucket with fresh water.

- Allow a dosing quantity of 75% to pump through the silage additives unit in "Continuously active" mode, refer to page 192.

18.5.2 Internal silage additives unit fine dosing (for "controlled silage additives unit fine dosing" design)

**NOTICE**

**Damage to the silage additives unit by using incorrect silage additives**

If the silage additives unit is operated with aggressive or corrosive silage additives, parts of the silage additives unit may be damaged.
- Do not use aggressive or corrosive silage additives in the silage additives unit.

The internal silage additives unit fine dosing is a controlled silage additives unit, which has a canister with silage additives in a support on the right side of the ladder and which is connected to the pump of the silage additives unit.

The two canisters that belong to the silage additives unit can be used alternately and can be stored filled in a refrigerator so the that bacteria do not die in the silage additives.

For operating and setting the silage additives unit in the terminal, refer to page 310.
To get to the canister and to the operating elements of the silage additives unit (1):

- Open the flap (2).

**Operating internal silage additives unit fine dosing**

- Open the flap (1) and remove it.

Fill the canister (2) with silage additives:

- Unscrew the cover (3) off of the canister (2).

- Fill the canister (2) with fresh water and the silage additives. Make a note of the exact amount of water and silage additives.

- Place the canister (1) through the opening in the support and lock it in place with the lock (2).
Connect the hose (2) to the connector (1).
Reattach the flap (3) and close it.
At the terminal, enter the type of attached nozzles and the amount of silage additives in the tank and operate the silage additives unit from the terminal, refer to page 310.

Cleaning the internal silage additives unit fine dosing

The silage additives unit fine dosing must be cleaned after each use.

Open the flap (1) and remove it.
Press the release button (2) and remove the hose (3).

Turn the lock (1) to the side and in doing so, unlock the canister.
Remove the canister from the support.
Take the hose (2) with the wing nut (1) off of the connection and remove the filter (3).
Rinse the filter (3) with clear water.
Reinsert the filter (3) and attach the hose (2) with the wing nut (1).

Remove the screws (1) and remove the support (2).
Remove the nut (3) and take out the filter (4) and the nozzle (5).
Rinse the filter (4) and the nozzle (5) with clear water.
Reinsert the filter (4) and the nozzle (5) and tighten the nut (3) so that it is hand-tight.
Mount the support (2) using the screws (1).

Remove the cover (2) and the drain hose (3).
Rinse the canister (1) and the drain hose (3) well with clear water.
18 Operation device
18.5 Silage additives unit

- If any residual water remains in the canister, drain the water through the drain sleeve (4).
- When assembling the drain hose (3), make sure that the lower end reaches up to the sump of the canister (1).
- Fill the canister (1) with clear water, reinstall it and allow the internal silage additives unit fine dosing to pump in "Continuously active" mode for ten minutes with a dosing quantity of 75%, refer to page 310.

18.5.3 Connecting an additional silage additives unit (for "External silage additives unit" version)

An external silage additives unit can be connected. The electrical connection for the dosing unit is located behind the cover sheet (1).

Connecting the dosing unit to the electrical connection:
- Dismount the screw (4).
- Swivel the lubricant container (2) of the central lubrication to the side.
- Remove the four screws (3)
- Remove the cover sheet (1).
- Connect the plug X224.2 (1) to the external dosing unit.

Pin assignment:
Pin 1: +12 volt supply voltage
Pin 2: +12 volt control signal
Pin 3: Ground
The maximum amperage is 15 A.
- Mount the cover sheet (1) using the four screws (3).
- Swivel the lubricant container (2) of the central lubrication back into place.
- Mount the screw (4)

For operating and setting the silage additives unit, refer to page 191.
18.6 Field mode on slopes

- When using the forage harvester with a maize header, do not bring the maize header from working position into transport position or from transport position into working position as long as the machine is on a diagonal to the slope.
- Before working on a slope, increase the tyre pressure in the front wheels by 0.5 bar more than indicated in the tyre pressure table, refer to page 73.
- After working on the slope, the tyre pressure must be set to the values in the tyre pressure table, refer to page 73.

18.7 Fast change of direction of travel (fast reversing)

During fast reversing, the machine decelerates to a standstill and accelerates in the opposite direction to 70% of the previous driving speed.

Fast reversing is possible in field mode only.

- The main mode switch is in the “Field mode” position.

To activate fast reversing:
- While driving, press and hold down the activation key for the traction drive (2), move the control lever (1) to the left and back to the central position.
18.8 Operating intake/header

**WARNING**

Risk of injury from moving components of intake or header

When the intake and header are switched on, unforeseeable movements of the intake rollers and header may occur and endanger people.

- Ensure that people are at an adequate distance from the intake and the header.

**NOTICE**

Damage to the machine by turning the quick connector without attached header

If the quick connector is driven without the header attached, the machine may be damaged, as the clutch disc of the quick connector is not controlled.

- Ensure that the quick connector is not driven unless a header has been attached.
- If the intake is to be run without a header for maintenance purposes, remove the universal shaft from the forage harvester beforehand.

To adjust the setpoint speed of header and the chop length, refer to page 135

Switching on intake/header

[BX001-593]

- The driver's seat is occupied.
- The engine is started.
- The main mode switch (2) is in the “Field mode” position (3).
- The main clutch is switched off (1).

**INFORMATION**

When the intake and header are switched on for the first time, the intake rollers and the header must be reversed by the driver to remove any soiling. Only then the intake and header can be switched on.
To switch on the intake/header:

- Press the “Reverse intake/header” key (2) on the control lever.
- Press the “Intake/header on” key (1) on the control lever.

The header and intake rollers are switched on.

**Switching of intake/header**

- Press the “Intake/header on/off” key (1) on the control lever.

The header and the intake rollers are switched off.

**Reversing intake/header**

To remove blockages and faults in the crop flow which occur during operation, the intake and the header can be reversed.

To reverse the intake/header from the driver's seat:

- Press and hold down the “Reverse intake/header” key (2) on the control lever.

The header and the intake rollers will reverse for as long as the “Reverse intake/Header” key (2) is pressed.

The “Reverse intake/Header” key (2) on the control lever can be pressed even when the intake/ header is switched on. Then the intake/header must be switched on again.
18.9 Lifting unit control

To optimise field mode, the position of the header is controlled via the lifting unit of the forage harvester. To have the best conditions for the particular application, one of the three following lifting unit controls can be selected.

- Lifting unit position control
  When the lifting unit position control is active, the control unit sets the height of the header to a constant value relative to the machine.
- Lifting unit bearing pressure control
  When the lifting unit bearing pressure control is active, the control unit adjusts the pressure of the header on the ground to a constant value.
- Lifting unit distance control (optional)
  When the lifting unit distance control is active, the control unit constantly adjusts the height of the header relative to the ground by active oscillation and automatic raising/lowering of the lifting unit. The lifting unit distance control can be activated only in conjunction with an attached maize header and with attached ground contour sensors.

To set the lifting unit control and the setpoint pressure or setpoint height, refer to page 135.

Activating the lifting unit position control

1. Press the "Lower lifting unit" key (1).
2. Press the "Raise lifting unit" key (2).

Changing and saving the setpoint height (working height) on the control lever

1. Use the "Raise lifting unit" (2) or "Lower lifting unit" (1) keys to move to the new setpoint height.
2. Press the "Automatic lifting unit" key (3) for 3 seconds.

The new setpoint height is saved and a corresponding information message appears on the terminal.
Activating the set setpoint height

- Press the "Automatic lifting unit" key (3).

The lifting unit is raised or lowered to the set setpoint height. The icon is indicated with the set setpoint height on the terminal. The lifting unit position control is active.

Deactivating the lifting unit position control

The lifting unit position control is deactivated:
- If the lifting unit is manually controlled with keys (1) and (2).
- If the diagnostic electronics detect an error.

Setting and saving the lifting height for the headland

<table>
<thead>
<tr>
<th>BX000-321</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
</tbody>
</table>

- Press the "Raise lifting unit" (2) or "Lower lifting unit" (1) keys to move to the lifting height.
- Press the "Raise lifting unit to top" key (4) for 3 seconds.

The lifting height is saved and a corresponding information message appears on the terminal.

Repeat the process for a new lifting height.

Raising lifting unit to the headland position

- Press the "Raise lifting unit to top" (4) key.

The lifting unit is raised to the set lifting height.

Activating the lifting unit bearing pressure control

<table>
<thead>
<tr>
<th>BXG001-020</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
</tbody>
</table>

BiG X 880
Original Operating Instructions 150000768_00_en 319
The following sequences: activation, control, activate setpoint pressure and change and save setpoint pressure on the terminal correspond to the procedure used for the lifting unit position control.

Raising and lowering the lifting unit for the lifting unit bearing pressure control

Use the "Raise lifting unit" (2) or "Lower lifting unit" (1) keys.

When the key (1 or 2) has been released, the position controller keeps the lifting unit at a constant lifting height.

To activate the lifting unit bearing pressure control:

Press the "Automatic lifting unit" key (3).

The lifting unit, controlled by positioned, is lowered to the ground and is automatically set to the lifting unit bearing pressure control.

Activating the lifting unit distance control (optional)

The following sequences: activation, control, activate setpoint height and change and save setpoint height on the terminal correspond to the procedure used for the lifting unit position control.
18.10 Setting spout

**WARNING**

Risk of injury caused by put down spout (with mounted spout extension)

With mounted spout extension (optional), the spout flap extends as far downward when spout is put down so that road users are endangered during road travel.

- For road travel, fold in the spout extension (optional).

The spout has been designed in such a way that it can be operated in trailer operation as well as with forage transport wagons driving in parallel alongside on the right and left.

The movements of the spout are controlled with the control lever and the keypad.

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Designation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&quot;Turn spout left&quot; key</td>
<td>Turns the spout to the left</td>
</tr>
<tr>
<td>2</td>
<td>&quot;Turn spout right&quot; key</td>
<td>Turns the spout to the right</td>
</tr>
<tr>
<td>3</td>
<td>&quot;Spout flap down&quot; key</td>
<td>Lowers the spout flap</td>
</tr>
<tr>
<td>4</td>
<td>&quot;Spout flap up&quot; key</td>
<td>Raises the spout flap</td>
</tr>
</tbody>
</table>
| 5    | "Reversing/parking spout" key             | When main coupling is switched on: Reverses the position of the spout  
|      |                                            | When main coupling is switched off: Swivels the spout into the transport position |
| 6    | "Raise spout" key                          | Raises the spout.                                                |
| 7    | "Lower spout" key                          | Lowers the spout.                                                |
| 8    | "Fold in spout extension" key             | Folds in the spout extension (optional).                         |
| 9    | "Fold out spout extension" key            | Folds out the spout extension (optional).                        |

18.11 Adjusting discharge distance

For "StreamControl" version
The StreamControl is implemented via the discharge accelerator rear wall (1) and consists of an adjustable deflector sheet (2) which can be swivelled into the flow of the crops. The deflection of the crop flow affects the discharge distance of the chopping crops.

The StreamControl is operated with the additional keypad, refer to page 102.

In addition, the "M1" and "M2" keys of the control lever can be assigned with the adjustment of the discharge distance, refer to page 163.

The dimension, by which the adjustable deflector sheet is swivelled into the crop flow, can be set on the terminal, refer to page 188.

18.12 TractionControl/Traction control system

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

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

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

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

To activate the traction control system and adjust the sensitivity:

- Press “Traction control system” (1) key until the desired status is reached.

The status of traction control system is displayed on the terminal by the “indicator lamp for TractionControl” (2), refer to page 142.
18.13 Automatic steering system

**WARNING**

**Danger to life due to automatically controlled machine**

The forage harvester with activated automatic steering system is automatically controlled and is monitored only by the driver while driving. This means that people near the machine and along the route of the machine are in danger.

- Use the automatic steering system in open country exclusively for automatically guiding the forage harvester on a row of thin-stemmed plants or with a GPS-based steering system.
- Do not use the machine with activated automatic steering system on public highways, in yard areas or near people.

**WARNING**

**Danger to life due to automatically controlled machine**

If the automatic steering system is incorrectly installed or if the components of the automatic steering system have been tampered with, people near the forage harvester, which has an activated automatic steering system, are in danger, as the machine may make unexpected movements.

- The automatic steering system must only be mounted by authorised specialist workshop.
- Do not make any changes to the safety-relevant elements of the automatic steering system or to hydraulic, electrical or electronic components of the automatic steering system.

**WARNING**

**Danger to life due to automatically controlled machine**

Before starting up the automatic steering system, check that the controllable safety elements function.

- Check whether the automatic steering system switches off if the steering wheel is moved abruptly or if the driver leaves the driver's seat.
- Visually check that the row tracers, steering angle sensor as well as the visible hoses and wiring are in full working order (i.e. free of mechanical damage and leaks).

**WARNING**

**Danger to life due to automatically controlled machine**

When working with the automatic steering system activated, the driver must act particularly carefully and prudently so that he/she can respond if people and material assets are at risk.

- Ensure that there is nobody near the forage harvester, within a radius of 50 m.
- The driver must not leave the cabin of the machine during operation of automatic steering system.
- While the automatic steering system is in operation, the driver must regularly check the direction in which the machine is moving and its travel path to be able to take over manual control of the forage harvester immediately in the event of a hazardous situation or if obstructions or interruptions come up in the vehicle's path.
**INFORMATION**

When the rear axle has been completely raised or completely lowered, the automatic steering system operates less precisely. As a result, the tips of the header will not run exactly in the middle of the rows of maize plants.

To ensure precise guidance along the row of plants by the automatic steering system:
- Ensure that the rear axle is in the middle position (the vehicle chassis is horizontal).

The automatic steering system is an optional additional feature which automatically guides the forage harvester on a row of thin-stemmed plants.

The automatic steering system is available only in maize operating mode with mounted EasyCollect maize header and for the "Automatic steering system" version.
- The diesel engine is running.
- The driver's seat is occupied.
- The Main Mode Switch is in the "Field mode" position.
- The machine is on a level surface.

Perform chaffing preferably in "Row tracer automatic steering system" mode.

Now, the following modes can be used:
- ISO row tracer
- Row tracer automatic steering system

To set row tracer mode, refer to page 203.

To activate the automatic steering system:
- Move the forage harvester parallel to the rows of plants. The automatic steering system can be switched on after 1 metre.
- Press the "Automatic steering system" key (2) on the control lever (1).

On the terminal the "Automatic steering system" (3) indicator lamp shows the current status of the automatic steering system. When the indicator lamp is pressed, the "Automatic steering system settings" menu opens, refer to page 203.

The automatic steering system now takes over the selected 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 automatic steering system ensures that the machine moves straight ahead.

To deactivate the automatic steering system:
- Move the steering wheel abruptly.

The deactivation of the automatic steering system is indicated by an acoustic warning signal.
WARNING

Danger to life due to uncontrolled machine

When the automatic steering system has been deactivated, the driver must take control of the machine again, otherwise the forage harvester is not controlled.

- After the automatic steering system has been deactivated, actively take control by using the steering wheel.

The automatic steering system is also automatically deactivated if:

- the driver's seat is left,
- the steering wheel is moved,
- the "Automatic steering system" key is pressed again,
- the Main Mode Switch is moved to "Road mode",
- one of the two quick-stop switches is pressed,
- the forage harvester stops for 1 min,
- if the system components of the automatic steering system are defective.

18.14 Setting chop length

The current chop length can be adjusted on the terminal.
- Via "Field mode" direct input on the terminal working screen
- Via the "Chop length" parameter in the main menu

2 values can be saved which can be called up during operation using the control lever or the keypad.

Adjusting the current chop length via direct input:

- To reduce the chop length, press on the "Change chop length" field (1).
- To increase the chop length, press on the "Change chop length" field (1).

Adjusting values for the 1st and the 2nd saved chop length:

- In the main menu -> Menu Crop flow -> Submenu "Intake settings" adjust the parameters "1st saved chop length" and "2nd saved chop length".

Both saved chop lengths can be called up by pressing the "Chop length 1" and "Chop length 2" keys on the keypad.
18 Operation device

18.15 Metal detection

Calling up the stored value for the 1st saved chop length:
- On the keypad press the "Chop length 1" key.

Calling up the stored value for the 2nd saved chop length:
- On the keypad press the "Chop length 2" key.

The saved chop lengths can also be called up via the control lever.

To do this, the function keys on the control lever (2, 3) must be assigned with the saved chop length:
- In the main menu -> Menu Cabin -> Submenu "Settings" place the "Call up saved chop length" value on the "Function assignment keys M1/M2" parameter.

Calling up the stored value for the 1st saved chop length:
- On the control lever press the "M1" key.

Calling up the stored value for the 2nd saved chop length:
- On the keypad press the "M2" key.

18.15 Metal detection

The metal detection protects the machine from metal parts drawn in with the crops. The detectors are located in the lower feed drive roller.

If the system detects metal in the crops, the intake and header are immediately stopped.
On the terminal the "Foreign object detection" (3) indicator lamp shows the current status of the metal detection and RockProtect. When the indicator lamp is pressed, the menu "Foreign object detection settings" opens.

Adjusting the sensitivity of the metal detection:

- In the main menu -> menu Crop flow -> menu "Foreign object detection settings" set the sensitivity value.

When metal detection is triggered, intake and header stop immediately.

To rectify the problem:

- Reverse the intake and the header.
- Shut down and secure the machine, refer to page 34.
- Remove the metal part from the intake.

WARNING

Risk of injury from exposed, rotating chopping drum

If the chopping drum is engaged without intake and header, there is an increased risk of injury due to the rotating chopping drum which is not covered.

- When the metal detection is defective, only engage the chopping drum with removed intake via special switching routine.

INFORMATION

If the chopping drum does not engage due to an error in the metal detection of the chopping drum although there is no metal in the intake, it is nevertheless possible to engage the chopping drum by means of a special switching routine.

To engage the chopping drum in spite of defective metal detection:

- Switch on the diesel engine.
- Move the main mode switch to “Maintenance operation”.
- Press the “Main coupling on” key in the keypad for at least 5 s.

An information message appears in the terminal and the follow-up alarm is heard.

- Release the “Main coupling on” key and take note of the information message.
- Press the “Main coupling on” key for at least 2 s.

The chopping drum is engaged and the follow-up alarm goes out.

- Set the main mode switch to “Field mode” and work as usual.
18.16 RockProtect

RockProtect is a rock detection system which protects the machine from damage by larger foreign objects (e.g. stones). If the system detects a foreign object in the crops, the intake and header are immediately stopped.

The sensitivity of the rock detection must be adjusted to the particular working conditions, as even swathes of different sizes can trigger the rock detection.

Activating the rock detection (RockProtect):

- In the main menu -> menu Crop flow -> menu "Foreign object detection settings" set the status of RockProtect to "active".

On the terminal the "Foreign object detection" (3) indicator lamp shows the current status of the metal detection and the rock detection (RockProtect). When the indicator lamp is pressed, the menu "Foreign object detection settings" opens.

Adjusting the sensitivity of RockProtect:

- In the main menu -> menu Crop flow -> menu "Foreign object detection settings" set the sensitivity value of RockProtect.

When rock detection is triggered, intake and header stop immediately.

To rectify the problem:

- Reverse the intake and the header.
- Shut down and secure the machine, refer to page 34.
- Remove the foreign object from the intake.

Deactivating the rock detection (RockProtect):

- In the main menu -> menu Crop flow -> menu "Foreign object detection settings" set the status of RockProtect to "inactive".

18.17 ConstantPower

The ConstantPower load limit control controls the travelling speed of the machine depending on the diesel engine load and provides constant machine load at a lower fuel consumption. This means that the machine travels automatically quicker for a weaker crop and automatically slower for a stronger crop.

Load limit control is possible in field mode only.
To change a parameter:
- In the main menu -> Menu Engine -> Menu "ConstantPower" select a parameter and change the setting with the selection box.

To be able to activate the load limit control with the control lever:
- In the main menu -> Menu Engine -> Menu "ConstantPower" select the "Activation Constant Power" parameter and allow or do not allow activation with the selection box.

To activate the load limit control:
- Tap the control lever (1) 2x briefly to the right.

The load limit control can be deactivated by doing one of the following:
- Actuate the control lever (accelerate / decelerate).
- Turn the main mode switch to "Road mode".
- Press the brake pedal.

18.18 AutoScan

The AutoScan system regulates the chop length depending on the degree of maturity of the plants being harvested by the EasyCollect.

Using the AutoScan sensor in the central tip of the EasyCollect, the system detects the degree of maturity of the maize plants and calculates the optimum chop length of the maize plants based on the values input previously for the minimum and maximum chop length and controls the speed of the pre-compression rollers accordingly.

The AutoScan system is only available for maize operating mode.
The AutoScan system controls according to four specifications:

- The minimum chop length
- The maximum chop length
- The degree of maturity at which the automatic chop length adjustment starts.
- The degree of maturity at which the automatic chop length adjustment ends.

To change the parameters for these specifications:

- In the main menu -> Menu Crop flow -> Menu "AutoScan" select a parameter and change the setting with the selection box, refer to page 179.

To activate the AutoScan system:

- In the main menu -> Menu Crop flow -> Menu "AutoScan" set the chop length calculation mode (1) to "Moisture measurement", refer to page 179.

To deactivate the AutoScan system:

- In the main menu -> Menu Crop flow -> Menu "AutoScan" set the chop length calculation mode (1) to "Manual setting", refer to page 179.

### 18.19 CropControl

The CropControl system permits full yield recording and documentation of the harvested fields.

**INFORMATION**

The CropControl system is not a measuring system under the terms of German metrology and calibration law.

**INFORMATION**

The counter only indicates the laden weight precisely when CropControl has been calibrated for the field by means of counterweighing and when the crop on the field is homogeneous in terms of moisture. Otherwise major discrepancies may occur.

- To access the menu "CropControl", press in the Main menu -> Menu Crop flow -> Menu CropControl, refer to page 189.

On the terminal the "CropControl" (3) indicator lamp shows the current status of the counterweighing. When the indicator lamp is pressed, the menu "CropControl counterweighing" opens, refer to page 114.

**Counterweighing and calibration**

To ensure that the yield measurement is accurate, the CropControl system must be calibrated. Carry out a counterweighing for each area and type of crop.

To receive correct measured values, carry out a counterweighing after chaffing.
When counterweighing is complete and the entered weight of the counterweighing has been applied, the correction factor is recalculated.

- The path sensor has been calibrated, refer to page 189.
- An empty tractor/wagon combination with a known empty weight is available.
- The machine is stopped.

The following conditions must be met for counterweighing to ensure that the yield measurement is accurate:

- select a trailer load corresponding to the average of the total field,
- drive at average driving speed and engine load.

**Perform counterweighing:**

- Position the empty tractor/wagon combination next to the machine.

- To start the counterweighing, press Starten, in the following dialogue field press Ja and start chopping.

- Load the tractor/wagon combination.

**NOTICE! Ensure that all harvested chopping crops are loaded on the tractor/wagon combination.**

- When the tractor/wagon combination has been loaded, stop the counterweighing.

- To stop the counterweighing, press Stoppen.

- Weigh the tractor/wagon combination.

**NOTICE! Ensure that no loss of crops occurs when driving to the weighing scale.**

Chopping can not continue while the weighing is being weighed.

- Determine the laden weight of the tractor/wagon combination (full weight minus empty weight of the tractor/wagon combination).

- To enter the value of the laden weight as a counterweighing value, press 0 kg and enter the value via the value input field.

- Counterweighing is complete. The correction factor is automatically determined from this counterweighing and from then is taken as a basis for the yield recording.

**NOTICE! Delete current counterweighing.**

- To delete the current counterweighing, press Löschen.

- The counterweighing implemented beforehand is displayed and the correction factor, determined from this counterweighing, is taken from then as a basis for the yield recording.

**18.20 PowerSplit**

The PowerSplit is used to increase the efficiency of the machine. The continuous engine performance is adjusted to the application conditions and therefore helps to optimise the fuel consumption.

The PowerSplit automatically switches between ECO-Power and X-Power, depending on the speed of the diesel engine.
ECO-Power automatically switches to X-Power if the engine speed drops below 1700 rpm during chopping.

X-Power automatically switches to ECO-Power when the engine speed exceeds 1700 rpm again and the engine load is above the switchover load (factory basic setting 80%).

X-Power always switches back to ECO-Power mode abruptly as soon as the engine is relieved to the necessary extent.

Setting the PowerSplit:

- In the main menu -> 
  Menu Engine -> Submenu "Diesel engine settings" set the status of the "PowerSplit" to "Discontinuous switchover" or "Continuous switchover".

In the case of discontinuous switchover, the switchover occurs abruptly at the set rotational speed.

In the case of continuous switchover, the switchover occurs continuously and starts 100 rpm before the set rotational speed.
Following activation of the PowerSplit, the indicator lamp on the terminal is lit for the engine management (1) or for the automatic switchover of the engine management.

As soon as the "ECO/X-Power" key for manual ECO-Power/X-Power switchover is pressed on the keypad, the automatic operation of the PowerSplit is interrupted and the selected engine characteristic ECO-Power or X-Power is retained.

18.21 Operating VariLOC chop length gearbox

**NOTICE**

**Machine will be damaged by an unapproved use of the VariLOC chop length gearbox**

If the VariLOC chop length gearbox is not used with a complete set of blades and not for corn crops, the machine may be damaged.

- Use the VariLOC chop length gearbox only with the MaxFlow chopping drum and with a complete set of blades consisting of 28 or 36 blades.
- Use the VariLOC chop length gearbox for corn crops only.

The VariLOC chop length gearbox is an additional gearbox in the belt pulley of the chopping drum. The cutting length range of the chopping drum can be increased by up to 53 % by switching the drum speed from 1,250 rpm to 800 rpm using a standard open-ended spanner. It is therefore possible to choose quickly between long and short cut.

<table>
<thead>
<tr>
<th>Number of blades</th>
<th>Chop length for a non-reduction gearbox (transmission ratio 1:1)</th>
<th>Chop length for a reduction gearbox (transmission ratio 1:1.5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>4–22 mm</td>
<td>10-30 mm</td>
</tr>
<tr>
<td>36</td>
<td>3-17 mm</td>
<td>10-24 mm</td>
</tr>
</tbody>
</table>
Prerequisite

It must be known in which position the VariLOC chop length gearbox is.
If the position is not known:

- Start the machine.
- Switch on the chopping drum and leave the diesel engine running at idle speed (1,100 rpm).
- Read off the chopping drum speed on the terminal.
- Read off the gearbox position in the table for the chopping drum speed which has been read off.

<table>
<thead>
<tr>
<th>Chopping drum speed</th>
<th>Gearbox position</th>
</tr>
</thead>
<tbody>
<tr>
<td>660–760 rpm</td>
<td>Gearbox position I (transmission 1:1)</td>
</tr>
<tr>
<td>440–506 rpm</td>
<td>Gearbox position II (transmission 1:1.5)</td>
</tr>
</tbody>
</table>

Switching between 2 gearbox positions

- Slacken the main belt.
- Remove the screw connections (1) and remove the belt guard (2).
- Place the hexagon wrench (1) on the gearbox.
- Place the wrench (WAF 36) (2) on the nut in the centre of the gearbox so that it is situated at the height of the middle arrow.
- If the position of the wrench is not in alignment with the arrow, turn the belt pulley using the hexagon wrench until the positions are in alignment.
- Lock the cutter drum, refer to page 419.
NOTICE

Damage to the VariLOC chop length gearbox due to incorrect operation

If the wrench (2) is re-attached during the adjustment or is moved with excessive force or if the gearbox is operated in the neutral position, the VariLOC chop length gearbox may be damaged.

- Do not re-attach the wrench (2) during the adjustment.
- Do not move the wrench (2) with excessive force (maximum 60 Nm).
- Operate the gearbox only in gearbox stages I (transmission ratio 1:1) or II (transmission ratio 1:1.5).

![Image of wrench (2) in required position]

BX001-867

- Turn the wrench (2) into the required position until it is at the height of the arrow.
  - The coupling clicks into place.
  - The coupling does not engage correctly.
  - Turn the belt pulley using the hexagon wrench until the coupling clicks into place.

- To check the gearbox position, move the wrench (2) into the required position until resistance is felt.
  - If the wrench (2), when released, is pressed back by spring force, the coupling is correctly engaged.
  - It must not be possible to turn the belt pulley with the hexagon wrench, as the chopping drum is locked.

- Remove the wrench and the hexagon wrench.

![Image of belt guard (2) and hook connections (1)]

BX001-865

- Attach the belt guard (2) and secure with the screw connections (1).
- Unlock the chopping drum, refer to page 419.
Changing the setting on the terminal

After each switching process on the VariLOC chop length gearbox, the transmission ratio of the VariLOC must be reset on the terminal.

EQG002-075

▶ In the main menu -> crop flow menu -> main coupling menu -> set the VariLOC transmission ratio (1) for non-reduction gearbox to "normal mode" (2) or for reduction gearbox to "reduction gearbox" (3).

The transmission ratio can be set alternatively in the season settings:

EQG002-076

▶ In the season settings -> VariLOC transmission ratio -> set the VariLOC transmission ratio (1) for non-reduction gearbox to "normal mode" (2) or for reduction gearbox to "reduction gearbox" (3).

Performing a function test

To ensure that the setting on the VariLOC chop length gearbox matches the setting on the terminal, perform a function test:

▶ Start the machine.

▶ Switch on the chopping drum and leave the diesel engine running at idle speed (1,100 rpm).

▶ Read off the chopping drum speed on the terminal and read off the associated gearbox position in the table.

<table>
<thead>
<tr>
<th>Chopping drum speed</th>
<th>Gearbox position</th>
</tr>
</thead>
<tbody>
<tr>
<td>660–760 rpm</td>
<td>Gearbox position I (transmission 1:1)</td>
</tr>
<tr>
<td>440–506 rpm</td>
<td>Gearbox position II (transmission 1:1.5)</td>
</tr>
</tbody>
</table>

▶ Check whether the gearbox position in the table matches the setting on the terminal.

▷ The setting on the terminal does not match the actual setting on the VariLOC chop length gearbox.

▶ Change the setting on the VariLOC chop length gearbox or the setting on the terminal.
Information message

If the gearbox setting does not match the setting on the terminal, a message will be displayed on the terminal as soon as the main coupling is connected or the grinding process is started.

EQG002-077

If the information message is displayed:

▶ Change the setting on the VariLOC chop length gearbox or the setting on the terminal.

18.22 Operating the cabin lift (for the cabin lift design)

**WARNING**

Risk of injury from falling from the raised cabin

If the cabin is raised with the cabin lift, the driver may fall from a great height and injure himself in the process when leaving the cabin.

▶ Lower the raised cabin before leaving it.

**INFORMATION**

If the driver's seat is not occupied when the cabin is raised or if the cabin door is open, a vehicle horn sounds for five seconds and a warning message appears on the terminal.

The cabin (1) can be raised with the cabin lift while in field mode in order to have better visibility during the chopping process.

✔ The Main Mode Switch is in the "Field mode" position.
✔ The driver's seat is occupied.
To raise the cabin (1):

- Press the "Raise/lower cabin lift" key (3).
- The "Raise/lower cabin lift" function appears.
- To raise the cabin, keep the "Raise" key (2) pressed.
- The cabin is raised after three seconds as long as the "Raise" key (2) is pressed.

To lower the cabin (1):

- Press the "Raise/lower cabin lift" key (3).
- The "Raise/lower cabin lift" function appears.
- To lower the cabin, keep the "Lower" key (3) pressed.
- The cabin is lowered after three seconds as long as the "Lower" key (3) is pressed.
19 Settings

**WARNING**

Risk of injury due to non-observance of relevant safety instructions
If the relevant safety instructions are not observed, persons may be seriously injured or killed.
- To avoid accidents, the relevant safety instructions must be read and observed, refer to page 19.

**WARNING**

Risk of injury due to non-observance of safety instructions
If the relevant safety routines are not observed, persons may be seriously injured or killed.
- The safety routines must be read and observed to avoid accidents, refer to page 34.

**WARNING**

Risk of injury from sharp chopping blades
When performing maintenance work on the cutting drum, there is a risk of the operators being injured by the sharp cutting blades.
- When working on the cutting drum, work particularly carefully and prudently.
- Wear protective gloves when working on the cutter drum.
- Turn the cutting drum clockwise on the belt pulley only and, when the correct position has been reached, lock with the locking bolt.

19.1 Optimising crop flow

How header speed depends on chop length
If the header speed is too low, it may be that the intake rollers are pulling the crops in clumps from the header and the crop flow is being severed.

The header speeds depend to a great extent on e.g.: Crops, driving speed, crop mass, degree of maturity of the crop. The rotational speed should be set so that the crop flow is homogeneous.

If the speed of the EasyCollect is too high in maize mode, blockages will occur.
19 Settings
19.2 Optimising discharge capacity of the machine

Grass mode
- Guide value for the header speed: 400-420 rpm
Depending on the application conditions, however, a header speed of 300 rpm to 600 rpm may also be advisable.

Maize operating mode
- Guide value for the header speed: 380-420 rpm
The header speed should be set as low as possible.

XDisc mode
- Header speed: 700 rpm

19.2 Optimising discharge capacity of the machine

19.2.1 Adjusting overhang of chopping blades

The discharge capacity of the machine is determined by the chopping drum among other things. Depending on how far the chopping blade edge (1) extends beyond the chopping drum housing (2), there will be correspondingly more or less discharge capacity.

The maximum overhang of the chopping blade edge (1) relative to the chopping drum housing (2) is 89 mm (3).

During operation, the chopping blades close, thus becoming shorter. Wear leads to a drop in the volume beneath the chopping blades. The discharge capacity of the machine deteriorates due to this reduced volume.

- Move the chopping blades with the greatest possible overhang.
- Re-adjust the chopping blades more frequently, refer to page 417.

19.2.2 Setting drum base

INFORMATION
An incorrectly set drum base will result in an increased fuel consumption as well as an increased wear of machine components.
Another way to improve the discharge capacity is to fine-tune the setting of the drum base (1) by adjusting the drum base (2).

The drum base is adjusted in the factory.

- The distance from the blades (4) to the drum base at the rear (3) is \( X = 6 \text{–} 8 \text{ mm} \).
- The distance from the blades to the drum base at the front is automatically adjusted by the counterblade.

The nature of the crop (for example, a dry crop) may require readjustment of the drum base.

**Setting the distance between the drum base and cutter**

- Adjust drum base equally on both sides.

To reduce the distance between the drum base and blades, on the right and left sides of the machine:
  - Loosen the counter nut (1).
  - Unscrew the screw (2) a little.
  - Retighten the counter nut (1).

To increase the distance between the drum base and blades, on the right and left sides of the machine:
  - Loosen the counter nut (1).
  - Screw in the screw (2) a little
  - Retighten the counter nut (1).
### Measuring the distance

![Image of the drum base with labels 3, 4, and 5 with a measurement symbol X]

After adjusting the drum base, measure the distance from the drum base to the blades.

- At the rear edge of the drum base (3), use a hexagon socket to check along the entire length that the distance to the blades (4) is the dimension $X = 6-8$ mm (5).

### Setting the spring force of the drum base

![Image of the drum base with labels 1 and 2 with a measurement symbol X]

The factory setting dimension of the compression spring is $X = 45$ mm.

To reduce the spring force of the drum base, on the right and left sides of the machine:

- Loosen the counter nut (1).
- Unscrew the nut (2) a little.
- Retighten the counter nut (1).

To increase the spring force of the drum base, on the right and left sides of the machine:

- Loosen the counter nut (1).
- Screw in the nut (2) a little.
- Retighten the counter nut (1).
19.2.3 Setting the rear wall discharge accelerator

**NOTICE**

Increased wear and increased fuel consumption caused by incorrectly set rear wall of discharge accelerator

An incorrectly set distance between discharge accelerator (1) and rear wall (2) will result in increased fuel consumption and wear of machine components.

- Set the distance from rear wall of discharge accelerator to the discharge scoops so that the discharge capacity is optimised.

![Diagram BX001-915](image)

To achieve the optimal distance between the discharge accelerator (1) and the rear wall (2), the position of the rear wall can be set up or down using the setting screw and oblong hole to make the adjustment.

![Diagram BX001-917](image)

Reducing or increasing the gap (X) between the rear wall (1) and the discharge scoops (2) may either improve or reduce the discharge capacity depending on the crop.

**Default factory setting:**

- Grass: X = 3-4 mm
- Maize: X = 3-4 mm

**Preparing forage harvester for setting the gap between the discharge scoops and rear wall**

- The machine is shut down and secured, *refer to page 34.*
To access the setting elements of the discharge accelerator rear wall (3):

- Loosen the quarter turn fasteners (2) and remove the crop flow cover (1).

**Measuring the distance between the discharge scoops and rear wall**

To measure the distance between rear wall and discharge scoops:

- Remove the channel support cover (3).

**WARNING!** Risk of crushing from rotating discharge accelerator rotor. If the discharge accelerator rotor is rotated by hand, there is a risk of being crushed between the discharge accelerator scoops and the housing, the rear wall and the scraper. As a result, people may be injured. Ensure that there is nobody inside the danger zone.

- Rotate the discharge accelerator rotor by hand until the lowest gap X is reached.
- Measure the gap X between the discharge accelerator scoops (1) and rear wall (2).
Setting the distance between the discharge accelerator and the rear wall at bottom

To adjust the discharge accelerator rear wall at the bottom (1) on the right and left sides of the machine:

- Loosen the nut (2).
- Set the gap between the discharge accelerator-rear wall by adjusting the nuts (3, 4) until the surfaces (5, 6) are parallel.
- Tighten the nuts (3, 4).
- Tighten the nut (2).
- Check the transition between grass channel/corn conditioner and discharge accelerator, refer to page 345.

Checking transition between grass channel/corn conditioner and discharge accelerator rotor

At the transition between the grass channel/corn conditioner (2) and the discharge accelerator rotor (1) the crop flow must not form a retaining edge. The chopping crops may back up on a retaining edge and cause crop flow problems or crop blockages.

- When setting the rear wall of discharge accelerator, ensure that there is no retaining edge at the transition (3) between the grass channel/corn conditioner (2) and the discharge accelerator rotor (1).
- Remove the cover from the channel support.
WARNING! Risk of crushing from rotating discharge accelerator rotor. If the discharge accelerator rotor is rotated by hand, there is a risk of being crushed between the discharge accelerator scoops and the housing, the rear wall and the scraper. As a result, people may be injured. Ensure that there is nobody inside the danger zone.

- Check the transition (3), if required, turn the discharge accelerator rotor by hand.
  - There is a retaining edge.
- Check the installation position and the lock of the grass channel/corn conditioner.
- Reset the distance rear wall of discharge accelerator, .

**Setting the distance between the discharge accelerator and the rear wall at top**

![Diagram showing settings and parts](image)

To reduce the gap between the discharge accelerator rear wall (1) and the discharge scoops, on the right and left sides of the machine:

- Loosen the counter nut (2) of the rubber buffer (3).
- Screw the rubber buffer (3) on both sides in or out by the same dimension.
- Retighten the counter nut (2).
- To reset the spring force of the rear wall discharge accelerator, keep turning the screw (4) until the rear edge of the disc (5) is flush with the front edge of the control sheet (6).
- Check the transition between the discharge accelerator and channel support, refer to page 345.

**Checking transition between discharge accelerator and channel support**

![Diagram showing transition check](image)

At the transition between the discharge accelerator (1) and the channel support there must be no retaining edge in crop flow even when the discharge accelerator rear wall has completely sprung back. The chopping crops may back up on a retaining edge and cause crop flow problems or crop blockages.
Factory basic setting:

- X=15-18 mm

- When setting the discharge accelerator rear wall, ensure that there is no retaining edge at the transition between the discharge accelerator rear wall (2) and the channel support (1).

- Remove the cover from the channel support.

- Check the transition between the discharge accelerator rear wall (2) and the channel support (1) when the discharge accelerator rear wall (2) has completely sprung back.

  → There is a retaining edge. The discharge accelerator rear wall (2) is located behind the channel support (1).

- Reset the distance "Discharge accelerator - rear wall at top".
### 20 Maintenance - General Information

**WARNING**

<table>
<thead>
<tr>
<th>Risk of injury due to non-observance of relevant safety instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the relevant safety instructions are not observed, persons may be seriously injured or killed.</td>
</tr>
<tr>
<td>To avoid accidents, the relevant safety instructions must be read and observed, <a href="#">refer to page 19</a>.</td>
</tr>
</tbody>
</table>

**WARNING**

<table>
<thead>
<tr>
<th>Risk of injury due to non-observance of safety instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the relevant safety routines are not observed, persons may be seriously injured or killed.</td>
</tr>
<tr>
<td>The safety routines must be read and observed to avoid accidents, <a href="#">refer to page 34</a>.</td>
</tr>
</tbody>
</table>

**WARNING**

<table>
<thead>
<tr>
<th>Risk of injury during trial run of the machine</th>
</tr>
</thead>
<tbody>
<tr>
<td>If a trial run is conducted after repairs, maintenance, cleaning work or technical adjustments, the machine could respond unpredictably. As a result, people may be seriously injured or killed.</td>
</tr>
<tr>
<td>The machine is in working position.</td>
</tr>
<tr>
<td>Make certain there are no persons in the danger zone when the engine and header drive start.</td>
</tr>
<tr>
<td>Start the trial run of the machine from the driver’s seat only.</td>
</tr>
</tbody>
</table>

**NOTICE**

<table>
<thead>
<tr>
<th>Damage to the machine due to incorrectly performed or unfinished maintenance work</th>
</tr>
</thead>
<tbody>
<tr>
<td>If maintenance work is not carried out by qualified personnel, the machine could be damaged. A qualified service centre has the required technical knowledge, qualifications and tools to perform the required work on the machine in a proper manner. This applies in particular to safety-relevant work.</td>
</tr>
<tr>
<td>Always have the following work performed by a qualified specialist workshop:</td>
</tr>
<tr>
<td>- Safety-relevant work</td>
</tr>
<tr>
<td>- Service and maintenance work</td>
</tr>
<tr>
<td>- Repair work</td>
</tr>
<tr>
<td>- Modifications as well as installations and conversions</td>
</tr>
<tr>
<td>- Working on electronic parts</td>
</tr>
<tr>
<td>This chapter does not list all the necessary maintenance work of the engine. It is necessary to observe the maintenance instructions of engine manufacturer. The maintenance instructions are available at each qualified specialist workshop having access to the Workshop Information System (WIS) or after having participated in motor training at KRONE premises.</td>
</tr>
</tbody>
</table>
### 20.1 Maintenance table

#### 20.1.1 Maintenance – Once after 1 hour

<table>
<thead>
<tr>
<th>Components</th>
<th>Action</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheels / tyres</td>
<td>Retighten wheel nuts on the front/rear wheels</td>
<td>refer to page 394</td>
</tr>
</tbody>
</table>

#### 20.1.2 Maintenance – Once after 10 hours

<table>
<thead>
<tr>
<th>Components</th>
<th>Action</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components for crop flow</td>
<td>Retighten the fastening screws of the chopping blades</td>
<td>refer to page 417</td>
</tr>
<tr>
<td></td>
<td>Retighten the fastening screws on the discharge scoops</td>
<td>refer to page 446</td>
</tr>
<tr>
<td>Screw connections</td>
<td>Check fastening screws of the steering cylinder</td>
<td>refer to page 388</td>
</tr>
<tr>
<td></td>
<td>Check fastening screws on the track rod</td>
<td>refer to page 389</td>
</tr>
<tr>
<td>Central lubrication</td>
<td>Check that the lines are firmly attached</td>
<td>refer to page 480</td>
</tr>
</tbody>
</table>

#### 20.1.3 Maintenance – 6 times after every 10 hours

<table>
<thead>
<tr>
<th>Components</th>
<th>Action</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheels / tyres</td>
<td>Retighten wheel nuts on the front/rear wheels</td>
<td>refer to page 394</td>
</tr>
</tbody>
</table>

#### 20.1.4 Maintenance – Once after 50 hours

<table>
<thead>
<tr>
<th>Components</th>
<th>Action</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gearbox</td>
<td>Wheel hub gearbox front/back, change oil</td>
<td>refer to page 459</td>
</tr>
<tr>
<td>Engine</td>
<td>Check the coolant hoses for leaks.</td>
<td>refer to page 376</td>
</tr>
<tr>
<td>Fuel system (engine)</td>
<td>Check the fuel line for leaks</td>
<td>refer to page 379</td>
</tr>
<tr>
<td></td>
<td>Check that detachable connecting elements (screws, hose clamps, pipe connections, hoses) are tight and retighten if required</td>
<td>refer to page 377</td>
</tr>
<tr>
<td>Cooling system (engine)</td>
<td>Check concentration of anti-freeze and anti-corrosion agent</td>
<td>refer to page 375</td>
</tr>
<tr>
<td></td>
<td>Check the coolant hoses for leaks.</td>
<td>Checking tubing in engine cooling system</td>
</tr>
<tr>
<td></td>
<td>Check that detachable connecting elements (screws, hose clamps, pipe connections, hoses) are tight and retighten if required</td>
<td>refer to page 377</td>
</tr>
</tbody>
</table>
### 20.1.5 Maintenance – Once after 500 hours

<table>
<thead>
<tr>
<th>Engine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check the intake and exhaust gas system for correct state, attachment and leaks. To be performed by an authorised technician only.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electrical system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check the batteries and cable connections. To be performed by an authorised technician only.</td>
</tr>
<tr>
<td>Check the sensors, actuators, cable holders and plugs for correct state. To be performed by an authorised technician only.</td>
</tr>
<tr>
<td>Check the control unit bearing for correct state. To be performed by an authorised technician only.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gearbox</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheel hub gearbox front/back, change oil</td>
</tr>
</tbody>
</table>

### 20.1.6 Maintenance – Once after 1000 km

<table>
<thead>
<tr>
<th>Rear axle for front wheel drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check hub bearings for wear and play</td>
</tr>
</tbody>
</table>

### 20.1.7 Maintenance – Prior to the beginning of the season

<table>
<thead>
<tr>
<th>Hydraulic system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check hydraulic tank oil level</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Brake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check service brake function</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Components for crop flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check conveyor bars on the pre-compression roller</td>
</tr>
<tr>
<td>Check intake unit tension springs</td>
</tr>
<tr>
<td>Check counterblade for damage and wear</td>
</tr>
<tr>
<td>Check chopping blade for damage and wear</td>
</tr>
<tr>
<td>Check corn conditioner for wear</td>
</tr>
<tr>
<td>Check discharge scoop for damage and wear</td>
</tr>
<tr>
<td>Check discharge accelerator scraper</td>
</tr>
<tr>
<td>Check grinding stone for damage</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gearbox</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfer gearbox, check oil level</td>
</tr>
<tr>
<td>Intake intermediate gearbox, check oil level</td>
</tr>
<tr>
<td>Bottom roller gearbox, check oil level</td>
</tr>
<tr>
<td>Top roller gearbox, check oil level</td>
</tr>
<tr>
<td>Wheel hub gearbox front/back, check oil level</td>
</tr>
</tbody>
</table>
### Gearbox
- Rotary drive gearbox spout, check oil level: refer to page 461
- Main gearbox, check oil level: refer to page 454
- VariLOC chop length gearbox, check oil level: refer to page 462

### Engine
- Change the engine oil: To be performed by an authorised technician only.

### Cooling system (engine)
- Check the coolant level: refer to page 376
- Check the coolant hoses for leaks: refer to page 376
- Clean/replace air filter: refer to page 380
- Check that detachable connecting elements (screws, hose clamps, pipe connections, hoses) are tight and retighten if required: refer to page 377

### General maintenance work
- Check all wear plates: refer to page 441

### Electrical system
- Cleaning the battery: refer to page 466

### Wheels / tyres
- Visually inspect tyres for cuts and breaks: refer to page 394
- Check tyre pressure: refer to page 394

### Fire extinguisher
- Service fire extinguisher: refer to page 396

### Silage additives unit
- Rinse silage additives unit with clear water: refer to page 190

### 20.1.8 Maintenance – At the beginning of the cold season

#### Cooling system (engine)
- Check corrosion and frost protection concentration in the coolant: To be performed by an authorised technician only. Contact your sales partner.

#### Silage additives unit
- Fill silage additives unit with biodegradable frost protection: refer to page 190

### 20.1.9 Maintenance – Every 10 hours, at least daily

#### Hydraulic system
- Check hydraulic tank oil level: refer to page 450

#### Brake
- Check service brake function: refer to page 391, refer to page 85
<table>
<thead>
<tr>
<th>Components for crop flow</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Check counterblade for damage and wear</td>
<td>refer to page 430</td>
</tr>
<tr>
<td>Check chopping blade for damage and wear</td>
<td>refer to page 417</td>
</tr>
<tr>
<td>Check discharge scoop for damage and wear</td>
<td>refer to page 446</td>
</tr>
<tr>
<td>Check grinding stone for damage</td>
<td>refer to page 412</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Engine</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual inspection of the engine compartment (leak tightness, soiling, damage, condition of the drive belt)</td>
<td></td>
</tr>
<tr>
<td>Clean engine compartment</td>
<td></td>
</tr>
<tr>
<td>Check engine piping for leaks</td>
<td>refer to page 377</td>
</tr>
<tr>
<td>Check engine oil level</td>
<td>refer to page 368</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fuel system (engine)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Check the water separator on the fuel prefilter and drain water, if necessary</td>
<td>refer to page 370</td>
</tr>
<tr>
<td>Check fuel level</td>
<td>Display on the terminal, fill fuel refer to page 372</td>
</tr>
<tr>
<td>Check urea fill level</td>
<td>Display on the terminal, fill urea refer to page 373</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cooling system (engine)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Check the coolant level</td>
<td>refer to page 376</td>
</tr>
<tr>
<td>Clean cooler, cooler compartment and cooler screen</td>
<td>refer to page 387</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Air filter</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean/replace air filter</td>
<td>refer to page 380</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cabin</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean fresh air filter</td>
<td>refer to page 386</td>
</tr>
<tr>
<td>Topping up windscreen washer system</td>
<td>refer to page 384</td>
</tr>
<tr>
<td>Check warning lights</td>
<td>refer to page 284</td>
</tr>
<tr>
<td>Check lighting function</td>
<td>refer to page 86</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Air conditioning/heating</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleaning the capacitor</td>
<td>refer to page 387</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Central lubrication</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Check filling level of the reservoir</td>
<td>refer to page 487</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General maintenance work</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean the machine completely</td>
<td></td>
</tr>
<tr>
<td>Manually lubricate according to lubrication chart</td>
<td>refer to page 473</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Silage additives unit</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean silage additives unit</td>
<td>refer to page 305</td>
</tr>
</tbody>
</table>
## Maintenance - General Information

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Task Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wheels / tyres</strong></td>
<td>Visually inspect tyres for cuts and breaks</td>
<td>refer to page 394</td>
</tr>
<tr>
<td><strong>Rear axle for front wheel drive</strong></td>
<td>Check hub covers for damage and that they are secure</td>
<td>refer to page 389</td>
</tr>
<tr>
<td><strong>Gearbox</strong></td>
<td>Wheel hub gearbox front/back, perform noise inspection</td>
<td></td>
</tr>
</tbody>
</table>

### 20.1.10 Maintenance – Weekly

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Task Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gearbox</strong></td>
<td>Wheel hub gearbox front/back, check oil level</td>
<td>refer to page 459</td>
</tr>
<tr>
<td><strong>Wheels / tyres</strong></td>
<td>Check tyre pressure</td>
<td>refer to page 394</td>
</tr>
<tr>
<td><strong>Compressor unit</strong></td>
<td>Drain condensation water from compressed air storage tank</td>
<td>refer to page 382</td>
</tr>
</tbody>
</table>

### 20.1.11 Maintenance – Every 50 hours

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Task Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wheels / tyres</strong></td>
<td>Retighten wheel nuts on the front/rear wheels</td>
<td>refer to page 394</td>
</tr>
<tr>
<td><strong>Gearbox</strong></td>
<td>Transfer gearbox, check oil level</td>
<td>refer to page 455</td>
</tr>
<tr>
<td></td>
<td>Intake intermediate gearbox, check oil level</td>
<td>refer to page 456</td>
</tr>
<tr>
<td></td>
<td>Bottom roller gearbox, check oil level</td>
<td>refer to page 457</td>
</tr>
<tr>
<td></td>
<td>Top roller gearbox, check oil level</td>
<td>refer to page 458</td>
</tr>
<tr>
<td></td>
<td>Rotary drive gearbox spout, check oil level</td>
<td>refer to page 461</td>
</tr>
<tr>
<td></td>
<td>Main gearbox, check oil level</td>
<td>refer to page 454</td>
</tr>
<tr>
<td></td>
<td>Check VariLOC gearbox, oil level</td>
<td>refer to page 462</td>
</tr>
<tr>
<td><strong>Fuel system (engine)</strong></td>
<td>Drain water and sediments in the fuel tank.</td>
<td>refer to page 369</td>
</tr>
</tbody>
</table>

### 20.1.12 Maintenance – Every 100 hours

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Task Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cabin</strong></td>
<td>Clean circulation filter</td>
<td>refer to page 386</td>
</tr>
<tr>
<td><strong>General maintenance work</strong></td>
<td>Manually lubricate according to lubrication chart</td>
<td>refer to page 473</td>
</tr>
</tbody>
</table>
### 20.1.13 Maintenance – Monthly

<table>
<thead>
<tr>
<th>Gearbox</th>
<th>refer to page 390</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheel hub gearbox front/back, check fastening screw of the planetary gearbox to ensure a tight fit</td>
<td></td>
</tr>
</tbody>
</table>

### 20.1.14 Maintenance – Every 250 hours

<table>
<thead>
<tr>
<th>Components for crop flow</th>
<th>refer to page 434</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check scraper flat roller for wear and correct distance dimension</td>
<td></td>
</tr>
<tr>
<td>Check discharge accelerator scraper</td>
<td>refer to page 448</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Drive belt</th>
<th>refer to page 392</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check screen drum belt</td>
<td></td>
</tr>
<tr>
<td>Check corn conditioner belt</td>
<td>refer to page 392</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Screw connections</th>
<th>refer to page 388</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check fastening screws of the steering cylinder</td>
<td></td>
</tr>
<tr>
<td>Check fastening screws on the track rod</td>
<td>refer to page 389</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General maintenance work</th>
<th>refer to page 395</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check wearing plate on the trailer coupling</td>
<td></td>
</tr>
<tr>
<td>Check coupling bolt on the trailer coupling</td>
<td>refer to page 395</td>
</tr>
<tr>
<td>Check that coupling jaw can turn</td>
<td>refer to page 395</td>
</tr>
<tr>
<td>Manually lubricate according to lubrication chart</td>
<td>refer to page 473</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fire extinguisher</th>
<th>refer to page 396</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service fire extinguisher</td>
<td></td>
</tr>
</tbody>
</table>

### 20.1.15 Maintenance – Every 500 hours

<table>
<thead>
<tr>
<th>Hydraulic system</th>
<th>refer to page 450</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change hydraulic oil in the hydraulic oil tank</td>
<td></td>
</tr>
<tr>
<td>Change return suction filter</td>
<td>refer to page 450</td>
</tr>
<tr>
<td>Change hydraulic oil filter (high-pressure filter) in the working hydraulics</td>
<td>refer to page 451</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Brake</th>
<th>refer to page 391</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check service brake function</td>
<td></td>
</tr>
<tr>
<td>refer to page 85</td>
<td></td>
</tr>
<tr>
<td><strong>Engine</strong></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Check the engine oil level.</td>
<td>To be performed by an authorised technician only.</td>
</tr>
<tr>
<td>Check the engine piping for leaks, soiling</td>
<td>To be performed by an authorised technician only.</td>
</tr>
<tr>
<td>and damage.</td>
<td></td>
</tr>
<tr>
<td>Check the belt drive.</td>
<td>To be performed by an authorised technician only.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Fuel system (engine)</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Check the water separator on the fuel prefilter</td>
<td>Work must be carried out only by authorised technicians. Contact your sales partner.</td>
</tr>
<tr>
<td>and drain water, if necessary.</td>
<td></td>
</tr>
<tr>
<td>Drain water and sediments in the fuel tank.</td>
<td>Work must be carried out only by authorised technicians. Contact your sales partner.</td>
</tr>
<tr>
<td>Check the lubricating oil unit and fuel system</td>
<td>Work must be carried out only by authorised technicians. Contact your sales partner.</td>
</tr>
<tr>
<td>for leaks and condition.</td>
<td></td>
</tr>
<tr>
<td>Check that detachable connecting elements</td>
<td>refer to page 377</td>
</tr>
<tr>
<td>(screws, hose clamps, pipe connections,</td>
<td></td>
</tr>
<tr>
<td>hoses) are tight and retighten if required</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Cooling system (engine)</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Check the coolant level</td>
<td>To be performed by an authorised technician only.</td>
</tr>
<tr>
<td>Check the engine piping for leaks, soiling</td>
<td>To be performed by an authorised technician only.</td>
</tr>
<tr>
<td>and damage.</td>
<td></td>
</tr>
<tr>
<td>Check that detachable connecting elements</td>
<td>refer to page 377</td>
</tr>
<tr>
<td>(screws, hose clamps, pipe connections,</td>
<td></td>
</tr>
<tr>
<td>hoses) are tight and retighten if required</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Air filter</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Check the low-pressure indicator of the air</td>
<td>To be performed by an authorised technician only.</td>
</tr>
<tr>
<td>filter</td>
<td>Contact your sales partner.</td>
</tr>
<tr>
<td>Clean the dust discharge valve of the air filter.</td>
<td>To be performed by an authorised technician only.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Drive belt</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Check belt tension of the drive belts</td>
<td>refer to page 392</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Belt pulleys</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Check belt pulleys</td>
<td>refer to page 392</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Cabin</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Replace fresh air filter</td>
<td>refer to page 386</td>
</tr>
<tr>
<td>Replace circulation filter</td>
<td>refer to page 386</td>
</tr>
<tr>
<td>Check functions of the driver's seat</td>
<td>refer to page 213</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>General maintenance work</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Check the fire extinguishers.</td>
<td>refer to page 56</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Electrical system</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleaning the battery</td>
<td>refer to page 466</td>
</tr>
</tbody>
</table>
### 20.1.16 Maintenance – Every 1,000 hours, at least after the season

#### Hydraulic system
- Change oil filter in the gearbox oil cooling  
  - refer to page 456

#### Gearbox
- Change transfer gearbox oil  
  - refer to page 455
- Change intermediate gearbox intake oil  
  - refer to page 457
- Change bottom roller gearbox oil  
  - refer to page 457
- Change top roller gearbox oil  
  - refer to page 458
- Wheel hub gearbox front/back, change oil  
  - refer to page 459
- Change spout rotary drive gearbox oil  
  - refer to page 461
- Change main gearbox oil  
  - refer to page 454
- VariLOC chop length gearbox, change oil  
  - refer to page 463

#### Engine
- Check all lines, hoses and electric cables for chafe marks
- Change the engine oil filter  
  - To be performed by an authorised technician only.
- Replace the oil separator filter insert  
  - To be performed by an authorised technician only. Contact your sales partner.
- Check the belt drive.  
  - To be performed by an authorised technician only.
- Check the intake and exhaust gas system for correct state, attachment and leaks.  
  - To be performed by an authorised technician only.
- Check the engine mount and diesel engine brackets for tight fit.  
  - To be performed by an authorised technician only.
- Check/adjust valve play  
  - To be performed by an authorised technician only.

#### Fuel system (engine)
- Replace the fuel prefilter.  
  - To be performed by an authorised technician only.
- Replace the fuel fine filter.  
  - To be performed by an authorised technician only.

#### Cooling system (engine)
- Check the cooling and heating system for leaks and condition  
  - To be performed by an authorised technician only. Contact your sales partner.
- Clean/replace air filter  
  - refer to page 380

#### Air conditioning/heating
- Replace dryer  
  - To be performed by an authorised technician only. Contact your sales partner
### Electrical system

<table>
<thead>
<tr>
<th>Task</th>
<th>To be performed by an authorised technician only.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check the batteries and cable connections.</td>
<td></td>
</tr>
<tr>
<td>Check the control unit bearing for correct state.</td>
<td></td>
</tr>
<tr>
<td>Check the sensors, actuators, cable holders and plugs for correct state.</td>
<td></td>
</tr>
</tbody>
</table>

### 20.1.17 Maintenance – After each season

**Rear axle for front wheel drive**

- Check hub bearings for wear and play  
- Refer to page 390

### 20.1.18 Maintenance – Every 1500 hours, at least before the beginning of the season

**Engine**

- Change the engine oil  
- To be performed by an authorised technician only.

### 20.1.19 Maintenance – Every 2,000 hours, at least once a year

**Cooling system (engine)**

- Check corrosion and frost protection concentration in the coolant.  
- To be performed by an authorised technician only.

### 20.1.20 Maintenance – Every 3 years

**Cooling system (engine)**

- Change coolant  
- Refer to page 377  
- Refer to page 388  
- Replace safety cartridge air filter  
- Refer to page 381

### 20.1.21 Maintenance – Every 4,000 hours, at least every four years

**Cooling system (engine)**

- Change coolant  
- To be performed by an authorised technician only.

### 20.1.22 Maintenance - Every 6 years

**Components**

- Have the hydraulic hoses replaced by your KRONE service partner
## 20.1.23 Maintenance – As needed

### Hydraulic system
- Change return suction filter  
  *refer to page 450*
- Change hydraulic oil filter (high-pressure filter) in the working hydraulics  
  *refer to page 451*

### Brake
- Check service brake function  
  *refer to page 391, refer to page 85*

### Components for crop flow
- Check conveyor bars on the pre-compression roller  
  *refer to page 433*
- Check intake unit tension springs  
  *refer to page 438*
- Check counterblade for damage and wear  
  *refer to page 430*
- Check chopping blade for damage and wear  
  *refer to page 417*
- Check corn conditioner for wear  
  *refer to page 445*
- Check discharge scoop for damage and wear  
  *refer to page 446*
- Check discharge accelerator scraper  
  *refer to page 448*
- Check grinding stone for damage  
  *refer to page 412*

### Engine
- Clean engine compartment
- Clean cooler, cooler compartment and cooler screen  
  *refer to page 387*

### Fuel system (engine)
- Check the water separator on the fuel prefilter and drain water, if necessary  
  *refer to page 370*
- Vent the fuel system (do not release the injection lines)  
  To be performed by an authorised technician only.

### Cooling system (engine)
- Check the coolant hoses for leaks.  
  *refer to page 376*
- Check that detachable connecting elements (screws, hose clamps, pipe connections, hoses) are tight and retighten if required  
  *refer to page 377*

### Air filter
- Change the main element of the air filter (based on maintenance display / annually).  
  To be performed by an authorised technician only.
- Change the air filter safety element (every 3rd time the main element is replaced / annually).  
  To be performed by an authorised technician only.

### Drive belt
- Change screen drum belt  
  *refer to page 392*
- Change corn conditioner belt  
  *refer to page 392*
### 20.2 Tightening torques

**Metric thread screws with control thread**

<table>
<thead>
<tr>
<th>X</th>
<th>Thread size</th>
<th>1</th>
<th>Strength class on screw head</th>
</tr>
</thead>
</table>

**INFORMATION**

The table does not apply to countersunk screws with hexagon socket in case the countersunk screw is tightened via hexagon socket.

<table>
<thead>
<tr>
<th>X</th>
<th>Strength class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.6</td>
</tr>
<tr>
<td>M4</td>
<td>3.0</td>
</tr>
<tr>
<td>M5</td>
<td>5.9</td>
</tr>
<tr>
<td>M6</td>
<td>10</td>
</tr>
<tr>
<td>M8</td>
<td>25</td>
</tr>
<tr>
<td>M10</td>
<td>29</td>
</tr>
<tr>
<td>M12</td>
<td>42</td>
</tr>
<tr>
<td>M14</td>
<td>135</td>
</tr>
</tbody>
</table>
### 20.2 Tightening torques

<table>
<thead>
<tr>
<th>X</th>
<th>Strength class</th>
<th>5.6</th>
<th>8.8</th>
<th>10.9</th>
<th>12.9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tightening torque (Nm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M16</td>
<td>210</td>
<td>310</td>
<td>365</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M20</td>
<td>425</td>
<td>610</td>
<td>710</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M22</td>
<td>571</td>
<td>832</td>
<td>972</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M24</td>
<td>730</td>
<td>1,050</td>
<td>1,220</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M27</td>
<td>1,100</td>
<td>1,550</td>
<td>1,800</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M30</td>
<td>1,450</td>
<td>2,100</td>
<td>2,450</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Metric thread screws with fine thread

<table>
<thead>
<tr>
<th>X</th>
<th>Thread size</th>
<th>1</th>
<th>Strength class on screw head</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strength class</td>
<td>5.6</td>
<td>8.8</td>
</tr>
<tr>
<td></td>
<td>Tightening torque (Nm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M12 x 1.5</td>
<td>88</td>
<td>130</td>
<td>152</td>
</tr>
<tr>
<td>M14 x 1.5</td>
<td>145</td>
<td>213</td>
<td>249</td>
</tr>
<tr>
<td>M16 x 1.5</td>
<td>222</td>
<td>327</td>
<td>382</td>
</tr>
<tr>
<td>M18 x 1.5</td>
<td>368</td>
<td>525</td>
<td>614</td>
</tr>
<tr>
<td>M20 x 1.5</td>
<td>465</td>
<td>662</td>
<td>775</td>
</tr>
<tr>
<td>M24 x 2</td>
<td>787</td>
<td>1,121</td>
<td>1,312</td>
</tr>
<tr>
<td>M27 x 2</td>
<td>1,148</td>
<td>1,635</td>
<td>1,914</td>
</tr>
<tr>
<td>M30 x 1.5</td>
<td>800</td>
<td>2,100</td>
<td>2,650</td>
</tr>
</tbody>
</table>

### Metric thread screws with countersunk head and hexagon socket

**INFORMATION**

The table applies only to countersunk screws with hexagon socket and metric thread tightened via hexagon socket.
### Tightening torques

<table>
<thead>
<tr>
<th>Thread size</th>
</tr>
</thead>
<tbody>
<tr>
<td>M4</td>
</tr>
<tr>
<td>M5</td>
</tr>
<tr>
<td>M6</td>
</tr>
<tr>
<td>M8</td>
</tr>
<tr>
<td>M10</td>
</tr>
<tr>
<td>M12</td>
</tr>
<tr>
<td>M14</td>
</tr>
<tr>
<td>M16</td>
</tr>
<tr>
<td>M20</td>
</tr>
</tbody>
</table>

### Strength class

<table>
<thead>
<tr>
<th>Strength class</th>
<th>5.6</th>
<th>8.8</th>
<th>10.9</th>
<th>12.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>M4</td>
<td>2.5</td>
<td>3.5</td>
<td>4.1</td>
<td></td>
</tr>
<tr>
<td>M5</td>
<td>4.7</td>
<td>7</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>M6</td>
<td>8</td>
<td>12</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>M8</td>
<td>20</td>
<td>29</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>M10</td>
<td>23</td>
<td>39</td>
<td>58</td>
<td>67</td>
</tr>
<tr>
<td>M12</td>
<td>34</td>
<td>68</td>
<td>100</td>
<td>116</td>
</tr>
<tr>
<td>M14</td>
<td>108</td>
<td>160</td>
<td>188</td>
<td></td>
</tr>
<tr>
<td>M16</td>
<td>168</td>
<td>248</td>
<td>292</td>
<td></td>
</tr>
<tr>
<td>M20</td>
<td>340</td>
<td>488</td>
<td>568</td>
<td></td>
</tr>
</tbody>
</table>

### Locking screws on the gearboxes

**INFORMATION**

The tightening torques only apply to assembly of locking screws, viewing glasses, ventilation and breather filters and bleed valves in gearboxes with cast housings or aluminium or steel housings. The term “locking screw” includes the drain plug, the inspection screw as well as the ventilation and breather filters.

The table only applies to locking screws with external hexagon together with copper seal ring and for bleed valves made of brass with shaped seal ring.

<table>
<thead>
<tr>
<th>Thread</th>
<th>Locking screw and viewing glass with copper ring&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ventilation/breather filter made of steel</td>
</tr>
<tr>
<td></td>
<td>Steel and cast</td>
</tr>
<tr>
<td></td>
<td>Aluminium</td>
</tr>
<tr>
<td>M10x1</td>
<td></td>
</tr>
<tr>
<td>M12 x 1.5</td>
<td></td>
</tr>
<tr>
<td>G1/4&quot;</td>
<td></td>
</tr>
<tr>
<td>M14 x 1.5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thread</th>
<th>Maximum tightening torque (Nm) (±10 %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M10x1</td>
<td>8</td>
</tr>
<tr>
<td>M12 x 1.5</td>
<td>14</td>
</tr>
<tr>
<td>G1/4&quot;</td>
<td>14</td>
</tr>
<tr>
<td>M14 x 1.5</td>
<td>16</td>
</tr>
</tbody>
</table>
### 20.3 Compressed air connections to clean with compressed air

**WARNING**

Eye damage caused by flying dirt particles!

When cleaning the machine with compressed air or with high-pressure cleaner, the dirt particles are slung away at high speed. The dirt particles may hit the eyes and hurt them.

- Keep persons away from working range.
- When performing cleaning work with compressed air or with high-pressure cleaner, wear suitable working clothes (for example eye protection).

To clean the machine with compressed air, there is a blow-out gun with hose in the tool storage compartment. This blow-out gun can be connected to compressed-air connections on the machine.

<table>
<thead>
<tr>
<th>Thread</th>
<th>Locking screw and viewing glass with copper ring*</th>
<th>Bleed valve made of brass</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ventilation/breather filter made of steel</td>
<td>Ventilation and breather filter made of brass</td>
</tr>
<tr>
<td>Steel and cast</td>
<td>Aluminium</td>
<td>Steel and cast</td>
</tr>
<tr>
<td>M16 x 1.5</td>
<td>45</td>
<td>40</td>
</tr>
<tr>
<td>M18 x 1.5</td>
<td>50</td>
<td>45</td>
</tr>
<tr>
<td>M20 x 1.5</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>G1/2&quot;</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>M22x1.5</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>M24x1.5</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>G3/4&quot;</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>M33x2</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>G1&quot;</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>M42x1.5</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>G1 1/4&quot;</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

*) Always replace copper rings
20.4 Swivel the ladder to the cabin to the side

For maintenance work on the left side of the machine, the ladder to the cabin can be swivelled to the side.
To swivel the ladder to the cabin to the side:

- Remove the screw (1) and put it aside for reassembly later.
- Swivel the ladder (2) to the side
## Before the beginning of the new season

**WARNING**

Risk of injury due to non-observance of relevant safety instructions
If the relevant safety instructions are not observed, persons may be seriously injured or killed.
- To avoid accidents, the relevant safety instructions must be read and observed, *refer to page 19.*

**WARNING**

Risk of injury due to non-observance of safety instructions
If the relevant safety routines are not observed, persons may be seriously injured or killed.
- The safety routines must be read and observed to avoid accidents, *refer to page 34.*

Before the start of the new harvest season, inspect the machine thoroughly.

Keeping the machine in a perfect technical condition will significantly reduce costly running problems during harvest time.

If this was not already done after the last harvest, the machine must be thoroughly cleaned inside and outside.

- Refit any belts and V-belts that were removed and check belt tensions.
- If engine openings were covered, remove the covers.
- Check to make certain all bolts are tightened and all cotter pins are in place.
- Check all seals and the filling quantity of the cooling system. Antifreeze and anticorrosion agent must remain in the cooling system even during summer months, since they protect the system against corrosion.
- Check the charge state of the batteries; recharge the batteries if required.
- Lubricate the machine completely according to the lubrication chart. Remove any condensation water which may have collected in the bearings. Wipe away grease that escapes from lubrication points.
- Check the oil level in the gearboxes and top up the oil if required.
- Check the hydraulic hoses and lines for leaks and replace them if necessary.
- Set the tyre pressure according to the tyre pressure table suitable for the header, *refer to page 73.*
- Check all screws to make certain they are tight or retighten them if necessary.
- Check all electrical connection cables and the lighting. Repair or replace if necessary.
- Check the entire setting of the machine and correct if necessary.
- After these tasks are complete, let the machine run about one hour at half speed. Then check all bearings for overheating.
22 Maintenance - Engine

**WARNING**
Risk of injury due to non-observance of relevant safety instructions
If the relevant safety instructions are not observed, persons may be seriously injured or killed.
- To avoid accidents, the relevant safety instructions must be read and observed, refer to page 19.

**WARNING**
Risk of injury due to non-observance of safety instructions
If the relevant safety routines are not observed, persons may be seriously injured or killed.
- The safety routines must be read and observed to avoid accidents, refer to page 34.

**WARNING**
Health hazard due to dust from the damaged catalytic converter of the urea system
If the catalytic converter of the urea system is damaged, there is a health hazard due to inhaling escaping dust or insulation material.
- If the catalytic converter of the urea system is damaged, make certain that no one inhales the dust from the inside of the catalytic converter or the insulation.

**NOTICE**
Damage to the machine due to incorrectly performed or unfinished maintenance work
If maintenance work is not carried out by qualified personnel, the machine could be damaged. A qualified service centre has the required technical knowledge, qualifications and tools to perform the required work on the machine in a proper manner. This applies in particular to safety-relevant work.
- Always have the following work performed by a qualified specialist workshop:
  - Safety-relevant work
  - Service and maintenance work
  - Repair work
  - Modifications as well as installations and conversions
  - Working on electronic parts
- This chapter does not list all the necessary maintenance work of the engine. It is necessary to observe the maintenance instructions of engine manufacturer. The maintenance instructions are available at each qualified specialist workshop having access to the Workshop Information System (WIS) or after having participated in motor training at KRONE premises.
### 22.1 Overview of engine

1. Alternator 24 V
2. Oil filter
3. Hydraulic pump (circulation)
4. Variable displacement pump (work hydraulics / steering)
5. Control unit for exhaust gas aftertreatment (LMB-ECU2)
6. Oil dipstick
7. Starter 24 V
8. Oil drain
9. Coolant compactor
10. Fuel prefilter/water separator
11. Oil filler neck
12. Fuel fine filter

### 22.2 Dirt deposits in engine compartment

**WARNING**

**Risk of fire due to dirt deposits in the engine compartment**

A mixture of dust, oil and plant residue inside the engine compartment is a source of fire and presents an increased fire hazard.

- Always keep the engine compartment clean.
22.2.1 Cleaning engine compartment with compressed air

**WARNING**

**Eye damage caused by flying dirt particles!**
When cleaning the machine with compressed air or with high-pressure cleaner, the dirt particles are slung away at high speed. The dirt particles may hit the eyes and hurt them.

- Keep persons away from working range.
- When performing cleaning work with compressed air or with high-pressure cleaner, wear suitable working clothes (for example eye protection).
- If necessary, blow away the dirt and contamination and wipe off oil deposits.

22.3 Engine oil level

**NOTICE**

**Engine damage due to excessively low or high oil level**
If the oil level is too low, the amount of oil in the engine is too low, the lubrication points in the engine are not adequately supplied and there is a risk of engine damage. If the oil level is too high, the engine or the exhaust gas aftertreatment system may be damaged.

- Check oil level according to the engine maintenance table, refer to page 349.
- Check oil level only when machine is in a horizontal position.
- Do not start the engine if the oil level is below the bottom mark (min. mark) of the oil dipstick.
- Drain or extract oil which has been topped up too much.

22.3.1 Checking engine oil level

- The main frame of the machine has been aligned horizontally.
- 5 to 10 minutes have passed after the engine has been switched off.
- Have a lint-free cloth at hand to clean the oil dipstick (1).
- Thoroughly clean the area around the oil dipstick (1).
- Pull out the oil dipstick (1), clean and push in all the way.
- Pull out the oil dipstick (1) and check the engine oil level.
If the engine oil level is indicated between the "min." and "max." marks, the engine oil level is correct.

- Push in the oil dipstick (1).

If the engine oil level is indicated below the "min." mark:

- Top up the engine oil, refer to page 369.

22.3.2 Topping up engine oil

![Image of engine oil dipstick]

- The machine is shut down and safeguarded, refer to page 34.
- The main frame of the machine is aligned horizontally.
- The diesel engine has cooled off to the ambient temperature.
- Clean around the locking cover (1).
- Unscrew the locking cover (1).
- **NOTICE!** Only engine oils that are approved by the engine manufacturer may be used, refer to page 70.
- Top up the engine oil via the oil filler neck up to the "max." mark on the oil dipstick.
- Clean the locking cover (1), set it in place and tighten it.
- Start the diesel engine, run at idle speed and check the oil pressure.
- Switch off the diesel engine.
- After 2-3 minutes check the engine oil level, refer to page 368.

22.4 Cleaning fuel tank

Draining water and sediment

![Image of fuel tank]

- The machine is shut down and safeguarded, refer to page 34.
- The main frame of the machine is aligned horizontally.
- The diesel engine has cooled off to the ambient temperature.
- Clean around the locking cover (1).
- Unscrew the locking cover (1).
- **NOTICE!** Only engine oils that are approved by the engine manufacturer may be used, refer to page 70.
- Top up the engine oil via the oil filler neck up to the "max." mark on the oil dipstick.
- Clean the locking cover (1), set it in place and tighten it.
- Start the diesel engine, run at idle speed and check the oil pressure.
- Switch off the diesel engine.
- After 2-3 minutes check the engine oil level, refer to page 368.
Run the fuel tank as close as possible to empty.

The machine is shut down and safeguarded, refer to page 34.

- Provide a sufficiently large container for the fuel.
- Turn out the drain plug (1).
  - The collected water, the sediment and fuel run out of the fuel tank.
- Attach the drain plug (1) with an o-ring seal, tightening torque = 50 Nm.
- Fill the machine with fuel, refer to page 372.
- If necessary vent the fuel system, refer to page 374.

### 22.5 Fuel prefilter/water separator

![Diagram showing fuel prefilter/water separator components](BXG000-030)

The fuel prefilter is located on the right side of the machine behind the rear flap on the machine rear. The fuel prefilter cleans fuel.
Changing fuel filter element and cleaning inspection glass

- The machine is shut down and secured. refer to page 34
- A new filter element and a clean cleaning brush from HYDAC are available.
- A suitable vessel for collecting the draining fuel is available.
  - Follow the instructions in the supplied document: Operating instructions for water separator/ fuel prefilter SWK-2000, chapter Changing the element.
  - Hold the suitable vessel under the drain plug (5), slowly unscrew the drain plug (5) and drain the fuel into the vessel.
  - Unscrew the screw cover (1) with filter element and pull slightly out of the filter housing (2). Allow the fuel to run out.
  - Remove the screw cover (1) with filter element (3).
  - Remove the drain plug (5) and the water sensor (6).
  - Insert the head of the available brush from above into the filter housing (2) so that the inspection glass (4) can be cleaned through the lower opening in the filter housing (2).
  - When cleaning, do not apply force and do not use any cleaning agents.
  - Rinse out the detached residual dirt from above with diesel fuel and collect in the suitable vessel.
  - After cleaning the sight glass (4), insert the drain plug (5) and the water sensor (6), tighten hand-tight.
  - Wet the new O-ring seal on the screw cover (1) with fuel.
  - Insert the new filter element (3) into the screw cover (1).
  - Screw on the screw cover (1) with filter element (3) and tighten to 40 Nm.
  - Fill the fuel filter with diesel and check the filter for leaks.
  - Vent the fuel system, refer to page 374.

Draining condensation water from the fuel prefilter

The condensation water in the fuel is collected in the inspection glass (4).

A water sensor (6) checks whether condensation water has collected in the sight glass (4).

If a fault message is displayed in the terminal indicating that condensation water has collected in the sight glass (4), the condensation water must be drained.
  - Hold a suitable container under the drain plug (5).
  - Open the drain plug (5).
  - Allow the water-fuel mixture to run into the container.
  - Close the drain plug (5).
  - Dispose of the water-fuel mixture according to the applicable regulations.
22.6 Refuelling

**NOTICE**

**Machine damage due to use of unauthorised or contaminated fuel.**
If refuelling with unauthorised or contaminated fuel or with fuel which has a high sulphur content, the engine and the exhaust gas after-treatment system will be damaged.

- Refuel only with standard, sulphur-free diesel fuel, according to EN 590.
- Do not refuel with contaminated fuel.
- Observe the operating instructions of engine manufacturer, chapter “Refuelling”.
- Do not use the following fuels:
  - Fuels containing more than 0.005% (50ppm) sulphur
  - Marine diesel fuel
  - Aviation turbine fuel
  - Heating oil
  - Fatty acid methyl ester FAME (bio-diesel fuels)

**NOTICE**

**Machine damage by water in the fuel**
If the machine is parked with tank unfilled, condensation water may form and when it is cold, freezing could result.

- Refuel daily at the end of operation.

---

Filling quantity: *refer to page 70.*
- Follow the instructions in the following, supplied document: Engine operating instructions, chapter entitled Lubricants and consumables.
- Shut down and safeguard the machine, *refer to page 34.*
- Fold open the flap (1).
- Clean around the filler neck (3).
- Unscrew the tank cap (2).
- Fill the fuel tank with fuel.
- Close the tank cap (2) tight.
- Fold down the flap (1).
22.7 Topping up urea solution

⚠️ CAUTION

Risk of injury from contact with urea solution
The urea solution must not come in contact with the skin, eyes or clothing.

▶ If urea solution comes into contact with the eyes or skin, immediately rinse off with plenty of clear water.
▶ If urea solution is swallowed, rinse out the mouth immediately with plenty of clear water and drink a lot of water.
▶ If urea solution soils clothing, immediately change clothing.
▶ If allergic reactions occur, consult a doctor immediately.
▶ Keep children away from the urea solution.

⚠️ CAUTION

Risk of injury from escaping ammonia vapours!
If the urea tank cap is opened at high temperatures, ammonia vapours may escape. Ammonia vapours have a pungent smell and irritate in particular:
- Skin
- Mucous membranes
- Eyes.
This can lead to burning of the eyes, nose and throat as well as irritation of the throat and tearing eyes.

▶ Do not inhale ammonia vapours.

NOTICE

Damage to the machine due to incorrect handling of the urea solution
The machine or the exhaust aftertreatment system could be damaged due to incorrect handling of the urea solution.

▶ Use only urea solution according to DIN 70070 / ISO 22241.
▶ To prevent damage to the urea tank at very low temperatures, do not overfill the urea tank.
▶ To prevent damage to the exhaust gas after-treatment system due to contaminants, seal the tank properly.
▶ To prevent damage to the exhaust gas after-treatment system, the urea solution must not be mixed with additives or diluted with tap water.
Filling quantity: refer to page 70

- Follow the instructions in the following, supplied document: Engine operating instructions, chapter entitled Lubricants and consumables.
- Shut down and safeguard the machine, refer to page 34.
- Fold open the flap (1).
- Clean around the filler neck (3).
- Unscrew the tank cap (2).
- Fill the urea tank with urea solution until the pump nozzle switches off.
- Close the tank cap (2) tight.
- Fold down the flap (1).

### 22.8 Venting fuel system

The fuel system may have to be vented,
- after the filter element on the fuel prefilter was changed.
- after prolonged machine standstill
- after filling the previously drained fuel system

To vent the fuel system:
- The machine is shut down and safeguarded, refer to page 34.
- Follow the instructions in the following, supplied document: Engine operating instructions, section "Venting the fuel system".
- To allow air to escape, unscrew the venting screw (2).
- Turn the activation lever (1) to the left until the activation lever (1) can be moved freely upwards.
- Pump the activation lever (1) until fuel comes out of the venting screw (2).
- If fuel comes out, guide the activation lever (1) downwards and lock by turning it to the right.
- Screw in the venting screw (2) and clean up any fuel which has run out.
If the fuel tank has been run empty, the fuel system can, if necessary, also be vented via the measuring connection (1) at the fuel fine filter (2):

- Refuelling, refer to page 372.
- Provide a container for the escaping fuel.
- Unscrew the cap of the measuring connection (1).
- Take the measuring hose from the storage compartment, screw it onto the measuring connection (1) and place the end of the measuring hose in the provided container.
- Turn the ignition key to the "I" position, refer to page 283.
- The fuel pump conveys fuel.
- When fuel starts to escape from the hose, turn the ignition key to the "STOP" position.
- Unscrew the measuring hose from the measuring connection (1) and screw the cap onto the measuring connection.

### 22.9 Engine coolant

**NOTICE**

**Damage to the cooling system by using incorrect coolant**

If a mixture of coolant containing silicate and a silicate-free coolant is used, this may cause damage to the cooling system of the diesel engine.

- Never use a mixture of coolant containing silicate and a silicate-free coolant as an engine coolant.

The engine cooling system has been filled with coolant at the factory that ensures frost protection, corrosion protection and further protective effects.

The engine coolant is a mixture of water, anti-corrosion agent and frost protection agent.

The engine coolant has the following properties:

- Heat transfer
- Corrosion protection
- Cavitation protection (protection against pitting)
- Frost protection
- Increase in the boiling point

The engine coolant must remain in the engine cooling system irrespective of the time of year, even in countries which have high outdoor temperatures.
When replacing engine coolant, ensure that

- The coolant meets the requirements of at least the following specification: LH-01-COL3A. The engine manufacturer recommends using the anti-corrosion antifreeze Liebherr Antifreeze OS Concentrate or Liebherr-Antifreeze OS Mix (ready-to-use mixture of 50% water and 50% anti-corrosion antifreeze).
- that the water which is used meets the requirements of the Drinking Water Guideline of the World Health Organisation (WHO) of 2006.
- the engine coolant contains 50% vol. anti-corrosion agent and frost protection agent. This is equivalent to frost protection down to -37° C.
- the percentage of anti-corrosion agent and frost protection agent in the engine coolant does not exceed 55% vol. This is equivalent to frost protection down to -45° C. Otherwise, the frost protection and the heat supply will deteriorate.
- the engine coolant is not mixed with a different anti-corrosion agent and frost protection agent.
- a low coolant level is not topped up not only with water, but also with the correct percentage of an approved anti-corrosion agent and frost protection agent.

22.10 Checking the engine coolant level

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
</table>

**Risk of fire from frost protection agent**

If frost protection agent comes into contact with hot components in the warm engine compartment, it may ignite. There is a risk of fire and injuries.

- Leave the engine to cool down before filling with anti-freeze.
- Keep anti-freeze away from the filler neck.
- Before starting the engine, thoroughly clean components contaminated with frost protection agent.

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
</table>

**Danger of injury due to scalding**

The engine cooling system is under pressure, especially when the engine is warm. If the cover is opened when the engine is warm, hot coolant may spray out. There is risk of injury.

- Leave the engine to cool down before opening the cover.
- When opening the cover, wear suitable gloves and goggles.
- To relieve the pressure, open the cover by a half turn.
The reservoirs (1) for the coolant are located behind the left and right side hood at the top of the engine room.

- Check the coolant level in the coolant compensation tank (1) in the viewing pane (2).
  - The coolant level must reach up to the middle of the viewing pane (2); refill coolant if necessary.

**Topping up the engine coolant**

Filling quantity: *refer to page 70*

Follow the instructions in the following, supplied document: Engine operating instructions, chapter Consumables "Coolant".

Shut down and safeguard the machine, *refer to page 34*.

- Turn the locking cover (3) on the filler neck of the coolant compensation tank (1) to the right catch point and allow residual pressure to escape slowly.
- Fully open the locking cover (3) and remove it.
- Fill with coolant up to the middle of the viewing pane (2).
- Set the locking cover (3) in place on the filler neck of the coolant compensation tank and close it.

**22.11 Checking engine piping**

**22.11.1 Checking pipework in the air conditioning and heating system**

- Check all lines, hoses and sleeves for leaks and condition and replace if required.
22.11.2 Check pipework of the engine cooling system and the charge air

- Check all lines, hoses and collars for leaks and condition and replace if required.
- Attach the hose clamps of the joint bolts during the initial installation with a tightening torque of 9 Nm.
- Warm up the machine.
- Retighten the joint bolt hose clamps with a tightening torque of 10-11 Nm.
22.11.3 Checking pipework of the air intake

- Check all lines, hoses and collars for leaks and condition and replace if required.
- Attach the joint bolt hose clamps with a tightening torque of 10-12 Nm.

22.11.4 Checking fuel lines
22 Maintenance - Engine

22.12 Cleaning air filter

NOTICE

Engine damage caused by dirty or damaged air filter or safety cartridge
If the machine is operated with a soiled or damaged air filter or safety cartridge, the diesel engine may be damaged.

- Clean or replace the air filter and the safety cartridge according to the maintenance table, refer to page 349.
- Immediately replace a damaged air filter or a damaged safety cartridge.
- Do not clean and reuse the safety cartridge but always replace it by a new one.

1 Main fuel tank 3 Fuel prefilter
2 Rear fuel tank 4 Side fuel tank

- Check all lines, hoses and sleeves for leaks and condition and replace if required.

Immediate replacement of damaged air filter or safety cartridge.

Interval for checking and changing: refer to page 349.

- Shut down and secure the machine, refer to page 34.
- Release the clamps (2) and remove the cover (1).
- By gently turning the filter element (3), carefully pull it out of the filter housing (4).
- Clean the interior area and the sealing surfaces of the filter housing (4).
- Blow out the filter element (3) with compressed air (max. 5 bar) from the inside to the outside.

If the filter element is excessively soiled or damaged, replace the filter element. If the installation date of the filter element is 4 years old, replace the filter element.

- Install the cleaned or a new filter element (3).
- Attach the cover (1) so that the extraction hose is aligned with the middle of the machine.
- Secure the cover (1) with the clamps (2).
22.13 Replacing safety cartridge

**NOTICE**

**Engine damage caused by dirty or damaged air filter or safety cartridge**

If the machine is operated with a soiled or damaged air filter or safety cartridge, the diesel engine may be damaged.

- Clean or replace the air filter and the safety cartridge according to the maintenance table, refer to page 349.
- Immediately replace a damaged air filter or a damaged safety cartridge.
- Do not clean and reuse the safety cartridge but always replace it by a new one.

Interval for checking and changing:

- Shut down and secure the machine, refer to page 34.
- Release the clamps (2) and remove the cover (1).
- By gently turning the filter element (3), carefully pull it out of the filter housing (4).
- Unscrew the safety cartridge (5).
- Clean the interior area and the sealing surfaces of the filter housing (4).
- Screw in a new safety cartridge (5).
- Install the cleaned or a new filter element (3).
- Secure the cover (1) with the clamps (2).
## 23 Maintenance – Compressed Air System

### 23.1 Drain condensation water from the compressed air tank

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Risk of injury due to non-observance of relevant safety instructions</strong></td>
</tr>
<tr>
<td>If the relevant safety instructions are not observed, persons may be seriously injured or killed.</td>
</tr>
<tr>
<td>▶ To avoid accidents, the relevant safety instructions must be read and observed, refer to page 19.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Risk of injury due to non-observance of safety instructions</strong></td>
</tr>
<tr>
<td>If the relevant safety routines are not observed, persons may be seriously injured or killed.</td>
</tr>
<tr>
<td>▶ The safety routines must be read and observed to avoid accidents, refer to page 34.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Risk of injury from escaping compressed air</strong></td>
</tr>
<tr>
<td>The compressed air system is under high pressure. Escaping compressed air may seriously injure skin, limbs and eyes.</td>
</tr>
<tr>
<td>▶ Shut down and safeguard the machine, refer to page 34.</td>
</tr>
<tr>
<td>▶ Reduce the pressure from the compressor unit.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NOTICE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Damage to compressed air reservoir caused by water in the compressor unit</strong></td>
</tr>
<tr>
<td>Water in the compressor unit leads to corrosion which damages the compressed air reservoir.</td>
</tr>
<tr>
<td>▶ Check and clean drain valve according to maintenance table, refer to page 349.</td>
</tr>
<tr>
<td>▶ Immediately replace a defective drain valve.</td>
</tr>
</tbody>
</table>
Shut down and safeguard the machine, refer to page 34.

**WARNING! Risk of eye injury due to escaping condensation water! Wear suitable protective goggles.**

- A suitable container is available for escaping condensation water.
- Open the drain valve (2).
- Compressed air and condensation water escape from the compressed air tank.
- Perform a visual inspection to ensure the drain valve (2) is not defective or soiled.
- If the drain valve (2) is defective, have the drain valve (2) replaced immediately by a KRONE service partner.
- If the drain valve (2) is soiled, clean the drain valve (2).

### 23.1.1 Retighten tensioning straps at the compressed air tank

Shut down and safeguard the machine, refer to page 34.

- Make sure the tensioning straps (1) are tight.

If the tensioning straps are tight, the setting is correct.
If the tensioning straps are not tight, retension the tensioning straps.

**Tension the tensioning straps**

- To tension the tensioning straps, tighten the nuts (2).
24 Maintenance – Basic Machine

24.1 Checking/refilling windscreen washer system

**WARNING**

Risk of injury due to non-observance of relevant safety instructions

If the relevant safety instructions are not observed, persons may be seriously injured or killed.
- To avoid accidents, the relevant safety instructions must be read and observed, refer to page 19.

**WARNING**

Risk of injury due to non-observance of safety instructions

If the relevant safety routines are not observed, persons may be seriously injured or killed.
- The safety routines must be read and observed to avoid accidents, refer to page 34.

**24.1 Checking/refilling windscreen washer system**

BMG000-012

The reservoir (1) for the windscreen washer system is located on the left behind the flap over the ladder.

The cover (2) is on top of the machine and can be reached by climbing the ladder on the right side of the machine.
- Check the level of the windscreen washer system daily.
  - If the cleaning fluid can be seen in the reservoir, the fluid level is correct.
  - If no cleaning fluid can be seen in the reservoir, refill:
    - Open the cover (2) and add cleaning fluid.
    - Close the cover (2).

**INFORMATION**

- To achieve a better cleaning effect under extreme crop and road conditions, add windscreen cleaner/anti-freeze.
- In winter drain the washer system or fill with special anti-freeze.
24.2 Maintaining air conditioning and heating

**WARNING**

Risk of injury from touching refrigerant
During repair, upkeep, maintenance and cleaning work on the refrigerant circuit, refrigerant may be emitted; refrigerant may be emitted in liquid or gaseous form and is hazardous to people and the environment.

- Switch off the engine, remove the ignition key and take it with you.
- Secure the machine against the possibility of rolling back.
- Take suitable protective measures (for example wear protective goggles and protective gloves).
- Repair, upkeep, maintenance and cleaning work must be carried out only by authorised specialists.
- If the refrigerant causes burns, always consult a doctor and take the refrigerant data sheet R 134a (excerpt) with you, refer to page 72.
- Ensure sufficient ventilation when working on the cooling system.
- During refill and repair work do not allow refrigerants to escape; dispose of them into a recycling container.
- Spare parts that are used must correspond to the technical requirements of the machine manufacturer. For this reason, use KRONE original spare parts only.
- Extreme caution is advised when welding close to the air conditioning system.

**NOTICE**

Environmental damage due to chemicals
The air conditioning is operated with refrigerant R134a (tetrafluorethane). This substance contains no chlorine atoms, and thus is not harmful to the ozone in the atmosphere of the world. Nonetheless, the refrigerant must not be drained; it must be collected at a recycling plant.

- Collect the refrigerant with a recycling plant.
- Thus do NOT separate the connecting pipes beforehand.
- Have all maintenance and repair work on the air conditioning carried out only by your KRONE dealer with a suitable disposal and recycling equipment.

### 24.2.1 Components of air conditioning

<table>
<thead>
<tr>
<th>Component</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressor</td>
<td>On the right behind the engine, driven by a V-belt</td>
</tr>
<tr>
<td>Capacitor with dryer</td>
<td>Behind the rotating screen, can be accessed from the right side of the machine</td>
</tr>
<tr>
<td>Evaporator</td>
<td>In the cabin roof</td>
</tr>
<tr>
<td>Pressure switch</td>
<td>On the capacitor, behind the rotating screen</td>
</tr>
<tr>
<td>Expansion valve</td>
<td>At the evaporator inlet</td>
</tr>
<tr>
<td>Control panel for automatic climate control</td>
<td>In the terminal</td>
</tr>
</tbody>
</table>
24.2.2 Replacing/cleaning fresh air filter

**INFORMATION**

If filters are not properly maintained, the fresh air filter may become very soiled and it can no longer be guaranteed that adequate fresh air will flow into the cab.

A fresh air filter (4) is located in the upper cabin area behind the ventilation grid (2) on the left hand side in direction of travel. The fresh air filter protects the driver in the cabin against airborne contamination outside the cabin.

Always check the fresh air filter before starting to drive the machine.

- Open the closing device (1) by turning it 90° clockwise and remove the gill screen (2).
- To remove the fresh air filter (4), remove the knurled head screw (3).
- Pull out the fresh air filter (4), check for soiling and clean if required.

Shake out the fresh air filter (4); never use compressed air. If heavily soiled, replace the fresh air filter (4).

- Reinsert the fresh air filter (4).
- Attach the fresh air filter with the knurled head screw (3).
- Insert the ventilation grid (2) and close using the closing device (1).

24.2.3 Replacing/cleaning circulation filter
INFORMATION

If the filters are not adequately maintained, the circulation filter may become heavily soiled and cause a reduction in the output of the air conditioning and the heating.

- To clean the circulation filter, loosen the screws (2) and remove the ventilation grid (1) together with the filter element.
- Clean filter element with compressed air and replace it, if necessary.
- Mount the ventilation grid (1) together with the filter element, ensuring that the filter element is correctly inserted.
- Press in the screws (2).

24.3 Cleaning cooler and cooler compartment

The right side hood is used to access the cooler, the maintenance flaps of the crop flow and the right side of the engine compartment.

- Open the side hood (1) and enter the cooler compartment via the right ladder (2).
- Every day remove dirt from around the area of the engine compartment and the cooler and clean the ambient area to prevent the risk of fire and wipe off any oil residue.
- If there is a large accumulation of dust and if the crops are very dry, clean the above locations more frequently.

The water cooler, oil cooler, charging air cooler, diesel cooler and capacitor are located behind the rotating screen in the engine room.
Preferably clean the cooler and the capacitor while the engine is cold.

- Open the snap locks (2) on the rotating screen (1) and open the rotating screen.
- Blow out the coolers (3) with compressed air from the engine compartment in the direction of travel. Ensure that the blades are not damaged.
- Blow out the capacitor (4) with compressed air from the cooler compartment against the direction of travel. Ensure that the blades are not damaged.
- Close the rotating screen (1) and lock with the snap locks (2).

### 24.4 Draining coolant

The drain sleeve is located at the back on the left side of the machine.

- The left side hood is open.
- Place a suitable container under the drain sleeve (1).
- Remove the end cap of the drain sleeve (1).
- Remove the drain hose from the storage compartment and hold the open end in the container provided.
- Screw on the screw connection for the drain hose onto the drain sleeve (1) and allow the coolant to flow into the container.
- Once the coolant has fully drained out, remove the drain hose and place the end cap onto the drain sleeve (1).

### 24.5 Maintaining chassis

#### 24.5.1 Checking attachment of steering cylinder
Check the screws of steering cylinder with the following tightening torques:

▶ The screws (1) of the steering cylinder are mounted to a tightening torque of 730 Nm.

### 24.5.2 Checking fitting of track rod

Check the screw of track rod with the following tightening torques:

▶ The axial ball joint (1) is fitted to the piston rod of the steering cylinder at a tightening torque of 350 Nm.
▶ The clamping screw (2) of the track rod is mounted with a tightening torque of 70 +20 Nm.
▶ The castle nut (3) of the track rod head is mounted with a tightening torque of 450 +50 Nm and secured by means of a cotter pin.

### 24.5.3 Checking the hub cover of the rear axle, with front wheel drive version

Check the hub covers (1) for damage and tight fit:

▶ Replace lost or worn hub covers (1) immediately to prevent dirt entering the interior of the hub and damaging the bearing.

If a hub cover is missing or if a hub cover is dismounted, the seal must be replaced before a new installation.

Check the screws of the hub covers:

▶ Shut down and secure the machine, refer to page 34.
▶ Make sure the hub covers have been mounted correctly and are in a perfect state.
▶ Check the screws of the hub cover for tight fit.
24.5.4 Checking the hub bearing of the rear axle, for the front-wheel drive version

The hub bearings of the rear axle are subject to wear. The lifetime of the bearings depends on the working conditions, load, speed, setting and lubrication of the bearings.

**Checking the hub bearing of the wheels for wear:**

- Shut down and secure the machine, *refer to page 34.*
- Raise the rear axle until the wheels no longer have contact with the ground
- Turn the wheels one after the other in both directions to determine possible hard stops or resistance.
- Quickly turn the wheels one after the other to detect any noises, vibrations or impacts.
  - Wear is determined at a hub bearing.
  - Replace the hub bearing and all oil seals.

**Determine the bearing clearance of the hubs:**

- Shut down and secure the machine, *refer to page 34.*
- Raise the rear axle until the wheels no longer have contact with the ground
- Take hold of the wheel from the top and bottom and check the clearance by carrying out a wobble test. (To check the clearance, it might be helpful to use a lever between the wheel and ground.)
- Make sure the clearance does not originate from the suspension or the steering knuckles.
  - Clearance is determined at a hub bearing.
  - Have a qualified service centre set the bearing clearance.

24.5.5 Checking attachment of wheel hub gearbox
Test the screws of the wheel hub gearbox at the front axle on both sides of the machine with the following tightening torques:

- Test the 2 screws (1) connecting the wheel hub gearbox and the adjusting motor with a tightening torque of 415 Nm.
- Test the 20 screws (2) connecting the wheel hub gearbox and the adapter plates with a tightening torque of 610 Nm.
- Test the 14 M22 screws (3) connecting the adapter plates and the vehicle frame with a tightening torque of 550 Nm.
- Test the 2 M20 screws (4) connecting the adapter plates and the vehicle frame with a tightening torque of 410 Nm.
- Test the 2 screws (5) of the oil holes with a tightening torque of 65 Nm.

Test the screws of the wheel hub gearbox at the rear axle on both sides of the machine with the following tightening torques:

- Test the 2 screws (1) connecting the wheel hub gearbox and the adjusting motor with a tightening torque of 230 Nm.
- Test the 18 screws (2) connecting the wheel hub gearbox and the steering knuckle with a tightening torque of 210 Nm.
- Test the 2 screws (3) of the oil holes with a tightening torque of 65 Nm.

24.6 Maintaining brake (Bosch)

**NOTICE**

Failure of the service brake caused by malfunctions of brake as well as thermal overload

If malfunctions occur or there is a thermal overload, the multi-disc brake may fail.

- After a malfunction or thermal overload, always replace the blades, springs and sealing elements.
- If repairs are required due to malfunctions or thermal overload, they may be performed by trained personnel or employees of the BOSCH-REXROTH service department only.

 svenska: BOSCH-REXROTH will accept no liability for any damage which occurs due to non-compliance with these instructions.
NOTICE

Damage to the multi-disc brake

If the outer and inner discs of the multi-disc brake are replaced during maintenance/repair work but are not wetted with lubricating oil prior to installation, the discs, which have not been wetted with a film of lubricating oil, may become severely worn when the brakes are directly applied. This may cause the multi-disc brake to fail.

- When repairing the multi-disc brake, generally replace the entire multi-disc pack, the springs and the sealing elements. It is not permitted to replace individual discs.
- Prior to installation, wet all replaced discs with lubricating oil according to the enclosed lubricating oil recommendation.
- Ensure that the discs are completely wetted with a film of lubricating oil.

Daily or before moving off

- Always check the function of the service brake before moving off, refer to page 85.

Checking within the limits of the national regulations:

- Regularly check the function of the multi-disc brake according to the national regulations. This check can be conducted for example during a TÜV vehicle inspection. Also test the braking deceleration. The target value must correspond with the vehicle specification.

After emergency braking

Irrespective of the maintenance intervals, the brake must be completely inspected following emergency braking when the hydrostats have failed.

- Contact KRONE customer service.

24.7 Maintaining belt drives

1 Discharge accelerator drive
2 Belt tensioner for belt drive of cutter drum
3 Power take-off
4 Power take-off
5 Belt drive for cutter drum

BX001-846
24.7.1 Checking kraftband

INFORMATION

If worn or soiled, the complete power transmission of the kraftband and pulley is not guaranteed.

- Visually check the kraftbands on the inside (1) and outside (2) for wear and damage (e.g. tears, stones) and replace if required.
- Check each kraftband for soiling (oil, grease) and clean or replace it, if necessary.

24.7.2 Checking pulley
24.8 Maintaining tyres and wheels

24.8.1 Checking/maintaining tyres

- The machine is shut down and safeguarded, refer to page 34.

**Inspect the tyres visually**

- Visually inspect tyres for cuts or breaks.
- If there are cuts or breaks in the tyres, have the tyres repaired or replaced by a KRONE service partner.

Maintenance intervals for visual inspection of the tyres, refer to page 349.

**Checking/adapting the tyre pressure**

- Check the tyre pressure, refer to page 73.
- If the tyre pressure is too high, deflate air.
- If the tyre pressure is too low, increase the tyre pressure.

Check the maintenance intervals for tyre pressure, refer to page 349.

24.8.2 Retighten wheel nuts

Retighten the nuts for attaching the wheels crosswise
- Retighten the nuts on the front axle to 700 Nm.
- Retighten the nuts on the rear axle to 550 Nm.

The intervals after which the nuts on the wheels must be retightened, refer to page 349.
24.8.3 Running direction of tyres

**INFORMATION**

If machines have front wheel drive only, the left and right tyres on the rear axle are deliberately interchanged for reasons of traction. (The left wheel is mounted on the right and the right wheel is mounted on the left.)

24.8.4 Changing tyre size

**INFORMATION**

Before switching the tyre size when changing the tyres, check beforehand the reliability of the new tyre size for the vehicle and adjust parameters in the terminal. To do this, contact KRONE customer service.

24.9 Maintaining tow coupling

Maintenance work on the tow coupling:

**Wear plate:**

- Check the thickness of the wear plate (1).
  - If the wear plate is thinner than 6 mm:
    - Have the wear plate replaced by a specialist workshop.

**Coupling bolt:**

- Check the diameter of the coupling bolt at the thickest point.
  - If the diameter of the coupling bolt is less than 37 mm:
    - Have the coupling bolt replaced by a specialist workshop.

**Coupling gap:**

- Check the degree of wear of the coupling gap.
  - If the coupling gap is worn by more than 1.5 mm or the gap (a) between the coupling jaw (3) and the coupling carrier (4) is greater than 3 mm at any point:
    - Replace tow coupling.
24.10 Checking the fire extinguisher

The machine is shut down and safeguarded, refer to page 34.

- Make certain that the fire extinguisher (1) is mounted on the machine.
- Ensure that access and view on the fire extinguisher (1) are not obstructed.
- Weigh the fire extinguisher (1) to make sure that the fire extinguisher (1) is filled.
- Ensure by a visual inspection that the seal on the erase head and the security seal are neither defective nor missing.
- Check visually if the operating instructions on the type plate of the fire extinguisher (1) are readable and show to the outside.
- Check if the fire extinguisher is affected by apparent material damage, corrosion, leakage or a clogged hose and/or nozzle.
- Make certain that the indicator of the pressure gauge displays the green area.
25 Maintenance – Feed System

**WARNING**

Risk of injury due to non-observance of relevant safety instructions
If the relevant safety instructions are not observed, persons may be seriously injured or killed.
- To avoid accidents, the relevant safety instructions must be read and observed, refer to page 19.

**WARNING**

Risk of injury due to non-observance of safety instructions
If the relevant safety routines are not observed, persons may be seriously injured or killed.
- The safety routines must be read and observed to avoid accidents, refer to page 34.

25.1 Removing intake unit with mounting cart

✓ The header is removed.
✓ The machine is shut down and safeguarded, refer to page 34.

**Hydraulically relieve tension on the pendulum frame**

The relief button (1) is located on the right side of the ladder. Tension is hydraulically relieved on the pendulum frame by pressing the relief button.

- To hydraulically relieve tension on the hydraulic system of the pendulum frame, pull the relief button (1) and let it go again.
Removing universal shaft

- Remove the lower universal shaft (1) on the forage harvester side.
- Remove the upper universal shaft (2) on the forage harvester side, pull the universal shaft half (3) out of the universal shaft and put it to one side.

Disconnecting cables and lines

Right-hand machine side
- Separate the plug connection (1) and mount the dummy plug on both sides.
- Lay the cable harness down on the intake unit and secure it against falling down.

Left-hand machine side
- Disconnect the lubrication line (2).
- Detach the hydraulic lines (3) (C1, C2, D1, D2).
- Insert the lubrication line (2) and the hydraulic lines (3) into hose support on the intake unit and lock it.
Placing intake unit on the mounting cart

- The holder (1) of the mounting cart is swivelled down, the securing pins and the spring cotter pins (2) have been put to one side, on the right and left.
- Remove the cotter pins (5) and the bolts (6).
- Push the mounting cart centred in front of the intake unit.
- Lower the lifting unit with the keys of the grinding control unit until the locking pins (3) are centred in front of the holders (4).
- Slide the mounting cart onto the locking pins and secure with bolt (6) and cotter pins (5).

- Lower the lifting unit using the keys on the grinding control unit until the locking pins (1) have been relieved.
- Pull out the locking pins (1) and set them aside.
- Raise the lifting unit until the support (2) of the mounting cart can be folded up.
- Fold up the support and secure with bolt (3) and spring cotter pin (4), on the right and left.
- Lower the lifting unit until the holding claw (5) is under the support device (6).

Push out the intake unit forwards and store in a safe place for subsequent reinstallation.
25.2 Mounting intake unit with installation cart

- Lower the lifting unit on the grinding control unit until the holding claw (5) is under the holding mechanism (6).
- Push the intake unit centred in front of the chopper unit.
- Raise the lifting unit until the support (2) of the mounting cart can be folded down.

**WARNING! Risk of injury; if the holding claw (5) does not pick up the holding mechanism (6) correctly, the intake unit may fall down. Ensure that the holding mechanism is held securely in the holding claw.**

- Pull out the spring cotter pin (4) and remove the bolts (3) on the right and left.
- Fold down the support (2).
- Lower the lifting unit until the locking pins (1) can be inserted.
- Insert and secure the locking pins (1).

- Remove the cotter pins (1) and bolts (2) from the mounting cart.
- Raise or lower the lifting unit so that the mounting cart can be pushed down off the locking pins (3).
- Push out the mounting cart forwards and store in a safe place for subsequent re-installation.
Connecting the cables and lines

Right-hand machine side
- Establish the plug connection (1).

Left-hand machine side
- Unlock the locking of the hose support on the intake unit.
- Clean the coupling sleeves and coupling plugs of the lubrication line (2).
- Connect the lubrication line (2). In doing so, tighten the screw connection until the stop is reached.
- Clean the coupling sleeves and coupling plugs of the hydraulic lines (3).
- Connect the hydraulic lines (3) (C1,C2,D1,D2).

Mounting universal shafts

Universal shaft halves can only be pushed together in one position. Observe the marking (I) on the universal shaft!
- Insert the universal shaft half (3) into the upper universal shaft (2).
- Attach the upper universal shaft on the forage harvester side until the slider pin engages.
- Attach the lower universal shaft (1) on the forage harvester side until the slider pin engages.
25.3 Removing intake unit with header

For the "EasyFlow" version

- The EasyFlow is situated on a solid and level surface with the support jacks extended and the supporting wheels unfolded, see operating instructions for EasyFlow "Removing the machine".
- The machine is shut down and safeguarded, refer to page 34.

Hydraulically relieve tension on the pendulum frame

The relief button (1) is located on the right side of the ladder. Tension is hydraulically relieved on the pendulum frame by pressing the relief button.

- To hydraulically relieve tension on the hydraulic system of the pendulum frame, pull the relief button (1) and let it go again.

Removing universal shaft

- Remove the lower universal shaft (1) on the forage harvester side.
- Remove the upper universal shaft (2) on the forage harvester side, pull the universal shaft half (3) out of the universal shaft and put it to one side.
Disconnecting cables and lines

Right-hand machine side
- Separate the plug connection (1) and mount the dummy plug on both sides.
- Lay the cable harness down on the intake unit and secure it against falling down.

Left-hand machine side
- Disconnect the lubrication line (2).
- Detach the hydraulic lines (3) (C1, C2, D1, D2).
- Insert the lubrication line (2) and the hydraulic lines (3) into hose support on the intake unit and lock it.
25.4 Mounting intake unit with header

- Lower the lifting unit on the grinding control unit until the locking pins (1) have been relieved.
- Pull out the locking pins (1) and set them aside.
- Lower the lifting unit until the support jacks (3) can be fitted.
- Remove the linch pins (4) and the bolts (2).
- Fold out the support jacks (3).
- Insert the bolts (2) and secure with the linch pins (4).
- Lower the lifting unit until the intake unit is on the support jacks.

- Lower the lifting unit until the holding claw (1) is under the support device (2).
- Move backward carefully with the forage harvester.

- Lower the lifting unit until the holding claw (1) is under the support device (2).
- Move the forage harvester carefully centred in front of the intake unit.
Lower the lifting unit until the support jacks (3) can be fitted.
- Remove the linch pins (4) and the bolts (2).
- Fold out the support jacks (3).
- Insert the bolts (2) and secure with the linch pins (4).
- Insert and secure the locking pins (1).

Connecting the cables and lines

Right-hand machine side
- Establish the plug connection (1).

Left-hand machine side
- Unlock the locking of the hose support on the intake unit.
- Clean the coupling sleeves and coupling plugs of the lubrication line (2).
- Connect the lubrication line (2). In doing so, tighten the screw connection until the stop is reached.
- Clean the coupling sleeves and coupling plugs of the hydraulic lines (3).
- Connect the hydraulic lines (3) (C1,C2,D1,D2).
25.5 Grinding chopping blades

**WARNING**

Risk of injury from exposed, rotating chopping drum

The chopping blade can be ground only when the chopping drum is rotating. During the grinding process not all rotating parts of the chopping drum and drive can be completely encased. This means there is an increased risk of injury.

- During the grinding process ensure that all other safety devices are in the protective position and that all maintenance openings are closed.
- During the grinding process the operator must be either on the driver's seat in the cabin or in the area of the grinding control unit on the left next to the platform.
- During the grinding process ensure that nobody is in the area of the chopping drum or reaches into the rotating chopping blades.

**WARNING**

Risk of injury from sharp chopping blades

When performing maintenance work on the cutting drum, there is a risk of the operators being injured by the sharp cutting blades.

- When working on the cutting drum, work particularly carefully and prudently.
- Wear protective gloves when working on the cutter drum.
**WARNING**

Risk of fire due to deposits in the grinding channel

A mixture of dust, grass and chaff in the grinding channel is a source of fire and means an increased fire risk during the grinding process.

- Before grinding the chopping blades, check the automatic readjustment of the grinding stone and clean the grinding channel.

**NOTICE**

Damage to the grinding stone due to water retention

The grinding stone must not become wet, as water retention in freezing temperatures will cause the grinding stone to break during the grinding process.

- Do not wet the grinding stone with water.
- Open the cover hood for maintenance work only, otherwise keep it closed.

Grinding the chopping blades when intake is not mounted

**WARNING**

Risk of injury from exposed, rotating chopping drum.

When grinding the chopping blades, there is a risk of injury in particular if the grinding process is performed without intake. There is an increased risk of injury due to the chopping drum which is not running with cover.

- Close off the area in front of the machine well visible.
- Warn all persons in the proximity against the open running chopping drum and the relevant dangers before starting grinding.
- During the grinding process ensure that nobody is in the area of the chopping drum or reaches into the rotating chopping blades.

The chopping blades must be ground when a set of blades is readjusted on the chopping drum. It may be useful to operate the chopping drum without mounted intake in order to make the evaluation of the chopping blade grinding pattern as simple as possible. To ensure that the unprotected chopping drum does not start unintentionally, a special start-up procedure is provided for this application for security reasons.

- The intake is removed.
- The machine is secured against rolling away.
- The area in front of the machine is closed off well visible.
- The people in the proximity have been informed about the open running chopping drum and any resultant risks.
- The diesel engine is switched on.

To engage the chopping drum without intake:

- Set the main mode switch to the “Maintenance mode” position.
- Press the “Main coupling on” key in the keypad for at least 5 s.

An information message appears in the terminal and the follow-up alarm is heard.

- Release the “Main coupling on” key and obey the information message.
- Press the “Main coupling on” key for at least 2 s.

The chopping drum is engaged and the follow-up alarm goes out.
The grinding process can be performed as described in chapter Maintenance - Feed System, “Grinding Chopping Blades”, refer to page 406.

**Frequency and duration of the grinding process for chopping blades:**

Dull cutting blades and too great a distance between the cutting blade and the counterblade will result in an unnecessarily high power demand, poor chop quality and high wear on the cutting elements.

Therefore the worn cutting blades must be ground with the grinding device of the forage harvester and then the counterblade must be re-adjusted.

The frequency and the duration of the grinding process depend on the application conditions. In principle, short grinding intervals with a short grinding duration and corresponding counterblade adjustment are recommended.

- To ensure that the cutting blades for the maize operation achieve a very good self-sharpening effect, they must not be "fully ground", i.e. the blade should not be ground down to the cutting edge. This will cause the base material to wear more quickly than the coating and an aggressive cutting edge will be formed, the so-called "mouse tooth".

- On account of the application conditions, the self-sharpening effect of the cutting blades for grass operation is difficult to achieve, as is the case with the cutting blades for maize operation. The blades must therefore be "fully ground", i.e. the blade should be ground down to the cutting edge.

Before grinding the cutting blades, check the automatic re-adjustment of the grinding stone and clean the grinding channel.

### Checking and cleaning the grinding stone and grinding channel

1. Shut down and secure the machine, refer to page 34.

To open the flap of the grinding device:
WARNING! Risk of injury from exposed, rotating cutter drum. Do not open the flap on the
grinding device until the cutter drum has come to a standstill!

- Unlock the lock (2) by turning it anti-clockwise using a flat head screwdriver and swivel up
the flap (1).

![Image of grinding device](BX001-273)

- Clean the grinding channel (1) (e.g. blow out with compressed air).
- Measure the visible thread length of the grinding device (dimension X).

If dimension X is ≥ 5 mm, the grinding stone setting is correct and the grinding process can be
started.

- Close the flap of the grinding device again.

If dimension X is < 5 mm, the grinding stone must be re-adjusted or replaced, refer to page 412.

Running the grinding process

![Image of control panel](BX001-274)

- The machine is secured from rolling away with wheel chocks.
- The engine is started and is idling.
- The parking brake (2) has been applied.
- The main coupling (1) has been switched on.
- The Main Mode Switch (3) is in the "Maintenance" position (4).
The header must be on the ground for the grinding process:

- Press the "Manually lower lifting unit" key (8a) on the control lever until the header is on the ground.

To change the setting of the grinding device:

- On the terminal open the main menu Crop flow -> menu Grinding device "Settings", refer to page 183.
- Change the setting if required.

To run a grinding process from the driver's seat

- On the terminal open the main menu Crop flow -> menu Grinding device -> menu Maintenance, refer to page 183.
- Press the "Start grinding process" key.
To run a grinding process from the grinding control unit.

- Press the "Automatic grinding operation" key (7).

The set number of grinding cycles is run. At the end of the grinding process the grinding stone moves to the parking position on the right side of the grinding device.

### Readjusting counterblade

Prerequisite with mounted header:

- The lifting unit is lowered so that the header rests on the ground.

When the grinding process is complete, the counterblade must be readjusted while the chopping drum is running:

- Alternatively tap the “Move counterblade right to chopping drum” key (3) and the “Move counterblade left to chopping drum” key (5) on the grinding control unit.

As soon as noise is generated when readjusting the counterblade on one side (the blades have then come into contact with the counterblade):

- Immediately release the key and tap the corresponding "Move counterblade away from the chopping drum" key (4 or 6).

- Readjust the counterblade on the opposite side using the same procedure.

After you have readjusted the counterblade, the chopping drum must run without making any noise.

If there is no noise while the counterblade is being readjusted, the blades must be readjusted or worn blades and blades which can no longer be readjusted must be replaced, refer to page 417.
25.6 Readjusting or replacing grinding stone

**WARNING**

Risk of injury due to rotating chopping drum
Sharp and rotating chopping blades represent a danger of injury when the grinding device flap is opened while the chopping drum rotates.

- Do not open the flap of grinding device until the chopping drum has come to a complete stop.

**WARNING**

Risk of fire due to deposits in the grinding channel
A mixture of dust, grass and chaff in the grinding channel is a source of fire and means an increased fire risk during the grinding process.

- Before grinding the chopping blades, check the automatic readjustment of the grinding stone and clean the grinding channel.

**INFORMATION**

Check the grinding stone for damage and wear and replace if required. These may cause the grinding stone to run noisily, resulting in an uneven grinding pattern.

The grinding stone of the grinding device is automatically re-adjusted during the grinding process.

If automatic re-adjustment no longer occurs, the grinding stone must be re-adjusted.

The grinding stone can be re-adjusted 3–4 times, then the grinding stone must be replaced.

25.6.1 Checking grinding stone

1. BX001-272

- Shut down and secure the machine, refer to page 34.

To open the flap of the grinding device:
WARNING! Risk of injury from exposed, rotating cutter drum. Do not open the flap on the grinding device until the cutter drum has come to a standstill!

- Unlock the lock (2) by turning it anti-clockwise using a flat head screwdriver and swivel up the flap (1).

- Clean the grinding channel (1) (e.g. blow out with compressed air).
- Measure the visible thread length of the grinding device (dimension X).

If dimension X is ≥ 5 mm, the grinding stone setting is correct and the grinding process can be started.

- Close the flap of the grinding device again.

If dimension X is < 5 mm, the grinding stone must be re-adjusted or replaced.

25.6.2 Readjusting grinding stone

To prepare the grinding device for re-adjustment:

- Remove the screw (1).
- Remove the pawl (2).
- Measure and note down dimension X from the lower edge of the grinding stone (3) to the lower edge of the grinding slide (4).
- Rotate the detent pin (5) by 90° until it engages in the first notch.
Loosen the ratchet wheel (2) using a spanner WAF 30 (1) until the detent pin engages.

Continue loosening the ratchet wheel (2) until the detent pin fully engages and locks the grinding stone adjustment.

To loosen the clamp of the grinding stone, continue loosening the ratchet wheel (2).

Press down the grinding stone (3) from above until dimension X-2 mm has been reached from the lower edge of the grinding stone to the lower edge of the grinding slide.

To reclamp the grinding stone, tighten the ratchet wheel to a torque of 180 Nm.

To ensure that the grinding stone does not touch the chopping blades, check the dimension X-2 mm.

**NOTICE**

**Damage to chopping drum and grinding device due to incorrect operation**

If there is no free travel to the chopping drum when the grinding stone has been readjusted, there is a risk of collision between the grinding stone and the chopping blade.

- After readjusting the grinding stone, check and observe dimension X – 2 from the lower edge of the grinding stone to the lower edge of the grinding slide.

**NOTICE**

**Damage to the chopping drum due to the grinding stone falling out of the grinding device**

If the grinding stone is too short due to wear, it is no longer adequately clamped and may fall onto the rotating chopping drum.

- If dimension Y (distance from the upper edge of the grinding stone to the upper edge of the hexagon nut) is greater than 160 mm, replace the grinding stone.
Measure dimension Y (distance from the upper edge of the grinding stone to the upper edge of the hexagon nut) through the nut.

If dimension Y is < 160 mm, the clamping length is adequate to securely clamp the grinding stone.

**NOTICE**

**Damage to the grinding device due to incorrect operation**

If the detent pin is not removed again when the grinding stone has been readjusted, it will be damaged during the next automatic grinding process.

- After readjusting the grinding stone, always lift the detent pin and rotate it by 90°.

- Pull the detent pin (5) out of the notch and rotate by 90°.
- Re-attach the pawl (2).
- Close the flap of the grinding device again.
- Reset the wear counter on the operating terminal, *refer to page 183*.
- After the first grinding process, retighten the ratchet wheel, tightening torque = 180 Nm.

If dimension Y is ≥ 160 mm, the grinding stone must be replaced, *refer to page 415*.

### 25.6.3 Replacing grinding stone

If the grinding stone (1) is worn to such an extent that it can no longer be readjusted, the grinding stone must be replaced.

If the grinding stone (1) is replaced, the clamping rings (3) must also be replaced.
25.6 Readjusting or replacing grinding stone

When installing the new grinding stone, ensure that the parts are correctly arranged:

- The clamping rings (3), the intermediate ring (4), the support disc (5) and the sleeve (6) must be mounted as shown in the figure.
- The bevelled edges of the intermediate ring (4) and the sleeve (6) must show downwards.

To prepare the grinding device for replacement of the grinding stone:

- Remove the screw (1).
- Remove the pawl (2).
- Measure and note down dimension X from the lower edge of the grinding stone (3) to the lower edge of the grinding slide (4).
- Rotate the detent pin (5) by 90° until it engages in the first notch.
- Loosen the ratchet wheel (2) using a spanner WAF 30 (1) until the detent pin engages.
- Continue loosening the ratchet wheel (2) until the detent pin fully engages and locks the grinding stone adjustment.
- Continue loosening the ratchet wheel (2) and remove.
- Press out and remove the grinding stone.
- Remove the clamping rings.
- Insert a new grinding stone from above.
Adjust the grinding stone to dimension X – 2 mm (lower edge of the grinding stone to the lower edge of the grinding slide).

Re-attach the ratchet wheel and tighten to a torque of 180 Nm.

To ensure that the grinding stone does not touch the chopping blades, check the dimension X-2 mm.

**NOTICE**

**Damage to chopping drum and grinding device due to incorrect operation**

If there is no free travel to the chopping drum when the grinding stone has been readjusted, there is a risk of collision between the grinding stone and the chopping blade.

- After readjusting the grinding stone, check and observe dimension X – 2 from the lower edge of the grinding stone to the lower edge of the grinding slide.

**NOTICE**

**Damage to the grinding device due to incorrect operation**

If the detent pin is not removed again when the grinding stone has been readjusted, it will be damaged during the next automatic grinding process.

- After readjusting the grinding stone, always lift the detent pin and rotate it by 90°.

- Pull the detent pin out of the notch and rotate by 90°.

- Re-attach the pawl.

- Close the flap of the grinding device again.

- Reset the grinding cycles counter on the terminal, refer to page 183.

- After the first grinding process, retighten the ratchet wheel, tightening torque = 180 Nm.

- The "replace grinding stone" process is complete.

### 25.7 Readjusting or changing chopping blades

**WARNING**

**Risk of injury from sharp chopping blades**

When performing maintenance work on the cutting drum, there is a risk of the operators being injured by the sharp cutting blades.

- When working on the cutting drum, work particularly carefully and prudently.

- Wear protective gloves when working on the cutter drum.

- Turn the cutting drum clockwise on the belt pulley only and, when the correct position has been reached, lock with the locking bolt.
25.7 Readjusting or changing chopping blades

**INFORMATION**

To avoid imbalances in the chopping drum:

- the chopping blades and the screw bars must always be replaced in pairs. Replace both blades and both screw bars each with are located on the chopping drum offset by 180° (e.g. blade 1 and blade 6 in case of a chopping drum with 20 blades, blade 1 and blade 8 in case of a chopping drum with 28 blades, blade 1 and blade 10 in case of a chopping drum with 36 blades).
- The blades and screw-on strips which form a pair depend on the total number of blades.
- Mount a set of dismounted screw-on strips in the same order as before disassembly on the chopping drum again.

Worn chopping blades may result in an unsatisfactory chop quality. To keep wear as low as possible, the chopping blades must be ground correctly and regularly and the distance between the counterblade and the chopping blades (cutting gap) must be adjusted correctly and regularly, refer to page 406. The chopping blades must be replaced if they can no longer be readjusted and the coating (a) under the chopping blade is worn. In the original state the coating “X” is 19 mm.

The chopping drum operates particularly efficiently if the maximum cutting radius and conveying space can be used. Therefore the chopping blades should be readjusted if the dimension “X” is less than 10-12 mm.

Preparatory activities:

- Remove the intake unit,
- refer to page 372
To be able to rotate the cutter drum by hand, the belt drive for the "Cutter drum" must be slackened.

- Open the left side hood.
- Press the valves (4) into the control block (3) and turn to the left until the valve heads automatically jump out.
- Check whether the belt tensioner (1) of the belt drive for the "Cutter drum" has been run in and the belt drive has become slack.

If not:
- Start the engine and run at idling speed for several seconds.

The pressure tank (2) is filled, the belt tensioner (1) is relieved and the belt drive for the "Cutter drum" has become slack.

**Rotating chopping drum**

- Dismount the guard from the pulley (2).
- Turn the pulley clockwise to move the chopping drum.

After the maintenance work:
- Attach the belt pulley guard.
- Press the valves into the control block and turn clockwise until the valve heads automatically jump out.
- Close the left side flaps.

The belt tensioner of the belt drive for the "Cutter drum" is tensioned again as soon as the engine is started.

**Locking chopping drum**

The locking device is on the right-hand side of the chopping drum.
The chopping drum (1) has a locking hole (2) for each working position.

Slide a spanner (width across flats 17) on the locking bolt (1).
Pull out the spring cotter pin (3).
Turn the chopping drum (2) into the desired working position.
Use the spanner to push the locking bolt (2) towards the chopping drum up to the stop and to rotate it one quarter turn clockwise.

Setting the chopping blades (for version with MaxFlow chopping drum)

**NOTICE**

**Damage to the machine caused by installation of defective screws**
If the old screws are screwed in after changing the chopping blades, there is a risk that these screws may be damaged and fail during operation, possibly damaging the machine.
- When changing the blades, use new screws to fasten the chopping blades.

To sharpen the chopping blades with as few grinding cycles as possible, the chopping blades must be adjusted to the grinding device.
Grind the chopping blades (1) by using the grinding device, refer to page 406.

**INFORMATION**

If it is necessary to replace the counterblade, replace it before carrying out the following settings.

- Adjust the counterblade (3) with the spindle motors (4) via the grinding control unit in parallel with the ground area of the blades, refer to page 411

Measure the distance “X” of counterblade (parallel to the upper edge of counterblade) to the drum casing left and right.

- Determine the difference between the both values.

- Adjust the distance from counterblade (3) to drum casing (6) (measured in parallel with upper edge of counterblades) via the grinding control unit to the dimension X = 87 – 89 mm. In doing so, consider the difference previously determined. This ensures that the counterblade is aligned in parallel to the blades.

- Loosen the centre screw (2) of the blade.
25.7 Readjusting or changing chopping blades

- Screw a ring spanner W/F17 (7) with screw and disc on the eccentric (8) included with delivery. The eccentric is located in direction of travel left on the chopping drum housing.
- Insert the eccentric into the borehole (4).
- Loosen the outer screws (5) just enough so that the blade (1) can be brought into position free of play by turning the eccentric.
- Adjust the blade (1) by moving the ring spanner (7). Set the distance from blade (1) to counterblade (3) to a dimension of 0.1 mm.
- Tighten all hexagon head screws of the blade using a spanner (torque 280 Nm).
- Loosen the locking of the chopping drum, turn the chopping drum by one row of blades and lock it again.
- Readjust the blades of the next row of blades.
- Continue in this manner until all rows of blades of the chopping drum are readjusted equally.
- Loosen the locking of the chopping drum.
- Set the grinding stone so that the distance between blade back and grinding stone is 0.5 mm, refer to page 412.
- Equally move away the counterblade a little on both sides.
- Mount intake unit, refer to page 400.
- Grind the chopping blades, refer to page 406.
- Readjust the counterblade, refer to page 411.

Adjusting the chopping blades (for version with 40 biogas chopping drum)

**NOTICE**

**Damage to the machine caused by installation of defective screws**

If the old screws are screwed in after changing the chopping blades, there is a risk that these screws may be damaged and fail during operation, possibly damaging the machine.

- When changing the blades, use new screws to fasten the chopping blades.

To sharpen the chopping blades with as few grinding cycles as possible, the chopping blades must be adjusted to the grinding device.

- Grind the chopping blades (1) with the grinding device, refer to page 406.
**INFORMATION**

If it is necessary to replace the counterblade, replace it before carrying out the following settings.

- Adjust the counterblade (3) with the spindle motors (4) via the grinding control unit parallel to the ground area of the blades, *refer to page 411*

<table>
<thead>
<tr>
<th>2</th>
<th>2c</th>
<th>2a</th>
<th>2b</th>
<th>2d</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>6</td>
</tr>
</tbody>
</table>

**BX001-623**

- Measure the distance “X” from counterblade (parallel to the upper edge of counterblade) to drum casing on left and right.
- Determine the difference between the both values.
- Adjust the distance from the counterblade (3) to the drum casing (6) (measured in parallel with upper edge of counterblades) via the grinding control unit to the dimension X = 87 – 89 mm. In doing so, consider the difference previously determined. This ensures that the counterblade is aligned parallel to the blades.
- Loosen all hexagon head screws (2) of a blade.
- Set the distance from blade (1) to counterblade (3) to 0.1 mm.
- Tighten the chopping blade (1) in the sequence 2a, 2b, 2c, 2d with a spanner (torque 280 Nm).
- Release the locking of the chopping drum, turn the chopping drum by one row of blades and lock it again.
- Readjust the blades of the next row of blades.
- Continue in this manner until all rows of blades of the chopping drum have been readjusted evenly.
- Loosen the locking of the chopping drum.
- Adjust the grinding stone so that the distance between the back of the blade and the grinding stone is 0.5 mm, *refer to page 412*.
- Equally move away the counterblade on both sides.
- Mount intake unit, *refer to page 400*.
- Grind chopping blades, *refer to page 406*.
- Readjust the counterblade, *refer to page 411*.

**Renew chopping blade (for version with MaxFlow chopping drum)**

Worn and damaged cutting blades must be replaced.
**WARNING**

**Risk of injury from sharp components**
When working on the cutter drum, there is a risk of injury from sharp chopping blades and sharp edges of the screw bars.

- When working on the cutter drum, always wear protective gloves.

**NOTICE**

**Damage to the machine caused by installation of dirty parts**
If dirty chopping blades and screw bars are installed, there is a risk of the chopping blades becoming detached from the chopping drum and damaging components of the machine.

- Clean all parts before installing them.

**NOTICE**

**Damage to the machine caused by installation of defective screws**
If the old screws are screwed in after changing the chopping blades, there is a risk that these screws may be damaged and fail during operation, possibly damaging the machine.

- When changing the blades, use new screws to fasten the chopping blades.

**INFORMATION**

To avoid imbalances in the chopping drum:

- the chopping blades and the screw bars must always be replaced in pairs.
  Replace both blades and both screw bars each with are located on the chopping drum offset by 180°
  (e.g. blade 1 and blade 6 in case of a chopping drum with 20 blades,
  blade 1 and blade 8 in case of a chopping drum with 28 blades,
  blade 1 and blade 10 in case of a chopping drum with 36 blades).
  The blades and screw-on strips which form a pair depend on the total number of blades.

- Mount a set of dismounted screw-on strips in the same order as before disassembly on the chopping drum again.
To replace the cutting blade:

- Grind the chopping blades (1) with the grinding device, refer to page 406.

**INFORMATION**

If the counterblade has to be replaced, do this before making the following settings.

- Using the grinding control unit, adjust the counterblade (3) parallel to the ground surface of the blades, refer to page 411.
- Measure the distance "X" between the counterblade (parallel to the upper edge of the counterblade) and the drum casing on the left and right.
- Determine the difference between the two values.
- Using the grinding control unit, set the distance between the counterblade (3) and the drum casing (6) (measured parallel to the upper edge of the counterblades) to the dimension $X=87-89$ mm. In doing so, consider the difference determined beforehand. This ensures that the counterblade has been aligned parallel to the blades.
- Remove the hexagon head screws (2).
- Pull out the chopping blade forward.
- Clean the blade carrier (7) and the screw bar (9).
- Check the screw bar.
- Replace damaged or heavily worn screw bar.
When inserting dummy blades (1), pay attention to the installation position, the notch (2) must be outside and at the front, as seen in the direction of travel. The other attachment is, as described below, identical to the installation of the chopping blades.

Insert a new chopping blade with new screws (2).

Leave the middle screw (2a) loose.

Screw a ring spanner (WAF 17) with a screw and disc on the supplied eccentric. The eccentric is on the left on the cutting drum housing as seen in direction of travel, refer to page 420.

Insert the eccentric into the borehole of the blade carrier (7).

Tighten the outer screws (2b, 2c) until the blade can be positioned backlash-free by turning the eccentric.

Adjust the blade by moving the ring spanner. Set the gap between the blade and counterblade (3) to a dimension of 0.1 mm.

Tighten the screws in the sequence 2a, 2b, 2c (from the inside to the outside) at a torque of 280 Nm.

Loosen the locking device on the cutter drum, rotate the cutter drum by one row of knives and lock again.

Readjust the blades on the next row of knives.

Continue in this manner until all rows of knives on the cutter drum have been readjusted equally.

Unlock the chopping drum.

Set the grinding stone until there is a gap of 0.5 mm between the blade back and the grinding stone, refer to page 412.

Move the counterblade back a little, equally on both sides.

Attach the intake unit, refer to page 404.

Grind the chopping blade, refer to page 406.

Readjust the counterblade, refer to page 411.

**Replace the chopping blade (for version with 40x biogas chopping drum)**

Worn and damaged cutting blades must be replaced.
**WARNING**

**Risk of injury from sharp components**

When working on the cutter drum, there is a risk of injury from sharp chopping blades and sharp edges of the screw bars.

- When working on the cutter drum, always wear protective gloves.

**NOTICE**

**Damage to the machine caused by installation of dirty parts**

If dirty chopping blades and screw bars are installed, there is a risk of the chopping blades becoming detached from the chopping drum and damaging components of the machine.

- Clean all parts before installing them.

**NOTICE**

**Damage to the machine caused by installation of defective screws**

If the old screws are screwed in after changing the chopping blades, there is a risk that these screws may be damaged and fail during operation, possibly damaging the machine.

- When changing the blades, use new screws to fasten the chopping blades.

**INFORMATION**

To avoid imbalances in the chopping drum:

- the chopping blades and the screw bars must always be replaced in pairs.
  
  Replace both blades and both screw bars each with are located on the chopping drum offset by 180°
  
  (e.g. blade 1 and blade 11 in case of a chopping drum with 40 blades).
  
  The blades and screw-on strips which form a pair depend on the total number of blades.

- Mount a set of dismounted screw-on strips in the same order as before disassembly on the chopping drum again.

---

![Diagram of chopping drum](BX001-624)
To replace the cutting blade:

- Grind the chopping blades with the grinding device, refer to page 406.

**INFORMATION**

If the counterblade has to be replaced, do this before making the following settings.

- Using the grinding control unit, adjust the counterblade (3) parallel to the ground surface of the blades, refer to page 411.
- Measure the distance “X” between the counterblade (parallel to the upper edge of the counterblade) and the drum casing (6) on the left and right.
- Determine the difference between the two values.
- Using the grinding control unit, set the distance between the counterblade (3) and the drum casing (6) (measured parallel to the upper edge of the counterblades) to the dimension X=87-89 mm. In doing so, consider the difference determined beforehand. This ensures that the counterblade has been aligned parallel to the blades.

**NOTICE**

When installing the chopping blades (1), observe installation direction of the threaded bars (8). The area (I) with the rounded corners must be positioned on the chopping drum (6), the area (II) must be turned away from the chopping drum (6).
Set the gap between the blade and the counterblade to 0.1 mm.

Tighten the screws in the sequence 2a, 2b, 2c, 2d with a torque of 280 Nm.

Loosen the locking device on the cutter drum, rotate the cutter drum by one row of knives and lock again.

Replace the blades on the next row of knives.

Continue in this manner until all rows of knives on the cutter drum have been replaced and readjusted equally.

Unlock the chopping drum.

Set the grinding stone until there is a gap of 0.5 mm between the blade back and the grinding stone, refer to page 412.

Move the counterblade back a little, equally on both sides.

Attach the intake unit, refer to page 400.

Grind the chopping blade, refer to page 406.

Readjust the counterblade, refer to page 411.

---

25.8 Working with half the number of chopping blades

The speed of the intake and the number of cutting blades determine the chop length.

If the adjustable chop length range is inadequate and the chop length is still too short, the number of chopping blades can be reduced to half.

- Remove every second blade from both sides of the cutting drum.
- To guard the blade carriers, attach the supplied dummy blades (accessories), refer to page 423.
- Set the relevant number of blades on the terminal, refer to page 180.
25.9 Turning or replacing counterblade

**WARNING**

**Risk of injury from sharp chopping blades**

When performing maintenance work on the cutting drum, there is a risk of the operators being injured by the sharp cutting blades.

- When working on the cutting drum, work particularly carefully and prudently.
- Wear protective gloves when working on the cutter drum.

**NOTICE**

**Damage to the machine by foreign bodies which get into the crop flow**

If the counterblade or the counterblade support is not flat, the components could be damaged, small parts could get into the crop flow and damage components.

- Ensure that the counterblade and the counterblade support are clean and flat. If necessary, clean or replace the components that are not alright.

Both sides of the counterblade (1) can be used. If one or both sides (1a, 1b) of the counterblade are worn, the counterblade must be turned or replaced. If the forage harvester is operated with a worn counterblade, this will result in increased diesel consumption, unsatisfactory cutting quality and in a reduction in the downtime of the chopping blade. To essentially keep wear as low as possible, the gap between the counterblade and the chopping blades (cutting gap) must be adjusted correctly, refer to page 406.

Furthermore, the cutting blades must be correctly ground, refer to page 417.

Preparatory activities:

- Remove the intake unit, refer to page 402.
Turning/Changing Counterblade

- Grind the chopping blades with the grinding device, *refer to page 406*.
- Using the grinding control unit, adjust the counterblade (1) parallel to the ground surface of the blades, *refer to page 411*.
- Remove the hexagon head screws (2), the detent edged washers (3) and the washers (4).
- Pull the counterblade (1) forwards out of the support.
- Clean the skid surface area and the underside of the counterblade (1).

**NOTICE**

**Damage to machine parts due to loose components**

If the counterblade is not securely attached, it may become detached and damage the blades on the chopping drum or the entire chopping drum.

- Secure the screw connections identified by ![1](1) on the right and left of the machine with medium strength LOCTITE.

**Installing new counterblade**

- Drive the counterblade support parallel to the cutter drum far enough so that the counterblade (1) can be attached.
- Position the new counterblade (1) on the counterblade support and attach hand-tight in the centre at the bottom using the hexagon head screws (3), the detent edged washers (4) and the washers (5).
- Align the counterblade (1) parallel to the ground blade backs on the counterblade support.
- Tighten all three screw connections on the counterblade using the indicated torque, see diagram BX001-297.
- Attach the intake unit, *refer to page 400*.
- Readjust the counterblade, *refer to page 411*. 
25.10 Operating the mounting cart of the chopper unit (for "Chopper unit mounting cart" design)

25.10.1 Setting mounting cart

The retaining tubes of the mounting cart must be set according to the machine type. The boreholes (2) must be used for machines with a chopping drum width of 630 mm. The boreholes (1) must be used for machines with a chopping drum width of 800 mm.

Setting retaining tube

- Dismount the safety linch pins (3) and pull out the bolts (2) upwards.
- Push the right retaining tube (1) into the desired position.
- Mount the bolts (2) and secure them by means of the safety linch pins (3).
- Dismount the safety linch pins (6) and pull out the bolts (4) upwards.
- Push the left retaining tube (5) into the desired position.
- Mount the bolts (4) and secure them by means of the safety linch pins (6).
25.10.2 Parking mounting cart

In order to park the mounting cart with the removed chopping drum unit securely, remove the support jacks (3) and secure them with a bolt and a safety linch pin (1).

Set the support wheel by means of the crank handle (2) so that the mounting cart is completely on the support jacks (3).

In order to facilitate working at the chopping drum unit, dismount the linch pin and the bolt (2) and swivel the crossbar (1) to the side.

25.11 Turning or replacing conveyor bars of pre-compression roller

The pre-compression roller (1) is fitted with conveyor bars which have a smooth and a serrated side. The conveyor bars can be attached in such a way that either the smooth or the serrated side is used.

From experience the smooth side obtains the best results for grass operation and the serrated side for maize operation.

INFORMATION
The conveyor bars must be changed if the wear is so great that the conveyor bars are no longer higher than the crossbars on the pre-compression and feed roller.

INFORMATION
Due to metal detection, only fastening material made of anti-magnetic steel may be used. The screws must not be tightened with an impact wrench because of the magnetization effect as the metal detection triggers constantly if there are magnetized screws on the pre-compression roller.
25.12 Changing conveyor bars on feed roller

The bottom feed roller (4) can also be fitted with conveyor bars. These conveyor bars are used to protect the feed roller against wear and cannot be turned.

25.13 Adjusting the gap between the scraper and flat roller

**NOTICE**

- **Machine damage caused by broken scraper**
  - If the scraper is too thin, it may break, get into the crop flow and damage machine parts there.
  - Check the thickness of the scraper according to maintenance table, refer to page 349.
  - If the scraper is thinner than 24 mm, it must be replaced.

The setting is made on the removed intake unit.
The scraper must be adjusted, preferably with no gap, over the entire width of the flat roller.
The gap between the scraper and flat roller must be 0.1 to 0.3 mm.
To relieve the rear compression springs:
- Loosen the screws (2) on the spring console (1).

Checking the gap between the scraper and flat roller

- Raise the top roller unit (1), with a mounting lever (2) for example.

**WARNING! Risk of injury due to the raised roller unit! Prior to measuring the gap, secure the roller unit from inadvertently dropping.**
- Check the gap between the scraper (3) and the flat roller (4) using a feeler gauge.

If the gap is between 0.1 mm and 0.3 mm, the setting is correct.
- Tighten the screws on the spring console.

If the gap is not between 0.1 mm and 0.3 mm, the gap must be adjusted.
Adjusting the gap between the scraper and flat roller

Loosen the four hexagon head screw (6) enough so that the scraper (3) can be moved after gently tapping it using a hammer, for example.

To check the gap between the scraper (3) and the flat roller (4) using a feeler gauge, press the compression roller upward (2) using a mounting lever (5), for example.

Check the gap between the scraper (3) and the flat roller (4) using a feeler gauge.

If the gap is between 0.1 mm and 0.3 mm, the setting is correct.

If the gap is greater than 0.3 mm, the scraper must be readjusted.

If necessary, readjust the scraper (3) evenly over the entire width by gently tapping it.

If the gap is between 0.1 mm and 0.3 mm, the setting is correct.

If the scraper (3) presses too much on the flat roller (4), the scraper must be readjusted.

If necessary, readjust the scraper (3) evenly over the entire width of the flat roller. To do so, M12 hexagon head screws can be screwed into the threaded holes (1).

Check the gap between the scraper (3) and flat roller (4) using a feeler gauge and readjust if necessary.

If the gap is between 0.1 mm and 0.3 mm, the setting is correct.

If M12 hexagon head screws were screwed into the threaded holes (1), remove the hexagon head screws.

Once the gap between the scraper and flat roller has been set:

Tighten the four hexagon head screws (6).

Check the gap between the scraper and the flat roller.

If the gap is between 0.1 mm and 0.3 mm, the setting is correct.

If the gap is not between 0.1 and 0.3 mm, readjust the gap between the scraper and the flat roller.
25.14 Adjusting the gap between the compression roller and scraper

- Tighten the screws (2) on the spring console (1).

- Measure the gap between the conveyor bars (3) of the compression roller and the scraper (4).

  If the gap is between 3 mm and 8 mm, the setting is correct.
  If the gap is not between 3 mm and 8 mm, the gap must be adjusted.

  To relieve the rear compression springs:
  - Loosen the screws (2) on the spring console (1).
Adjusting the gap between the compression roller and scraper

The gap between the conveyor bars (1) of the compression roller and the scraper (3) must be X=3-8 mm.

- Check the dimension X between the conveyor bars (1) of the compression roller and the scraper (3).

If the dimension X is between 3 mm and 8 mm, the setting is correct.
If dimension X is < 3 mm, the gap X must be increased.
- Raise the top roller unit (4), with a mounting lever (5) for example.
- Place discs under the bump stops (2) of the intake unit.
- Measure the gap X.

If the gap a is X> 8 mm, gap a must be reduced.
- Raise the top roller unit (4), with a mounting lever (5) for example.
- Remove the discs from under the bump stops (2) of the intake unit.
- Measure the gap X.

When the gap between the compression roller and the scraper has been set

- Tighten the screws (2) on the spring console (1).
- Measure the gap between the conveyor bars of the compression roller and the scraper.

If the gap is between 3 mm and 8 mm, the setting is correct.
If the gap is not between 3 mm and 8 mm, the gap must be readjusted.

25.15 Setting the springs on the intake unit

Setting the compression springs on the intake unit
The rear compression springs on the left and right (1) must be pre-tensioned equally on both sides of the intake unit to the dimension X = 306.5 mm.

To pretension the compression springs if dimensions differ on the right and left sides of the machine:
- Loosen the counter nut (3).
- Adjust the bottom spring cup using the hexagon socket wrench (2) until the dimension X=306.5 mm is reached.
- Tighten the counter nut (3).

Setting the tension springs on the intake unit

The rear tension springs on the left and right (1) must be pre-tensioned equally on both sides of the intake unit to the dimension X = 448 mm.

To pretension the tension springs if dimensions differ on the right and left sides of the machine:
- Loosen the counter nut (3).
- With the nut (2), adjust the tension springs until the dimension X=448 mm is reached.
- Tighten the counter nut (3).

25.16 Setting corn conditioner

NOTICE

Damage to the adjusting motor by impact wrench
If the screw on the adjusting motor is turned with an impact wrench, the adjusting motor will be damaged.
- Manually turn the screw on the adjusting motor using a hexagon wrench only.
If the measured roller distance X between the corn conditioner rollers (1, 2) deviates from the specifications on the terminal or the distance X of the rollers on the left and right is not the same, the stops on the corn conditioner must be set.

Before setting the corn conditioner, ensure that the adjusting motor of the corn conditioner has been fully extended:

- Remove the screw (3) using a hexagon wrench WAF 6.
- Completely separate the adjusting motor by manually turn the setting screw (4) using a hexagon wrench WAF 6.
- Mount the screw (3).

Set the distance (X) of the corn conditioner rollers (1, 2) on the terminal to 0.5 mm, refer to page 137.

Measure the distance (X) of the corn conditioner rollers (1, 2) using a feeler gauge on the left and right of the corn conditioner.

If the distance on both sides of the corn conditioner is X=0.5 mm, the setting is correct.

If the distance on both sides of the corn conditioner is not X=0.5 mm, the stops on the corn conditioner must be set.

To set the stops on the corn conditioner, on one side of the corn conditioner first:

- Loosen the nuts (3).
- To remove the screw head from the housing, screw in the screw (4).
- Loosen the counter nut (5).
- Using the nut (6), set the distance of the corn conditioner rollers until the distance X=0.5 mm.
- Tighten the counter nut (5).
- Unscrew the screw (4) until the screw head is positioned on the housing.
- Tighten the nuts (3).
- Then repeat this process on the other side of the corn conditioner.

When the distance of the corn conditioner rollers has been set on both sides:

- Measure the distance (X) of the corn conditioner rollers (1, 2) using a feeler gauge on the left and right of the corn conditioner.

If the distance on both sides of the corn conditioner is X=0.5 mm, the setting is correct.

If the distance on both sides of the corn conditioner is not X=0.5 mm, the setting is not correct.

Repeat the setting process.
26 Maintenance - Crop Flow

**WARNING**
Risk of injury due to non-observance of relevant safety instructions
If the relevant safety instructions are not observed, persons may be seriously injured or killed.
- To avoid accidents, the relevant safety instructions must be read and observed, refer to page 19.

**WARNING**
Risk of injury due to non-observance of safety instructions
If the relevant safety routines are not observed, persons may be seriously injured or killed.
- The safety routines must be read and observed to avoid accidents, refer to page 34.

To obtain the best possible crop flow, the wear plates of the individual components must be checked and, if required, replaced. The wear plates are worn if there are severe worn-out areas resulting in small retaining edges.

The following components must be checked:
- Intake unit
- Drum base
- Transfer shaft
- Grass channel
- Corn conditioner (wedge on right / left)
- Discharge accelerator (housing, rear wall)
- Channel support at top
- Spout

26.1 Access points to crop flow

The crop flow is accessed via the maintenance flaps, e.g. to eliminate crop blockages in the crop flow.

**Before opening the maintenance flaps**
- Shut down and secure the machine, refer to page 34.

To access the maintenance flaps of the lower crop flow, remove the cover (1).
- Loosen the quarter turn fasteners (2) and remove the cover (1).
26.1.1 Removing the grass channel

- The machine is shut down and safeguarded, refer to page 34.
- The crop flow cover is removed, refer to page 240.

To unlock the grass channel (4) loosen the screws (2) on both sides and rotate the lock (1) to the side.

Pull out the grass channel (4) on the handles (3) and set it down to the side.

26.1.2 Installing the grass channel

- The machine is shut down and safeguarded, refer to page 34.
- The crop flow cover is removed, refer to page 240.

Make sure that the locking (1) on both sides are in horizontal position.

Insert the grass channel (4) on the handles (3) until it reaches the stop.

Rotate the locking (1) downward on both sides and secure them with the screws (2).
26.1.3 Opening maintenance flap transfer shaft

Loosen the hexagon head screws (1) and turn the clamping pieces (2) to the side.

Fold down the maintenance flap (3).

When the maintenance work is complete, fold up the maintenance flap (3), turn the clamping pieces (2) in front of the maintenance flap and secure with the hexagon head screws (1).

26.1.4 Removing the rear wall of the discharge accelerator

The machine is shut down and secured, refer to page 34.

Remove the hexagon head screws (1, 7) and remove the adjusting motor (2) of the accelerator rear wall.

Remove the screws (6).

Remove the screws (3).

WARNING! Risk of injury due to the loosened rear wall of the discharge accelerator (5). Secure the rear wall of the discharge accelerator (5) to keep it from falling out.

Swivel the support brackets (4) outwards.

Remove the rear wall of the discharge accelerator (5) by first pushing it upward and then pulling it back.

Reinstall the rear wall of the discharge accelerator (5), refer to page 444.
26.1.5 Reinstalling the rear wall of the discharge accelerator

The machine is shut down and secured, refer to page 34.

1. Swivel the support brackets (2) inward.
2. Install the screws (1).
3. Install the screws (7).
4. Using the hexagon head screws (3, 5) install the adjusting motor (4) of the rear wall of the discharge accelerator.
5. Adjusting the rear wall of the discharge accelerator, refer to page 343.

26.1.6 Removing maintenance flap in channel support

1. Screw out the hexagon head screws (1).
2. Remove the maintenance flap (3).
3. When the maintenance work is complete, attach the maintenance flap (3) and secure with the hexagon head screws (1).
26.1.7 Opening maintenance flap in the spout

**WARNING**

Risk of injury by falling from great height.

On top of the engine cowl or on the cabin roof operators are at a height from which a fall might cause serious injury.

- Do not climb on the engine cowl or the cabin roof until:
  - the spout is in the central position;
  - the engine is off, the ignition key has been removed;
  - the machine has been secured against rolling;
  - the engine cowl or cabin roof is clean.

Swivel the spout forwards on the left and lower until the maintenance flaps are accessible from the platform.

Loosen the nuts (1) and push the maintenance flap (2) to the side.

Open and turn the maintenance flap.

When the maintenance work is complete, turn back and close the maintenance flap (2).

Push the maintenance flap (2) into the original position and tighten the screws (1).

26.2 Maintenance corn conditioner

Before using the corn conditioner, the rollers should be checked for wear. Worn rollers no longer achieve the required conditioning quality and the crops are no longer accepted so well, possibly resulting in crop blockages.
To check the wear of the rollers, the corn conditioner must be removed or must be moved all the way backwards on the swivel device.

Place a ruler (1) on one tooth of the rollers.

The gap between the roller and ruler should not be greater than X= 1 mm. Otherwise it is recommended to replace the rollers.

26.3 Maintenance discharge accelerator

26.3.1 Checking discharge scoops

To check the discharge scoops (1), remove the maintenance flap from the channel support.

Examine the discharge scoops:
- There should be no major damage, e.g. caused by stones, resulting in forage wrapping around the discharge scoop.
- The edge of the discharge scoops should not be severely eroded so that the distance to the rear wall is always even.
26.3.2 Removing/installing discharge scoops

Removing the discharge scoops

Prerequisite:

- Rear wall of discharge accelerator is removed, Removing rear wall of discharge accelerator
- To remove the discharge scoops, remove the screw connections (2).
- Remove the discharge scoops (1).

Installing discharge scoops

<table>
<thead>
<tr>
<th>NOTICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Damage to discharge accelerator</td>
</tr>
</tbody>
</table>

If the discharge scoops are not replaced in pairs, an imbalance may occur during operation and lead to subsequent damage on the machine.

- Always replace the discharge scoops in pairs and opposite each other.

- Clean supporting surface of the rotor.
- Fix new discharge scoops (1) with new screws (2) hand-tight.
- Pull the discharge scoops outwards (towards the rear wall) and tighten the screws (2) to a tightening torque of 95 Nm.
- Check the distance of scraper and adjust it, if necessary, refer to page 448.
- Mount rear wall of discharge accelerator.
- Check the setting of rear wall to the discharge scoops and adjust, if necessary, Setting rear wall of discharge accelerator.
26.3.3 Checking and adjusting discharge accelerator scraper

Checking the scraper

- To check the scraper, remove the maintenance flap from the channel support.
- Examine the scraper:
  - There should be no major damage, e.g. caused by stones.
  - The edge of the scraper should not be severely eroded so that the gap to the discharge scoop is always even.

Replacing scrapers:

- The rear wall of discharge accelerator is removed.
- To remove the scraper (1), dismount the screws (2).
- Remove the scraper and replace by a new one.
- Attach the new scraper hand-tight using the both outer screws.
- Position the scraper so that the gap between the scraper and discharge scoop is evenly \( X = 1 \text{ mm} \) over the whole width.
- Screw in both middle screws and tighten with "medium strength" screw locking to a tightening torque of 39 Nm.
- Unscrew both outer screws and tighten with "medium strength" screw locking to a tightening torque of 39 Nm.
- Mount rear wall of discharge accelerator.
- Check the settings of the rear wall to the discharge scoops and adjust if necessary.

Setting rear wall of discharge accelerator.
27 Maintenance - Hydraulic System

**WARNING**

Risk of injury due to non-observance of relevant safety instructions
If the relevant safety instructions are not observed, persons may be seriously injured or killed.

- To avoid accidents, the relevant safety instructions must be read and observed, refer to page 19.

**WARNING**

Risk of injury due to non-observance of safety instructions
If the relevant safety routines are not observed, persons may be seriously injured or killed.

- The safety routines must be read and observed to avoid accidents, refer to page 34.

**WARNING**

Hydraulic hoses are subject to ageing
Hydraulic hoses may wear depending on pressure, heat load and the effect of UV rays. People can be seriously injured or killed by damaged hydraulic hoses.

- The date of manufacture appears on the hydraulic hoses. This way the age can be ascertained quickly.
- Replacement of the hydraulic hoses is recommended after a lifetime of six years.
  - Use original spare parts when replacing hoses.

**NOTICE**

Damage to the machine due to soiling of the hydraulic system
If foreign objects or liquids get into the hydraulic system, the hydraulic system may be severely damaged.

- Clean hydraulic connections and components before removal.
- Seal open hydraulic connections with protective caps.
- Ensure that foreign objects or liquids do not get into the hydraulic system.

**NOTICE**

Storing and disposing of oils and used oil filters
If oil and used oil filters are not stored and disposed of properly, the environment may be damaged.

- Store or dispose of used oil and oil filters according to statutory provisions.

27.1 Pressure limiting valves

The control blocks have been equipped with pressure limiting valves. These valves were preset in the factory and must not be changed.
27 Maintenance - Hydraulic System

27.2 Hydraulic oil

**NOTICE**

The pressure limiting valves on the machine have been preset in the factory. Work on the pressure limiting valves may be performed by KRONE customer service only.

---

**NOTICE**

**Damage to the hydraulic system caused by non approved hydraulic oils**

If non-approved hydraulic oils or a mixture of different oils are used, the hydraulic system may be damaged.

- Never mix different types of oil.
- Never use engine oil.
- Use approved hydraulic oils only.

Filling quantities and types of oil, refer to page 70.

27.3 Maintaining hydraulic oil tank

> BXG000-035

- Observe the safety routine “Safely performing oil level check, oil change and filter element change”, refer to page 35.

**Checking hydraulic oil tank level**

- Move the spout to the parking position.

  To check the oil level:

  The hydraulic oil must be topped up to the middle of the inspection glass (1).

- If required, top up hydraulic oil via the oil filling pipe (2).

**Changing oil in the hydraulic oil tank**

- Move the spout to the parking position.

  - Provide a collecting vessel (approx. 130 litres).
  - Clean thoroughly around the oil drain sleeve (3).

    - Place the end of the oil drain hose (enclosed with the machine) in the collecting vessel. Attach the other end of the hose to the oil drain sleeve (3) of the hydraulic oil tank (4). As a result, the oil drain valve is automatically opened and the hydraulic oil flows into the collector.
> Remove the drain hose.
> > Top up the hydraulic oil in the hydraulic oil tank up to the middle of the inspection glass via the oil filling pipe (2). Quantity and specification, Consumables.
> > Run the diesel engine at a low idle speed for approx. 10 seconds.
> > Turn off the diesel engine.
> > Check the hydraulic oil tank level, top up the hydraulic oil if required.
> > Repeat the process until the oil level no longer drops.

### Changing the return suction filter of the hydraulic oil tank

> The machine is shut down and safeguarded, refer to page 34.

> To bleed the pressure from the hydraulic oil tank, open the oil filler neck (1) of the hydraulic oil tank.

> Unscrew the cover (2).

> Gently turn the filter element, pull it out and drain the hydraulic oil.

> Clean housing and cover

> Wet the sealing surfaces and O-ring seals of the new filter element with oil and insert by gently turning it.

> Put on the cover (2) and screw it own with a tightening torque of 45 Nm.

> Close the oil filler neck (1) of the hydraulic oil tank.

> Start the diesel engine and run at idle speed.

> Check the return suction filter for leaks.

### 27.4 Changing the high-pressure filter

> BXG000-071
The high-pressure filter (1) features an electrical contamination indicator (4).

**Changing the high-pressure filter**

- The machine is shut down and safeguarded, *refer to page 34*.
- Remove and clean the filter housing (1).
- By gently moving the filter element (2) back and forth, remove it downwards from the retainer piece and replace it with a new filter element.
- Check the O-ring seal (3) for damage and replace if required.
- Wet the thread and the sealing surfaces with hydraulic oil.
- Mount the filter housing (1).
- Start the diesel engine and check the screw connections of the high-pressure filter for leaks.
28 Maintenance - Gearbox

⚠️ WARNING
Risk of injury due to non-observance of relevant safety instructions
If the relevant safety instructions are not observed, persons may be seriously injured or killed.
- To avoid accidents, the relevant safety instructions must be read and observed, refer to page 19.

⚠️ WARNING
Risk of injury due to non-observance of safety instructions
If the relevant safety routines are not observed, persons may be seriously injured or killed.
- The safety routines must be read and observed to avoid accidents, refer to page 34.

✓ The machine is shut down and safeguarded, refer to page 34.

28.1 Overview of gearboxes

 BXG000-036

1 Rotary drive gearbox spout
2 Main gearbox
3 Transfer gearbox
4 Rear wheel hub gearbox
5 Front wheel hub gearbox
6 VariLOC chop length gearbox
7 Lower roller gearbox
8 Intermediate gearbox intake
9 Upper roller gearbox
28.2 Servicing the main gearbox

NOTICE

Damage to the gearbox by foreign bodies in the gearbox oil.

If the low-pressure filter of gearbox oil cooling is not replaced whenever the oil is changed, foreign bodies could get into the gearbox oil and damage the gearbox.

- Whenever the oil is changed, also replace the low-pressure filter of gearbox oil cooling, refer to page 455.

The main gearbox is at the rear on left under the tailgate.

Observe the safety routine “Safely performing oil level check, oil change and filter element change”, refer to page 35.

Checking oil level

The oil level must reach the middle of the viewing glass (2).

If the oil does not reach the middle of the viewing glass (2):

- Unscrew the locking screw of the oil filling hole (1).
- Top up oil via oil filling hole (1) until the middle of the viewing glass (2) is reached.
- Mount the locking screw of the oil filling hole (1), tightening torque refer to page 361.

Change oil

- A suitable container is available for escaping oil.
- Unscrew the locking screw from the oil filling hole (1).
- Set the container below the drain sleeve (3) for the leaking oil.
- Remove the end cap of the drain sleeve (3).
- Remove the drain hose from the storage compartment and hold the open end in the container for the leaking oil.
- Screw on the screw connection for the drain hose onto the drain sleeve (3) and allow the oil to flow into the container.
- Once the oil has fully drained out of the gearbox, remove the drain hose and place the end cap onto the drain sleeve (3).
- Refill with fresh oil via the oil filling hole (1) up to the middle of the sight glass (2).
- Screw the locking screw into the oil filling hole (1), tightening torque refer to page 361.
Changing the low-pressure filter

Replacing the Filter Element

- A suitable container is available for escaping oil.
- Remove and clean the filter housing (1).
- Remove the filter element (2) and replace with a new filter.
- Check the O-ring seals (3, 4) for damage and replace if required.
- Wet the thread and the sealing surfaces with hydraulic oil.
- Mount the filter housing (1) and tighten to 60 Nm.
- Charge the hydraulic system with pressure and check for leaks.

Checking oil level after changing the oil filter and low-pressure filter

- Start the diesel engine, switch on the main coupling, run both for 1 min and then switch off the diesel engine.
- Check the oil level on the main gearbox.

When the oil reaches the middle of the sight glass, the oil change on the main gearbox is complete.

If the oil does not reach the middle of the sight glass:

- Top up oil, refer to page 454

28.3 Servicing the transfer gearbox

- Observe the safety routine “Safely performing oil level check, oil change and filter element change”, refer to page 35.
- Swivel the ladder to the cabin to the side, refer to page 363.
28.4 Maintaining intermediate gearbox intake

Check oil level

- Unscrew the locking screw of the inspection hole (1).
  - If the oil reaches up to the inspection hole (1):
    - Screw on the locking screw of the inspection hole (1), tightening torque refer to page 361.
  - If the oil does not reach up to the inspection hole (1):
    - Remove the locking screw from the filling hole (3).
    - Refill with fresh oil up to the inspection hole (1) via the filling hole (3).
    - Screw on the locking screw of the inspection hole (1) and the locking screw of the filling hole (3), tightening torque refer to page 361.

Changing oil

- A suitable container is available for escaping oil.
- Unscrew the locking screw of the inspection hole (1) and the locking screw of the filling hole (3).
- Unscrew the drain plug (2) and drain the oil.
- Mount the drain plug (2), tightening torque refer to page 361.
- Top up new oil via the filling hole (3) up to the inspection hole (1).
- Mount the locking screw of the inspection hole (1) and the locking screw of the filling hole (3), tightening torque refer to page 361.

NOTICE

Damage to gearbox caused by incorrect amount of oil

If the intake is not horizontal when checking the oil level and changing the oil, it may occur that there is too much or too less oil in the gearbox.

- Ensure that the intake housing cover is horizontal when checking the oil level and changing the oil.

Observe the safety routine “Safely performing oil level check, oil change and filter element change”, refer to page 35.
Check oil level

- Thoroughly clean the area around the oil dipstick (1).
- Pull out the oil dipstick (1), clean and push in all the way. Use a lint-free cloth to clean the oil dipstick.
- Pull out the oil dipstick (1) and check the oil level.
  - If the oil level is indicated between the "min." and "max." marks:
    - Push in the oil dipstick (1).
  - If the oil level is indicated below the "min." mark:
    - Refill the oil above the filling hole.
    - Check the oil level.

Change oil

- A suitable container is available for escaping oil.
- Turn out the oil dipstick (1).
- Unscrew the oil drain plug (2) and drain the oil.
- Screw in the drain plug (2), tightening torque refer to page 361.
- Fill in new oil through the filling hole.
- Check the oil level.

28.5 Maintaining bottom roller gearbox

NOTICE

Damage to gearbox caused by incorrect amount of oil

If the intake is not horizontal when checking the oil level and changing the oil, it may occur that there is too much or too less oil in the gearbox.

- Ensure that the intake housing cover is horizontal when checking the oil level and changing the oil.

Checking oil level

The oil level must reach the middle of the viewing glass (2).
If the oil does not reach the middle of the viewing glass (2):

- Unscrew the locking screw of the oil filling hole (1).
- Top up oil via oil filling hole (1) until the middle of the viewing glass (2) is reached.
- Mount the locking screw of the oil filling hole (1), tightening torque refer to page 361.

**Changing oil**

- A suitable container is available for escaping oil.
- Unscrew the locking screw of the filling hole (1).
- Unscrew the drain plug (3) and drain the oil.
- Mount the drain plug (3), tightening torque refer to page 361.
- Top up new oil via filling hole (1) up to the middle of the viewing glass (2).
- Screw in the locking screw of the filling hole (1) and tighten it firmly, tightening torque refer to page 361.

### 28.6 Maintaining top roller gearbox

**NOTICE**

**Damage to gearbox caused by incorrect amount of oil**

If the intake is not horizontal when checking the oil level and changing the oil, it may occur that there is too much or too less oil in the gearbox.

- Ensure that the intake housing cover is horizontal when checking the oil level and changing the oil.

**Checking oil level**

The oil level must reach the middle of the viewing glass (2).

If the oil does not reach the middle of the viewing glass (2):

- Unscrew the locking screw of the oil filling hole (1).
- Top up oil via oil filling hole (1) until the middle of the viewing glass (2) is reached.
- Mount the locking screw of the oil filling hole (1), tightening torque refer to page 361.
Changing oil

- A suitable container is available for escaping oil.
- Unscrew the locking screw of the filling hole (1).
- Unscrew the drain plug (3) and drain the oil.
- Mount the drain plug (3), tightening torque refer to page 361.
- Top up new oil via filling hole (1) up to the middle of the viewing glass (2).
- Screw in the locking screw of the filling hole (1) and tighten it firmly, Tightening torque refer to page 361.

28.7 Maintaining wheel hub gearbox

**NOTICE**

**Damage to the wheel hub gearboxes caused by use of incorrect gearbox oil**

When incorrect gearbox oil is used, the wheel hub gearboxes could be damaged during operation.

- Only use SHELL SPIRAX S4 CX 50 gearbox oil to refill or change the gearbox oil in the wheel hub gearboxes.
- If this gearbox oil is not available, contact your KRONE service partner.

Observe the safety routine “Safely performing oil level check, oil change and filter element change”, refer to page 35.

Check oil level

Checking the oil level on the front axle: Dimension X= 40 mm.
Checking the oil level on the rear axle: Dimension X= 30 mm.

- A suitable container is available for escaping oil.
- Position the wheel so that the filling hole (1) is in the top position (I).
- Thoroughly clean the area around the screw plug of the filling hole (1) and the locking screw of the inspection hole (2).

**WARNING! Risk of scalding by hot gear oil escaping under pressure. Wear personal protective equipment such as gloves and safety glasses and carefully loosen the locking screw of the filling hole.**

- To reduce the pressure, carefully remove the locking screw from the filling hole (1) from a lateral position.
  - The pressure in the wheel hub gearbox is reduced.
- Screw the locking screw into the filling hole (1).
- Position the wheel so that the centre of the locking screw of the inspection hole (2) is dimension X below the centre of the hub. To do this, position a spirit level horizontally in the centre of the hub and determine the dimension X using a measuring tape (II).
- Unscrew the locking screw of the inspection hole (2).
- Check whether the oil level reaches up to the inspection hole (2).

If the oil level reaches up to the inspection hole (2):

- Screw on the locking screw of the inspection hole (2), tightening torque=60 Nm.

If the oil level does not reach up to the inspection hole (2):

- Remove the locking screw from the filling hole (1).
- Refill with fresh oil via the filling hole (1) until the oil level reaches the inspection hole (2).
- Screw the locking screw into the inspection hole (2) and the locking screw into the filling hole (1), tightening torque=60 Nm.

**Change oil**

- A suitable container is available for escaping oil.
- Position the wheel so that the filling hole (1) is in the top position (I).
- Thoroughly clean the area around the screw plug of the filling hole (1) and the locking screw of the inspection hole (2).

**WARNING! Risk of scalding by hot gear oil escaping under pressure. Wear personal protective equipment such as gloves and safety glasses and carefully loosen the locking screw of the filling hole.**

- To reduce the pressure, carefully remove the locking screw from the filling hole (1) from a lateral position.
The pressure in the wheel hub gearbox is reduced.

- Screw the locking screw into the filling hole (1).
- Position the wheel so that the drain plug (2) is in the lowest position (II).
- Place a suitable container under the drain hole (2).
- Unscrew the locking screw of the filling hole (1), remove the drain plug (2) and drain the oil into the container.
- Position the wheel so that the centre of the locking screw of the inspection hole (2) is dimension X below the centre of the hub. To do this, position a spirit level horizontally in the centre of the hub and determine the dimension X using a measuring tape.
- Refill with fresh oil via the filling hole (1) until the oil level reaches the inspection hole (2).
- Screw the locking screw into the inspection hole (2) and the locking screw into the filling hole (1), tightening torque=60 Nm.

28.8 Maintaining spout rotary drive gearbox

- Observe the safety routine “Safely performing oil level check, oil change and filter element change”, refer to page 35.

Checking oil level:

- Unscrew the locking screw of the inspection hole (1).
- Check whether the oil level reaches the inspection hole (1).

If the oil reaches the inspection hole:

- Mount the locking screw of the inspection hole (1), tightening torque refer to page 361.

If the oil does not reach the inspection hole:

- Dismount the ventilation filter (3).
- Top up new oil via the filling hole (3) until the oil level has reached the inspection hole.
- Mount the locking screw of the inspection hole (1) and the ventilation filter (3), tightening torque refer to page 361.

Changing oil:

- A suitable container is available for escaping oil.
- Dismount the cover (4) and the ventilation filter (3).
- Provide a collecting vessel under the drain plug (2).
- Thoroughly clean the environment around the drain plug (2).
- Unscrew the drain plug (2) and drain the oil into the container.
- Mount the drain plug (2), tightening torque refer to page 361.
Top up new oil via the filling hole (3) up to the inspection hole (2).
Mount the ventilation filter (3), tightening torque refer to page 361.
Mount the cover (4).

28.9 Servicing VariLOC chop length gearbox

The intake has been removed.
Observe the safety routine “Safely performing oil level check, oil change and filter element change”, refer to page 35.

Checking oil level

The machine is shut down and secured, refer to page 34.
A suitable container is available for escaping oil.

Turn the planetary gearbox so that the markings and “UP” (2) are in the top position.
Lock the cutter drum, refer to page 419.
Thoroughly clean the area around the locking screw (1).
Unscrew the locking screw (1).
Check whether the oil level reaches the inspection hole (1).
If the oil reaches up to the inspection hole (1):
Screw in the locking screw (1), refer to page 359.
If the oil does not reach up to the inspection hole (1):
Top up new oil via the inspection hole (1) until the inspection hole (1) is reached.
Mount the locking screw (1).
Unlock the chopping drum, refer to page 419.
Changing oil

- The machine is shut down and secured, refer to page 34.
- A suitable container is available for escaping oil.
- Turn the pulley so that the locking screw (1) is in the lowest position.
- Lock the chopping drum.
- Thoroughly clean the area around the locking screw (1).
- Unscrew the locking screw (1) and drain the oil into the container.
- Loosen the locking of the chopping drum.

- Turn the planetary gearbox so that the markings and “UP” (2) are in the top position.
- Lock the chopping drum.

NOTICE! Damage to the gearbox when using a mix of different oils. Make sure that different types of oil are not mixed when you top up the oil.
- Top up new oil via the inspection hole (1) until the inspection hole (1) is reached.
- Mount the locking screw (1).
- Loosen the locking of the chopping drum.
29 Maintenance – Electrics

⚠️ WARNING
Risk of injury due to non-observance of relevant safety instructions
If the relevant safety instructions are not observed, persons may be seriously injured or killed.
- To avoid accidents, the relevant safety instructions must be read and observed, refer to page 19.

⚠️ WARNING
Risk of injury due to non-observance of safety instructions
If the relevant safety routines are not observed, persons may be seriously injured or killed.
- The safety routines must be read and observed to avoid accidents, refer to page 34.

⚠️ WARNING
Risk of injury due to exploding battery gas
If the booster cables are not connected properly, an explosion may occur. As a result, people may be seriously injured or killed or the electrical system could be damaged.
- Jump start the diesel engine with 24 volts only.
- First connect positive cable to positive pole of the external voltage source, then connect it to the positive pole of the left battery (C2) on machine side.
- Then connect negative cable to negative pole of external voltage source and then to negative pole of right battery (C1) on machine side.

⚠️ WARNING
Danger to life due to exploding battery gas
Highly explosive battery gas may escape from the battery
- Keep ignition sources and naked flames away from the battery.
- Note the correct polarity when disconnecting and connecting the battery.

NOTICE
Damage to the electrical system due to incorrect polarity of the battery
Non-observance of the correct polarity between the battery and alternator may severely damage the electrical system.
- First connect the positive pole of the battery.
- Then connect the negative terminal of the battery.

NOTICE
Damage to electronic parts caused by voltage peaks
If the supply voltage is interrupted while the machine is running, voltage peaks could result. As a result, electronic components could be damaged.
- Switch off diesel engine.
- Switch off main battery switch.
**INFORMATION**

An overview of all control units, circuit boards and fuses can be found in the circuit diagram, which is part of the other applicable documents that was delivered with the machine.

### 29.1 Batteries

**WARNING**

Risk of injury due to a short circuit of the battery poles

When working on the batteries, carelessness may result in a short circuit of the battery poles. A high current flows that may result in an electric shock, burns or explosion of the batteries. As a result, people may be seriously injured.

- When working on the batteries, make sure the positive pole does not come into contact with the negative pole or the frame.
- Guard the battery poles with insulating caps against contact.

---

**Main battery switch**

---
The main battery switch (2) is designed as a momentary switch with integrated LED and can be found in the battery compartment (1) in the rear bumper.

- Open the flap (1) of the battery compartment.
- To open or close the circuit, press the main battery switch (2):
  - The circuit is closed if the LED is illuminated.
  - The run-down time of the urea system is running if the LED is flashing.
  - If the LED is not illuminated, the circuit is interrupted.

**INFORMATION**

In an emergency, the main battery switch can also be actuated when the ignition key is not in the "STOP" position.

### 29.1 Cleaning and maintaining batteries

- To keep the battery surface clean and dry, clean the batteries with a damp or anti-static cloth only.
- Protect the battery terminals and connecting terminals from corrosion by applying terminal grease to the battery terminals and connecting terminals.
- Use a brush to remove any oxidation from the pole terminal.
- When batteries are removed and placed in storage, regularly check the charge state or use a charge maintenance device. If the open-circuit voltage is below 12.3 V, recharge the battery.
- Keep removed batteries cool, dry and charged.

### 29.1.2 Charging batteries

The voltage of the machine wiring system is 24 V. Two 12-V batteries are connected in series to supply the vehicle electronics with 24 V.

To charge and maintain the charge, the batteries must be connected to a battery charger.

The voltage of the battery charger must correspond to the voltage of the wiring system (24 V). The vehicle electronics will be damaged if a battery charger with a higher or lower voltage is used.
The machine is shut down and secured, refer to page 453.

- Open the battery compartment.
- Interrupt the circuit with the main battery switch (1), refer to page 56.
- Remove the insulating caps by loosening the cable ties.
- Connect the positive cable of the battery charger to the positive terminal on the left battery (C2) (2) on the machine side.
- Connect the negative cable of the battery charger to the negative terminal on the right battery (C1) (3) on the machine side.
- Switch on the battery charger
- When the batteries are charged, switch off the battery charger.
- First disconnect the negative cable from the negative terminal on the right battery (C1) (3).
- Then disconnect the positive cable from the positive terminal on the left battery (C2) (2).
- Attach the insulating caps and fix with cable ties.
- Close the battery compartment.

29.1.3 Replacing batteries

Disconnecting the batteries

- The machine is shut down and secured, refer to page 34.
The battery compartment is open.

- Remove the insulating caps (1) by loosening the cable ties.
- Dismount the pole terminal (XC1/-) of the negative cable (2) from the negative pole of battery C1 (5).
- Dismount the pole terminal (XC2/+ .1) of the positive cable (3) from the positive pole of battery C2 (6).
- Dismount the pole terminal (XC2/-) of the cable (4) from the negative pole of battery C2 (6).
- Dismount the pole terminal (XC1/+ ) of the cable (4) from the positive pole of battery C1 (5).

Removing the batteries

Each battery weighs approx. 37 kg.

- The batteries are disconnected, refer to page 467.
- Remove the screws (1) and set the retaining sheet (2) down to the side.
- Remove battery C1 (3) and battery C2 (4) from the battery compartment.

Installing the batteries

- Insert battery C1 (3) and battery C2 (4) in the battery compartment.
- Insert the retaining plates (2) and mount the screws (1).
- Connect the batteries, refer to page 469.
Connecting a battery

- Mount the pole terminal (XC1/) of the cable (4) on the positive pole of battery C1 (5) (tightening torque = 6 ±1 Nm).
- Mount the pole terminal (XC1/-) of the cable (4) on the negative pole of battery C2 (6) (tightening torque = 6 ±1 Nm).
- Mount the pole terminal (XC2/+) of the positive cable (3) on the positive pole of battery C2 (6) (tightening torque = 6 ±1 Nm).
- Mount the pole terminal (XC1/-) of the negative cable (2) on the negative pole of battery C1 (5) (tightening torque = 6 ±1 Nm).
- Attach the insulating caps (1) and fix with cable ties.
- Close the battery compartment.

29.2 Maintaining alternator

**NOTICE**

**Engine damage due to improper handling**

When installing/removing the batteries, improper handling may cause a short circuit. As a result, electronic components may be damaged.

- Interrupt the circuit using the main battery switch and secure to prevent it from being switched on again.
- Prior to installation/removal, ensure that the LED on the main battery switch is not illuminated.
Checking/tensioning/replacing V-belt of the alternator

For the installation steps, refer to the delivered operating instructions from Liebherr Machines Bulle S.A.

If the alternator (1) fails or is not working satisfactorily

- Determine the possible cause of the fault.
- Attempt to eliminate the possible cause according to the following list.

Fault: The charging warning light lights up.
Error messages under/overvoltage on the terminal.

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>The output voltage of the alternator is too low.</td>
<td>▶ Have the alternator checked by a qualified service centre.</td>
</tr>
<tr>
<td>The connection cable to the alternator is loose.</td>
<td>▶ Tighten the cable connections with a tightening torque of 14 ±1 Nm.</td>
</tr>
<tr>
<td>The cable connections are corroded.</td>
<td>▶ Clean the cable connections on the alternator and battery.</td>
</tr>
</tbody>
</table>

If the damage cannot be repaired based on the suggestions, contact your KRONE distributor.

29.3 Maintaining starter

NOTICE

Engine damage due to improper handling
When installing/removing the batteries, improper handling may cause a short circuit. As a result, electronic components may be damaged.

- Interrupt the circuit using the main battery switch and secure to prevent it from being switched on again.
- Prior to installation/removal, ensure that the LED on the main battery switch is not illuminated.

If the starter (1) fails or is not working satisfactorily

- Determine the possible cause of the fault.
- Attempt to eliminate the possible cause according to the following list.

Fault: The starter fails or does is not working satisfactorily.
### Possible cause

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>The connection cable to the starter is loose.</td>
<td>▶ Tighten the cable connections (2) to a tightening torque of 24 ±4 Nm and the cable connection (3) to a tightening torque of 4 ±0.6/-0.3 Nm.</td>
</tr>
<tr>
<td>The cable connections are corroded.</td>
<td>▶ Clean the cable connections on the starter and engine.</td>
</tr>
<tr>
<td>The magnetic switch of the starter is defective</td>
<td>▶ Have the starter checked by a qualified service centre.</td>
</tr>
</tbody>
</table>

If the damage cannot be repaired based on the suggestions, contact your KRONE dealer.
30 Maintenance - Lubrication

30.1 Lubricating universal shafts

**WARNING**

Risk of injury due to non-observance of relevant safety instructions
If the relevant safety instructions are not observed, persons may be seriously injured or killed.
- To avoid accidents, the relevant safety instructions must be read and observed, refer to page 19.

**WARNING**

Risk of injury due to non-observance of safety instructions
If the relevant safety routines are not observed, persons may be seriously injured or killed.
- The safety routines must be read and observed to avoid accidents, refer to page 34.

**NOTICE**

Environmental damage caused by consumables
If consumables are not stored and disposed of properly, they may escape into the environment. As a result, the environment will be damaged, even by small quantities.
- Store the consumables in suitable containers according to the statutory provisions.
- Dispose of used consumables according to statutory provisions.

**NOTICE**

Damage to bearing points
When using lubricating greases not approved and when mixing different lubricating greases, the lubricated parts may be damaged.
- Only use approved lubricating greases, refer to page 72.
- Do not use graphite-containing lubricating greases.
- Do not mix different lubricating greases.
Lubricate the universal shafts and the double joint at the intervals indicated in the drawings using a multi-purpose grease.

### 30.2 Lubrication chart - machine

The information on maintenance intervals is based on average load of the machine. In case of an increased load and under extreme working conditions, the time periods must be reduced. The types of lubrication are marked by means of icons in the lubrication chart, refer to table.

<table>
<thead>
<tr>
<th>Type of lubrication</th>
<th>Lubricant</th>
<th>Comment</th>
</tr>
</thead>
</table>
| Grease              | Multi-purpose grease | ▶ Apply two strokes of lubricating grease from the grease gun per grease nipple.  
<p>|                     |                    | ▶ Remove excess lubricating grease at the grease nipple.                 |</p>
<table>
<thead>
<tr>
<th>Every 100 operating hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
</tr>
<tr>
<td>2)</td>
</tr>
<tr>
<td>3)</td>
</tr>
<tr>
<td>4)</td>
</tr>
<tr>
<td>5)</td>
</tr>
<tr>
<td>6)</td>
</tr>
<tr>
<td>7)</td>
</tr>
<tr>
<td>8)</td>
</tr>
<tr>
<td>9)</td>
</tr>
<tr>
<td>10)</td>
</tr>
<tr>
<td>11)</td>
</tr>
</tbody>
</table>
30 Maintenance - Lubrication
30.2 Lubrication chart - machine

Corn conditioner

BX002-035
### Every 100 operating hours

<table>
<thead>
<tr>
<th>2)</th>
<th>4)</th>
<th>7)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image4.png" alt="Image" /></td>
</tr>
</tbody>
</table>

### After cleaning with water

<table>
<thead>
<tr>
<th>1)</th>
<th>3)</th>
<th>5)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
<td><img src="image7.png" alt="Image" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image8.png" alt="Image" /></td>
</tr>
</tbody>
</table>
30 Maintenance - Lubrication

30.2 Lubrication chart - machine

Intake

BXG000-037
<table>
<thead>
<tr>
<th>Every 100 operating hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
</tr>
<tr>
<td><img src="image1.png" alt="Image" /></td>
</tr>
<tr>
<td>2)</td>
</tr>
<tr>
<td><img src="image2.png" alt="Image" /></td>
</tr>
<tr>
<td>3)</td>
</tr>
<tr>
<td><img src="image3.png" alt="Image" /></td>
</tr>
<tr>
<td>4)</td>
</tr>
<tr>
<td><img src="image4.png" alt="Image" /></td>
</tr>
<tr>
<td>5)</td>
</tr>
<tr>
<td><img src="image5.png" alt="Image" /></td>
</tr>
<tr>
<td>6)</td>
</tr>
<tr>
<td><img src="image6.png" alt="Image" /></td>
</tr>
<tr>
<td>7)</td>
</tr>
<tr>
<td><img src="image7.png" alt="Image" /></td>
</tr>
<tr>
<td>8)</td>
</tr>
<tr>
<td><img src="image8.png" alt="Image" /></td>
</tr>
</tbody>
</table>
### 31 Maintenance – Central Lubrication System

#### 31.1 Overview of the distributor blocks of the central lubrication system

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk of injury due to non-observance of relevant safety instructions</td>
</tr>
<tr>
<td>If the relevant safety instructions are not observed, persons may be seriously injured or killed.</td>
</tr>
<tr>
<td>▶ To avoid accidents, the relevant safety instructions must be read and observed, refer to page 19.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk of injury due to non-observance of safety instructions</td>
</tr>
<tr>
<td>If the relevant safety routines are not observed, persons may be seriously injured or killed.</td>
</tr>
<tr>
<td>▶ The safety routines must be read and observed to avoid accidents, refer to page 34.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NOTICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Damage to the machine due to the use of incorrect and contaminated lubricants</td>
</tr>
<tr>
<td>Unauthorised or contaminated lubricants in the central lubrication system will cause faults in the central lubrication system and damage the bearing positions.</td>
</tr>
<tr>
<td>▶ When working on the central lubrication system, use clean and suitable tools.</td>
</tr>
<tr>
<td>▶ Use authorised lubricants only.</td>
</tr>
<tr>
<td>▶ Ensure that dirt or dirty lubricant cannot get into the central lubrication system.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>The distributor blocks have one grease nipple each (red cap) for lubrication with a grease gun if required.</td>
</tr>
</tbody>
</table>
The lubrication point is assigned by the numbers on the lubrication lines to the distributor blocks.

<table>
<thead>
<tr>
<th>Distributor block</th>
<th>Lubrication point</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Main distributor</td>
<td>1  Discharge accelerator bearing on right</td>
</tr>
<tr>
<td></td>
<td>2  Discharge accelerator bearing on left</td>
</tr>
<tr>
<td></td>
<td>3  Channel support slewing ring at front</td>
</tr>
<tr>
<td></td>
<td>8  Channel support slewing ring at rear</td>
</tr>
<tr>
<td>2) Drives</td>
<td>4  Bearing spout on right</td>
</tr>
<tr>
<td></td>
<td>5  Flange-mounted bearing header</td>
</tr>
<tr>
<td></td>
<td>6  Flange-mounted bearing intake</td>
</tr>
<tr>
<td></td>
<td>7  Tensioning arm main belt</td>
</tr>
<tr>
<td></td>
<td>9  Bearing spout on left</td>
</tr>
<tr>
<td></td>
<td>12 Tension roll main belt</td>
</tr>
</tbody>
</table>
### Overview of the distributor blocks of the central lubrication system

<table>
<thead>
<tr>
<th>Distributor block</th>
<th>Lubrication point</th>
</tr>
</thead>
<tbody>
<tr>
<td>3) Foraging unit</td>
<td>21 Drum bearing on right</td>
</tr>
<tr>
<td></td>
<td>22 Bushing frame bearing on right</td>
</tr>
<tr>
<td></td>
<td>23 Spindle counterblade adjustment on right</td>
</tr>
<tr>
<td></td>
<td>24 Axial bearing on right at rear</td>
</tr>
<tr>
<td></td>
<td>25 Axial bearing on right at front</td>
</tr>
<tr>
<td></td>
<td>26 Drum base on left</td>
</tr>
<tr>
<td></td>
<td>27 Tension anchor on left</td>
</tr>
<tr>
<td></td>
<td>28 Drum bearing on left</td>
</tr>
<tr>
<td></td>
<td>29 Bushing frame bearing on left</td>
</tr>
<tr>
<td></td>
<td>30 Spindle counterblade adjustment on left</td>
</tr>
<tr>
<td></td>
<td>31 Axial bearing at front on left</td>
</tr>
<tr>
<td></td>
<td>32 Axial bearing at rear on left</td>
</tr>
<tr>
<td></td>
<td>33 Drum base on right</td>
</tr>
<tr>
<td></td>
<td>34 Tension anchor on right</td>
</tr>
<tr>
<td>4) Corn conditioner</td>
<td>52 Bearing corn conditioner at rear on left</td>
</tr>
<tr>
<td></td>
<td>53 Bearing corn conditioner at front on left</td>
</tr>
<tr>
<td></td>
<td>54 Bearing corn conditioner at rear on right</td>
</tr>
<tr>
<td></td>
<td>55 Bearing corn conditioner at front on right</td>
</tr>
</tbody>
</table>
### Overview of the distributor blocks of the central lubrication system

#### 5) Intake

<table>
<thead>
<tr>
<th>Distributor block</th>
<th>Lubrication point</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>Lower roller at rear on left</td>
</tr>
<tr>
<td>36</td>
<td>Lower roller in middle on left</td>
</tr>
<tr>
<td>37</td>
<td>Lower roller at front on left</td>
</tr>
<tr>
<td>38</td>
<td>Lower roller at rear on right</td>
</tr>
<tr>
<td>39</td>
<td>Lower roller in middle on right</td>
</tr>
<tr>
<td>40</td>
<td>Lower roller on right at front</td>
</tr>
<tr>
<td>41</td>
<td>Roll on right</td>
</tr>
<tr>
<td>42</td>
<td>Rocker arm on right</td>
</tr>
<tr>
<td>43</td>
<td>Pendulum tube</td>
</tr>
<tr>
<td>44</td>
<td>Rocker arm on left at rear</td>
</tr>
<tr>
<td>45</td>
<td>Upper roller on left at rear</td>
</tr>
<tr>
<td>46</td>
<td>Upper roller on left in middle</td>
</tr>
<tr>
<td>47</td>
<td>Upper roller on left at front</td>
</tr>
<tr>
<td>48</td>
<td>Roll on left</td>
</tr>
<tr>
<td>49</td>
<td>Upper roller on right at rear</td>
</tr>
<tr>
<td>50</td>
<td>Upper roller on right in middle</td>
</tr>
<tr>
<td>51</td>
<td>Upper roller on right at front</td>
</tr>
</tbody>
</table>
### 31.2 Lubricants

To ensure problem-free operation of the central lubrication system, we recommend using the following greases which we have tested. Sodium soap greases must not be used in the on-road or off-road area because of their solubility in water. Grease can be changed from conventional grease to bio-degradable greases (and vice-versa) for the products listed here without resulting disadvantage.

<table>
<thead>
<tr>
<th>Distributor block</th>
<th>Lubrication point</th>
</tr>
</thead>
<tbody>
<tr>
<td>6) Rear axle</td>
<td>16 Upper steering knuckle on right</td>
</tr>
<tr>
<td></td>
<td>17 Lower steering knuckle on right</td>
</tr>
<tr>
<td></td>
<td>19 Upper steering knuckle on left</td>
</tr>
<tr>
<td></td>
<td>20 Lower steering knuckle on left</td>
</tr>
<tr>
<td>7) Sub-distributor corn conditioner</td>
<td>10 Deflection roll drive corn conditioner</td>
</tr>
<tr>
<td></td>
<td>11 Bearing tensioning arm corn conditioner</td>
</tr>
</tbody>
</table>

---

```mermaid
diagram LR
  6: distributor block, "Rear axle"
  7: sub-distributor corn conditioner
```

---
Standard commercial greases or greases recommended by the vehicle or grease manufacturer are used as lubricants. Greases should still exhibit adequate suction and flow performance at –25 °C (max. flow pressure 700 mbar). They must not have a tendency to bleed out, as this may result in depositions in the lines during extended operation.

MoS2 greases (up to 5% molybdenum disulphide) can be conveyed with progressive pumps and distributor blocks.

### Lubricant types NLGI class 2

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type designation</th>
<th>Saponification</th>
<th>Minimum conveying temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGIP</td>
<td>Autol Top 2000</td>
<td>Spec. Ca</td>
<td>–10 °C</td>
</tr>
<tr>
<td>ARAL</td>
<td>Long-term grease H</td>
<td>Li</td>
<td>–25 °C</td>
</tr>
<tr>
<td>BECHEM</td>
<td>High–Lub L4742</td>
<td>Li</td>
<td>–20 °C</td>
</tr>
<tr>
<td>BP</td>
<td>Energrease LS EP 9346</td>
<td>Li</td>
<td>–25 °C</td>
</tr>
<tr>
<td></td>
<td>Energrease LS-EP2</td>
<td>Li</td>
<td>–20 °C</td>
</tr>
<tr>
<td>CASTROL</td>
<td>Spheerol EP L2</td>
<td>Li</td>
<td>–20 °C</td>
</tr>
<tr>
<td>ESSO</td>
<td>Exxon multi-purpose grease</td>
<td>Li</td>
<td>–20 °C</td>
</tr>
<tr>
<td>ELF</td>
<td>ELF Multi 2</td>
<td>Li</td>
<td>–20 °C</td>
</tr>
<tr>
<td>FINA</td>
<td>EP multi-purpose grease</td>
<td>Li</td>
<td>–20 °C</td>
</tr>
<tr>
<td>FUCHS</td>
<td>LZR 2</td>
<td>Li</td>
<td>–25 °C</td>
</tr>
<tr>
<td>KROON OIL</td>
<td>Lithep Grease</td>
<td>Li</td>
<td>–10 °C</td>
</tr>
<tr>
<td>MOBIL</td>
<td>Mobilux EP 2</td>
<td>Li</td>
<td>–15 °C</td>
</tr>
<tr>
<td>Mobilgrease</td>
<td>MB 2</td>
<td>Li</td>
<td>–20 °C</td>
</tr>
<tr>
<td>MOGUL</td>
<td>LV 1 EP</td>
<td>Li</td>
<td>–25 °C</td>
</tr>
<tr>
<td>ÖMV</td>
<td>ÖMV Signum M283</td>
<td>Li/Ca</td>
<td>–25 °C</td>
</tr>
<tr>
<td>OPTIMOL</td>
<td>Olit EP 2</td>
<td>Li</td>
<td>–25 °C</td>
</tr>
<tr>
<td>SHELL</td>
<td>Retinax EP L2</td>
<td>Li</td>
<td>–20 °C</td>
</tr>
<tr>
<td>TEXACO</td>
<td>Multifak EP2</td>
<td>Li</td>
<td>–15 °C</td>
</tr>
<tr>
<td>TOTAL</td>
<td>Multis EP2</td>
<td>Li</td>
<td>–20 °C</td>
</tr>
<tr>
<td>Zeller &amp; Gmelin</td>
<td>Divinol multi-purpose grease 2</td>
<td>Li</td>
<td>–20 °C</td>
</tr>
</tbody>
</table>

### Lubricating greases with fast bio-degradable times

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type designation</th>
<th>Saponification</th>
<th>Minimum conveying temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARAL</td>
<td>BAB EP 2</td>
<td>Li/Ca</td>
<td>–20 °C</td>
</tr>
<tr>
<td>AVIA</td>
<td>Syntogrease</td>
<td>Li</td>
<td>–25 °C</td>
</tr>
<tr>
<td>BECHEM</td>
<td>UWS VE 42</td>
<td>Li/Ca</td>
<td>–25 °C</td>
</tr>
<tr>
<td>DEA</td>
<td>Dolon E EP2</td>
<td>Li/Ca</td>
<td>–20 °C</td>
</tr>
<tr>
<td>FINA</td>
<td>Biocal EP S2</td>
<td>Li/Ca</td>
<td>–25 °C</td>
</tr>
<tr>
<td>FUCHS</td>
<td>Plantogel 0120S</td>
<td>Li</td>
<td>–25 °C</td>
</tr>
<tr>
<td>LUBRITECH</td>
<td>Stabyl Eco EP2</td>
<td>Li/Ca</td>
<td>–20 °C</td>
</tr>
</tbody>
</table>
## 31.3 Filling the lubricant tank

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type designation</th>
<th>Saponification</th>
<th>Minimum conveying temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>ÖMV</td>
<td>ÖMV ecodur EP2</td>
<td>Ca</td>
<td>-25 °C</td>
</tr>
<tr>
<td>TEXACO</td>
<td>Starfak 2</td>
<td>Ca</td>
<td>-20 °C</td>
</tr>
<tr>
<td>Zeller &amp; Gmelin</td>
<td>Divinol E2</td>
<td>Li</td>
<td>-25 °C</td>
</tr>
</tbody>
</table>

The lubricant tank can be filled via the conical grease nipple (1) or via the quick coupling (2).

There are two different ways to top up the container by means of a standard grease gun:

- directly via conical grease nipple (1)
- via filler neck screwed in instead of conical grease nipple.

### Topping up the lubricant tank via filler neck

- Dismount the conical grease nipple (3) on the lubricant tank and mount it through the filler neck 27 001 594 0 (4).
- Mount the coupling sleeve 27 001 595 0 (2) on the filling pump (1).

### Topping up the lubricant tank via filling cylinder
31.4 Check filling level

**NOTICE**

**Damage to the machine due to lack of lubrication**

If the machine is not adequately lubricated, the affected components will be damaged.

- Ensure that the lubricant tank of central lubrication system is always adequately full.

- Visually check the filling level by the transparent lubricant tank.

The following error message appears in the terminal when the lubricant tank is empty:

- “Lubrication tank of central lubrication” empty

To ensure that the machine can be lubricated sufficiently again:

- Stop the machine and refill the lubricant tank.

31.5 Starting intermediate lubrication

The lubrication interval is preset ex works. The factory setting is 600 s for the interval duration and 18 for the number of clock cycles per lubrication interval (corresponds to a grease quantity of 20 ml).

To start intermediate lubrication manually:

- Open the “Central Lubrication” → “Maintenance” menu on the terminal and press the “Start intermediate lubrication” key.
31.6 Searching for the error in the central lubrication system

Jam in the system or at a connected lubrication point

- Unscrew the outlet screw connections from the main distributor to the subdistributor one after the other. If lubricant suddenly exits under pressure when one of the outlet screw connections is loosened, the connected subdistributor is blocked. If lubricant does not exit from any of the outlet screw connections, the main distributor is blocked. Clean or replace the main distributor.

- Reinstall the outlet screw connections.

- Loosen the outlet screw connections on the blocked subdistributor. If lubricant suddenly exits under pressure when unscrewing one of the outlet screw connections, the connected lubrication point is blocked. If lubricant does not exit from any of the outlet screw connections, the subdistributor is blocked. Clean or replace the blocked subdistributor.

- Remove the blockage at the lubrication point.
32 Malfunction, cause and remedy

32.1 Electrics/electronics BiG X defective

INFORMATION
An overview of all control units, circuit boards and fuses can be found in the circuit diagram, which is part of the other applicable documents that was delivered with the machine.

If any error messages occur, follow the instructions on the terminal. If the error cannot be alleviated, contact your distributor.

You will find basic information and overviews about the electrical/electronic components on the following pages.

Components may only be repaired or replaced by a qualified service centre. Contact your distributor.

• Explanations about cable breaks and short circuits, refer to page 489.
• Overview of fuses, refer to page 491.
• Overview of the control units, refer to page 494.
• Overview of the sensors, refer to page 495.
• Overview of the actuators, refer to page 496.

32.1.1 Cable break, short circuit

Short circuit to ground

![Diagram](BX001-689)
32 Malfunction, cause and remedy

32.1 Electrics/electronics BiG X defective

1 Signal line 2 Ground line

If the signal voltage is under the specified value, a short circuit to ground has occurred.
Possible cause: The cable is damaged and has made contact with the vehicle body.

Cable break

BX001-690

1 Signal line 2 Ground line

If the input signal has not been recorded, there is a broken cable.
Possible cause: The cable is not connected or it is damaged or severed (torn off).

Short circuit

BX001-691

1 Signal line 2 Ground line

There is a connection between the supply voltage (plus and minus) or the signal voltage and ground. A short circuit is present.
Possible cause: The cable is damaged and the supply lines to the sensors are connected to each other.
Short circuit to supply voltage

1 Signal line 2 Ground line

If the voltage on the signal line is above the value range that is valid for the sensor, there is a connection to the other live line.

Possible cause: A supply line is connected to the sensor signal line.

32.1.2 Overview of fuses

The fuses of the "Distributor block - supply of fuses" are located on the right-hand machine side in the bumper, below the battery compartment.

<table>
<thead>
<tr>
<th>BMK</th>
<th>Designation</th>
<th>BMK</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>Distributor block - supply of fuses</td>
<td>F1.F4</td>
<td>Power supply - cabin electronics</td>
</tr>
<tr>
<td>F1.F2</td>
<td>Batteries</td>
<td>F1.F5</td>
<td>Battery cut-off relay</td>
</tr>
<tr>
<td>F1.F3</td>
<td>Power supply - cabin output</td>
<td>F1.F6</td>
<td>VariQuick power supply</td>
</tr>
</tbody>
</table>
The "Central electrical system circuit board" is located in the console in the cabin, refer to page 63.

You can find the values for the fuses on the circuit diagram.
### Malfunction, cause and remedy

#### BiG X defective

<table>
<thead>
<tr>
<th>BMK</th>
<th>Designation</th>
<th>BMK</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A14.F1</td>
<td>ISOBUS: 12V power supply</td>
<td>A14.F6</td>
<td>T3 voltage converter (optional)</td>
</tr>
<tr>
<td>A14.F5</td>
<td>Built in-socket 3-pole, cooling box socket</td>
<td>A14.F6</td>
<td>KMB 1: Voltage group 1</td>
</tr>
<tr>
<td>A14.F7</td>
<td>ISOBUS In-cab socket</td>
<td>A14.F6</td>
<td>KMB 1: Voltage group 2</td>
</tr>
<tr>
<td>A14.F8</td>
<td>Silage additives unit</td>
<td>A14.F6</td>
<td>KMB 2: Voltage group 1</td>
</tr>
<tr>
<td>A14.F1</td>
<td>Fuel pre-feed pump</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A14.F1</td>
<td>SCR components</td>
<td>A14.F6</td>
<td>KMB 3: Voltage group 1 &amp; 2</td>
</tr>
<tr>
<td>A14.F1</td>
<td>Quick-stop valve air dryer</td>
<td>A14.F6</td>
<td>Motor control module LMB-ECU2</td>
</tr>
<tr>
<td>A14.F1</td>
<td>Driver's seat</td>
<td>A14.F7</td>
<td>Motor control module LMB-ECU2</td>
</tr>
<tr>
<td>A14.F1</td>
<td>Cigarette lighter</td>
<td>A14.F7</td>
<td>Heating valve 1.2</td>
</tr>
<tr>
<td>A14.F2</td>
<td>Rear windscreen wiper</td>
<td>A14.F7</td>
<td>Function module front right: Voltage group 3</td>
</tr>
<tr>
<td>A14.F2</td>
<td>Operating terminal, USB printer</td>
<td>A14.F7</td>
<td>Function module front right: Voltage group 4</td>
</tr>
<tr>
<td>A14.F2</td>
<td>Switch-on signal voltage converter, position of front windscreen wiper</td>
<td>A14.F7</td>
<td>Function module cabin voltage group 1</td>
</tr>
<tr>
<td>A14.F2</td>
<td>Steering column, radio</td>
<td>A14.F7</td>
<td>Function module cabin voltage group 2</td>
</tr>
<tr>
<td>A14.F2</td>
<td>Lifting unit control, KMB 1-5, KMC, LMB-ECU2 SCR</td>
<td>A14.F7</td>
<td>Function module cabin voltage group 3</td>
</tr>
<tr>
<td>A14.F2</td>
<td>Drive computer, alternator, motor control modules, exhaust gas control unit</td>
<td>A14.F7</td>
<td>Function module cabin voltage group 4</td>
</tr>
<tr>
<td>A14.F3</td>
<td>Function modules, camera system, steering column, brake pedal angle, service brake pressure, steering pressure, KRONESmartConnect</td>
<td>A14.F7</td>
<td>Front function module: left voltage group 1</td>
</tr>
<tr>
<td>A14.F3</td>
<td>AutoScan, moisture measurement, metal detection</td>
<td>A14.F8</td>
<td>CB radio, interior lamp main illumination, radio, door switch</td>
</tr>
<tr>
<td>A14.F3</td>
<td>Automatic Fill Control foot pedal</td>
<td>A14.F8</td>
<td>Lifting unit control, light control unit</td>
</tr>
</tbody>
</table>
### 32 Malfunction, cause and remedy

#### 32.1 Electrics/electronics BiG X defective

<table>
<thead>
<tr>
<th>BMK</th>
<th>Designation</th>
<th>BMK</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A14.F3</td>
<td>Wiper right</td>
<td>A14.F8</td>
<td>Front function module: left voltage group 3</td>
</tr>
<tr>
<td>A14.F4</td>
<td>Centre windscreen wiper</td>
<td>A14.F8</td>
<td>Front function module: left voltage group 4</td>
</tr>
<tr>
<td>A14.F4</td>
<td>Wiper left</td>
<td>A14.F8</td>
<td>Function Module rear: Voltage group 1</td>
</tr>
<tr>
<td>A14.F4</td>
<td>Drive computer</td>
<td>A14.F9</td>
<td>Function Module rear: Voltage group 3</td>
</tr>
<tr>
<td>A14.F4</td>
<td>KMB 5: Voltage group 1 &amp; 2</td>
<td>A14.F9</td>
<td>Front left function module, rear function module</td>
</tr>
<tr>
<td>A14.F4</td>
<td>Function module front right: Voltage group 1</td>
<td>A14.F9</td>
<td>Cabin function module, KMC: Electronics supply</td>
</tr>
<tr>
<td>A14.F5</td>
<td>KMC: Voltage group 1 &amp; 2</td>
<td>A14.F9</td>
<td>Lifting unit control, KMB 1-5</td>
</tr>
<tr>
<td>A14.F5</td>
<td>KMC: Voltage group 3</td>
<td>A14.F9</td>
<td>Armrest, steering column, momentary switch ladder lighting button</td>
</tr>
<tr>
<td>A14.F5</td>
<td>KMC: Voltage group 4</td>
<td>A14.F9</td>
<td>LMB-ECU2 SCR</td>
</tr>
<tr>
<td>A14.F5</td>
<td>KMC: Voltage group 5 &amp; 6</td>
<td>A14.F9</td>
<td>Ignition lock, drive computer, motor control module LMB-ECU2</td>
</tr>
<tr>
<td>A14.F5</td>
<td>SCR hose heating 1-4</td>
<td>A14.F1</td>
<td>Left windscreen wiper</td>
</tr>
<tr>
<td>A14.F5</td>
<td>Voltage converter T1</td>
<td>A14.F1</td>
<td>Right windscreen wiper</td>
</tr>
<tr>
<td>A14.F5</td>
<td>Voltage converter T2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 32.1.3 Overview of control units

<table>
<thead>
<tr>
<th>BMK</th>
<th>Designation</th>
<th>BMK</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Automatic climate control</td>
<td>A17</td>
<td>Armrest</td>
</tr>
<tr>
<td>A2</td>
<td>Drive computer</td>
<td>A21</td>
<td>Steering column</td>
</tr>
<tr>
<td>A3</td>
<td>Operation control</td>
<td>A24</td>
<td>Motor control unit</td>
</tr>
<tr>
<td>A4</td>
<td>Operation control</td>
<td>A26</td>
<td>Exhaust gas control unit</td>
</tr>
<tr>
<td>A6</td>
<td>Operation control</td>
<td>A27</td>
<td>Urea pump module 1</td>
</tr>
<tr>
<td>A7</td>
<td>Lifting unit control</td>
<td>A28</td>
<td>Urea pump module 2</td>
</tr>
<tr>
<td>A8</td>
<td>Grinding control unit</td>
<td>A30</td>
<td>Camera system</td>
</tr>
<tr>
<td>A9</td>
<td>Front right function module</td>
<td>A31</td>
<td>Terminal</td>
</tr>
<tr>
<td>A10</td>
<td>Function module rear</td>
<td>A32</td>
<td>ForageCam</td>
</tr>
</tbody>
</table>
### 32.1.4 Overview of sensors

<table>
<thead>
<tr>
<th>BMK</th>
<th>Designation</th>
<th>BMK</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2</td>
<td>Automatic climate control pressure</td>
<td>B52</td>
<td>Side tank filling level</td>
</tr>
<tr>
<td>B5</td>
<td>Pump pressure MA</td>
<td>B54</td>
<td>Cutter drum rotational speed</td>
</tr>
<tr>
<td>B6</td>
<td>Pump pressure MB</td>
<td>B55</td>
<td>Tension relief main belt</td>
</tr>
<tr>
<td>B7</td>
<td>Brake accumulator pressure</td>
<td>B56</td>
<td>Oil pressure of gearbox</td>
</tr>
<tr>
<td>B8</td>
<td>Parking brake pressure</td>
<td>B57</td>
<td>Working hydraulics oil filter</td>
</tr>
<tr>
<td>B9</td>
<td>Service brake pressure</td>
<td>B58</td>
<td>Position axle level left</td>
</tr>
<tr>
<td>B10</td>
<td>Swivel angle pump</td>
<td>B59</td>
<td>Position axle level right</td>
</tr>
<tr>
<td>B11</td>
<td>Rotational speed front left</td>
<td>B60</td>
<td>Header rotational speed</td>
</tr>
<tr>
<td>B12</td>
<td>Rotational speed front right</td>
<td>B61</td>
<td>Intake rotational speed</td>
</tr>
<tr>
<td>B13</td>
<td>Rotational speed rear left</td>
<td>B62</td>
<td>CropControl path sensor</td>
</tr>
<tr>
<td>B14</td>
<td>Rotational speed rear right</td>
<td>B64</td>
<td>RockProtect acceleration sensor</td>
</tr>
<tr>
<td>B15</td>
<td>Steering angle at rear left</td>
<td>B65</td>
<td>Additional axle pressure</td>
</tr>
<tr>
<td>B16</td>
<td>Angle brake pedal</td>
<td>B66</td>
<td>Extraction module urea tank 1</td>
</tr>
<tr>
<td>B17</td>
<td>Reversing camera</td>
<td>B68</td>
<td>Exhaust gas temperature upstream of catalytic converter 1</td>
</tr>
<tr>
<td>B18</td>
<td>Additional camera</td>
<td>B69</td>
<td>Exhaust gas temperature upstream of catalytic converter 2</td>
</tr>
<tr>
<td>B20</td>
<td>Ambient temperature</td>
<td>B71</td>
<td>NOx downstream of catalytic converter 1</td>
</tr>
<tr>
<td>B22</td>
<td>Moisture measurement</td>
<td>B72</td>
<td>NOx downstream of catalytic converter 2</td>
</tr>
<tr>
<td>B23</td>
<td>Metal detection</td>
<td>B73</td>
<td>Constant pressure</td>
</tr>
<tr>
<td>B26</td>
<td>Position grinding stone right</td>
<td>B74</td>
<td>Silage additives fill level</td>
</tr>
<tr>
<td>B27</td>
<td>Position grinding stone left</td>
<td>B75</td>
<td>Silage additives flow</td>
</tr>
<tr>
<td>B28</td>
<td>Grinding flap closed</td>
<td>B76</td>
<td>Coolant fill level</td>
</tr>
<tr>
<td>B31</td>
<td>Lifting unit pressure</td>
<td>B77</td>
<td>Extraction module urea tank 2</td>
</tr>
<tr>
<td>B32</td>
<td>Position lifting unit</td>
<td>B81</td>
<td>Position of centre windscreen wiper</td>
</tr>
<tr>
<td>B36</td>
<td>Water in fuel</td>
<td>B92</td>
<td>Clean air temperature</td>
</tr>
<tr>
<td>B38</td>
<td>Steering pressure</td>
<td>B96</td>
<td>Switch central lubrication cycle</td>
</tr>
<tr>
<td>B39</td>
<td>Return suction filter</td>
<td>B100</td>
<td>Position of bottom cabin lift</td>
</tr>
<tr>
<td>B40</td>
<td>Filling level, oil tank</td>
<td>B103</td>
<td>Pressure switch circulation oil filter</td>
</tr>
<tr>
<td>B41</td>
<td>Hydraulic oil temperature</td>
<td>B104</td>
<td>NOx downstream catalytic converter</td>
</tr>
</tbody>
</table>
## 32 Malfunction, cause and remedy
### 32.1 Electrics/electronics BiG X defective

<table>
<thead>
<tr>
<th>BMK</th>
<th>Designation</th>
<th>BMK</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>B42</td>
<td>Air filter contamination 1</td>
<td>B105</td>
<td>Moisture sensor</td>
</tr>
<tr>
<td>B43</td>
<td>Air filter contamination 2</td>
<td>B106</td>
<td>NH3 sensor</td>
</tr>
<tr>
<td>B44</td>
<td>Spout position centre</td>
<td>B107</td>
<td>Pressure reservoir</td>
</tr>
<tr>
<td>B45</td>
<td>Spout bottom position</td>
<td>B108</td>
<td>Parking brake pressure</td>
</tr>
<tr>
<td>B46</td>
<td>Spout angular momenta</td>
<td>B109</td>
<td>Height of spout</td>
</tr>
<tr>
<td>B47</td>
<td>Pendulum frame position left</td>
<td>B110</td>
<td>Spout flap position</td>
</tr>
<tr>
<td>B48</td>
<td>Pendulum frame position right</td>
<td>B112</td>
<td>Flow silage additives coarse dosing</td>
</tr>
<tr>
<td>B51</td>
<td>Filling level fuel tank</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 32.1.5 Overview actuators

<table>
<thead>
<tr>
<th>BMK</th>
<th>Designation</th>
<th>BMK</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>Alternator</td>
<td>G6</td>
<td>Silage additives fine dosing pump</td>
</tr>
<tr>
<td>G2</td>
<td>Fuel pre-feed pump 1</td>
<td>G9</td>
<td>Central lubrication</td>
</tr>
<tr>
<td>G3</td>
<td>Fuel pre-feed pump 2</td>
<td>G12</td>
<td>Silage additives pump coarse dosing</td>
</tr>
<tr>
<td>K3</td>
<td>Spout rotation pilot valve</td>
<td>K14</td>
<td>Wheel motor rear left</td>
</tr>
<tr>
<td>K9</td>
<td>Evaporator blower fan/PWM</td>
<td>K15</td>
<td>Wheel motor rear right</td>
</tr>
<tr>
<td>K10</td>
<td>Drive pump forwards</td>
<td>K16</td>
<td>Parking brake</td>
</tr>
<tr>
<td>K11</td>
<td>Drive pump backwards</td>
<td>K20</td>
<td>Fan reversing</td>
</tr>
<tr>
<td>K12</td>
<td>Wheel motor front left</td>
<td>K22</td>
<td>Miniplexer</td>
</tr>
<tr>
<td>K13</td>
<td>Wheel motor front right</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1</td>
<td>Centre windscreen wiper</td>
<td>M12</td>
<td>Front windscreen water pump</td>
</tr>
<tr>
<td>M2</td>
<td>Wiper left</td>
<td>M13</td>
<td>Corn conditioner motor</td>
</tr>
<tr>
<td>M3</td>
<td>Wiper right</td>
<td>M14</td>
<td>Rear windscreen wiper</td>
</tr>
<tr>
<td>M4</td>
<td>Starter</td>
<td>M15</td>
<td>Mirror left</td>
</tr>
<tr>
<td>M6</td>
<td>Automatic climate control compressor</td>
<td>M16</td>
<td>Left windscreen wiper</td>
</tr>
<tr>
<td>M8</td>
<td>Right mirror</td>
<td>M17</td>
<td>Right windscreen wiper</td>
</tr>
<tr>
<td>M9</td>
<td>Engine counterblade left</td>
<td>M18</td>
<td>Left windscreen water pump</td>
</tr>
<tr>
<td>M10</td>
<td>Engine counterblade right</td>
<td>M19</td>
<td>Right windscreen water pump</td>
</tr>
<tr>
<td>M11</td>
<td>Discharge accelerator motor (optional)</td>
<td>M20</td>
<td>Rear windscreen water pump</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BMK</th>
<th>Designation</th>
<th>BMK</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>Lower spout</td>
<td>Q53</td>
<td>Grinding stone stop</td>
</tr>
<tr>
<td>Q2</td>
<td>Lift spout</td>
<td>Q54</td>
<td>Displacement shift</td>
</tr>
<tr>
<td>Q3</td>
<td>Spout rotation right/left</td>
<td>Q55</td>
<td>Intake forward</td>
</tr>
<tr>
<td>Q4</td>
<td>Holding brake intake</td>
<td>Q56</td>
<td>Intake reverse</td>
</tr>
<tr>
<td>Q5</td>
<td>Lower spout flap</td>
<td>Q57</td>
<td>Header forward</td>
</tr>
</tbody>
</table>
### 32.2 External starting of the machine

#### WARNING

**Risk of injury due to exploding battery gas**

If the booster cables are not connected properly, an explosion may occur. As a result, people may be seriously injured or killed or the electrical system could be damaged.

- Jump start the diesel engine with 24 volts only.
- First connect positive cable to positive pole of the external voltage source, then connect it to the positive pole of the left battery (C2) on machine side.
- Then connect negative cable to negative pole of external voltage source and then to negative pole of right battery (C1) on machine side.

---

<table>
<thead>
<tr>
<th>BMK</th>
<th>Designation</th>
<th>BMK</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q6</td>
<td>Lift spout flap</td>
<td>Q58</td>
<td>Header backwards</td>
</tr>
<tr>
<td>Q7</td>
<td>Main coupling/cutter drum</td>
<td>Q59</td>
<td>Quick stop</td>
</tr>
<tr>
<td>Q8</td>
<td>Tensioning main belt</td>
<td>Q60</td>
<td>Ventilator</td>
</tr>
<tr>
<td>Q11</td>
<td>Raise cabin lift</td>
<td>Q62</td>
<td>Steer autopilot on right</td>
</tr>
<tr>
<td>Q12</td>
<td>Lower cabin lift</td>
<td>Q63</td>
<td>Steer autopilot on left</td>
</tr>
<tr>
<td>Q13</td>
<td>Fold out spout extension</td>
<td>Q64</td>
<td>Block autopilot on right</td>
</tr>
<tr>
<td>Q14</td>
<td>Fold in spout extension</td>
<td>Q65</td>
<td>Block autopilot on left</td>
</tr>
<tr>
<td>Q16</td>
<td>Battery cut-off relay</td>
<td>Q67</td>
<td>Unlocking header</td>
</tr>
<tr>
<td>Q17</td>
<td>Solenoid valve heating</td>
<td>Q69</td>
<td>Raise/lower axle level</td>
</tr>
<tr>
<td>Q27</td>
<td>Lock cabin lift</td>
<td>Q70</td>
<td>Lock axle level regulation</td>
</tr>
<tr>
<td>Q29</td>
<td>Grinding flap open/closed</td>
<td>Q71</td>
<td>Relieving the tension on the main belt</td>
</tr>
<tr>
<td>Q33</td>
<td>Engine cleaning 1</td>
<td>Q73</td>
<td>Lift additional axle</td>
</tr>
<tr>
<td>Q35</td>
<td>Auxiliary hydraulics 1 up</td>
<td>Q74</td>
<td>Lower additional axle</td>
</tr>
<tr>
<td>Q36</td>
<td>Auxiliary hydraulics 1 down</td>
<td>Q75</td>
<td>Lock additional axle 1</td>
</tr>
<tr>
<td>Q37</td>
<td>Auxiliary hydraulics 2 up</td>
<td>Q76</td>
<td>Lock additional axle 2</td>
</tr>
<tr>
<td>Q38</td>
<td>Auxiliary hydraulics 2 down</td>
<td>Q78</td>
<td>SCR heating valve 1</td>
</tr>
<tr>
<td>Q39</td>
<td>Turn pendulum frame left</td>
<td>Q79</td>
<td>Pressure switch-off</td>
</tr>
<tr>
<td>Q40</td>
<td>Rotate pendulum frame right</td>
<td>Q80</td>
<td>SCR heating valve 2</td>
</tr>
<tr>
<td>Q41</td>
<td>Raise lifting unit</td>
<td>Q86</td>
<td>SCR air supply valve 1</td>
</tr>
<tr>
<td>Q42</td>
<td>Lower lifting unit</td>
<td>Q87</td>
<td>SCR air supply valve 2</td>
</tr>
<tr>
<td>Q45</td>
<td>Float position pendulum frame</td>
<td>Q89</td>
<td>Tuning of rear axle running gear</td>
</tr>
<tr>
<td>Q48</td>
<td>Raise plant divider / raise holding-down clamp</td>
<td>Q90</td>
<td>Parking brake trailer</td>
</tr>
<tr>
<td>Q49</td>
<td>Lower plant divider / lower holding-down clamp</td>
<td>Q91</td>
<td>Valve switchover nozzle 1</td>
</tr>
<tr>
<td>Q50</td>
<td>Fold out header / support wheel out</td>
<td>Q93</td>
<td>Compressed air Fanfare</td>
</tr>
<tr>
<td>Q51</td>
<td>Fold in header / support wheel in</td>
<td>Q94</td>
<td>Lock pendulum frame on right</td>
</tr>
<tr>
<td>Q52</td>
<td>Grinding stone right/left</td>
<td>Q95</td>
<td>Lock pendulum frame on left</td>
</tr>
</tbody>
</table>
The power supply of the machine is 24 V. Two 12 V batteries (C1 and C2) are connected in series and supply the vehicle electronics with 24 V.

The engine can be started by means of booster cables and external voltage source (24 V), if necessary.

The voltage of external voltage source must correspond to the vehicle electronics voltage (24 V).

**The vehicle electronics is damaged by using an external voltage source with higher or lower voltage.**

**Connecting the jump leads**

- The electric circuit is interrupted (LED of the main battery switch is not lit), *refer to page 56*.
- First connect positive cable to positive pole of the external voltage source, then connect it to the positive pole of the left battery (C2) on machine side.
- Then connect the negative cable to the negative pole of the external voltage source and afterwards to the negative pole of the right battery on machine side (C1)

**Starting the engine**

- Switch on the main battery switch to close the circuit, *refer to page 56*.
- The main battery switch LED is lit.
- Start the engine.

**Remove the jump leads after the engine starts**

- Disconnect negative cable from negative pole of the right battery (C1).
- Disconnect negative cable from negative pole of external voltage source.
- Disconnect positive cable from positive pole of the left battery (C2).
- Disconnect positive cable from positive pole of external voltage source.
32.3 Removing crop blockages in area of crop flow

**WARNING**

Danger of injury due to unexpected movement of the machine and moving parts
There is an increased danger of injury when removing crop blockages
- Shut down and safeguard the machine, refer to page 34.
- Ensure that no one approaches the machine as long as the follow-up alarm is sound.

**WARNING**

Risk of injury due to turning parts in the crop flow
After switching off the main drive, the chopping drum, the discharge accelerator and the corn conditioner may continue to run. If this is the case, an acoustic follow-up alarm can be heard.
- For all tasks and when eliminating malfunctions, always be absolutely certain to wait until the units have come to a complete stop.

Bringing the machine into a safe state

1. Stop the machine in case of blockage.
2. To switch off the intake/header drive, press the “Intake/header” (1) key.
3. Move the machine back a little.
4. Lower the header to the ground.
5. Switch off main coupling.
6. Switch off the engine, remove the ignition key in order to avoid accidental start.
7. Inform all people that the crop flow is blocked and the inner parts of the machine will continue to move as long as the follow-up alarm sounds.
8. Wait until the follow-up alarm stops.

The blockage in the crop flow must only be removed after the mentioned work steps have been performed and the follow-up alarm has stopped.
- Check the crop flow for blockages and remove them, if necessary.
  - In case of crop blockages between the chopping drum and the spout, refer to page 501.
  - In case of crop blockages in the spout, refer to page 503.
Reversing

Depending on the extent of the blockage, you can reverse the intake/header with chopping drum switched off/on in order to remove a part of the blockage.

Reversing with chopping drum switched on

If there are blockages in the area of intake/header, reverse with the chopping drum switched on.

- Start diesel engine.
- Raise header until headland position is reached.
- Switch on main coupling.
- Reverse the intake/header by pressing the "Reverse intake/header" key (2).
- Release the "Reverse intake/header" key (2) once the entire forage was ejected from header and intake.
- Bring the machine into a safe state, refer to page 499.

Reversing with cutter drum switched off

If serious blockages occur, the intake/header must be reversed with the cutter drum switched off. This will prevent overloading the drives. The main coupling must not be connected until the entire crop flow has been checked for blockages and any blockages have been removed.

- If a blockage occurs, stop the machine.
- Switch off the intake/header by pressing the "Intake/header" (1) key on the control lever.
- Switch off the main coupling.
- Move the machine back a little.
- Raise the lifting unit to the headland position.
Press and hold down the "Reverse intake/header" key (2) on the control lever.

- The speed of the diesel engine is reduced to the idle speed, the main belt is disconnected from the diesel engine, the main coupling is automatically connected and the intake and the header is reversed. This process may take several seconds.

Release the "Reverse intake/header" key (2) when all the forage has been ejected from the header and the intake.

Bring the machine into a safe state, refer to page 499.

Removing crop blockages between the cutter drum and the discharge accelerator

**WARNING**

Risk of injury from sharp-edged components

When removing crop blockages, there is an increased risk of injury from the sharp-edged components of the crop flow.

- When eliminating blockages, wear protective gloves.

The machine is in a safe state, refer to page 499.

Open the right side hood, refer to page 107.

Loosen the quarter turn fasteners (2) and remove the cover (1).

**Maintenance flap transfer shaft**

Loosen the screws (1) and turn the clamping pieces (2) to the side.

Fold down the maintenance flap (3).

Manually remove blocked crops from the crop flow channel.
32 Malfunction, cause and remedy
32.3 Removing crop blockages in area of crop flow

- Completely remove adhesions on the inner walls of the crop flow channel using a suitable tool.
- If required, remove and clean the grass channel, Removing the grass channel or the corn conditioner, Removing corn conditioner.
- Install the grass channel, Installing grass channel or the corn conditioner, Installing corn conditioner.
- When the maintenance work is complete, fold up the maintenance flap (3), turn the clamping pieces (2) in front of the maintenance flap and tighten the screws (1).

Grass channel maintenance flap
- Loosen the screws (1) and lift the maintenance flap (2) to the side.
- Manually remove blocked crops from the crop flow channel.
- Completely remove adhesions on the inner walls of the crop flow channel using a suitable tool.
- When the maintenance work is complete, insert the maintenance flap (2) and insert the screws (1).

Removing crop blockages between the discharge accelerator and the spout

☐ The machine is in a safe state, refer to page 499.
- Remove the screws (1).
- Remove the maintenance flap (3) from the channel support.
- Manually remove blocked crops from the crop flow channel.
- Completely remove adhesions on the inner walls of the crop flow channel using a suitable tool.
- When the maintenance work is complete, insert the maintenance flap (3) and insert the screws (1).
Removing crop blockages in the spout

**WARNING**

**Risk of injury by falling from great height.**

On top of the engine cowl or on the cabin roof operators are at a height from which a fall might cause serious injury.

- Do not climb on the engine cowl or the cabin roof until:
  - the spout is in the central position;
  - the engine is off, the ignition key has been removed;
  - the machine has been secured against rolling;
  - the engine cowl or cabin roof is clean.

**BX001-609**

- Swivel the spout forwards on the left and lower until the maintenance flaps are accessible from the platform.
- Loosen the nuts (1) and push the maintenance flap (2) to the side.
- Open and turn the maintenance flap.
- When the maintenance work is complete, turn back and close the maintenance flap (2).
- Push the maintenance flap (2) into the original position and tighten the screws (1).

**Crop flow cover**

**BXG000-083**

Mount the cover (1) after removing the blockages in the crop flow.

- Attach the cover (1) and lock with the quarter turn fasteners (2).
33 Storage

**WARNING**

Risk of injury due to non-observance of relevant safety instructions
If the relevant safety instructions are not observed, persons may be seriously injured or killed.

- To avoid accidents, the relevant safety instructions must be read and observed, *refer to page 19*.

---

**WARNING**

Risk of injury due to non-observance of safety instructions
If the relevant safety routines are not observed, persons may be seriously injured or killed.

- The safety routines must be read and observed to avoid accidents, *refer to page 34*.

Placing the machine in storage at the end of the harvest season is the best possible way to preserve the machine.

- Park the machine in a weatherproof and dry place which is far away from corrosive substances.
- Set the tyre pressure to the max. permissible value, *refer to page 73*.
- Protect the tyres against external influences such as oil, grease or direct sunlight.
- Clean the machine thoroughly.

Chaff and dirt attract moisture which causes steel parts to start rusting.

**NOTICE**

Damage to the machine due to water damages with high-pressure cleaner
If the water jet from a high-pressure cleaner is aimed directly at bearings and electrical/electronic components, these parts can be damaged.

- Do not aim the water jet from high-pressure cleaner at bearings and electrics/electronic components.

- Lubricate the machine according to lubrication chart. Do not wipe off any grease that comes out of bearing points as the hardened grease will provide additional protection against moisture.
- Grease the threads of setting screws and similar items.
- Release the springs.
- Lower the intake as far as possible.
- Remove the kraftband of corn conditioner.
- Disassemble the universal shaft. Lubricate the inner tubes with grease.
- Grease the grease nipples on the universal joint of the universal shaft as well as on the bearing rings of the guard tubes, *refer to page 472*.
INFORMATION

Follow the operating instructions of the universal shaft manufacturer.

- Protect the machine, including the lubrication points "Maintenance – Every 1000 hours", after the harvest by injecting lubricant.
- To distribute the grease evenly, subsequently run the machine until a small grease collar forms on the outside of the bearings.
- Lubricate the bearing positions before and after using a high-pressure cleaner to clean the machine.

If a silage additives unit is installed:
- Fill the silage additives tank with a biodegradable frost protection agent and allow the system to run for 10 minutes.

If the corn conditioner is installed:
- Remove the corn conditioner, clean it thoroughly and coat with grease or a preservative to protect it against corrosion.

After cleaning and preservation:
- Reinstall the corn conditioner and run the diesel engine for 5 minutes to ensure any water is squeezed out of the bearings.
- Lubricate the piston rods of all hydraulic cylinders liberally and insert as far as possible.
- Wet all lever joints and bearing positions which cannot be lubricated with oil.
- Touch up damaged paint and preserve all uncoated areas thoroughly with rust protection agent.
- Check all moving components for smooth running. If necessary remove, clean, grease and remount.
- If parts need to be replaced, use KRONE original spare parts only.

INFORMATION

Write down all repair jobs which must be performed by the next harvest and arrange for them to be done with sufficient lead time. Your KRONE dealer is better able to perform maintenance service and any required repairs outside of harvest season.

Engine area

Measures for storing the diesel engine when not in use for a period from 30 days to 12 months

- Fill the fuel tank, coolant tank and engine oil tank up to the maximum permitted filling level. Choose the specification of consumables according to the expected outside temperatures while the machine is in storage.
- Drain the fuel tank and prefilter.
- The coolant must contain at least 50% anti-corrosion antifreeze.
- Lower the urea tank to the minimum permitted filling level.
- Clean the outside of the engine.
- As protection against corrosion, spray or apply corrosion protection agent DWX 30 (Id no. 8633258) (with the exception of electrical connections).
Measures for placing the diesel engine in service again after storing when not in use for a period from 30 days to 12 months

- Before starting up the machine, perform the maintenance interval "Every 10 hours, at least daily".
- Change the engine oil.
- Change the oil filter.
- Examine the engine for leaks, soiling and damage.
- Check the coolant level.
- Drain water and collected sediment out of the fuel tank. Check the water separator on the fuel prefilter and drain water if necessary.
- Perform a visual inspection to check the starter, alternator and refrigerating compressor.
- Check the ribbed V-belts on the diesel engine and replace if necessary.
- Check the diesel engine power supply.
- Make certain the fuel supply is connected.
- Fill the urea tank up to the maximum filling quantity.

Restarting the diesel engine after storing it when not in use from 30 days to 12 months

- Check the oil pressure display immediately after starting, refer to page 284.
- Check the air filter pressure display.
- Let the diesel engine run until it reaches operating temperature.
34 Waste disposal

After the service life of the machine has expired, the individual components of the machine must be disposed of properly. The currently applicable country-specific waste disposal directives and the concerning valid laws must be observed.

Metal parts
- All metal parts must be brought to a metal recycling centre.
- The parts must be freed from operating fluids and lubricants (gearbox oil, oil from hydraulic system, …) before being scrapped.
- The operating fluids and lubricants must be brought separately to an environmentally friendly disposal point or recycling centre.

Operating fluids and lubricants
- Operating fluids and lubricants (diesel fuel, coolant, gearbox oil, oil from hydraulic system, …) must be brought to a disposal point for waste oil.

Synthetic materials
- All synthetic materials must be brought to a recycling centre for synthetic materials.

Rubber
- Rubber parts (hoses, tyres, …) must be brought to a rubber recycling centre.

Electronic scrap
- All electronic parts must be brought to a disposal point for electronic scrap.
Index  35

Icons

"Armrest diagnostics" menu .................................. 162
"Armrest key test" menu ..................................... 163
"Automatic climate control graphic" menu ............. 167
"Automatic climate control settings" menu .......... 168
"Automatic climate control" menu....................... 167
"Automatic steering system diagnostics" menu ...... 204
"Automatic steering system settings" menu ......... 203
"AutoScan graphic" menu................................... 179
"AutoScan settings" menu.................................. 180
"AutoScan" menu ............................................. 179
"Background lighting settings" menu .................... 165
"Cabin lift diagnostics" menu ............................... 158
"Cabin lift" menu .......................................... 158
"Camera system settings" menu ............................ 172
"Camera system" menu ..................................... 172
"Central lubrication maintenance" menu .............. 174
"Central lubrication settings" menu..................... 173
"Central lubrication" menu ................................ 173
"Compressed air cleaning maintenance" menu ....... 199
"Compressed air cleaning settings" menu ............. 198
"Compressed air cleaning" menu ......................... 198
"ConstantPower settings" menu ............................ 198
"Control lever key test" menu ................................ 164
"Control lever settings" menu ............................... 163
"Control unit versions hardware" menu ............... 166
"Control unit versions software" menu ................. 165
"Control units overview" menu ............................ 132
"Corn conditioner calibration" menu ..................... 187
"Corn conditioner settings" menu ......................... 186
"Crop flow" menu ............................................ 175
"CropControl counterweighing" menu ................. 189
"CropControl settings" menu ............................... 190
"CropControl" menu ......................................... 189
"Day counter" menu .......................................... 128
"Diesel engine settings" menu ............................. 196
"Discharge accelerator settings" menu ................. 188
"Error history" menu ........................................ 131
"External silage additives unit settings" menu ....... 191
"External silage additives unit" menu ..................... 191
"Foreign object detection" menu.......................... 181
"Grinding device and counterblade key test GC" menu ........................................... 184
"Grinding device and counterblade maintenance" menu ........................................... 184
"Grinding device and counterblade settings" menu ........................................... 183
"Grinding device and counterblade" menu ............. 183
"Header drive settings" menu .............................. 179
"Header locking diagnostics" menu ....................... 200
"Header settings" menu ..................................... 178
"Intake settings" menu ....................................... 180
"Intermediate gearbox diagnostics" menu ............. 175
"Intermediate gearbox" menu ................................ 175
"Lifting unit calibration" menu ............................. 182
"Lifting unit settings" menu ................................ 182
"Lighting" menu .............................................. 171
"Lubrication" menu .......................................... 172
"Machine" menu .............................................. 156
"Main coupling calibration" menu ......................... 185
"Main coupling settings" menu ............................. 185
"Navigation scroll wheel" function ....................... 101
"Printer settings" menu ..................................... 166
"Rear axle calibration central position" menu ...... 205
"Rear axle calibration end positions" menu ........... 205
"Remote maintenance diagnostics" menu ............... 170
"Remote maintenance settings" menu .................... 170
"Remote maintenance" menu ............................... 169
"Silage additives unit coarse dosing calibration" menu ........................................... 192
"Silage additives unit coarse dosing settings" menu ........................................... 192
"Silage additives unit coarse dosing" menu .......... 192
"Silage additives unit fine dosing settings" menu ........................................... 192
"Silage additives unit fine dosing" menu .............. 192
"Silage additives units" menu ............................... 191
"Silage additives unit fine dosing" menu .............. 191
"Silage additives units" menu ............................... 190
"Spout settings" menu ....................................... 194
"Spout" menu ................................................. 193
" Tanks" menu ................................................. 157
"Terminal information" menu .............................. 162
"Terminal settings" menu ................................... 161
"Traction drive calibration" menu ......................... 204

BiG X 880
Original Operating Instructions 150000768_00_en 509
Numerical

12 V socket/24 V socket ........................................ 104
12 V sockets .................................................. 104
B

Basic safety instructions .....................................  19
Batteries ...........................................................  465
Before the beginning of the new season ....  365
Behaviour after the engine has stalled ..........  285
Behaviour in case of voltage flashover of overhead lines .........................................................  29
Behaviour in dangerous situations and in case of accidents ...................................................  33
Bringing up menu level .......................................  153

C

Cabin .................................................................  212
Cable break, short circuit ..................................  489
Change chop length ...........................................  136
Change oil ........................................................  454, 460
Changing conveyor bars on feed roller ............  434
Changing Corn Conditioner Roller Distance ....  137
Changing oil .......................................................  456, 458, 459
Changing the header speed ...............................  136
Changing the high-pressure filter .......................  451
Changing the lifting unit control default value...  137
Changing tyre size ..............................................  395
Changing/saving parameter ..............................  154
Charging batteries ............................................  466
Check before start-up .........................................  212
Check filling level ..............................................  487
Check oil level ...................................................  459
Check pipework of the engine cooling system and the charge air .............................................  378
Checking and adjusting discharge accelerator scraper .........................................................  448
Checking attachment of steering cylinder ........  388
Checking attachment of wheel hub gearbox ....  390
Checking discharge scoops ................................  446
Checking engine oil level ..................................  368
Checking engine piping .....................................  377
Checking fitting of track rod .............................  389
Checking fuel lines ............................................  379
Checking grinding stone .....................................  412
Checking kraftband ...........................................  393
Checking oil level .............................................  454, 457, 458
Checking pipework in the air conditioning and heating system .............................................  377
Checking pipework of the air intake .................  379
Checking pulley .................................................  393
Checking seal on adapter frame .......................  260
Checking the engine coolant level ....................  376
Checking the fire extinguisher .........................  396
Checking the hub bearing of the rear axle, for the front-wheel drive version ..........................  390
Checking the hub bearing of the wheels for wear:
...........................................................................  390
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Checking the hub cover of the rear axle, with front wheel drive version</td>
<td>389</td>
</tr>
<tr>
<td>Checking/maintaining tyres</td>
<td>394</td>
</tr>
<tr>
<td>Checking/refilling windscreen washer system</td>
<td>384</td>
</tr>
<tr>
<td>Checklist for initial operation</td>
<td>208</td>
</tr>
<tr>
<td>Chemicals</td>
<td>28</td>
</tr>
<tr>
<td>Children in danger</td>
<td>20</td>
</tr>
<tr>
<td>Cigarette lighter 12 Volt</td>
<td>103</td>
</tr>
<tr>
<td>Cleaning air filter</td>
<td>380</td>
</tr>
<tr>
<td>Cleaning and maintaining batteries</td>
<td>466</td>
</tr>
<tr>
<td>Cleaning cooler and cooler compartment</td>
<td>387</td>
</tr>
<tr>
<td>Cleaning engine compartment with compressed air</td>
<td>368</td>
</tr>
<tr>
<td>Cleaning fuel tank</td>
<td>369</td>
</tr>
<tr>
<td>Climbing up and down safely</td>
<td>31</td>
</tr>
<tr>
<td>Components of air conditioning</td>
<td>385</td>
</tr>
<tr>
<td>Compressed air connections to clean with compressed air</td>
<td>362</td>
</tr>
<tr>
<td>Connecting a battery</td>
<td>469</td>
</tr>
<tr>
<td>Connecting an additional silage additives unit (for &quot;External silage additives unit&quot; version)</td>
<td>314</td>
</tr>
<tr>
<td>Connecting EasyCollect</td>
<td>267</td>
</tr>
<tr>
<td>Connecting EasyFlow</td>
<td>258</td>
</tr>
<tr>
<td>Connecting hydraulic hoses</td>
<td>260, 269</td>
</tr>
<tr>
<td>Connecting side tank to main tank</td>
<td>210</td>
</tr>
<tr>
<td>Connecting the additional tank to the main tank</td>
<td>247</td>
</tr>
<tr>
<td>Connecting the machine</td>
<td>20</td>
</tr>
<tr>
<td>Connecting the side and additional tanks from the main tank</td>
<td>246</td>
</tr>
<tr>
<td>Connecting the side tank to the main tank</td>
<td>247</td>
</tr>
<tr>
<td>Connecting trailer</td>
<td>304</td>
</tr>
<tr>
<td>Connecting XDisc</td>
<td>277</td>
</tr>
<tr>
<td>ConstantPower</td>
<td>328</td>
</tr>
<tr>
<td>Consumables</td>
<td>27, 70</td>
</tr>
<tr>
<td>Consumables/Initial filling at the factory</td>
<td>72</td>
</tr>
<tr>
<td>Contact</td>
<td>2</td>
</tr>
<tr>
<td>Contact data of your dealer</td>
<td>2</td>
</tr>
<tr>
<td>Control and Display Elements</td>
<td>77</td>
</tr>
<tr>
<td>Control and display elements on the keypad</td>
<td>97</td>
</tr>
<tr>
<td>Control and display elements on the steering column</td>
<td>80</td>
</tr>
<tr>
<td>Control of moving machine</td>
<td>21</td>
</tr>
<tr>
<td>Control of the machine during operation</td>
<td>21</td>
</tr>
<tr>
<td>Conversion table</td>
<td>15</td>
</tr>
<tr>
<td>Converting spout flap</td>
<td>248</td>
</tr>
<tr>
<td>Coolant</td>
<td>72</td>
</tr>
<tr>
<td>Cooler</td>
<td>225</td>
</tr>
<tr>
<td>Creating a surface</td>
<td>125</td>
</tr>
<tr>
<td>Creating customer data record</td>
<td>122</td>
</tr>
<tr>
<td>CropControl</td>
<td>330</td>
</tr>
<tr>
<td>Cross references</td>
<td>12</td>
</tr>
<tr>
<td>Cruise control</td>
<td>287</td>
</tr>
</tbody>
</table>
D

Damaged compressor unit ....................... 30
Damaged hydraulic hoses ....................... 30
Danger associated with welding work ............ 32
Danger due to machine which is not prepared properly for road travel ........................................ 26
Danger of fire ........................................... 28
Danger resulting from damage to the machine .. 22
Danger when driving on road and field ........... 26
Danger zone between precision forage harvester and header .......................................... 24
Danger zone due to coasting machine parts ..... 24
Danger zone PTO shaft ................................ 23
Danger zone quick coupler ......................... 24
Danger zone universal shaft ....................... 23
Danger zone when drive is switched on ........... 24
Danger zones ............................................. 22
Dangers arising from environment ................ 28
Dangers for road travel ................................ 26
Dangers in connection with certain activities: checking and charging batteries ....................... 33
Dangers in connection with certain activities: climbing up and down .................................... 31
Dangers in connection with certain activities: Working on the machine ................................. 31
Dangers in connection with certain activities: working on wheels and tyres ......................... 33
Dangers when cornering with trailed trailer ...... 26
Dangers when operating the machine on slopes 26
Data memory ............................................ 62
Deactivating cruise control ....................... 288
Declaration of conformity ............................ 521
Deleting a surface .................................... 126
Description display .................................... 109
Description of the keys .............................. 100
Determine the bearing clearance of the hubs: . 390
Diagnostic socket ISOBUS/diagnostic socket KRONE ....................................................... 104
Diesel engine "Maintenance" menu ................. 197
Direct input "Field mode" ......................... 135
Directories and references ......................... 12
Dirt deposits in engine compartment ............ 367
Disconnecting the additional tank from the main tank .................................................. 234
Disconnecting the batteries ....................... 467
Disconnecting the side and additional tanks from the main tank .................................. 233
Disconnecting the side tank from the main tank .................................................................. 234
Disconnecting trailer ................................ 305
Display design ........................................... 108
Display for cruise control (5) ..................... 144
Drain condensation water from the compressed air tank .................. 382
Draining coolant ....................................... 388
Draining water and sediment .................... 369
Drawer for first-aid kit and operating instructions ........................................... 225
Driver's seat ............................................ 213
Driving and Transport ............................... 282
Driving backward and stopping ................... 288
Driving forwards and stopping .................... 286

E

Electrics/electronics BiG X defective .......... 489
Emergency exit ........................................ 57
Engine and driving data display range ........... 138
Engine coolant ....................................... 375
Engine oil level ....................................... 368
Ensuring functionality of safety devices ........ 25
Environmental protection and disposal .......... 27
Exporting customer data ............................ 128
External starting of the machine .................. 497
Fahrersitz bedienen (bei Ausführung Standard) .................................................. 214
Fast change of direction of travel (fast reversing) ............................................. 315
Field mode on slopes ................................................................................. 315
Figures ........................................................................................................ 13
Filling the lubricant tank ............................................................................ 486
Fire extinguisher .......................................................................................... 56
Fuel is harmful .............................................................................................. 27
Fuel prefilter/water separator ....................................................................... 370
Fuel/urea ........................................................................................................ 73
Function description chopping crops ............................................................ 65

G
General aspects ............................................................................................. 224
Grinding chopping blades ............................................................................ 406
Grinding control unit ..................................................................................... 105

H
Hot liquids ..................................................................................................... 30
Hot surfaces .................................................................................................. 31
How to use this document .......................................................................... 12
Hydraulic oil ................................................................................................ 450

I
Icons in figures ............................................................................................. 13
Icons in the text ............................................................................................ 13
Ignition lock .................................................................................................. 101
Importance of operating instructions .......................................................... 19
In-cab diagnostics socket ............................................................................ 105
Indicator lamp for direction of travel and parking brake (2) ....................... 142
Indicator lamp for traction control system (TC) (4) ...................................... 143
Information area ........................................................................................... 138
Information for enquiries and orders ........................................................... 2, 65
Information on direction ................................................................................ 13
Information on This Document ................................................................... 12
Initial operation ............................................................................................. 208
Input window ................................................................................................ 109
Inside rear mirror ......................................................................................... 224
Installing the batteries ................................................................................ 468
Installing the corn conditioner ..................................................................... 241
Installing the grass channel ......................................................................... 230, 442
Instructional seat .......................................................................................... 224
Intended use ................................................................................................ 18
Interior lighting ............................................................................................. 93
Internal silage additives unit coarse dosing (for "Controlled silage additives unit" design) .......................................................... 306
Internal silage additives unit fine dosing (for "controlled silage additives unit fine dosing" design) .......................................................... 310

J
Jobs on the machine ..................................................................................... 21

K
Keep cabin free of chemicals ..................................................................... 28
Keys in the title bar ....................................................................................... 121
Index  

L
Labelling ............................................................. 64
Ladders .............................................................. 55
Lashing points .................................................. 299
Life-threatening electric shock from overhead lines .................................................. 29
Lifting unit control ............................................. 318
Light control unit ................................................. 86
Lighting ............................................................... 86
Lighting and labelling........................................ 213
Lighting on ladder cabin and ladder right ....... 60
Liquids under high pressure ............................... 30
Locking chopping drum .................................... 419
Locking screws on the gearboxes .................... 361
Lubricants ......................................................... 484
Lubricating grease.............................................. 72
Lubricating universal shafts ....................... 472
Lubrication chart - machine ......................... 473

M
Machine Description........................................... 63
Machine overview ............................................... 63
Main battery switch .......................................... 56
Main menu ......................................................... 134
Main mode switch ............................................. 99
Maintaining a charge ........................................ 466
Maintaining air conditioning and heating ........ 385
Maintaining alternator .................................... 469
Maintaining belt drives .................................... 392
Maintaining bottom roller gearbox ................ 457
Maintaining brake (Bosch) ............................... 391
Maintaining chassis ......................................... 388
Maintaining hydraulic oil tank ...................... 450
Maintaining intermediate gearbox intake ....... 456
Maintaining spout rotary drive gearbox .......... 461
Maintaining starter ............................................ 470
Maintaining top roller gearbox ...................... 458
Maintaining tow coupling ................................ 395
Maintaining tyres and wheels ....................... 394
Maintaining wheel hub gearbox ..................... 459
Maintenance – 6 times after every 10 hours ... 349
Maintenance – After each season .................. 357
Maintenance – As needed ............................... 358
Maintenance – At the beginning of the cold season ................................................. 351
Maintenance – Basic Machine ....................... 384
Maintenance – Central Lubrication System ...... 480
Maintenance – Compressed Air System ....... 382
Maintenance - Crop Flow ................................. 441
Maintenance – Electrics .................................. 464
Maintenance - Engine ..................................... 366
Maintenance – Every 1,000 hours, at least after the season ........................................ 356
Maintenance – Every 10 hours, at least daily ... 351
Maintenance – Every 100 hours .................... 353
Maintenance – Every 1500 hours, at least before the beginning of the season .......... 357
Maintenance – Every 2,000 hours, at least once a year .............................................. 357
Maintenance – Every 250 hours ................... 354

BiG X 880
Original Operating Instructions 150000768_00_en  515
Maintenance – Every 3 years........................... 357
Maintenance – Every 4,000 hours, at least every four years ........................................ 357
Maintenance – Every 50 hours........................ 353
Maintenance – Every 500 hours....................... 354
Maintenance - Every 6 years............................ 357
Maintenance – Feed System............................ 397
Maintenance - Gearbox.................................... 453
Maintenance - General Information.................. 348
Maintenance - Hydraulic System...................... 449
Maintenance - Lubrication ................................ 472
Maintenance – Monthly .................................... 354
Maintenance – Once after 1 hour..................... 349
Maintenance – Once after 10 hours .................. 349
Maintenance – Once after 1000 km .................. 350
Maintenance – Once after 50 hours ................. 349
Maintenance – Once after 500 hours ............... 350
Maintenance – Prior to the beginning of the season ......................................................................... 350
Maintenance – Weekly ..................................... 353
Maintenance and repair work ............................. 32
Maintenance corn conditioner .......................... 445
Maintenance discharge accelerator ................. 446
Maintenance lighting .......................................... 90
Maintenance table ............................................ 349
Malfunction, cause and remedy ....................... 489
Malfunctions indicated on malfunction warning panel................................................................. 119
Means of representation..................................... 13
Menu structure ................................................. 145
Metal detection .................................................. 326
Metric thread screws with control thread........... 359
Metric thread screws with countersunk head and hexagon socket ........................................... 360
Metric thread screws with fine thread ............... 360
Monitor for camera monitoring ......................... 222
Mounting EasyCollect....................................... 266
Mounting EasyFlow .......................................... 257
Mounting fire extinguisher ............................... 209
Mounting grain capture sheet........................... 246
Mounting intake unit with header ..................... 404
Mounting intake unit with installation cart........... 400
Mounting licence plate...................................... 210
Mounting spout extension ................................ 247
Mounting warning panels in operating position 209
Mounting XDisc .............................................. 276
Moving header to transport position ................. 294
Moving intake into transport position ............... 296
Moving parking jacks on right/left into transport position .......................................................... 261, 270, 279

N
Navigating in menus........................................ 154
Navigation module.......................................... 100
Navigation scroll wheel.................................... 101
Noise may damage your health........................ 29
Notes on driving the machine........................... 286
Notes with information and recommendations ... 15
O

Observing warning lights .................................. 284
Öl wechseln .............................................. 461, 463
Ölstand kontrollieren ....................................... 461
Ölstand prüfen ........................................... 462
On-board instructors when using the machine for work (passenger seat) ........................................ 21
Only perform work when the machine is at standstill .......................................................... 31
Opening and closing side hoods and rear hood ......................................................................... 107
Opening doors and windows of cabin ................. 77
Opening maintenance flap in the spout ................. 445
Opening maintenance flap transfer shaft .............. 443
Opening right side window ................................ 77
Opening the cabin door .................................... 78
Operate input window ...................................... 110
Operating air-cushioned comfort seat (for "ACTIVO" version) .............................................. 216
Operating air-cushioned comfort seat (for "Standard" version) .............................................. 214
Operating driver's seat (for ACTIVO version) .......................................................... 216
Operating elements on control lever ..................... 94
Operating intake/header .................................... 316
Operating the cabin lift (for the cabin lift design) ........................................................................ 337
Operating the mounting cart of the chopper unit (for "Chopper unit mounting cart" design) ........ 432
Operating VariLOC chop length gearbox ............... 333
Operation alphanumeric input field ...................... 123
Operation device ........................................... 300
Operation is only allowed after proper start-up ... 21
Operational safety: Technically sound condition 21
Optimising crop flow ........................................ 339
Optimising discharge capacity of the machine . 340
Overview .................................................. 227, 241
Overview actuators.......................................... 496
Overview of control units .................................. 494
Overview of crop flow .................................... 64
Overview of engine ........................................ 367
Overview of fuses.......................................... 491

P

Parking mounting cart ...................................... 433
Parking the machine ........................................ 292
Parking the machine safely ................................ 27
Passengers ................................................... 21
Personal protective equipment ......................... 25
Personnel qualification of the operating personnel .............................................................. 19
Personnel qualification of the technicians ............ 20
Position and meaning of safety labels .................. 38
PowerSplit .................................................... 331
Preparing the intake ....................................... 257, 266, 276
Preparing the machine for road travel ................. 293
Preparing the machine for shipment .................. 299
Pressure limiting valves ................................... 449
Putting down EasyCollect ............................... 274
Putting Down EasyFlow .................................. 263
Putting down XDisc ....................................... 281

Q

Quick-stop switch ............................................ 58
Quick-stop switch grinding control unit ............... 59
R

Raised machine and machine parts ................... 32
Raising and lowering lifting unit ..................... 300
Readjusting grinding stone ............................. 413
Readjusting or changing chopping blades .......... 417
Readjusting or replacing grinding stone ............ 412
Rear wipers .................................................. 91
Reasonably foreseeable misuse ......................... 18
Refrigerant (air conditioning) ........................... 72
Refuelling ..................................................... 372
Reinstalling the rear wall of the discharge accelerator ........................................... 444
Released headers ............................................. 76
Releasing header locking ................................ 302
Releasing the parking brake manually ............... 298
Removing crop blockages in area of crop flow .... 499
Removing EasyCollect ..................................... 271
Removing EasyFlow ........................................ 261
Removing grain capture sheet ......................... 233
Removing intake unit with header .................... 402
Removing intake unit with mounting cart .......... 397
Removing maintenance flap in channel support ........................................... 444
Removing rear weight ..................................... 235
Removing spout extension ............................... 236
Removing the batteries ................................. 468
Removing the corn conditioner ......................... 227
Removing the grass channel ............................ 240, 442
Removing the rear wall of the discharge accelerator ........................................... 443
Removing XDisc ............................................ 279
Removing/installing discharge scoops ............... 447
Renaming surface ........................................... 125
Renew chopping blade (for version with MaxFlow chopping drum) ......................... 423
Re-ordering ................................................... 12
Replace the chopping blade (for version with 40x biogas chopping drum) ................. 426
Replacing batteries ........................................ 467
Replacing grinding stone ............................... 415
Replacing safety cartridge .............................. 381
Replacing/cleaning fresh air filter ..................... 386
Retighten tensioning straps at the compressed air tank ........................................... 383
Retighten wheel nuts ..................................... 394
Road safety ..................................................... 26
Road travel lighting ........................................ 87
RockProtect .................................................. 328
Running actuator test ..................................... 35
Running direction of tyres .............................. 395
Replacing/cleaning fresh air filter ..................... 386
Retighten tensioning straps at the compressed air tank ........................................... 383
Retighten wheel nuts ..................................... 394
Road safety ..................................................... 26
Road travel lighting ........................................ 87
RockProtect .................................................. 328
Running actuator test ..................................... 35
Running direction of tyres .............................. 395
Safely performing oil level check, oil change and filter element change .......................................................... 35
Safety ............................................................................. 18
Safety equipment .................................................................. 55
Safety labels on the machine ................................................. 36
Safety markings on the machine ........................................... 25
Safety routines .................................................................. 34
Save speed of the diesel engine for "Diesel engine speed" key (13) ........................................................................... 99
Saving speed for operation with cruise control. 287
Scope of the document ....................................................... 13
Searching for the error in the central lubrication system ........ 488
Seat switch in driver’s seat .................................................... 58
Securing raised machine and machine parts against lowering ................................................................ 34
Selection window ................................................................ 111
Service life of the machine .................................................. 19
Servicing the main gearbox .................................................. 454
Servicing the transfer gearbox ............................................. 455
Servicing VariLOC chop length gearbox .............................. 462
Setting chop length ................................................................ 325
Setting corn conditioner ....................................................... 439
Setting driver’s seat ............................................................ 213
Setting drum base ............................................................. 340
Setting Lifting Unit Hydraulics ............................................. 232
Setting mirror .................................................................... 92
Setting mounting cart ........................................................ 432
Setting spout ...................................................................... 321
Setting the acceleration behaviour ...................................... 285
Setting the anti-collision mirror ......................................... 92
Setting the chopping blades (for version with MaxFlow chopping drum) .......................................................... 420
Setting the folding-in/folding-out speed of the 12/14-row spout extension ......................................................... 251
Setting the rear wall discharge accelerator ...... 343
Setting the springs on the intake unit ................................. 438
Setting the start-up safety mechanism of spout 252
Setting the terminal ............................................................ 221
Settings ............................................................................. 339
Shutting down and safeguarding the machine ... 34
Silage additives unit .............................................................. 305
SMV emblem ..................................................................... 61
Sockets ............................................................................... 103
Sources of danger on the machine ..................................... 29
Spout "Calibration" menu ..................................................... 194
Starting and stopping surface counter .............................. 127
Starting engine .................................................................. 282
Starting intermediate lubrication ......................................... 487
Starting up machine .......................................................... 285
Start-up ............................................................................. 212
Start-up – Attaching and removing EasyCollect .................. 265
Start-up – Attaching and removing EasyFlow ...................... 256
Start-up – Attaching and removing XDisc ......................... 275
Start-up – Grass mode/direct cut header ............................. 226
Start-up – Maize mode ....................................................... 239
Status line ......................................................................... 114
Steering column adjustment .............................................. 221
Steering column switch ....................................................... 80
Stopping machine by using control lever ......................... 289
Stopping machine with the service brake ......................... 290
Stopping the machine ......................................................... 288
Storage ............................................................................. 504
Structural modifications on the machine ............................. 20
Sun visor ........................................................................... 223
Switching and saving working lights via "Memory" key .......................................................... 89
Switching direction indicators on/off ................................. 81
Switching full beam on/off .................................................. 82
Switching mirror heating on/off .......................................... 93
Switching off the engine ...................................................... 292
Switching parking light/dipped beam on/off ................. 81
Switching the flashing warning light on/off ...................... 85
Switching windshield wipers on/off ................................. 83
Swivel the ladder to the cabin to the side ......................... 363
Swivelling spout into transport position ......................... 296
Target group of this document ..................... 12
Technical Data ........................................... 66
Technical limit values ................................. 22
Technically sound state of the machine .......... 22
Temporarily change working width or number of rows ......................... 135
Term "machine" ........................................... 13
Terminal ................................................... 108
Terminal - Menus ...................................... 145
Terminal machine functions ....................... 113
Tightening torques .................................... 359
Topping up engine oil ............................... 369
Topping up the engine coolant ................... 377
Topping up urea solution ......................... 373
Total weights and axle loads ..................... 74
Towing the machine ................................ 297
Toxic exhaust gases .................................. 30
Traction drive indicator lights .................... 142
TractionControl/Traction control system ...... 322
Trailer operation ..................................... 303
Transport position .................................. 293
Transport/road travel .............................. 282
Turning or replacing conveyor bars of pre-compression roller ............ 433
Turning or replacing counterblade ............... 430
Turning the driver's seat (for the "Swivel seat adapter" design) .......... 220
Tyres ....................................................... 73

Warning beacons ....................................... 89
Warning lights ......................................... 84
Warning lights - Filling level urea tank ........... 119
Warning lights - urea quality, errors or manipulation on the urea system ............................................ 120
Warning lights for engine displays and fuel levels ............................................ 139
Warning signs .......................................... 14
Warnings of property damage/environmental damage ..................... 15
Waste disposal ......................................... 507
Wheel chocks .......................................... 58
Wiper on left/on right ................................ 91
Working lights ......................................... 88
Working with half the number of chopping blades ......................... 429

Unattended parking ................................ 27
Unsuitable consumables ......................... 27
USB connection ...................................... 105

Validity .................................................. 12
Venting fuel system .............................. 374
Viewing current surface data ................... 127
We

Maschinenfabrik Krone Beteiligungs-GmbH
Heinrich-Krone-Straße 10, D-48480 Spelle

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

Machine: Precision Forage Harvester
Type: BX404-30

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

- EU Directive 2014/30/EU (EMC) The harmonised standard EN ISO 14982:2009 has been applied in accordance with the directive.
- EC Directive 2006/42/EC (Machinery)

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

Dr.-Ing. Josef Horstmann
Spelle, 01/08/2017
(Managing Director, Design & Development)

Year of manufacture: Machine no.: 