Original operating instructions

Disc Mower

EasyCut B 1000 CV
EasyCut B 1000 CV Collect
EasyCut B 1000 CR
EasyCut B 1000 CR Collect

(from serial no.: 912 340)

Order no.: 150 000 161 04 en

13.01.2014

EC Declaration of Conformity

We **Maschinenfabrik Bernard Krone GmbH**

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

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

Machine: **Krone disc mower**

Type / Types: **EasyCut B 1000 CV, EasyCut B 1000 CV Collect**
EasyCut B 1000 CR, EasyCut B 1000 CR Collect

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

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

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

Spelle, 07.01.2014

Dr.-Ing. Josef Horstmann
(Managing Director, Design and Development)

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

Dear customer,
Dear customer,

You have now received the operating instructions for the KRONE product which you have purchased.

These operating instructions contain important information for the proper use and safe operation of the machine.

If these operating instructions should become wholly or partially unusable, you can obtain replacement operating instructions for your machine by stating the number given overleaf.

1 Foreword 9
2 To this Document 10
2.1 Validity 10
2.1.1 Direction Information 10
2.2 Identifying Symbols in the Operating Instructions 10
2.3 Identification of the hazard warnings 10
3 Safety 12
3.1 Purpose of Use 12
3.2 Intended Use 12
3.2.1 Personnel Qualification and Training 12
3.2.2 Dangers in Case of Non-compliance with the Safety Instructions 12
3.2.3 Safety-conscious work practices 12
3.3 Safety Instructions and Accident Prevention Regulations 13
3.4 Attached devices 14
3.5 PTO operation 15
3.6 Hydraulic system 16
3.7 Maintenance 17
3.8 Unauthorised Conversion/Modification and Spare Parts Production 17
3.9 Inadmissible Modes of Operation 17
3.10 Working in the vicinity of power transmission lines 17
4 Machine Description 18
4.1 Identification Plate 18
4.2 Information Required for Questions and Orders 18
4.2.1 Contact 18
4.3 Introduction 19
4.3.1 Re-Ordering the Adhesive Safety and Information Labels 19
4.3.2 Affixing the Adhesive Safety and Information Labels 19
4.4 Position of the Adhesive Safety Stickers on the Machine 20
4.5 Position of the Adhesive Safety Stickers on the Machine 24
5 Technical data 30
5.1 Lubricants 32
5.1.1 Filling Quantities and Lubrication Designations for Gearboxes 32
6 Commissioning 34
6.1 First installation 34
6.2 Special Safety Instructions 34
6.2.1 Check List for Initial Operation 35
6.2.2 Checking / Setting Speed Sensor 36
6.2.3 Setting cross conveyor belt sensor 36
6.3 Adapting to the tractor 37
6.3.1 Clutching points 37
6.3.2 Checking space between tractor and machine 38
6.4 PTO shaft 39
6.4.1 Length adjustment 39
6.4.2 Adjusting the hydraulic system 41
6.5 Load-sensing connection 41
6.5.1 Operating the Machine without LS (Load-Sensing Connection) 41
6.5.2 Operating the Machine via LS (Load-Sensing Connection) 41

6.6 Checking Cross Conveyor Belt Right / Left for Firm Attachment ... 42
7 Start-up ... 43
7.1 Mounting onto the Tractor ... 43
7.2 Hydraulics ... 44
7.2.1 Special Safety Instructions ... 44
7.3 Load-sensing connection ... 45
7.3.1 Operating the Machine without LS (Load-Sensing Connection) ... 45
7.3.2 Operating the Machine via LS (Load-Sensing Connection) ... 45
7.3.3 Connecting the hydraulic lines ... 46
7.4 Connecting to the KRONE ISOBUS CCI Terminal ... 47
7.5 Lighting ... 48
7.6 Lighting connection ... 48
7.7 PTO shaft ... 49
7.7.1 Special Safety Instructions ... 49
7.7.2 Install the PTO shaft ... 50
7.8 Intermediate PTO shaft ... 50
7.9 Swivelling parking support into transport position ... 51
8 KRONE ISOBUS Terminal ... 52
8.1 Installing the terminal into cabin ... 53
8.2 ISOBUS Short Cut Button ... 54
8.2.1 Display / Touchscreen ... 55
8.2.2 Connecting the Terminal (on tractors with integrated ISOBUS system) ... 56
8.2.3 Connecting the Multi-Function Lever to the CCI Terminal (on Tractors with an Integrated ISOBUS System) ... 57
8.2.4 Connecting the terminal (on tractors without ISOBUS system) ... 58
8.2.5 Connecting the Multi-Function Lever to the CCI Terminal (on tractors without ISOBUS system) 59
8.2.6 Switching the terminal on / off when the machine is not connected ... 60
8.2.7 Switching the terminal on / off when the machine is connected ... 61
8.2.7.1 Start screen ... 61
8.3 Display design ... 62
8.3.1 Displays in the main window ... 68
9 KRONE ISOBUS CCI 100 Terminal / manual mode ... 72
9.1 Bringing up the Basic Screens ... 72
9.2 'Raise/Lower front mowing unit' basic dialogue ... 74
9.2.1 Lowering front mowing unit ... 74
9.2.2 Raising front mowing unit ... 74
9.2.3 Lowering the lateral mowing units from the transport position to the headland position ... 75
9.2.3.1 Protection for wild animals ... 75
9.2.4 Raising the lateral mowing units from the headland position to the transport position ... 75
9.3 'Raise/Lower mowing units' basic dialogue ... 76
9.3.1 Lowering the lateral mowing units from the transport position to the headland position ... 76
9.3.2 Lowering all mowing units from the headland position to the working position ... 77
9.3.3 Lowering individual mowing units from the headland position to the working position ... 77
9.3.4 Raising individual mowing units from the working position to the headland position ... 77
9.3.5 Raising all mowing units from the working position to the headland position ... 78
9.3.6 Raising the lateral mowing units from the headland position to the transport position ... 78
9.4 Basic Screen Lifting/Lowering Mowing Units Inching With the Key ... 79
9.4.1 Lowering the lateral mowing units from the transport position to the headland position ... 79

9.4.2 Lowering all mowing units from the headland position to the working position ... 80
9.4.3 Lowering individual mowing units (inching) ... 80
9.4.4 Raising individual mowing units (inching) ... 81
9.4.5 Raising all mowing units from the working position to the headland position ... 81
9.4.6 Raising the lateral mowing units from the headland position to the transport position ... 81
9.5 Overcut / Lateral displacement basic dialogue ... 82
9.5.1 Increasing/Decreasing overcut ... 82
9.5.2 Increasing/Decreasing lateral displacement ... 83
9.6 Cross conveyor basic dialogue (optional) ... 84
9.6.1 Raising/Lowering right-hand cross conveyor belt ... 84
9.6.2 Raising/Lowering left-hand cross conveyor belt ... 84
9.6.3 Raising/Lowering both cross conveyor belts simultaneously ... 85
9.6.4 Speed control of the cross conveyor belts ... 85
9.7 Hydraulic system basic dialogue ... 86
10 KRONE ISOBUS CCI 100 Terminal / automatic mode ... 88
10.1.1 Lowering front mowing unit ... 88
10.1.2 Raising front mowing unit ... 88
10.1.3 Raising/Lowering right-hand cross conveyor belt ... 89
10.1.4 Raising/Lowering left-hand cross conveyor belt ... 89
10.1.5 Speed control of the cross conveyor belts ... 89
10.1.6 Raising/Lowering individual lateral mowing units ... 89
10.1.7 Lowering all mowing units from the headland position to the working position ... 90
10.1.8 Raising all mowing units from the working position to the headland position ... 90
10.1.9 Increasing/Decreasing overcut ... 91
10.1.10 Presetting Width Shift ... 92
10.2 Menu level ... 94
10.2.1 Calling up the menu level ... 96
10.3 Main menu 1 "Setting overcut" ... 98
10.4 Main menu 2 "Setting lateral displacement" ... 100
10.5 Main menu 3 "Setting front mowing unit" ... 102
10.6 Main menu 4 "Setting mode for swath roller height" ... 104
10.7 Main menu 5 "Setting manual/time/distance control" ... 106
10.8 Main menu 6 "Setting lowering speed" ... 110
10.9 Main menu 7 "Setting overlap" ... 112
10.10 Main Menu 13 “Counters” ... 114
10.10.1 Sub-Menu 13-1 “Customer Counter” ... 115
10.10.2 Sub-Menu 13-2 “Total Counter” ... 119
10.11 Main Menu 14 “ISOBUS Settings” ... 120
10.11.1 Sub-Menu 14-1 Diagnostics Auxiliary (AUX) ... 121
10.11.2 Sub-Menu 14-2 “Driving Speed Display Diagnostics / Motion Direction Display Diagnostics" 122
10.11.3 Sub-Menu 14-3 Setting the Background Colour ... 123
10.11.4 Sub-Menu 14-7 “Virtual Terminal (VT)” ... 124
10.11.5 Sub-Menu 14-9 “Switching Between Terminals” ... 126
10.12 Main Menu 15 “Settings” ... 127
10.12.1 Sub-Menu 15-1 “Sensor Test” ... 128
10.12.2 Sub-Menu 15-2 “Actuator Test” ... 133
10.12.3 Sub-menu 15-3 "Manual operation without confirmation prompt" ... 138
10.12.4 Sub-Menu 15-4 Error List ... 140

10.12.5 Sub-Menu 15-5 “Information” ... 141
10.12.6 Sub-Menu 15-6 Technician ... 142
10.13 Alarm Message ... 143
10.14 Alarm messages ... 144
10.14.1 Logical Alarms ... 145
10.14.2 Physical alarm messages ... 147
11 ISOBUS operation ... 149
11.1 Mounting ISOBUS Terminal ... 150
11.1.1 Connection Terminal to Tractor ... 150
11.1.2 Connection Tractor to Machine ... 150
11.2 Differing functions to KRONE ISOBUS terminal CCI ... 151
11.2.1 Variant Functions on ISO Terminals with 10 Keys ... 151
11.2.2 Reversing ... 151
11.2.3 ISOBUS Short Cut Button ... 151
11.3 ISOBUS „Auxiliary“-function (AUX) ... 152
11.3.1 Example of joystick assignment for Fendt (default setting) ... 154
11.3.2 Recommended settings for a WTK multi-function lever ... 155
12 Driving and Transport ... 158
12.1 Switching from working position to transport position ... 158
13 Operation ... 160
13.1 Before mowing ... 160
13.2 Mowing ... 160
13.2.1 Folding down the Safety Device ... 161
13.2.2 Adjusting the lateral suspension arm ... 162
13.3 From transport into working position ... 163
13.3.1 Lowering the lateral mowing units from the transport position to the headland position ... 163
13.3.1.1 Protection for wild animals ... 164
13.3.2 Lowering all mowing units from the headland position to the working position ... 164
13.4 Headland Position ... 165
13.4.1 Raising all mowing units from the working position to the headland position ... 165
13.4.2 Raising the lateral mowing units from the headland position to the transport position ... 166
13.5 Detaching the machine ... 167
13.6 Parking ... 168
14 Settings ... 169
14.1 Adjusting the cutting height ... 169
14.2 Adjusting the Guards ... 170
14.2.1 Lateral Guards ... 170
14.3 Setting of the pole protection mechanism ... 171
14.4 Adjusting the Tedder Speed ... 172
14.5 Adjusting the conditioner plate ... 173
14.5.1 Adjustment for Swathing ... 174
14.5.2 Wide spreading ... 175
14.5.3 Setting wide distributor plate ... 176
14.5.4 Wide spreading with the "Cross Conveyor" option ... 178
14.6 Adjust Locking ... 180
14.7 Setting the Distance of the Rollers ... 181
14.8 Setting Conveyor Belt ... 182
14.9 Moving the Cross Conveyor ... 184

15 Maintenance 186
15.1.1 Test run 186
15.2 Spare Parts 186
15.3 Maintenance table 187
15.4 Tightening Torques 188
15.5 Tightening Torques (Countersunk Screws) 189
15.5.1 Deviating Torque 189
15.6 Rotary hub with shear fuse (optional) 190
15.6.1 After Shearing Off 192
16 Maintenance - hydraulic system 194
16.1 High-pressure filter 194
16.2 Load-sensing connection 195
16.2.1 Operating the Machine without LS (Load-Sensing Connection) 195
16.2.2 Operating the Machine via LS (Load-Sensing Connection) 195
16.3 Emergency manual activation 196
16.4 Preparing the machine for road travel (in emergency manual mode) 197
16.5 Comfort Hydraulic Block Diagram 198
17 Maintenance - Gearbox 201
17.1 Main gearbox 201
17.2 Mower Drive Gearbox 202
17.3 Angular gearbox 203
17.3.1 Top part 203
17.4 Angular gearbox 204
17.4.1 Bottom part 204
17.5 Gearbox for Top Roller Drive 205
17.6 Oil level check and oil change on the cutter bar 206
17.6.1 Oil change 206
17.6.2 Checking the oil level 206
18 Maintenance - Blade Changing 207
18.1 Checking the Cutter Blades and Blade Holder 207
18.1.1 Cutter Blades 208
18.1.2 Blade screw connection 209
18.1.3 Blade Quick-Fit Device 209
18.1.4 Periodical Inspection of the Leaf Springs 210
18.1.5 Periodical Inspection of the Cutting Discs / Blade Drums 211
18.1.6 Abrasion Limit 212
18.2 Blade Changing on Cutting Discs 213
18.2.1 Blade Screw Connection 214
18.2.2 Blade Quick-Fit Device 215
18.3 Replacing the linings 216
19 Maintenance – lubrication chart 217
19.1 Special Safety Instructions 217
19.2 PTO shaft 217
19.3 Lubrication Chart 218
20 Maintenance – electrical system 226
20.1 Position of the Sensors 226
20.1.1 Adjusting the Sensors 230
20.1.1.1 Namur sensor d = 12 mm 230

20.1.1.2 Namur sensor d = 30 mm ... 230
21 Special equipment ... 231
21.1 Special Safety Instructions ... 231
21.2 Adjusting Skids ... 231
21.3 Cross conveyor ... 232
21.3.1 General ... 232
21.4 Automatic mode ... 232
21.4.1 Raising/Lowering right-hand cross conveyor belt ... 232
21.4.2 Raising/Lowering left-hand cross conveyor belt ... 232
21.4.3 Speed control of the cross conveyor belts ... 232
21.5 Manual mode ... 233
21.5.1 Raising/Lowering right-hand cross conveyor belt ... 233
21.5.2 Raising/Lowering left-hand cross conveyor belt ... 233
21.5.3 Raising/Lowering both cross conveyor belts simultaneously ... 233
21.5.4 Speed control of the cross conveyor belts ... 234
21.6 Bar on cross conveyor is bent ... 235
21.7 Hydraulic system ... 235
21.7.1 Filling Quantities and Lubricant Designations ... 236
21.7.2 Oil Tank ... 236
21.7.3 Checking the oil level ... 237
21.7.4 Oil change ... 237
21.7.5 Replacing the hydraulic oil filter ... 238
21.8 Cleaning the cross conveyors ... 240
22 Placing in Storage ... 242
23 Before the Start of the New Season ... 243
23.1 Special Safety Instructions ... 243
23.2 Test run. ... 243
23.3 Friction Clutch ... 244
24 Appendix ... 245
24.1 Electrical circuit diagram ... 245
25 Index ... 246

1 Foreword

Dear Customer!

By purchasing the disc mower, you have acquired a quality product made by KRONE.

We are grateful for the confidence you have invested in us in buying this machine.

To be able to use the disc mower optimally, please read these operating instructions thoroughly before you start using the machine.

The contents of this manual are laid out in such a way that you should be able to perform any task by following the instructions step by step. It contains extensive notes and information about maintenance, how to use the machine safely, secure working methods, special precautionary measures and available accessories. This information and these instructions are essential, important and useful for the operational safety, reliability and durability of the disc mower.

Note

In the operating instructions which follow, the disc mower will also be referred to as the "machine".

Please note:

The operating instructions are part of your machine.

Only operate this machine after you have been trained to do so and according to these instructions.

It is essential to observe the safety instructions!

It is also necessary to observe the relevant accident prevention regulations and other generally recognised regulations concerning safety, occupational health and road traffic.

All information, illustrations and technical data in these operating instructions 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. Should you for any reason not be able to use these operating instructions either wholly or partially, you can receive a replacement set of operating instructions for your machine by quoting the number supplied overleaf.

We hope that you will be satisfied with your KRONE machine.

Maschinenfabrik Bernard Krone GmbH

Spelle

2 To this Document

2.1 Validity

These operating instructions apply to disc mowers of series:
EasyCut B 1000 CV, EasyCut B 1000 CV Collect,
EasyCut B 1000 CR, EasyCut B 1000 CR Collect

These operating instructions describe the rear combination only. Separate operating instructions are available for the front mowing unit and must also be taken into consideration.

2.1.1 Direction Information

Direction information in these operating instructions such as front, rear, right and left always applies in direction of travel.

2.2 Identifying Symbols in the Operating Instructions

The safety instructions contained in this manual which could result in personal injury if not followed are identified by the general danger sign:

2.3 Identification of the hazard warnings

Danger!

DANGER! - Type and source of the hazard!
Effect: Danger to life or serious injuries.
- Measures for hazard prevention

Warning !

WARNING! - Type and source of the hazard!
Effect: Injuries, serious material damage.
- Measures for hazard prevention

Caution!

CAUTION! - Type and source of the hazard!
Effect: Property damage
- Measures for risk prevention.

General function instructions are indicated as follows:
Note!

Note - Type and source of the note
Effect: Economic advantage of the machine
- Actions to be taken

Instructions which are attached to the machine need to be followed and kept fully legible.

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3 Safety

3.1 Purpose of Use

The EasyCut disc mower is used for cutting crops growing on the ground (except maize).

3.2 Intended Use

The disc mower is built exclusively for customary use in agricultural work (intended use).

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

Operation in accordance with intended use also includes observing the operating, maintenance and service instructions specified by the manufacturer.

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

3.2.1 Personnel Qualification and Training

The machine may be used, maintained and repaired only by persons who are familiar with it and have been instructed about the dangers connected with it. The operator must define areas of responsibility and monitoring of personnel. Should personnel lack the required knowledge, they must receive the required training and instruction. The operator must ensure that the contents of these operating instructions have been fully understood by personnel.

Repair work not described in these operating instructions should only be performed by authorised service centres.

3.2.2 Dangers in Case of Non-compliance with the Safety Instructions

Failure to follow the safety instructions could result in personal injury and environmental hazards as well as damage to the machine. If the safety instructions are not respected, this could result in the forfeiture of any claims for damages.

Failure to follow the safety instructions could result, **for example**, in the following hazards:

- Endangering of persons due to not protected working areas.
- Breakdown of important machine functions
- Failure of prescribed methods for repair and maintenance
- Endangering of persons due to mechanical and chemical effects
- Damage to the environment due to leaking hydraulic oil

3.2.3 Safety-conscious work practices

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

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

The safety instructions provided by the vehicle manufacturer should also be observed.

Observe the applicable traffic laws when using public roads.

Be prepared for emergencies. Keep the fire extinguisher and first aid box within reach. Keep emergency numbers for doctors and fire brigade close to the telephone.

3.3 Safety Instructions and Accident Prevention Regulations

1 Please follow all generally applicable safety and accident prevention regulations in addition to the safety instructions contained in these operating instructions!

2 The attached warning and safety signs provide important information for safe operation. Pay attention to these for your own safety!

3 When using public roads, make sure to observe the applicable traffic regulations!

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

5 The user should wear close fitting clothes. Avoid wearing loose or baggy clothing.

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

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

8 Carrying passengers during operation and transport on the working implement is not permitted.

9 Couple implements correctly! Attach and secure implements to specified devices only!

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

11 Use extreme caution when attaching or detaching implements onto or from the tractor!

12 Always attach ballast weights properly to the fixing points provided!

13 Observe permitted axle loads, gross weight and transport dimensions!

14 Check and attach transport equipment, such as lighting, warning devices and protective equipment!

15 Actuating mechanisms (cables, chains, linkages etc.) for remote controlled devices must be positioned in such a way that no movements are unintentionally triggered in any transport or working positions.

16 Ensure that implements are in the prescribed condition for on-road travel and lock them in place in accordance with the manufacturer's instructions!

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

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

19 Hitched implements and ballast weights affect the driving, steering and braking response of the machine. Make sure that you are able to brake and steer the machine as required!

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

21 Start up implements only when all safety devices have been attached and set in the required position!

22 Keep safety equipment in good condition. Replace missing or damaged parts.

23 Keep clear of the working range of the machine at all times!

24 Do not stand within the turning and swivel range of the implement!

25 Never operate the hydraulic folding frames if anyone is inside the swivel range!

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

27 Before leaving the tractor, lower the implement onto the ground, apply the parking brake, switch off the engine and remove the ignition key!

3.4 Attached devices

1 Use extreme caution when attaching or detaching implements onto or from the tractor!

2 Couple the respective application devices to the appropriate couplings (e.g. three-point suspension) only and secure them in a way (transport, use) that excludes inadvertent lifting or lowering of the device.

3 When using three-point linkage, the attachment categories of the tractor and the device (e.g. PTO speed, hydraulic system) must be coordinated!

4 When using the outside controls for the three-point linkage, do not step between the tractor and the device (risk of injury)!

3.5 PTO operation

1 Use only PTO shafts specified by the manufacturer!
2 The guard tube and guard cone of the PTO shaft and the PTO guard must be attached and in good working condition (on the implement side, too)!
3 Make sure that the required tube covers are in place for PTO shafts in transport and working position!
4 Before installing or detaching PTO shafts, disengage the PTO, switch off the engine and remove the ignition key!
5 When using PTO shafts with an overload safety or free-running coupling which are not shielded by the guard on the tractor, mount the overload safety or free-running coupling on the implement side!
6 Always make sure that the PTO shaft is properly installed and secured!
7 Attach chains to prevent the PTO shaft guard from rotating with the shaft!
8 Before switching on the PTO, make sure that the selected PTO speed of the tractor matches the permissible implement speed!
9 Before switching on the PTO shaft make sure that no person is in the danger zone of the device!
10 Never switch on the PTO if the engine is switched off!
11 No one should be in the vicinity of the rotating PTO or PTO shaft when the PTO is in use.
12 Always switch off the PTO shaft when the angle is too large or the PTO shaft is not required!
13 Caution! After disengaging the PTO danger due to the flywheel running on! Keep away from the implement during this time. The machine may be worked on only if it is completely at standstill and if the flywheel is secured by the parking brake.
14 Cleaning, lubricating or adjusting PTO driven implements or the PTO shaft only with PTO disengaged, engine switched off and ignition key withdrawn! Secure the fly-wheel with the parking brake.
15 Place the disconnected PTO shaft onto the support provided!
16 After detaching the PTO shaft, attach the protective cover to the PTO end!
17 If damage occurs, correct this immediately before using the implement!

Note

The instructions of the manufacturer must be observed with regard to the PTO shaft. (separate operating instructions)

3.6 Hydraulic system

1 The hydraulic system is pressurised!

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

3 When connecting the hydraulic hoses to the tractor hydraulics, make sure that the hydraulics of both the tractor and the implement have been depressurized!

4 In the case of hydraulic connections between tractor and machine, the coupling sleeves and plugs should be marked to ensure a proper connection! If the connectors are interchanged, the function will be reversed (e. g. raising/lowering) - Risk of accident!

5 When searching for leaks, use suitable aids to avoid the risk of injury!

6 Liquids escaping under high pressure (hydraulic oil) can penetrate the skin and cause serious injury! Seek medical help immediately should injuries occur! Danger of infection!

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

8 Check the hydraulic hose lines at regular intervals and replace them if damaged or worn! The new hoses must fulfill the technical requirements set by the manufacturer of the implement!

3.7 Maintenance

1 Always make certain that the drive and the engine are switched off before doing any repairs, maintenance or cleaning! - Remove the ignition key!
2 Regularly check that nuts and bolts are properly seated and tighten if necessary!
3 When carrying out maintenance work on a raised mowing unit, always use suitable means to secure it against falling.
4 When replacing working tools with cutting edges, use suitable tools and gloves!
5 Oils, greases and filters must be disposed of correctly!
6 Always disconnect the power supply before working on the electrical system!
7 If protective devices and guards are subject to wear, check them regularly and replace them in good time!
8 When performing electrical welding work on the vehicle and mounted devices, turn the power supply off at main battery switch or disconnect generator cable and battery!
9 Replacement parts must at least comply with the technical requirements set by the manufacturer of the implements! This is guaranteed by original KRONE spare parts!
10 Only use nitrogen for filling pneumatic accumulators - risk of explosion!

3.8 Unauthorised Conversion/Modification and Spare Parts Production

Conversions or modifications of the machine are permitted only with prior consultation with the manufacturer. Original spare parts and accessories authorised by the manufacturer help to ensure safety. Use of other parts may void liability for resulting damage.

3.9 Inadmissible Modes of Operation

The operating safety of the delivered machine is guaranteed only when it is used as intended in compliance with the introductory section "Intended use" of the operating instructions. The limit values listed in the data charts should not be exceeded under any circumstances.

3.10 Working in the vicinity of power transmission lines

1 Always take great care when working under or in the vicinity of power transmission lines.
2 Ensure that when in operation or being transported, the machine cannot exceed a total height of approx. 4m.
3 If there is any need to travel under overhead lines, the machine operator must request information on the rated voltage and the minimum height of the overhead lines from the overhead line operator.
4 Always keep the safety distances according to the table.

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

4 Machine Description

4.1 Identification Plate

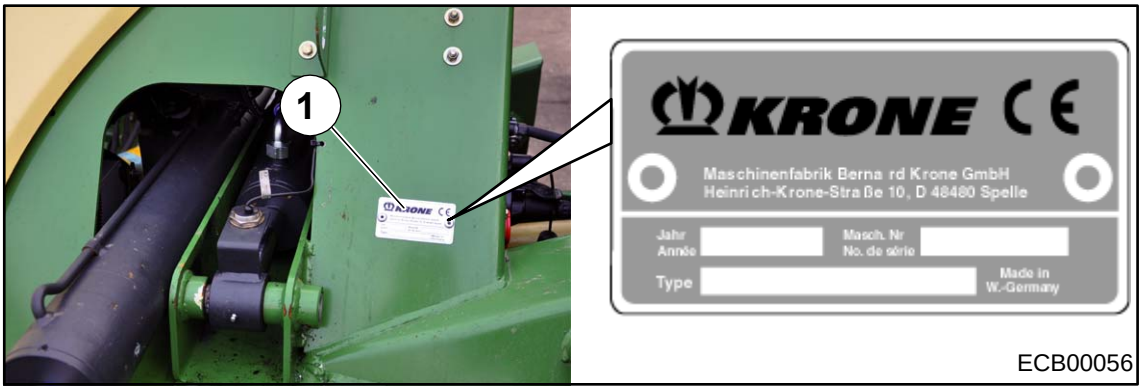


Fig. 1

The machine data is located on the type plate (1). It is mounted right front on the three-point linkage.

4.2 Information Required for Questions and Orders

Year	
Mach. No.	
Type	

Note

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

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

Note

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

4.2.1 Contact

Maschinenfabrik Bernard Krone GmbH
Heinrich-Krone-Strasse 10
D-48480 Spelle (Germany)

Telephone: + 49 (0) 59 77/935-0 (Head Office)
Fax.: + 49 (0) 59 77/935-339 (Head Office)
Fax.: + 49 (0) 59 77/935-239 (Spare parts - domestic)
Fax.: + 49 (0) 59 77/935-359 (Spare parts - export)
Email: info.ldm@krone.de

4.3 Introduction

The disc mower is equipped with all safety devices (protective devices). However, it is not possible to eliminate all potential hazards on this machine as this would impair its full functional capability. Hazard warnings are attached to the machine in the relevant areas to warn against any dangers. The safety instructions are provided in the form of so-called warning pictograms. Important information on the position of these safety signs and what they mean is given below!

WARNING!

Danger of injury on machine parts if danger zones have not been marked when warning pictograms are missing, damaged or illegible.

Danger of injury due to dangerous parts and other residual risks as users or third parties enter the danger area or reach into it as they are not aware of the danger.

- Immediately replace damaged or illegible labels.
- Following repair work, always attach appropriate adhesive safety labels to all the replaced, modified or repaired components.
- Never clean areas carrying an adhesive safety label using a high-pressure cleaner.

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

4.3.1 Re-Ordering the Adhesive Safety and Information Labels

Note

Every adhesive safety and information label is assigned an order number and can be ordered directly from the manufacturer or from an authorized dealer (see Section "Contact").

4.3.2 Affixing the Adhesive Safety and Information Labels

Note - Affixing an adhesive label

Effect: Adhesion of the label

- The surface for affixing the adhesive label must be clean and free of dirt, oil and grease.

4.4 Position of the Adhesive Safety Stickers on the Machine

EasyCut B 1000 CV / EasyCut B 1000 CR

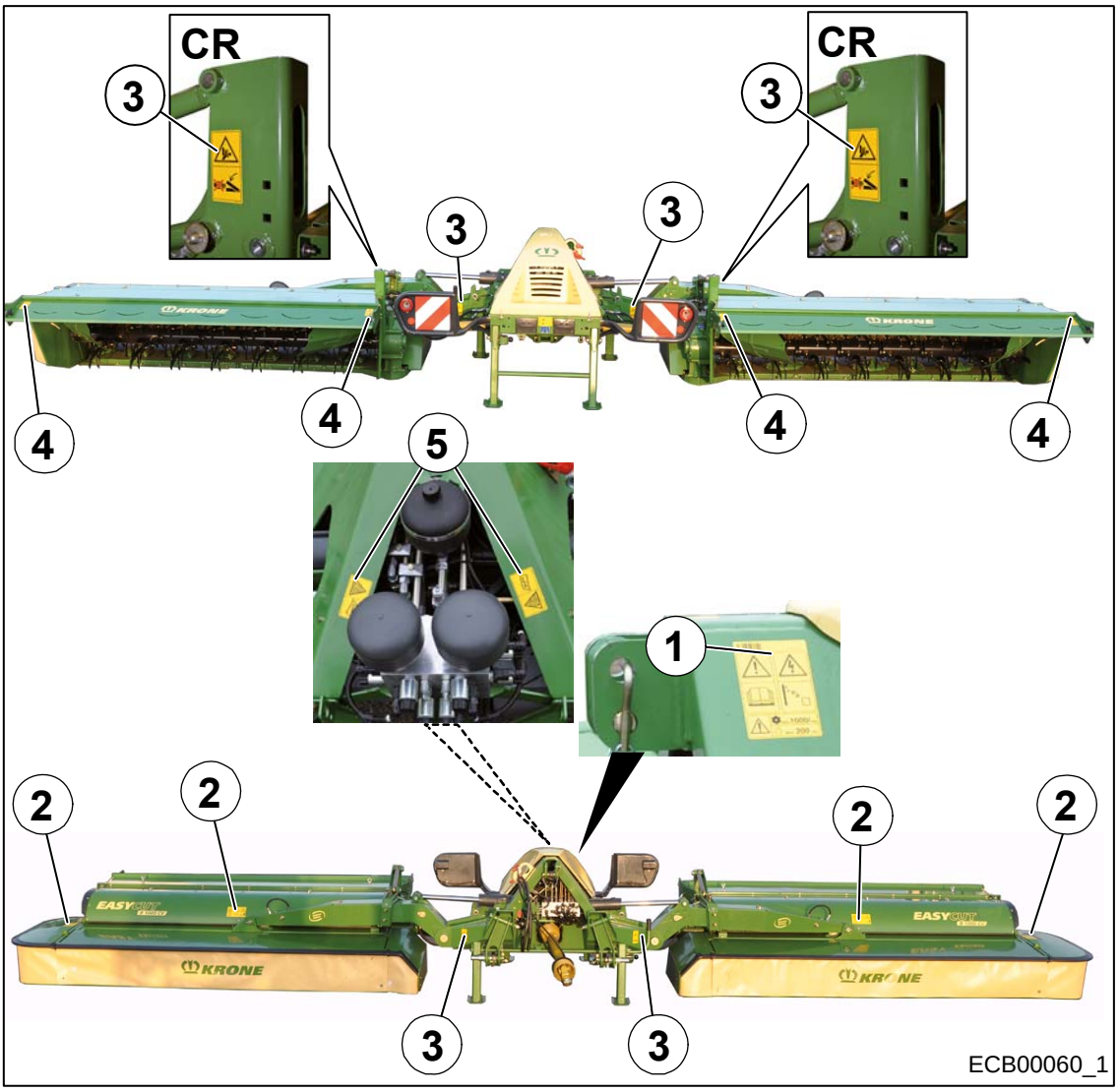
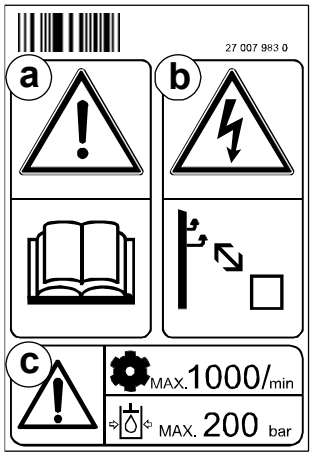


Fig. 2 EasyCut B 1000 CV, EasyCut B 1000 CR

1 Order No. 27 007 983 0 (1x)



a)

Danger from improper operation and ignorance

Improper operation and ignorance of the machine as well as inappropriate behaviour in dangerous situations cause a danger to life for operators and third parties.

- Prior to start-up, read and observe operating instructions and safety instructions.

b)

Danger from electric shock.

Serious injuries due to voltage flashover when machine parts come too close to high-voltage transmission lines.

- Keep the stipulated safety distance to electrical high-voltage transmission lines.

c)

Danger when exceeding the maximum permissible PTO speed or the maximum permissible operating pressure.

When exceeding the permissible PTO speed, machine parts may be destroyed or be flung out uncontrollably.

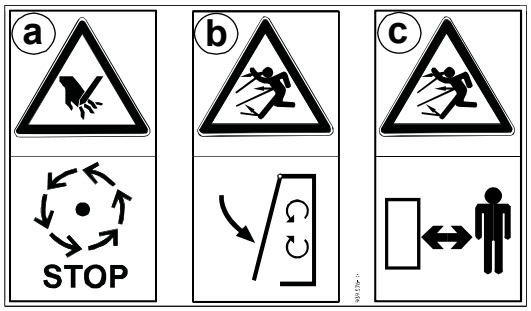
When exceeding the maximum permissible operating pressure, hydraulic parts may be damaged.

Thus persons may get seriously hurt.

- Note the permissible PTO speed.
- Note the permissible operating pressure.

2) Order No. 939 576 0 (4x)

a) b) c)



a)

Danger from turning machine parts

There is a risk of injury as machine parts may still continue to run for a certain time after being switched off

- Do not touch any moving parts of the machine.
- Wait until the machine parts have come to a complete stop.

b)

Danger from objects being flung out

When the machine is running, there is a risk of injury as objects may be flung out uncontrollably.

- Before start-up, move guards into protective position.

c)

Danger from objects being flung out

When the machine is running, there is a risk of injury as objects may be flung out uncontrollably.

- Keep your distance when the machine is running.

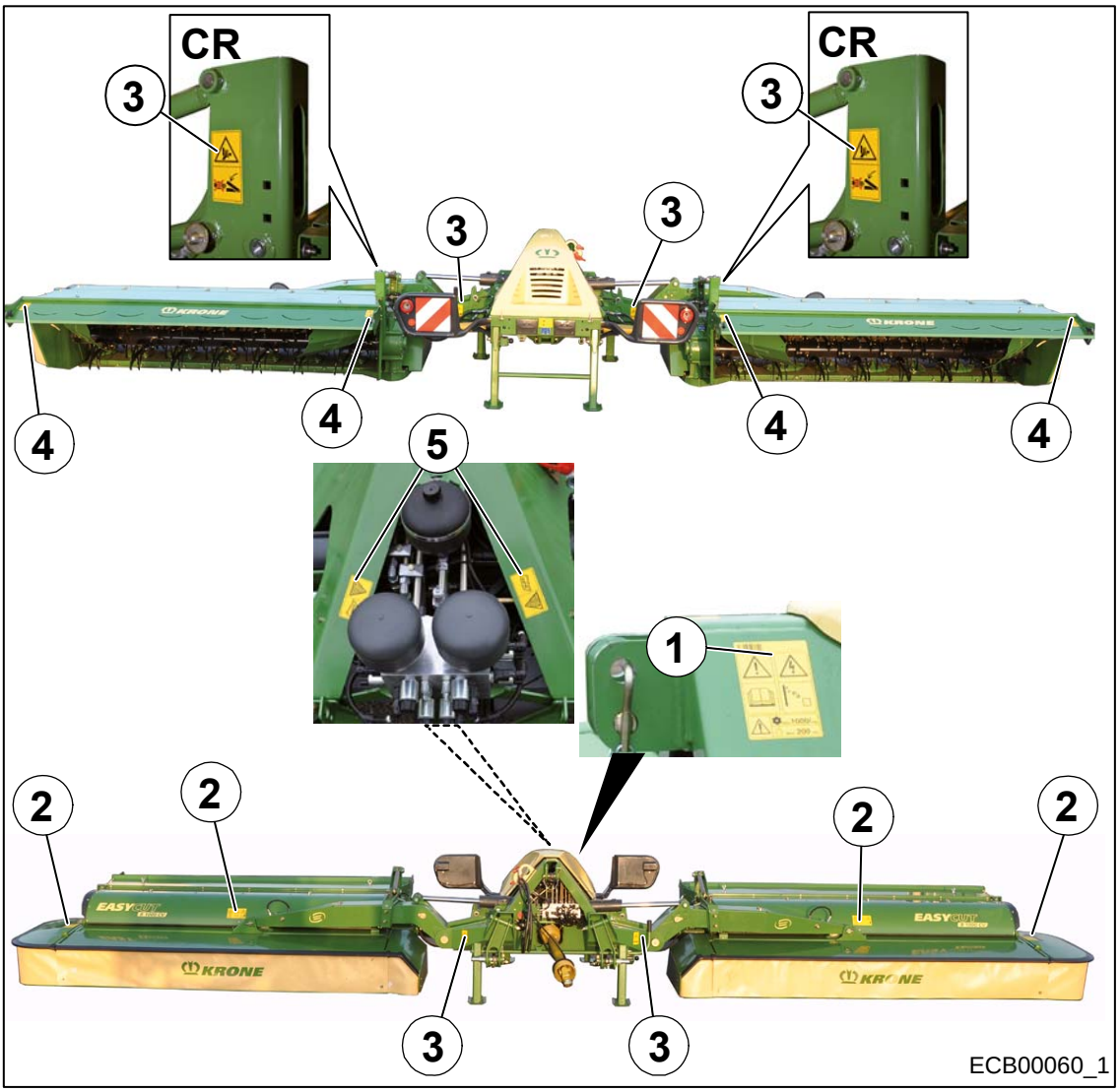
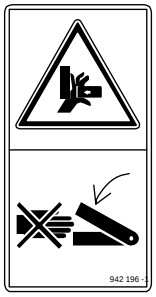


Fig. 3 EasyCut B 1000 CV, EasyCut B 1000 CR

3) Order No. 942 196 1

*) on the CV version (4x)

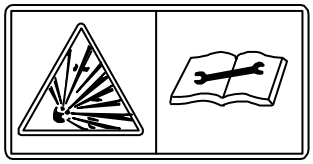
**) on the CR version (6x)

	**Danger due to crushing or shearing** Risk of injury due to crushing or shearing points on moving machine parts. • While parts are moving, never reach into areas where there is a risk of being crushed.

4) Order No. 942 197 1 (4x)

	Danger from objects being flung out. When the machine is running, there is a risk of injury as objects may be flung out uncontrollably. • Keep your distance when the machine is running.

5) Order no. 939 529 0 (2x)

	**Danger due to high-pressure liquid.** The accumulator is under gas and oil pressure. If the accumulator is not removed or repaired properly, there is a risk of injury. • Before removing and repairing the accumulator, follow the information in the operating instructions. • The accumulator may be removed and repaired by a service centre only.

4.5 Position of the Adhesive Safety Stickers on the Machine

EasyCut B 1000 CV Collect / EasyCut B 1000 CR Collect

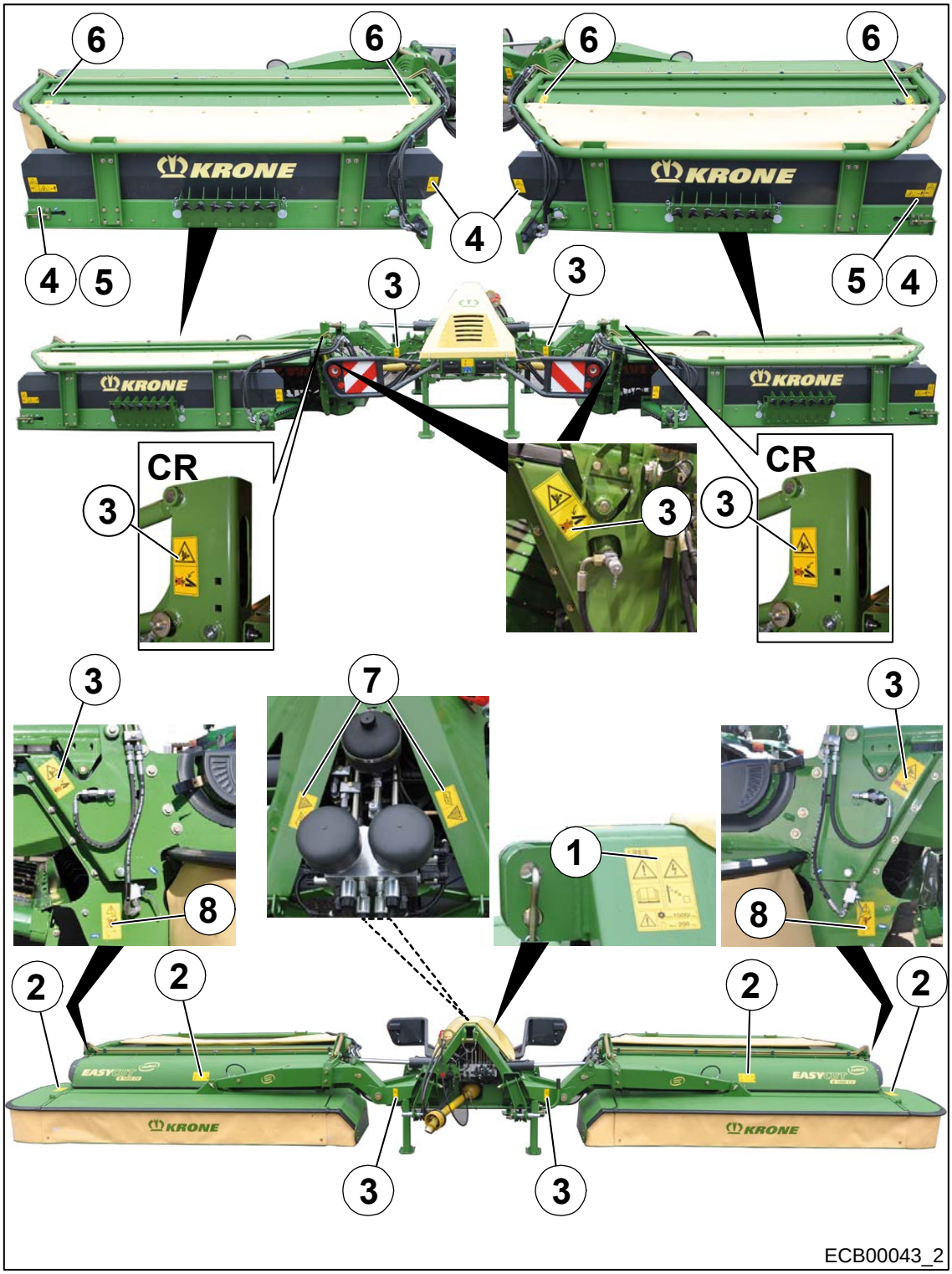
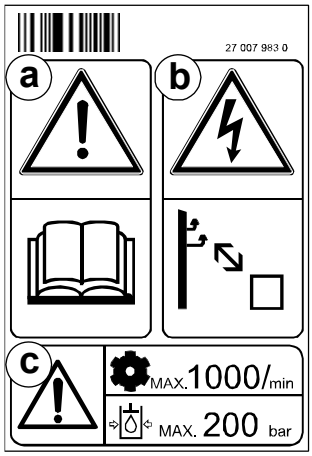


Fig. 4 EasyCut B 1000 CV Collect, EasyCut B 1000 CR Collect

1 Order No. 27 007 983 0 (1x)



a)

Danger from improper operation and ignorance

Improper operation and ignorance of the machine as well as inappropriate behaviour in dangerous situations cause a danger to life for operators and third parties.

- Prior to start-up, read and observe operating instructions and safety instructions.

b)

Danger from electric shock.

Serious injuries due to voltage flashover when machine parts come too close to high-voltage transmission lines.

- Keep the stipulated safety distance to electrical high-voltage transmission lines.

c)

Danger when exceeding the maximum permissible PTO speed or the maximum permissible operating pressure.

When exceeding the permissible PTO speed, machine parts may be destroyed or be flung out uncontrollably.

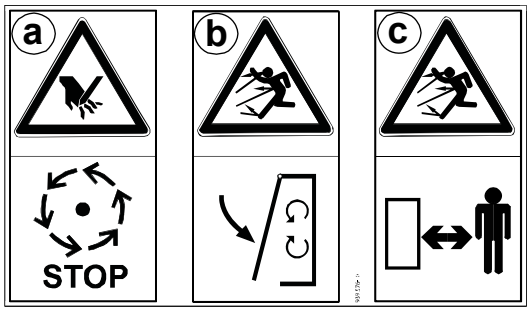
When exceeding the maximum permissible operating pressure, hydraulic parts may be damaged.

Thus persons may get seriously hurt.

- Note the permissible PTO speed.
- Note the permissible operating pressure.

2) Order No. 939 576 0 (4x)

a) b) c)



a)

Danger from turning machine parts

There is a risk of injury as machine parts may still continue to run for a certain time after being switched off

- Do not touch any moving parts of the machine.
- Wait until the machine parts have come to a complete stop.

b)

Danger from objects being flung out

When the machine is running, there is a risk of injury as objects may be flung out uncontrollably.

- Before start-up, move guards into protective position.

c)

Danger from objects being flung out

When the machine is running, there is a risk of injury as objects may be flung out uncontrollably.

- Keep your distance when the machine is running.

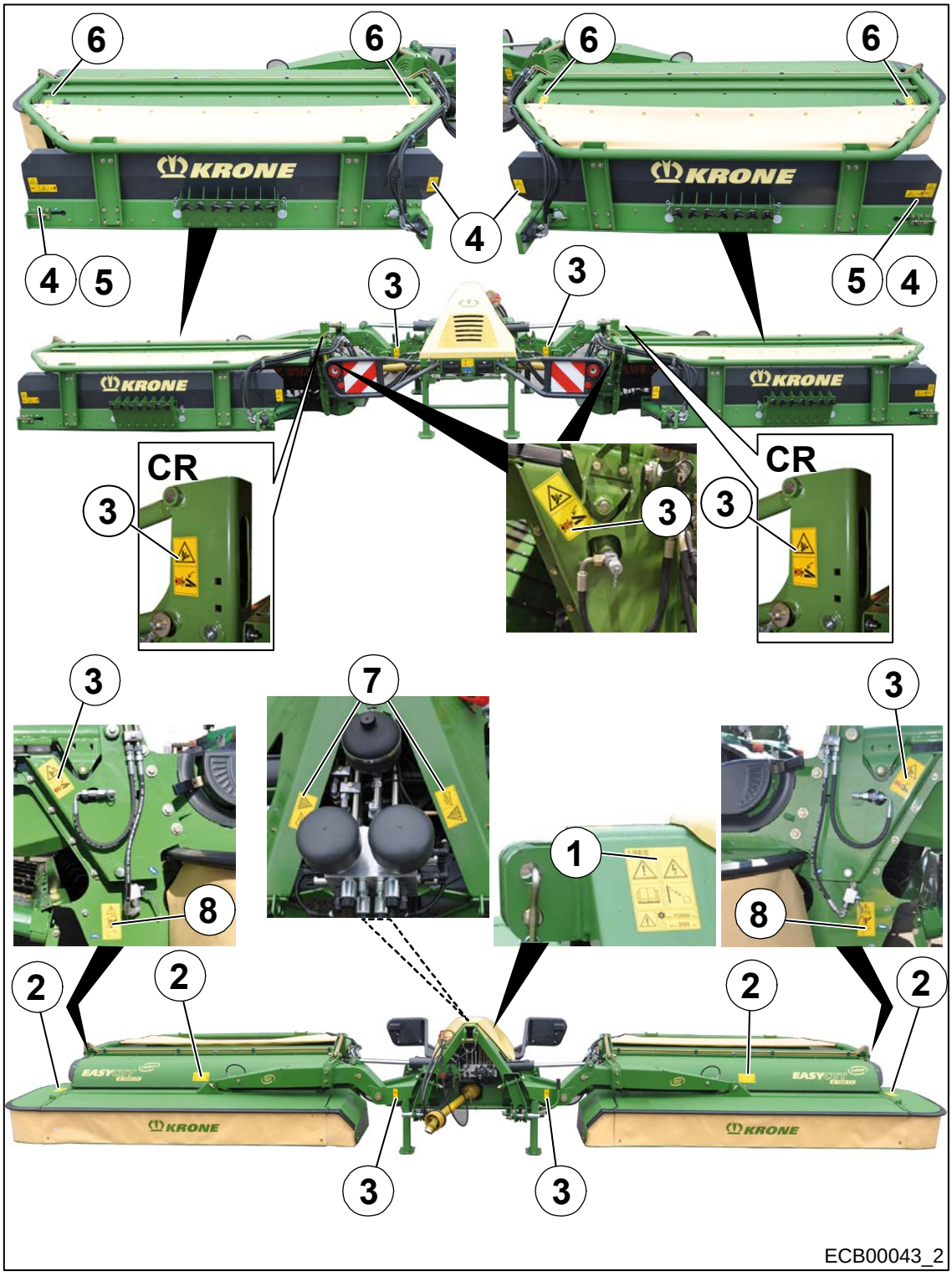
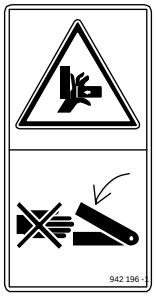


Fig. 5 EasyCut B 1000 CV Collect, EasyCut B 1000 CR Collect

3) Order No. 942 196 1

*) In case of CV version (8x)

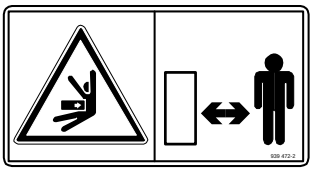
**) In case of CR version (10x)

	**Danger due to crushing or shearing** Risk of injury due to crushing or shearing points on moving machine parts. • While parts are moving, never reach into areas where there is a risk of being crushed.

4) Order No. 942 200 1 (4x)

	Danger due to rotating machine parts. When approaching the danger zone, there is a risk of being drawn in by the rotating machine parts. • Keep a sufficient distance from rotating machine parts.

5) Order No. 939 472 2 (2x)

	**Danger due to impact** Risk of death due to swivelling movements of the machine. • Ensure that there is nobody in the swivel range of the machine. • Maintain distance from moving machine parts.

6) Order No. 942 197 1 (4x)

	Danger from objects being flung out. When the machine is running, there is a risk of injury as objects may be flung out uncontrollably. • Keep your distance when the machine is running.

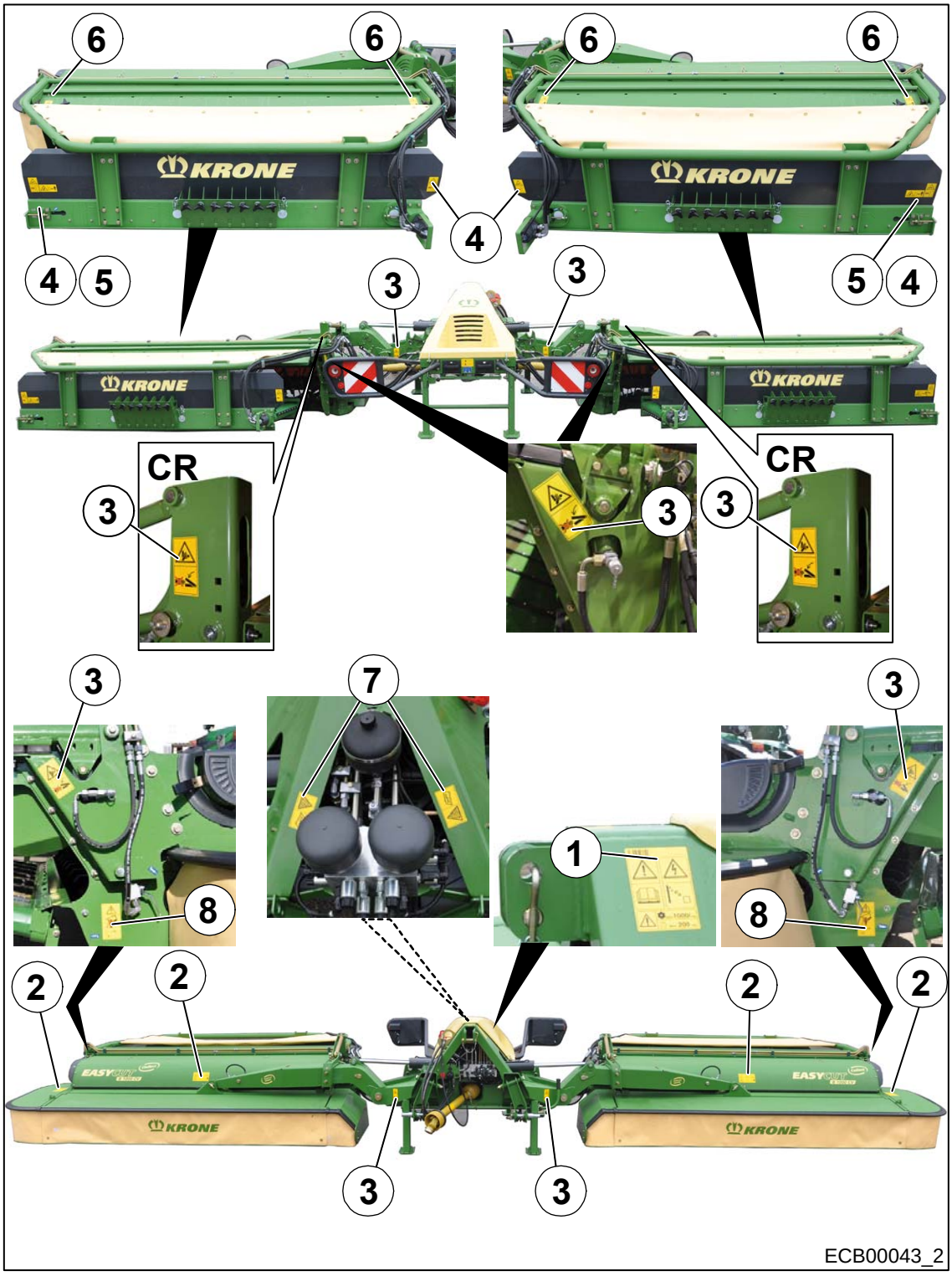
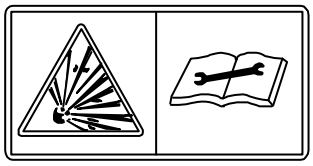


Fig. 6 EasyCut B 1000 CV Collect, EasyCut B 1000 CR Collect

7) Order no. 939 529 0 (2x)

	**Danger due to high-pressure liquid.** The accumulator is under gas and oil pressure. If the accumulator is not removed or repaired properly, there is a risk of injury. • Before removing and repairing the accumulator, follow the information in the operating instructions. • The accumulator may be removed and repaired by a service centre only.

8) Order No. 27 010 148 0 (2x)

	Danger from shock and crush The sinking cross conveyor belt causes a danger to life. • Make sure that there is no one between machine and cross conveyor belt. • Do not stay under the raised cross conveyor belt before it is secured with the stop cock against accidental lowering.

5 Technical data

All information, illustrations and technical data in these operating instructions 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.

Type		**EasyCut B 1000 CV**	**EasyCut B 1000 CV Collect**
Working Width	[mm]	9,300 – 10,100	
Transport width	[mm]	2,950	
Set-down height	[mm]	4,200	
Transport height	[mm]	4,000	
Number of mowing discs		12	
Number of mowing drums		4	
Conditioner system		V-shaped steel tines	
Speed of the conditioner	[rpm]	600 / 900	
Width of conditioner system	[rpm]		
Cross conveyors			Standard
Acreage	[ha/h]	10 - 14	
Power consumption	[kW/HP]	130 / 180	145 / 200
PTO speed	[rpm]	1000	
Hydraulic connections required		1 x EW* and free reverse	
Load-sensing capability		Standard	
Service weight	[kg]	approx. 3400	approx. 3880

*) EW= single-action control unit

Type		EasyCut B 1000 CR	EasyCut B 1000 CR Collect
Working width	[mm]	9300 - 10100	
Transport width	[mm]	2950	
Set-down height	[mm]	4200	
Transport height	[mm]	4000	
Number of mowing discs		12	
Number of mower drums		4	
Conditioner system		Roller conditioner	
Cross conveyor belts		-	Series
Acreage output	[ha/h]	10 - 14	
Power requirement	[kW/HP]	130 / 180	145 / 200
PTO speed	[rpm]	1000	
Required hydraulic connections		1 x single-action* and free return	
LoadSensing capable		Series	
Dead weight	[kg]	approx. 3420	approx. 3900

*) SA = single-action control unit

5.1 Lubricants

5.1.1 Filling Quantities and Lubrication Designations for Gearboxes

ENVIRONMENT! - Disposal and storage of lubricants

Effect: Environmental damage

- Store lubricants in eligible containers according to statutory provisions
- Dispose used lubricants according to statutory provisions

	Filling quantity [litres]	Refined oils Brand name	Bio-degradable lubricants Brand name
Main gearbox	2.0	SAE 90	**On request**
Mower Drive Gearbox	2 x 6.5		
Cutter bar	2 x 8.0 l		

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6 Commissioning

6.1 First installation

The document "Assembly Instructions" describes how to install the device for the first time.

6.2 Special Safety Instructions

WARNING!

When performing repair, maintenance or cleaning work on the machine, or in case of technical intervention, drive elements may start moving. Thus there is a risk of serious injuries or death.

- Switch off tractor engine, remove the ignition key and carry it with you.
- Secure the tractor against accidental start-up and against rolling.
- Wait until all machine parts have come to a complete stop and have been cooled down completely.

Danger! - Incorrect assembly

Effect: Danger to life, serious injuries or serious damage to the machine.

- Only authorised service centres may assemble the machine.
- The machine must be assembled with special care.
- Always heed the applicable accident prevention regulations.
- Use only safe and sufficiently dimensioned lifting equipment and load-securing equipment.
- The machine may be taken into operation only after all the safety devices have been installed.
- If unauthorised modifications are made to the machine, the manufacturer is released from liability for any resulting damage.

Danger! - Missing guard cloths

Effect: Lebensgefahr, schwere Verletzungen oder schwere Schäden an der Maschine.

- Before starting up the machine for the first time, install all supplied guard cloths on the machine.

6.2.1 Check List for Initial Operation

- Install the machine according to assembly instructions of the machine.
- Check all screws and nuts for firm attachment, observe prescribed torque.
- Check all sensors to make certain they are correctly seated. Check the setting values and set them, if necessary. Observe prescribed tightening torque.
- Check safety devices.
- Lubricate the machine.
- Check the oil on all gearboxes.
- Adapt the hydraulic system to the tractor.
- Check the density of the hydraulic system.
- Check whether the tractor meets the requirements of the machine.
- Check axle loads, minimum ballast and total weight.
- Adapt the coupling points to the tractor, is necessary.
- Check universal shaft length and adapt the length, if necessary.
- In transport position, the cross conveyor must be checked for firm attachment.
- Check the conveyor belt setting and the running behaviour, depending on the equipment of the machine; refer to chapter Special Equipment “Conveyor Belt Setting”.
- Vent the friction clutches.
- Perform all machine functions (e. g. lifting and lowering) one after the other until the hydraulic system is vented.

6.2.2 Checking / Setting Speed Sensor

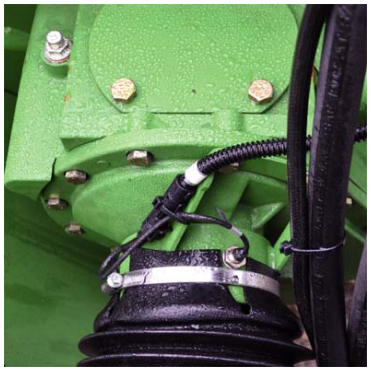

Fig. 7

Set the speed sensors (B4,B5) to a setting dimension of 2 mm.

Check the function of the speed sensor as described in menu 4-2 “Manual Sensor Test”.

Note

Turn the PTO shaft around once manually. Observe the display when turning. The status of the sensor changes from “alive” to “not alive” and vice versa.

6.2.3 Setting cross conveyor belt sensor

Fig. 8

Set the sensors (B7, B9) to a setting distance of 4 mm.

Check that the sensors actuate by raising/lowering the cross conveyor belts.

6.3 Adapting to the tractor

Warning - Impairment of the steerability of the tractor.

Effect: Damage to the tractor or the machine.

The attachment of implements at the front and rear must not cause exceedance of the max. permissible weight, of the permissible axle loads and of the carrying capacities of the tractor tyres. Even with a fitted rear-mounted accessory unit, the front axle must always be loaded with a minimum 20% service weight of the tractor.
Make sure that these prerequisites are met prior to driving.

6.3.1 Clutching points

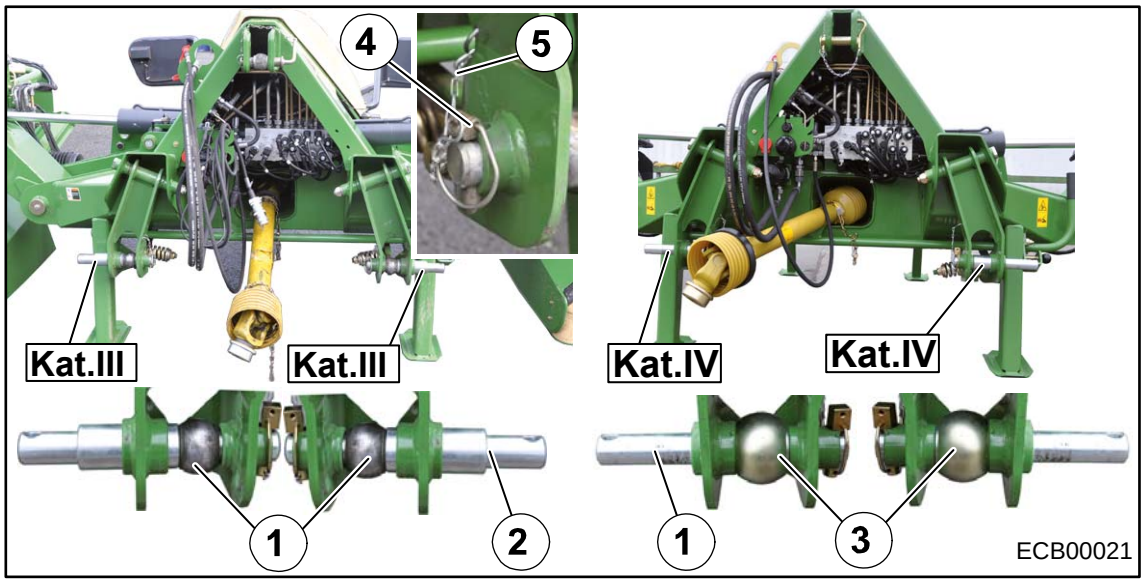

Fig. 9

For the EasyCut the three-point suspension is designed for Cat. III and Cat. IV.

The EasyCut is preconfigured for Cat. III as standard.

- Mount ball sleeve (1) Cat. III onto lower suspension arm bolt (2).
- Secure the lower suspension arm bolt using the linch pin (4) and retaining chain (5).

Conversion to Cat. IV:

- Take out the lower suspension arm bolt (2), rotate it through 180° and remount it (longer pin must face outwards).
- Mount ball sleeve (3) Cat. IV onto lower suspension arm bolt (2).
- Secure the lower suspension arm bolt using the linch pin (4) and retaining chain (5).

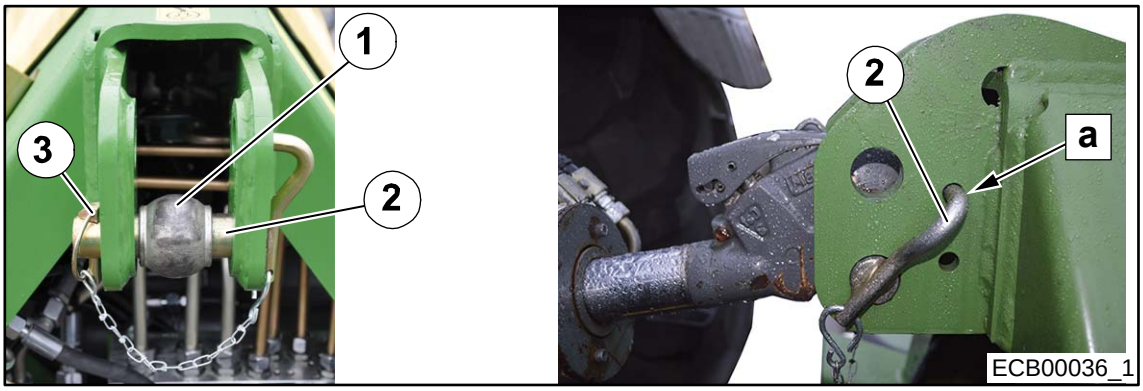

Fig. 10

- Insert the top link bolt (2) into the lower hole of the three-point hitch.
- Attach the ball sleeve (1) to the top link bolt (2).
- To prevent the top link bolt from turning, insert the anti-twist lock of the top link bolt into the bore hole (a).
- Secure the top link bolt with linch pin (3).

6.3.2 Checking space between tractor and machine

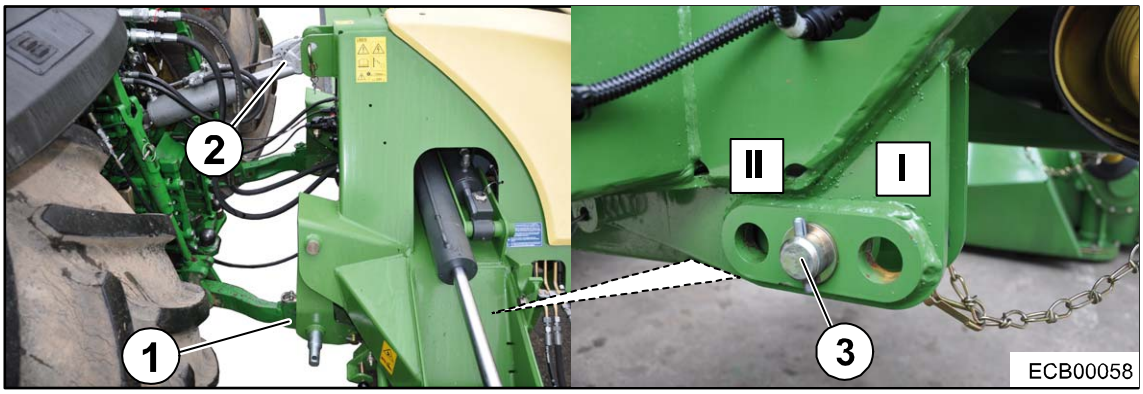

Fig. 11

If the space between the tractor and the machine is too narrow, increase it by shifting the pole protection mechanism.

To do this:

- Observe the safety instructions at the beginning of the section.
- Attach the machine onto the lower suspension arm (1) of the tractor.
- Hitch the top suspension arm (2) onto the three-point block.
- Check space.

If there is not enough space:

- Detach the machine.
- Remove the bolt (3) in the rear section of the pole protection mechanism.
- Shift the pole protection mechanism to another hole, replace the bolt and secure it.

Set the pole protection mechanism equally on the left and right.

Pos.I = smallest displacement to tractor

Pos.II = largest displacement to tractor

6.4 PTO shaft

6.4.1 Length adjustment

Danger! - Inadvertent uncoupling of the machine during road travel or work.

Effect: Danger to life, serious injuries or serious damage to the machine.

- Use extreme caution when attaching or detaching devices to or from the tractor! The accident prevention regulations must be complied with absolutely.
- In order to prevent swivelling of the machine during transport or work, the lower suspension arms on the tractor must be secured by limiting chains or bars. If the lower suspension arms (1) are equipped with catch hooks, the following items must be taken into consideration:

High forces develop in the lower suspension arm bolts (3) especially in the headland position. For this reason, the catch hooks must be in a flawless condition. Additionally, the catch hooks must be secured in the provided locking hole (4) against unwanted opening after the machine has been connected to the tractor.

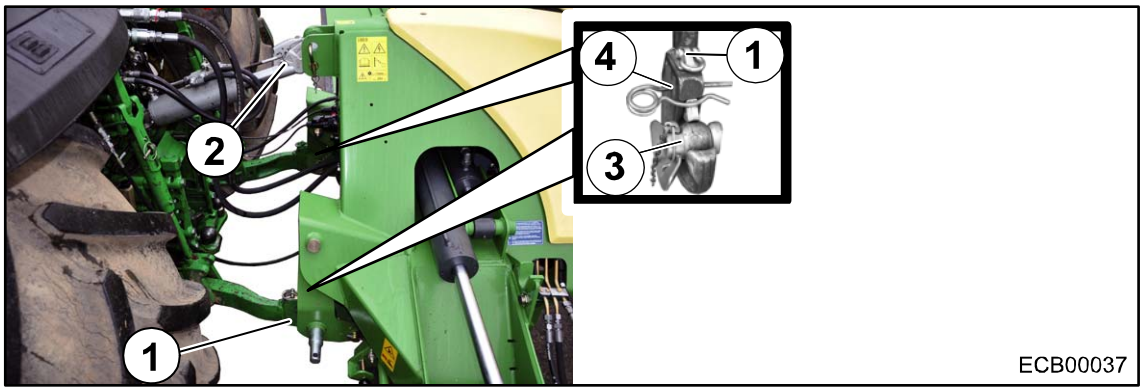

Fig. 12

- Attach the machine onto the lower suspension arm (1) of the tractor.
- Hitch the top suspension arm (2) onto the three-point block.

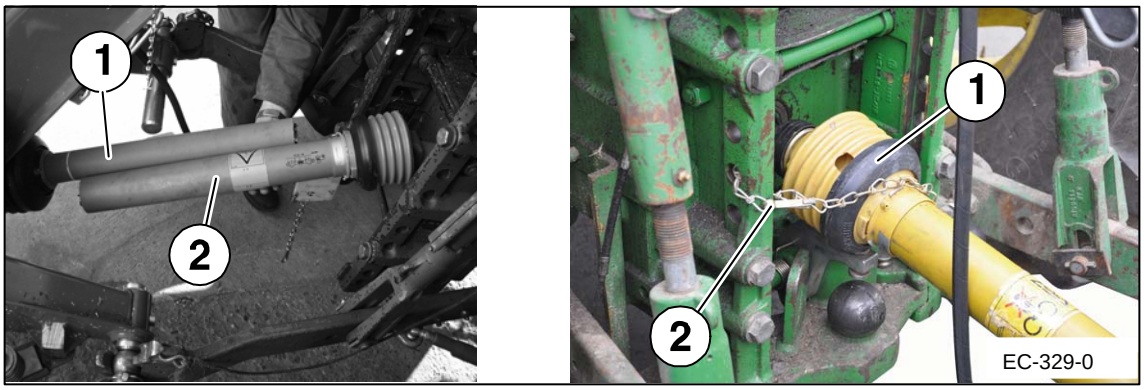

Fig.13

The length of the PTO shaft (1) must be adjusted.

- Disassemble the PTO shaft.
- Install each half (1) and (2) on the tractor and machine side respectively.
- Check the special section tubes and guard tubes.
- Shorten special section tubes and guard tubes to an extent that the PTO shaft can move freely in the shortest operating position.
- For additional operating instructions refer to the operating instructions of the PTO shaft manufacturer.

Caution! - Swivel range of the PTO shaft

Effect: Damage to the tractor or the machine

- Check the swivel range and clearance of the PTO shaft!

CAUTION! - Using a different tractor

Effect: Damage to the machine

When using the machine for the first time, every time the tractor is changed and when shifting the pole protection mechanism the cardan shaft length must be checked. If the length of the cardan shaft does not fit the tractor, be sure to follow the instructions in the section entitled 'Adjusting the length of the cardan shaft'.

6.4.2 Adjusting the hydraulic system

6.5 Load-sensing connection

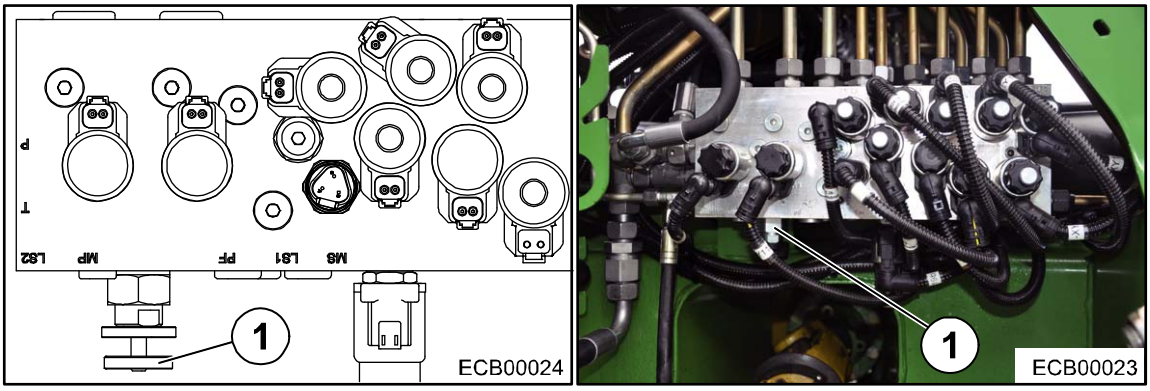

Fig. 14

The Comfort hydraulic system is load-sensing-capable.

The oil supply comes through the Power-Beyond system of the tractor hydraulics for use of the load-sensing system (further information can be obtained from the operating instructions provided by the manufacturer of the tractor).

Adapt the Comfort hydraulic system of the machine to the tractor. The hydraulic system is designed for continuous circulation. The adjustment is made by adjusting the hydraulic system screw on the control valve block of the machine. The control valve block is at the front and in the middle under the three-point block.

Note

The adjustment depends on the hydraulic system of the tractor and must be made while the machine is depressurised!

6.5.1 Operating the Machine without LS (Load-Sensing Connection)

Unscrew the system screw (1) as far as it will go for:

- Tractor with an open (constant-current) hydraulic system (for additional information, please refer to the tractor manufacturer's operating instructions)
- Tractors with LS pump and non-activated load-sensing system

Note

This adjustment is set when the unit leaves the factory.

6.5.2 Operating the Machine via LS (Load-Sensing Connection)

Screw the system screw (1) as far as it will go for:

- Tractors with closed (constant pressure or load sensing) Hydraulic system (For more information, please refer to the tractor manufacturer's operating instructions)
- Tractors with LS pump and message line that is connected

6.6 Checking Cross Conveyor Belt Right / Left for Firm Attachment

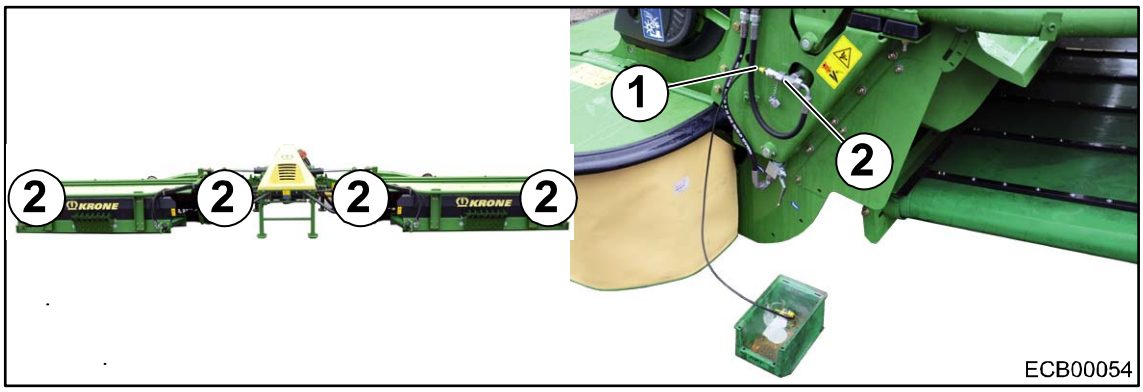

Fig. 15

After the machine has been assembled, the cross conveyor belts right and left must be checked for firm attachment in the transport position of the machine. The four lifting cylinders of the cross conveyor belts must be vented if the cross conveyor belts can be moved manually in transport position. If they are not vented, a collision may occur when the mowing units are folded up in the transport position.

- Move the machine to working position.
- Screw a suitable connecting piece (1) on the measurepoint minimess connection (2).

Collect escaping hydraulic oil in a suitable container.

- Raise / lower the cross conveyor belt from a safe distance until the hydraulic oil runs out bubble-free.
- Unscrew the connecting piece.

Repeat this process for all four measurepoint minimess connections.

7 Start-up

7.1 Mounting onto the Tractor

Warning - Impairment of the steerability of the tractor.

Effect: Damage to the tractor or the machine.

The attachment of implements at the front and rear must not cause exceedance of the max. permissible weight, of the permissible axle loads and of the carrying capacities of the tractor tyres. Even with a fitted rear-mounted accessory unit, the front axle must always be loaded with a minimum 20% service weight of the tractor.
Make sure that these prerequisites are met prior to driving.

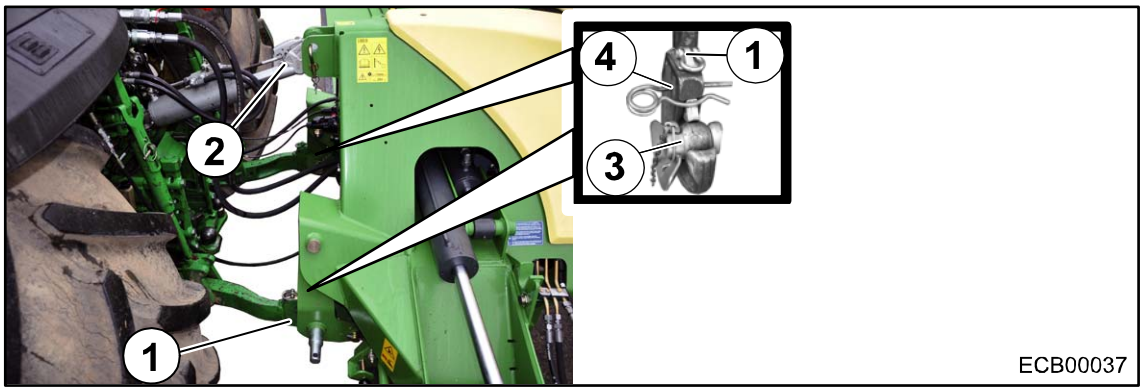

Fig. 16

- Attach the machine onto the lower suspension arm (1) of the tractor.
- Hitch the top suspension arm (2) onto the three-point block.

7.2 Hydraulics

7.2.1 Special Safety Instructions

Warning ! - Connection of the hydraulic line

Effect: severe injuries due to penetration of hydraulic oil under the skin.

- When connecting the hydraulic hoses to the hydraulic system of the tractor, the system must be relieved of the pressure on either side.
- Due to the risk of injury when searching for leaks, always use suitable tools and wear protective goggles.
- Seek medical help immediately should injuries occur! Danger of infection.
- Depressurise prior to uncoupling the hydraulic hoses and working on the hydraulic system!
- Check the hydraulic hose lines at regular intervals and replace them if damaged or worn! The replacement hoses must fulfil the technical requirements set by the equipment manufacturer.

7.3 Load-sensing connection

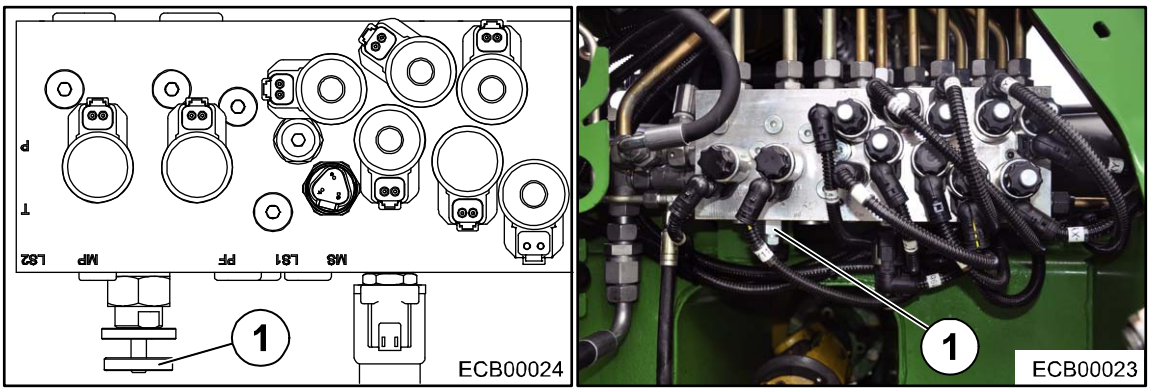

Fig. 17

The Comfort hydraulic system is load-sensing-capable.

The oil supply comes through the Power-Beyond system of the tractor hydraulics for use of the load-sensing system (further information can be obtained from the operating instructions provided by the manufacturer of the tractor).

Adapt the Comfort hydraulic system of the machine to the tractor. The hydraulic system is designed for continuous circulation. The adjustment is made by adjusting the hydraulic system screw on the control valve block of the machine. The control valve block is at the front and in the middle under the three-point block.

Note

The adjustment depends on the hydraulic system of the tractor and must be made while the machine is depressurised!

7.3.1 Operating the Machine without LS (Load-Sensing Connection)

Unscrew the system screw (1) as far as it will go for:

- Tractor with an open (constant-current) hydraulic system (for additional information, please refer to the tractor manufacturer's operating instructions)
- Tractors with LS pump and non-activated load-sensing system

Note

This adjustment is set when the unit leaves the factory.

7.3.2 Operating the Machine via LS (Load-Sensing Connection)

Screw the system screw (1) as far as it will go for:

- Tractors with closed (constant pressure or load sensing) Hydraulic system (For more information, please refer to the tractor manufacturer's operating instructions)
- Tractors with LS pump and message line that is connected

7.3.3 Connecting the hydraulic lines

Warning - If the hydraulic hoses are interchanged when connecting them to the hydraulic system of the tractor, the functions will be interchanged as well.

Effect: Injuries, serious damage to the machine

- Identify the hydraulic connections.
- Always ensure correct connection between the machine and the tractor.
- When engaging the hydraulic hose, the hydraulic control unit must be in float position or in "lowering" position.

Caution! - Soiling of the hydraulic system

Effect: Damages to the machine

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

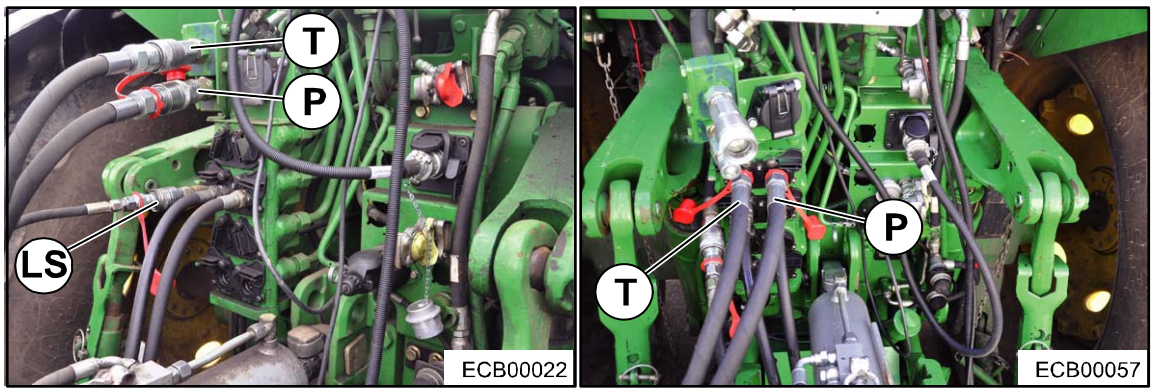

Fig. 18

Tractor with load-sensing pump and signal line (LS):

- Connect the pressure hose (P) to the Load Sensing connector on the tractor.
- Always connect the return flow to the connector for pressureless return flow.
- Connect the signal line (LS) to the connector for Load Sensing control.

or

Tractor with constant pressure pump:

- Connect the pressure hose (P) to the tractor.
- Always connect the return flow to the connector for pressureless return flow.
- Hang up the signal line (LS) on the holder on the machine.

or

Tractor with constant flow pump:

To operate the machine, the tractor must be equipped with a single-action control unit with free return flow to control the hydraulic system.

- Remove the hydraulic coupling and plug supplied as standard.
- Mount the components supplied (2x hydraulic plugs) on the hydraulic hose lines (P, T).
- Connect the hydraulic hose line to a single-action control unit on the tractor.
- Always connect the return flow to the connector for pressureless return flow.

7.4 Connecting to the KRONE ISOBUS CCI Terminal

Refer to the section on the KRONE ISOBUS Terminal ('Connecting the terminal') for information on connecting to the terminal.

The machine is then operated from the terminal.

For further information on machine operation:

- see Section 'KRONE ISOBUS Terminal'

Caution! - Connecting the electrical controls

Effect: Damage to the control unit

Before inserting the plugs, make certain the plugs and sockets are clean and dry. Dirt and moisture may result in short circuits!

7.5 Lighting

Danger! - Lighting system

Effect: Danger to life, serious injuries or serious damage to the machine.

- Before transporting on public roads, always connect the lighting system and perform a function check.
- Keep the lighting system clean. Soiled lights and spotlights impair road safety.
- Replace defective light bulbs or broken spotlights.
- When transporting on public highways, the machine must be in the transport position.

7.6 Lighting connection

To comply with the Road Traffic Licensing Regulations, the machine is equipped as follows by default:

- 3-chamber rear lamps (3) (direction indicator: reversing light and brake light)
- with red reflectors on the rear (4)
- with lateral yellow reflectors on the rear (5)

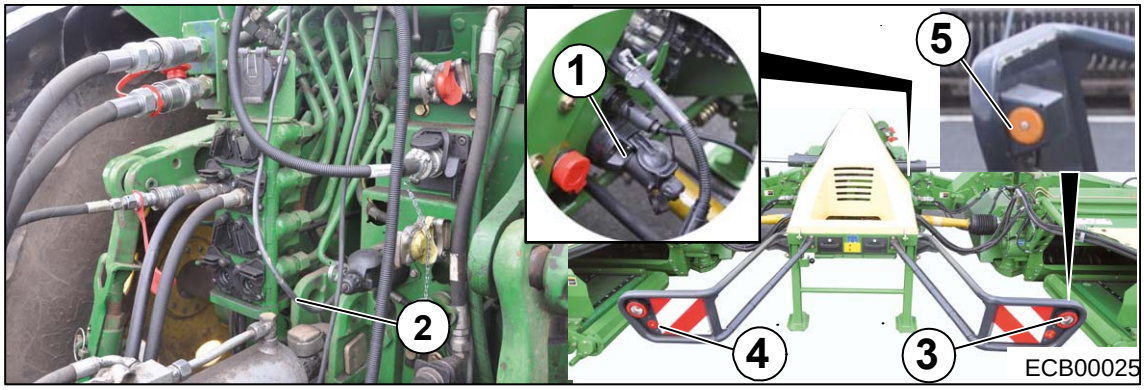

Fig. 19

The lighting system is connected via the 7-pin connection cable (2).

To do this:

- Insert the 7-pin connection cable plug (2) into the appropriate socket (1) of the machine.
- Insert the 7-pin connection cable plug (2) into the appropriate socket of the tractor.
- Position the cable so that it will not come in contact with the wheels.

Note

Before inserting the plugs, make certain the plugs and sockets are clean and dry. Dirt and moisture may result in short circuits!

7.7 PTO shaft

7.7.1 Special Safety Instructions

Danger! - Rotating PTO shaft

Effect: Danger to life or serious injuries

- Install or detach the PTO shaft only with the engine switched off and the ignition key removed.
- Secure the tractor against rolling.
- Make sure that the PTO shaft is coupled properly (the lock of the PTO shaft must have snapped in).
- Make sure that the protective devices are attached properly.
- Never use a PTO shaft, the protective devices of which have not been attached.
- Replace damaged protective devices immediately
- Attach the safety chain of the PTO shaft so that the guard tube does not rotate simultaneously with the PTO shaft.

Danger! - Incorrect PTO speed

Effect: Danger to life, serious injuries or damage to the machine.

- This machine may only be driven with a max. PTO speed of 1000 rpm.
- Before switching on the PTO, make sure that you have selected the correct PTO speed.

Caution! - Swivel range of the PTO shaft

Effect: Damage to the tractor or the machine

- Check the swivel range and clearance of the PTO shaft!

7.7.2 Install the PTO shaft

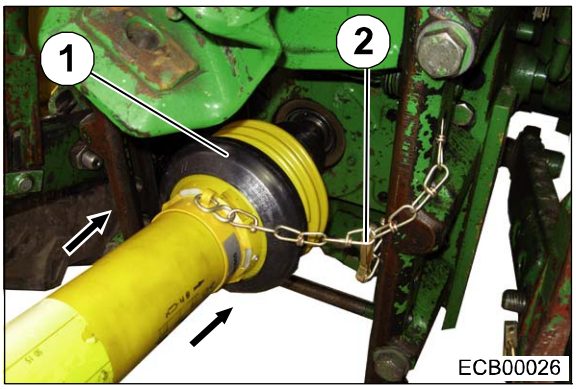

Fig. 20

- Slide the PTO shaft (1) onto the PTO end of the tractor and secure it.
- Secure the PTO shaft guard against turning with the retaining chain (2).

7.8 Intermediate PTO shaft

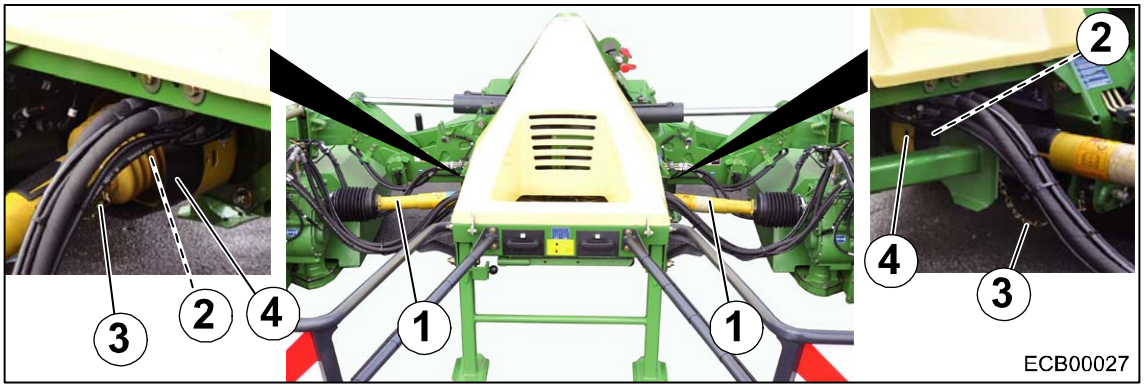

Fig. 21

Connect the intermediate cardan shafts (1) for the mowing unit drives with the overload couplings (2) towards the three-point block gearbox. Attach the retaining chains (3) to the three-point linkage (4) of the machine.

Note - Friction Clutch

Effect: Conserve functionality and increased service life

- The friction clutch (2) must be vented prior to commissioning and once a year prior to harvesting. (See section Before the Start of the New Season "Friction clutch")

7.9 Swivelling parking support into transport position

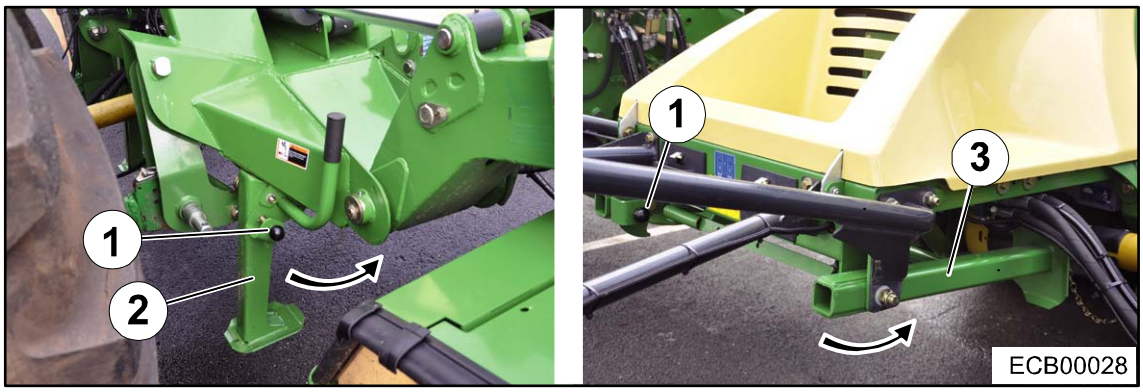

Fig. 22

After the machine is attached, swivel the parking supports into transport position.

- Use the three-point hydraulic system to raise the parking support a little.
- Swivel the front parking support (2) back for transport and lock it in place with the bolt (1).
- Swivel the rear parking support (3) forward for transport and lock it in place with the bolt (1).

8 KRONE ISOBUS Terminal

Note

In the operating instructions which follow, the terminal will also be referred to as the "control unit".

Caution! - Protect Control Unit.

Effect: Damage to the control unit

- The control unit must be protected against water.
- If the machine is not used for an extended period of time (for example during the winter), the control unit must be stored in a dry place.
- For mounting and repair jobs, especially for welding jobs on the machine, disconnect the power supply to the control unit. Overvoltage can damage the control unit.

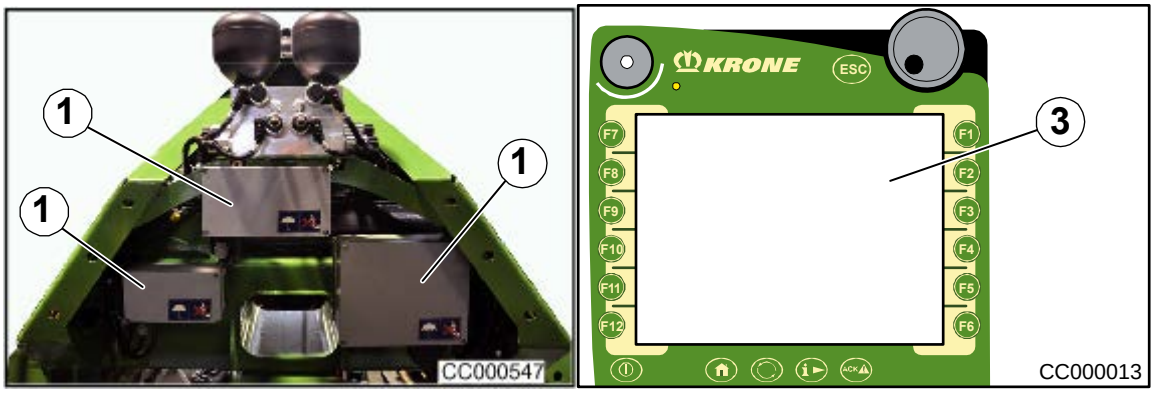

Fig. 23

The electronic equipment of the machine consists essentially of the job computers (1), the terminal (3) and the control and function elements. The number of job computers (1) is dependent on how the machine is equipped.

The job computers (1) are located behind the three-point block.

Their functions are:

- Control of the actuators installed on the machine
- Transfer of alarm messages
- Sensor/actuator diagnostics

The control unit (3) communicates information to the driver and performs settings to operate the machine. This information is received and further processed by the job computer.

8.1 Installing the terminal into cabin

Note

Please mind the terminal operating instructions included with delivery for the installation of the terminal into the tractor cabin.

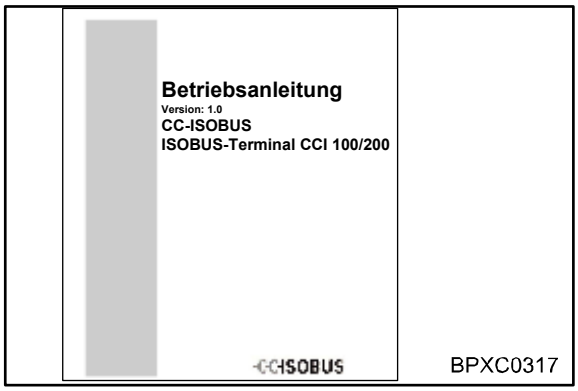

Fig. 24

8.2 ISOBUS Short Cut Button

DANGER! – risk of injury by running machine!

Your machine supports the ISOBUS short cut button.

- By actuation of the ISOBUS short cut button (1) the machine functions are switched off in order to be able to initiate a secure condition of the machine in hazardous situations. Process oriented procedures perform to the end. Therefore, machine parts continue to run after actuating the ISOBUS short cut button. This can lead to injuries
- The ISOBUS short cut button does in no case interfere with tractor functions, i.e. neither universal shaft functions nor hydraulic functions will be affected in any way! Therefore, the machine can continue to run after actuating the ISOBUS short cut button. This can lead to injuries

By hitting the ISOBUS Short Cut Button (as emergency pushbutton) (1) on the terminal a STOP signal is sent to the ISOBUS. This signal is evaluated by your connected ISOBUS machine in order to trigger automatic measures in a hazard situation.

Activating the ISOBUS Short Cut Button will call up the appropriate alarm screen on the display:

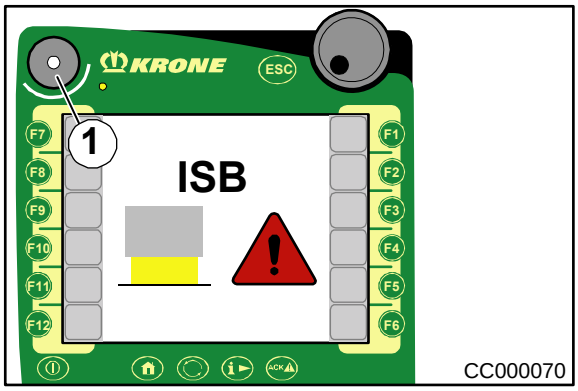

Fig. 25

The job computer will then block the following functions on the machine side.

- all hydraulic functions (e.g. raising / lowering the mowing units …)

CAUTION! – The cross conveyor continues running

Where a cross conveyor is fitted the cross conveyor drive is not switched off when the ISOBUS Short Cut Button is pressed.

If the ISOBUS short cut button is deactivated again, the following message will appear in the display:

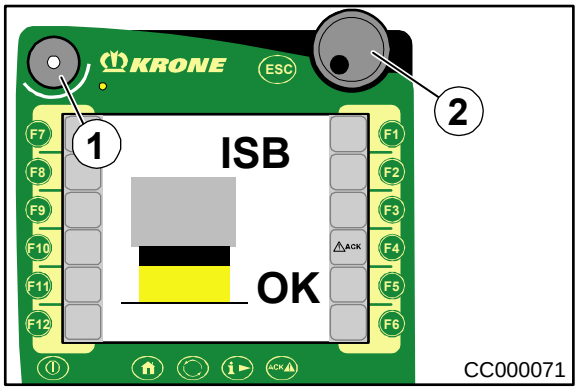

Fig. 26

The alarm mask is exited by actuating the function key ACK. It is only now that all functions of the machine are available again.

8.2.1 Display / Touchscreen

The terminal is equipped with a high quality touchscreen for menu navigation and entering data and text easily. Functions can be activated directly and values can be changed by touching the screen.

Note

Use the scroll wheel (2) to execute the same functions as via the touchscreen.

8.2.2 Connecting the Terminal (on tractors with integrated ISOBUS system)

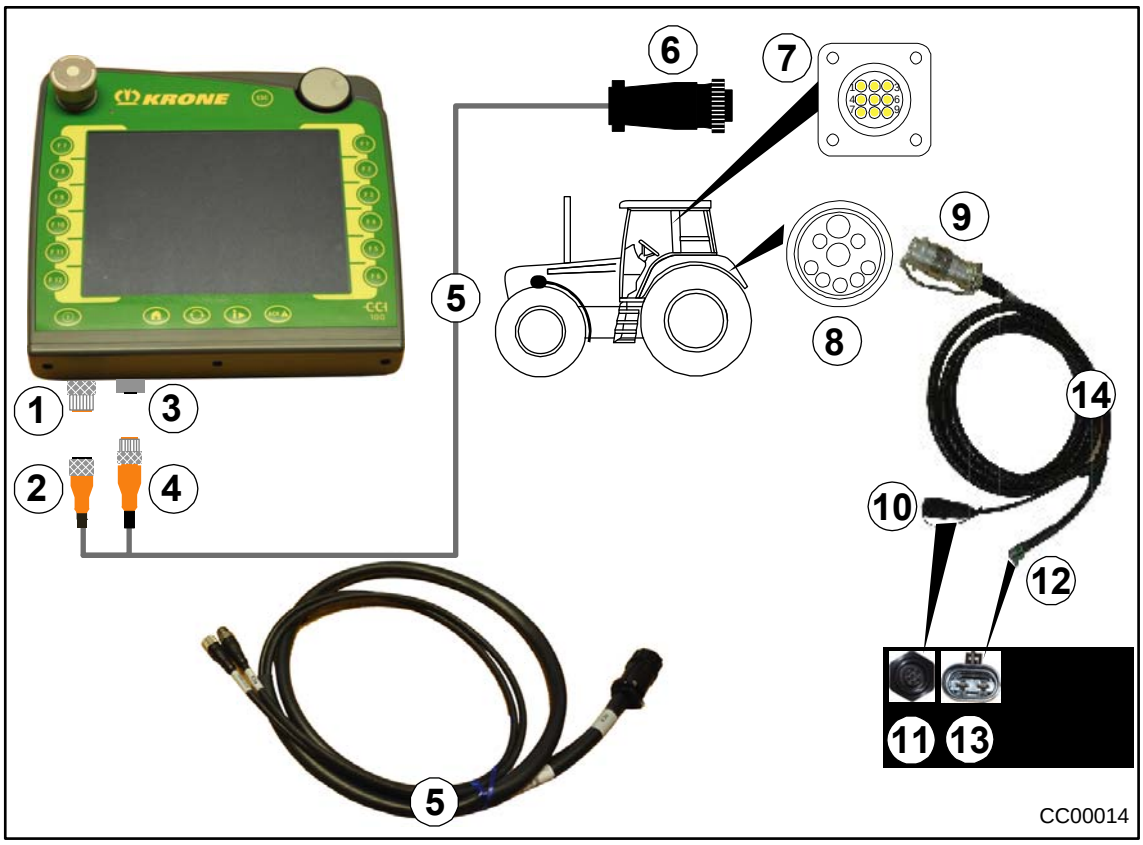

Fig. 27

Connection terminal to tractor

Note

The terminal is connected to the tractor via a special cable set (5) which can be ordered by stating the KRONE article no. 20 081 223 0.

- Connect plug (2) of cable set (5) with socket (1) (CAN1-IN) of the terminal.
- Connect plug (4) of cable set (5) with socket (3) (CAN1-out) of the terminal.
- Connect ISO plug (6) (9-pole) of cable set (5) with the ISO socket (7) (9-pole) located in the tractor cabin.

Connection tractor to machine

Note

The tractor is connected to the machine via cable set (14) which can be ordered by stating KRONE article no. 20 080 384 0.

- Connect ISO-plug (9) (9-pole) of cable set (14) with the outer ISO socket (8) (9-pole) on tractor side.
- Connect plug (10) (7-pole) of cable set (14) with socket (11) (7-pole) of the machine.
- Connect plug (12) (2-pole) of cable set (14) with socket (13) (2-pole) of the machine.

8.2.3 Connecting the Multi-Function Lever to the CCI Terminal (on Tractors with an Integrated ISOBUS System)

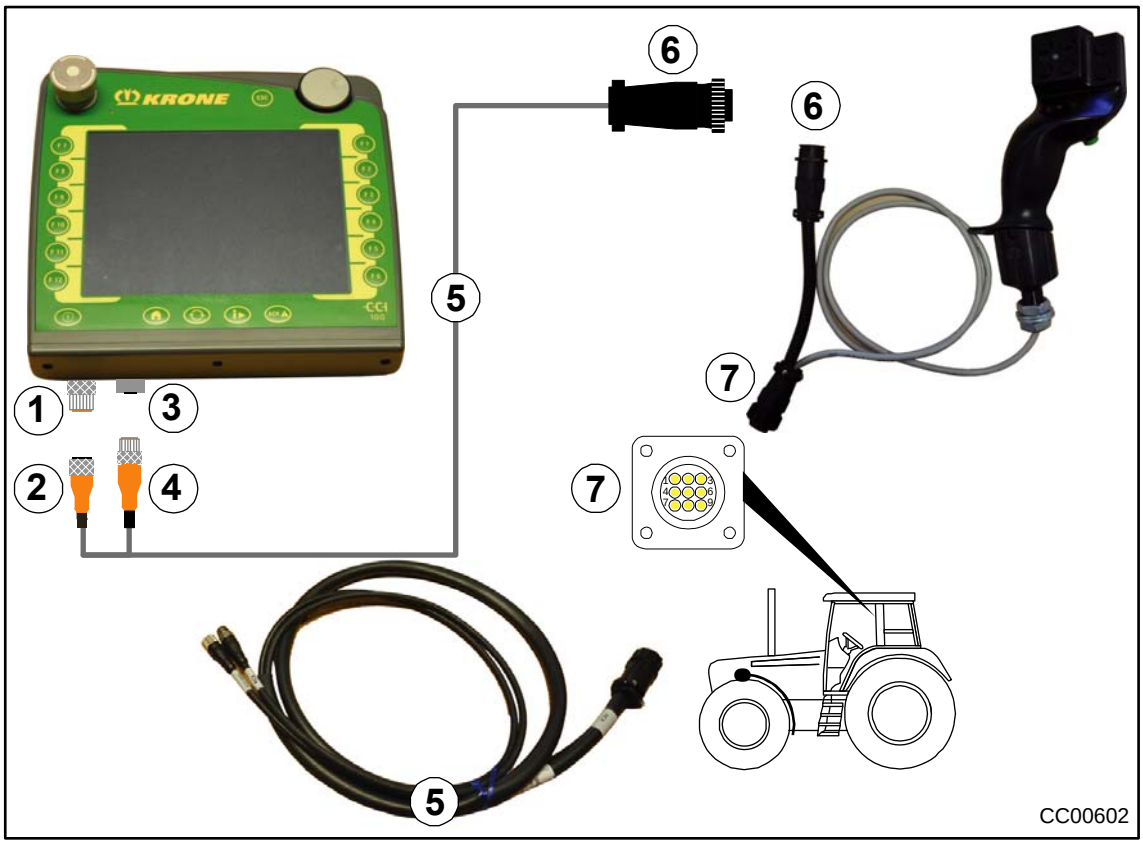

Fig. 28

Note

The connection of terminal to tractor is made via a special cable set (5) which can be ordered by stating the KRONE article no. 20 081 223 0.

- Connect plug (2) of cable set (5) with socket (1) (CAN1-IN) of the terminal
- Connect plug (4) of cable set (5) with socket (3) (CAN1-OUT) of the terminal
- Connect ISO plug (6) (9-pole) of cable set (5) with the ISO socket (6) (9-pole) of the multi-function lever
- Connect ISO plug (7) (9-pole) of multi-function lever with ISO socket (7) (9-pole) located in the tractor cabin

8.2.4 Connecting the terminal (on tractors without ISOBUS system)

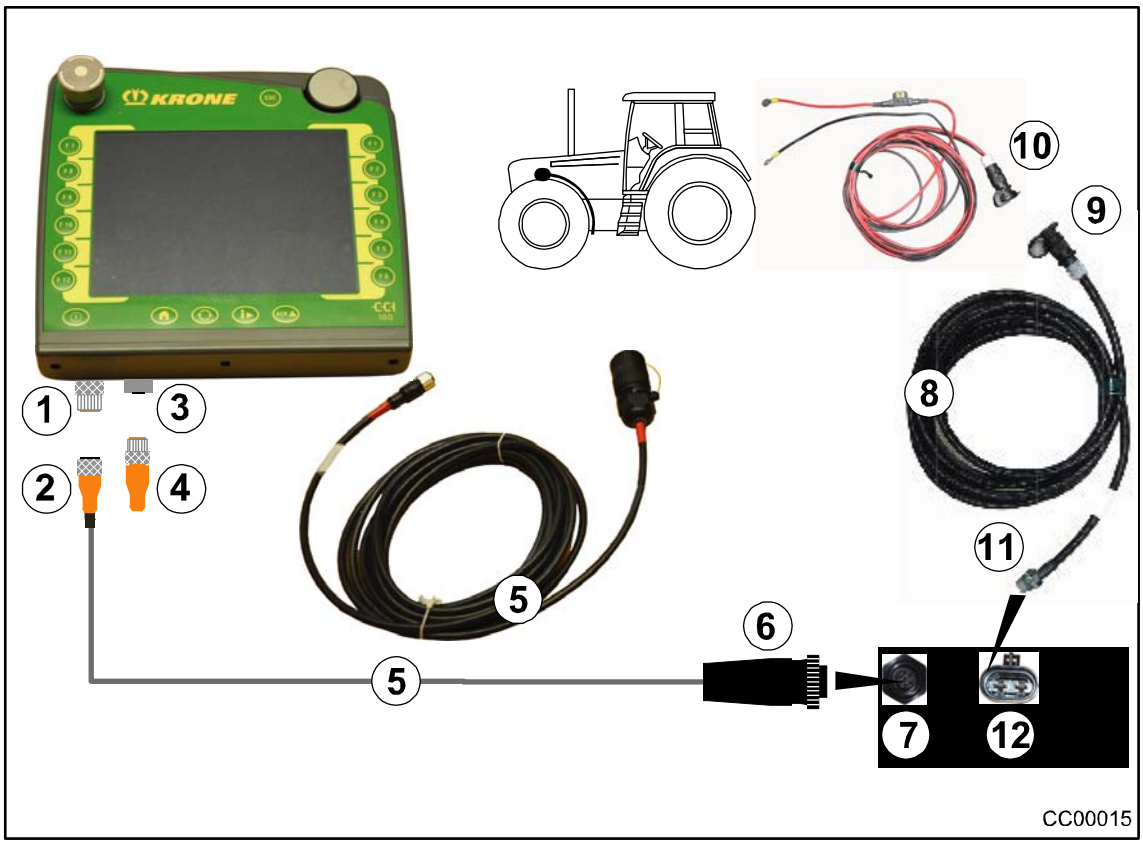

Fig. 29

Connection terminal to machine

Note

The connection of terminal to machine takes place via a provided cable set (5) (article no. 20 081 224 0).

- Connect plug (2) of cable set (5) with socket (1) (CAN1-IN) of the terminal
- Connect plug (6) (7-pole) of cable set (5) with socket (7) (7-pole) of the machine
- Connect connector plug (4) (article no. 00 302 300 0 included in scope of delivery) with socket (3) (CAN1-OUT) of the terminal

Connection tractor to machine

Note

The connection of tractor to machine takes place via a provided power cable (8) (article no. 20 080 601 0).

- Connect plug (9) of power cable (8) with continuous current socket (10) of the tractor
- Connect plug (11) (2-pole) of power cable (8) with socket (12) (2-pole) of the machine

8.2.5 Connecting the Multi-Function Lever to the CCI Terminal (on tractors without ISOBUS system)

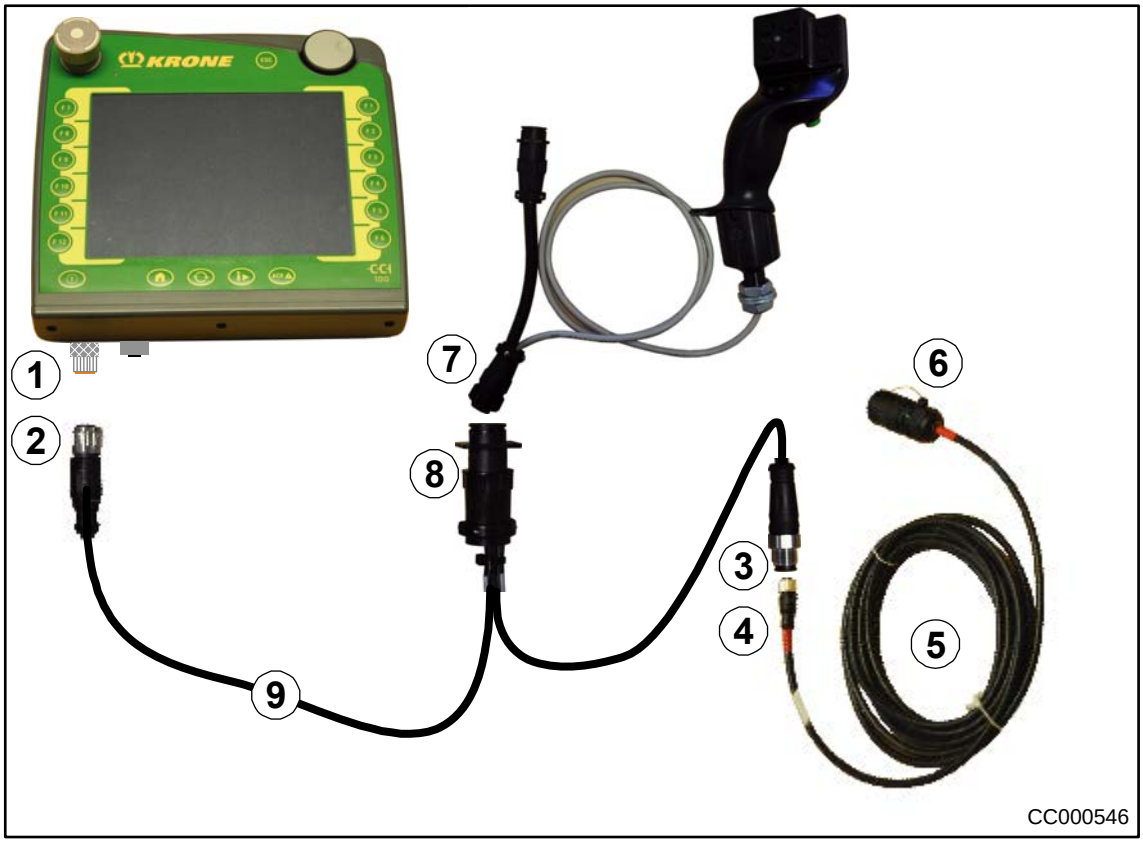

Fig. 30

Note

The terminal is connected to the multi-function lever via a special cable set (9) which can be ordered by stating the Krone product no. 20 081 676 0.

- Connect plug (2) of cable set (9) with the socket (1) (CAN1-IN) of the terminal
- Connect socket (3) of cable set (9) with the plug (4) of the cable set (5)
- Connect ISO plug (8) (9-pole) of cable set (9) with the ISO socket (7) (9-pole) of the multi-function lever
- Connect plug (6) (7-pole) of cable set (5) with the socket (7) (7-pole) of the machine

8.2.6 Switching the terminal on / off when the machine is not connected

Fig. 31

Note

Before switching the terminal on for the first time make sure that the connections on the device are fastened right and securely.

By pressing and holding (for approx. 2 sec.) the key (1) (ON/OFF) the terminal will be switched on or off.

Note

For further information on the functioning of the ISOBUS terminal CCI refer to the terminal operating instructions included with delivery.

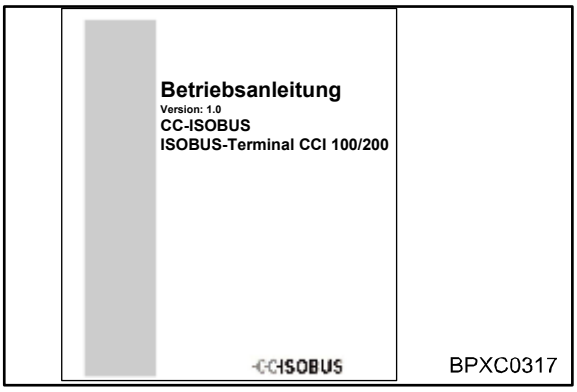

Fig. 32

8.2.7 Switching the terminal on / off when the machine is connected

8.2.7.1 Start screen

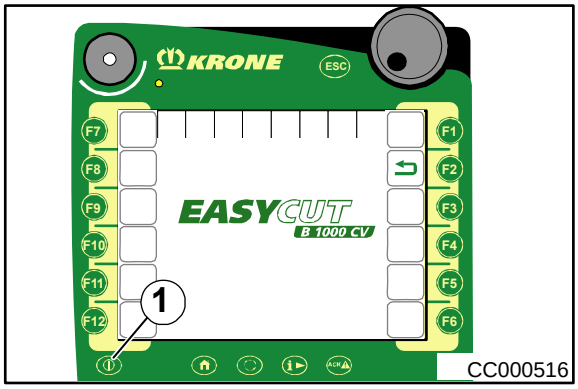

Fig. 33

Note

Before switching the terminal on for the first time make sure that the connections on the device are fastened right and securely.

By pressing and holding (for approx. 2 sec.) the key (1) (ON/OFF) the terminal will be switched on or off.

Note - Prior to first use

When switching on for the first time the configuration of the specific menu of the machine is uploaded into the terminal. The loading may take a few minutes. The configuration will be saved on the memory of the terminal.

- The “start-up screen” is shown in the display after the loading process

The terminal is now ready for operation.

8.3 Display design

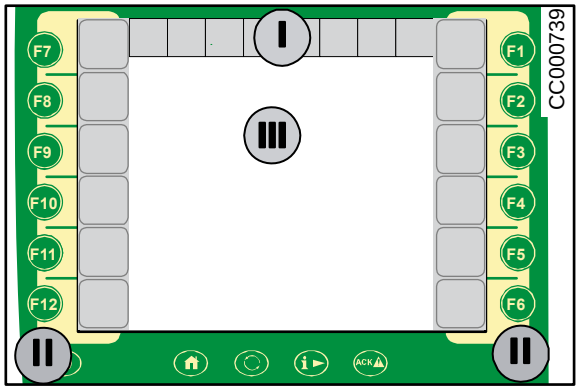

Fig. 34

The display on the terminal is divided into the following areas:

Status line (I)

– The status displays for the machine.

Function keys (II) (F1 to F12)

The machine is operated by activating a function key or pressing the respective softkey. The softkeys (graphics) associated with the function keys are touch-enabled.

Main window (III)

Values shown in colour (figures) in the main window can be selected using the touch function.

There are three main window views:

– The start screen.
– Manual mode.
– Automatic mode.

Status Line

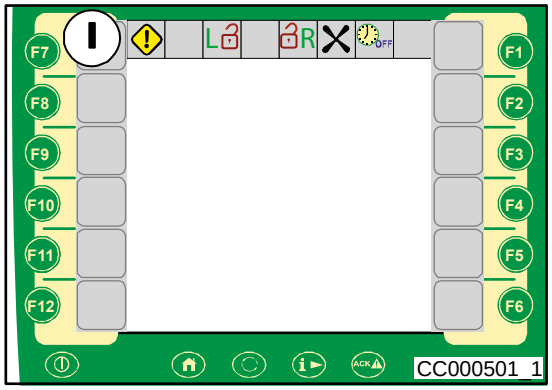

Fig. 35

Status line (I)

The top line (I) of the display shows current status indicators for the machine (depending on equipment):

Graphic	Meaning	Information
	Alarm message is pending	– Touch-sensitive, a mask opens with the existing alarm messages.
	Operating hours counter deactivated	
	Operating hours counter activated	
	Left-hand transport lock open	
	Right-hand transport lock open	
	Left-hand transport lock closed	
	Right-hand transport lock closed	
	Fan OFF	
	Fan cooling	
	Fan cleaning	
	Manual control	Depends on the set mode under menu "Setting manual/time/distance control".
	Distance control	
	Time control	
	Open the customer counter menu	– Touch-sensitive

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Description of the symbols (II) for the function keys (F1 to F12)

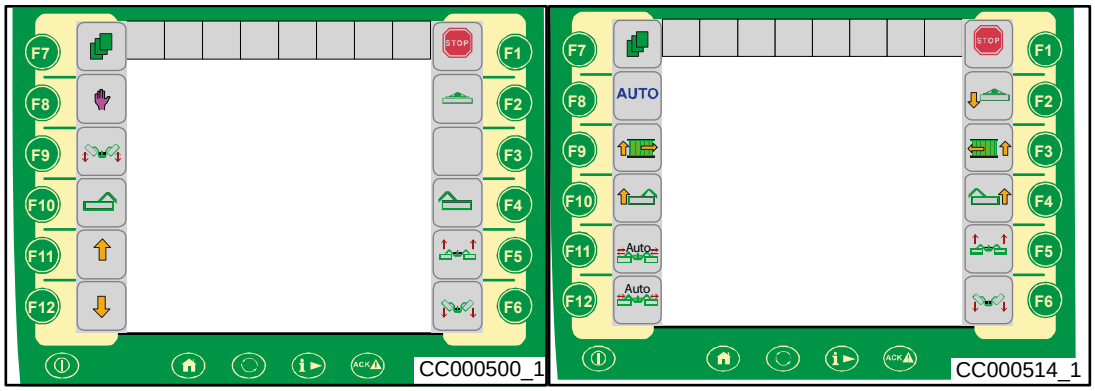


Fig. 36

Manual mode

Automatic Mode

Note

The available softkeys (graphics) for the function keys depend on the equipment of the machine. The following displayed softkeys are not always available.

Softkey	Meaning	Information
STOP	Stop	– All the currently running functions are stopped.
	Raise front mowing unit	– Available in the "Raising/Lowering front mowing unit" basic screen. – Available in automatic mode.
	Lower front mowing unit	
	Raise mowing units	– From working position to headland position
	Lower mowing units	– From headland position to working position.
	Switch to automatic mode	– The machine is in manual mode. – It is only possible to change to automatic mode when the lateral mowing units are in headland or working position and the PTO shaft is engaged.
AUTO	Switch to manual mode	– The machine is in automatic mode.
	Calling up the machine menu level	

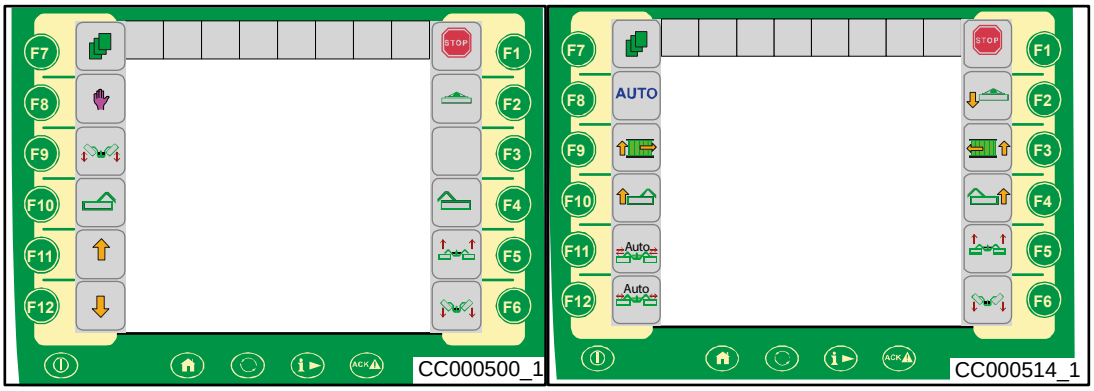


Fig. 37

Manual mode Automatic Mode

Softkey	Meaning	Information
	"Raising/Lowering mowing units" basic screen	– Only available in manual mode. – The basic screens are stored in the terminal to be displayed in rotation. They are accessible according to the machine version and the position of the lateral mowing units.
	"Raising/Lowering mowing units (inching)" basic screen	
	"Raising/Lowering front mowing unit" basic screen	
	"Working width/Overcut" basic screen	
	"Cross conveyor belt" basic screen	
	"Hydraulic system" basic screen	
	Preselect front mowing unit	– Only available in manual mode. – Preselected mowing units are displayed with colour highlighting, (, ,). – Press again to cancel the preselection.
	Preselect right-hand lateral mowing unit	
	Preselect left-hand lateral mowing unit	
	Preselect left-hand cross conveyor belt	– Only available in manual mode in the "Cross conveyor belt" basic screen. – Preselected cross conveyor belts are displayed with colour highlighting, (, ,).
	Preselect right-hand cross conveyor belt	
	Raise	– Only available in manual mode.
	Lower	
	Move to right	
	Move to left	
	Increase value	
	Reduce value	

Softkey	Meaning	Information
	Raise left-hand cross conveyor belt	– Only available in automatic mode.
	Lower left-hand cross conveyor belt	
	Raise right-hand cross conveyor belt	
	Lower right-hand cross conveyor belt	
	Raise left lateral mowing unit	
	Lower left lateral mowing unit	
	Raise right lateral mowing unit	
	Lower right lateral mowing unit	
	Set/Start lateral displacement	
	Set/Start overcut	

8.3.1 Displays in the main window

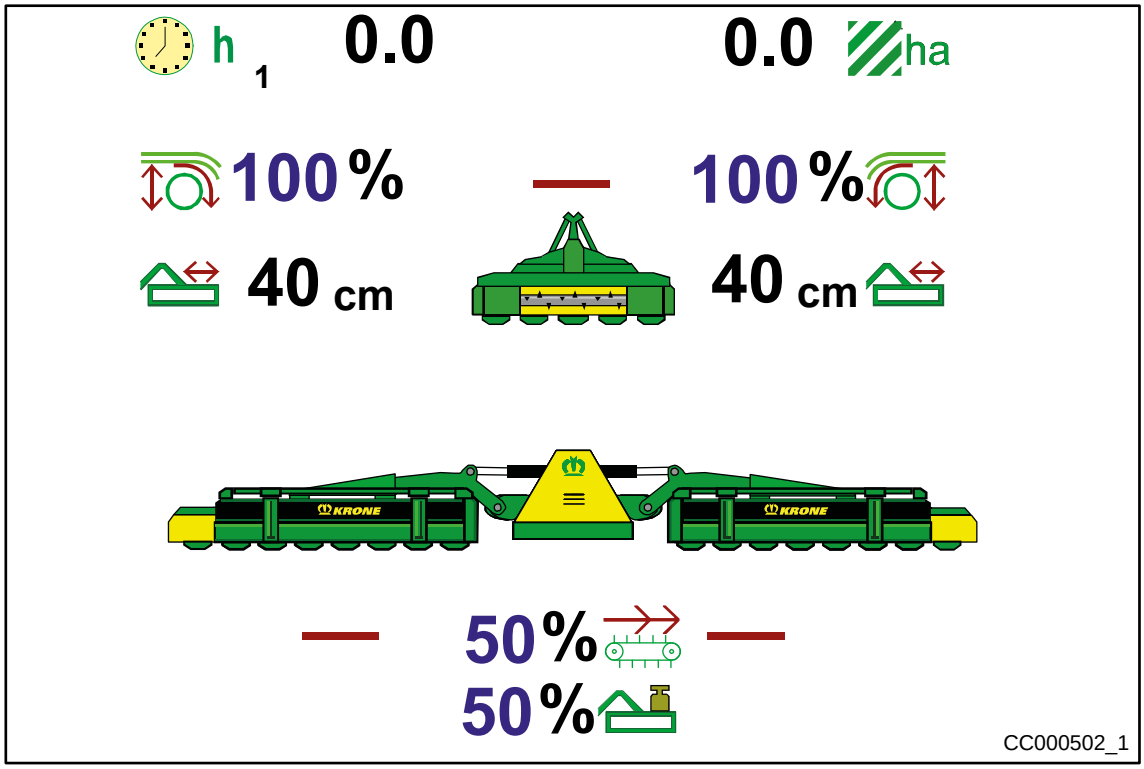


Fig. 38

Graphic	Meaning	Information
h	Operating hours counter	– The operating hours counter is running when the electronics are switched on and the operating hours counter is activated. – The adjoining number indicates the current customer counter
ha ac	Overall surface counter	– Appears when the signal 'forward movement' is sent from the tractor to the job computer of the machine. – Depends on the country setting in terminal.
	Setting left-hand swath roller height	– Only appears in automatic mode. If the "Manual setting" modes are selected under the "Setting swath roller height" sub-menu: – The number next to the graphic is touch-sensitive. – Setting range 0% to 100%.
	Setting right-hand swath roller height	
	Setting the speed of the cross conveyor belts	– Setting range (50% to 100%) – The number next to the graphic is touch-sensitive.
	Setting the mowing unit relief	– Setting range (0% to 100%) – The number next to the graphic is touch-sensitive.
	Setting lateral displacement	– Setting range (0 cm to 40 cm in 8 cm increments).

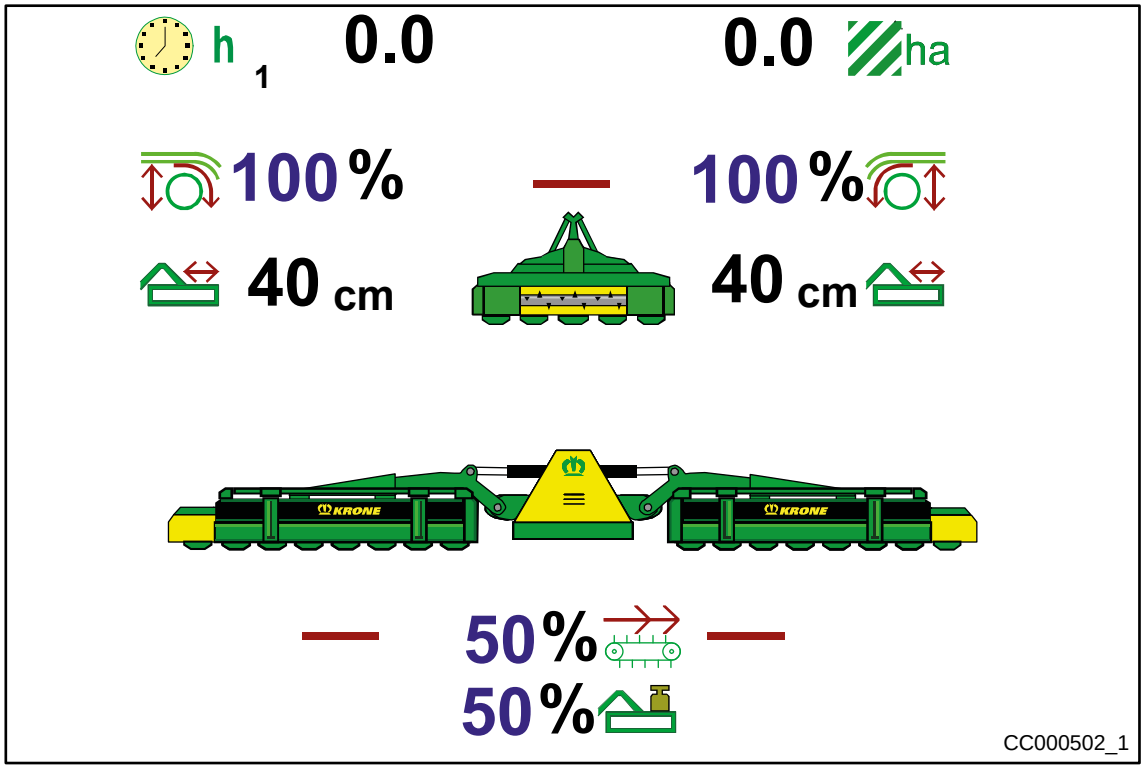


Fig. 39

Graphic	Meaning	Information
	Mowing unit is being raised	
	Mowing unit is being lowered	
	Right-hand mowing unit is deployed	– Lateral displacement
	Right-hand mowing unit is retracted	
	Left-hand mowing unit is deployed	
	Left-hand mowing unit is retracted	
	Mowing unit is being folded down	
	Mowing unit is being folded up	
	Cross conveyor belt is being lowered	
	Cross conveyor belt is being raised	
	Float position	
	Not in float position	

Graphic	Meaning	Information
	Left-hand swath roller is lowered	
	Left-hand swath roller is raised	
	Right-hand swath roller is lowered	
	Right-hand swath roller is raised	

Possible mowing unit information in main window

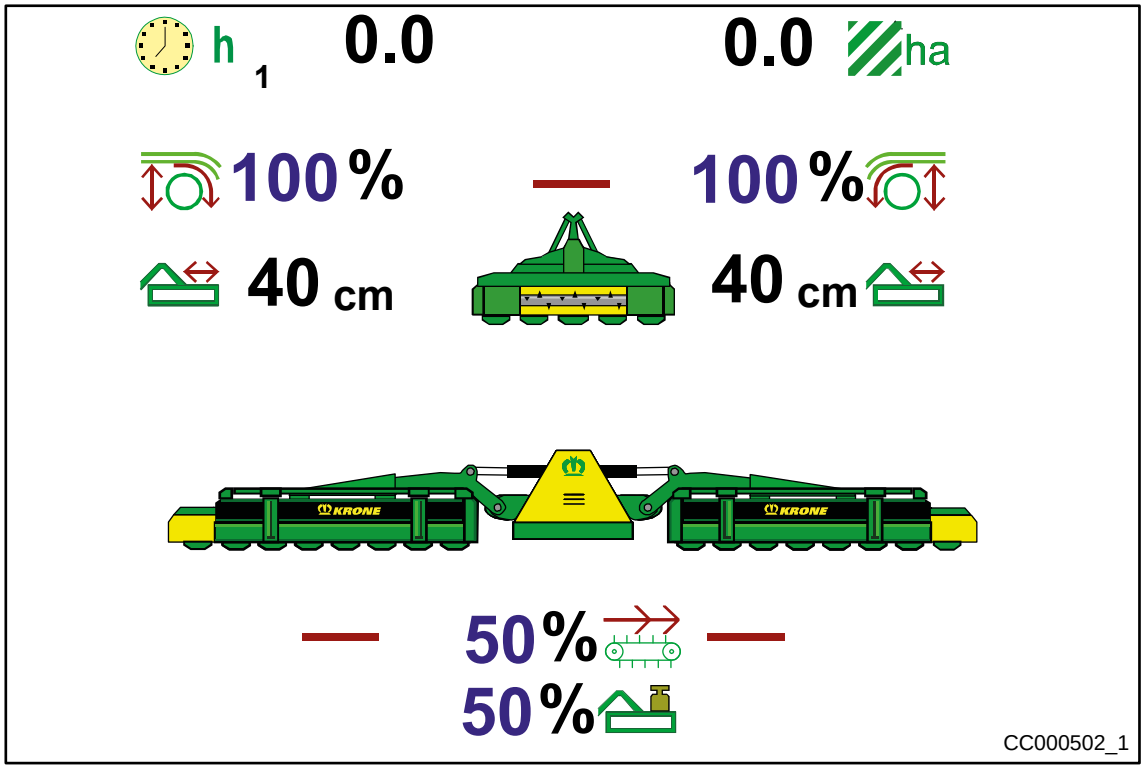
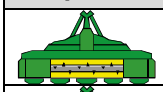
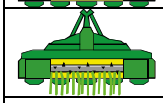
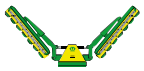
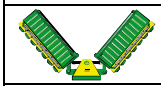
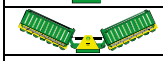


Fig. 40

Graphic	Meaning	Information
	Front mowing unit is raised	– Only appears when the front mowing unit is attached.
	Front mowing unit is in working position	
	The machine is in transport position	– Outrigger arms are fully retracted and secured. – For version without cross conveyor belt.
	The machine is not in final transport position	– Outrigger arms are not fully retracted and not secured. – For version without cross conveyor belt.
	The machine position is below the transport position	– For version without cross conveyor belt.
	The machine is in transport position	– Outrigger arms are fully retracted and secured. – For version with cross conveyor belt.
	The machine is not in final transport position	– Outrigger arms are not fully retracted and not secured. – For version with cross conveyor belt.
	The machine position is below the transport position	– For version with cross conveyor belt.

Graphic	Meaning	Information
	The machine position is above the headland position	– For version without cross conveyor belt.
	The machine is in headland position	
	The machine is in working position	
	The machine position is above the headland position	– For version with cross conveyor belt. – The cross conveyor belt is folded up.
	The machine is in headland position	
	The machine is in working position	
	The machine position is above the headland position	– For version with cross conveyor belt. – The cross conveyor belt is in working position.
	The machine is in headland position	
	The machine is in working position	

9 KRONE ISOBUS CCI 100 Terminal / manual mode

9.1 Bringing up the Basic Screens

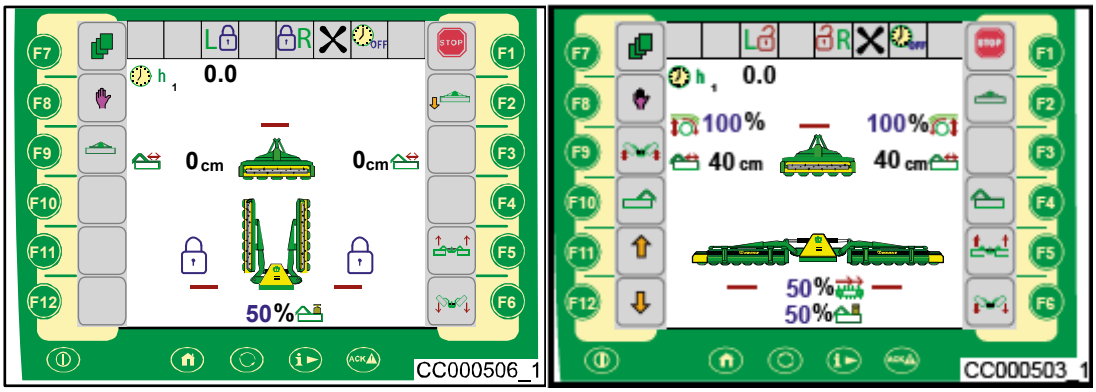


Fig. 41

"Raising/Lowering front mowing unit" basic screen

"Raising/Lowering mowing units" basic screen

- Pressing the function key invokes either the 'Raise/Lower front mowing unit' basic dialogue or the 'Raise/Lower mowing units' basic dialogue depending on the position of the lateral mowing units.

Calling up "Raising/Lowering front mowing unit" basic screen

Prerequisite:

– The lateral mowing units are in transport position and locked.

- To call the "Raising/Lowering front mowing unit" basic screen, press (, , , , ,) until is displayed in the terminal.

Calling up "Raising/Lowering mowing units" basic screen

Prerequisite:

– The lateral mowing units are either in the headland position or the working position.

- To call the "Raising/Lowering front mowing units" basic screen, press (, , , , ,) until is displayed in the terminal.

Calling up "Raising/Lowering front mowing units (inching)" basic screen

Prerequisite:

– The lateral mowing units are either in the headland position or the working position.

- To call the "Raising/Lowering front mowing units (inching)" basic screen, press (, , , , ,) until is displayed in the terminal.

Calling up the "Overcut/Lateral displacement" basic screen

Prerequisite:

– The lateral mowing units are either in the headland position or the working position.

- To call the "Overcut/Lateral displacement" basic screen, press (, , , , ,) until is displayed in the terminal.

Calling up "Cross conveyor belt (optional)" basic screen

Prerequisite:

– The mowing unit is equipped with a cross conveyor belt.
– The lateral mowing units are either in the headland position or the working position.

• To call the "Cross conveyor belt (optional)" basic screen, press (, , , , ,) until is displayed in the terminal.

Calling up the "Hydraulic system" basic screen

Prerequisite:

– The lateral mowing units are either in the working position or the transport position (locked).

• To call the "Hydraulic system" basic screen, press (, , , , ,) until is displayed in the terminal.

9.2 'Raise/Lower front mowing unit' basic dialogue

WARNING!

Danger of injury in the danger zone of the machine.

Persons may be gripped by hydraulically actuated machine parts. As a result, persons may be seriously injured.

- Instruct persons to keep away from the danger zone of tractor and machine.
- Switching on drives and engine is permissible only when there is no one in the danger zone.
- Press STOP to stop all executed machine functions in case of imminent danger.

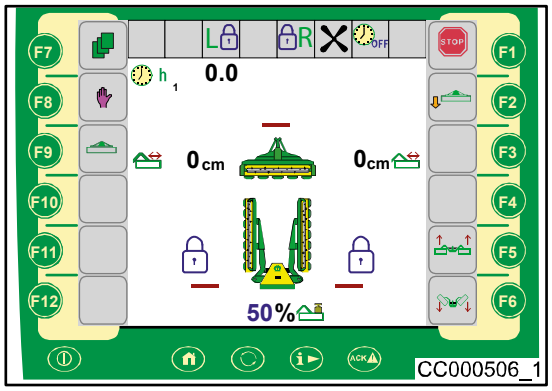


Fig. 42

The 'Raise/Lower front mowing unit' basic dialogue only appears when the front mowing unit is attached and the lateral mowing units are in transport position or above the headland position.

The front mowing unit alone can be used for partial mowing, to mow small parcels of crop or narrow sections in open fields. To this end the lateral mowing units must be in transport position and locked.

Prerequisite:

– The "Raising/Lowering front mowing unit" basic screen is called up.

9.2.1 Lowering front mowing unit

- To lower the front mowing unit, press and release .

9.2.2 Raising front mowing unit

- To raise the front mowing unit, press and release .

9.2.3 Lowering the lateral mowing units from the transport position to the headland position

- To lower both lateral mowing units, press and hold .

9.2.3.1 Protection for wild animals

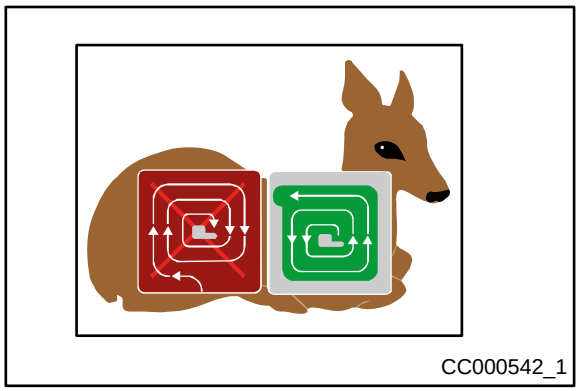


Fig. 43

Note

When the lateral mowing units are lowered from the transport position to the headland position, information appears on the display concerning the proper mowing technique. At the same time a warning tone is audible. The information disappears after several seconds.

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

This can be avoided by mowing according to the 'from the inside outwards' technique. Instead of mowing any edge sections at first, the operator drives straight into the middle of the field and then mows in a left-handed spiral from the inside to the outside. Animals can rely on their natural instincts to escape from the field without injury.

9.2.4 Raising the lateral mowing units from the headland position to the transport position

Raising both lateral mowing units

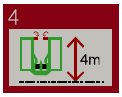
- To raise both lateral mowing units, press and hold .

Note

When the machine is folded up to the transport position information item 4 is always displayed.

- Perform a visual check that the side protection is folded up.
- Be aware of the transport height and lower the lower suspension arm further if necessary.

Information item 4:



Check the machine transport height.

Side guards must be folded up.

9.3 'Raise/Lower mowing units' basic dialogue

WARNING!

Danger of injury in the danger zone of the machine.

Persons may be gripped by hydraulically actuated machine parts. As a result, persons may be seriously injured.

- Instruct persons to keep away from the danger zone of tractor and machine.
- Switching on drives and engine is permissible only when there is no one in the danger zone.
- Press STOP to stop all executed machine functions in case of imminent danger.

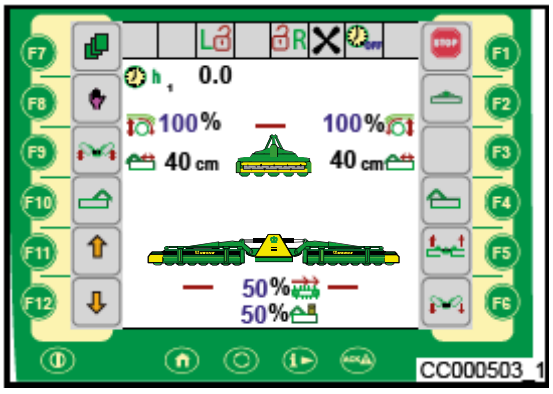


Fig. 44

The 'Raise/Lower mowing units' basic dialogue only appears when both lateral mowing units are in the headland position or working position.

Prerequisite:

– The "Raising/Lowering mowing units" basic screen is called up.

9.3.1 Lowering the lateral mowing units from the transport position to the headland position

- To lower both lateral mowing units, press and hold .

9.3.2 Lowering all mowing units from the headland position to the working position

Lowering of the lateral mowing units to the front mowing unit depends on the set mode under the menu "Setting manual/distance/time control".

In mode 1 manual control

Lower front mowing unit

- To lower the front mowing unit, press and hold .

Lowering lateral mowing units

- To lower the lateral mowing units, release .

In mode 2 time control and in mode 3 distance control

Lowering front mowing unit and lateral mowing units

- To lower the front mowing unit, press and release .

The lateral mowing units are lowered once the set time delay has elapsed or the set distance has been covered.

Lowering lateral mowing units before end of the time/distance control

- To raise the lateral mowing units, press again.

Note

If there is no front mowing unit attached, the lateral mowing units are deployed to the working position immediately.

9.3.3 Lowering individual mowing units from the headland position to the working position

Preselecting mowing units

- To preselect the mowing units, press , , .

Preselected mowing units are displayed with colour highlighting (, ,).

Lowering preselected mowing units

- To lower the mowing units, press and release .

The preselected mowing units are lowered to the working position.

9.3.4 Raising individual mowing units from the working position to the headland position

Preselecting mowing units

- To preselect the mowing units, press , , .

Preselected mowing units are displayed with colour highlighting (, ,).

Raising preselected mowing units

- To raise the mowing units, press and release .

The preselected mowing units are raised to the headland position.

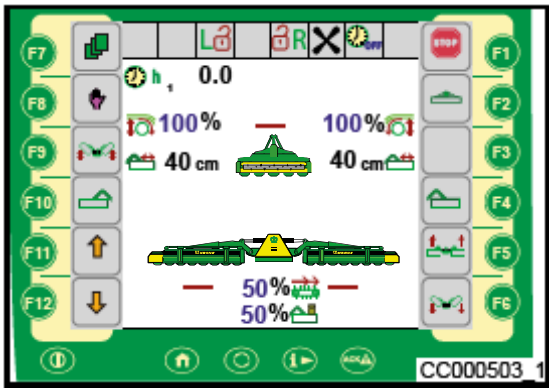


Fig. 45

9.3.5 Raising all mowing units from the working position to the headland position

Raising of the lateral mowing units to the front mowing unit depends on the set mode under the menu "Setting manual/distance/time control".

In mode 1 manual control

Raising front mowing unit

- To raise the front mowing unit, press and hold .

Raising lateral mowing units

- To raise the lateral mowing units, release .

In mode 2 time control and in mode 3 distance control

Raising front mowing unit and lateral mowing units

- To raise the front mowing unit, press and release .

The lateral mowing units are raised once the set time delay has elapsed or the set distance has been covered.

Raising lateral mowing units before end of the time/distance control

- To raise the lateral mowing units, press again.

Note

If there is no front mowing unit attached, the lateral mowing units are deployed to the headland position immediately.

9.3.6 Raising the lateral mowing units from the headland position to the transport position

Raising both lateral mowing units

- To raise both lateral mowing units, press and hold .

9.4 Basic Screen Lifting/Lowering Mowing Units Inching With the Key

WARNING!

Danger of injury in the danger zone of the machine.

Persons may be gripped by hydraulically actuated machine parts. As a result, persons may be seriously injured.

- Instruct persons to keep away from the danger zone of tractor and machine.
- Switching on drives and engine is permissible only when there is no one in the danger zone.
- Press STOP to stop all executed machine functions in case of imminent danger.

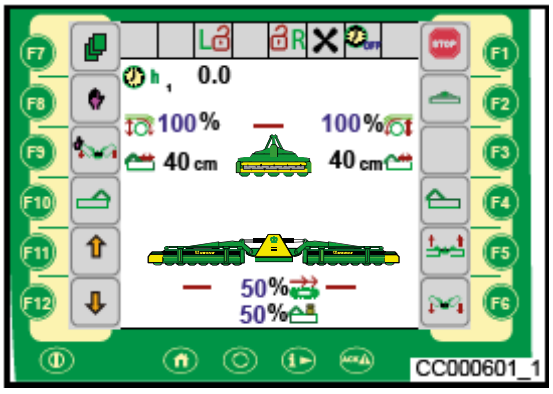


Fig. 46

The "Raising/Lowering mowing units (inching)" basic screen only appears when both lateral mowing units are in the headland position or the working position. The function keys for raising/lowering the mowing units in an inching fashion are stored in the "Raising/Lowering mowing units (inching)" basic screen.

Inching means: The function is executed as long as the function key or the softkey is actuated.

Prerequisite:

– The "Raising/Lowering mowing units (inching)" basic screen is called up.

9.4.1 Lowering the lateral mowing units from the transport position to the headland position

- To lower both lateral mowing units, press and hold .

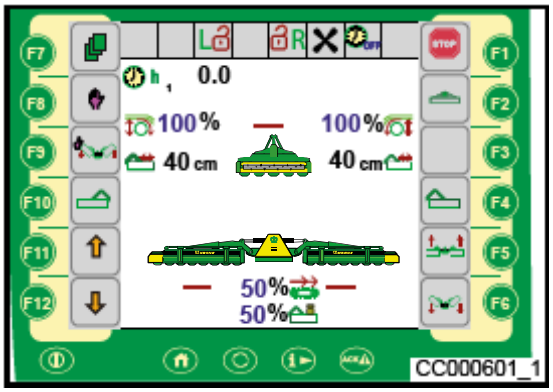


Fig. 47

9.4.2 Lowering all mowing units from the headland position to the working position

Lowering of the lateral mowing units to the front mowing unit depends on the set mode under the menu "Setting manual/distance/time control".

In mode 1 manual control

Lower front mowing unit

- To lower the front mowing unit, press and hold .

Lowering lateral mowing units

- To lower the lateral mowing units, release .

In mode 2 time control and in mode 3 distance control

Lowering front mowing unit and lateral mowing units

- To lower the front mowing unit, press and release .

The lateral mowing units are lowered once the set time delay has elapsed or the set distance has been covered.

Lowering lateral mowing units before end of the time/distance control

- To raise the lateral mowing units, press again.

Note

If there is no front mowing unit attached, the lateral mowing units are deployed to the working position immediately.

9.4.3 Lowering individual mowing units (inching)

Preselecting mowing units

- To preselect the mowing units, press , , .

Preselected mowing units are displayed with colour highlighting (, ,).

Lowering preselected mowing units (inching)

- To lower the mowing units, press and hold .

Note

Mowing units must not be in float position anymore.

9.4.4 Raising individual mowing units (inching)

Preselecting mowing units

- To preselect the mowing units, press , , .

Preselected mowing units are displayed with colour highlighting (, ,).

Raising mowing units (inching)

- To raise the mowing units, press and hold .

Note

Mowing units must not be in float position anymore.

9.4.5 Raising all mowing units from the working position to the headland position

Raising of the lateral mowing units to the front mowing unit depends on the set mode under the menu "Setting manual/distance/time control".

In mode 1 manual control

Raising front mowing unit

- To raise the front mowing unit, press and hold .

Raising lateral mowing units

- To raise the lateral mowing units, release .

In mode 2 time control and in mode 3 distance control

Raising front mowing unit and lateral mowing units

- To raise the front mowing unit, press and release .

The lateral mowing units are raised once the set time delay has elapsed or the set distance has been covered.

Raising lateral mowing units before end of the time/distance control

- To raise the lateral mowing units, press again.

Note

If there is no front mowing unit attached, the lateral mowing units are deployed to the headland position immediately.

9.4.6 Raising the lateral mowing units from the headland position to the transport position

Raising both lateral mowing units

- To raise both lateral mowing units, press and hold .

9.5 Overcut / Lateral displacement basic dialogue

WARNING!

Danger of injury in the danger zone of the machine.

Persons may be gripped by hydraulically actuated machine parts. As a result, persons may be seriously injured.

- Instruct persons to keep away from the danger zone of tractor and machine.
- Switching on drives and engine is permissible only when there is no one in the danger zone.
- Press STOP to stop all executed machine functions in case of imminent danger.

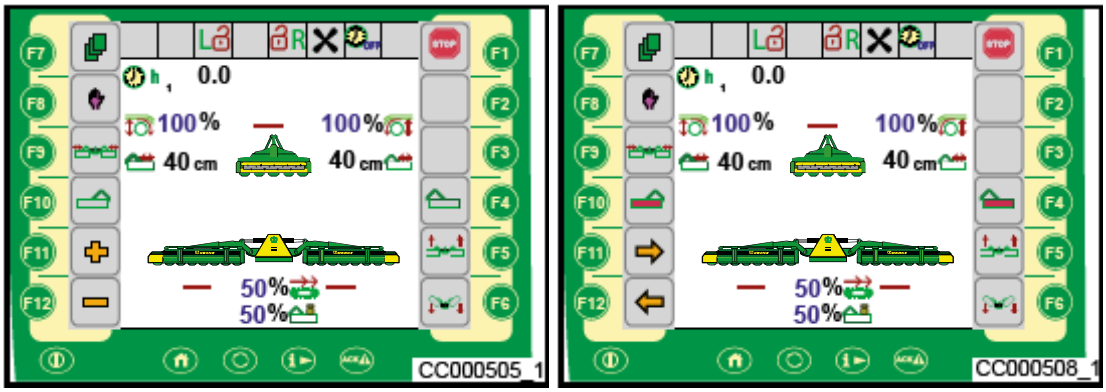


Fig. 48

Overcut Lateral displacement

The overcut basic dialogue can be used to adjust the working width of the lateral mowing units in relation to the front mowing unit such that no crop sections are left standing when driving straight ahead / round bends.

If both lateral mowing units are preselected, the lateral mowing units shift to the left or right simultaneously (lateral displacement).
The lateral displacement function allows both lateral mowing units to be shifted to the right or left at the same time, so that when mowing on a slope no crop sections remain standing.

The 'Overcut / Lateral displacement' basic dialogue can only be used when both lateral mowing units are in the headland position or working position.

Prerequisite:

– The "Overcut/Lateral displacement" basic screen is called up.

9.5.1 Increasing/Decreasing overcut

Only one lateral mowing unit should be preselected to ensure the overcut can be set.

- To preselect a lateral mowing unit, press or .

The preselected sofkey is displayed with colour highlighting (,).

- To increase the overcut, press .
- To reduce the overcut, press .

9.5.2 Increasing/Decreasing lateral displacement

In order to be able to set the lateral displacement, both lateral mowing units must be preselected.

To preselect both lateral mowing units, press and .

The preselected softkeys are displayed with colour highlighting (, ,).

- To move both mowing units to the right, press .
- To move both mowing units to the left, press .

9.6 Cross conveyor basic dialogue (optional)

WARNING!

Danger of injury in the danger zone of the machine.

Persons may be gripped by hydraulically actuated machine parts. As a result, persons may be seriously injured.

- Instruct persons to keep away from the danger zone of tractor and machine.
- Switching on drives and engine is permissible only when there is no one in the danger zone.
- Press STOP to stop all executed machine functions in case of imminent danger.

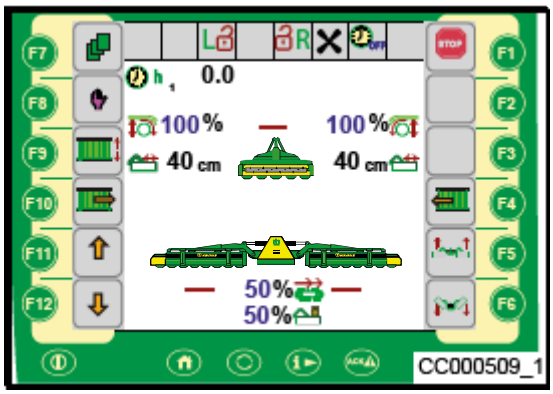


Fig. 49

Prerequisite:

– The "Raising/Lowering cross conveyor belt" basic screen is called up.

9.6.1 Raising/Lowering right-hand cross conveyor belt

Preselecting cross conveyor belt

- To preselect the right-hand cross conveyor belt, press .

The softkey is displayed with colour highlighting.

Raising

- To raise the cross conveyor belt, press and hold .

Lowering

- To lower the cross conveyor belt, press and hold .

9.6.2 Raising/Lowering left-hand cross conveyor belt

Preselecting cross conveyor belt

To preselect the left-hand cross conveyor belt, press .
The softkey is displayed with colour highlighting.

Raising

- To raise the cross conveyor belt, press and hold .

Lowering

- To lower the cross conveyor belt, press and hold .

9.6.3 Raising/Lowering both cross conveyor belts simultaneously

Preselecting cross conveyor belts

To preselect both cross conveyor belts, press and .
The softkeys are displayed with colour highlighting.

Raising

- To raise both cross conveyor belts, press and hold .

Lowering

- To lower both cross conveyor belts, press and hold .

9.6.4 Speed control of the cross conveyor belts

The speed of the cross conveyor belts can be increased or reduced infinitely during operation.

- To change the speed of the cross conveyor belts, press the value in front of the softkey.

The input mask opens.

- Increase or decrease the value.
- Acknowledge the input with "OK".

9.7 Hydraulic system basic dialogue

WARNING!

Danger of injury in the danger zone of the machine.

Persons may be gripped by hydraulically actuated machine parts. As a result, persons may be seriously injured.

- Instruct persons to keep away from the danger zone of tractor and machine.
- Switching on drives and engine is permissible only when there is no one in the danger zone.
- Press STOP to stop all executed machine functions in case of imminent danger.

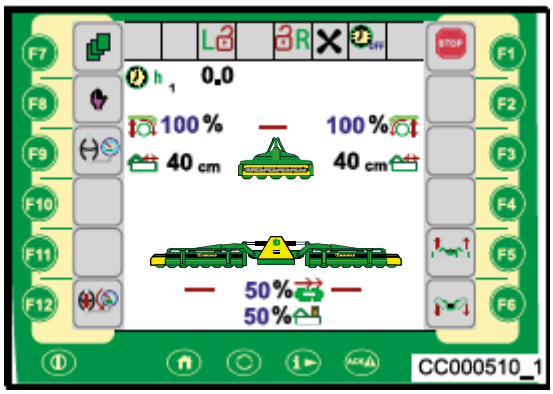


Fig. 50

Before you disconnect the lateral mowing units from the tractor, depressurise the hydraulic system completely so as to avoid difficulties when reconnecting the machine to the tractor the next time.

Prerequisite:

– The "Hydraulic system" basic screen is called up.

Relieving all pressure from the hydraulic system

- To depressurise the hydraulic system, press .

All valves are opened for several seconds.

Changing to automatic mode

- To change to automatic mode, press .

The AUTO symbol appears on the display (automatic mode).

This page has been left blank deliberately!!

10 KRONE ISOBUS CCI 100 Terminal / automatic mode

WARNING!

Danger of injury in the danger zone of the machine.

Persons may be gripped by hydraulically actuated machine parts. As a result, persons may be seriously injured.

- Instruct persons to keep away from the danger zone of tractor and machine.
- Switching on drives and engine is permissible only when there is no one in the danger zone.
- Press STOP to stop all executed machine functions in case of imminent danger.

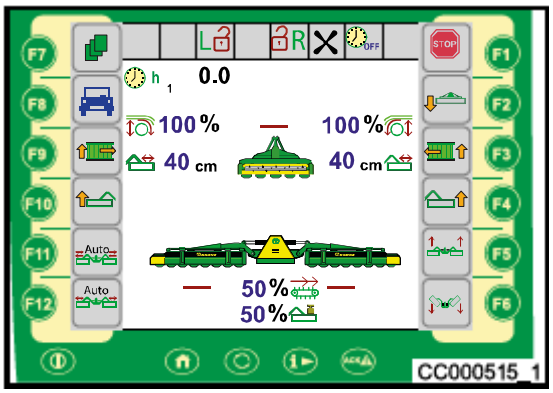


Fig. 51

10.1.1 Lowering front mowing unit

- To lower the front mowing unit, press and release .

10.1.2 Raising front mowing unit

- To raise the front mowing unit, press and release .

10.1.3 Raising/Lowering right-hand cross conveyor belt

- To lower the cross conveyor belt to the working position, press and release .

The cross conveyor belt drive switches on automatically.

- To raise the cross conveyor belt, press and release .

The cross conveyor belt drive switches off automatically.

10.1.4 Raising/Lowering left-hand cross conveyor belt

- To lower the cross conveyor belt to the working position, press and release .

The cross conveyor belt drive switches on automatically.

- To raise the cross conveyor belt, press and release .

The cross conveyor belt drive switches off automatically.

10.1.5 Speed control of the cross conveyor belts

The speed of the cross conveyor belts can be increased or reduced infinitely during operation.

- To change the speed of the cross conveyor belts, press the value in front of the softkey.

The input mask opens.

- Increase or decrease the value.
- Acknowledge the input with "OK".

10.1.6 Raising/Lowering individual lateral mowing units

Lowering right-hand lateral mowing unit from headland position to working position

- To lower the unit, press and release .

Raising right-hand lateral mowing unit from working position to headland position

- To raise the unit, press and release .

Lowering left-hand lateral mowing unit from headland position to working position

- To lower the unit, press and release .

Raising left-hand lateral mowing unit from working position to headland position

- To raise the unit, press and release .

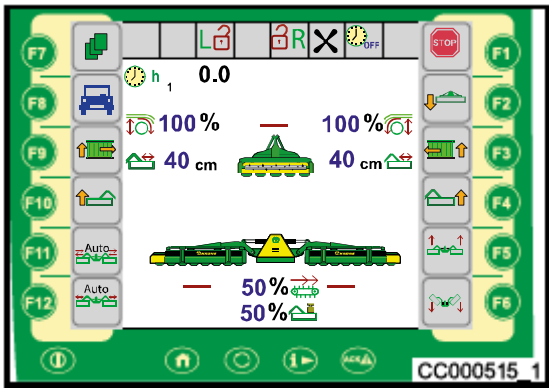


Fig. 52

10.1.7 Lowering all mowing units from the headland position to the working position

Lowering of the lateral mowing units to the front mowing unit depends on the set mode under the menu "Setting manual/distance/time control".

In mode 1 manual control

Lower front mowing unit

- To lower the front mowing unit, press and hold .

Lowering lateral mowing units

- To lower the lateral mowing units, release .

In mode 2 time control and in mode 3 distance control

Lowering front mowing unit and lateral mowing units

- To lower the front mowing unit, press and release .

The lateral mowing units are lowered once the set time delay has elapsed or the set distance has been covered.

Lowering lateral mowing units before end of the time/distance control

- To raise the lateral mowing units, press again.

Note

If there is no front mowing unit attached, the lateral mowing units are deployed to the working position immediately.

10.1.8 Raising all mowing units from the working position to the headland position

Raising of the lateral mowing units to the front mowing unit depends on the set mode under the menu "Setting manual/distance/time control".

In mode 1 manual control

Raising front mowing unit

- To raise the front mowing unit, press and hold .

Raising lateral mowing units

- To raise the lateral mowing units, release .

In mode 2 time control and in mode 3 distance control

Raising front mowing unit and lateral mowing units

- To raise the front mowing unit, press and release .

The lateral mowing units are raised once the set time delay has elapsed or the set distance has been covered.

Raising lateral mowing units before end of the time/distance control

- To raise the lateral mowing units, press again.

Note

If there is no front mowing unit attached, the lateral mowing units are deployed to the headland position immediately.

10.1.9 Increasing/Decreasing overcut

The overcut allows the working width of the lateral mowing units to be adjusted in relation to the front mowing unit such that no crop sections are left standing when driving straight ahead/round bends.
Two separately saved values can be approached for the overcut. (e.g. straight ahead/round bends). The values are entered in the menu "Setting overcut".

When pressing the value in front of the ( ) symbol in the main window, an input mask opens and the overcut can be increased or decreased infinitely during operation.

Approaching first value

- To approach the first value, press

once.

Approaching second value

- To approach the second value, press

again.

Setting overcut during operation

- To set the overcut, touch the number in front of .

The input mask opens.

- Increase or decrease the value.
- Acknowledge the input with "OK".

Calling up "Setting overcut" sub-menu

- To call up the sub-menu, press and hold

.

The "Setting overcut" sub-menu is displayed.

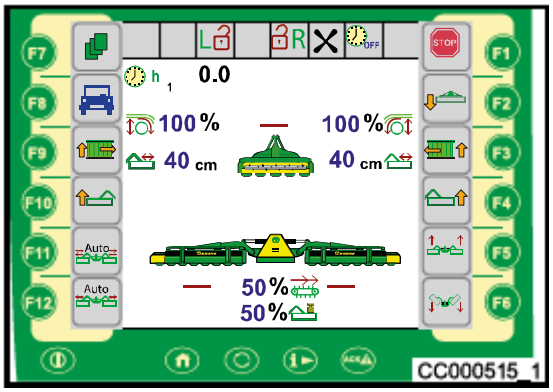


Fig. 53

10.1.10 Presetting Width Shift

The both lateral mowers can be moved simultaneously to the right or to the left (round trip) via width shift so that no crop residues remain when mowing on slopes. Enter the values in “Width Shift” menu.

INFORMATION: With swath rolls design

In order to preset the swath rolls via function “Presetting Width Shift”, the following conditions must be fulfilled:

- In menu “Setting Mode for Swath Roll Height”, mode 2/2 “Setting Swath Rolls Manually” must be selected.
- In menu “Setting the Width Shift”, the values (A) must be set to the same value.

Preset width shift right.

- In order to preset width shift right, press Auto once.

Preset width shift left.

- In order to preset width shift left, press Auto once.

Calling up "Setting lateral displacement" sub-menu

- Press and hold Auto.

The "Setting lateral displacement" sub-menu is displayed.

Changing to manual mode

- Press AUTO.

The symbol appears on the display (manual mode).

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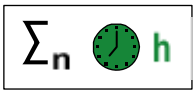
10.2 Menu level

Short Overview

Main menu	Sub-menu	Designation
1		Setting overcut
2		Setting lateral displacement
3		Setting front mowing unit (optional)
4		Setting mode for swath roller height
5		Setting manual/time/distance control (optional)
6		Setting lowering speed
7		Setting overlap
13		Counter
	13-1 	Customer counter
	13-2	Total counter

Main menu	Sub-menu	Designation
14		ISOBUS settings
	14-1	Auxiliary diagnostics (AUX)
	14-2	Diagnostics for driving speed/direction of travel indicator
	14-3	Setting background colour
	14-7	Virtual terminal (VT)
	14-9	Switching between terminals
15		Settings
	15-1	Sensor test
	15-2	Actuator test
	15-3	Manual operation without safety prompt
	15-4	Error list
	15-5	Info
	15-6	Technician

10.2.1 Calling up the menu level

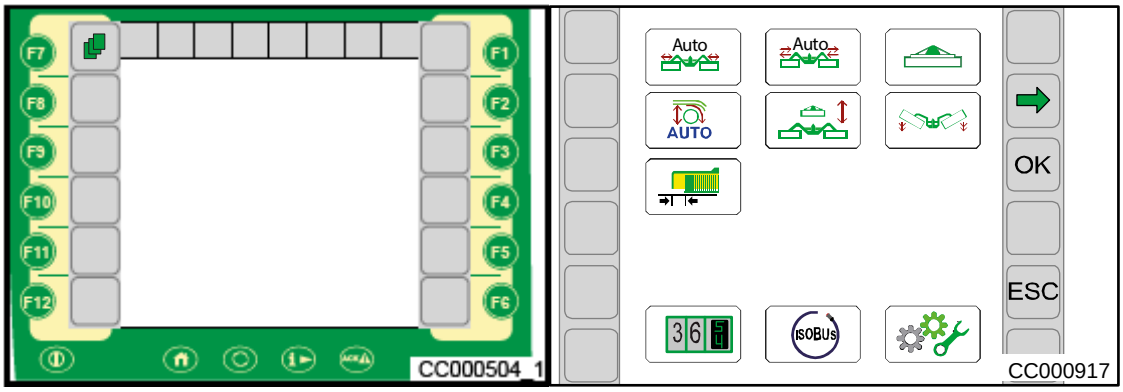


Fig. 54

- Press to bring up the menu level from the basic screen.

The main menu level is divided into the following main menus depending on the machine configuration:

Main menu	Description
	Main menu 1 "Setting overcut"
	Main menu 2 "Setting lateral displacement"
	Main menu 3 "Setting front mowing unit"
	Main menu 4 "Setting mode for swath roller height"
	Main menu 5 "Setting manual/time/distance control"
	Main menu 6 "Setting lowering speed"
	Main menu 7 "Setting overlap"
	Main menu 13 "Counters"
	Main menu 14 "ISOBUS settings"
	Main menu 15 "Settings"

Symbol	Meaning
⇦	Selecting the previous menu
⇨	Selecting the next menu
OK	Opening menu
ESC	Leaving menu

10.3 Main menu 1 "Setting overcut"

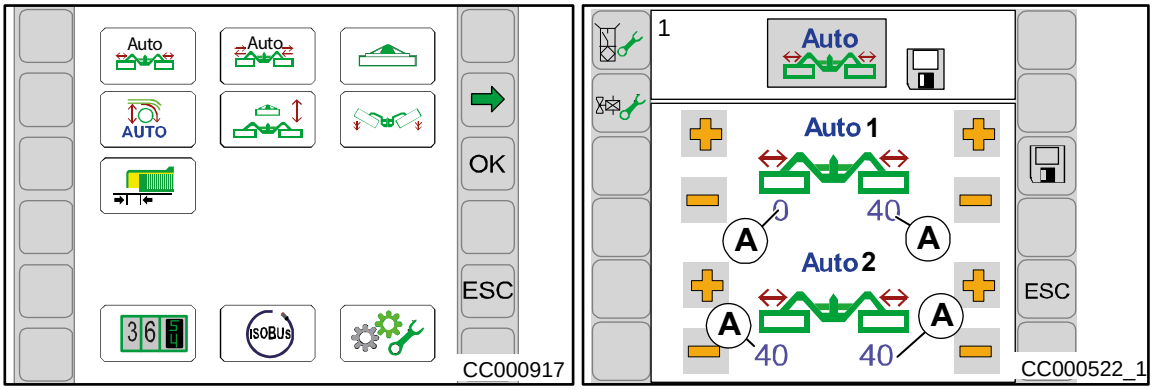


Fig. 55

Prerequisite: The menu level has been opened.

- To open the menu, press Auto.

The display shows the "Setting overcut" menu.

Function keys

Symbol	Meaning	Information
	Displaying “Sensor Test” menu	In the “Sensor Test” menu, only the corresponding sensors for this menu are displayed.
	Displaying “Actuator Test” menu	In the “Actuator Test” menu, only the corresponding actuators for this menu are displayed.

Softkey	Meaning	Information
	Save	
ESC	Leave menu	– Without saving

Display area

Softkey	Meaning	Information
	Increase value	
	Reduce value	

Setting overcut

Using the scroll wheel

- Use the scroll wheel to make the required selection (A).

The selection box is highlighted in colour.

- Press the scroll wheel.

The input mask is opened.

- To increase or reduce the value, turn the scroll wheel.
- To save the value, press the scroll wheel.

The setting is accepted and the selection field is left.

Via the value (A)

- Tap the value (A).

The input mask is opened.

- Increase or reduce the value.
- To save the value, press OK.

Using plus / minus

- Press to increase the value.
- Press to reduce the value.

10.4 Main menu 2 "Setting lateral displacement"

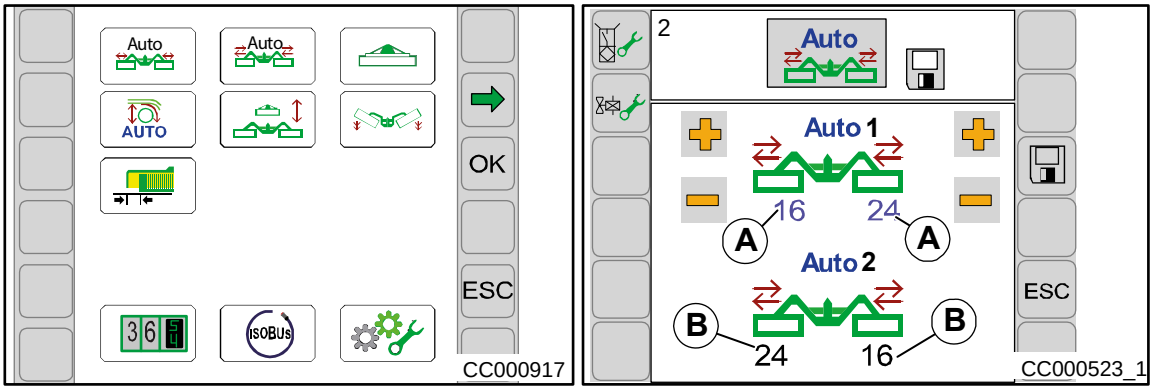


Fig. 56

Prerequisite: The menu level has been opened.

- To open the menu, press .

The display shows the "Setting lateral displacement" menu.

The lateral displacement function allows both lateral mowing units to be shifted to the right or left at the same time (for mowing in one direction, then the other), so that when mowing on a slope no crop sections remain standing. The upper values (A) can be adopted automatically diagonally for the lower values (B).

INFORMATION: With swath rolls design

In order to preset the swath rolls via “Presetting Width Shift” function, the following conditions must be fulfilled:

- In menu “Setting Mode for Swath Roll Height”, mode 2/2 “Setting Swath Rolls Manually” must be selected.
- In menu “Setting the Width Shift”, the values (A) must be set to the same value.

Function keys

Symbol	Meaning	Information
	Displaying “Sensor Test” menu	In the “Sensor Test” menu, only the corresponding sensors for this menu are displayed.
	Displaying “Actuator Test” menu	In the “Actuator Test” menu, only the corresponding actuators for this menu are displayed.

Softkey	Meaning	Information
	Save	
ESC	Leave menu	– Without saving

Display area

Softkey	Meaning	Information
	Increase value	
	Reduce value	

Setting lateral displacement

Using the scroll wheel

- Use the scroll wheel to make the required selection (A).

The selection box is highlighted in colour.

- Press the scroll wheel.

The input mask is opened.

- To increase or reduce the value, turn the scroll wheel.
- To save the value, press the scroll wheel.

The setting is accepted and the selection field is left.

Via the value (A)

- Tap the value (A).

The input mask is opened.

- Increase or reduce the value.
- To save the value, press OK.

Using plus / minus

- Press to increase the value.
- Press to reduce the value.

Simultaneously preset width shift and swath rolls.

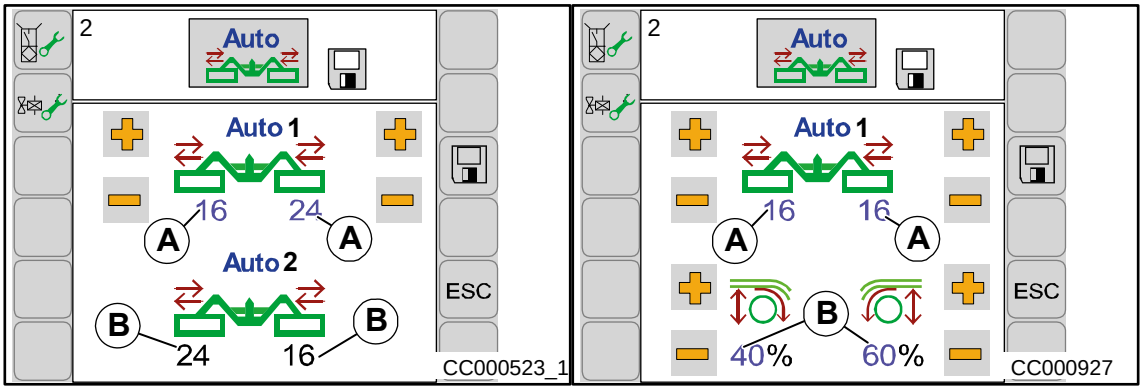


Fig. 57

- Set the values (A) to the same value.
  The right figure is shown in the display.
- Set the values (B) for swath roll height.

The swath rolls can only be preset simultaneously with width shift for round trip via “Presetting Width Shift” function. The values (B) are adopted automatically, diagonal for round trip.

10.5 Main menu 3 "Setting front mowing unit"

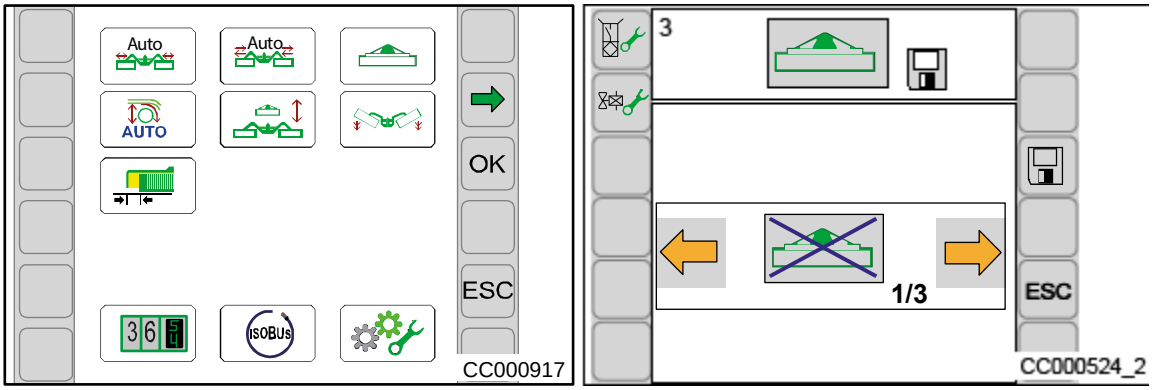


Fig. 58

Prerequisite: The menu level has been opened.

- To open the menu, press .

The display shows the "Setting front mowing unit" menu.

Function keys

Symbol	Meaning	Information
	Displaying “Sensor Test” menu	In the “Sensor Test” menu, only the corresponding sensors for this menu are displayed.
	Displaying “Actuator Test” menu	In the “Actuator Test” menu, only the corresponding actuators for this menu are displayed.

Softkey	Meaning	Information
	Save	
ESC	Leave menu	– Without saving

Softkey	Meaning	Information
	Display next mode	– Touch-sensitive
	Display previous mode	– Touch-sensitive

One of 3 modes can be selected:

Symbol	Information
Mode 1/3	– The front mowing unit is raised/lowered via the control unit on the tractor side.
Mode 2/3	– The front mowing unit is raised/lowered via the terminal. – The front mowing unit is always fully lifted.
Mode 3/3	– The front mowing unit is raised/lowered via the terminal. – The front mowing unit is lifted in a time-controlled manner. – The lifting time can be set.

Calling and saving a mode

The icon in the upper line indicates that the displayed mode is saved.

- To open the next mode, press .
- To open the previous mode, press .

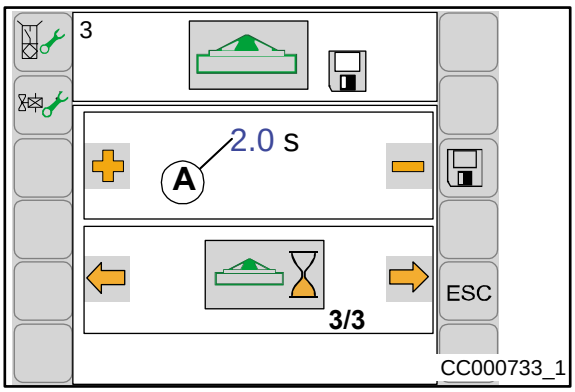
The symbol in the upper line disappears.

- To save, press .

The set mode is saved and the symbol appears in the upper line.

- To leave the menu, press **ESC** .

Setting lifting time for mode 3



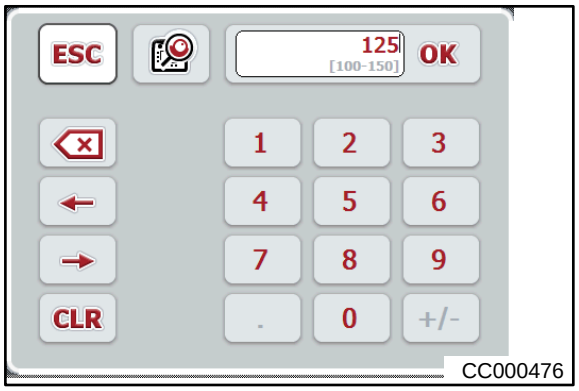


Fig. 59

Setting lifting time

As a precondition, mode 3 has been selected and saved.

Using the scroll wheel

- Use the scroll wheel to make the required selection (A).

The selection box is highlighted in colour.

- Press the scroll wheel.

The input mask is opened.

- To increase or reduce the value, turn the scroll wheel.
- To save the value, press the scroll wheel.

The setting is accepted and the selection field is left.

Via the value (A)

- Tap the value (A).

The input mask is opened.

- Increase or reduce the value.
- To save the value, press OK.

Using plus / minus

- Press to increase the value.
- Press to reduce the value.

10.6 Main menu 4 "Setting mode for swath roller height"

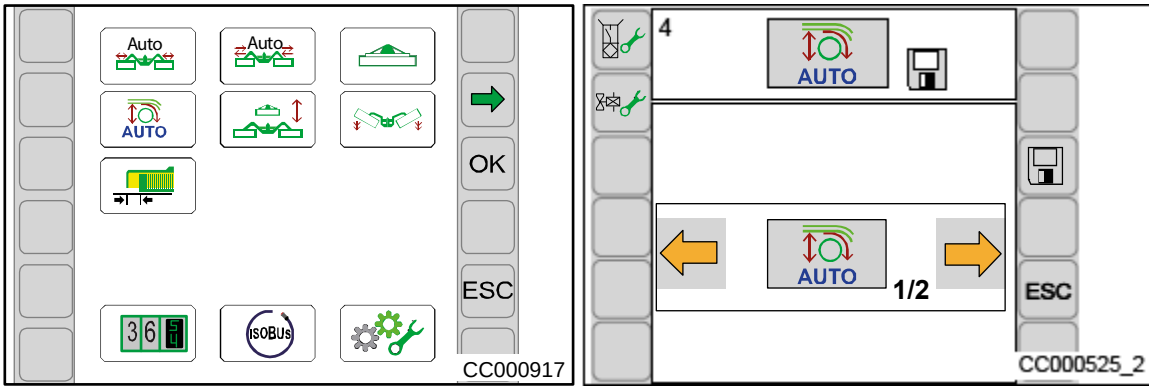


Fig. 60

Prerequisite: The menu level has been opened.

- To open the menu, press AUTO.

The display shows the "Setting mode for swath roller height" menu.

Function keys

Symbol	Meaning	Information
	Displaying “Sensor Test” menu	In the “Sensor Test” menu, only the corresponding sensors for this menu are displayed.
	Displaying “Actuator Test” menu	In the “Actuator Test” menu, only the corresponding actuators for this menu are displayed.

Softkey	Meaning	Information
	Save	
ESC	Leave menu	– Without saving

Softkey	Meaning	Information
	Display next mode	– Touch-sensitive
	Display previous mode	– Touch-sensitive

One of 2 modes can be selected:

Symbol	Description	Information
Mode 1/2	System-controlled swath roller height	– In automatic mode, the swath roller height is determined by the system and the speed of the cross conveyor belt is adjusted.
Mode 2/2	Setting swatch roller height manually	– Manual value input for the swath roller height (,) is activated for automatic mode in the main window. – Value input is touch-sensitive in the main window.

Calling and saving a mode

The icon in the upper line indicates that the displayed mode is saved.

- To open the next mode, press .
- To open the previous mode, press .

The symbol in the upper line disappears.

- To save, press .

The set mode is saved and the symbol appears in the upper line.

- To leave the menu, press **ESC** .

10.7 Main menu 5 "Setting manual/time/distance control"

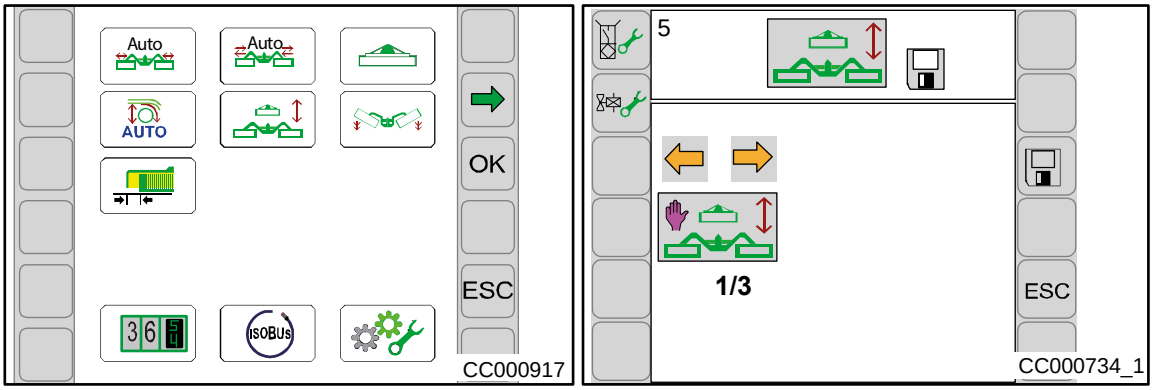


Fig. 61

Prerequisite: The menu level has been opened.

- To open the menu, press .

The display shows the "Setting manual/time/distance control" menu.

In this menu level it is possible to select the lowering behaviour of the lateral mowing units to the front mowing unit from three modes.

Function keys

Symbol	Meaning	Information
	Displaying “Sensor Test” menu	In the “Sensor Test” menu, only the corresponding sensors for this menu are displayed.
	Displaying “Actuator Test” menu	In the “Actuator Test” menu, only the corresponding actuators for this menu are displayed.

Softkey	Meaning	Information
	Save	
ESC	Leave menu	– Without saving

Softkey	Meaning	Information
	Display next mode	– Touch-sensitive
	Display previous mode	– Touch-sensitive

One of 3 modes can be selected:

Graphic	Description	Information
Mode 1/3	Manual control	– When the function key is pressed, the front mowing unit is initially lowered or raised. Once the function key is released, the lateral mowing units follow suit.
Mode 2/3	Time control	– Determines the delay time for lifting or lowering the lateral mowing units to the front mowing unit. – The delay time can be set.
Mode 3/3	Distance control	– Determines the distance still to be covered before the lateral mowing units are raised or lowered to the front mowing unit. – The distance can be set.

Calling and saving a mode

The icon in the upper line indicates that the displayed mode is saved.

- To open the next mode, press .
- To open the previous mode, press .

The symbol in the upper line disappears.

- To save, press .

The set mode is saved and the symbol appears in the upper line.

- To leave the menu, press **ESC** .

Setting time control for mode 2

As a precondition, mode 2 has been selected and saved.

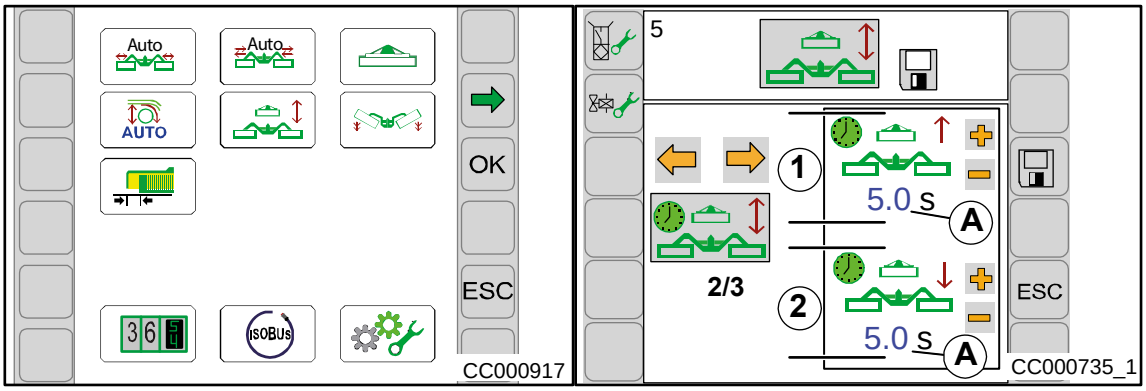


Fig. 62

Display area

Symbol	Meaning	Information
1)	Delay time for raising	
2)	Delay time for lowering	
A)	Value input	– Touch-sensitive

Using the scroll wheel

- Use the scroll wheel to make the required selection (A).

The selection box is highlighted in colour.

- Press the scroll wheel.

The input mask is opened.

- To increase or reduce the value, turn the scroll wheel.
- To save the value, press the scroll wheel.

The setting is accepted and the selection field is left.

Via the value (A)

- Tap the value (A).

The input mask is opened.

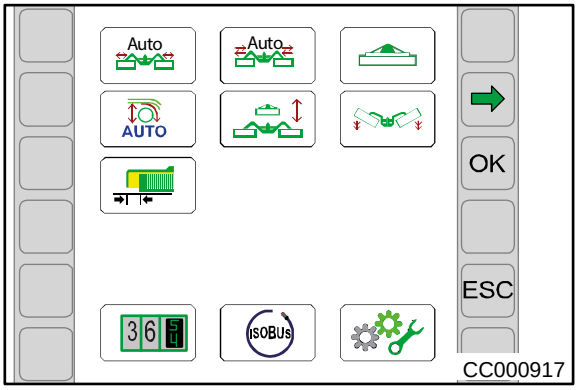
- Increase or reduce the value.
- To save the value, press OK.

Using plus / minus

- Press + to increase the value.
- Press – to reduce the value.

Setting distance control for mode 3

As a precondition, mode 3 has been selected and saved.



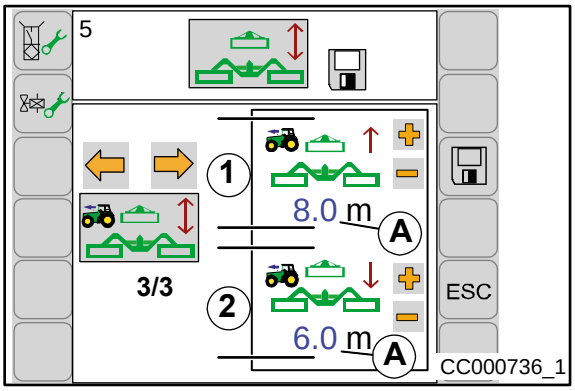


Fig. 63

Display area

Symbol	Meaning	Information
1)	Distance still to be covered for raising	
2)	Distance still to be covered for lowering	
A)	Value input	– Touch-sensitive

Using the scroll wheel

- Use the scroll wheel to make the required selection (A).

The selection box is highlighted in colour.

- Press the scroll wheel.

The input mask is opened.

- To increase or reduce the value, turn the scroll wheel.
- To save the value, press the scroll wheel.

The setting is accepted and the selection field is left.

Via the value (A)

- Tap the value (A).

The input mask is opened.

- Increase or reduce the value.
- To save the value, press OK.

Using plus / minus

- Press + to increase the value.
- Press – to reduce the value.

10.8 Main menu 6 "Setting lowering speed"

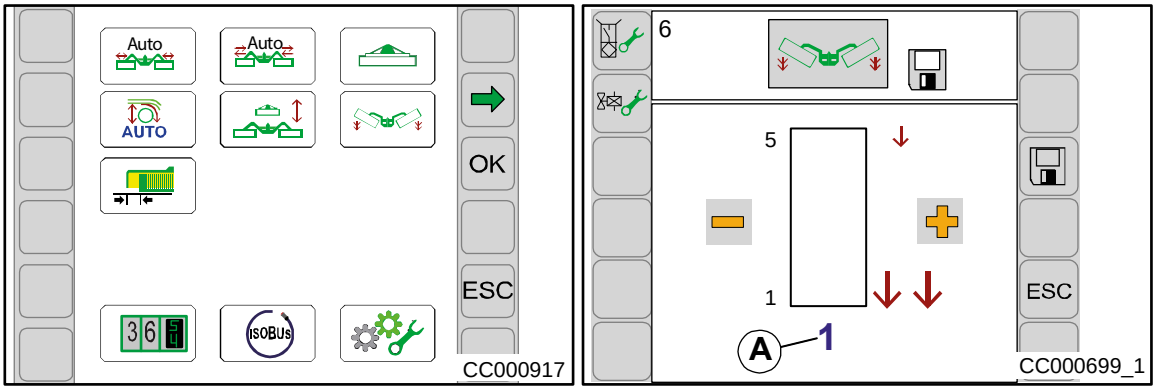


Fig. 64

In this menu, it is possible to adjust the lowering speed of the mowing units from headland position/to working position.

Prerequisite: The menu level has been opened.

- To open the menu, press .

The display shows the "Setting lowering speed" menu.

Function keys

Symbol	Meaning	Information
	Displaying “Sensor Test” menu	In the “Sensor Test” menu, only the corresponding sensors for this menu are displayed.
	Displaying “Actuator Test” menu	In the “Actuator Test” menu, only the corresponding actuators for this menu are displayed.

Softkey	Meaning	Information
	Save	
ESC	Leave menu	– Without saving

Softkey	Meaning	Information
	Display next mode	– Touch-sensitive
	Display previous mode	– Touch-sensitive

Display area

Graphic	Meaning	Information
(A)	Lowering speed	– 1 Highest lowering speed – 2 Medium lowering speed – 3 Lowest lowering speed

Softkey	Meaning	Information
	Increase value	
	Reduce value	

Using the scroll wheel

- Use the scroll wheel to make the required selection (A).

The selection box is highlighted in colour.

- Press the scroll wheel.

The input mask is opened.

- To increase or reduce the value, turn the scroll wheel.
- To save the value, press the scroll wheel.

The setting is accepted and the selection field is left.

Via the value (A)

- Tap the value (A).

The input mask is opened.

- Increase or reduce the value.
- To save the value, press OK.

Using plus / minus

- Press to increase the value.
- Press to reduce the value.

10.9 Main menu 7 "Setting overlap"

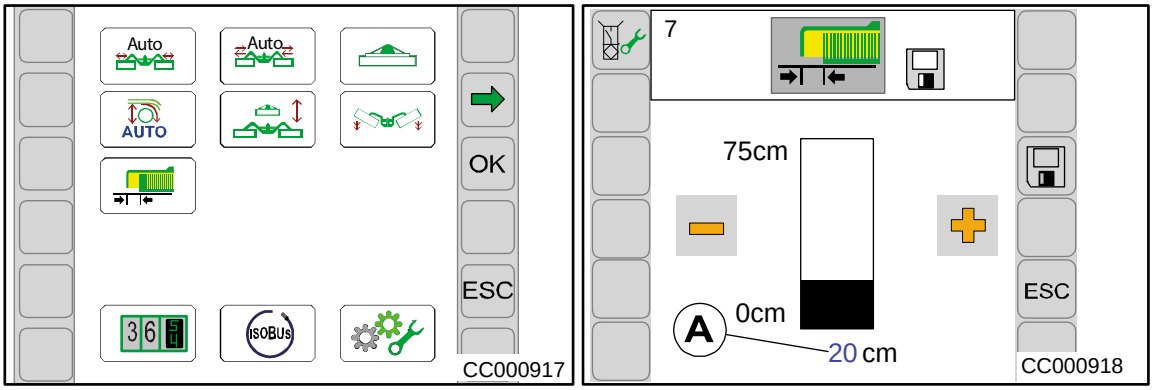


Fig. 65

In this menu, the overlap can be used to set the accuracy of the counter for total surface.

Prerequisite: The menu level has been opened.

- To open the menu, press .

The display shows the "Setting overlap" menu.

Function keys

Symbol	Meaning	Information
	Displaying “Sensor Test” menu	In the “Sensor Test” menu, only the corresponding sensors for this menu are displayed.
	Displaying “Actuator Test” menu	In the “Actuator Test” menu, only the corresponding actuators for this menu are displayed.

Softkey	Meaning	Information
	Save	
ESC	Leave menu	– Without saving

Softkey	Meaning	Information
	Display next mode	– Touch-sensitive
	Display previous mode	– Touch-sensitive

Display area

Graphic	Meaning	Information
(A)	Value for overlap	– Touch-sensitive

Softkey	Meaning	Information
	Increase value	
	Reduce value	

Using the scroll wheel

- Use the scroll wheel to make the required selection (A).

The selection box is highlighted in colour.

- Press the scroll wheel.

The input mask is opened.

- To increase or reduce the value, turn the scroll wheel.
- To save the value, press the scroll wheel.

The setting is accepted and the selection field is left.

Via the value (A)

- Tap the value (A).

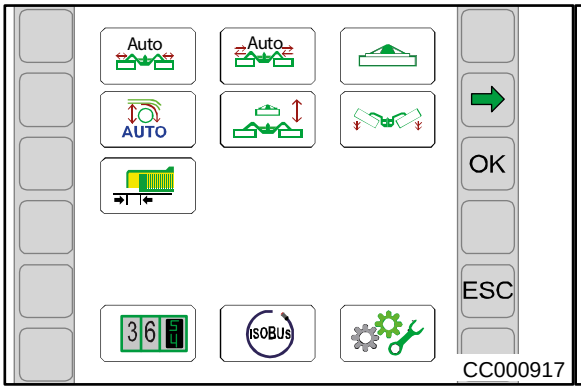
The input mask is opened.

- Increase or reduce the value.
- To save the value, press OK.

Using plus / minus

- Press to increase the value.
- Press to reduce the value.

10.10 Main Menu 13 “Counters”



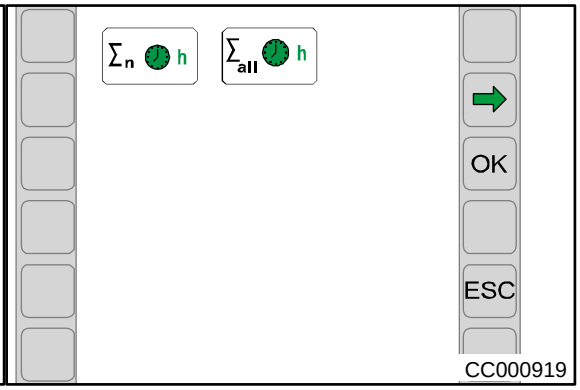


Fig. 66

Prerequisite: The menu level is called.

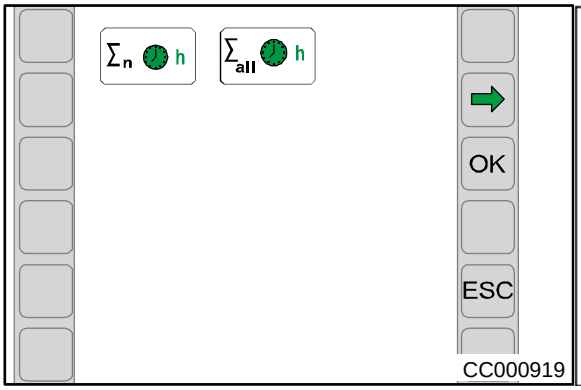
- Press 36 to open the menu.

The display shows “Counters” menu.

The main menu "Counter" is divided into the following sub-menus depending on the machine configuration:

Sub-menu	Description
Σn h	Sub-menu 13-1 "Customer counter"
Σall h	Sub-menu 13-2 "Total counter"

10.10.1 Sub-Menu 13-1 “Customer Counter”



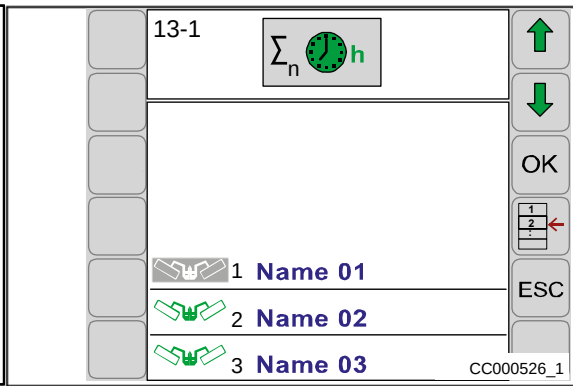


Fig. 67

Prerequisite: The main menu 13 "Counter" has been opened.

- To open the menu, press .

The display shows the "Customer counter" menu.

Display area

Softkey	Meaning	Information
	Customer counter	– 1 to 20 customer counter. – The activated customer counter is highlighted in grey. – The selected customer counter is the one between the lines. – The selected customer counter does not have to be activated. – The name next to the customer counter is touch-sensitive, an input mask opens. – Tap the softkey to open the detail counter.

Detail counter

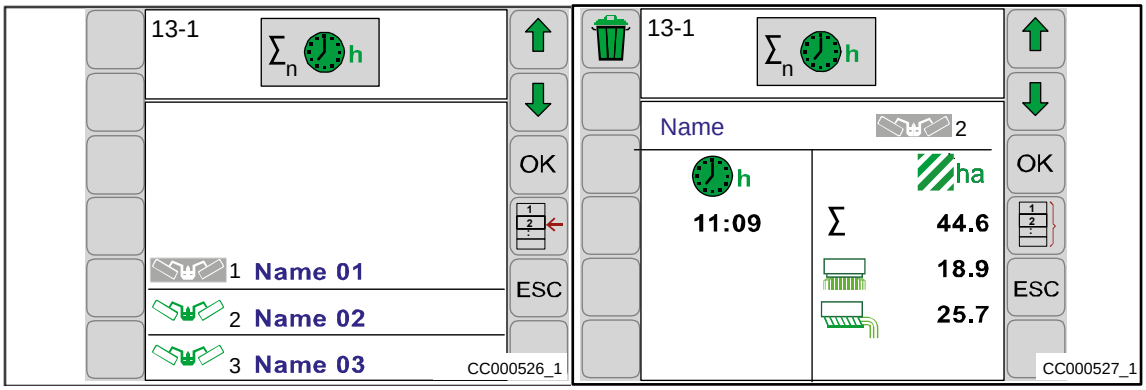


Fig. 68

Prerequisite: The submenu 13-1 "Customer counter" is opened.

- To open the detail counter, press .
- To open the customer counter, press .

Softkey	Meaning	Information
	Scroll up	
	Scroll down	
OK	Confirm selection	
ESC	Exit menu	– Pressing the key and holding it down brings up the basic screen.
	Delete values for the selected customer counter.	
	Display detailed counter	– Additional counter information for the selected customer counter is displayed.
	Display customer counter	– The list of all customers is displayed.

Graphic	Meaning	Information
	Activated customer counter	– Here customer counter 1
	Operating hours counter	– The operating hours counter counts when the electronics are switched on and the PTO shaft is running.
	Surface counter	– Is only displayed when the respective parameter has been activated in the fitter setting. – The surface counter counts when the tractor transmits the 'forward movement' signal to the job computer and at least one mowing unit is working. – The surface counter stops as soon as the tractor stops or no mowing unit is working. – The surface displayed may not necessarily correspond with the actual area mowed, as tractors may have been used that have not transmitted the 'forward movement' signal.
∑	Overall surface counter	– Added up surface from surface with cross conveyor belt and surface without cross conveyor belt
	Counter 'surface mowed without cross conveyor belt'	
	Counter 'surface mowed with cross conveyor belt'	
Name	Create name for customer counter	– A name can be created for each customer counter. – The input is restricted to 15 characters. – Touch-sensitive

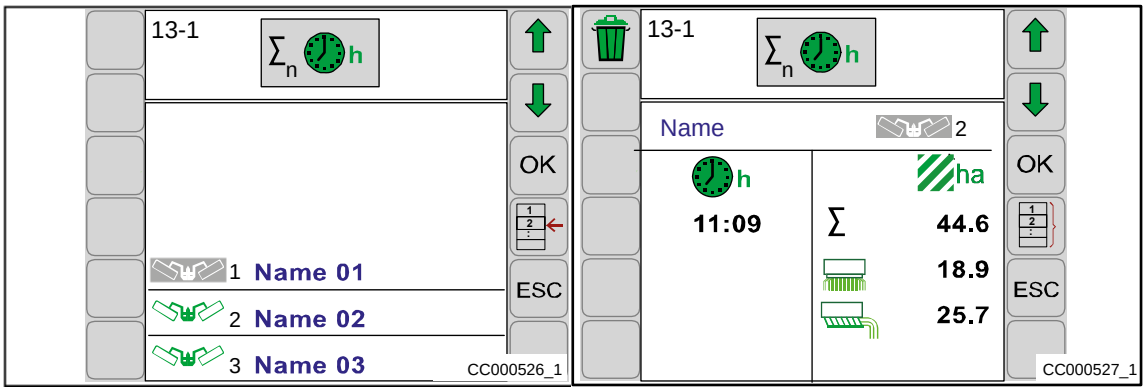


Fig. 69

Activating customer counter

– As a pre-condition, the detailed counter has been opened.

- To select the customer counter, press ↑ or ↓.
- To activate the customer counter, press **OK**.

The new activated customer counter is highlighted in grey.

Deleting the customer counter

The customer counter, which is to be deleted, does not have to be activated.

- To select the customer counter to be deleted, press ↑ or ↓ .
- To reset the customer counter to zero, press 🗑 .

Applying or changing a new name for the customer counter

- Press “name”.

An input dialogue appears.

- Enter the name via keyboard.
- Press **OK** to save the name.
- Press **ESC** to leave the input dialogue without saving.

10.10.2 Sub-Menu 13-2 “Total Counter”

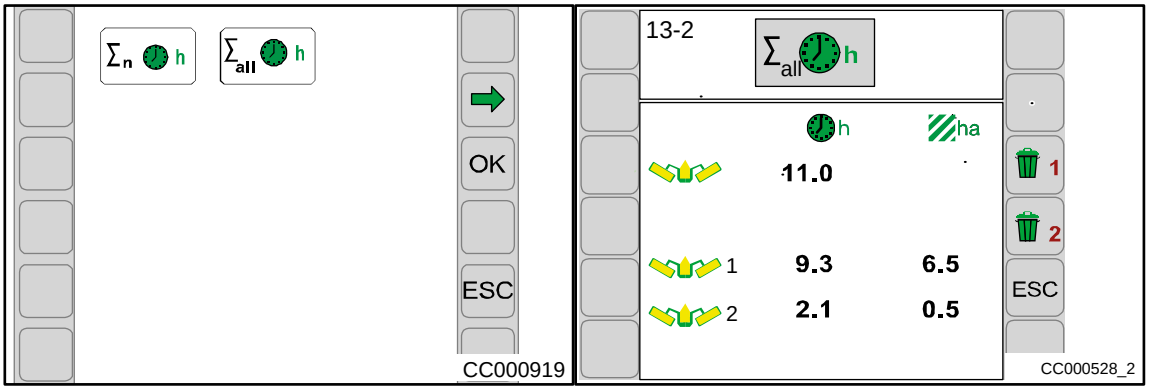


Fig. 70

Prerequisite: The main menu 13 "Counter" has been opened

- To open the menu, press [Σall h].

The display shows the "Total counter" menu.

Display area

Graphic	Description
ha	Surface counter
h	Operating hours counter
	Total counter (cannot be deleted)
1	Season counter 1 (can be deleted)
2	Daily counter 2 (can be deleted)

Deleting season counter

- To delete the season counter, press 1.

The season counter is set to zero.

Resetting daily counter

- To delete the daily counter, press 2.

The daily counter is set to zero.

Note

The total operating hours counter (1) is running as soon as the electronics is turned on. The total operating hours counter (1) cannot be deleted.

10.11 Main Menu 14 “ISOBUS Settings”

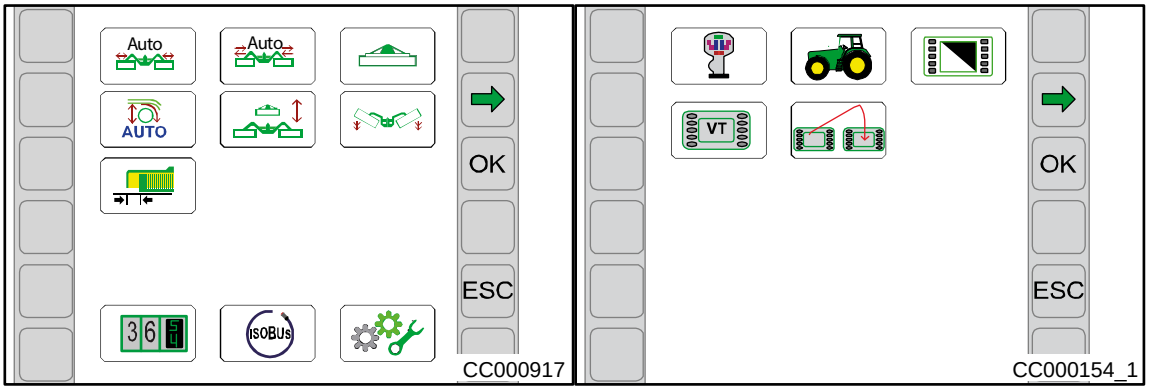


Fig. 71

Prerequisite: The menu level is called.

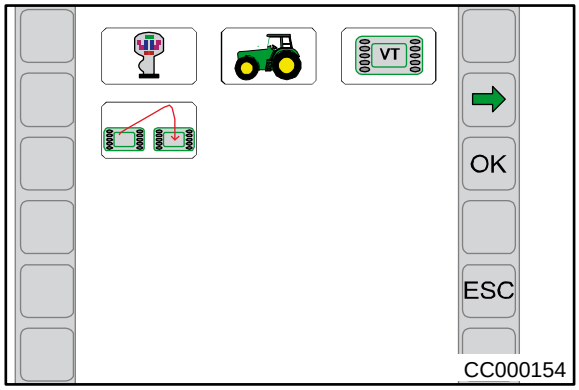
- Press ISOBUS to open the menu.

The display shows “ISOBUS Settings” menu.

Depending on how the machine is equipped, main menu “ISOBUS Settings” is divided into the following sub-menus:

Sub-menu	Description	Information
	Sub-menu 14-1 Diagnostics Auxiliary (AUX)	– Refer to chapter Foreign ISOBUS Operation Terminal “Sub-menu 14-1 Diagnostics Auxiliary (AUX)”.
	Sub-menu 14-2 “Driving Speed Display Diagnostics / Motion Direction Display Diagnostics”	– Refer to chapter Foreign ISOBUS Operation Terminal “Sub-menu 14-2 Driving Speed Display Diagnostics / Motion Direction Display Diagnostics”.
	Sub-menu 14-3 “Setting the Background Colour”	
	Sub-menu 14-7 “Virtual Terminal (VT)”	– Refer to chapter Foreign ISOBUS Operation Terminal “Sub-Menu 14-7 Virtual Terminal (VT)“.
	Sub-menu 14-9 “Switching between Terminals”	– Refer to chapter Foreign ISOBUS Operation Terminal, sub-menu 14-9 “Switching between the Terminals”.

10.11.1 Sub-Menu 14-1 Diagnostics Auxiliary (AUX)



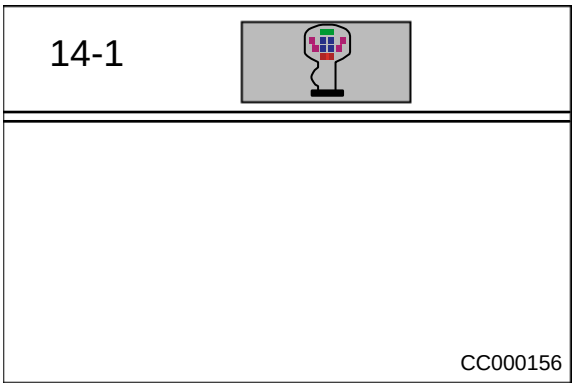


Fig. 72

Prerequisite: Main menu 14 “ISOBUS” is called

- Press to open the menu.

The display shows menu 4-7 “Diagnostics Auxiliary (AUX)”.

A figure of the multi-function lever appears in the display. When activating a function on the multi-function lever, only the assigned symbol will appear in the display. The function itself is not performed.

10.11.2 Sub-Menu 14-2 “Driving Speed Display Diagnostics / Motion Direction Display Diagnostics"

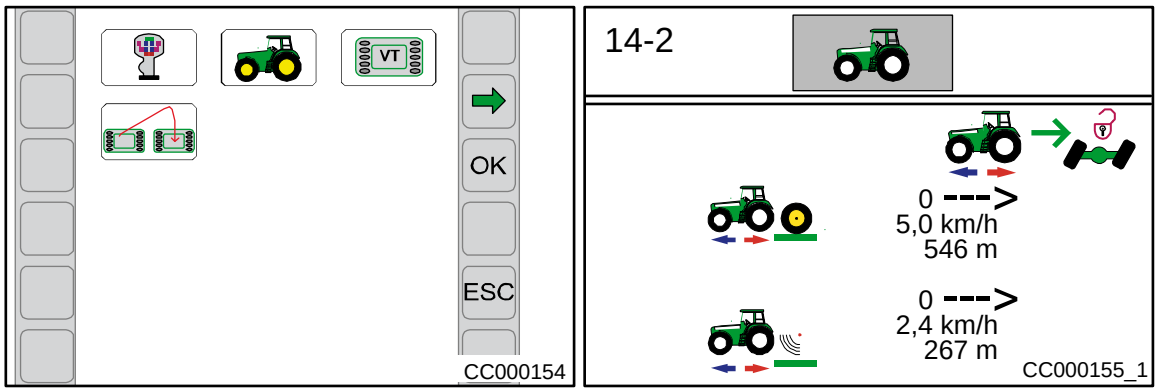


Fig. 73

Prerequisite: Main menu 14 “ISOBUS” is called.

- Press to open the menu.

The display shows “Driving Speed Diagnostics Display / Motion Direction Display”.

Symbol	Meaning	Information
	Wheel-based speed	
	Ground-based speed	
<--- 0	Driving forward	
0 --->	Reversing	
	Parameters selected	ISO bus evaluation
	Parameters not selected	

10.11.3 Sub-Menu 14-3 Setting the Background Colour

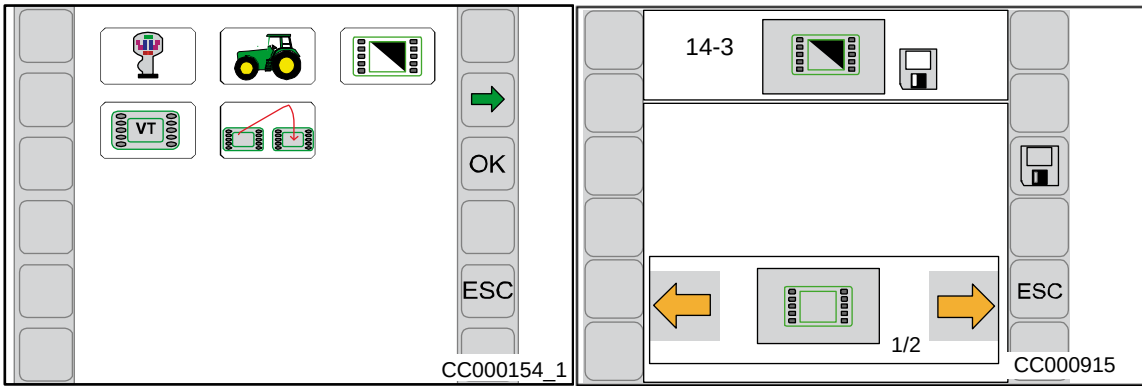


Fig. 74

Prerequisite: Main menu 14 “ISOBUS Settings” is called.

- Press to open the menu.

The display shows menu “Setting the Background Colour”.

Function keys

Softkey	Meaning	Information
	Save	
ESC	Leave menu	– Without saving

Display area

Softkey	Meaning	Information
	Display next mode	– Touch-sensitive
	Display previous mode	– Touch-sensitive

A selection is possible between two modes.

Graphic	Meaning	Information
	Background colour white	– Recommended for day.
	Background colour grey	– Recommended for night.

Calling and saving a mode

The icon in the upper line indicates that the displayed mode is saved.

- To open the next mode, press .
- To open the previous mode, press .

The symbol in the upper line disappears.

- To save, press .

The set mode is saved and the symbol appears in the upper line.

- To leave the menu, press **ESC** .

10.11.4 Sub-Menu 14-7 “Virtual Terminal (VT)”

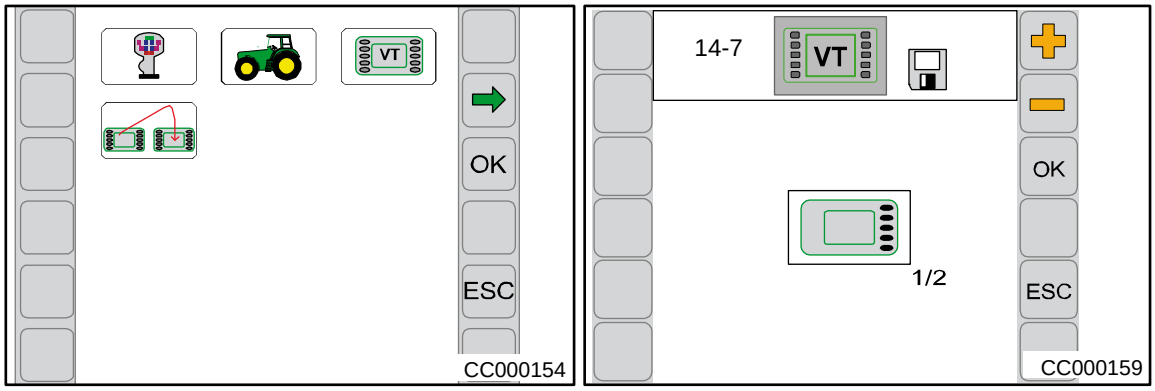


Fig. 75

Prerequisite: Main menu 14 “ISOBUS” is called.

- Press VT to open the menu.

The display “Virtual Terminal (VT)“ menu.

Note

This menu only appears on ISO terminals with less than 8 keys.

For ISO terminals with less than 8 keys, an additional ISO joystick is recommended for the convenient operation of the attached machines. For the assignment of the joystick, please refer to chapter “Example of joystick assignment”.

ISO terminal with less than 8 keys

In this menu, the basic screen is set to 5 softkeys or 8 softkeys. During the change-over to 8 softkeys, additional softkeys will be virtually included and can be reached by scrolling.

Graphic	Meaning	Information
	Display the next mode	
	Display the previous mode	
	Saved mode	
OK	Save the selected setting	
ESC	Leave the menu without saving	

The current status is displayed as a graphic

Graphic	Meaning
	Terminal with 5 softkeys without virtual softkey
	Terminal with less than eight keys and utilization of virtual softkeys

Changing and saving status

- Press the function key for softkey or to change the status.

The symbol in the upper line disappears.

- Press function key for softkey **OK** to save the status.

The symbol appears in the upper line.

- Press function key **ESC** to leave the menu.
- Press function key **ESC** multiple times in succession to bring up the basic screen.

10.11.5 Sub-Menu 14-9 “Switching Between Terminals”

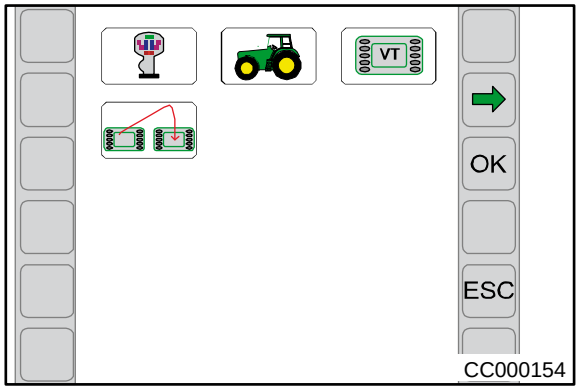
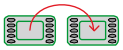


Fig. 76

Prerequisite: Main menu 14 “ISOBUS” is called.

- Press  to open the menu.

The display shows “Switching between the Terminals” menu.

Note

- The sub-menu appears only if several ISO terminals are connected.
- Depending on how many terminals are connected, you can switch to the next connected terminal.
- When switching for the first time, the configuration of the machine is loaded into the next terminal. The loading process may take a few minutes. The configuration is stored in the accumulator of the next terminal.

Note

Up to the next call, the machine is no longer available in the previous terminal.

Note

In case of a restart, the system first tries to start the last used terminal. If the last used terminal is not available any longer (if it is removed for example), the restart is delayed as the system is searching for a new terminal and loads the specific menus into the terminal. The loading process may take a few minutes.

10.12 Main Menu 15 “Settings”

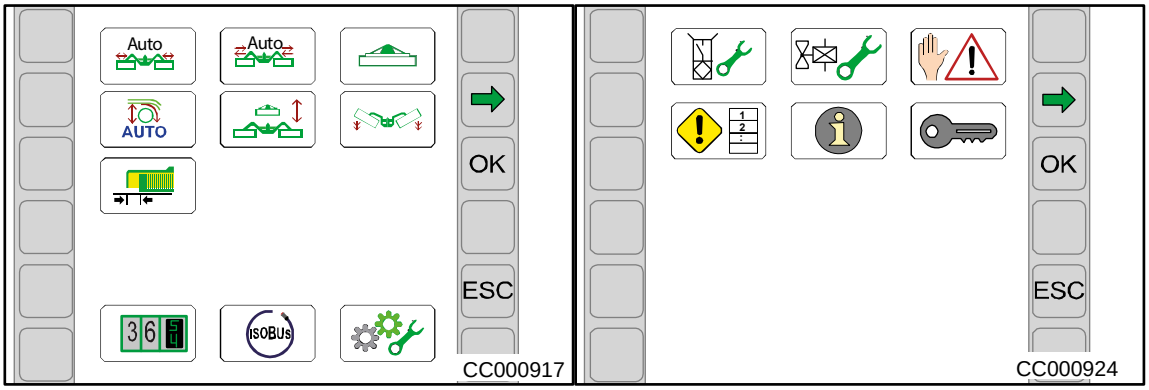


Fig. 77

Prerequisite: The menu level is called.

- Press to open the menu.

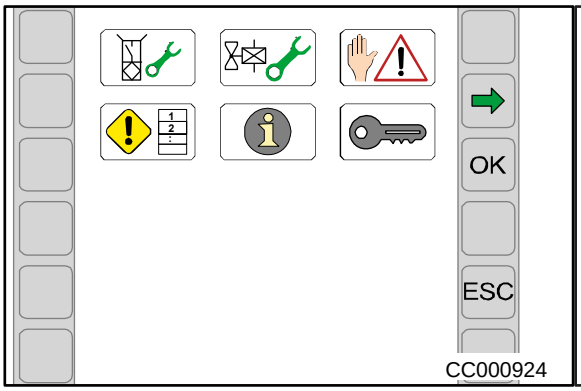
The display shows “Settings” menu.

The main menu "Settings" is divided into the following submenus depending on the machine configuration:

Sub-menu	Description
	Submenu 15-1 Sensor test
	Submenu 15-2 Actuator test
	Submenu 15-4 Error list
	Submenu 15-5 Info
	Submenu 15-6 Fitter

10.12.1 Sub-Menu 15-1 “Sensor Test”

Caution!
Make sure the PTO shaft is not rotating while is sensor test is performed.



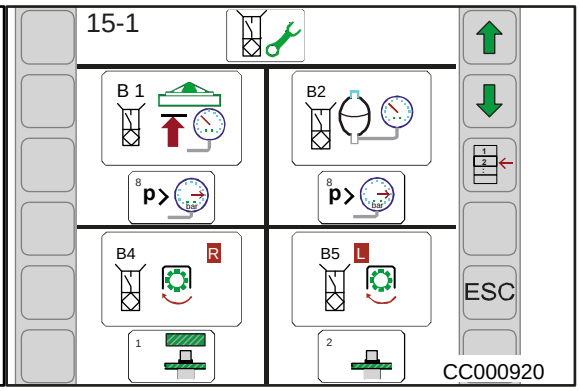


Fig. 78

Prerequisite: Main menu 15 “Settings” is called.

- Press to open the menu.

The display shows “Sensor Test” menu.

In the sensor test, the sensors installed on the machine are checked for errors. In addition, the sensors can be set correctly in the sensor test. There is no guarantee the machine is working correctly until after the sensors have been adjusted.

Symbols	Meaning	Information
	Scrolling up	
	Scrolling down	
	Open mask for sensor test	– Press graphic, the “Sensor test” mask opens.
ESC	Leaving menu	

Testing the sensor

- Press on the symbol of the sensor to test a sensor.

The “Sensor test” mask appears.

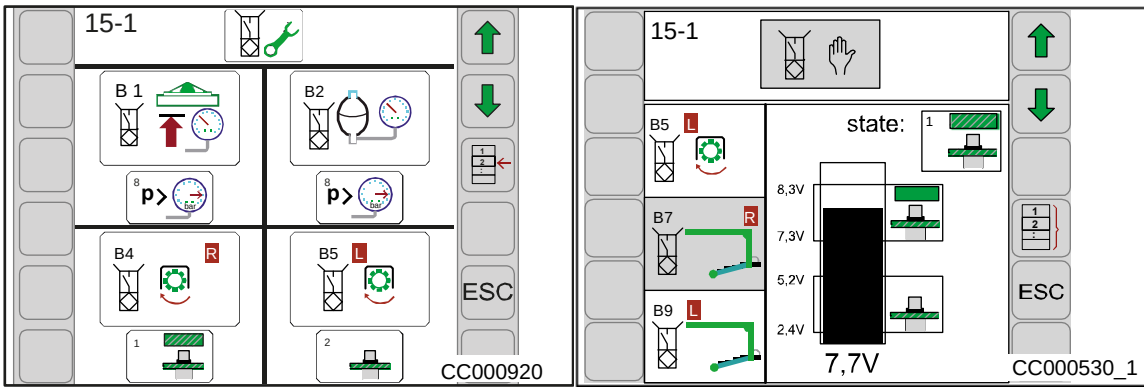


Fig. 79

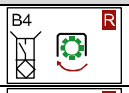
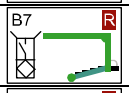
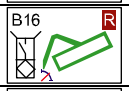
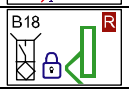
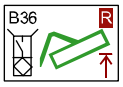
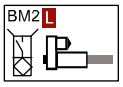
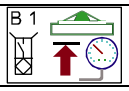
Symbols	Meaning	Information
↑	Selecting the next sensor	
↓	Selecting the previous sensor	
	Closing sensor test mask	Sub-menu “Sensor Test” is called.
ESC	Leaving menu	

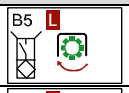
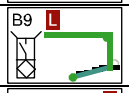
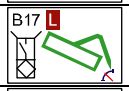
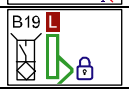
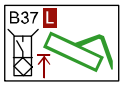
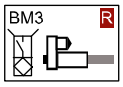
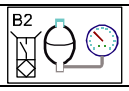
Setting values:

The minimum and maximum setting values with the sensor alive (metal in front of the sensor) are shown in the upper part of the bar display. The current setting value (actual value) is displayed under the bar display.

The distance from the sensor to the metal must be adjusted so that in the alive state the bar is in the upper mark. Next check whether the bar is in non-alive state in the lower marked area.

Possible sensors (depending on how the machine is equipped)

No.	Symbol	Description
B4		Speed of right mowing unit
B7		Cross conveyor belt bottom right
B11		Working width right
B13		Working width left
B16		Position right (to approx. 110°)
B18		Transport position right
B36		Headland position right
BM2		Position of left-hand swath roller
B1		Front mowing unit up

No.	Symbol	Description
B5		Speed of left mowing unit
B9		Cross conveyor belt bottom left
B12		Working width zero right
B14		Working width zero left
B17		Position left (to approx. 110°)
B19		Transport position left
B37		Headland position left
BM3		Position of left-hand swath roller
B2		Tank pressure

State:

1	Alive (iron)	2	Not alive (no iron)
3	Broken cable	4	Short circuit

State of load bolt:

⓪ OK	Sensor OK	⑧	Connection to force measurement amplifier (KMV) interrupted
⑦	Cable break / short circuit on sensor		Failure of communication with force measurement amplifier (KMV)

Communication error with steering computer (ME)

Communication error with KRONE-PIC-IO1 computer

Communication error with KRONE-PIC-IO2 computer

Diagnostics Pressure Sensors

State:

①	Pressure threshold is not reached	②	Pressure threshold is reached

Diagnostics supply voltages

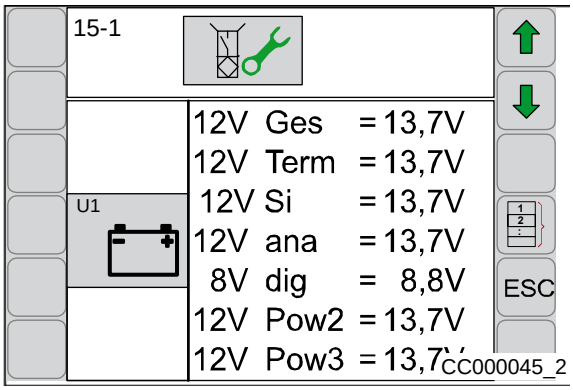
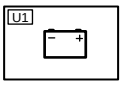


Fig. 80

No.	Symbol	Description
U1		**Supply voltage**

Nominal voltages:

- 12 V tot. 12 - 14.5 V
- 12 V term: 12 - 14.5 V
- 12VSi: 12 – 14.5 V
- 12V ana: 12 – 14.5 V
- 8V dig: 8.5 - 9.1 V
- 12V Pow2: 12 - 14.5 V
- 12V Pow3: 12 - 14.5 V

10.12.2 Sub-Menu 15-2 “Actuator Test”

WARNING!

The functions are directly executed by energizing the actuators. As a result, machine parts may start to move unexpectedly, persons may be captured and seriously hurt.

- Switch off PTO shaft.
- Deactivate tractor hydraulics.
- Only persons familiar with the machine are permitted to perform the actuator test.
- The person performing the test must know the machine parts being actuated by controlling the actuators. If necessary, secure actuated machine components from unintentional lowering.
- Only perform the sensor test from a safe position outside the moving machine parts.
- Make sure that there is no one in the danger zone.

WARNING!

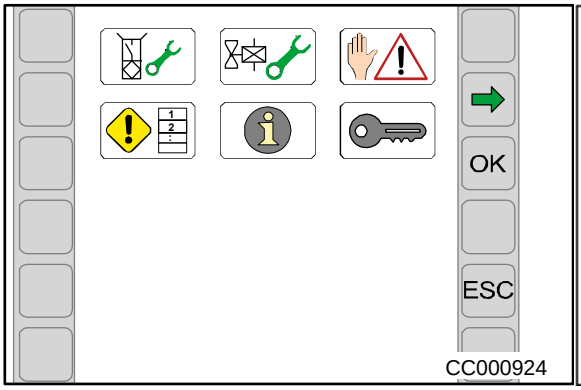
Functions are carried out directly when energising actuators. This can lead to the unintentional movement of machine parts, resulting in serious injuries.

- For the actuator test the machine must be in the working position.

The actuator test is used to test the actuators installed on the machine. An actuator can only be tested if power is flowing through it. In the manual actuator test the actuator must therefore be controlled manually for a short time to be able to determine if there are any errors in the actuator system.

CAUTION! - Unexpected actions on the machine.

The P.T.O. shaft must not be turning during the actuator test. The tractor hydraulics must be deactivated.



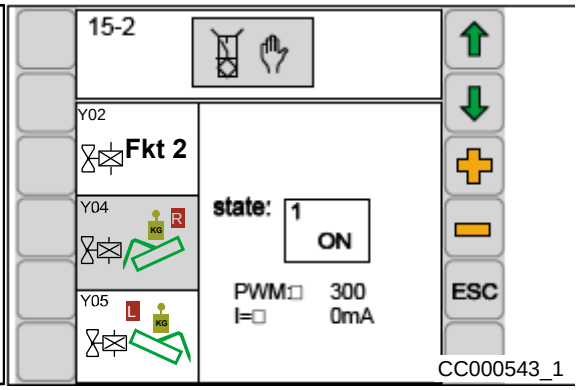


Fig. 81

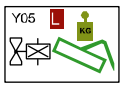
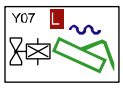
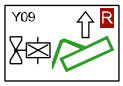
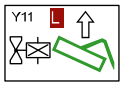
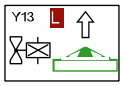
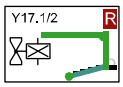
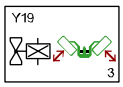
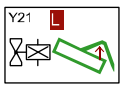
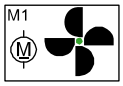
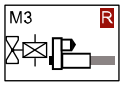
Prerequisite: Main menu 15 “Settings” is called.

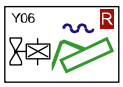
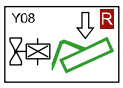
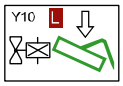
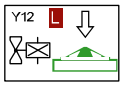
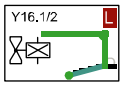
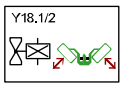
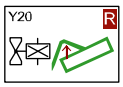
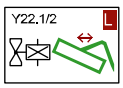
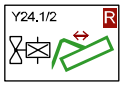
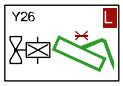
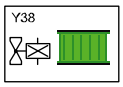
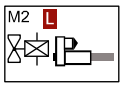
- Press to open the menu.

The display shows “Actuator Test” menu.

Symbols	Meaning	Information
	Selecting the next actuator	
	Selecting the previous actuator	
ON	Activating actuator	– Digital actuators The function is directly executed.
OFF	Deactivating actuator	
	Increasing value	– Analogue actuators – In case of motors, the function of the motor is directly executed.
	Reducing value	
ESC	Leaving menu	

Possible actuators (depending on how the machine is equipped)

No.	Symbol	Description
Y 1		Function valve 1
Y 5		Mowing unit relief left
Y 7		Float position left
Y 9		Raise mowing unit right
Y11		Raise mowing unit left
Y13		Raise front mowing unit
Y17		Cross conveyor belt right*)
Y19		Fold_up_3
Y21		Swing release left
M1		Oil cooler (cool/clean)
M3		Adjust right-hand swath roller (linear motor)

No.	Symbol	Description
Y 2		Function valve 2
Y 4		Mowing unit relief right
Y 6		Float position right
Y 8		Lower mowing unit right
Y10		Lower mowing unit left
Y12		Lower front mowing unit
Y16		Cross conveyor belt left*)
Y18		Fold up*)
Y20		Swing release right
Y22		Working width left*)
Y24		Working width right*)
Y26		Working width reverse left
Y38		Cross conveyor belt
M2		Adjust left-hand swath roller (linear motor)

*) 2 valves that must be switched

State:

1 **ON** Actuator ON 2 **OFF** Actuator OFF

3 No power supply; fuse is probably defective

Diagnostics digital actuators

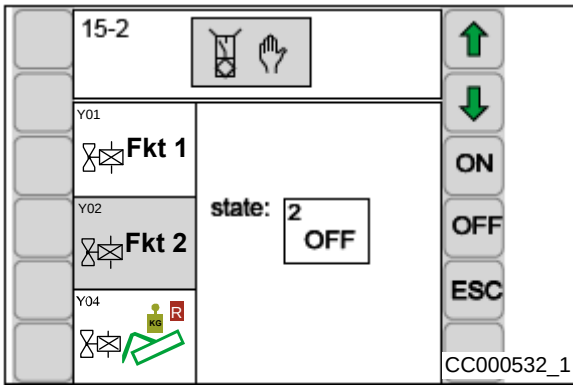


Fig. 82

Diagnostics digital actuators

Errors are only displayed if the actuator is switched on and an actuator test is possible. The LED on the plug can be checked directly on the actuator.

- Press **ON** to switch on the actuator.
- Press **OFF** to switch off the actuator.

Diagnostics analogue actuators

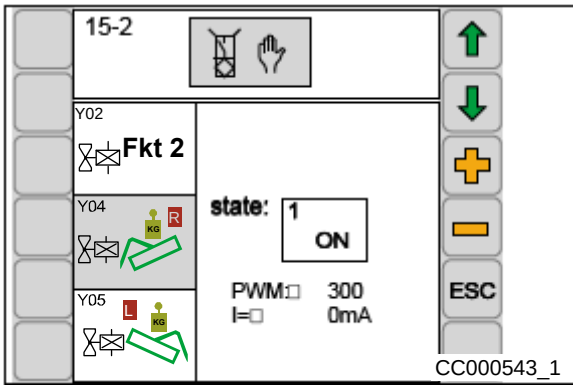


Fig. 83

A current (in mA) can be set with the PWM value (in parts per thousand).

With a value of PWM = 500, the current should be between 500 mA and 3000 mA (depending on the valve that is used and the operating temperature).

Engines

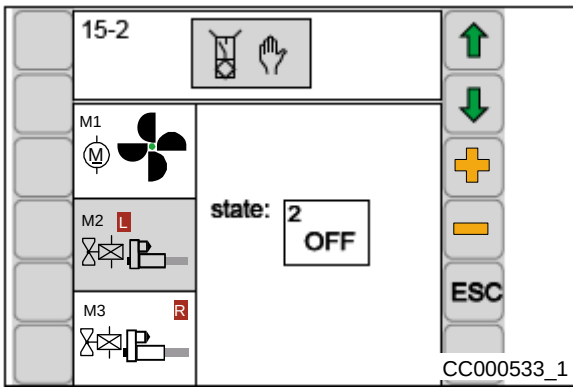


Fig. 84

- To execute the function, press .
- To execute the function, press .

10.12.3 Sub-menu 15-3 "Manual operation without confirmation prompt"

WARNING! – Manual operation!

Effect: Serious damage to the machine

Manual operation while the tractor engine is running!

- Functions operated are immediately executed (even in the transport position). For this reason, manual operation should only be carried out by persons who are familiar with the machine.
- Turn off the PTO
- Remove cardan shaft from tractor
- Stay far enough away from moving parts (lateral mowing units, front mowing unit, cross conveyor, etc.).
- In an emergency, switch off the hydraulic system immediately.
- As necessary, switch off the machine immediately, shut off the engine and remove the ignition key.
- Manual mode must only be performed from a safe position outside the area that is affected by machine parts activated by the actuators.

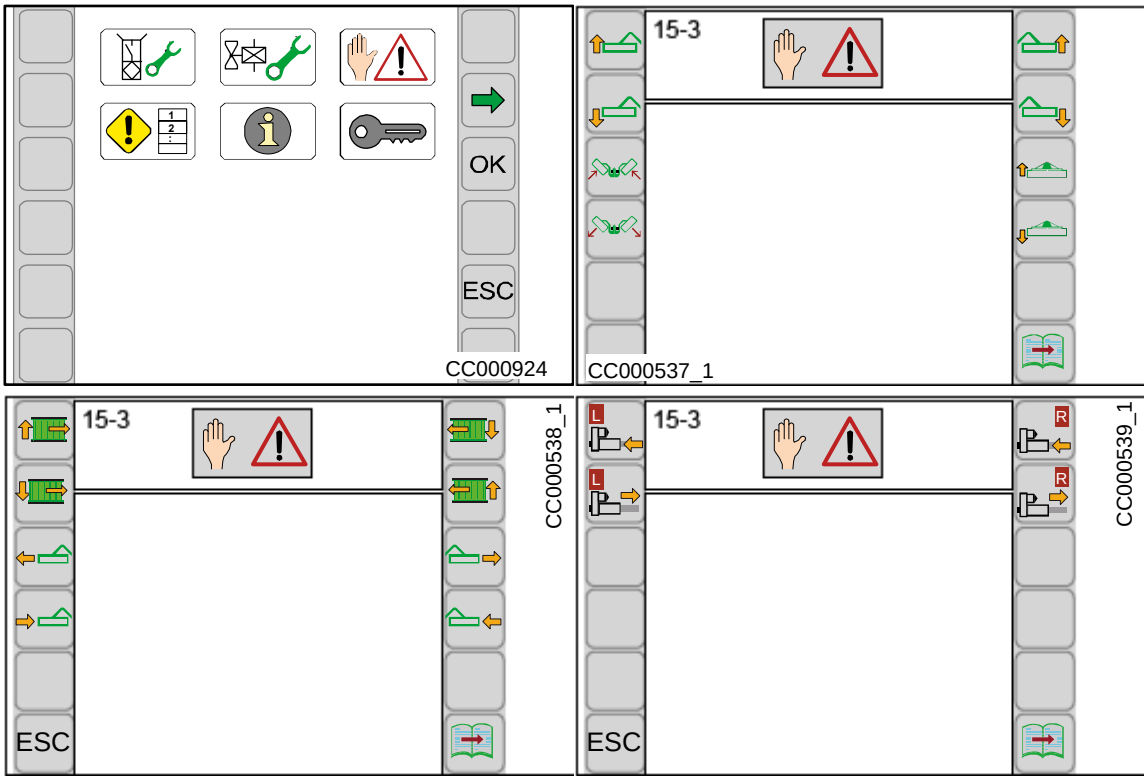


Fig. 85

Prerequisite: The main menu 15 "Settings" has been opened.

- To open the menu, press .

The display shows the "Manual operation without confirmation prompt" menu.

- The next page can be accessed by pressing the function key for .

Possible Functions (Depending on How the Machine is Equipped)

Symbol	Function to be executed
	Raise right lateral mowing unit
	Lower right lateral mowing unit
	Raise left lateral mowing unit
	Lower left lateral mowing unit
	Raise front mowing unit
	Lower front mowing unit
	Fold up right-hand/left-hand lateral mowing units
	Fold down right-hand/left-hand lateral mowing units
	Lower right-hand cross conveyor
	Raise right-hand cross conveyor
	Raise left-hand cross conveyor
	Lower left-hand cross conveyor

Symbol	Function to be executed
	Deploy right-hand lateral mowing unit
	Retract right-hand lateral mowing unit
	Deploy left-hand lateral mowing unit
	Retract left-hand lateral mowing unit
	Retract right-hand swath roller
	Deploy right-hand swath roller
	Retract left-hand swath roller
	Deploy left-hand swath roller

- Pressing the corresponding function key for the desired symbol (alternatively via touch screen) the desired function (as shown in the table above) is executed directly without safety check.

10.12.4 Sub-Menu 15-4 Error List

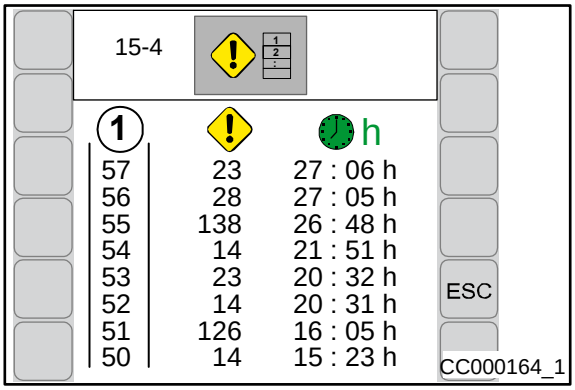


Fig. 86

Prerequisite: The main menu 15 "Settings" has been opened.

- To open the submenu 15-4 "Error list", press .

The display shows menu 15-4 "Error list".

Softkey	Meaning	Information
	Scrolling up	
	Scrolling down	
ESC	Leaving menu	

Graphic	Meaning	Information
1)	Consecutive numbering	
	Error number	– For a description of the errors, see "Alarm messages".
h	Input time	– According to total operating hours counter

10.12.5 Sub-Menu 15-5 “Information”

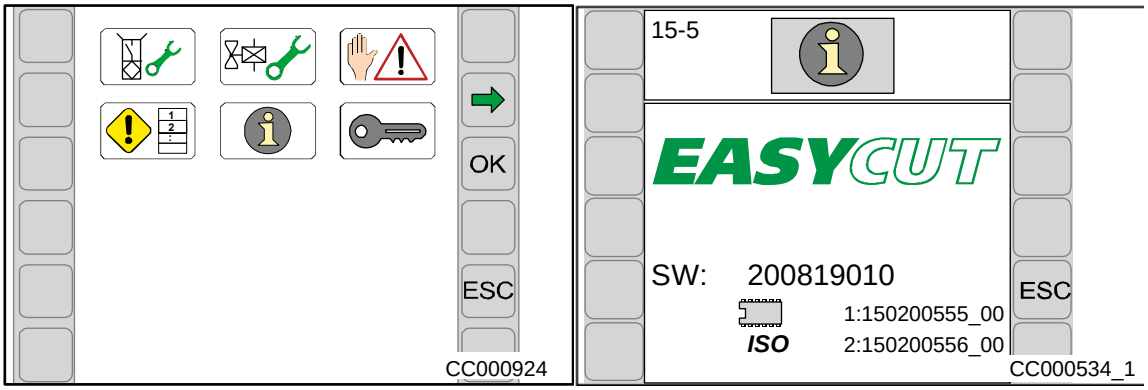


Fig. 87

Prerequisite: Main menu 15 “Settings” is called.

- Press to open the menu.

The display shows “Information” menu.

SW	Complete software version of the machine
	Version of the job computer
ISO	ISO software version

10.12.6 Sub-Menu 15-6 Technician

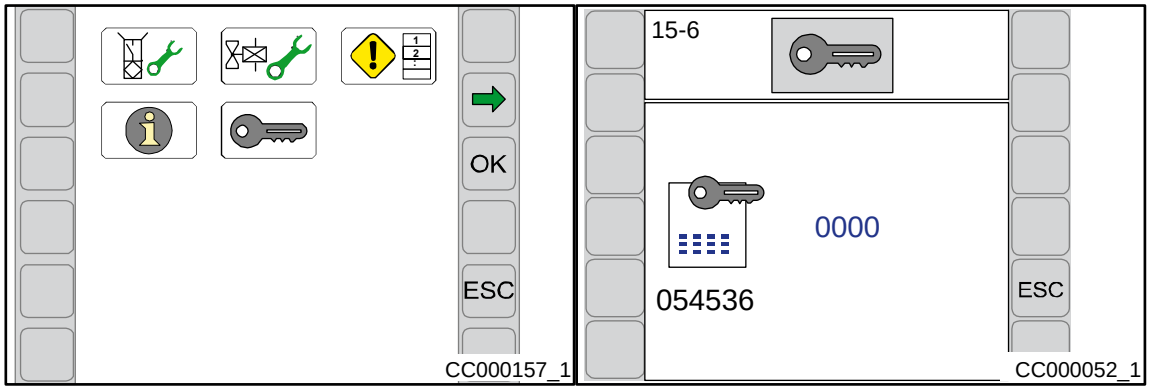


Fig. 88

Prerequisite: Main menu 15 “Settings” is called.

- Press to open the menu.

The display shows the “Technician” menu.

The “Technician” sub-menu is protected by password.
The display shows the password query.

10.13 Alarm Message

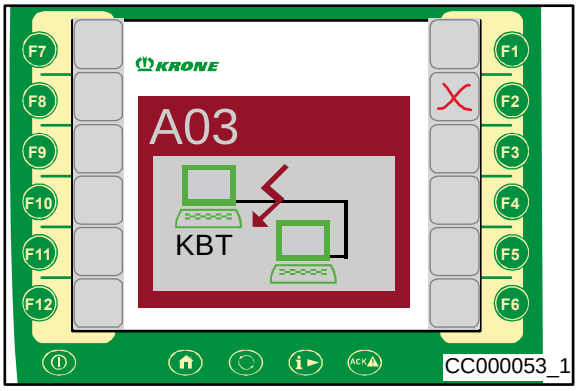


Fig. 89

Alarm message

If a malfunction occurs on the machine, an alarm message appears in the display and an audio signal is heard at the same time (constant horn signal). Description, possible cause and remedy are shown in the chapter entitled “Alarm Messages”.

Note

All functions in the covered menu are still active. The softkeys covered by the alarm message are deactivated.

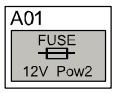
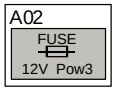
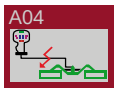
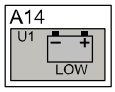
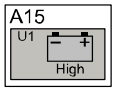
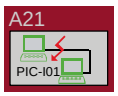
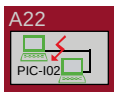
To reset alarm:

- To reset the alarm, press function key for softkey X, the acoustic signal is stopped.

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

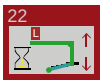
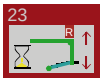
Softkey	Description	Information
X	Acknowledge alarm	– The alarm message will appear again if the malfunction occurs again
🗑	Delete message	– This message is not shown until the operation terminal is started the next time.

10.14 Alarm messages

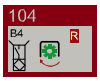
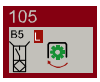
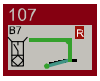
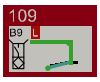
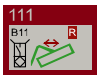
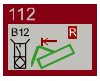
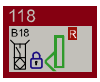
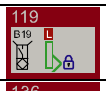
No.	Figure	Possible cause	Remedy
A01		– The plug-in fuse in the job computer is defective. – Short circuit at voltage outputs +12V2FU_L	– Check the connection for short circuit and replace the fuse.
A02		– Fuse in job computer is defective – Short circuit at voltage outputs +12V3FU_L	– Check the connection for short circuit. – The fuse regenerates itself after cooling.
A04		– The connection to the multi-function lever is interrupted. – The multi-function lever is not connected correctly.	– Check the wiring of the multi-function lever.
A14		– Undervoltage – Tractor battery is defective. – Tractor dynamo is too weak. – The 12V supply on the tractor side is too weak or is not correctly connected to the battery.	– Connect the KRONE connection cable directly to the tractor battery.
A15		– Overvoltage – Tractor dynamo is defective.	– Check the dynamo.
A21		– The CAN connection is interrupted between the job computer and the Krone PIC I/1 computer. – The CAN wiring is defective. – The Krone PIC-I01 computer is inactive.	– Check the CAN wiring. – Replace the Krone PIC-I01 computer.
A22		– The CAN connection is interrupted between the job computer and the Krone PIC I/2 computer. – The CAN wiring is defective. – The Krone PIC-I02 computer is inactive.	– Check the CAN wiring. – Replace the Krone PIC-I02 computer.
A25			

10.14.1 Logical Alarms

No.	Image	Possible cause	Remedy
1		– The P.T.O. shaft is still running when attempting to move the mowing unit left into transport position.	– Turn off P.T.O. shaft and wait until it stops.
2		– The P.T.O. shaft is still running when attempting to move the mowing unit right into transport position.	
3		– Pressure threshold is not reached. – The tractor engine is OFF. – The hydraulic block does not get any oil.	– Start the tractor engine. – Pressurise the control unit. – Check the LS hydraulic system.
4		– The information appears when folding up the machine into transport position.	– Observe transport height. – Make certain the side guards are folded up.
5		– The setpoint working width right is not reached.	– Check the parts for width shift for damage. – Completely retract the lateral mowing unit once.
6		– The setpoint working width left is not reached.	
11		– The swath roller height left is not reached.	– Check the parts for swath roller height for damage.
12		– The swath roller height right is not reached.	
13		– Time error, the process for lifting mowing unit left takes longer than 30 seconds. – The sensor setting is incorrect. – Insufficient hydraulic supply.	– Perform a sensor test. – Check hydraulic supply.
14		– Time error, the process for lifting the mowing unit right takes longer than 30 seconds. – The sensor setting is incorrect. – Insufficient hydraulic supply.	
15		– Time error; the process for lifting the front mowing unit takes longer than 30 seconds. – The sensor setting is incorrect. – Insufficient hydraulic supply.	

No.	Image	Possible cause	Remedy
20		Manual operation: – When folding up the mowing unit right, the width shift is smaller than 16cm.	– Set width shift to more than 16cm.
21		Manual operation: – The width shift is smaller than 16cm when folding in the mowing unit.	
22		– Time error, the process for moving cross conveyor left into the correct position takes longer than 30 seconds.	– Perform a sensor test. – Check hydraulic supply.
223		– Time error, the process for moving cross conveyor right into the correct position takes longer than 30 seconds.	

10.14.2 Physical alarm messages

No.	Screen	Sensor description	Possible cause	Remedy
104		Speed of right mowing unit	Sensor or line defective.	Perform a sensor test. Check the sensor and supply line for damage.
105		Speed of left mowing unit		
107		Grouping below right		
109		Grouping below left		
111		Working width right		
112		Working width zero right		
113		Working width left		
114		Working width zero left		
118		Transport position right		
119		Transport position left		
136		Headland position right		
137		Headland position left		

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11 ISOBUS operation

General aspects

The ISOBUS system is an internationally standardized communication system for agricultural machines and systems. The designation of the related series of standards is: ISO 11783. The agricultural ISOBUS system makes an information and data exchange between tractor and device of different manufacturers possible. To this end, both, the necessary plug connections and the signals are standardized which are necessary for the communication and command transmission. The system also enables the operation of machines with control units (terminal) which are already existent on the tractor or have been attached in the tractor cabin. The relevant details can be found in the technical documentation of the control unit or on the device itself.
Those KRONE machines which are ISOBUS equipped are adapted to this system.

Note

The KRONE ISOBUS systems pass the ISOBUS COMPATIBILITY TEST (DLG/VDMA) on a regular basis. The operation of this machine requires at least implementation level 3 of the ISOBUS system.

DANGER!

When using terminals and other control units which have not been delivered by KRONE mind that the user:

- has to take the responsibility for the use of KRONE machines when using the machine on control units (terminal / other control elements) which have not been delivered by KRONE
- must check the machine before operation on all machine functions, if they are performed as described in the enclosed operating instructions
- as possible, should only couple those systems to each other which have passed a DLG/VDMA test (so called ISOBUS COMPATIBILITY TEST) before
- has to follow the operating and safety instructions of the supplier of the ISOBUS control unit (e.g. terminal)
- must guarantee that the control elements and machine control systems fit together according to the IL (IL= Implementation Level; describes the compatibility status of the different software versions) (requirement: IL same or higher)

11.1 Mounting ISOBUS Terminal

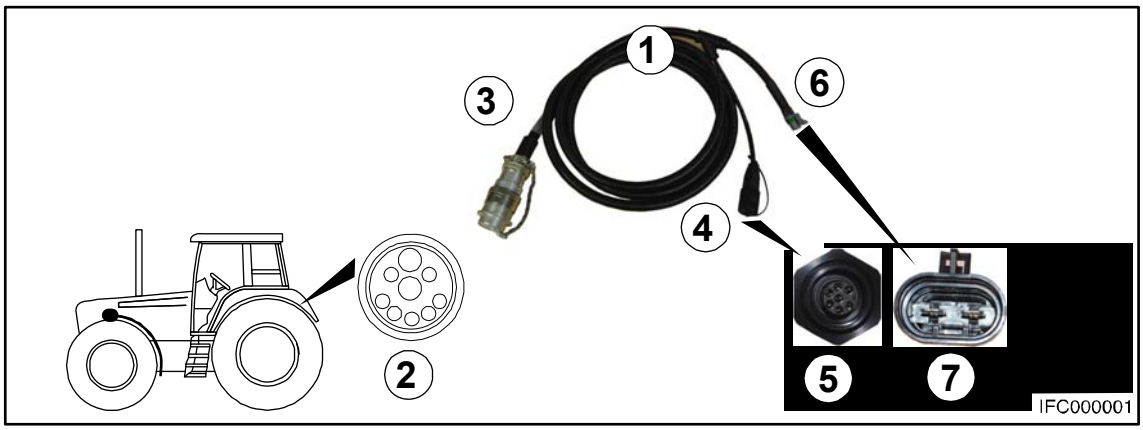


Fig. 90

CAUTION!

Failure of control unit.

When installing, make certain that the connection cables are not tight when cornering and that they do not touch the tractor wheels or any other parts of tractor or machine.

11.1.1 Connection Terminal to Tractor

Note

For further details on the attachment, consult the operating instructions of the ISOBUS terminal manufacturer.

11.1.2 Connection Tractor to Machine

- Connect ISO-plug (3) (9-pole) of cable set (1) with outer ISO-socket (2) (9-pole) on tractor side
- Connect plug (4) (7-pole) of cable set (1) with socket (5) (7-pole) of the machine
- Connect plug (6) (2-pole) of cable set (1) with socket (7) (2-pole) of the machine

11.2 Differing functions to KRONE ISOBUS terminal CCI

Via the accessory unit, the ISOBUS control unit will provide information and control functions to the display of the ISOBUS terminal. Operation with an ISOBUS terminal is analogue to the KRONE ISOBUS terminal CCI. Prior to start-up, refer to the operating instructions for the method of operation of the KRONE ISOBUS terminal CCI.
A fundamental difference to the KRONE ISOBUS terminal CCI is the arrangement of the softkeys, which are determined by the selected ISOBUS terminal.
Only the functions that differ from the KRONE ISOBUS terminal CCI are described in the following.

11.2.1 Variant Functions on ISO Terminals with 10 Keys

In case of ISO terminals with 10 keys, the functions “Adjusting / Approaching Width Shift” and “Adjusting / Approaching Overcut” are not available on machines without cross conveyor belt. These two functions are not displayed on machines with cross conveyor belt.

The function “Setting / Approaching Width Shift” and “Setting / Approaching Overcut” can be laid on multi-function lever (refer to Chapter entitled “ISOBUS Auxiliary Function (AUX)”.

11.2.2 Reversing

When reversing, the mowing units are raised automatically to headland position.
When the reversing operation has completed, the mowing units must be returned to working position via the terminal.

The following conditions must be met:

- Automatic mode must be engaged.
- The tractor must transmit the travelling speed and direction of travel on the ISO bus.
- The parameter (ISO bus evaluation) must be released (can only be done by a Krone service technician).

Note

You can check whether the parameter (ISO bus evaluation) is released in menu 4-6 'Diagnostics of travelling speed / direction of travel display'.

11.2.3 ISOBUS Short Cut Button

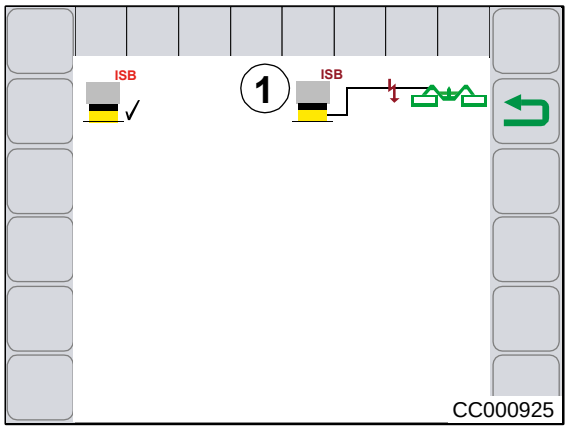


Fig. 91

Note

Symbol (1) is shown in the display if there is no ISOBUS Short Cut Button available on ISOBUS terminals of other manufacturers.

The possibility to switch off the machine function via ISOBUS Short Cut Button is not available here.

11.3 ISOBUS „Auxiliary“-function (AUX)

Note

There are terminals which support the additional function “auxiliary” (AUX). With this function, programmable keys of the peripheral equipment (e.g. multi-function levers ...) can be assigned with functions of the connected job computers. A programmable key can also be assigned with several different functions. If key assignments are saved, accordant menus will appear on the screen when switching on the terminal.

The following functions are available in the Auxiliary (AUX) menu:

Auxiliary	Function in automatic mode	Function in manual mode
	Width shift	Not available
	Retracting lateral mowing unit right by 8 cm	Retracting lateral mowing unit right (momentary-action)
	Extending lateral mowing unit right by 8 cm	Extending lateral mowing unit right (momentary-action)
	Retracting lateral mowing unit left by 8 cm	Retracting lateral mowing unit left (momentary-action)
	Extending lateral mowing unit left by 8 cm	Extending lateral mowing unit left (momentary-action)
	Width shift one step to the left	Not available
	Width shift one step to the right	Not available
	Lifting lateral mowing units from working position to headland position	Lifting lateral mowing units from working position to headland position
	Lowering lateral mowing units from headland position to working position	Lowering lateral mowing units from headland position to working position
	Lifting / lowering cross conveyor right	Not available
	Lifting / lowering lateral mowing unit right	Not available
	Lifting / lowering cross conveyor left	Not available
	Lifting / lowering lateral mowing unit left	Not available
	Lifting / lowering front mowing unit	Lifting / lowering front mowing unit
	Overcut	Not available
	Cross conveyor faster	Cross conveyor faster
	Cross conveyor slower	Cross conveyor slower

Auxiliary	Function in automatic mode	Function in manual mode
	Lifting front mowing unit (momentary-action)	Lifting front mowing unit (momentary-action)
	Lowering front mowing unit (momentary-action)	Lowering front mowing unit (momentary-action)
	Lifting lateral mowing unit left (momentary-action)	Lifting lateral mowing unit left (momentary-action)
	Lowering lateral mowing unit left (momentary-action)	Lowering lateral mowing unit left (momentary-action)
	Lifting lateral mowing unit right (momentary-action)	Lifting lateral mowing unit right (momentary-action)
	Lowering lateral mowing unit right (momentary-action)	Lowering lateral mowing unit right (momentary-action)

Inching means that the function is carried out as long as the key is activated.

Note

For further guidelines, please refer to the operating instructions of the terminal being used.

11.3.1 Example of joystick assignment for Fendt (default setting)

Note

For further guidelines, please refer to the operating instructions of the terminal being used.

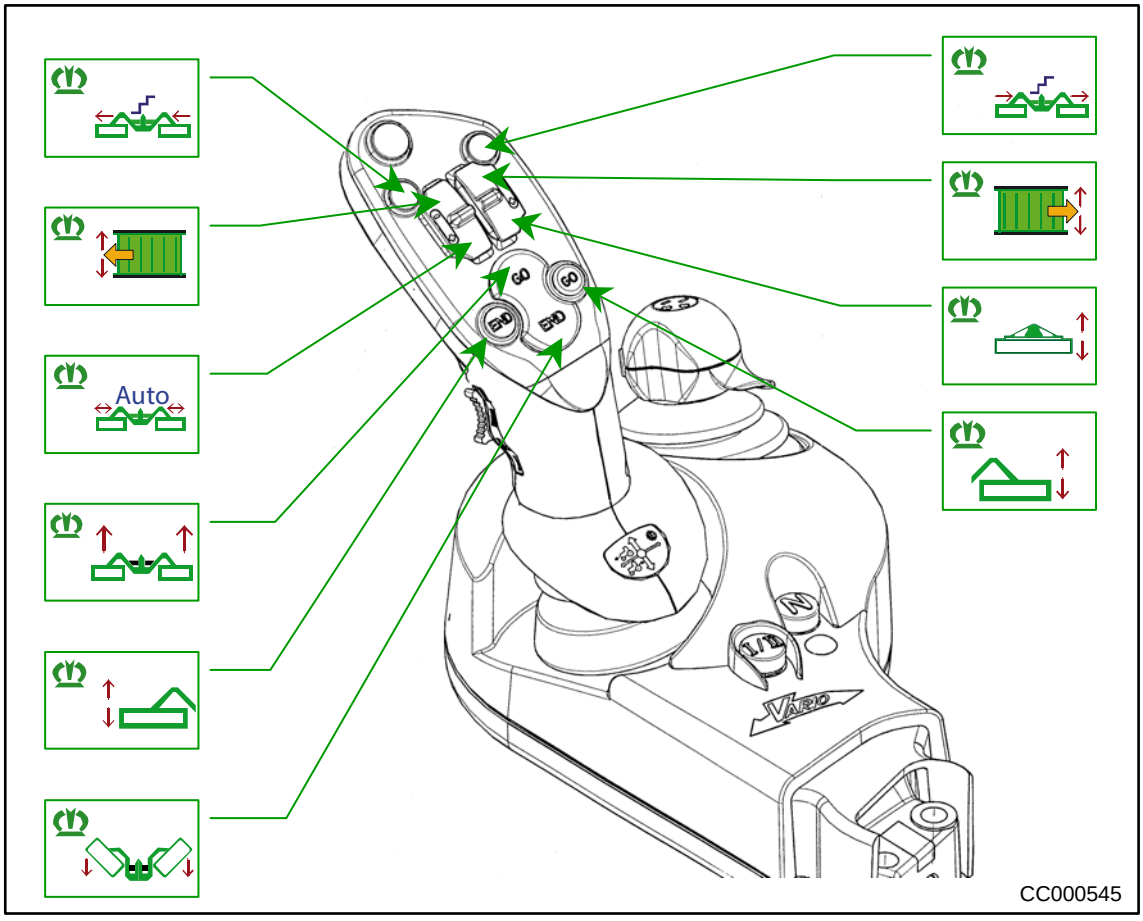


Fig. 92

11.3.2 Recommended settings for a WTK multi-function lever

Note

For further guidelines, please refer to the operating instructions of the terminal being used.

Switch (1) on the back in upper position (LED (2) lights up red)

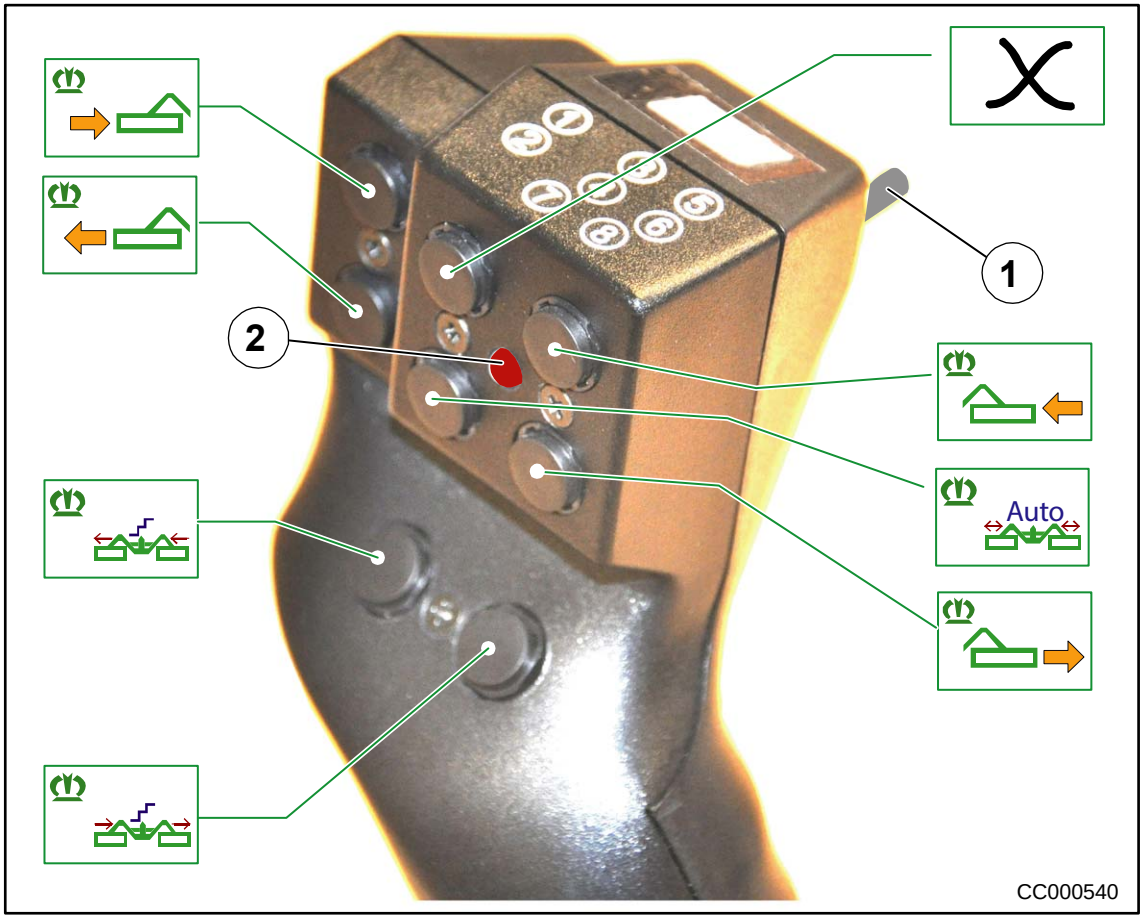


Fig. 93

Switch (1) on the back in lower position (LED (2) lights up green)

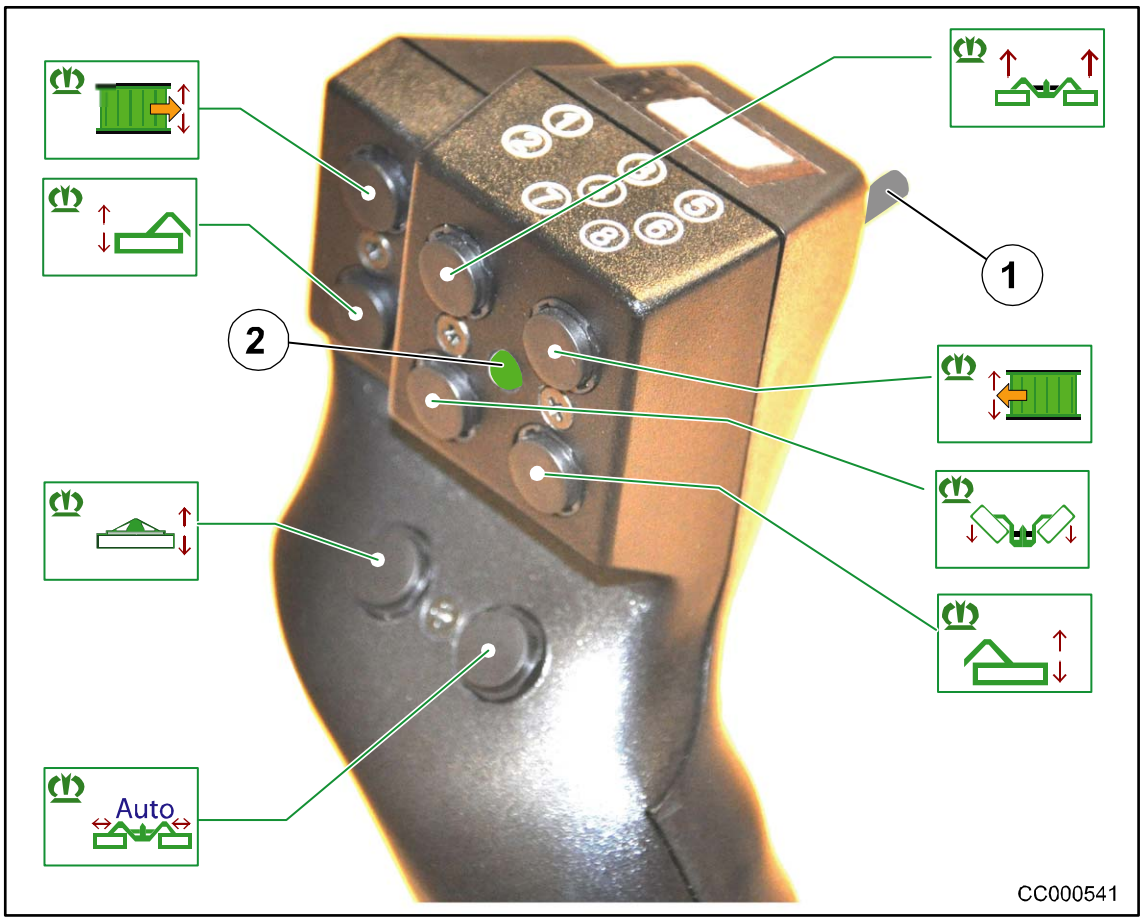


Fig. 94

Switch (1) on the back in mid position (LED (2) lights up yellow)

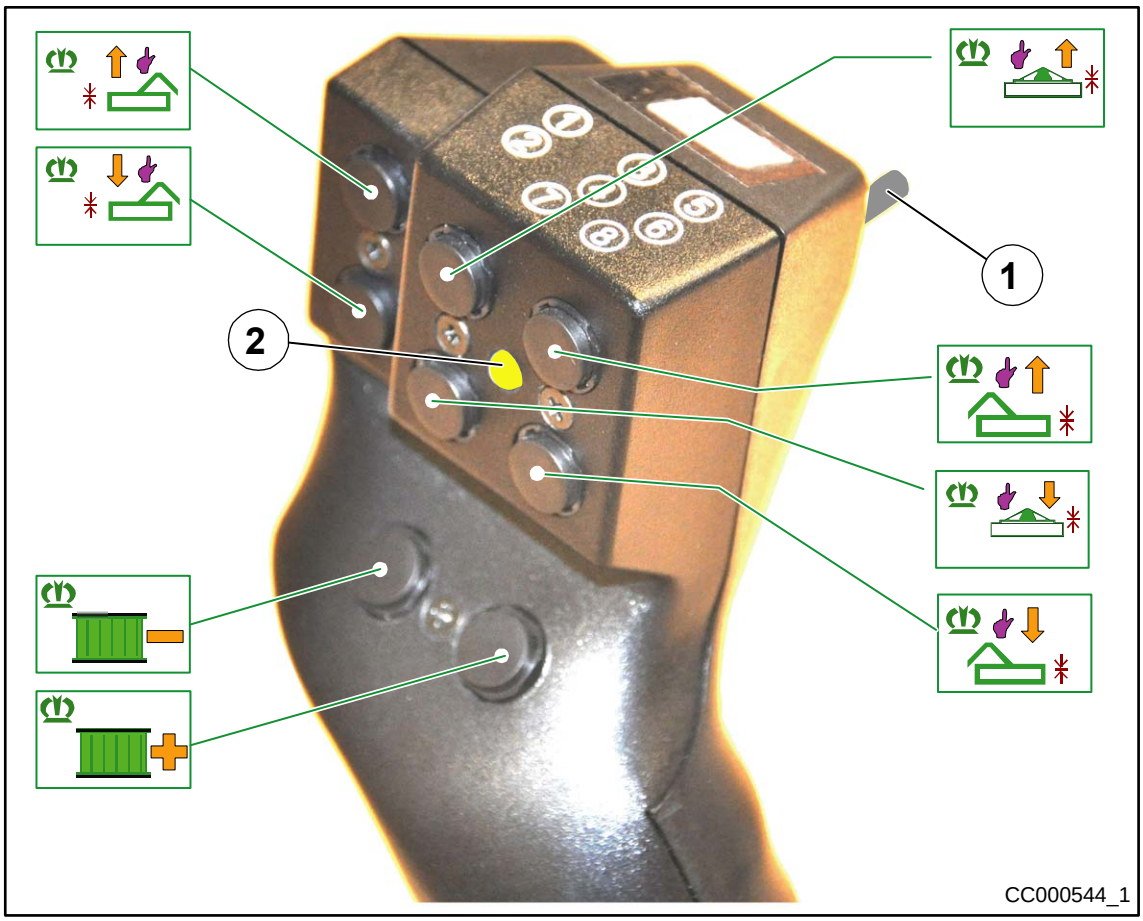


Fig. 95

12 Driving and Transport

12.1 Switching from working position to transport position

DANGER! – Road travel, carrying passengers, driving conduct

Effect: Danger to life, injuries or damage to the machine.

- The machine must be fully and correctly hitched.
- The machine must be in transport position.
- The operating terminal must be switched off or the display must show the 'start-up dialogue'.
- The lower suspension arms must be locked.
- Carrying passengers on the machine is not permitted.

When driving on public roads, the provisions of the Road Traffic Licensing Regulations must be adhered to (lighting, identification, axle loads, permissible dimensions of additional housing component, etc.).

- Before starting, ensure that you have perfect visibility on and around the tractor and the machine.

WARNING!

During the swivelling operation of the mower, persons may be gripped by the mower and be seriously injured.

- Before swivelling the mower up into transport position, turn off the PTO shaft.
- Do not swivel up the machine until
  - all machine parts have come to a complete stop.
  - there is no one in the swivel range.

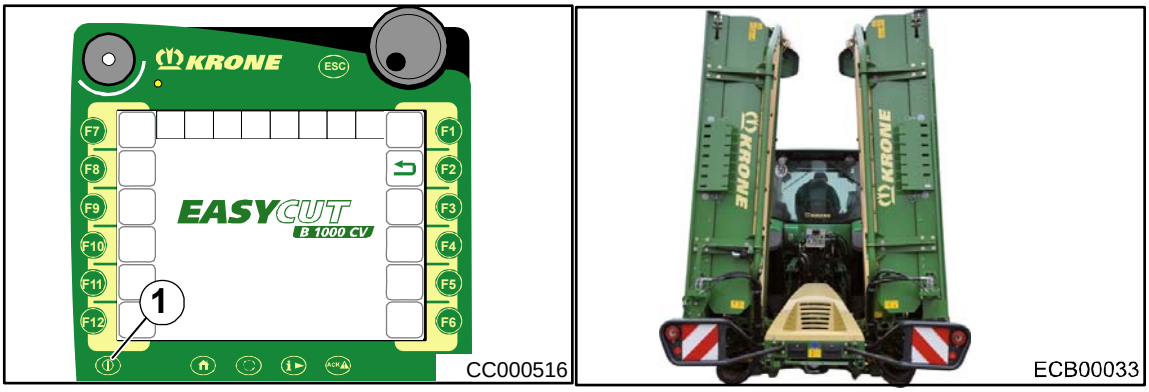


Fig. 96 Start-up dialogue

For transport/road travel, the mowing units must be folded up.

To do this:

- Switch off PTO drive
- Slightly raise the machine via the rear power lift.
- Swivel the front and rear parking supports into transport position and lock them in place with the bolts.
- Raise the mowing units into the transport position using the terminal (the outrigger arms are fully retracted and locked and the display shows the 'Raise/Lower front mowing unit' basic dialogue).
- After about 60 sec. or on pressing function key

for approx. 2 sec., the 'Raise/Lower front mowing unit' basic dialogue switches back to the 'Start-up' dialogue.
- The terminal display must show the start-up dialogue.

Note

- Check that the mowing units are fully swivelled into the transport securing position.
- Make sure that the side protection units are folded down.
- Lower the machine using the rear power lift enough to ensure that the maximum transport height is not exceeded.
- Make sure that there is enough ground clearance.
- Make sure that the terminal display shows the 'Start-up dialogue'.

13 Operation

13.1 Before mowing

DANGER! - Using the machine for work

Effect: Danger to life, injuries or damage to the machine.

- The glide skids must rest on the ground before start-up and during work
- Maintain an adequate safety distance from the cutting tools during operation
- There is danger of foreign objects being forcibly ejected even when the machine is operated properly. Persons must therefore be directed out of the danger zone of the machine.
- Special care should be taken when working near roads and buildings)

13.2 Mowing

- Swivel parking supports into transport position.
- Move the machine to the working position.
- Block the rear power lift.
- Fold down the safety device.
- Set the lateral guides correctly.
- Before switching on the PTO make sure that the selected RPM and the direction of rotation of the tractor PTO agrees with the direction of rotation of the machine and its permitted maximum RPM.
- Before driving into the crop engage the tractor PTO in neutral gear and slowly bring it up to the nominal machine RPM.
- Drive into the crop.
- Check the mowing unit suspension during mowing.
- To ensure a clean cut, adjust the driving and cutting speeds to the prevailing conditions (soil condition, state of the crop, height, density).

13.2.1 Folding down the Safety Device

DANGER! – Stones forcibly projected during operation

Effect: Danger to life or serious injuries.

- Check the guard cloths regularly. Worn or damaged guard cloths must be replaced!
- The protective equipment on the mowing unit, e.g. cloths and hoods, protects against flying stones and similar objects, and also prevents access to dangerous parts. Because of this, you must always move it to its protective position before starting work
- Fold the side plate(s) down and secure with twist locks before use

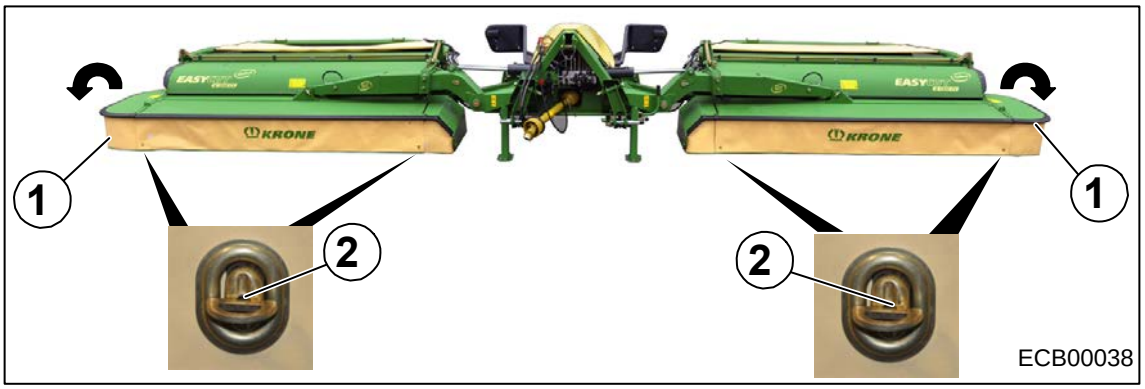


Fig. 97

Ensure before use that the side panel(s) (1) of the machine is/ are folded down and that it/they is/are secured by the rotating locking devices (2).

13.2.2 Adjusting the lateral suspension arm

Danger! - Height adjustment of the lower suspension arms on the tractor

Effect: Danger to life, injuries or damage to the machine.

- Switch off the PTO.
- Secure the tractor against rolling.
- Do not step into the space between the tractor and the machine.

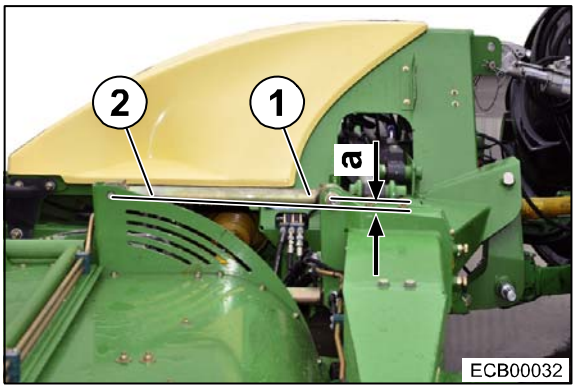


Fig. 98

During mowing, the height of the headstock must be adjusted so that the lateral suspension arms (1) in the front area (1) and the rear area (2) are at the same level (**a= ca. 0 mm)**.

The adjustment is made through the height adjustment of the lower suspension arms on the tractor.

13.3 From transport into working position

Danger! - Lowering the mowing unit into the working position

Effect: Danger to life, injuries or damage to the machine.

- Lower the mowing unit only when you are absolutely sure that neither persons, animals nor objects are in the swivel range of the mowing unit.
- Switch on the PTO only when the mowing unit is resting on the ground.

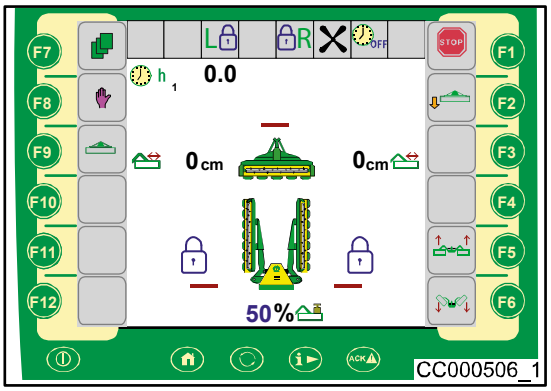


Fig. 99

The front mowing unit alone can be used for partial mowing, to mow small parcels of crop or narrow sections in open fields. To this end the lateral mowing units must be in transport position and locked.

The 'Raise/Lower front mowing unit' basic dialogue only appears when the front mowing unit is attached and the lateral mowing units are in transport position or above the headland position.

13.3.1 Lowering the lateral mowing units from the transport position to the headland position

- To lower both lateral mowing units, press and hold .

13.3.1.1 Protection for wild animals

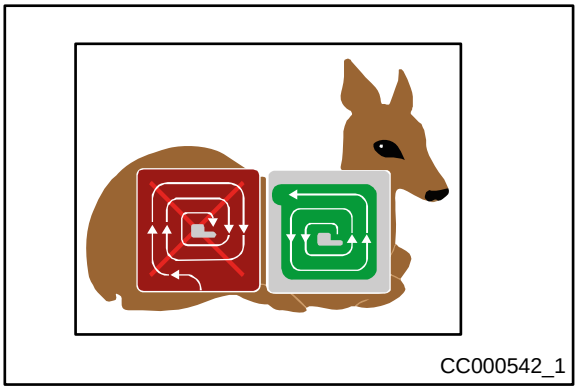


Fig. 100

Note

When the lateral mowing units are lowered from the transport position to the headland position, information appears on the display concerning the proper mowing technique. At the same time a warning tone is audible. The information disappears after several seconds.

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

This can be avoided by mowing according to the 'from the inside outwards' technique. Instead of mowing any edge sections at first, the operator drives straight into the middle of the field and then mows in a left-handed spiral from the inside to the outside. Animals can rely on their natural instincts to escape from the field without injury.

13.3.2 Lowering all mowing units from the headland position to the working position

Lowering of the lateral mowing units to the front mowing unit depends on the set mode under the menu "Setting manual/distance/time control".

In mode 1 manual control

Lower front mowing unit

- To lower the front mowing unit, press and hold .

Lowering lateral mowing units

- To lower the lateral mowing units, release .

In mode 2 time control and in mode 3 distance control

Lowering front mowing unit and lateral mowing units

- To lower the front mowing unit, press and release .

The lateral mowing units are lowered once the set time delay has elapsed or the set distance has been covered.

Lowering lateral mowing units before end of the time/distance control

- To raise the lateral mowing units, press again.

Note

If there is no front mowing unit attached, the lateral mowing units are deployed to the working position immediately.

13.4 Headland Position

Danger! - Lifting the mowing unit from the working position into headland position

Effect: Danger to life, injuries or damage to the machine.

- Lift the mowing unit into headland position only when you are absolutely sure that neither persons, animals nor objects are in the swivel range of the mowing unit.

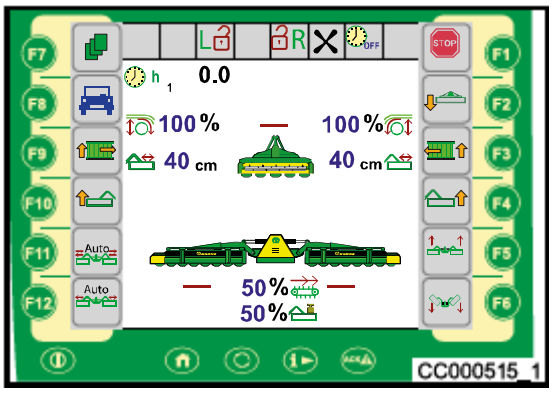


Fig. 101

13.4.1 Raising all mowing units from the working position to the headland position

Raising of the lateral mowing units to the front mowing unit depends on the set mode under the menu "Setting manual/distance/time control".

In mode 1 manual control

Raising front mowing unit

- To raise the front mowing unit, press and hold .

Raising lateral mowing units

- To raise the lateral mowing units, release .

In mode 2 time control and in mode 3 distance control

Raising front mowing unit and lateral mowing units

- To raise the front mowing unit, press and release .

The lateral mowing units are raised once the set time delay has elapsed or the set distance has been covered.

Raising lateral mowing units before end of the time/distance control

- To raise the lateral mowing units, press again.

Note

If there is no front mowing unit attached, the lateral mowing units are deployed to the headland position immediately.

13.4.2 Raising the lateral mowing units from the headland position to the transport position

Raising both lateral mowing units

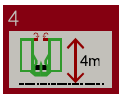
- To raise both lateral mowing units, press and hold .

Note

When the machine is folded up to the transport position information item 4 is always displayed.

- Perform a visual check that the side protection is folded up.
- Be aware of the transport height and lower the lower suspension arm further if necessary.

Information item 4:



Check the machine transport height.

Side guards must be folded up.

13.5 Detaching the machine

Danger! - Unexpected movements of the machine

Effect: Danger to life, serious injuries

- No one is permitted inside the danger zone.
- Park the machine on a solid and even surface.
- You should not unhitch the machine until the engine has been switched off and the ignition key has been removed.
- Secure the tractor against rolling.
- Use extreme caution when attaching implements to or detaching them from the tractor! The accident prevention regulations must be complied with absolutely.
- When connecting the hydraulic hose to and disconnecting it from the hydraulic system of the tractor, the tractor system as well as the machine system must be depressurised! Move the appropriate control valves into the flow position.
- When detaching the machine, do not walk between the tractor and the machine!

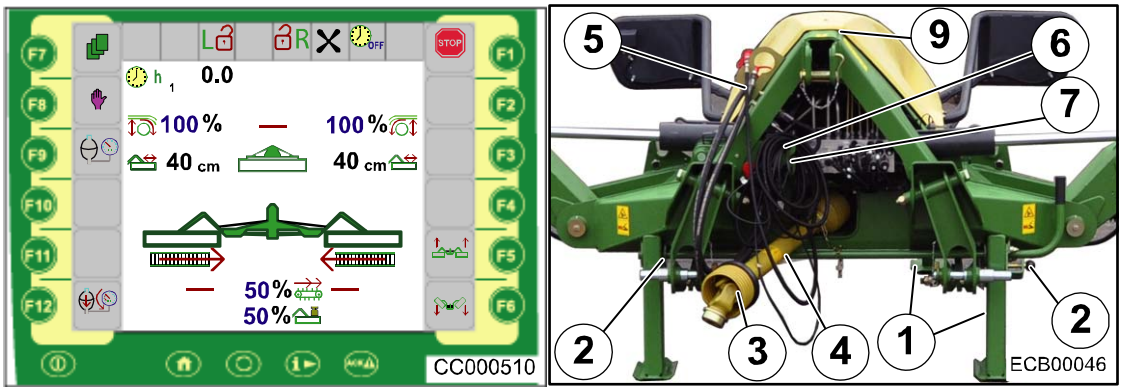


Fig. 102 Basic view of hydraulic system.

Before you disconnect the lateral mowing units from the tractor, depressurise the hydraulic system completely so as to avoid difficulties when reconnecting the machine to the tractor the next time.

Prerequisite:

– The "Hydraulic system" basic screen is called up.

Displaying the basic hydraulic system dialogue

The 'Hydraulic system' basic dialogue is indicated on the terminal via the symbol.

Relieving all pressure from the hydraulic system

- To depressurise the hydraulic system, press .

All valves are opened for several seconds.

- Press function key basic screen (, , , , ,) until the desired basic screen is displayed in the terminal

- Lower the front and rear parking supports (1) and secure them in position with bolts (2).
- Lower the machine to the ground using the tractor's hydraulic system.
- Remove the cardan shaft (3) from the tractor and place it onto the storage surface (4)
- Disconnect the hydraulic hoses (5) from the tractor, fit the dust caps and hang them onto the connection block.
- Disconnect the connection of the lighting cable (6) between the tractor and machine and place it in the supports provided for that purpose.
- Disconnect the power supply plug (7) between the tractor and machine and place it in the supports provided for that purpose.
- Remove the terminal from the tractor and store it so that it is protected from damp.
- Unhitch the top suspension arm.
- Unlock the lower guide hook of the tractor.
- Lower the rear power lift further until the lower guide bolts are free.
- Drive the tractor away carefully.

13.6 Parking

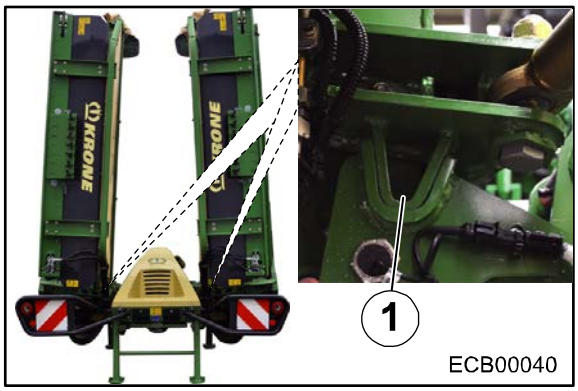


Fig. 103

Note - Parking with the mowing units folded up

Effect: Save space

For reasons of space, the machine can also be folded up for parking.

In this case, take special care to ensure that the two interlocks (1) (LH and RH) are hooked in and that the mowing unit is parked only on especially solid ground such as concrete or asphalt.

14 Settings

DANGER! - Unexpected movement of the machine

Effect: Danger to life or serious injuries.

- Setting tasks must only be performed when the drive is switched off and the engine is at a standstill!
- Switch off engine.
- Remove the ignition key and carry it with you.
- Secure the tractor against rolling away.

Danger!

Accident hazard through unintentional lowering of the cross conveyor.

Effect: Danger to life or serious injuries.

- Work may only be done under the raised cross conveyor when the cross conveyor stopcock is closed.

14.1 Adjusting the cutting height

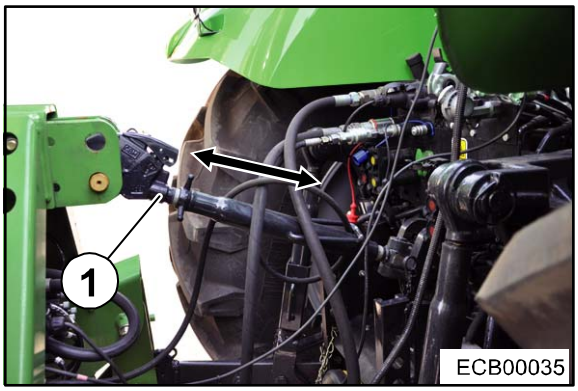


Fig. 104

- Observe the safety instructions at the beginning of the section.

The cutting height is adjusted via the top link (1).

To do this:

- Swivel the parking support(s) down
- Lower the machine into working position and set it down on the parking support(s).
- Rotate the top suspension arm (1).
- Fold in the parking support(s).

Top suspension arm longer = bigger cutting height

Top suspension arm shorter = smaller cutting height

14.2 Adjusting the Guards

DANGER! – Stones forcibly projected during operation

Effect: Danger to life or serious injuries.

- Check the guard cloths regularly. Worn or damaged guard cloths must be replaced!
- The protective equipment on the mowing unit, e.g. cloths and hoods, protects against flying stones and similar objects, and also prevents access to dangerous parts. Because of this, you must always move it to its protective position before starting work
- Fold the side plate(s) down and secure with twist locks before use

14.2.1 Lateral Guards

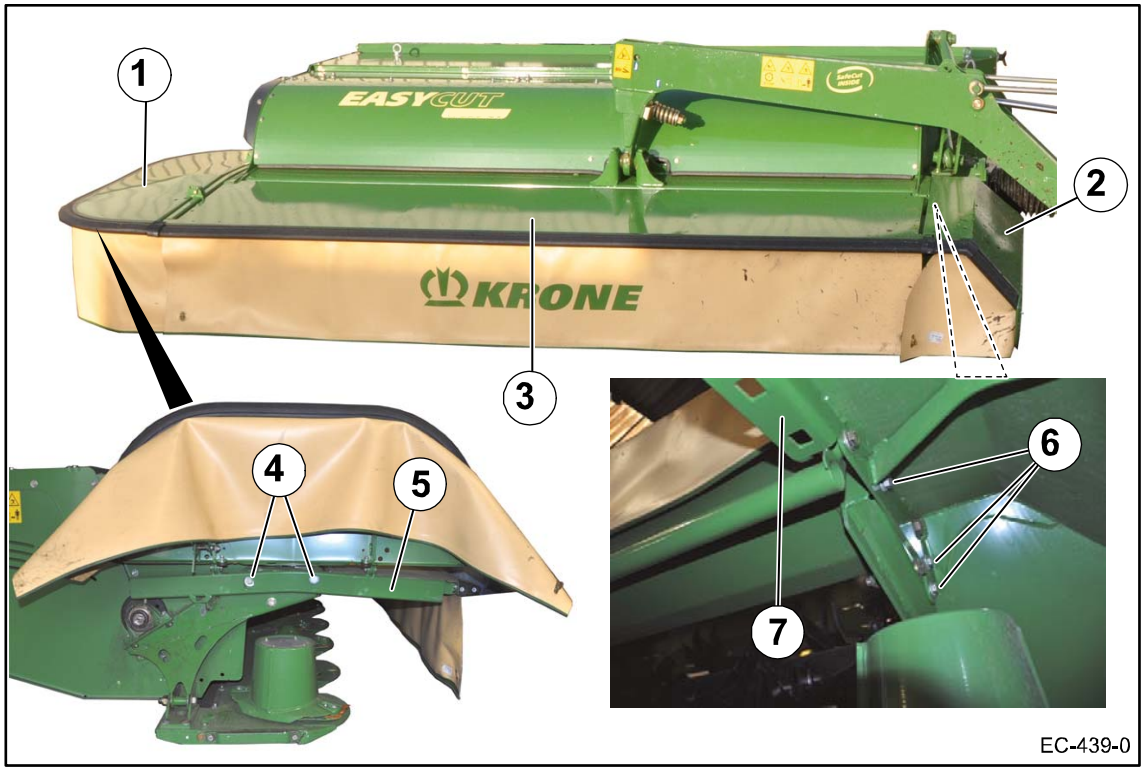


Fig. 105

The height of the outer guard (1) and of the inner guard (2) can be adjusted.

Adjusting the outer guard (1):

- Fold up the guard (1)
- Loosen the screws (4)
- Adjust the height of the guard by using the mounting bar (5)
- Tighten the screws (4)

Adjusting the inner guard (2):

- Fold up the guard front (3)
- Loosen the screws (6)
- Adjust the height of the guard by using the mounting bar (7)
- Tighten the screws (6)

14.3 Setting of the pole protection mechanism

Caution! - Adjusting the pole protection mechanism

Effect: Damage to the machine

- If the setting value is changed, the trigger moment will also change. If the spring on the pole protection mechanism is pretensioned more than prescribed by the manufacturer, there is a risk of damaging the disc mower.
- The spring on the pole protection mechanism must be tensioned at least to the extent that the pole protection mechanism does not respond in transport position even with abrupt loads.

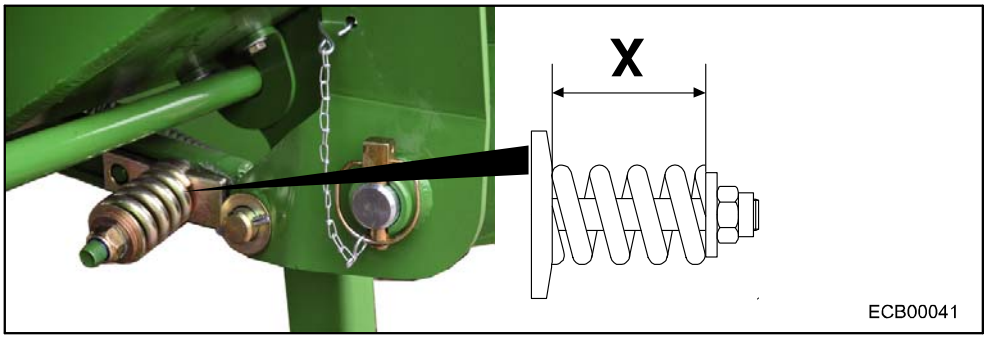


Fig. 106

- Observe the safety instructions at the beginning of the section.

In order to protect the disc mower against damages during driving over obstacles, it is equipped with a so-called pole protection mechanism.
The optimal setting for the trigger moment takes place in the factory.

Mower type	Dimension x
EASYCUT B 1000 CV	85 mm
EASYCUT B 1000 CV Collect	85 mm
EASYCUT B 1000 CR	85 mm
EASYCUT B 1000 CR Collect	85 mm

After the pole protection mechanism is triggered, the mowing unit swings back. The pole protection mechanism will catch again as soon as you move back.

14.4 Adjusting the Tedder Speed

CV-Design

Danger! - Settings on the machine

Effect: Danger to life, injuries or damage to the machine.

- Setting tasks must only be performed when the drive is switched off and the engine is at a standstill! Remove the ignition key!

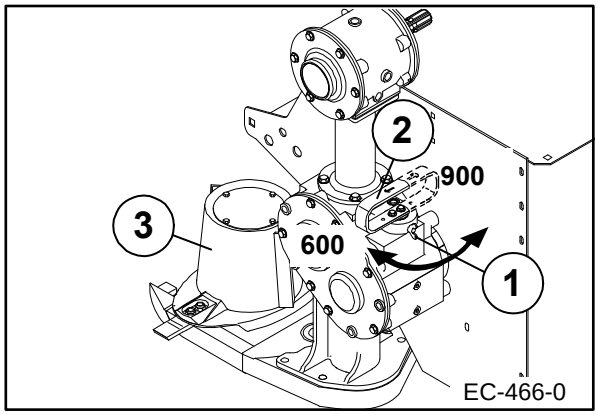


Fig. 107

Two tedder speeds can be set on the speed gearbox. This affects the conditioning effect and the power consumption.

Minimum speed: 600 rpm.

Maximum speed: 900 rpm.

- Unscrew the wing screw (1) from the actuating lever (2).
- Rotate the actuating lever (2) 180°. In doing so, turn the mower drum (3) so that the actuating lever can be rotated completely.
- Secure the actuating lever (2) with the wing screw (1).

14.5 Adjusting the conditioner plate

CV-Design

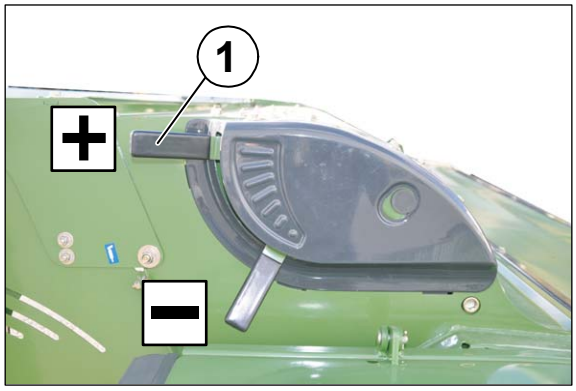


Fig. 108

- Observe the safety instructions at the beginning of the section.

The degree of conditioning is changed by adjusting the lever (1).
In the “+” direction: Degree of conditioning is increased
In the “-” direction: Degree of conditioning is decreased

Always check the tedder for damaged tines before the machine is used:
Straighten any bent tines.
Replace any broken tines.

14.5.1 Adjustment for Swathing

CV-Design

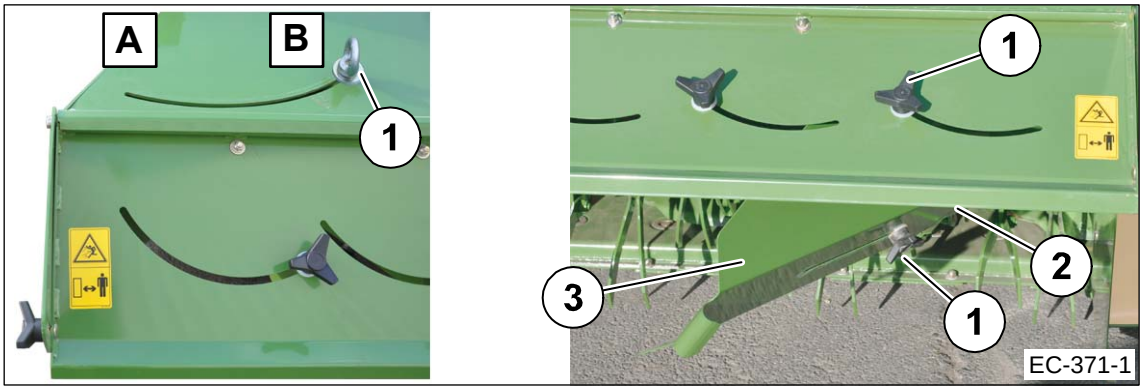


Fig. 109

- Observe the safety instructions at the beginning of the section.

The swath width can be adjusted to the crop

To do this:

- Loosen the ring nut (1) (right and left machine side)
- Adjust the swath flaps (2) (ensure that right and left machine side have the same settings)
  - to the outside “A” = wide swath
  - to the inside “B” = close swath
- Tighten ring nut (1)

The swath width can also be set using the extension on the swath flaps.

To do this:

- Loosen the star knobs (1) (right and left sides of machine)
- Set swath flap extension (3)
- Tighten the star knobs (1)

Note

The star knobs may work loose due to vibrations, possibly resulting in the loss of the star knobs, screws and swath plates.

- Manually tighten star knobs as tight as possible to ensure that they cannot work loose during operation due to vibrations

14.5.2 Wide spreading

CV-Design

Note

The star knobs may work loose due to vibrations, possibly resulting in the loss of the star knobs, screws and swath plates.

- Manually tighten star knobs as tight as possible to ensure that they cannot work loose during operation due to vibrations

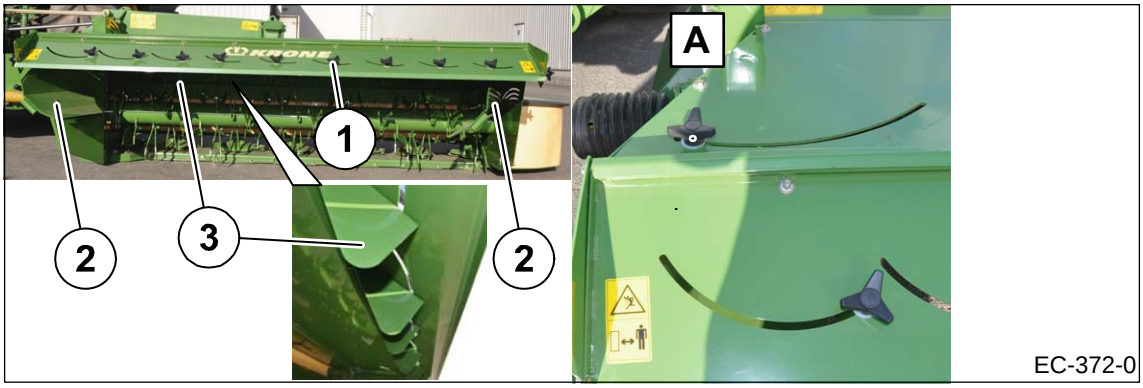


Fig. 110

- Observe the safety instructions at the beginning of the section.

Swivel the swath flaps (2) all the way outwards (towards “A”).

Depending on the operating conditions, the deflector plates (3) may have to be adjusted to obtain equal distribution across the entire area.

- Loosen star knob (1)
- Push the deflector plate (3) into the required position
- Tighten the star knobs (1)

14.5.3 Setting wide distributor plate

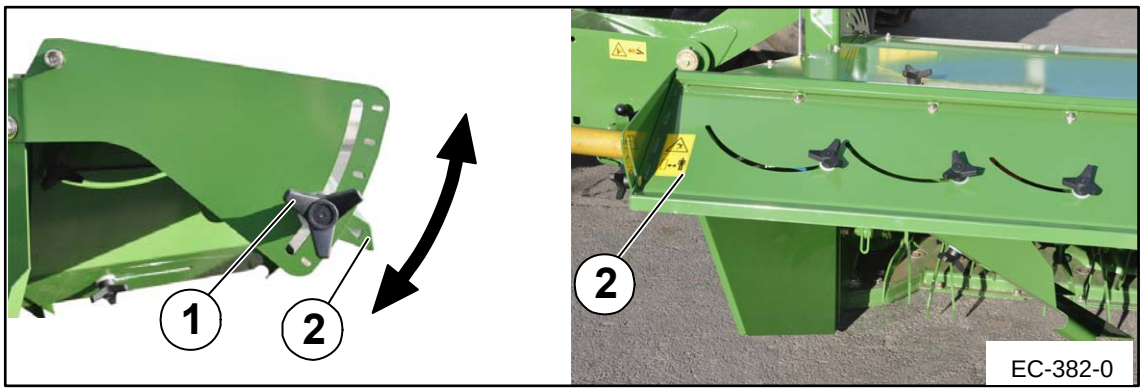


Fig. 111

- Observe the safety instructions at the beginning of the section.

For swathing set the wide distributor plate (2) all the way down.
For wide spreading the wide distributor plate can be adjusted individually to the amount of forage.

To do this:

- Loosen the star knob (1) (right and left sides of machine)
- Swivel wide distributor plate (2) into the required position
- Tighten the star knobs (1)

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14.5.4 Wide spreading with the "Cross Conveyor" option

EasyCut B 1000 CV Collect

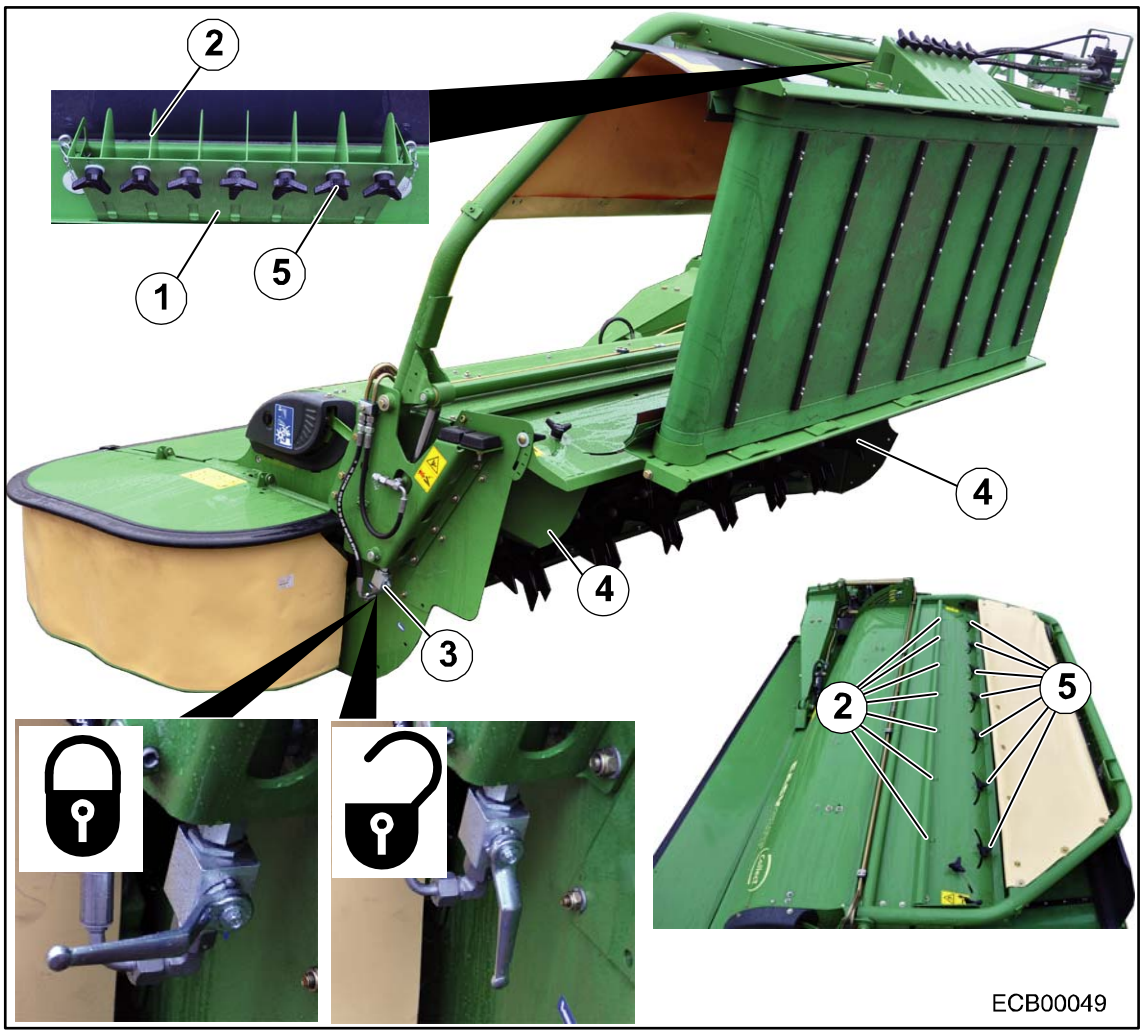

Fig. 112

Operation without the cross conveyor

- Move the machine to the working position.
- Switch off the PTO and then the tractor engine, secure the tractor against rolling and remove the ignition key.
- Remove the deflector plates (2) from the brackets (1) and put to one side.
- Start the tractor and raise the cross conveyor over the terminal.
- Switch off the tractor engine and remove the ignition key.
- Close the stopcock (3) on the cross conveyor.
- Open the tedder flaps (4) as far as possible.
- Mount the deflector plates and tighten the palm grips (5).
- Open the stopcock on the cross conveyor.

Setting the deflector plates

- **Observe the safety instructions at the beginning of the section.**
- Depending on the operating conditions, the deflector plates (2) may have to be adjusted to provide for equal crop distribution across the entire area.
- Move the machine to the working position.
- Raise the cross conveyor over the terminal.
- Switch off the PTO and then the tractor engine, secure the tractor against rolling and remove the ignition key.

Set the deflector plates as needed and tighten the palm grips.

Use with cross conveyor belt

When working with activated cross conveyor belt, we recommend removing the deflector plates.

- Move the machine into working position
- Raise the cross conveyor belt by using the terminal
- PTO shaft OFF, tractor engine OFF, secure the tractor against rolling and remove the ignition key
- Close stop cock on the cross conveyor belt
- Remove deflector plates (2) and put them aside
- Open the stop cock on the cross conveyor belt
- Start the tractor and lower the cross conveyor belt via the terminal
- Switch off tractor engine and remove the ignition key
- Insert the deflector plates (2) into the support (1) and secure with star knobs
- Set the conditioner flaps as requested
- Adjust the broad distribution plate so that there is a uniform crop flow on the cross conveyor belt

14.6 Adjust Locking

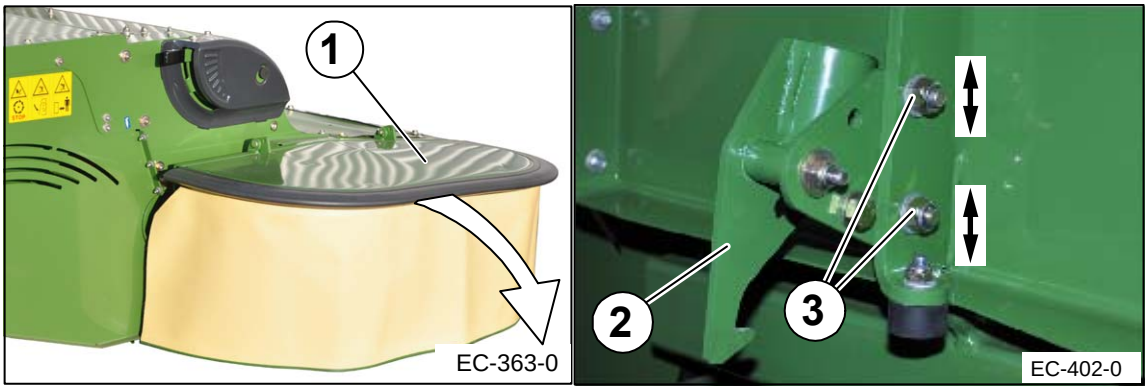

Fig. 113

- Observe the safety instructions at the beginning of the section.

The locking (2) prevents during use that the side panel folds up and that foreign objects are slung away. Therefore, it is very important to ensure before every use that the side panel (1) of the machine is folded down and that the locking (2) is secured.

The side panel (2) must be adjusted in that way that

- the side panel (1) folds down when swivelling the machine from transport position to working position and that it is secured by the locking (2)
- the side panel (1) slides independently from the locking when swivelling the machine from working position to transport position and that the side panel is folded over to transport position. Thus the transport height is reduced.

If this is not the case, the locking (2) must be set via the screw connection (3).

To do this:

- Loosen the screw connection (3)
- Readjust the locking in the oblong hole
- Tighten the screw connection (3)

14.7 Setting the Distance of the Rollers

With roller conditioner design (CR)

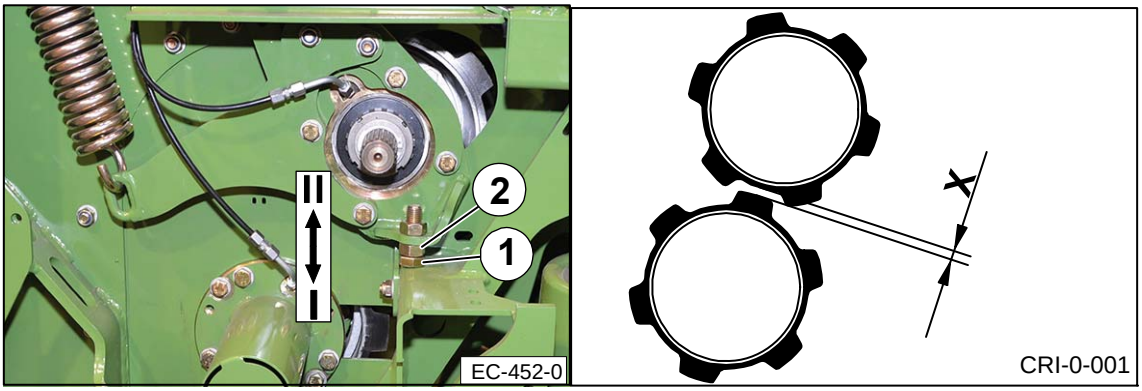

Fig. 114

The roller distance (X) can be adjusted by means of the screw (1), right and left side of the machine. The dimension X = 2 mm must not be below this level to avoid high wear on the rollers.

- Loosen the nuts (2).

Increasing the distance X

- Rotate the screw (1) in the direction (I) to increase the distance.

Reducing the distance X

- Rotate the screw (1) in the direction (II) to reduce the distance.
- Tighten the counter nut (2) again

14.8 Setting Conveyor Belt

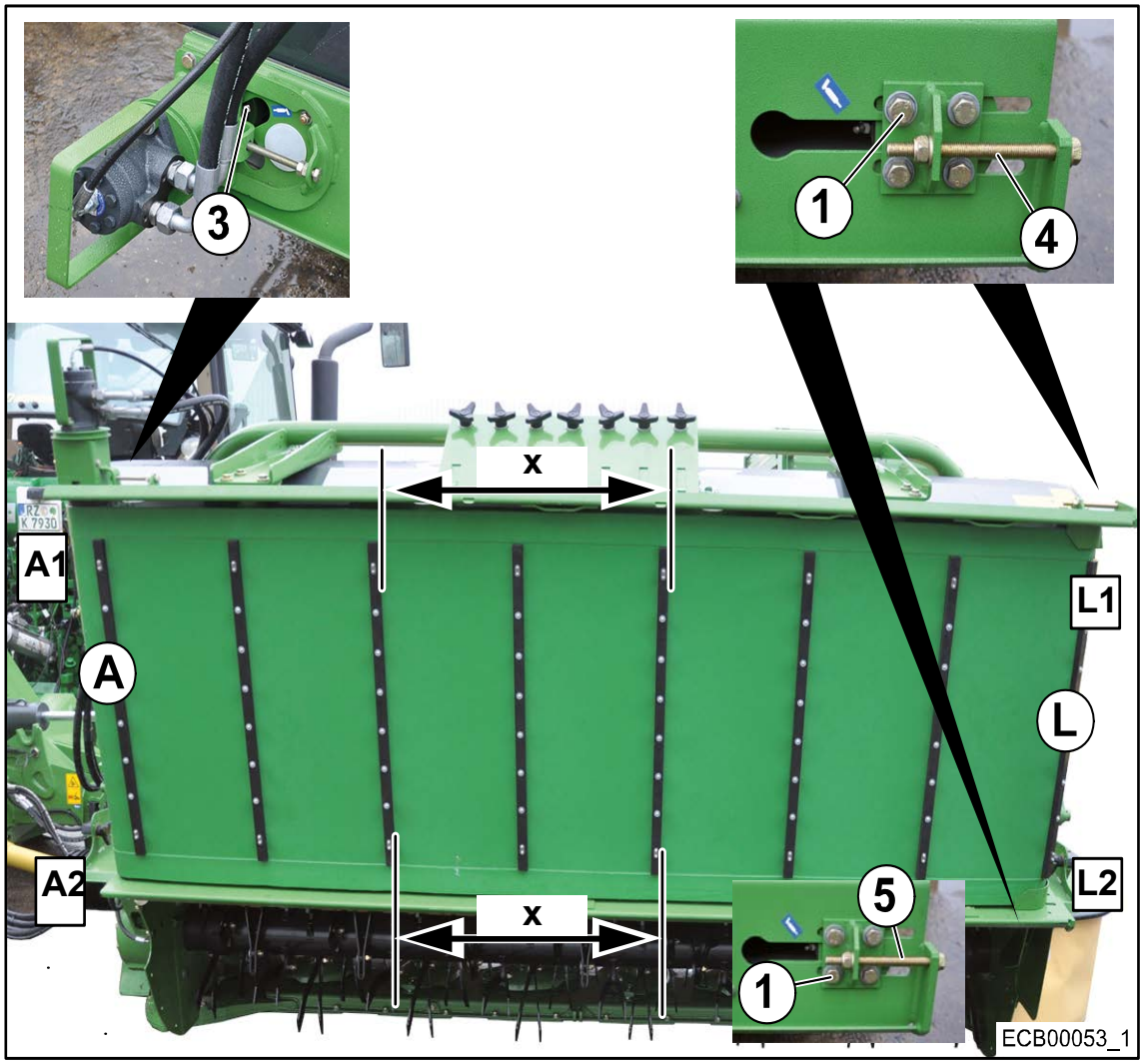

Fig. 115

The drive roller (A) can only be set on one side.

A1= inside / A2 = outside

The running roller (L) can be set on both sides.

L1= inside / L2 = outside

- Move the machine to the working position.
- Lower the cross conveyor over the terminal.
- Switch off the PTO and then the tractor engine, secure the tractor against rolling and remove the ignition key.
- Release the screw type bearings (1) at the front and rear of the running roller.
- Unclamp the conveyor belt by releasing the clamping screws (4,5) at the front and rear of the running roller.
- Raise the cross conveyor over the terminal.
- Mark the conveyor belt above and below at intervals of x = 1000 mm.
- Use the adjustment screws (4,5) to tighten the conveyor belt until the marks have a spacing of x = 1005 mm.
- Tighten the screw type bearings (1) at the front and rear (see Maintenance section , 'Tightening torques').
- Move the conveyor belt by hand through 2 or 3 revolutions (the markings must become visible again).

- Check the markings (x = 1005 mm) and retension the conveyor belt if necessary.
- Lower the cross conveyor over the terminal.
- Engage the PTO and observe the conveyor belt movement at a safe distance.

Checking / Correcting the direction of movement:

- Switch off the PTO and then the tractor engine, secure the tractor against rolling and remove the ignition key.

If the conveyor belt drifts off the running roller (L), then the drive roller must be tightened or loosened.

Conveyor belt drifts off the running roller to the outside (L1): Tighten the clamping screw (3).

Conveyor belt drifts off the running roller to the inside (L2): Unscrew the clamping screw (3).

If the conveyor belt drifts off the drive roller (A), then the running roller must be tightened above or below.

Conveyor belt drifts off the drive roller to the outside (A1): Tighten the clamping screw (5).

Conveyor belt drifts off the drive roller to the inside (A2): Tighten the clamping screw (4).

Note

- Do not make these adjustments while the conveyor belt is running. In each case only make small adjustments to the conveyor belt (turn the clamping screws through 1 or 2 revolutions). Carry out a trial run after each adjustment and check the markings.
- Adjustments may only be made on one side. That means that the clamping screw that was previously tightened must be released again to avoid overtensioning the conveyor belt.
- Once the conveyor belt is properly set the markings must lie between 1005 mm and 1008 mm. Provided the individual marking measurements remain within the range 1005 mm to 1008 mm a difference between above and below is OK.

14.9 Moving the Cross Conveyor

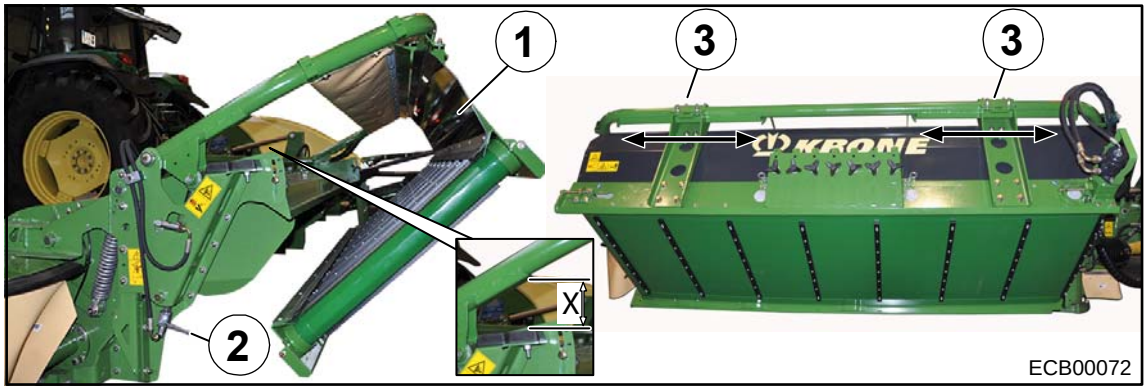

Fig. 116

The cross conveyors can be adapted by moving to the operating conditions of the crop.

Moving the cross conveyor:

- Raise the cross conveyor belts until the dimension is X= 13 cm.

Measured between rubber pad and frame. As a result, the cross conveyors are mounted on a pendulum bearing after the nut (3) is released. They can be moved manually.

- Close stop cock (2).
- Switch off tractor engine, secure the tractor from rolling away and remove the ignition key.
- Loosen the nuts (3), do not unscrew them completely.
- Move cross conveyor belts manually.
- Tighten nuts.
- Open stop cock.

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15 Maintenance

WARNING!

When performing repair, maintenance or cleaning work on the machine, or in case of technical intervention, drive elements may start moving and thus there is a risk of injuries or death.

- Switch off tractor engine, remove the ignition key and carry it with you.
- Secure the tractor against accidental start-up and against rolling.
- Wait until all machine parts have come to a complete stop and have been cooled down completely.
- Perform work on the disc mower only if it is in the working position.

Danger! - When checking the cutter blades and retaining bolts only sporadically

Effect: Danger to life, injuries or damage to the machine.

- Always check the mowing units for damaged, missing or worn blades, retaining bolts, leaf springs and cutting discs/blade drum before starting operation; replace any parts that are damaged, missing or worn!
- Always replace missing and damaged blades in sets to prevent unbalanced rotation!
- Never mount unevenly worn blades on a drum/disc!
- Whenever a blade is changed, also inspect the fasteners and replace them, if necessary!

15.1.1 Test run

Danger! - Testing the machine after repair, maintenance or cleaning work and after technical intervention.

Effect: Danger to life or serious injuries

- The mowing unit must be in working position
- Do not switch on the drives until the mowing units are resting on the ground and you are absolutely sure that neither persons, animals nor objects are in the danger zone.
- Start a trial run of the machine only from the driver's seat.

15.2 Spare Parts

Danger! - Using non-approved spare parts.

Effect: Danger to life, serious injuries or loss of warranty claims as well as exclusion of liability

- Use only authentic KRONE spare parts and accessories authorised by the manufacturer. The use of spare parts, accessories or additional equipment not manufactured, tested or approved by KRONE will exclude any liability for consequential damage.

Note

To ensure problem-free operation of the machine and to reduce wear and tear, specific maintenance and upkeep intervals must be observed. These include cleaning, greasing, lubricating and oiling parts and components.

15.3 Maintenance table

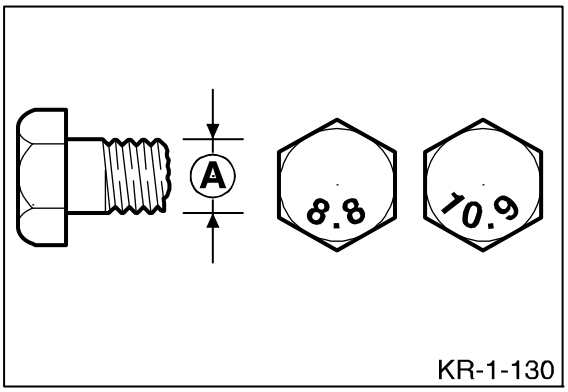
Maintenance work	Maintenance interval					
	Once after 10 hours	Before the beginning of the season	Every 10 hours but at least 1x daily	Once after 50 hours	Every 50 hours	Every 200 hours
Cutter bar						
Oil level check		X	X			
Oil change	not required					
All gearboxes						
Oil level check		**X**	**X**			
Oil change				X		**X**
Checking the cutter blades		**X**	**X**			
Check the retaining bolts for cutter blades		**X**	**X**			
Check the material thickness of the leaf springs, with blade quick-fit device design		X	X			
Cutting disc / blade drum		X	X			
Linings on the cutter bar		X				
Tighten the screws / nuts						
All screws		**X**			**X**	
Friction clutch						
Vent		**X**				
Guard cloths						
Check the guard cloth for wear and damage			**X**			

15.4 Tightening Torques

Tightening torque M_A in Nm (unless otherwise indicated).

A Ø	5.6	6.8	8.8	10.9	12.9
	M_A (Nm)				
M 4		2.2	3	4.4	5.1
M 5		4.5	5.9	8.7	10
M 6		7.6	10	15	18
M 8		18	25	36	43
M 10	29	37	49	72	84
M12	42	64	85	125	145
M14		100	135	200	235
M14x1.5			145	215	255
M 16		160	210	310	365
M16x1.5			225	330	390
M 20			425	610	710
M 24			730	1050	1220
M 24x1.5	350				
M 24x2			800	1150	1350
M 27			1100	1550	1800
M 27x2			1150	1650	1950
M30			1450	2100	2450

A = Thread size
(the stability class can be seen on the head of the screw).



NOTE

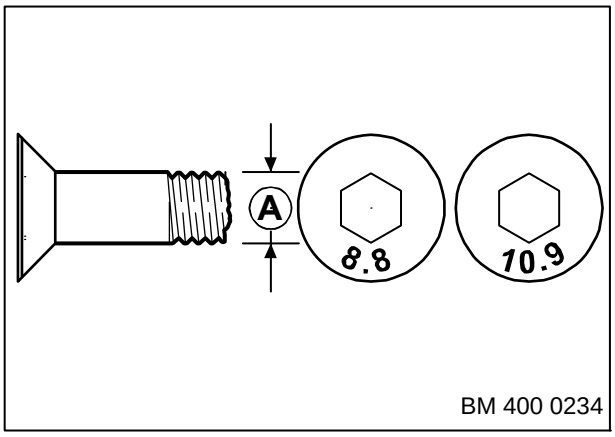
The table above does not apply to countersunk screws with hexagonal socket in case the countersunk screw is tightened via hexagonal socket.

15.5 Tightening Torques (Countersunk Screws)

Tightening torque M_A in Nm (unless otherwise indicated).

A Ø	5.6	8.8	10.9	12.9
	M_A (Nm)			
M 4		2.5	3.5	4.1
M 5		4.7	7	8
M 6		8	12	15
M 8		20	29	35
M 10	23	39	58	67
M 12	34	68	100	116
M 14		108	160	188
M 16		168	248	292
M 20		340	488	568

A = thread size
(the stability class can be seen on the head of the screw).



NOTE

The table above does not apply to countersunk screws with hexagonal socket and metric thread which are tightened via hexagonal socket.

15.5.1 Deviating Torque

Screws / nuts	MA [Nm]
Nut for cutting disc flange	850
Nut for shear protection (rotary hub)	300
Bearing housing for cutting disc	50
Bearing housing for blade drum	50

15.6 Rotary hub with shear fuse (optional)

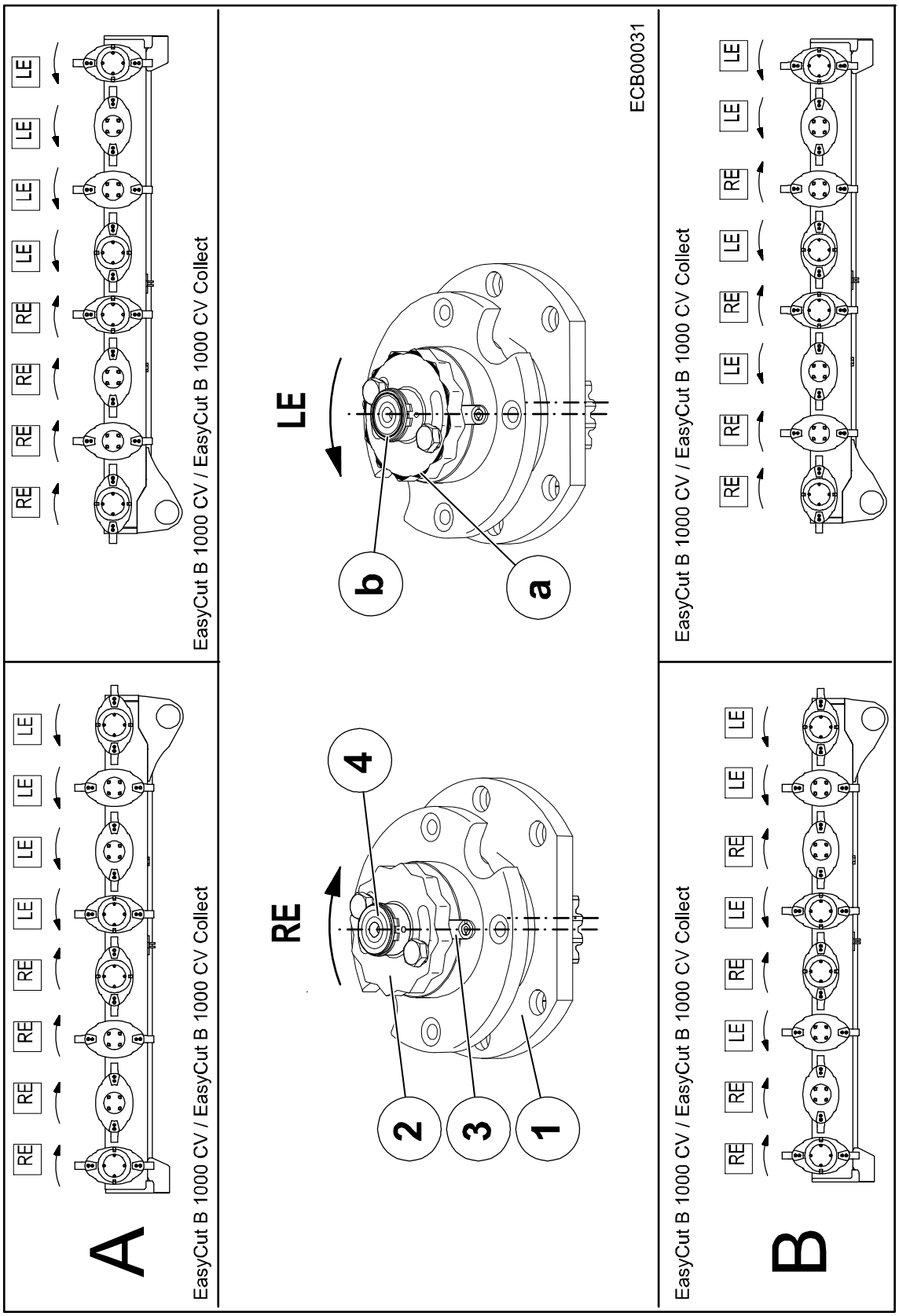


Fig. 117

Danger! - Rapidly rotating cutting discs/blade drums.

Effect: Danger to life or serious injuries.

- Switch off the engine and remove the ignition key.
- The cutting discs/blade drums continue to run!
- Do not leave the driver's cab until the cutting discs/blade drums have come to a complete stop.

Explanation of abbreviations:

A= Direction of rotation "A" to the middle
B= Direction of rotation "B" in pairs
RE= Eccentric bearing housing (clockwise threading, without identifying groove).
LE= Eccentric bearing housing (anticlockwise threading), with identifying groove.

For protection against overload on the mowing units, the rotary hubs (1) are secured with nuts (2) and shear pins (3).
If the machine strikes obstacles (for example stones), the 2 shear pins in the rotary hub will be sheared off. The rotary hub and nut turn upward on the pinion shaft.

- The cutting discs or drums which move crop to the left (as seen in the direction of travel) (LE) have left-handed threading.
- The cutting discs or drums which move crop to the right (in the direction of travel) (RE) have right-handed threading.

To distinguish between right-hand (clockwise) threading (RE) and left-hand (anti-clockwise) threading (LE), the nuts (2) and pinion shaft (4) for left-hand threading (LE) have a distinctive grove (a, b).

- Left-handed (LE) nuts (2) have distinctive grooves (a) on the bevel.
- Left-handed (LE) pinion shafts (4) have a distinctive groove (b) on the face.

15.6.1 After Shearing Off

Caution! - Correct installation position of the bearing housing not observed.

Effect: Damage to the machine

- Right rotating (RE/RZ) cutting discs and drums always have right-handed pinion shafts and nuts (no groove mark on the pinion shaft and nut).
- Left rotating (LE/LZ) cutting discs and drums always have left-handed pinion shafts and nuts (with groove mark on the pinion shaft and nut).

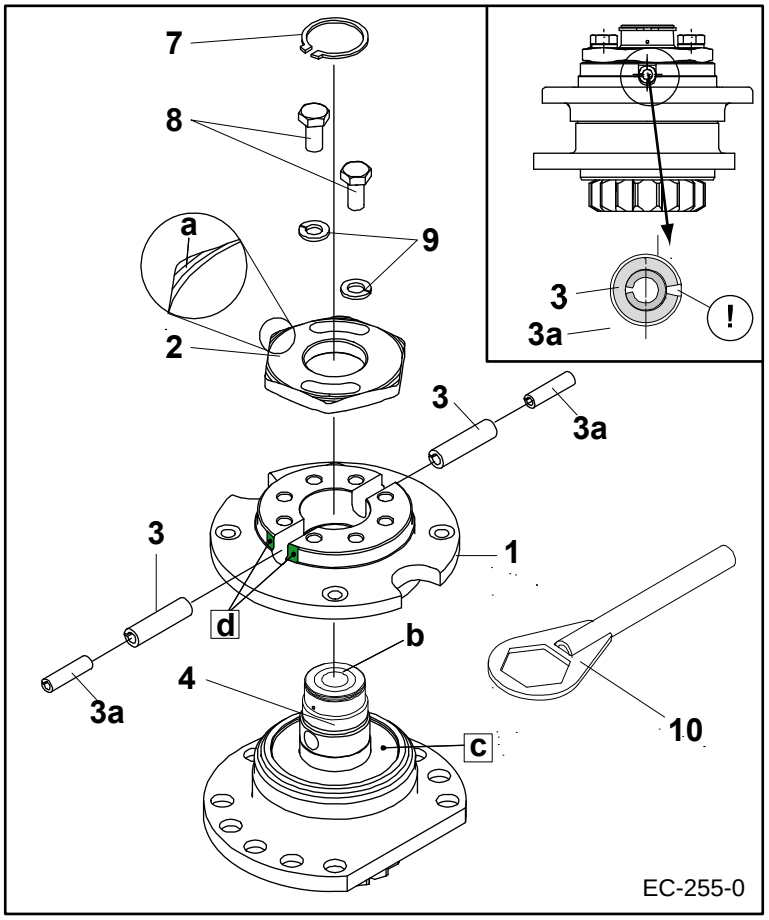


Fig. 118

- Remove the cutting disc or drum.
- Remove retaining ring (7).
- Unscrew the hexagon head bolts (8).
- Use the special key (10) included with delivery to remove the nut (2).
- Remove the hub (1).
- Remove the damaged shear pins (3).
- Check the nut and hub for damage. Replace damaged parts with KRONE original replacement parts.
- Fill the space above the bearing with grease (c).
- Place the hub on the pinion shaft.
- Drive the new shear pins (3) through the hub (1) and shaft (4).

Note - Note the position of the shear pins!

- Drive the shear pins (3) into the hole from outside until the end of the pin reaches the surface of the hub (d).
- he slots of the shear pins (3) must be mounted facing each other horizontally (see detail (I)).

- Install the nut (2) using the special key (10) included with delivery (tighten to a tightening torque of 300 Nm).
- Install and tighten the hexagon head bolts (8) with detent edged washers.
- Install the retaining ring (7).
- Install the cutting disc (5) or blade drum (6).

16 Maintenance - hydraulic system

16.1 High-pressure filter

The filter takes up depositions of solid particles of the hydraulic system. The filtering of the hydraulic circuit serves as a prevention of damages on components of the circuit. The filter is equipped with an optical contamination indicator (7). The contamination indicator (7) informs optical about the degree of contamination of the filter

Note

Check the contamination indicator before the machine is used and exchange the contaminated filter element if necessary.

When starting in cold condition the button on the contamination indicator (7) could hop out. Only press the button back in after achieving the operating temperature. In case it immediately hops out again, the filter element needs to be changed.

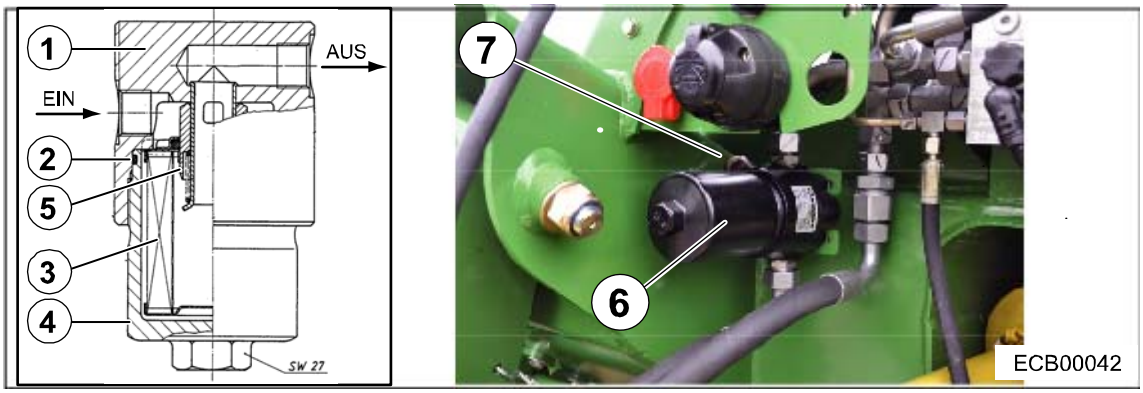


Fig. 119

Replacing the Filter Element

The hydraulic system filter (6) is at the front on the left hand side under the three-point block of the machine.

ENVIRONMENT! - Disposal and storage of used lubricants and oil filters

Effect: Environmental damage

Store or dispose used oil and oil filters according to statutory provisions.

Collect escaping oil in a suitable container.

- Relieve all pressure from the hydraulic system.
- Unscrew the bottom part of the filter (4) from the top part of the filter (1), clean it and make certain that it is not damaged.•
- Remove the filter element (3) and replace it by a new one with identical properties.
- Push a new filter element (3) onto the valve sleeve (5).
- Check the O-ring seal (2) and, if necessary, replace it by a new one with identical properties.
- Screw the bottom part of the filter (4) onto the top part of the filter until the stop is reached and turn it back one quarter of a revolution.
- Charge the hydraulic system with pressure and check it for leaks.

16.2 Load-sensing connection

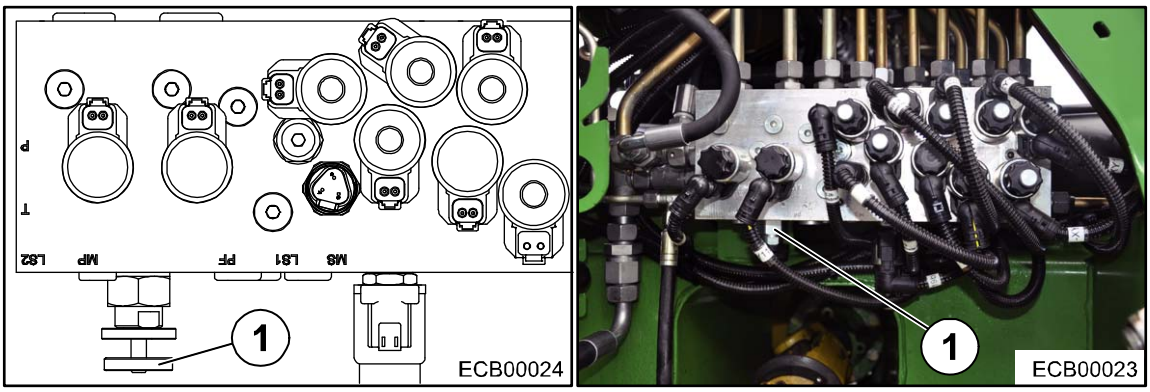


Fig. 120

The Comfort hydraulic system is load-sensing-capable.

The oil supply comes through the Power-Beyond system of the tractor hydraulics for use of the load-sensing system (further information can be obtained from the operating instructions provided by the manufacturer of the tractor).

Adapt the Comfort hydraulic system of the machine to the tractor. The hydraulic system is designed for continuous circulation. The adjustment is made by adjusting the hydraulic system screw on the control valve block of the machine. The control valve block is at the front and in the middle under the three-point block.

Note

The adjustment depends on the hydraulic system of the tractor and must be made while the machine is depressurised!

16.2.1 Operating the Machine without LS (Load-Sensing Connection)

Unscrew the system screw (1) as far as it will go for:

- Tractor with an open (constant-current) hydraulic system (for additional information, please refer to the tractor manufacturer's operating instructions)
- Tractors with LS pump and non-activated load-sensing system

Note

This adjustment is set when the unit leaves the factory.

16.2.2 Operating the Machine via LS (Load-Sensing Connection)

Screw the system screw (1) as far as it will go for:

- Tractors with closed (constant pressure or load sensing) Hydraulic system (For more information, please refer to the tractor manufacturer's operating instructions)
- Tractors with LS pump and message line that is connected

16.3 Emergency manual activation

The electromagnetic valve block (I) is at the front on the three-point block of the machine.

In the event the electrical system should fail completely, the valves are equipped with an <<Emergency manual activation>>.

- All valves are activated by screwing in the setting screw.

16.4 Preparing the machine for road travel (in emergency manual mode)

Note

The emergency manual operation is only intended for transporting the machine from the field to the nearest workshop.

WARNING!

There is an increased risk of injury if you operate the machine using the emergency manual activation.

When the machine is operated using the emergency manual activation, functions are executed immediately without safety prompts. This means there is an increased risk of injury.

- Only persons who are familiar with the machine are permitted to perform an emergency manual activation.
- The person performing the test must know which machine parts are moved by controlling the valves.
- The manipulation of the valves must only be carried out from a safe position outside the range of the machine parts which are moved by the actuators.
- Make certain there are no persons, animals or objects in the danger zone.

DANGER! – Unexpected actions on the machine.

Effect: Danger to life or serious injuries.

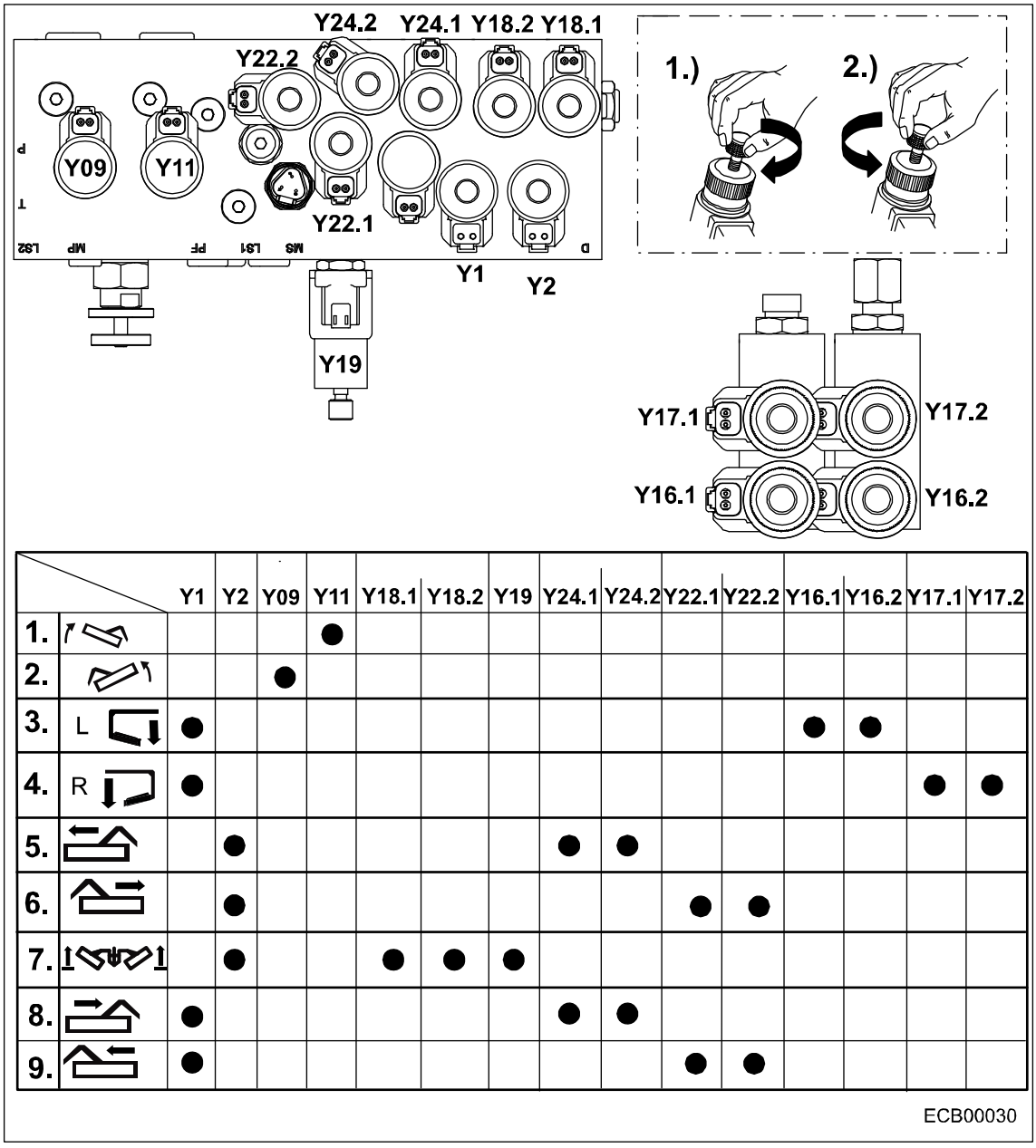
- Emergency manual operation is not permitted during operation on the closed hydraulic system (PB, LS).
- For emergency manual operation, change the machine's hydraulic system (hydraulic lines) to operation via double-action control unit by means of the two hydraulic plugs supplied.
- Disconnect the LS signal line and place it in the bracket provided on the machine.
- Do not activate the control unit until you have left the danger area.

- Switch off the mowing unit drive (switch off PTO).
- Wait until all machine parts have come to a complete stop.
- Stop the tractor engine.
- Secure the tractor against rolling.
- Switch off the operating terminal.
- Disconnect the LS signal line and place it in the bracket provided on the machine.
- Disconnect the hydraulic hose lines (P, T).
- Remove the hydraulic coupling and plug.
- Mount the components supplied (2x hydraulic plugs) on the hydraulic hose lines (P, T).
- Connect the hydraulic hose lines to a double-action control unit on the tractor.
- Set the control valve of the connected hydraulic hose lines to neutral.
- Release the valve / valves (by screwing in the setting screw(s)) for which a function is to be executed according to the table.
- Start the engine and pressurise the control valve.
- Switch off the engine when the function has been executed.
- Switch the control valve to neutral.
- Screw out the setting screws again.

Repeat the procedure according to the table until the lateral mowing units are in transport position.

16.5 Comfort Hydraulic Block Diagram

EasyCut B 1000 CV Collect



		Y1	Y2	Y09	Y11	Y18.1	Y18.2	Y19	Y24.1	Y24.2	Y22.1	Y22.2	Y16.1	Y16.2	Y17.1	Y17.2
1.					●											
2.				●												
3.	L	●											●	●		
4.	R	●													●	●
5.			●						●	●						
6.			●								●	●				
7.			●			●	●	●								
8.		●							●	●						
9.		●									●	●				

ECB00030

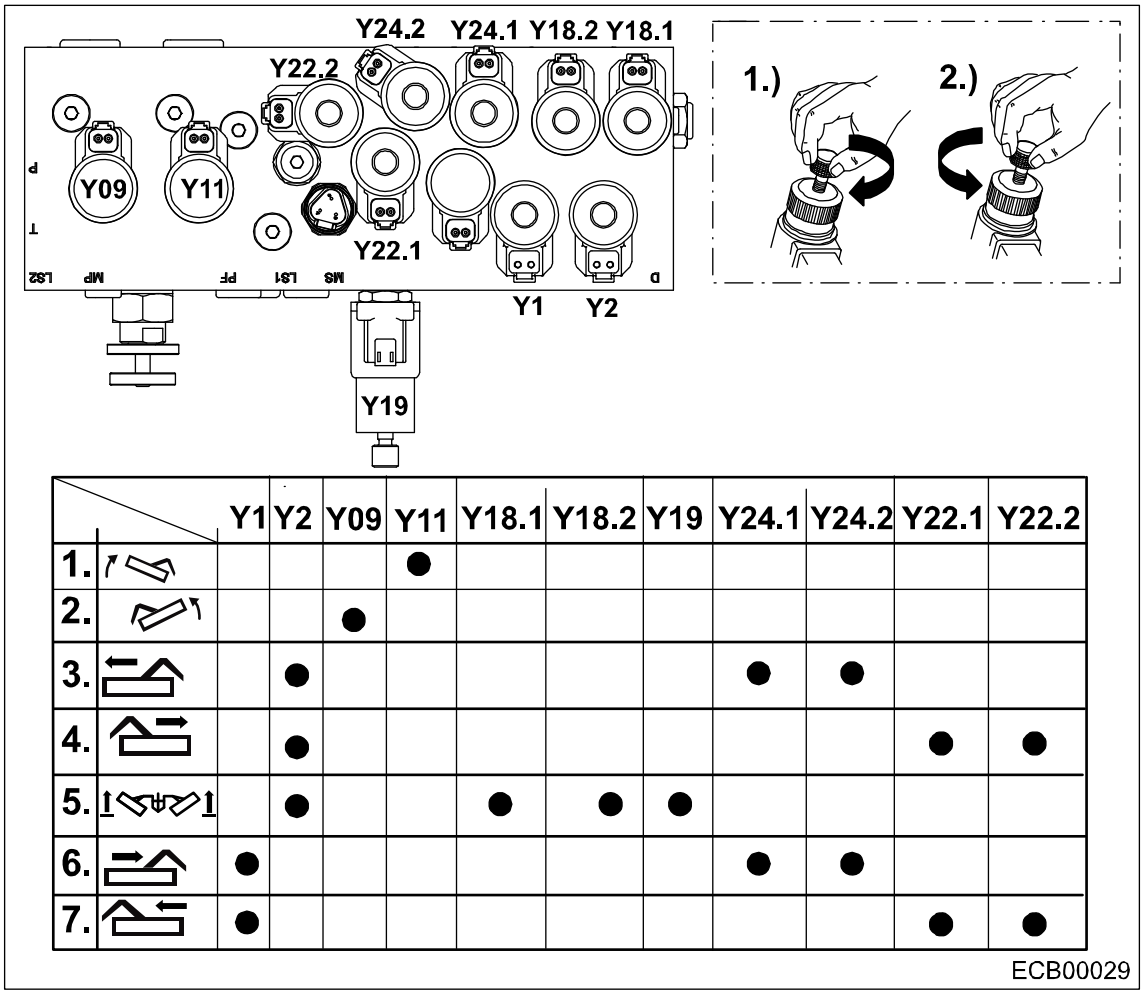
Fig. 121

The following table shows which valves must be released by screwing in the setting screws to execute the corresponding function.

Carry out the steps in the following table very exactly in order to raise the machine to transport position. After each step, screw the setting screws out again.

1.	Fold the right-hand lateral mowing unit in headland position (Y11).
2.	Fold the left-hand lateral mowing unit in headland position (Y09).
3.	Lower the left-hand cross conveyor (Y1,Y16.1,Y16.2).
4.	Lower the right-hand cross conveyor (Y1,Y17.1,Y17.2).
5.	Deploy the left-hand lateral mowing unit (Y2, Y24.1, Y24.2).
6.	Deploy the right-hand lateral mowing unit (Y2, Y22.1, Y22.2).
7.	Fold the lateral mowing units from the headland position to transport position. (Y2, Y18.1, Y18.2, Y19)
8.	Retract the left-hand lateral mowing unit (Y1, Y24.1, Y24.2).
9.	Retract the right-hand lateral mowing unit (Y2, Y22.1, Y22.2).

EasyCut B 1000 CV



	Y1	Y2	Y09	Y11	Y18.1	Y18.2	Y19	Y24.1	Y24.2	Y22.1	Y22.2
1.				●							
2.			●								
3.		●						●	●		
4.		●								●	●
5.		●			●	●	●				
6.	●							●	●		
7.	●									●	●

Fig. 122

The following table shows which valves must be released by screwing in the setting screws to execute the corresponding function:

Carry out the steps in the following table very exactly in order to raise the machine to transport position. After each step, screw the setting screws out again.

1.	Fold the left-hand lateral mowing unit in headland position (Y11).
2.	Fold the right-hand lateral mowing unit in headland position (Y09).
3.	Deploy the left-hand lateral mowing unit (Y2, Y24.1, Y24.2).
4.	Deploy the right-hand lateral mowing unit (Y2, Y22.1, Y22.2).
5.	Fold the lateral mowing units from the headland position to transport position. (Y2, Y18.1, Y18.2, Y19)
6.	Retract the left-hand lateral mowing unit (Y1, Y24.1, Y24.2).
7.	Retract the right-hand lateral mowing unit (Y2, Y22.1, Y22.2).

17 Maintenance - Gearbox

17.1 Main gearbox

Note
Perform oil level check and oil change while the machine is in a horizontal position!

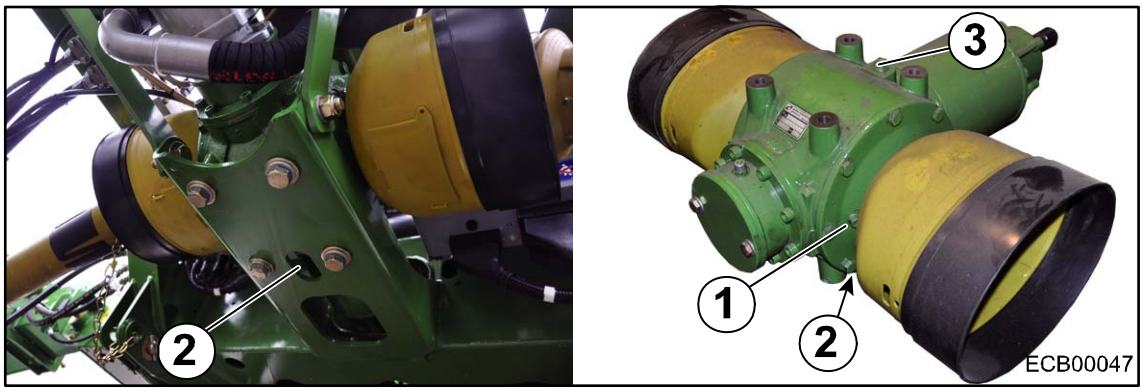


Fig. 123

1) Inspection screw / control hole
2) Drain plug
3) Filler plug / oil filling hole

Oil Quality / Amount of Oil: Refer to Chapter Technical Data “Lubricants”

Interval for oil level check and oil change: refer to chapter Maintenance “Maintenance Table”

Oil level check:

- Screw out inspection screw.
- Oil level up to control hole.

If the oil reaches the control hole:

- Screw in the inspection screw and tighten it securely.

If the oil does not reach the control hole:

- Screw out filler plug.
- Top up oil via oil filling hole until the control hole is reached.
- Screw in the inspection screw and the filler plug and tighten them securely.

Oil change:

Collect escaping oil in a suitable container.

- Screw out oil drain plug and drain the oil.
- Screw out inspection screw and filler plug.
- Screw in oil drain plug and tighten it securely.
- Top up new oil via oil filling hole until the control hole is reached.
- Screw in the inspection screw and the filler plug and tighten them securely.

Note
The used oil must be disposed of correctly

17.2 Mower Drive Gearbox

Note
Perform oil level check and oil change while the machine is in a horizontal position!

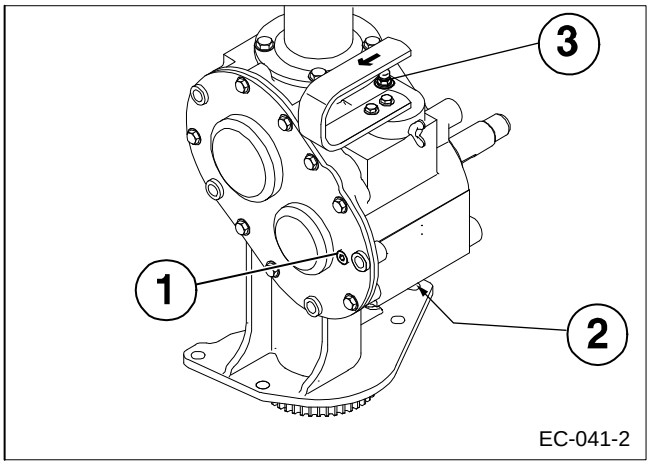


Fig. 124

1) Inspection screw / control hole
2) Drain plug
3) Filler plug / oil filling hole

Oil Quality / Amount of Oil: Refer to Chapter Technical Data “Lubricants”

Interval for oil level check and oil change: refer to chapter Maintenance “Maintenance Table”

Oil level check:

- Screw out inspection screw.
- Oil level up to control hole.

If the oil reaches the control hole:

- Screw in the inspection screw and tighten it securely.

If the oil does not reach the control hole:

- Screw out filler plug.
- Top up oil via oil filling hole until the control hole is reached.
- Screw in the inspection screw and the filler plug and tighten them securely.

Oil change:

Collect escaping oil in a suitable container.

- Screw out oil drain plug and drain the oil.
- Screw out inspection screw and filler plug.
- Screw in oil drain plug and tighten it securely.
- Top up new oil via oil filling hole until the control hole is reached.
- Screw in the inspection screw and the filler plug and tighten them securely.

Note
The used oil must be disposed of correctly

17.3 Angular gearbox

CR design

17.3.1 Top part

Note
Perform oil level check and oil change while the machine is in a horizontal position!

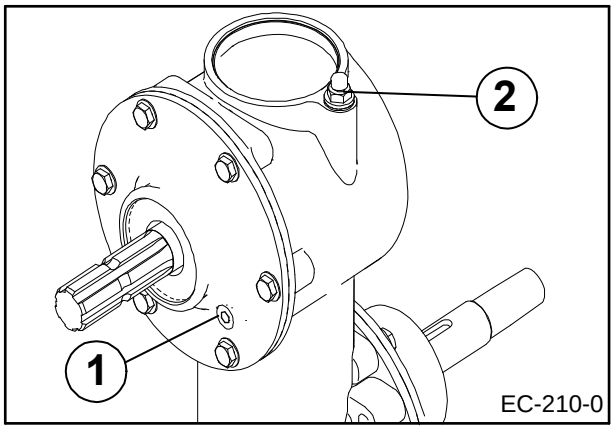


Figure 125

1) Inspection screw / control hole
2) Filler plug / oil filling hole

Oil Quality / Amount of Oil: Refer to Chapter Technical Data “Lubricants”

Interval for oil level check and oil change: refer to chapter Maintenance “Maintenance Table”

Oil level check:

- Screw out inspection screw.
- Oil level up to control hole.

If the oil reaches the control hole:

- Screw in the inspection screw and tighten it securely.

If the oil does not reach the control hole:

- Screw out filler plug.
- Top up oil via oil filling hole until the control hole is reached.
- Screw in the inspection screw and the filler plug and tighten them securely.

Oil change:

Collect escaping oil in a suitable container.

- Screw out inspection screw and filler plug and drain the oil.
- Top up new oil via oil filling hole until the control hole is reached.
- Screw in inspection screw and filler plug and tighten them securely.

Note
The used oil must be disposed of correctly

17.4 Angular gearbox

CR design

17.4.1 Bottom part

Note
Perform oil level check and oil change while the machine is in a horizontal position!

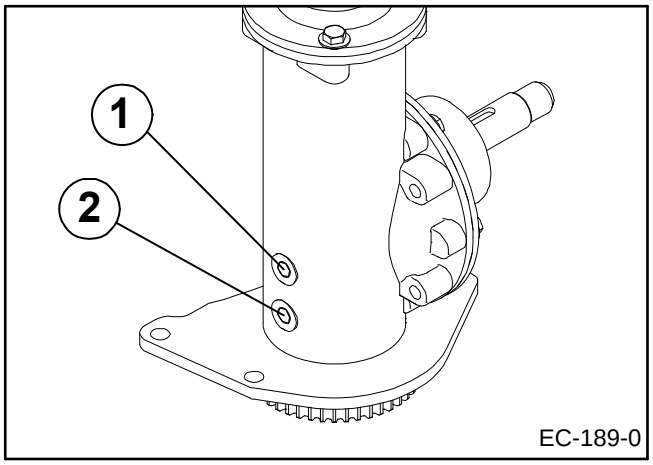


Fig. 126:

1) Inspection screw / control hole
2) Drain plug

Oil Quality / Amount of Oil: Refer to Chapter Technical Data “Lubricants”

Interval for oil level check and oil change: refer to chapter Maintenance “Maintenance Table”

Oil level check:

- Screw out inspection screw.
- Oil level up to control hole.

If the oil reaches the control hole:

- Screw in the inspection screw and tighten it securely.

If the oil does not reach the control hole:

- Top up oil via control hole until the control hole is reached.
- Screw in the inspection screw and tighten it securely.

Oil change:

Collect escaping oil in a suitable container.

- Screw out oil drain plug and drain the oil.
- Screw out inspection screw.
- Screw in oil drain plug and tighten it securely.
- Top up new oil via control hole until the control hole is reached.
- Screw in the inspection screw and tighten it securely.

Note
The used oil must be disposed of correctly

17.5 Gearbox for Top Roller Drive

CR design

Note
Perform oil level check and oil change while the machine is in a horizontal position!

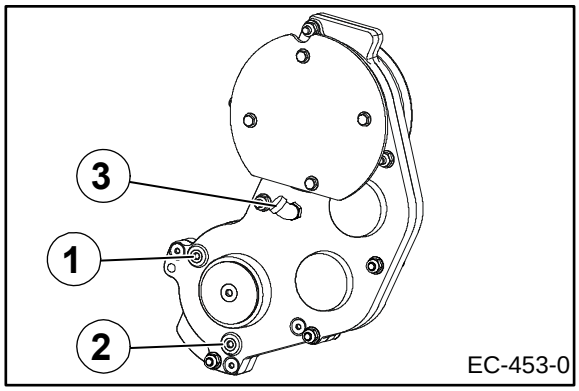


Fig. 127

1) Inspection screw / control hole
2) Drain plug
3) Filler plug / oil filling hole

Oil Quality / Amount of Oil: Refer to Chapter Technical Data “Lubricants”

Interval for oil level check and oil change: refer to chapter Maintenance “Maintenance Table”

Oil level check:

- Screw out inspection screw.
- Oil level up to control hole.

If the oil reaches the control hole:

- Screw in the inspection screw and tighten it securely.

If the oil does not reach the control hole:

- Screw out filler plug.
- Top up oil via oil filling hole until the control hole is reached.
- Screw in the inspection screw and the filler plug and tighten them securely.

Oil change:

Collect escaping oil in a suitable container.

- Screw out oil drain plug and drain the oil.
- Screw out inspection screw and filler plug.
- Screw in oil drain plug and tighten it securely.
- Top up new oil via oil filling hole until the control hole is reached.
- Screw in the inspection screw and the filler plug and tighten them securely.

Note
The used oil must be disposed of correctly

17.6 Oil level check and oil change on the cutter bar

17.6.1 Oil change

Note
No oil change is required on the cutter bar.

17.6.2 Checking the oil level

Danger! - Rapidly rotating cutting discs/blade drums.
Effect: Danger to life or serious injuries.
Lower guards. Nobody should be in the danger zone around the machine.

Danger! - Rapidly rotating cutting discs/blade drums.
Effect: Danger to life or serious injuries.
- Switch off the engine and remove the ignition key.
- The cutting discs/blade drums continue to run!
- Do not leave the driver's cab until the cutting discs/blade drums have come to a complete stop.

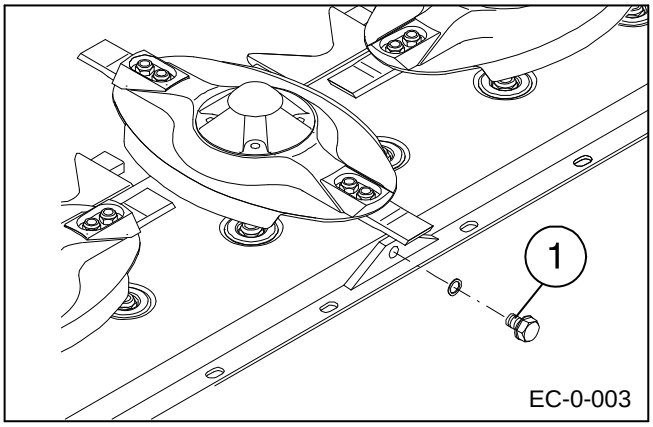


Fig. 128

- Allow the machine to run briefly.
- Wait until cutting discs/blade drums have come to a complete stop.
- Move the cutter bar into transport position.

Check the oil level before every use

- Remove the oil level inspection screw (1) from the cutter bar.
- The oil level must be up to the bore hole. If required, top up the oil (SAE 90)
- Screw in the oil level inspection screw (1) again and tighten securely.

18 Maintenance - Blade Changing

18.1 Checking the Cutter Blades and Blade Holder

Warning! - Missing and damaged cutter blades and cutter blade retainers.

Effect: Danger to life, serious injuries or damage to the machine

- Check cutter blades at least once per day and check retaining bolts every time you change the blades or after contact with foreign objects.
- Immediately replace missing or damaged cutter blades and cutter blade retainers

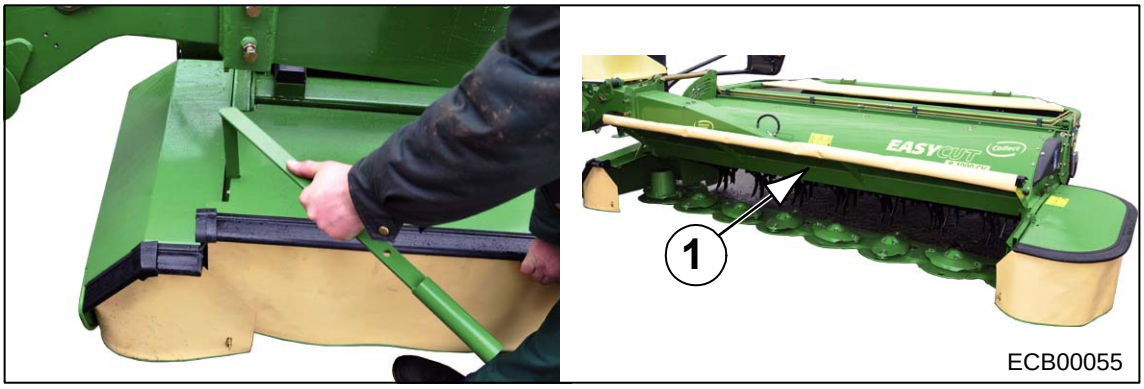


Fig. 129

To check and fit the blades, fold up the protective device (1). The safety device can be opened with the aid of a sharp instrument (e.g. blade key, screwdriver).

- Use the sharp instrument to press down the handle; fold up the protective cover.
- Now the blades are freely accessible.

Note

After the inspection and installation tasks are completed, fold down the protective device back into position.

18.1.1 Cutter Blades

The borehole on the cutter blades may spread due to wear.

Danger! - Insufficient thickness of material on the cutter blades.

Effect: Danger to life or serious injuries.

- The cutter blades must be replaced at the latest when the wear limit is reached (see mark (1) on the cutter blade; dimension a less than or equal to 7 mm).

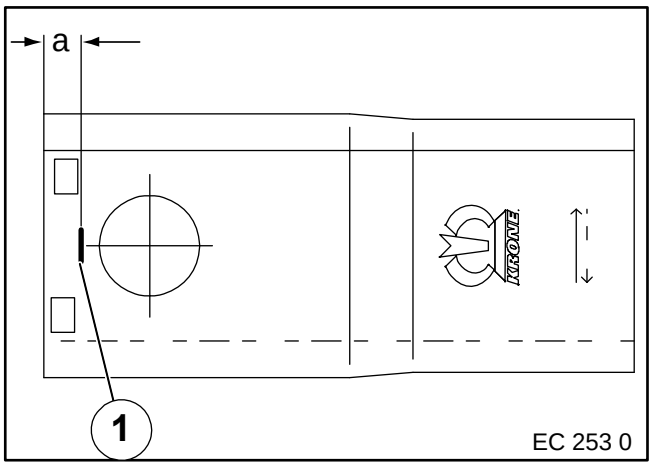


Fig. 130

Note - The cutter blades can be turned around and used on both sides.

- When cutter blades are missing or damaged, they must be replaced as a complete set. This prevents dangerous unbalanced rotation

18.1.2 Blade screw connection

Danger! - Insufficient thickness of material on the retaining bolts.

Effect: Danger to life or serious injuries.

- At every blade changing check the thickness of the holding bolts material.
- Damage or worn retaining bolts must always be replaced by sets on each cutting disc/blade drum!
- The material thickness of the retaining bolts must not be less than 14 mm at the weakest point.

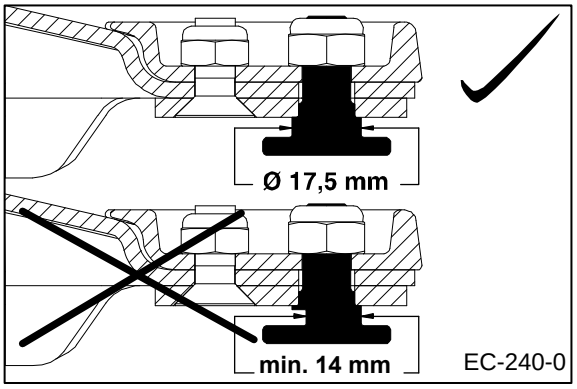


Fig. 131

18.1.3 Blade Quick-Fit Device

Danger! - Insufficient thickness of material on the retaining bolts.

Effect: Danger to life or serious injuries.

- At every blade changing check the thickness of the holding bolts material.
- Damage or worn retaining bolts must always be replaced by sets on each cutting disc/blade drum!
- The material thickness of the retaining bolts must not be less than 14 mm at the weakest point.
- The material thickness of the leaf spring must not be less than 3 mm at the weakest point.

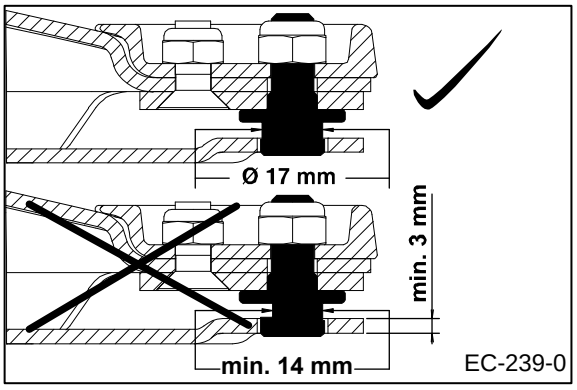


Fig. 132

18.1.4 Periodical Inspection of the Leaf Springs

Danger! - Worn application seam on the leaf springs.

Effect: Danger to life or serious injuries.

- Check the leaf springs for damages at least once a day or after contact with foreign objects.
- The abrasion limit of the leaf springs will be achieved if the application seam (1) is worn on one point.

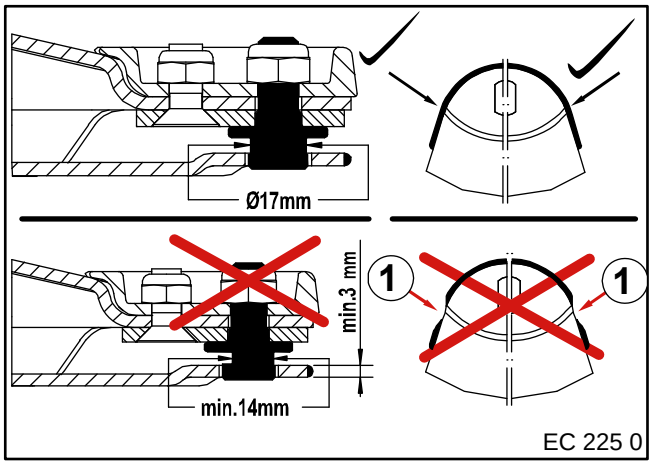


Fig. 133

Note

Use only original Krone spare parts to replace the leaf springs.

18.1.5 Periodical Inspection of the Cutting Discs / Blade Drums

Danger! - Deformed Cutting Discs / Blade Drums

Effect: Danger to life or serious injuries.

- Check the cutting discs or blade drums for damages at least once per day or after contact with foreign objects.
- In case of deformed cuttings discs or drums, the dimension of A = 48 mm must never be exceeded.

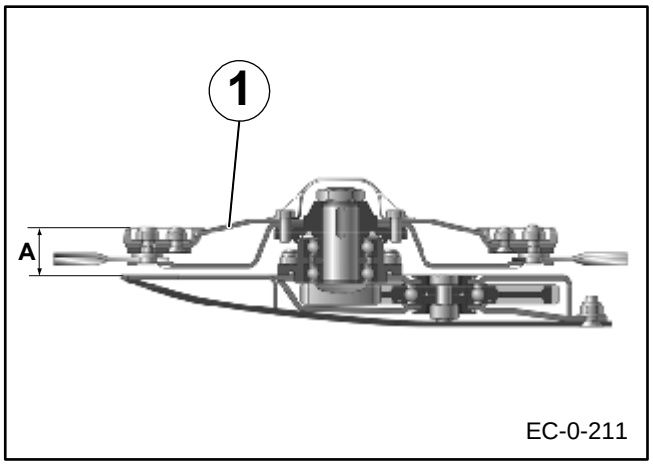


Fig. 134

Note

The cutting discs or drums must be replaced by Original Krone spare parts only.

18.1.6 Abrasion Limit

Danger! - Abrasion on the cutting discs / blade drums

Effect: Danger to life or serious injuries.

- The abrasion limit (2) will be achieved if the min. material thickness of 3 mm is no longer given.

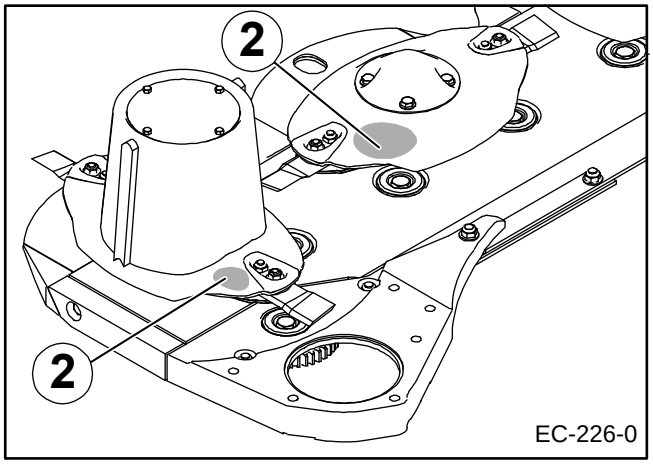


Fig. 135

Note

If cutting discs or blade drums show deformations or wear in form of abrasions (2) or similar, these components have to be replaced by Original Krone spare parts .

18.2 Blade Changing on Cutting Discs

Danger! - Rapidly rotating cutting discs/blade drums.

Effect: Danger to life or serious injuries.

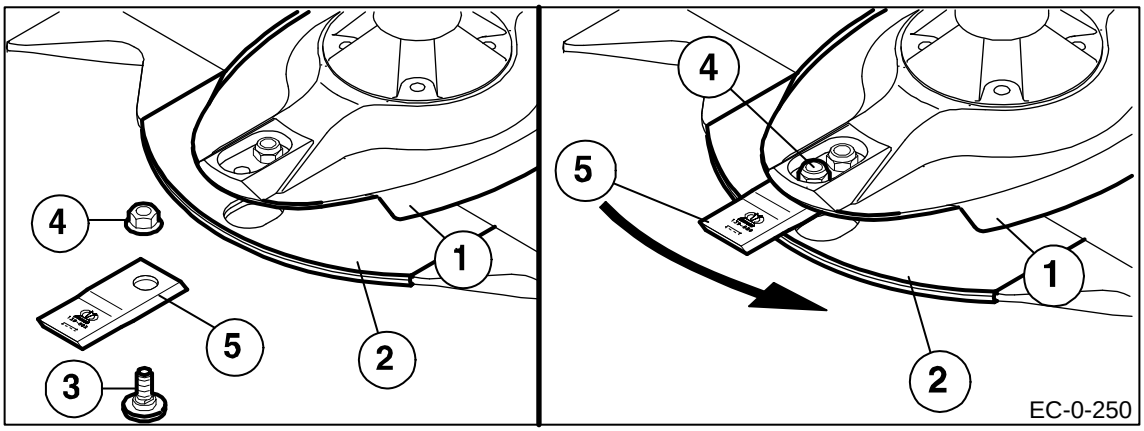
- Switch off the engine and remove the ignition key.
- The cutting discs/blade drums continue to run!
- Do not leave the driver's cab until the cutting discs/blade drums have come to a complete stop.

Danger! - Cutter blades coming loose

Effect: Danger to life or serious injuries.

- After changing the blades check that they fit perfectly and that they can move freely.
- Whenever a blade is changed, also inspect the fasteners and replace them, if necessary!
- Always replace missing and damaged blades in sets to prevent unbalanced rotation!
- Never mount unevenly worn blades on a drum/disc!

18.2.1 Blade Screw Connection



Pic. 136

- Fold up safety device
- Clean the area
- Remove damaged or worn blades
- To fit the blades, insert the blade (5) between the wear skid (2) and the cutting disc (1)
- Insert the retaining bolt (3) from below through the wear skid, the blade and the cutting disc
- Place the locknut (4) on the retaining bolt from above and tighten it firmly (tightening torque refer to chapter “Torques”)
- Repeat the process for all blades
- After fitting the blades, fold the safety device down again

Note

- The cutter blades of anticlockwise rotating cutting discs / blade drums are different to those of clockwise rotating ones. Make certain the direction of rotation is correct when installing!
- The arrow on the cutter blades must match the direction of rotation of the corresponding cutting discs / blade drums
- The locknut (4) used to secure the retaining bolts must not be used more than once

Order No. for clockwise rotating blade: 139-889

Order No. for anticlockwise rotating blade: 139-888

18.2.2 Blade Quick-Fit Device

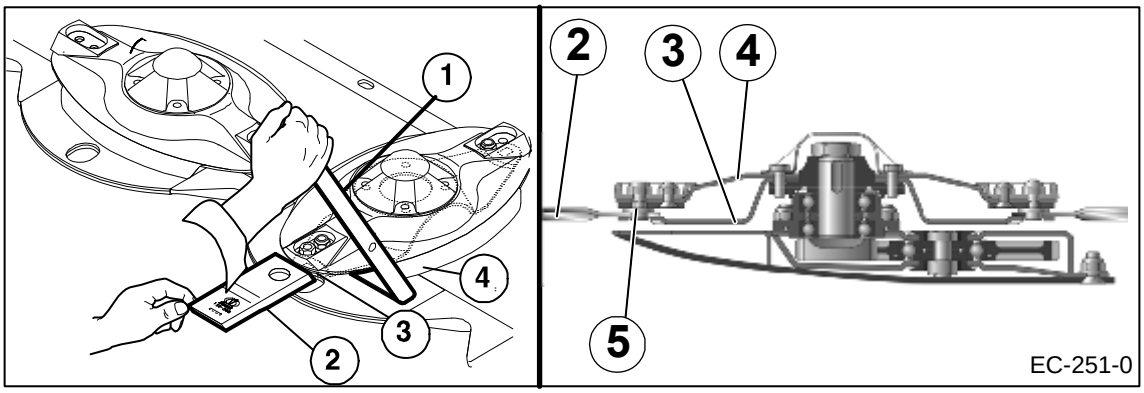


Fig. 137

- Clean the area.
- Remove damaged or worn blades.
- Push the special tool (1) {blade key} between the cutter disc (4) and leaf spring (3) and press down with one hand.
- Guide a new blade (2) onto the retaining bolt and allow the blade key to return upwards.
- After fitting the blades, fold the protective device down again.

Note

- The cutter blades of anticlockwise rotating cutting discs / blade drums are different than those of clockwise rotating ones. Make certain the direction of rotation is correct when installing!
- The arrow on the cutter blades must match the direction of rotation of the corresponding cutting discs / blade drums.
- The hex nut (4) used to secure the retaining bolts must not be used more than once.

Order No. for clockwise rotating blade: 139-889

Order No. for anticlockwise rotating blade: 139-888

18.3 Replacing the linings

Caution! - If the linings are checked irregularly.

Effect: Damage to the machine

- Always check the mowing unit for damaged linings prior to start-up and replace linings, if necessary!
- Adjust the welding current and the welding material to the cutter bar material and to the lining or carry out a trial welding if necessary.•

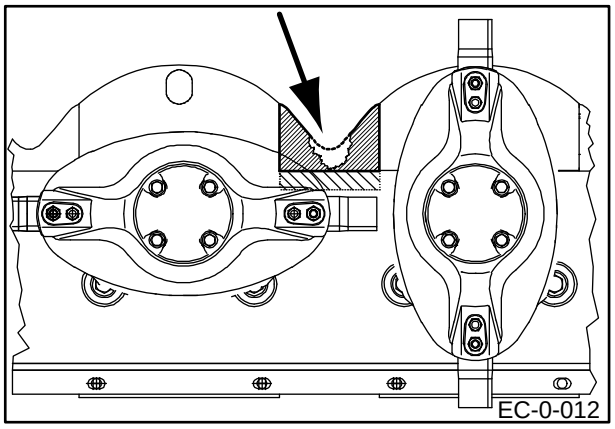


Fig. 138

- Open the welding seams of the old lining.
- Remove the lining
- Deburr the contact surface.

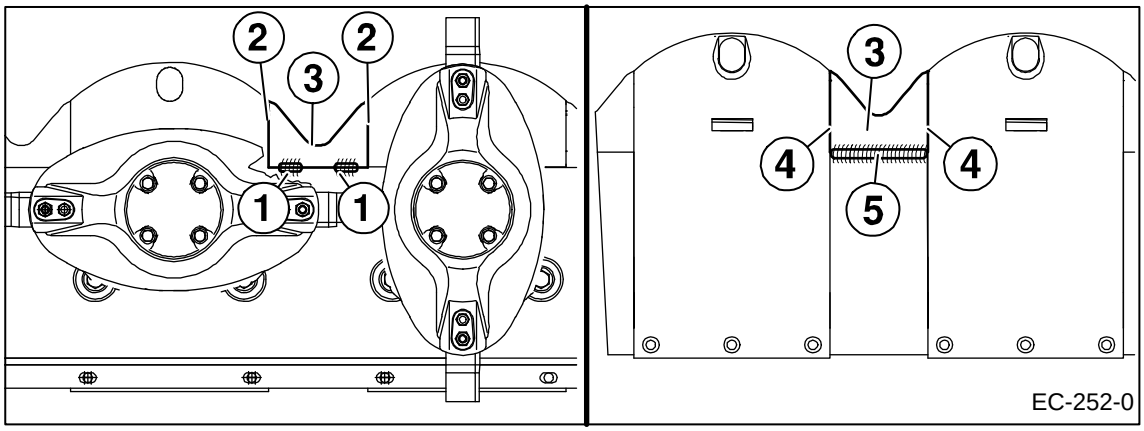


Fig. 139

- Adapt the new lining (3).
- Weld short I seams on the **upper surface** of the cutter bar in the areas marked (1) (each should be approx. 30 mm).
- Do not weld the edges (2).
- On the **lower surface** of the cutter bar, weld the lining (3) to the cutter bar along the whole length in area (5).
- Do not weld the edges (4).

19 Maintenance – lubrication chart

19.1 Special Safety Instructions

WARNING!

When performing repair, maintenance or cleaning work or in case of technical intervention, drive elements may start moving (caution: cutting discs continue to run).

Effect: Danger to life, injuries or damage to the machine.

- Turn off the PTO shaft.
- Move the machine to the working position and lower it to the ground.
- Switch off the engine of the tractor, remove the ignition key and carry it with you.
- Secure the tractor against accidental start-up and against rolling.
- After the repair, maintenance, cleaning work or technical modifications are completed, mount all protective covers and safety devices properly again.
- Avoid skin contact with oils, greases, cleaning agents and solvents.
- In the event of injuries or burns due to oils, cleaning agents or solvents, contact a physician immediately.
- All other safety instructions must also be followed to avoid injuries and accidents.

19.2 PTO shaft

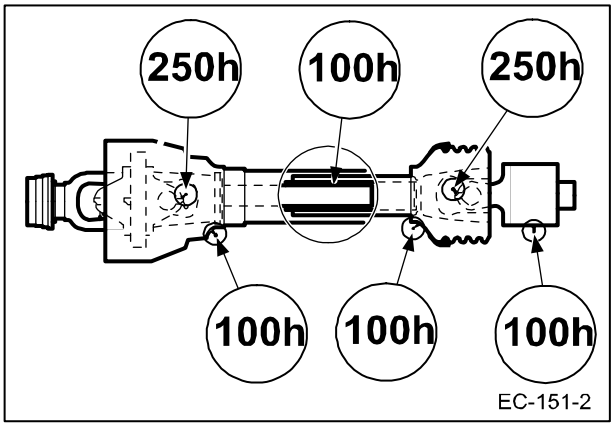


Fig. 140

Lubricate the PTO shafts at the intervals indicated in the drawing with a multi-purpose grease. Follow the operating instructions of the PTO shaft manufacturer.

19.3 Lubrication Chart

EasyCut B 1000 CV

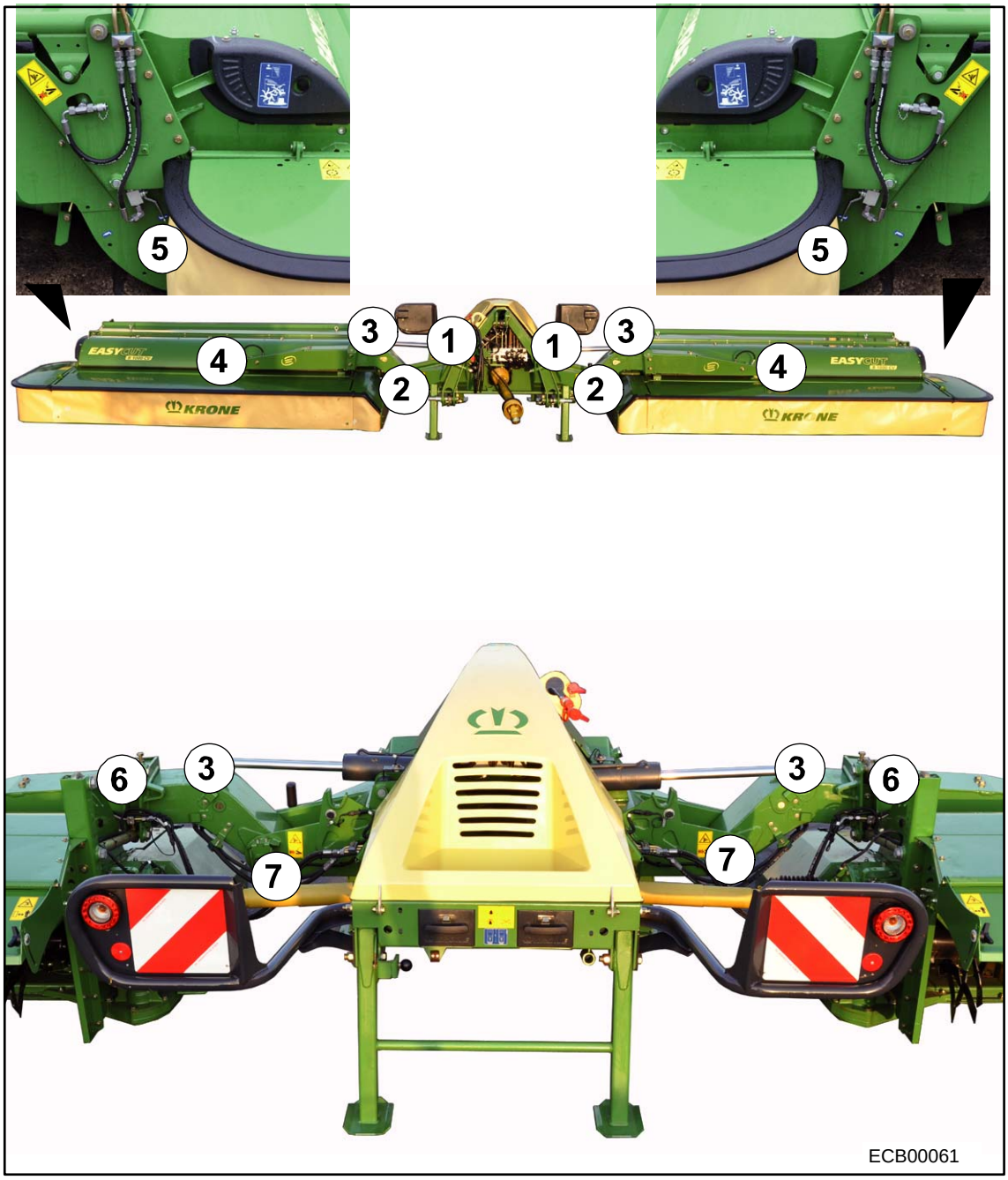


Fig. 141 EasyCut B 1000 CV

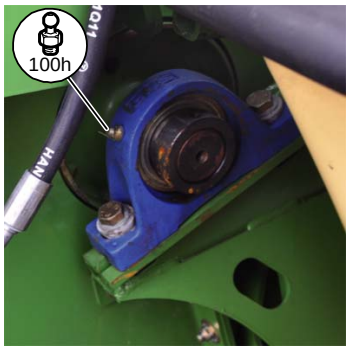
1)

2)

3)

4)

5)



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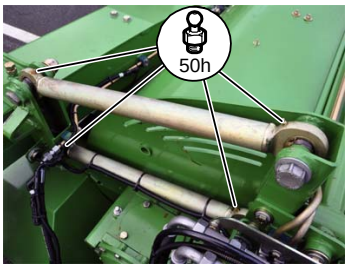


7)

EasyCut B 1000 CV Collect

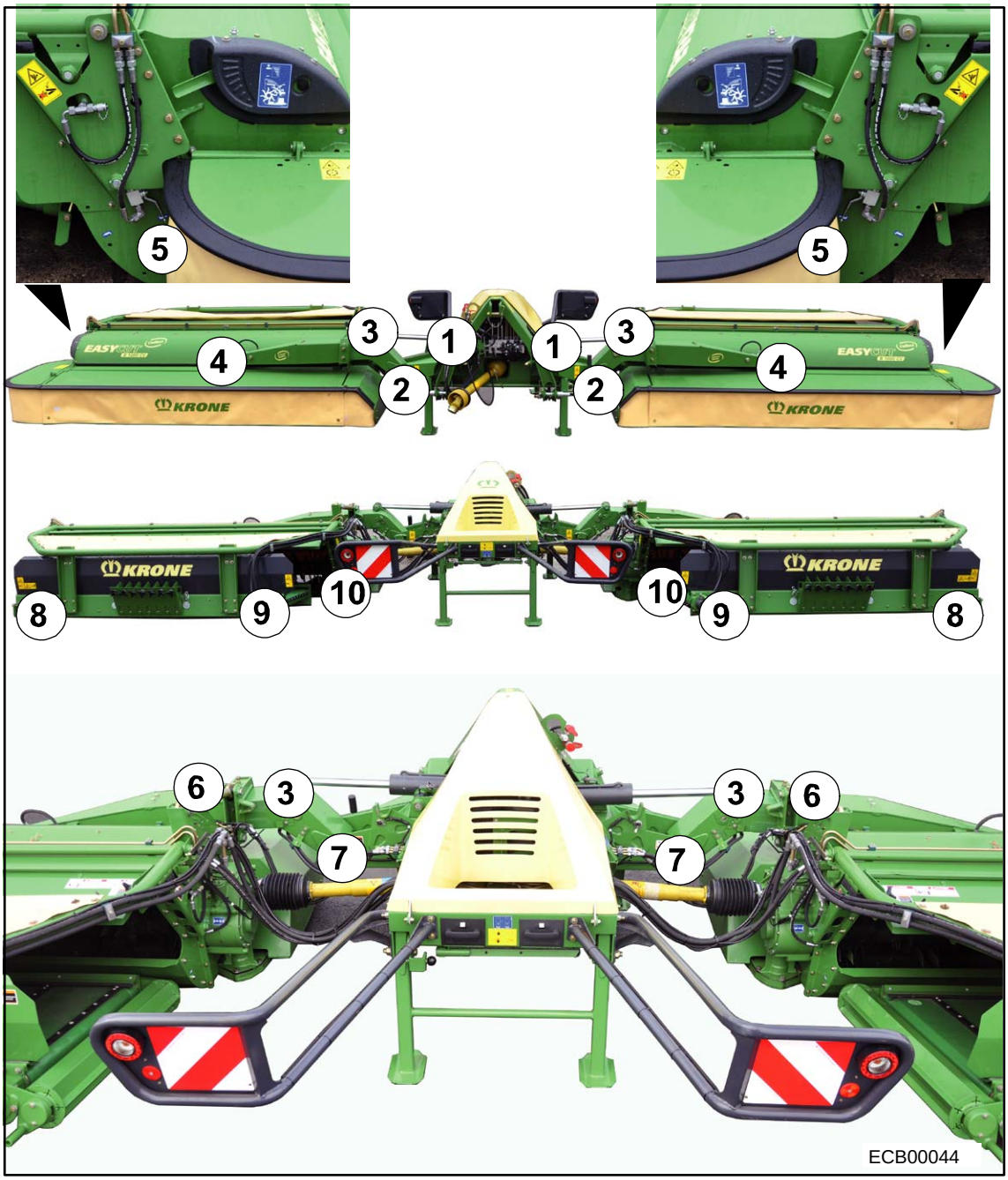
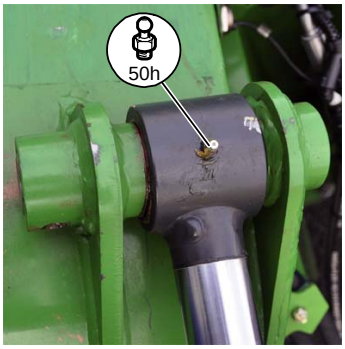


Fig. 142 EasyCut B 1000 CV Collect

1)

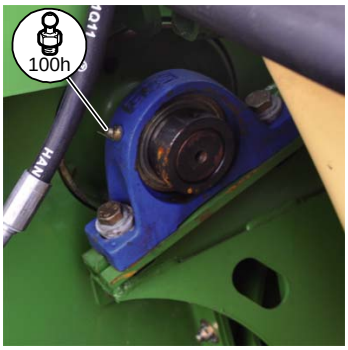
2)

3)



4)

5)



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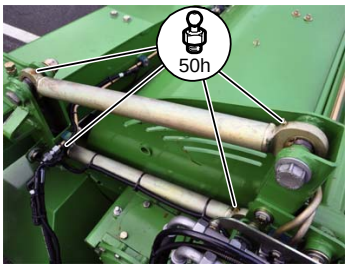
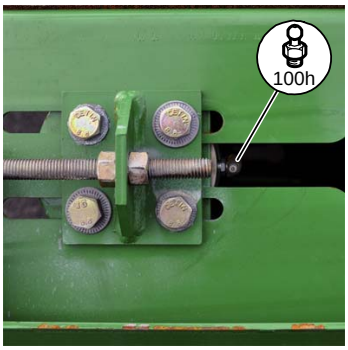
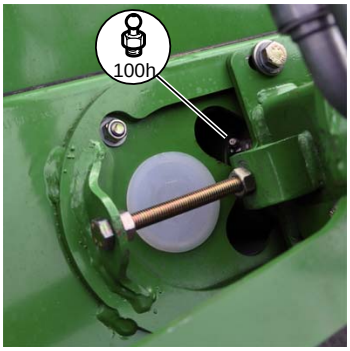


7)

8)



9)



10)

EasyCut B 1000 CR

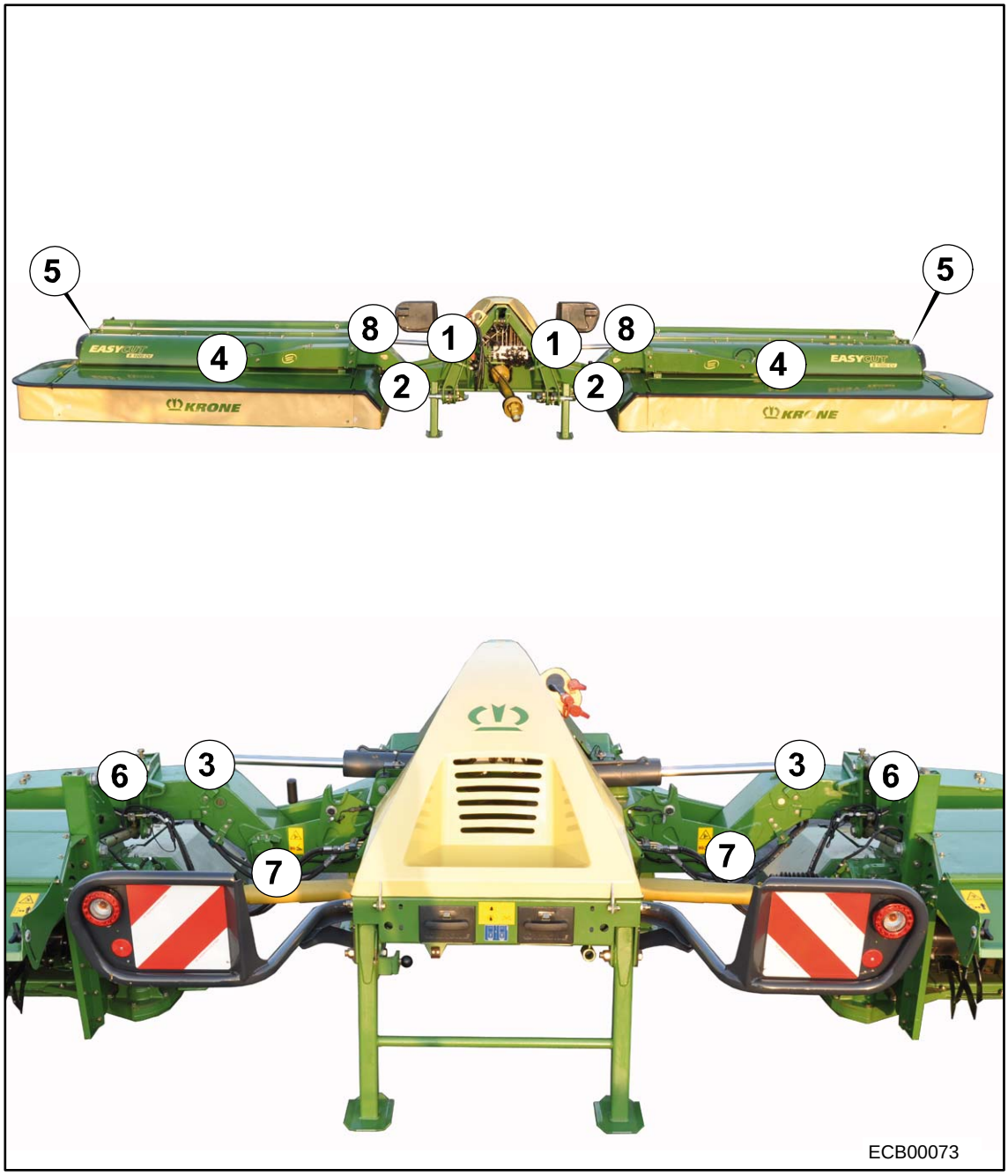


Fig. 143 EasyCut B 1000 CR

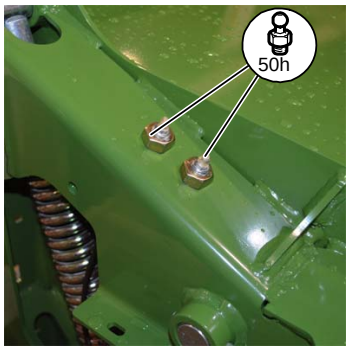
1)

2)

3)

4)

5)



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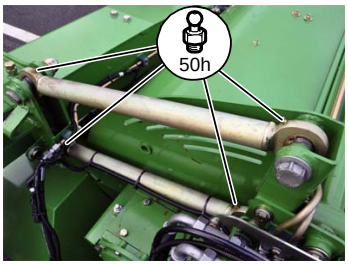

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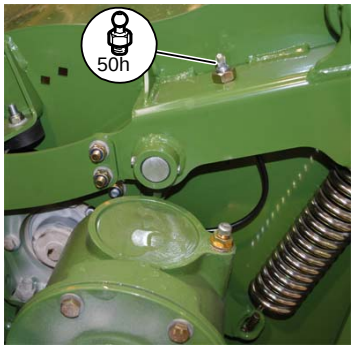
8)



EasyCut B 1000 CR Collect

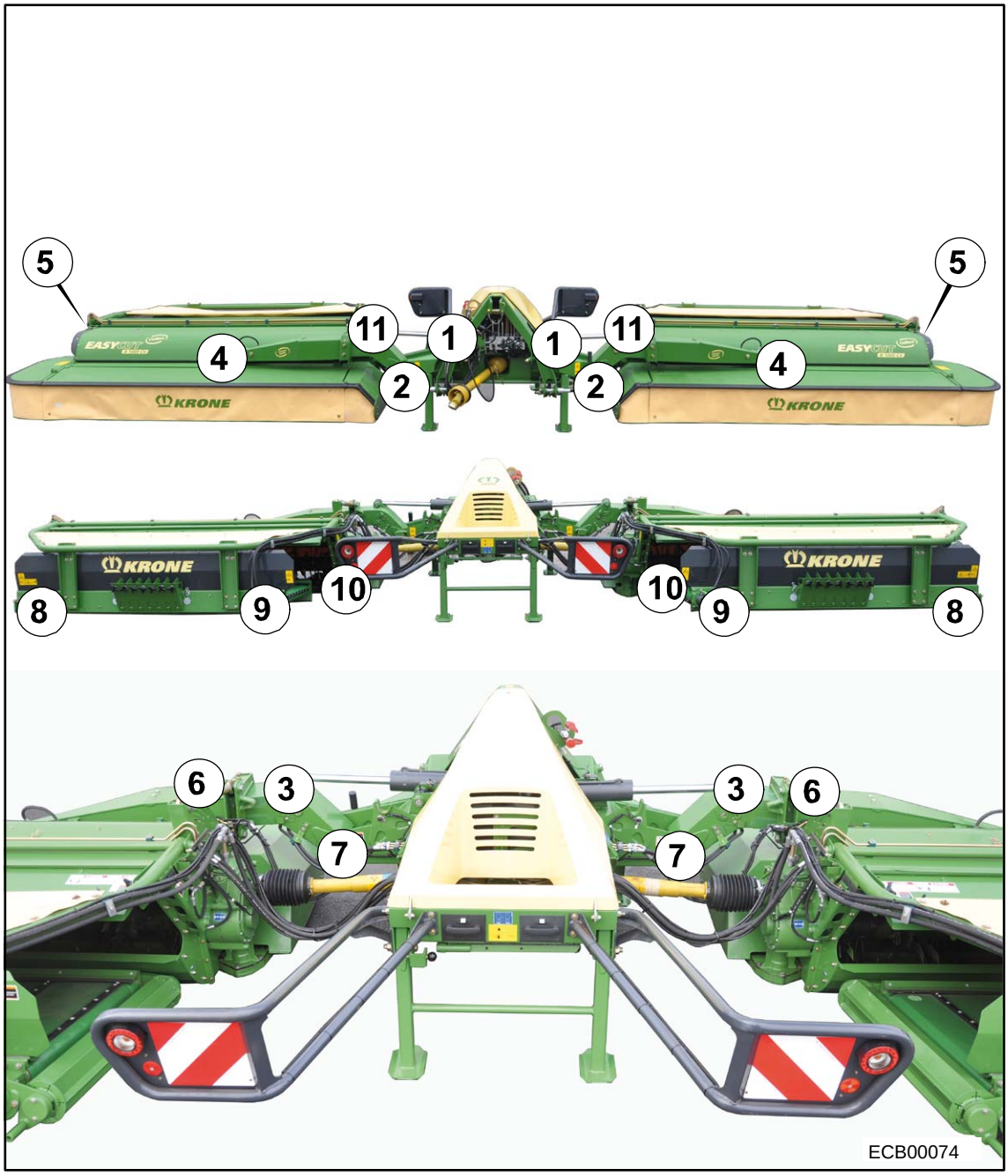
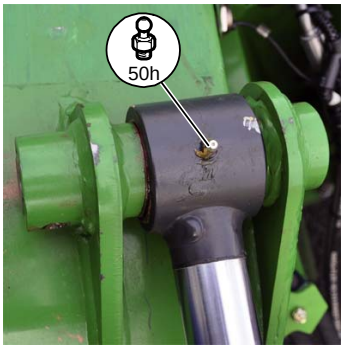


Fig. 144 EasyCut B 1000 CR Collect

1)

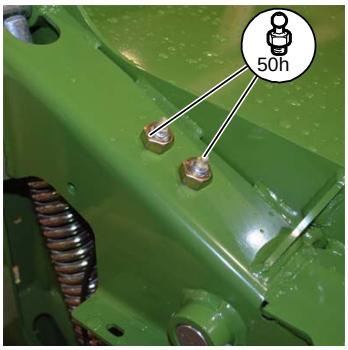
2)

3)



4)

5)



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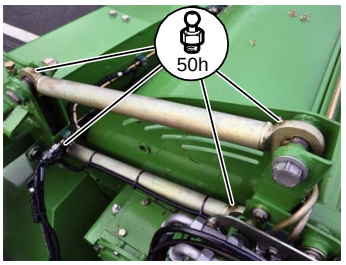

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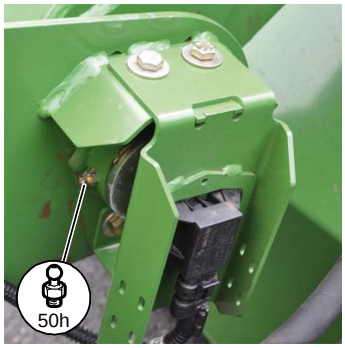
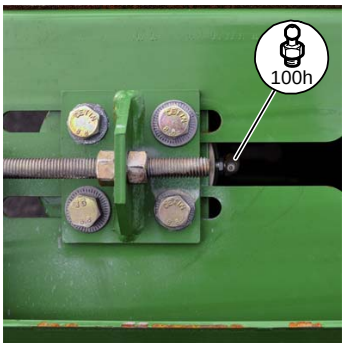


8)



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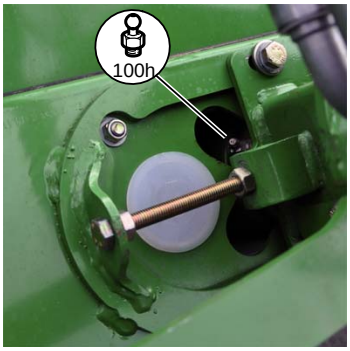
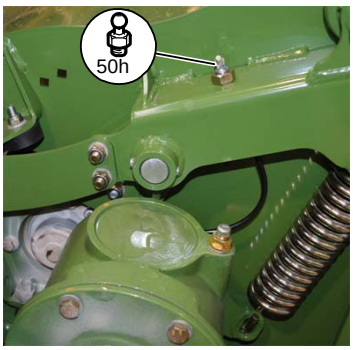


10)

11)



20 Maintenance – electrical system

20.1 Position of the Sensors

EasyCut B 1000 CV

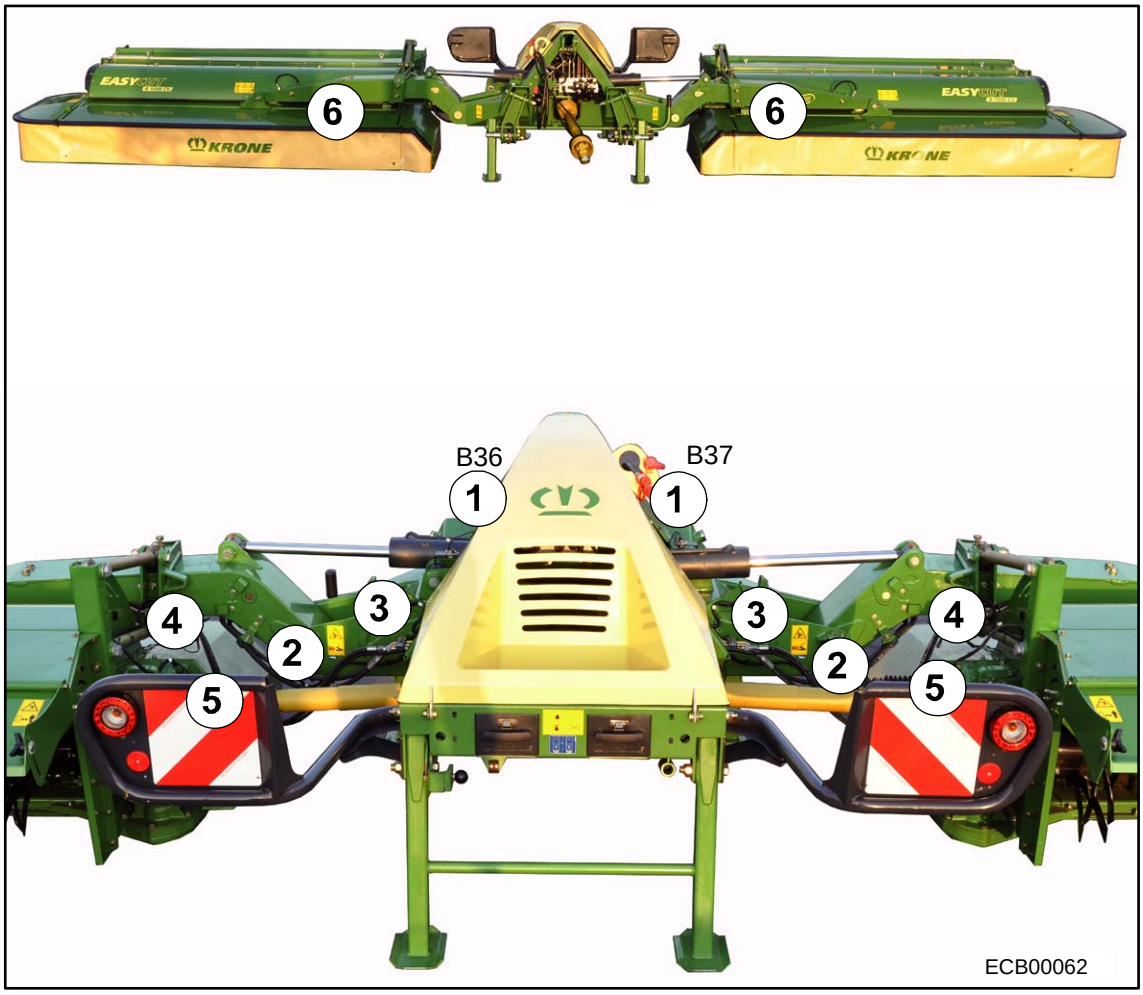
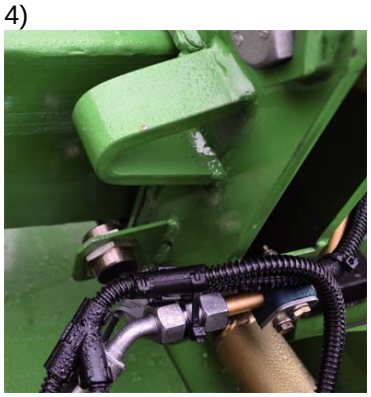
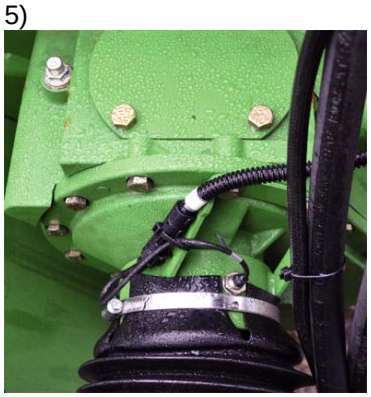
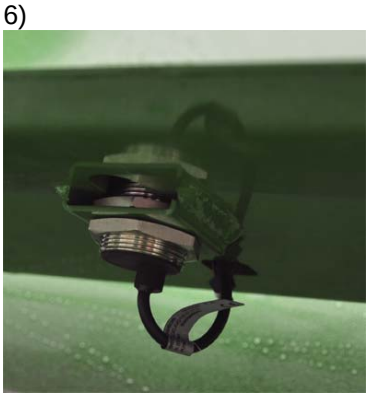


Fig. 145 EasyCut B 1000 CV

1)	2)	3)
 B36 Headland position right B37 Headland position left	 B16 Position of right-hand mowing unit B17 Position of left-hand mowing unit	 B18 Transport position right B19 Transport position left

4)  B12 Working width right zero B14 Working width left zero	5)  B4 Speed of right-hand mowing unit B5 Speed of left-hand mowing unit	6)  B11 Working width right B13 Working width left

EasyCut B 1000 CV Collect

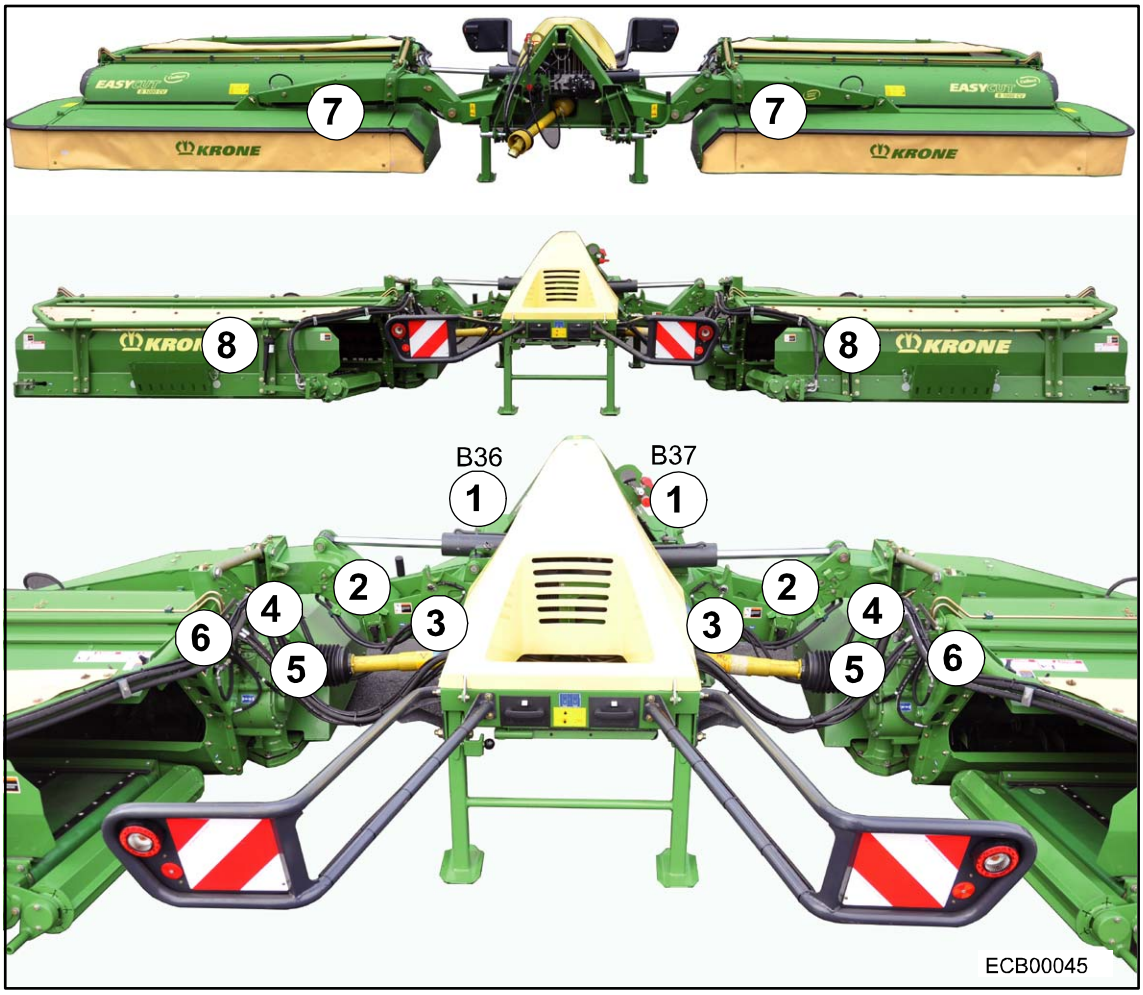
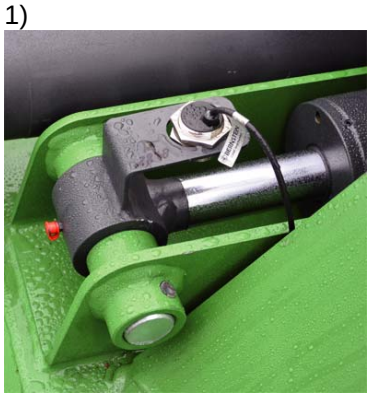
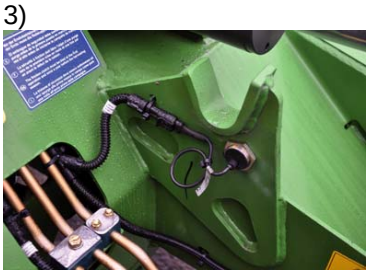
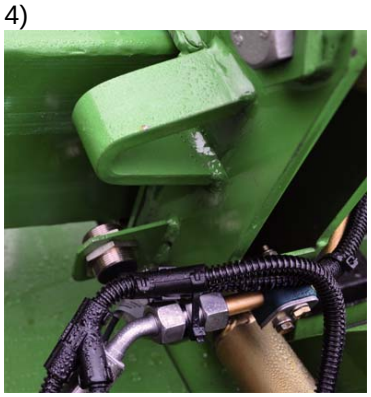
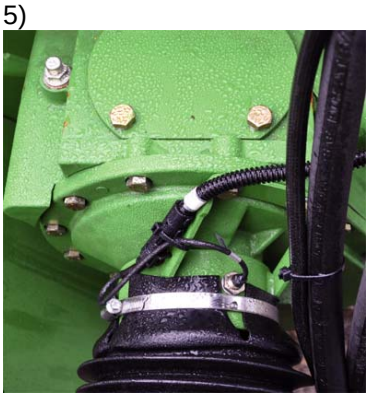
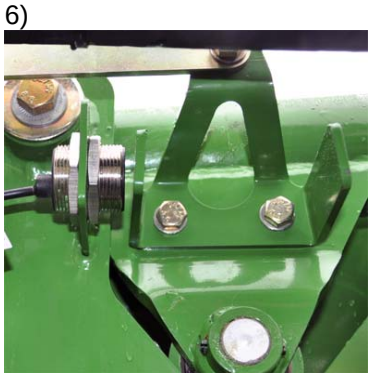
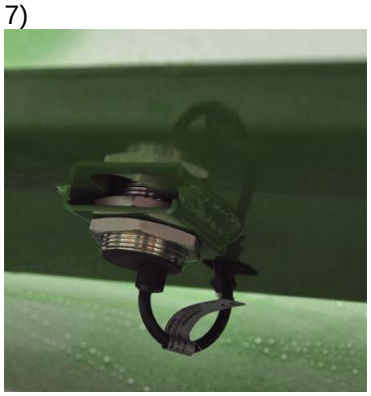
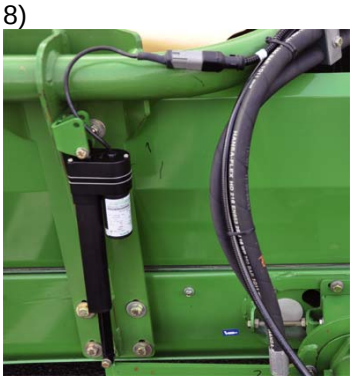


Fig. 146 EasyCut B 1000 CV Collect

1)	2)	3)
 B36 Headland position right B37 Headland position left	B16 Position of right-hand mowing unit B17 Position of left-hand mowing unit	 B18 Transport position right B19 Transport position left

4)  B12 Working width right zero B14 Working width left zero	5)  B4 Speed of right-hand mowing unit B5 Speed of left-hand mowing unit	6)  B7 Cross conveyor below right B9 Cross conveyor below left
7)  B11 Working width right B13 Working width left	8)  BM3 Position of right-hand swath roller BM4 Position of left-hand swath roller	

20.1.1 Adjusting the Sensors

20.1.1.1 Namur sensor d = 12 mm

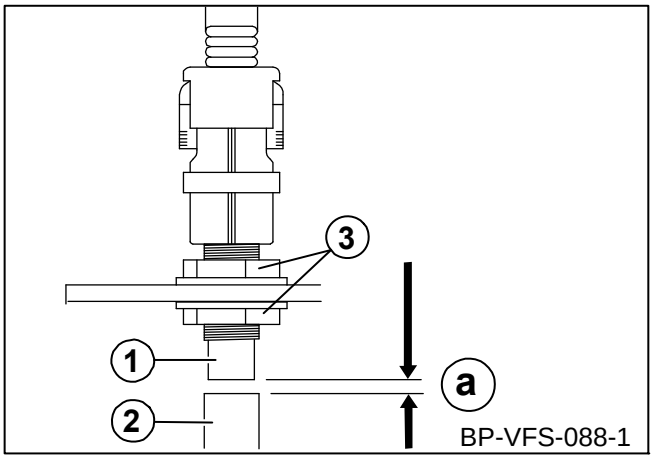


Figure 147

The dimension between the encoder (2) and the sensor (1) must be "a" = 2 mm .

Setting

- Loosen the nuts on either side of the sensor.
- Turn the nuts until dimension "a" = 2 mm is reached.
- Tighten the nuts again.

The tightening torque for all Namur sensors is 10 Nm.

20.1.1.2 Namur sensor d = 30 mm

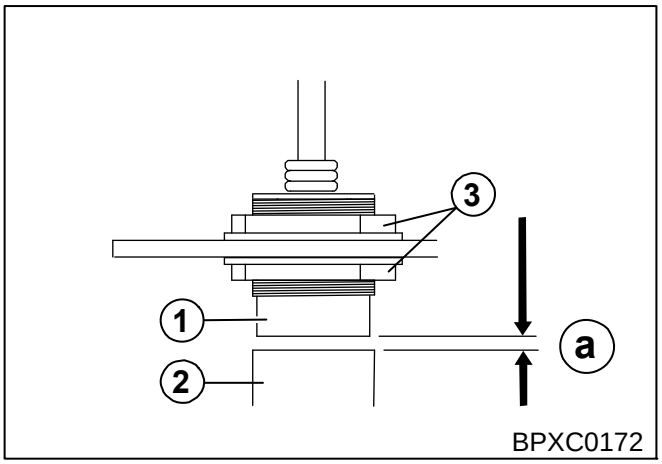


Fig. 148

The dimension between the encoder (2) and the sensor (1) must be "a" = 4 mm.

Setting

- Loosen the nuts on either side of the sensor.
- Turn the nuts until dimension "a" = 4 mm is reached.
- Tighten the nuts again.

The tightening torque for all Namur sensors is 10 Nm.

21 Special equipment

21.1 Special Safety Instructions

WARNING!

When performing repair, maintenance or cleaning work or in case of technical intervention, drive elements may start moving (caution: cutting discs continue to run).

Effect: Danger to life, injuries or damage to the machine.

- Turn off the PTO shaft.
- Move the machine to the working position and lower it to the ground.
- Switch off the engine of the tractor, remove the ignition key and carry it with you.
- Secure the tractor against accidental start-up and against rolling.
- After the repair, maintenance, cleaning work or technical modifications are completed, mount all protective covers and safety devices properly again.
- Avoid skin contact with oils, greases, cleaning agents and solvents.
- In the event of injuries or burns due to oils, cleaning agents or solvents, contact a physician immediately.
- All other safety instructions must also be followed to avoid injuries and accidents.

21.2 Adjusting Skids

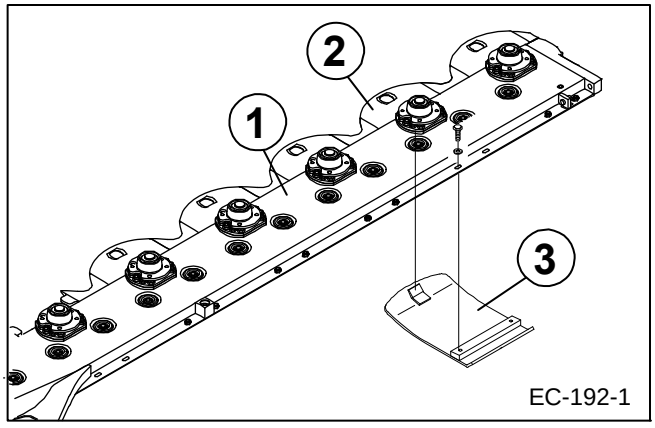


Fig. 149

Adjusting skids can be used to increase the cutting height (see chapter entitled "Adjusting the cutting height")

To do this, insert the adjusting skids (3) into the glide skids (2) and screw them in place. The adjusting skids must always be mounted underneath the mowing discs that run next to the mower drum.

21.3 Cross conveyor

21.3.1 General

The cross conveyors offer the possibility of forming a double swath, a single swath (working with a cross-conveyor belt) or a triple swath (working with a cross conveyor belt). To form a swath, the cross conveyors are moved from the raised position over the terminal to the tedder. During the rotation process, the conveyor belts are automatically turned on. The speed of the conveyor belts can be infinitely adjusted via the terminal according to the amount of crop material. The speed of the cross conveyors determines the discharge distance of the cropped material and thus the resulting swath width. To form three individual swaths, the cross conveyors are raised above the terminal. The conveyor belts switch off automatically.

21.4 Automatic mode

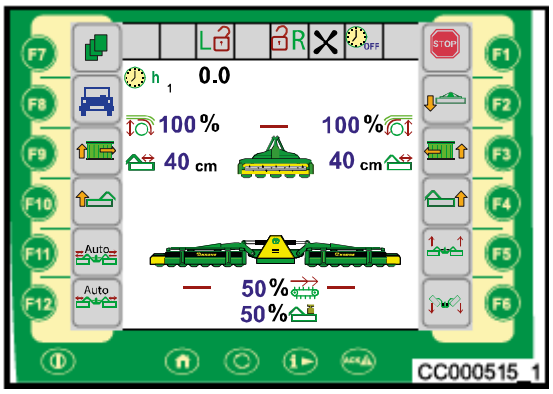


Fig. 150

21.4.1 Raising/Lowering right-hand cross conveyor belt

- To lower the cross conveyor belt to the working position, press and release .

The cross conveyor belt drive switches on automatically.

- To raise the cross conveyor belt, press and release .

The cross conveyor belt drive switches off automatically.

21.4.2 Raising/Lowering left-hand cross conveyor belt

- To lower the cross conveyor belt to the working position, press and release .

The cross conveyor belt drive switches on automatically.

- To raise the cross conveyor belt, press and release .

The cross conveyor belt drive switches off automatically.

21.4.3 Speed control of the cross conveyor belts

The speed of the cross conveyor belts can be increased or reduced infinitely during operation.

- To change the speed of the cross conveyor belts, press the value in front of the softkey.

The input mask opens.

- Increase or decrease the value.
- Acknowledge the input with "OK".

21.5 Manual mode

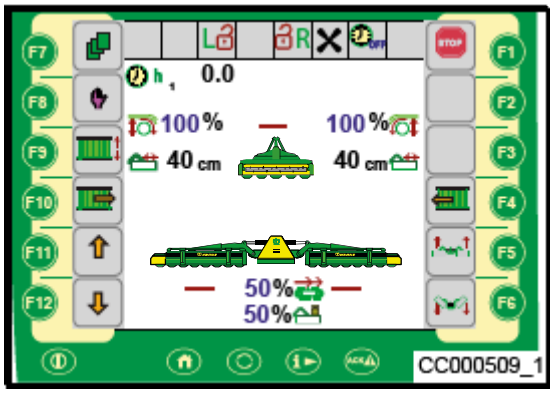


Fig. 151

21.5.1 Raising/Lowering right-hand cross conveyor belt

Preselecting cross conveyor belt

- To preselect the right-hand cross conveyor belt, press .

The softkey is displayed with colour highlighting.

Raising

- To raise the cross conveyor belt, press and hold .

Lowering

- To lower the cross conveyor belt, press and hold .

21.5.2 Raising/Lowering left-hand cross conveyor belt

Preselecting cross conveyor belt

To preselect the left-hand cross conveyor belt, press .
The softkey is displayed with colour highlighting.

Raising

- To raise the cross conveyor belt, press and hold .

Lowering

- To lower the cross conveyor belt, press and hold .

21.5.3 Raising/Lowering both cross conveyor belts simultaneously

Preselecting cross conveyor belts

To preselect both cross conveyor belts, press and .
The softkeys are displayed with colour highlighting.

Raising

- To raise both cross conveyor belts, press and hold .

Lowering

- To lower both cross conveyor belts, press and hold .

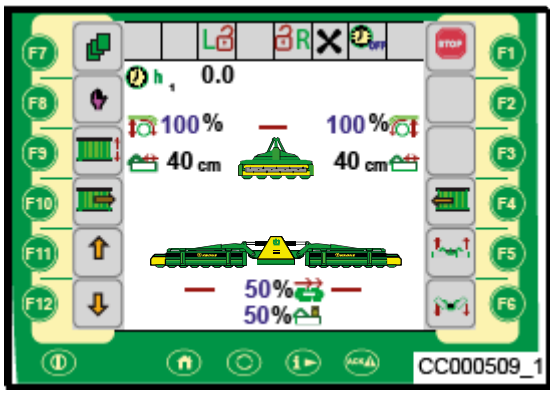


Fig. 152

21.5.4 Speed control of the cross conveyor belts

The speed of the cross conveyor belts can be increased or reduced infinitely during operation.

- To change the speed of the cross conveyor belts, press the value in front of the softkey.

The input mask opens.

- Increase or decrease the value.
- Acknowledge the input with "OK".

21.6 Bar on cross conveyor is bent

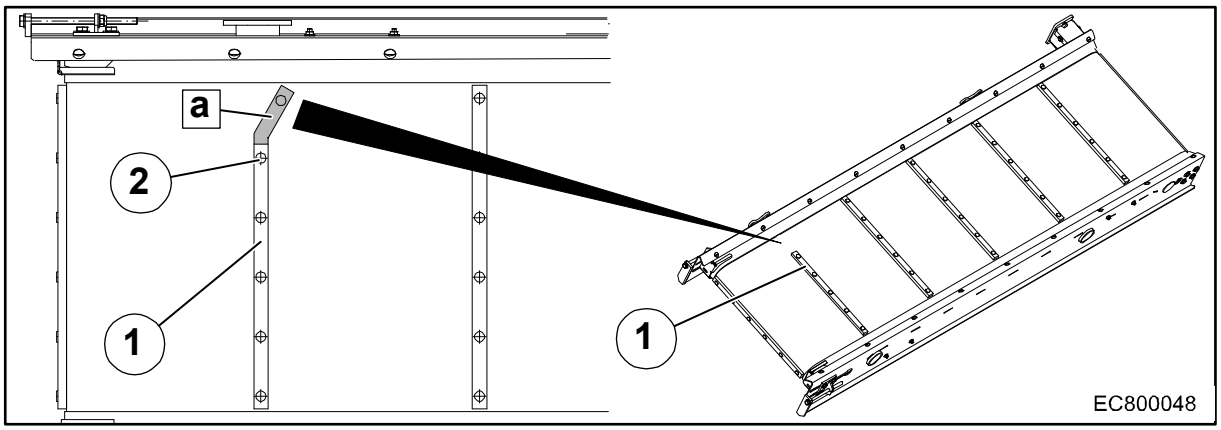


Fig. 153

If a cross conveyor bar (1) is bent in the outside area by contact with foreign object, the bent area (a) must be cut off close to the nearest rivet (2).
This will prevent further destruction to the bar or cross conveyor bar.

21.7 Hydraulic system

WARNING!

Risk of injury as a result of incorrect handling of liquids under high pressure.

Effect: Escaping high-pressure liquids can penetrate the skin and cause serious injury.

Repair work on the hydraulic system may only be performed by authorised KRONE professional workshops.

- Depressurise the system before disconnecting lines.
- When searching for leaks, use suitable aids and wear protective goggles.
- High-pressure liquid that is escaping from a small opening is virtually invisible. Therefore, you should use a piece of cardboard or something similar when searching for leaks. Protect your hands and body.
- If liquid penetrates the skin, consult a doctor immediately. The liquid must be removed from the body as quickly as possible. Danger of infection! Physicians who are not familiar with this area must consult appropriate information from a competent medical source.
- Check hydraulic hoses regularly and replace if there are any signs of damage or ageing! The replacement lines must comply with the requirements of the device manufacturer.
- Ensure that all line connections are tight before the pressure in the system builds up again.

21.7.1 Filling Quantities and Lubricant Designations

	Filling Quantity [litres]	Filtered oils Brand name	Bio-degradable lubricants Brand name
Oil Tank	approx. 15 l	HLP 46 (ISO VG 46)	**On request**

Note - Observe maintenance intervals

Effect: Long expected service life of machine

- With bio-degradable oils always observe the change intervals because of the ageing of the oils.

21.7.2 Oil Tank

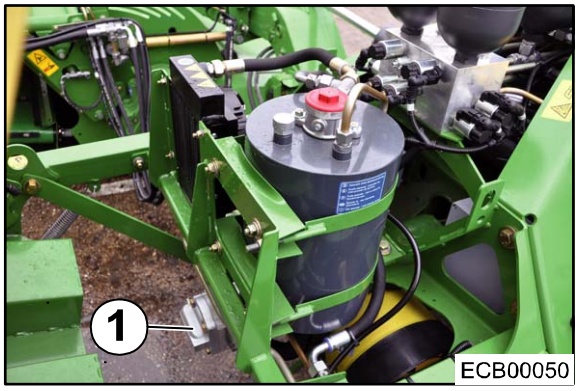


Fig. 154

Pressure is supplied to the on-board hydraulic system of the machine through its own hydraulic pump (1). The hydraulic pump (1) is connected to the lower part of the main gearbox by a flange and requires no maintenance.

Note! - Do not mix different types of oil.

Effect: Damage to the machine

- Never mix different types of oil.
- Before changing the type of oil, consult customer service. Never use engine oil.

21.7.3 Checking the oil level

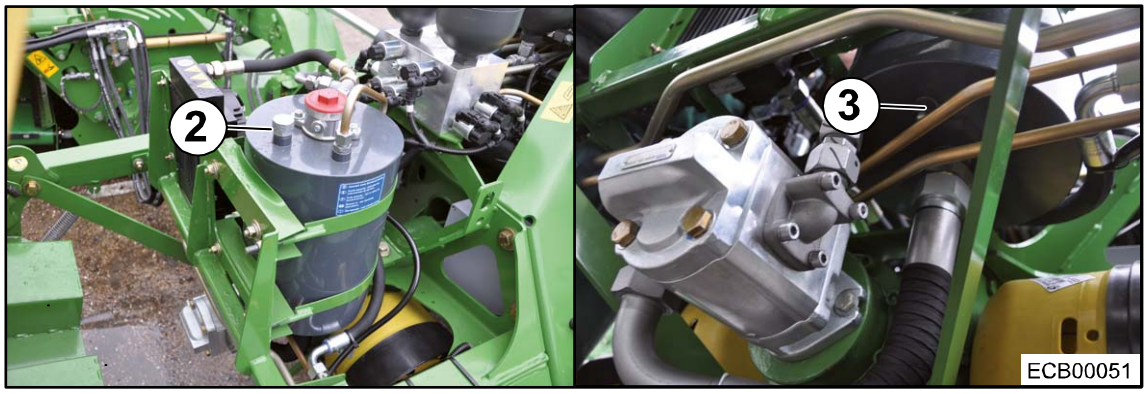


Fig. 155

Check the hydraulic oil level after every 10 operating hours of the cross conveyor.
To do this:

- Lower the machine and switch off the engine.
- Unscrew and remove the ventilation filter (2) (with measuring rod).
- • Use a lint-free cloth to clean the ventilation filter (2) and insert it again completely.
- Pull out the ventilation filter (2) again.
- The oil level must lie between the min. and max. mark.
- Top off with hydraulic oil if necessary.
- Screw in and tighten the ventilation filter (2).

21.7.4 Oil change

Change the hydraulic oil every 500 hours (but at least once a year).

- Unscrew and remove the ventilation filter (2) (with measuring rod).
- Screw out the oil drain plug (3).
- Collect the used oil in a suitable drip pan.
- Screw in the oil drain plug (3).
- Top up oil (2) (the oil level must lie between the min. and max. mark).
- Screw in and tighten the ventilation filter (2).

21.7.5 Replacing the hydraulic oil filter

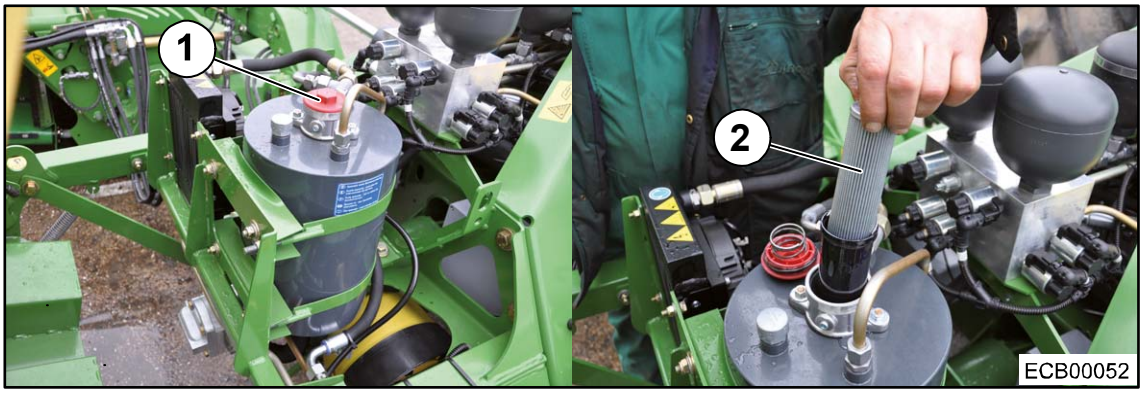


Fig. 156

Note

Ensure total cleanliness when changing the filter. Properly dispose of filter cartridge that was removed.

Replace the hydraulic oil filter before every season (but at least once year)

- Unscrew the screw cover (1).
- Lift the filter insert (2) and allow hydraulic oil to drip out.
- Remove the filter insert and dispose of it properly.
- Moisten the seal surface of the new filter insert with oil and set it in place.
- Tighten the screw cover (1).

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21.8 Cleaning the cross conveyors

WARNING! – Cleaning with high-pressure equipment!

Effect: Loss of eyesight!

- Keep people well away from the working area.
- Wear suitable work clothes to perform cleaning jobs with high-pressure equipment (for example eye protection).

Note

Clean the cross conveyors only at low pressure and using plenty of water. Never use cleaning agents. After cleaning, lubricate the bearings.

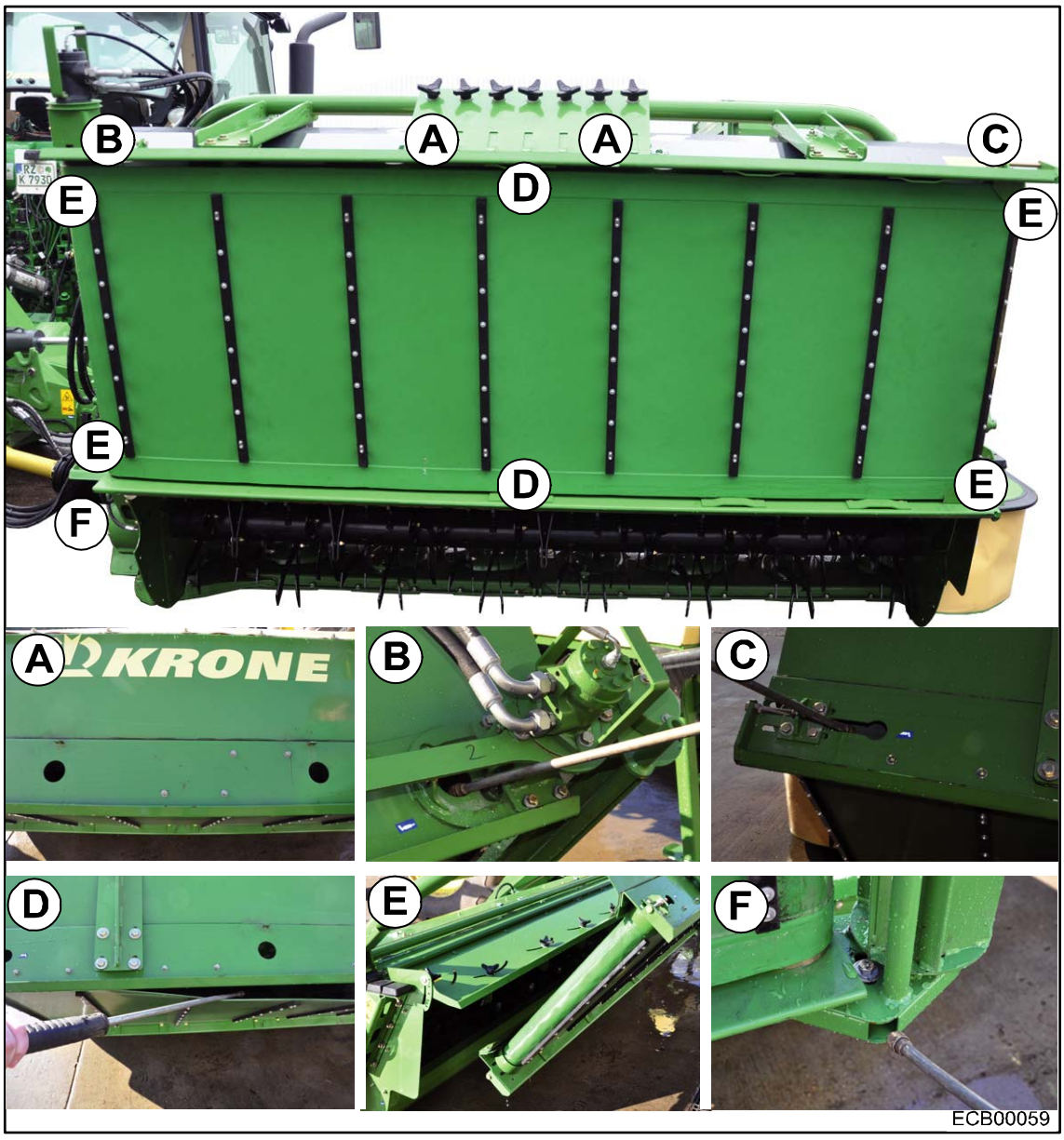


Fig. 157

- Move the machine to the working position.
- Remove the deflector plate retainers and put them to one side.
- Remove the plastic covers.
- Raise the cross conveyors over the terminal.
- Switch off the PTO and then the tractor engine, secure the tractor against rolling and remove the ignition key.
- Close the stopcock on the cross conveyor.
- Clean the locations (a to f) with the high-pressure cleaner.
- Attach the plastic covers.
- Mount the deflector plate retainers.
- Open the stopcock on the cross conveyor.

22 Placing in Storage

- Park the machine in a dry location, but not in the vicinity of artificial fertilisers or livestock buildings.
- Before placing the machine in winter storage, clean inside and outside thoroughly. If you use a high-pressure cleaner to do this. do not keep a stream of water directed at bearing points. After cleaning is completed, lubricate all lubrication points. Do not wipe off any grease that comes out of bearing points. The hardened grease will provide additional protection against moisture.
- Disassemble the PTO shaft. Lubricate the inner tubes and the guard tube with grease. Grease the lubrication points on the cross joint and on the bearing rings of the guard tubes.
- Oil all joint points!
- Touch up damaged paint and preserve all uncoated areas thoroughly with rust protection agent.
- Check all movable components such as deflector rollers, joints, tension rollers, etc. to make certain they move easily. If necessary remove, clean, grease and remount. If necessary, replace with new parts.
- **Use only original KRONE replacement parts.**

Perform the necessary repair tasks during the time immediately after the harvest season. Draw up a list of all replacement parts you will need. This will make it easier for your KRONE dealer to process your orders and you will be certain that your machine will be ready for use at the beginning of the next season.

23 Before the Start of the New Season

23.1 Special Safety Instructions

WARNING!

When performing repair, maintenance or cleaning work or in case of technical intervention, drive elements may start moving (caution: cutting discs continue to run).

Effect: Danger to life, injuries or damage to the machine.

- Turn off the PTO shaft.
- Move the machine to the working position and lower it to the ground.
- Switch off the engine of the tractor, remove the ignition key and carry it with you.
- Secure the tractor against accidental start-up and against rolling.
- After the repair, maintenance, cleaning work or technical modifications are completed, mount all protective covers and safety devices properly again.
- Avoid skin contact with oils, greases, cleaning agents and solvents.
- In the event of injuries or burns due to oils, cleaning agents or solvents, contact a physician immediately.
- All other safety instructions must also be followed to avoid injuries and accidents.

23.2 Test run.

Danger! - Testing the machine after repair, maintenance or cleaning work and after technical intervention.

Effect: Danger to life or serious injuries

- The mowing unit must be in working position
- Do not switch on the drives until the mowing unit is resting on the ground and you are absolutely sure that neither persons, animals nor objects are in the danger zone.
- Start a trial run of the machine only from the driver's seat.

- Lubricate the machine thoroughly. Remove any condensation water which may have collected in the bearings.
- Check oil level in the gearbox(es) and top up if necessary.
- 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.
- Re-read the operating instructions thoroughly.

Note

Use vegetable oils and greases.

- Vent the friction clutch to release the adhesion of the friction lining.

23.3 Friction Clutch

Caution! - Manipulation of the friction clutch

Effect: Serious damage to the machine

- Manipulation of the overload protection changes the slip torque. This will lead to a loss of warranty claims! Original KRONE spare parts only may be used.

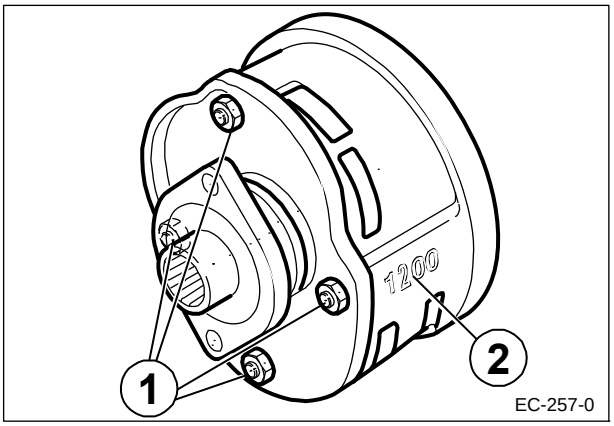


Fig. 158

The friction clutch protects the tractor and the machine against damage. It is designed with a permanently adjusted turning torque M_R. The torque is applied on the housing of the friction clutch (2).

Venting the friction clutch

Tighten the four nuts (1). Block the machine and move the friction clutch manually to the point where it slips through. Loosen the nuts again.

Note - Friction Clutch

Effect: Conserve functionality and increased service life

- The friction clutch (2) must be vented prior to commissioning and once a year prior to harvesting. (See section Before the Start of the New Season "Friction clutch")

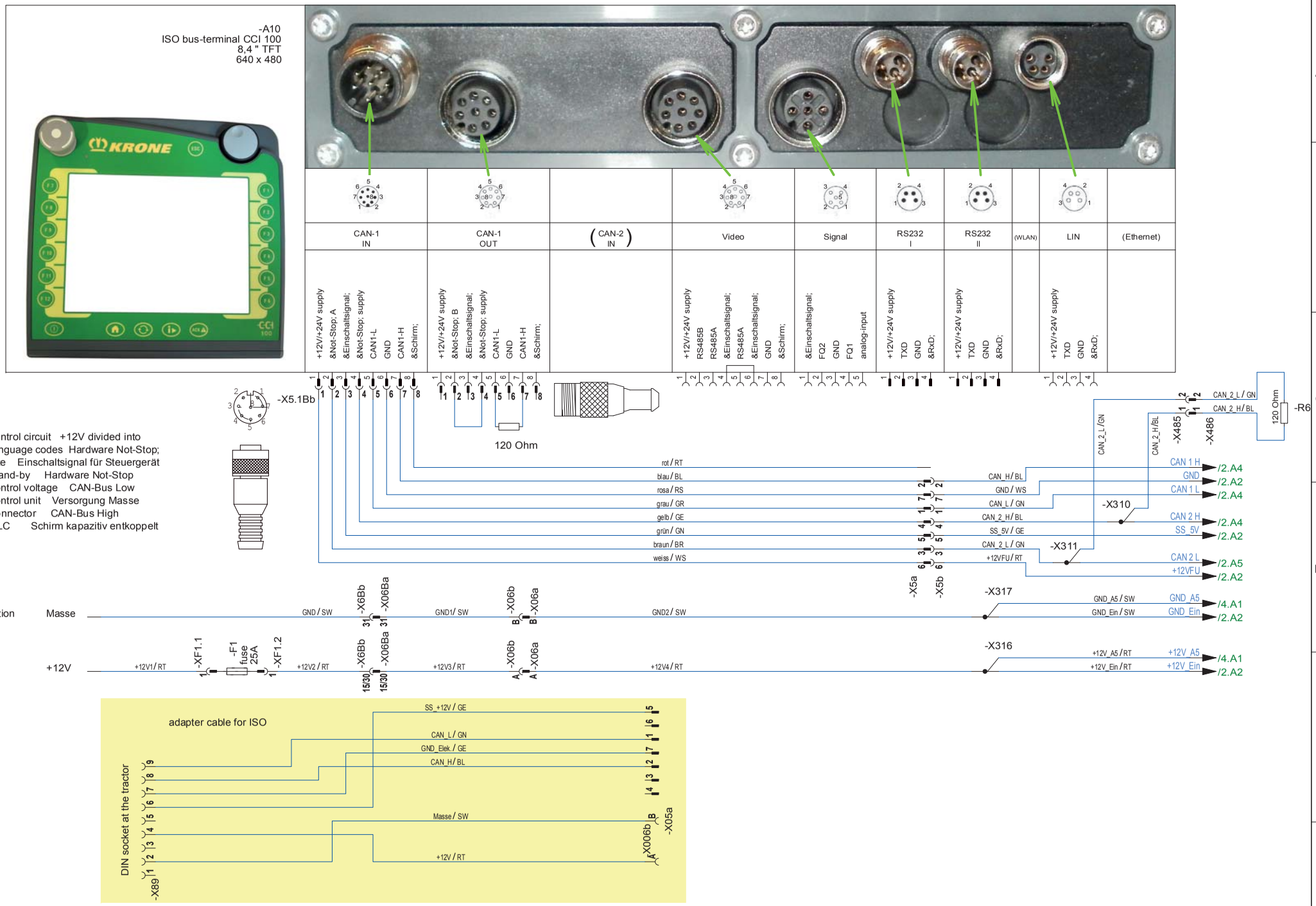
24 Appendix

24.1 Electrical circuit diagram

You will find the circuit diagrams listed below in the Appendix

1 Circuit diagram with cross conveyor belt (150 100 745)

2 Circuit diagram without cross conveyor belt (150 100 745)



1 control circuit +12V divided into
2 language codes Hardware Not-Stop;
3 site Einschaltsignal für Steuergerät
4 stand-by Hardware Not-Stop
5 control voltage CAN-Bus Low
6 control unit Versorgung Masse
7 connector CAN-Bus High
8 PLC Schirm kapazitiv entkoppelt

C				Created	KRONE	document-no.: D24	Easy Cut B 1000 CV	plant	
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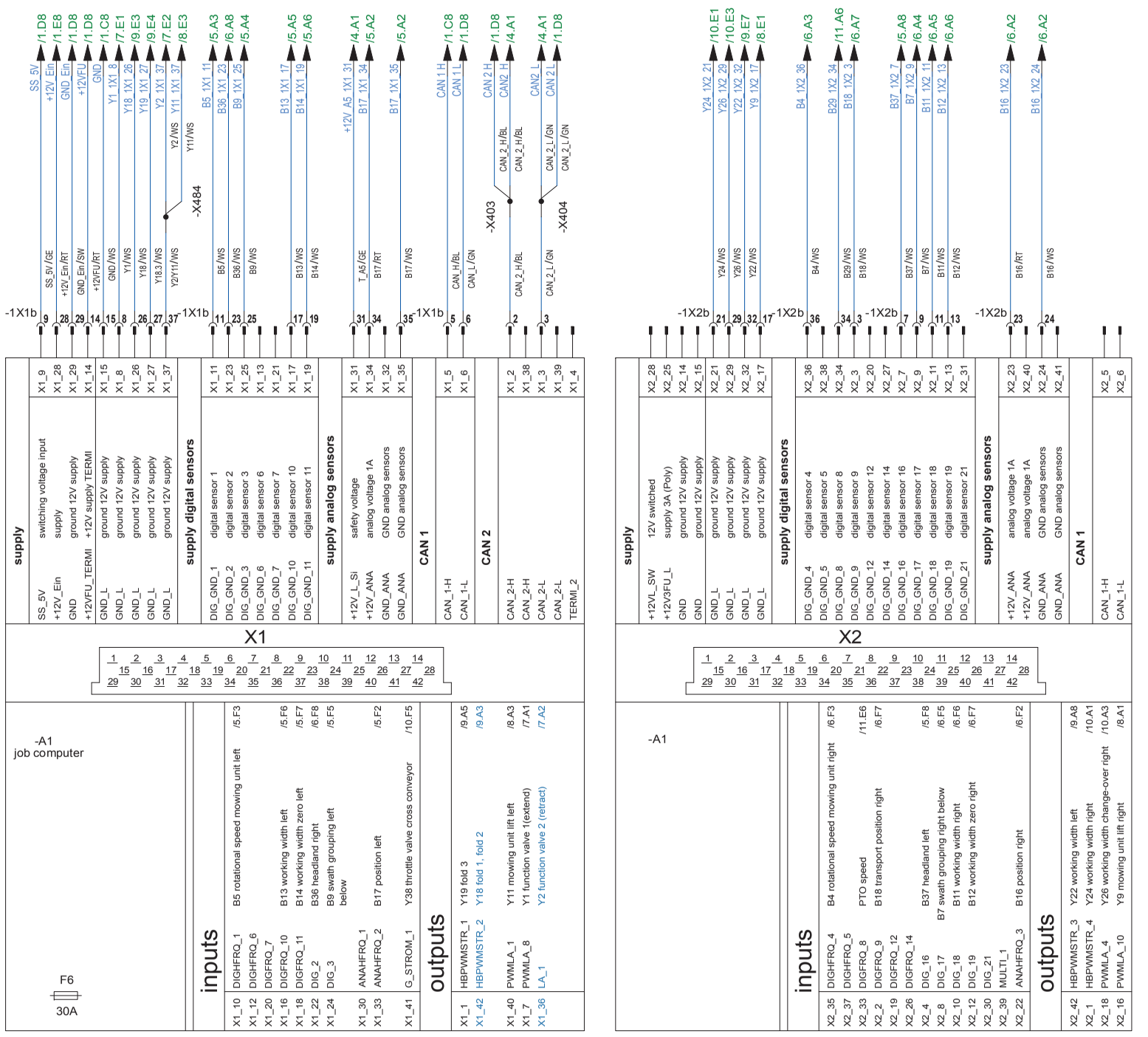

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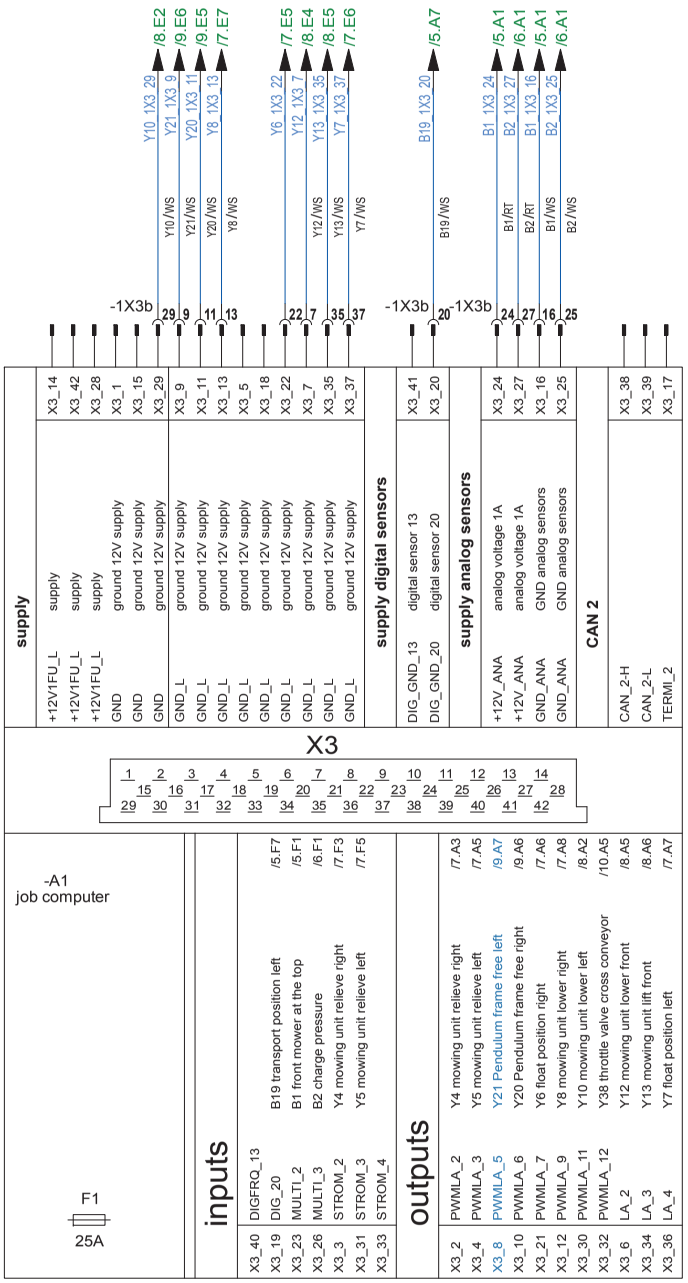

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KRONE

Origin	Repl. f.	Repl. by

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150100745 - 03

Easy Cut B 1000 CV
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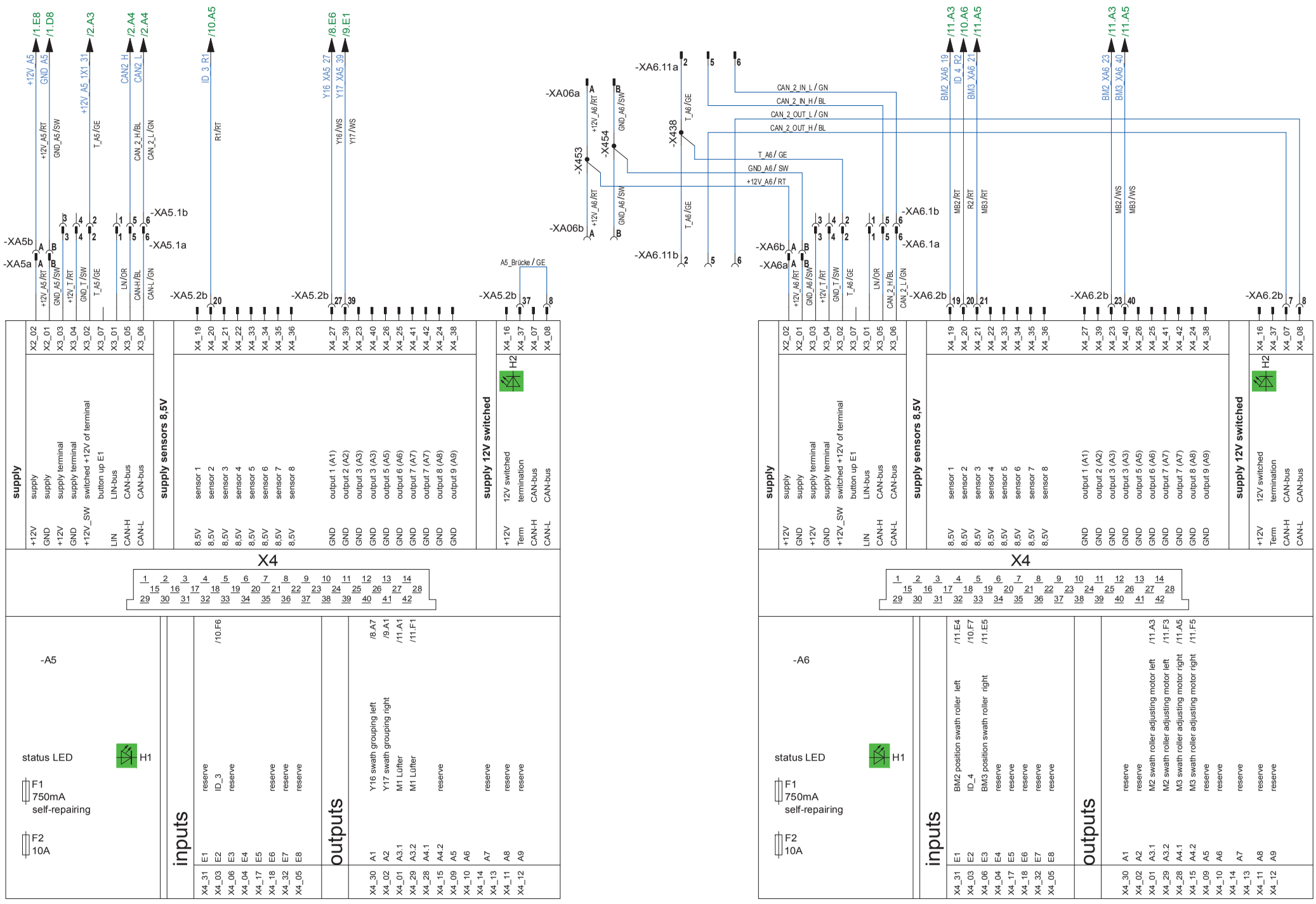

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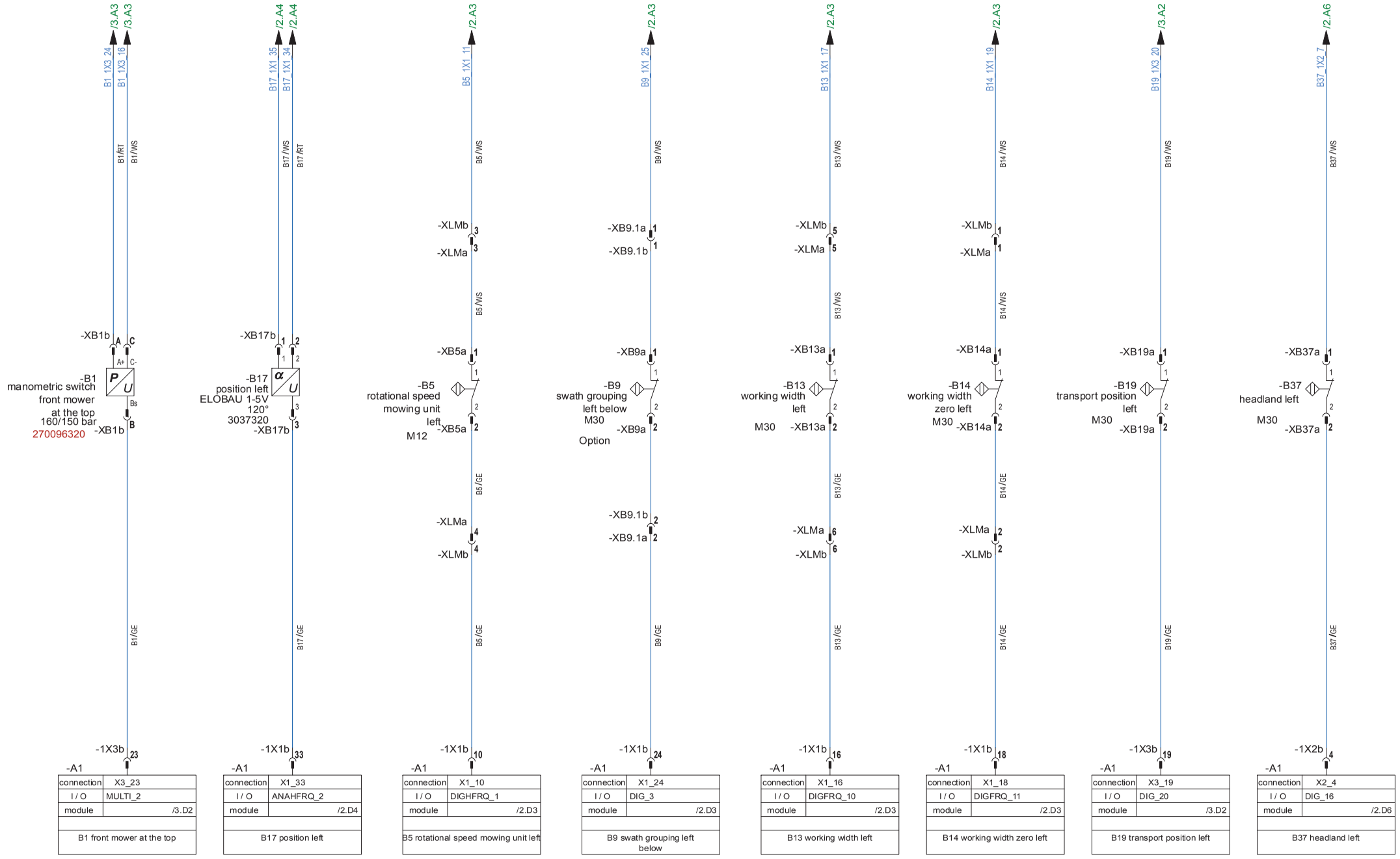

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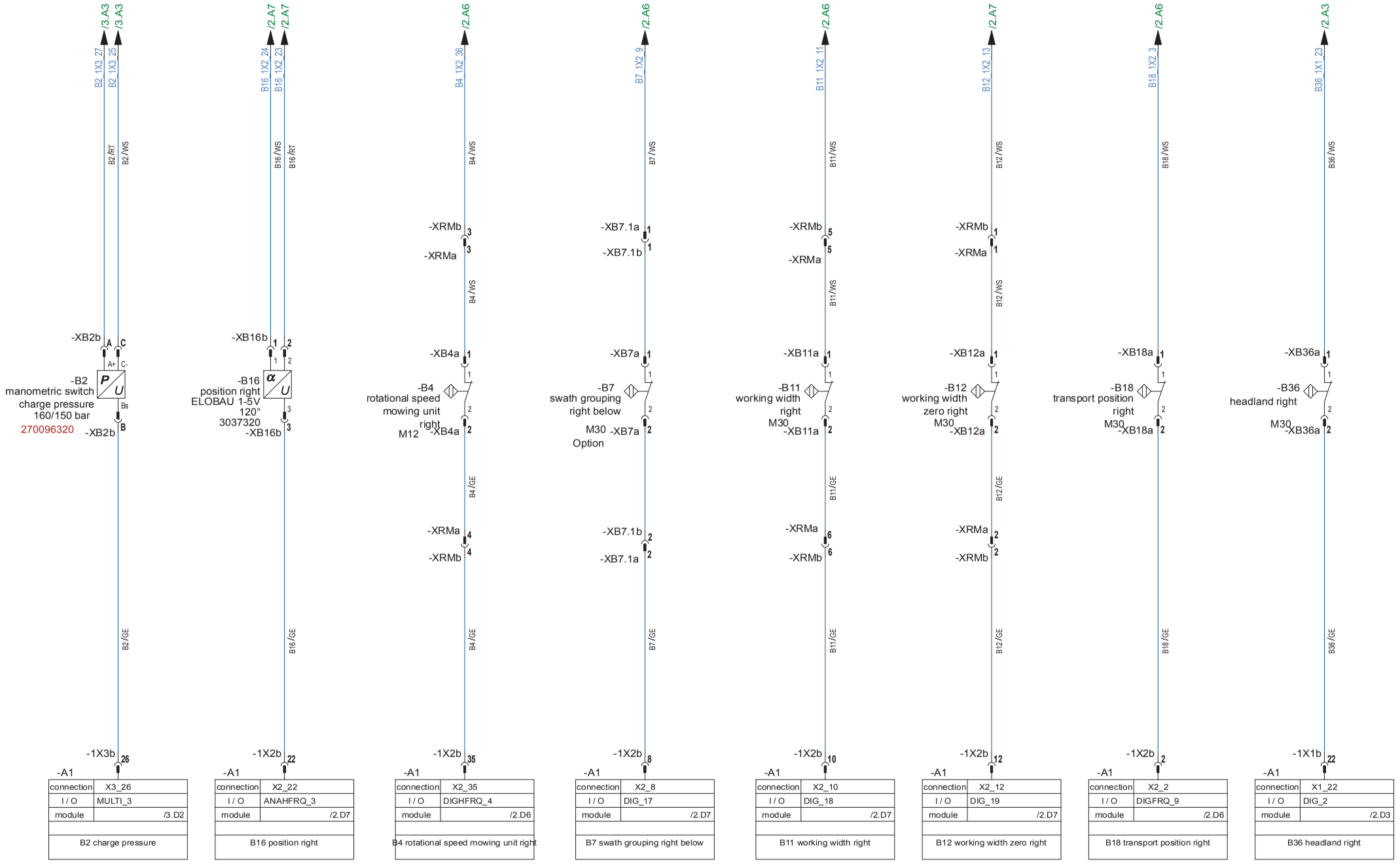

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KRONE

document-no.: D24
150100745 - 03

Easy Cut B 1000 CV
actuators 2

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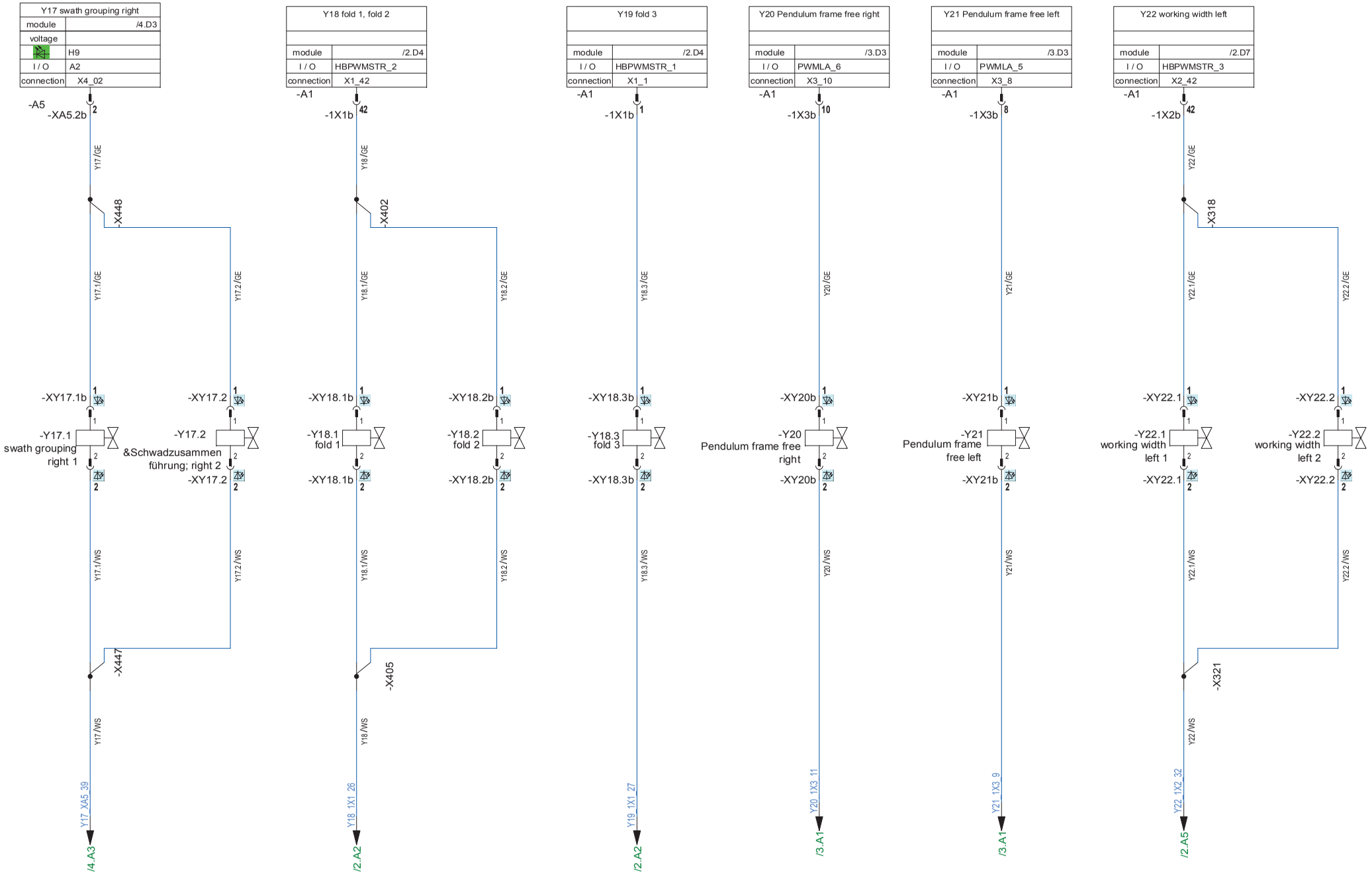

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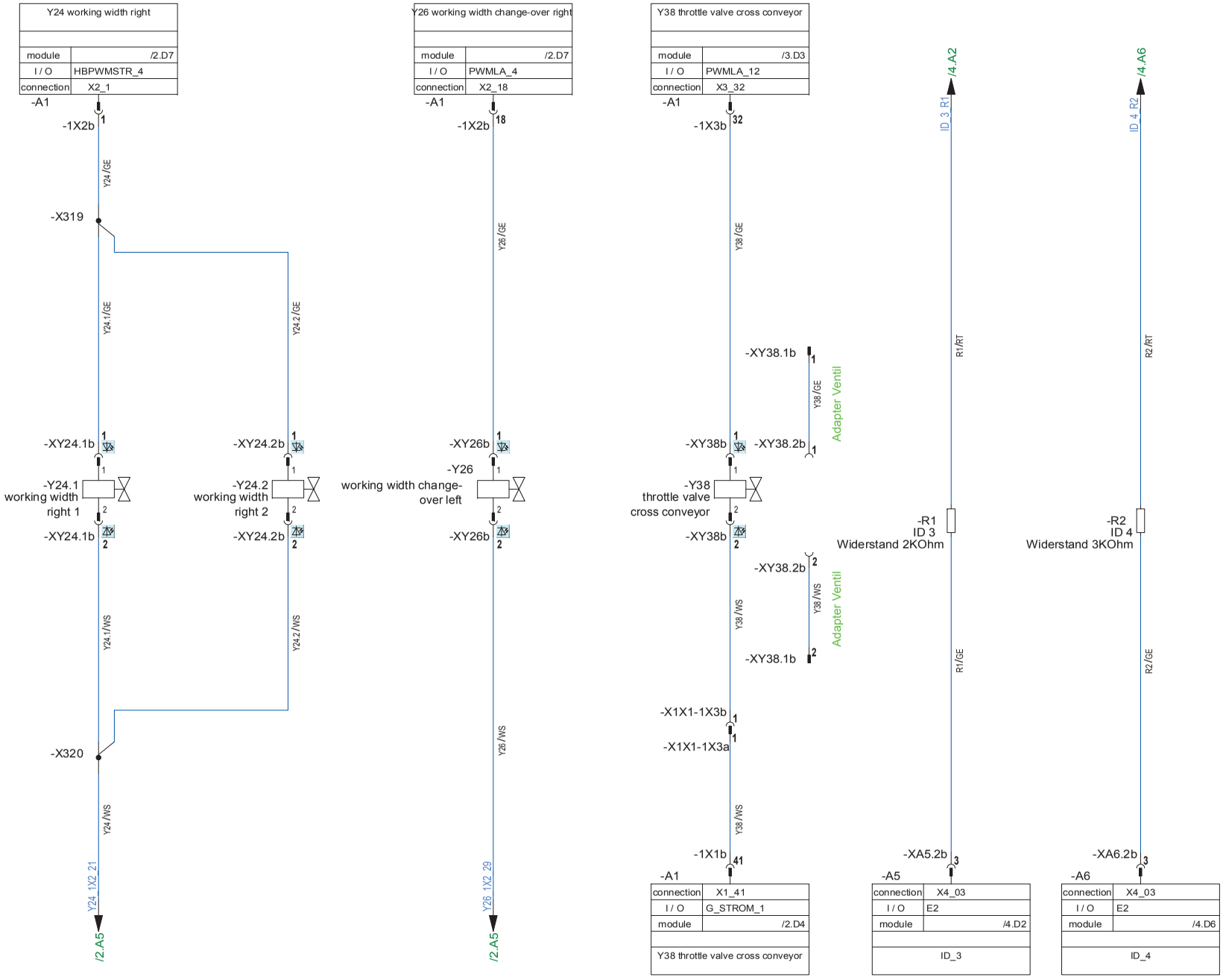

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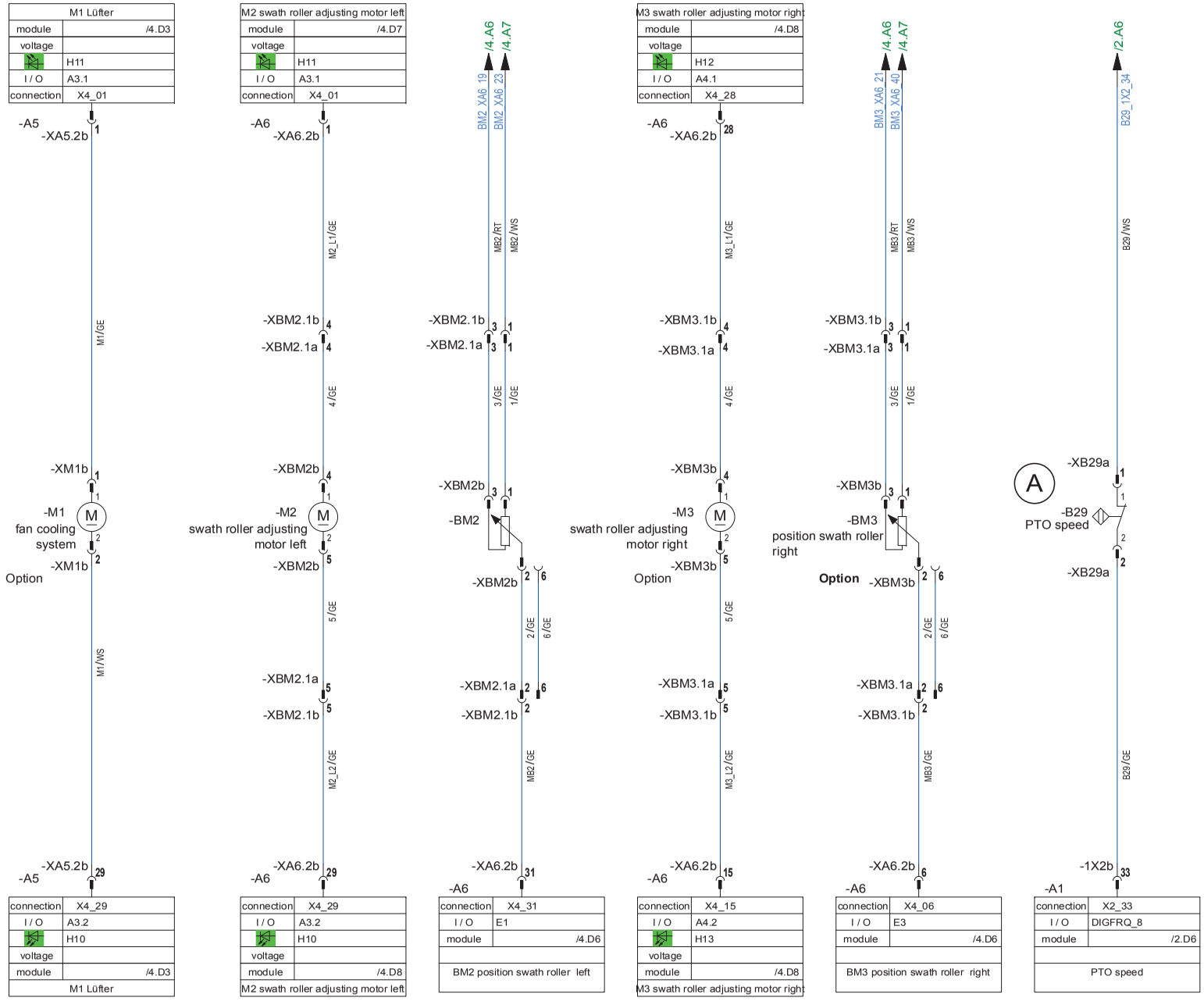

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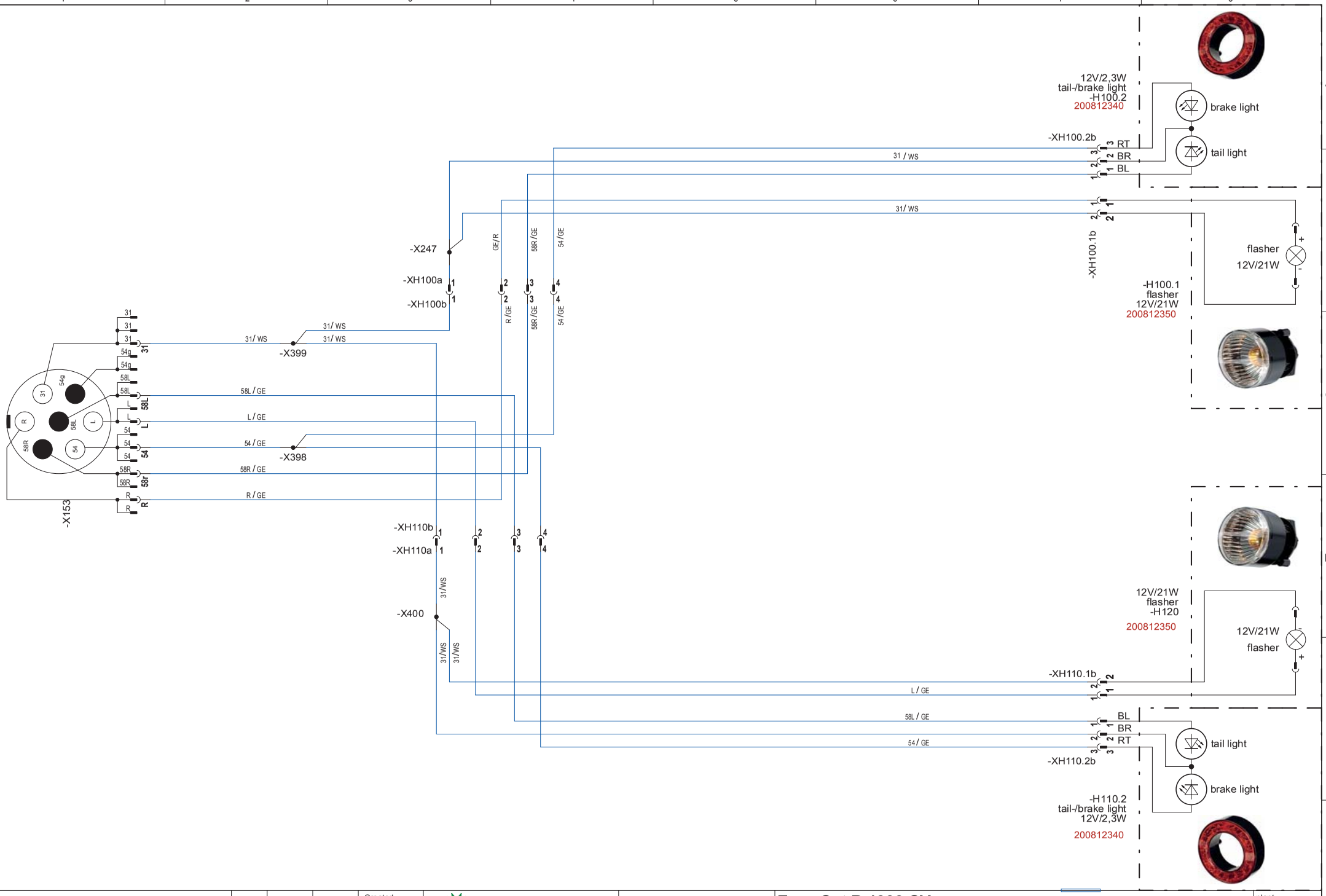

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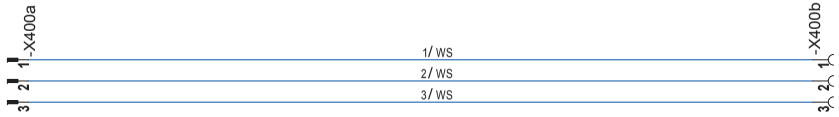

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25 Index

A

Abrasion Limit 212
Activating customer counter 118
Actuator Test 133
Adapting to the tractor 37
Adjust Locking 180
Adjusting Skids 231
Adjusting the conditioner plate 173
Adjusting the cutting height 169
Adjusting the Guards 170
Adjusting the hydraulic system 41
Adjusting the lateral suspension arm....162
Adjusting the Sensors....230
Adjusting the Tedder Speed 172
Adjustment for Swathing....174
Affixing the Adhesive Safety and Information Labels 19
After Shearing Off....192
Alarm Message....143
Alarm messages....144
Angular gearbox 203, 204
Appendix....245
Attached devices 14
Automatic mode....232
Auxiliary-function (AUX)....152

B

Bar on cross conveyor is bent 235
Basic Screen Lifting/Lowering Mowing Units Inching With the Key....79
Before mowing....160
Before the Start of the New Season 243
Blade Changing on Cutting Discs....213
Blade Quick-Fit Device 209, 215
Blade screw connection....209
Blade Screw Connection 214
Bringing up the Basic Screens 72

C

Calling up the menu level 96
Checking Cross Conveyor Belt Right / Left for Firm Attachment 42
Checking the Cutter Blades and Blade Holder.207
Cleaning the cross conveyors 240
Clutching points 37
Comfort Hydraulic Block Diagram 198
Commissioning 34
Connecting the hydraulic lines....46
Connecting the Multi-Function Lever 57
Connecting the Multi-Function Lever to the CCI Terminal 59
Connecting the Terminal with ISOBUS.... 56
Connecting the terminal without ISOBUS.... 58
Connecting to the KRONE ISOBUS CCI Terminal 47
Contact.... 18
Counter loading time.... 116
Counter unloading time.... 116
Cross conveyor.... 232
Cross conveyor basic dialogue (optional).... 84
Customer Counter.... 115
Cutter Blades 208

D

Dangers in Case of Non-compliance with the Safety Instructions 12
Deleting the customer counter.... 118
Detaching the machine 167
Detail counter.... 116
Deviating Torque.... 189
Diagnostics analogue actuators.... 136
Diagnostics Auxiliary.... 121
Diagnostics digital actuators 136
Diagnostics supply voltages 132
Differing functions to KRONE ISOBUS terminal CCI.... 151
Direction Information.... 10
Display 55
Driving and Transport 158
Driving Speed Display Diagnostics / Motion Direction Display Diagnostics 122

E

Electrical circuit diagram.... 245
Emergency manual activation.... 196
Error List 140
Example of joystick assignment for Fendt (default setting) 154

F

Filling Quantities and Lubricant Designations . 236
Filling Quantities and Lubrication Designations for Gearboxes 32
First installation.... 34
Folding down the Safety Device 161
Friction Clutch.... 244
From transport into working position.... 163

G

Gearbox for Top Roller Drive.....205

H

Headland Position.....165
High-pressure filter 194
Hydraulic system 16, 235
Hydraulic system basic dialogue 86
Hydraulics 44

I

Identification Plate 18
Identifying Symbols in the Operating Instructions 10
Inadmissible Modes of Operation 17
Increasing/Decreasing overcut 91
Information 141
Information Required for Questions and Orders 18
Install the PTO shaft 50
Installing the terminal into the cabin 53
Intended Use 12
Intermediate PTO shaft.....50
ISOBUS 120
ISOBUS CCI 100 Terminal / automatic mode 88
ISOBUS CCI 100 Terminal / manual mode 72
ISOBUS operation 149
ISOBUS Short Cut Button 54, 151
ISOBUS-Terminal 52

L

Lateral Guards 170
Lighting 48
Lighting connection.....48
Load bolt 131
Load-sensing connection.....41, 45, 195
Logical Alarms 145
Lowering front mowing unit.....74, 88
Lowering mowing unit (inching) 80
Lubricants 32
Lubrication Chart 218

M

Main gearbox 201
Main menu 1 98
Main Menu 13 Counters 114
Main Menu 14 ISOBUS Settings 120
Main Menu 15 Settings 127
Main menu 2 100
Main menu 3 102
Main menu 4 104
Main menu 5 106
Main menu 6 110
Main menu 7 112
Main window 68
Maintenance 17, 186
Maintenance – electrical system..... 226
Maintenance - hydraulic system 194
Maintenance – lubrication chart..... 217
Maintenance table..... 187
Manual mode 233
Menu Level 94
Mounting ISOBUS Terminal 150
Mounting onto the Tractor..... 43
Moving the Cross Conveyor 184
Mower Drive Gearbox..... 202
Mowing..... 160

O

Oil level check and oil change on the cutter bar 206
Oil Tank..... 236
Operating the Machine via LS (Load-Sensing Connection)..... 41, 45, 195
Operating the Machine without LS (Load-Sensing Connection)..... 41, 45, 195
Operation 160
Overcut / Lateral displacement basic dialogue.. 82

P

Parking..... 168
Periodical Inspection of the Cutting Discs / Blade Drums 211
Periodical Inspection of the Leaf Springs 210
Personnel Qualification and Training..... 12
Placing in Storage..... 242
Position of the Adhesive Safety Stickers on the Machine 20, 24
Position of the Sensors..... 226
Presetting Width Shift 92
Pressure Sensors 131
Protection for wild animals..... 75, 164
PTO operation..... 15
PTO shaft..... 39, 49, 217
Purpose of Use 12

'

'Raise/Lower front mowing unit' basic dialogue. 74
'Raise/Lower mowing units' basic dialogue 76

R

Raising mowing units (inching) 81
Raising/Lowering individual lateral mowing units 89
Raising/Lowering left-hand cross conveyor belt89, 232

Raising/Lowering right-hand cross conveyor belt 89, 232
Re-Ordering the Adhesive Safety and Information Labels 19
Replacing the hydraulic oil filter.....238
Replacing the linings.....216
Road travel (in emergency manual mode) 197
Rotary hub with shear fuse (optional).....190

S

Safety.....12
Safety Instructions and Accident Prevention Regulations.....13
Safety-conscious work practices 12
Sensor Test 128
Setting Conveyor Belt.....182
Setting of the pole protection mechanism 171
Setting the Distance of the Rollers 181
Settings.....169
Space tractor / machine.....38
Spare Parts.....186
Special equipment 231
Speed control of the cross conveyor belts...85, 89, 232, 234
Start screen 61
Start-up 43
Status Line.....63
Sub-Menu 13-1 Customer Counter 115
Sub-Menu 13-2 Total Counter 119
Sub-Menu 14-1 Diagnostics Auxiliary.....121
Sub-Menu 14-2 Driving Speed Display Diagnostics / Motion Direction Display Diagnostics 122
Sub-Menu 14-3 Setting the Background Colour 123
Sub-Menu 14-7 Virtual Terminal.....124
Sub-Menu 14-9 Switching Between Terminals 126
Sub-Menu 15-1 Sensor Test..... 128
Sub-Menu 15-2 Actuator Test..... 133
Sub-Menu 15-4 Error List 140
Sub-Menu 15-5 Information 141
Sub-Menu 15-6 Technician..... 142
Switching Between Terminals..... 126
Switching from working position to transport position..... 158
Switching the terminal on / off when the machine is connected..... 61
Switching the terminal on / off when the machine is not connected..... 60
Swivelling parking support into transport position 51

T

Technical data..... 30
Test run..... 243
Test run..... 186
Tightening Torques..... 188
Tightening Torques (Countersunk Screws)..... 189
Total Counter 119
Touchscreen 55

U

Unauthorised Conversion/Modification and Spare Parts Production 17

V

Virtual Terminal (VT)..... 124

W

Wide distributor plate 176
Wide spreading..... 175
Working in the vicinity of power transmission lines 17
WTK multi-function lever..... 155

KRONE

THE POWER OF GREEN

Maschinenfabrik Bernard Krone GmbH

Heinrich-Krone-Straße 10, D-48480 Spelle
Postfach 11 63, D-48478 Spelle

Phone +49 (0) 59 77/935-0
Fax +49 (0) 59 77/935-339
Internet: http://www.krone.de
eMail: info.ldm@krone.de